OFFICIAL STATEMENT DATED JUNE 29, 2023

NEW ISSUES – BOOK-ENTRY ONLY

Ratings:
See "RATINGS" herein

In the opinion of Bracewell LLP, Tax Counsel, under existing law, interest on the Series 2023A Bonds (i) is excludable from gross income for federal income tax purposes under section 103 of the Internal Revenue Code of 1986, as amended (the "Code"), except for any period during which a Series 2023A Bond is held by a person who is a "substantial user" of the facilities financed or refinanced with the proceeds of the Series 2023A Bonds or a "related person" to such a "substantial user," each within the meaning of section 147(a) of the Code and (ii) is an item of tax preference for purposes of the alternative minimum tax on individuals. Furthermore, under existing law, interest on the Series 2023B Bonds (i) is excludable from gross income for federal income tax purposes under section 103 of the Code and (ii) is not an item of tax preference for purposes of the alternative minimum tax on individuals. See "TAX MATTERS" herein, including information regarding potential alternative minimum tax consequences for corporations.

$756,050,000
CITY OF HOUSTON, TEXAS
AIRPORT SYSTEM
SUBORDINATE LIEN REVENUE AND REFUNDING BONDS

Consisting of:

$647,865,000
CITY OF HOUSTON, TEXAS
AIRPORT SYSTEM
SUBORDINATE LIEN REVENUE AND REFUNDING BONDS, SERIES 2023A (AMT)

$108,185,000
CITY OF HOUSTON, TEXAS
AIRPORT SYSTEM
SUBORDINATE LIEN REVENUE AND REFUNDING BONDS, SERIES 2023B (NON-AMT)

Interest Accrual Date: Date of Delivery

Due: July 1, as shown on inside cover

This Official Statement is provided to furnish information in connection with the offering by the City of Houston, Texas (the "City") of its Airport System Subordinate Lien Revenue and Refunding Bonds, Series 2023A (AMT) (the "Series 2023A Bonds") and its Airport System Subordinate Lien Revenue and Refunding Bonds, Series 2023B (Non-AMT) (the "Series 2023B Bonds" and, together with the Series 2023A Bonds, the "Series 2023 Bonds"). Proceeds of the sale of the Series 2023A Bonds will be used, together with other lawfully available funds, if any, to (i) refund the 2023A Refunded Notes (as defined herein); (ii) refund the 2023A Refunded Bonds (as defined herein) and the 2023A Target Bonds (as defined herein) tendered to the City for purchase and cancellation; (iii) provide financing for Authorized System Purposes (as defined herein); (iv) fund capitalized interest; (v) fund the Subordinate Lien Bond Reserve Fund (as defined herein); and (vi) pay related costs of issuance of the Series 2023A Bonds. Proceeds of the sale of the Series 2023B Bonds will be used, together with other lawfully available funds, if any, to (i) refund the 2023B Refunded Notes (as defined herein); (ii) refund the 2023B Refunded Bonds (as defined herein) and the 2023B Target Bonds (as defined herein) tendered to the City for purchase and cancellation; (iii) fund the Subordinate Lien Bond Reserve Fund; and (iv) pay related costs of issuance of the Series 2023B Bonds. See "PURPOSE AND PLAN OF FINANCING."

The Series 2023 Bonds will be issued in fully registered form in denominations of $5,000 or any integral multiple thereof. Interest on the Series 2023 Bonds will accrue from their Date of Delivery and will be payable semi-annually on each January 1 and July 1, commencing January 1, 2024, until maturity or prior redemption. The Bank of New York Mellon Trust Company, National Association (the "Paying Agent/Registrar") is the initial Paying Agent/Registrar.

The Series 2023 Bonds, when issued, will be registered in the name of Cede & Co., as registered owner and nominee for The Depository Trust Company, New York, New York ("DTC"), which will act as securities depository for the Series 2023 Bonds, until DTC resigns or is discharged. The Series 2023 Bonds will be available to purchasers only in book-entry form. For as long as Cede & Co. is the exclusive registered owner of the Series 2023 Bonds, the principal of and interest on the Series 2023 Bonds will be payable by the Paying Agent/Registrar to DTC, which will be responsible for making such payments to DTC Participants for subsequent remittance to the owners of beneficial interests in the Series 2023 Bonds. The purchasers of the Series 2023 Bonds will not receive certificates representing their beneficial ownership interests therein. See APPENDIX E – DEPOSITORY TRUST COMPANY.

The Series 2023 Bonds are special obligations of the City which, together with the Outstanding Subordinate Lien Bonds and any Additional Subordinate Lien Bonds hereafter issued, are payable from, and equally and ratably secured by, a lien on the Net Revenues of the Houston Airport System (as used herein, such term shall have the meaning assigned to the term "Airport System" within the hereinafter defined Ordinance), subject and subordinate to the prior and superior lien of Outstanding Senior Lien Obligations and Additional Senior Lien Obligations, if any, all as defined herein, and certain Funds established pursuant to the Ordinance (as defined herein). See "COVENANTS AND TERMS OF THE ORDINANCE."

The City, with the assistance of Siebert Williams Shank & Co. LLC, as dealer manager, released an "Invitation to Tender Bonds," dated June 12, 2023, inviting owners of the Target Bonds to tender such bonds to the City for purchase and cancellation. The City selected a portion of such bonds to accept for tender and intends to fund the purchase of such selected tendered bonds with a portion of the proceeds of the Series 2023 Bonds. "PURPOSE AND PLAN OF FINANCING – The Target Bonds" herein.

THE SERIES 2023 BONDS DO NOT CONSTITUTE AN INDEBTEDNESS OR GENERAL OBLIGATION OF THE CITY. OWNERS OF THE SERIES 2023 BONDS SHALL NEVER HAVE THE RIGHT TO DEMAND PAYMENT OF THE PRINCIPAL OF OR INTEREST ON THE SERIES 2023 BONDS FROM ANY FUNDS RAISED OR TO BE RAISED BY TAXATION.

The scheduled payment of principal of and interest on the Series 2023 Bonds when due will be guaranteed under an insurance policy to be issued concurrently with the delivery of the Series 2023 Bonds by **ASSURED GUARANTY MUNICIPAL CORP.**

The Series 2023 Bonds are subject to optional and mandatory redemption prior to maturity, as described herein. See "THE SERIES 2023 BONDS – Redemption."

SEE INSIDE COVER PAGES FOR MATURITIES, PRINCIPAL AMOUNTS, INTEREST RATES, PRICES AND YIELDS

This cover page is not intended to be a summary of the terms of, or the security for, the Series 2023 Bonds. Investors are advised to read the Official Statement in its entirety to obtain information essential to the making of an informed investment decision. See "INVESTMENT CONSIDERATIONS" herein.

The Series 2023 Bonds are offered by the Underwriters listed below when, as and if issued by the City and accepted by the Underwriters, subject to the approving opinions of the Attorney General of the State of Texas and the opinions of Bracewell LLP, Houston, Texas, Co-Bond Counsel and Tax Counsel, and of West & Associates, L.L.P., Houston, Texas, Co-Bond Counsel, as to the validity of the Series 2023 Bonds under the Constitution and the laws of the State of Texas. Certain matters will be passed upon for the City by its Special Disclosure Co-Counsel, Greenberg Traurig, LLP, Houston, Texas and The Chevalier Law Firm, PLLC, Houston, Texas. Certain other legal matters will be passed upon for the Underwriters by their co-counsel, McCall, Parkhurst & Horton L.L.P., Houston, Texas and Levi Benton & Associates PLLC, Houston, Texas. The Series 2023 Bonds are expected to be available for delivery on or about July 19, 2023 (the "Date of Delivery") through the facilities of DTC in New York, New York.

SIEBERT WILLIAMS SHANK & CO., LLC

BARCLAYS **J.P. MORGAN**

LOOP CAPITAL MARKETS **MORGAN STANLEY** **RAYMOND JAMES**

MATURITY AND PRICING SCHEDULE

$647,865,000
CITY OF HOUSTON, TEXAS
AIRPORT SYSTEM
SUBORDINATE LIEN REVENUE AND REFUNDING BONDS,
SERIES 2023A (AMT)

CUSIP Prefix[(1)]: 442349

Maturity Date (July 1)	Principal Amount	Interest Rate	Yield	CUSIP Suffix[(1)]
2026	$9,465,000	5.000%	3.500%	GB6
2027	9,935,000	5.000	3.530	GC4
2028	24,640,000	5.000	3.580	GD2
2029	17,935,000	5.000	3.600	GE0
2030	11,505,000	5.000	3.600	GF7
2031	43,185,000	5.000	3.600	GG5
2032	49,040,000	5.000	3.600	GH3
2033	13,315,000	5.000	3.630	GJ9
2034[(2)]	13,980,000	5.000	3.670[(3)]	GK6
2035[(2)]	14,680,000	5.000	3.740[(3)]	GL4
2036[(2)]	15,415,000	5.000	3.850[(3)]	GM2
2037[(2)]	16,185,000	5.000	3.940[(3)]	GN0
2038[(2)]	16,995,000	5.000	4.010[(3)]	GP5
2039[(2)]	17,845,000	5.250	4.030[(3)]	GQ3
2040[(2)]	18,780,000	5.250	4.090[(3)]	GR1
2041[(2)]	19,770,000	5.250	4.140[(3)]	GS9
2042[(2)]	20,805,000	5.250	4.160[(3)]	GT7
2043[(2)]	21,900,000	5.250	4.180[(3)]	GU4

<u>Term Bonds</u>

$127,980,000 Term Bonds Due July 1, 2048[(2)(4)], Interest Rate 5.250%, Yield 4.360%[(3)], CUSIP Suffix[(1)] GV2

$114,510,000 Term Bonds Due July 1, 2053[(2)(4)], Interest Rate 5.250%, Yield 4.400%[(3)], CUSIP Suffix[(1)] GW0

$50,000,000 Term Bonds Due July 1, 2053[(2)(4)], Interest Rate 4.500%, Yield 4.610%, CUSIP Suffix[(1)] GX8

(1) CUSIP is a registered trademark of the American Bankers Association. CUSIP data herein is provided by CUSIP Global Services, managed by FactSet Research Systems Inc. on behalf of the American Bankers Association. This data is not intended to create a database and does not serve in any way as a substitute for the CUSIP Services. None of the City, the Co-Financial Advisors or the Underwriters is responsible for the selection or correctness of the CUSIP numbers set forth herein.

(2) The City reserves the right, at its option, to redeem Series 2023A Bonds having stated maturities on or after July 1, 2034, in whole or in part, in principal amounts of $5,000 or any integral multiple thereof, on July 1, 2033, or any date thereafter, at the par value thereof plus accrued interest to the date of redemption. See "THE SERIES 2023 BONDS – Redemption – *Optional Redemption*."

(3) The initial yield on the Series 2023A Bonds sold at an original issue premium is calculated to the first optional redemption date, which is July 1, 2033.

(4) Subject to mandatory sinking fund redemption, as described in "THE SERIES 2023 BONDS – Redemption – *Mandatory Sinking Fund Redemption*."

$108,185,000
CITY OF HOUSTON, TEXAS
AIRPORT SYSTEM
SUBORDINATE LIEN REVENUE AND REFUNDING BONDS,
SERIES 2023B (NON-AMT)

CUSIP Prefix[1]: 442349

Maturity Date (July 1)	Principal Amount	Interest Rate	Yield	CUSIP Suffix[1]
2026	$575,000	5.000%	3.000%	GY6
2027	605,000	5.000	2.930	GZ3
2028	10,890,000	5.000	2.930	HA7
2029	5,430,000	5.000	2.950	HB5
2030	700,000	5.000	2.950	HC3
2031	23,745,000	5.000	2.950	HD1
2032	37,820,000	5.000	2.950	HE9
2033	810,000	5.000	3.000	HF6
2034[2]	855,000	5.000	3.060[3]	HG4
2035[2]	895,000	5.000	3.180[3]	HH2
2036[2]	940,000	5.000	3.320[3]	HJ8
2037[2]	985,000	5.000	3.470[3]	HK5
2038[2]	1,035,000	5.000	3.580[3]	HL3
2039[2]	1,090,000	5.000	3.640[3]	HM1
2040[2]	1,145,000	5.000	3.690[3]	HN9
2041[2]	1,200,000	5.000	3.740[3]	HP4
2042[2]	1,260,000	5.000	3.770[3]	HQ2
2043[2]	1,325,000	5.000	3.790[3]	HR0

Term Bonds

$16,880,000 Term Bonds Due July 1, 2053[2][4], Interest Rate 4.250%, Yield 4.350%, CUSIP Suffix[1] HS8

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(1) CUSIP is a registered trademark of the American Bankers Association. CUSIP data herein is provided by CUSIP Global Services, managed by FactSet Research Systems Inc. on behalf of the American Bankers Association. This data is not intended to create a database and does not serve in any way as a substitute for the CUSIP Services. None of the City, the Co-Financial Advisors or the Underwriters is responsible for the selection or correctness of the CUSIP numbers set forth herein.

(2) The City reserves the right, at its option, to redeem Series 2023B Bonds having stated maturities on or after July 1, 2034, in whole or in part, in principal amounts of $5,000 or any integral multiple thereof, on July 1, 2033, or any date thereafter, at the par value thereof plus accrued interest to the date of redemption. See "THE SERIES 2023 BONDS – Redemption – *Optional Redemption*."

(3) The initial yield on the Series 2023B Bonds sold at an original issue premium is calculated to the first optional redemption date, which is July 1, 2033.

(4) Subject to mandatory sinking fund redemption, as described in "THE SERIES 2023 BONDS – Redemption – *Mandatory Sinking Fund Redemption*."

No broker, dealer, sales representative or any other person has been authorized by the City or the Underwriters to give any information or to make any representation other than as contained in this Official Statement in connection with the offering described in it and, if given or made, such other information or representation must not be relied upon as having been authorized by any of the foregoing. This Official Statement does not constitute an offer to sell or the solicitation of any offer to buy any securities other than those described on the cover page, nor shall there be any offer to sell, solicitation of any offer to buy or sale of such securities by any persons in any jurisdiction in which it is unlawful for such person to make such offer, solicitation or sale.

THE SERIES 2023 BONDS HAVE NOT BEEN REGISTERED UNDER THE SECURITIES ACT OF 1933, AS AMENDED, IN RELIANCE UPON EXEMPTIONS CONTAINED IN SUCH ACT. THE REGISTRATION OR QUALIFICATION OF THE SERIES 2023 BONDS IN ACCORDANCE WITH APPLICABLE PROVISIONS OF SECURITIES LAWS OF THE STATES IN WHICH THE SERIES 2023 BONDS HAVE BEEN REGISTERED OR QUALIFIED AND THE EXEMPTION FROM REGISTRATION OR QUALIFICATION IN OTHER STATES CANNOT BE REGARDED AS A RECOMMENDATION THEREOF.

IN MAKING AN INVESTMENT DECISION, INVESTORS MUST RELY ON THEIR OWN EXAMINATION OF THE TERMS OF THIS OFFERING, INCLUDING THE MERITS AND RISKS INVOLVED. THE SERIES 2023 BONDS HAVE NOT BEEN RECOMMENDED BY ANY FEDERAL OR STATE SECURITIES COMMISSION OR REGULATORY AUTHORITY. FURTHERMORE, THE FOREGOING AUTHORITIES HAVE NOT CONFIRMED THE ACCURACY OR DETERMINED THE ADEQUACY OF THIS OFFICIAL STATEMENT. ANY REPRESENTATION TO THE CONTRARY MAY BE A CRIMINAL OFFENSE.

This Official Statement includes descriptions and summaries of certain events, matters and documents. Such descriptions and summaries do not purport to be complete, and all such descriptions, summaries and references thereto are qualified in their entirety by reference to this Official Statement in its entirety and to each such document, copies of which may be obtained from the City. Any statements made in this Official Statement or the appendices hereto involving matters of opinion or estimates, whether or not so expressly stated, are set forth as such and not as representations of fact, and no representation is made that any of such opinions or estimates will be realized.

This Official Statement is delivered in connection with the sale of securities referred to herein and may not be reproduced or used, in whole or in part, for any other purposes. This Official Statement does not constitute an offer to sell or the solicitation of an offer to buy nor shall there be any sale of the Series 2023 Bonds in any jurisdiction in which it is unlawful to make such offer, solicitation, or sale. No dealer, salesperson, or other person has been authorized by the City to give any information or to make any representation other than those contained herein, and, if given or made, such other information or representation must not be relied upon as having been authorized by the City, the Underwriters, or any other person. The information and expressions of opinion herein are subject to change without notice, and neither the delivery of this Official Statement nor any sale made hereunder shall, under any circumstances, create any implication that there has been no change in the matters described herein since the date hereof.

Certain statements in this Official Statement, which may be identified by the use of such terms as "plan," "project," "expect," "estimate," "budget" or other similar words, constitute forward-looking statements. Such forward-looking statements refer to the achievement of certain results or other expectation or performance that involves known and unknown risks, uncertainties and other factors. These risks, uncertainties and other factors may cause actual results, performance or achievements to be materially different from any projected results, performance or achievements described or implied by such forward-looking statements. Although the City currently publishes certain monthly financial reports that are available upon written request from the City to the extent permitted by applicable law, the City reserves the right to discontinue or modify this practice at any time, and the City does not plan to issue any other updates or revisions to any forward-looking statements if or when its expectations, or events, conditions or circumstances on which such statements are based, occur, or if actual results, performance or achievements are materially different from any results, performance or achievements described or implied by such forward-looking statements.

The Underwriters have provided the following sentence for inclusion in this Official Statement. The Underwriters have reviewed the information in this Official Statement in accordance with, and as part of, their respective responsibilities to investors under the federal securities laws as applied to the facts and circumstances of this transaction, but the Underwriters do not guarantee the accuracy or completeness of such information.

The prices and other terms respecting the offering and sale of the Series 2023 Bonds may be changed from time to time by the Underwriters after such Series 2023 Bonds are released for sale, and the Series 2023 Bonds may be offered and sold at prices other than the initial offering prices, including to dealers who may sell the Series 2023 Bonds into investment accounts.

All financial and other information presented herein, except for the information expressly attributed to other sources, has been provided by the City from its records and is intended to show recent historical information. Such information is not guaranteed as to accuracy or completeness. No representation is made that past performance, as might be shown by such financial and other information, will necessarily continue or be expected in the future. All descriptions of laws and documents contained herein are subject to change without notice, and neither the delivery of this Official Statement nor any sale of the Series 2023 Bonds will, under any circumstances, create any implication that the information contained herein has remained unchanged since the respective dates as of which such information is given herein.

None of the City, the Co-Financial Advisor, nor the Underwriters make any representation or warranty with respect to the information contained in this Official Statement regarding The Depository Trust Company, New York, New York ("DTC") or its Book-Entry-Only System, as such information has been provided by DTC.

References to website addresses presented herein are for informational purposes only and may be in the form of a hyperlink solely for the reader's convenience. Unless specified otherwise, such websites and the information or hyperlinks contained therein are not incorporated into, and are not part of, this Official Statement for any purpose.

THE COVER PAGE CONTAINS CERTAIN INFORMATION FOR GENERAL REFERENCE ONLY AND IS NOT INTENDED AS A SUMMARY OF THIS OFFERING. INVESTORS SHOULD READ THIS ENTIRE OFFICIAL STATEMENT, INCLUDING ALL APPENDICES ATTACHED HERETO, TO OBTAIN INFORMATION ESSENTIAL TO MAKING AN INFORMED INVESTMENT DECISION.

IN CONNECTION WITH THIS OFFERING, THE UNDERWRITERS MAY OVER-ALLOT OR EFFECT TRANSACTIONS WHICH STABILIZE OR MAINTAIN THE MARKET PRICES OF THE SERIES 2023 BONDS AT A LEVEL ABOVE THAT WHICH MIGHT OTHERWISE PREVAIL IN THE OPEN MARKET. SUCH STABILIZING, IF COMMENCED, MAY BE DISCONTINUED AT ANY TIME.

Assured Guaranty Municipal Corp. ("AGM") makes no representation regarding the Series 2023 Bonds or the advisability of investing in the Series 2023 Bonds. In addition, AGM has not independently verified, makes no representation regarding, and does not accept any responsibility for the accuracy or completeness of this Official Statement or any information or disclosure contained herein, or omitted herefrom, other than with respect to the accuracy of the information regarding AGM supplied by AGM and presented under the heading "BOND INSURANCE" and APPENDIX G – SPECIMEN MUNICIPAL BOND INSURANCE POLICY.

CITY OF HOUSTON, TEXAS

ELECTED OFFICIALS

Sylvester Turner, Mayor

Chris B. Brown, City Controller

CITY COUNCIL

Council Member,
District A.................................... Amy Peck

Council Member,
District B............................. Tarsha Jackson

Council Member,
District C................................ Abbie Kamin

Council Member,
District D................Carolyn Evans-Shabazz

Council Member,
District E ....Dave Martin

Council Member,
District F .... Tiffany D. Thomas

Council Member,
District G...................... Mary Nan Huffman

Council Member,
District H.............................. Karla Cisneros

Council Member,
District I ....Robert Gallegos

Council Member,
District J ....Edward Pollard

Council Member,
District K........................Martha Castex-Tatum

Council Member, At-Large
Position 1 ....Mike Knox

Council Member, At-Large
Position 2 .... David W. Robinson

Council Member, At-Large
Position 3 ....Michael Kubosh

Council Member, At-Large
Position 4 ....Letitia Plummer

Council Member, At-Large
Position 5.....................................Sallie Alcorn

APPOINTED OFFICIALS

City Attorney.. Arturo Michel
Deputy City Controller...Charisse Page Mosely
Director, Department of Finance.. William Jones
Director of Aviation, Houston Airport System .... Mario C. Diaz
City Secretary.. Pat Jefferson-Daniel

CONSULTANTS AND ADVISORS

Co-Financial Advisor	Masterson Advisors LLC The RSI Group LLC
Tax Counsel	Bracewell LLP
Co-Bond Counsel	Bracewell LLP West & Associates, L.L.P.
Co-Disclosure Counsel	Greenberg Traurig, LLP The Chevalier Law Firm, PLLC
Airport Management Consultant	Ricondo & Associates, Inc.

FINANCING WORKING GROUP MEMBERS

Houston Airport System	Clint Stephen Kertecia Hampton James Storemski Roy Carter Mandy Wu
Office of the City Attorney	Gary L. Wood Rahat Huq Eric Nguyen
Department of Finance	Melissa Dubowski Elvira Ontiveros Fahad Gulzar Chris Gonzalez
Office of the City Controller	Shannan Nobles Han Au Vernon D. Lewis Linjie Zhu

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OFFICIAL STATEMENT

$756,050,000

CITY OF HOUSTON, TEXAS
AIRPORT SYSTEM SUBORDINATE LIEN REVENUE AND REFUNDING BONDS

Consisting of:

$647,865,000	**$108,185,000**
CITY OF HOUSTON, TEXAS AIRPORT SYSTEM SUBORDINATE LIEN REVENUE AND REFUNDING BONDS, SERIES 2023A (AMT)	**CITY OF HOUSTON, TEXAS AIRPORT SYSTEM SUBORDINATE LIEN REVENUE AND REFUNDING BONDS, SERIES 2023B (NON-AMT)**

INTRODUCTION

This Official Statement, including the cover page, schedules and appendices hereto, is provided to furnish information in connection with the offer and sale by the City of Houston, Texas (the "City") of its Airport System Subordinate Lien Revenue and Refunding Bonds, Series 2023A (AMT) (the "Series 2023A Bonds") and its Airport System Subordinate Lien Revenue and Refunding Bonds, Series 2023B (NON-AMT) (the "Series 2023B Bonds" and, together with the Series 2023A Bonds, the "Series 2023 Bonds"). This Official Statement is concurrently provided to furnish information in connection with the Invitation to Tender Bonds (the "Invitation to Tender") made by the City, dated June 12, 2023 (the "Tender Offer"), inviting owners of the Target Bonds (as defined herein) to tender such bonds to the City for purchase and cancellation.

The Series 2023 Bonds are being issued pursuant to Chapters 1201-1205, 1207, 1371 and 1503, Texas Government Code, as amended, a master ordinance adopted by the City Council of the City (the "City Council") on November 9, 2016 (the "Master Ordinance"), a supplemental ordinance adopted by the City Council on May 31, 2023 (the "Seventh Supplemental Ordinance"), and one or more pricing certificates (collectively, the "Officers Pricing Certificate") executed by the pricing officers pursuant to the Seventh Supplemental Ordinance; collectively, the Master Ordinance, the Seventh Supplemental Ordinance and the Officers Pricing Certificate are referred to herein as the "Ordinance."

The Houston Airport System, an enterprise system of the City, is currently comprised of the following facilities, each of which the City manages, owns and operates through the Houston Airport System: George Bush Intercontinental Airport/Houston ("Intercontinental"), William P. Hobby Airport ("Hobby") and Ellington Airport ("Ellington"). United Airlines, Inc. ("United") is the largest air carrier operating at Intercontinental. Southwest Airlines, Inc. ("Southwest") is the largest air carrier operating at Hobby. Ellington supports the operations of the United States military, NASA and a variety of general aviation tenants. For additional information about the Houston Airport System, see "THE HOUSTON AIRPORT SYSTEM."

The City is the fourth most populous city in the nation and the most populous city in the State of Texas (the "State") and has a land area of approximately 675 square miles. According to the most recent United States Census Bureau estimate, the City's population was approximately 2.3 million in 2020. The Census Bureau's 2020 estimate for the population of the nine-county metropolitan statistical area ("Houston-The Woodlands-Sugar Land MSA"), the fifth largest metropolitan statistical area in the United States, was approximately 7.2 million. The City is located on the Southeast Texas Gulf Coastal Plains, approximately 50 miles from the Gulf of Mexico. The City is a major corporate and international business center. Leading industries include energy, petrochemical engineering and construction, real estate, aerospace, medicine and health care, transportation, biotechnology and computer technology.

Descriptions and summaries of the Series 2023 Bonds, the Houston Airport System and the Ordinance are included in this Official Statement. References herein to the Series 2023 Bonds and the Ordinance are qualified in their entirety by reference to the Ordinance. Attached as APPENDIX A is the Report of Airport Management Consultant. Houston Airport System Fund Financial Statements for the Fiscal Years ended June 30, 2021 and June 30, 2022 are included as APPENDIX B. Excerpts of the Master Ordinance and a glossary of defined terms are included as APPENDIX C-1 and, unless otherwise specifically defined, capitalized terms used herein have the meanings set out in APPENDIX C-1. APPENDIX C-2 contains certain proposed amendments to the Master Ordinance adopted in the Seventh Supplemental Ordinance, which proposed amendments shall be binding upon all Owners of the Series 2023 Bonds upon the Amendment Effective Date (as defined herein). Attached as APPENDIX D are the forms of opinions of Co-Bond Counsel and Tax Counsel. Attached as APPENDIX E is a list of continuing disclosure schedules included in this Official Statement. Attached as APPENDIX F is information relating to The Depository Trust Company, New York, New York ("DTC") and its book-entry system applicable to the Series 2023 Bonds.

Lien Securing the Series 2023 Bonds and other Obligations

The lien on Net Revenues securing the Series 2023 Bonds and other Subordinate Lien Bonds is (i) junior and subordinate to the lien on Net Revenues securing the Outstanding Senior Lien Notes and any Additional Senior Lien Obligations hereafter issued and (ii) senior to the lien on Net Revenues securing any Inferior Lien Bonds hereafter issued.

The City maintains a commercial paper program of Senior Lien Notes supported by a direct pay letter of credit issued by Sumitomo Mitsui Banking Corporation, acting through its New York Branch, which expires in March 2025, in the original stated amount of $375,890,411 (representing an amount equal to the maximum aggregate principal amount at any time Outstanding of $350 million plus an amount equal to 270 days' interest at the maximum rate described therein). As of the date hereof, $350 million of Senior Lien Notes are outstanding and will be refunded with a portion of the proceeds of the Series 2023 Bonds. See "PURPOSE AND PLAN OF FINANCING – The Refunded Notes."

There currently are no Senior Lien Bonds Outstanding.

No Inferior Lien Bonds are Outstanding. In February 2020, the City entered into an amended and restated forward bond purchase agreement with Royal Bank of Canada that establishes a mechanism for the City to issue and Royal Bank of Canada to underwrite up to $450 million of Airport System Inferior Lien Revenue Bonds. Such agreement expires in February 2027. No Inferior Lien Bonds have been issued, and as of the date hereof, no amounts are expected to be issued.

See "DEBT SERVICE REQUIREMENTS OF HOUSTON AIRPORT SYSTEM OBLIGATIONS – Schedule 8: Houston Airport System Outstanding Debt."

PURPOSE AND PLAN OF FINANCING

The Series 2023 Bonds

Proceeds of the sale of the Series 2023A Bonds will be used to (i) refund certain Outstanding Senior Lien Notes, as more specifically described in Schedule I (the "2023A Refunded Notes"); (ii) refund certain Outstanding Subordinate Lien Bonds, as more specifically described in Schedule I (the "2023A Refunded Bonds") and certain Outstanding Subordinate Lien Bonds, as more specifically described in Schedule II (the "2023A Target Bonds") tendered to the City for purchase and cancellation; (iii) provide financing for Authorized System Purposes; (iv) fund capitalized interest; (v) fund the Subordinate Lien Bond Reserve Fund by depositing cash therein and/or purchasing a Subordinate Lien Bond Reserve Fund Surety Policy; and (vi) pay related costs of issuance of the Series 2023A Bonds.

Proceeds of the sale of the Series 2023B Bonds will be used to (i) refund certain Outstanding Senior Lien Notes, as more specifically described in Schedule I (the "2023B Refunded Notes" and, together with the 2023A Refunded Notes, the "Refunded Notes"); (ii) refund certain Outstanding Subordinate Lien Bonds, as more specifically described in Schedule I (the "2023B Refunded Bonds" and, together with the 2023A Refunded Bonds, the "Refunded Bonds" and, collectively with the Refunded Notes, the "Refunded Obligations") and certain Outstanding Subordinate Lien Bonds, as more specifically described in Schedule II (the "2023B Target Bonds" and, together with the 2023A Target Bonds, the "Target Bonds") tendered to the City for purchase and cancellation; (iii) fund the Subordinate Lien Bond Reserve Fund by depositing cash therein and/or purchasing a Subordinate Lien Bond Reserve Fund Surety Policy; and (iv) pay related costs of issuance of the Series 2023B Bonds.

The Refunded Bonds

A portion of the proceeds of the Series 2023 Bonds, together with other available funds, if any, will be used to purchase a portfolio of obligations authorized under State law and the ordinances authorizing the Refunded Bonds (the "Refunded Bonds Escrowed Securities") to be deposited in one or more escrow funds or accounts (collectively, the "Refunded Bonds Escrow Fund") with The Bank of New York Mellon Trust Company, N.A. (the "Refunded Bonds Escrow Agent") pursuant to an escrow agreement between the City and the Refunded Bonds Escrow Agent (the "Refunded Bonds Escrow

Agreement”). The maturing principal of and interest on the Refunded Bonds Escrowed Securities will be sufficient, together with other funds, if any, to pay, when due, the principal of and interest on the Refunded Bonds.

Simultaneously with the issuance of the Series 2023 Bonds, the City will provide irrevocable instructions to the paying agent for the Refunded Bonds to give notice of redemption to the owners of the Refunded Bonds in accordance with the ordinance authorizing the Refunded Bonds.

Samuel Klein and Company, independent certified public accountants, in conjunction with Public Finance Partners LLC (the “Verification Agent”) will verify the accuracy of the mathematical computations as to the adequacy of the maturing principal of and interest on the Refunded Bonds Escrowed Securities, together with other available funds held in the Refunded Bonds Escrow Fund, if any, to provide for the payment of the Refunded Bonds when due. See “VERIFICATION OF MATHEMATICAL COMPUTATIONS.”

In the opinion of Co-Bond Counsel for the City, by making the escrow deposits required by the Seventh Supplemental Ordinance and the Refunded Bonds Escrow Agreement, the City will have made firm banking and financial arrangements for the discharge and final payment of the Refunded Bonds pursuant to the provisions of Chapter 1207, Texas Government Code, as amended. Thereafter, the Refunded Bonds will be deemed to be fully paid and no longer Outstanding, and the lien on and pledge of Net Revenues of the Airport System securing the Refunded Bonds will be deemed to have been defeased pursuant to the terms of the ordinance authorizing the issuance of the Refunded Bonds, except for the purpose of being paid from the funds provided therefor pursuant to the Refunded Bonds Escrow Agreement.

The Refunded Notes

A portion of the proceeds of the Series 2023 Bonds, together with other lawfully available funds of the City, will be deposited with U.S. Bank National Association, as the issuing and paying agent for the Refunded Notes (the “Refunded Notes Paying Agent”) and used to pay the Refunded Notes on or about July 19, 2023 (the “Date of Delivery”).

The sufficiency of the deposit to pay the principal of and interest on the Refunded Notes will be confirmed through a certificate delivered by the Co-Financial Advisors and acknowledged by the Refunded Notes Paying Agent, thereby confirming that the City will have made firm banking and financial arrangements for the discharge and final payment of the Refunded Notes pursuant to the provisions of Chapter 1207, Texas Government Code, as amended.

The Target Bonds

The City, with the assistance of Siebert Williams Shank & Co. LLC, as dealer manager (the “Dealer Manager”), released the Invitation to Tender to the beneficial owners of the Target Bonds on the terms set forth in the Invitation to Tender. Subject to the terms and conditions of the Invitation to Tender, on the Date of Delivery of the Series 2023 Bonds, the City will purchase for cash the Target Bonds validly tendered for purchase and accepted by the City in the principal amounts comprising the purchased bonds, as set forth in “SCHEDULE II – SCHEDULE OF TARGET BONDS”. The City expects to pay for such Target Bonds, together with the costs related thereto, from (i) proceeds of the Series 2023 Bonds, and (ii) certain available funds of the City held in trust for the beneficial owners of the Target Bonds. The Target Bonds will be canceled on the Date of Delivery and will no longer be deemed Outstanding. See “SOURCES AND USES OF FUNDS”.

Target Bonds not so purchased will remain Outstanding. On or before the Date of Delivery, the Verification Agent will provide the City its report verifying the sufficiency of cash deposited with the paying agent/registrar for the Target Bonds (the “Target Bonds Paying Agent”) to pay the purchase price of the Target Bonds. See “VERIFICATION OF MATHEMATICAL COMPUTATIONS.”

This description is not intended to summarize the terms of the Invitation to Tender, or to solicit offers to tender Target Bonds. Reference is made to the Invitation to Tender for a discussion of the terms of the Invitation to Tender and the conditions for settlement of the Target Bonds validly tendered and accepted for purchase. The City has filed the Invitation to Tender with the MSRB through its EMMA System.

REPORT OF AIRPORT MANAGEMENT CONSULTANT

The City has engaged Ricondo & Associates, Inc. (the "Airport Management Consultant") to evaluate the ability of the Houston Airport System to generate sufficient Net Revenues to meet the financial requirements established by the Ordinance for Fiscal Years 2024 through 2032. See the Report of Airport Management Consultant, dated June 12, 2023 (the "Report") included herein as APPENDIX A.

The Houston Airport System may issue one or more series of additional Airport Obligations over the next few years to complete the financing of the current Houston Airport System's Capital Improvement Plan ("CIP") and may issue additional Airport Obligations for other improvements not in the current CIP. See "COVENANTS AND TERMS OF THE ORDINANCE - Additional Airport Obligations" and APPENDIX C-1 for further details regarding the conditions to the issuance of additional Airport Obligations. For the purposes of the Report, pending the final determination of the project scope for certain CIP projects, only near-term projects in the current CIP are taken into account in the financial forecasts, including certain projects that may be funded, all or in part, with the proceeds of any such additional Airport Obligations. See "THE HOUSTON AIRPORT SYSTEM – Capital Improvement Program". Further, some of the projects the Report lists as expected to be financed with the proceeds of the Series 2023 Bonds may instead be financed with proceeds of future additional Airport Obligations. Houston Airport System management estimates that almost all of the projects in the current CIP will be completed by the end of Fiscal Year 2033. Only those projects expected to be completed by the end of Fiscal Year 2030 are taken into account in the financial forecasts presented in the Report.

The financial forecasts presented in the Report are based on information and assumptions that have been reviewed with and approved by the Houston Airport System management. The Report should be read in its entirety for an understanding of the forecasts and the underlying assumptions contained therein. In the opinion of the Airport Management Consultant, the assumptions underlying the forecasts are reasonable given the information available and circumstances existing as of the date of the Report. However, any forecast is subject to uncertainties and, inevitably, some assumptions used to develop the forecasts will not be realized and unanticipated events and circumstances may occur. Therefore, the actual results achieved may vary from the forecasts, and the variations could be material.

See "CERTAIN INVESTMENT CONSIDERATIONS – Airport Management Consultant Report and Financial Projections" herein.

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SOURCES AND USES OF FUNDS

The following table summarizes the estimated sources and uses of proceeds of the Series 2023 Bonds:

	Series 2023A Bonds	Series 2023B Bonds	Total
SOURCES OF FUNDS:			
Principal Amount	$647,865,000.00	$108,185,000.00	$756,050,000.00
Net Original Issue Premium	47,999,820.40	12,436,150.25	60,435,970.65
Issuer Contribution	151,522.42	144,539.29	296,061.71
TOTAL SOURCES	$696,016,342.82	$120,765,689.54	$816,782,032.36
USES OF FUNDS:			
Deposit to Capitalized Interest Account	$29,671,953.88	--	$29,671,953.88
Deposit to Refunded Bonds Paying Agent (1) and Target Bonds Paying Agent	96,107,492.63	$85,098,454.97	181,205,947.60
Deposit to Refunded Notes Paying Agent(2)	317,564,000.00	32,436,000.00	350,000,000.00
Deposit to Project Fund	211,870,000.00	--	211,870,000.00
Deposit to Subordinate Lien Bond Reserve Fund(3)	35,347,156.72	2,093,150.39	37,440,307.11
Underwriter's Discount	2,221,842.61	359,910.52	2,581,753.13
Costs of Issuance(4)	3,233,896.98	778,173.66	4,012,070.64
TOTAL USES	$696,016,342.82	$120,765,689.54	$816,782,032.36

(1) A portion of the interest due on the Refunded Bonds will be deposited with the Refunded Bonds Escrow Agent by the City from other lawfully available funds on or before the Date of Delivery.

(2) The interest due on the Refunded Notes will be deposited with the Refunded Notes Paying Agent by the City from other lawfully available funds on or before the Date of Delivery. Such amount of interest is not reflected in this table of sources and uses.

(3) Deposit to the Subordinate Lien Bond Reserve Fund Participant Account, which is the common reserve for all Outstanding Subordinate Lien Bonds. See "SECURITY FOR THE SERIES 2023 BONDS – Debt Service Reserves."

(4) Includes legal fees, rating agency fees, fees of the Paying Agent/Registrar, Refunded Bonds Escrow Agent, Refunded Notes Paying Agent, fees of the Airport Management Consultant, bond insurance premium, Subordinate Lien Bond Reserve Fund Surety Policy premium and other costs of issuance (inclusive of rounding amounts, if any).

THE SERIES 2023 BONDS

General

The Series 2023 Bonds are Subordinate Lien Bonds that, together with all other Subordinate Lien Bonds from time to time Outstanding, are payable from, and equally and ratably secured by, a lien on the Net Revenues of the Houston Airport System. The lien on Net Revenues securing Subordinate Lien Bonds is subordinate and junior to the superior lien on the Net Revenues securing the Senior Lien Obligations. See "INTRODUCTION – Lien Securing the Series 2023 Bonds and Other Obligations."

The Series 2023 Bonds will mature in the principal amounts and on the dates indicated on the inside cover pages of this Official Statement. Interest on the Series 2023 Bonds will accrue from July 19, 2023 (the "Date of Delivery"), be payable on each January 1 and July 1, commencing January 1, 2024, until maturity or earlier redemption, and be calculated on the basis of a 360-day year consisting of twelve 30-day months. The Series 2023 Bonds will be issued in fully registered form in denominations of $5,000 or any integral multiple thereof ("Authorized Denominations").

Principal of the Series 2023 Bonds is payable when due upon presentation and surrender thereof at the principal office of the Paying Agent/Registrar. Interest on the Series 2023 Bonds will be payable to the Registered Owner whose name appears in the registration books for the Series 2023 Bonds (the "Register") maintained by the Paying Agent/Registrar at the close of business on the 15th day of the calendar month immediately preceding the applicable interest payment date and shall be payable by the Paying Agent/Registrar by check or draft sent by United States mail, first class postage prepaid. Accrued interest payable at maturity of the Series 2023 Bonds will be paid upon presentation and surrender of such Series 2023 Bonds at the principal office of the Paying Agent/Registrar.

Redemption

Optional Redemption

The Series 2023A Bonds maturing on or after July 1, 2034 shall be subject to redemption prior to stated maturity at the option of the City on July 1, 2033 or any date thereafter, in whole or in part, at a price equal to the principal amount of the Series 2023A Bonds to be redeemed, plus the accrued interest thereon to (but not including) the date fixed for redemption.

The Series 2023B Bonds maturing on or after July 1, 2034 shall be subject to redemption prior to stated maturity at the option of the City on July 1, 2033 or any date thereafter, in whole or in part, at a price equal to the principal amount of the Series 2023B Bonds to be redeemed, plus the accrued interest thereon to (but not including) the date fixed for redemption.

Mandatory Sinking Fund Redemption

The Series 2023A Bonds maturing on July 1 in the years 2048 and 2053 ("Series 2023A Term Bonds") are being issued as term bonds and are subject to mandatory sinking fund redemption prior to their maturity in the following amounts (subject to reduction as hereinafter provided), on the following dates (all mandatory redemption dates for all applicable Bonds are hereinafter referred to as the "Mandatory Redemption Dates"), at a price equal to the principal amount of the Series 2023A Bonds to be redeemed plus accrued interest to (but not including) the applicable Mandatory Redemption Date, subject to the conditions set forth below:

$127,980,000 Series 2023A Term Bonds Maturing July 1, 2048

Mandatory Redemption Date (July 1)	Principal Amount to be Redeemed
2044	$23,045,000
2045	24,255,000
2046	25,530,000
2047	26,870,000
2048 (maturity)	28,280,000

$114,510,000 Series 2023A 5.250% Term Bonds
Maturing July 1, 2053

Mandatory Redemption Date (July 1)	Principal Amount to be Redeemed
2049	$19,765,000
2050	21,255,000
2051	22,820,000
2052	24,470,000
2053 (maturity)	26,200,000

$50,000,000 Series 2023A 4.500% Term Bonds
Maturing July 1, 2053

Mandatory Redemption Date (July 1)	Principal Amount to be Redeemed
2049	$10,000,000
2050	10,000,000
2051	10,000,000
2052	10,000,000
2053 (maturity)	10,000,000

The Series 2023B Bonds maturing on July 1, 2053 ("Series 2023B Term Bonds") are being issued as term bonds and are subject to mandatory sinking fund redemption prior to their maturity in the following amounts (subject to reduction as hereinafter provided), on the following Mandatory Redemption Dates, at a price equal to the principal amount of the Series 2023B Bonds to be redeemed plus accrued interest to (but not including) the applicable Mandatory Redemption Date, subject to the conditions set forth below:

$16,880,000 Series 2023B Term Bonds Maturing July 1, 2053

Mandatory Redemption Date (July 1)	Principal Amount to be Redeemed
2044	$1,390,000
2045	1,450,000
2046	1,510,000
2047	1,575,000
2048	1,640,000
2049	1,710,000
2050	1,785,000
2051	1,860,000
2052	1,940,000
2053 (maturity)	2,020,000

On or before 30 days prior to each Mandatory Redemption Date set forth above, the Paying Agent/Registrar shall (i) determine the principal amount of such Term Bonds that must be mandatorily redeemed on such Mandatory Redemption Date, after taking into account deliveries for cancellation and optional redemptions, (ii) select, by lot or other customary random method, the Term Bonds or portions of Term Bonds of such maturity to be mandatorily redeemed on such Mandatory Redemption Date, and (iii) give notice of such redemption as provided below. The principal amount of any Term Bonds to be mandatorily redeemed on a Mandatory Redemption Date shall be reduced by the principal amount of such Term Bonds which, by the 45th day prior to such Mandatory Redemption Date, either have been purchased in the open market and delivered or tendered for cancellation by or on behalf of the City to the Paying Agent/Registrar or optionally redeemed by the City and which, in either case, have not previously been made the basis for a reduction under this sentence.

Partial Redemption

The Series 2023 Bonds may be redeemed in part within a maturity only in integral multiples of $5,000. If a Series 2023 Bond subject to redemption is in a denomination larger than $5,000, a portion of such Series 2023 Bond may be redeemed, but only in integral multiples of $5,000. Upon presentation and surrender of any Series 2023 Bond for redemption in part, the Paying Agent/Registrar, in accordance with the provisions of the Ordinance, shall authenticate and deliver in exchange therefor Series 2023 Bonds of like maturity and interest rate in an aggregate principal amount equal to the unredeemed portion of the Series 2023 Bonds so presented and surrendered.

Selection of Bonds to be Optionally Redeemed

In the case of any optional redemption in part of the Series 2023 Bonds, the City shall select the stated maturities to be redeemed. If less than all of the Series 2023 Bonds of a stated maturity are to be optionally redeemed, the Paying Agent/Registrar shall select the particular Series 2023 Bonds of such stated maturity to be redeemed in such manner as it deems fair and appropriate and consistent with the requirements of the Series 2023 Bonds.

Notice of Redemption

If any of the Series 2023 Bonds are called for redemption, the Paying Agent/Registrar shall give notice, in the name of the City, of the redemption of such Series 2023 Bonds, which notice shall (i) specify the Series 2023 Bonds to be redeemed, the redemption date, the redemption price and the place or places where amounts due upon such redemption will be payable (which shall be the designated principal corporate trust office of the Paying Agent/Registrar) and, if less than all of the Series 2023 Bonds are to be redeemed, the portions of the Series 2023 Bonds to be redeemed, (ii) state any condition to such redemption and (iii) state that on the redemption date and upon the satisfaction of any such condition, the Series 2023 Bonds to be redeemed shall cease to bear interest. CUSIP number identification shall accompany all redemption notices. Such notice may set forth any additional information relating to such redemption. Such notice shall be given by mail, postage prepaid, at least 30 days but not more than 60 days prior to the date fixed for redemption to each Registered Owner of Series 2023 Bonds to be redeemed at its address shown on the Register; provided, however, that failure to give such notice to any Registered Owner or any defect in such notice shall not affect the validity of the proceedings for the redemption of any of the other Series 2023 Bonds.

Any notice given as provided herein shall be conclusively presumed to have been duly given, whether or not the Registered Owner or Beneficial Owner receives such notice. When the Series 2023 Bonds have been called for redemption in whole or in part, due provision has been made to redeem the same as provided in the Series 2023 Bonds and in the Ordinance, and any condition to redemption stated in the notice of redemption has been satisfied, the Series 2023 Bonds or portions thereof to be so redeemed shall no longer be regarded as Outstanding except for the purpose of receiving payment solely from the funds so provided for redemption, and the rights of the Registered Owners to collect interest that would otherwise accrue after the redemption date on any Series 2023 Bond or portion thereof called for redemption shall terminate on the date fixed for redemption.

Ownership

The City, the Paying Agent/Registrar, and any other person may treat the person in whose name any Series 2023 Bond is registered as the absolute Owner of such Series 2023 Bond for the purpose of making and receiving payment of the principal thereof, premium, if any, and interest thereon, and for all other purposes, whether or not such Series 2023 Bond is overdue, and neither the City nor the Paying Agent/Registrar shall be bound by any notice or knowledge to the contrary. All payments made to the person deemed to be the Owner of any Series 2023 Bond in accordance with the Ordinance shall be valid and effectual and shall discharge the liability of the City and the Paying Agent/Registrar upon such Series 2023 Bond to the extent of the sums paid.

Transfers and Exchanges

Beneficial ownership of the Series 2023 Bonds registered in the name DTC, will initially be transferred as described under APPENDIX F – DEPOSITORY TRUST COMPANY.

So long as any Series 2023 Bonds remain Outstanding, the Paying Agent/Registrar shall keep the Register at its principal office in which, subject to such reasonable regulations as it may prescribe, the Paying Agent/Registrar shall provide for the registration and transfer of the Series 2023 Bonds in accordance with the terms of the Ordinance. A copy of the Register shall be maintained at an office of the Paying Agent/Registrar in Texas.

If the Series 2023 Bonds are not in the DTC book-entry-only registration system, each Series 2023 Bond shall be transferable only upon the presentation and surrender thereof at the principal office of the Paying Agent/Registrar, duly endorsed for transfer, or accompanied by an assignment duly executed by the Registered Owner or his authorized representative in form satisfactory to the Paying Agent/Registrar. Upon due presentation and surrender of any Series 2023 Bond for transfer, the Paying Agent/Registrar is required to authenticate and deliver in exchange therefor, within 72 hours after such presentation and surrender, a new Series 2023 Bond or Series 2023 Bonds, registered in the name of the transferee or transferees, in Authorized Denominations and of the same series, maturity and aggregate principal amount and bearing interest at the same rate as the Series 2023 Bond or Series 2023 Bonds so presented and surrendered.

If the Series 2023 Bonds are not in the DTC book-entry-only registration system, all Series 2023 Bonds shall be exchangeable upon the presentation and surrender thereof at the principal office of the Paying Agent/Registrar for a Series 2023 Bond or Series 2023 Bonds of the same series, maturity and interest rate and in any Authorized Denomination, in an aggregate principal amount equal to the unpaid principal amount of the Series 2023 Bond or Series 2023 Bonds presented for exchange.

Each Series 2023 Bond delivered in accordance with the Ordinance shall be entitled to the benefits and security of the Ordinance to the same extent as the Series 2023 Bond or Series 2023 Bonds in lieu of which such Series 2023 Bond is delivered.

The City or the Paying Agent/Registrar may require DTC or any subsequent Registered Owner of any Series 2023 Bond to pay a sum sufficient to cover any tax or other governmental charge that may be imposed in connection with the transfer or exchange of such Series 2023 Bond.

The Paying Agent/Registrar shall not be required to transfer or exchange any Series 2023 Bond during the 45-day period prior to the date fixed for redemption; provided, however, that such restriction shall not apply to the transfer or exchange by the Registered Owner of the unredeemed portion of any Series 2023 Bond called for redemption in part.

BOND INSURANCE

Bond Insurance Policy

Concurrently with the issuance of the Series 2023 Bonds, Assured Guaranty Municipal Corp. ("AGM") will issue its Municipal Bond Insurance Policy for the Series 2023 Bonds (the "Policy"). The Policy guarantees the scheduled payment of principal of and interest on the Series 2023 Bonds when due as set forth in the form of the Policy included as APPENDIX G to this Official Statement.

The Policy is not covered by any insurance security or guaranty fund established under New York, California, Connecticut or Florida insurance law.

Assured Guaranty Municipal Corp.

AGM is a New York domiciled financial guaranty insurance company and an indirect subsidiary of Assured Guaranty Ltd. ("AGL"), a Bermuda-based holding company whose shares are publicly traded and are listed on the New York Stock Exchange under the symbol "AGO". AGL, through its operating subsidiaries, provides credit enhancement products to the U.S. and non-U.S. public finance (including infrastructure) and structured finance markets and asset management services. Neither AGL nor any of its shareholders or affiliates, other than AGM, is obligated to pay any debts of AGM or any claims under any insurance policy issued by AGM.

AGM's financial strength is rated "AA" (stable outlook) by S&P Global Ratings, a business unit of Standard & Poor's Financial Services LLC ("S&P"), "AA+" (stable outlook) by Kroll Bond Rating Agency, Inc. ("KBRA") and "A1" (stable outlook) by Moody's Investors Service, Inc. ("Moody's"). Each rating of AGM should be evaluated independently. An explanation of the significance of the above ratings may be obtained from the applicable rating agency. The above ratings are not recommendations to buy, sell or hold any security, and such ratings are subject to revision or withdrawal at any time by the rating agencies, including withdrawal initiated at the request of AGM in its sole discretion. In addition, the rating agencies may at any time change AGM's long-term rating outlooks or place such ratings on a watch list for possible downgrade in the near term. Any downward revision or withdrawal of any of the above ratings, the assignment of a negative outlook to such ratings or the placement of such ratings on a negative watch list may have an adverse effect on the market price of any security guaranteed by AGM. AGM only guarantees scheduled principal and scheduled interest payments payable by the issuer of bonds insured by AGM on the date(s) when such amounts were initially scheduled to become due and payable (subject to and in accordance with the terms of the relevant insurance policy), and does not guarantee the market price or liquidity of the securities it insures, nor does it guarantee that the ratings on such securities will not be revised or withdrawn.

Current Financial Strength Ratings

On October 21, 2022, KBRA announced it had affirmed AGM's insurance financial strength rating of "AA+" (stable outlook). AGM can give no assurance as to any further ratings action that KBRA may take.

On July 8, 2022, S&P announced it had affirmed AGM's financial strength rating of "AA" (stable outlook). AGM can give no assurance as to any further ratings action that S&P may take.

On March 18, 2022, Moody's announced it had upgraded AGM's insurance financial strength rating to "A1" (stable outlook) from "A2" (stable outlook). AGM can give no assurance as to any further ratings action that Moody's may take.

For more information regarding AGM's financial strength ratings and the risks relating thereto, see AGL's Annual Report on Form 10-K for the fiscal year ended December 31, 2022.

<u>Capitalization of AGM</u>

At March 31, 2023:

- The policyholders' surplus of AGM was approximately $2,742 million.

- The contingency reserve of AGM was approximately $874 million.

- The net unearned premium reserves and net deferred ceding commission income of AGM and its subsidiaries (as described below) were approximately $2,092 million. Such amount includes (i) 100% of the net unearned premium reserve and net deferred ceding commission income of AGM, and (ii) the net unearned premium reserves and net deferred ceding commissions of AGM's wholly owned subsidiary Assured Guaranty UK Limited ("AGUK") and its 99.9999% owned subsidiary Assured Guaranty (Europe) SA ("AGE").

The policyholders' surplus of AGM and the contingency reserves, net unearned premium reserves and net deferred ceding commission income of AGM were determined in accordance with statutory accounting principles. The net unearned premium reserves and net deferred ceding commissions of AGUK and AGE were determined in accordance with accounting principles generally accepted in the United States of America.

<u>Incorporation of Certain Documents by Reference</u>

Portions of the following documents filed by AGL with the Securities and Exchange Commission (the "SEC") that relate to AGM are incorporated by reference into this Official Statement and shall be deemed to be a part hereof:

(i) the Annual Report on Form 10-K for the fiscal year ended December 31, 2022 (filed by AGL with the SEC on March 1, 2023); and

(ii) the Quarterly Report on Form 10-Q for the quarterly period ended March 31, 2023 (filed by AGL with the SEC on May 10, 2023).

All information relating to AGM included in, or as exhibits to, documents filed by AGL with the SEC pursuant to Section 13(a) or 15(d) of the Securities Exchange Act of 1934, as amended, excluding Current Reports or portions thereof "furnished" under Item 2.02 or Item 7.01 of Form 8-K, after the filing of the last document referred to above and before the termination of the offering of the Series 2023 Bonds shall be deemed incorporated by reference into this Official Statement and to be a part hereof from the respective dates of filing such documents. Copies of materials incorporated by reference are available over the internet at the SEC's website at http://www.sec.gov, at AGL's website at http://www.assuredguaranty.com, or will be provided upon request to Assured Guaranty Municipal Corp.: 1633 Broadway, New York, New York 10019, Attention: Communications Department (telephone (212) 974-0100). Except for the information referred to above, no information available on or through AGL's website shall be deemed to be part of or incorporated in this Official Statement.

Any information regarding AGM included herein under the caption "BOND INSURANCE – Assured Guaranty Municipal Corp." or included in a document incorporated by reference herein (collectively, the "AGM Information") shall be modified or superseded to the extent that any subsequently included AGM Information (either directly or through incorporation by reference) modifies or supersedes such previously included AGM Information. Any AGM Information so modified or superseded shall not constitute a part of this Official Statement, except as so modified or superseded.

Miscellaneous Matters

AGM makes no representation regarding the Series 2023 Bonds or the advisability of investing in the Series 2023 Bonds. In addition, AGM has not independently verified, makes no representation regarding, and does not accept any responsibility for the accuracy or completeness of this Official Statement or any information or disclosure contained herein, or omitted herefrom, other than with respect to the accuracy of the information regarding AGM supplied by AGM and presented under the heading "BOND INSURANCE".

SECURITY FOR THE SERIES 2023 BONDS

General

The Series 2023 Bonds are special obligations of the City that, together with the Outstanding Subordinate Lien Bonds and any Additional Subordinate Lien Bonds hereafter issued, are payable from and are equally and ratably secured by a lien on the Net Revenues of the Houston Airport System, the Subordinate Lien Bond Interest and Sinking Fund and the Subordinate Lien Bond Reserve Fund, all as defined and provided in the Ordinance. See APPENDIX C-1 – GLOSSARY OF TERMS AND EXCERPTS OF THE MASTER ORDINANCE. The lien on Net Revenues securing the Series 2023 Bonds and other Subordinate Lien Bonds is (i) junior and subordinate to the lien on Net Revenues securing the Senior Lien Obligations and any Additional Senior Lien Obligations hereafter issued and (ii) senior to the lien on Net Revenues securing any Inferior Lien Bonds hereafter issued. See "INTRODUCTION – Lien Securing the Series 2023 Bonds and Other Obligations."

Passenger facility charge revenues (as more particularly defined in APPENDIX C-1, "PFC Revenues") are not pledged to the payment of the Series 2023 Bonds or any Subordinate Lien Bonds; however, periodically, the Houston Airport System irrevocably commits PFC Revenues to the Subordinate Lien Bond Interest and Sinking Fund for the purpose of paying eligible debt service attributable to certain projects for which the City has received approval to use PFC Revenues. See "CAPITAL IMPROVEMENT PROGRAM – PFC Revenues" for a discussion of permitted uses of PFC Revenues. The Master Ordinance provides that the calculation of Debt Service Requirements excludes any portion of the principal or interest due on Airport Obligations (as defined herein) that has been irrevocably committed by the City to be paid from funds other than Net Revenues, including but not limited to PFC Revenues. See "HOUSTON AIRPORT SYSTEM FINANCIAL INFORMATION – Sources of Revenues – *PFC Revenues,*" "HOUSTON AIRPORT SYSTEM FINANCIAL INFORMATION – Schedule 5: Selected Financial Information," "INVESTMENT CONSIDERATIONS – Passenger Facility Charges – *Availability of PFCs*" and APPENDIX A, "Exhibit 6-5 and Exhibit 6-6."

The Series 2023 Bonds do not constitute a general obligation of the City. Owners of the Series 2023 Bonds shall never have the right to demand payment of principal of, interest on or any redemption premium on the Series 2023 Bonds from any funds raised or to be raised by taxation.

In addition to the definitions described below, see APPENDIX C-1 – GLOSSARY OF TERMS AND EXCERPTS OF THE MASTER ORDINANCE for excerpts of the Master Ordinance, which further details the security for the Series 2023 Bonds.

Net Revenues

Net Revenues means that portion of the Gross Revenues remaining after the deduction of the Operation and Maintenance Expenses of the Houston Airport System.

Gross Revenues

Subject to the exclusions noted below, Gross Revenues means all income and revenues derived directly or indirectly by the City from the operation and use of and otherwise pertaining to the Houston Airport System, or any part thereof, whether resulting from extensions, enlargements, repairs, betterments or other improvements to the Houston Airport System, or otherwise, and includes, except to the extent hereinafter expressly excluded, all revenues received by the City from the Houston Airport System, including, without limitation, all rentals, rates, fees and other charges for the use of the Houston Airport System, or for any service rendered by the City in the operation thereof, interest and other income realized from the investment or deposit of amounts credited to any fund required to be maintained pursuant to the Master Ordinance or any other ordinance authorizing the issuance of Senior Lien Obligations, Subordinate Lien Bonds or Inferior Lien Bonds (collectively, the "Airport Obligations").

Gross Revenues expressly exclude: (1) proceeds of any Airport Obligations; (2) interest or other investment income derived from proceeds of Airport Obligations deposited to the credit of any construction fund, or applied to fund capitalized interest, or interest or investment income required to be retained in the various reserve funds established by the Ordinance or any escrow fund in order to accumulate therein any amount or balance required to be accumulated or maintained therein pursuant to any ordinance authorizing any series of Airport Obligations; (3) any moneys received as grants, appropriations, or gifts, the use of which is limited by the grantor or donor to the construction or acquisition of the Houston Airport System facilities, except to the extent any such moneys shall be received as payments for the use of the Houston Airport System facilities; (4) any revenues derived from any Special Facilities that are pledged to the payment of Special Facilities Bonds; (5) insurance proceeds other than loss of use or business interruption insurance proceeds; (6) PFC Revenues and any other per-passenger charge as may be authorized under federal law; (7) sales and other taxes collected by the Houston Airport System on behalf of the State and any other taxing entities; (8) Federal Payments received by the Houston Airport System, unless the City first receives an opinion from nationally recognized bond counsel to the effect that such payments, if included in Gross Revenues, would not cause the interest on the Airport Obligations to be includable within the gross income of the Owners thereof for federal income tax purposes; (9) the net proceeds received by the City from the disposition of any Houston Airport System property; (10) any Excluded Fee and Charge Revenues; and (11) any Taxable Bond Credit Revenues.

See APPENDIX C-2 – PROPOSED AMENDMENTS TO THE MASTER ORDINANCE and "COVENANTS AND TERMS OF THE ORDINANCE – Proposed Amendments to the Master Ordinance – *Released Revenues*" for a discussion of a proposed amendment to the Master Ordinance that would, under certain circumstances, allow certain revenues to be released from the definition of "Gross Revenues."

Operation and Maintenance Expenses

Subject to the exclusions noted below, Operation and Maintenance Expenses means all reasonable and necessary current expenses of the City, paid or accrued, of operating, maintaining and repairing the Houston Airport System including, without limitation, those reasonably allocated City overhead expenses relating to the administration, operation and maintenance of the Houston Airport System; insurance and fidelity bond premiums; payments to pension and other funds and to any self-insurance fund not in excess of premiums that would otherwise be required for such insurance; any general and excise taxes or other governmental charges imposed by entities other than the City; costs of contractual and professional services, labor, materials and supplies for current operations, including the costs of such direct City services rendered to the Houston Airport System as are requested from the City by the Houston Airport System and as are reasonably necessary for the operation of the Houston Airport System; costs of issuance of Airport Obligations (except to the extent paid from the proceeds thereof); fiduciary costs; costs of collecting and refunding Gross Revenues; utility costs; any lawful refunds of any Gross Revenues; and all other administrative, general and commercial expenses. Operation and Maintenance Expenses include only those current expenses due or payable within the next 30 days.

The following expenses are specifically excluded from the definition of Operation and Maintenance Expenses: (1) any allowance for depreciation; (2) costs of capital improvements; (3) reserves for major capital improvements, Houston Airport System operations, maintenance or repair; (4) any allowance for redemption of, or payment of interest or premium on, Airport Obligations; (5) any liabilities incurred in acquiring or improving properties of the Houston Airport System; (6) expenses of lessees under Special Facilities Leases and operation and maintenance expenses pertaining to Special Facilities to the extent they are required to be paid by such lessees pursuant to the terms of the Special Facilities Leases; (7) any charges or obligations incurred in connection with any lawful Houston Airport System purpose, including the lease, acquisition, operation or maintenance of any facility or property benefiting the Houston Airport System, provided that the payment of such charges or obligations is expressly agreed by the payee to be payable solely from proceeds of the Airports Improvement Fund; (8) liabilities based upon the City's negligence or other grounds not based on contract; and (9) so long as Federal Payments are excluded from Gross Revenues, an amount of expenses that would otherwise constitute Operation and Maintenance Expenses for such period equal to the Federal Payments for such period.

Perfection of Security Interest in Revenues

The Master Ordinance provides that pursuant to Chapter 1208, Texas Government Code, the liens on Net Revenues created under the Master Ordinance are valid, effective and perfected.

Bondholders' Remedies

The Ordinance provides that if the City defaults in the payment of principal of or interest on any Subordinate Lien Bonds, including the Series 2023 Bonds, or the performance of any duty or covenant provided by law or in the Ordinance, Owners of such Subordinate Lien Bonds, including the Series 2023 Bonds, may pursue all legal remedies afforded by the Constitution and the laws of the State to compel the City to remedy such default and to prevent further default or defaults. See APPENDIX C-1 – GLOSSARY OF TERMS AND EXCERPTS OF THE MASTER ORDINANCE.

The Ordinance neither appoints nor makes any provision for the appointment of a trustee to protect the rights of Owners of the Series 2023 Bonds. Furthermore, the Ordinance does not provide for acceleration of maturity of the Series

2023 Bonds or for foreclosure on Net Revenues or possession of Net Revenues by a trustee or agent for Owners of the Series 2023 Bonds or for operation of the Houston Airport System by an independent third party in the event of default.

No lien has been placed on any of the physical properties comprising the Houston Airport System to secure the payment of or interest on the Series 2023 Bonds. Moreover, in the event of default, the Owners of the Series 2023 Bonds have no right or claim under the laws of the State against the Houston Airport System or any property of the City other than their right to receive payment from Net Revenues and certain Funds maintained pursuant to the Ordinance. Owners of the Series 2023 Bonds have no right to demand payment of principal of or interest or premium, if any, on the Series 2023 Bonds from any funds raised or to be raised by taxation or from any funds on deposit in any of the special Funds described in the Ordinance, except the Subordinate Lien Bond Interest and Sinking Fund, and the applicable account of the Subordinate Lien Bond Reserve Fund. Further, unless sovereign immunity is expressly waived by the Texas Legislature or it is determined that the borrowing of money related to the provision of airport services is a proprietary rather than a governmental function of the City, local governmental immunity would be available as a defense against suits for money damages against the City or the Houston Airport System in connection with the Series 2023 Bonds. The City will not waive sovereign immunity against suit in connection with the issuance of the Series 2023 Bonds. Accordingly, the only practical remedy in the event of a default may be a mandamus proceeding to compel the City to increase rates and charges reasonably required for the use and service of the Houston Airport System or perform its other obligations under the Ordinance, including the deposit of the Gross Revenues into the special Funds provided in the Ordinance and the application of such Gross Revenues and such special Funds in the manner required in the Ordinance. Such remedy may need to be enforced on a periodic basis because maturity of the Series 2023 Bonds is not subject to acceleration. In addition, the City's ability to comply with the Rate Covenant will be limited by contractual and competitive supply and demand constraints. See "COVENANTS AND TERMS OF THE ORDINANCE – Rate Covenant."

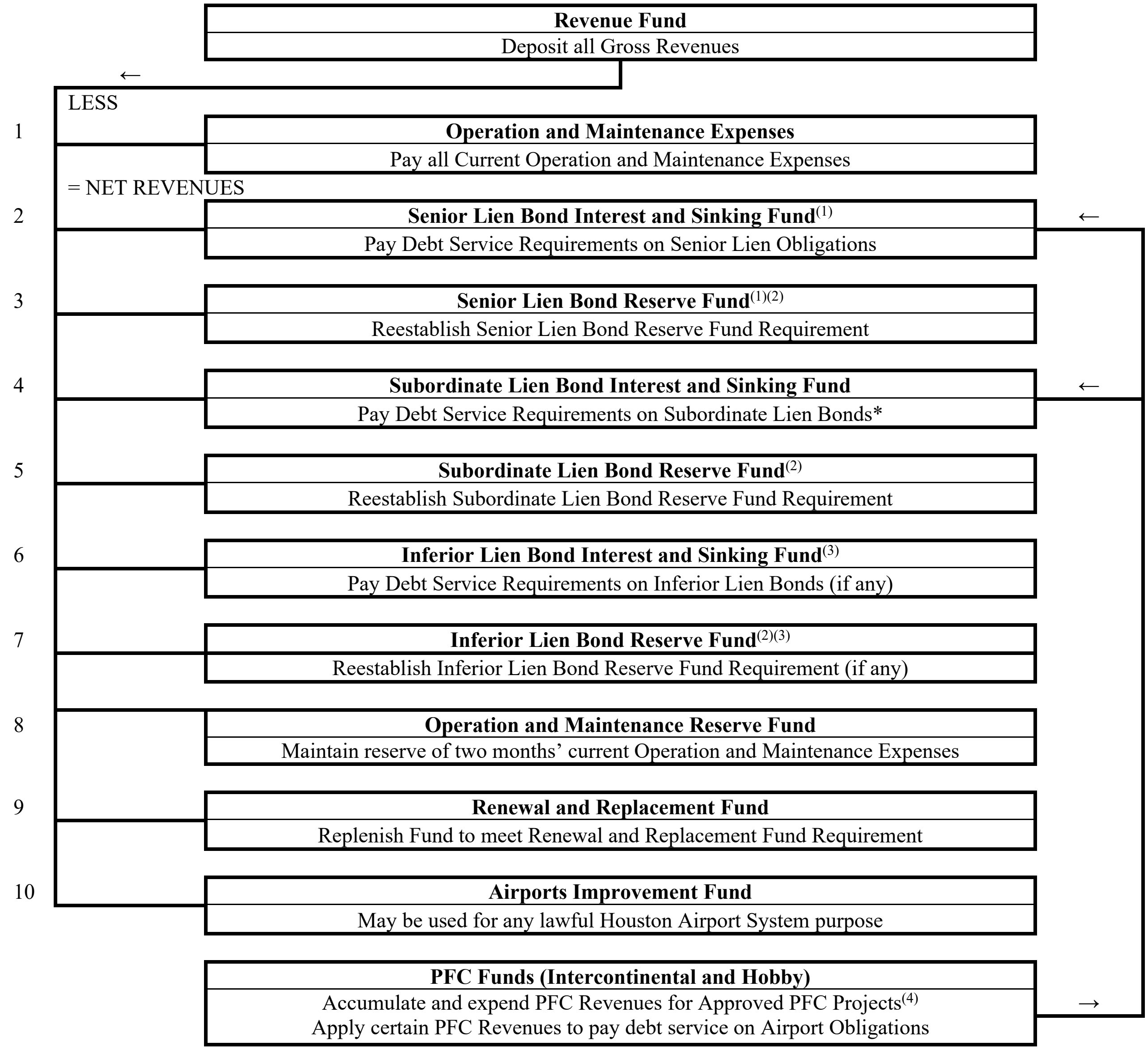
The enforcement of a claim for payment of principal of or interest on the Series 2023 Bonds and the City's other obligations with respect to the Series 2023 Bonds are subject to the applicable provisions of the federal bankruptcy laws and to any other similar laws affecting the rights of creditors of political subdivisions generally. The City may seek relief from its creditors under Chapter 9 of the U.S. Bankruptcy Code ("Chapter 9"). Should the City become a debtor in a Chapter 9 bankruptcy proceeding, the owners of the Series 2023 Bonds would continue to have a lien on Net Revenues after the commencement of the bankruptcy case so long as the Net Revenues constitute "special revenues" within the meaning of the Bankruptcy Code. "Special revenues" are defined under the Bankruptcy Code to include, among other things, receipts by local governments from the ownership, operation or disposition of projects or systems that are primarily used to provide transportation services. While the Net Revenues appear to be "special revenues," no assurance can be given that a court would not determine otherwise. Bankruptcy courts are courts of equity and as such have broad discretionary powers. If Net Revenues do not constitute "special revenues," there could be delays or reductions in payments by the City with respect to the Series 2023 Bonds. See APPENDIX E – FORMS OF CO-BOND COUNSEL OPINIONS AND TAX COUNSEL OPINION.

If the City were to become a debtor in a proceeding under Chapter 9, the automatic stay of section 362 of the Bankruptcy Code would be applicable to the City's proceedings, subject to certain possible exceptions. For example, the proceeding should not operate to stay application of pledged "special revenues" to the payment of indebtedness secured by such revenue. However, although the automatic stay has historically been understood not to stay the collection and application of such "special revenues" to payment of bonds secured by such special revenues, the bankruptcy court could possibly decide that (i) post-bankruptcy Series 2023 Bond payments by the City are merely optional and not mandatory under the special revenues provisions of the Bankruptcy Code and/or (ii) the automatic stay exception for special revenues in those provisions does not apply (including to possible enforcement actions by the owners of the Series 2023 Bonds) or is limited to amounts then in the possession of the owners of the Series 2023 Bonds. If the bankruptcy court were to interpret the Bankruptcy Code in that (or a similar) fashion, the parties to the proceeding may thus be prohibited from taking any action to collect the Net Revenues, or to enforce any related obligation connected with the Series 2023 Bonds, without the bankruptcy court's permission.

Regardless of any specific determinations by a bankruptcy court in a City bankruptcy proceeding that may be adverse to the Houston Airport System or the owners, the mere filing by the City for bankruptcy protection likely would have a material adverse effect on the marketability and market price of the Series 2023 Bonds. In addition, there may be delays or reductions in payments on the Series 2023 Bonds in a Chapter 9 proceeding, especially if the City does not voluntarily pay debt service on the Series 2023 Bonds as and when required by the Ordinance.

Flow of Funds

Below is a presentation of the application of revenues under the Master Ordinance. For more information about the Houston Airport System's revenues, see "SECURITY FOR THE SERIES 2023 BONDS" and APPENDIX C-1 – GLOSSARY OF TERMS AND EXCERPTS OF THE MASTER ORDINANCE.



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(1) There currently are no Senior Lien Bonds Outstanding; however, the City maintains a commercial paper program of Senior Lien Notes. See "INTRODUCTION – Lien Securing the Series 2023 Bonds and Other Obligations. While PFC Revenues may in the future be irrevocably committed to the Senior Lien Bond Interest and Sinking Fund, the City does not currently commit PFC Revenues for such purposes.

(2) Interest income on funds on deposit in the Senior Lien Bond Reserve Fund, Subordinate Lien Bond Reserve Fund and Inferior Lien Bond Reserve Fund may be transferred to the related Interest and Sinking Fund, or such other funds as may be permitted by federal tax law.

(3) There are no Inferior Lien Bonds Outstanding.

(4) PFC Revenues are not included in the definition of Net Revenues and are not pledged to pay debt service on any Outstanding Airport Obligations, including the Series 2023 Bonds, but may be pledged or otherwise obligated, consistent with FAA regulations. However, the Houston Airport System periodically irrevocably commits PFC Revenues to the Subordinate Lien Bond Interest and Sinking Fund for the purpose of paying eligible debt service attributable to certain projects for which the City has received approval to use PFC Revenues. See "HOUSTON AIRPORT SYSTEM FINANCIAL INFORMATION –Sources of Revenues –*PFC Revenues*."

* The Houston Airport System has also irrevocably committed certain CARES Act, CRRSA Act and ARPA funds to pay debt service on outstanding bonds.

Debt Service Reserves

The Master Ordinance establishes a Subordinate Lien Bond Reserve Fund for all Subordinate Lien Bonds and requires to be maintained therein a balance equal to the Reserve Fund Requirement.

Reserve Fund Requirement for Reserve Fund Participants. Within the Subordinate Lien Bond Reserve Fund, there is a Subordinate Lien Bond Reserve Fund Participant Account (i.e., the common reserve account), which constitutes trust funds held in trust for Owners of the Subordinate Lien Bonds that are secured thereby (the "Reserve Fund Participants"). All Subordinate Lien Bonds Outstanding as of the date hereof have been declared and designated to be Reserve Fund Participants; and the Series 2023 Bonds will be Reserve Fund Participants. With respect to those Subordinate Lien Bonds that are Reserve Fund Participants (i.e., all Outstanding Subordinate Lien Bonds), the Reserve Fund Requirement is equivalent to the maximum annual Debt Service Requirements on such bonds, which amount shall be computed and recomputed upon the issuance of each series of Subordinate Lien Bonds that are Reserve Fund Participants and on each date on which such bonds are paid at maturity or optionally or mandatorily redeemed.

Reserve Fund Non-Participants. The Master Ordinance also provides that any issue of Subordinate Lien Bonds may be secured by a lien on an account of the Subordinate Lien Bond Reserve Fund that is created and held for the sole benefit of such series of Subordinate Lien Bonds, referred to in the Master Ordinance as "Reserve Fund Non-Participants." No Outstanding Subordinate Lien Bonds are Reserve Fund Non-Participants; therefore, no such account has been created within the Subordinate Lien Bond Reserve Fund. All of the Outstanding Subordinate Lien Bonds are secured by, and the Series 2023 Bonds will be secured by, a lien on the Subordinate Lien Bond Reserve Fund Participant Account.

Draws on the Subordinate Lien Bond Reserve Fund Participant Account. The Subordinate Lien Bond Reserve Fund Participant Account is required to be used to pay the principal of and interest on the Subordinate Lien Bonds that are Reserve Fund Participants at any time when there is not sufficient money available in the Subordinate Lien Bond Interest and Sinking Fund for such purpose (with the requirement that all cash and investments on deposit in such account be depleted before drawing upon any Subordinate Lien Bond Reserve Fund Surety Policies allocable to the Subordinate Lien Bond Reserve Fund Participant Account) and to repay amounts drawn under any Subordinate Lien Bond Reserve Fund Surety Policy allocable to the Subordinate Lien Bond Reserve Fund Participant Account for such purpose, together with interest thereon, in accordance with the terms of the City's reimbursement obligations incurred in connection with such Subordinate Lien Bond Reserve Fund Surety Policies. The Subordinate Lien Bond Reserve Fund Participant Account may also be used to make the final payments for the retirement or defeasance of all Subordinate Lien Bonds then Outstanding that are Reserve Fund Participants.

Funding the Reserve Fund Requirement. As further provided in the Master Ordinance, each increase in the Reserve Fund Requirement resulting from the issuance of Additional Subordinate Lien Bonds is required to be funded at the time of issuance and delivery of such series of bonds. The Reserve Fund Requirement may be satisfied by depositing to the credit of the appropriate account of the Subordinate Lien Bond Reserve Fund either (1) proceeds of such Additional Subordinate Lien Bonds or other lawfully appropriated funds or (2) a Subordinate Lien Bond Reserve Fund Surety Policy.

Deficiencies in the Subordinate Lien Bond Reserve Fund. As further provided in the Master Ordinance, in any month in which any account of the Subordinate Lien Bond Reserve Fund contains less than the applicable Reserve Fund Requirement, the City shall transfer from the Revenue Fund, after making all required payments of Operation and Maintenance Expenses and after making all required transfers to the (i) Senior Lien Bond Interest and Sinking Fund, (ii) the Senior Lien Bond Reserve Fund and (iii) the Subordinate Lien Bond Interest and Sinking Fund, on a pro rata basis into the Subordinate Lien Bond Reserve Fund Participant Account and other designated non-participant accounts, if any, such amounts as shall be required to permit the City to pay all reimbursement obligations under the Subordinate Lien Bond Reserve Fund Surety Policies allocable to the Subordinate Lien Bond Reserve Fund Participant Account or such other designated non-participant accounts, as applicable, within a twelve-month period, and such additional amounts as shall be sufficient to enable the City within a twelve-month period to reestablish the Reserve Fund Requirement in the Subordinate Lien Bond Reserve Fund Participant Account or such other designated accounts, as applicable.

See APPENDIX C-1 – GLOSSARY OF TERMS AND EXCERPTS OF THE MASTER ORDINANCE for excerpts of the Master Ordinance relating to the Subordinate Lien Bond Reserve Fund. For a discussion regarding the City's current surety policies for the Outstanding Subordinate Lien Bonds and the Senior Lien Notes, see "RESERVE FUNDS AND RESERVE FUND SURETY POLICIES."

Additional Reserves and Other Funds

The Master Ordinance also provides for maintenance of an Operation and Maintenance Reserve Fund and a Renewal and Replacement Fund. The Operation and Maintenance Reserve Fund is required to be funded in an amount at least equal to two months' current Operation and Maintenance Expenses (which amount shall annually be re-determined by the Director of Aviation for the Houston Airport System at the time the department submits the proposed annual Houston Airport System budget based upon either such official's recommended budget for Operation and Maintenance Expenses or an estimate of actual Operation and Maintenance Expenses for the then-current Fiscal Year). The amount required by the Master Ordinance to be maintained in the Renewal and Replacement Fund is $10 million, but may be increased by any supplemental ordinance authorizing any series of additional Airport Obligations). Unappropriated funds in the Operations and Maintenance Reserve Fund and the Renewal and Replacement Fund may be used to pay Operation and Maintenance expenses, if needed, among other purposes. See APPENDIX C-1 – GLOSSARY OF TERMS AND EXCERPTS OF THE MASTER ORDINANCE and "DEBT SERVICE REQUIREMENTS OF HOUSTON AIRPORT SYSTEM OBLIGATIONS – Schedule 8A: Cash and Liquidity."

RESERVE FUNDS AND RESERVE FUND SURETY POLICIES

Reserve Fund for the Subordinate Lien Bonds

Reserve Fund Requirement

The Reserve Fund Requirement for the Subordinate Lien Bonds that are Reserve Fund Participants, which includes all of the Outstanding Subordinate Lien Bonds, was approximately $207 million as of May 31, 2023.

The Series 2023 Bonds will be issued as Reserve Fund Participants. On the Date of Delivery of the Series 2023 Bonds, the Reserve Fund Requirement in the Subordinate Lien Bond Reserve Fund Participant Account will be $244,672,290.48. As of the Date of Delivery of the Series 2023 Bonds, the amount on deposit in the Subordinate Lien Bond Reserve Fund Participant Account will be sufficient to satisfy the Reserve Fund Requirement in the Subordinate Lien Bond Reserve Fund Participant Account and will consist of cash deposited therein, allowable investments and amounts attributable to each Subordinate Lien Bond Reserve Fund Surety Policy, as described in the table below. Therefore, on the Date of Delivery of the Series 2023 Bonds, the increase in the Reserve Fund Requirement resulting from the issuance of the Series 2023 Bonds will be satisfied. See "SOURCES AND USES OF FUNDS." All amounts credited to the Subordinate Lien Bond Reserve Fund Participant Account are pledged and available to pay debt service on all Subordinate Lien Bonds that are Reserve Fund Participants (i.e., all the Outstanding Subordinate Lien Bonds).

The City has never utilized any amounts or drawn upon any surety policies in the Subordinate Lien Bond Reserve Fund to pay Debt Service Requirements. Based on a variety of factors, the City may supplement the current funding of the Subordinate Lien Bond Reserve Fund with lawfully available funds of the Houston Airport System, including bond proceeds, derived from future issuances or a Subordinate Lien Reserve Fund Surety Policy (as defined in APPENDIX C-1 – GLOSSARY OF TERMS AND EXCERPTS OF THE MASTER ORDINANCE).

See "SECURITY FOR THE SERIES 2023 BONDS – Debt Service Reserves" herein.

Subordinate Lien Bond Reserve Fund Surety Policies

As shown in the table below, the Reserve Fund Requirement for Subordinate Lien Bonds that are Reserve Fund Participants (i.e., all of the Outstanding Subordinate Lien Bonds) is partially funded with Subordinate Lien Bond Reserve Fund Surety Policies insured by National Public Finance Guarantee Corporation ("National") and Assured Guaranty Municipal Corp., formerly known as Financial Security Assurance, Inc. ("AGM"). On the Date of Delivery of the Series 2023 Bonds, the AGM Subordinate Lien Bond Reserve Fund Surety Policy will terminate because the City of Houston, Texas Airport System Subordinate Lien Revenue Bonds, Series 2002A (AMT) and City of Houston, Texas Airport System Subordinate Lien Revenue Bonds, Series 2002B (Non-AMT) will no longer be Outstanding. The City will replace the AGM Subordinate Lien Bond Reserve Fund Surety Policy with a new Subordinate Lien Bond Reserve Fund Surety Policy with a portion of the proceeds of the Series 2023 Bonds.

In addition to the cash and investments on deposit in the Subordinate Lien Bond Reserve Fund Participant Account described above, the following table describes the surety policies on deposit in such account as of the Date of Delivery of the Series 2023 Bonds.

Reserve Fund Policy Issuer	Termination Date	Maximum Amount
National[(1)]	July 1, 2028	$32,050,000.00
National[(1)]	July 1, 2030	43,269,100.00
National[(1)]	July 1, 2032	3,152,880.00
Build America Mutual	July 1, 2032	12,800,000.00
AGM	Earlier of July 1, 2053, or the date that no Series 2023 Bonds are Outstanding	32,000,000.00
	TOTAL:	$123,271,980.00

(1) On August 19, 2013, pursuant to a novation agreement, National became the primary insurer of the policies originally issued by Financial Guaranty Insurance Corporation.

Reserve Fund for the Senior Lien Obligations

The City maintains a separate reserve account within the Senior Lien Bond Reserve Fund for the Senior Lien Notes. The Senior Lien Bond Reserve Fund account for the Senior Lien Notes is funded with (i) cash and investments in the approximate amount of $10 million and (ii) three surety policies insured by National in an aggregate maximum amount of approximately $12 million. Two of such surety policies in an aggregate maximum amount of approximately $6 million terminate on October 25, 2023, and the third surety policy in the maximum amount of approximately $6 million terminates on July 1, 2030. The City intends to replace the policies that terminate in October 2023.

There are currently no Senior Lien Bonds Outstanding and, consequently, no debt service reserves relating to Senior Lien Bonds.

COVENANTS AND TERMS OF THE ORDINANCE

The following section describes certain covenants and other terms of the Ordinance. For additional information relating to the covenants in the Master Ordinance, see APPENDIX C-1 – GLOSSARY OF TERMS AND EXCERPTS OF THE MASTER ORDINANCE. Certain proposed amendments to the Master Ordinance were adopted as part of the Seventh Supplemental Ordinance and shall be binding upon all Owners of the Series 2023 Bonds, upon the effective date of such proposed amendments. See APPENDIX C-2 – PROPOSED AMENDMENTS TO THE MASTER ORDINANCE for a description of the proposed amendments and "– Proposed Amendments to the Master Ordinance" below for a discussion of when and how such amendments will become effective.

Rate Covenant

The City has covenanted in the Master Ordinance that it will at all times fix, charge, impose and collect rentals, rates, fees and other charges for use of the Houston Airport System, and, to the extent it legally may do so, revise the same as may be necessary or appropriate, in order that in each Fiscal Year the Net Revenues will at all times be at least sufficient to equal the larger of either: (1) all amounts required to be deposited in such Fiscal Year to the credit of the Senior Lien Bond Interest and Sinking Fund, the Senior Lien Bond Reserve Fund, the Subordinate Lien Bond Interest and Sinking Fund, the Subordinate Lien Bond Reserve Fund, the Inferior Lien Bond Interest and Sinking Fund and the Inferior Lien Bond Reserve Fund or (2) an amount not less than 125% of the Debt Service Requirements for the Outstanding Senior Lien Obligations for such Fiscal Year, plus 110% of the Debt Service Requirements for the Outstanding Subordinate Lien Bonds for such Fiscal Year, plus 100% of the Debt Service Requirements for the Outstanding Inferior Lien Bonds for such Fiscal Year. (Such covenant is referred to herein as the "Rate Covenant.")

As further set forth in APPENDIX C-1 – GLOSSARY OF TERMS AND EXCERPTS OF THE MASTER ORDINANCE, the calculation of Debt Service Requirements excludes any portion or all of the interest on or principal of Airport Obligations which has been irrevocably committed by the City to be paid from Houston Airport System funds other than Net Revenues including, but not limited to, PFC Revenues. Additionally, the calculation of Debt Service Requirements does not include any capitalized interest on Airport Obligations.

If the Net Revenues in any Fiscal Year are less than the amounts specified above, the City, promptly upon receipt of the annual audit for such Fiscal Year, must request an Airport Management Consultant to make its recommendations, if any, as to a revision of the City's rentals, rates, fees and other charges, its Operation and Maintenance Expenses or the method of operation of the Houston Airport System in order to satisfy as quickly as practicable the foregoing requirements. Copies of such request and the recommendations of the Airport Management Consultant, if any, shall be filed with the City Secretary. So long as the City substantially complies in a timely fashion with the recommendations of the Airport Management Consultant, the City will not be deemed to have defaulted in the performance of its duties under the Master Ordinance even if the resulting Net Revenues are not sufficient to be in compliance with the Rate Covenant, so long as there is no other default under the Master Ordinance.

For further description of the Rate Covenant and related definitions, see APPENDIX C-1 – GLOSSARY OF TERMS AND EXCERPTS OF THE MASTER ORDINANCE.

Other Factors Affecting Rate Covenant

The City's ability to comply with the Rate Covenant may be limited in that, among other things, (1) a significant portion of the Gross Revenues of the Houston Airport System is derived pursuant to contracts that cannot be adjusted unilaterally by the City, (2) the use and lease agreements with the airlines provide for recovery of certain, but not all, operating and capital costs attributable to certain facilities and do not include a debt service coverage factor, (3) parking and other sources of Gross Revenues, which are not derived under contracts, are subject to competitive supply and demand constraints and (4) certain City Charter tax and revenue limitations, voter-approved propositions and ongoing litigation involving such limitations and propositions could have an impact on the operations of the Houston Airport System. See "THE CITY AND CITY FINANCIAL INFORMATION – City Charter Tax and Revenue Propositions."

Additional Airport Obligations

The Master Ordinance permits the City to issue, for any lawful Houston Airport System purpose, Additional Subordinate Lien Bonds, Additional Senior Lien Obligations and additional Inferior Lien Bonds, if certain conditions are satisfied. For detailed information relating to the issuance of additional Airport Obligations, see APPENDIX C-1 – GLOSSARY OF TERMS AND EXCERPTS OF THE MASTER ORDINANCE – Article V – Additional Bonds.

Amendments to Ordinance

As further set forth in APPENDIX C-1 – GLOSSARY OF TERMS AND EXCERPTS OF THE MASTER ORDINANCE, the Ordinance provides that it may be amended either with or without the consent of Owners under certain circumstances. See also "– Proposed Amendments to the Master Ordinance" below and APPENDIX C-2 – PROPOSED AMENDMENTS TO THE MASTER ORDINANCE."

Amendments of Ordinance without Consent

The City may, without the consent of or notice to the Owners of the Airport Obligations, amend the Ordinance for any one or more of the following purposes: (1) to cure any ambiguity, defect, omission or inconsistent provision in the Ordinance or in the Airport Obligations; or to comply with any applicable provision of state or federal law or regulation of federal agencies; provided, however, that such action shall not adversely affect the interests of the Owners of the Airport Obligations; (2) to change the terms or provisions of the Ordinance to the extent necessary to prevent the interest on the Airport Obligations from being includable within the gross income of the Owners thereof for federal income tax purposes; (3) to grant to or confer upon the Owners of the Airport Obligations any additional rights, remedies, powers or authority that may lawfully be granted to or conferred upon the Owners of the Airport Obligations; (4) to add to the covenants and agreements of the City contained in the Ordinance other covenants and agreements of, or conditions or restrictions upon, the City or to surrender or eliminate any right or power reserved to or conferred upon the City in the Ordinance; (5) to subject to the lien and pledge of the Ordinance additional Net Revenues that may include revenues, properties or other collateral, (6) to add requirements or incorporate modifications the compliance with which is required by a rating agency in connection with issuing or confirming a rating with respect to any series of Airport Obligations; (7) to authorize any series of Additional Senior Lien Bonds, Additional Senior Lien Notes, Additional Subordinate Lien Bonds or Inferior Lien Bonds, and, in connection therewith: (i) to specify and determine the terms, forms and details thereof and (ii) to create such additional funds and accounts and to effect such amendments of the Ordinance that may be necessary for such issuance, provided in each case that no such amendment or supplement shall be contrary to or inconsistent with the limitations set forth in the Ordinance; (8) to evidence any sale, transfer or encumbrance of the Houston Airport System in accordance with the Ordinance; (9) to make any other modification, amendment or supplement that shall not materially adversely affect the interests of the Owners of the Airport Obligations; (10) to cure or correct any technical defect in connection with the terms, conditions or procedures relating to the variable rate provisions contained in any Supplemental Ordinance, provided, however, that such action shall not adversely affect the interests of the owners of the Airport Obligations; and (11) prior to the conversion of any variable rate Airport Obligations to a different interest rate mode, to change the terms, conditions or procedures relating to the new interest rate mode.

Amendments of Ordinance with Consent

The City may at any time adopt one or more ordinances amending, modifying, adding to or eliminating any provisions of the Ordinance, but, if such amendment is not of the character described in the preceding paragraph, only with the consent given in accordance with the Ordinance of the Owner or Owners of not less than a majority in aggregate unpaid principal amount of the Airport Obligations then Outstanding and affected by such amendment, modification, addition or elimination; provided, however, no such amendment, modification, addition or elimination shall permit (1) an extension of the maturity of the principal of or interest on any Airport Obligation issued under the Ordinance, (2) a reduction in the principal amount of any Airport Obligations or the rate of interest on any Airport Obligations, (3) a privilege or priority of (a) any Senior Lien Obligation(s) over any other Senior Lien Obligation(s), (b) Subordinate Lien Bond(s) over any other Subordinate Lien Bond(s), or (c) Inferior Lien Bond(s) over any other Inferior Lien Bond(s) or (4) a reduction in the aggregate principal amount of the Airport Obligations required for consent to such amendment, unless the Owner or Owners of 100% in aggregate principal amount of the Airport Obligations shall consent to any of such changes. Before the City may adopt such an ordinance, the City must receive an opinion from nationally recognized bond counsel to the effect that such ordinance does not adversely affect the exclusion from gross income for federal income tax purposes of interest on the Airport Obligations.

Proposed Amendments to the Master Ordinance

The City has determined to amend the Master Ordinance in the form set forth in APPENDIX C-2 – PROPOSED AMENDMENTS TO THE MASTER ORDINANCE (such amendments are collectively referred to as the "Proposed 2016 Amendments"). The following summarizes the changes made to the Master Ordinance by the Proposed 2016 Amendments.

The Proposed 2016 Amendments were adopted as part of the Seventh Supplemental Ordinance and shall be binding upon all Owners of the Series 2023 Bonds. The City intends to include the Proposed 2016 Amendments in each future supplemental ordinance until the Proposed 2016 Amendments become effective.

The Proposed 2016 Amendments (or any portion thereof) shall not become effective until the date on which the Proposed 2016 Amendments (or portions thereof) have become incorporated or deemed incorporated into every ordinance pursuant to which Airport Obligations are then Outstanding (the "Amendment Effective Date"), subject to satisfaction of any required conditions. Although the Proposed 2016 Amendments have been incorporated into the Seventh Supplemental Ordinance authorizing the Series 2023 Bonds and certain other Airport Obligations issued in 2018, 2020 and 2021, the amendments are not yet effective and the City may not exercise its rights under any portion of the Proposed 2016 Amendments until the Amendment Effective Date. The Master Ordinance will not be deemed to be amended by the Proposed 2016 Amendments until the Amendment Effective Date.

Short-Term/Demand Obligations

The Master Ordinance provides that the aggregate principal amount of Short Term/Demand Obligations Outstanding at any time may not exceed the greater of $150,000,000 or 30% of the aggregate principal amount of Senior Lien Obligations and Subordinate Lien Bonds Outstanding at the time of issuance of the last series of Short Term/Demand Obligations. The City has determined to amend the Master Ordinance to delete this limitation on the total aggregate principal amount of Short-Term/Demand Obligations that may be Outstanding at any time. Additionally, the City has determined to amend the definition of "Short-Term/Demand Obligations" to delete the requirement that an obligation must be secured by a credit or liquidity facility to qualify as a Short-Term/Demand Obligation.

Released Revenues

The City has determined to amend the Master Ordinance to allow the City to remove a specific, identifiable portion of the income and revenues from the definition of "Gross Revenues" once certain conditions are met, including meeting a debt service coverage test, the delivery of an opinion of bond counsel to the effect that the exclusion of such revenues will not, in and of itself, cause the interest on any Outstanding Airport Obligations to be included in gross income for purposes of federal income tax, and ratings confirmations from each rating agency rating the Airport Obligations affected thereby. See APPENDIX C-2 – PROPOSED AMENDMENTS TO THE MASTER ORDINANCE for a full description of such conditions.

Reserve Fund Requirement for Reserve Fund Non-Participants

The Master Ordinance requires all Reserve Fund Non-Participants to maintain a Reserve Fund Requirement equal to maximum annual Debt Service Requirements for all Airport Obligations that are secured thereby. The City has determined to amend the definition of Reserve Fund Requirement for Reserve Fund Non-Participants to be any amount set forth in the supplemental ordinance that authorizes the issuance of such Reserve Fund Non-Participants. There is no effect on the Reserve Fund Requirement for Reserve Fund Participants, including the Series 2023 Bonds.

Qualified Hedge Agreements

The City has determined to amend the Master Ordinance to allow a financial institution that has long-term credit ratings in one of the two highest rating categories by a single nationally recognized rating service to qualify as a qualified hedge counterparty. The Master Ordinance currently requires such an institution to have such long-term credit ratings from two nationally recognized rating services.

THE HOUSTON AIRPORT SYSTEM

General

The Houston Airport System is an enterprise fund of the City. The Houston Airport System is comprised of three airports – Intercontinental, Hobby and Ellington. Intercontinental is the nation's 12th busiest airport (as measured by enplaned passengers in calendar year 2021) and is classified as a "large hub airport" by the Federal Aviation Administration ("FAA"). It serves as an international gateway airport and a primary connecting point in the national air transportation system and was the third busiest hub for United in calendar year 2022 based on total departures. Additionally, Intercontinental is the primary air cargo airport for the region. Hobby is the nation's 34th busiest airport (as measured by enplaned passengers in calendar year 2021) and is classified as a "medium hub airport" by the FAA. Hobby is one of the major operating bases for Southwest, which offers domestic service and international service to destinations in Mexico, Central America, and the Caribbean. Ellington is used for general aviation, military, and the National Aeronautics and Space Administration's ("NASA") operations, but currently has no commercial airline passenger service. The Houston Airport System obtained a spaceport license for Ellington in June 2015 from the FAA, allowing Ellington to accommodate horizontal-launch commercial spaceflight operations. See "– Houston Airport System Facilities – Ellington Airport/Spaceport Development."

See "INVESTMENT CONSIDERATIONS" herein.

Houston Airport System Facilities

George Bush Intercontinental Airport/Houston

Intercontinental is situated on approximately 10,125 acres of land approximately 22 miles north of downtown Houston and is the Houston area's busiest commercial airport. Intercontinental's passenger terminal facilities currently consist of five terminal buildings and related concourses – Terminals A, B, C, D and E – with a total of 127 aircraft gates and seven hardstand positions. The facilities provide public parking for approximately 24,504 automobiles in multi-story garages and surface lots, an automated underground inter-terminal train system (the "Subway") that connects (pre-security) the existing five terminals and the Marriott Hotel, and an above-ground level automated people mover system (the "Skyway") that connects (post-security) all five terminals and a central federal customs and immigration inspection services building (the "Central FIS Facility") accommodating international arrivals from Terminals D and E. The Central FIS Facility has the capacity to process approximately 4,500 arriving international passengers per hour.

Terminals B, C and E are used exclusively by United and its United Express affiliates. Terminal B, containing 41 aircraft gates, is used by United and United Express for regional jet operations. Pursuant to the Terminal B Special Facilities Lease (as defined herein), United has constructed two phases of its Terminal B redevelopment plan, which include certain improvements to Terminal C. Terminal C contains 29 aircraft gates and primarily accommodates United and United Express domestic operations. Terminal E, containing 22 gates, is used by United for mainline international arrivals and departures and domestic arrivals and departures and by United Express for some international arrivals. Terminal A contains 23 aircraft gates as well as two regional aircraft hardstand positions and is used by various airlines (including United and its United Express affiliates) for domestic and precleared international aircraft operations. Foreign-flag airlines conduct international operations out of Terminal D, which contains 12 aircraft gates. Additionally, Terminal D is used by United and its United Express affiliates and Spirit Airlines for some international arrivals.

Intercontinental has five runways interconnected by a system of taxiways. The longest runway is approximately 12,000 feet long; two are approximately 10,000 feet long; and the remaining two are at least 9,000 feet long. The runways are equipped with instrument landing systems, lighting systems, and other navigation aids and are configured to permit the simultaneous use of the three east-west runways for aircraft landings in most weather conditions.

Also located on Intercontinental property are multiple air cargo buildings providing nearly one million square feet of space and a fuel farm that currently provides approximately 13 million gallons of storage capacity for jet fuel. Two fixed base operators provide airline, corporate and general aviation aircraft operations support. The Marriott Hotel is located between Terminals B and C, has 573 rooms and underwent a substantial renovation completed in January 2016.

United operates facilities for aircraft maintenance, catering, flight attendant training, and other support functions, and constructed a new 270,000-square-foot technical operations center to accommodate a hangar for widebody aircraft maintenance and is improving and expanding other aircraft maintenance and support facilities at Intercontinental. The office areas of the technical operations center and associated widebody hangar opened in February 2020, and the supporting shops are partially in use, pending their expected completion in the third quarter of calendar year 2022.

A consolidated rental car facility was financed by the proceeds of certain Special Facilities Bonds issued in 2001. The Special Facilities Bonds related to the consolidated rental car facility are secured by and payable from a customer facility charge assessed on rental car customers at Intercontinental and are not secured by a lien on Net Revenues. The facility opened in August 2003.

See "CAPITAL IMPROVEMENT PROGRAM" below for a discussion of planned renovations and improvements to Intercontinental. See "HOUSTON AIRPORT SYSTEM SIGNIFICANT CONTRACTUAL AGREEMENTS – Airport Use and Lease Agreements and Special Facilities Lease Agreements" below for descriptions of the lease agreements and Special Facilities Leases relating to the facilities at Intercontinental and "– Other Significant Airport Agreements – *Rental Car Facilities at Intercontinental*" for a description of the lease agreement relating to the consolidated rental car facility at Intercontinental.

Hobby Airport

Hobby is located on approximately 1,500 acres of land approximately 7 miles southeast of downtown Houston. It has a terminal building with two concourses. The Central Concourse, completed in 2008, contains 25 gates and is used primarily for domestic arrivals and departures. The West Concourse opened in October 2015 and contains five gates, all connected to the federal immigration and customs inspection services building, which can accommodate up to approximately 800 arriving passengers per hour. Southwest's ticketing facilities are in the West Terminal, while ticketing facilities for other airlines are located in the Central Terminal. All domestic baggage claim facilities are in the Central Terminal. The entire terminal complex includes over 910,000 square feet of space. Hobby has three runways in total: two runways are approximately 7,600 feet long, and one runway is approximately 5,150 feet long. The runways are equipped with instrument landing systems, lighting systems, and other navigation aids to permit use in most weather conditions.

Additional facilities at Hobby include approximately 6,500 public parking spaces, rental car facilities, an underground fuel distribution system, a cargo building, several aircraft maintenance facilities, and some corporate hangars. Five fixed-base operators support Hobby's significant corporate and general aviation operations. Southwest maintains a maintenance facility and hangars at Hobby, including a 240,000 square foot hangar that opened in January 2020.

See "CAPITAL IMPROVEMENT PROGRAM" below for a discussion of planned improvements to Hobby. See "HOUSTON AIRPORT SYSTEM SIGNIFICANT CONTRACTUAL AGREEMENTS – Airport Use and Lease Agreements and Special Facilities Lease Agreements" below for descriptions of the lease agreements relating to the facilities at Hobby.

Ellington Airport/Spaceport Development

Ellington is located approximately 15 miles southeast of downtown Houston on approximately 2400 acres. It has no scheduled commercial flights and its non-governmental operations are for general and corporate aviation. The Texas Air National Guard, NASA, Coast Guard, and the U.S. Air Force currently use Ellington. Ellington has three runways: one is approximately 9,000 feet long, another is approximately 8,000 feet long and the third is approximately 4,600 feet long.

Ellington has one fixed-based operator leasing two fixed-base operating facilities, approximately 90 T-hangars, and three corporate-base operators that allow it to relieve Hobby of general aviation traffic. Lone Star Flight Museum opened a new facility at Ellington in September 2017 to replace its prior facility in Galveston.

The Houston Airport System was granted a Commercial Spaceport Launch Site License from the FAA in June 2015 that enables Ellington to establish itself as a horizontal launch site for Reusable Launch Vehicles ("RLV"), making it the 10th commercial spaceport in the United States. The Houston Airport System designated over 400 acres on the southeast side of Ellington as the Houston Spaceport development (the "Spaceport"). In October 2015, the Houston Airport System acquired a 53,000-square-foot aerospace engineering building and land adjacent to Ellington which is currently occupied by Intuitive Machines, a spacecraft manufacturing company and a workforce development center, operated by San Jacinto College. In December 2020, Axiom Space, Inc., a space habitat manufacturer, announced plans to build a facility in Phase 1 of the Spaceport. Construction is under way for its first 106,000 square foot facility, which is expected to be complete by June 2023. On September 2022, Collins Aerospace (Hamilton Sundstrand) opened its first 125,000 square foot facility at the Spaceport. Intuitive Machines is currently constructing a 120,000 square foot facility, with a target date for completion of September 2023. Construction of the first phase of Taxiway Lima is expected to be complete by the end of 2024. No spaceflight operations are currently scheduled.

See "CAPITAL IMPROVEMENT PROGRAM" below for a discussion of planned improvements to Ellington.

Management

The management of the Houston Airport System is the responsibility of the Director of Aviation, who is appointed by the Mayor and confirmed by the City Council. The Director of Aviation has a staff of approximately 1,200 employees. The Airport System Fund is an enterprise fund of the City, under the administrative control of the Mayor. The City Controller, as the chief financial officer of the City, maintains the books of account, prepares financial statements and, with the Mayor, co-signs all warrants, contracts and orders for payment of any public funds or money relating to the Houston Airport System.

Following is selected biographical information for certain principal administrative officers and airport staff of the Houston Airport System:

Mario C. Diaz was appointed Director of the City of Houston Department of Aviation in May 2010. He is responsible for the overall management of the Houston Airport System's three aviation facilities. Prior to his appointment as Director of Aviation, beginning in 1999, Mr. Diaz served as the deputy general manager for Hartsfield-Jackson Atlanta International Airport where he was responsible for the daily operational activities of the world's busiest airport, including operations, business, finance and capital development. He has been one of the industry's leading authorities in aviation technology as well as the study of future developments in commercial aviation. Prior to 1999, Diaz was the manager of business, properties and commercial development for New Jersey Airports for four years. In this role, he managed the division responsible for all business and lease negotiations at Newark International Airport as well as the day-to-day oversight management of Teterboro Airport, one of the nation's premier general aviation airports and a major reliever airport for Newark International. Before that, Mr. Diaz served for 17 years with the Port Authority of New York and New Jersey. Beginning in 1981, Mr. Diaz held key management positions in leasing, finance, marketing, operations and properties. During this period, Diaz also served 18 months as the assistant director of the redevelopment program at John F. Kennedy Airport. A native of Barranquitas, Puerto Rico, and a licensed private pilot with instrument certification, Diaz earned his Bachelor of Arts degree from Rutgers University in Newark, New Jersey. He also earned a Master of Business Administration in finance from Rutgers Graduate School of Business Administration in New Jersey.

Jim Szczesniak, Chief Operating Officer for the Houston Airport System, is responsible for the overall execution of Houston Airport System's strategic initiatives, driving both commercial airports for a "five-star" system performance, maximizing the commercial potential of Houston Airport System's infrastructure and maintaining operational excellence throughout the organization. Previously, Mr. Szczesniak served as the Airport Director for the Ted Stevens Anchorage International Airport (ANC). ANC is the world's fourth busiest air cargo airport and gateway to Alaska. He also spent a decade at the Chicago Department of Aviation. Mr. Szczesniak started in airport operations at O'Hare International Airport, became Director of Airport Planning and ultimately became Deputy Commissioner of Aviation overseeing the section at both O'Hare and Midway International airports. Mr. Szczesniak holds an Masters of Business Administration from the University of Chicago and a Bachelor's in Aviation Management from Southern Illinois University. He is also a licensed commercial pilot and aircraft mechanic.

Steve Runge, A.A.E., ACE, Chief of Operations for the Houston Airport System, is responsible for Operations at Intercontinental and Hobby, which includes the Airport Operations Centers, Airside, Safety Management System (SMS), Landside, Ground Transportation, Security/Badging and Safety & Emergency Management business units. Mr. Runge has been with the Houston Airport System for 20 years and has worked in a variety of positions at William P. Hobby, Ellington, and Intercontinental Airports. Most recently Mr. Runge was the Assistant Director for Terminal Management at Intercontinental Airport. Mr. Runge received a Master of Science degree in Aviation Safety from the University of Central

Missouri as well as a Bachelor of Science degree in Aviation Business Administration from Embry-Riddle Aeronautical University. He's an active American Association of Airport Executives (AAAE) member and is an Accredited Airport Executive (A.A.E.) as well as an Airport Certified Employee (ACE) for Safety Management Systems. Additionally, Mr. Runge has extensive emergency management training and is a certified Incident Command System (ICS) instructor through the Center for Domestic Preparedness.

Gary High, Interim Chief Development Officer, is responsible for overseeing Construction, Design, Environmental, GIS, Permitting, Planning and Project Controls. He also oversees the International Terminal Redevelopment Program (ITRP) and the upcoming Domestic Terminal Redevelopment Program (DRP). He leads the division in on-time delivery of the Houston Airport System Capital Improvement Program with a focused goal to improve reliability, resilience, sustainability and cost-effectiveness and leads in extending the life of Houston Airport System's infrastructure assets through focused and efficient scheduled and corrective maintenance programs. Mr. High has more than two decades of experience in construction management. Before joining the Houston Airport System, he worked at Walsh Construction as a Senior Project Manager and Senior Estimator where he helped build the first-of-its-kind modular concourse at Dallas Fort Worth Airport. The entire concourse was constructed in a remote area at the airport and then was transported and connected to other terminal buildings. He holds a Construction Management Degree from the University of Houston. He's certified as an Associate Constructor by the American Institute of Constructors and is a member of the Sigma Lambda Chi Construction Management Society.

Clint Stephen, Chief Financial Officer, is responsible for monitoring the overall financial health of the Houston Airport System. Mr. Stephen provides financial leadership by working with the Executive Management Team to establish long-range financial goals, strategies, and plans while also ensuring that short-term funding needs are met. He oversees all aspects of the airport's financial operation including accounting and control, corporate finance, budget and forecasting, financial planning and analysis, capital program control, audit, tax, airline affairs and risk management. He plays a leading role in driving the Houston Airport System's "Build the Platforms for Future Success" strategic priority, as he helps the organization maintain fiscal discipline, fund capital improvements and pursue revenue growth opportunities. Mr. Stephen's 30-year finance and accounting career began at United Parcel Service managing multiple Finance and Accounting functional areas. He later joined Continental Airlines and held a variety of financial positions, including controller positions for the Cargo, Corporate Real Estate, Airports and Operations divisions and as a member of the negotiating team for Labor Relations. Recently, Clint worked as a Financial Officer for Starcon International in the petrochemical construction industry. Clint holds both a Bachelor of Business Administration in Finance and a Masters of Business Administration from the University of Houston.

Mandy Wu, Assistant Director of Accounting for the Houston Airport System, oversees the proper and timely recording of financial transactions within the General Accounting and Financial Reporting, Revenue Accounting, Fixed Assets and Grant Administration and Accounts Payable groups. She also ensures the proper internal and external reporting of HAS financial activities, and continually monitors and implements internal controls as necessary to enhance confidence in the integrity of published financial statements and interim reports. Ms. Wu joined Houston Airport System in June 2020 with over 14 years of professional experience, including Big Four audit experience with Deloitte. Ms. Wu gained progressive experience in accounting, financial analysis and process improvement in the oil and gas industry over the past decade with Schlumberger, Juneau Exploration and Rosehill Resources. Additionally, she has manufacturing cost accounting experience as an Accounting Manager with Sinomax USA. Ms. Wu holds a Master of Business Administration and a Master of Science in Accountancy from the University of Houston and is a Licensed Certified Public Accountant (CPA) in the State.

Liliana Rambo, CAPP, Chief Terminal Management Officer for Intercontinental and Hobby, plans and implements strategic policy and provides day-to-day guidance and direction to assure that passengers traveling through the terminals at both commercial airports experience a five-star quality of service each and every time they travel. Every touchpoint the passenger has within the terminal: the ticketing counters, security checkpoint, hold rooms, concessions, FIS, baggage claim, and restrooms must all be thought through, planned and executed correctly, consistently, and with a sense of service. Ms. Rambo is responsible for over 250 service delivery team members. The Terminal Management Division is the central coordinating body tasked with the responsibility to work with each Division in the Houston Airport System providing direct contribution, service or action to achieve the Houston Airport System vision to become a five-star global air service gateway. Ms. Rambo holds a Master of Science degree in Management from St. Thomas University and a Bachelor of Business Administration degree in Marketing and International Business from Florida International University. She has held key leadership roles within the parking community, most recently as the Chair of the Board of Directors for the International Parking Institute. Ms. Rambo currently serves on the Board of Directors for the Hobby Management District; Texas Commercial Airports Association and is a candidate for the ACI-ICAO Airport Management Professional Accreditation Programme.

Arturo Machuca, General Manager of Ellington, is responsible for the daily operations and the development and implementation of policies and procedures at Ellington. He also is the lead on the Houston Spaceport project. Mr. Machuca joined the Houston Airport System in 2009 with over 30 years of sales and marketing experience in the aviation industry. His prior responsibilities included economic development, industry affairs and business relations for all three airports, and was tasked with the responsibility of developing a plan to bring a commercial spaceport to Ellington. He worked with various federal and local agencies, as well as key players in the aerospace industry, to create preliminary plans and conceptual drawings to pursue a license to bring commercial spaceflights to Ellington and is now leading commercial development efforts for Ellington Airport and Houston Spaceport. Mr. Machuca holds a Bachelor of Arts degree in Hotels and Tourism Administration from Universidad Regiomontana (Monterrey, Mexico).

Darryl Daniel, Chief Technology Officer at Houston Airport System, leads the Communications Technology, Technology Infrastructure, Applications and Support, IT Security, and Technology Project Management Ooffice business units. In this capacity, he is responsible for the maintenance and integrity of all technology and communications systems supporting Intercontinental, Hobby, and Ellington as well as developing and aligning technology vision with business strategy. With 25 years of experience in airport systems and technology consulting, Mr. Daniel's background includes time with EDS Aviation Group, Continental Airlines, Avidel Consulting, Burns Engineering where he led technology design teams on major terminal expansion and development programs across the United States. Mr. Daniel is a certified Project Management Professional (PMP), a licensed commercial pilot, and holds a Bachelor of Science degree in Industrial Distribution from Texas A&M University's College of Engineering.

Saba Abashawl, Chief External Affairs Officer, manages the External Affairs division for Global Industry Relations, Government Affairs and Corporate Communications. She leads a variety of Business Development initiatives that, together, provide a vital support network for new and expanded air service in Houston. This means a greater level of connectivity for millions of Houstonians, fueling economic growth. Ms. Abashawl also serves as Executive Officer for the Mayor of Houston in foreign affairs and business development initiatives, fostering economic vitality for both the Houston Airport System and the greater Houston region. Her efforts not only seek to maximize the number of nonstop flights available to Houston, but also position and reinforce Houston as a "global gateway" destination to international leaders. Her efforts in working with leaders at the Department of Homeland Security and key communities has been instrumental in developing various passenger facilitation best practices and was integral in ensuring the timely opening of the new international concourse at Hobby in 2015, as well as implementing a touchless biometrics travel process at both Intercontinental and Hobby. Ms. Abashawl holds a bachelor's degree in Marketing and a master's degree in International Finance and Business, both from the University of St. Thomas and is an active member of numerous civic and professional organizations.

Jocelyn Labove, Houston Airport System's Chief Aviation Risk and Regulatory Compliance Officer, is responsible for: advancing the Houston Airport System's initiatives and objectives through identification of threats; administrative policy development pertinent to aviation governing the use, control and operation of the Houston Airport System; developing and maintaining FAA compliant service level agreements with all stakeholders; interacting on behalf of the Director of the Department of Aviation with third parties and officials pertinent to regulatory and compliance matters as directed. Ms. Labove brings almost three decades of labor and employment law experience, human resources experience as well as an executive management background in risk mitigation, compliance, management coaching, investigations, employee relations, legal research, project management and policy development. She is also Board Certified in Labor and Employment Law, SHRM certified and a Certified Mediator. Ms. Labove holds a law degree from the University of Houston Law Center and a Bachelor of Science degree in Biology and Chemistry from Houston Baptist University. Prior to joining the Houston Airport System, Ms. Labove worked at United Airlines as a Labor Relations Director in the Human Resources Department with oversight of litigation/arbitration dockets, staff and teams.

Molly E. Waits, the Chief Marketing, Air Service Development and Communications Officer, oversees all marketing efforts, specifically targeting an understanding of passengers' needs, air service development activities to expand air service at Houston's two commercial airports, and all external communications and public relations outreach. She joined the Houston Airport System in October 2004 as Senior Marketing Specialist within the Air Service Development Team. In that position, Ms. Waits was responsible for the development of new air service for Houston's two commercial airports. Prior to joining the Houston Airport System, Ms. Waits served as a Corporate and Agency Sales Executive for Northwest Airlines. Ms. Waits received a bachelor's degree in International Trade and Finance from Louisiana State University and a Masters of Business Administration degree in Global Management from the University of Phoenix.

Francisco Cuellar, Chief Commercial Officer for the Houston Airport System, oversees the commercial activities at the Houston Airport System's three airports, including concessions, parking, and real estate development. Mr. Cuellar joined the Houston Airport System in 2022. With a career in the aviation industry spanning more than 20 years, Francisco Cuellar has participated in airport bids in countries such as Argentina, Chile, Uruguay, Dominican Republic, Colombia, and

Mexico. Some bids involved forming a consortium to invest in large infrastructure investments ranging from $100 million to $2.5 billion. Mr. Cuellar recently served as the Chief Commercial and Marketing Officer for Aerodom, which was owned by Latin American Airports Holding at the time. At Aerodom, he was responsible for leading the commercial development and marketing for six airports in the Dominican Republic. At that time, he also served as Chief Commercial and Marketing Officer in charge of Terminal 1 at Mexico City International Airport, which operated under concession by Latin American Airports Holding. Mr. Cuellar has held several executive-level positions at other regional airport groups, like Chief Business Development Officer at ASUR, a private airport group in Mexico that operates several airports including Cancún, Cozumel and Mérida. He also created the first professional airport marking team in Latin America. Mr. Cuellar holds a Global Master's of Business Administration from The Thunderbird School of International Management, a Bachelor of Science in Business Administration degree from The Ohio State University and a Financial Valuation Executive Education Diploma from Harvard University.

Airport Service Region

The primary service region for the Houston Airport System is the nine-county Houston-The Woodlands-Sugar Land Metropolitan Statistical Area ("MSA") and the broader Houston-Woodlands Combined Statistical Area ("CSA"). The 2020 U.S. Census population estimates for the MSA and CSA were approximately 7.15 million and 7.34 million, respectively. The MSA contain the City, the nation's fourth most populous city. Harris County (the county in which the City is primarily located) accounted for 66.7% of the MSA's population. The extended air service region includes smaller markets with limited or no air service within driving distance of Houston Airport System airports, including Beaumont/Port Arthur, Bryan/College Station, Lufkin/Nacogdoches, and Victoria, Texas, and Lake Charles, Louisiana.

The MSA's population growth between 2018 and 2022 is described in the table below:

Historical Houston-The Woodlands - Sugar Land MSA
Population Estimates

Year (July 1)	Population Estimate	Annual Percentage Change
2018	6,974,948	1.10
2019	7,063,400	1.27
2020	7,140,749	1.10
2021	7,215,837	1.05
2022	7,340,118	1.72

Source: Greater Houston Partnership and U.S. Census Bureau

The development and strength of the economic base of the Houston Airport System's service region is important to airline traffic growth at the airports. This dependency is particularly true for an economy with large trade volumes, such as that of the region, in which industries rely on airports for the connections provided by passenger and cargo airline service. Houston's location supports routes to destinations in Latin America. Intercontinental is currently the second busiest U.S. international gateway to Latin America, behind only Miami International airport. The region also is a center for the energy, financial, medical, transportation, retail and manufacturing industries. The region has 24 Fortune 500 companies headquartered in its metropolitan area, fourth after the New York City, Chicago and Dallas regions. The 10 largest private employers in the Houston area in 2022 are shown in the table below:

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Top 10 Greater Houston Private Employers

Company	Employment	Type of business
Memorial Herman Health Center	33,700	Healthcare
Houston Methodist	30,000	Healthcare
Walmart	29,400	Retail
HEB	24,500	Retail grocer
UT MD Anderson Cancer Center	22,000	Healthcare
HCA Houston Healthcare	15,000	Healthcare
Kroger	15,000	Retail grocer
CHI St. Luke's Health	13,100	Healthcare
Schlumberger	12,100	Oil and gas
ExxonMobil	12,000	Oil and gas

Source: Greater Houston Partnership

According to a study performed for the Houston Airport System by ICF International, Inc. dated September 20, 2019, Intercontinental supports more than 141,000 local jobs and contributes more than $27.3 billion to the local economy. Hobby supports more than 36,000 local jobs and contributes more than $5.8 billion to the local economy. Ellington supports more than 13,000 local jobs and contributes more than $3.3 billion to the local economy.

Sustainable Management Program

The Houston Airport System has developed a Sustainable Management Plan to guide its use of the Airport System's financial, natural and human capital resources. Houston Airport System promotes economic, social and environmental excellence through actions that enhance the mission of connecting the people, businesses, cultures, and economies of the world to Houston. The Houston Airports System identified issues important in becoming a sustainable organization by defining operational areas of energy, solid waste/recycling, water, and Greenhouse Gas Emissions, which focused on providing sustainable design, assets, infrastructure, and procurement.

The Houston Airport System recognizes that sustainability is not only about using less resources, but is also about recognizing the role of airports in creating enduring communities, acknowledging the social costs of air travel, and creating airports that are resilient to future stresses such as energy and/or water scarcity.

IMPACT OF COVID-19 PANDEMIC ON THE HOUSTON AIRPORT SYSTEM

The COVID-19 pandemic resulted in a severe contraction in demand for air travel. The impact to air travel began in East Asia in December 2019 and rapidly accelerated to other regions of the world in March and April 2020. By May 2020, which represented the low point in terms of passenger airline capacity offered, scheduled departing seats decreased to sixteen percent (16%) of May 2019 capacity at Intercontinental and thirty-one percent (31%) of May 2019 capacity at Hobby. By December 2020 departing seat capacity for Intercontinental had increased to fifty-four percent (54%) of December 2019 departing seat capacity and to sixty-five percent (65%) of December 2019 seat capacity at Hobby. The slower rate of recovery at Intercontinental compared to Hobby was due in large part to Intercontinental's exposure to international markets. International markets, particularly long-haul destinations that are not served from Hobby, were more severely impacted by travel restrictions than domestic markets. Most of the international markets served from Hobby are leisure-oriented destinations in Mexico and the Caribbean that had fewer travel restrictions and experienced growth in demand during the COVID-19 pandemic.

By December 2021 scheduled departing seats as a percentage of December 2019 were ninety-two percent (92%) for Intercontinental and eighty-four percent (84%) for Hobby. The restoration of scheduled capacity increased through 2022. By December 2022, the recovery rates for scheduled departing seats for Intercontinental and Hobby had converged between 95 percent and 98 percent of December 2019. Scheduled departing seat capacity exceeds 2019 levels for Intercontinental and Hobby in the summer of 2023.

Passenger volumes decreased at a faster rate than seat capacity at the onset of the COVID-19 pandemic. For the Houston Airport System, April 2020 enplaned passengers represented approximately four percent (4%) of April 2019 enplaned passengers at both Intercontinental and Hobby. By December 2020 passenger volumes as a percentage of December 2019 had recovered to forty-five (45%) percent at Intercontinental and fifty-five percent (55%) at Hobby. Passenger activity continued to recover over the course of 2021 and 2022, with July 2022 enplaned passengers as a percentage of July 2019 reaching ninety-two percent (92%) at Intercontinental and one hundred percent (100%) at Hobby. At the end of April 2023, enplaned passengers as a percentage of April 2019 reached one-hundred one percent (101%) recovery at Intercontinental and ninety-two percent (92%) at Hobby.

See "REPORT OF AIRPORT MANAGEMENT CONSULTANT" herein.

CAPITAL IMPROVEMENT PROGRAM

General Discussion

The City updates and adopts annually a rolling five-year comprehensive plan that determines and prioritizes its capital and infrastructure needs, including the Houston Airport System. In connection with updates to its master plans for its airports, the Houston Airport System publishes its CIP extending past the City's five-year requirement, which is described below. The Houston Airport System continuously monitors and adjusts its CIP based upon financial capacity, air travel demand and airline industry developments. From 2000 to 2010, the Houston Airport System undertook a major renovation, modernization and expansion project at all three airports totaling approximately $2.8 billion. At Intercontinental, the City built, among other projects, two new air carrier runways and related airfield expansions and improvements; a new international arrivals facility; an extended automated people mover system; and expansions and renovations to existing terminal, garage, and support facilities. At Hobby, the City constructed a new central concourse, substantially expanded the main terminal building, and completed various runway and taxiway improvements. At Ellington, the City made various airfield improvements. See "INVESTMENT CONSIDERATIONS."

Master Plans

The Houston Airport System completed updates to the Intercontinental, Hobby, and Ellington Master Plans in 2014 and 2015. These long-term development plans are generally demand-driven (with respect to activity levels), time-driven (with respect to facility condition), and consistent with management's strategic goals. Projects are identified as needed when a pre-defined demand level is reached, but are revalidated before implementation in the then-current operating environment.

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CIP Projects

Houston Airport System management has adopted a $2.3 billion Fiscal Year 2023-2027 CIP. The major projects in the Fiscal Year 2023-2027 CIP include the following:

Major Projects for the Adopted Fiscal Year 2023-2027 CIP(1)
(dollars in millions)

Airport	Description	Amount
Intercontinental	Intercontinental Terminal Redevelopment Program	$ 1,359
	Runway, Taxiway and Airfield Projects	175
	Central Plant and Other Infrastructure Improvements	116
	Other Improvements	89
Hobby	International Terminal 7 gate expansion	230
	Runway, Taxiway and Airfield Projects	151
	Other Improvements	74
Ellington	Taxiway Lima (adjacent to RWY 4-22)	117
	Spaceport and Other Improvements	3
Administration	Technology Contracts	22
	System Support	8
	Total	**$2,344**

(1) The CIP reflected in the Report covers projects to be implemented through Fiscal Year 2030. See "REPORT OF AIRPORT MANAGEMENT CONSULTANT" herein.

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Houston Airport System management has adopted a $2.76 billion Fiscal Year 2024-2028 CIP, which was approved by City Council on June 21, 2023. The major projects in the Fiscal Year 2024-2028 CIP include the following:

Major Projects for the Fiscal Year 2024-2028 CIP(1)
(dollars in millions)

Airport	Description	Amount
Intercontinental	Terminal Redevelopment Programs	$915
	Runway, Taxiway and Airfield Projects	227
	Central Plant and Other Infrastructure Improvements	135
	Skyway and Subway Replacements	380
	Other Improvements	214
Hobby	International Terminal 7 gate expansion	450
	Runway, Taxiway and Airfield Projects	206
	Other Improvements	94
Ellington	Taxiway Lima (adjacent to RWY 4-22)	66
	Spaceport and Other Improvements	33
Administration	Technology Contracts	18
	System Support	28
	Total	**2,763**

(1) The CIP reflected in the Report covers projects to be implemented through Fiscal Year 2030. See "REPORT OF AIRPORT MANAGEMENT CONSULTANT" herein.

Intercontinental Capital Improvement Program. The International Terminal Redevelopment Program ("ITRP") includes renovation and expansion of Terminal D, the Mickey Leland International Terminal, which opened in 1990, to provide needed additional wide-body aircraft-capable gates and terminal facilities. The City has begun the redevelopment of Terminal D with the demolition of what was the original North Concourse of Terminal C. The Terminal D redevelopment is expected to take multiple years to complete and will provide, among other things, the footprint for a new international-capable pier, and adjacent aircraft parking aprons. The renovated facility is anticipated to offer up to 13 wide-body gates versus the six that are available today. Terminal D will provide approximately 560,000 square feet of space and up to 13 gates capable of accommodating wide-body aircraft, up to two of which will be A380-capable (with restrictions on the use of adjacent gate(s)). All gates will be connected to the existing Central FIS Facility and be capable of accommodating both domestic and international flights. Terminal D also will include improved concessions, club rooms and other passenger amenities. The City anticipates that a portion of the proceeds of the Series 2023 Bonds will be sufficient to finance the remainder of costs related to the ITRP.

Intercontinental's Central FIS Facility will be renovated and enlarged to provide a new check-in facility for both United and the foreign flag carriers using Terminal D, improve arriving international passenger flows through primary and secondary processing functions and facilitate the use of automated passport control technology. Passenger security screening checkpoints from Terminal D and for United's international departing and connecting passengers will be consolidated into a single checkpoint. A new baggage handling system will be installed and a new baggage claim annex will be constructed to provide four additional baggage claim units. After removal of one existing baggage claim unit during reconfiguration, 14 units will be provided, four with the capacity for A380 aircraft. A separate baggage claim area with room for four claim units, two of which will be installed initially, will be provided for domestic and precleared passengers using Terminal D and will also be accessible by domestic and precleared passengers using Terminal E.

Terminal C North (a new Terminal B North Concourse building) occupied by and leased to United, opened in May 2017. Terminal C North was constructed to the west of the original C North concourse to replace domestic gates that will be redeveloped as part of the Terminal D development. The new concourse provides 280,000 square feet of space on two levels (including a renovated portion of the original C North concourse), an increase of 40,000 square feet over the original concourse. The new Terminal C North concourse provides 14 domestic gates, compared with 13 gates at the original concourse. The project included reconstruction of the apron and utilities and installation of equipment to allow bags to be transferred from the new concourse to the baggage sortation complex at Terminal C. The original C-North concourse was demolished in the second quarter of calendar year 2020. See "HOUSTON AIRPORT SYSTEM SIGNIFICANT CONTRACTUAL AGREEMENTS – Airport Use and Lease Agreements and Special Facilities Lease Agreements – *Intercontinental Terminal B Improvement Projects and Special Facilities Lease Agreement*" for a description of the third and final phase of the Terminal B Improvement Projects United may construct at its expense.

The Domestic Redevelopment Plan (DRP) includes the renovation, modernization and expansion of the Terminal A concourses and central ticketing facility to accommodate additional domestic volume on 10 new gates. Terminal A, which opened in June 1969, contains 20 aircraft gates including seven hardstand positions and is used by various airlines for domestic and precleared international aircraft operations. The Terminal A Roadway Improvements will provide for the expansion of both drop-off and pick-up curbside areas as well as other roadway improvements around Terminal A.

Runway, Taxiway and Airfield Projects include the full-depth replacement and widening of Taxiway NA, significant improvements to Taxiways RA, RB, SA, and SB and replacement of the airfield lighting system. Also, a new crossfield taxiway will be constructed to connect the central and north airfield to the south airfield, which is served by Runway 9-27. Central plant and other infrastructure improvements are required for the entire Intercontinental terminal complex as well as the roadway system. The Terminal A Roadway Improvements will provide for the expansion of both drop-off and pick-up curbside areas as well as other roadway improvements around Terminal A.

In August 2021, the City issued Special Facilities Bonds in the approximate aggregate principal amount of $290 million to finance improvements to the baggage handling system at Intercontinental, secured by the lease payments from United pursuant to the Terminal B Special Facilities Lease (as defined herein) and the Terminal E Special Facilities Lease (as defined herein). The improvements to the baggage system will include an early baggage storage system. The Special Facilities Bonds are not secured by or payable from Net Revenues. See "HOUSTON AIRPORT SYSTEM SIGNIFICANT CONTRACTUAL AGREEMENTS – Airport Use and Lease Agreements and Special Facilities Lease Agreements."

Hobby Capital Improvement Program. The Hobby Master Plan provides for expansion of the international concourse and apron to add seven gates (for a total of 12 gates). Terminal projects included in the Fiscal Year 2024-2028 CIP are made up of anticipated capital improvements related to the concession program as well as various other smaller rehabilitation projects.

In March of 2022, the City has entered into a Memorandum of Agreement (the "MOA") relating to the initial design and engineering of the seven gate expansion project. The MOA obligates the City to reimburse Southwest for up to $20 million of costs incurred. The Houston Airport System estimates the total project will cost $470 million and anticipates funding the costs with debt in the approximate amount of $250 million, Airport Improvement Funds in the approximate amount of $150 million, PFC Revenues in the approximate amount of $50 million.

The Houston Airport System completed an update to the Master Plan for Hobby in 2015. Key airfield projects in the Hobby Master Plan include the relocation, widening and extension of Runway 13L-31R from a general aviation runway to a full air carrier-capable runway 8,000 feet long and 150 feet wide with a full-length parallel taxiway and the acquisition of land. Runway 17-35 was decommissioned in 2020 and is in the process of being demolished. Construction of the extended runway is not planned until after 2026. Other airfield projects in the CIP are the reconstruction of the north end of Runway 13R-31L to correct areas the FAA had identified as having high probabilities of runway incursions and the rehabilitation of taxiway and apron pavement.

Ellington Capital Improvement Program. The Houston Airport System completed an update to the Master Plan for Ellington in 2015. Projects in the Ellington Master Plan (not expected to be implemented until after 2026) include the extension of Runway 17R 35L to 10,000 feet, land acquisition for a runway protection zone for the extended runway, reconfiguration of other airfield facilities, construction of additional general aviation hangars, and development of infrastructure to enable future spaceport and other commercial development.

Projects included in the Fiscal Year 2024-2028 CIP are the construction of Taxiway Lima and the development of several Spaceport-related facilities. Taxiway Lima will be a full-length taxiway parallel to Runway 4-22. The design of the Taxiway Lima is underway and construction is anticipated to commence in Fiscal Year 2024. Several agreements are either in place or in negotiation for the development of facilities for research, engineering, manufacturing and related aerospace activities at a 400-acre Spaceport campus on the east side of Ellington. In December 2020, Axiom Space, Inc. (Axiom), a space habitat manufacturer, announced plans to build a new headquarters in Fiscal Year 2024. Intuitive Machines continues work on their 12.5-acre plot for the company's lunar program, which includes a moon lander and deep space communications. The City approved a binding agreement between the Houston Airport System and Texas Southern University for the creation of a new Aviation Education facility on two acres of land at the Ellington Airport.

CIP Project Funding

The Houston Airport System anticipates funding the Fiscal Year 2024-2028 CIP from multiple sources, including available cash in the AIF and Renewal and Replacement Fund, entitlement and discretionary grants and awards from the FAA and the Transportation Security Administration, PFC Pay-Go Revenues, and bond proceeds. The Houston Airport System also anticipates issuing Senior Lien Notes to fund projects on an interim basis, and periodically refinancing Outstanding Senior Lien Notes into long-term Subordinate Lien Bonds.

The table below describes funding for the Fiscal Year 2024-2028 CIP. The Fiscal Year 2024-2028 CIP anticipates the issuance of additional general airport revenue bonds to finance certain capital expenditures. The timing and structure of any new bond issue is uncertain and depends upon, among other things, market considerations, the amount of cash generated internally by the Houston Airport System, and the timing and scope of projects in the CIP, in particular those relating to the ITRP. See also APPENDIX C-1 – GLOSSARY OF TERMS AND EXCERPTS OF THE MASTER ORDINANCE – Article V—Additional Bonds.

CIP Funding Sources[(1)]

Funding Source	FY 2024-2028 ($'s in millions)
Airport Improvement Fund	$ 661
Bonds/Commercial Paper	1,306
Pay-Go PFCs	115
AIP/FAA/AIG/ATP Grants	681
Total	$2,763

(1) CIP funding sources, as shown, are subject to approval and are subject to change based on the above-mentioned factors.

The Infrastructure Investment and Jobs Act of 2021 ("IIJA") was passed by the 117th Congress and signed into law by President Biden on November 15, 2021. The IIJA included $25 billion in funding for the FAA to invest in airport terminals, airport infrastructure and air traffic facilities over the next five years. The Houston Airport System was awarded $278 million ($55.6 million annually, beginning in Fiscal Year 2022) in entitlement grants to support airport terminal and infrastructure projects as part of IIJA. The Houston Airport System intends to seek additional grants under the IIJA's Airport Terminal Program, a discretionary grant program providing $1 billion per year to airports nationwide, to replace aging terminals and airport-owned towers, increase terminal energy efficiency and accessibility, and more.

PFC Revenues

As described under "HOUSTON AIRPORT SYSTEM FINANCIAL INFORMATION – Sources of Revenues – PFC Revenues," the City currently collects PFC Revenues for existing capital improvements at Intercontinental and received approval in September 2020 from the FAA for authority to impose and use PFC Revenues for future capital improvements at Intercontinental, including for the ITRP and other projects in the CIP. The City is authorized to use PFC Revenues to (a) pay debt service on outstanding bonds issued for certain completed Intercontinental projects; (b) reimburse the Houston Airport System for the unamortized costs of certain other Intercontinental projects that were originally funded from the Houston Airport System's resources, such as the AIF; (c) provide pay-as-you-go funding of the local share of the costs of certain planned future projects; and (d) pay debt service on commercial paper and future bonds to finance certain projects. The City is also authorized to use and is collecting PFC Revenues to pay debt service on certain projects relating to Hobby.

The City's authority to impose and use PFCs at both Intercontinental and Hobby is subject to certain terms and conditions in the federal PFC authorizing legislation, the PFC regulations adopted by the FAA and specific FAA approvals applicable to the Intercontinental and Hobby PFC programs. If the City fails to comply with any of these requirements, the failure could reduce or terminate the City's authority to impose PFCs at one or both airports and use such PFCs to finance a portion of the CIP.

The City imposes a PFC of $4.50 per enplaned passenger at both Intercontinental and Hobby. The City has authority from its initial application to impose and use approximately $1.4 billion of PFCs collected at Intercontinental through January 1, 2028 and the authority to impose and use approximately $736 million of PFCs collected at Hobby through September 1, 2038. In September 2020, the FAA approved the City's second application to impose and use PFCs at Intercontinental beginning January 1, 2028 through May 1, 2039, which will give the City the authority to impose and use an additional estimated $1.4 billion of PFCs collected at Intercontinental over that time period.

As of June 30, 2022, the aggregate account balances for PFC Revenues were approximately $216.6 million at Intercontinental, of which approximately $81.7 million were attributable to collections during Fiscal Year 2022. As of June 30, 2022, the aggregate account balances for PFC Revenues were approximately $29.8 million at Hobby, of which $22.2 million were attributable to collections during Fiscal Year 2022. As of March 31, 2023, the Houston Airport System collected $55.1 million of PFC Revenues for Intercontinental and $17.8 million of PFC Revenues for Hobby, on a cash basis, for the Fiscal Year 2023. All PFC Revenues are scheduled to be used to either pay future debt service for projects already approved by the FAA or pay the local share of capital projects approved by the FAA on a pay-as-you go basis. Historical PFC collections for the Houston Airport System are shown below.

Schedule A: PFC Collections

Houston Airport System PFC Collections
(dollars in thousands)

	FY 2018	**FY 2019**	**FY 2020**	**FY 2021**	**FY 2022**
Intercontinental	$ 83,220	$ 85,167	$61,120	$46,994	$81,674
Hobby	25,801	25,988	17,298	15,547	22,176
Total	$109,021	$111,155	78,418	$62,541	$103,850
Year-over-Year Change	7.37%	1.96%	-29.5%	-20.25%	66.05%

Source: Houston Airport System audited financial statements for Fiscal Year 2018 to Fiscal Year 2022.

For a discussion of the treatment of PFC Revenues under the Ordinance, see APPENDIX C-1 – GLOSSARY OF TERMS AND EXCERPTS OF THE MASTER ORDINANCE. See "HOUSTON AIRPORT SYSTEM FINANCIAL INFORMATION – Schedule 5: Selected Financial Information" for the historical amounts of PFC Revenues committed to pay Debt Service Requirements and the impact on debt service coverage ratios.

Grants under the FAA Airport Improvement Program and Other Programs

The City has been awarded, on behalf of the Houston Airport System, numerous grants under the FAA Airport Improvement Program, including grant funding, and awards from the Transportation Security Administration. Eligible projects include runway and taxiway rehabilitation, noise mitigation, environmental impact studies and security projects. The Houston Airport System has recognized capital contributions from these programs totaling over $107.1 million over the prior five fiscal years ending Fiscal Year 2022. These grant funds are not available for payment of debt service.

The FAA also announced that the Houston Airport System is eligible to receive grant funds under the CARES Act, which funds may be used for Operation and Maintenance Expenses and debt service payments. Additionally, the FAA announced that the Houston Airport System is eligible to receive grant funds under the ARPA and CRSSA Acts, which funds may also be used for Operation and Maintenance Expenses and debt service payments. In Fiscal Years 2020, 2021 and 2022, COVID relief provided to the Houston Airport System totaled $458 million. By the end of the Fiscal Year 2023, the Houston Airport System will have spent $412 million of the grant funds for Operation and Maintenance Expenses and debt service. The Houston Airport System anticipates spending the remaining $46 million in Fiscal Year 2024 for Operation and Maintenance Expenses and debt service. All Houston Airport System COVID relief grants are obligated, and as such, are not subject to any rescission or claw-back as a result of the newly enacted debt ceiling law.

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HOUSTON AIRPORT SYSTEM OPERATING STATISTICS

According to the U.S. Department of Transportation, Intercontinental and Hobby ranked 12th and 34th among U.S. airports, respectively, based on total enplaned passengers in calendar year 2021.

Airlines Utilizing the Houston Airport System

The table below shows the passenger and cargo airlines that provided scheduled service in 2022 from either Intercontinental or Hobby. JSX airline provides non-scheduled service from Hobby. During calendar year 2023, the passenger airlines scheduled 423 average daily departures to 113 domestic destinations and 111 average daily departures to 66 international destinations from Intercontinental. During calendar year 2023, the passenger airlines scheduled 129 average daily departures to 69 domestic destinations and 8 average daily departures to 9 international destinations from Hobby. The international destinations include or expect to include cities in Mexico, Central America, South America, Canada, Europe, Asia, Middle East, and Australia. All of the mainline carriers shown below have signatory airline status under various use and lease agreements, except for Alaska Airlines, Allegiant Air, Frontier Airlines, JetBlue and WestJet.

Recovery since the Pandemic. Over the past three years, most of the airlines that temporarily paused their services to Houston airports have resumed and recovered. The only long-haul routes for international countries that have not yet returned as of February 2023 are Togo, Ethiopia and China. Since April 2021, Southwest also started flying from Intercontinental, offering flight services from both Houston airports. Sun Country Airlines began services to domestic and international destinations in May 2021 for Intercontinental. Hobby added Allegiant Air and Frontier Airlines during the pandemic.

Intercontinental			Hobby		
Mainline Carriers	**Regional Carriers**	**Cargo Carriers**	**Mainline Carriers**	**Regional Carriers**	**Cargo Carriers**
Aeromexico	CommutAir	Air France Cargo	Allegiant Air	Mesa Airlines	Ameristar Air Cargo
Aeromexico Connect	Endeavor Air	Air Transport Services Group	Delta Air Lines	Skywest Airlines	
Air Canada	Envoy Air	Antonov Airlines	Envoy Air		
Air France	Jazz Air	Atlas Air	Frontier Airlines		
Air New Zealand	Mesa Airlines	C.A.L Cargo Airlines Ltd.	Southwest Airlines		
Alaska Airlines	Republic Airlines	Cargolux Airlines International S.A.			
All Nippon Airways	SkyWest Airlines	Cathay Cargo			
American Airlines		DHL			
Avianca		Emirates SkyCargo			
British Airways		FedEx			
Delta Air Lines		Lufthansa Cargo			
Emirates		Qatar Airways Cargo			
EVA Air		Silk Way West			
Frontier Airlines		Turkish Airlines Cargo			
JetBlue		UPS			
KLM Royal Dutch Airlines					
Lufthansa					
Qatar Airways					
Singapore Airlines					
Southwest Airlines					
Spirit Airlines					
Sun Country Airlines					
Turkish Airlines					
United Airlines					
VivaAerobus					
Volaris					
WestJet Airlines					

Source: Houston Airport System

United Airlines

United has the most market share of any airline at Intercontinental and together with its regional affiliates, enplaned 74.1% of total enplaned passengers in Fiscal Year 2022. See "– Schedule 2: Airline Market Shares." For a discussion of the sources of operating revenues for the Houston Airport System and the term of United's use and lease agreements at Intercontinental, respectively, see "HOUSTON AIRPORT SYSTEM FINANCIAL INFORMATION – Sources of Revenues" and "HOUSTON AIRPORT SYSTEM SIGNIFICANT CONTRACTUAL AGREEMENTS – Airport Use and Lease Agreements and Special Facilities Lease Agreements."

According to DIIO, a provider of airline market intelligence tools ("DIIO"), Intercontinental was the busiest of United's principal domestic airport hubs as measured by available seats, accounting for approximately 11.5% of United's system-wide seats for Fiscal Year 2022. During this period at Intercontinental, United enplaned approximately 10.6 million passengers while its regional affiliates enplaned 4.1 million passengers. When comparing February 2023 to the same period in 2019, United is offering 94% of its pre-COVID seat capacity. The airline with the next highest market share at Intercontinental in Fiscal Year 2022 was Spirit Airlines, with an enplaned passenger market share of 6.6%.

Southwest Airlines

Southwest was the busiest airline at Hobby with 5.9 million enplanements in Fiscal Year 2022. Southwest carried 93.6% of the total Hobby passengers in Fiscal Year 2022. According to DIIO, Hobby is the 7th busiest airport for Southwest and their activity at Hobby accounted for 4.0% of Southwest's system-wide seats for Fiscal Year 2022. When comparing February 2023 to February 2019, Southwest is offering 92.8% of its pre-COVID seat capacity at Hobby. See "– Schedule 2: Airline Market Shares." For a discussion of the sources of operating revenues for the Houston Airport System and the term of Southwest's use and lease agreement at Hobby, respectively, see "HOUSTON AIRPORT SYSTEM FINANCIAL INFORMATION – Sources of Revenues" and "HOUSTON AIRPORT SYSTEM SIGNIFICANT CONTRACTUAL AGREEMENTS "– Airport Use and Lease Agreements and Special Facilities Lease Agreements – Hobby Use and Lease Agreements."

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The following schedules set forth certain statistical information regarding the Houston Airport System as provided by the City.

Schedule 1: Passenger Statistics

Schedule 1 shows total passengers at Intercontinental and Hobby over the most recent five fiscal years.

Total Passengers
(In Thousands)

Intercontinental Domestic Passengers	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022
Enplaned and Deplaned	31,102	33,972	25,068	17,645	31,045
Year-over-Year Change	1.0%	9.2%	-26.2%	-29.6%	75.9%
Intercontinental International Passengers					
Enplaned and Deplaned	10,404	10,939	7,969	3,892	8,436
Year-over-Year Change	-2.4%	5.1%	-27.2%	-51.1%	116.8%
Total Intercontinental Passengers*					
Enplaned and Deplaned	41,506	44,911	33,037	21,537	39,481
Year-over-Year Change	0.8%	8.2%	-26.4%	-34.8%	83.3%
Hobby Domestic Passengers					
Enplaned and Deplaned	12,864	13,629	9,998	7,738	11,656
Year-over-Year Change	3.5%	5.9%	-26.6%	-22.6%	50.6%
Hobby International Passengers					
Enplaned and Deplaned	957	965	591	421	843
Year-over-Year Change	11.3%	0.8%	-38.8%	-28.8%	100.4%
Total Hobby Passengers					
Enplaned and Deplaned	13,821	14,594	10,589	8,159	12,499
Year-over-Year Change	4.0%	5.6%	-27.4%	-23.0%	53.2%
Total Airport System Passengers*					
Enplaned and Deplaned	55,327	59,505	43,626	29,696	51,981
Year-over-Year Change	1.0%	7.6%	-26.7%	-31.9%	75.0%

Source: Houston Airport System

*Numbers may not total exactly due to rounding.

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Schedule 1A: Total Enplaned Passengers for the Houston Airport System

Schedule 1A shows originating and connecting enplaned passengers for Intercontinental and Hobby over the most recent five fiscal years. The enplaned originating percentage has generally stayed within a relatively narrow range for both airports.

Houston Airport System
Total Originating and Connecting Enplaned Passengers(1)
(in thousands)

Intercontinental	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022
Originating Enplaned	11,332	12,411	9,275	6,416	11,512
Connecting Enplaned	9,44	10,067	7,252	4,444	8,301
Total Enplaned Passengers	20,775	22,478	16,527	10,861	19,812
Enplaned Originating Percentage	54.5%	55.2%	56.12%	59.1%	58.1%
Hobby					
Originating Enplaned	4,829	4,996	3,657	2,710	4,112
Connecting Enplaned	2,107	2,333	1,645	1,396	2,156
Total Enplaned Passengers	6,937	7,329	5,302	4,107	6,268
Enplaned Originating Percentage	69.6%	68.2%	69.0%	66.0%	65.6.%
Houston Airport System					
Originating Enplaned	16,162	17,407	12,931	9,127	15,623
Connecting Enplaned	11,550	12,400	8,897	5,841	10,456
Total Enplaned Passengers	27,712	29,807	21,828	14,969	26,080
Enplaned Originating Percentage	58.3%	58.4%	59.2%	61.0%	59.9%

Source: Houston Airport System
*Numbers may not total exactly due to rounding.
(1) Estimates of originating and connecting passengers (and originating percentages) presented above are as reported by the airlines to the Houston Airport System.

Schedule 2: Airline Market Shares

Schedule 2 shows airline passenger market shares for the Houston Airport System over the most recent five fiscal years. United and Southwest have maintained leading market shares at Intercontinental and Hobby, respectively, over the period.

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Houston Airport System
Market Share Data
(in thousands)*

	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022
Total Passengers- Intercontinental					
Domestic					
United and affiliates	24,787	27,274	19,620	13,118	23,342
Spirit Airlines	2,024	2,244	1,778	1,739	2,209
American and affiliates	2,288	2,479	1,846	1,305	2,122
Delta and affiliates	1,528	1,589	1,285	811	1,641
				184	1,045
Southwest					
Frontier	285	192	297	314	325
Alaska Airlines	186	188	164	99	181
JetBlue	--	--	71	68	161
All Other Airlines	3	7	7	6	19
Subtotal Domestic Passengers	31,102	33,972	25,068	17,645	31,045
International					
United Airlines	7,307	7,520	5,461	2,776	6,015
VivaAerobús	38	82	88	299	355
Aeroméxico	155	143	116	160	286
Spirit Airlines	120	183	170	131	268
Volaris	38	58	56	150	214
Qatar Airways	155	157	134	64	178
Turkish Airlines	189	197	148	82	170
Lufthansa	279	291	187	52	151
Air Canada	350	330	231	13	135
Emirates	207	261	178	54	131
All Other Airlines	1,565	1,719	1,200	110	533
Subtotal Int'l Passengers	10,404	10,939	7,969	3,892	8,436
Total Domestic and Int’l Passengers	41,506	44,911	33,037	21,537	39,481
Market Share-Intercontinental					
Domestic					
United and affiliates	59.7%	60.7%	59.4%	60.9%	59.1%
Spirit Airlines	4.9%	5.0%	5.4%	8.1%	5.6%
American and affiliates	5.5%	5.5%	5.6%	6.1%	5.4%
Delta and affiliates	3.7%	3.5%	3.9%	3.8%	4.2%
Southwest	0.0%	0.0%	0.0%	0.9%	2.6%
Frontier	0.7%	0.4%	0.9%	1.5%	0.8%
Alaska Airlines	0.4%	0.4%	0.5%	0.5%	0.5%
JetBlue	0.0%	0.0%	0.2%	0.3%	0.4%
All Other Airlines	0.0%	0.0%	0.0%	0.0%	0.0%
Subtotal Domestic Passengers	74.9%	75.7%	75.9%	82.0%	78.7%
International					
United Airlines	17.6%	16.7%	16.5%	12.9%	15.2%
VivaAerobús	0.1%	0.2%	0.3%	1.4%	0.9%
Aeroméxico	0.4%	0.3%	0.4%	0.7%	0.7%
Spirit Airlines	0.3%	0.4%	0.5%	0.6%	0.7%
Volaris	0.1%	0.1%	0.2%	0.7%	0.5%
Qatar Airways	0.4%	0.3%	0.4%	0.3%	0.4%
Turkish Airlines	0.5%	0.4%	0.4%	0.4%	0.4%
Lufthansa	0.7%	0.6%	0.6%	0.2%	0.4%
Air Canada	0.8%	0.7%	0.7%	0.1%	0.3%
Emirates	0.5%	0.6%	0.5%	0.2%	0.3%
All Other Airlines	28.8%	28.2%	27.8%	18.6%	22.7%
Subtotal Int'l Passengers	25.1%	24.4%	24.1%	18.1%	21.4%
Total	100.0%	100.0%	100.0%	100.0%	100.0%

Source: Houston Airport System
*Numbers may not total exactly due to rounding.

Houston Airport System
Market Share Data
(in thousands)*

	FY 2018	FY 2019	FY 2020	FY 2021	FY2022
Total Passengers-Hobby					
Domestic					
Southwest	11,937	12,710	9,403	7,224	10,853
Delta and affiliates	436	436	282	240	352
American and affiliates	304	290	245	206	270
JetBlue	179	178	60	0	161
All Others	8	15	4	68	20
Subtotal Domestic Passengers	12,864	13,628	9,994	7,738	11,656
International					
Southwest	957	965	591	421	839
All Others	0	0	0	0	4
Subtotal Int'l Passengers	957	965	591	421	843
Total Domestic and Int'l	13,821	14,594	10,585	8,159	12,499
Market Share-Hobby					
Domestic					
Southwest	86.4%	87.1%	88.8%	88.5%	86.8%
Delta and affiliates	3.2	3.0	2.7	2.9	2.8%
American and affiliates	.3	.9	2.3	2.5	2.2%
JetBlue	1.3	1.2	0.6	0.0	1.3%
All Others	1.9	1.1	0.0	0.8	0.2%
Subtotal Domestic Passengers	93.1%	93.4%	94.4%	94.8%	93.3%
International					
Southwest	6.9%	6.6%	5.6%	5.2 %	6.7%
All Others	0.0	0.0	0.0	0.0	0.0%
Subtotal Int'l Passengers*	6.9%	6.6%	5.6%	5.2%	6.7%
Total	100.0%	100.0%	100.00 %	100.0%	100.0%

Source: Houston Airport System
*Numbers may not total exactly due to rounding.

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Schedule 3: Total Aircraft Operations and Aircraft Landed Weight

Schedule 3 shows the aircraft operations (take-offs and landings) and aircraft landed weight for the Houston Airport System for the most recent five fiscal years.

Aircraft Operations
(in thousands)

	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022
Aircraft Operations	735	752	624	512	691
Year-over-Year Change	-3.29%	2.31%	-17.0%	-17.95%	35.02%

Aircraft Landed Weight
(in million pounds)

	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022
Aircraft Landed Weight	34,814	37,210	30,345	23,438	33,832
Year-over-Year Change	0.48%	6.88%	-18.45%	-22.76%	32.91%

Source: Houston Airport System

Schedule 4: Total System Cargo Activity

Schedule 4 shows cargo activity for the Houston Airport System for the most recent five fiscal years.

Total System Cargo Activity
(in metric tons)

	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022
Domestic Freight	231,670	270,965	303,119	331,151	321,111
International Freight	234,384	240,260	181,244	129,560	212,478
Mail	23,790	23,413	19,857	21,197	26,765
Total Cargo	489,844	534,638	504,220	481,908	560,354
Year-over-Year Change	6.8%	9.1%	-5.7%	-4.4%	15.8%

Source: Houston Airport System
*Numbers may not total exactly due to rounding.

HOUSTON AIRPORT SYSTEM FINANCIAL INFORMATION

Sources of Revenues

The Houston Airport System generates Operating and Non-Operating Revenues from various sources, as described below.

Landing Fees

Landing fees for airlines that provide scheduled service at Intercontinental and Hobby are computed annually under residual cost-recovery formulas derived from various use and lease agreements and license agreements (see "HOUSTON AIRPORT SYSTEM SIGNIFICANT CONTRACTUAL AGREEMENTS – Airport Use and Lease Agreements and Special Facilities Lease Agreements"). Landing fees are also applied by ordinance to nonscheduled, commercial aircraft and non-signatory scheduled aircraft landings at both airports based upon maximum FAA-approved gross landed weights. The City also receives revenues from aviation fuel flowage fees (currently six cents per gallon) assessed on the delivery of fuel to certain aircraft in lieu of landing fees; however, at Intercontinental and Hobby, this revenue is netted against the airfield costs used to set the landing fees.

Building and Ground Area Revenues

Terminal space rentals paid by signatory airlines under use and lease agreements are computed annually under compensatory cost-recovery formulas derived from various use and lease agreements and license agreements. Ground rentals are charged by the City under long-term ground leases of land at Intercontinental, Hobby and Ellington, typically at market rates escalating periodically. The City leases various parcels of land to airlines, fixed base operators and various corporations for hangars, aircraft maintenance facilities, flight kitchens and cargo buildings, auto rental companies for their service facilities and storage lots, and to a variety of other entities for buildings and other permanent improvements. See "HOUSTON AIRPORT SYSTEM SIGNIFICANT CONTRACTUAL AGREEMENTS – Airport Use and Lease Agreements and Special Facilities Lease Agreements."

Parking, Concessions and Other Revenues

Other than revenues from airline landing fees and terminal rentals, parking revenues from City-owned facilities are historically the largest single source of revenues of the Houston Airport System. Parking operations are managed and operated on behalf of the Houston Airport System by New South Parking. See "HOUSTON AIRPORT SYSTEM SIGNIFICANT CONTRACTUAL AGREEMENTS – Other Significant Airport Agreements." Parking rates are approved by the City Council; however, under a City ordinance, the Houston Airport System has the authority to increase parking rates, without further approval from City Council, up to specified amounts. Whereas the airline agreements generally allow for the Houston Airport System to set rates only to recover costs allocable to airline facilities, the Houston Airport System is generally able to set parking rates and concession and other business terms on a commercial basis. The Houston Airport System generates these non-airline revenues in order to (1) cover that portion of system operating and capital costs not paid by the airlines; (2) produce an annual surplus for deposit to the Airports Improvement Fund to meet current or anticipated needs of the Houston Airport System; and (3) comply with the Rate Covenant.

PFC Revenues

The City is authorized by the FAA to impose and use PFC Revenues for certain Houston Airport System improvements. PFCs are being collected at the rate of $4.50 ($4.39 net of $0.11 airline collections fee permitted by federal regulation) per eligible enplaned passenger at both Intercontinental and Hobby. In Fiscal Year 2022, PFC revenues received by the Houston Airport System indicated that approximately 84.3% of enplaned passengers were subject to the PFC. The City has authority to impose and use $2.8 billion of PFCs collected at Intercontinental through May 1, 2039 (pursuant to two FAA approvals) and the authority to impose and use $736 million of PFCs collected at Hobby through September 1, 2038.

As further described under "CAPITAL IMPROVEMENT PROGRAM – PFC Revenues," the City is authorized to use PFC revenues to pay debt service on bonds issued for certain capital improvement projects, reimburse the City for capital improvement projects funded from Houston Airport System resources, and provide pay-as-you-go funding for certain capital projects.

For purposes of the Master Ordinance, PFC Revenues are not Gross Revenues and are not pledged as security for any Airport Obligations, including the Series 2023 Bonds. See "SECURITY FOR THE SERIES 2023 BONDS." However, as set forth in "– Schedule 5: Selected Financial Information" below, the City has historically committed PFC Revenues to reduce Debt Service Requirements on the Subordinate Lien Bonds, and plans to continue to periodically commit PFC Revenues to reduce Debt Service Requirements on the Subordinate Lien Bonds.

For purposes of the Houston Airport System's annual comprehensive financial statements, PFC Revenues are recognized as non-operating revenues. See APPENDIX B attached hereto. See also "INVESTMENT CONSIDERATIONS – Passenger Facility Charges" and "CAPITAL IMPROVEMENT PROGRAM – PFC Revenues" and "—Schedule A: PFC Collections."

Selected Financial Information

Schedule 5 sets forth, for the Fiscal Years indicated, (1) the Gross Revenues, Operation and Maintenance Expenses and Net Revenues (each computed as defined in the Ordinance) of the Houston Airport System, (2) the total Debt Service Requirement (computed as defined in the Ordinance) on then Outstanding Airport Obligations, which include all obligations payable from Net Revenues and (3) the coverage of Debt Service Requirement by Net Revenues. All amounts in "–Schedule 5: Selected Financial Information" for Fiscal Years 2018 through 2022 and a portion of the Fiscal Year 2023 are derived from the audited financial statements of the Houston Airport System Fund, or from the supplementary information and the statistical section included in the City Controller's Annual Comprehensive Financial Report of the City of Houston, Texas, for each respective Fiscal Year. The schedule should be read in conjunction with the complete audited financial statements of the City of Houston, Texas Airport System Fund Annual Comprehensive Financial Report and the notes thereto included as APPENDIX B.

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Schedule 5: Selected Financial Information (in thousands)

	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	9 Months Ended 3/31/2022	9 Months Ended 3/31/2023
Operating Revenues							
Landing fees:							
Landing fees	$91,258	$83,318	$91,270	$65,560	$88,757	$64,754	$68,317
Aviation fuel	1,679	1,554	1,249	1,302	1,705	1,227	1,170
Aircraft parking	2,842	2,895	3,343	3,726	3,791	2,816	2,748
Subtotal	$95,779	$87,767	$95,862	$70,578	$94,253	$68,797	$72,235
Building and ground area revenues:							
Terminal space rentals	$195,198	$185,943	$194,056	$129,527	$166,444	$133,056	$140,231
Cargo building rentals	2,390	2,391	2,378	2,164	2,078	1,586	1,505
Other rentals	6,460	6,454	9,361	6,256	6,332	4,705	4,450
Hangar rental	6,691	6,530	6,822	6,339	5,921	4,475	4,558
Ground rental	9,475	10,005	10,684	11,312	11,254	8,538	9,222
Subtotal	$220,214	$211,323	$223,301	$155,598	$192,029	$152,360	$159,967
Parking, concession and other revenues:							
Retail concessions	$ 41,245	$ 41,521	$ 32,146	$ 14,584	$ 39,570	$ 27,850	$ 33,637
Auto parking	103,961	110,136	81,173	43,815	98,417	69,910	86,370
Auto rental concession	28,767	28,949	23,400	20,695	34,056	24,593	28,013
Ground transportation	11,062	12,645	10,072	6,913	15,192	10,515	14,902
Other operating revenues	9,836	6,123	5,958	6,471	7,657	5,367	5,783
Subtotal	$194,871	$199,374	$152,749	$ 92,379	$ 194,892	$138,235	$168,705
Total operating revenue	$510,864	$498,464	$471,912	$318,555	$481,174	$359,392	$400,907
Nonoperating revenues(1)							
Interest on investments(1)	$13,348	$19,681	$19,503	10,403	7,556	5,214	13,885
Other revenues - revenue fund	(1,805)	47	122	152	77	77	35
Subtotal	$11,543	$19,192	$19,625	$10,555	$7,633	$5,291	$13,920
Total gross revenues	$522,407	$518,192	$491,537	$329,110	$488,807	$364,683	$414,827
Operation and Maintenance Expenses(2)							
Personnel and other current expenses	$326,321	$315,046	$313,927	$251,642	$254,969	210,415	235,341
Interest on pension bonds and note(3)	107	107	107	106	106	80	80
Other interest	461	-	-	82	302	225	234
Total operation and maintenance expenses	$326,889	$315,153	$314,034	$251,830	$255,377	$210,720	$235,655
Net revenue	$195,518	$203,039	$177,503	$77,280	$233,430	$153,963	$179,172
Total Debt Service Requirements	$174,456	$176,312	$180,731	$145,349	$163,503		
PFC revenue available for debt service	(50,642)	(60,646)	(55,040)	(56,365)	(59,819)		
Grant revenue available for debt service	-	-	(14,169)	(88,984)	(103,684)		
Net debt service requirement(4)	$123,814	$115,666	$111,522	N/A(5)	N/A(5)		
Coverage of debt service	1.58	1.76	1.59	N/A(5)	N/A(5)		

* Totals may not add up due to rounding.

(1) The figures shown have been adjusted for miscellaneous revenues not defined as Gross Revenues or Net Revenues in the Ordinance. Excludes interest revenue earned in restricted bond funds and PFC Revenues.

(2) Does not include depreciation expenses.

(3) Represents a portion of the pension debt issued in 2005 allocable to the Houston Airport System. No revenues of the Houston Airport System are pledged to such debt.

(4) Does not include debt service for which interest was capitalized from bond proceeds. Interest earned in reserve funds and used for debt service reduces the Debt Service Requirement. See definition of "Debt Service Requirements" in APPENDIX B-1 – GLOSSARY OF TERMS AND EXCERPTS OF THE MASTER ORDINANCE.

(5) Pursuant to the Ordinance, the application and use of federal relief grant funds and PFC Revenues for Fiscal Year 2021 and Fiscal Year 2022 to pay debt service reduced Debt Service Requirements to zero.

Source: Houston Airport System

Schedule 6: Summary of Certain Fees and Charges

Schedule 6 shows the budgeted rates and charges for Fiscal Year 2022 and Fiscal Year 2023 for both Intercontinental and Hobby. These rates and charges are established according to the terms of the use and lease agreements for each airport and are subject to annual fiscal year-end adjustments once actual airport-related expenses are finalized. See "– Sources of Revenues".

	Intercontinental		Hobby	
	FY 2022	FY 2023	FY 2022	FY 2023
Landing Fee Rates[(1)]	$2.63	$2.52	$2.69	$2.62
Terminal Space Rentals[(2)]	19.04-73.85	21.43-73.03	58.41-73.01	71.67-89.59
Apron[(2)]	2.213-2.441	2.168-2.326	2.567-2.582	2.582-2.597
Aircraft Parking (per day)	100.00-400.00	100.00-400.00	100.00-400.00	100.00-400.00
Cargo (per day)	200.00-600.00	200.00-600.00	200.00-600.00	200.00-600.00
Parking Rates (maximum per day)				
Economy				
(Ecopark) Uncovered	6.47	6.47	n/a	n/a
(Ecopark) Covered	8.31	8.31	n/a	n/a
(Ecopark2) Covered	7.39	7.39	n/a	n/a
(Ecopark2)	n/a	n/a	9.24	9.24
Structured	24	24	24	24
Sure Park	n/a	n/a	n/a	n/a
Valet	28	30	28	28

(1) Per 1,000 pounds of landed weight. Rates shown are original budgeted rates.
(2) Range per square foot.
Source: Houston Airport System

Shown below are average airline payments per enplaned passenger for the most recent five fiscal years and budget for Fiscal Year 2023. This average does not include payments by United for Special Facilities Bond debt service or terminal operations and maintenance in net-leased terminals, nor is it reflective of concession revenues retained by United in these terminals.

Houston Airport System
Total Cost Per Enplanement
($ per enplanement)

	FY 2018	FY 2019	FY 2020	FY 2021[(1)]	FY 2022	FY 2023[(2)]
Intercontinental	11.39	10.16	13.64	13.61	10.51	10.83
Hobby	6.40	6.63	9.18	9.65	8.96	8.39

(1) Airline costs at Hobby were reduced from $49 million in the Fiscal Year 2020 budget to $37 million (-24%) in the Fiscal Year 2021 budget and reduced at Intercontinental from $236 million in the Fiscal Year 2020 budget to $153 million (-35%) in the Fiscal Year 2021 budget.
(2) Budget for Fiscal Year 2023.
Source: Houston Airport System

DEBT SERVICE REQUIREMENTS OF HOUSTON AIRPORT SYSTEM OBLIGATIONS

Schedule 7: Houston Airport System Debt Service Requirements Schedule*

Schedule 7 sets forth the debt service requirements on all Outstanding Subordinate Lien Bonds as of the Date of Delivery of the Series 2023 Bonds, assuming scheduled mandatory redemption of any term bonds, taking into account the refunding of the Refunded Obligations and the Target Bonds tendered to the City for purchase and cancellation. The table does not take into account any reductions to Debt Service Requirements as provided in the Master Ordinance. This schedule excludes the Senior Lien Notes. There currently are no Senior Lien Bonds Outstanding. See "PURPOSE AND PLAN OF FINANCING." See APPENDIX C-1 – GLOSSARY OF TERMS AND EXCERPTS OF THE MASTER ORDINANCE for further details regarding the calculation of Debt Service Requirements in accordance with the Ordinance.

12 Months Ending	Subordinate Lien Debt Service	(Less: Refunded Subordinate Lien Debt Service)	Plus: Series 2023 Bonds Net Debt Service**	Total Houston Airport System Obligations Debt Service
7/1/2024	$199,499,223	$5,921,234	$16,398,162	$209,976,150
7/1/2025	199,393,736	5,921,234	28,844,304	222,316,805
7/1/2026	201,028,178	5,921,234	47,266,308	242,373,252
7/1/2027	201,058,084	5,921,234	48,317,875	243,454,725
7/1/2028	201,046,380	37,681,234	72,780,875	236,146,021
7/1/2029	207,011,455	23,734,038	58,839,375	242,116,792
7/1/2030	207,032,288	8,871,122	46,511,125	244,672,290
7/1/2031	206,988,691	65,519,151	100,625,875	242,095,415
7/1/2032	207,105,068	87,264,906	117,209,375	237,049,538
7/1/2033	72,960,200	--	40,131,375	113,091,575
7/1/2034	72,961,950	--	40,135,125	113,097,075
7/1/2035	72,961,700	--	40,133,375	113,095,075
7/1/2036	72,966,950	--	40,134,625	113,101,575
7/1/2037	72,959,550	--	40,131,875	113,091,425
7/1/2038	72,960,050	--	40,133,375	113,093,425
7/1/2039	72,967,750	--	40,136,875	113,104,625
7/1/2040	43,926,700	--	40,135,513	84,062,213
7/1/2041	43,928,450	--	40,137,313	84,065,763
7/1/2042	34,247,400	--	40,134,388	74,381,788
7/1/2043	34,244,850	--	40,139,125	74,383,975
7/1/2044	34,253,150	--	40,133,125	74,386,275
7/1/2045	34,249,950	--	40,134,188	74,384,138
7/1/2046	34,253,900	--	40,134,175	74,388,075
7/1/2047	34,242,650	--	40,134,675	74,377,325
7/1/2048	24,434,800	--	40,132,063	64,566,863
7/1/2049	--	--	40,132,663	40,132,663
7/1/2050	--	--	40,137,325	40,137,325
7/1/2051	--	--	40,135,575	40,135,575
7/1/2052	--	--	40,138,475	40,138,475
7/1/2053	--	--	40,131,350	40,131,350
Total	$2,658,683,104	$246,755,388	$1,379,619,848	$3,791,547,564

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* Numbers may vary due to rounding.
**Debt service is shown net of capitalized interest.

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Schedule 8: Houston Airport System Outstanding Debt

Schedule 8 summarizes Houston Airport System debt outstanding as of April 30, 2023, including the Senior Lien Notes, taking into account the issuance of the Series 2023 Bonds, the refunding of the Refunded Notes, Refunded Bonds and the Target Bonds. See "INTRODUCTION – Senior Lien Obligations, Subordinate Lien Bonds and Inferior Lien Bonds." Schedule 8 also includes the outstanding principal amount of obligations that are not secured by a pledge of Net Revenues of the Houston Airport System, but are included in the Houston Airport System's financial statements, including private placement loans, pension obligations, and special facilities revenue bonds. See APPENDIX B, Note 5 – Long-Term Liabilities – *Special Facility Bonds*, *–Pension Obligation Bonds*, and *–Private Placement Loans*, and APPENDIX B, Note 10 – Conduit Debt Obligations.

	Outstanding Principal Amount (dollars in thousands)
Senior Lien Bonds	$ -
Senior Lien Notes(1)	-
Subordinate Lien Bonds	2,613,030
Inferior Lien Obligations	-
Private Placement Loans(2)	15,399
Pension Obligations(3)	2,006
Total Outstanding Principal	$2,630,435
Special Facilities Bonds(4)	$1,144,935

Source: Houston Airport System

(1) See "INTRODUCTION – Senior Lien Obligations, Subordinate Lien Bonds and Inferior Lien Bonds." Adjusted to reflect the refunding of all of the Senior Lien Notes with a portion of the proceeds of the Series 2023 Bonds.

(2) Represents two loans obtained from the State Energy Conservation Office to finance energy-related cost-reduction projects for the Houston Airport System. The costs of the loans are expected to be offset by annual energy savings from the implementation of the financed projects. Net Revenues are not pledged to the repayment of these loans, but the City may use available Net Revenues to repay these loans. See APPENDIX B, Note 5 – Long-Term Liabilities – Private Placement Loans.

(3) Not secured by a pledge of Net Revenues. Represents the Houston Airport System's allocation of the City's pension obligation bonds issued in 2005, which are not direct obligations of the Houston Airport System. In December 2017, the City issued $1.005 billion of pension obligation bonds; however, the Houston Airport System has no financial obligation with respect to those bonds.

(4) Not secured by a pledge of Net Revenues. Represents the dollar amount of Special Facilities Bonds that the City has issued on behalf of third parties, the repayment of which is solely the obligation of such third parties. THESE SPECIAL FACILITIES BONDS ARE SECURED SOLELY BY LEASE PAYMENTS OF THIRD PARTIES, AND NO REVENUES OF THE HOUSTON AIRPORT SYSTEM ARE PLEDGED TO PAY SUCH BONDS. Approximately $52.5 million of the bonds outstanding were issued to support a consolidated rental car facility, and the remaining bonds were issued to support certain United airport projects. See "HOUSTON AIRPORT SYSTEM SIGNIFICANT CONTRACTUAL AGREEMENTS – Airport Use and Lease Agreements and Special Facilities Lease Agreements" for a more detailed description of these bonds.

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Schedule 8A: Cash and Liquidity

Schedule 8A shows the cash position of the Houston Airport System and a calculation of days of available cash on hand for the most recent five fiscal years. A portion of the Houston Airport System cash is restricted to certain uses and some of the cash is unrestricted. The Ordinance requires the Houston Airport System to maintain two months of Operation and Maintenance Expenses in the Operation and Maintenance Reserve Fund. The Houston Airport System's policy has been to reserve greater than the minimum two-month requirement in the Operation and Maintenance Reserve Fund to accommodate fluctuations in revenues and enplanements. See APPENDIX C-1 – GLOSSARY OF TERMS AND EXCERPTS OF THE MASTER ORDINANCE.

Houston Airport System
Cash and Investments
(dollars in thousands)

	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022
Restricted and Unrestricted Airport System Cash and Current Investments	$508,633	$485,410	$424,636	$476,276	$486,056
Days of Available Cash on Hand	568	562	495	690	695

Source: Houston Airport System

HOUSTON AIRPORT SYSTEM SIGNIFICANT CONTRACTUAL AGREEMENTS

Airport Use and Lease Agreements and Special Facilities Lease Agreements

General

At both Intercontinental and Hobby, the vast majority of landing fees and terminal rentals are paid by the airlines pursuant to use and lease agreements and/or Special Facilities Leases. Those agreements generally require the airlines to pay landing fees, terminal building rentals and certain other charges to enable the Houston Airport System to recover costs allocable to facilities occupied by the airlines. These costs include, among others, Operation and Maintenance Expenses, amortization charges associated with the Houston Airport System's investment in airport capital improvements and interest on the Houston Airport System's investment in land. Airlines that do not operate under use and lease agreements operate either under agreements on a month-to-month basis or under City ordinance.

While the Houston Airport System maintains different use agreements for Intercontinental, each terminal at Intercontinental, and Hobby, airline rentals and use fees are generally calculated using the same "compensatory" cost allocation and rate-making principles. Under these principles, the Houston Airport System creates cost centers for each terminal or major facility (e.g., Terminals A, B, C, D and E; the Central FIS Facility; the Skyway; and the Airfield at Intercontinental; and the Central Terminal, West Terminal, and Airfield at Hobby) and calculates a rate base requirement as the total of all allocable direct, indirect and system (e.g., the Subway and the central utility plant) operating and capital costs of the facility. Capital costs are calculated as the level annual amortization charge allocable to each investment. Terminal costs are further allocated between airline, non-airline, and apron areas, with terminal building and apron rental rates set to recover the rate base requirement, and the Houston Airport System bears risk for costs allocable to vacant space. Costs associated with non-airline (e.g., public and concession) areas of the terminals are the responsibility of the Houston Airport System and are recovered through concession revenues (including parking, rental car and ground transportation revenues) and other eligible non-airline revenues. Landing fee rates are calculated on a cost-center residual basis to recover in full the costs of the airfield area, net of certain non-airline cost center revenues (principally general aviation fuel flowage fees).

At Intercontinental, United leases certain terminals (Terminals B, C and E) under long-term "net lease" agreement provisions by which United leases in full airline and non-airline premises so that the Houston Airport System does not bear the risk of vacant space, and capital investment is generally the responsibility of United. The amount of space that is leased by United in Terminals B, C and E comprises 53% of the total usable terminal space at Intercontinental, which is approximately 4.6 million square feet. In consideration of this mitigated risk, the Houston Airport System confers upon United the right to control, and retain revenues generated by, terminal concessions, such as food and beverage, gifts and news.

The following sections summarize the major provisions of the Houston Airport System's use and lease agreements, Special Facilities Leases and license agreements.

Intercontinental Terminal A Airlines Use and Lease Agreement

The Terminal A Use and Lease Agreement expired on June 30, 2005 and is currently being held over on a month-to-month basis with Air Canada, American, Delta, Spirit and United. In addition to allowing for the lease of preferential terminal building space, the agreement provides for the use of certain premises such as holdroom and apron on a common-use basis, with equivalent per-use charges in lieu of rentals.

Intercontinental Terminal B Improvement Projects and Special Facilities Lease Agreement

In November 2011, the Houston Airport System and Continental (now United) entered into a Second Amended and Restated Special Facilities Lease (the "Terminal B Special Facilities Lease") with a term of thirty years, subject to certain early termination and extension provisions, to provide for the redevelopment of Terminal B in three phases (the "Terminal B Improvement Projects"). Pursuant to the Terminal B Special Facilities Lease, United leases all airline premises in Terminal B and, as facilities are redeveloped, all airline and non-airline premises in the terminal under "net lease" provisions. Also pursuant to the Terminal B Special Facilities Lease, the Houston Airport System leases to United certain Special Facilities located in Terminal B and Terminal C that were financed with proceeds of the Terminal B Special Facilities Bonds (as defined below).

The Terminal B Improvement Projects will be accomplished in phases. In the first phase, completed in 2013, United built a new Terminal B South Concourse for regional jet aircraft. In the second phase, completed in May 2017, United built Terminal C North, a new mainline concourse between the original north concourses of Terminals B and C. Under the third and final phase, United has the option to construct two new international-capable Terminal B North Concourses for both mainline and regional jet aircraft along with a Terminal B FIS facility and the renovation and reconstruction of the existing Terminal B central lobby and baggage claim areas. The redevelopment, with the exception of the projects to be funded by the City, as detailed below, is to be undertaken by United at its sole expense, with the City agreeing to issue additional Special Facilities Bonds on behalf of United secured by the Terminal B Special Facilities Lease.

To support the Terminal B Improvement Projects, the Houston Airport System has agreed to undertake certain capital projects to be completed concurrently with United's capital projects at Terminal B. The Houston Airport System's capital projects include ramp and apron replacement and roadway, signage, the Subway, utility, environmental and fuel system relocation or improvements. The first phase of the Houston Airport System's capital program for Terminal B cost approximately $53 million. The second phase cost approximately $91.5 million. It is anticipated that the third phase will cost approximately $176.5 million. Phase one and two are complete. Phase three has recently commenced. The Houston Airport System's capital program for Terminal B was and will be financed largely with AIF cash balances, PFC Revenues, grants, and airport revenue bond proceeds. See "CAPITAL IMPROVEMENT PROGRAM – CIP Projects" and "– CIP Project Funding" herein.

As security for the Houston Airport System Special Facilities Revenue Bonds (Continental Airlines, Inc. Terminal Improvement Projects), Series 2011 (AMT), the Houston Airport System Special Facilities Revenue Bonds (United Airlines, Inc. Terminal Improvement Projects), Series 2015B-1 (AMT), the Houston Airport System Special Facilities Revenue Refunding Bonds (United Airlines, Inc. Terminal Improvement Projects), Series 2020B-2 (AMT) and the Houston Airport System Special Facilities Revenue Bonds (United Airlines, Inc. Terminal Improvement Projects), Series 2021B-1 (AMT) (collectively, the "Terminal B Special Facilities Bonds"), the Terminal B Special Facilities Lease obligates United to pay rent, directly to the trustee, equal to the debt service on such Special Facilities Bonds. In addition, following substantial completion of each phase or segment of the Terminal B Improvement Projects, United will pay the Houston Airport System rentals calculated under "net lease" provisions.

Intercontinental Terminal C Use and Lease Agreements

United's Airport Use and Lease Agreement, as it relates to Terminal C, was amended in 2015 and expires on December 31, 2037 (subject to certain extension rights and early termination provisions). The Terminal C Use and Lease Agreement gives United the preferential right to use all of the apron area and exclusive right to use of all of the holdrooms and other airline space in Terminal C for the duration of the lease term.

The amended Airport Use and Lease Agreement converted Terminal C to a net lease similar to Terminal E's (described below), in which United is responsible for all maintenance, janitorial and all-around upkeep and United retains all revenues from inside concessions.

In calculating airline fees, rentals and any other charges at Intercontinental, the total costs of all support facilities such as the Subway and the chilled and hot water plant are allocated among the various areas that benefit from such facilities, including airline areas of the terminal buildings. In addition, the Houston Airport System charges apron fees that are calculated to recover costs allocable to the aprons. Finally, landing fees are calculated according to a formula through which the airlines are required to pay their pro-rata share of all costs allocable to the airfield cost center after first deducting airfield revenues derived from general aviation (principally fuel flowage fees, if any).

Intercontinental Terminal D International Facilities Agreement

Foreign-flag airlines, United and other airlines providing international service at Terminal D, share the Central FIS Facility with Terminal E. They operate under the terms of the International Facilities Agreement, which expired December 31, 2021, but is cancellable by either the Houston Airport System or the signatory airlines with 30 days' notice. The City negotiated a new International Facilities Agreement with the Terminal D Carriers. City Council approved such agreement in May 2023. Use fee rates are calculated for Terminal D sub-cost centers by function (e.g., arrivals, departure, and ticketing and baggage make-up), with costs allocated using compensatory rate-making principles. See "CAPITAL IMPROVEMENT PROGRAM – CIP Projects – *Intercontinental Capital Improvement Program*."

Intercontinental Terminal E Lease and Special Facilities Lease Agreement

The term of the Terminal E Lease and Special Facilities Lease Agreement (the "Terminal E Special Facilities Lease") relating to the central ticketing facility, Terminal E baggage system improvements, Terminal C-East garage, ATO facility, Terminal E apron area and fuel systems and ancillary facilities, commenced August 29, 2001 and is scheduled to terminate on January 31, 2030, subject to certain extension provisions. United may extend the term until the earlier to occur of (i) the latest date allowed by law (currently August 2041), (ii) the latest date that the Terminal E Special Facilities Lease may expire and remain in compliance with applicable federal tax law, or (iii) January 2045. United net leased the facilities on an exclusive basis, with the exception of the Terminal E apron area and fuel systems, which are leased on a preferential basis.

As security for the Airport System Special Facilities Revenue Refunding Bonds (United Airlines, Inc. Terminal E Project), Series 2014 (AMT), Airport System Special Facilities Revenue Refunding Bonds (United Airlines, Inc. Terminal E Project), Series 2020A (AMT) and Airport System Special Facilities Revenue Bonds (United Airlines, Inc. Terminal E Project), Series 2021A (AMT) (collectively, the "Terminal E Special Facilities Bonds"), which financed or refinanced the Special Facilities Bonds originally issued in 2001 to finance the construction of Terminal E, the Terminal E Special Facilities Lease obligates United to pay rent, directly to the trustee, equal to debt service on such Special Facilities Bonds. In addition, United must pay the Houston Airport System ground rentals for the special facility areas and "city charges" for the portions of the facilities financed by the Houston Airport System as well as certain allocated costs relating to capital project amortization, maintenance, and operations costs, replenishment of the renewal and extension fund for system costs, and airport and departmental administrative costs. In consideration of United's net leasing of the entire Terminal E and central ticketing facility (including the public areas), United is entitled to the revenues from all "inside concessions" at Terminal E, such as revenues from concession agreements for food and beverage, gift/news, telephone and advertising.

Other United Lease Agreements at Intercontinental

United and the City also have entered into two separate Special Facilities Leases related to non-terminal improvements at Intercontinental.

Non-Terminal Special Facilities Lease. The construction and improvement of certain United non-terminal facilities at Intercontinental were partially financed by Special Facilities Bonds issued in 1997 and 1998. Such bonds were subsequently refinanced in 2015 with the City's Airport System Special Facilities Revenue Refunding Bonds (United Airlines, Inc. Airport Improvement Projects), Series 2015C (AMT) (the "2015C Bonds"). The Series 2015C Bonds were refinanced with the City's Airport System Special Facilities Revenue Refunding Bonds (United Airlines, Inc. Airport Improvement Projects), Series 2020C (AMT) (the "2020C Bonds"). The improvement, renovation, expansion and repair of certain other non-terminal facilities at Intercontinental were financed by the City's Airport System Special Facilities Revenue Bonds (United Airlines, Inc. Airport Improvement Projects), Series 2018C (AMT) (the "2018C Bonds"). The Series 2018C Bonds and Series 2020C Bonds are secured on a parity by a Special Facilities Lease of non-terminal improvements used by United at Intercontinental (the "Non-Terminal Special Facilities Lease") and are not secured by Net Revenues or other revenues of the Houston Airport System. United has a continuing obligation to pay debt service on such bonds that may become due and payable after expiration of the Special Facilities Lease term, which extends until the end of 2027.

UTOC Special Facilities Lease. In 2018, the City issued its Airport System Special Facilities Revenue Bonds (United Airlines, Inc. Technical Operations Center Project), Series 2018 (AMT) (the "UTOC Bonds") to finance a new technical operations center and provide certain improvements to related facilities at Intercontinental ("UTOC") and, in connection with the UTOC Bonds, the City and United entered into a Special Facilities Lease, whereby United agreed, among other things, to pay debt service on the UTOC Bonds. The term of the Special Facilities Lease relating to UTOC expires in 2053.

United leases approximately 4,300 parking spaces principally near the Ecopark economy parking lot at Intercontinental. The spaces are primarily for employee use. In conjunction with the MOA related to the UTOC project mentioned above, the lease was extended until August 31, 2027.

Hobby Use and Lease Agreements

The use and lease agreements for the airlines operating at Hobby are similar in form and substance to the agreements at Intercontinental, but with certain differences in rate-making methodology. The agreements do not divide cost centers into "airline" and "non-airline," as is the practice at Intercontinental but, like at Intercontinental, the airlines have financial responsibility only for the premises they lease. Under the Hobby use and lease agreements, landing fees are calculated using the same formula as is used at Intercontinental. The Hobby agreements also include a cost containment provision with respect to the Terminal Building, the Central Concourse and associated Apron and Airfield cost centers. This provision uses the Fiscal Year 2012 airline cost per enplanement as a base but allows increases based on the Consumer Price Index for the Houston area both annually and cumulatively, with no adjustments if the actual cost per enplanement for ensuing fiscal years does not exceed the adjusted rate. If the adjusted rate were calculated to exceed the calculated containment cost per enplanement, the Houston Airport System must reduce the allocation of costs to airline cost centers so as not to exceed the adjusted rate. The lease also provides for an Inside Concession Revenue-sharing program for those airlines signing a 25-year lease term. Currently, only Southwest has entered into such a lease. The revenue-sharing program calls for inside concession revenue (food and beverage, retail) to be shared at the average net inside concession revenue rate per enplaned passenger for each fiscal year in which there is incremental enplanement growth over the base of Fiscal Year 2012, up to a maximum of $4 million annually.

In February 2013, the Houston Airport System entered into a new agreement with Southwest, which expires on June 30, 2040. Delta and American both originally entered into five-year agreements in 2015 that automatically renewed in 2020 for another five-year term when neither airline elected to exercise their option cancel the lease after its initial five-year term. In October 2015, international operations began at Hobby.

In December 2016, the City and Southwest entered into an MOA regarding a maintenance hangar development project. The City agreed to lease approximately 44 acres at Hobby exclusively to Southwest for the project. The project was completed in January 2020 and includes both Southwest project components and City project components. Southwest expended, at its own cost, $125 million to design and construct the project. The complex is approximately 240,000 square feet and can hold up to six 737 narrowbody aircraft. The City's enabling projects cost approximately $14 million.

Other Significant Airport Agreements

Rental Car Facilities at Intercontinental

The consolidated rental car facility at Intercontinental was financed in March 2001 with proceeds of Special Facilities Bonds secured by and payable from a separate customer facility charge ("CFC") assessed on rental car customers at Intercontinental, which is currently $4.00 per transaction day. Under the terms of the Master Special Facilities Lease, the rental car companies are responsible for all operation and maintenance costs associated with the facility and the associated busing operation. Such lease is scheduled to expire on June 30, 2027.

The Houston Airport System has concession agreements with eight rental car operators at Intercontinental (which represent 11 brands) that expire June 30, 2027.

Rental Car Facilities at Hobby

At Hobby, there are nine rental car operators, four of which lease facilities from the Houston Airport System on month-to-month leases. The concession agreements with the rental car operators at Hobby went to a month-to-month basis on January 1, 2021.

Concessions, Cargo and Service Agreements

Shown below is a summary of other significant non-airline agreements for the Houston Airport System.

Houston Airport System
Significant Non-Airline Agreements

Vendor	Expiration Date	Extension or Termination Options	Service Provided	Airport
JC Decaux	February 28, 2024; July 31, 2024	N/A	Advertising	Intercontinental; Hobby
International Shoppes Shekinah Group IAH, LLC	August 18, 2029	N/A	Duty Free	Intercontinental
Paradies-HOU 2014, LLC	December 31, 2025	N/A	News, gift and specialty	Hobby
WDFG	December 31, 2025	N/A	News, gift and specialty	Hobby
Host International, Inc	December 31, 2025	N/A	Food	Intercontinental
WDFG North America, LLC	December 31, 2025	N/A	News, gift and specialty	Intercontinental
Paradies-IAH 2014, LLC	December 31, 2025	N/A	News, gift and specialty	Intercontinental
SSP America Texas, Inc	December 31, 2025	N/A	Food	Intercontinental
Latrelle's Galley, L.P.	December 31, 2025	N/A	Food	Intercontinental
Host International, Inc.	December 31, 2025	N/A	Food	Intercontinental
Houston Airport Hotel Owner's, L.P.	October 31, 2053	N/A	Marriott	Intercontinental
4 Families of Houston	Month to month	N/A	Food	Hobby
Federal Express	May 30, 2027	N/A	Freight, Mail	Intercontinental
UPS	December 31, 2032	1 ten-year optional extension	Freight, Mail	Intercontinental
Aero Houston Central	December 31, 2024	N/A	Central Cargo	Intercontinental
Aero Houston East, LLC	February 25, 2043	Option to terminate after 30 years	East Cargo	Intercontinental
Aero Houston East II, L.P.	February 28, 2043	Option to terminate after 30 years	East Cargo	Intercontinental
Trammel Crow Company IAH International Air Cargo II, L.P	August 31, 2049	Option to terminate after 30 years	Perishables Cargo	Intercontinental
Prologis	February 28, 2043	Option to terminate after 30 years	East Cargo, Warehouse	Intercontinental
SP+/Global/IMS (Formerly: New South Parking –Texas)	June 30, 2031	N/A	Parking management	Intercontinental; Hobby

Source: Houston Airport System

THE AIRLINE INDUSTRY FINANCIAL INFORMATION

Certain of the certificated major domestic airlines (or their respective parent corporations) are subject to the information reporting requirements of the U.S. Securities Exchange Act of 1934, as amended, and thus must file reports and other information with the U.S. Securities and Exchange Commission (the "Commission"). Certain information, including financial information, as of particular dates, concerning the certificated major domestic airlines (or their respective parent corporations) is disclosed in such reports and statements filed with the Commission. Such reports and statements can be inspected and copied at the public reference facilities maintained by the Commission at 450 Fifth Street, N.W., Washington, D.C. 20549, and at the Commission's regional offices, including the Northwestern Atrium Center, 500 West Madison Street, Suite 1400, Chicago, IL 60661-2511 and 5670 Wilshire Boulevard, 11th Floor, Los Angeles, California 90036. Copies of such reports and statements can be obtained from the Public Reference Section of the Commission at 450 Fifth Street, N.W., Washington, D.C. 20549, at prescribed rates. The Commission also maintains a website at http://www.sec.gov containing reports, proxy and information statements and other information regarding registrants that file electronically with the Commission. The Commission undertakes no responsibility for and makes no representations (and the City, the City's Co-Financial Advisors and the Underwriters disclaim any responsibility) as to the accuracy or completeness of the content of such material contained on the website described in the preceding sentence, including but not limited to, updates of such information or links to other websites accessed through the aforementioned website. In addition, all major and certain other airlines are required to file periodic reports of financial and operating statistics with the United States Department of Transportation. Such reports can be inspected in the Office of Airline Statistics, Research and Special Programs Administration, United States Department of Transportation, 400 Seventh Street, S.W., Washington, D.C. 20590, and copies of such reports can be obtained from the U.S. Department of Transportation at prescribed rates.

Airlines owned by foreign governments or foreign corporations operating airlines (other than foreign airlines that have American Depository Receipts registered on a national exchange) are not required to file information with the Commission. Airlines owned by foreign governments, or foreign corporations operating airlines, file limited information only with the U.S. Department of Transportation.

INVESTMENT CONSIDERATIONS

COVID-19

The COVID-19 pandemic has and may continue to have an adverse effect on the demand for passenger air travel. In addition, the continuing impact of the COVID-19 pandemic has resulted in operational difficulties for certain airlines as they increase capacity to meet demand. In some cases, this has resulted in higher flight cancellation rates and reductions in previously planned additions of scheduled capacity. The City cannot predict the outcome of many factors that can materially adversely affect its finances or operations, including, but not limited to: (a) the extent of a significant COVID-19 outbreak or another pandemic; (b) what effect any COVID-19 pandemic (or other pandemic) related restrictions or warning may have on air travel; (c) the extent to which the COVID-19 pandemic or another outbreak or pandemic may result in changes in demand for air travel, including long-term changes in consumer behavior and the operations of other businesses, or may have an impact on the airline and travel industry, generally; or (d) whether any of the foregoing may have a material adverse effect on the finances and operations of the Houston Airport System. Future outbreaks, pandemics or events outside the Houston Airport System's control may further reduce demand for air travel, which in turn could cause a decrease in passenger activity and result in a decline in revenues. See "IMPACT OF COVID-19 PANDEMIC ON THE HOUSTON AIRPORT SYSTEM".

Economic and Political Conditions

Historically, U.S. airline passenger traffic has correlated closely with the state of the U.S. economy and levels of real discretionary income. Recessions in the U.S. economy in 2001, 2008-2009 and 2020 and associated high unemployment reduced discretionary income and coincided with reduced airline travel in those years. With the globalization of business and the increased importance of international trade and tourism, the U.S. economy is more closely tied to worldwide economic, political and social conditions. As a result, international economics, trade balances, currency exchange rates, political relationships and hostilities all influence passenger traffic at major U.S. airports. Sustained future increases in passenger traffic at the Houston Airport System airports depend on stable international conditions as well as national and global economic growth.

Industry Workforce Shortages

Pilot shortage has been an industry-wide issue, especially for smaller regional airlines. There are several causes for the pilot shortage that have affected all airlines. Congress changed duty time rules in 2010 to mitigate pilot fatigue, which required airlines to increase pilot staff. Beginning in 2013, first officers flying for commercial airlines were required to have at least 1,500 hours of flight time, instead of the 250 hours previously required. Other factors include an aging pilot workforce and fewer new pilots. As a result of the COVID-19 pandemic, many airlines offered buyouts, early retirement, and severance packages to reduce staffing costs to mitigate the effects of reduced passenger traffic. As passenger demand recovers, major air carriers need additional pilots and have hired pilots away from regional airlines. As a result, small regional airlines have experienced difficulties in hiring qualified new pilots, despite increased incentives, resulting in reduced service to some smaller U.S. markets.

In addition to the pilot shortage, over the next decade there could be a shortage of qualified mechanics to maintain the airlines' fleet of planes. This potential shortage is a result of an aging pool of mechanics, a large portion of which are expected to retire in the next decade, and relatively fewer new mechanics entering the labor market. A shortage of mechanics could raise the cost of maintenance, require airlines to maintain more spare planes and/or result in increased flight cancellations and delays.

General labor shortages, including pilots, mechanics and air traffic controllers, have been impacting, and may continue to impact, the airline industry and the Houston Airport System. Several major airlines have announced reduced schedules and have cancelled flights as a result of reported labor shortages and staffing challenges. Labor shortages have been attributed to growing travel demand after thousands of workers in the airline industry opted for buyouts, early retirement packages or otherwise terminated their employment during the COVID-19 pandemic. Staffing challenges as a result of COVID-19 infections and quarantines also may have short-term impacts on an airline's ability to operate scheduled flights.

Oil and Gas Industry

The Houston metropolitan area has the world's largest concentration of petro-chemical manufacturing, so the regional economy has been particularly susceptible to adverse conditions in the oil and gas industry. Concerns related to the Pandemic, among other factors, have led to recent declines in crude oil prices in the U.S., at times to the lowest levels in three decades. These price declines have led to reduced revenues, declines in capital and operating expenditures, business failures and layoffs of workers in the oil and gas industry. The continuation of adverse conditions in the oil and gas industry and their spillover effects on other industries in the Houston region could adversely affect the Houston region's economy and the demand for air travel at Intercontinental and Hobby. See "THE HOUSTON AIRPORT SYSTEM – Airport Service Region – *Top 10 Greater Houston Private Employers*" and "INVESTMENT CONSIDERATIONS – Economic and Political Conditions."

Financial Condition of the Airlines

The ability of the Houston Airport System to generate revenues depends, in part, upon the financial health of the aviation industry in general. The economic condition of the aviation industry is volatile and periodically the industry undergoes significant changes, including mergers, acquisitions, bankruptcies and closures. Further, the aviation industry is sensitive to a variety of factors, including (i) the cost and availability of financing, labor, fuel, aircraft and insurance, (ii) regional, national and international economic conditions, (iii) international trade, (iv) currency values, (v) competitive considerations, including the effects of airline ticket pricing, (vi) traffic and airport capacity constraints of the Houston Airport System and competing airports, (vii) governmental regulation, including security regulations and taxes imposed on airlines and passengers, and maintenance and environmental requirements, (viii) passenger demand for air travel and (ix) disruption caused by airline accidents, criminal incidents, acts of war or terrorism, such as the events of September 11, 2001, and (x) public health emergencies, such as the Pandemic. The aviation industry is also vulnerable to employee strikes and other labor-related disruptions. The number of passengers at the Houston Airport System airports depends partly on the profitability of the U.S. airline industry and the associated ability of the industry and individual airlines, particularly United and Southwest, to make the necessary investments to provide service.

Airline Service and Routes

Intercontinental and Hobby accommodate travel demand to and from the Houston region and serve as connecting hubs. The number of origin and destination passengers at the two airports depends on the intrinsic attractiveness of the Houston region as a business and leisure destination, the propensity of its residents to travel, and airline fares and service. The number of connecting passengers, on the other hand, depends entirely on airline fares and service provided at the airports.

Intercontinental serves as a primary connecting hub and international gateway for United and Hobby serves as a connecting airport and Latin American gateway for Southwest. As a result, much of the connecting passenger traffic at the two airports results from the route networks and flight schedules of United and, to a lesser extent, Southwest, rather than the economy of the Houston region. If United reduced connecting service at Intercontinental, or Southwest reduced connecting service at Hobby, such service would not necessarily be replaced by other airlines.

Airline Competition and Airfares

Airline fares have an important effect on passenger demand, particularly for relatively short trips, for which automobile and other surface travel modes are potential alternatives, and for price-sensitive discretionary travel. The price elasticity of demand for airline travel increases in weak economic conditions when the disposable income of potential airline travelers is reduced. Airfares are influenced by airline capacity and yield management, passenger demand, airline market presence, labor, fuel and other airline operating costs, taxes, fees and other charges assessed by governmental and airport agencies, and competitive factors. Future passenger numbers, both nationwide and at the Houston Airport System airports, will depend, in part, on the level of airfares.

Structural Changes in the Travel Market

Many factors have combined to alter consumer travel patterns. Consumers have become more price-sensitive. Efforts of airlines to stimulate traffic by heavily discounting fares have changed consumer expectations regarding airfares. In addition, the availability of fully transparent price information on the Internet now allows quick and easy comparison shopping, which has changed consumer purchasing habits. This has made pricing and marketing even more competitive in the U.S. airline industry. Smaller corporate travel budgets, combined with the higher time costs of travel, have made business customers more amenable to communications substitutes such as tele- and video-conferencing, which services have grown significantly since the onset of the Pandemic. Further, increased adoption of videoconferencing technologies during the COVID-19 pandemic and increased acceptance of these methods of communicating could reduce the demand for business travel, though the impact of such technologies on the demand for business travel is not known at this time.

Airline Concentration; Effect of Airline Industry Consolidation

Further airline consolidation remains possible. Although the Houston Airport System believes that merger activity has had little impact on the respective combined airlines' market shares at Intercontinental or Hobby, future mergers or alliances among airlines operating at the Houston Airport System's facilities may result in fewer flights or decreases in gate utilization as airlines reduce capacity at Houston Airport System airports. Such decreases could result in reduced Net Revenues, reduced PFC Revenue collections and increased costs for the other airlines using the Houston Airport System. However, historically, when airlines have reduced or ceased operations at the Houston Airport System, other airlines have absorbed the traffic with no significant adverse impact on the Houston Airport System revenues.

United and Southwest account for a significant portion of the Houston Airport System's operating revenues. For more information, see Note 10 of the Notes to the Financial Statements as set forth in APPENDIX B. See also "HOUSTON AIRPORT SYSTEM OPERATING STATISTICS – Schedule 2: Airline Market Shares." If either airline was to significantly reduce service, it could have a material impact on revenues, including concession revenues and PFC Revenue collections, and on the resulting cost per enplanement charged at each airport.

Passenger Facility Charges

General

Pursuant to 49 U.S.C. §40117 and the Wendell H. Ford Aviation Investment and Reform Act for the 21st Century (the "PFC Act"), the FAA has approved the City's application to require the airlines to collect and remit to the City a $4.50 PFC on each enplaning revenue passenger at Intercontinental and Hobby, as further discussed in "HOUSTON AIRPORT SYSTEM FINANCIAL INFORMATION –Sources of Revenues – *PFC Revenues*" and "CAPITAL IMPROVEMENT PROGRAM – PFC Revenues."

The PFC Act provides that PFC Revenues collected by the airlines constitute a trust fund held for the beneficial interest of the eligible agency (i.e., the City for the benefit of the Houston Airport System) imposing the PFCs, except for any handling fee or retention of interest collected on unremitted proceeds. In addition, federal regulations require airlines to account for PFC Revenue collections separately and to disclose the existence and amount of funds regarded as trust funds for financial statements. However, the airlines are permitted to commingle PFC Revenue collections with other revenues and are also entitled to retain interest earned on PFC Revenue collections until such collections are remitted. In the event of a bankruptcy, the PFC Act, as amended in December 2003, provides that (1) PFCs are and remain trust funds, (2) the airline in bankruptcy may not grant to any third party any security or other interest in PFC Revenues and (3) the airline in bankruptcy must segregate in a separate account PFC Revenues equal to its average monthly PFC liability as well as post-petition actual PFC Revenues. Despite these enhanced statutory protections, it is unclear whether the City would be able to recover the full amount of PFC trust funds collected or accrued by an airline in the event of its liquidation or cessation of business. The City also cannot predict whether an airline operating at Intercontinental or Hobby that files for bankruptcy would have properly accounted for PFC Revenues owed to the City or whether the bankruptcy estate would have sufficient moneys to pay the City in full for PFC Revenues owed by such airline. Although the City expects to pay a portion of the debt service on its Subordinate Lien Bonds from PFC Revenues, PFC Revenues are not pledged to the payment of any Subordinate Lien Bonds, including the Series 2023 Bonds. See "SECURITY FOR THE SERIES 2023 BONDS – General." For a discussion of the treatment of PFC Revenues under the Ordinance, see APPENDIX C-1 – GLOSSARY OF TERMS AND EXCERPTS OF THE MASTER ORDINANCE.

FAA Reauthorization

The FAA Reauthorization Act of 2018, which extended FAA's federal funding and authorities through Fiscal Year 2023, represented the first significant multi-year reauthorization since the FAA Modernization and Reform Act of 2012, and the first five-year reauthorization since 1982. The failure of Congress to reauthorize the FAA's operating authority beyond Fiscal Year 2023, or adverse changes in the conditions placed on such authority, could have an adverse impact on Houston Airport System operations over the long run because grants awarded under the FAA's Airport Improvement Program have been a significant source of financing for the Houston Airport System.

Availability of PFCs

The Houston Airport System currently uses PFC collections to pay a portion of its debt service and to fund certain pay-as-you-go projects. The collection of PFCs is subject to several risks. The amount of PFCs received by the Houston Airport System depends on the actual number of eligible passenger enplanements at Intercontinental and Hobby. As eligible passenger enplanements decline, PFC collections will also decline. Further, the PFC authorizations for Intercontinental and Hobby expire in May 2039 and September 2038, respectively. Finally, the Houston Airport System's authority to impose PFCs could be terminated if it violates Department of Transportation regulations regarding their use. A shortfall in PFC collections would require the Houston Airport System to pay these debt service costs from existing cash balances or from Net Revenues, or to seek approval to increase PFC rates at one or both airports and could impact the ability to comply with the Rate Covenant (see "COVENANTS AND TERMS OF THE ORDINANCE – Rate Covenant"). The PFC rate is currently \$4.50 per enplaned passenger at both Intercontinental and Hobby. See "CAPITAL IMPROVEMENT PROGRAM – Schedule A: PFC Collections".

Airport Security and Safety

Concerns about the safety of airline travel and the effectiveness of security and health safety precautions influence passenger travel behavior and airline travel demand. Anxieties about the safety of flying and the inconveniences and delays associated with security and health screening procedures could lead to both the avoidance of travel and the switch from air to surface modes of transportation for short trips.

Historically, airline travel demand has recovered after temporary declines stemming from terrorist attacks or threats, hijackings, aircraft crashes, public health and safety concerns, and international hostilities. If precautions by government agencies, airlines and airport operators maintain confidence in the safety of commercial aviation without imposing unacceptable inconveniences for airline travelers, it can be expected that future demand for airline travel at the Houston Airport System airports will depend primarily on economic, not safety or security, factors.

In addition, the Pandemic has caused a substantial decline in passenger traffic at both Intercontinental and Hobby. Despite the widespread availability of COVID-19 vaccines in the United States, a reduced level of passenger traffic, as compared to the years before the Pandemic, may continue.

5G Wireless Services and Potential of Interference or Disruption with Airline Operations

The 5G C-Band is a radio spectrum that is close to the frequencies used by radar altimeters, an important piece of safety equipment in aircraft. The FAA has imposed restrictions on flight operations using certain types of radar altimeter equipment close to antennas in the 5G C-band networks, which could affect flight schedules and operations. The 5G C-band wireless broadband service was expected to rollout on January 5, 2022 in the United States but was delayed voluntarily by the major cellular carriers with limitations to C-band 5G deployment until July 5, 2022. The deployments of 5G C-Band have continued to be voluntarily limited through significantly reduced power at base stations near airports. To date, Houston Airport System has not authorized any indoor or outdoor deployment of 5G C-band on any of the three airport properties and continues to monitor the situation closely. In addition, Houston Airport System is a participating in Airport Council International – North America's 5G working group.

Cybersecurity Initiatives of the City

The Houston Airport System relies on computer technology for its operations, and faces cybersecurity threats including, but not limited to, hacking, phishing, viruses, malware, digital theft, and other attacks on its digital networks and systems. As a recipient and provider of personal, private, or sensitive information, the Houston Airport System may be the target of cybersecurity incidents that could adversely affect the Houston Airport System's operations.

The federal government regulates various aspects of airport operations and the FAA and the Transportation Security Administration ("TSA") both impose various regulations and security directives that affect the design, policies and procedures of the information technology and physical access security of Houston Airport System. The TSA has recently issued a TSA Joint Emergency Amendment on Cybersecurity-Performance-Based Measures which include a series of time-based deliverables. Houston Airport System is currently in compliance with the emergency amendment and continues to work with the TSA accordingly.

Houston Airport System Information Technology department has yearly initiatives that minimize the risk to airport operations such as upgrades to servers, computers, network devices, security related hardware and software, security assessments, audits, reviews, and policies and procedures. Major investments have also been made to increase the posture to Houston Airport System cybersecurity-related initiatives in order to minimize risk. In addition, the Houston Airport System is committed to replacing the current electronic badging system with the next generation access and identity system that will greatly reduce and minimize the threats of a physical compromise to airport security access.

Over the past five years, the City has taken several steps to enhance and protect information systems and information of the City. To help protect the City against claims and expenses due to a cybersecurity incident, the City is self-insured.

In 2013 and 2014, the City implemented Executive Order (EO) 1-44 (2013) and Executive Order 1-48 (2014) (the "Executive Orders") respectively authorizing the Chief Information Officer (CIO) to manage city-wide IT risk, to develop a city-wide information security program. The CIO designated a Chief Information Security Officer (CISO) responsible for carrying out the CIO's information security responsibilities. Specific objectives of the Executive Orders include: (i) protecting all City information and information systems in a manner that is commensurate with the security classification level, sensitivity, value, and critical nature of information; (ii) protecting information from unauthorized access, disclosure, destruction, disruption, or modification while the information is being collected, processed, transmitted, stored, or disseminated; (iii) managing all information technology that is acquired, developed, or used in support of City programs, projects, and department requirements by use of a process that covers the complete system lifecycle; (iv) managing all information systems in a cost-effective manner, guided by the application of sound risk management processes that ensure an appropriate level of integrity, confidentiality, and availability of information in each phase of the system lifecycle; (v) conducting periodic audits of all City information systems that process, store, or transmit City data; (vi) investigating information security incidents for incident management, forensic investigations, and reports; and (vii) ensuring all basic information security policy requirements, audits, and forensic investigations are implemented across all City departments.

Among other initiatives, the CISO is in the process of implementing a comprehensive, multi-year, cybersecurity master plan. The plan is designed to identify, protect, detect, respond and recover from cyber events and incidents from nation state actors, organized criminals, hacktivist groups and insider threats. The City recently completed year four of the master plan and several initiatives have been completed.

In addition to direct risks to the Houston Airport System's digital systems, FAA digital systems and individual airline systems are subject to the same kinds of risks as the Houston Airport System, and attacks on those systems could substantially affect Houston Airport System operations and revenues.

Capacity of National Air Traffic Control and Airport Systems

Demands on the national air traffic control system have, in the past, caused delays and operational restrictions affecting airline schedules and passenger traffic. In addition, the Transportation Secretary recently announced that air traffic control is understaffed by approximately 3,000 people. The FAA is gradually implementing its Next Generation Air Transportation System (NextGen) air traffic management programs to modernize and automate the guidance and communications equipment of the air traffic control system and enhance the use of airspace and runways through improved air navigation aids and procedures.

Hurricane Activity and Weather Events Affecting Houston

Downtown Houston is located approximately 50 miles north of the Gulf of Mexico. The Gulf region is prone to seasonal hurricane activity; major hurricanes or other dangerous storms may develop. A hurricane of great severity could significantly damage Houston Airport System properties. The Houston Airport System maintains hurricane insurance jointly and severally with the City and its other enterprise departments, but the policy covers only part of the total property value of the Houston Airport System. Deductibles and any costs in excess of insured amounts or reimbursements received from FEMA would be borne by the City or the airlines.

The City experienced a substantial natural disaster on August 23-27, 2017, when up to 50 inches of rain in the Houston area from Hurricane Harvey caused flooding in portions of the City. Intercontinental closed to commercial traffic for two days but the airlines had resumed normal operating capacity by September 5, 2017. Operations at Hobby were stopped for three days and airlines resumed normal operations by September 7, 2017. Enplanements for August and September 2017 decreased by approximately 616,000, or 3.1%, when compared to the same period for the previous year.

The Houston Airport System sustained water damage to various buildings and components of the airfields at all three airports. The estimate of the total damage to facilities owned by the Houston Airport System is approximately $4 million. Shortly after Hurricane Harvey, the Houston Airport System established a "Disaster Recovery O&M Fund" in its accounts to serve as an appropriation source for disaster-related expenses pending insurance payments and reimbursement by FEMA.

See "LITIGATION AND REGULATION – Storm Activity and Periodic Flooding."

In February 2021, the State experienced a severe winter storm ("Winter Storm Uri") which resulted in power outages and potable and non-potable water shortages in many areas of the State. The federal government issued a Major Disaster Declaration for the State.

The Houston Airport System did not experience any material damage to its facilities or equipment as a result of Winter Storm Uri, nor did it suffer any material financial impacts.

Future weather events could have an adverse impact on the region's economy, including an impact on business activity and development in the region. The City cannot predict what impact future weather events in the region will have on the City or the Houston Airport System.

Unmanned Aerial Vehicles

With the proliferation of inexpensive, commercially available, unmanned aerial vehicles ("UAVs"), or drones, the threat that unauthorized and unsafe UAV operations near airports could adversely affect the safety or security of U.S. airports and arriving or departing aircraft has increased significantly in recent years. Recent incursions of airport airspace by UAVs have disrupted airport operations by causing flights to be halted or diverted. London's Gatwick Airport was closed for 27 hours, impacting some 140,000 passengers and causing roughly 1,000 flights to be delayed or canceled between December 19 and 21, 2018 due to drone incursions. An unauthorized UAV incursion at Intercontinental or Hobby could result in the temporary delay or cancellation of flights to or from such airport as well as harm the Houston Airport System's brand, reputation and its relationships with its customers, airlines and government partners. Although UAVs are regulated by the FAA and federal law prohibits the Houston Airport System from disrupting UAV operations or undertaking UAV countermeasures, the Houston Airport System is working closely with the FAA to develop measures to prevent unauthorized UAV activity from adversely affecting the Houston Airport System. There can be no assurance, however, that in the future, unauthorized UAV activity will not adversely affect operations at Intercontinental or Hobby.

Cost and Completion Schedule of Houston Airport System Capital Improvement Program

The costs and completion timeframe of capital projects included in the Houston Airport System's CIP are subject to a number of uncertainties. The ability of the Houston Airport System to complete the CIP could be adversely affected by various factors including: (i) estimating errors, (ii) design and engineering errors, (iii) changes to the scope of the projects, (iv) delays in contract awards, (v) material, and/or labor shortages, (vi) unforeseen site conditions, (vii) adverse weather conditions, (viii) contractor defaults, (ix) labor disputes, (x) unanticipated levels of inflation, (xi) environmental issues, including environmental approvals that the Houston Airport System has not obtained at this time, (xii) additional security improvements and associated costs mandated by the federal government and (xiii) lack of adequate funding, including inability to access the capital markets or loss of grants or PFC Revenues.

A delay in the completion of certain projects under the CIP could delay the collection of revenues for such projects, increase project costs, or cause the rescheduling of other projects. There can be no assurance that the cost of construction of the Fiscal Year 2024-2028 CIP projects will not exceed the currently estimated dollar amount or that the completion of the projects will not be delayed beyond the currently projected completion dates. Any schedule delays or cost increases could result in the need to issue additional Airport Obligations and may result in increased costs per enplaned passenger to the airlines, which could place the Houston Airport System at a competitive disadvantage with other airports. Further, changes in the mix of the projects that comprise the Houston Airport System's CIP could negatively impact the long-term revenue base of the Houston Airport System. This could occur if there were a substantial shift to the capital projects that the Houston Airport System is required to fund out of non-airline revenues versus those that become part of the airline rate base and for which the Houston Airport System receives airline revenues through landing fees and terminal rentals. In such case, the Houston Airport System would seek to alter its rate-making methodology or find additional revenue sources. See "CAPITAL IMPROVEMENT PROGRAM".

Airport System Capital Markets Access

Airport operators such as the Houston Airport System have also historically required access to third-party capital, primarily through the municipal bond market, to finance significant portions of their capital needs and to effectively manage their cost per enplanement or debt coverage ratios. If the capital markets were to become inaccessible by the Houston Airport System or interest rates were to rise, it could significantly impact the Houston Airport System's ability to meet its prospective coverage ratios or to meet its future spending needs or to achieve a competitive cost per enplanement.

Effect of Airline Bankruptcies

Prior bankruptcies by airlines using the Houston Airport System have resulted in reductions of service levels by particular airlines, even in cases where such airlines continued to operate in bankruptcy. Bankruptcies, liquidations or major restructurings of other airlines could occur. The bankruptcy of an airline with significant operations at the Houston Airport System, such as United or Southwest, could have a material adverse effect on operations at the Houston Airport System, revenues and the cost to the other airlines operating at the Houston Airport System. Regardless of any specific adverse determinations in an airline bankruptcy proceeding, the existence of an airline bankruptcy proceeding could have an adverse effect on the liquidity and value of the Series 2023 Bonds.

In the event of bankruptcy proceedings involving one or more of the airlines operating at the Houston Airport System, the debtor or its bankruptcy trustee must determine within a time period determined by the court whether to assume or reject the applicable airline's use and lease agreement or other lease agreements. If assumed, the debtor would be required to cure any prior defaults and to provide adequate assurance of future performance under the relevant agreements. Rejection of a lease or executory contract by an airline would give the City an unsecured claim for damages, the amount of which in the case of a lease is limited by the Bankruptcy Code.

Airport Management Consultant Report and Financial Projections

The financial projections in the Report regarding the Airport are based generally upon certain assumptions, as well as economic, demographic and development trends. See APPENDIX A – Section 6.7 – "Projection of Financial Performance and Debt Service Coverage" and Section 6.8 – "Assumptions Underlying the Financial Projections". Inevitably, some of the assumptions and other data used to develop the projections will not be realized, and unanticipated events and circumstances may occur. Therefore, the actual financial results achieved during the projection periods will vary from the financial projections, and such differences may be material.

THE CITY AND CITY FINANCIAL INFORMATION

Governmental Structure

The City has a mayor-council form of government in which the Mayor and the sixteen-member City Council serve as the legislative body. Eleven council members are elected by district and five council members are elected at-large. The Mayor, all members of the City Council and the City Controller are elected for four-year terms. The present term of office for all elected officials expires at various times. The City Charter limits the terms of office for all elected City officials to two, four-year terms.

The Mayor is the City's chief executive officer. The Mayor exercises administrative control over the City's government; presides over City Council meetings; establishes the City Council agenda; and appoints the heads of the various departments of the City, subject to confirmation by the City Council. The Mayor also is responsible for preparing and submitting the City's annual budget proposals to the City Council for adoption.

The City Controller is the City's chief financial officer. The Office of the City Controller superintends, supervises, manages and conducts the fiscal affairs of the City; maintains the books of accounts; prepares financial statements; conducts the sales of City obligations; certifies the availability of funds before the City incurs any financial obligation; and, along with the Mayor, countersigns all warrants, contracts or orders for payment of any money by the City.

Home-Rule Charter

The City operates under a home-rule charter pursuant to the Texas Constitution. The City Charter may be amended not more than once every two years at an election held for that purpose, which may be called by the City Council or upon petition of 20,000 of the City's registered voters. The last City Charter amendments were adopted on November 6, 2018. See "– Governmental Structure." In addition, the City Charter allows the City's voters to exercise the powers of initiative and referendum. To compel enactment of an ordinance by initiative, a petition signed by voters equal in number to at least 15% of the largest total number of votes cast for Mayor in any general election in the preceding three (3) years must be submitted to the City. Thereafter, the City Council may enact the ordinance or call an election on the question of its adoption. To compel a referendum on an ordinance, a petition signed by voters equal in number to at least 10% of the largest total number of votes cast for Mayor in any general election in the preceding three (3) years must be submitted to the City. Thereafter, the City Council may repeal the ordinance that is the subject of the referendum petition or call an election on the question of its repeal. See "– City Charter Tax and Revenue Propositions."

City Interest Rate Swap Policy

The City currently has no outstanding Swaps (as defined below) with respect to any Outstanding Airport Obligations.

The City follows a master swap policy, as amended from time to time (the "Swap Policy"), to provide guidance for the City in its use of swaps, caps, floors, collars, options and other derivative financial products (collectively, "Swaps") in conjunction with the City's management of its assets and liabilities. The Swap Policy describes the circumstances and methods by which Swaps will be used, the guidelines to be employed when Swaps are used, and the City official responsible for carrying out these policies. The City may enter into Swaps as authorized by the City Council and approved by the Attorney General of the State in connection with the issuance or payment of certain debt obligations, before, concurrently with, or after the actual issuance of the debt.

As a general rule, the City will enter into Swap transactions only with counterparties whose obligations are rated in the double-A category or better from at least one nationally recognized rating agency. In addition, if a counterparty's credit rating is downgraded below the double-A rating category, the City may require that its exposure to the counterparty be collateralized or may exercise its right to terminate the Swap transaction prior to its scheduled termination date. In order to limit the City's counterparty risk, the City will seek to avoid excessive concentration of exposure to a single counterparty or guarantor.

The Swap Policy provides that the City may choose counterparties for entering into Swap contracts on either a negotiated or competitive basis. To provide safeguards on negotiated transactions, the Swap Policy provides that the City should generally secure outside professional advice to assist in the process of structuring, documenting and pricing the transaction, and to verify that a fair price was obtained. In any negotiated transaction, the counterparty will be required to disclose all payments to third parties (including lobbyists, consultants and attorneys) who had any involvement in assisting the counterparty in doing business with the City.

The City tracks and regularly reports on the financial implications of its Swaps. A quarterly report is prepared for the City Council, and includes: (i) a summary of key terms of the agreements, including notional amounts, interest rates, maturities and methods of procurement, including any changes to Swap agreements since the last reporting period; (ii) the mark-to-market value (termination value) of its Swaps, as measured by the economic cost or benefit of terminating outstanding contracts at specified intervals; (iii) the amount of the City's exposure to each specific counterparty, as measured by aggregate mark-to-market values, netted for offsetting transactions; (iv) the credit ratings of each counterparty (or guarantor, if applicable) and any changes in credit ratings since the last reporting period; and (v) any collateral posting as a result of Swap agreement requirements. In addition, the City performs such monitoring and reporting as is required by the rating agencies or for compliance with GASB requirements.

Financial Policies

The City operates under financial policies (the "Financial Policies") that have been adopted by City Council. Under the Financial Policies, the Mayor is required to review the Financial Policies at least once every two years. The Financial Policies were initially approved in 2003 and have been amended and updated from time to time to include, among other things, provisions regarding pay-as-you-go funding, the issuance of debt and the disclosure of financial information pursuant to State and federal securities laws. The City implemented the policies related to disclosure of financial information in 2016 and amended such policies on November 18, 2020.

Under the heading of Operating Budget Policies – Revenues and Expenditures, the Financial Policies state that the City will adopt a budget annually in which current revenues and other sources will be sufficient to support current expenditures. All retirement and employee benefit systems will be financed in a manner to fully and systematically fund liabilities (with the City making all necessary payments in compliance with contractual obligations and statutory requirements and in a manner that results in full amortization of liabilities over a closed 30-year period). See the sections captioned "– Health Care Benefits for Retired Employees," "– Employee Pension Funds" and Schedules 9, 9A, 9B and 9C for more detailed information relating to the funding of the City's Pension Systems.

Each enterprise fund maintains revenues that support the full (direct and indirect) cost of the service provided. A review of all fees and rates will be conducted at least every five years except for impact fees, which will be reviewed at least every ten years, to determine the extent to which the full costs of associated services are being recovered by revenues. Fees may be adjusted in the interim period by ordinance; however, based on an analysis conducted whenever there have been significant changes in the method, level or cost of service delivery. The General Fund unassigned fund balance will be maintained to provide for temporary financing of unforeseen needs of an emergency, disaster and economic instability. The Financial Policies also provide that the level of the General Fund unassigned fund balance will be a minimum of 7.5% of General Fund expenditures, less debt service and transfers for pay-as-you-go capital expenditures. To the extent that the General Fund unassigned fund balance exceeds 7.5% of total expenditures less debt service and transfers for pay-as-you-go capital expenditures, the excess funds are available for appropriation by City Council for non-recurring expenditures.

Under the heading "Special Revenue Fund Reserve Policy," the Financial Policies state that the proposed and adopted operating budgets for each year must include the budgets of all special revenue funds that are restricted or committed to expenditures for specified purposes other than debt service or capital projects. Each special revenue fund is required to have an appropriate methodology for determining minimum and maximum cash reserves. The Financial Policies also state that any fiscal year-end fund balance that exceeds the established maximum cash reserve of a special revenue fund may be transferred to the General Fund, subject to City Council approval.

Under the heading of "Debt Management Policies," the Financial Policies provide that any capital project financed through the issuance of bonds be financed for a period not to exceed the average expected life of the assets. Average (weighted) general obligation bond maturities will be maintained at or below 12 years. The Financial Policies also provide that annual contributions to the Debt Service Fund from the General Fund not exceed 20% of the total General Fund revenues, excluding state and federal grants, until Fiscal Year 2019. Beginning in Fiscal Year 2019 and in each subsequent fiscal year, the maximum annual contribution to the Debt Service Fund from the General Fund is to be reduced by 0.5% annually until it reaches 12% of General Fund revenues (excluding state and federal grants), at which point the maximum is to be held constant at 12%.

The City's Financial Policies require that an annual audit be performed by an independent public accounting firm in accordance with generally accepted accounting principles. The June 30, 2022 City Controller's audited Annual Comprehensive Financial Report of the City and additional financial information are available for public inspection, or copies may be obtained by written request, to the extent permitted by law, addressed to the Office of the City Controller.

Additionally, the Financial Policies require the Finance Department to annually prepare a five-year General Fund forecast that includes identification of requirements for achieving a "structural balanced budget" in the upcoming fiscal year and the subsequent fiscal year, including a list of options for eliminating any funding shortfalls preventing achievement of a structural balanced budget. If a structural balanced budget was adopted by the City Council, it is expected that the level of expenditure reductions would be materially and significantly higher than currently anticipated.

City Investment Policy

The City maintains an investment strategy that emphasizes, in order of priority, safety, liquidity and return on investment, as embodied in its investment policy (the "Investment Policy"). The City does not invest in inverse floaters, or interest-only or principal-only mortgage-backed securities. The Investment Policy provides, among other things, that (1) the Investment Manager (as defined in the Investment Policy) shall submit quarterly investment reports to City Council and (2) the Investment Policy shall be reviewed annually by City Council. On December 7, 2022, the City Council approved and readopted the Investment Policy with no changes. The Investment Policy aims to further protect City assets by identifying investment objectives, addressing the issues of investment risks versus rewards, and providing the framework for the establishment of controls, limitations and responsibilities of City employees in the performance of their fiduciary responsibilities.

Fitch Ratings, Inc. has assigned a "AAA" credit quality rating to the City's General Investment Portfolio. The ratings reflect the view of Fitch Ratings, Inc., from whom an explanation of the significance of such ratings may be obtained.

The Ordinance provides that all interest and income derived from the deposit and investment of amounts held in all Funds will be transferred or credited monthly to the Revenue Fund and shall constitute Gross Revenues of the Houston Airport System (unless specifically excluded from the definition of Gross Revenues), except as follows: (1) all interest and income derived from deposits and investments credited to the Senior Lien Bond Reserve Fund, the Subordinate Lien Bond Reserve Fund and the Operation and Maintenance Reserve Fund will remain in such funds to the extent necessary to accumulate the Reserve Fund Requirements or other required balance therein; and (2) all interest and income derived from deposits and investments held in any construction fund, including amounts held therein as capitalized interest, created by any ordinance authorizing the issuance of Airport Obligations will remain in such construction fund for disposition in the manner provided in the applicable ordinance. Notwithstanding anything to the contrary contained in the Ordinance, any interest and income derived from deposits and investments of any amounts credited to any fund or account may be paid to the federal government if in the opinion of nationally recognized bond counsel such payment is required in order to prevent interest on any Airport Obligations from being includable within the gross income of the owners thereof for federal income tax purposes.

Health Care Benefits for Retired Employees

The City provides certain health care benefits for its retired employees, their spouses and survivors. Employees on long-term disability and their spouses can also qualify for retiree health care benefits. Currently, substantially all of the City's employees who qualify for pension benefits while working for the City will become eligible for such benefits.

Effective January 1, 2021, the City provides three (3) Medicare plans with two (2) different vendors and has made these plans mandatory for all retirees over age 65 who are eligible for Medicare. The medical plans are supported by contributions from the City and subscribers. In addition to the medical plan and in an effort to mitigate costs and maximize benefits to the City and Medicare eligible retirees, the City offers Medicare Advantage plans from two insurance providers. Effective January 1, 2021, the City awarded a three-year contract with two (2) one-year renewal options to Aetna (Premier ESA PPO and Basic PPO Plans) and Kelsey (HMO Plan). These Medicare Advantage Plans provide retirees with alternative managed healthcare plans. The Medicare Advantage Plans are to be fully insured products and offer retirees the choice of several different plans. The City requires all Medicare-eligible retirees to enroll in a Medicare Advantage Plan.

Funding of Other Post-Employment Benefits

The City currently pays other post-employment benefits ("OPEB") on an annual pay-as-you-go basis, which are accounted for as a current operating expense in the City's financial statements in the Fiscal Year in which the benefit is paid. See the table captioned "Statement of Revenues, Expenditures and Changes in Fund Balances in Governmental Funds" in the City's audited Annual Comprehensive Financial Report for Fiscal Year 2022. The City has taken steps to assess the current and future financial impact of its unfunded OPEB liabilities and continues to review the appropriate policies to address and manage any such liabilities.

Beginning in Fiscal Year 2007, to comply with the Government Accounting Standards Board Statement No. 45 ("GASB 45"), Accounting by Employers for Other Postemployment Benefits, the City reported an actuarially determined cost of OPEBs, other than pensions, such as health and life insurance for current and future retirees. Under GASB 45, the City recognized such cost over the working lifetime of employees to the extent they were not pre-funded and reported such cost as a financial statement liability. In June 2015, the Government Accounting Standards Board issued Statement 74, "Financial Reporting for Postemployment Benefit Plans Other than Pension Plans", and Statement 75, "Accounting and Financial Reporting for Postemployment Benefits Other Than Pensions." Under these statements, state and local government entities that provide OPEBs are required to report the cost of these benefits on their financial statements. The requirements of this statement are effective for financial statements for periods beginning after June 15, 2017 (Fiscal Year end 2018 for the City). Beginning with Fiscal Year 2018, the City is required by GASB 75 to recognize its full OPEB liability on its balance sheet. The financial impact of implementing GASB 75 in Fiscal Year 2018 was an increase in OPEB liability and a decrease in total net position. The decrease in net position is primarily due to the increase in unfunded OPEB liability from previous year. Together with other changes, the City's total net position decreased from $1.86 billion to $792 million in Fiscal Year ended June 30, 2019. The City's total net position was $3,607 million and is $5,881 million as reported in the City's Annual Comprehensive Financial Report for Fiscal Year ended June 30, 2021 and Fiscal Year ended June 30, 2022 respectively. The increase in City's total net position is mainly due to pension and OPEB benefits realized from prior year deferred gains and change in OPEB benefit terms.

The City's most recent actuarial study indicated that, as of June 30, 2022, the City's net OPEB liability is $2.3 billion, the reported Actuarial Determined Contribution (ADC) is $199 million, calculated using a discount rate of 2.16%. The City expects the actuarial report for July 1, 2023 to be completed and received in Fiscal Year 2024.

The City's costs for retiree claim payments and health insurance premiums from the System were approximately $6.1 million in Fiscal Year 2022 and approximately $3.6 million as of March 31, 2023 for Fiscal Year 2023. Including non-system fund sources, payments were approximately $61.5 million at Fiscal Year end 2022 and approximately $48.6 million as of March 31, 2023 for Fiscal Year 2023. To date, the City has not accumulated assets to offset future benefit costs.

Options available to an issuer such as the City to offset or reduce the future OPEB liability that will be reported under GASB 75 include the following:

- Reduction of benefits for new hires, active employees and/or retirees;

- Increase of required contributions from new hires, active employees and/or retirees; and

- Contributing assets or pre-funding with real property, a dedicated revenue stream or other taxes or City assets not yet identified.

See also Note 11 of the City's audited Financial Statements for Fiscal Year 2022 presented in APPENDIX B, which includes information relating to retiree health care premiums paid by the City in Fiscal Year 2022, as well as information relating to health and long-term disability benefits.

Bargaining with Other Municipal Employees

Chapter 146 of the Texas Local Government Code ("Chapter 146"), extends to municipal employees of the City, other than department heads, firefighters and police officers, the right to appoint bargaining agents to "meet and confer" with representatives of the City or any agency, board, commission or political subdivision that is required to establish wages, salaries, rates of pay, hours, working conditions or other terms and conditions of employment regarding such issues. Chapter 146 prohibits municipal employees from engaging in strikes and specifically prohibits the bargaining agent and the City from entering into agreements regarding pension-related matters governed by Article 6243g, Vernon's Texas Civil Statutes, or a successor statute (now Article 6243h, Vernon's Texas Civil Statutes). See "EMPLOYEE PENSION FUNDS." However, any agreement affecting the salaries of municipal employees will likely have a negative effect on the City's pension liabilities. See also "– Health Benefits – Health Benefits for Retired Employees."

Pursuant to the provisions of Chapter 146, the City recognized the Houston Organization of Public Employees ("HOPE") as the exclusive bargaining agent for all covered employees, which generally consist of municipal employees, but not elected officials, directors, or classified firefighters and police officers. On August 4, 2021, City Council enacted an ordinance approving a new "meet and confer" agreement between HOPE and the City (the "2021 HOPE Agreement"). Pursuant to the 2021 HOPE Agreement, "across-the-board" three percent pay increases occurred on October 1, 2021, and July 1, 2022, and will occur on July 1, 2023.

Employee Pension Funds

Prospective investors are advised that any projections or forecasts in the section below, including projections of the amount of the Unfunded Actuarially Accrued Liability ("UAAL") and other calculations of unfunded pension liability and the amounts of actuarially calculated contributions by the City, constitute forward-looking information that reflects the judgment of the City, the boards of the Pension Systems (as defined below) and their respective actuaries as to the funding required to pay future benefits to retirees. Such forward looking information is based upon a variety of assumptions concerning future events and circumstances. Future actuarial studies may differ significantly from current estimates due to factors such as: retirements, terminations, deaths, disabilities, salary growth and investment returns, changes in contributions or investment portfolios, changes in actuarial or accounting standards, and changes in plan provisions, the Pension Statutes (as defined below) or applicable laws. See "– Pension Reform Legislation" below. The assumptions underlying the projections are material to the development of the projections, and changes in one or more of the assumptions may produce substantially different results. In addition to these projections, the City's financial statements as set forth at http://www.houstontx.gov/controller/cafr.html also report Net Pension Liability as required by GASB 68. The Net Pension Liability, as reported in the financial statements, is higher than the UAAL reported in the various actuarial reports of the Pension Systems and has materially changed the City's financial statements relating to the Pension Systems. Such differences reflect, in part, the different methods of valuation employed by accountants and actuaries. Prospective investors are strongly encouraged to review the entirety of Note 10 to the City's Financial Statements at http://www.houstontx.gov/controller/cafr.html for additional information.

Statutory Authority, Governance and Management

Texas statutes authorize three separate pension systems (collectively, the "Pension Systems") for full-time firefighters ("HFRRF" or the "Firefighter Fund"), police ("HPOPS" or the "Police System"), and municipal employees ("HMEPS" or the "Municipal System"). Detailed information regarding the funding of each Pension System is discussed under "– Municipal System," "– Police System," and "– Firefighter Fund" below and in Note 10 to the City's Financial Statements. Each Pension System is a defined benefits plan, which guarantees retiree benefits based on years of service and salary. The City bears the primary financial risk of such plans. Therefore, the City must fund the Pension Systems to pay a retiree's defined benefit regardless of why the Pension System is underfunded.

The Texas Legislature adopted the Pension Reform Legislation (https://legiscan.com/TX/text/SB2190/2017) to enact reforms and substantive changes to the funding and benefit structure of the Pension Systems. The Pension Reform Legislation was effective July 1, 2017 (the "Reform Effective Date") – the first day of Fiscal Year 2018 – and is the culmination of an effort to reform the Pension Systems to control costs, reduce the unfunded liability and better manage future pension costs and liabilities. The risk-sharing corridor implemented in the Pension Reform Legislation provides the City with more budget certainty by establishing minimum and maximum City contribution rates and mandates management of unfunded liabilities by the City and the Pension Systems. Under the Pension Reform Legislation, the City will pay off the unfunded liability (the "Legacy Liability") over a fixed maximum 30-year amortization period ending in 2047. The Legacy Liability was calculated using a standard actuarial cost methodology, based on the market value of each Pension System's assets as of July 1, 2016, after giving effect to the Pension Reform Legislation and delivery of certain pension obligation bonds issued on December 22, 2017 in the aggregate principal amount of $1,005,145,000 (the "2017 POBs") to fund a portion of the Legacy Liability of HMEPS and HPOPS, with earnings at the 7% per annum discount rates and allocable City contributions from July 1, 2016 through the Reform Effective Date. Any future actuarial loss liabilities will have an amortization period of 30 years from the date the loss is recognized, with a corresponding final payoff year and credits for any future gains.

Statutory Authority. The statutes governing the Pension Systems are as follows:

(i) HMEPS: Article 6243h, Vernon's Texas Civil Statutes, as amended (the "HMEPS Statute");

(ii) HPOPS: Article 6243g-4, Vernon's Texas Civil Statutes, as amended (the "HPOPS Statute"); and

(iii) HFRRF: Article 6243e.2(1), Vernon's Texas Civil Statutes, as amended (the "HFRRF Statute" and, collectively with the HMEPS Statute and the HPOPS Statute, the "Pension Statutes").

Below is a description of Pension System governance, the funding of the Pension Systems prior to pension reform, the Pension Reform Legislation and status of funding requirements.

Governance

Each Pension System is separately governed by a board of trustees that acts independently of the City. The Mayor appoints a designee to serve on the board of each Pension System, and the Director of Finance of the City appoints a trustee to the HFRRF Board and the HPOPS Board, while the City Controller appoints a trustee to the HMEPS Board. However, a majority of the trustees serving on each Pension System board are either full-time employees or retirees elected by participants in the respective Pension System and are themselves participants. These trustees have a pecuniary interest in the plan administered by the board of the Pension System on which they serve. All trustees of a Pension System board take an oath to "diligently and honestly administer" such Pension System, and each trustee is counseled and trained on his or her fiduciary responsibilities. Trustees appointed by the City are counseled that his or her fiduciary duties to the Pension System take precedence over the interests of the City and the official that appointed them. No legal challenges have arisen as a result of potential conflicts of interest.

The Pension Systems' boards are generally imbued with broad powers to interpret, construe and supplement omissions in their governing statutes and to determine questions related to eligibility for membership, services and benefits, although their ability to act unilaterally with respect to the reforms enacted as part of the Pension Reform Legislation is limited. The grant of such powers to the Pension System boards may adversely affect the City's ability to manage its Pension Obligations through mechanisms such as reducing the number of City full-time employees by outsourcing certain City functions. In 2004, City voters opted out of an amendment to the Texas Constitution that otherwise would have prohibited a reduction in or impairment of the accrued retirement benefits or death benefits provided by a public employee retirement.

The Pension Systems are funded from City contributions, employee contributions and investment earnings, and the amount of funding required is related to the benefits projected to be paid to retirees. HMEPS and HPOPs are currently underfunded; HFRRF currently has a net pension asset.

Pension System Funding Prior to Pension Reform Legislation

Historically, the Pension Systems calculated unfunded liability as required by each Pension Statute pursuant to actuarial valuation reports prepared by firms retained by each respective Pension System. Prior to the Reform Effective Date, the City and the governing boards of HMEPS and HPOPS would agree to changes in benefits, management, and funding of HMEPS and HPOPS through "meet and confer" agreements authorized under their respective Pension Statutes. Funding plans negotiated through the "meet and confer" process were not necessarily consistent with actuarially-determined contribution levels and component UAALs (determined by a standard actuarial cost method for the respective System) or Net Pension Liability, as determined by GASB 68. The current "meet and confer" agreement between HMEPS and the City is effective until July 1 of the year following the date that the City's annual contribution rate meets or exceeds the actuarial required contribution. The current "meet and confer" agreement between HPOPS and the City is effective until December 2023. From the Reform Effective Date, the Pension Reform Legislation governs most aspects of Pension System funding and City contributions. See "– Municipal System" and "– Police System." Prior to the Reform Effective Date, the HFRRF Statute did not allow "meet and confer" agreements to change or augment benefits, management or funding, and the authority to enter into such agreements under the Pension Reform Legislation is limited.

Pension Reform Legislation

The Pension Reform Legislation (https://legiscan.com/TX/text/SB2190/2017) amended the HMEPS Statute, the HPOPS Statute and the HFRRF Statute and codified portions of the meet and confer agreements between the City and HMEPS and HPOPS. The Pension Reform Legislation includes recognition of unrealized losses in the Pension Systems and reductions in both anticipated earnings and the discount rate used to calculate the City's future payments to 7.00% (which is lower than the discount rate assumptions used by the Pension Systems to the Reform Effective Date), reductions in planned benefits, amortization of the Legacy Liability (see "– Legacy Liability") over a fixed maximum 30-year period, and a limit on the maximum future City payments as a percentage of active employee payroll. For a comparison of actuarial liabilities of each Pension System before and after the Pension Reform Legislation, see "– Status of Funding of the Pension Systems."

The Pension Reform Legislation augments the principle provisions of the existing agreements between HMEPS and the City and HPOPS and the City, and authorizes future agreements between HMEPS, HPOPS and HFRRF under limited circumstances. Moreover, to the extent there is any conflict between the Pension Reform Legislation and any separate "meet and confer" agreements between HMEPS and the City, or HPOPS and the City, the Pension Reform Legislation controls; thus, any future agreements may not affect the calculation, payment of City obligations or benefit structure unless they conform to limitations and scope set forth in the Pension Reform Legislation. With respect to the enforcement of meet and confer agreements, the Texas Supreme Court has held that agreements under the Pension Statutes are contracts and do not amend the statutes. A suit for breach of such an agreement by either the City or a Pension System could be subject to governmental immunity. See "– Pending Pension System Litigation."

The Pension Statutes in the Pension Reform Legislation enacted certain changes to the Pension Statutes, including:

<u>Benefits and Contributions</u>. The Pension Reform Legislation reduced future benefits and increased current employee contributions. No payments to existing retirees were reduced by the proposed amendments, but cost of living adjustments ("COLAs") for current retirees were suspended for up to three years.

<u>Unfunded Liability</u>. The unfunded pension obligation was reduced by the benefit changes (See "– Legacy Liability" below), amortized and required to be paid by the City over a fixed maximum 30-year period.

<u>Future Costs</u>. The Pension Reform Legislation requires that future costs of the Pension Systems be calculated each Fiscal Year by actuarial valuations separately performed by each of the respective Pension Systems and the City. The annual valuation establishes the City's legally mandated payments to meet the costs of the respective Pension Systems.

Risk Sharing. The City and the Pension Systems share the risk that returns on pension assets are less than projected so that the City's maximum annual contribution is capped.

Utilizing lower long-term discount rate assumptions, the total recalculated GASB Net Pension Liability of the Pension Systems as of July 1, 2016 was estimated by the City to be approximately $8.21 billion. The City estimates the Pension Reform Legislation reduced the recalculated GASB Net Pension Liability by approximately $2.9 billion, without giving effect to the 2017 POBs, which paid down the Legacy Liability of HMEPS and HPOPS. See "– Legacy Liability." As of June 30, 2021, the net Pension Liability was estimated to be approximately $1.5 billion. Certain of the estimates used herein depend upon the data provided by the Pension Systems and are subject to its completeness and accuracy. Such data is in the sole control of the respective Pension System.

The following is a general description of the principal benefit changes implemented by the Pension Reform Legislation.

Benefits Reforms. In order to reduce and reform pension costs related to each Pension System, the Pension Reform Legislation (i) increased the age at which an employee can retire with full benefits for HPOPS and HFRRF; (ii) reduced the amount of benefits accrued in each year for HFRRF; and (iii) changed the types of pay included in salary for pension benefit calculations for HFRRF and HPOPS. Significantly, the Pension Reform Legislation suspended COLA increases for up to three years. The minimum guaranteed COLA for future benefits was reduced, and the age at which COLAs begin for retirees increased from no minimum age to age 55 for HPOPS retirees and from age 48 to age 55 for HFRRF retirees.

The Pension Reform Legislation substantially changed the Deferred Retirement Option Plans ("DROP") for active employee members of HFRRF and HPOPS. DROP allows an active employee to be paid a salary and have the monthly pension benefit the employee would have received as a retiree credited to the DROP account. Credited benefits accumulate and are paid to the employee (or retiree, as applicable) as a lump sum, with attributed earnings and COLA increases, if any, at the end of the employee's period of participation therein. Under the Pension Reform Legislation, the ability of active employees to enter the DROP program has been restricted by reducing the period during which an employee can enter such program. Over time, the legislation eliminates the opportunity for all employees to participate in the DROP program. Earnings reflect actual earnings of the applicable pension fund, with the payment guaranteed by the applicable Pension System. Prior to the Pension Reform Legislation, earnings attributed to a DROP account might not have reflected actual earnings of the appropriate pension fund, but payment thereof was guaranteed by the Pension System and, ultimately, the City. Additionally, among other changes, earnings on amounts credited to DROP accounts are aligned with expected earnings of the respective Pension Systems and COLAs for monthly DROP payments have been eliminated.

The Pension Reform Legislation increased employee contributions for each Pension Systems. Additionally, with respect to HMEPS, it reduced survivor benefits generally from 100% to 80% of the retirement benefit to which a deceased member would have been entitled. For HMEPS, a cash balance plan component was added for group D members, which is comprised of employees hired after January 1, 2008. In addition to the required employee contribution for group D members, the Pension Reform Legislation requires each group D member to contribute an additional 1.0% of salary to be credited to a notional cash balance plan account on the member's behalf. Such amounts are credited with earnings at a rate equal to the discount rate on amounts credited to an eligible member's DROP account. See "– Municipal System."

Legacy Liability. The Pension Reform Legislation implements a fixed maximum 30-year closed period (as opposed to the rolling 30-year open period used prior to pension reform) to amortize the Legacy Liability. Based on the separate risk sharing valuation studies conducted by each respective Pension System and for the City, the Legacy Liability for HMEPS is calculated to be $2.0 billion as calculated by the City's actuary, compared to $2.1 billion as calculated by the Pension System actuary; for HPOPS it is $1.3 billion, as calculated by the Pension System actuary, compared to $1.4 billion as calculated by the City's actuary; and for HFRRF it is $900 million, as calculated by the Pension System actuary, compared to $602 million as calculated by the City's actuary.

Future Costs. Costs of the Pension Systems arising after the Reform Effective Date are required to be calculated each Fiscal Year by actuarial valuations separately carried out by the respective Pension Systems and the City. The annual actuarial valuations establish the City's required payments to meet Pension System costs, based on pension system normal costs and unfunded accrued liabilities. New liability losses will be amortized over a new 30-year period. New liability gains will be amortized over the remaining period of the largest remaining liability loss layer or, if there is none, 30 years.

Risk Sharing. The Pension Reform Legislation enacted a risk sharing and cost control mechanism. Under the risk sharing mechanism, the City and each Pension System are required to share information and cooperate to evaluate the performance of the Pension System. The City and each Pension System are required to conduct an annual valuation study (the "RSVS"), which is subject to review by the Texas Pension Review Board. The City's contribution rates for future Fiscal Years will be calculated by each subsequent year's RSVS. The initial RSVS process set the City's projected future contribution rates and the corridor midpoints as a percentage of projected pensionable payroll for each Pension System for the next 31 years beginning in Fiscal Year 2018. For years one through 30, the corridor midpoint for HMEPS ranges from 8.17% in Fiscal Year 2018 to 8.81% in Fiscal Year 2047. Similarly, for HPOPS the corridor midpoint ranges between 31.77% in Fiscal Year 2018 to 32.13% in Fiscal Year 2047, while the corridor midpoint for HFRRF is constant at 31.89% for the 30-year period. The projected contribution rates and the annual contribution rates for HPOPS and HFRRF include the amortization of the Legacy Liability. The annual cost of amortization of the Legacy Liability for HMEPS is excluded from the calculation of projected and annual contribution rates; however, the HMEPS Legacy Liability is paid on a fixed-dollar schedule rather than based on a percentage of pensionable payroll. Because pensionable payroll for each Pension System is projected to increase, the actual dollar amounts required to be paid based on the projected corridor midpoints and contribution rates are also projected to increase.

Under the Pension Reform Legislation, because the differences in the calculations for HPOPS and HMEPS by the City and such Pension System for any year were less than two percent of projected payroll, the Pension System's calculations were used to establish the corridor midpoints for future years. Because the differences in HFRRF and the City's calculations for each year were greater than two percent of projected payroll, the arithmetic means of the City and Pension System calculations were used to establish the corridor midpoints.

The City bears the risk of pension contribution costs increasing up to 5% of pensionable payroll above the corridor midpoint. If the increase is greater than 5% of the pensionable payroll, then steps must be taken, including the reduction of benefits or increase of Pension System member contributions, to reduce the City's cost. Conversely, if costs are 5% of pensionable payroll less than projected for any plan, steps must be taken to maintain the City's contribution at the minimum level. If on or after July 1, 2021, the funded ratio of HPOPS or HFRRF is less than 65% as determined in an RSVS, then the City and the Pension System are required to establish a cash balance retirement plan for any new participants in HPOPS or HFRRF, as applicable. If on or after July 1, 2027, the funded ratio of HMEPS is less than 60% as determined in an RSVS, then the City and the Pension System are required to establish a cash balance retirement plan for any new participants in HMEPS.

The City has identified the following investment consideration, but any potential investor should consult his or her own advisor, recognizing that additional risks may occur with implementation of the Pension Reform Legislation. The RSVS requires the sharing of information and comparison of results by the City and each Pension System. Although the Pension Reform Legislation requires the City and each Pension System to conduct the RSVS and to share information, failure to do so by the City or a Pension System could result in litigation or other enforcement efforts that could delay conduct of the RSVS in any year. If a Pension System fails to provide information, the City may conduct its RSVS based on estimates, but the estimated payments could carry a greater risk of under- or over-payments by the City.

Status of Funding of the Pension Systems

The following information is based on reports prepared reflecting the current system of funding and benefits under the Pension Statutes. <u>The Airport System is only directly responsible for the costs of funding the portion of the Municipal System associated with employees of the Airport System.</u>

As stated in the Fiscal Year 2023 adopted budget, the total amount of the City's contribution to the Pension Systems for Fiscal Year 2023 will be approximately $464 million, which represents an approximate increase of $33 million above the Fiscal Year 2022 budget. See "– Municipal System," "– Police System" and "– Firefighter Fund." The annual contribution to the Pension Systems is sufficient to fund the annual cost of amortizing the Legacy Liability and the normal and administrative costs of the Pension Systems.

Changes in pension accounting rules resulted in significant changes to the presentation of the City's liabilities for each Pension System in its financial statements beginning in Fiscal Year 2015. For a comparison of the liabilities, see "– Net Pension Liability (Asset) Under GASB 67 and 68" below as well as Note 10 to the City's Financial Statements. GASB 67 and 68 do not affect the City's pension contributions or contribution rates.

The City has historically funded the Pension Systems in amounts agreed upon by the City and the respective boards of the Pension Systems either (i) as part of jointly-sponsored changes in State law or (ii) in negotiations with the Municipal System's and Police System's respective boards through the "meet and confer" process.

The annual contribution to the Pension Systems is sufficient to fund the annual cost of amortizing the Legacy Liability and the normal and administrative costs of the Pension Systems.

Net Pension Liability (Asset) Under GASB 67 and 68. As reflected in the schedule below, the financial statements reflect a calculation of the City's Net Pension Liability to describe the City's funding obligation to the Pension Systems. The "Net Pension Liability (Asset)" is the difference between the City's "Total Pension Liability" and the "Fiduciary Net Position" under each respective Pension System's plan. The Total Pension Liability is the present value of pension benefits allocated to current members because of past service by the entry age normal actuarial cost method. It includes benefits related to projected salary and service and automatic cost of living adjustments. In addition, the ad hoc cost of living adjustments is included in the Total Pension Liability to the extent it is substantially automatic. Fiduciary Net Position is determined on the same basis used by each individual Pension System.

The City's Net Pension Liability (Asset) was measured as of June 30, 2022. For a more detailed break-out of Net Pension Liability (Asset) for each Pension System, see Note 10 to the City's Financial Statements.

NET PENSION LIABILITY (ASSET) AS OF JUNE 30, 2022
(in thousands)

	HFRRF	HMEPS	HPOPS
Total Pension Liability	$4,963,438	$5,562,146	$7,585,734
Fiduciary Net Position	(5,093,736)	(3,952,351)	(6,861,988)
Net Pension Liability (Asset)	$ (130,298)	$1,609,795	$723,746

Schedule 9: Actuarially Determined Contribution Amounts and Changes in Pension Plan Assets

Each part of the following schedules should be read in conjunction with the sections that follow describing in more detail the Pension Systems individually. Such information is historic, and prior to Fiscal Year 2018, does not reflect the Pension Reform Legislation calculation of the City's required contributions. See "– Employee Pension Funds – Pension Reform Legislation – Risk Sharing." Part 1 sets forth for each of the Fiscal Years 2018 through 2022 the amount of the annual pension cost to the City and the percentage contribution made by the City to each Pension System.

Part 2 sets forth for each of the Fiscal Years 2018 through 2022 actuarially determined amounts and actual City pension contribution amounts as a percentage of payroll. Part 3 sets forth certain information from the City's financial statements for Fiscal Year 2022 (June 30, 2022). The schedules reflect annual pension costs and contributions after the Reform Effective Date. See "Employee Pension Funds – Pension Reform Legislation."

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Part 1: Annual Pension Costs and Contributions Made[a]
(in millions)

	Municipal System			Police System			Firefighter Fund		
Fiscal Year	Annual Pension Cost	City Contrib.	Percent Contrib.	Annual Pension Cost	City Contrib.	Percent Contrib.	Annual Pension Cost	City Contrib.[b]	Percent Contrib.
2018[c]	383.9	171.6	45	353.3	137.1	39	210.4	83.0	39
2019	366.1	176.3	48	330.3	142.4	43	227.3	89.9	40
2020	382.9	176.4	46	297.2	149.1	53	232.4	83.8	36
2021	64.4	184.8	35	(87.6)	151.1	58	(65.5)	77.5	85
2022	38.8	197.3	20	86.5	152.4	57	(72.5)	81.4	89

[a] For further details, see the City's Financial Statements for Fiscal Year 2022, particularly the section captioned "Required Supplementary Information."
[b] Contribution amounts are determined by the applicable Pension Statute.
[c] City contribution amounts exclude the 2017 POBs in the amount of $250 million for HMEPS and $750 million for HPOPS.

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Part 2: Actuarially Determined Contribution Amount and Actual City Contribution as a Percentage of Payroll[a][b]

Fiscal Year	Municipal System Actuarial	Municipal System Actual	Police System Actuarial	Police System Actual	Firefighter Fund Actuarial	Firefighter Fund Actual
2018[c]	27.8%	28.1%	31.8%	33.2%	31.9%	31.9%
2019[d]	28.9	28.7	31.9	32.0	33.0	33.0
2020[e]	29.3	28.2	31.8	32.1	32.3	32.3
2021[f]	29.5	28.7	31.8	31.9	31.9	31.9
2022[g]	29.5	29.0	31.9	32.0	31.9	31.9
2023[h]	29.8	TBD	31.9	TBD	26.9	TBD

[a] For further details, see the City's Financial Statements for Fiscal Year 2022, particularly Note 10 and the section captioned "Required Pension System Supplementary Information." Actuarial numbers from the funding valuations prepared by the Pension Systems may be different from the GASB 68 accounting valuations used to prepare the City's financial statements.

[b] Adopted actuarial reports for the respective Pension System for actuarially determined percentages and internal City figures for actual contribution percentages. See "—*Municipal System*," "—*Police System*" and "—*Firefighter Fund*."

[c] Source: HMEPS Final Initial Risk Sharing Valuation Study as of July 1, 2016; HPOPS Final Risk Sharing Valuation Study as of June 30, 2016; and Joint Addendum to HFRRF Final Initial Risk Sharing Valuation Study as of July 1, 2016.

[d] Source: HMEPS Risk Sharing Valuation Study as of July 1, 2017; HPOPS Risk Sharing Valuation Study as of July 1, 2017; and HFRRF Joint Addendum to Final Risk Sharing Valuation Study for Fiscal Year 2019. Actual Contributions for Fiscal Year 2019 are per the City's annual financial statements for Fiscal Year 2019. The HMEPS actuarial percentage for Fiscal Year 2019 is calculated based on 8.27% of payroll plus $127 million. Using HMEPS's payroll assumption, the rate is approximately 28.9%.

[e] Source: HMEPS Risk Sharing Valuation Study as of July 1, 2018; HPOPS Risk Sharing Valuation Study as of July 1, 2018; and HFRRF Joint Addendum to Final Risk Sharing Valuation Study for Fiscal Year 2020. Actual contributions for Fiscal Year 2020 are budgeted and equal the required actuarial contribution. The HMEPS actuarial percentage for Fiscal Year 2020 is calculated based on 8.32% of payroll plus $131 million. Using HMEPS's payroll assumption, the rate is approximately 29.3%.

[f] Source: HMEPS Risk Sharing Valuation Study as of July 1, 2019; HPOPS Risk Sharing Valuation Study as of July 1, 2019; and HFRRF Joint Addendum to Final Risk Sharing Valuation Study for Fiscal Year 2021. Actual contributions for Fiscal Year 2021 are budgeted and equal the required actuarial contribution. The HMEPS actuarial percentage for Fiscal Year 2021 is calculated based on 8.36% of payroll plus $134.5 million. Using HMEPS's payroll assumption, the rate is approximately 29.5%.

[g] Source: HMEPS Risk Sharing Valuation Study as of July 1, 2020; HPOPS Risk Sharing Valuation Study as of July 1, 2020; and HFRRF Joint Addendum to Final Risk Sharing Valuation Study for Fiscal Year 2022. Actual contributions for Fiscal Year 2022 are budgeted and equal the required actuarial contribution. The HMEPS actuarial percentage for Fiscal Year 2022 is calculated based on 8.41% of payroll plus $138.2 million. Using HMEPS's payroll assumption, the rate is approximately 29.5%.

[h] Source: HMEPS Risk Sharing Valuation Study as of July 1, 2021; HPOPS Risk Sharing Valuation Study as of July 1, 2021; and HFRRF Final Risk Sharing Valuation Study for Fiscal Year 2023. Actual contributions for Fiscal Year 2023 are budgeted and equal the required actuarial contribution. The HMEPS actuarial percentage for Fiscal Year 2023 is calculated based on 8.44% of payroll plus $142.0 million. Using HMEPS's payroll assumption, the rate is approximately 29.8%.

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Part 3: Changes in Pension Plan Assets[a]
(in millions)

Fiscal Year 2022	Municipal	Police	Fire	Total
Additions[b]	$ 419.4	$ 103.9	$ 112.8	$ 636.1
(Deductions)[c]......................................	(334.1)	(379.1)	(275.8)	(989.1)
Net Increase/(Decrease).......................	$ 85.3	$ (275.3)	$ (163.0)	$ (353.0)
City's Total Contribution.....................	$ 197.3	$ 152.3	$ 81.3	$ 430.9

(a) Source: Pension Systems Financial Statements for Fiscal Year 2022.
(b) Includes contributions by the employees and the City, net increase (decrease) in the fair value of investments, income from investments, and other income.
(c) Includes benefits paid to members, refunds to members, and other costs, including professional services and administrative expenses.

Houston Airport System's Contributions to the Municipal System

The Fiscal Year 2023 Budget provides that the Airport System will be responsible for approximately $21.3 million of the City's $213.7 million contribution to the Municipal System. In Fiscal Year 2022, the Airport System was responsible for approximately $20.1 million of the City's $197.3 million contribution to the Municipal System.

In addition to the cash contributions made by the City, the City has issued $448 million in Pension Obligations for the benefit of HMEPS. Although these bonds are secured by a pledge of ad valorem tax revenues, the Houston Airport System is responsible for repaying its pro-rata share of debt service on $2.0 million of pension obligation bonds issued by the City in 2005. Interest expense on these bonds is $106,500 per year. Principal payments will begin in Fiscal Year 2029. In January 2009, the City refunded its $300 million 2004 Collateralized Pension Note (the "Pension Note"). The Houston Airport System did not financially participate in the transaction, but instead paid $34.8 million as a cash contribution. In Fiscal Year 2018, the Houston Airport System transferred to the City $27.61 million for its pro-rata share of the principal payable on the 2017 POBs on March 1, 2019. The Houston Airport System also paid its share of interest in Fiscal Year 2019, totaling approximately $608,248 and now has no continuing obligation on such 2017 POBs.

Municipal System

The Municipal System is a contributory defined benefits pension program that provides benefits to most municipal employees (other than classified police officers and firefighters) pursuant to three different programs. Employees hired prior to January 1, 1999 had a choice to enroll in either a contributory defined benefit program ("Group A") under which, prior to the Reform Effective Date, the employees contributed 5% of their salary to the plan or a non-contributory plan ("Group B"). Employees hired between January 1, 1999 and January 1, 2008 are provided benefits pursuant to the Group A program. Employees hired after January 1, 2008 are covered by a defined benefit plan ("Group D") which, prior to the Reform Effective Date, was non-contributory. The HMEPS Risk Sharing Valuation Studies post July 1, 2019 do not provide classification of active employees by their Groups. Prior year's study reports that 40.89% of active employees of the City were enrolled in Group A, 10.23% were enrolled in Group B and 48.88% were enrolled in Group D. After the Reform Effective Date, Group A employees contribute 8% of their salary, Group B employees contribute 4% of their salary, and Group D employees contribute 2% of salary, plus 1% of salary placed in a notional cash balance plan account.

For Fiscal Year 2018 and thereafter, the annual contribution is governed by the Pension Reform Legislation, and annual contributions for Fiscal Year 2022 to the Municipal System was 8.41% of payroll plus $138.2 million, equating to roughly 29.5% of payroll. The Fiscal Year 2023 Budget includes annual contributions to the Municipal System of 8.44% of payroll plus $142.0 million, equating to roughly 29.8% of payroll.

Municipal System Fiscal Year Funding. The City budgets its contributions by allocating the cost between its General Fund and Enterprise Funds based upon the nature of the employment of the covered employees. Fiscal Year 2022 provides that the General Fund was responsible for approximately $59.7 million of the City's approximately $197.3 million contribution to the Municipal System (approximately 8.41% of payroll plus $138.2 million); the Fiscal Year 2023 adopted budget provides that the General Fund is responsible for approximately $68.5 million of the City's estimated $228.3 million contribution to the Municipal System (approximately 8.44% of payroll plus $142.0 million).

Schedule 9A: Municipal System Pension Plan Assets, Liabilities and Unfunded Actuarial Accrued Liability[(a)]
(in millions)

	As of July 1,				
	2018[(b)]	2019	2020	2021	2022
Actuarial Accrued Liability	$4,982	$5,091	$5,196	$5,290	$5,428.6
Actuarial Value of Plan Assets[(c)]	2,875	3,019	3,074	3,323	3,573.4
Unfunded Actuarial Accrued Liability	$2,107	$2,072	$2,122	$1,967	$1,855.2
Funded Ratio	57.7%	59.3%	59.2%	62.8%	65.8%

(a) Source: Municipal System Actuarial Valuation Reports. This information is no longer presented in the City's financial statements.
(b) Source: HMEPS Risk Sharing Valuation Study as of July 1, 2017. These values are post Reform Effective Date, and reflect a reduction in the discount rate, changes in future benefits, and delivery of the proceeds of the 2017 POBs.
(c) The actuarial value of plan assets is determined by the actuary for HMEPS. Such value was calculated using a generally accepted method of recognizing market gains and losses (relative to the assumed discount rate) over a five-year period.

Police System

The Police System is a contributory defined benefits pension program that provides benefits to the City's classified police officers. Prior to the Reform Effective Date, the City's annual contributions were determined through the "meet and confer" process; the board of trustees of the Police System and the City entered into an agreement in 2004, as amended in 2011, referred to herein as the "HPOPS Agreement."

Police System Fiscal Year Funding. The General Fund covers substantially all of the City's contributions to the Police System. The Fiscal Year 2022 set the contribution to HPOPS at approximately $152.4 million. The Fiscal Year 2023 Budget sets the contribution to HPOPS at approximately $165.2 million as determined by the Pension Reform Legislation.

The schedule below reflects actuarial accrued liability, actuarial value of plan assets, unfunded actuarial accrued liability or surplus and funded ratio for each of the years 2018 - 2022. The information contained therein is derived from the HPOPS actuarial valuation reports from July 1 in each of the respective years. The schedule reflects annual pension costs and contributions prior to and following the Reform Effective Date. See "– Employee Pension Funds – Pension Reform Legislation."

Schedule 9B: Police System Pension Plan Assets, Liabilities and Unfunded Actuarial Accrued Liability[(a)]
(in millions)

	2018	2019	2020	2021	2022
Actuarial Accrued Liability	$6,464	$6,655	$6,835	$7,121	$7,381.2
Actuarial Value of Plan Assets[(b)]	5,129	5,435	5,631	6,082	6,459.4
Unfunded Actuarial Accrued Liability	$1,335	$1,220	$1,204	1,309	$921.9
Funded Ratio	79.3%	81.7%	82.4%	85.4%	87.5%

(a) Source: Police System Actuarial Valuation Reports. This information is no longer presented in the City's financial statements due to the implementation of GASB 68.
(b) The actuarial value of plan assets is determined by the actuary for the Police System. Such value was calculated using a generally accepted method of recognizing market gains and losses (relative to the assumed discount rate) over a five-year period.

Firefighter Fund

The Firefighter Fund provides benefits to the City's classified firefighters and is structured as a contributory defined benefits pension program. Prior to the Reform Effective Date, each fund member in active service made contributions to the fund in an amount equal to 9% of the member's salary at the time of the contribution. Under the Pension Reform Legislation, a firefighter must contribute 10.5% of his or her pensionable pay.

Prior to the Reform Effective Date, State law provided that the City's contribution to the Firefighter Fund be the greater of (i) two times the firefighter's contribution or (ii) an actuarially determined rate established at least once every three years. The City's contribution is now determined by the RSVS process. See "– Pending Pension System Litigation" regarding the firefighter lawsuit relating to the Pension Reform Legislation.

Firefighter Fund Fiscal Year Funding. The General Fund covers substantially all of the City's contributions to HFRRF. The Fiscal Year 2022 contribution to HFRRF is approximately $81.4 million. The Fiscal Year 2023 Budget sets the contribution at approximately $70.6 million as determined by the Pension Reform Legislation. For a discussion of certain lawsuits related to the HFRRF, see "– Pending Pension System Litigation.

The schedule below reflects actuarial accrued liability, actuarial value of plan assets, unfunded actuarial accrued liability or surplus and funded ratio for 2018 to 2022. The information contained therein is derived from the HFRRF Actuarial Valuations from July 1 in each of the respective years. See "– Employee Pension Funds – Pension Reform Legislation."

Schedule 9C: Firefighter Fund Pension Plan Assets, Liabilities and Unfunded Actuarial Accrued Liability[(a)]
(in millions)

	2018	2019	2020	2021	2022
Actuarial Accrued Liability	$4,948	$5,058	$4,932	$4,882	$5,076
Actuarial Value of Plan Assets[(b)]	4,027	4,191	4,252	4,550	4,844
Unfunded Actuarial Accrued Liability	$ 921	$ 867	$680	$332	$232
Funded Ratio	81.4%	82.9%	86.2%	93.2%	95.4%

(a) Source: Firefighter Fund Actuarial Valuation Reports. This information is no longer presented in the City's financial statements.
(b) The actuarial value of the plan assets is determined by the actuary for the HFRRF. Such value was calculated using a generally accepted method of recognizing market gains and losses (relative to the assumed discount rate) over a five-year period.

Pending Pension System Litigation

Firefighter Litigation Regarding Pension Reform Legislation. The City currently is involved in lawsuits against the Houston Firefighters' Relief and Retirement Fund (the "Firefighter Fund"). In Houston Firefighters' Relief and Retirement Fund v. City of Houston, et. al., filed on May 30, 2017, the Firefighter Fund sued the City and various City officials asserting a facial challenge to the constitutionality of the Pension Reform Legislation passed in the 2017 legislative session and sought injunctive relief and declaratory judgment in respect to such legislation. After favorable rulings for the City in the district court and court of appeals, the Firefighter Fund filed a petition for review in the Supreme Court seeking to challenge the appeals court ruling. On March 13, 2020, the Supreme Court denied the petition for review filed by the Firefighter Fund and the deadline for it to file any motion for rehearing has passed.

On July 26, 2019, the Firefighter Fund filed a separate, constitutional challenge to the Pension Reform Legislation largely asserting the same allegations and arguments as its first suit, but alleging that in its application the Pension Reform Legislation was unconstitutional. In this second case, the Firefighter Fund has sued the City and various City officials and the Attorney General of Texas On October 7, 2020, the trial court entered a final order/judgment in favor of the Firefighter Fund granting its motion and finding the Pension Reform Legislation unconstitutional. On August 30, 2022, the Texas Court of Appeals reversed the trial court's motion. The Court of Appeals, therefore, held in favor of the City of Houston. The Fund appealed to the Texas Supreme Court. On March 10, 2023, the Texas Supreme Court denied the Fund's petition for review. The Fund had 15 days to file a motion for rehearing. This deadline has passed and the case is over. It ends with a win for the City.

City Charter Tax and Revenue Propositions

General

In addition to certain constitutional and statutory limitations described above, the City may limit, increase or change the revenue resources available during a given Fiscal Year, either by voter authorization as provided by the City Charter or by amending the City Charter itself. The City Charter may not be amended more frequently than once every two years. Voters of the City have limited increases in ad valorem tax revenues and other revenues in Proposition 1 (codified in Article III, Sec. 1 and Article IX, Sec. 20, City Charter) and Proposition 2 (codified in Article VI-a, Sec. 7, City Charter, but not effective). Voters also have increased available revenue sources in Proposition G (codified in Article IX, Sec. 21, City Charter) and Proposition H, which did not amend the City Charter. Notwithstanding any limitations on revenue described below, the City Charter provides that, in preparing the City's budget, provision shall first be made for the payment of debt service on the City's outstanding Tax Obligations, with remaining revenues to be apportioned among the City's respective departments. In future Fiscal Years, the amount of the tax levy allocated to debt service may need to be increased, reducing the amount available for the delivery of essential governmental services unless there is a corresponding increase in the overall tax levy or other revenues.

Proposition 1 and Proposition 2 (2004)

In 2004, voters approved Proposition 1 (now codified as Article III, Sec. 1 and Article IX, Sec. 20, City Charter) in order to limit increases in (i) the City's ad valorem tax revenues by requiring voter approval for increases in ad valorem taxes in future years above a limit equal to the lesser of the actual revenues in the preceding Fiscal Year, plus 4.5%, or a formula that is based upon the actual revenues received in Fiscal Year 2005 adjusted for the cumulative combined rates of inflation and the City's population growth; and (ii) water and sewer rates (i.e., the City's Combined Utility System) by limiting rate increases to the combined increases in the rates of inflation and population growth, excluding rate increases required by certain bond covenants and rates established by contract, unless approved by the voters. At the same election, the voters also approved Proposition 2 (Article VI-a, Sec. 7, City Charter), which proposed to limit increases in the City's "combined revenues," including revenues of the General Fund, Special Funds and Enterprise Funds. Based on the specific language of Proposition 1 and Proposition 2, the number of votes for each proposition, and the language of the City Charter, the City declared that Proposition 2 was not effective.

Proposition 2 Litigation

Supporters of Proposition 2 filed a lawsuit to declare Proposition 2 effective. After protracted litigation, on August 26, 2011, the Texas Supreme Court vacated the judgment of the trial court (for lack of ripeness) without reference to the merits and dismissed the case for want of jurisdiction. In April 2014, the suit was refiled. The court granted the City Defendant's Motion for Summary Judgment on September 16, 2019 and denied plaintiffs' Motion for Summary Judgment. On October 4, 2019, the trial court held a bench trial on the remaining issues. On October 29, 2019, the trial court held for the City Defendants, ordering that the plaintiffs take nothing. The parties cross appealed and on October 12, 2021, the court of appeals issued a 2-1 decision affirming the trial court's ruling. The remaining plaintiff filed a petition for review in the Texas Supreme Court. On April 21, 2023, the Texas Supreme Court reversed the judgment of the court of appeals, in part, and affirmed the trial court's judgment ruling that the City has complied with Proposition 1. The City has asked for a rehearing on several issues and the case remains pending in the Texas Supreme Court.

Propositions G and H

In response to Proposition 1 and Proposition 2, the City held an election on November 7, 2006, at which the voters approved Proposition G and Proposition H, both of which are currently effective. Proposition G amended the City Charter to exclude revenues of the City's enterprise systems (i.e., Combined Utility System, Houston Airport System and the Convention and Entertainment Facilities Department) from the types of revenues limited under the City Charter. Voter approval of Proposition G removed the enterprise systems from the revenue limitations of Proposition 2, although the limitation on water and sewer rate increases included in Proposition 1 remains in effect. Consequently, the Houston Airport System revenues are exempted from the revenue limitations imposed on the City by Propositions 1 and 2. Proposition H allows the City to collect and spend up to $90 million of revenue, over and above any Proposition 2 limitations, for increased police, fire and emergency medical services and related matters. The amount collected and spent in each year becomes part of the base revenue calculations for the following year. Propositions G and H are incorporated into the City's Financial Policies (defined below), and the City has collected revenues and made expenditures for public safety purposes in compliance with Proposition H.

Proposition B Litigation

On November 6, 2018, the voters approved a proposition adding a charter amendment ("Proposition B") to cause the City to compensate its firefighters in an amount that is "at least equal and comparable by rank and seniority" to the City's police officers. Proposition B does not identify a revenue source, create a new revenue source or define what "equal and comparable" means with respect to police officers and firefighters.

On May 15, 2019, the Harris County District Court granted the City's Motion for Summary Judgment and ruled that Proposition B is preempted in its entirety and unconstitutional.

The Firefighter Union appealed, and in a 2-1 decision, the Fourteenth Court of Appeals reversed the trial court's order. On November 12, 2021, the City filed a petition for review with the Texas Supreme Court, and the case has been fully briefed. The Texas Supreme Court heard oral argument in November of 2022. On March 31, 2023, the Texas Supreme Court issued an opinion holding Proposition B conflicted with Chapter 174 of the Texas Local Government Code and remanded the case back to the trial court on the issue of the applicability of Chapter 174.

LITIGATION AND REGULATION

Houston Airport System Claims and Litigation

The City is aware of various pending claims and lawsuits associated with the operation of the Houston Airport System. These include, but are not limited to, certain personal injury claims, claims involving rents and charges and property disputes. The City intends to defend itself vigorously against these claims and lawsuits; however, no prediction of the City's liability with respect to the claims, or the final outcome of the lawsuits, can be made at this time. In the opinion of management of the Houston Airport System, it is improbable that such claims and lawsuits now outstanding against the City that are associated with the operation of the Houston Airport System could become final in a time and manner so as to have a material adverse financial impact upon the operations of the City or the Houston Airport System.

Other Claims and Litigation Affecting the City

The City is a defendant in various lawsuits and is aware of pending claims arising in the ordinary course of its municipal and enterprise activities, certain of which seek substantial damages. That litigation includes lawsuits claiming damages that allege that the City caused personal injuries and wrongful deaths; class actions and other lawsuits and claims alleging discriminatory hiring and promotion practices and certain civil rights violations arising under the Federal Voting Rights Act; various claims from contractors for additional amounts under construction contracts; claims involving property tax assessments; suits over the validity of City ordinances and over their enforcement; suits alleging non-compliance with certain federal and state environmental statutes; and various other liability claims. The status of such litigation ranges from an early discovery stage to various levels of appeal of judgments both for and against the City. The amount of damages is limited in certain cases under the Texas Tort Claims Act and is subject to appeal. The City intends to defend itself vigorously against the suits; however, no prediction can be made, as of the date hereof, with respect to the liability of the City for such claims or the final outcome of such suits.

The City is also aware that various claims for inverse condemnation have been and may be asserted against the City in connection with the City's operations, the aggregate amounts of which are unknown. The City intends to defend itself vigorously against all such inverse condemnation claims; however, the City's liability with respect to these claims cannot be predicted.

State Legislation

Although the City is a home-rule city under the Texas Constitution, it may not adopt ordinances or charter provisions inconsistent with Texas law. The Texas Legislature may enact legislation that (i) materially increases the costs and expenditures of the City or (ii) reduces the ability of the City to collect ad valorem taxes or other revenues described herein. Under the Texas and United States Constitutions, the Texas Legislature may not, however, enact legislation that impairs the City's ability to pay principal of and interest on its indebtedness.

The Texas Legislature meets in regular session in odd numbered years for 140 days. The 88th Texas Legislature began on January 10, 2023 and ended on May 29, 2023. During the 2023 Regular Legislative Session, the Texas Legislature approved numerous bills, new laws and changes to various State statutes, including the changes to the Texas Agriculture Code, the Texas Business and Commerce Code, the Texas Finance Code, the Texas Insurance Code, the Texas Labor Code, the Texas Local Government Code, the Texas Natural Resources Code, the Texas Occupations Code and the Texas Property Code (each an "Affected Code," and collectively, the "Affected Codes") contained in House Bill 2127 ("HB 2127"), described below. The City and the Houston Airport System are in the process of analyzing such new laws and changes, including the provisions of HB 2127. On July 3, 2023, the City filed suit in Travis County District Court challenging the constitutionality of HB 2127 and can give no assurance on the outcome of such suit.

Upon the Governor's signature, effective September 1, 2023, municipalities, including the City, will be precluded from adopting or enforcing an ordinance, order, rule, or policy (each, a "Municipal Action") in a field "occupied by" a provision of an Affected Code unless explicitly authorized otherwise by State statute. A Municipal Action that violates this provision will be void and unenforceable. Any person (as defined by HB 2127), including a taxpayer, adversely affected by a Municipal Action or a trade association representing the person will have standing to sue the municipality for a declaratory or injunctive relief, costs and reasonable attorney's fees. HB 2127 waives governmental immunity from suit and liability to the extent that liability is created by HB 2127. The City is currently conducting a review of its existing Municipal Actions to determine which, if any, are in a field occupied by provisions of the Affected Codes and expects that some existing Municipal Actions will need to be rescinded, revoked or amended in order to not violate HB 2127. However, the City does not expect that any such actions will have a material adverse effect on the imposition and collection of Net Revenues pledged to the payment of Series 2023 Bonds or other the obligations of the Houston Airport System.

The Governor may call one or more special sessions, each of which may last no more than thirty (30) days and for which the Governor sets the agenda. In a special session, the Texas Legislature may consider additional bills that could have a direct impact on the City, the Houston Airport System, their operations or the administrative agencies that oversee the City and the Houston Airport System. The Governor called a special session that began on May 29, 2023 to consider property tax relief and border security. In addition, the Governor is expected to call additional special sessions to address various matters not addressed during the regular session. At this time, the City can make no representations or predictions concerning the substance or the effect of laws passed in the 88th Texas Legislature, including HB 2127, or any other legislation that may be passed in the future, legislative topics that may be included in the call for future special sessions, or how any such legislation could affect the City or the Houston Airport System. Changes in the scope and standards for public agencies, such as the Houston Airport System, may lead to increasingly stringent operating requirements and the imposition of administrative orders issued by State regulators. Future compliance with such requirements and orders may impose substantial additional costs on the Houston Airport System. In addition, claims against the Houston Airport System for failure to comply with applicable laws and regulations could be significant. Such claims are payable from assets of the Houston Airport System or from other legally available sources. No assurance can be given that the cost of compliance with such existing or future laws, regulations and orders would not adversely affect the ability of the Houston Airport System to generate revenues sufficient to pay debt service on the Series 2023 Bonds.

Environmental Regulation

The City is subject to State and federal environmental laws and regulations. These laws and regulations are subject to change, and the City may be required to expend substantial funds to meet the requirements of such regulatory authorities, such as requirements relating to quality of the City's water supply or wastewater discharges or to the handling and disposal of wastes. Failure to comply with these laws and regulations may result in the imposition of administrative, civil and criminal penalties, or the imposition of an injunction requiring the City to take or refrain from taking certain actions. In addition, the City may be required to remediate contamination as a result of City operations or on properties owned by others.

Other Environmental Measures

Air quality control measures required by the United States Environmental Protection Agency (the "EPA") and the Texas Commission on Environmental Quality ("TCEQ") may adversely affect new industrial, commercial and residential development in Houston and adjacent areas. Under the Clean Air Act Amendments of 1990, the eight county Houston-Galveston-Brazoria Area ("HGB Area") has been designated by the EPA as a non-attainment area under the EPA's ozone standards. Such areas are required to demonstrate progress in reducing ozone concentrations each year until compliance with the EPA's standards is achieved. To provide for annual reductions in ozone concentrations, the EPA and the TCEQ have imposed increasingly stringent limitations on emissions of volatile organic compounds and nitrogen oxides (chemical precursors of ground level ozone) from existing stationary sources of air emissions. In addition, any significant new source of those types of emissions, such as a new industrial plant, must provide for a net reduction of those air emissions by arranging or paying for reductions of emissions by 1.3 times the amount of pollutants proposed to be emitted by the new source. Even though existing air emissions controls are quite stringent, studies have indicated that even more stringent air emissions controls may be necessary in order for the HGB Area to achieve compliance with ozone standards. Due to the magnitude of air emissions reductions required as well as shortage of economically reasonable control options, the development of a successful air quality compliance plan has been and continues to be extremely challenging and will inevitably impact a wide cross-section of the business and residential community. More stringent controls on sources of air emissions in the HGB Area could make the Houston area a less attractive location to businesses in comparison to other areas of the country that are not subject to similarly stringent air emissions controls. Although air quality data indicates steady improvement in the HGB area, if it fails to meet the EPA's standards, the EPA may impose a moratorium on the awarding of federal highway construction grants and other federal grants for certain public works construction projects. The EPA may also impose even more stringent emissions offset requirements on new major sources of emissions for which construction has not already commenced.

Other constraints on economic growth and development include lawsuits filed under the Clean Air Act by plaintiffs seeking to require emission reduction measures that are even more stringent than those adopted by TCEQ and approved by EPA. From time to time, various plaintiff environmental organizations have filed lawsuits against TCEQ and EPA seeking to compel the early adoption of additional emission reduction measures, many of which could make it more difficult for businesses to construct or expand industrial facilities or which could result in travel restrictions or other limitations on the actions of businesses, governmental entities and private citizens. Any successful court challenge to the currently effective air emissions control plan could result in the imposition of even more stringent air emission controls that could threaten continued growth and development in the HGB Area.

Storm Activity and Periodic Flooding

Downtown Houston is located approximately 50 miles north of the Gulf of Mexico. The Gulf region is prone to seasonal hurricane activity; major hurricanes or related storms may develop. Owing in part to its relatively flat topography and moist coastal climate, certain areas in the City are subject to periodic flooding and associated severe property damage as a result of hurricanes and storm events. In addition to the damage experienced from Hurricane Harvey, the City has experienced three other major floods in the past eight years: the 2015 Memorial Day Flood, the 2016 Tax Day Flood and Tropical Storm Imelda in 2019.

The City and Harris County each participate in the National Flood Insurance Program, which is administered by FEMA. Communities participating in the National Flood Insurance Program are required by FEMA to adopt restrictions on development in designated flood prone areas. In exchange, the National Flood Insurance Program makes federally subsidized flood insurance available to homeowners, renters, and business owners located in the participating communities.

In connection with its administration of the National Flood Insurance Program, from time to time FEMA will revise its Flood Insurance Rate Maps, which classify the relative flooding potential of geographic areas. FEMA revised its Flood Insurance Rate Maps for the Greater Houston area as well as unincorporated Harris County in late 2006. As a result of this most recent revision, some homes and businesses within the City and the surrounding area that were outside of the 100-year flood plain (those areas that are determined to have a greater than 1% chance of flooding in any given year) under the previous Flood Insurance Rate Maps are now included in the 100-year flood plain. Residential, commercial, and industrial properties in the City that recently have been reclassified as being within the 100-year flood plain could experience a diminution in value, the extent of which has not yet been determined. It is anticipated that a pending federal climate study will result in flood plain map changes that will significantly increase the 100-year flood elevation and flood plain.

The City is currently pursuing hazard mitigation grants from FEMA to fund flood mitigation and/or flood damage reduction projects. Mitigation projects may include home buyouts, home elevations and home reconstruction. Flood damage reduction projects may consist of channel widening, regional water detention and stream diversions. These projects will be coordinated with the other local agencies responsible for watershed management.

RATINGS

The rating services of Moody's and Fitch Ratings, Inc. have assigned ratings of "A1" and "A+", respectively, on the Series 2023 Bonds, without taking into account the issuance of the Policy. The rating services of Moody's, S&P and KBRA have assigned ratings of "A1", "AA" and "AA+", respectively, on the Series 2023 Bonds, taking into account the Policy. Ratings reflect only the views of the rating agencies, from whom an explanation of the significance of such ratings may be obtained. There is no assurance that ratings will continue for any given period of time or that they will not be revised downward or withdrawn entirely if, in the judgment of the rating agency, circumstances so warrant. Any such downward revision or withdrawal could have an adverse effect on the market price of the Series 2023 Bonds. The City and the Co-Financial Advisors will undertake no responsibility to oppose any revision or withdrawal of such ratings.

Due to changes in rating criteria and the current economic conditions of the United States, obligations issued by state and local governments, such as the Series 2023 Bonds, could be subject to a rating downgrade. Additionally, if a significant financial crisis or budgetary reductions should occur in the affairs of the U.S. Government or of any of its agencies or political subdivisions, then such an event could adversely affect the market for and ratings, liquidity and market value of outstanding debt obligations, including the Series 2023 Bonds.

TAX MATTERS

The following discussion of certain federal income tax considerations is for general information only and is not tax advice. Each prospective purchaser of the Series 2023 Bonds should consult its own tax advisor as to the tax consequences of the acquisition, ownership and disposition of the Series 2023 Bonds.

Tax Exemption

In the opinion of Bracewell LLP, in its capacity as Tax Counsel (in such capacity, "Tax Counsel"), under existing law, interest on the Series 2023A Bonds (i) is excludable from gross income for federal income tax purposes under section 103 of the Internal Revenue Code of 1986, as amended (the "Code"), except with respect to interest on any Series 2023A Bond for any period during which such Series 2023A Bond is held by a person who is a "substantial user" of the facilities financed or refinanced with the proceeds of the Series 2023A Bonds or a "related person" of such a "substantial user," each within the meaning of section 147(a) of the Code, and (ii) is an item of tax for purposes of the alternative minimum tax on individuals. Furthermore, under existing law, interest on the Series 2023B Bonds (i) is excludable from gross income for federal income tax purposes under section 103 of the Code and (ii) is not an item of tax preference for purposes of the alternative minimum tax on individuals.

The Code imposes a number of requirements that must be satisfied for interest on state or local obligations, such as the Series 2023 Bonds, to be excludable from gross income for federal income tax purposes. These requirements include, among other things, limitations on the use of the bond financed project, limitations on the use of bond proceeds and the source of repayment of bonds, limitations on the investment of bond proceeds prior to expenditure, a requirement that excess arbitrage earned on the investment of bond proceeds be paid periodically to the United States and a requirement that the issuer file an information report with the Internal Revenue Service (the "Service"). The City has covenanted in the Ordinance that it will comply with these requirements.

Tax Counsel's opinion will assume continuing compliance with the covenants of the Ordinance pertaining to those sections of the Code that affect the excludability of interest on the Series 2023 Bonds from gross income for federal income tax purposes and, in addition, will rely on representations by the City and other parties involved with the issuance of the Series 2023 Bonds with respect to matters solely within the knowledge of the City and such parties, which Tax Counsel has not independently verified. If the City fails to comply with the covenants in the Ordinance, or if the foregoing representations are determined to be inaccurate or incomplete, interest on the Series 2023 Bonds could become includable in gross income from the date of original delivery of each issue of the Series 2023 Bonds, regardless of the date on which the event causing such inclusion occurs.

The Code imposes an alternative minimum tax on the "alternative minimum taxable income" of an individual, if the amount of such alternative minimum tax is greater than the amount of such individual's regular income tax. Generally, the alternative minimum taxable income of an individual will include items of tax preference under the Code, such as the amount of interest received on "private activity bonds" issued after August 7, 1986. Accordingly, Tax Counsel's opinion will state that interest on the Series 2023A Bonds is an item of tax preference for purposes of the alternative minimum tax on individuals.

Except as stated above, Tax Counsel will express no opinion as to the amount of interest on the Series 2023 Bonds or any federal, state or local tax consequences resulting from the receipt or accrual of interest on, acquisition, ownership or disposition of, the Series 2023 Bonds. Certain actions may be taken or omitted subject to the terms and conditions set forth in the Ordinance upon the advice or with the approving opinion of Bond Counsel. Bond Counsel will express no opinion with respect to Bond Counsel's ability to render an opinion that such actions, if taken or omitted, will not adversely affect the excludability of interest of the Series 2023 Bonds from gross income for federal income tax purposes.

Tax Counsel's opinions are based on existing law, which is subject to change. Such opinions are further based on Tax Counsel's knowledge of facts as of the date thereof. Tax Counsel assumes no duty to update or supplement their opinions to reflect any facts or circumstances that may thereafter come to Tax Counsel's attention or to reflect any changes in any law that may thereafter occur or become effective. Moreover, Tax Counsel's opinions are not a guarantee of result and are not binding on the Service; rather, such opinions represent Tax Counsel's legal judgment based upon their review of existing law and in reliance upon the representations and covenants referenced above that they deem relevant to such opinions. The Service has an ongoing audit program to determine compliance with rules that relate to whether interest on state or local obligations is includable in gross income for federal income tax purposes. No assurance can be given as to whether or not the Service will commence an audit of the Series 2023 Bonds. If an audit is commenced, in accordance with its current published procedures, the Service is likely to treat the City as the taxpayer and the Owners may not have a right to participate in such audit. Public awareness of any future audit of any issue of the Series 2023 Bonds could adversely affect the value and liquidity of the Series 2023 Bonds regardless of the ultimate outcome of the audit.

Additional Federal Income Tax Considerations

Collateral Tax Consequences

Prospective purchasers of the Series 2023 Bonds should be aware that the ownership of tax-exempt obligations may result in collateral federal income tax consequences, including but not limited those noted below. Therefore, prospective purchasers of the Series 2023 Bonds should consult their own tax advisors as to the tax consequences of the acquisition, ownership and disposition of the Series 2023 Bonds.

For tax years beginning after December 31, 2022, an "applicable corporation" (as defined in section 59(k) of the Code) may be subject to a 15% alternative minimum tax imposed under section 55 of the Code on its "adjusted financial statement income" (as defined in section 56A of the Code) for such taxable year. Because interest on tax-exempt obligations, such as the Series 2023 Bonds, is included in a corporation's "adjusted financial statement income," ownership of the Series 2023 Bonds could subject certain corporations to alternative minimum tax consequences.

Ownership of tax-exempt obligations also may result in collateral federal income tax consequences to financial institutions, life insurance and property and casualty insurance companies, certain S corporations with Subchapter C earnings and profits, individual recipients of Social Security or Railroad Retirement benefits, taxpayers who may be deemed to have incurred or continued indebtedness to purchase or carry tax-exempt obligations, low and middle income taxpayers otherwise qualifying for the health insurance premium assistance credit and individuals otherwise qualifying for the earned income tax credit. In addition, certain foreign corporations doing business in the United States may be subject to the "branch profits tax" on their effectively connected earnings and profits, including tax-exempt interest such as interest on the Series 2023 Bonds.

Prospective purchasers of the Series 2023 Bonds should also be aware that, under the Code, taxpayers are required to report on their returns the amount of tax-exempt interest, such as interest on the Series 2023 Bonds, received or accrued during the year.

Tax Accounting Treatment of Original Issue Discount

The issue price of all or a portion of the Series 2023 Bonds may be less than the stated redemption price payable at maturity of such Series 2023 Bonds (the "Original Issue Discount Bonds"). In such case, the difference between (i) the amount payable at the maturity of each Original Issue Discount Bond, and (ii) the initial offering price to the public of such Original Issue Discount Bond constitutes original issue discount with respect to such Original Issue Discount Bond in the hands of any owner who has purchased such Original Issue Discount Bond in the initial public offering of the Series 2023 Bonds. Generally, such initial owner is entitled to exclude from gross income (as defined in Section 61 of the Code) an amount of income with respect to such Original Issue Discount Bond equal to that portion of the amount of such original issue discount allocable to the period that such Original Issue Discount Bond continues to be owned by such owner. Because original issue discount is treated as interest for federal income tax purposes, the discussions regarding interest on the Series 2023 Bonds under the captions "TAX MATTERS – Tax Exemption" and "TAX MATTERS – Additional Federal Income Tax Considerations – Collateral Tax Consequences" and "—Tax Legislative Changes" generally apply and should be considered in connection with the discussion in this portion of the Official Statement.

In the event of the redemption, sale or other taxable disposition of such Original Issue Discount Bond prior to stated maturity, however, the amount realized by such owner in excess of the basis of such Original Issue Discount Bond in the hands of such owner (adjusted upward by the portion of the original issue discount allocable to the period for which such Original Issue Discount Bond was held by such initial owner) is includable in gross income.

The foregoing discussion assumes that (i) the Underwriter has purchased the Series 2023 Bonds for contemporaneous sale to the public and (ii) all of the Original Issue Discount Bonds have been initially offered, and a substantial amount of each maturity thereof has been sold, to the general public in arm's-length transactions for a price (and with no other consideration being included) not more than the initial offering prices thereof stated on the inside cover pages of this Official Statement. Neither the City nor Tax Counsel has made any investigation or offers any comfort that the Original Issue Discount Bonds will be offered and sold in accordance with such assumptions.

Under existing law, the original issue discount on each Original Issue Discount Bond accrues daily to the stated maturity thereof (in amounts calculated as described below for each six-month period ending on the date before the semiannual anniversary dates of the date of the Series 2023 Bonds and ratably within each such six-month period) and the accrued amount is added to an initial owner's basis for such Original Issue Discount Bond for purposes of determining the amount of gain or loss recognized by such owner upon the redemption, sale or other disposition thereof. The amount to be added to basis for each accrual period is equal to (i) the sum of the issue price and the amount of original issue discount accrued in prior periods multiplied by the yield to stated maturity (determined on the basis of compounding at the close of each accrual period and properly adjusted for the length of the accrual period) less (ii) the amounts payable as current interest during such accrual period on such Original Issue Discount Bond.

The federal income tax consequences of the purchase, ownership, and redemption, sale or other disposition of Original Issue Discount Bonds that are not purchased in the initial offering at the initial offering price may be determined according to rules that differ from those described above. All owners of Original Issue Discount Bonds should consult their own tax advisors with respect to the determination for federal, state, and local income tax purposes of interest accrued upon redemption, sale or other disposition of such Original Issue Discount Bonds and with respect to the federal, state, local and foreign tax consequences of the purchase, ownership, redemption, sale or other disposition of such Original Issue Discount Bonds.

Tax Accounting Treatment of Original Issue Premium

The issue price of all or a portion of the Series 2023 Bonds may exceed the stated redemption price payable at maturity of such Series 2023 Bonds. Such Series 2023 Bonds ("Premium Bonds") are considered for federal income tax purposes to have "bond premium" equal to the amount of such excess. The basis of a Premium Bond in the hands of an initial owner is reduced by the amount of such excess that is amortized during the period such initial owner holds such Premium Bond in determining gain or loss for federal income tax purposes. This reduction in basis will increase the amount of any gain or decrease the amount of any loss recognized for federal income tax purposes on the sale or other taxable disposition of a Premium Bond by the initial owner. No corresponding deduction is allowed for federal income tax purposes for the reduction in basis resulting from amortizable bond premium. The amount of bond premium on a Premium Bond that is amortizable each year (or shorter period in the event of a sale or disposition of a Premium Bond) is determined using the yield to maturity on the Premium Bond based on the initial offering price of such Premium Bond.

The federal income tax consequences of the purchase, ownership and redemption, sale or other disposition of Premium Bonds that are not purchased in the initial offering at the initial offering price may be determined according to rules that differ from those described above. All owners of Premium Bonds should consult their own tax advisors with respect to the determination for federal, state, and local income tax purposes of amortized bond premium upon the redemption, sale or other disposition of a Premium Bond and with respect to the federal, state, local, and foreign tax consequences of the purchase, ownership, and sale, redemption or other disposition of such Premium Bonds.

Tax Legislative Changes

Current law may change so as to directly or indirectly reduce or eliminate the benefit of the excludability of interest on the Series 2023 Bonds from gross income for federal income tax purposes. Any proposed legislation, whether or not enacted, could also affect the value and liquidity of the Series 2023 Bonds. Prospective purchasers of the Series 2023 Bonds should consult with their own tax advisors with respect to any recently-enacted proposed, pending or future legislation.

LEGAL INVESTMENTS AND ELIGIBILITY TO SECURE PUBLIC FUNDS IN TEXAS

Under State law, the Series 2023 Bonds are legal and authorized investments for insurance companies, fiduciaries, trustees and sinking funds of municipalities or other political subdivisions or public agencies of the State. The Series 2023 Bonds are eligible to secure deposits of public funds of the State, its agencies or any political subdivision thereof to the extent of their market value. For political subdivisions or public agencies of Texas that have adopted investment policies and guidelines in accordance with the Public Funds Investment Act (Chapter 2256, Texas Government Code, as amended), the Series 2023 Bonds must be assigned a rating of not less than "A" or its equivalent as to investment quality by a nationally recognized rating agency in order to be eligible investments for such entity. See "RATINGS" herein. In addition, under State law, the Series 2023 Bonds are legal investments of state banks, savings banks, trust companies, and savings and loan associations.

The City has not reviewed the laws in other states to determine whether the Series 2023 Bonds are legal investments for various institutions in those states. The City has not made any investigation of any other laws, rules, regulations or investment criteria that affect the suitability of the Series 2023 Bonds for any of the above purposes or limit the authority of any of the above persons or entities to purchase or invest in the Series 2023 Bonds.

VERIFICATION OF MATHEMATICAL COMPUTATIONS

The Verification Agent will deliver to the City, on or before the Date of delivery of the Series 2023 Bonds, its verification report indicating that it has verified the mathematical accuracy of (a) the mathematical computations of the adequacy of the cash and the maturing principal of and interest on the Refunded Bonds Escrowed Securities to pay, when due, the maturing principal of, interest on and related call premium requirements, if any, of the Refunded Bonds, (b) the purchase price of the Target Bonds and the sufficiency of cash deposited with the Target Bonds Paying Agent to pay the purchase price of the Target Bonds, and (c) the mathematical computations of yield used by Tax Counsel to support its opinion that interest on the Series 2023 Bonds will be excluded from gross income for federal income tax purposes.

The Verification Agent has relied on the accuracy, completeness and reliability of all information provided to it by, and on all decisions and approvals of, the City. In addition, the Verification Agent has relied on any information provided to it by the City's retained advisors, consultants or legal counsel.

CONTINUING DISCLOSURE

General

In the Ordinance, the City has made certain agreements regarding the continuing disclosure of information for the benefit of the holders and Beneficial Owners of the Series 2023 Bonds. The City is required to observe such agreements for so long as it remains obligated to advance funds to pay the Series 2023 Bonds. Under the agreements, the City will be obligated to provide certain updated financial information and operating data annually, and timely notice of specified events, whether or not material, to the information repository described below.

Annual Reports

The City will provide certain updated financial information and operating data to the Municipal Securities Rulemaking Board (the "MSRB") annually. The information to be updated includes quantitative financial information and operating data with respect to the City's Airport System contained in APPENDIX B and under the schedules listed in APPENDIX E. The City will update and provide this information within six months after the end of each fiscal year. See APPENDIX E relating to the City's limited obligations to update Schedules 9, 9A, 9B and 9C, which contain actuarial information related to the pension plans.

The City may provide updated information in full text or in such other form consistent with the Ordinance, or may incorporate by reference certain other publicly available documents, as permitted by Securities and Exchange Commission Rule 15c2-12 (the "Rule"). The updated information will include audited financial statements if the City commissions an audit and it is completed by the required time. If audited financial statements are not provided by that time, the City will provide audited financial statements when and if they become available, but if such audited financial statements are unavailable, the City will provide such financial statements on an unaudited basis within the required time. Any such financial statements will be prepared in accordance with the accounting principles described in APPENDIX B or such other accounting principles as the City may be required to employ from time to time pursuant to state law or regulation.

The City's current Fiscal Year end is June 30. Accordingly, it must provide updated information by December 31 in each year, unless the City changes its Fiscal Year. If the City changes its Fiscal Year, it will notify the MSRB of the change.

Notices of Certain Events

The City will also provide timely notice of certain events to the MSRB, not in excess of ten (10) Business Days after the occurrence of the event. Specifically, the City will provide notice of any of the following events with respect to the Series 2023 Bonds: (1) principal and interest payment delinquencies; (2) non-payment related defaults, if material; (3) unscheduled draws on debt service reserves reflecting financial difficulties; (4) unscheduled draws on credit enhancements reflecting financial difficulties; (5) substitution of credit or liquidity providers, or their failure to perform; (6) adverse tax opinions, the issuance by the Internal Revenue Service of proposed or final determinations of taxability, Notices of Proposed Issue (IRS Form 5701-TEB) or other material notices or determinations with respect to the tax status of the Series 2023 Bonds, or other material events affecting the tax status of the Series 2023 Bonds; (7) modifications to rights of holders of the Series 2023 Bonds, if material; (8) bond calls, if material, and tender offers; (9) defeasances; (10) release, substitution, or sale of property securing repayment of the Series 2023 Bonds, if material; (11) rating changes; (12) bankruptcy, insolvency, receivership, or similar event of the City; (13) the consummation of a merger, consolidation, or acquisition involving the City or the sale of all or substantially all of the assets of the City, other than in the ordinary course of business, the entry into a definitive agreement to undertake such an action or the termination of a definitive agreement relating to any such actions, other than pursuant to its terms, if material; (14) the appointment of a successor or additional trustee or the change in the name of the trustee, if material; (15) incurrence of a Financial Obligation of the City, if material, or agreement to covenants, events of default, remedies, priority rights, or other similar terms of a Financial Obligation of the City, any of which affect security holders, if material; and (16) default, event of acceleration, termination event, modification of terms, or other similar events under the terms of a Financial Obligation of the City, any of which reflect financial difficulties. In addition, the City will provide to the MSRB, in a timely manner, notice of any failure by the City to provide the required annual financial information described above under “Annual Reports” and any notices of events specified in this section.

For these purposes, (A) any event described in clause (12) in the immediately preceding paragraph is considered to occur when any of the following occur: the appointment of a receiver, fiscal agent, or similar officer for the City in a proceeding under the United States Bankruptcy Code or in any other proceeding under state or federal law in which a court or governmental authority has assumed jurisdiction over substantially all of the assets or business of the City, or if such jurisdiction has been assumed by leaving the existing governing body and officials or officers in possession but subject to the supervision and orders of a court or governmental authority, or the entry of an order confirming a plan of reorganization, arrangement, or liquidation by a court or governmental authority having supervision or jurisdiction over substantially all of the assets or business of the City, and (B) the City intends the words used in clauses (15) and (16) in the immediately preceding paragraph and the definition of Financial Obligation to have the meanings ascribed to them in SEC Release No. 34-83885 dated August 20, 2018.

Availability of Information

The City has agreed to provide the foregoing information only to the MSRB. The information is expected to be available to holders of the Series 2023 Bonds from the MSRB through the EMMA website at www.emma.msrb.org; however, the City makes no representation regarding the availability of such information from the MSRB.

Limitations and Amendments

The City has agreed to provide annual reports and notices of certain events only as described above. The City has not agreed to provide other information that may be relevant or material to a complete presentation of its financial results of operations, condition or prospects or agreed to update any information that is provided, except as described above. The City makes no representation or warranty concerning such information or concerning its usefulness to a decision to invest in or sell the Series 2023 Bonds at any future date. The City disclaims any contractual or tort liability for damages resulting in whole or in part from any breach of its agreement to provide annual reports or notices of certain events or from any statement made pursuant to its agreement, although holders of the Series 2023 Bonds may seek a writ of mandamus to compel the City to comply with its agreement.

The City may amend its continuing disclosure agreement to adapt to changed circumstances that arise from a change in legal requirements, a change in law, or a change in the identity, nature, status or type of operations of the City, if the agreement, as amended, would have permitted an underwriter to purchase or sell the Series 2023 Bonds in the offering made hereby in compliance with the Rule and either the holders of a majority in aggregate principal amount of the Outstanding Series 2023 Bonds consent or any person unaffiliated with the City (such as nationally recognized bond counsel) determines that the amendment will not materially impair the interests of the Beneficial Owners of the Series 2023 Bonds. The City may also amend or repeal the agreement if the Commission amends or repeals the applicable provisions of the Rule or a court of final jurisdiction determines that such provisions are invalid, and the City may amend the agreement in its discretion in any other circumstance or manner, but in either case only to the extent that its right to do so would not prevent an Underwriter from purchasing the Series 2023 Bonds in the offering described herein in compliance with the Rule. If the City amends its agreement, it must include with the next financial information and operating data provided in accordance with its agreement described above under “Annual Reports” an explanation, in narrative form, of the reasons for the amendment and of the impact of any change in the type of information and data provided.

See APPENDIX E relating to the City's limited obligation to update Schedules 9, 9A, 9B, and 9C, which contain actuarial information related to the Municipal System Pension Plan.

Compliance with Prior Undertakings

On June 12, 2023, the City filed disclosures (the "Summarized Update") describing its compliance with its continuing disclosure undertakings during the previous five years, including certain filings with respect to the Houston Airport System bonds, which disclosures are available by accessing the following link (https://emma.msrb.org/P21713881-P21317661-P21750297.pdf). The content of the Summarized Update is incorporated herein by reference.

No Continuing Disclosure Undertakings by Airlines

No airline has made any agreement regarding the continuing disclosure of information for the benefit of the holders and Beneficial Owners of the Series 2023 Bonds. However, certain of the certificated major domestic airlines (or their respective parent corporations) are subject to the information reporting requirements of the Securities Exchange Act of 1934, as amended, and thus must file reports and other information with the Commission. See "THE AIRLINE INDUSTRY FINANCIAL INFORMATION." In addition, pursuant to the Rule, certain airlines may have agreed to continuing disclosure undertakings in connection with the issuance and sale of obligations other than the Series 2023 Bonds. In those instances the airlines would have undertaken, in a written agreement or contract for the benefit of the holders of such obligations, to provide to various information repositories certain annual financial information and operating data, including audited financial statements, and to provide notice to such repositories and the MSRB of certain specified material events. Such information is available to securities brokers and others who subscribe to receive the information from such repositories.

LEGAL PROCEEDINGS

The delivery of the Series 2023 Bonds is subject to the approving opinions of the Attorney General of the State and the opinions of Co-Bond Counsel, Bracewell LLP, Houston, Texas, and West & Associates, L.L.P., Houston, Texas, as to the validity of the issuance of the Series 2023 Bonds under the Constitution and laws of the State and the opinion of Tax Counsel, Bracewell LLP, Houston, Texas, as to federal income tax matters. The opinions of Co-Bond Counsel and Tax Counsel will be based upon an examination of a transcript of certain certified proceedings relating to the issuance and authorization of the Series 2023 Bonds. Copies of the proposed opinions of Co-Bond Counsel and Tax Counsel to be delivered in connection with the issuance of the Series 2023 Bonds are attached to this Official Statement as APPENDIX D.

Co-Bond Counsel has reviewed the statements and information contained in the Official Statement under the captions and sub-captions "PURPOSE AND PLAN OF FINANCING – The Refunded Bonds," "–The Refunded Notes" and "–The Target Bonds," "THE SERIES 2023 BONDS," "SECURITY FOR THE SERIES 2023 BONDS" (except for information under the sub-caption "Bondholders' Remedies" as to which no opinion is expressed), "COVENANTS AND TERMS OF THE ORDINANCE" (except for the information under the sub-caption "Rate Covenant – Other Factors Impacting Rate Covenant" as to which no opinion is expressed), "CONTINUING DISCLOSURE" (except for the information under the sub-captions "Compliance With Prior Undertakings" and "No Continuing Disclosure Undertakings by Airlines" as to which no opinion is expressed), and APPENDICES C-1 and C-2, solely to determine that such statements and information fairly and accurately describe the Series 2023 Bonds and the Ordinance; further, Co-Bond Counsel has reviewed the statements and information under the caption "LEGAL INVESTMENTS AND ELIGIBILITY TO SECURE PUBLIC FUNDS IN TEXAS" solely to determine whether such information fairly and accurately summarizes the law referred to therein. Tax Counsel has reviewed the statements and information under the caption "TAX MATTERS" solely to determine whether such information fairly and accurately summarizes the law referred to therein and Tax Counsel is of the opinion that the statements and information contained therein are correct as to matters of law.

Such firms have not, however, independently verified any of the factual information contained in this Official Statement nor have they conducted an investigation of the affairs of the City or the Houston Airport System for the purpose of passing upon the fairness, accuracy or completeness of this Official Statement. No person is entitled to rely upon such firms' limited participation as an assumption of responsibility for, or an expression of opinion of any kind with regard to, the fairness, accuracy or completeness of any of the information contained herein.

Certain matters will be passed on for the City by its Special Disclosure Co-Counsel, Greenberg Traurig, LLP, Houston, Texas, and The Chevalier Law Firm, PLLC, Houston, Texas. Certain other legal matters will be passed on for the Underwriters by their Co-Counsel, McCall, Parkhurst & Horton L.L.P., Houston, Texas and Levi Benton & Associates PLLC, Houston, Texas.

The fees of Co-Bond Counsel, Tax Counsel, Special Disclosure Co-Counsel and Underwriters' Counsel for their services with respect to the Series 2023 Bonds are contingent upon the sale and delivery of the Series 2023 Bonds.

Bracewell LLP, West & Associates, L.L.P., Greenberg Traurig, LLP, and The Chevalier Law Firm, PLLC represent the Underwriters from time to time in matters unrelated to the issuance of the Series 2023 Bonds. McCall, Parkhurst & Horton L.L.P. and Levi Benton & Associates PLLC represent the City from time to time in matters unrelated to the issuance of the Series 2023 Bonds.

The various legal opinions to be delivered concurrently with the delivery of the Series 2023 Bonds express the professional judgment of the attorneys rendering the opinions as to the legal issues explicitly addressed therein. In rendering a legal opinion, the attorney does not become an insurer or guarantor of that expression of professional judgment, of the transaction opined upon, or of the future performance of the parties to the transaction, nor does the rendering of an opinion guarantee the outcome of any legal dispute that may arise out of the transaction.

CO-FINANCIAL ADVISORS

Masterson Advisors LLC and The RSI Group LLC (the "Co-Financial Advisors"), are retained by the City as its independent financial advisors in connection with the issuance of the Series 2023 Bonds and, in such capacity, have assisted the City in the preparation of documents. The Co-Financial Advisors' fee for services rendered with respect to the sale of the Series 2023 Bonds is not contingent upon the issuance and delivery of the Series 2023 Bonds.

Although the Co-Financial Advisors have read and participated in the preparation of this Official Statement, they have not independently verified any of the information set forth herein. The information contained in this Official Statement has been obtained primarily from the City's records and from other sources that are believed to be reliable, including financial records of the City and other entities that may be subject to interpretation. No guarantee is made as to the accuracy or completeness of any such information. No person, therefore, is entitled to rely upon the participation of the Co-Financial Advisors as an implicit or explicit expression of opinion as to the completeness and accuracy of the information contained in this Official Statement.

INDEPENDENT AUDITORS

The financial statements of the Houston Airport System Fund, as of and for the Fiscal Years ended June 30, 2022 and June 30, 2021, included in this Official Statement as APPENDIX B, have been audited by McConnell & Jones LLP/Banks, Finley, White & Co., a Joint Venture Partnership known as M&J/BFW, independent auditors, as stated in their report appearing herein.

UNDERWRITING

Siebert Williams Shank & Co., LLC, on behalf of itself and the other underwriters listed on the cover page of this Official Statement, has agreed to purchase the Series 2023 Bonds, subject to certain conditions, and has agreed to pay therefor a price of $813,904,217.52 (reflecting the par amount of the Series 2023 Bonds, plus a net premium of $60,435,970.65, less an underwriting discount of $2,581,753.13).

The Target Bonds are being tendered under the terms of the Invitation to Tender through Siebert Williams Shank & Co., LLC as Dealer Manager in connection with the tender offer described in "THE SERIES 2023 BONDS – The Target Bonds." The Dealer Manager will be compensated separately for its services as Dealer Manager. For its services as Dealer Manager, the Dealer Manager will be compensated (the "Dealer Manager's Fee") in an amount equal to a percentage of the aggregate principal amount of the Target Bonds tendered for purchase and will be reimbursed for their reasonable expenses relating to the Invitation to Tender. The Dealer Manager's Fee is expected to be paid from proceeds of the Series 2023 Bonds.

The Underwriters and their respective affiliates are full service financial institutions engaged in various activities, which may include securities trading, commercial and investment banking, financial advisory, investment management, investment research, principal investment, hedging, financing and brokerage activities. Certain of the Underwriters and their respective affiliates have, from time to time, performed, and may in the future perform, various financial advisory and investment banking services for the City, for which they received or will receive customary fees and expenses. In the ordinary course of their various business activities, the Underwriters and their respective affiliates may make or hold a broad array of investments and actively trade debt and equity securities (or related derivative securities) and financial instruments (including bank loans) for their own account and for the accounts of their customers, and such investment and securities activities may involve securities and/or instruments of the City. The Underwriters and their respective affiliates may also make investment recommendations and/or publish or express independent research views in respect of such securities or instruments and may at any time hold, or recommend to clients that they acquire, long and/or short positions in such securities and instruments.

J.P. Morgan Securities LLC ("JPMS"), one of the Underwriters of the Series 2023 Bonds, has entered into negotiated dealer agreements (each, a "JPM Dealer Agreement") with each of Charles Schwab & Co., Inc. ("CS&Co.") and LPL Financial LLC ("LPL") for the retail distribution of certain securities offerings at the original issue prices. Pursuant to each JPM Dealer Agreement, each of CS&Co. and LPL may purchase Series 2023 Bonds from JPMS at the original issue price less a negotiated portion of the selling concession applicable to any Series 2023 Bonds that such firm sells.

Morgan Stanley & Co. LLC, one of the Underwriters of the Series 2023 Bonds, has entered into a retail distribution arrangement with its affiliate, Morgan Stanley Smith Barney LLC. As part of the distribution arrangement, Morgan Stanley & Co. LLC may distribute securities to retail investors through the financial network of Morgan Stanley Smith Barney LLC. As part of this arrangement, Morgan Stanley & Co. LLC may compensate Morgan Stanley Smith Barney LLC for its underwriting efforts with respect to the Series 2023 Bonds.

FORWARD LOOKING STATEMENTS

The statements contained in this Official Statement, and in any other information provided by the City, that are not purely historical are forward-looking statements, including statements regarding the City's expectations, hopes, intentions, or strategies regarding the future. Readers should not place undue reliance on forward-looking statements. All forward-looking statements included in this Official Statement are based on information available to the City on the date hereof, and the City assumes no obligation to update any such forward-looking statements. It is important to note that the City's actual results could differ materially from those in such forward-looking statements.

The forward-looking statements herein are necessarily based on various assumptions and estimates and are inherently subject to various risks and uncertainties, including risks and uncertainties relating to the possible invalidity of the underlying assumptions and estimates and possible changes or developments in social, economic, business, industry, market, legal and regulatory circumstances and conditions and actions taken or to be taken by third parties, including customers, suppliers, business partners and competitors, and legislative, judicial and other governmental authorities and officials. Assumptions related to the foregoing involve judgments with respect to, among other things, future economic, competitive, and market conditions and future business decisions, all of which are difficult or impossible to predict accurately and many of which are beyond the control of the City. Any of such assumptions could be inaccurate and, therefore, there can be no assurance that the forward-looking statements included in this Official Statement would prove to be accurate.

GENERAL INFORMATION

All of the summaries of the statutes, ordinances and other related reports set forth herein are made subject to all of the provisions of such documents. The descriptions of the Series 2023 Bonds and the Ordinance herein do not purport to be complete and all such descriptions or references thereto contained in this Official Statement are qualified in their entirety by reference to the complete forms of the Series 2023 Bonds and of the Ordinance. Statements made herein involving estimates or projections, whether or not expressly identified as such, should not be construed to be statements of fact or as representations that such estimates or projections will ever be attained or will even approximate actual results.

This Official Statement is not to be construed as a contract with the Underwriters or the holders of any of the Series 2023 Bonds.

Copies of the June 30, 2022 Annual Comprehensive Financial Report of the City of Houston, Texas are available to each of the prospective purchasers of the Series 2023 Bonds upon written request addressed to the office of the City Controller, P.O. Box 1562, Houston, Texas 77251. THE SERIES 2023 BONDS ARE, HOWEVER, PAYABLE SOLELY FROM NET REVENUES OF THE HOUSTON AIRPORT SYSTEM AND CERTAIN RESERVES ESTABLISHED PURSUANT TO THE ORDINANCE, AND NO IMPLICATION IS MADE THAT ANY OTHER REVENUES OR MONEY OF THE CITY ARE TO BE AVAILABLE FOR THE PAYMENT OF THE PRINCIPAL OF OR INTEREST ON THE SERIES 2023 BONDS. Copies of the Ordinance are available to each of the prospective purchasers of the Series 2023 Bonds upon written request to the Office of the City Attorney, 900 Bagby, 4th Floor, Houston, Texas 77002. This document was approved by the City Council of the City.

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SCHEDULE I

SCHEDULE OF REFUNDED OBLIGATIONS

2023A Refunded Notes

$317,564,000
City of Houston, Texas Airport System
Senior Lien Commercial Paper Notes, Series A (AMT)

2023A Refunded Bonds

City of Houston, Texas Airport System
Subordinate Lien Revenue Bonds, Series 2002A (AMT)

Stated Maturity (July 1)	Principal Amount Refunded	Interest Rate
2032	$20,005,000	5.125%

2023B Refunded Notes

$32,436,000
City of Houston, Texas Airport System
Senior Lien Commercial Paper Notes, Series A (AMT)

2023B Refunded Bonds

City of Houston, Texas Airport System
Subordinate Lien Revenue Bonds, Series 2002B (Non-AMT)

Stated Maturity (July 1)	Principal Amount Refunded	Interest Rate
2032	$27,450,000	5.000%

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SCHEDULE II

SCHEDULE OF TARGET BONDS

City of Houston, Texas Airport System
Subordinate Lien Revenue Refunding Bonds, Series 2020C (Taxable)

Stated Maturity (July 1)	Interest Rate	Principal Amount Refunded by Series 2023A Bonds	Principal Amount Refunded by Series 2023B Bonds	Total Principal Amount Refunded
2028	2.085%	$18,075,000	$13,685,000	$31,760,000
2029	2.235	10,515,000	7,960,000	18,475,000
2030	2.285	2,290,000	1,735,000	4,025,000
2031	2.385	34,580,000	26,185,000	60,765,000
2032	2.485	20,775,000	15,730,000	36,505,000

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APPENDIX A

REPORT OF AIRPORT MANAGEMENT CONSULTANT

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June 12, 2023 APPENDIX A

Report of the Airport Management Consultant

Houston Airport System

Airport System Subordinate Lien Revenue and Refunding Bonds, Series 2023A and Airport System Subordinate Lien Revenue and Refunding Bonds, Series 2023B

Prepared for:

City of Houston, Texas

Prepared by:

RICONDO

June 12, 2023

Mr. Mario C. Diaz
Director of Aviation, City of Houston
Houston Airport System
P.O. Box 60106
Houston, Texas 77205

RE: Report of the Airport Management Consultant
City of Houston, Texas
Airport System Subordinate Lien Revenue and Refunding Bonds, Series 2023A and Series 2023B (2023 Bonds)

Dear Mr. Diaz:

Ricondo & Associates, Inc. (Ricondo) is pleased to present this Report of the Airport Management Consultant (Report) for inclusion as Appendix A in the Official Statement for the 2023 Bonds, described in detail in this Report. The City of Houston (City) issues bonds relating to the Houston Airport System (HAS) pursuant to a master ordinance adopted by the City in November 2016 (the Master Ordinance). On May 31, 2023, the City adopted a seventh supplemental ordinance authorizing the issuance of the 2023 Bonds (the Supplemental Ordinance). Since 2016, additional parity bonds have been issued pursuant to the Master Ordinance and separate supplemental ordinances. Prior to 2016, each series of additional parity bonds were issued under the terms of standalone ordinances incorporating common covenants to those in the Master Ordinance. For purposes of this Report, the Master Ordinance, the Supplemental Ordinance, and all prior parity ordinances are collectively referred to as the Bond Ordinance.

Under provisions of the Bond Ordinance, the 2023 Bonds will be issued as Subordinate Lien Bonds, secured by and payable from Net Revenues (Gross Revenues less Operation and Maintenance Expenses) of the Airport, subject to the prior and superior lien of Additional Senior Lien Obligations (inclusive of Senior Lien Notes).

The City will use the proceeds from the sale of the 2023 Bonds, together with other available funds, to:

i. fund portions of the HAS Capital Improvement Program,
ii. refund the Senior Lien Notes,
iii. pay capitalized interest,
iv. refund the Subordinate Lien Revenue Bonds, Series 2002A and Series 2002B,
v. tender a portion of the Subordinate Lien Revenue Refunding Bonds, Series 2020C Bonds for purchase and cancellation,
vi. fund the Subordinate Lien Bond Reserve Fund, and
vii. pay all costs of issuance incurred in connection with the issuance of the 2023 Bonds.

All capitalized terms in this Report have the meanings assigned to such terms in the Bond Ordinance, the Official Statement for the 2023 Bonds, or defined herein based on airline use and lease agreements authorized by the City or notations within the Report. In addition to the 2023 Bonds, the financial analysis presented in Chapter 6 of this Report also includes debt service on future bonds assumed to be issued to fully fund planned HAS capital projects described herein. For purposes of this Report, it was assumed that future bonds will also be issued as Subordinate Lien Bonds.

This Report presents the analysis undertaken by Ricondo to demonstrate the ability of the City to comply with the requirements of the Bond Ordinance for Fiscal Years (FYs) 2024 through 2032 (the Projection Period) based on the assumptions regarding the planned issuance of the 2023 Bonds established by the City through consultation with its financial advisors, underwriters, and the financing team. In developing its analysis, Ricondo reviewed historical trends and formulated projections based on the assumptions put forth in this Report, which have been reviewed by the City, regarding the ability of the Air Trade Area (as defined herein) to generate demand for airline service within the Airport System, the amount of airline service and passenger activity within the Airport System, and the generation of Net Revenues through the Projection Period.

The Report is organized as follows:

- Summary of Findings
- Chapter 1: The 2023 Bonds
- Chapter 2: The Houston Airport System
- Chapter 3: The Capital Improvement Program and Funding Sources
- Chapter 4: Demographic and Economic Analysis
- Chapter 5: Air Traffic
- Chapter 6: Financial Analysis

On the basis of the analysis set forth in this Report, Ricondo is of the opinion that the Net Revenues generated each year of the Projection Period are expected to be sufficient to comply with the rate covenant established in section 3.03 of the Master Ordinance, and that the resulting projected airline costs should remain reasonable. Although summary information is provided, a complete understanding of the justification for our conclusion cannot be attained without reading the Report in its entirety.

Founded in 1989, Ricondo is a full-service aviation consulting firm providing airport physical and financial planning services to airport owners and operators, airlines, and federal and state agencies. Ricondo has prepared reports of the airport consultant in support of over $41 billion of airport-related revenue bonds since 1996. Ricondo is not registered as a municipal advisor under Section 15B of the Securities Exchange Act of 1934. Ricondo is not acting as a municipal advisor and has not been engaged by the City to provide advice with respect to the structure, timing, terms, or other similar matters concerning the issuance of municipal securities. The assumptions regarding such matters included in this Report were provided by the City or the City's financial advisors or underwriters, or, with the City's approval, were derived from general, publicly available data approved by the City. Ricondo owes no fiduciary duty to the City. Ricondo recommends that the City discuss the information and analysis contained in this Report with internal and external advisors and experts that the City deems appropriate before taking any action. Any opinions, assumptions, views, or information contained herein are not intended to be, and do not constitute, "advice" within the meaning of Section 15B of the Securities Exchange Act of 1934.

The techniques and methodologies used by Ricondo in preparing this Report are consistent with industry practices for similar studies in connection with airport revenue bond sales. While Ricondo believes the approach and assumptions used in this Report are reasonable, some assumptions regarding future trends and events detailed in this Report, including, but not limited to, the implementation schedule, the forecast of passenger activity, and the projections of financial performance, may not materialize. Therefore, actual performance will likely differ from the projections and forecasts set forth in this Report, and the variations may be material. In developing our analyses, Ricondo used information from various sources, including the City, the underwriters, the financial advisors, federal and local governmental agencies, and independent private providers of economic and aviation industry data, as identified in the notes accompanying the related tables and exhibits in this Report. Ricondo believes these sources to be reliable but has not audited the data and does not warrant their accuracy. The analysis presented is based on conditions known as of the date of this letter. Ricondo has no obligation to update this Report on an ongoing basis.

Sincerely,

Ricondo & Associates, Inc.

RICONDO & ASSOCIATES, INC.

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SUMMARY OF FINDINGS

The City of Houston (the City) engaged Ricondo & Associates, Inc. (Ricondo) to prepare this Report of the Airport Management Consultant (the Report) to provide an independent assessment of the City's ability to meet its obligations regarding the issuance of the Houston Airport System (HAS) Subordinate Lien Revenue and Refunding Bonds, Series 2023A (the 2023A Bonds) and Airport System Subordinate Lien Revenue and Refunding Bonds, Series 2023B (the 2023B Bonds, together with the 2023A Bonds, the 2023 Bonds).[1]

HAS, an enterprise system of the City of Houston, Texas, manages and operates George Bush Intercontinental/Houston Airport (Intercontinental or IAH), William P. Hobby Airport (Hobby or HOU), and Ellington Airport (Ellington or EFD). Collectively, the three airports managed by HAS are referred to within this Report as the Airport System or the Airports.

The 2023 Bonds will be issued pursuant to the Master Ordinance adopted by the City of Houston in November 2016 (the Master Ordinance) and the supplemental ordinance authorizing the issuance of the 2023 Bonds (the Supplemental Ordinance). Since 2016, additional parity bonds have been issued pursuant to the Master Ordinance and separate supplemental ordinances. Prior to 2016, each series of additional parity bonds were issued under the terms of standalone ordinances incorporating common covenants to those in the Master Ordinance. For purposes of this Report, the Master Ordinance, the Supplemental Ordinance, and all prior parity ordinances are collectively referred to as the Bond Ordinance.

All capitalized terms in this Report have the meanings assigned to such terms in the Bond Ordinance, the Official Statement for the 2023 Bonds, or defined herein based on airline use and lease agreements authorized by the City or notations within the Report.

In developing the analyses, Ricondo reviewed the terms of the 2023 Bonds, as provided by the City's Financial Advisor; the outstanding financial obligations of HAS; the capacity of the Airport System's existing and planned facilities to accommodate current and forecast demand; projects included in the HAS Capital Improvement Program (CIP); and proposed funding sources, including future bonds assumed to be issued.

To develop the pro forma analysis of the financial performance of HAS, Ricondo reviewed key provisions of the existing agreements that establish the business arrangements between the City and its various airport tenants, including the commercial airlines serving the Airport System. In addition, Ricondo reviewed key provisions of certain proposed airline agreements provided by the City, the negotiations of which are nearly complete as of June 2023. Assumptions regarding airline rates and charges resulting from the existing and proposed agreements are described in Section 6.1.

Airport Revenues are in large measure driven by passenger demand for air service from the Airports, which is a function of local, national and international economic conditions, as well as the ability and willingness of the commercial airlines to supply service at a level commensurate with this demand. Thus, Ricondo reviewed the

[1] Ricondo prepared this Report for the stated purposes as expressly set forth herein and for the sole use of the City and its intended recipients. The techniques and methodologies used in preparing this Report are consistent with industry practices at the time of preparation, and this Report should be read in its entirety for an understanding of the analyses, assumptions, and opinions presented. Ricondo is not registered as a municipal advisor under Section 15B of the Securities Exchange Act of 1934 and does not provide financial advisory services within the meaning of such Act.

historical relationships between economic activity and demand for air service, the airlines' provision of air service, and the financial performance of the Airports. Based on this historical review, Ricondo developed assumptions regarding these factors and relationships through the period from Fiscal Year (FY) 2024 through FY 2032 (the Projection Period), which provide the basis for the forecasts of passenger activity and the projections of financial performance presented in this Report.[2]

On the basis of the analysis set forth in this Report, Ricondo is of the opinion that the Net Revenues generated each year of the Projection Period are expected to be sufficient to comply with the Rate Covenant established in Section 3.03 of the Master Ordinance, and that the resulting projected airline costs should remain reasonable. The following sections summarize Ricondo's assumptions, projections, and findings. Additional details are included in Chapters 1 through 6 of this Report, which should be read in its entirety.

THE 2023 BONDS

The 2023 Bonds are being issued to refund the Senior Lien Notes, as well as to provide funding for the completion of the IAH Terminal Redevelopment Program (ITRP). The proceeds to be used for the refunding approximately $350 million of Senior Lien Notes, while the proceeds used to fund remaining ITRP costs are expected to be approximately $212 million. Upon issuance of the 2023 Bonds, sufficient funds will be available to complete the construction of the ITRP.

Additionally, proceeds from the 2023 Bonds will be used to pay capitalized interest; refund the City's Airport System Subordinate Lien Revenue Bonds, Series 2002A and Series 2002B (Series 2002 Bonds); purchase and cancel certain of the City's Airport System Subordinate Lien Revenue Refunding Bonds, Series 2020C (Series 2020C Bonds) tendered to the City; fund the Subordinate Lien Bond Reserve Fund with bond proceeds and/or a surety policy; and pay certain costs of issuance incurred in connection with the 2023 Bonds.

For the purposes of this Report and financial analysis included herein, the refunding of the Series 2002 Bonds and the purchase and cancellation of the Series 2020C Bonds tendered to the City is not assumed. If the 2023 Bonds refund the Series 2002 Bonds and/or purchase the Series 2020C Bonds, it is expected that a reduction of annual debt service would occur.

Pursuant to the terms of the Bond Ordinance, the 2023 Bonds will be payable from and secured by Net Revenues, subject to the prior and superior lien on Net Revenues securing the Senior Lien Obligations. The 2023 Bonds will further be secured by the Subordinate Lien Bond Interest and Sinking Fund and the Subordinate Lien Bond Reserve Fund.

Additional information on the 2023 Bonds is provided in Chapter 1 of this Report.

[2] FY ending June 30.

THE HOUSTON AIRPORT SYSTEM AND AIRPORT CAPITAL PROGRAM

Chapter 2 reviews the existing Airport System facilities, and Chapter 3 summarizes the HAS CIP for FY 2024 through FY 2030[3], including anticipated funding sources.

In total, the HAS capital improvement projects anticipated for FY 2024 through FY 2030 are estimated to cost approximately $3.3 billion. Estimated funding sources are summarized as follows:

- Series 2023 Bond Proceeds ($211.9 million)
- Future Bond Proceeds ($1,893.2 million)
- Passenger Facility Charge (PFC) Pay-as-You-Go Revenues ($207.4 million)
- Grant Proceeds ($399.0 million)
- Airport Improvement Fund (AIF; $602.8 million)

GEORGE BUSH INTERCONTINENTAL/HOUSTON AIRPORT

IAH serves as an international gateway and is the largest commercial service airport in the Houston Air Trade Area. It covers approximately 10,125 acres of land and is located 22 miles north of downtown Houston, Texas. The Federal Aviation Administration (FAA) classifies IAH as a large-hub airport based on total enplaned passengers, and IAH serves as a connecting hub for United Airlines (United).

The airfield consists of five runways, with the longest measuring approximately 12,000 feet in length, as well as a network of taxiways and apron areas, aviation fuel services, and lighting systems. Airlines serving the airport operate from five terminal buildings (A, B, C, D, and E), providing access to 127 gates. Terminal A serves primarily domestic flights, as well as a select number of pre-cleared international flights. Terminal B, which is leased entirely by United, is mainly served by United Express regional jet flights. Terminal C is served by United domestic flights, and its original north concourse, demolished in 2021, was located in the footprint of the expanded Terminal D area planned as a component of ITRP. Terminal D, dedicated solely to international flights, and Terminal E, dedicated to both domestic and international flights, are situated on opposite sides of a central Federal Inspection Services (FIS) facility. Ongoing redevelopment of Terminal D and the FIS facility through the ITRP is included in the HAS CIP.

Facilities at IAH include a hotel, cargo and general aviation facilities, parking and rental car facilities, and support facilities, such as the fire stations located on the airfield.

The primary improvements planned at Intercontinental within the HAS CIP for FY 2024 through FY 2030 include the following: completion of ITRP, the Domestic Redevelopment Program (DRP), Skyway Train Replacement, Inter-Terminal Train (ITT) / Subway Replacement, Central Utility Plant (CUP) Improvements, and IAH airfield improvements. A portion of the 2023 Bonds proceeds will be used for the completion of ITRP. In addition, the 2023 Bonds will provide for the refunding of Senior Lien Notes that have been used to fund prior project costs primarily associated with ITRP.

Table S-1 summarizes the primary improvements planned at IAH for the period from FY 2024 through FY 2030.

[3] The analysis associated with this Report incorporates the HAS preliminary five-year CIP (FY 2024 through FY 2028) as well as additional planned capital spending in FY 2029 and FY 2030 provided by HAS. Beyond FY 2030, planned capital improvements for the Airports are not included within the analysis, but there is a potential for additional CIP spending. The City adopts five-year capital improvement programs each year. The City expects to adopt the FY 2024 through FY 2028 CIP in June 2023.

TABLE S-1 IAH CAPITAL IMPROVEMENTS (FISCAL YEAR 2024 – FISCAL YEAR 2030)

PROGRAM	DESCRIPTION	PROJECT COSTS (FY 2024 – FY 2030; IN THOUSANDS)
IAH Terminal Redevelopment Program (ITRP)	**North Concourse Project:** ▪ Refurbishment and re-life of the existing Terminal D ▪ Construction of the new MLIT D-West Pier **Central Processor and FIS Project:** ▪ Demolition of the existing Terminal D/E Garage ▪ Roadway modifications ▪ Construction of the new International Central Processor (ICP) building ▪ Renovation and expansion of the existing FIS facilities	$485,097
Domestic Redevelopment Program (DRP)	▪ Modernize and expand Terminal A	$875,564
Skyway Train Replacement	▪ Complete design, fabrication, assembly, factory testing, demolition, disposal, construction, installation and on-site integration, test and demonstration, and implementation of the Skyway APM System	$350,000
Inter-Terminal Train (ITT) / Subway Replacement Design	▪ Design of the train/subway replacement system that includes the capability to extend service to the rental car facility and a future East Side Terminal	$22,000
Central Utility Plant (CUP) Improvements	▪ Replacing various equipment and components	$118,624
IAH Airfield Improvements	▪ Reconstruction of Taxiways SA and SB ▪ Reconstruction of Taxiways RA and RB ▪ Additional airfield improvements	$106,162
Other Ongoing Capital Projects	▪ Terminal A Vault Replacement; FIDS and BIDS upgrade ▪ IAH Consolidated Employee Parking Lot ▪ Terminal B Garage third and fourth levels rehabilitation ▪ Rehabilitation of JFK and Will Clayton Parkway Cell Phone Lots ▪ Construction of Kenswick Intersections ▪ Rehabilitation and expansion program for ARFF Station 92 ▪ Additional capital projects	$310,278
TOTAL IAH CAPITAL PROJECTS INCLUDED IN FINANCIAL ANALYSIS		**$2,315,525**

NOTES:
ARFF – Aircraft Rescue and Firefighting
BIDS – Baggage Information Display System
FIDS – Flight Information Display System
FIS – Federal Inspection Services
MLIT - Mickey Leland International Terminal
SOURCE: Houston Airport System, June 2023.

WILLIAM P. HOBBY AIRPORT

Prior to the opening of Intercontinental in 1969, HOU served as Houston's main international airport. HOU covers approximately 1,500 acres of land and is located approximately 7 miles southeast of downtown Houston, Texas. The FAA classifies HOU as a medium-hub airport based on total enplaned passengers, and it serves as an operating base for Southwest Airlines (Southwest).

The HOU airfield consists of three intersecting runways, with the longest runways measuring approximately 7,600 feet in length, as well as a network of taxiways and apron areas, aviation fuel services, and lighting systems. The Hobby terminal building serves 30 gates, 5 at the west concourse from which international flights are operated and 25 at the central concourse designated for domestic flights. The FIS facilities for arriving international passengers are located on the first floor of the west concourse.

The airport also provides cargo and general aviation services, parking and rental car facilities, and support facilities.

Planned capital improvements at HOU include an expansion of the west concourse, airfield improvements, renewal and replacement projects, and other infrastructure improvements.

Table S-2 summarizes the primary improvements planned at HOU for the period from FY 2024 through FY 2030.

TABLE S-2 HOU CAPITAL IMPROVEMENTS (FISCAL YEAR 2024 – FISCAL YEAR 2030)

PROGRAM	DESCRIPTION	PROJECT COSTS (FY 2024 – FY 2030; IN THOUSANDS)
West Concourse Expansion	▪ Adding seven narrowbody contact gates ▪ Increasing the overall holdroom area ▪ Enhancing the concessions and retail space ▪ Increasing the apron area and airfield circulation	$412,325
Airfield Improvements	▪ Non-standard taxiway realignment ▪ Fuel tank relocation; demolition of an operational "hot spot" by Runway 17-35 ▪ Reconstruction of Taxiway C ▪ Rehabilitation and upgrade of Runway 12L-30R ▪ Rehabilitation of Taxiway M ▪ Additional airfield improvements	$196,836
Renewal and Replacement	▪ SIDA booth improvements ▪ Sanitary sewer system ▪ Passenger boarding bridges ▪ Additional capital projects	$144,105
TOTAL HOU CAPITAL PROJECTS INCLUDED IN FINANCIAL ANALYSIS		**$753,266**

NOTE:
SIDA – Secure Identification Display Area
SOURCE: Houston Airport System, June 2023.

ELLINGTON AIRPORT

EFD currently serves general aviation, military, and National Aeronautics and Space Administration (NASA) operations, with no commercial aviation service. It is also home to the Houston Spaceport. EFD covers approximately 2,300 acres of land and is located 15 miles southeast of downtown Houston, Texas. Approximately 400 acres are designated on the southeast side of the airport for the Spaceport development.

The EFD airfield consists of three runways, with the longest measuring approximately 9,000 feet, as well as a network of taxiways and apron areas, aviation fuel services, and lighting systems.

Planned capital improvements at Ellington include airfield, infrastructure, and commercial development projects.

Table S-3 summarizes the primary improvements planned at EFD for the period from FY 2024 through FY 2030.

TABLE S-3 EFD CAPITAL IMPROVEMENTS (FISCAL YEAR 2024 – FISCAL YEAR 2030)

PROGRAM	DESCRIPTION	PROJECT COSTS (FY 2024 – FY 2030; IN THOUSANDS)
Airfield Projects	▪ Construction of a new Taxiway L to support growing Spaceport activities	$110,000
Additional Ellington Improvements	▪ Axiom Spaceport Development ▪ Drainage improvements ▪ Intuitive machines ▪ Spaceport Roadway ▪ Additional capital projects	$51,421
TOTAL EFD CAPITAL PROJECTS INCLUDED IN FINANCIAL ANALYSIS		**$161,421**

SOURCE: Houston Airport System, June 2023.

DEMOGRAPHIC AND ECONOMIC ANALYSIS

The demand for air transportation at an airport is, to a large degree, dependent upon the demographic and economic characteristics of the geographical area surrounding the airport (the airport's "air trade area"). This relationship is particularly true for origin and destination (O&D) passenger traffic, which has historically accounted for between approximately 42 and 56 percent of passenger traffic at IAH and between approximately 63 and 74 percent of passenger traffic at HOU.[4] The HAS Airports (IAH, HOU, EFD) are within the Air Trade Area.

The Air Trade Area has a large, diverse economy with projected growth that is anticipated to increase the demand for air travel and is a base that supports business and leisure travel. Projected economic variables indicate the Air Trade Area will remain a destination that supports the growth of inbound and outbound air travel.

Table S-4 presents selected 2020 and 2032 economic figures for the Air Trade Area and for the United States, as projected by Woods & Poole Economics, Inc. (Woods & Poole).

Additional information on the demographic and economic characteristics of the Air Trade Area is provided in Chapter 3.

AIR TRAFFIC

Houston's large population base and geographic position support domestic and international connectivity and make it a natural location for airline hub and focus city operations.[5] The status of IAH as a hub for United and HOU as a focus city for Southwest have established the positions of IAH and HOU as key components of the national air transportation system. IAH is United's third-largest hub in terms of scheduled average daily departures in FY 2023 and ranks fourth in terms of scheduled average daily departing seats. HOU is the seventh-largest airport in Southwest's network by both average daily departures and departing seats.

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[4] For purposes of this Report, the Air Trade Area coincides with the geographic boundaries of the Houston–The Woodlands, Texas, Combined Statistical Area (CSA).

[5] At hub airports airlines schedule flights around multiple departure and arrival banks throughout the day to accommodate local and connecting passenger itineraries. At focus city airports airlines schedule service to many destinations and multiple daily frequencies on many routes, prioritizing accommodation of O&D passengers. The volume of flights and destinations served from a focus city typically enable accommodation of connecting passenger itineraries as well.

TABLE S-4 PROJECTIONS OF ECONOMIC VARIABLES USED IN PASSENGER DEMAND FORECAST (2020 AND 2032)

VARIABLE	CY 2020	CY 2032	COMPOUND ANNUAL GROWTH RATE CY 2020 – CY 2032
Air Trade Area Population	7,341,569	8,593,146	1.3%
US Population	331,501,094	356,413,906	0.6%
Air Trade Area Total Employment (jobs)[1]	4,230,366	5,560,960	2.3%
US Total Employment (jobs)[1]	186,274,766	232,916,601	1.9%
Air Trade Area Total Personal Income[2]	$396,257	$567,690	3.0%
US Total Personal Income[2]	$17,628,632	$22,484,638	2.0%
Air Trade Area Per Capita Personal Income[3]	$53,974	$66,063	1.7%
US Per Capita Personal Income[3]	$53,178	$63,086	1.4%
Air Trade Area Gross Regional Product (GRP)[2]	$446,516	$636,084	3.0%
US Gross Domestic Product (GDP)[2]	$18,664,908	$24,492,794	2.3%
Air Trade Area per Capita Gross Regional Product (GRP)[3]	$60,820	$74,022	1.7%
US per Capita Gross Domestic Product (GDP)[3]	$56,304	$68,720	1.7%

NOTES:
All dollar amounts are in 2020 dollars. 2032 data are Woods & Poole Economics, Inc., projections.
CY – Calendar Year
1 Employment data include wage and salary workers, proprietors, private household employees, and miscellaneous workers.
2 Figures displayed in millions of 2012 dollars.
3 Figures displayed in 2012 dollars.
SOURCE: Woods & Poole Economics, Inc., *2022 Complete Economic and Demographic Data Source (CEDDS)*, June 2022.

Based on airline bookings data, in the year ending June 2022 the Houston market was ranked 13th in the nation in terms of total O&D passengers. IAH and HOU are served by a large and stable base of airlines. As of April 2023, 52 airlines served IAH and HOU, collectively, with 49 serving IAH and 9 serving HOU (6 airlines serve both airports). Currently, no airlines operate scheduled passenger or cargo flights to EFD. Significant US airlines serving IAH include Alaska Airlines (Alaska), American Airlines (American), Delta Air Lines (Delta), Frontier Airlines (Frontier; transferred service from HOU to IAH in 2012), JetBlue Airways (JetBlue; transferred service from HOU to IAH in 2019), Southwest (initiated service in 2021), Sun Country Airlines (Sun Country; initiated service in 2021), Spirit Airlines (Spirit; initiated service in 2012), and United. American, Delta, and Southwest have consistently served HOU. Allegiant Air (Allegiant) launched service from HOU in 2020 and Frontier resumed service at HOU in 2022, while maintaining service at IAH.

During CY 2023 airlines scheduled 423 average daily departures to 113 domestic destinations and 111 average daily departures to 66 international destinations from IAH. During CY 2023 airlines scheduled 129 average daily departures to 69 domestic destinations and 8 average daily departures to 9 international destinations from HOU.

The HAS served approximately 26.1 million enplaned passengers in FY 2022, which represents 87.5 percent of 29.8 million enplaned passengers in FY 2019, prior to the impact of COVID-19 on air travel. Historically, IAH and HOU have served approximately three-quarters and one-quarter of HAS traffic, respectively. The compound annual growth rate (CAGR) from FY 2013 to FY 2019 was 2.9 percent, and the FY 2013 to FY 2022 CAGR was 0.4 percent.

Of the passengers served by IAH and HOU in FY 2022, O&D passenger traffic comprised approximately 58.1 percent and 64.0 percent of traffic at IAH and HOU, respectively, while connecting passenger traffic comprised approximately 41.9 percent and 36.0 percent of traffic at IAH and HOU, respectively.

Forecasts of aviation demand (i.e., enplaned passengers, aircraft operations, and landed weight) were developed considering the following:

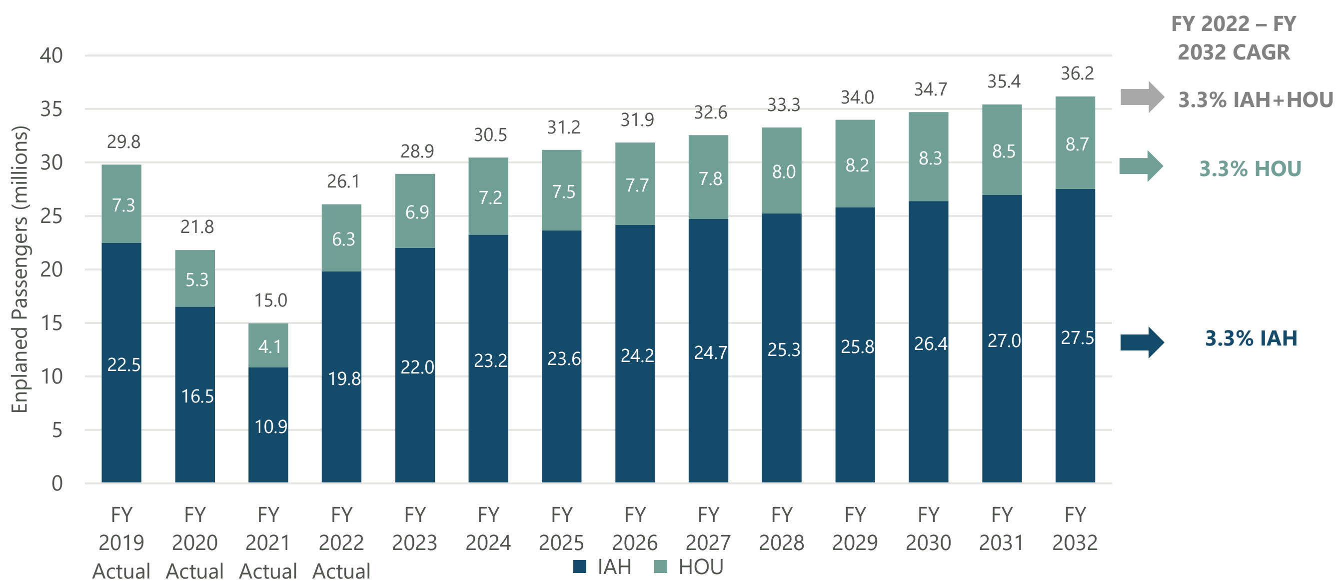
- historical activity at the Airport System and across the industry;
- recent trends and projections of local and national socioeconomic factors; and
- anticipated use of IAH and HOU by United, Southwest, and other airlines.

Enplaned passenger activity is forecast to grow at IAH from 19.8 million in FY 2022 to 27.5 million in FY 2032, which represents a CAGR of 3.3 percent. Total enplaned passengers are forecast to exceed 2019 levels on a FY basis beginning in FY 2024.

At HOU, enplaned passengers are forecast to increase from 6.3 million in FY 2022 to 8.7 million in FY 2032, which represents a CAGR of 3.3 percent. Total enplaned passengers are forecast to exceed 2019 levels on a FY basis beginning in FY 2024.

Additional information on air traffic is provided in Chapter 5 of this Report. **Exhibit S-1** summarizes historical and forecast enplaned passengers at the Airports through FY 2032.

EXHIBIT S-1 IAH AND HOU TOTAL ENPLANED PASSENGERS



NOTES:
CAGR – Compound Annual Growth Rate
FY – Fiscal Year
HOU – William P. Hobby Airport
IAH – George Bush Intercontinental/Houston Airport
SOURCES: Houston Airport System, April 2023 (actual passengers); Ricondo & Associates, Inc., June 2023 (forecast passengers).

FINANCIAL ANALYSIS

HAS maintains the financial records and accounts of the Airports in accordance with generally accepted accounting principles and as required by the provisions of the Bond Ordinance. Neither the City of Houston nor State of Texas tax revenues are pledged to the payment of debt service or to fund the cost of operations at the Airports. The City's FY begins on July 1 and ends on June 30 of each year.

As defined in the Bond Ordinance, Net Revenues are Revenues less Operation and Maintenance Expenses (O&M Expenses) resulting in Net Revenues of the combined Airport System (IAH, HOU, and EFD). The financial framework and debt service coverage calculations are presented in Chapter 6 and Appendix A of this Report.

Airline use and lease agreements have been authorized to formalize the main financial and operational arrangements between the City and the signatory airlines at IAH. Rather than a single agreement, distinct agreements have been developed for each terminal. For each agreement, charges are assessed using a residual airfield calculation and a compensatory cost recovery methodology for the remaining airline-related Airport Cost Centers.[6] However, costs at IAH Terminal D are recovered primarily on a common use, or activity basis, while costs at the remaining IAH terminals are primarily recovered on an exclusive or preferential use basis. In addition, the retention of concessions revenues and commitments regarding capital improvements vary between each use and lease agreement. Information on the terminal-specific agreements, including certain agreements that are currently being negotiated, is included in Chapter 6.

The Hobby Airport Use and Lease Agreement, initially established in 2013, provides for the operational and financial arrangement between the City and airlines operating at HOU. Airlines operating from Hobby are provided the opportunity to enter into either Short-Term or Long-Term Airport Use and Lease Agreements, with terms extending to 5 years after authorization or to 2040 for the Short-Term and Long-Term leases, respectively. The Short-Term agreements may be renewed for 5-year periods until 2040.

Based on the analysis in this Report, and the financial projections presented in Chapter 6, Ricondo is of the opinion that the Net Revenues generated by the Airport System in each year of the Projection Period are expected to be sufficient to comply with the Bond Ordinance.

Results of the financial analysis presented herein are summarized below. Although the Series 2023 Bonds may include the refunding of the Series 2002 Bonds and the purchase and cancellation of the Series 2020C Bonds, the analysis associated with this Report does not reflect any anticipated reduction of total annual debt service requirements resulting from such refunding and/or purchase.

- Total Operating and Maintenance (O&M) Expenses are budgeted to increase from $367.3 million in FY 2023 to $484.3 million in FY 2032, reflecting a CAGR of 3.1 percent. The increase includes impacts of the planned terminal expansions, in addition to inflation (assumed to average 3.0 percent annually through the Projection Period).
- Non-airline revenues are projected to increase from approximately $240.1 million in the FY 2023 budget to approximately $376.0 million in FY 2032, reflecting a CAGR of 5.1 percent. The increase is mainly due to the forecast growth of passengers and inflation.
- Other available revenue includes PFCs, as well as FAA Airport Improvement Program (AIP) grants and other federal funding. Projected PFC Revenues are expected to be sufficient to cover all anticipated PFC commitments, as described in more detail in Chapter 6.
- Debt Service Requirements (including outstanding Airport Obligations, estimated debt service on the 2023 Bonds, and projected debt service on future bonds necessary to complete the HAS CIP), net of capitalized interest, PFC Revenues, and other funds used to pay debt service as further provided in the Bond Ordinance, is budgeted to be approximately $88.6 million in FY 2023; it is projected to increase throughout the Projection Period to approximately $275.3 million in FY 2032.

[6] Airport Cost Centers is defined in the HAS airline agreements as "the facilities and areas to be used in accounting for Airport costs for the purposes of calculating rates and charges . . . as such areas now exist or may hereafter be modified or expanded."

- HAS airline revenue is projected to increase from $299.1 million in FY 2023 to $489.6 million in FY 2032, reflecting a CAGR of 5.6 percent.
- **Table S-5** provides a summary of cost per enplaned passenger (CPE) and debt service coverage projections associated with the financial analysis. Supporting calculations can be found in Appendix A.

TABLE S-5 PROJECTED COST PER ENPLANED PASSENGER AND DEBT SERVICE COVERAGE

	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028	FY 2029	FY 2030	FY 2031	FY 2032
Hobby CPE	$8.62	$8.33	$8.36	$8.34	$9.18	$9.42	$11.15	$11.20	$11.25
Intercontinental CPE	$11.22	$12.06	$11.82	$12.14	$12.09	$12.22	$12.53	$14.17	$14.06
Debt Service Coverage	1.78 x	1.85 x	1.82 x	1.82 x	1.71 x	1.48 x	1.39 x	1.42 x	1.39x

NOTE:
CPE – Cost per Enplaned Passenger
SOURCE: Houston Airport System, June 2023; Ricondo & Associates, Inc., June 2023.

The projected CPE amounts shown on Table S-5 were determined to be reasonable based on the expectation that these fees would not deter forecast demand for air traffic at HAS airports as airlines continue to deploy capacity to airports based on available resources. The projected CPE amounts are estimated assuming certain terms will be included in future airline agreements authorizing the use of facilities at the Airport System, as described in more detail in Section 61. The projected user fees in this analysis are deemed to be reasonable based on the following combination of factors, which are discussed in detail in Section 6.6.7.1:

- large population and strong economic base,
- attractive geographical location,
- important airports for United and Southwest, and
- increases in debt are associated with capital projects supported by airlines.

1. THE 2023 BONDS

The 2023 Bonds will be issued as Subordinate Lien Bonds pursuant to provisions of the Master Ordinance and the Supplemental Ordinance. Collectively, the Master Ordinance, the Supplemental Ordinance, and the previously described prior parity ordinances are referred to in this Report as the Bond Ordinance. This chapter describes the 2023 Bonds and key provisions of the Bond Ordinance.

Unless otherwise defined herein, all capitalized terms in this Report have the meanings assigned to such terms in the Bond Ordinance, the Official Statement for the 2023 Bonds, or the airline use and lease agreements authorized by the City.

1.1 THE 2023 BONDS

The 2023 Bonds include the 2023A Bonds and the 2023B Bonds. The City is issuing the 2023 Bonds to provide funding for planned capital improvements at HAS, to refund its outstanding Senior Lien Notes, and to refund the Series 2002 Bonds. Specifically, proceeds from the 2023 Bonds are anticipated to be used to:

i. fund portions of the HAS CIP,
ii. refund the Senior Lien Notes,
iii. fund capitalized interest,
iv. refund the Series 2002 Bonds,
v. tender a portion of the Series 2020C Bonds for purchase and cancellation,
vi. fund the Subordinate Lien Bond Reserve Fund, and
vii. pay all costs of issuance incurred in connection with the 2023 Bonds.

Table 1-1 reflects the funding plan for the 2023 Bonds. Proceeds from the 2023 Bonds will be used to fund approximately $562 million in project costs, including (1) $350 million associated with prior project costs originally funded by the Senior Lien Notes and (2) approximately $212 million associated with future project costs that will allow for completion of the ITRP at Intercontinental. Details on the projects and related proceed amounts associated with the 2023 Bonds can be found in Table 1-1.

Additional details on the HAS CIP can be found in Chapter 3 of this Report.

The HAS commercial paper program of Senior Lien Notes is supported by a direct pay letter of credit issued by Sumitomo Mitsui Banking Corporation, expiring in March 2025, which provides for a maximum amount of $350 million in outstanding principal as Senior Lien Notes. As of April 28, 2023, $350 million of Senior Lien Notes are outstanding. Proceeds from the 2023 Bonds will be used to refund the full amount of outstanding Senior Lien Notes.

Table 1-2 presents the estimated sources and uses for the 2023 Bonds.

For purposes of the financial analysis in this Report, the City's Financial Advisor made the following assumptions for the Series 2023 Bonds, as presented in **Table 1-3**.

TABLE 1-1 2023 BONDS PROJECT FUNDING PLAN

FUNDING	PROJECTS	2023A BONDS (AMT)	2023B BONDS (NON-AMT)	TOTAL 2023 BONDS PROCEEDS APPLIED
Outstanding Senior Lien Notes	▪ IAH ITRP ($260 million) ▪ HOU West Expansion Design/Engineering ($20 million) ▪ IAH Terminal A Outbound Baggage Handling System ($16 million) ▪ Fleet Maintenance Building ($15 million) ▪ Additional reimbursement of various prior capital project costs ($39 million)	$317,564,000	$32,436,000	**$350,000,000**
Planned Project Funding	▪ IAH ITRP	$211,870,000	$0	**$211,870,000**
Total		**$529,434,000**	**$32,436,000**	**$561,870,000**

NOTES:
Amounts are approximate, estimated as of May 2023.
IAH – George Bush Intercontinental/Houston Airport
ITRP – IAH Terminal Redevelopment Program
HOU – William P. Hobby Airport
SOURCES: Houston Airport System, April 2023; Masterson Advisors LLC, May 2023.

TABLE 1-2 2023 BONDS ESTIMATED SOURCES AND USES (NOT INCLUDING REFUNDING OR TENDER)

	2023A BONDS (AMT)	2023B BONDS (NON-AMT)	TOTAL
Sources			
Par Amount of Bonds	$571,160,000	$32,035,000	$603,195,000
Premium	$32,154,500	$2,811,116	$34,965,616
Total Sources of Funds at Closing	**$603,314,500**	**$34,846,116**	**$638,160,616**
Uses[1]			
Deposit to Project Fund	$211,870,000	$0	$211,870,000
Commercial Paper Refunding	$317,564,000	$32,436,000	$350,000,000
Deposit to Subordinate Lien Bond Reserve Fund[2]	$39,025,988	$2,153,000	$41,178,988
Cost of Capitalized Interest	$30,281,226	$0	$30,281,226
Cost of Issuance[3]	$4,573,286	$257,116	$4,830,402
Total Uses of Funds at Closing	**$603,314,500**	**$34,846,116**	**$638,160,616**

NOTES:
Numbers are preliminary and based on market rates as of May 15, 2023 plus a 25 basis points cushion, and are subject to change. Numbers may not sum due to rounding.
1 The analysis associated with this Report does not include debt service savings that are anticipated to occur from the refunding of the Series 2002 Bonds and the purchase and cancellation of the Series 2020C Bonds. Any such refunding and/or tender is anticipated to result in a decrease in total annual debt service. There is approximately $47.6 million of outstanding Series 2002 Bonds.
2 The anticipated amounts shown as Deposit to Subordinate Lien Bond Reserve Fund may include a deposit of bond proceeds, the use of bond proceeds to purchase a reserve fund surety policy, or a combination thereof.
3 The cost of issuance includes the underwriter's discount and additional proceeds.
SOURCE: Masterson Advisors LLC, May 2023.

TABLE 1-3 2023 BONDS FINANCING ASSUMPTIONS (NOT INCLUDING REFUNDING OR TENDER)

	2023A BONDS (AMT)	2023B BONDS (NON-AMT)
Last Maturity Date	07/01/2053 (30-year bond)	07/01/2053 (30-year bond)
Average Life	19.59 years	19.54 years
True Interest Cost	4.73%	4.34%

NOTE:
Numbers are preliminary and based on market rates as of May 12, 2023 plus a 25 basis point cushion, and are subject to change.
SOURCE: Masterson Advisors LLC, May 2023.

1.2 BOND ORDINANCE

1.2.1 SECURITY FOR THE 2023 BONDS

The 2023 Bonds will be payable from and secured by Net Revenues, subject to the prior and superior lien on Net Revenues securing the Senior Lien Obligations. The 2023 Bonds, as Subordinate Lien Reserve Fund Participants, will further be secured by the Subordinate Lien Bond Interest and Sinking Fund and the Subordinate Lien Bond Reserve Fund.

Table 1-4 shows total Senior Lien Notes, Subordinate Lien Bonds, and Inferior Lien Bonds outstanding as of May 2023.

TABLE 1-4 OUTSTANDING DEBT AND AIRPORT OBLIGATIONS

	OUTSTANDING DEBT (IN THOUSANDS)
Senior Lien Bonds	$0
Senior Lien Notes	$350,000
Subordinate Lien Bonds	$2,055,965
Inferior Lien Bonds	$0
Total Outstanding Airport Obligations	$2,405,965

NOTE:
In addition to the Senior Lien and Subordinate Lien debt secured solely by Airport System Fund revenues, Houston Airport System is responsible for a portion of taxable general obligation pension bonds and special facility revenue bonds (consolidated rental car facility).
SOURCE: Houston Airport System, June 2023.

The City has authority from the FAA to impose a PFC of $4.50 per eligible enplaned passenger at Intercontinental and Hobby. PFC Revenues are not included in the definition of Net Revenues and are not pledged to the payment of the 2023 Bonds or any other outstanding Airport Obligations. However, under the Master Ordinance, the calculation of Debt Service Requirements provides for a credit of the amount of other HAS funds, including, but not limited to, PFC Revenues that have been irrevocably committed by the City to the payment of principal or interest on Airport Obligations. HAS periodically irrevocably commits PFC Revenues to the Subordinate Lien Interest and Sinking Fund for the purpose of paying PFC-eligible debt service on approved PFC projects. For the purposes of this Report, PFC Revenues that the City expects to use to pay future debt service on Airport Obligations are credited against such future Debt Service Requirements.

The Master Ordinance establishes a Subordinate Lien Bond Reserve Fund and, within such fund, a Subordinate Lien Bond Reserve Fund Participant Account. All currently outstanding Subordinate Lien Bonds are Reserve Fund Participants secured by the Subordinate Lien Bond Reserve Fund Participant Account; however, the City reserves the right to issue future Subordinate Lien Bonds secured by a separate non-participant account within the Subordinate Lien Bond Reserve Fund. The 2023 Bonds are expected to be issued as Reserve Fund Participants. The Reserve Fund Requirement for the Subordinate Lien Bond Reserve Fund Participant Account is equal to the greatest amount of the Debt Service Requirements scheduled to occur In the then-current and each future FY for all Subordinate Lien Bonds then Outstanding that are Reserve Fund Participants, including the bonds then being issued. The Subordinate Lien Bond Reserve Fund Participant Account is currently funded with Subordinate Lien Bond Reserve Fund Surety Policies, cash, and allowable investments. A portion of the proceeds of the 2023 Bonds will be deposited in the Subordinate Lien Bond Reserve Fund Participant Account and/or used to purchase a reserve fund surety policy for the Subordinate Lien Bond Reserve Fund Participant Account.

1.2.2 RATE COVENANT

The City covenants in the Master Ordinance to fix, charge, impose, and collect rentals, rates, fees, and other charges for use of the Airport System, and, to the extent it legally may do so, revise the same as may be necessary or appropriate, in order that in each FY the Net Revenues will at all times be at least sufficient to equal the larger of either:

(1) All amounts required to be deposited in such FY to the credit of the Senior Lien Bond Interest and Sinking Fund, the Senior Lien Bond Reserve Fund, the Subordinate Lien Bond Interest and Sinking Fund, the Subordinate Lien Bond Reserve Fund, the Inferior Lien Bond Interest and Sinking Fund, and the Inferior Lien Bond Reserve Fund; or

(2) An amount not less than (1) 125 percent of the Debt Service Requirements for the Outstanding Senior Lien Obligations for such FY, plus (2) 110 percent of the Debt Service Requirements for the Outstanding Subordinate Lien Bonds for such FY, plus (3) 100 percent of the Debt Service Requirements for the Outstanding Inferior Lien Bonds for such FY.

1.2.3 FLOW OF FUNDS

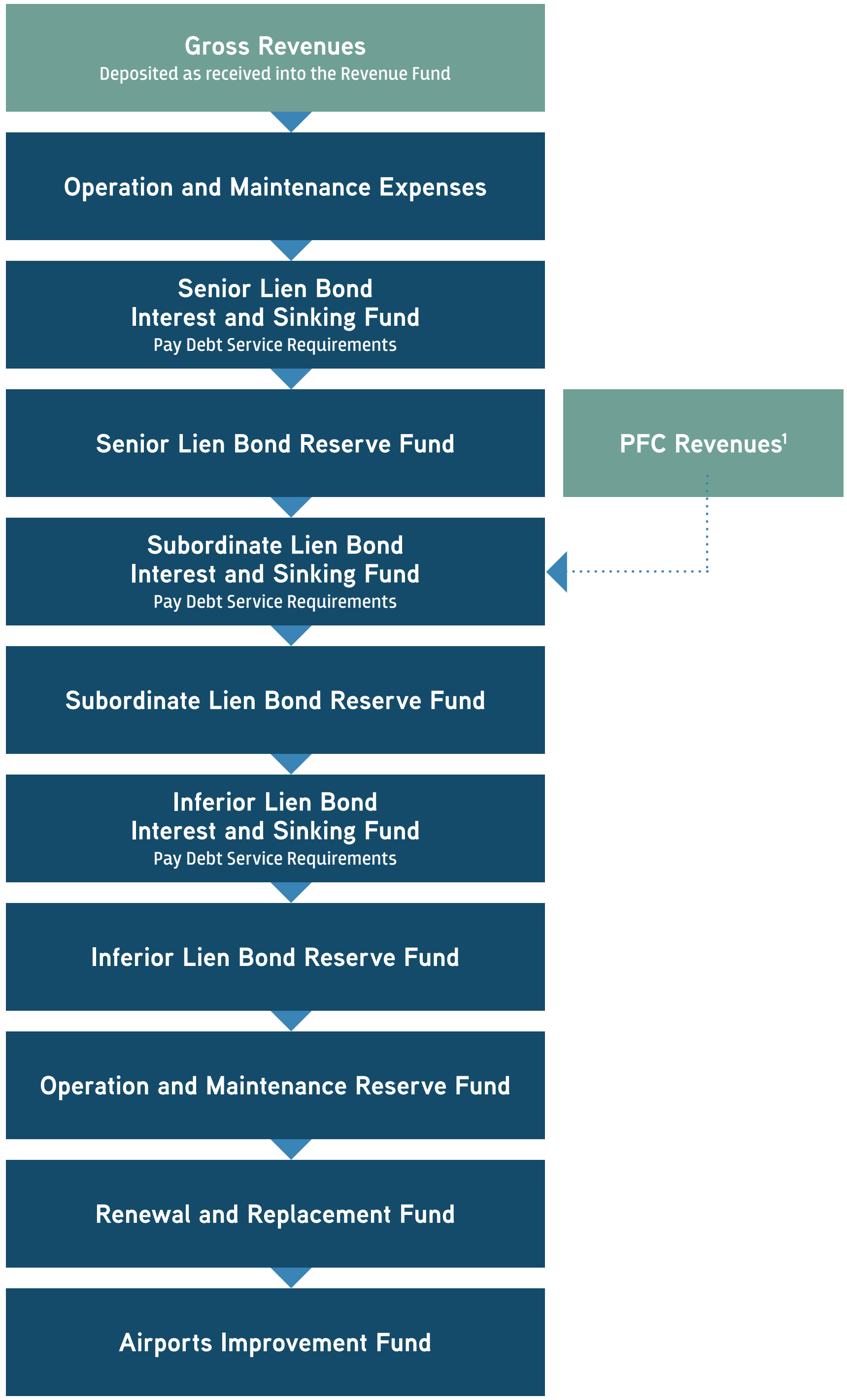
All Gross Revenues of the Airport System are deposited as received into the Revenue Fund and are first used for the payment of all current O&M Expenses. The City may also deposit any Federal Payments to the Revenue Fund, as further provided in the Master Ordinance. The remaining Net Revenues must then be deposited to certain accounts in order of priority, as required by the Master Ordinance; **Exhibit 1-1** illustrates the required flow of funds for Gross Revenues and PFC Revenues.

1.2.4 ADDITIONAL BONDS TEST

The Bond Ordinance authorizes the issuance of Additional Senior Lien Obligations and Additional Subordinate Lien Bonds, subject to certain conditions. The following conditions must be met:

(1) No Default. The Mayor and Aviation Director must certify that, upon the issuance of such series of Bonds, the City will not be in default under any term or provision of any Bonds then Outstanding;

(2) Proper Fund Balances. The City Controller shall certify that, upon the issuance of such series of Bonds, the interest and sinking funds and reserve funds for the Senior Lien Obligations and Subordinate Lien Bonds will contain the required amounts on deposit;



1 PFC Revenues are not included in the definition of Net Revenues and are not pledged to the payment of the 2023 Bonds or any other Airport Obligations. However, HAS periodically irrevocably commits PFC Revenues to the Subordinate Lien Bond Interest and Sinking Fund for the purpose of paying Debt Service Requirements on approved PFC projects.

SOURCE: Ricondo & Associates, Inc., June 2023.

EXHIBIT 1-1

FLOW OF FUNDS

(3) Historical Coverage on Outstanding Bonds. The City Controller shall certify that, for either the City's most recent complete FY or for any consecutive 12 out of the most recent 18 months, the Net Revenues were equal to at least

a. 125 percent of the Debt Service Requirements on all Senior Lien Obligations for such period, plus

b. 110 percent of the Debt Service Requirements on all Subordinate Lien Bonds for such period.

(4) Projected Coverage for Additional Bonds. An Airport Management Consultant provides a written report setting forth projections that indicate the estimated Net Revenues for each of the three consecutive FYs beginning in the earlier of:

a. the first FY following the estimated date of completion and initial use of all revenue-producing facilities to be financed with such series of Bonds, based upon a certified written estimated completion date by the consulting engineer for such facility or facilities, or

b. the first FY in which the City will have scheduled payments of interest on or principal of the series of Bonds to be issued for the payment of which provision has not been made as indicated in the report of such Airport Management Consultant from proceeds of such series of Bonds, investment income thereon or from other appropriated sources (other than Net Revenues),

are equal to at least

(1) 125 percent of the Debt Service Requirements on all Senior Lien Obligations, plus

(2) 110 percent of the Debt Service Requirements on all Subordinate Lien Bonds,

scheduled to occur during each such respective FY after considering the additional Debt Service Requirements for the additional series of Bonds to be issued;

(5) Alternate Coverage for Additional Bonds. In lieu of the certification described in (4), the City Controller may provide a certificate showing that, for either the City's most recent complete FY or for any consecutive 12 out of the most recent 18 months, the Net Revenues were equal to at least:

(1) 125 percent of the maximum Debt Service Requirements on all Senior Lien Obligations, plus

(2) 110 percent of the maximum Debt Service Requirements on all Subordinate Lien Bonds,

scheduled to occur in the then-current or any future FY after taking into consideration the issuance of the series of Bonds proposed to be issued.

This Report evaluates item (4), as described in more detail in Chapter 6. Additional provisions in the Bond Ordinance are described for conditions related to refunding bonds, Short-Term/Demand Obligations, Completion Bonds, Credit Agreements, Qualified Hedge Agreements, Inferior Lien Bonds, Special Facilities Bonds, and obligations secured by PFC Revenue and Excluded Fee and Charge Revenues, all of which are not applicable to the issuance of the 2023 Bonds.

2. THE HOUSTON AIRPORT SYSTEM

The HAS, an enterprise system of the City of Houston, Texas, manages and operates IAH, HOU, and EFD. This chapter describes the existing IAH, HOU, and EFD facilities, including airfield, terminal, automobile parking, rental car, air cargo, support, and general aviation facilities.

2.1 GEORGE BUSH INTERCONTINENTAL/HOUSTON AIRPORT

Intercontinental covers approximately 10,125 acres of land and is located 22 miles north of the central business district of Houston, Texas. IAH is bordered by Farm to Market 1960 Road on the north side, Interstate 69 (I-69) on the east side, Aldine Westfield Road on the west side, and Greens Road on the south side. The FAA classifies IAH as a large-hub airport, which is based on total enplaned passengers.

Exhibit 2-1 presents an aerial view of Intercontinental.

2.1.1 AIRFIELD

The IAH airfield consists of five runways, a network of taxiways and apron areas, aviation fuel services, and lighting systems.

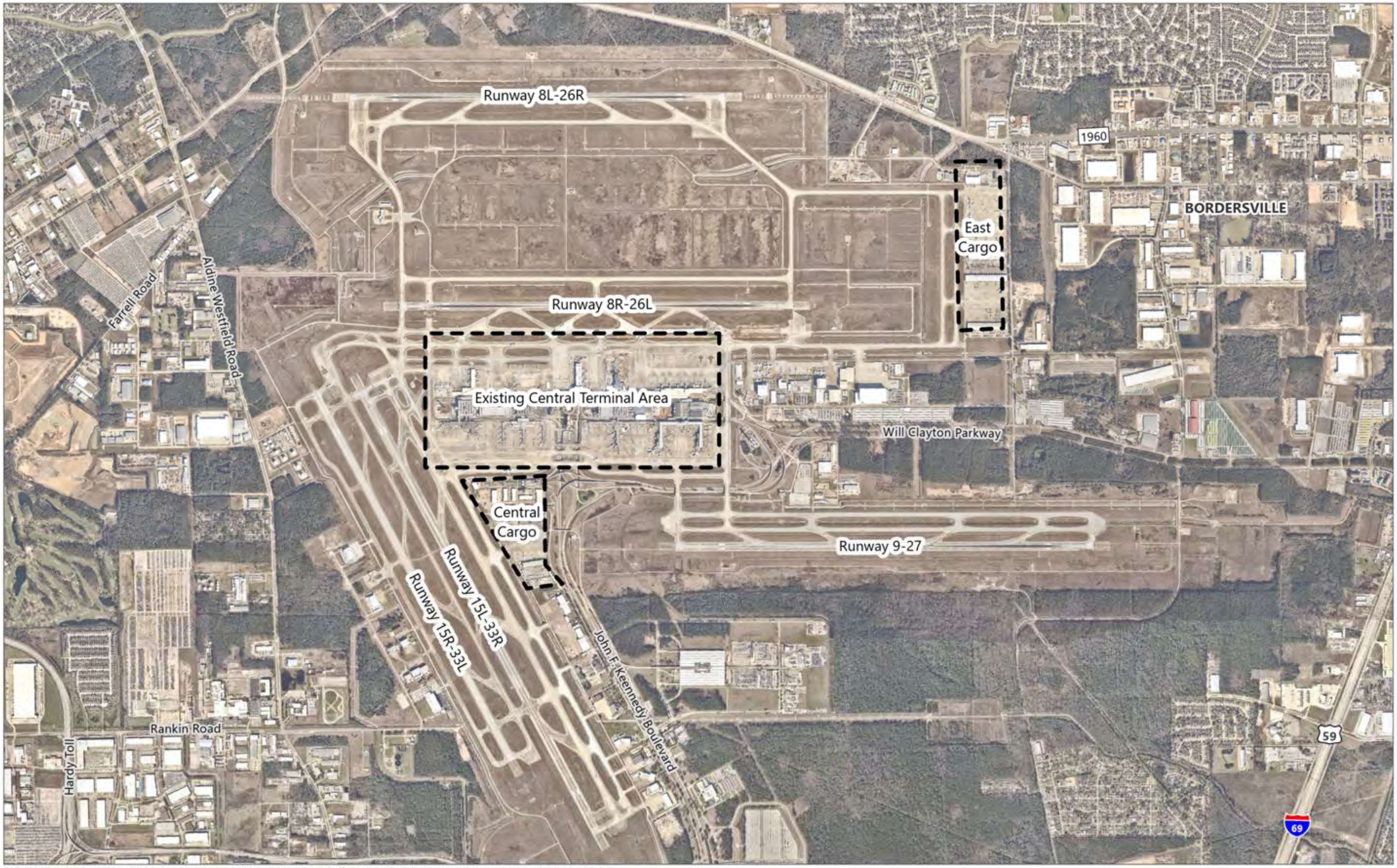
Table 2-1 lists the orientation and length for each runway at IAH. All runways have electronic and other navigational aids that permit aircraft to land in most weather conditions. Aircraft generally arrive on the east–west runways and depart on the northwest–southeast runways. Centerline separation allows for simultaneous approaches to the three east–west runways during most weather conditions.

TABLE 2-1 RUNWAYS – GEORGE BUSH INTERCONTINENTAL/HOUSTON AIRPORT

	ORIENTATION	LENGTH (FEET)	WIDTH (FEET)
Runway 15R-33L	northwest–southeast	10,000	150
Runway 15L-33R	northwest–southeast	12,001	150
Runway 8L-26R	east–west	9,000	150
Runway 8R-26L	east–west	9,402	150
Runway 9-27	east–west	10,000	150

SOURCE: US Department of Transportation, Federal Aviation Administration, June 2023 (airport diagram).

A network of taxiways, aprons, and aircraft holding areas supports the runways. Taxiways connect the passenger terminal, cargo, and general aviation aircraft parking areas to the runways. The taxiway system also provides access to support facilities, such as the fire stations located on the IAH airfield.



SOURCES: Nearmap, January 2023 (aerial photography–for visual reference only, may not be to scale).

NORTH 0 3,500 ft

EXHIBIT 2-1

EXISTING AIRPORT FACILITIES
– GEORGE BUSH INTERCONTINENTAL/HOUSTON AIRPORT

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2.1.2 TERMINAL COMPLEX

The IAH terminal complex comprises five terminals: A, B, C, D, and E. With a total terminal area of over 4 million square feet, IAH provides access to 127 gates. All terminals are connected by both an underground train for passenger transport outside security (Subway) and an elevated train for passenger transport inside security (Skyway). **Exhibit 2-2** illustrates the existing terminal complex.

Within each terminal building, the lower level provides access to the non-secure Subway that connects the five terminals and the Marriott Hotel. The arrivals level provides access to baggage claim, parking, and ground transportation. The second (departure) level primarily contains ticketing and check-in, security checkpoints, and the secure areas, including holdrooms, concession spaces, and restrooms. The Skyway on Level 3 provides secure access to each terminal building, with stations located at Terminals A, B, C, and D/E.

Terminal A comprises a north and south concourse connected by a shared ticketing/check-in area. As of April 2023, 10 individual airlines provide domestic service through Terminal A. Terminal A also serves a select number of pre-cleared international flights. As discussed in more detail in Chapter 3, the modernization and expansion of Terminal A at IAH is included within the HAS CIP and is scheduled to begin in FY 2024.

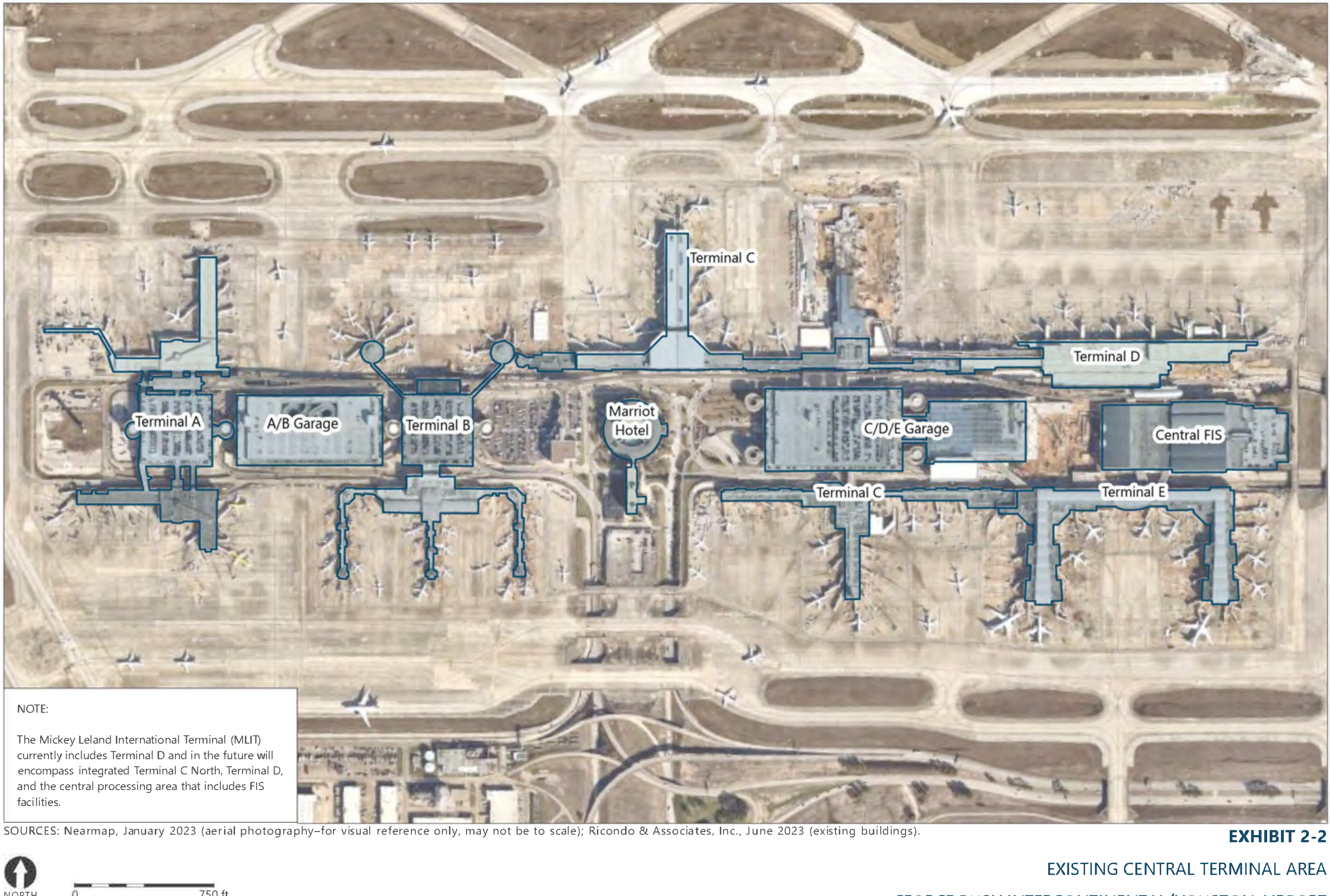
Terminal B, leased entirely by United, is also separated into north and south concourses connected by a shared ticketing/check-in area. Terminal B is primarily served by United Express regional jet flights. The south concourse was redeveloped in 2013. The Terminal B north concourse represents the only two remaining circular-shaped flight stations associated with the architecture of the original construction of IAH. The redevelopment of the north concourse to replace the two remaining flight stations may potentially be undertaken by United, but the redevelopment is not assumed to occur within the Projection Period for the purpose of this Report.

Terminal C, served by United domestic flights, comprises north and south concourses connected by a shared ticketing/check-in area. The original Terminal C North concourse, located directly north of the Terminal C South concourse, was demolished in 2021 to allow for the implementation of the ITRP. The existing Terminal C North concourse is located west of the original Terminal C North concourse and was constructed in 2017.

Terminals D and E at IAH are located north (Terminal D) and south (Terminal E) of a central FIS facility. Terminal D is an east–west oriented concourse that currently serves all non-United international operations (except Air Canada and WestJet Airlines operating pre-cleared international flight at Terminal A), while Terminal E comprises two separate piers and serves both domestic and international operations for United. The ongoing redevelopment of Terminal D and the FIS facility through the ITRP at IAH is included in the HAS CIP, as discussed in more detail in Chapter 3.

2.1.3 AIRPORT HOTEL

The Houston Airport Marriott at Intercontinental is located between Terminals B and C. The hotel offers 573 guestrooms and over 30,000 square feet of event space. On-site parking is available at the adjacent parking garage, and the Subway provides access to each terminal at the Airport.



NOTE:

The Mickey Leland International Terminal (MLIT) currently includes Terminal D and in the future will encompass integrated Terminal C North, Terminal D, and the central processing area that includes FIS facilities.

SOURCES: Nearmap, January 2023 (aerial photography–for visual reference only, may not be to scale); Ricondo & Associates, Inc., June 2023 (existing buildings).

EXHIBIT 2-2

EXISTING CENTRAL TERMINAL AREA

– GEORGE BUSH INTERCONTINENTAL/HOUSTON AIRPORT

2.1.4 AUTOMOBILE PARKING FACILITIES

Two public parking facilities provide a total of approximately 10,000 public parking garage spaces for Intercontinental patrons:

- Terminals A and B Parking Garage (located between Terminals A and B) – The Terminals A and B Parking Garage has eight levels for parking. The first level of the garage is used for valet parking. The remaining levels of the garage are available for public parking, totaling approximately 4,000 parking spaces for public use.
- Terminal C/D/E Parking Garage (located between Terminal C North and Terminal C South) – The Terminal C/D/E Parking Garage has seven levels for parking. The fourth level of the garage is used for valet parking. The remaining levels are available for public parking, totaling approximately 6,000 parking spaces for public use.

A third garage, the Terminal D/E Parking Garage, was previously located east of the Terminal C/D/E Parking Garage but was closed in March 2021 and demolished to accommodate the expansion related to the ITRP. An employee parking lot is located approximately 0.5 miles east of the airport.

Additional public parking is available on IAH property at two Ecopark lots with a total of approximately 11,000 spaces, and a cell phone lot is located off Will Clayton Parkway. An additional 3,000 parking spaces are available for employee use.

2.1.5 RENTAL CAR FACILITIES

The IAH consolidated rental car center is located on the airport and is approximately 5 minutes from the terminals by shuttle. All of the rental car companies serving the airport operate from the consolidated rental car center. Four companies operate 10 rental car brands on-site at the Airport: Hertz Corporation (Hertz, Dollar, and Thrifty), the Avis Budget Group (Avis, Budget, and Payless Car Rental), Enterprise Holdings (Enterprise, Alamo, and National), and Zipcar. Each brand has passenger-accessible counter space and ready/return spaces located on the first level of the rental car center. The shuttle to and from the terminal complex is located on the second level.

2.1.6 AIR CARGO

Air cargo operations are supported at two separate locations at the airport: Central Cargo and IAH Cargo Center (East Cargo). Combined, the two air cargo areas, including cargo support buildings, are located on approximately 295 acres and offer parking for up to 20 widebody aircraft. The cargo centers serve 14 cargo carriers, several passenger airlines moving belly cargo, and multiple charter cargo airlines.

2.1.7 GENERAL AVIATION

General aviation services at Intercontinental are provided by Signature Flight Support and Atlantic Aviation, two fixed base operators (FBOs) located south of the terminal complex on opposite sides of Runways 15L-33R and 15R-33L. The Signature Flight Support FBO, located west of Runway 15R-33L, consists of a 208,000-square-foot aircraft parking apron, a single 120,000-square-foot multiuse hangar, and a 5,500-square-foot executive terminal. The Atlantic Aviation FBO, located east of Runway 15L-33R, consists of a 320,000-square-foot aircraft parking apron, a 45,000-square-foot multiuse hangar, and a 17,000-square-foot executive terminal.

2.1.8 OTHER AREAS

Support facilities provide various critical functions at Intercontinental and support the airlines, airfield, and terminal operations. Activities conducted in these facilities directly impact the quality and safety of airport operations and contribute to a well-run airport. The following is a list of primary support facilities located within other areas of IAH:

- The main Aircraft Rescue and Firefighting (ARFF) Station, ARFF Station 99, is located southwest of runway 15R 33L. There are additional supporting fire stations, ARFF Station 54 and ARFF Station 92, located adjacent to Taxiways NE and SB, respectively.
- The IAH Airport Traffic Control Tower (ATCT) is located southeast of the terminal buildings, adjacent to Taxiway SF.
- A fuel farm is located on airport property and provides approximately 13 million gallons of jet fuel storage capacity.
- United’s maintenance facility is located east of the terminal building complex and has a footprint of 375,000 square feet, including 260,000 square feet of aircraft hangar space.

2.2 WILLIAM P. HOBBY AIRPORT

Hobby covers approximately 1,500 acres of land and is located 7 miles southeast of the central business district of Houston, Texas. HOU is bordered by Airport Boulevard on the north side, Monroe Road on the east side, Telephone Road on the west side, and Randolph Street on the south side. The FAA classifies HOU as a medium-hub airport, which is based on total enplaned passengers.

Exhibit 2-3 presents an aerial view of Hobby.

2.2.1 AIRFIELD

The HOU airfield consists of three intersecting runways, a network of taxiways and apron areas, aviation fuel services, and lighting systems.

Table 2-2 lists the orientation, length, and width for each runway at HOU. All runways have electronic and other navigational aids that permit aircraft to land in most weather conditions. Airline operations generally take place on Runway 4-22 and Runway 13R-31L, while general aviation operations take place on the shorter Runway 13L-31R. A network of taxiways connects the passenger terminal, cargo, and general aviation aircraft parking areas to the runways.

TABLE 2-2 RUNWAYS – WILLIAM P. HOBBY AIRPORT

	ORIENTATION	LENGTH (FEET)	WIDTH (FEET)
Runway 4-22	northeast–southwest	7,602	150
Runway 13R-31L	northwest–southeast	7,602	150
Runway 13L-31R	northwest–southeast	5,148	100

SOURCE: US Department of Transportation, Federal Aviation Administration, June 2023 (airport diagram).

SOURCES: Nearmap, January 2023 (aerial photography–for visual reference only, may not be to scale).

EXHIBIT 2-3

EXISTING AIRPORT FACILITIES
–WILLIAM P. HOBBY AIRPORT

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2.2.2 TERMINAL

The HOU terminal building comprises a central concourse, a west concourse, and a consolidated check-in area, totaling approximately 910,000 square feet of space and serving 30 gates, 5 at the west concourse and 25 at the central concourse. **Exhibit 2-4** illustrates the existing terminal facilities.

Level 1 of the terminal is dedicated to arrivals and contains baggage claim carousels and access to ground transportation and parking. Level 1 of the west concourse also includes FIS facilities for arriving international passengers. Level 2 serves departures and contains ticketing and check-in, the security checkpoint to all gates, and the secure areas, including holdrooms, concession spaces, retail spaces, and restrooms.

Completed in 2008, the central concourse replaced the three original concourses. This concourse has 25 aircraft gates and serves domestic operations for Allegiant, American, Delta, Frontier, and Southwest. Gates 20 through 32 are located on the east side of the central concourse, while Gates 40 through 51 are located on the west side of the central concourse.

The west concourse opened in 2015 and is connected to the main terminal building via a post-security walkway. This concourse is designated for international flights and has 5 gates that are located on the second floor of the concourse, above the FIS area located on the first floor. Four of the gates are operated solely by Southwest. The HAS CIP includes a 7-gate expansion of the west concourse at HOU, anticipated to be completed by FY 2030, as described in more detail in Chapter 3 of this Report.

2.2.3 AUTOMOBILE PARKING FACILITIES

Three public parking facilities provide a total of approximately 6,500 on-airport parking spaces at HOU:

- Blue Garage –The Blue Garage has four levels, all of which are available for public parking. The Blue Garage is connected to the terminal via a pedestrian bridge on the fourth level of the garage.
- Red Garage – Located adjacent to and connected to the Blue Garage, the Red Garage also provides four levels for parking. The second level of the garage is used for valet parking. The remaining levels are available for public parking.
- Ecopark – The Ecopark parking lot is adjacent to the east end of the terminal's lower level and provides additional parking spaces for the public. In addition, the Ecopark lot includes areas designated for employee parking.

In addition, approximately 1,900 parking spaces are available at HOU for use as employee parking.

2.2.4 RENTAL CAR FACILITIES

Four companies operate 10 rental car brands at the airport: Hertz Corporation (Hertz, Dollar, and Thrifty), the Avis Budget Group (Avis, Budget, and Payless Car Rental), Enterprise Holdings (Enterprise, Alamo, and National), and Fox Rent a Car. All brands except Fox Rent a Car and Payless Car Rental have a counter in the terminal's baggage claim area. Shuttles to the rental car areas are located outside the first level of the terminal. The majority of the rental car companies operate lots that are located on HOU property at Airport Boulevard, with the exception of Dollar, Enterprise, Hertz, and Thrifty, which offer locations located off airport property.

SOURCES: Nearmap, January 2023 (aerial photography–for visual reference only, may not be to scale); Ricondo & Associates, Inc., June 2023 (existing buildings).

EXHIBIT 2-4

EXISTING TERMINAL FACILITIES
– WILLIAM P. HOBBY AIRPORT

2.2.5 AIR CARGO

Air cargo operations at HOU consist primarily of Southwest Air Cargo activities. The Southwest Air Cargo facility is located in the northeast corner of the airport property, adjacent to the Ecopark lot. There is no dedicated apron area attached to the cargo facility.

2.2.6 GENERAL AVIATION

General aviation services at HOU are provided by six FBOs: Wilson Air Center, Million Air, Jet Aviation, Atlantic Aviation, Galaxy FBO, and Signature Flight Support. The FBOs, located on the north and south ends of the airfield, provide fueling, aircraft parking, minor airframe and powerplant service, and oxygen refilling service. Each FBO consists of an aircraft parking apron, one or more hangars, and a general aviation facility building.

2.2.7 OTHER AREAS

Support facilities provide various critical functions at Hobby and support the airlines, airfield, and terminal operations. Activities conducted in these facilities directly impact the quality and safety of airport operations and contribute to a well-run airport. The following is a list of primary support facilities located within other areas of HOU:

- The main ARFF Station is located at the intersection of Taxiways K and J.
- The HOU ATCT is located west of the terminal, at midfield.
- Southwest operates a maintenance facility located on the east side of the HOU property, adjacent to the northeast end of Runway 4-22. The facility has a footprint of approximately 240,000 square feet, including 140,000 square feet for aircraft maintenance and 100,000 square feet for offices, parts storage, and other support areas.

2.3 ELLINGTON AIRPORT

Ellington covers approximately 2,400 acres of land and is located 15 miles southeast of the central business district of Houston, Texas. EFD is bordered by Sam Houston Tollway and Genoa Red Bluff Road on the north side, Space Center Boulevard on the east side, Galveston Road on the west side, and Sylvan Rodriguez Park on the south side. EFD currently serves general aviation, military, and NASA operations, with no commercial aviation service.

HAS was granted a Commercial Spaceport Launch Site License from the FAA in 2015, allowing HAS to establish a horizontal launch site for Reusable Launch Vehicles (RLVs) at Ellington. Approximately 400 acres are designated on the southeast side of the airport for the Spaceport development.

Phase 1 of the Houston Spaceport Project was approved by the City Council in October 2018. Infrastructure construction, including streets, utility, and communication facilities, is underway. The site of Phase 1 Expansion includes 153 acres with infrastructure and 400 build-to-suit acres.

All 53,000 square feet and laboratory and office space in the Houston Aerospace Support Center, the first dedicated facility for the Houston Spaceport, are leased out. In addition, two major tenants, Axiom Space and Collins Aerospace, were selected by NASA to supply equipment for the International Space Station program and future Artemis lunar missions. In August 2022, Collins Aerospace opened a new 125,000-square-foot facility at EFD to expand operations, manufacturing, and testing capacity. Axiom Space's new headquarters is under construction at EFD and will include astronaut training, mission control, development and testing, and production facilities.

Exhibit 2-5 presents an aerial view of Ellington.

SOURCES: Nearmap, January 2023 (aerial photography–for visual reference only, may not be to scale).

NORTH 0 2,000 ft

EXHIBIT 2-5

EXISTING AIRPORT FACILITIES –ELLINGTON AIRPORT

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2.3.1 AIRFIELD

The EFD airfield consists of three runways, a network of taxiways and apron areas, aviation fuel services, and lighting systems. **Table 2-3** lists the orientation, length, and width for each runway at EFD. A network of taxiways connects the general aviation aircraft parking areas, NASA facilities, and military facilities to the runways.

TABLE 2-3 RUNWAYS – ELLINGTON AIRPORT

	ORIENTATION	LENGTH (FEET)	WIDTH (FEET)
Runway 17R-35L	north–south	9,001	150
Runway 17L-35R	north–south	4,609	75
Runway 4-22	northeast–southwest	8,001	150

SOURCE: US Department of Transportation, Federal Aviation Administration, June 2023 (airport diagram).

Design is underway for the construction of a new Taxiway L at Ellington, the construction of which is planned to occur during the Projection Period for this Report. The new taxiway would provide Spaceport access to the EFD airfield. Additional details can be found in Chapter 3.

2.3.2 GENERAL AVIATION

General aviation services at EFD are provided by Signature Flight Support; the FBO is located on the west side of the airport, adjacent to Taxiway J. The FBO consists of an aircraft parking apron, a single multiuse hangar, and a general aviation facility building with 35,000 square feet of space.

2.3.3 OTHER AREAS

In addition to the FBO, tenants at EFD include businesses (TrustComm, Inc., North American Controls, Inc., and Northrop Rice), NASA, military (Texas Air National Guard, Texas Army National Guard, and US Coast Guard), and the Lone Star Flight Museum.

Support facilities provide various critical functions at Ellington. The following is a list of primary support facilities located at EFD:

- The self-fueling station can be accessed via Taxiway J to the T-hangar area and is open 24 hours a day, 7 days a week.
- The main ARFF Station is located at the north end of Taxiway H. The ARFF Station is owned by HAS and operated by Texas Army National Guard.
- The EFD ATCT is located on the west side of the airfield at the intersection of Taxiways K and H. The ATCT is owned by HAS and operated by Texas Army National Guard.

3. CAPITAL IMPROVEMENT PROGRAM AND FUNDING SOURCES

This chapter summarizes the HAS CIP, including assumed funding sources and a description of the primary project components.

3.1 CAPITAL IMPROVEMENT PROGRAM

Each year, HAS adopts a five-year CIP to address ongoing maintenance, capacity, and security needs of the Airport System. For the period from FY 2024 through FY 2028, the proposed CIP includes projects that address needs of the Airports which range from rehabilitation of airfield infrastructure to development projects that support new or expanded facilities.[7] The largest development components of the current CIP are related to Airport terminal projects and include the completion of the ITRP at IAH, the West Concourse Expansion at HOU, and the DRP at IAH. The 2023 Bonds will provide funding for the refunding of commercial paper and the completion of ITRP. In addition, the 2023 Bonds will provide for the refunding of the Series 2002 Bonds and the purchase and cancellation of the Series 2020C Bonds tendered to the City; however, the Series 2002 Bonds and the Series 2020C Bonds are associated with prior project costs.

The analysis associated with this Report incorporates the HAS proposed five-year CIP (FY 2024 through FY 2028) as well as additional planned capital spending in FY 2029 and FY 2030 provided by HAS. Beyond FY 2030, planned capital improvements for the Airports are not included within the analysis, but there is a potential for additional CIP spending. The five-year CIP is re-evaluated annually, and projects could be included/excluded based on project need at that time.

Table 3-1 summarizes the HAS CIP for FY 2024 through FY 2030, including estimated total project costs and approximate annual funding requirements. The HAS CIP consists of approximately $3.3 billion of total project costs over the period from FY 2024 through FY 2030.

3.1.1 INTERCONTINENTAL CAPITAL PROJECTS

The primary improvements within the HAS CIP for FY 2024 through FY 2030 related to IAH include the completion of ITRP, the DRP, Skyway Train Replacement, various airfield improvements, CUP Improvements, and ITT/Subway Replacement.

3.1.1.1 IAH TERMINAL REDEVELOPMENT PROGRAM

The implementation of the ITRP project is necessary to provide the additional facilities required to accommodate international operations at IAH. Completion of ITRP, which is underway, includes the renovation and expansion of the Mickey Leland International Terminal (MLIT) and renovation/expansion of the FIS facility. ITRP scope elements are depicted in **Exhibit 3-1**. The ITRP scope includes:

- **The International Terminal – North Concourse Project**, which is comprised of two key elements: the refurbishment and re-life of the existing Terminal D and the construction of the new MLIT D-West Pier.

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7 The HAS preliminary proposed CIP for the period from FY 2024 through FY 2028 reflects an updated version of the CIP approved by City Council for FY 2023 through FY 2027 in June 2022 and reflects additional capital projects. The City expects to adopt the FY 2024 through FY 2028 CIP in June 2023. The CIP associated with this Report includes capital spending through FY 2030 as anticipated by HAS. The CIP in this Report is indicative of the HAS plans but remains subject to City Council approval and is subject to change.

TABLE 3-1 HOUSTON AIRPORT SYSTEM CAPITAL IMPROVEMENT PROGRAM COST AND FUNDING SOURCES (FISCAL YEAR 2024 – FISCAL YEAR 2030, DOLLARS IN THOUSANDS)

	PROJECT COSTS (FY 2024–2030)	GRANTS	PFC PAY-GO	AIF FUNDS	SERIES 2023 BONDS	FUTURE AIRPORT OBLIGATIONS
George Bush Intercontinental/Houston Airport						
ITRP	$485,097	$0	$135,000	$138,227	$211,870	$0
Domestic Redevelopment Program	$875,564	$176,477	$0	$82,358	$0	$616,730
Skyway Train Replacement	$350,000	$0	$0	$0	$0	$350,000
IAH Airfield Improvements	$106,162	$0	$0	$14,383	$0	$91,779
Central Utility Plant (CUP) Improvements	$118,624	$14,978	$0	$0	$0	$103,646
IAH Consolidated Employee Parking Lot	$47,800	$0	$0	$47,800	$0	$0
Subway Train Replacement Design	$22,000	$16,500	$0	$0	$0	$5,500
Additional IAH Improvements	$310,278	$49,539	$0	$80,545	$0	$180,214
George Bush Intercontinental/Houston Airport	**$2,315,525**	**$257,494**	**$135,000**	**$363,313**	**$211,870**	**$1,347,868**
William P. Hobby Airport						
7 Gate Expansion at Hobby	$412,325	$49,993	$50,0000	$0	$0	$352,332
Hobby Airfield Improvements	$196,836	$40,708	$22,379	$73,169	$0	$20,580
Additional Hobby Improvements	$144,105	$41,799	$0	$13,913	$0	$88,393
William P. Hobby Airport	**$753,266**	**$132,500**	**$72,379**	**$87,082**	**$0**	**$461,305**
Ellington Airport						
Construction Of Taxiway L (Lima)	$110,000	$9,007	$0	$100,995	$0	$0
Additional Ellington Improvements	$51,421	$0	$0	$51,421	$0	$0
Ellington Airport	**$161,421**	**$9,007**	**$0**	**$152,416**	**$0**	**$0**
HAS System Support	**$84,075**	**$0**	**$0**	**$0**	**$0**	**$84,075**
Total	**$3,314,287**	**$399,002**	**$207,379**	**$602,809**	**$211,870**	**$1,893,248**

NOTES:
AIF – Airport Improvement Fund
FY – Fiscal Year
IAH – George Bush Intercontinental/Houston Airport
ITRP – IAH Terminal Redevelopment Program
PAY-GO – Pay as You Go
PFC – Passenger Facility Charge
SOURCE: Houston Airport System, June 2023.

SOURCES: Nearmap, January 2023 (aerial photography–for visual reference only, may not be to scale); Ricondo & Associates, Inc., November, 2022 (existing buildings); IAH Terminal Redevelopment Program (ITRP) Update, Economic Development Committee Meeting, June 17, 2020 (new and modified facilities–indicative layouts and subject to further design, review and airfield planning).

NORTH 0 300 ft

EXHIBIT 3-1

GEORGE BUSH INTERCONTINENTAL/HOUSTON AIRPORT
IAH TERMINAL REDEVELOPMENT PROGRAM (ITRP)

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- **The International Terminal – Central Processor and FIS Project**, which is comprised of the demolition of the existing Terminal D/E Garage, roadway modifications and construction of the new International Central Processor (ICP) building, and modifications to the existing FIS building. The FIS Renovation and Expansion Program modernizes and expands the existing FIS facility to support future international passenger growth up to approximately 33 million annual enplaned passengers.
- An additional ITRP project includes a new C-West Parking Garage to replace the lost parking capacity associated with the demolition of the Terminal D/E Parking Garage. The new C-West Parking Garage adds approximately 1,800 parking spaces between the Marriott Hotel and Garage C.

The following enabling projects were performed to support the ITRP:

- Infrastructure Division Office (IDO) Building, completed in April 2019, which allowed for the collocation and integration of the HAS Infrastructure, ITRP team, designers and contractors
- Enabling utilities improvements and landside enabling projects
- Enabling work for the D-West pier Apron and utilities
- Enabling work for the demolition of the Terminal D/E Garage and other advanced civil and baggage systems scope
- Construction of the West Pier, along with the associated connector and Terminal D renovations, are anticipated to be completed in FY 2025. The Central Processor and FIS modifications are planned for completion in FY 2027. The total cost of ITRP is approximately $1.3 billion, the majority of which has been funded with prior bonds and grant proceeds.

3.1.1.2 DOMESTIC REDEVELOPMENT PROGRAM

HAS plans to address capacity needs for domestic operations at IAH through the implementation of the DRP, which is anticipated to modernize and expand Terminal A. Although the Terminal A BHS Optimization component of the DRP is underway, the majority of the project construction will begin in FY 2024, with the date of beneficial occupancy (DBO) anticipated in FY 2031.

In 2020, HAS received several requests from airlines operating from Terminal A to expand their count of active boarding positions; active boarding positions are described as aircraft contact gates served by a passenger boarding bridge. In December 2020, recognizing there is limited capacity for other airline (OAL) domestic growth at the IAH, HAS initiated the DRP to identify opportunities and strategies to provide additional domestic gates. The DRP resulted in a terminal development strategy to add gate capacity to the Central Terminal Area (CTA) and optimize the facilities inside the CTA to address near-term gate needs from several non-hubbing airlines operating at IAH.

The Terminal A modernization and expansion is anticipated to include the addition of nine new contact gates to Terminal A. The Terminal A gate count would increase from 19 to 24 non-United gates, plus nine gates dedicated to United Airlines, for a total of 33 gates. The passengers using the Terminal A United gates will continue to be processed at other United processing facilities (e.g., Terminal B) and will use the Skyway train to connect between facilities. Additional elements of the Terminal A modernization will include restroom renovations; roof and passenger loading bridge replacements; and utility, fire protection system, and technology upgrades.

The total cost estimate for the DRP is approximately $950 million. Approximately $75 million has been expended to date, and approximately $875 million in costs will be required from the period from FY 2024 through FY 2030. A discussion of the status of negotiations with air carriers using Terminal A, including anticipated changes to rate setting methodology, is included in Chapter 6.

3.1.1.3 SKYWAY TRAIN REPLACEMENT

The City intends to replace the existing Skyway Automated People Mover (APM) System operating at IAH to provide an improved level of customer experience, improve reliability and to increase capacity. The Skyway APM is nearing the end of its useful life and the operation of and maintainability of the system are becoming more challenging. There have been service interruptions and the current system is nearing capacity limits during peak periods.

The Skyway APM consists of a dual-lane guideway approximately one mile in length, which connects the airside of Terminals, A, B, C and D/E. The Skyway APM System operation consists of a pinched-loop mode between the two end stations. In the pinched-loop mode, trains depart the D/E Terminal Station and proceed along the north guideway heading west, stopping at the Terminals C, B and A stations. After stopping at the Terminal A station, the trains reverse direction and travel back to the D/E Terminal Station along the south guideway.

The operating headway during the peak period is capped at a maximum of 180 seconds and the roundtrip headway time is 11 minutes. The peak operating periods for the Skyway APM System are from 5:30 a.m. to 10:00 p.m. The Skyway APM continues to operate in off-peak hours.

The Maintenance and Storage Facility (M&SF) is located within the CTA between the surface parking lot by Terminal B and the Marriott Hotel. There are a total of five service lanes in the M&SF: three lanes are dedicated to light maintenance, one lane is dedicated to heavy maintenance and car wash, and one lane is a storage lane. The Skyway Central Control Facility (CCF) will also be relocated as an expansion to the M&SF.

The Skyway APM System replacement project includes the complete design, fabrication, assembly, factory testing, demolition, disposal, construction, installation and on-site integration, test and demonstration and implementation of the Skyway APM System. Once the Skyway APM System replacement is substantially complete, the City will commence the operations and maintenance upgrade of the APM System. The Skyway APM replacement is expected to be complete in FY 2031. The current cost estimate for the project is $350 million.

3.1.1.4 IAH INTER-TERMINAL TRAIN/SUBWAY REPLACEMENT DESIGN

The ITT connects the landside or non-secure side of Terminals, A, B, C and D/E as well as the Marriott Hotel. The ITT is located in a below grade tunnel that provides stops at each of the terminals and the hotel. The IAH Inter-Terminal Train/Subway is reaching the end of its useful life. Parts replacement and maintainability has become challenging. Additionally, the current subway system could possibly be expanded to other landside locations on the airport.

The replacement system will take the place of the existing ITT and will operate within the existing tunnel. The replacement system will also service terminals A, B, C, D/E, and the Marriott Hotel. The replacement system will potentially include the capability to extend service to a future East Side Terminal and to the existing Consolidated Rental Car facility.

Currently, technologies under consideration for the replacement system include personal rapid transit (PRT), guideway rapid transit (GRT) and autonomous vehicle (AV) systems.

The subway replacement design is scheduled for completion in FY 2028 and is estimated to cost $22 million.

3.1.1.5 CENTRAL UTILITY PLANT IMPROVEMENTS

The IAH CUP was constructed in 1965 and is reaching the end of its useful life. Several expansions and additions have been appended to the CUP adding approximately 20,000 square feet to the original building footprint. The CUP building houses both chilled water and hot water assets along with cooling towers located southwest of the building. The chilled water assets include both electrically driven and steam driven centrifugal chillers. The hot water production assets consist of solely of hot water boilers that serve the entirety of the airport's heating load. Steam boilers, also located within the CUP, are used to supply steam to the steam driven chillers.

The CUP improvements are scheduled to be completed by FY 2027. The CUP improvements project is estimated to cost approximately $119 million and will include replacing various pumps, transformers, switchgear, motor control centers, cooling towers, air handling units, chillers, boilers, controls, and other physical building structural components.

3.1.1.6 AIRFIELD IMPROVEMENTS

A major airfield capital project at IAH includes the reconstruction of Taxiways SA, SB, RA, and RB. The taxiways have been used beyond their life expectancy and have substantial deterioration. Taxiways SA and SB are located parallel to Runway 9-27 and Taxiways RA and RB are located south of and parallel to the Terminal C and E apron. These taxiways are necessary to ensure efficient movement of aircraft on the southeast side of the airport. Taxiways SA and SB are programmed for completion by the end of 2024 and will cost approximately $81.5M. Taxiways RA and RB are estimated to cost $37.5M and will be complete by the end of 2025.

ARFF Station 92 is over 20 years old and HAS has developed a rehabilitation and expansion program for the station. The expansion will include the addition of new vehicle bays, dormitory space, training area and support offices for ARFF staff. Additionally, the station utilities are approaching their intended useful life and require replacement and upgrading. This project is scheduled to be complete by the end of 2024 and is estimated to cost $13.8 million.

3.1.1.7 OTHER ONGOING CAPITAL PROJECTS

Other key capital projects occurring at IAH include additional terminal and landside projects. Additional terminal projects include the Terminal A Vault Replacement, and FIDS and BIDS upgrades to be completed by the spring of 2024. Landside projects include the IAH Consolidated Employee Parking Lot anticipated to be complete by 2025, Terminal B Garage third and fourth levels rehabilitation, rehabilitation of JFK and Will Clayton Parkway Cell Phone Lots, and Construction of Kenswick Intersections.

3.1.2 WILLIAM P. HOBBY AIRPORT CAPITAL PROJECTS

Key components of the HAS CIP related to Hobby include the West Concourse Expansion, airfield improvements, renewal and replacement projects, and other infrastructure improvements.

3.1.2.1 WEST CONCOURSE EXPANSION

Southwest Airlines has initiated a planning and programming effort funded by HAS to explore the expansion of the west concourse at HOU to support growth in international operations. The design and construction of the West Concourse Expansion project are subject to certain terms and conditions outlined in a Memorandum of Agreement between Southwest Airlines and HAS. Current plans for the expansion include the addition of seven narrowbody contact gates; six to be preferential use gates for Southwest and one will be an HAS common use gate. The program is anticipated to increase the overall holdroom area within the west concourse and enhance the concessions and retail space in the concourse.

The program will also increase the apron area and airfield circulation. The terminal apron will be expanded to accommodate the additional gate positions and a taxilane to allow for aircraft circulation around the expanded concourse. The design of this program is anticipated to begin in early 2024. The construction schedule has not yet been developed. For purposes of this Report, the project is assumed to cost approximately $430 million, of which approximately $410 million is anticipated to be incurred during FY 2024 through FY 2030, and construction is anticipated to be complete in FY 2030.

See Chapter 6 for a discussion of the amendment to the Hobby use agreement relating to the west concourse expansion that is currently being negotiated.

3.1.2.2 AIRFIELD IMPROVEMENTS

Planned airfield improvements at HOU include Non-Standard Taxiway Realignment and Fuel Tank Relocation, the demolition of an operational "hot spot" by Runway 17-35, reconstruction of Taxiway C, rehabilitation and upgrade of Runway 12L-30R, and rehabilitation of Taxiway M.

The Taxiway M Rehabilitation project replaces deteriorating taxiway pavement and includes the full reconstruction the taxiway. Taxiway M is currently constructed of asphalt and this project will reconstruct the taxiway with concrete, extending the useful life of the asset. Taxiway M is the parallel taxiway to Runway 12R-30L. This taxiway will be the primary taxi route from Runway 12R-30L when reconstruction of Runway 12L-30R occurs. Taxiway M reconstruction is scheduled to occur between June 2024 and March 2027. The project is estimated to cost $18.6 million.

3.1.2.3 RENEWAL AND REPLACEMENT

Renewal and replacement projects at HOU include Secure Identification Display Area (SIDA) Booth Improvements, Sanitary Sewer System, and Hobby Passenger Boarding Bridges.

3.1.3 ELLINGTON AIRPORT CAPITAL PROJECTS

Planned capital improvements for Ellington Airport include airfield, infrastructure, and commercial development projects. These projects are described in the sections below.

3.1.3.1 AIRFIELD

HAS plans to construct a new taxiway at EFD to support growing Spaceport activities and to provide operational flexibility on the airfield. The taxiway will be constructed parallel to Runway 4-22 and will be designated Taxiway L. The project is estimated to cost approximately $110.0M and is anticipated to be completed in FY 2026.

3.1.3.2 INFRASTRUCTURE

Planned capital improvements for EFD includes infrastructure projects to support the airport. The first project was the Spaceport Infrastructure project, which was completed in 2022 at a cost of $22.2 million. This project included extending all supporting infrastructure for the first phase of the Spaceport development to each of the sites being prepared for future development. The supporting infrastructure included roadways, power, data, water, and drainage. These infrastructure projects were required to facilitate the development of new tenant leaseholds.

A project has been established to address drainage concerns at the airport. The Drainage Structure Repairs project is scheduled to be complete in fall of 2024 and is estimated to cost $1.9 million. The repairs will include maintenance and repair of existing drainage infrastructure that was damaged during storms in recent years.

3.1.3.3 COMMERCIAL DEVELOPMENT

HAS entered into reimbursable agreements with three of the Spaceport tenants. In these agreements, HAS supported the financing plans for the tenants and HAS will be reimbursed through the lease agreements. The tenant projects, the reimburse agreement cost, and the construction completion dates are provided below.

- Axiom Space headquarters and space station production facility – the total cost to HAS is approximately $40.2 million, with approximately $36 million incurred to date, and the scheduled completion date is November 2023.

- Intuitive Machines lunar production and operations center – the total cost is estimated at $42.0 million and is scheduled for a spring 2024 completion date. Approximately $13.8 million is anticipated to be incurred in FY 2024, while the remaining costs have already been incurred.

The revenues from these leases is included in the Net Revenue presented in Chapter 6.

3.2 FUNDING SOURCES

Table 3-1 also summarizes the anticipated funding sources for CIP costs through FY 2030.

3.2.1 FEDERAL AVIATION ADMINISTRATION AIRPORT IMPROVEMENT PROGRAM AND OTHER GRANTS

In total, the HAS CIP includes approximately $408.5 million in grant funding for FY 2024 through FY 2030, including AIP discretionary funding, Bipartisan Infrastructure Law (BIL) grants, and the application of COVID relief funds. Additional details on the anticipated grant amounts received during the Projection Period can be found in Section 6.4.2.

3.2.2 SUBORDINATE LIEN BONDS

As shown in Table 3-1, approximately $212 million in bond proceeds from the 2023 Bonds will be used for completion of ITRP.

In addition to the 2023 Bonds, future Subordinate Lien Bonds are assumed to be issued in support of the HAS CIP. Additional details on assumptions for future Subordinate Lien Bonds issuances can be found in Section 6.5.3.

3.2.3 PASSENGER FACILITY CHARGE FUNDING

Approximately $207 million in PFC Revenues applied on a pay-go basis are included in the HAS CIP for the period from FY 2024 through FY 2030, primarily in support of the completion of ITRP. In addition, a portion of the debt service for the 2023 Bonds and anticipated future Subordinate Lien Bonds will be payable with PFC Revenues. Additional details can be found in Chapter 6 regarding the FAA application status for certain projects, the anticipated collection of PFC Revenues, and planned uses of PFC Revenues.

3.2.4 HOUSTON AIRPORT SYSTEM FUNDS

The HAS CIP includes approximately $603 million in HAS AIF for FY 2024 through FY 2030. The AIF funding will be applied to various improvement projects at each of the three Airports within the Airport System. Under existing and future airline agreements, a portion of the HAS funds allocated toward airline-related project costs will be recovered from the airlines through the amortization of local funds assigned to the rate base. Details regarding amortization assumptions for existing and future agreements can be found in Section 6.1.

4. DEMOGRAPHIC AND ECONOMIC ANALYSIS

The demand for air transportation at an airport is, to a large degree, dependent upon the demographic and economic characteristics of the Air Trade Area. This relationship is particularly true for O&D passenger traffic, which has historically accounted for between approximately 42 and 56 percent of passenger traffic at IAH and between approximately 63 and 74 percent of passenger traffic at HOU.[8] For purposes of this Report, the Air Trade Area coincides with the geographic boundaries of the Houston–The Woodlands, Texas, Combined Statistical Area (CSA), and all three Airports that comprise the HAS (IAH, HOU, EFD) are within those geographic boundaries. As presented on **Exhibit 4-1**, the Air Trade Area comprises 14 counties: Austin, Brazoria, Chambers, Fort Bend, Galveston, Harris, Liberty, Montgomery, Trinity, Walker, Waller, Washington, Wharton, and Matagorda. This chapter presents data indicating that the Air Trade Area has an economic base capable of supporting increased demand for air travel during the Projection Period.

4.1 DEMOGRAPHIC ANALYSIS

4.1.1 POPULATION

There is typically a positive correlation between population growth in a local area and air travel demand. **Table 4-1** presents the historical population for the Air Trade Area, Texas, and the United States. As shown, population in the Air Trade Area increased from approximately 4.9 million in calendar year (CY) 2000 to approximately 6.1 million in CY 2010 and to approximately 7.3 million in CY 2020. As also shown, population growth in the Air Trade Area between CY 2000 and CY 2020 (CAGR of 2.0 percent) was 0.3 percentage points above Texas population growth and 1.2 percentage points above the nation's population growth during this period.

In an April 2023 Greater Houston Partnership report that analyzed the most current population data released by the U.S. Census Bureau, the Air Trade Area added nearly 125,000 residents in 2022, growth which ranked the area second among the nation's major metros in 2022 population growth.[9] Air Trade Area population growth is up from just over 75,000 in 2021, when there was a temporary slowdown in population growth due to lingering effects of the COVID-19 pandemic. The Air Trade Area is the fifth largest metropolitan area in the United States.

Table 4-1 also presents population projections from Woods & Poole[10] for the Air Trade Area, Texas, and the United States for CY 2032. Population in the Air Trade Area is expected to increase at a CAGR of 1.3 percent between CY 2020 and CY 2032, from approximately 7.3 million in CY 2020 to approximately 8.6 million in CY 2032. Projected population growth for the Air Trade Area is expected to be approximately the same as that experienced by Texas (CAGR of 1.2 percent), but more rapid than the nation (CAGR of 0.6 percent) during this period. Between CY 2020 and CY 2032, Air Trade Area population is expected to grow fastest in Fort Bend County and Montgomery County (CAGRs of 2.9 percent and 2.4 percent, respectively).

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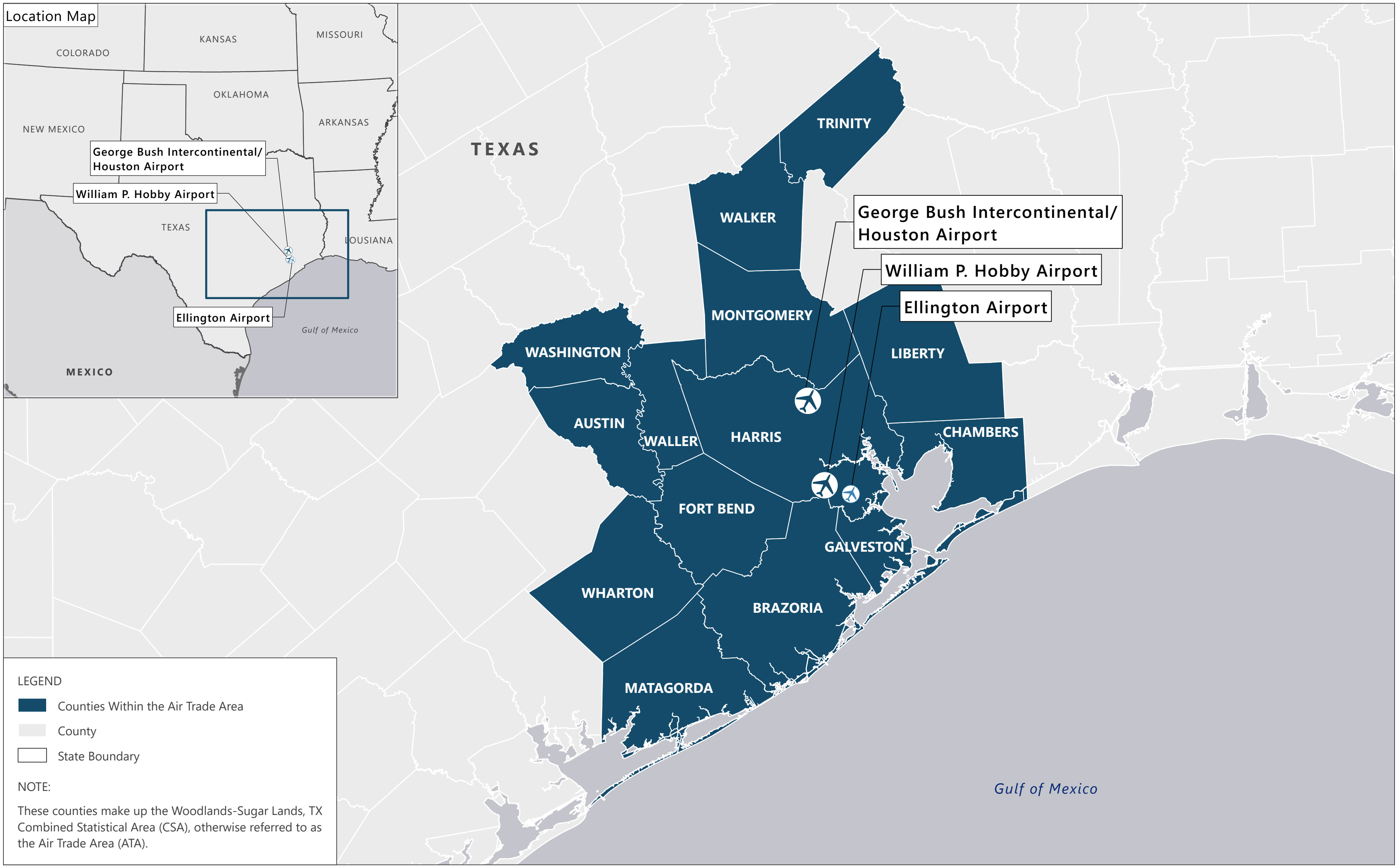
[8] While included in the HAS, EFD has no commercial services.

[9] Greater Houston Partnership, "Economy at a Glance - April 2023," https://www.houston.org/houston-data/economy-glance-april-2023 (accessed May 18, 2023).

[10] Woods & Poole is an independent firm specializing in long-term county demographic and economic data projections.



SOURCES: Esri, 2022 (counties), Esri, 2021 (countries), US Census Bureau, 2021 (states), Federal Aviation Administration - Aeronautical Information Services, 2020 (airports).

EXHIBIT 4-1

HOUSTON AIRPORT SYSTEM
AIR TRADE AREA

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TABLE 4-1 HISTORICAL AND PROJECTED POPULATION

					COMPOUND ANNUAL GROWTH RATE			
	HISTORICAL			PROJECTED	HISTORICAL			PROJECTED
AREA	CY 2000	CY 2010	CY 2020	CY 2032	CY 2000 – CY 2010	CY 2010 – CY 2020	CY 2000 – CY 2020	CY 2020 – CY 2032
Austin County	23,836	28,372	30,109	33,265	1.8%	0.6%	1.2%	0.8%
Brazoria County	243,116	314,499	373,368	450,239	2.6%	1.7%	2.2%	1.6%
Chambers County	26,188	35,452	47,051	59,146	3.1%	2.9%	3.0%	1.9%
Fort Bend County	358,738	590,177	828,632	1,161,144	5.1%	3.5%	4.3%	2.9%
Galveston County	250,675	292,492	351,458	395,055	1.6%	1.9%	1.7%	1.0%
Harris County	3,414,239	4,107,542	4,732,491	5,266,895	1.9%	1.4%	1.6%	0.9%
Liberty County	70,576	75,870	92,351	106,597	0.7%	2.0%	1.4%	1.2%
Matagorda County	37,873	36,706	36,269	36,263	-0.3%	-0.1%	-0.2%	0.0%
Montgomery County	297,296	459,223	624,938	833,675	4.4%	3.1%	3.8%	2.4%
Trinity County	13,793	14,728	13,623	14,260	0.7%	-0.8%	-0.1%	0.4%
Walker County	61,768	68,239	76,543	83,586	1.0%	1.2%	1.1%	0.7%
Waller County	32,843	43,558	57,349	72,529	2.9%	2.8%	2.8%	2.0%
Washington County	30,423	33,695	35,837	38,402	1.0%	0.6%	0.8%	0.6%
Wharton County	41,220	41,280	41,550	42,090	0.0%	0.1%	0.0%	0.1%
Air Trade Area	4,902,584	6,141,833	7,341,569	8,593,146	2.3%	1.8%	2.0%	1.3%
Texas	20,944,498	25,241,896	29,217,652	33,716,035	1.9%	1.5%	1.7%	1.2%
United States	282,162,375	309,327,094	331,501,094	356,413,906	0.9%	0.7%	0.8%	0.6%

NOTES:
CY – Calendar Year
2020 is the last year of historical data available in the Woods & Poole 2022 CEDDS database (released June 2022) and is the basis for Woods & Poole's 2022 demographic and economic projections; 2021 historical data may be available from other sources at the time of this Report.
SOURCE: Woods & Poole Economics, Inc., *2022 Complete Economic and Demographic Data Source (CEDDS)*, June 2022.

4.1.2 AGE DISTRIBUTION AND EDUCATION

Demand for airline travel varies by age group, and the age distribution of the Air Trade Area population can influence O&D passenger activity at an airport. According to Consumer Expenditure Survey data from the US Department of Labor, Bureau of Labor Statistics, in the United States, persons between the ages of 35 and 54 account for 44.0 percent of expenditures on airfares.[11]

Table 4-2 shows that, in 2020, residents in the Air Trade Area aged 35 to 54 accounted for 26.9 percent of the population. Thus, the age group that generates the most expenditures on airfares is represented in the Air Trade Area at a higher rate than the population in both Texas (25.9 percent) and the United States (25.1 percent).

According to Consumer Expenditure Survey data, persons with a college degree generate a high percentage of expenditures on airline travel. Data indicate that 74.0 percent of airfares are purchased by college graduates, while

[11] New Strategist Press, *Who's Buying for Travel*, 12th ed. Ithaca, NY: New Strategist Press, 2018. Data in *Who's Buying for Travel* are based on the US Department of Labor, Bureau of Labor Statistics' Consumer Expenditure Survey, an ongoing nationwide survey of household spending.

18.0 percent are purchased by consumers who have had some college, and 8.0 percent are purchased by consumers who never attended college.[12] As shown in Table 4-2, 40.7 percent of the Air Trade Area's population over the age of 25 has a post-secondary degree (associate, bachelor's, master's, or doctorate)—a higher percentage than the population of Texas (38.1 percent) but lower than the United States (41.6 percent). In addition to having a highly educated population, the Air Trade Area is also home to more than 100 colleges and universities. These schools, which include community colleges and technical schools, have a total enrollment of over 300,000 students.[13] These educational institutions generate demand for airline service through academic meetings and conferences, visiting professorships, study abroad programs, and individual student and faculty travel.

TABLE 4-2 AGE DISTRIBUTION AND EDUCATIONAL ATTAINMENT (2020)

AGE DISTRIBUTION	AIR TRADE AREA	TEXAS	UNITED STATES
Total Population	**7,341,569**	**29,217,652**	**331,501,094**
By Age Group			
19 and Under	26.0%	25.3%	22.1%
20 to 24 Years	9.1%	9.7%	9.1%
25 to 34 Years	14.7%	14.7%	14.0%
35 to 44 Years	14.3%	13.7%	12.8%
45 to 54 Years	12.6%	12.2%	12.3%
55 to 64 Years	11.2%	11.2%	12.9%
65 and Above	12.0%	13.2%	16.9%
Total[1]	**100.0%**	**100.0%**	**100.0%**
Median Age	**34.6 years**	**34.7 years**	**38.1 years**
EDUCATIONAL ATTAINMENT	AIR TRADE AREA	TEXAS	UNITED STATES
Population 25 Years and Over	**4,762,668**	**18,990,966**	**228,035,369**
By Highest Level Achieved			
Less than 9th Grade	8.4%	7.8%	4.9%
9th–12th Grade, No Diploma	7.3%	7.8%	6.6%
High School Graduate (includes GED/Alternative Credential)	23.1%	24.7%	26.7%
Some College, No Degree	20.5%	21.5%	20.3%
Post-Secondary Degree	40.7%	38.1%	41.6%
Associate degree	*7.4%*	*7.4%*	*8.6%*
Bachelor's Degree	*21.1%*	*19.9%*	*20.2%*
Master's Degree or Doctorate	*12.1%*	*10.8%*	*12.7%*
Total[1]	**100.0%**	**100.0%**	**100.0%**

NOTES:
GED – General Education Development
2020 is the last year of historical data available in the Woods & Poole 2022 CEDDS database (released June 2022) and is the basis for Woods & Poole's 2022 demographic and economic projections.
1 Sums may not total to 100.0 percent due to rounding.
SOURCES: Woods & Poole Economics, Inc., *2022 Complete Economic and Demographic Data Source (CEDDS)*, June 2022; US Census Bureau, *American Community Survey (ACS)*, January 2022 (metropolitan statistical areas, states, and United States).

[12] New Strategist Press, *Who's Buying for Travel*, 12th ed. Ithaca, NY: New Strategist Press, 2018.

[13] Visit Houston, "Houston Colleges & Universities," https://www.visithoustontexas.com/about-houston/colleges-and-universities (accessed April 27, 2023).

4.1.3 PER CAPITA PERSONAL INCOME

Table 4-3 presents historical per capita personal income (PCPI) for the Air Trade Area, Texas, and the United States between CY 2010 and CY 2020, as expressed in 2012 dollars. As shown, PCPI for the Air Trade Area was higher than equivalent measures for the nation and Texas each year between CY 2010 and CY 2020. As also shown, PCPI for the Air Trade Area increased at a CAGR of 1.2 percent between CY 2010 and CY 2020, slower than the 2.0 percent CAGR for Texas and the 2.3 percent CAGR experienced by the nation over this same period.

TABLE 4-3 PER CAPITA PERSONAL INCOME

(Per Capita Personal Income in 2012 Dollars)

	PER CAPITA PERSONAL INCOME		
YEAR	AIR TRADE AREA	TEXAS	UNITED STATES
Historical			
CY 2010	$47,824	$40,763	$42,497
CY 2011	$49,741	$42,818	$43,552
CY 2012	$52,807	$44,241	$44,557
CY 2013	$51,811	$44,219	$44,210
CY 2014	$53,936	$46,045	$45,582
CY 2015	$53,417	$46,035	$47,265
CY 2016	$49,591	$44,733	$47,649
CY 2017	$51,750	$46,421	$48,644
CY 2018	$53,533	$48,026	$49,698
CY 2019	$53,683	$48,675	$50,708
CY 2020	$53,974	$49,808	$53,178
Projected			
CY 2032	$66,063	$61,617	$63,086
Compound Annual Growth Rate			
CY 2010 – CY 2020	1.2%	2.0%	2.3%
CY 2020 – CY 2032	1.7%	1.8%	1.4%
PERCENTAGE OF HOUSEHOLDS IN INCOME CATEGORIES (CY 2020)			
INCOME CATEGORY (IN 2020 DOLLARS)	AIR TRADE AREA	TEXAS	UNITED STATES
Less than $35,000	25.2%	27.2%	27.0%
$35,000 – $49,999	11.7%	12.3%	12.0%
$50,000 – $74,999	16.9%	17.6%	17.2%
$75,000 – $99,999	12.3%	12.5%	12.8%
$100,000 – $199,999	23.9%	22.6%	22.7%
$200,000 or More	10.0%	7.8%	8.3%

NOTES:
CY – Calendar Year
2020 is the last year of historical data available in the Woods & Poole 2022 CEDDS database (released June 2022) and is the basis for Woods & Poole's 2022 demographic and economic projections.
SOURCE: Woods & Poole Economics, Inc., *2022 Complete Economic and Demographic Data Source (CEDDS)*, June 2022.

Table 4-3 also presents projections of PCPI for CY 2032. According to data from Woods and Poole, PCPI for the Air Trade Area is projected to increase from $53,974 in CY 2020 to $66,063 in CY 2032. This increase represents a CAGR of 1.7 percent, closely aligned to that projected for Texas (1.8 percent) and above the CAGR projected for the nation (1.4 percent) during the same period.

An additional indicator of the market potential for air transportation demand is the percentage of households in higher income categories. As income increases, air transportation becomes more affordable and, therefore, is generally used more frequently. Table 4-3 also presents percentages of households in selected PCPI categories for CY 2020 as expressed in 2020 inflation-adjusted dollars. As presented, 46.2 percent of households in the Air Trade Area had a PCPI of $75,000 or more in CY 2020, which was higher than the percentage of households in these income categories for Texas (42.9 percent) and the nation (43.8 percent).

4.2 ECONOMIC ANALYSIS

4.2.1 GROSS DOMESTIC PRODUCT

Gross domestic product (GDP) for the United States and its state and Metropolitan Statistical Area (MSA) equivalent, gross regional product (GRP), are measures of the market value of all final goods and services produced within a particular area for a specific time period. These indicators are one of the broadest measures of the economic health of a particular area and, consequently, the area's potential air travel demand.

Table 4-4 presents historical GRP/GDP for the Air Trade Area, Texas, and the United States between CY 2010 and CY 2020, as expressed in 2012 dollars. As shown, despite the impact of the Great Recession, two major storms (Hurricanes Ike and Harvey), and the COVID-19 pandemic, Air Trade Area GRP increased from approximately $376,419 million in CY 2010 to approximately $446,516 million in CY 2020, a CAGR of 1.7 percent. In comparison, the GRP for Texas increased at a 2.1 percent CAGR over the same period, while the nation's equivalent measure, GDP, grew at a 1.8 percent CAGR.

TABLE 4-4 GROSS REGIONAL/DOMESTIC PRODUCT

(In 2012 Dollars, Amounts in Millions)

YEAR	AIR TRADE AREA (GRP)	TEXAS (GRP)	UNITED STATES (GDP)
Historical			
CY 2010	$376,419	$1,301,304	$15,608,905
CY 2011	$397,325	$1,366,338	$15,777,260
CY 2012	$413,956	$1,421,180	$16,140,743
CY 2013	$431,458	$1,494,954	$16,506,385
CY 2014	$437,005	$1,534,985	$16,947,640
CY 2015	$454,610	$1,525,950	$17,547,298
CY 2016	$442,177	$1,516,126	$17,845,990
CY 2017	$453,209	$1,581,419	$18,265,186
CY 2018	$474,302	$1,670,735	$18,835,682
CY 2019	$471,068	$1,695,706	$19,325,096
CY 2020	$446,516	$1,596,393	$18,664,908
Projected			
CY 2032	$636,084	$2,289,038	$24,492,794
Compound Annual Growth Rate			
CY 2010 – CY 2020	1.7%	2.1%	1.8%
CY 2020 – CY 2032	3.0%	3.0%	2.3%

NOTES:
CY – Calendar Year
GRP – Gross Regional Product
GDP – Gross Domestic Product
2020 is the last year of historical data available in the Woods & Poole 2022 CEDDS database (released June 2022) and is the basis for Woods & Poole's 2022 demographic and economic projections.
SOURCE: Woods & Poole Economics, Inc., *2022 Complete Economic and Demographic Data Source (CEDDS)*, June 2022.

Table 4-4 also presents projections of GRP/GDP for CY 2032. Woods & Poole projects GRP for the Air Trade Area to increase from $446,516 million in CY 2020 to $636,084 in CY 2032, reflecting a CAGR of 3.0 percent. GRP growth for Texas is projected to be equivalent to the Air Trade Area during this period. However, projected GRP growth in the Air Trade Area is higher than the projected GDP growth for the nation (2.3 percent).

4.2.2 EMPLOYMENT TRENDS

Table 4-5 presents the recent employment trends for the Air Trade Area, Texas, and the United States. As shown, the Air Trade Area's civilian labor force increased from approximately 3.0 million workers in CY 2010 to approximately 3.4 million workers in CY 2019. This increase represents a CAGR of approximately 1.4 percent in the Air Trade Area's labor force during this period, compared to an approximately 1.4 percent increase for Texas and an approximately 0.5 percent increase for the United States. The Air Trade Area's civilian labor force declined slightly (-0.1 percent) in CY 2020; the civilian labor force of Texas remained unchanged. Shifts in labor force levels were more significant nationwide, as the US labor force decreased -1.7 percent, due in part to workers leaving the labor force due to childcare duties, fear of getting COVID-19 in the workplace, and other reasons related to the COVID-19 pandemic.[14] When COVID vaccines became widely available in March 2021, more contact-sensitive (restaurants, bars, shopping malls, salons) and COVID jobs were added.[15] The Air Trade Area's civilian labor force saw a recovery from the pandemic in CY 2021 with a CAGR of 1.2 percent, lower than the improvement in the overall Texas civilian labor force (2.5 percent) but higher than the national recovery of civilian labor force (0.3 percent). The labor force growth accelerated in CY 2022 with a CAGR of 4.8 percent for the Air Trade Area, higher than both the Texas civilian labor force growth (3.1 percent) and the national labor force growth (1.9 percent).

Table 4-5 also shows that average annual unemployment rates (non-seasonally adjusted) for the Air Trade Area were lower than the unemployment rates for Texas and the nation from CY 2010 to CY 2015. The unemployment rate for the Air Trade Area rose above the unemployment rates of Texas and the nation starting in CY 2016; however, unemployment rates for all three areas trended downward from CY 2016 until the start of the COVID-19 pandemic. In CY 2020, the unemployment rate of the Air Trade Area, Texas and the nation increased by more than 4 percentage points due to the pandemic, but all rates declined in CY 2021 as COVID-19 vaccines became widely available and business operations were restored.[16] Unemployment rates continued to decline in CY 2022, reaching close to or below pre-pandemic CY 2019 levels.

4.2.3 BUSINESS CLIMATE

In 2022, Texas ranked first in the number of US companies listed in the Fortune 500 by state, ahead of New York and California; 21 of the 53 Fortune 500 companies headquartered in Texas were in the Air Trade Area, including Exxon Mobil (ranked 6th; one of the world's largest publicly traded international oil and gas companies); Phillips 66 (ranked 29th; a diversified energy manufacturing and logistics company); Sysco Corp., (ranked 70th; global leader in food distribution); Enterprise Products Partners (ranked 89th; midstream natural gas and crude oil pipeline

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[14] Harvard Business Review, "The Great Resignation Didn't Start with the Pandemic," https://hbr.org/2022/03/the-great-resignation-didnt-start-with-the-pandemic (accessed April 20, 2023).

[15] Gilmer, Robert W. "Bill," "The Economic Outlook for Houston After the Pandemic," University of Houston Bauer College of Business, https://www.bauer.uh.edu/centers/irf/houston-updates.php (accessed April 20, 2023).

[16] Federal Reserve Bank of Dallas, "Houston Economic Indicators," https://www.dallasfed.org/research/indicators/hou/2022/hou2201#:~:text=The%20unemployment%20rate%20in%20Houston,in%20December%20to%203.9%20percent (accessed April 20, 2023).

company); and Hewlett Packard Enterprise (HPE) (ranked 123rd; global edge-to-cloud real-time data-driven decision-making company).[17]

TABLE 4-5 CIVILIAN LABOR FORCE AND UNEMPLOYMENT RATES

(Civilian Labor Force in Thousands)

CIVILIAN LABOR FORCE			
YEAR	AIR TRADE AREA	TEXAS	UNITED STATES
CY 2010	2,975	12,258	153,889
CY 2011	3,040	12,500	153,617
CY 2012	3,105	12,641	154,975
CY 2013	3,176	12,833	155,389
CY 2014	3,235	13,007	155,922
CY 2015	3,259	13,092	157,130
CY 2016	3,300	13,348	159,187
CY 2017	3,309	13,473	160,320
CY 2018	3,349	13,683	162,075
CY 2019	3,387	13,873	163,539
CY 2020	3,384	13,866	160,742
CY 2021	3,424	14,216	161,204
CY 2022	3,593	14,663	164,287
Compound Annual Growth Rate			
CY 2010 – CY 2019	1.5%	1.4%	0.7%
CY 2019 – CY 2022	2.0%	1.9%	0.2%
CY 2010 – CY 2022	1.6%	1.5%	0.5%
UNEMPLOYMENT RATES			
CY 2010	8.3%	8.2%	9.6%
CY 2011	8.1%	8.0%	8.9%
CY 2012	6.6%	6.7%	8.1%
CY 2013	6.1%	6.3%	7.4%
CY 2014	5.0%	5.2%	6.2%
CY 2015	4.7%	4.5%	5.3%
CY 2016	5.3%	4.6%	4.9%
CY 2017	5.1%	4.4%	4.4%
CY 2018	4.4%	3.9%	3.9%
CY 2019	3.8%	3.5%	3.7%
CY 2020	8.6%	7.7%	8.1%
CY 2021	6.3%	5.7%	5.3%
CY 2022	4.2%	3.9%	3.6%

NOTES:
CY – Calendar Year
n/a – not available
SOURCE: US Department of Labor, Bureau of Labor Statistics, May 2023.

[17] Fortune, "2022 Fortune 500 Rankings," https://fortune.com/ranking/fortune500/ (accessed April 20, 2023); Houston Agent, "Texas Leads Nation for Most Fortune 500 Companies," https://houstonagentmagazine.com/2022/05/31/texas-leads-nation-for-most-fortune-500-companies (accessed April 20, 2023).

According to the Greater Houston Partnership, a combination of the Greater Houston Chamber of Commerce, the Houston Economic Development Council, and the Houston World Trade Association, the Air Trade Area's business-friendly climate, including favorable state tax law leading to relatively low tax expenses, low corporate rent costs, and access to a young and diverse professional talent pool attracts both big corporations and small businesses to Texas.[18] In 2022, Texas ranked first in the Chief Executive's Best State for Business; it has been awarded the best state in this category for the 18th consecutive year.[19] Texas ranked 13th overall in the Tax Foundation's 2023 State Business Tax Climate Index.[20]

The Houston MSA[21] has trading activities with more than 200 countries and territories and the Port of Houston ranked as the largest port along the Gulf Coast and in the nation by weight.[22] Its top 5 trading partners in 2021 were: China ($18.5 billion), Mexico ($12.8 billion), Brazil ($11.5 billion), South Korea ($8.2 billion), Japan ($7.9 billion).[23]

The City of Houston has also approved of an economic development agreement with Rice University to build a new mixed-use innovation and technology destination in Midtown Houston called The Ion District. It is intended to serve as a blueprint for smart cities of the future expected to generate significant economic growth.[24] Texas is a center for foreign trade; it includes 34 foreign trade zones (FTZs), of which 5 of the FTZs are in the Air Trade Area (Harris, Liberty, Galveston, Conroe, and Texas City).[25] The Houston-Galveston Customs District handled 40 percent more exports ($273.1 billion in total exports) in 2021 than 2020.[26] This trading trend depicts the high overseas demand for crude, plastics, refined products, chemicals, oil field equipment, and exploration and production activities that Houston manufacturers produce.[27]

The City of Houston has over 5,000 companies that take part in international business, an estimated 1,000 firms of which are owned by foreign companies.[28] The City ranks third in the nation by fDi Intelligence in its list of global cities of the future.[29] The City of Houston is also a leading hub for tech workers. Over 8,500 tech-related companies

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[18] Greater Houston Partnership, *Houston Business Insider*, https://www.houston.org/sites/default/files/2022-11/2022%20Houston%20Business%20Insidre%20EDG.pdf (accessed April 21, 2023).

[19] Texas Economic Development Corporation, "Chief Executive's Best State for Business," https://businessintexas.com/news/texas-ranked-1-best-state-for-business-for-the-18th-consecutive-time (accessed April 21, 2023).

[20] Tax Foundation, "2023 State Business Tax Climate Index," https://taxfoundation.org/2023-state-business-tax-climate-index (accessed April 20, 2023).

[21] The Houston MSA consists of nine counties: Austin, Brazoria, Chambers, Fort Bend, Galveston, Harris, Liberty, Montgomery, and Waller.

[22] Greater Houston Partnership, *Houston Facts 2022*, https://www.houston.org/sites/default/files/2022-09/houston%20facts%202022_Digital_0.pdf (accessed April 21, 2023).

[23] Ibid.

[24] SmartCitiesWorld, "Smart City District Gets Green Light from City of Houston," https://www.smartcitiesworld.net/commercial-buildings/commercial-buildings/smart-city-district-gets-green-light-from-city-of-houston-7135 (accessed April 21, 2023).

[25] Texas Economic Development & Tourism, *Foreign Trade Zones in Texas*, https://gov.texas.gov/uploads/files/business/FTZ.pdf (accessed April 21, 2023).

[26] Greater Houston Partnership, *Houston Business Insider*, https://www.houston.org/sites/default/files/2022-11/2022%20Houston%20Business%20Insidre%20EDG.pdf (accessed April 21, 2023).

[27] Greater Houston Partnership, *Global Houston 2022: International Trends and Their Impact on the Region*, https://www.houston.org/sites/default/files/2022-11/Global%20Houston%20-%202022_final.pdf (accessed April 21, 2023).

[28] City of Houston, "Mayor's Office of Trade and International Affairs," https://www.houstontx.gov/motia/trade-intl-bus-dev.html (accessed April 20, 2023).

[29] Greater Houston Partnership, *Houston Tech Report: Charting the Innovation Landscape of America's Fourth Largest City*, https://www.houston.org/sites/default/files/2022-04/Tech%20Report_2022%204.1.pdf (accessed April 20, 2023).

are in the city, contributing over $2.0 billion in venture capital (VC) that supports more than 800 startups.[30] The top 3 sectors for VC funding are Information Technology ($632.1 million), Health Care ($518.4 million), and Materials and Resources ($426.5 million).[31] The Houston region also ranks as the #11 largest tech workforce (243,908 net tech employment) in the nation, with most working as programmers and system engineers.[32] There are over 19 incubator and accelerator programs in the Air Trade Area, including Greentown Labs (an energy accelerator to support climate change technologies), and Texas Medical Center's (TMC) Innovation Institute (supporting Houston's biotech and life science companies).[33] TMC Helix Park, a new research campus spanning 37 acres including 5 million square feet, is under construction. Once completed, TMC Helix Park will provide research labs, office/co-working space, and IT infrastructure to academic institutions and industry partners. It is estimated to bring 22,958 permanent jobs and an ongoing annual impact of $4,795.4 million to City of Houston and Harris County.[34]

Table 4-6 presents the major employers in the Air Trade Area, as measured by the number of employees. As shown, there are 30 private or public entities in the Air Trade Area with 3,000 or more employees. The largest employer in the area is Walmart Super Markets, with over 34,000 local employees, followed by H-E-B (32,635 employees); Memorial Hermann Health System (29,130 employees); Houston Methodist (28,304 employees); and the University of Texas MD Anderson Cancer Center (22,088 employees).

4.2.4 EMPLOYMENT BY MAJOR INDUSTRIAL SECTOR

Sources of economic diversity in the region are discussed in this section by focusing on the following nonagricultural employment sectors, listed in order of their contribution to the Air Trade Area's employment base: professional and business services, trade, education and health services, construction/mining/logging, financial, government, leisure and hospitality, other services, transportation/utilities, manufacturing, and information.[35]

An analysis of nonagricultural employment trends by major industry sector is presented in **Table 4-7**, which compares the Air Trade Area's employment trends to those of Texas and the nation for CY 2010, CY 2019, and CY 2022[36] As shown, nonagricultural employment in the Air Trade Area increased from approximately 2.6 million workers in CY 2010 to approximately 3.2 million workers in CY 2022. This increase represents a CAGR of approximately 2.0 percent during this period, lower than Texas's growth of 2.2 percent and higher than the increase nationwide growth of 1.3 percent. The Air Trade Area and the nation's nonagricultural employment showed signs of recovery after the initial decrease as a result of the COVID-19 pandemic in CY 2020. Increases in nonagricultural employment in CY 2022 resulted in the 3-year post–COVID-19 pandemic growth rate (CY 2019 to CY 2022) of 0.9 percent for the Air Trade Area, whereas the CY 2019 to CY 2020 rate was -5.1 percent. Similar trends occurred for the nation, with 0.4 percent nonagricultural employment growth between CY 2019 and CY 2022, which includes a -5.8 percent decrease between CY 2019 and CY 2020.

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[30] Greater Houston Partnership, *Houston Tech Report: Charting the Innovation Landscape of America's Fourth Largest City*, https://www.houston.org/sites/default/files/2022-04/Tech%20Report_2022%204.1.pdf (accessed April 20, 2023).

[31] Ibid.

[32] Ibid.

[33] Ibid.

[34] Texas Medical Center, https://www.tmc.edu/tmchelixpark (accessed April 20, 2023).

[35] The 11 industry sectors discussed in this section and displayed in Table 4-7 correspond to the 12 "supersectors" defined by the US Department of Labor, Bureau of Labor Statistics' grouping by North American Industry Classification System code, with one exception; due to low employment in the mining and logging supersector, it is included in the construction sector in this Report.

[36] Air Trade Area employment by sector data only represent the Houston MSA, because data for the full Air Trade Area are not available from the US Department of Labor, Bureau of Labor Statistics.

TABLE 4-6 MAJOR EMPLOYERS IN THE AIR TRADE AREA (2022)

EMPLOYER	INDUSTRY	# OF LOCAL EMPLOYEES[1]
Walmart	Retail	34,000
H-E-B	Retail	32,635
Memorial Hermann Health System	Health Care	29,130
Houston Methodist	Health Care	28,304
The University of Texas MD Anderson Cancer Center	Health Care	22,088
Amazon	E-commerce	20,000
Kroger	Retail	15,000
Texas Children's Hospital	Health Care	14,378
HCA Houston Healthcare	Health Care	12,614
United Airlines	Transportation	11,834
The University of Texas Medical Branch	Health Care	11,826
Exxon Mobil	Oil and Gas	11,814
The University of Texas Health Science Center at Houston (UTHealth Houston)	Health Care	11,539
Baylor College of Medicine	Health Care	9,651
Daikin Comfort Technologies North America	Manufacturing	8,819
Harris Health System	Health Care	8,659
Schlumberger	Oil and Gas	7,802
St. Luke's Health	Health Care	7,223
Shell Oil Co./Royal Dutch Shell	Oil and Gas	7,000
Chevron Corp.	Oil and Gas	7,000
Michael E. DeBakey VA Medical Center	Health Care	5,900
JPMorgan Chase	Commercial Bank	5,800
Baker Hughes	Oil and Gas	5,068
Academy Sports + Outdoors	Retail	5,030
CenterPoint Energy	Utilities	4,860
NOV	Oil and Gas	4,814
LyondellBasell Industries	Chemicals	4,810
Kelsey-Seybold Clinic	Health Care	4,512
Southwest Airlines	Transportation	4,340
Enterprise Products	Oil and Gas	3,450

NOTE:
1 Full-time and part-time employees at public and private companies in Austin, Brazoria, Chambers, Fort Bend, Galveston, Harris, Liberty, Montgomery, San Jacinto, and Waller County.

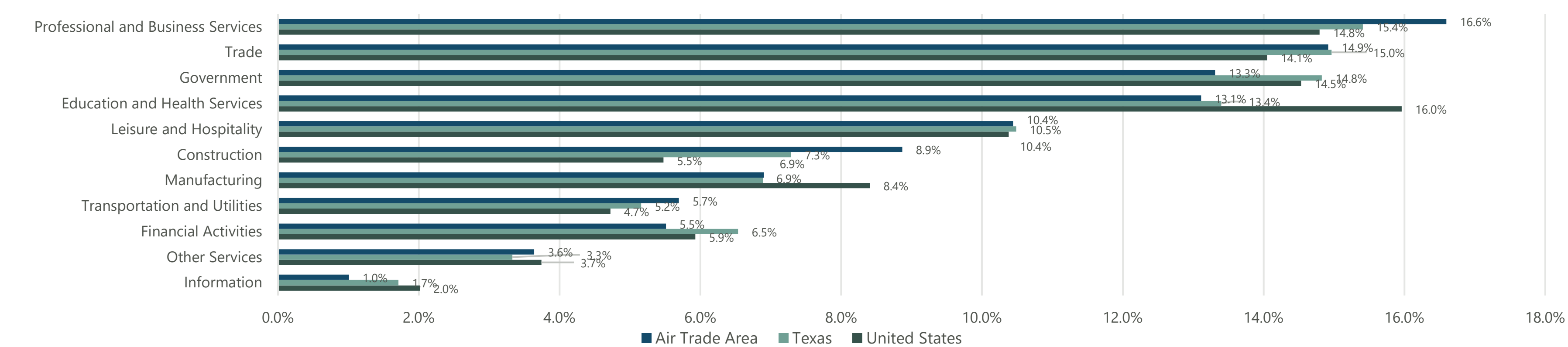
SOURCE: Houston Chronicle, "Chronicle 100: Top employers,", June 19, 2022.

TABLE 4-7 EMPLOYMENT TRENDS BY MAJOR INDUSTRY SECTOR

(Employment in Thousands)

SECTOR	AIR TRADE AREA CY 2010	AIR TRADE AREA CY 2019	AIR TRADE AREA CY 2022	AIR TRADE AREA CAGR CY 2010 – CY 2022	AIR TRADE AREA CAGR CY 2019 – CY 2022	TEXAS CY 2010	TEXAS CY 2019	TEXAS CY 2022	TEXAS CAGR CY 2010 – CY 2022	TEXAS CAGR CY 2019 – CY 2022	UNITED STATES NONAGRICULTURAL EMPLOYMENT CY 2010	UNITED STATES NONAGRICULTURAL EMPLOYMENT CY 2019	UNITED STATES NONAGRICULTURAL EMPLOYMENT CY 2022	UNITED STATES NONAGRICULTURAL EMPLOYMENT CAGR CY 2010 – CY 2022	UNITED STATES NONAGRICULTURAL EMPLOYMENT CAGR CY 2019 – CY 2022
Professional and Business Services	378	508	539	3.0%	2.0%	1,291	1,803	2,074	4.0%	4.8%	16,783	21,274	22,572	2.5%	2.0%
Trade	400	476	484	1.6%	0.6%	1,615	1,924	2,014	1.9%	1.5%	19,833	21,509	21,438	0.7%	-0.1%
Government	387	416	432	0.9%	1.3%	1,893	1,978	1,996	0.4%	0.3%	22,490	22,613	22,171	-0.1%	-0.7%
Education and Health Services	309	404	426	2.7%	1.7%	1,381	1,742	1,803	2.2%	1.2%	19,975	24,163	24,350	1.7%	0.3%
Leisure and Hospitality	235	334	339	3.1%	0.5%	1,008	1,396	1,411	2.8%	0.4%	13,049	16,586	15,835	1.6%	-1.5%
Construction, Mining, and Logging	256	316	288	1.0%	-3.1%	771	1,023	981	2.0%	-1.4%	6,223	8,220	8,353	2.5%	0.5%
Manufacturing	215	236	224	0.3%	-1.7%	817	907	927	1.1%	0.7%	11,528	12,817	12,825	0.9%	0.0%
Transportation and Utilities	124	155	185	3.4%	6.1%	419	584	694	4.3%	6.0%	4,733	6,215	7,205	3.6%	5.1%
Finance/Insurance/Real Estate	138	167	179	2.2%	2.4%	626	802	880	2.9%	3.1%	7,695	8,754	9,045	1.4%	1.1%
Other Services[1]	94	116	118	1.9%	0.6%	363	446	448	1.8%	0.2%	5,331	5,891	5,708	0.6%	-1.0%
Information[2]	33	33	33	0.0%	0.2%	195	210	230	1.4%	3.2%	2,707	2,864	3,074	1.1%	2.4%
Total	**2,568**	**3,160**	**3,246**	**2.0%**	**0.9%**	**10,378**	**12,814**	**13,459**	**2.2%**	**1.7%**	**130,346**	**150,905**	**152,575**	**1.3%**	**0.4%**

Percent of CY 2022 Nonagricultural Employment



NOTES:
CY – Calendar Year; CAGR – Compound Annual Growth Rate
Numbers may not sum due to rounding.
Air Trade Area employment by sector data only represents the Houston MSA because data for the full Air Trade Area is not available from BLS.
Nonagricultural employment only.
1 The nonagricultural employment for the services sector includes outsourcing from the manufacturing sector.
2 The information sector includes communications, publishing, motion picture and sound recording, and online services.
SOURCE: US Department of Labor, Bureau of Labor Statistics, May 2023.

As shown in Table 4-7, the workforce of the Air Trade Area is concentrated in four industries in CY 2022: professional and business services, trade, government, and education and health services. The highest employment growth occurred in the transportation/utilities sector between CY 2010 and CY 2022. Along with the transportation/utilities sector, the education and health services, professional and business services, and leisure and hospitality sectors led employment growth in the Air Trade Area. The most significant impact on national employment from the COVID-19 pandemic was in the construction, mining, and logging sector, where employment declined by 3.1 percent, and 1.4 percent in the Air Trade Area, and Texas, and increased by 0.5 percent in the nation, respectively, between CY 2019 and CY 2022. The worst affected employment sector in the Air Trade Area was construction, with a -3.1 percent decrease in employment between CY 2019 and CY 2022. As shown in the bar chart in Table 4-7, employment in the Air Trade Area in CY 2022 was more significantly concentrated in the professional and business services than it was in Texas and the nation. Contrarily, employment in government was less concentrated in the Air Trade Area than it was in Texas and the nation.

Changes in the Air Trade Area's nonagricultural employment sector makeup differ from the national trends that occurred between CY 2010 and CY 2022. In the Air Trade Area and Texas during that period, it was primarily government, trade, construction, manufacturing, and information employment that lost part of their share of employment to the transportation/utilities, professional and business services, and education and health services sectors, as employment in the latter sectors increased at greater CAGRs (3.4 percent, 3.0 percent, and 2.7 percent, respectively) between CY 2010 and CY 2022 than the former sectors. The remaining sectors were within a percentage point of the average for total employment in the Air Trade Area (2.0 percent) and Texas (2.2 percent). In the nation, the changes in employment makeup by sector were not as significant as the Air Trade Area, with only the transportation/utilities, construction, and professional and business services sectors increasing by more than a percentage point above the average for total employment. The government sector of the nation was the only sector with a decline in employment between CY 2010 and CY 2022. All sectors, except for manufacturing, construction, information, and transportation/utilities of the Air Trade Area, experienced higher growth than the nation during the same period. Education and health services, government, leisure and hospitality, and the other services sector experienced higher growth than both Texas and the nation during the same period.

4.2.4.1 PROFESSIONAL AND BUSINESS SERVICES

In CY 2022, the professional and business services sector accounted for approximately 539,000 employees in the Air Trade Area, the highest employment level among all sectors. The professional and business services sector is significantly more concentrated in the Air Trade Area than it is in Texas and the nation, accounting for 16.6 percent of total nonagricultural employment in CY 2022 in the Air Trade Area, compared to 15.4 and 14.8 percent in Texas and the nation respectively.

Professional and business services employment in the Air Trade Area increased at a CAGR of 3.0 percent between CY 2010 and CY 2022, compared to a 2.5 percent increase for the nation over the same period. Professional and business services employment in the Air Trade Area was equally affected by the COVID-19 pandemic than professional and business services employment in the nation, with the Air Trade Area and national professional and business services employment each increasing 2.0 percent between CY 2019 and CY 2022.

Professional services providers, while large in number, primarily employ smaller numbers of employees per firm. However, there are professional services providers within the Air Trade Area that employ large numbers of workers. Deloitte Touche Tohmatsu Limited is the largest accounting professional service provider in the Air Trade Area with over 3,000 local accounting professionals.[37] PBK is the largest architecture, engineering, and consulting firm in the Air Trade Area, with approximately 650 employees.[38]

4.2.4.2 TRADE

In CY 2022, the trade sector accounted for approximately 484,000 employees in the Air Trade Area, the second-highest employment level among all sectors. The trade sector in the Air Trade Area accounted for 14.9 percent of total nonagricultural employment in CY 2022, compared to 15.0 percent in Texas and 14.1 percent in the nation.

Trade employment in the Air Trade Area increased at a CAGR of 1.6 percent between CY 2010 and CY 2022, compared to a 1.9 and 0.7 percent increase for Texas and the nation respectively over the same period. Trade employment in the Air Trade Area was slightly less affected by the COVID-19 pandemic than trade employment in the nation, with the Air Trade Area trade employment increasing 0.6 percent, compared to a -0.1 percent decrease in national trade employment between CY 2019 and CY 2022.

One indicator of growth in the trade sector is retail sales, defined as all net sales (gross sales minus refunds and allowances for returns) for establishments engaged primarily in retail trade. **Table 4-8** presents total retail sales for the Air Trade Area, Texas, and the United States between CY 2010 and CY 2020. As shown in Table 4-8, between CY 2010 and CY 2020, total retail sales in the Air Trade Area increased at a CAGR of 2.9 percent, higher than both Texas's growth rate (2.8 percent) and the United States' growth rate (2.3 percent) during this period.

Table 4-8 also presents projections of total retail sales for CY 2032. According to data from Woods & Poole, total retail sales for the Air Trade Area are projected to increase from approximately $115.9 billion in CY 2020 to approximately $160.0 billion in CY 2032, reflecting a CAGR of 2.7 percent between CY 2020 and CY 2032. Growth in the Air Trade Area's total retail sales is projected to be faster than that of Texas and the nation between CY 2020 and CY 2032 (with a CAGRs of 2.6 percent and 2.1 percent respectively).

Texas was the nation's largest exporter in CY 2021 with more than $165.2 billion worth of exports, ahead of the next three largest state exporters in combined value (California: $86.1 billion, New York: $42.7 billion, Louisiana: $36.3 billion).[39] Total value of shipments from the Houston-Galveston Customs District was approximately $273.1 billion and 351.5 million metric tons in goods and commodities, ranking the district as the fifth nationally in total value and first in total tonnage.[40] Overall, the oil and gas sectors typically comprise the largest share of the Air Trade Area's exported services.[41]

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[37] Houston Business Journal, "2022 Largest Houston-Area Accounting Firms," https://www.bizjournals.com/houston/subscriber-only/2021/07/09/2021-largest-houston-area-accounting.html (accessed April 28, 2023).

[38] Houston Business Journal, "2022 Largest Houston-Area Architecture Firms," https://www.bizjournals.com/houston/subscriber-only/2021/11/26/2021-largest-houston-area-architecture.html (accessed April 28, 2023).

[39] Texas Economic Development Corporation, "Texas Leads in Export Trade in 2021 Due to Unique Factors," https://businessintexas.com/ceo-blog/texas-leads-in-export-trade-in-2021-due-to-unique-factors/ (accessed April 21, 2023).

[40] Greater Houston Partnership, *Global Houston 2022: International Trends and Their Impact on the Region*, https://www.houston.org/sites/default/files/2022-11/Global%20Houston%20-%202022_final.pdf (accessed April 21, 2023).

[41] Ibid.

TABLE 4-8 TOTAL RETAIL SALES

(In 2012 Dollars, Amounts in Millions)

YEAR	TOTAL RETAIL SALES		
	AIR TRADE AREA	TEXAS	UNITED STATES
Historical			
CY 2010	$87,111	$362,857	$4,385,184
CY 2011	$92,785	$383,887	$4,588,529
CY 2012	$97,591	$400,544	$4,732,279
CY 2013	$100,272	$410,178	$4,838,638
CY 2014	$103,663	$422,449	$4,969,891
CY 2015	$106,813	$432,949	$5,083,799
CY 2016	$108,689	$441,214	$5,183,338
CY 2017	$110,145	$450,790	$5,306,643
CY 2018	$113,070	$463,819	$5,425,365
CY 2019	$115,620	$474,984	$5,511,795
CY 2020	$115,886	$476,770	$5,481,467
Projected			
CY 2032	$160,038	$650,893	$7,033,779
Compound Annual Growth Rate			
CY 2010 – CY 2020	2.9%	2.8%	2.3%
CY 2020 – CY 2032	2.7%	2.6%	2.1%

NOTE:
CY – Calendar Year
SOURCE: Woods & Poole Economics, Inc., *2022 Complete Economic and Demographic Data Source (CEDDS)*, June 2022.

4.2.4.3 GOVERNMENT

In CY 2022, the government sector accounted for approximately 432,000 employees in the Air Trade Area, the third-highest employment level among all sectors. The government sector accounted for 13.3 percent of total nonagricultural employment in CY 2022 in the Air Trade Area, compared to 14.8 and 14.5 percent in Texas and the nation respectively.

Government employment in the Air Trade Area increased at a CAGR of 0.9 percent between CY 2010 and CY 2022, compared to a -0.1 percent decrease for the nation over the same period. Government employment in the Air Trade Area increased by a CAGR of 1.3 percent between CY 2019 and CY 2022, whereas government employment in the nation decreased by -0.7 percent over the same period.

The NASA Johnson Space Center is located southeast of downtown Houston and occupies approximately 1,620 acres. It serves as the hub for human spaceflight activity, mission operations for the International Space Station (ISS), and is the home of the astronaut corps, Orion Program, and research programs. It has a team of scientists, physicians, and other researchers, around 3,000 total employees and more than 12,000 contractors.[42] The Space Center Houston serves as the official visitor center of the Johnson Space Center and includes an educational complex and museum.

The Houston Independent School District is the largest public school system in Texas and seventh largest school district in the nation. The number of employees as of January 31, 2022, was 27,040.[43] The largest local full-service government employer is the City of Houston with over 21,000 employees, 25 departments, and more than 700 job categories.[44]

4.2.4.4 EDUCATION AND HEALTH SERVICES

In CY 2022, the education and health services sector accounted for approximately 426,000 employees in the Air Trade Area, the fourth-highest employment level among all sectors. The education and health services sector accounted for 13.1 percent of total nonagricultural employment in CY 2022 in the Air Trade Area, compared to 13.4 and 16.0 percent in Texas and the nation, respectively.

Education and health services employment in the Air Trade Area increased at a CAGR of 2.7 percent between CY 2010 and CY 2022, compared to a 2.2 and 1.7 percent increase for Texas and the nation respectively over the same period. Education and health services employment in the Air Trade Area was less negatively impacted by the COVID-19 pandemic than education and health services employment in the nation, with the Air Trade Area education and health services employment increasing at a CAGR of 1.7 percent between CY 2019 and CY 2022, compared to a 0.3 percent increase in national education and health services employment over the same period. Major subsectors in the education and health services sector are higher education and health services, which are described in the following subsections.

Higher Education

Higher education is provided in the Air Trade Area by five major universities, as well as several colleges, community colleges, and technical/vocational/business schools. Over 300,000 students are enrolled in higher education throughout the Air Trade Area.[45]

The University of Houston (UH) is one of the largest public universities (based on enrollment) and among the top 100 public colleges and universities in the nation.[46] UH is classified by the Carnegie Foundation for the Advancement of Teaching in the top tier of research universities, a distinction attained by only 3.7 percent of all universities.[47] Over

[42] Johnson Space Center, "Doing Business with Us," https://www.nasa.gov/centers/johnson/business/jobs.html#:~:text=The%20JSC%20civil%20service%20workforce,these%2C%20approximately%20110%20are%20astronauts (accessed April 21, 2023).

[43] 2022 Houston Independent School District Board of Education, *2021 – 2022 Facts and Figures*, https://www.houstonisd.org/site/handlers/filedownload.ashx?moduleinstanceid=48525&dataid=362423&FileName=Pace_46017_2021-2022_Facts_Figures_proof_3.pdf (accessed April 21, 2023).

[44] City of Houston, "Human Resources Department: Grow Your Own Workforce," https://www.houstontx.gov/hr/gyow.html (accessed April 21, 2023).

[45] Texas Higher Education Coordinating Board, "2021 Almanac Data," https://www.highered.texas.gov/data-reports/texas-public-higher-education-almanac (accessed April 5, 2022).

[46] U.S. News & World Report, "Top Public Schools," https://www.usnews.com/best-colleges/rankings/national-universities/top-public (accessed April 28, 2023).

[47] American Council on Education, Carnegie Classification of Institutions of Higher Education, "Classification Summary Tables," https://carnegieclassifications.iu.edu/downloads.php (accessed April 28, 2023).

47,000 students are currently enrolled in 276 undergraduate and graduate academic programs, both on campus and online. The university operates 28 research centers and institutes, and additionally hosts 8 nationally-funded centers.[48]

Rice University is a private research university located on 300 acres near the TMC. Rice had an enrollment of over 8,000 students in fall 2022. It is currently ranked among the top 20 universities in the United States by U.S. News and World Report. Rice collaborates extensively with other educational institutions as well as industry, private foundation, and governmental partners, and is particularly noteworthy for its programs in science, engineering, and technology.[49]

Other universities in the Air Trade Area include Sam Houston State University, Prairie View A&M University, Texas Southern University, Houston Christian University, and the University of St. Thomas. Two-year colleges in the Air Trade Area include the Lone Star College System, the Houston Community College System, the San Jacinto Community College District, Blinn College District, and Lee College. In addition, the University of Texas (UT), Texas A&M University, Baylor College of Medicine, and the UH all have medical schools in the Air Trade Area.

Health Services

The health services industry plays a significant role in the Air Trade Area, and it will continue to become more significant as the Air Trade Area population grows. With over 20,000 licensed physicians and more than 85 hospitals (many of which were ranked on U.S. News & World Report's "America's Best Hospitals"), including over a dozen teaching hospitals, the Air Trade Area offers a wide range of advanced medical services.[50,51] Houston is home to over 394,000 health care and social assistance workers, almost 1 in 8 workers in the City of Houston.

TMC is located 5-miles away from downtown Houston and is the largest medical complex in the world. It hosts over 60 institutions and provides health care, research and education.[52] TMC is home to the nation's largest children's hospital in terms of number of beds and the world's top cancer hospital for years with experienced physicians to cure the rarest cancers.[53]It employs over 106,000 people and sees over 8 million patient encounters as well as over 180,000 surgeries per year.[54] Patients across the country and the world travel to TMC to receive treatments. [55] This contributes as a significant source of air travel demand at the Airports. As of April 2023, the annual economic benefit of TMC is valued over $5.4 billion.[56] TMC includes the University of Texas MD Anderson Cancer Center, Baylor College

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[48] University of Houston Division of Research, "About," https://uhsystem.edu/uh-system/uh/index.php (accessed April 28, 2023).

[49] Rice University, "About," https://www.rice.edu/about (accessed April 28, 2023).

[50] Greater Houston Partnership, *Houston Facts 2022*, https://www.houston.org/sites/default/files/2022-09/houston%20facts%202022_Digital_0.pdf (accessed April 28, 2023).

[51] City of Houston, "About Houston – Health," https://www.houstontx.gov/abouthouston/health.html (accessed April 28, 2023).

[52] Texas Medical Center, "TMC at a Glance," https://www.tmc.edu/about-tmc (accessed April 28, 2023).

[53] Hospital Management, "Top Ten Largest Children's Hospitals in the US," https://www.hospitalmanagement.net/analysis/top-ten-largest-childrens-hospitals-us-bed-size-2021/ (accessed April 28, 2023).

[54] Texas Medical Center, *TMC Facts & Figures*, https://www.tmc.edu/wp-content/uploads/2016/08/TMC_FactsFiguresOnePager_0307162.pdf (accessed April 28, 2023).

[55] Visit Houston, "Texas Medical Center," https://www.visithoustontexas.com/about-houston/texas-medical-center/ (accessed April 28, 2023).

[56] Texas Medical Center, "Economic Impact," https://www.tmc.edu/tmchelixpark/#:~:text=A%20%245.4%20Billion%20Economic%20Impact,impact%20of%20over%20%245.4%20billion (accessed April 28, 2023).

of Medicine, UT Health Science Center, Memorial Hermann Hospital, Houston Methodist Hospital, Texas Children's Hospital, and UH College of Pharmacy, among other institutions.

Other hospitals and hospital systems in the Air Trade Area include the CHI St. Luke's Health, Menninger Clinic, HCA Houston Healthcare, Harris Health System, the Michael E. DeBakey Veterans Affairs Medical Center, the UT Medical Branch in Galveston, and the UT Health Science Center at Houston.

4.2.4.5 LEISURE AND HOSPITALITY

In CY 2022, the leisure and hospitality sector accounted for approximately 339,000 employees in the Air Trade Area, the fifth-highest employment level among all sectors. The leisure and hospitality sector accounted for 10.4 percent of total nonagricultural employment in CY 2022 in the Air Trade Area, compared to 10.5 percent in Texas and 10.4 percent in the nation.

Leisure and hospitality employment in the Air Trade Area increased 3.1 percent between CY 2010 and CY 2022, compared to a 2.8 percent increase for Texas and a 1.6 percent increase for the nation over the same period. Leisure and hospitality employment in the Air Trade Area was slightly less affected by the COVID-19 pandemic than leisure and hospitality employment in the nation, with the Air Trade Area leisure and hospitality employment increasing 0.5 percent between CY 2019 and CY 2022, compared to a -1.5 percent decrease in national leisure and hospitality employment over the same period.

The Air Trade Area has over 94,000 hotel rooms and more than 11,000 restaurants.[57] The growth of this industry is a significant driver of services-related employment and air travel demand at an airport. In support of leisure travel and conventions in the Air Trade Area, there are over 800 hotels in the Houston metropolitan region. According to the Greater Houston Partnership, the number of visitors to Houston was nearly 25 million in CY 2019 (latest data available), and those visitors spent approximately $19.1 billion on tourism.[58]The Air Trade Area has two primary convention centers. The George R. Brown Convention Center in eastern downtown Houston has 1.2 million square feet of usable space.[59] NRG Park, in addition to being the home of the Houston Texans and the Houston Livestock Show and Rodeo, features over 2 million square feet of total net exhibition/meeting space. It hosts some of Houston's largest conventions and tradeshows each year.[60]

The Houston Galleria has been listed among the top 10 most valuable shopping malls in the United States with an annual sales value of $1.03 billion dollar before the pandemic.[61] The future of brick-and-mortar stores is uncertain but The Houston Galleria can remain competitive in value if the stores in the shopping mall introduce omnichannel

[57] Greater Houston Partnership, *Houston Region Economic Outlook*, https://www.houston.org/sites/default/files/2022-12/Employment%20Forecast_2022_Digital.pdf (accessed April 28, 2023).

[58] Greater Houston Partnership, *2022 Houston Employment Forecast*, https://www.houstonpublicmedia.org/app/plugins/pdfjs-viewer-shortcode/pdfjs/web/viewer.php?file=https://cdn.hpm.io/wp-content/uploads/2021/12/01143637/Employment-Forecast_2021_Final-3.pdf&attachment_id=414557&dButton=true&pButton=true&oButton=false&sButton=true#zoom=auto&pagemode=none&_wpnonce=75204e3b8f (accessed April 28, 2023).

[59] Visit Houston, "George R. Brown Convention Center," https://www.visithoustontexas.com/meetings/facilities/george-r-brown-convention-center (accessed April 28, 2023).

[60] Visit Houston, "NRG Park," https://www.visithoustontexas.com/listings/nrg-park/23231 (accessed April 28, 2023).

[61] CNBC, "The 10 Most Valuable Malls in America Before the Coronavirus Pandemic," https://www.cnbc.com/2020/07/03/the-10-most-valuable-malls-in-america-before-the-coronavirus-pandemic.html (accessed April 28, 2023).

capabilities and if the shopping mall itself adapts its business model to new consumer behavior after the pandemic through customizing tenant mix, creative leasing, and repurposing of spaces.[62]

The Port of Galveston is the fourth most popular US cruise port based on its accessibility, exceptional sailing experience to Western Caribbean destinations.[63] The Port of Galveston is expected to provide service to more than 1 million cruise passengers in 2023, exceeding the 2019 record, and is the only home port for US cruise ships in Texas.[64] Cruises resumed in July 2021 with Carnival Cruise Line, the first cruise sailing since March 2020. Other cruise lines operating out of Port of Galveston in CY 2023 include Royal Caribbean International, and Norwegian Cruise Line. Disney Cruise Line operates out of Port of Galveston on a seasonal basis as well.

Primary leisure and hospitality–related attractions located in the Air Trade Area are the following:

- **Museum District.** Divided over 4 walkable zones with 19 museums in total, the Museum District of Houston welcomes millions of visitors annually. It includes such institutions as the Museum of Fine Arts, the Houston Museum of Natural Science, the Children's Museum of Houston, the Menil Collection, the Holocaust Museum, and the Contemporary Arts Museum Houston, to name just a few.
- **Theater District.** Spanning 17 blocks in central Houston, the Theater District ranks second in the United States for the number of theater seats in a concentrated downtown area.[65] Houston is also one of only five cities in the United States with permanent professional resident companies in the four major performing arts disciplines: ballet, opera, symphony, and theater.[66] In addition to the performing arts, the Theater District includes Bayou Place, a large dining and entertainment complex with venues for special events.
- **Historic Sites.** The Air Trade Area includes historically significant sites that are open to visitors, including the San Jacinto Battleground State Historic Site (which includes a 567-foot-high monument and adjoining museum), as well as the Battleship Texas State Historic Park, which includes the only preserved dreadnought ship from the early 20th century.
- **Space Center Houston.** One of the most popular attractions in the Air Trade Area, and the most visited attraction for international visitors, Space Center Houston is the official visitor center of the NASA Johnson Space Center.[67]
- **Houston Zoo.** The second most visited zoo in the United States, and one of the most popular cultural attractions in the Air Trade Area, the Houston Zoo features over 6,000 animals across its 55 acres.[68] *Travel + Leisure* magazine ranks the Houston Zoo among the top 10 zoos in the United States.[69]

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[62] Deloitte Insights, "The Future of Shopping: Creating Customer Value with Retail Real Estate," https://www2.deloitte.com/us/en/insights/industry/financial-services/future-of-shopping-malls.html (accessed April 28, 2023).

[63] Port of Galveston, "Galveston Cruise Industry on Track to Set New Records," https://www.portofgalveston.com/CivicAlerts.aspx?AID=235 (accessed April 28, 2023).

[64] Ibid.

[65] Visit Houston, "Theater – About," https://www.visithoustontexas.com/theater/about (accessed April 28, 2023).

[66] Ibid.

[67] Space Center Houston, "About Us," https://spacecenter.org/about-us/ (accessed April 28, 2023).

[68] Houston Zoo, "About Us," https://www.houstonzoo.org/about (accessed April 28, 2023).

[69] Travel + Leisure, "14 of the Best Zoos in the U.S.," https://www.travelandleisure.com/attractions/zoos-aquariums/best-zoos-in-the-us (accessed April 28, 2023).

- **National Forest and Wildlife Refuges.** The Air Trade Area has a number of protected forests and wildlife areas within its bounds, which provide natural havens for both wildlife and visitors. These include the Sam Houston National Forest and the Anahuac, Brazoria, Trinity River, MidCoast, and San Bernard National Wildlife Refuges.
- **Beaches.** The Air Trade Area has numerous beaches, located both along the Gulf of Mexico as well as around Galveston Bay. Galveston Island and Bolivar Peninsula (both in Galveston County) together total nearly 60 miles of beach shoreline.[70,71] Surfside Beach is another popular beach along the Gulf of Mexico, while Sylvan Beach and El Jardin Beach are popular bayside destinations closer to central Houston.[72]

Major spectator sports/events in the Air Trade Area include the following: the Houston Astros, a Major League Baseball (MLB) franchise; the Houston Texans, a National Football League (NFL) franchise; the Houston Rockets, a National Basketball Association (NBA) franchise; the Houston Dynamo, a Major League Soccer (MLS) franchise; the Houston Dash, a National Women's Soccer League (NWSL) franchise; the Professional Golfers' Association (PGA) Tour's Houston Open; the Ladies Professional Golf Association's (LPGA) Chevron Championship; and the Grand Prix of Houston. In 2023 Houston hosted the National Collegiate Athletic Association (NCAA) Men's Basketball Championship. Houston is scheduled to host the College Football National Championship in 2024, and several matches of the FIFA World Cup in 2026.

4.2.4.6 CONSTRUCTION, MINING, AND LOGGING

In CY 2022, the construction, mining, and logging sector is the sixth-highest employment level among all sectors and accounted for approximately 288,000 employees in the Air Trade Area. In CY 2022, the construction, mining, and logging sector accounted for 8.9 percent of total nonagricultural employment in the Air Trade Area, compared to 7.3 percent in Texas and 5.5 percent in the nation. Employment in the construction, mining, and logging sector in the Air Trade Area and Texas is more heavily concentrated than it is in the nation due in part to employment in the mining sector. Texas is the top crude oil- and natural gas-producing state in the nation, and the Air Trade Area is a key center for oil and gas companies, including BP, ConocoPhillips, and Shell.

Construction, mining, and logging employment in the Air Trade Area increased by 1.0 percent between CY 2010 and CY 2022, compared to a 2.0 percent increase for Texas and 2.5 percent increase for the nation over the same period.

Both building permits and housing sales and prices are indirect indicators of employment in the residential construction sector. As shown in **Table 4-9**, Air Trade Area residential building permits and valuation experienced a lower increase than what was experienced by Texas and the United States over the CY 2010 to CY 2021 period. After rebounding from the bottom of the most recent residential real estate building cycle in CY 2009, the Air Trade Area's residential building permit units have grown significantly, at a CAGR of 8.7 percent from CY 2010 to CY 2021, compared to an increase of 10.4 percent for Texas and 10.0 percent for the United States over the same period. Building permit valuation increased at a CAGR of 11.3 percent (compared to an increase of 12.7 percent for Texas and 12.6 percent for the United States) between CY 2010 and CY 2021.

70 City of Galveston, "Galveston Beaches," https://www.galvestontx.gov/189/Galveston-Beaches (accessed April 28, 2023).

71 Bolivar Peninsula Texas, "The Best Beaches Near Houston," https://www.tripsavvy.com/best-beaches-near-houston-4172733 (accessed April 28, 2023).

72 TripSavvy, "The Beach," https://www.bolivarpeninsulatexas.com/Activities/Enjoy-Bolivar-Outdoors/The-Beach (accessed April 28, 2023).

TABLE 4-9 RESIDENTIAL BUILDING PERMITS AND VALUATION CALENDAR YEAR 2010 THROUGH CALENDAR YEAR 2021

(Dollar Amounts in Millions)

	AIR TRADE AREA		TEXAS		UNITED STATES	
YEAR	UNITS	VALUATION	UNITS	VALUATION	UNITS	VALUATION
CY 2010	27,452	$4,175	88,461	$13,740	604,610	$101,943
CY 2011	31,271	$4,831	97,450	$14,736	624,061	$105,269
CY 2012	43,290	$6,439	135,514	$19,451	829,658	$140,425
CY 2013	51,333	$7,402	147,460	$22,356	990,822	$177,656
CY 2014	63,741	$9,251	166,982	$26,296	1,046,363	$193,243
CY 2015	56,901	$8,566	175,443	$29,087	1,182,582	$223,611
CY 2016	44,732	$7,396	165,853	$29,242	1,206,642	$237,102
CY 2017	42,395	$7,880	175,112	$32,514	1,281,977	$258,505
CY 2018	57,288	$9,172	192,878	$34,690	1,328,827	$271,120
CY 2019	63,672	$9,827	209,895	$37,413	1,386,048	$280,534
CY 2020	68,415	$11,889	230,503	$42,986	1,471,141	$307,210
CY 2021	69,053	$13,594	261,951	$51,422	1,729,910	$375,212
Compound Annual Growth Rate						
CY 2010 – CY 2019	9.8%	10.0%	10.1%	11.8%	9.7%	11.9%
CY 2019 – CY 2020	7.4%	21.0%	9.8%	14.9%	6.1%	9.5%
CY 2010 – CY 2021	8.7%	11.3%	10.4%	12.7%	10.0%	12.6%

NOTES:
CY – Calendar Year
CY 2022 data not yet available from the United States Census Bureau.
SOURCE: United States Census Bureau, *Annual Building Permits*, April 2022.

Residential construction remained strong in 2022 as new permits for single-family homes were at their highest levels since 2005, the last housing peak.[73] Homebuilding in the Air Trade Area was particularly strong relative to the national average, which is still down by a third compared to 2005.[74] A growing population of homebuyers in the homebuying age, employment growth in well-paying manufacturing jobs, and—despite the increase in home prices and slight decline in affordability in the Air Trade Area compared to pre-COVID-19 pandemic—continued affordability relative to Dallas and Austin, all support the faster pace of homebuilding.[75]

After the spike in sales and home prices during the COVID-19 pandemic, March 2023 marked the 12th consecutive month of falling sales and the second consecutive month of slightly lower prices in the Air Trade Area.[76] In March 2023, the median price was $325,000 for the Air Trade Area, down from a peak of $355,000 in June 2022.[77]

[73] Moody's Analytics, Inc., "Précis U.S. Metro – Houston-The Woodlands-Sugar Land TX," May 2022.

[74] Ibid.

[75] Ibid.

[76] RISMedia, "Houston Association of Realtors Shares Market Update," https://www.rismedia.com/2023/04/17/houston-association-realtors-shares-market-update/ (accessed May 16, 2023).

[77] Greater Houston Partnership, "Monthly Update: Home Sales," https://www.houston.org/houston-data/monthly-update-home-sales (accessed May 16, 2023).

Approximately 2.7 months inventory of homes for sale was available as of March 2023, up from 1.1 months a year earlier.[78]

4.2.4.7 MANUFACTURING

In CY 2022, the manufacturing sector accounted for approximately 224,000 employees in the Air Trade Area. The manufacturing sector accounted for 6.9 percent of total nonagricultural employment in CY 2022 in the Air Trade Area, consistent with 6.9 percent in Texas, and lower than 8.4 percent in the nation, respectively. The Air Trade Area comprises more than 600 chemical plants and employs over 35,000 workers as of CY 2020.[79]

Manufacturing employment in the Air Trade Area increased by 0.3 percent between CY 2010 and CY 2022, compared to an increase of 1.1 percent in Texas and 0.9 percent in the nation over the same period. Manufacturing employment in the Air Trade Area was more affected in CY 2020 through CY 2022 by the COVID-19 pandemic than manufacturing employment in the nation (decreasing at a CAGR of -1.7 percent between CY 2019 and CY 2022).

As of CY 2019, manufacturing accounted for 16.8 percent of the Air Trade Area's GDP.[80] Despite smaller gains in manufacturing employment between CY 2010 and CY 2022 relative to other sectors, manufacturing continues to be an important component of the Air Trade Area's economy. Petrochemicals manufacturing capacity in Texas accounted for 43 percent of the total national capacity in CY 2021.[81] The Air Trade Area also produces computer and electronic products, plastics and rubber products, electrical equipment and appliances, and transportation equipment.[82] The manufacturing sector continues to recover in CY 2023 but is facing difficulty hiring workers to operate machines.[83]

The Spaghetti Bowl is a product pipeline that links chemical plants, refineries, salt domes and fractionation plants along the Texas Gulf Coast. This pipeline provides the Air Trade Area a productive and cost-efficient energy-related manufacturing process.[84] Included in the list of major employers in the Air Trade Area in Table 4-6, ExxonMobil is the largest oil and gas industry employer in the Air Trade Area, employing 11,814 in CY 2021. Marathon Petroleum Co is the largest petroleum refinery in terms of refinery capacity in the Air Trade Area.[85]

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[78] RISMedia, "Houston Association of Realtors Shares Market Update," https://www.rismedia.com/2023/04/17/houston-association-realtors-shares-market-update/ (accessed May 16, 2023).

[79] Greater Houston Partnership, *Houston Facts 2021*, https://www.houston.org/sites/default/files/2021-09/houston%20facts%202021_digital_Final.pdf (accessed April 28, 2023).

[80] Greater Houston Partnership, *Manufacturing Overview*, https://www.lonestar.edu/economicdevelopment/documents/16A%20W010%20Manufacturing%20Overview.pdf (accessed June 28, 2023).

[81] US Energy Information Administration, "Texas State Energy Profile," https://www.eia.gov/state/print.php?sid=TX (accessed April 28, 2023).

[82] Greater Houston Partnership, *Houston Facts 2022*, https://www.houston.org/sites/default/files/2022-09/houston%20facts%202022_Digital_0.pdf (accessed April 28, 2023).

[83] Deloitte, "2023 Manufacturing Industry Outlook," https://www2.deloitte.com/us/en/pages/energy-and-resources/articles/manufacturing-industry-outlook.html (accessed April 2023).

[84] Greater Houston Partnership, *Houston Facts 2021*, https://www.houston.org/sites/default/files/2021-09/houston%20facts%202021_digital_Final.pdf (accessed April 28, 2023).

[85] Greater Houston Partnership, *Houston Facts 2021*, https://www.houston.org/sites/default/files/2021-09/houston%20facts%202021_digital_Final.pdf (accessed April 28, 2023).

Also included in the list of major employers in the Air Trade Area in Table 4-6, Daikin Comfort Technologies North America is the largest employer in heating, ventilation, and air conditioning (HVAC) manufacturing, with 8,819 employees in CY 2021.

4.2.4.8 TRANSPORTATION/UTILITIES

In CY 2022, the transportation/utilities sector accounted for approximately 185,000 employees in the Air Trade Area. The transportation/utilities sector accounted for 5.7 percent of total nonagricultural employment in CY 2022 in the Air Trade Area, compared to 5.2 and 4.7 percent in Texas and the nation, respectively.

Transportation/utilities employment in the Air Trade Area increased at a CAGR of 3.4 percent between CY 2010 and CY 2022, compared to a 3.6 percent increase for the nation over the same period. Transportation/utilities employment in the Air Trade Area was similarly affected in CY 2020 and CY 2022 by the COVID-19 pandemic than transportation/utilities employment in the nation, with the Air Trade Area transportation/utilities employment increasing at a CAGR of 6.1 percent between CY 2019 and CY 2022, compared to a 5.1 percent increase in national transportation/utilities employment over the same period.

IAH and HOU service the air transportation demand in the Air Trade Area, which is also supported by additional transportation infrastructure providing both passenger and freight access:

- The Air Trade Area is directly connected to major US markets by an integrated network of interstate highways. It lies at the intersection of Interstate 10 (I-10), which is the major east–west interstate in the southern United States, and Interstate 45 (I-45), which connects Galveston with Dallas via Houston. I-69/US Highway 59, US Highway 90, and US Highway 290 are additional spokes that cross the Air Trade Area. There are three outer loop highway systems that encircle the area and form concentric circles: Interstate 610 (I-610), Beltway 8, and Texas State Highway 99 (SH 99). Texas manages various other state highways and farm-to-market roads, with various other new highways and spurs planned. Finally, the Harris County Toll Road Authority (HCTRA) and Fort Bend County Toll Road Authority (FBCTRA) operate a collection of toll roads, such as the Sam Houston Tollway, the Fort Bend Parkway Toll Road, the Hardy Toll Road, and the Westpark Tollway, that provide additional options for residents and visitors.
- Ocean shipping is facilitated by the Greater Port of Houston that extends along the 52-mile-long Houston Ship Channel and is the largest port in the United States in terms of total cargo tonnage.[86] The Houston Ship Channel handled over 275 million short tons of cargo in 2020; the goods that flow through the Greater Port of Houston sustain nearly 70,000 direct jobs and contribute over $800 billion to the national economy.[87] The Bayport Terminal and Barbour's Cut Terminal are the two primary container terminals of the Port of Houston.
- As discussed in Section 4.2.4.5, the Air Trade Area is also served by the Port of Galveston. The Port of Galveston does not focus on cargo shipping, but rather the cruise ship industry. The Port of Galveston is the fourth most popular US cruise port and the only home port for US cruise ships in Texas.[88]

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[86] Port Houston, *Port Houston Facts and Figures*, https://porthouston.com/wp-content/uploads/Dec-2021-Houston-Ship-Channel-Still-Ranked-No.1-FINAL.pdf (accessed April 28, 2023).

[87] Port of Houston, *2018 Economic Impact of Marine Cargo Activity at the Port of Houston: Executive Summary*, https://porthouston.com/wp-content/uploads/Port-of-Houston-EIS-Executive-Summary-4-5-2019-1.pdf (accessed April 28, 2023); Port Houston, *Port Houston Facts and Figures*, https://porthouston.com/wp-content/uploads/Dec-2021-Houston-Ship-Channel-Still-Ranked-No.1-FINAL.pdf (accessed April 28, 2023).

[88] Port of Galveston, "About Us," https://www.portofgalveston.com/8/About-Us (accessed April 28, 2023).

- There are three Class 1 railroad companies that serve the Air Trade Area: Burlington Northern Santa Fe (BNSF) Railway, Kansas City Southern (KCS) Railway, and Union Pacific Railroad (UP). Eight mainline tracks and five branch line tracks radiate from the Air Trade Area.[89]
- Passenger rail service is provided to and from the Air Trade Area by Amtrak. Texas Central is a rail project that plans to build high-speed rail between Houston and Dallas. The agency is in the process of acquiring the right-of-way for the future connection between the two cities, a trip that would take approximately 90 minutes. The $20 billion project is proposed to open as early as 2026, which will create jobs and draw both business and leisure travelers to the Air Trade Area.[90]
- Public transit in the Air Trade Area is primarily provided by the Metropolitan Transit Authority of Harris County, Texas (METRO), which provides a variety of traditional bus transit services, as well as bus rapid transit, paratransit, and light rail (METRORail) services. In addition, Island Transit serves the City of Galveston, and the Gulf Coast Transit District serves Brazoria and Galveston Counties with fixed-route, paratransit and trolley services. Conroe Connection serves the City of Conroe and Southern Brazoria County Transit System serves several towns in the Air Trade Area with fixed-route bus services.

The primary utility company serving the Air Trade Area is CenterPoint Energy, an electric and natural gas utility serving several states in the Midwest and South; headquartered in Houston, CenterPoint Energy has over 5,000 employees in the Air Trade Area.

4.2.4.9 FINANCIAL

The financial sector comprises financial, insurance, and real estate services. In CY 2022, the financial sector accounted for approximately 179,000 employees in the Air Trade Area. The financial sector accounted for 5.5 percent of total nonagricultural employment in CY 2022 in the Air Trade Area, compared to 6.5 and 5.9 percent in Texas and the nation respectively.

Financial employment in the Air Trade Area increased by 2.2 percent between CY 2010 and CY 2022, compared to a 1.4 percent increase for the nation over the same period. Financial employment in the Air Trade Area was less affected by the COVID-19 pandemic and has a higher positive growth than financial employment in the nation, with the Air Trade Area financial employment increasing 2.4 percent between CY 2019 and CY 2022, compared to a 1.1 percent increase in national financial employment during the same period.

The City of Houston is a center of international finance with 16 foreign banks from 9 nations.[91] As shown in Table 4-7, JPMorgan Chase Bank was the largest financial services employer in the Air Trade Area, with approximately 6,000 employees.

Table 4-10 presents total bank deposits for the Air Trade Area, Texas, and the United States between the year ending June 30, 2010, and the year ending June 30, 2022. Total bank deposits are an indication of the economic activity of the financial sector. As shown, total bank deposits in the Air Trade Area increased from approximately

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[89] Greater Houston Partnership, *Houston Facts 2022*, https://www.houston.org/sites/default/files/2022-09/73ouston%20facts%202022_Digital_0.pdf (accessed April 28, 2023).

[90] Texas Central, "Learn the Facts," https://www.texascentral.com/facts/#:~:text=What%20will%20the%20project%20cost,stations%20and%20three%20passenger%20stations (accessed April 28, 2023).

[91] Greater Houston Partnership, *Houston Facts 2022*, https://www.houston.org/sites/default/files/2022-09/houston%20facts%202022_Digital_0.pdf (accessed April 28, 2023).

$137,113 million in the year ending June 30, 2010, to approximately $374,809 million in the year ending June 30, 2022. This increase represents a CAGR of 8.7 percent during this period, which was higher than that for nation and lower than that for Texas (CAGRs of 7.4 percent and 10.9 percent, respectively) during this same period. There was a surge in bank deposits in the first few months of the pandemic, which can be seen in a significant increase in bank deposits between the year ending June 30, 2019, and the year ending June 30, 2020. Numerous factors contributed to the surge, including the billions of dollars the government provided to small businesses via Paycheck Protection Program loans and individuals via stimulus checks and unemployment benefits; the Federal Reserve's efforts to support financial markets, including an unlimited bond-buying program; and the uncertainty that prompted an approach by individuals and corporations to keep more cash on hand.[92] Bank deposits have declined since the start of the current monetary policy tightening cycle in March 2022 and the outflow of deposits increased during March 2023, following the run on Silicon Valley Bank.[93]

TABLE 4-10 TOTAL BANK DEPOSITS

(Dollar Amounts in Millions)

	TOTAL BANK DEPOSITS		
YEAR	AIR TRADE AREA	TEXAS	UNITED STATES
Historical			
2010	$137,113	$499,211	$7,676,878
2011	$153,976	$543,733	$8,249,403
2012	$179,099	$599,031	$8,947,244
2013	$208,033	$652,053	$9,433,522
2014	$242,540	$719,813	$10,112,724
2015	$215,215	$730,504	$10,657,721
2016	$219,160	$769,160	$11,280,518
2017	$240,933	$818,120	$11,859,860
2018	$245,688	$840,122	$12,307,880
2019	$249,551	$878,164	$12,813,120
2020	$305,954	$1,366,567	$15,590,139
2021	$333,722	$1,572,292	$17,235,467
2022	$374,809	$1,728,401	$18,141,585
Compound Annual Growth Rate			
2010 – 2019	6.9%	6.5%	5.9%
2019 – 2022	14.5%	25.3%	12.3%
2010 – 2022	8.7%	10.9%	7.4%

NOTES:
Year ending June 30.
Air Trade Area bank deposit data only represents the Houston MSA because data for the full Air Trade Area is not available from Federal Deposit Insurance Corporation.
SOURCE: Federal Deposit Insurance Corporation, *Summary of Deposits Report*, May 2023.

92 Son, Hugh, "U.S. Banks Are 'Swimming in Money' as Deposits Increase by $2 Trillion Amid the Coronavirus," *CNBC*, https://www.cnbc.com/2020/06/21/banks-have-grown-by-2-trillion-in-deposits-since-coronavirus-first-hit.html (accessed April 28, 2023).

93 Luck, Stephen, Matthew Plosser and Josh Younger, "Bank Funding during the Current Monetary Policy Tightening Cycle," *Federal Reserve Bank of New York*, https://libertystreeteconomics.newyorkfed.org/2023/05/bank-funding-during-the-current-monetary-policy-tightening-cycle/ (accessed May 15, 2023).

4.2.4.10 OTHER SERVICES

Other services employment includes personal services (e.g., dry cleaning and laundry services; repair and maintenance services; religion, grant making, civic, professional, and similar organizations) and private household employment.[94] In CY 2022, the other services sector accounted for approximately 118,000 employees in the Air Trade Area. The other services sector accounted for 3.6 percent of total nonagricultural employment in CY 2022 in the Air Trade Area, compared to 3.3 and 3.7 percent in Texas and in the nation, respectively.

Other services employment in the Air Trade Area increased at a CAGR of 1.9 percent between CY 2010 and CY 2022, compared to a 1.8 and 0.6 percent increase for Texas and the nation, respectively, over the same period. Other services employment in the Air Trade Area was less affected in CY 2022 by the COVID-19 pandemic than other services employment in the nation, with the Air Trade Area other services employment increasing 0.6 percent between CY 2019 and CY 2022, compared to an -1.0 percent decrease in national other services employment.

Because the demand for other services is on an individual or household level, trends in other services employment do not independently drive economic growth, but rather tend to reflect growth in other industry sectors, which results in an increased demand for other services by individuals and households.

4.2.4.11 INFORMATION

The information sector combines telecommunications service providers, traditional publishing, motion picture and sound recording, broadcasting, software, online services, and data processing. In CY 2022, the information sector accounted for approximately 33,000 employees in the Air Trade Area. The information sector accounted for 1.0 percent of total nonagricultural employment in CY 2022 in the Air Trade Area, compared to 1.7 and 2.0 percent in Texas and the nation, respectively.

Information employment in the Air Trade Area remained unchanged between CY 2010 and CY 2022, compared to a 1.1 percent increase for the nation over the same period. Information employment in the Air Trade Area was more affected in CY 2020 through CY 2022 by the COVID-19 pandemic than information employment in the nation, with the Air Trade Area information employment increasing at a CAGR of 0.2 percent, compared to a 2.4 percent increase in national information employment over the same period.

The combination of being one of the leading tech hubs, having NASA's Johnson Space Center, and home to more than 20 Fortune 500 company headquarters, the Air Trade Area enjoys one of the most state-of-the-art communications networks globally.[95] The Air Trade Area hosts approximately 24 carriers to provide fiber service and was also the first metropolitan area in the United States to install Verizon 5G broadband in October 2018.[96] The Air Trade Area contains over 500 digital technology companies.[97]

Hewlett Packard, one of the Fortune 500 companies headquartered in the Air Trade Area, is a leading software, cloud computing, and data processing information technology company. The new Hewlett Packard headquarters in the Air Trade Area has completed its construction in April 2022 and the campus includes 440,000 square feet of

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[94] US Department of Labor, Bureau of Labor Statistics, "Industries at a Glance – Other Services," https://www.bls.gov/iag/tgs/iag81.htm (accessed April 28, 2023).

[95] Greater Houston Partnership, "2021 Telecommunications," https://www.houston.org/houston-data/telecommunications (accessed April 28, 2023).

[96] Ibid.

[97] Greater Houston Partnership, "Digital Tech – Practice Areas," https://www.houston.org/houston-data/digital-tech-practice-areas (accessed June 30, 2022).

leasable area.[98] In CY 2021, Hewlett Packard had 3,050 employers in the Air Trade Area to deliver intuitive and effective technology solutions for businesses in multiple industries.[99] Other large tech employers with information-related businesses and more than 1,000 employees in the Air Trade Area are NASA – Johnson Space Center, Boeing, IBM, Honeywell, Siemens, and Dell.[100]

4.3 ECONOMIC OUTLOOK

4.3.1 SHORT-TERM ECONOMIC OUTLOOK

With respect to the national economy, the Congressional Budget Office (CBO) outlook released in February 2023 projects a 0.3 percent year-over-year increase in real GDP for 2023. This would be a decline from real GDP growth in 2022, which was 1.9 percent. The real GDP growth rate is projected to increase to 1.8 percent in 2024, peak at 2.7 percent in 2025, and then gradually fall to 1.7 percent in 2033 (latest year of CBO outlook available). [101] The International Monetary Fund (IMF) outlook released in April 2023 projects a 1.6 percent year-over-year increase in real US GDP for 2023. 2024 is then projected to see year-over-year US GDP growth of 1.1 percent. [102] The CBO projects the national unemployment rate to rise to 4.7 percent in 2023 and 4.9 percent in 2024 before a gradual decline to 4.5 percent in 2027, at which it remains through 2033.[103]

At the time of this Report (June 2023), the Russian invasion of Ukraine has been ongoing for more than 16 months. [104] While the economic outlooks cited in this Report consider the Russian invasion's current and future impact on the national and local economy, the Russian invasion is likely to further exacerbate existing economic uncertainty, which could impact both travel and commerce—not only at a global level, but also within the United States.[105] As a result of the invasion, sanctions have been imposed on Russia, which creates regulatory barriers that can hinder economic growth. [106] In particular, a variety of US energy firms with headquarters in the Air Trade Area announced that they would discontinue operations in Russia; however, these operations represent only a small amount of total activity.[107] On the other hand, the Russian invasion has led to increased export, at least temporarily, of crude from the Air Trade Area to Northwest Europe to replace the region's loss of access to Russian crude.[108] Additionally, the increase in oil prices as a result of the Russian invasion emphasize the need for renewable energy and the execution

[98] Community Impact, "Hewlett Packard Enterprise Opens New Headquarters in City Place in Spring," https://communityimpact.com/houston/spring-klein/impacts/2022/05/19/hewlett-packard-enterprise-opens-new-headquarters-in-city-place-in-spring/ (accessed April 28, 2023).

[99] Greater Houston Partnership, *Houston Tech Report: Charting the Innovation Landscape of America's Fourth Largest City*, https://www.houston.org/sites/default/files/2022-04/Tech%20Report_2022%204.1.pdf (accessed April 28, 2023).

[100] Ibid.

[101] Congressional Budget Office, *The Budget and Economic Outlook: 2023 to 2033*, February 2023.

[102] International Monetary Fund, *World Economic Outlook Update: A Rocky Recovery*, April 2023.

[103] Congressional Budget Office, *The Budget and Economic Outlook: 2023 to 2033*, February 2023.

[104] CNN, "Zelensky Says 'Fierce Battles' Rage in Eastern Ukraine, with Russian Forces Suffering Large-Scale Losses," https://www.cnn.com/europe/live-news/russia-ukraine-war-news-11-08-22/index.html (accessed May 18, 2023).

[105] Prior to the Russian invasion, the December 2021 consumer price index (CPI) showed US inflation reached 7 percent for CY 2021, the highest rate in nearly 40 years.

[106] Department of the Treasury, "Ukraine/Russia-Related Sanctions Program," https://ofac.treasury.gov/sanctions-programs-and-country-information/ukraine-russia-related-sanctions (accessed May 18, 2023).

[107] Moody's Analytics, Inc., "Précis U.S. Metro – Houston-The Woodlands-Sugar Land," May 2022.

[108] Houston Public Media, "Russia's Invasion of Ukraine Has Prompted an Increase in Crude Oil Exports from Texas Ports," https://www.houstonpublicmedia.org/articles/news/energy-environment/2022/03/29/422134/russias-invasion-of-ukraine-has-prompted-an-increase-in-crude-oil-exports-from-texas-ports-analysts-say/ (accessed May 18, 2023).

of extensive energy efficiency measures. [109] As a leading partner of the Environmental Protection Agency, with high annual green power usage, the City of Houston can benefit from the extensive renewable energy implementation.[110]

4.3.2 LONG-TERM ECONOMIC ASSUMPTIONS INCORPORATED IN PASSENGER DEMAND FORECASTS

As described in more detail in Chapter 5, the methodologies used in developing forecasts of enplaned passengers at IAH and HOU included (among other methodologies) statistical linear regression modeling, with local and national socioeconomics and demographics as independent variables and O&D passengers as the dependent variable. Independent variables considered for this analysis included population, employment, earnings, personal income (per capita and total), and GRP/GDP for the Air Trade Area and the United States. For each socioeconomic and demographic variable, regression modeling produced a coefficient that was applied to the corresponding variable projection developed by Woods & Poole to provide a forecast of enplaned passengers. **Table 4-11** presents the CY 2020 and CY 2032 figures used in the modeling, as well as the CAGR for each independent variable in CY 2020 and CY 2032. As previously stated, the demand for air transportation at an airport is, to a large degree, dependent upon the demographic and economic characteristics of an airport's air trade area. The projected growth during the Projection Period in the economic indicators in Table 4-10 supports the underlying assumptions that drive the airline activity forecasts discussed in Chapter 5.

TABLE 4-11 PROJECTION OF ECONOMIC VARIABLES USED IN PASSENGER DEMAND FORECASTS

VARIABLE	CY 2020	CY 2032	COMPOUND ANNUAL GROWTH RATE CY 2020 – CY 2032
Air Trade Area Population	7,341,569	8,593,146	1.3%
US Population	331,501,094	356,413,906	0.6%
Air Trade Area Total Employment (jobs)[1]	4,230,366	5,560,960	2.3%
US Total Employment (jobs)[1]	186,274,766	232,916,601	1.9%
Air Trade Area Total Personal Income[2]	$396,257	$567,690	3.0%
US Total Personal Income[2]	$17,628,632	$22,484,638	2.0%
Air Trade Area Per Capita Personal Income[3]	$53,974	$66,063	1.7%
US Per Capita Personal Income[3]	$53,178	$63,086	1.4%
Air Trade Area Gross Regional Product (GRP)[2]	$446,516	$636,084	3.0%
US Gross Domestic Product (GDP)[2]	$18,664,908	$24,492,794	2.3%
Air Trade Area per Capita Gross Regional Product (GRP)[3]	$60,820	$74,022	1.7%
US Gross per Capita Domestic Product (GDP)[3]	$56,304	$68,720	1.7%

NOTES:
All dollar amounts are in 2020 dollars. 2032 data are Woods & Poole Economics, Inc., projections.
CY – Calendar Year
GDP – Gross Domestic Product
GRP – Gross Regional Product
1 Employment data include wage and salary workers, proprietors, private household employees, and miscellaneous workers.
2 Figures displayed in millions of 2012 dollars.
3 Figures displayed in 2012 dollars.
SOURCE: Woods & Poole Economics, Inc., *2022 Complete Economic and Demographic Data Source (CEDDS),* June 2022.

[109] The World Bank, "Russian Invasion to Shrink Ukraine Economy by 45 Percent this Year," https://www.worldbank.org/en/news/press-release/2022/04/10/russian-invasion-to-shrink-ukraine-economy-by-45-percent-this-year (accessed May 18, 2023).

[110] Greater Houston Partnership, "City of Houston No. 1 in Green Energy Usage," https://www.houston.org/news/epa-city-houston-no-1-green-energy-usage (accessed May 18, 2023).

4.4 CONCLUSIONS

The historical and future projected socioeconomic data cited in this chapter, including Air Trade Area employment, GRP, population, and PCPI data, support the conclusion that the Air Trade Area can support increased airline traffic demand through the Projection Period (ending CY 2032).

The Air Trade Area population was approximately 7.34 million in CY 2020, and it is projected by Woods & Poole to increase to approximately 8.59 million by CY 2032. This represents a 1.3 percent CAGR for the Air Trade Area, which is approximately the same as that experienced by Texas and higher than the United States during the same period (1.2 percent and 0.6 percent, respectively).

PCPI in the Air Trade Area was slightly higher than in the United States between CY 2010 and CY 2020. The Air Trade Area's PCPI in CY 2020 (approximately $54,000) was 1.5 percent higher than PCPI in the United States (approximately $53,200) and 8.4 percent higher than PCPI in Texas (approximately $49,800). PCPI in the Air Trade Area is projected by Woods & Poole to increase at a CAGR of 1.7 percent between CY 2020 and CY 2032, which is higher than the projected CAGR of 1.4 percent for the United States and comparable to the projected CAGR of 1.8 percent for Texas.[111]

Between CY 2010 and CY 2020, the Air Trade Area's GRP grew at a CAGR of approximately 1.7 percent; this is lower than Texas but comparable to the United States during the same period, which grew at CAGRs of 2.1 percent and 1.8 percent, respectively. GRP in the Air Trade Area is projected by Woods & Poole to increase at a CAGR of 3.0 percent between CY 2020 and CY 2032; Texas GRP and US GDP are projected to increase at CAGRs of 3.0 percent and 2.3 percent, respectively, over the same period.

Between CY 2010 and CY 2022, the Air Trade Area's labor force grew at a CAGR of approximately 1.6 percent; this is comparable to that experienced by Texas and higher than the United States during the same period, which grew at CAGRs of 1.5 percent and 0.5 percent, respectively.

In terms of percentages of industry sector shares, CY 2022 employment in the following industry sectors in the Air Trade Area exceeded employment in the United States: professional and business services, construction/mining/logging, transportation/utilities, and trade. During the same period, the following industry sectors in the Air Trade Area exceeded employment in Texas: professional and business services, construction/mining/logging, transportation/utilities, and other services.

The Air Trade Area's business-friendly climate, including favorable state tax law leading to relatively low tax expenses, low corporate rent costs, and access to a young and diverse professional talent pool attracts both big corporations and small businesses to Texas.[112] The Air Trade Area's economic strength is in part attributable to its' highly skilled workforce and position as a major transportation hub.

In conclusion, the Air Trade Area has a large and diverse economy, large and growing population base, and attractive business climate which favorably impacts future airline traffic demand.

[111] Amounts are in 2012 dollars.

[112] Greater Houston Partnership, *Houston Business Insider*, https://www.houston.org/sites/default/files/2022-11/2022%20Houston%20Business%20Insidre%20EDG.pdf (accessed April 21, 2023).

5. AIR TRAFFIC

This section describes the airlines serving the Airport System, historical activity, factors affecting aviation demand, and the forecast of Airport System activity.

5.1 NATIONAL AND GLOBAL PERSPECTIVE OF THE AIRPORT SYSTEM

Based on airline bookings data, in the year ending June 2022 the Houston market was ranked thirteenth in the nation in terms of total O&D passengers. **Table 5-1** presents the top 20 cities in the United States ranked by total O&D passengers for the year ending June 2019 through year ending June 2022. **Table 5-2** presents the top 20 airports in the United States ranked on domestic enplaned passengers for the year ending June 2019 through year ending June 2022. IAH ranked 11th for the year ending June 2022, HOU (not shown) ranked 35th. **Table 5-3** presents the top 20 airports in the United States ranked on international enplaned passengers for the year ending June 2019 through year ending June 2022. IAH ranked 5th for the year ending June 2022, HOU (not shown) ranked 23rd.

Houston's large population base and geographic position support domestic and international connectivity and make it a natural location for airline hub and focus city operations. The status of IAH as a hub for United and HOU as a focus city for Southwest have established the positions of IAH and HOU as key components of the national air transportation system.

5.2 AIRLINES SERVING THE AIRPORT SYSTEM

As of April 2023, 52 airlines served IAH and HOU. Currently no airlines operate scheduled passenger or cargo flights to EFD. **Table 5-4** presents the 49 airlines serving IAH and 9 airlines currently serving HOU during 2023. There are 6 airlines that serve both Airports.

Table 5-5 presents the US scheduled passenger airlines that have served IAH and HOU since 2010. Both Airports are served by a large and stable base of airlines. Alaska, American, Delta, and United have served IAH during every year of this period, with Spirit initiating service in 2012. Frontier transferred all service at HOU to IAH in 2012. In 2022 Frontier resumed service at HOU while maintaining service at IAH. In 2019 JetBlue transferred all service at HOU to IAH. Two US airlines launched service from IAH in 2021: Southwest, which maintained service at HOU, and Sun Country. American, Delta, and Southwest have consistently served HOU during this period. Allegiant launched service from HOU in 2020.

Table 5-6 presents the foreign-flag scheduled passengers airlines that have served IAH since 2010. While Southwest has provided international service from HOU since 2015, no foreign-flag passenger airlines have served HOU on a regularly scheduled basis during this period; 11 foreign-flag airlines representing Canada, Latin America, Europe, Asia, and the Middle East have served IAH every year during this period. By 2017 the number of foreign-flag airlines had increased to 21. The number fell to 16 in 2021 as airlines suspended service during the COVID-19 pandemic, with two additional foreign-flag airlines adding or resuming service in 2022. Of the 19 foreign-flag airlines serving IAH in 2023, 9 are members of Star Alliance along with United. Alliance cooperation between United and its Star Alliance partners has supported growth of international O&D and connecting passenger itineraries at IAH.

TABLE 5-1 TOP 20 US CITIES RANKED ON TOTAL O&D PASSENGERS(IN MILLIONS)

	YE JUNE 2019		YE JUNE 2020		YE JUNE 2021		YE JUNE 2022	
CITY	RANK	PASSENGERS	RANK	PASSENGERS	RANK	PASSENGERS	RANK	PASSENGERS
New York City [1]	1	58.7	1	43.1	1	18.6	1	43.6
Los Angeles [2]	2	46.2	2	33.8	3	17.4	2	36.1
Miami [3]	4	32.8	3	25.0	2	18.1	3	30.7
Chicago [4]	5	29.3	5	21.7	5	12.6	4	23.6
Orlando [5]	7	24.3	7	18.6	4	13.0	5	22.7
San Francisco [6]	3	34.3	4	24.5	12	9.3	6	21.9
Washington DC [7]	6	27.3	6	19.7	11	9.5	7	20.4
Las Vegas [8]	8	21.3	9	16.0	8	11.0	8	19.8
Denver [9]	9	20.9	8	16.2	6	11.9	9	18.9
Dallas [10]	10	20.5	10	15.8	7	11.3	10	18.8
Atlanta [11]	11	19.4	11	14.5	9	10.3	11	17.3
Phoenix [12]	15	15.6	14	12.2	10	9.7	12	15.9
Houston [13]	**14**	**15.6**	**15**	**11.9**	**13**	**8.5**	**13**	**14.4**
Boston [14]	12	19.2	12	13.8	16	5.7	14	14.0
Seattle [15]	13	17.2	13	13.0	14	7.0	15	13.7
Tampa [16]	18	11.4	17	8.8	15	6.7	16	11.0
San Diego [17]	16	11.8	16	8.8	20	4.8	17	9.5
Minneapolis [18]	17	11.4	18	8.6	17	5.2	18	9.3
Philadelphia [19]	19	10.5	19	7.9	19	5.0	19	8.8
Detroit [20]	20	10.3	20	7.7	18	5.1	20	8.6

NOTES:
YE = Year Ending.
1 Includes Newark Liberty International Airport (EWR), John F. Kennedy International Airport (JFK), LaGuardia Airport (LGA), Long Island MacArthur Airport (ISP), and Westchester County Airport (HPN).
2 Includes Los Angeles International Airport (LAX), Hollywood Burbank Airport (BUR), Ontario International Airport (ONT), Long Beach Airport (LGB), and John Wayne Airport (SNA).
3 Includes Miami International Airport (MIA), Fort Lauderdale–Hollywood International Airport (FLL), and Palm Beach International Airport (PBI).
4 Includes O'Hare International Airport (ORD) and Midway International Airport (MDW).
5 Include Orlando International Airport (MCO) and Sanford International Airport (SFB).
6 Includes San Francisco International Airport (SFO), Oakland International Airport (OAK) and Norman Y. Mineta San Jose International Airport (SJC).
7 Includes Ronald Reagan Washington National Airport (DCA), Dulles International Airport (IAD), and Baltimore / Washington International Airport (BWI).
8 Includes Harry Reid International Airport (LAS).
9 Includes Denver International Airport (DEN).
10 Includes Dallas Fort Worth International Airport (DFW) and Dallas Love Field (DAL).
11 Includes Hartsfield-Jackson Atlanta International Airport (ATL).
12 Includes Phoenix Sky Harbor International Airport (PHX) and Phoenix-Mesa Gateway Airport (AZA).
13 Includes George Bush Intercontinental/Houston Airport (IAH) and William P. Hobby Airport (HOU).
14 Includes Boston Logan International Airport BOS).
15 Includes Seattle-Tacoma International Airport (SEA) and Paine Field (PAE).
16 Includes Tampa International Airport (TPA) and St. Pete-Clearwater International Airport (PIE).
17 Includes San Diego International Airport (SAN).
18 Includes Minneapolis–Saint Paul International Airport (MSP).
19 Includes Philadelphia International Airport (PHL).
20 Includes Detroit Metropolitan Wayne County International Airport (DTW).
SOURCE: Sabre Market Intelligence, April 2023.

TABLE 5-2 TOP 20 US AIRPORTS RANKED ON DOMESTIC ENPLANED PASSENGERS (IN MILLIONS)

	YE JUNE 2019		YE JUNE 2020		YE JUNE 2021		YE JUNE 2022	
AIRPORT	RANK	PASSENGERS	RANK	PASSENGERS	RANK	PASSENGERS	RANK	PASSENGERS
Hartsfield-Jackson Atlanta International Airport (ATL)	1	46.9	1	34.5	1	22.6	1	39.8
Denver International Airport (DEN)	3	31.1	3	24.4	3	20.2	2	31.3
Dallas Fort Worth International Airport (DFW)	5	29.6	4	24.1	2	20.7	3	30.2
Chicago ''Hare International Airport (ORD)	2	33.7	2	24.9	5	14.8	4	27.8
Los Angeles International Airport (LAX)	4	30.5	5	22.0	9	12.2	5	24.1
Harry Reid International Airport (LAS)	6	22.5	7	17.0	8	12.5	6	22.4
Orlando International Airport (MCO)	10	20.7	10	15.9	7	12.7	7	21.2
Charlotte Douglas International Airport (CLT)	8	21.4	6	17.5	4	15.5	8	21.0
Phoenix Sky Harbor International Airport (PHX)	9	21.1	9	16.1	6	12.7	9	20.9
Seattle-Tacoma International Airport (SEA)	7	21.8	8	16.6	10	10.6	10	19.2
George Bush Intercontinental/Houston Airport (IAH)	**14**	**16.5**	**14**	**12.1**	**12**	**8.5**	**11**	**15.1**
Newark Liberty International Airport (EWR)	15	15.9	16	11.8	17	6.8	12	14.5
Miami International Airport (MIA)	25	10.7	24	8.2	15	7.3	13	13.9
Minneapolis–Saint Paul International Airport (MSP)	12	17.2	12	12.8	13	7.8	14	13.9
San Francisco International Airport (SFO)	11	20.7	11	14.5	21	5.7	15	13.9
Boston Logan International Airport (BOS)	13	16.7	13	12.1	22	5.4	16	13.1
Detroit Metropolitan Wayne County Airport (DTW)	16	15.9	15	12.0	14	7.4	17	12.7
Fort Lauderdale–Hollywood International Airport (FLL)	19	13.8	17	10.3	11	8.6	18	12.4
John F. Kennedy International Airport (JFK)	17	14.4	20	10.1	27	4.4	19	12.3
Salt Lake City International Airport (SLC)	22	12.1	22	9.3	16	7.2	20	12.0

NOTE:
YE – Year Ending
SOURCE: US Department of Transportation, T-100 Database, April 2023.

TABLE 5-3 TOP 20 US AIRPORTS RANKED ON INTERNATIONAL ENPLANED PASSENGERS (IN MILLIONS)

	YE JUNE 2019		YE JUNE 2020		YE JUNE 2021		YE JUNE 2022	
AIRPORT	RANK	PASSENGERS	RANK	PASSENGERS	RANK	PASSENGERS	RANK	PASSENGERS
John F. Kennedy International Airport (JFK)	2	16.9	2	11.7	2	3.4	1	7.4
Miami International Airport (MIA)	4	10.5	4	7.4	3	3.3	2	6.5
Los Angeles International Airport (LAX)	3	13.0	3	8.8	4	2.2	3	4.4
Newark Liberty International Airport (EWR)	6	7.1	6	4.9	7	1.6	4	3.7
George Bush Intercontinental/Houston Airport (IAH)	**9**	**5.4**	**9**	**3.9**	**6**	**1.9**	**5**	**3.2**
Hartsfield-Jackson Atlanta International Airport (ATL)	8	6.2	8	4.2	9	1.5	6	3.1
Chicago "Hare International Airport (ORD)	7	6.9	7	4.6	8	1.5	7	3.0
Dallas Fort Worth International Airport (DFW)	10	4.3	10	3.3	5	1.9	8	2.9
San Francisco International Airport (SFO)	5	7.3	5	5.1	12	0.8	9	2.1
Fort Lauderdale–Hollywood International Airport (FLL)	11	4.3	11	2.9	10	1.3	10	2.1
Washington Dulles International Airport (IAD)	12	4.0	12	2.8	11	0.8	11	1.9
Boston Logan International Airport (BOS)	13	3.8	13	2.6	15	0.5	12	1.4
Orlando International Airport (MCO)	14	3.4	14	2.4	18	0.3	13	1.3
Denver International Airport (DEN)	21	1.5	22	1.1	14	0.5	14	1.0
Seattle-Tacoma International Airport (SEA)	15	2.7	15	1.9	17	0.4	15	1.0
Charlotte Douglas International Airport (CLT)	20	1.7	20	1.2	13	0.7	16	1.0
Philadelphia International Airport (PHL)	17	2.0	17	1.3	20	0.3	17	0.7
Phoenix Sky Harbor International Airport (PHX)	25	1.1	25	0.7	16	0.4	18	0.7
Minneapolis–Saint Paul International Airport (MSP)	22	1.5	21	1.2	24	0.2	19	0.6
Detroit Metropolitan Wayne County Airport (DTW)	18	1.9	18	1.3	19	0.3	20	0.6

NOTE:
YE – Year Ending
SOURCE: US Department of Transportation, T-100 Database, April 2023.

TABLE 5-4 AIRLINES SERVING IAH AND HOU

AIRLINES SERVING IAH			
SCHEDULED US PASSENGER	FOREIGN FLAG	NON-SCHEDULED PASSENGER	ALL-CARGO
Alaska Airlines	Aeroméxico		Air France Cargo
American Airlines	Aeroméxico Connect		Air Transport Services Group
CommutAir (United)	Air Canada		Antonov Airlines
Delta Air Lines	Air France		Atlas Air
Endeavor Air (Delta)	Air New Zealand		C.A.L. Cargo Airlines Ltd.
Envoy Air (American)	All Nippon Airways		Cargolux Airlines International S.A.
Frontier Airlines	Avianca		Cathay Cargo
JetBlue Airways	British Airways		DHL
Mesa Airlines (American, United)	Emirates		Emirates SkyCargo
Republic Airline (American)	EVA Air		FedEx
SkyWest (American, Delta, United)	Jazz (Air Canada)		Lufthansa Cargo
Southwest Airlines	KLM Royal Dutch Airlines		Qatar Airways Cargo
Spirit Airlines	Lufthansa		Silk Way West
Sun Country Airlines	Qatar Airways		Turkish Airlines Cargo
United Airlines	Singapore Airlines		UPS
	Turkish Airlines		
	VivaAerobus		
	Volaris		
	WestJet		
AIRLINES SERVING HOU			
SCHEDULED US PASSENGER	**FOREIGN FLAG**	**NON-SCHEDULED PASSENGER**	**ALL-CARGO**
Allegiant Air		JSX	Ameristar Air Cargo
Delta Air Lines			
Envoy Air (American)			
Frontier Airlines			
Mesa Airlines (American)			
SkyWest Airlines (American)			
Southwest Airlines			

SOURCES: Innovata, April 2023 (published airline schedules); Houston Airport System, April 2023.

TABLE 5-5 SCHEDULED US PASSENGER AIRLINE BASE

US AIRLINES SERVING IAH														
AIRLINE[1]	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Alaska Airlines	●	●	●	●	●	●	●	●	●	●	●	●	●	●
American Airlines[2]	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Delta Air Lines[3]	●	●	●	●	●	●	●	●	●	●	●	●	●	●
United Airlines[4]	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Frontier Airlines	●		●	●	●	●	●	●	●	●	●	●	●	●
Spirit Airlines			●	●	●	●	●	●	●	●	●	●	●	●
JetBlue Airways										●	●	●	●	●
Southwest Airlines												●	●	●
Sun Country Airlines												●	●	●
SeaPort Airlines						●	●							
Great Lakes Airlines							●							
Boutique Air									●	●	●			
Total US Airlines	**5**	**4**	**6**	**6**	**6**	**7**	**8**	**6**	**7**	**8**	**8**	**9**	**9**	**9**
US AIRLINES SERVING HOU														
AIRLINE[1]	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
American Airlines	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Delta Air Lines	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Southwest Airlines[5]	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Allegiant Air											●	●	●	●
Frontier Airlines	●	●	●										●	●
JetBlue Airways	●	●	●	●	●	●	●	●	●	●	●			
Branson Air Express	●				●	●	●							
Southern Airways Express						●	●							
Via Airlines								●						
Total US Airlines	**6**	**5**	**5**	**4**	**5**	**6**	**6**	**5**	**4**	**4**	**5**	**4**	**5**	**5**

NOTES:
1 Where applicable, includes affiliated and regional carriers.
2 Includes US Airways, which served IAH from 2010 to 2015.
3 Includes Northwest Airlines, which served IAH in 2010.
4 Includes Continental Airlines, which served IAH from 2010 to 2012.
5 Includes AirTran Airways, which served HOU from 2010 to 2014.
SOURCES: Innovata, April 2023 (published airline schedules); Houston Airport System, April 2023.

TABLE 5-6 SCHEDULED FOREIGN-FLAG PASSENGER AIRLINE BASE

	FOREIGN-FLAG AIRLINES SERVING IAH													
AIRLINE[1]	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Aeroméxico	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Air Canada	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Air France	●	●	●	●	●	●	●	●	●	●	●	●	●	●
British Airways	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Emirates	●	●	●	●	●	●	●	●	●	●	●	●	●	●
KLM Royal Dutch Airlines	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Lufthansa	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Qatar Airways	●	●	●	●	●	●	●	●	●	●	●	●	●	●
VivaAerobus	●	●	●	●	●	●	●	●	●	●	●	●	●	●
AVIANCA[2]	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Singapore Airlines	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Turkish				●	●	●	●	●	●	●	●	●	●	●
All Nippon Airways						●	●	●	●	●	●	●	●	●
Volaris						●	●	●	●	●	●	●	●	●
WestJet						●	●	●	●	●	●	●	●	●
EVA Air							●	●	●	●	●	●	●	●
Air New Zealand						●	●	●	●	●	●		●	●
Caribbean Airlines													●	
Air China				●	●	●	●	●	●	●	●			
Interjet					●	●	●	●	●	●	●			
Korean Air					●	●	●	●						
Scandinavian Airlines System					●	●								
BahamasAir								●	●	●				
Ethiopian										●	●			
Saudia											●			
Total Foreign-Flag Airlines	**11**	**11**	**11**	**13**	**16**	**20**	**20**	**21**	**20**	**21**	**21**	**16**	**18**	**17**

NOTES:
1 Where applicable, includes affiliated carriers.
2 Includes TACA, which served IAH from 2010 to 2014.
SOURCES: Innovata, April 2023 (published airline schedules); Houston Airport System, April 2023.

5.3 HISTORICAL ACTIVITY

The following subsections review the historical passenger activity, air service, and operations at IAH and HOU.

Table 5-7 presents the historical domestic, international, and total enplaned passengers at IAH and HOU from FY 2013 through FY 2023 year to date (YTD) as well as each airport's share of enplaned passengers. Between FY 2013 and FY 2022, domestic enplaned passengers at IAH increased by a CAGR of 0.2 percent compared to a CAGR of 0.9 percent at HOU, resulting in the IAH share of the Airport System's domestic enplaned passengers decreasing from 74.1 percent to 72.5 percent during this period. The CAGR for IAH international enplaned passengers was -0.5 percent between FY 2013 and FY 2022. Prior to FY 2015 there was no nonstop service from HOU to international destinations. Southwest operated its first flights to international destinations from HOU in March 2015. As of FY 2022, HOU represented 9.1 percent of the Airport System's international enplaned passengers. Between FY 2013 and FY 2020 the CAGR for IAH total enplaned passengers was 0.0 percent, 1.8 percent for HOU total enplaned passengers, and 0.4 percent for combined Airport System enplaned passengers. During this period, the IAH share of total enplaned passengers decreased 2.8 percentage points from 78.6 percent to 75.8 percent while HOU's share increased from 21.4 percent to 24.2 percent.

5.3.1 GEORGE BUSH INTERCONTINENTAL/HOUSTON AIRPORT HISTORICAL ACTIVITY

5.3.1.1 IAH ENPLANED PASSENGERS

Table 5-8 presents the historical domestic, international, and total enplaned passengers and annual growth at IAH from FY 2013 to FY 2023 YTD. Total enplaned passengers increased from 19.8 million in FY 2013 to 22.5 million in FY 2019, which represents a CAGR of 2.2 percent. The CAGR for domestic enplaned passengers was 1.7 percent and 3.8 percent for international enplaned passengers. Enplaned passenger activity decreased substantially in FY 2020 and FY 2021 due to the impacts of the COVID-19 pandemic, which are presented in more detail in Section 5.4.1. Enplaned passengers increased 82.4 percent in FY 2022 as demand recovered from the low point experienced in FY 2021. For the period from FY 2013 to FY 2022, total enplaned passengers were virtually unchanged. Domestic enplaned passengers increased from 15.4 million in FY 2013 to 15.6 million in FY 2022, which represents a CAGR of 0.2 percent. During the same period international enplaned passengers decreased from 4.4 million to 4.2 million, which represents a CAGR of -0.4 percent.

The following factors influenced passenger activity at IAH between 2013 and 2022:

- In October 2010 United merged with Continental Airlines (Continental), which prior to the merger operated its largest hub at IAH. Between 2010 and 2013 the consolidated airline reduced capacity at IAH and other hubs as it integrated route networks and rationalized capacity. During this period, United and other US airlines adopted the capacity discipline business model in the domestic market, reducing less profitable capacity with the objective of increasing unit revenues and improving financial performance.
- Growth resumed in FY 2014 as United increased international capacity, launching new nonstop service to Munich, Germany (MUC) and increasing capacity to London Heathrow (LHR) and Tokyo Narita, Japan (NRT). Foreign-flag airlines China Airlines and Korean Airlines launched service from IAH in FY 2015.
- International growth continued in 2015 with United launching nonstop service to Santiago, Chile (SCL) and five foreign-flag airlines, Interjet, EVA Airways, All Nippon Airways, Volaris, and SAS (operated by Privatair) initiating service from IAH.

TABLE 5-7 IAH AND HOU HISTORICAL ENPLANED PASSENGERS AND SHARE OF SYSTEM

	DOMESTIC ENPLANED PASSENGERS					INTERNATIONAL ENPLANED PASSENGERS					TOTAL ENPLANED PASSENGERS				
YEAR	IAH	HOU	TOTAL	IAH SHARE	HOU SHARE	IAH	HOU	TOTAL	IAH SHARE	HOU SHARE	IAH	HOU	TOTAL	IAH SHARE	HOU SHARE
FY 2013	15,364,525	5,376,588	20,741,113	74%	26%	4,391,678	0	4,391,678	100%	0%	19,756,203	5,376,588	25,132,791	79%	21%
FY 2014	15,379,889	5,835,891	21,215,780	72%	28%	4,725,401	0	4,725,401	100%	0%	20,105,290	5,835,891	25,941,181	78%	22%
FY 2015	15,962,984	5,943,358	21,906,342	73%	27%	4,995,571	2,055	4,997,626	100%	0%	20,958,555	5,945,413	26,903,968	78%	22%
FY 2016	15,992,394	6,117,464	22,109,858	72%	28%	5,439,302	265,871	5,705,173	95%	5%	21,431,696	6,383,335	27,815,031	77%	23%
FY 2017	15,399,661	6,219,751	21,619,412	71%	29%	5,330,479	440,506	5,770,985	92%	8%	20,730,140	6,660,257	27,390,397	76%	24%
FY 2018	15,553,497	6,444,575	21,998,072	71%	29%	5,222,231	492,486	5,714,717	91%	9%	20,775,728	6,937,061	27,712,789	75%	25%
FY 2019	16,981,448	6,833,766	23,815,214	71%	29%	5,497,006	495,379	5,992,385	92%	8%	22,478,454	7,329,145	29,807,599	75%	25%
FY 2020	12,554,409	5,005,616	17,560,025	71%	29%	3,972,819	295,936	4,268,755	93%	7%	16,527,228	5,301,552	21,828,780	76%	24%
FY 2021	8,901,097	3,893,713	12,794,810	70%	30%	1,960,251	214,048	2,174,299	90%	10%	10,861,348	4,107,761	14,969,109	73%	27%
FY 2022	15,586,784	5,840,311	21,427,095	73%	27%	4,225,608	427,393	4,653,001	91%	9%	19,812,392	6,267,704	26,080,096	76%	24%
FY 2023 YTD	12,372,241	4,659,181	17,031,422	73%	27%	3,834,411	357,312	4,191,723	91%	9%	16,206,652	5,016,493	21,223,145	76%	24%
CAGR															
FY 2013 – FY 2019	1.7%	4.1%	2.3%			3.8%	NA	5.3%			2.2%	5.3%	2.9%		
FY 2013 – FY 2022	0.2%	0.9%	0.4%			-0.4%	NA	0.6%			0.0%	1.7%	0.4%		

NOTES:
CAGR – Compound Annual Growth Rate
FY 2023 YTD – July 2022 through March 2023.
SOURCE: Houston Airport System, April 2023.

TABLE 5-8 IAH HISTORICAL ANNUAL ENPLANED PASSENGER GROWTH

YEAR	DOMESTIC		INTERNATIONAL		TOTAL	
	ENPLANED PASSENGERS	ANNUAL GROWTH	ENPLANED PASSENGERS	ANNUAL GROWTH	ENPLANED PASSENGERS	ANNUAL GROWTH
FY 2013	15,364,525	-3.1%	4,391,678	1.7%	19,756,203	-2.1%
FY 2014	15,379,889	0.1%	4,725,401	7.6%	20,105,290	1.8%
FY 2015	15,962,984	3.8%	4,995,571	5.7%	20,958,555	4.2%
FY 2016	15,992,394	0.2%	5,439,302	8.9%	21,431,696	2.3%
FY 2017	15,399,661	-3.7%	5,330,479	-2.0%	20,730,140	-3.3%
FY 2018	15,553,497	1.0%	5,222,231	-2.0%	20,775,728	0.2%
FY 2019	16,981,448	9.2%	5,497,006	5.3%	22,478,454	8.2%
FY 2020	12,554,409	-26.1%	3,972,819	-27.7%	16,527,228	-26.5%
FY 2021	8,901,097	-29.1%	1,960,251	-50.7%	10,861,348	-34.3%
FY 2022	15,586,784	75.1%	4,225,608	115.6%	19,812,392	82.4%
FY 2023 YTD	12,372,241	7.1%	3,834,411	31.9%	16,206,652	12.1%
CAGR						
FY 2013 – FY 2019	1.7%		3.8%		2.2%	
FY 2013 – FY 2022	0.2%		-0.4%		0.0%	

NOTES:
CAGER – Compound Annual Growth Rate
FY 2023 YTD – July 2022 through March 2023.
SOURCE: Houston Airport System, April 2023.

- In 2016 domestic enplaned passengers were virtually unchanged from FY 2015 as United reduced domestic capacity at IAH as a decrease in the price of oil resulted in job losses in the Houston area and a short-term decrease in regional economic activity. The decrease in United's domestic capacity was offset by Spirit, which grew from serving 4 domestic destinations from IAH in 2014 to 17 domestic destinations in 2016. International enplaned passengers increased 8.9 percent in FY 2016 as Spirit completed its first full year of service from IAH to 7 international destinations in Mexico and Central America. United increased capacity to most of the destinations served by Spirit. Air New Zealand and WestJet initiated service from IAH in FY 2016.
- Enplaned passengers decreased in FY 2017 as United continued to reduce domestic capacity and discontinued service to Lagos, Nigeria (LOS) and Montreal, Canada (YUL). Spirit discontinued service to 4 out of 7 international destinations, resulting in a 44 percent decrease in international departing seats compared to FY 2016. Emirates transitioned from A380 service to 777-300ER, resulting in an 18 percent decrease in departing seats.
- United represented the largest driver of domestic enplaned passenger growth in FY 2018 due in large part to a 3.6 percent increase in average seats per departure. Spirit's domestic departing seats increased 22.0 percent in FY 2018 on more frequencies on existing routes coupled with a 12.9 percent increase in average seats per departure. International enplaned passengers decreased as Aeroméxico discontinued service to Monterrey, Mexico (MTY) and reduced service to Mexico City, Mexico (MEX). Volaris discontinued service to MEX and reduced service to Guadalajara, Mexico (GDL). Korean Air discontinued all service from IAH during FY 2018.
- FY 2019 was a record year for IAH for both domestic and international enplaned passengers. United represented most of the domestic growth, increasing domestic departing seats 7.0 percent compared to FY 2018 as it implemented a strategy that prioritized growth at its midcontinent hubs (IAH, DEN and ORD) to improve connectivity. American, Delta, Spirit, and Alaska also increased capacity at IAH in FY 2019. International enplaned

passengers increased as several incumbent airlines increased capacity to international destinations. Spirit's international capacity increased 44 percent as it launched nonstop service to Guatemala City, Guatemala (GUA) and reinstated service to San Salvador, El Salvador (SAL). VivaAerobus transitioned from 3 weekly flights to Monterry, Mexico (MTY) in FY 2018 to daily service in FY 2019, driving a 71 percent increase in departing seats. Emirates departing seat capacity increased 18 percent as it transitioned from 777-300ER operations back to A380 operations. Air China increased service to Beijing Capital, China (PEK) from 5 to 6 days a week and added a once weekly continuing flight to Panama City, Panama (PTY), driving a 41 percent increase in departing seats.

- Enplaned passengers decreased in FY 2020 and FY 2021 due to the impact of the COVID-19 pandemic on demand for air travel. Enplaned passengers increased 82.4 percent in FY 2022 compared to FY 2021 as demand recovered from the low point of the pandemic. FY 2023 YTD (July 2022 through March 2023) total enplaned passengers increased 12.1 percent compared to the same months in FY 2022 as airlines continued to restore capacity. The impact of the COVID-19 pandemic on airport activity is presented in more detail in Section 5.4.1.

Table 5-9 presents the historical connecting and O&D passengers at IAH from FY 2013 through FY 2023 YTD. Connecting passengers decreased from 10.5 million in FY 2013 to 10.1 million in FY 2019, which represents a CAGR of -0.7 percent. O&D passengers increased from 9.2 million in FY 2013 to 12.4 million in FY 2019, which represents a CAGR of 5.0 percent. During this period O&D passengers share of total passengers increased from 46.7 percent to 55.2 percent. The faster rate of growth of O&D passengers was due in part to the growth of Ultra-Low-Cost Carriers (ULCCs) Spirit and Frontier, which employ a point-to-point business model and accommodate very few connecting passengers. For the period FY 2013 to FY 2022, the CAGR was -2.6 percent for connecting passengers and 2.5 percent for O&D passengers, with O&D passengers share of 58.1 percent of total passengers in FY 2022.

TABLE 5-9 IAH HISTORICAL CONNECTING AND O&D PASSENGERS

	ENPLANED PASSENGERS				
YEAR	CONNECTING	CONNECTING PERCENT OF TOTAL	O&D	O&D PERCENT OF TOTAL	TOTAL
FY 2013	10,521,105	53.3%	9,235,098	46.7%	19,756,203
FY 2014	10,452,170	52.0%	9,653,120	48.0%	20,105,290
FY 2015	10,504,885	50.1%	10,453,670	49.9%	20,958,555
FY 2016	10,301,326	48.1%	11,130,370	51.9%	21,431,696
FY 2017	9,602,708	46.3%	11,127,432	53.7%	20,730,140
FY 2018	9,443,423	45.5%	11,332,305	54.5%	20,775,728
FY 2019	10,067,653	44.8%	12,410,801	55.2%	22,478,454
FY 2020	7,252,407	43.9%	9,274,821	56.1%	16,527,228
FY 2021	4,444,726	40.9%	6,416,622	59.1%	10,861,348
FY 2022	8,300,608	41.9%	11,511,784	58.1%	19,812,392
FY 2023 YTD	6,373,124	39.3%	9,833,528	60.7%	16,206,652
CAGR					
FY 2013 – FY 2019	-0.7%		5.0%		2.2%
FY 2013 – FY 2022	-2.6%		2.5%		0.0%

NOTES:
CAGR – Compound Annual Growth Rate
FY 2023 YTD – July 2022 through March 2023.
SOURCE: Houston Airport System, April 2023.

Table 5-10 presents IAH enplaned passengers by airline from FY 2018 through FY 2022. United, inclusive of its regional subsidiaries, operates a hub at IAH and has maintained over 73 percent of total enplaned passengers during this period. Spirit was the second largest airline (excluding regional affiliates) in terms of enplaned passengers in FY 2022, growing its share from 5.2 percent in 2018 to 6.6 percent in FY 2022.

5.3.1.2 IAH AIR SERVICE

An important characteristic of airport activity is the distribution of an airport's O&D markets, which is a function of air travel demand and available services and facilities. **Table 5-11** presents data on the top 30 domestic O&D markets from IAH in FY 2022, as measured by the number of total O&D passengers. Given IAH's central location in the United States, the largest domestic O&D markets by total passenger volume are predominately medium-haul markets between 601 and 1,800 miles in length. Only 4 of the top 50 O&D domestic markets from IAH are long-haul (Seattle, Portland, San Juan, and Honolulu), with an additional 7 of IAH's top 50 domestic markets classified as short-haul. The remaining 39 of the top 50 domestic O&D markets are medium-haul, including all of the top 10 O&D domestic markets. In October 2022, all top 50 domestic O&D markets had at least seven or more weekly nonstop flights to/from IAH. The top 50 Domestic O&D markets had an average stage length (i.e., passenger trip distance) of 1,042 miles, compared to an average stage length of 1,152 miles nationwide. The average stage length for IAH has historically been relatively equal to that for the nation, reflecting IAH's central US location and the strong demand for service to East Coast markets, such as New York/Newark, Washington, DC, Orlando, and Boston, as well as to West Coast markets, such as Los Angeles, Phoenix, and Las Vegas.

Exhibit 5-1 illustrates the domestic markets served nonstop from IAH. During CY 2023 airlines have scheduled 423 average daily departures to 113 domestic destinations. **Exhibit 5-2** illustrates the international markets served nonstop from IAH. During CY 2023 airlines have scheduled an 111 average daily departures to 66 international destinations served nonstop.

5.3.1.3 UNITED AIRLINES HUB AT IAH

IAH has played a critical and strategic role in the route network of United Airlines, which is the second largest airline globally in terms of scheduled available seat miles (ASMs) in the calendar year 2022. In FY 2022, United represented 74.1 percent of total IAH enplaned passengers. As presented in **Table 5-12**. United operates its third largest hub at IAH in terms of scheduled average daily departures in FY 2023. IAH ranks fourth in terms of scheduled average daily departing seats. **Table 5-13** presents the number of domestic, international, and total destinations served from each of United's hubs in FY 2023. IAH ranks third in domestic destinations served, second in international destinations served, and third in terms of total destinations served.

IAH is a critical international gateway for United. As presented in **Exhibit 5-3**, IAH ranks second among United's hubs in terms of scheduled departing seats to international destinations in FY 2023. It is United's largest gateway to Latin America, with more than twice as many scheduled departing seats to that region as the Newark Liberty International Airport (EWR), the second largest hub in terms of scheduled departing seats to Latin America and the Caribbean. United also serves transatlantic, transpacific, and Canadian destinations nonstop from IAH.

TABLE 5-10 IAH ENPLANED PASSENGERS BY AIRLINE

RANK	AIRLINE	FY 2018		FY 2019		FY 2020		FY 2021		FY 2022	
		ENPLANED PASSENGERS	SHARE	ENPLANED PASSENGERS	SHARE	ENPLANED PASSENGERS	SHARE	ENPLANED PASSENGERS	SHARE	ENPLANED PASSENGERS	SHARE
	United Airlines Combined	16,071,105	77.4%	17,418,906	77.5%	12,532,207	75.8%	7,982,612	73.5%	14,687,040	74.1%
1	United	11,429,068	55.0%	12,184,231	54.2%	8,466,184	51.2%	5,118,917	47.1%	10,596,104	53.5%
2	Mesa (American Eagle, and United Express)	2,048,829	9.9%	2,608,813	11.6%	2,024,665	12.3%	1,655,752	15.2%	2,125,489	10.7%
3	Spirit	1,077,502	5.2%	1,219,239	5.4%	1,019,630	6.2%	982,963	9.1%	1,303,551	6.6%
4	SkyWest (American Eagle, Delta Connection, and United Express)	437,048	2.1%	436,142	1.9%	440,430	2.7%	657,002	6.0%	1,017,161	5.1%
5	American	836,110	4.0%	1,061,263	4.7%	746,683	4.5%	476,587	4.4%	874,612	4.4%
6	Delta	394,862	1.9%	572,626	2.5%	643,049	3.9%	404,232	3.7%	813,897	4.1%
7	Southwest	0	0.0%	0	0.0%	0	0.0%	94,128	0.9%	546,955	2.8%
8	VivaAerobus	19,472	0.1%	42,044	0.2%	45,160	0.3%	141,745	1.3%	180,000	0.9%
9	Frontier	142,742	0.7%	96,246	0.4%	148,371	0.9%	160,355	1.5%	167,854	0.8%
10	Aeroméxico	77,931	0.4%	71,472	0.3%	58,603	0.4%	79,694	0.7%	141,009	0.7%
11	Volaris	18,669	0.1%	29,106	0.1%	27,821	0.2%	72,501	0.7%	106,213	0.5%
12	Alaska	91,521	0.4%	93,278	0.4%	81,364	0.5%	50,676	0.5%	91,560	0.5%
13	Qatar	76,809	0.4%	78,054	0.3%	64,619	0.4%	30,867	0.3%	86,537	0.4%
14	Turkish	93,926	0.5%	97,288	0.4%	71,249	0.4%	44,540	0.4%	84,111	0.4%
15	Lufthansa	137,381	0.7%	143,571	0.6%	88,713	0.5%	27,508	0.3%	80,762	0.4%
	Other	3,893,858	18.7%	0	0.0%	36,086	0.2%	36,731	0.3%	80,672	0.4%
	Airport Total	**20,775,728**	**100.0%**	**22,478,454**	**100.0%**	**16,527,228**	**100.0%**	**10,861,348**	**100.0%**	**19,812,392**	**100.0%**

SOURCE: Houston Airport System, April 2023.

TABLE 5-11 IAH TOP 30 DOMESTIC O&D MARKETS IN FY 2022

RANK	MARKET	TOTAL O&D PASSENGERS [1]	WEEKLY NONSTOP DEPARTURES [2]	NUMBER OF AIRLINES [3]	AIRLINES [4]
1	New York City[5]	1,381,713	159	5	AA, B6, DL, NK, UA
2	Los Angeles[6]	1,112,954	130	4	AA, DL, NK, UA
3	Miami[7]	854,503	111	3	AA, NK, UA
4	Chicago[8]	849,814	102	4	AA, NK, UA, WN
5	Denver	762,720	99	4	F9, NK, UA, WN
6	Las Vegas	761,458	77	5	F9, NK, SY, UA, WN
7	Orlando	717,924	77	4	F9, NK, UA, WN
8	Washington DC[9]	605,101	98	2	NK, UA
9	Atlanta	565,517	86	4	DL, F9, NK, UA
10	San Francisco[10]	453,036	67	1	UA
11	Boston[11]	389,697	32	2	B6, UA
12	Detroit	359,906	54	3	DL, NK, UA
13	Seattle[12]	346,742	36	2	AS, UA
14	Dallas[13]	310,794	143	3	AA, UA, WN
15	Philadelphia	309,758	36	4	AA, F9, NK, UA
16	Phoenix	293,892	53	3	AA, UA, WN
17	New Orleans	254,126	73	3	NK, UA, WN
18	Charlotte	243,583	46	2	AA, UA
19	Tampa	242,057	34	3	NK, UA, WN
20	Nashville	240,373	63	2	UA, WN
21	Salt Lake City	234,279	50	2	DL, UA
22	Minneapolis	230,832	46	3	DL, SY, UA
23	San Diego	227,857	30	2	NK, UA
24	Pittsburgh	149,510	22	1	UA
25	Portland	138,845	15	1	UA
26	Raleigh	136,711	20	1	UA
27	Cleveland	133,003	20	1	UA
28	San Juan	127,784	19	1	UA
29	Midland/Odessa	118,028	39	1	UA
30	Kansas City	113,934	28	1	UA
	Other Markets	4,097,164			
	Total	**16,763,616**			

NOTES:
1 Represents passengers traveling in both directions.
2 Weekly nonstop departures rounded to nearest integer value.
3 Regional affiliates are counted as part of their mainline carrier.
4 AA – American Airlines; AS – Alaska Airlines; B6 – JetBlue Airways; DL – Delta Air Lines; F9 – Frontier Airlines; NK – Spirit Airlines; UA – United Airlines; WN – Southwest Airlines
5 Includes John F. Kennedy International (JFK), Newark Liberty International (EWR), LaGuardia (LGA), Westchester County (HPN), and Long Island MacArthur (ISP) Airports.
6 Includes Los Angeles International (LAX), John Wayne (Orange County) (SNA), Ontario International (ONT), Hollywood Burbank (BUR), and Long Beach (LGB) Airports.
7 Includes Miami (MIA), Fort Lauderdale–Hollywood (FLL), and Palm Beach (PBI) International Airports.
8 Includes O'Hare (ORD) and Midway (MDW) International Airports.
9 Includes Washington Dulles International (IAD), Ronald Reagan Washington National (DCA), and Baltimore/Washington International Thurgood Marshall (BWI) Airports.
10 Includes San Francisco (SFO), Oakland (OAK), and Norman Y. Mineta San Jose (SJC) International Airports.
11 Includes Boston Logan International (BOS), Rhode Island T. F. Green International (PVD), and Manchester-Boston Regional (MHT) Airports.
12 Includes Seattle-Tacoma International Airport (SEA) and Paine Field (PAE).
13 Includes Dallas Fort Worth International Airport (DFW) and Dallas Love Field (DAL).
SOURCES: US Department of Transportation, O&D Survey, November 2022; Innovata, November 2022 (published airline schedules).

SOURCES: Esri, 2010 (continent boundary); US Census Bureau, 2022 (state boundary); Esri, 2021 (airports); Cirium, Diio Mi Schedule Dynamic Table Report, May 2023 (airline schedule data); Ricondo & Associates, Inc., May 2023 (routes).

NORTH

0 600 mi

EXHIBIT 5-1

GEORGE BUSH INTERCONTINENTAL AIRPORT
NONSTOP DOMESTIC MARKETS

SOURCES: Esri, 2010 (continent boundary); US Census Bureau, 2022 (state boundary); Esri, 2022 (airports); Cirium, Diio Mi Schedule Dynamic Table Report, May 2023 (airline schedule data); Ricondo & Associates, Inc., May 2023 (routes).

NORTH
0 1,250 mi

EXHIBIT 5-2

GEORGE BUSH INTERCONTINENTAL AIRPORT
NONSTOP INTERNATIONAL MARKETS

TABLE 5-12 UNITED AIRLINES AVERAGE DAILY DEPARTURES AND DEPARTING SEATS BY HUB IN FISCAL YEAR 2023

HUB	AVERAGE DAILY DEPARTURES		AVERAGE DAILY DEPARTING SEATS	
	DEPARTURES	HUB RANKING	SEATS	HUB RANKING
Chicago O'Hare International	448	1	53,490	2
Denver International	425	2	53,661	1
George Bush Intercontinental/Houston	**398**	**3**	**50,582**	**4**
Newark Liberty International	379	4	52,719	3
San Francisco International	212	5	34,695	5
Washington Dulles International	198	6	25,179	6
Los Angeles International	102	7	17,237	7

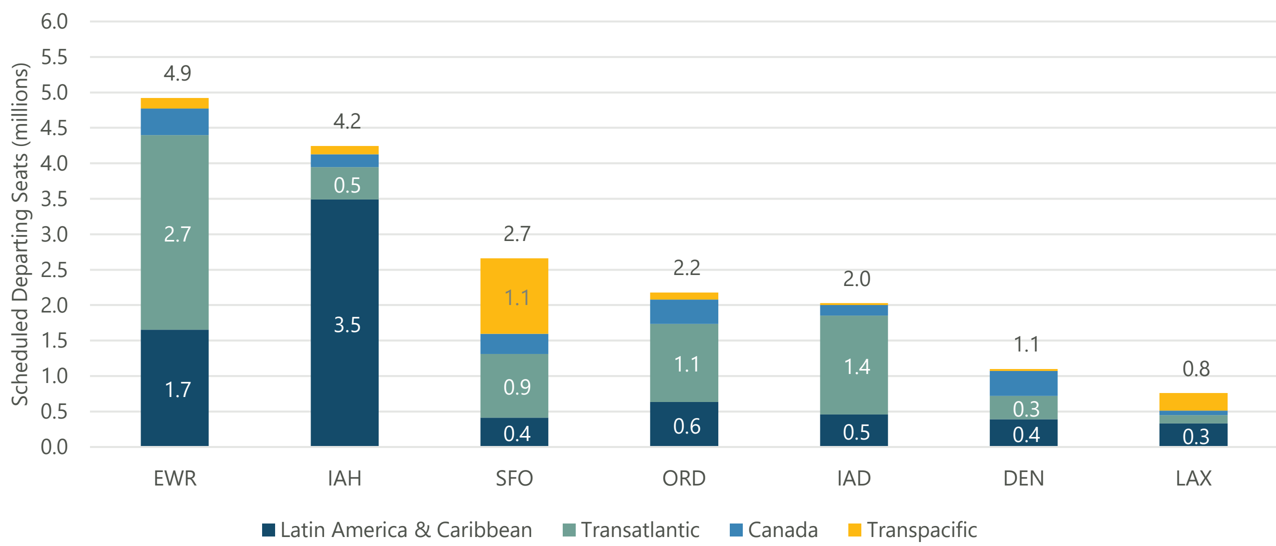
SOURCE: Innovata, April 2023 (published airline schedules).

TABLE 5-13 UNITED AIRLINES DESTINATIONS SERVED BY HUB IN FISCAL YEAR 2023

HUB	DOMESTIC		INTERNATIONAL		TOTAL	
	DESTINATIONS SERVED	HUB RANKING	DESTINATIONS SERVED	HUB RANKING	DESTINATIONS SERVED	HUB RANKING
Chicago O'Hare International	156	2	43	3	199	1
Denver International	161	1	17	6	178	2
George Bush Intercontinental/Houston	**113**	**3**	**56**	**2**	**169**	**3**
Newark Liberty International	91	4	74	1	165	4
Washington Dulles International	72	6	41	4	113	5
San Francisco International	77	5	29	5	106	6
Los Angeles International	53	7	17	6	70	7

SOURCE: Innovata, April 2023 (published airline schedules).

EXHIBIT 5-3 UNITED AIRLINES SCHEDULED INTERNATIONAL DEPARTING SEATS IN FISCAL YEAR 2023



SOURCE: Innovata, April 2023 (published airline schedules).

IAH provides United access to the large and diverse Houston O&D market as well as a geographic location that enables connectivity across United's vast network of domestic and international destinations. United schedules flights around arrival and departure banks that support efficient connecting passenger itineraries. **Table 5-14** presents the distribution of United's connecting and O&D passengers at IAH from FY 2013 through FY 2022. United's connecting passengers decreased from 10.5 million in FY 2013 to 9.9 million in FY 2019, which represents a CAGR of -1.0 percent. During the same period United's O&D passenger increased from 6.1 million in FY 2013 to 7.6 million in FY 2019, which represents a CAGR of 3.6 percent.

5.3.1.4 IAH AIRCRAFT OPERATIONS

Table 5-15 presents historical passenger airline operations, average seats per departure, and average load factor at IAH from FY 2013 through FY 2022. Passenger airline operations decreased from 470,758 in FY 2013 to 390,480 in FY 2022, which represents a -2.1 percent CAGR. During this period average seats per departure increased from 100 to 125 and average load factor decreased from 80.8 percent to 79.1 percent.

TABLE 5-14 UNITED AIRLINES CONNECTING AND O&D PASSENGERS AT IAH

			ENPLANED PASSENGERS		
YEAR	CONNECTING	CONNECTING PERCENT OF TOTAL	O&D	O&D PERCENT OF TOTAL	TOTAL
FY 2013	10,471,469	63.1%	6,122,992	36.9%	16,594,461
FY 2014	10,351,936	62.9%	6,107,597	37.1%	16,459,533
FY 2015	10,417,326	62.1%	6,361,154	37.9%	16,778,480
FY 2016	10,183,225	61.2%	6,461,954	38.8%	16,645,179
FY 2017	9,428,353	58.7%	6,645,735	41.3%	16,074,088
FY 2018	9,275,006	57.7%	6,796,099	42.3%	16,071,105
FY 2019	9,868,094	56.7%	7,550,812	43.3%	17,418,906
FY 2020	7,041,974	56.2%	5,490,233	43.8%	12,532,207
FY 2021	4,226,590	52.9%	3,756,022	47.1%	7,982,612
FY 2022	7,969,923	54.3%	6,717,117	45.7%	14,687,040
CAGR					
FY 2013 – FY 2019	-1.0%		3.6%		0.8%
FY 2013 – FY 2022	-3.0%		1.0%		-1.3%

NOTE:
Includes United and United regional affiliate airlines.
SOURCE: Houston Airport System, April 2023.

TABLE 5-15 IAH PASSENGER AIRLINE OPERATIONS

YEAR	PASSENGER AIRLINE OPERATIONS	AVERAGE SEATS PER DEPARTURE	AVERAGE LOAD FACTOR
FY 2013	470,758	100	80.8%
FY 2014	468,600	100	82.2%
FY 2015	476,952	104	81.2%
FY 2016	457,728	111	81.6%
FY 2017	431,282	113	82.0%
FY 2018	420,074	117	81.7%
FY 2019	441,892	120	82.6%
FY 2020	355,132	117	76.6%
FY 2021	266,202	114	68.4%
FY 2022	390,480	125	79.1%
CAGR			
2013 – 2019	-1.0%	3.0%	
2013 – 2022	-2.1%	2.5%	

NOTE:
Average load factor represents revenue passengers only.
SOURCE: US Department of Transportation, T-100 Database, April 2023.

Table 5-16 presents the historical air carrier, air taxi and commuter, general aviation, and military operations at IAH from FY 2013 through FY 2023 YTD. Air carrier operations increased from 273,346 in FY 2013 to 342,806 in FY 2022, which represents a CAGR of 2.6 percent. During the same period air taxi and commuter operations decreased from 217,683 in FY 2013 to 71,226 in FY 2022, which represents a CAGR of -17.7 percent. The forecast increase in average passenger airline seats per departure (as presented in Table 5-15) is reflective of the decrease in air taxi and commuter operations. The CAGR for general aviation operations was -4.7 percent between FY 2013 and FY 2022. Total operations decreased from 503,424 in FY 2013 to 422,143 in FY 2022, which represents a CAGR of -1.9 percent.

TABLE 5-16 IAH TOTAL OPERATIONS

	OPERATIONS				
YEAR	AIR CARRIER[1]	AIR TAXI / COMMUTER[2]	GENERAL AVIATION[3]	MILITARY	TOTAL
FY 2013	273,346	217,683	12,110	285	503,424
FY 2014	275,795	214,539	12,891	471	503,696
FY 2015	308,833	188,956	11,978	367	510,134
FY 2016	344,170	132,836	11,553	630	489,189
FY 2017	335,183	115,773	11,198	136	462,290
FY 2018	346,595	93,269	11,171	477	451,512
FY 2019	368,459	94,198	10,751	105	473,513
FY 2020	306,832	70,597	8,257	219	385,905
FY 2021	230,427	57,963	6,392	163	294,945
FY 2022	342,896	71,226	7,876	145	422,143
FY 2023 YTD	250,779	44,707	6,577	123	302,186
CAGR					
2013 – 2019	5.1%	-13.0%	-2.0%	-15.3%	-1.0%
2013 – 2022	2.6%	-11.7%	-4.7%	-7.2%	-1.9%

NOTES:
FY 2023 YTD – July 2022 through March 2023.
1 Air carrier includes aircraft with seating capacity of more than 60 seats or a maximum payload capacity of more than 18,000 pounds carrying passengers or cargo for hire or compensation.
2 Air taxi and commuter includes aircraft with seating capacity of 60 seats or less or a maximum payload capacity of 18,000 pounds or less carrying passengers or cargo for hire or compensation.
3 General aviation includes all civil aviation that is not for hire or compensation and excludes military operations. Activity includes flying for personal or corporate reasons and pilot training.
SOURCE: Houston Airport System, April 2023.

5.3.1.5 IAH LANDED WEIGHT

Table 5-17 presents the historical passenger airline and all-cargo landed weight at IAH between FY 2013 and FY 2023 YTD. Between FY 2013 and FY 2022 the passenger airline landed weight CAGR was -0.1 percent. During the same period, the all-cargo airline CAGR was 3.8 percent and 0.2 percent for all airlines.

TABLE 5-17 IAH LANDED WEIGHT

YEAR	PASSENGER AIRLINES	ALL-CARGO	TOTAL	ANNUAL GROWTH
FY 2013	24,779,645	1,635,298	26,414,942	-0.3%
FY 2014	25,093,235	1,709,899	26,803,134	1.5%
FY 2015	26,246,566	1,789,582	28,036,149	4.6%
FY 2016	26,660,091	1,666,128	28,326,219	1.0%
FY 2017	25,513,255	1,679,420	27,192,674	-4.0%
FY 2018	25,181,045	1,948,536	27,129,581	-0.2%
FY 2019	26,917,988	2,255,670	29,173,658	7.5%
FY 2020	21,197,537	2,472,152	23,669,689	-18.9%
FY 2021	15,478,782	2,283,326	17,762,109	-25.0%
FY 2022	24,650,269	2,285,613	26,935,882	51.6%
FY 2023 YTD	19,234,105	1,770,419	21,004,524	3.2%
CAGR				
2013 – 2019	1.4%	5.5%	1.7%	
2013 – 2021	-0.1%	3.8%	0.2%	

NOTE:
FY 2023 YTD – July 2022 through March 2023.
SOURCE: Houston Airport System, April 2023.

5.3.2 WILLIAM P. HOBBY AIRPORT HISTORICAL ACTIVITY

5.3.2.1 HOU ENPLANED PASSENGERS

Table 5-18 presents the historical domestic, international, and total enplaned passengers and annual growth at HOU from FY 2013 to FY 2023 YTD. Total enplaned passengers increased from 5.4 million in FY 2013 to 7.3 million in FY 2019, which represents a CAGR of 5.3 percent; the CAGR for domestic enplaned passengers was 4.1 percent. International services from HOU commenced during this period, growing to 495,000 international enplaned passengers in FY 2019. Enplaned passenger activity decreased substantially in FY 2020 and 2021 due to the impacts of the COVID-19 pandemic, which are presented in more detail in Section 5.4.1. Total enplaned passengers increased 54.4 percent and international enplaned passengers increased 99.6 percent in FY 2022 as demand recovered from the low point experienced in FY 2021. Total enplaned passengers increased from 5.4 million in FY 2013 to 6.3 million in FY 2022, which represents a CAGR of 1.8 percent. Domestic enplaned passengers increased from 5.4 million to 5.8 million in FY 2022, which represents a CAGR of 1.1 percent. The remainder of the growth in total enplaned passengers is a result of the commencement of international services.

TABLE 5-18 HOU HISTORICAL ANNUAL ENPLANED PASSENGER GROWTH

YEAR	DOMESTIC		INTERNATIONAL		TOTAL	
	ENPLANED PASSENGERS	ANNUAL GROWTH	ENPLANED PASSENGERS	ANNUAL GROWTH	ENPLANED PASSENGERS	ANNUAL GROWTH
FY 2013	5,376,588	4.8%	0	NA	5,376,588	4.8%
FY 2014	5,835,891	8.5%	0	NA	5,835,891	8.5%
FY 2015	5,943,358	1.8%	2,055	NA	5,945,413	1.9%
FY2016	6,117,464	2.9%	265,871	NM	6,383,335	7.4%
FY 2017	6,219,751	1.7%	440,506	65.7%	6,660,257	4.3%
FY 2018	6,444,575	3.6%	492,486	11.8%	6,937,061	4.2%
FY 2019	6,833,766	6.0%	495,379	0.6%	7,329,145	5.7%
FY 2020	5,005,616	-26.8%	295,936	-40.3%	5,301,552	-27.7%
FY 2021	3,893,743	-22.2%	214,048	-27.7%	4,107,791	-22.5%
FY 2022	5,840,311	50.0%	427,393	99.7%	6,267,704	52.6%
FY 2023 YTD	4,659,181	9.9%	357,312	18.8%	5,016,493	10.5%
CAGR						
2013 – 2019	4.1%		NA		5.3%	
2013 – 2022	0.9%		NA		1.7%	

NOTE:
FY 2023 YTD – July 2022 through March 2023.
SOURCE: Houston Airport System, April 2023.

The following factors influenced passenger activity at HOU between 2013 and 2022:

- Total passengers increased 4.8 percent in FY 2013 as Southwest grew capacity between HOU and Hartsfield-Jackson Atlanta International Airport (ATL) and integrated its network with merger partner AirTran Airways, that operated its largest base of operations at ATL prior to the merger. Southwest also launched nonstop service to six destinations in FY 2013: Indianapolis International (IND), John Wayne (Orange County) (SNA), Charlotte Douglas International (CLT), Pittsburgh International (PIT), LaGuardia Airport (New York) (LGA), and Boston Logan International (BOS) Airports.
- Southwest's growth at HOU continued in FY 2014, driving an 8.5 percent increase in passengers that year. A full year of service to destinations launched in FY 2013 represented most of Southwest's capacity growth that year. Southwest also launched service to 6 new domestic destinations in FY 2014: Pensacola (PNS), Memphis (MEM), Portland (PDX), Luis Muñoz Marín (San Juan) (SJU), Salt Lake City (SLC), and Lubbock Preston Smith (LBB) International Airports. JetBlue initiated service from HOU to BOS in FY 2014.
- Southwest slowed its growth at HOU in FY 2015. The October 2014 expiration of the Wright Amendment, which had restricted activity at Dallas Love Field (DAL), enabled Southwest to expand its service from DAL. Southwest no longer needed to direct DAL traffic through HOU to reach destinations beyond Texas or nearby states. The decrease in capacity between HOU and DAL was nearly offset by increased capacity from HOU to MEM, LGA, and Midland International Air & Space Port (MAF). In March 2015 Southwest launched its first international route from HOU to Queen Beatrix International Airport (Aruba) (AUA), which has US Customs and Border Protection (US CBP) preclearance facilities.
- Total passengers increased 7.4 percent in FY 2016 due in large part to new international service launched that year. The completion of a terminal expansion at HOU with US CBP FIS and five new gates that could

accommodate international service enabled Southwest to launch service to 8 international destinations in Mexico, Central America, and the Caribbean.

- International passenger growth drove most of the 4.3 percent total passenger growth in FY 2017 on a full year of service for routes launched during FY 2016. Southwest also launched service to Eppley Airfield (Omaha) (OMA) and increased capacity between HOU and Austin-Bergstrom International Airport (AUS), DAL and San Antonio International Airport (SAT).
- In FY 2018 domestic passengers increased 3.6 percent as Southwest launched service from HOU to Milwaukee Mitchell International (MKE), Norman Y. Mineta San Jose International (SJC), and Columbus John Glenn International (CMH) Airports and grew capacity to other Southwest focus cities, including DAL, ATL, Midway International (Chicago) (MDW) and Fort Lauderdale–Hollywood International (FLL) Airports. International passengers increased 11.8 percent as routes launched in FY 2016 and FY 2017 matured and load factors increased.
- FY 2019 was a record year at HOU for domestic and international passengers. Domestic enplaned passengers increased 6.0 percent as Southwest resumed service to Philadelphia International Airport (PHL) that had been suspended since FY 2013 and commenced service to Louisville Muhammad Ali International (SDF), Hollywood Burbank (BUR), and Sacramento International (SMF) Airports. International enplaned passengers increased 0.6 percent as growth to Mexico beach destinations was largely offset by the discontinuation of service to Benito Juárez International Airport (Mexico City) (MEX).
- Total passengers decreased 27.7 percent in FY 2020 due to a drop in demand related to the onset of the COVID-19 pandemic midway through FY 2020. Allegiant launched service to HOU in FY 2020, adding four new destinations, Asheville Regional Airport (AVL), Savannah/Hilton Head International Airport (SAV), McGhee Tyson Field (Knoxville) (TYS), and Destin-Fort Walton Beach Airport (VPS), while Southwest added two destinations, resuming service to Bill and Hillary Clinton National Airport (Little Rock) (LIT) that had been suspended in FY 2015 and commencing service to Cozumel International Airport (CZM) in Mexico. JetBlue transferred all Houston service from HOU to IAH during FY 2020.
- Total passengers decreased 22.7 percent in FY 2021 due to the continuing effects of the COVID-19 pandemic on demand. Allegiant added service to four new destinations, Phoenix-Mesa Gateway (AZA), Blue Grass (Lexington) (LEX), Punta Gorda (PGD), and Springfield-Branson National (SGF) Airports, and Southwest added service on existing Allegiant routes to SAV and VPS. Southwest also commenced flights to eight new domestic destinations and resumed service to three previously served destinations.
- In FY 2022, demand recovered from the low point experienced in FY 2021, with total passengers increasing 55.5 percent, including international passengers doubling from FY 2021 to FY 2022 as travel restrictions eased. Frontier returned to HOU after an eight-year absence, adding service to Cancun International (CUN), Harry Reid International (Las Vegas) (LAS), and Orlando International (MCO) Airports. Service from Frontier to HOU complemented existing service at IAH, which grew 3.2 percent relative to FY 2021. Southwest launched winter seasonal service to three new destinations in Colorado: Colorado Springs Airport (COS), Yampa Valley Regional Airport (HDN), and Montrose Regional Airport (MTJ). Allegiant launched service to Des Moines International Airport (DSM), Provo Airport (PVU), and Northwest Arkansas National Airport (XNA).

Table 5-19 presents the historical connecting and O&D passengers at HOU from FY 2013 to FY 2023 YTD. Connecting passengers increased from 1.4 million in FY 2013 to 2.3 million in FY 2019, which represents a CAGR of 8.7 percent. Connecting passengers as a percentage of the total passengers increased from 26.4 percent to 34.4 percent from FY 2013 to FY 2022. This trend was largely driven by growth in connecting passenger itineraries provided by Southwest Airlines, the largest airline at HOU by scheduled flights and departing seats throughout the period. During the period from FY 2013 to FY 2022, Southwest inaugurated international service from HOU, which is described in more detail in Section 5.3.2.3. Connecting passengers peaked in FY 2019, though connecting passengers as a percentage of total passengers continued to grow through the period of reduced total passenger demand due to the COVID-19 pandemic, and the growth during the FY 2013 to FY 2022 period from 1.4 million connecting passengers to 2.2 million connecting passengers represents, a CAGR of 4.8 percent. O&D passengers decreased from 4.0 million in FY 2013 to 4.1 million in FY 2022, representing a CAGR of 0.4 percent, while total enplaned passengers increased from 5.4 million in FY 2013 to 6.3 million in FY 2022, which represents a CAGR of 1.7 percent.

TABLE 5-19 HOU HISTORICAL CONNECTING AND O&D PASSENGERS

	ENPLANED PASSENGERS				
FISCAL YEAR	CONNECTING	CONNECTING PERCENT OF TOTAL	O&D	O&D PERCENT OF TOTAL	TOTAL
2013	1,416,922	26.4%	3,959,666	73.6%	5,376,588
2014	1,701,165	29.2%	4,134,726	70.8%	5,835,891
2015	1,674,247	28.2%	4,271,166	71.8%	5,945,413
2016	1,687,702	26.4%	4,695,633	73.6%	6,383,335
2017	1,807,446	27.1%	4,852,811	72.9%	6,660,257
2018	2,107,238	30.4%	4,829,823	69.6%	6,937,061
2019	2,332,635	31.8%	4,996,510	68.2%	7,329,145
2020	1,644,721	31.0%	3,656,831	69.0%	5,301,552
2021	1,396,968	34.0%	2,710,793	66.0%	4,107,761
2022	2,155,636	34.4%	4,112,068	65.6%	6,267,704
FY 2023 YTD	1,660,837	33.1%	3,355,656	66.9%	5,016,493
CAGR					
2013 – 2019	8.7%		4.0%		5.3%
2013 – 2022	4.8%		0.4%		1.7%

NOTE:
FY 2023 YTD – July 2022 through March 2023.
SOURCE: Houston Airport System, April 2023.

Table 5-20 presents HOU enplaned passengers by airline from FY 2018 through FY 2022. Southwest operates a focus city at HOU and has maintained over 90 percent of total enplaned passengers during this period. Delta has historically been the second largest airline at HOU (excluding regional affiliates) in terms of enplaned passengers and has maintained an approximately 3.0 percent share in the period presented.

TABLE 5-20 HOU ENPLANED PASSENGERS BY AIRLINE

RANK	AIRLINE	2018 ENPLANED PASSENGERS	2018 SHARE	2019 ENPLANED PASSENGERS	2019 SHARE	2020 ENPLANED PASSENGERS	2020 SHARE	2021 ENPLANED PASSENGERS	2021 SHARE	2022 ENPLANED PASSENGERS	2022 SHARE
1	Southwest	6,478,265	93.4%	6,867,092	93.7%	5,010,818	94.5%	3,847,011	93.7%	5,867,586	93.6%
2	Delta	200,910	2.9%	224,751	3.1%	138,358	2.6%	118,363	2.9%	174,048	2.8%
3	Mesa (American Eagle)	128,376	1.9%	107,730	1.5%	95,768	1.8%	98,343	2.4%	130,955	2.1%
4	Allegiant		0.0%		0.0%	1,816	0.0%	31,249	0.8%	79,934	1.3%
5	Frontier								0.0%	8,838	0.1%
6	Sun Country		0.0%		0.0%	2,150	0.0%	2,625	0.1%	3,647	0.1%
7	SkyWest (American Eagle and Delta Connection)		0.0%	16,670	0.2%	9,209	0.2%	1,533	0.0%	2,004	0.0%
8	Envoy Air (American Eagle)	15,583	0.2%	10,638	0.1%	13,304	0.3%	8,634	0.2%	676	0.0%
	Other	24,621	0.4%	13,899	0.2%	4	0.0%	3	0.0%	16	0.0%
	Airport Total	**6,937,061**	**100.0%**	**7,329,145**	**100.0%**	**5,301,552**	**100.0%**	**4,107,761**	**100.0%**	**6,267,704**	**100.0%**

SOURCE: Houston Airport System, April 2023.

5.3.2.2 HOU AIR SERVICE

An important characteristic of airport activity is the distribution of an airport's O&D markets, which is a function of air travel demand and available services and facilities. **Table 5-21** presents data on HOU's top 30 domestic O&D markets in FY 2022, as measured by the number of total O&D passengers. Given the Airport's central location in the United States, the domestic O&D markets are largely medium-haul (between 601 and 1,800 miles) markets; 23 of the top 30 domestic O&D markets are medium-haul markets, with the remainder being short-haul (600 or fewer miles) markets. The average stage length of HOU's top 30 domestic markets is 891 miles, 23.7 percent shorter than the nationwide average stage length. The Airport's lower average stage length relative to the rest of the United States reflects HOU's focus city role in Southwest Airlines' network, as the airline focuses primarily on medium-haul and short-haul services, particularly from its midcontinent focus cities. Southwest Airlines provides nonstop service to all HOU's top 30 domestic O&D markets, which include several other Southwest Airlines focus cities; major cities on the East Coast, West Coast, and the midcontinent; as well as other key regional destinations, including New Orleans, Midland/Odessa, and El Paso.

Exhibit 5-4 illustrates the markets served nonstop from HOU. During CY 2023 airlines have scheduled 129 average daily departures to 69 domestic destinations and 8 average daily departures to 9 international destinations.

5.3.2.3 SOUTHWEST AIRLINES FOCUS CITY AT HOU

Southwest is the third largest US airline in terms of total scheduled seat capacity and the second largest US airline in terms of domestic scheduled seat capacity in FY 2022. Unlike American, Delta, and United, Southwest does not operate large connecting hubs with flights scheduled around arrival and departure banks that maximize connecting opportunities. However, Southwest operates focus city operations, with service from a single airport to many destinations and multiple daily frequencies on many routes. Southwest's network strategy generally prioritizes accommodation of O&D passengers. But in focus cities the volume of flights and destinations served enable accommodation of connecting passenger itineraries as well. HOU has long served as a focus city for Southwest. In FY 2022, Southwest represented 93.3 percent of total HOU enplaned passengers. **Table 5-22** presents the 10 largest focus city airports for Southwest in terms of average daily departures and average daily departing seats for calendar year 2022; HOU is the seventh largest Southwest airport by both metrics. **Table 5-23** presents the number of domestic, international, and total destinations served from each of Southwest's focus city airports in the calendar year. HOU ranks fifth in terms of domestic destinations served, second in terms of international destinations served, and third in terms of total destinations served.

HOU plays a critical role as an international gateway in the Southwest network. **Exhibit 5-5** presents the scheduled departing seats to international destinations among Southwest's largest focus city airports in FY 2023. HOU is Southwest's largest international gateway by scheduled seats, with 72 percent more total scheduled departing international seats than Baltimore/Washington International Thurgood Marshall Airport (BWI), the second largest airport in terms of scheduled departing seats to international destinations, despite having fewer international destinations served than BWI. All of Southwest's international destinations served are in Mexico, Central America, and the Caribbean, and among those regions, HOU ranks first among Southwest's focus cities in terms of scheduled departing seats to Central America and Mexico.

TABLE 5-21 HOU TOP 30 DOMESTIC O&D MARKETS IN FY 2022

RANK	MARKET	TOTAL O&D PASSENGERS [1]	WEEKLY NONSTOP DEPARTURES [2]	NUMBER OF AIRLINES [3]	AIRLINES [4]
1	Los Angeles[5]	436,887	44	1	WN
2	Atlanta	405,412	60	2	DL, WN
3	Denver	359,945	44	1	WN
4	Washington, DC[6]	352,964	38	1	WN
5	Dallas[7]	348,700	108	2	AA, WN
6	Chicago[8]	331,949	30	1	WN
7	Miami[9]	301,872	43	1	WN
8	Orlando	295,389	35	2	F9, WN
9	Las Vegas	294,672	28	2	F9, WN
10	Phoenix[10]	254,466	33	2	G4, WN
11	San Francisco[11]	201,665	18	1	WN
12	New York City[12]	196,219	17	1	WN
13	New Orleans	183,972	34	1	WN
14	Nashville	170,288	24	1	WN
15	St. Louis	160,257	19	1	WN
16	Tampa	149,971	21	1	WN
17	Midland/Odessa	126,432	20	1	WN
18	San Diego	120,849	13	1	WN
19	El Paso	116,724	17	1	WN
20	Kansas City	109,960	11	1	WN
21	Oklahoma City	100,659	20	1	WN
22	Tulsa	84,860	13	1	WN
23	Albuquerque	79,882	13	1	WN
24	Salt Lake City	71,567	7	1	WN
25	Harlingen	69,297	23	1	WN
26	Indianapolis	62,691	7	1	WN
27	Sacramento	61,017	5	1	WN
28	Columbus	58,183	6	1	WN
29	Memphis	50,340	7	1	WN
30	Boston[13]	49,521	0	1	WN
	Other Markets	1,532,859	203		
	Total	**7,139,467**	**961**		

NOTES:
1 Represents passengers traveling in both directions.
2 Weekly nonstop departures rounded to nearest integer value.
3 Regional affiliates are counted as part of their mainline carrier.
4 AA – American Airlines; DL – Delta Air Lines; F9 – Frontier Airlines; G4 – Allegiant Air; WN – Southwest Airlines.
5 Includes Los Angeles International (LAX), John Wayne (Orange County) (SNA), Ontario International (ONT), Hollywood Burbank (BUR), and Long Beach (LGB) Airports.
6 Includes Washington Dulles International (IAD), Ronald Reagan Washington National (DCA), and Baltimore/Washington International Thurgood Marshall (BWI) Airports.
7 Includes Dallas Fort Worth International Airport (DFW) and Dallas Love Field (DAL).
8 Includes O'Hare (ORD) and Midway (MDW) International Airports.
7 Includes Miami (MIA), Fort Lauderdale–Hollywood (FLL), and Palm Beach (PBI) International Airports.
10 Includes Phoenix Sky Harbor International (PHX) and Mesa Gateway (AZA) Airports.
11 Includes San Francisco (SFO), Oakland (OAK), and Norman Y. Mineta San Jose (SJC) International Airports.
12 Includes John F. Kennedy International (JFK), Newark Liberty International (EWR), LaGuardia (LGA), and Long Island MacArthur (ISP) Airports.
13 Includes Boston Logan International (BOS), Rhode Island T. F. Green International (PVD), and Manchester-Boston Regional (MHT) Airports.
SOURCES: US Department of Transportation, O&D Survey, November 2022; Innovata, April 2023 (published airline schedules).

SOURCES: Esri, 2010 (continent boundary); US Census Bureau, 2022 (state boundary); Esri, 2022 (airports); Cirium, Diio Mi Schedule Dynamic Table Report, May 2023 (airline schedule data); Ricondo & Associates, Inc., May 2023 (routes).

EXHIBIT 5-4

WILLIAM P. HOBBY AIRPORT
NONSTOP MARKETS

TABLE 5-22 SOUTHWEST AIRLINES AVERAGE DAILY DEPARTURES AND DEPARTING SEATS BY FOCUS CITY AIRPORTS IN FISCAL YEAR 2023

	AVERAGE DAILY DEPARTURES		AVERAGE DAILY DEPARTING SEATS	
FOCUS CITY	DEPARTURES	RANKING	SEATS	RANKING
Denver International	249	1	38,860	1
Harry Reid International	220	2	34,426	2
Chicago Midway International	213	3	34,300	3
Baltimore/Washington International Thurgood Marshall	189	4	30,254	4
Dallas Love Field	187	5	29,395	5
Phoenix Sky Harbor International	171	6	26,777	6
Houston William P. Hobby	**144**	**7**	**22,540**	**7**
Nashville International	126	8	19,834	8
Orlando International	108	9	17,194	9
Oakland International	108	10	16,689	10

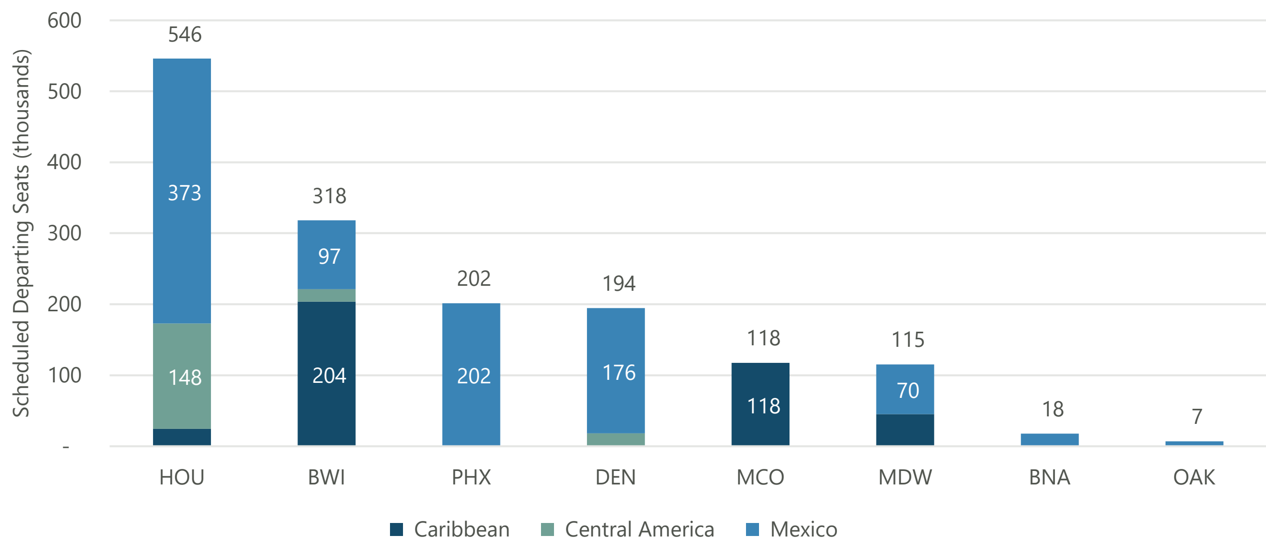
SOURCE: Innovata, April 2023 (published airline schedules).

TABLE 5-23 SOUTHWEST AIRLINES DESTINATIONS SERVED BY FOCUS CITY AIRPORTS IN FISCAL YEAR 2023

	DOMESTIC		INTERNATIONAL		TOTAL	
FOCUS CITY	DESTINATIONS SERVED	HUB RANKING	DESTINATIONS SERVED	HUB RANKING	DESTINATIONS SERVED	HUB RANKING
Denver International	87	1	7	3	94	1
Chicago Midway International	73	2	4	4	77	2
Houston William P. Hobby	**61**	**5**	**9**	**2**	**70**	**3**
Baltimore/Washington International Thurgood Marshall	60	6	10	1	70	3
Dallas Love Field	70	3	0	NA	70	3
Harry Reid International	67	4	0	NA	67	6
Phoenix Sky Harbor International	58	7	3	5	61	7
Nashville International	57	8	1	7	58	8
Orlando International	51	9	2	6	53	9
Oakland International	32	10	1	7	33	10

NOTE:
In the event of a tied count of destinations served, a were given the higher rank.
SOURCE: Innovata, April 2023 (published airline schedules).

EXHIBIT 5-5 SOUTHWEST AIRLINES SCHEDULED INTERNATIONAL DEPARTING SEATS IN CALENDAR YEAR 2022



SOURCE: Innovata, April 2023 (published airline schedules).

HOU is situated in the large and diverse Houston O&D market and is strategically positioned to take advantage of proximity to many locations in both Southwest's extensive domestic network as well as its international markets in Latin America and the Caribbean. Southwest typically develops its focus city schedules around primarily accommodating O&D passengers. Given the volume of flights and number of destinations served, Southwest is also able to accommodate connecting passengers at HOU traveling on domestic and international itineraries. **Table 5-24** presents the distribution of Southwest's connecting and O&D passengers at HOU from FY 2013 through FY 2022. Connecting passengers have represented between 30 percent and 39 percent of Southwest's total HOU passengers during this period.

5.3.2.4 HOU AIRCRAFT OPERATIONS

Table 5-25 presents historical passenger airline operations, average seats per departure, and average load factor at HOU from FY 2013 through FY 2022. Passenger airline operations grew from 113,818 operations in FY 2013 to 123,706 operations in FY 2019, representing a 1.4 percent CAGR. From FY 2013 to FY 2022, passenger airline operations decreased from 113,818 operations to 103,702 operations, which represents a -1.0 percent CAGR. Average seats per departure increased from 131 seats per departure in FY 2013 to 150 seats per departure in FY 2022, representing a 1.6 percent CAGR during the period. During this period, growth in average seats per departure reflects changes in Southwest's fleet, as the airline retired older generation 737 aircraft and aircraft and took delivery of newer generation 737 aircraft with increased seat capacity. The growth in average seats per departure was driven by ULCCs Allegiant and Frontier, both operators of predominantly high-capacity narrowbody aircraft. Increasing average seats per departure enabled growth in total passengers during the period despite the decrease in passenger airline operations.

TABLE 5-24 SOUTHWEST AIRLINES CONNECTING AND O&D PASSENGERS AT HOU

			ENPLANED PASSENGERS		
FISCAL YEAR	CONNECTING	CONNECTING PERCENT OF TOTAL	O&D	O&D PERCENT OF TOTAL	TOTAL
2013	1,415,497	29.6%	3,364,582	70.4%	4,780,079
2014	1,693,998	32.4%	3,528,263	67.6%	5,222,261
2015	1,672,449	30.9%	3,746,927	69.1%	5,419,376
2016	1,687,701	28.5%	4,233,666	71.5%	5,921,367
2017	1,807,444	29.2%	4,386,356	70.8%	6,193,800
2018	2,106,604	32.5%	4,371,661	67.5%	6,478,265
2019	2,328,004	33.9%	4,539,088	66.1%	6,867,092
2020	1,609,221	32.1%	3,401,597	67.9%	5,010,818
2021	1,396,968	36.3%	2,450,043	63.7%	3,847,011
2022	2,155,636	38.6%	3,424,150	61.4%	5,579,786
CAGR					
2013 – 2019	8.6%		5.1%		6.2%
2013 – 2022	4.8%		0.2%		1.7%

SOURCE: Houston Airport System, April 2023.

TABLE 5-25 HOU PASSENGER AIRLINE OPERATIONS

YEAR	PASSENGER AIRLINE OPERATIONS	AVERAGE SEATS PER DEPARTURE	AVERAGE LOAD FACTOR
FY 2013	113,818	131	75.3%
FY 2014	118,858	135	76.2%
FY 2015	114,606	137	78.3%
FY 2016	120,022	136	79.4%
FY 2017	120,806	141	78.1%
FY 2018	119,644	145	80.0%
FY 2019	123,706	147	80.2%
FY 2020	103,616	146	69.8%
FY 2021	88,034	148	63.1%
FY 2022	103,702	150	80.1%
CAGR			
2013 – 2019	1.4%	2.0%	1.1%
2013 – 2022	-1.0%	1.6%	0.7%

NOTE:
Average load factor represents revenue passengers only.
SOURCE: US Department of Transportation, T-100 Database, April 2023.

Table 5-26 presents the historical air carrier, air taxi and commuter, general aviation, and military operations at HOU from FY 2013 through FY 2022. Air carrier operations decreased from 109,216 operations in FY 2013 to 106,569 operations in FY 2022, representing a CAGR of -0.3 percent, and general aviation operations increased from 53,096 operations to 53,893 operations during the period, which represents a CAGR of 0.2 percent. Air taxi and commuter operations decreased from 35,185 operations in FY 2013 to 28,498 operations in FY 2022, representing a CAGR of -2.3 percent.

TABLE 5-26 HOU TOTAL OPERATIONS

	OPERATIONS				
YEAR	AIR CARRIER[1]	AIR TAXI / COMMUTER[2]	GENERAL AVIATION[3]	MILITARY	TOTAL
FY 2013	109,216	35,185	53,096	2,728	200,225
FY 2014	115,914	39,423	56,205	3,080	214,622
FY 2015	113,665	30,053	54,493	2,529	200,740
FY 2016	117,012	26,488	54,340	5,527	203,367
FY 2017	119,587	24,882	57,623	613	202,705
FY 2018	119,412	27,206	49,949	937	197,504
FY 2019	122,207	29,871	54,495	878	207,451
FY 2020	104,010	21,008	41,098	524	166,640
FY 2021	88,994	24,284	40,843	575	154,696
FY 2022	106,569	28,498	53,893	667	189,627
FY 2023 YTD	83,640	21,458	37,788	413	143,299
CAGR					
2013 – 2019	1.9%	-2.7%	0.4%	-17.2%	0.6%
2013 – 2022	-0.3%	-2.3%	0.2%	-14.5%	-0.6%

NOTES:
FY 2023 YTD – July 2022 through March 2023.
1 Air carrier includes aircraft with seating capacity of more than 60 seats or a maximum payload capacity of more than 18,000 pounds carrying passengers or cargo for hire or compensation.
2 Air taxi and commuter includes aircraft with seating capacity of 60 seats or less or a maximum payload capacity of 18,000 pounds or less carrying passengers or cargo for hire or compensation.
3 General aviation includes all civil aviation that is not for hire or compensation and excludes military operations. Activity includes flying for personal or corporate reasons and pilot training.
SOURCE: Houston Airport System, April 2023.

5.3.2.5 HOU LANDED WEIGHT

Table 5-27 presents the historical passenger airline and all-cargo landed weight at HOU between FY 2013 and FY 2023 YTD. Between FY 2013 and FY 2022 the passenger airline landed weight CAGR was 0.4 percent. During the same period, the all-cargo airline CAGR was 6.6 percent and 0.4 percent for all airlines.

TABLE 5-27 HOU LANDED WEIGHT – METRIC TONS (THOUSANDS)

YEAR	PASSENGER AIRLINES	ALL-CARGO	TOTAL	ANNUAL GROWTH
FY 2013	6,628,792	127	6,628,920	4.5%
FY 2014	7,077,035	362	7,077,397	6.8%
FY 2015	6,932,727	68	6,932,795	-2.0%
FY 2016	7,191,562	713	7,192,276	3.7%
FY 2017	7,454,957	356	7,455,313	3.7%
FY 2018	7,683,254	529	7,683,783	3.1%
FY 2019	8,035,814	314	8,036,128	4.6%
FY 2020	6,674,567	330	6,674,897	-16.9%
FY 2021	5,692,206	70	5,692,277	-14.7%
FY 2022	6,900,113	225	6,900,338	21.2%
FY 2023 YTD	5,593,756	275	5,594,031	9.0%
CAGR				
2013 – 2019	3.30%	16.20%	3.30%	
2013 – 2021	0.4%	6.6%	0.4%	

NOTE:
FY 2023 YTD – July 2022 through March 2023.
SOURCE: Houston Airport System, April 2023.

5.4 FACTORS AFFECTING AVIATION DEMAND

This section discusses the qualitative factors that may influence future aviation activity at IAH and HOU. These factors were considered, either directly or indirectly, in developing the aviation activity forecasts.

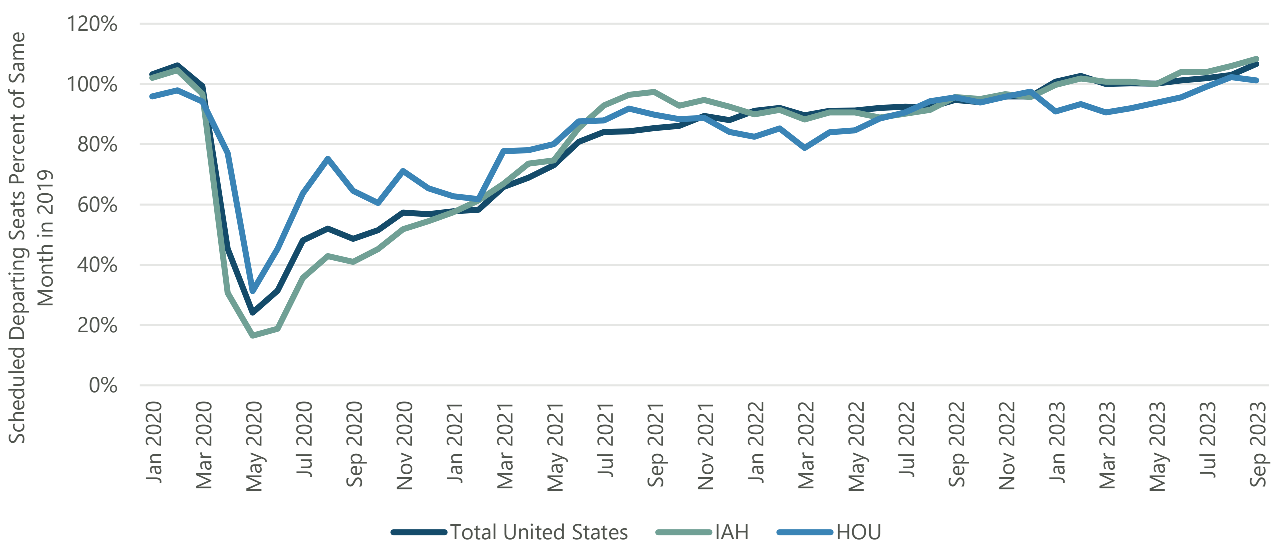
5.4.1 IMPACT OF THE COVID-19 PANDEMIC

The outbreak and spread of the COVID-19 pandemic have resulted in a severe contraction in demand for air travel that was driven by fear of illness, as well as government-imposed travel restrictions and quarantine requirements. The impact to air travel began in East Asia in December 2019 and rapidly accelerated to other regions of the world in March and April 2020. Airlines responded to the change in demand by parking aircraft and reducing capacity across their networks. Several large international foreign-flag airlines suspended all operations for a period in March and April 2020. By May 2020, which represented the low point in terms of passenger airline capacity offered, scheduled departing seats decreased to 24 percent of May 2019 capacity for all US airports, 16 percent of May 2019 capacity at IAH, and 31 percent of May 2019 capacity at HOU. A modest recovery in airline capacity occurred over the second half of 2020. By December 2020 departing seat capacity for all US airports had increased to 57 percent of December 2019 departing seat capacity, 54 percent of December 2019 departing seat capacity at IAH, and 65 percent of December 2019 seat capacity at HOU. The slower rate of recovery at IAH compared to HOU and the national average during this period was due in large part to Intercontinental's exposure to international markets. International markets, particularly long-haul destinations that are not served from HOU, were more severely impacted by travel restrictions than domestic markets. Most of the international markets served from HOU are leisure-oriented destinations in Mexico and the Caribbean that had fewer travel restrictions and experienced growth in demand during the COVID-19 pandemic.

Airlines continued to restore capacity over the course of 2021 as COVID-19 vaccines became widely available in the United States and demand for air travel increased. By December 2021 scheduled departing seats as a percentage of December 2019 were 88 percent for all US airports, 92 percent for IAH, and 84 percent for HOU. The restoration of scheduled capacity increased through 2022, despite interruptions in demand recovery that coincided with spikes in COVID-19 infections related to the Delta and Omicron variants of the virus. By December 2022, the recovery rates for scheduled departing seats for all US airports, IAH, and HOU had converged between 95 percent and 98 percent of December 2019. Scheduled departing seat capacity exceeds 2019 levels for all US airports as well as IAH and HOU in the summer of 2023.

Exhibit 5-6 depicts the scheduled departing seat capacity by month from January 2020 through September 2023 for all US airports, IAH, and HOU indexed to the same month in 2019.

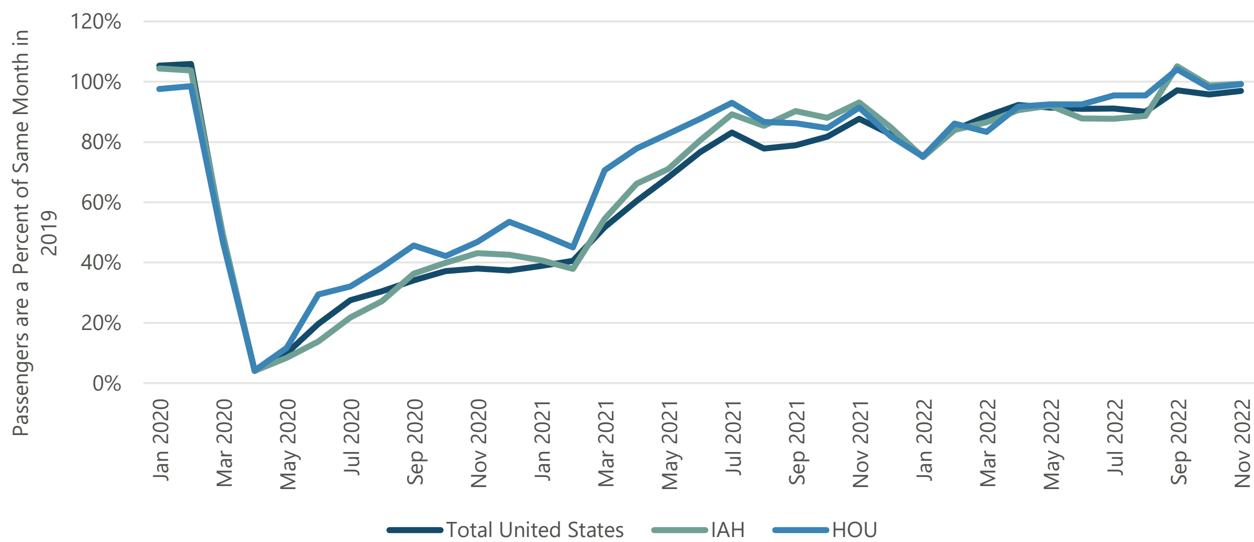
EXHIBIT 5-6 SEAT CAPACITY RECOVERY – THE UNITED STATES, IAH, AND HOU



SOURCE: Innovata, April 2023 (published airline schedules).

Passenger volumes decreased at a faster rate than seat capacity at the onset of the COVID-19 pandemic. Throughout most of April 2020, which has thus far been the lowest point in terms of domestic monthly passenger activity since the onset of the COVID-19 pandemic, the Transportation Security Administration (TSA) reported that daily airport screening throughput for all US airports was approximately 5 percent of the volume on the equivalent same day in 2019. For the airport system, April 2020 enplaned passengers represented approximately 4 percent of April 2019 enplaned passengers at both IAH and HOU. By December 2020 passenger volumes as a percentage of December 2019 had recovered to 45 percent at IAH and 55 percent at HOU. Passenger activity continued to recover over the course of 2021 and 2022, with July 2022 enplaned passengers as a percentage of July 2019 reaching 92 percent at IAH and 100 percent at HOU. **Exhibit 5-7** presents the monthly enplaned passengers from January 2020 through November 2022 indexed to the same month in 2019 for the average of all US airports, IAH, and HOU. During most of this period the recovery rates for both IAH and HOU have generally moved in line with the national average.

EXHIBIT 5-7 PASSENGER RECOVERY – THE UNITED STATES, IAH, AND HOU



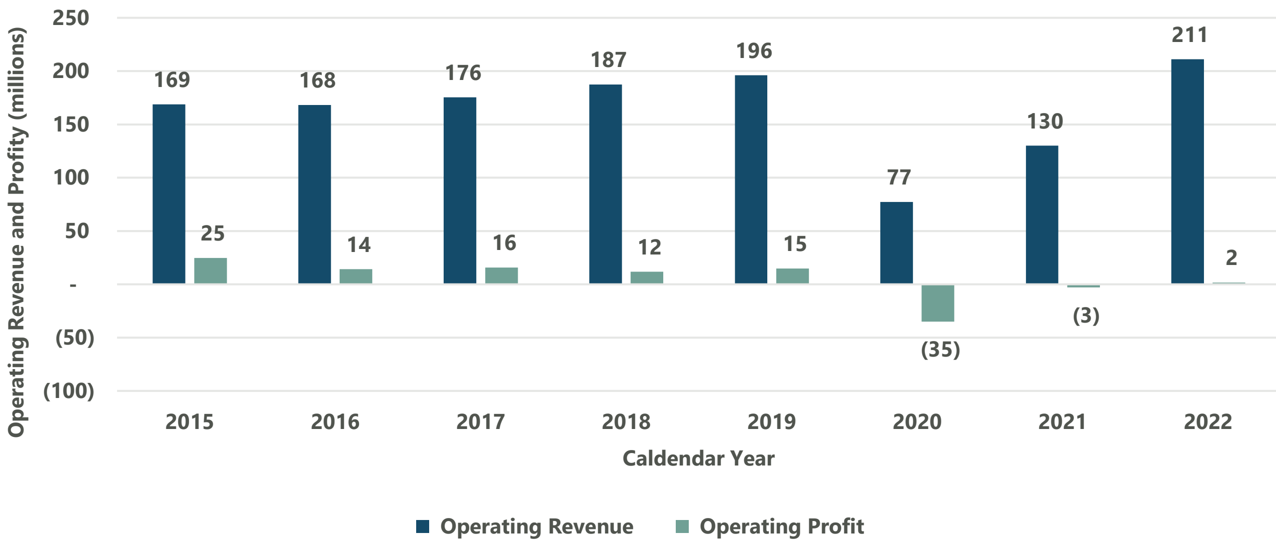
SOURCE: US Department of Transportation, T-100 Database, April 2023.

5.4.2 AIRLINE FINANCIAL PERFORMANCE

US airlines reported revenue growth and positive operating profits in the years leading up to the COVID-19 pandemic. The severe decrease in demand for air travel beginning in March 2020 drove a sharp contraction in operating revenues and steep financial losses in 2020 and 2021. In 2022 strong growth in demand drove record levels of operating revenue and US airlines collectively reported a positive operating profit in 2022, with performance improving over the course of the year. **Exhibit 5-8** presents operating revenue and profit for US airlines from CY 2015 through CY 2022.

Ricondo analyzes publicly available sources of financial and operational data and applies commonly used allocation methodologies in the airline industry to derive estimates of the operating profits of each of United's hubs and Southwest's focus cities. Ticket revenue was identified through US Department of Transportation O&D data accessed at the individual itinerary level and prorated to flight segments using a distance-based proration methodology. Non-ticket revenue was allocated using drivers that include revenue passenger miles and cargo volumes. Cost allocation drivers included block hours, departures, revenue passenger miles, available seat mile, and ticket revenue. To represent the economic impact of the mix of fleet types operating across the hubs, aircraft-type allocation rates were used where reporting is available at that level of detail. While Ricondo has applied commonly used approaches to the alignment of costs and revenues with activity-based allocation drivers, the estimates of hub profitability may differ from those of airlines that employ many different methodologies using detailed internal data sources.

EXHIBIT 5-8 OPERATING REVENUE AND PROFIT OF UNITED STATES COMMERCIAL AIRLINES (CY 2015 – CY 2022)



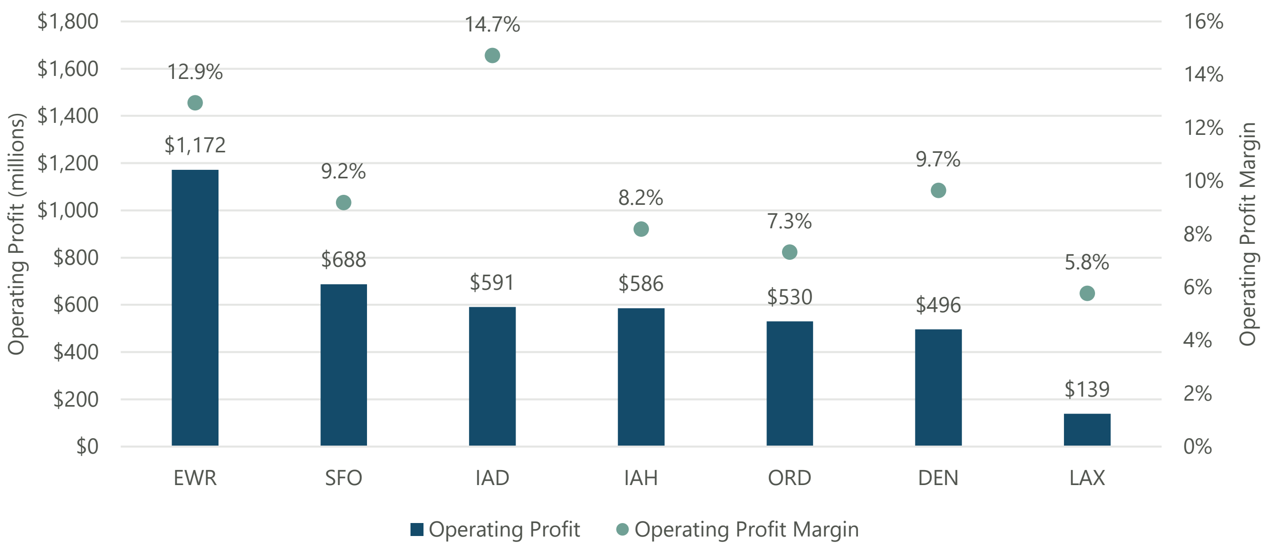
SOURCE: Airlines for America, April 2023 (data and statistics).

Exhibit 5-9 presents the estimated operating profit and operating profit margins for each of United's hubs in 2019, the most recent year prior to the impact of COVID-19. IAH was estimated to rank fourth among United's hubs in terms of operating profit and generated an 8.2 percent operating profit margin. **Exhibit 5-10** presents the estimated operating profit and operating profit margins for Southwest's principal focus cities in 2019.[113] HOU was estimated to rank eighth among Southwest's focus cities in terms of operating profit and generated a 15.6 percent operating profit margin. Airline financial performance deteriorated substantially during 2020 and 2021 due to the impacts of the COVID-19 pandemic, with both United and Southwest reporting financial losses systemwide.[114] United and Southwest reported positive net income in 2022 and have indicated in recent earnings calls and investor updates that they expect to report positive financial results in 2023. Both airlines have maintained all pre–COVID-19 pandemic hubs and focus cities and the general strategic roles of the hubs and focus cities in their respective route networks have not meaningfully changed.

[113] Airports with 100 or more average scheduled daily departures were identified as Southwest focus cities.

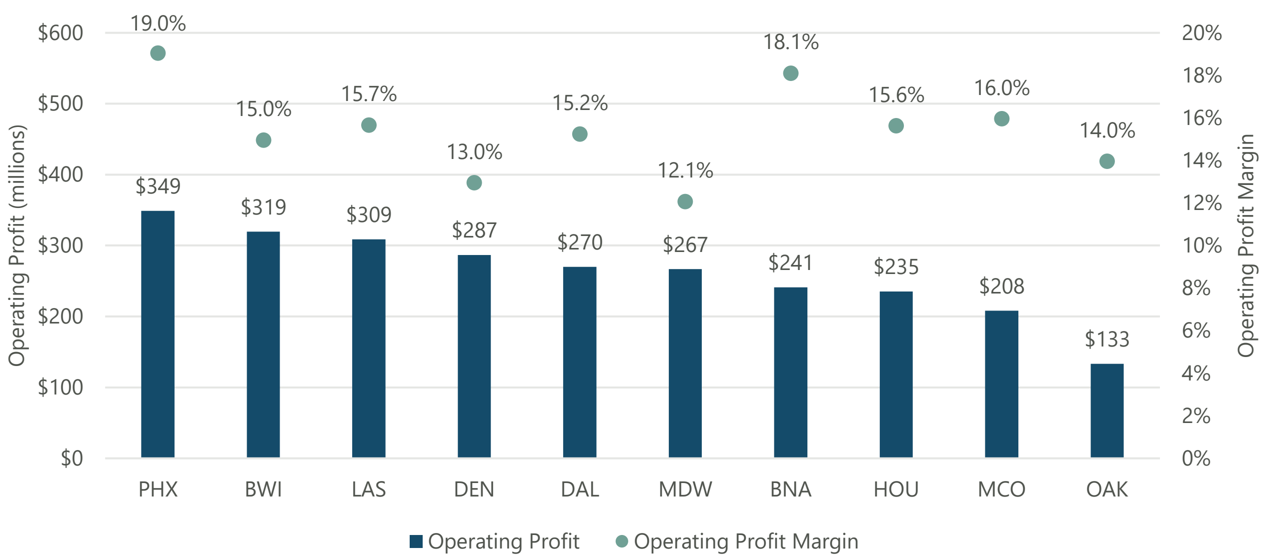
[114] United and Southwest reported annual losses excluding special items, including Payroll Support Program (PSP) proceeds under the Consolidated Appropriations Act 2021 and American Rescue Plan Act of 2021.

EXHIBIT 5-9 ESTIMATE OF UNITED AIRLINES PROFITABILITY BY HUB (FULL YEAR 2019)



SOURCES: US Department of Transportation, O&D Survey, April 2023; US Department of Transportation, T-100 Database, April 2023; US Department of Transportation, Form 41, April 2023; Ricondo & Associates, Inc., June 2023 (based on the analysis and assumptions described in the Report).

EXHIBIT 5-10 ESTIMATE OF SOUTHWEST AIRLINES PROFITABILITY BY FOCUS CITY (FULL YEAR 2019)



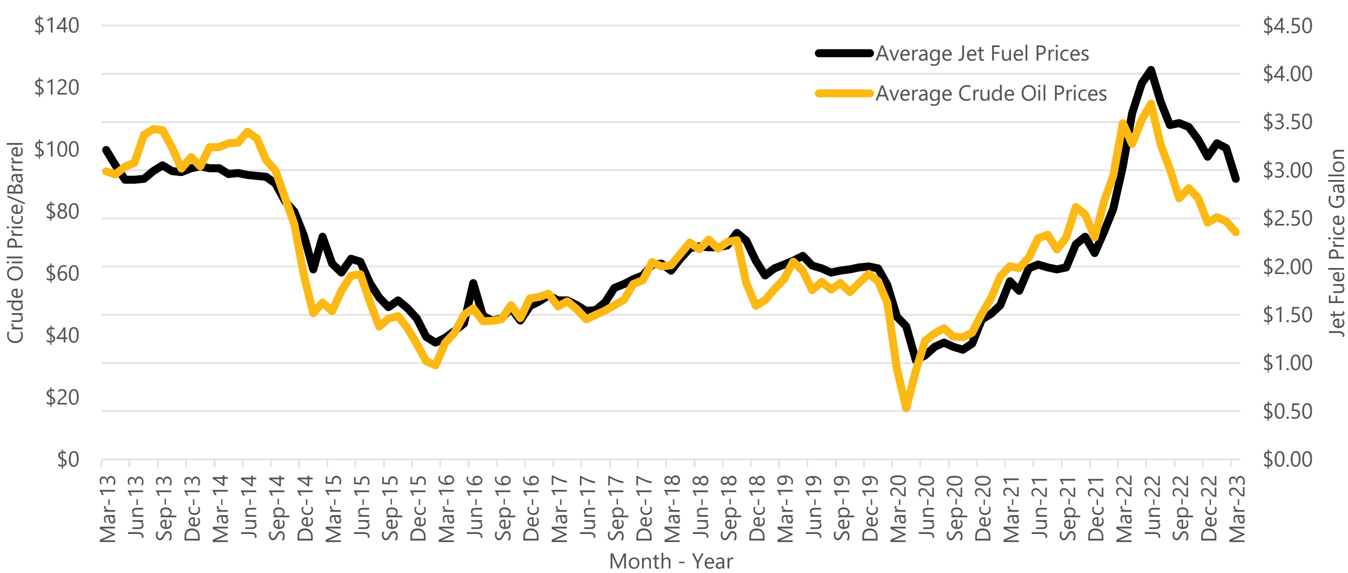
SOURCES: US Department of Transportation, O&D Survey, April 2023; US Department of Transportation, T-100 Database, April 2023; US Department of Transportation, Form 41, April 2023; Ricondo & Associates, Inc., June 2023 (based on the analysis and assumptions described in the Report).

5.4.3 COST OF AVIATION FUEL

As of the second quarter of 2022, jet fuel accounted for 25.9 percent of total airline operating costs, second only to labor, according to Airlines for America.[115]

In March 2023, the average price of jet fuel was $2.91 per gallon, having hit a record high of $4.04 per gallon in June 2022. **Exhibit 5-11** shows the monthly averages for jet fuel and crude oil prices from February 2013 through March 2023. Fluctuating fuel costs will continue to affect airline profitability. This could lead to changes in air service as airlines adjust capacity and pricing to address increases or decreases in the cost of fuel.

EXHIBIT 5-11 HISTORICAL MONTHLY AVERAGES OF JET FUEL AND CRUDE OIL PRICES



SOURCE: US Bureau of Transportation Statistics, US Energy Information Administration, April 2023.

5.4.4 NATIONAL ECONOMY

Historically, trends in airline travel have been closely correlated with national economic trends, most notably changes in GDP. Chapter 3 of this Report presents an analysis of the general economic trends, both national and local, that may influence demand for air service over time. As noted in Chapter 4, national GDP is expected to increase at a CAGR of 2.3 percent between 2020 and 2032, which should support generally increasing demand for air service over the Projection Period. Actual economic activity may differ from this projection, especially on a year-to-year basis. Demand for air service may be impacted by changes in economic performance.

5.4.5 MERGERS AND ACQUISITIONS

US airlines have merged or acquired competitors to achieve operational and commercial synergies and to improve their financial performance. A wave of consolidation began in 2005 when America West Airlines merged with US Airways, retaining the US Airways brand for the consolidated airline. In 2009, Delta acquired Northwest Airlines. In 2010, United acquired Continental Airlines. In 2011, Southwest acquired AirTran Airways. In 2013, US Airways and

[115] Airlines for America, "A4A Passenger Airline Cost Index (PACI)," https://www.airlines.org/dataset/a4a-quarterly-passenger-airline-cost-index-u-s-passenger-airlines/ (October 19, 2022).

American merged, with the consolidated airline retaining the American brand. The most recent consolidation occurred in 2016 when Alaska acquired Virgin America. The two airlines completed their integration in 2018. On July 28, 2022, JetBlue and Spirit announced their intention to merge no later than the first half of 2024, pending government and shareholder approval. JetBlue and Spirit will continue to operate as independent airlines until after the transaction closes. Sprit has terminated its prior merger agreement with Frontier that was announced in February 2022. Consolidation across the industry has resulted in the realignment of several airline route networks as airlines have sought efficiencies in their service. Further consolidation of the US airline industry could affect the amount of capacity offered at the HAS and could alter the competitive landscape.

5.4.6 INTERNATIONAL CONFLICTS AND THREAT OF TERRORISM

Since September 11, 2001, the recurrence of terrorism incidents against either domestic or world aviation has remained a risk to achieving forecast levels of activity. Tighter security measures have restored the public's confidence in the integrity of the US and global aviation security systems. However, any terrorist incident targeting aviation could have an immediate and significant impact on the demand for air travel.

Additionally, geopolitical issues may affect aviation activity during the Projection Period. Potential governmental or regional instability in certain countries or locations may affect access to, or demand for, aviation service in these places. At the time of this Report, the Russian invasion of Ukraine is ongoing and further development could exacerbate geopolitical and economic uncertainty and potentially impact demand for travel to certain regions. The conflict has resulted in the closure of airspace over Russia and Ukraine to most airlines. Restrictions on Russian airlines have resulted in the suspension of service between Russia and many countries. These restrictions have limited airlines' ability to operate certain nonstop routes that would otherwise overfly Russia or Ukraine. As an international gateway, IAH provides service to nearly all major regions of the world. Future geopolitical instability may have an impact on demand for international travel and international service.

5.4.7 CAPACITY OF THE NATIONAL AIRSPACE SYSTEM

One of the FAA's concerns is how increased delays at busy airports impact the efficiency of the National Airspace System (NAS). In its report *Airport Capacity Needs in the NAS* (January 2015), the FAA stated the need to address delays that remain at key airports since its 2007 assessment, as well as to implement NextGen airspace system improvements. The report emphasized the need to continue to invest in system improvements with airfield enhancements and NextGen capabilities.

5.5 ACTIVITY FORECAST

Forecasts of Airport System activity were developed for FY 2023 through FY 2032. The assumptions, techniques, and results of the forecast process are described in the following subsections.

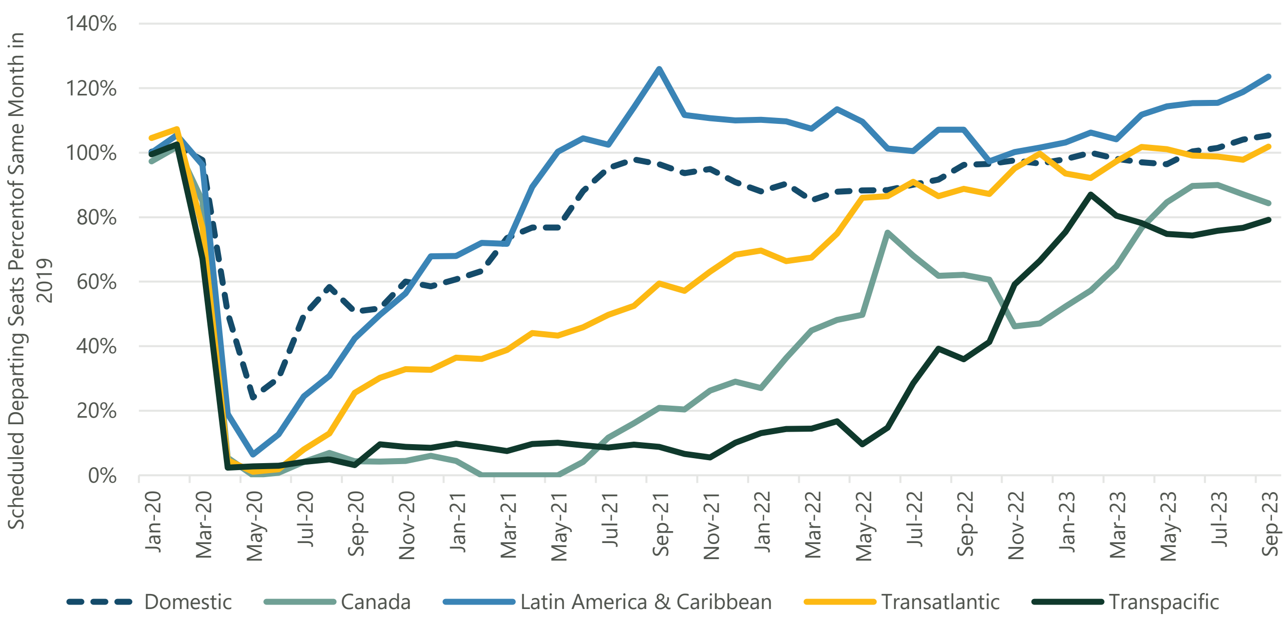
5.5.1 SHORT-TERM FORECAST METHODOLOGY

The development of the short-term forecast through FY 2025 takes into consideration how the COVID-19 pandemic has severely disrupted patterns of demand and aviation activity globally, nationally, and locally. Socioeconomic variables that have been traditionally used to model demand for air travel, such as economic output, employment, and personal income, are not as useful for predicting future aviation activity due to travel restrictions, fear of illness, labor shortages, and other factors that have emerged since the onset of the COVID-19 pandemic. While traditional drivers of demand are expected to influence travel patterns in the long-term, an approach was used to forecast activity in the short-term using the demonstrated recovery of demand since the onset of the COVID-19 pandemic, as well as assumptions regarding airline seat capacity and load factors through FY 2025. The activity forecast for this period was modeled on estimates of departing seat capacity and load factor by airline and region to derive a forecast of enplaned passengers, recognizing demand will recover differently by region due to the variable effect of COVID-19 and its associated impacts. Gradual increases in departing seats and passengers represent the recovery in demand, considering different rates of recovery by region and market segment, as well as seasonal demand patterns. The short-term forecast incorporates actual reported activity through February 2023 and published airline schedules through September 2023.

The following factors were also considered in the development of the short-term forecast:

- While the widespread deployment of effective vaccines to inhibit COVID-19 infection and treatments for illness have mitigated the severity of the COVID-19 pandemic, new variants of the COVID-19 virus may emerge, and the full duration of the global pandemic and resulting impact on air travel remain unknown. It is assumed that the emergence of any new variants of the COVID-19 virus would not result in a severe reduction in air service as experienced at the onset of the pandemic.
- Transborder travel restrictions have impacted demand for international travel resulting in an uneven recovery across different regions. **Exhibit 5-12** presents the consolidated monthly scheduled departing seats by region from IAH and HOU as a percentage of the same month in 2019. Latin America and the Caribbean has led all regions in terms of capacity recovery since September 2020, with capacity exceeding 2019 levels in the second half of 2021 and through most of 2022 and into 2023. Transatlantic capacity recovery accelerated in the second half of 2021 and first approached 2019 levels in the second half of 2022. Restoration of scheduled departing seats to destinations in Canada accelerated in 2022 with the lifting of some transborder travel restrictions. The recovery in transpacific destinations lags other regions, with scheduled departing seats representing approximately 75 percent of 2019 levels in 2023. The timeline for lifting all international travel restrictions is unknown, and the United States and other countries may impose new restrictions (or reinstate restrictions that have been lifted) if new surges of COVID-19 infection emerge.

EXHIBIT 5-12 CONSOLIDATED IAH AND HOU INDEXED SCHEDULED DEPARTING SEATS BY REGION



SOURCE: Innovata, April 2023 (published airline schedules).

- Airlines have retired certain aircraft types from their operating fleets since the onset of the pandemic, which in some cases represented an accelerated timeline for retiring older aircraft. Changes in fleet mix and average aircraft size could change the number of operations required to accommodate passenger demand.
- Supply-side factors, including slower than anticipated delivery of new aircraft and labor shortages, may limit airlines' ability to restore capacity at the same rate as the recovery in demand.
- A prolonged contraction of demand for air travel increases the likelihood of structural changes to the airline industry. These structural changes may include airline bankruptcies and failures, consolidation, and hub closures or other network changes. These types of changes are not assumed in the forecast.

5.5.2 LONG-TERM FORECAST METHODOLOGY

As the influence of the COVID-19 pandemic on passenger demand diminishes, it is expected that the traditional relationships between demand and socioeconomics will drive long-term passenger growth. Longer-term O&D passenger activity for the Houston region was forecast using socioeconomic regression analysis techniques that identified predictive statistical relationships between historical O&D passenger volumes and independent socioeconomic variables (such as GRP, employment, and personal income) over a 20-year period ending in 2019. Activity that occurred in 2020 and 2021 was not incorporated into the socioeconomic regression analysis, as activity during this period was heavily influenced by factors that were specific to the COVID-19 pandemic that are not expected to influence demand for air travel in the long-term.

Domestic and international O&D passengers were independently forecast for the Airport System, inclusive of both IAH and HOU, using US and Air Trade Area socioeconomic variables. The allocation of domestic O&D passengers between the two airports was based on each airport's share of O&D passengers in FY 2022. The allocation of international O&D passengers between to the two airports accounts for the slower rate of recovery in long-haul international markets that are only served from IAH compared to short-haul international markets that are served from both airports that have recovered faster than any other international region. The forecast assumes that Intercontinental's share of international O&D passengers falls from 94 percent in 2019 to 90 percent in 2023. From 2024 through 2033 the forecast assumes IAH captures 92 percent of the Airport System's international O&D passengers, the same share IAH represented in 2017.

Table 5-28 summarizes the output of the socioeconomic regression analysis of domestic and international O&D passengers.

The connecting passenger forecast was based on independent forecasts of total US domestic O&D passengers and total US to international destination O&D passengers, using US socioeconomic variables. The share of total domestic and international O&D passengers that connect at IAH and HOU was based on an evaluation of the share of each segment of traffic that have used IAH and HOU as a connect point. The long-term forecast assumes that IAH captures 1.2 percent of the total US domestic O&D market and 3.0 percent of the total US to international destination O&D market as connecting passengers, in line with its share of these market segments in 2015. IAH domestic connecting passengers as a percentage of total domestic and international O&D passengers decreased in 2016 and 2017 as United reduced capacity at its IAH hub. IAH connecting passenger share of this market is expected to return to historical levels in line with recent trends as well as guidance from United to support growth at its midcontinent hubs through increased connectivity.[116] The long-term forecast assumes that HOU captures

[116] United Airlines, "United Next Investor Event," https://ir.united.com/static-files/0e00efc8-a309-4942-8001-720e3d8d0e82 (accessed November 9, 2022).

0.3 percent of the total US domestic O&D and 0.2 percent of the total US to international destination O&D market as connecting passengers, consistent with its share of these market segments in 2019 and in recent periods.

TABLE 5-28 SOCIOECONOMIC REGRESSION ANALYSIS OUTPUTS

SOCIOECONOMIC VARIABLE	IMPLIED FY 2022 – FY 2030 DOMESTIC O&D PASSENGER CAGR	IMPLIED FY 2022 – FY 2030 INTERNATIONAL O&D PASSENGER CAGR
ATA Total Population	1.2%	2.5%
ATA Total Employment	1.6%	3.1%
ATA Total Earnings	1.7%	3.5%
ATA Personal Income	1.9%	3.8%
United States Total Employment	2.3%	4.1%
United States Total Earnings	2.4%	4.1%
United States Personal Income	2.1%	3.9%
United States Gross Regional Product	2.1%	3.9%
United States Mean Household Personal Income	2.0%	3.6%
Average	**2.0%**	**3.6%**

NOTES:
ATA – Air Trade Area
CAGR – Compound Annual Growth Rate
FY – Fiscal Year
O&D – Origin and Destination
SOURCES: Woods & Poole Economics, Inc., April 2023; US Department of Transportation, O&D Survey, November 2022; Ricondo & Associates, Inc., June 2023 (analysis).

The forecasts of domestic O&D, international O&D, domestic connecting, and international connecting passengers were consolidated to derive long-term year-over-year growth rates of domestic enplaned and international enplaned passengers at IAH and HOU. The year-over-year growth rates were applied to passenger volumes established in the short-term forecast model to forecast passengers through FY 2032.

5.5.3 ENPLANED PASSENGER FORECAST

Table 5-29 presents the historical and forecast domestic and international enplaned passengers at IAH. Domestic enplaned passengers are forecast to increase from 15.6 million in FY 2022 to 20.2 million in FY 2032, which represents a CAGR of 2.6 percent. International O&D passengers are forecast to increase from 4.2 million in FY 2022 to 7.3 million in FY 2032, which represents a CAGR of 5.6 percent. Total enplaned passengers are forecast to increase from 19.8 million in FY 2022 to 27.5 million in FY 2032, which represents a CAGR of 3.3 percent. Total enplaned passengers are forecast to exceed 2019 levels on a FY basis beginning in FY 2024.

Table 5-30 presents the historical and forecast domestic and international enplaned passengers at HOU. Domestic enplaned passengers are forecast to increase from 5.8 million in FY 2022 to 8.0 million in FY 2032, which represents a CAGR of 3.2 percent. International O&D passengers are forecast to increase from 427 thousand in FY 2022 to 611 thousand in FY 2032, which represents a CAGR of 3.6 percent. Total enplaned passengers are forecast to increase from 6.3 million in FY 2022 to 8.7 million in FY 2032, which represents a CAGR of 3.3 percent. Total enplaned passengers are forecast to exceed 2019 levels on a FY basis beginning in FY 2025.

TABLE 5-29 IAH ENPLANED PASSENGER FORECAST

YEAR	ENPLANED PASSENGERS			TOTAL PERCENT OF 2019
	DOMESTIC	INTERNATIONAL	TOTAL	
FY 2019 Actual	16,981,448	5,497,006	22,478,454	
FY 2020 Actual	12,554,409	3,972,819	16,527,228	73.5%
FY 2021 Actual	8,901,397	1,960,251	10,861,648	48.3%
FY 2022 Actual	15,592,705	4,219,687	19,812,392	88.1%
FY 2023	16,783,702	5,248,129	22,031,831	98.0%
FY 2024	17,430,498	5,808,882	23,239,380	103.4%
FY 2025	17,699,230	5,926,334	23,625,565	105.1%
FY 2026	18,046,366	6,116,890	24,163,256	107.5%
FY 2027	18,397,516	6,309,515	24,707,031	109.9%
FY 2028	18,752,740	6,504,231	25,256,971	112.4%
FY 2029	19,113,043	6,701,569	25,814,612	114.8%
FY 2030	19,478,268	6,901,454	26,379,722	117.4%
FY 2031	19,847,036	7,103,178	26,950,214	119.9%
FY 2032	20,220,063	7,307,047	27,527,110	122.5%
CAGR				
FY 2019 – FY 2032	1.4%	2.2%	1.6%	
FY 2022 – FY 2032	2.6%	5.6%	3.3%	

SOURCES: Houston Airport System, April 2023 (actual passengers); Ricondo & Associates, Inc., June 2023 (forecast passengers).

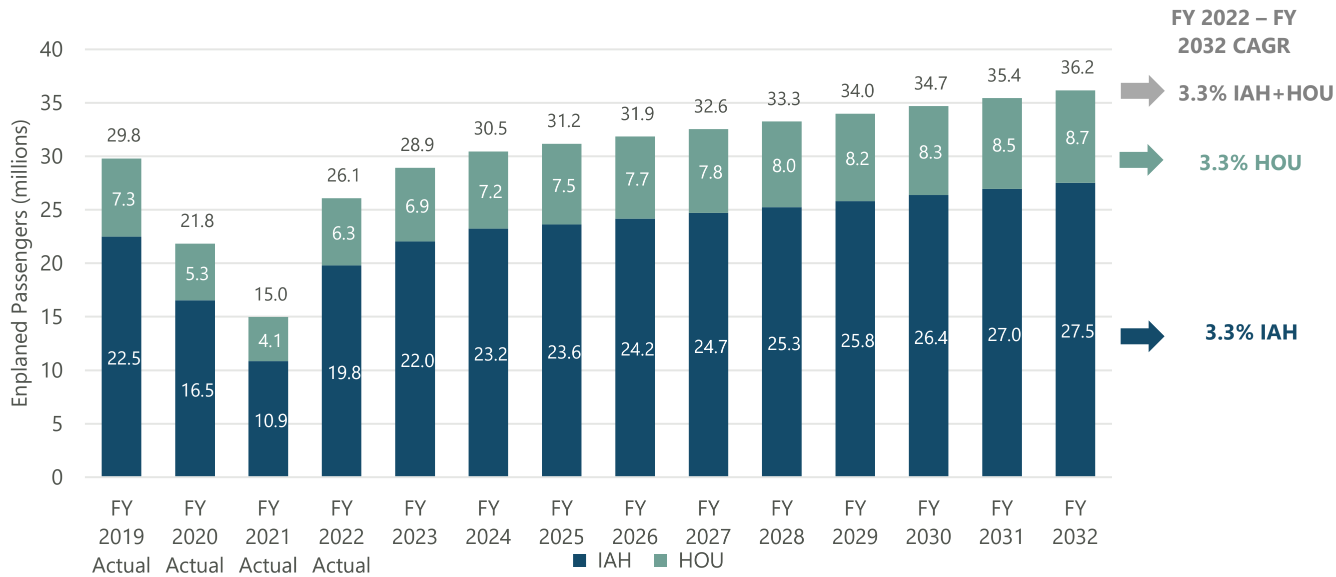
TABLE 5-30 HOU ENPLANED PASSENGER FORECAST

YEAR	ENPLANED PASSENGERS			TOTAL PERCENT OF 2019
	DOMESTIC	INTERNATIONAL	TOTAL	
FY 2019 Actual	6,833,766	495,379	7,329,145	
FY 2020 Actual	5,005,616	295,936	5,301,552	72.3%
FY 2021 Actual	3,893,743	214,048	4,107,791	56.0%
FY 2022 Actual	5,840,311	427,393	6,267,704	85.5%
FY 2023	6,421,819	472,545	6,894,364	94.1%
FY 2024	6,778,381	443,532	7,221,913	98.5%
FY 2025	7,052,716	488,722	7,541,439	102.9%
FY 2026	7,188,724	505,526	7,694,250	105.0%
FY 2027	7,326,303	522,538	7,848,841	107.1%
FY 2028	7,465,478	539,762	8,005,240	109.2%
FY 2029	7,606,637	557,244	8,163,881	111.4%
FY 2030	7,749,724	574,978	8,324,701	113.6%
FY 2031	7,894,207	592,905	8,487,112	115.8%
FY 2032	8,040,365	611,053	8,651,418	118.0%
CAGR				
FY 2019 – FY 2032	1.3%	1.6%	1.3%	
FY 2022 – FY 2032	3.2%	3.6%	3.3%	

SOURCES: Houston Airport System, April 2023 (actual passengers); Ricondo & Associates, Inc., June 2023 (forecast passengers).

Exhibit 5-13 presents the actual and forecast enplaned passengers for IAH and HOU from FY 2019 through FY 2032. The total IAH and HOU enplaned passengers are forecast to increase from 26.1 million in FY 2022 to 36.2 million in FY 2032, which represents a CAGR of 3.3 percent.

EXHIBIT 5-13 IAH AND HOU TOTAL ENPLANED PASSENGERS



SOURCES: Houston Airport System, April 2023 (actual passengers); Ricondo & Associates, Inc., June 2023 (forecast passengers).

5.5.4 OPERATIONS AND LANDED WEIGHT FORECAST

The forecast of passenger airline operations was based on the forecast of enplaned passengers and estimates of future average seats per departure and load factor. The average seats per departure assumptions were informed by published airline schedules through September 2023, as well as the current and expected future fleet mix of airlines serving IAH and HOU. Load factor assumptions were based on historical patterns, with increases in average load factors in the short-term reflecting recovery to pre–COVID-19 levels of demand. Gradual increases in load factor over the long-term reflect expected improvements in the processes and tools that airlines use to manage seat inventory more efficiently. Growth in average seats per departure and higher load factors will enable airlines to accommodate more passengers per passenger aircraft operation.

Table 5-31 presents the historical and forecast passenger airline operations, average seats per passenger airline departure, and average load factor for IAH and HOU. The average seats per passenger airline departure at IAH is forecast to increase from 124 in FY 2022 to 143 in FY 2032 as United and other legacy US airlines are expected to continue to replace 50 seat regional jets with larger regional jets with 70 or more seats. Legacy US airlines as well as ULCCs are also expected to take delivery of larger narrowbody aircraft such as the Airbus A321 and Boeing 737 MAX that will increase the average seats per departure of their mainline aircraft. The average load factor at IAH is forecast to increase from 81.5 percent in FY 2022 to 86.8 percent in FY 2032. The average seats per passenger airline departure at HOU is forecast to increase from 150 in FY 2022 to 157 in FY 2032, which is largely reflective of the expected changes in Southwest's fleet as it takes delivery of additional Boeing 737 MAX aircraft that have more seats per departure than the Boeing 737-700 aircraft they are replacing. The average load factor at HOU is forecast to increase from 79.4 percent in FY 2022 to 82.3 percent in FY 2032.

TABLE 5-31 PASSENGER AIRLINE OPERATIONS FORECAST

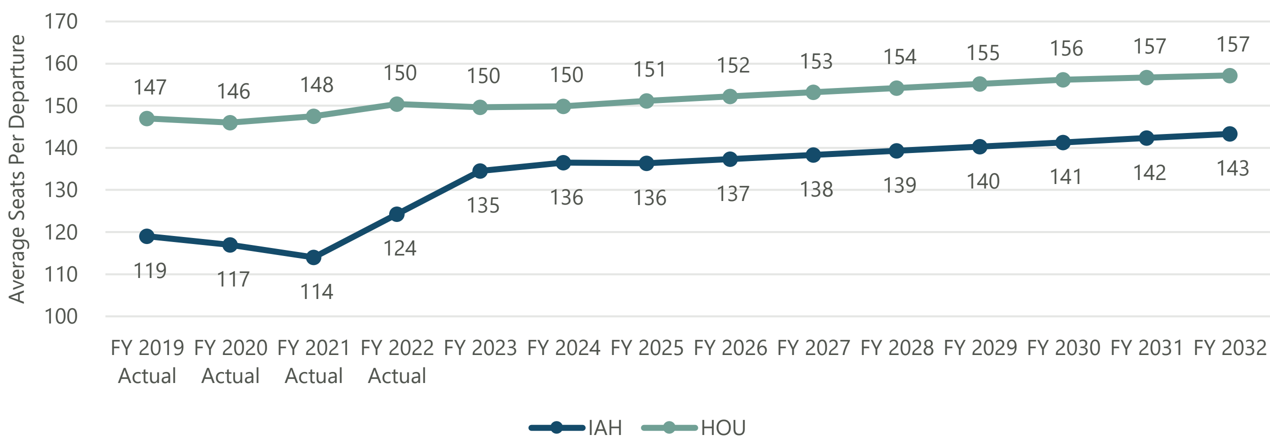
	IAH PASSENGER OPERATIONS				HOU PASSENGER OPERATIONS			
YEAR	OPERATIONS	OPERATIONS % OF 2019	AVERAGE SEATS PER DEPARTURE	AVERAGE LOAD FACTOR	OPERATIONS	OPERATIONS % OF 2019	AVERAGE SEATS PER DEPARTURE	AVERAGE LOAD FACTOR
FY 2019 Actual	442,340		119	85.1%	124,304		147	80.4%
FY 2020 Actual	355,572	80.4%	117	79.6%	104,048	83.7%	146	69.9%
FY 2021 Actual	265,860	60.1%	114	71.6%	89,430	63.3%	148	63.3%
FY 2022 Actual	391,006	88.4%	124	81.5%	108,134	79.4%	150	79.4%
FY 2023	380,220	86.0%	135	86.1%	113,356	81.3%	150	81.3%
FY 2024	398,024	90.0%	136	85.6%	118,849	81.1%	150	81.1%
FY 2025	405,163	91.6%	136	85.6%	123,019	81.1%	151	81.1%
FY 2026	410,406	92.8%	137	85.8%	124,380	81.3%	152	81.3%
FY 2027	415,639	94.0%	138	86.0%	125,742	81.5%	153	81.5%
FY 2028	420,861	95.1%	139	86.2%	127,104	81.7%	154	81.7%
FY 2029	426,098	96.3%	140	86.4%	128,473	81.9%	155	81.9%
FY 2030	431,346	97.5%	141	86.6%	129,848	82.1%	156	82.1%
FY 2031	437,073	98.8%	142	86.7%	131,798	82.2%	157	82.2%
FY 2032	442,803	100.1%	143	86.8%	133,760	82.3%	157	82.3%
CAGR								
FY 2019 – FY 2032	0.0%		1.4%		0.6%		0.5%	
FY 2022 – FY 2032	1.3%		1.4%		2.1%		0.4%	

SOURCES: Houston Airport System, April 2023 (actual passengers to derive calculation of actual load factor); US Department of Transportation, T-100 Database, April 2023 (actual operations and seats per departure); Ricondo & Associates, Inc., June 2023 (forecast operations, load factor, and seats per departure).

Exhibit 5-14 presents the historical and forecast average seats per passenger airline operation at IAH and HOU. **Exhibit 5-15** presents the historical and forecast average load factor at IAH and HOU.

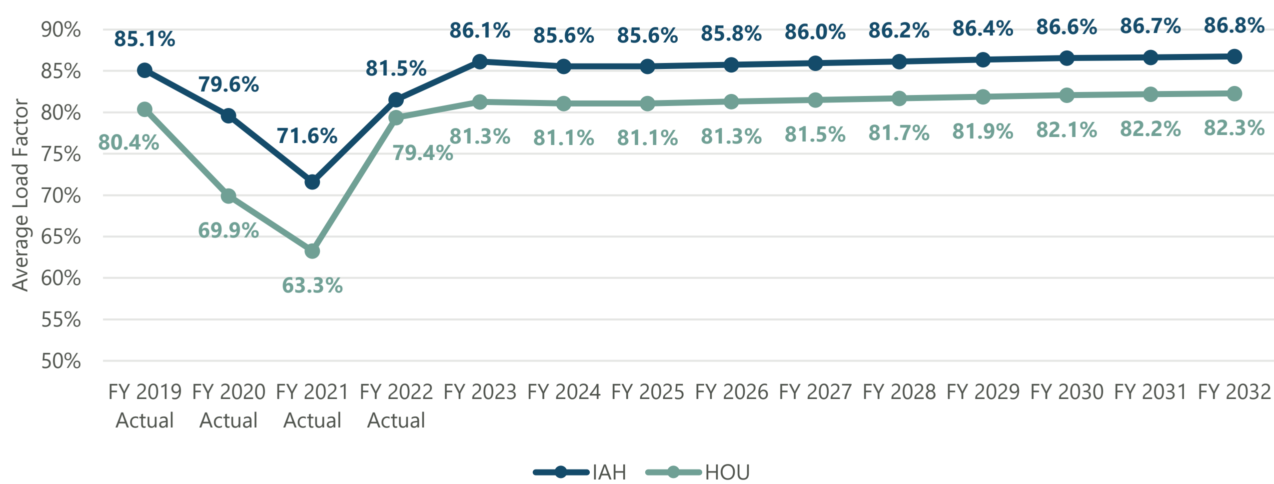
The forecast of non-passenger airline operations was based on growth rates established in the 2021 FAA Aerospace forecast for air taxi and general aviation operations applied to the baseline FY 2022 reported operations. Military operations were assumed to remain constant FY 2022 levels through FY 2030. **Table 5-32** presents the actual and forecast operations at IAH from FY 2019 through FY 2032. **Table 5-33** presents the actual and forecast operations at HOU from FY 2019 through FY 2032.

EXHIBIT 5-14 IAH AND HOU AVERAGE SEATS PER PASSENGER AIRLINE DEPARTURE



SOURCES: US Department of Transportation, T-100 Database, April 2023 (actual seats per departure); Ricondo & Associates, Inc., June 2023 (forecast seats per departure).

EXHIBIT 5-15 IAH AND HOU AVERAGE LOAD FACTOR



SOURCES: Houston Airport System, April 2023 (actual passengers to derive calculation of actual load factor); US Department of Transportation, T-100 Database, April 2023 (actual seats to derive calculation of load factor); Ricondo & Associates, Inc., June 2023 (forecast load factor).

TABLE 5-32 IAH TOTAL OPERATIONS FORECAST

YEAR	OPERATIONS				
	AIR CARRIER[1]	AIR TAXI / COMMUTER[2]	GENERAL AVIATION[3]	MILITARY	TOTAL
FY 2019 Actual	368,459	94,198	10,751	105	473,513
FY 2020 Actual	306,832	70,597	8,257	219	385,905
FY 2021 Actual	230,427	57,963	6,392	163	294,945
FY 2022 Actual	342,896	71,226	7,876	145	422,143
FY 2023	351,920	51,341	8,203	145	411,609
FY 2024	369,536	52,008	8,387	145	430,076
FY 2025	378,693	51,017	8,458	145	438,313
FY 2026	385,859	49,743	8,480	145	444,227
FY 2027	393,080	48,361	8,501	145	450,088
FY 2028	400,378	46,887	8,523	145	455,933
FY 2029	407,787	45,327	8,545	145	461,804
FY 2030	415,301	43,678	8,567	145	467,691
FY 2031	423,340	41,976	8,589	145	474,050
FY 2032	431,499	40,182	8,611	145	480,436
CAGR					
FY 2019 – FY 2032	1.2%	-6.3%	-1.7%	2.5%	0.1%
FY 2022 – FY 2032	2.3%	-5.6%	0.9%	0.0%	1.3%

NOTES:

1 Air carrier includes aircraft with seating capacity of more than 60 seats or a maximum payload capacity of more than 18,000 pounds carrying passengers or cargo for hire or compensation.

2 Air taxi and commuter includes aircraft with seating capacity of 60 seats or less or a maximum payload capacity of 18,000 pounds or less carrying passengers or cargo for hire or compensation.

3 General aviation includes all civil aviation that is not for hire or compensation and excludes military operations. Activity includes flying for personal or corporate reasons and pilot training.

SOURCES: Houston Airport System, April 2023 (actual); Ricondo & Associates, Inc., June 2023 (forecast).

TABLE 5-33 HOU TOTAL OPERATIONS FORECAST

YEAR	OPERATIONS				
	AIR CARRIER[1]	AIR TAXI / COMMUTER[2]	GENERAL AVIATION[3]	MILITARY	TOTAL
FY 2019 Actual	122,207	29,871	54,495	878	207,451
FY 2020 Actual	104,010	21,008	41,098	524	166,640
FY 2021 Actual	88,994	24,284	40,843	575	154,696
FY 2022 Actual	106,569	28,498	53,893	667	189,627
FY 2023	112,249	27,239	56,131	667	196,286
FY 2024	117,686	28,010	57,390	667	203,753
FY 2025	121,805	29,454	57,878	667	209,804
FY 2026	123,145	29,892	58,025	667	211,729
FY 2027	124,485	30,268	58,173	667	213,593
FY 2028	125,826	30,623	58,321	667	215,436
FY 2029	127,173	30,976	58,470	667	217,286
FY 2030	128,526	31,321	58,620	667	219,134
FY 2031	130,452	31,672	58,771	667	221,562
FY 2032	132,390	32,029	58,922	667	224,008
CAGR					
FY 2019 – FY 2032	0.6%	0.5%	0.6%	-2.1%	0.6%
FY 2022 – FY 2032	2.2%	1.2%	0.9%	0.0%	1.7%

NOTES:
1 Air carrier includes aircraft with seating capacity of more than 60 seats or a maximum payload capacity of more than 18,000 pounds carrying passengers or cargo for hire or compensation.
2 Air taxi and commuter includes aircraft with seating capacity of 60 seats or less or a maximum payload capacity of 18,000 pounds or less carrying passengers or cargo for hire or compensation.
3 General aviation includes all civil aviation that is not for hire or compensation and excludes military operations. Activity includes flying for personal or corporate reasons and pilot training.
SOURCES: Houston Airport System, April 2023 (actual); Ricondo & Associates, Inc., June 2023 (forecast).

The passenger landed weight forecast was based on forecast year-over-year percentage change in passenger airline departing seats applied to the baseline FY 2022 passenger airline landed weight at IAH and HOU, under the assumption that changes in average seats per departure generally reflect changes in average aircraft size. The all-cargo landed weight forecast was based on the year-over-year percentage change in cargo revenue ton miles as presented in the 2022 FAA aerospace forecast applied to the baseline FY 2022 all-cargo landed weight at IAH and HOU, under that assumption that cargo volumes at IAH and HOU grow in line with national averages and that average all-cargo aircraft size does not meaningfully change over the course of the projection period. **Table 5-34** presents the actual and forecast passenger airline and all-cargo landed weight at IAH and HOU from FY 2019 through FY 2032.

TABLE 5-34 IAH AND HOU LANDED WEIGHT FORECAST

	IAH LANDED WEIGHT			HOU LANDED WEIGHT		
YEAR	PASSENGER AIRLINES	ALL-CARGO	TOTAL	PASSENGER AIRLINES	ALL-CARGO	TOTAL
FY 2019 Actual	26,917,988	2,255,670	29,173,658	8,035,814	314	8,036,128
FY 2020 Actual	21,197,537	2,472,152	23,669,689	6,674,567	330	6,674,897
FY 2021 Actual	15,478,782	2,283,326	17,762,109	5,692,206	71	5,692,277
FY 2022 Actual	24,650,269	2,285,613	26,935,882	6,900,113	225	6,900,338
FY 2023	25,949,271	2,324,997	28,274,268	7,413,537	229	7,413,766
FY 2024	27,554,850	2,361,968	29,916,818	7,784,906	233	7,785,139
FY 2025	28,013,081	2,450,830	30,463,911	8,127,525	242	8,127,766
FY 2026	28,583,809	2,537,081	31,120,889	8,271,811	250	8,272,061
FY 2027	29,159,060	2,620,146	31,779,206	8,417,298	258	8,417,556
FY 2028	29,738,899	2,703,725	32,442,624	8,564,006	267	8,564,273
FY 2029	30,325,100	2,789,241	33,114,342	8,712,390	275	8,712,665
FY 2030	30,917,345	2,876,207	33,793,552	8,862,372	284	8,862,656
FY 2031	31,549,518	2,961,768	34,511,286	9,024,280	292	9,024,572
FY 2032	32,187,724	3,051,087	35,238,811	9,187,806	301	9,188,107
CAGR						
FY 2019 – FY 2032	1.4%	2.4%	1.5%	1.0%	-0.3%	1.0%
FY 2022 – FY 2032	2.7%	2.9%	2.7%	2.9%	2.9%	2.9%

SOURCES: Houston Airport System, April 2023 (actual); Ricondo & Associates, Inc., June 2023 (forecast).

6. FINANCIAL ANALYSIS

This chapter presents the financial structure of HAS and describes historical and projected financial information. The analysis supporting this chapter incorporates estimated impacts of the HAS CIP on projected O&M Expenses, airline and non-airline revenues, and debt service requirements, including the issuance of the 2023 Bonds and anticipated future bond issuances. The resulting airline cost per enplaned passenger and projected application of Revenues are discussed, and debt service coverage throughout the Projection Period is calculated pursuant to the Bond Ordinance. Certain assumptions are made regarding use agreements with airlines that are currently being negotiated and are not yet executed.

6.1 FINANCIAL FRAMEWORK

HAS, as a department of the City and an enterprise fund of the City, manages and operates the three Airports owned by the City. HAS maintains the financial records and accounts of the Airports in accordance with generally accepted accounting principles and as required by the provisions of the Bond Ordinance. Neither the City of Houston nor State of Texas tax revenues are pledged to the payment of debt service or to fund the cost of operations at the Airports. The City's FY ends June 30.

As defined in the Bond Ordinance, Net Revenues pledged to the payment of Airport Obligations include Net Revenues of the combined Airport System (IAH, HOU, and EFD). Therefore, the financial framework and debt service coverage calculations presented in this Chapter reflect Net Revenues and Airport Obligations associated with all three airports operated by HAS.

6.1.1 AIRLINE FEES AND CHARGES AT GEORGE BUSH INTERCONTINENTAL/HOUSTON AIRPORT

Various physical and functional areas of IAH are separated into Airport Cost Centers to allow for a portion of the costs of operating, maintaining, improving, and expanding Intercontinental to be allocated to the signatory airlines through the calculation of airline rates and charges.

The Cost Centers at IAH are summarized as follows:

- **Airfield**. The Airfield Cost Center includes runways, taxiways, taxilanes, and apron areas (other than apron areas available for lease and common use cargo aprons), navigational aids, hazard designations and warning devices, airfield security roads and fencing, blast fencing, lighting, clear zones and safety areas for landing, taking off and taxiing of aircraft, avigation easements, land utilized in connection therewith or acquired for such purpose, and facilities, the acquisition, construction, or installation cost of which is wholly or partially paid by the City.
- **Terminal Airline Areas**. Separate Terminal Airline Area Cost Centers are assigned for Terminals A, B, C, and E. Each Terminal Airline Area includes the space in the given terminal which is leased to or available for lease to airlines. Terminal A Airline Area Cost Center is further classified into baggage claim and loading bridge areas. Terminal-related Cost Centers assigned for Terminal D include Loading Bridge, Operations/Administration, Arrival, Departure, Ticketing, Bag Makeup, Non-FIS Bag Claim, VIP and Club, and Central Ticketing space.
- **Terminal Apron Areas**. Separate Terminal Apron Area Cost Centers are assigned for Terminals A, B, C, D, and E. The Terminal Apron Area for a given terminal includes the apron adjacent to the terminal as depicted in the airline use and lease agreements.
- **Central FIS**. The Central FIS means the IAH Federal Inspection Services facility located between Terminals D and E.

- **Automated People Mover**. This is defined as the APM system, including stations, walkways, guideways and maintenance and control facilities, which connects Terminal A, B, C, and D/E.
- **Non-Airline Cost Centers**. Non-airline cost centers include Public Areas of each Terminal, Other Buildings and Areas leased or available for lease to other Airport tenants and users at IAH, and areas or functions not attributable to an airline Cost Center.

Airline use and lease agreements have been authorized to formalize the main financial and operational arrangements between the City and the signatory airlines at Intercontinental. Rather than a single agreement applicable to IAH, distinct agreements have been developed for each terminal. For each agreement, charges are assessed using a residual airfield calculation and a compensatory cost recovery methodology for the remaining airline Cost Centers. However, costs at Terminal D are recovered primarily on a common use, or activity basis, while costs at the remaining terminals are primarily recovered on an exclusive or preferential use basis. In addition, the retention of concessions revenues and commitments regarding capital improvements vary between each use and lease agreement.

6.1.1.1 TERMINAL A

The airline use and lease agreement for Terminal A expired in 2005 but continues to be in effect through extensions on a month-to-month basis. Operational, maintenance, and capital improvement costs related to Terminal A airline cost centers are recovered from the signatory airlines through a compensatory rate calculation, as described in more detail in Section 6.6 of this Report. Holdrooms and aprons are leased on a preferential use basis. Space such as office or ticket counter areas are leased on an exclusive use basis, and areas used by multiple airlines, such as baggage claim, are leased on a common use basis. The agreement requires the City to provide the signatory airlines with detailed schedules for planned capital improvements at IAH.

For this analysis, it is assumed that a new airline agreement for the use of Terminal A will be executed prior to completion of DRP. Lease terms related to the amortization of AIF-funded and bond-funded project costs assigned to the Terminal A cost center after DBO of DRP are assumed to be commensurate with the amortization methodology described in the updated Terminal D agreement, which was under negotiation as of June 2023. Initial meetings have been held with the airlines regarding the updated Terminal A agreement, but negotiations are not yet underway as of June 2023.

6.1.1.2 TERMINALS B, C, AND E

In March of 1997, Continental Airlines (now United) entered into an agreement with the City for the use and lease of Terminals B and C at IAH. This lease was amended and restated as of December 1998.

In 2011, the lease was amended and restated for the second time. The second amended and restated lease was further amended as follows (1) Amendment No. 1 as of February 2013, (2) Amendment No. 2 as of April 2015, and (3) Amendment No. 3 as of August 2021. As amended, this lease is referred to herein as the Terminal B Special Facility Lease (SFL).

In 2015, in conjunction with Amendment No. 2 to the Terminal B SFL, the City and United entered into a new lease of Terminal C South. The use and lease of Terminal C South is now authorized by the Terminal C South Net Lease and Use Agreement, which was amended as of July 2021 (Terminal C Net Lease).

The original Terminal C North, located directly north of the Terminal C South concourse, was demolished to allow for future IAH development associated with the ITRP. United constructed a new north concourse that is located in

Terminal B but labeled as "Terminal C North," which United leases from the City pursuant to the terms of the Terminal B SFL.

Terminal B Improvement Projects and Special Facilities Lease Agreement

United leases all of Terminal B through the Terminal B SFL which expires in March of 2042, subject to certain extension rights. The agreement allows United to lease all of Terminal B under net lease arrangements whereby United provides a portion of inside concessions revenues to the City. The agreement also grants United Airlines the right to redevelop Terminal B in three phases.

Phases 1 and 2 of the redevelopment, the Terminal B South concourse redevelopment and the construction of the new Terminal C North concourse, were funded in part by special facility revenue bonds. In order to allow for the completion of Phase 2, the agreement was amended in 2015 to modify United's leasehold, allowing for the construction of the new Terminal C North concourse (west of the original Terminal C North concourse) and other ITRP projects described in the Memorandum of Agreement related to the ITRP (ITRP MOA).

Phase 3 of the Terminal B redevelopment has not yet occurred. Phase 3 would involve the construction of two new north concourses at Terminal B, replacing the only two remaining original flight stations discussed in Chapter 2 of this Report. United's right to proceed with the development of financing of Phase 3 in accordance with the Terminal B SFL expires in December of 2024.

Terminal C South Net Lease and Use Agreement

United Airlines leases all of Terminal C South pursuant to the Terminal C South Net Lease and Use Agreement. The Terminal C South area, defined to include Terminal C South Concourse as well as the central terminal building and a portion of the B-D connector, is leased exclusively to United, and United has preferential use rights for the Terminal C South apron and associated gates. The term of the Terminal C South Net Lease and Use Agreement extends through 2037.

United provides payments to the City to recover the operation, maintenance, and ongoing capital costs for Terminal C South, as described in more detail in Section 6.6. United also pays ground rentals for the footprint of the facility.

The agreement allows United to operate and manage inside concessions and the sale and display of advertising in Terminal C South. United is permitted to retain the majority of the inside concessions revenues from Terminal C South. United Airlines pays the City 10 percent of all net concessions revenues, up to a maximum of $500,000 per Fiscal Year, during the period beginning in FY 2015 and ending on December 31, 2025. After December 31, 2025, United Airlines will retain all inside concessions revenues from Terminal C South.

Applicable beginning in the FY following the DBO of the MLIT, Section 5.02 of the agreement requires the City to provide all signatory airlines with a share of non-airline revenues in any FY when HAS debt service coverage ratio exceeds 1.5.[117]

Terminal E Lease and Special Facilities Lease Agreement

The City and Continental Airlines (now United) entered into an agreement in 2001 which provided for the development, financing, construction, use, and lease of Terminal E. The construction of Terminal E was funded in

[117] As defined in the Terminal C South Net Lease and Use Agreement, MLIT includes Terminal C North, the West Pier of Terminal D, and central processing area.

part with the Series 2001 Special Facility Bonds (subsequently refinanced)[118], the debt service payments of which are provided to the City by United Airlines. United Airlines leases all of Terminal E, as well as its check-in facilities in the Central FIS building. The term of the Terminal E Lease and Special Facilities Lease Agreement extends to 2030, subject to certain extension rights.

United Airlines provides payments to the City to recover the operation, maintenance, and ongoing capital costs for Terminal E, as described in more detail in Section 6.6. United is also charged ground rentals for the footprint of the facility. In addition to the exclusive use of Terminal E gates, the Agreement provides United with the right to use up to six gates in Terminal D, subject to certain conditions. The Agreement also allows United to retain all inside concessions in the South Concourse of Terminal E and United's check-in facility.

ITRP Memorandum of Agreement

The original ITRP MOA was authorized in 2014, documenting the terms which were agreed upon between United and the City related to the development of IAH. In 2018, the authorization of the Amended and Restated Memorandum of Agreement for the Redevelopment of Terminals at George Bush Intercontinental/Houston Airport amended and fully restated the original Memorandum of Agreement. The ITRP MOA defines the agreed-upon scope for two capital improvement projects, the Terminal A Redevelopment Project and ITRP, and outlines each party's rights and responsibilities regarding the improvements.

The scope of ITRP is defined within the MOA to include the following components: (1) a North Concourse, including the construction of a West Pier, Central Pier, and East Pier (2) a Central Processor, (3) modifications to the FIS, and (4) various enabling projects. All project components will be undertaken at the City's cost and expense, with the exception of the various enabling components, which are to be performed by the City or United as the parties may mutually agree.

Phase 1 of the ITRP is defined as the completion of the West Pier, the Central Processor, and the FIS modifications. Additional details on the scope of these components and anticipated timeframe for completion are discussed in Chapter 3 of this Report. A final not-to-exceed budget for Phase 1 of ITRP is stated as $1.3 billion, in escalated dollars. The HAS CIP for FY 2024 through FY 2030 does not include any additional ITRP elements such as the North Concourse Central or East Piers, nor does the City anticipate such elements to occur within the Projection Period. Therefore, for the purposes of this Report, any use of the term ITRP reflects those elements defined as Phase 1 of ITRP in the ITRP MOA.

Section 5.1.2 of the ITRP MOA states, "In the event that the debt service coverage ratio…is greater than 1.5 at the end of any FY that occurs after the final date of beneficial occupancy of Phase 1 of ITRP, the non-airline revenue sharing formula for all signatory airlines (including United) shall be as provided in Section 5.02 of the Terminal C South Net Use and Lease Agreement between the City and United effective April 10, 2015."

The City is required to negotiate a rates and charges methodology to allow for separate charges for domestic and international operations. Airline CPE for domestic or pre-cleared operations in the North Concourse must equal the then-current airline CPE in Terminal A (excluding the landing fee and APM components). The ITRP MOA also limits

[118] At the request of United, the City issued (1) its Airport System Special Facilities Revenue Refunding Bonds, Series 2014 (the Series 2014 Bonds) to refund the Series 2001 Bonds and (2) its Airport System Special Facilities Revenue Refunding Bonds, Series 2020A to refund a portion of the Series 2014 Bonds.

the CPE for the first five fiscal years following the DBO for ITRP such that the International CPE[119] is no more than 150 percent of the same International CPE in FY 2018, adjusted annually for inflation as measured by the Houston Consumer Price Index (CPI).

Section 5.2.4.3 of the ITRP MOA outlines the agreed-upon priorities for the application of PFCs to the development of the ITRP. PFCs must be prioritized within the airline cost centers in the following order: (1) the apron, (2) the loading bridges, (3) the departure area, (4) the arrival area, and (5) all other airline cost centers.

The City also agrees to negotiate new airline use and lease agreements or amendments to incorporate the applicable terms of the ITRP MOA, including;

- a new agreement for the North Concourse to replace the existing Terminal D lease,
- a new Terminal A lease to provide United preferential rights for four Terminal A gates,
- a sublease agreement to allow the City to sublease the Terminal E Ticketing Hall from United,
- a supplement, amendment, or restatement of the Terminal E Special Facilities Lease, and
- an updated United Airlines Technical Operations Center Special Facilities Lease Agreement.

Amendment No. 1 to Terminal E Lease and Special Facilities Lease Agreement was executed in 2021, meeting the requirement to restate the Terminal E Special Facilities Lease. The sublease of the Terminal E Ticketing Hall was also executed in 2021. The ITRP MOA remains in effect until all the required agreements have been issued.

Amendment No. 1 to Terminal E Lease and Special Facilities Lease Agreement

Authorized in 2021, Amendment No. 1 to Terminal E Lease and Special Facilities Agreement amended and supplemented the original Agreement to facilitate the construction of the Terminal E baggage handling system project and the development of the ICP.

United requested that the City issue the Airport System Special Facilities Revenue Bonds, Series 2021A to provide funds for the development of an integrated Terminal E baggage handling system to support United's operations. The Amendment No. 1 also facilitates the construction of the ICP at the City's cost and expense, in accordance with the terms of the 2018 amendment to the ITRP MOA. In conjunction with the bonds and amendment to the Terminal E Lease, United and the City also entered into a sublease of the existing Terminal E ticketing hall to enable the construction of the ICP. After construction, United will lease a portion of the new ticketing hall. The City will construct a baggage tunnel and above-ground baggage corridor to support United's Terminal E baggage handling system.

6.1.1.3 TERMINAL D

Airline agreements for the use of Terminal D and the Central FIS Building expired in June 2020. Beginning in July of 2020, the terms of the prior agreement were extended on a month-to-month basis. The various sub-cost centers included in the financial structure for the Terminal D use and lease agreement allow for the majority of airline fees at Terminal D to be calculated on a common use basis, whereby an airline's share of costs is determined based on

[119] International CPE is defined in the MOA as "the total terminal fees (arrival fee, departure fee and ticketing fee, as currently calculated in Terminal D rates and charges) payable by airlines operating internationally in the North Concourse (excluding amounts payable for exclusive use space, such as offices, airline lounges or VIP clubs) divided by total enplaned international passengers at the North Concourse."

certain activities. As of the date of this Report, negotiations are nearing completion for a new airline agreement for the use of these facilities.

HAS intends to continue to charge for the use of Terminal D and FIS facilities primarily on a common use basis. Pursuant to the ITRP MOA, an international CPE cap will be imposed to ensure that the international CPE is no more than 150 percent of the same International CPE in FY 2018, adjusted annually for inflation as measured by the Houston CPI, and revenue sharing will be incorporated into the new agreement. Additional terms related to the calculation of airline rates and charges, such as the O&M Expense and amortization costs allocable to the rate base beginning in the FY of ITRP DBO, are anticipated to be included in the new agreement and are therefore incorporated into the calculations associated with this Report.

6.1.2 AIRLINE FEES AND CHARGES AT WILLIAM P. HOBBY AIRPORT

Similar to IAH, various physical and functional areas of Hobby are separated into Airport Cost Centers to allow for a portion of the costs of operating, maintaining, improving, and expanding HOU to be allocated to the signatory airlines through the calculation of airline rates and charges.

Airport Cost Centers, or direct cost areas, at Hobby are summarized below.

- **Airfield**. This includes the Airfield of Hobby. The definition of the Airfield at Hobby is unchanged from the definition of the Airfield at IAH.
- **Central Concourse Apron**. This includes the portion of the Apron Area adjacent to the Central Concourse.
- **Central Terminal/Central Concourse**. This Cost Center includes the areas of the Terminal Complex identified as the Central Concourse, as further defined in the space exhibits of the lease agreement.
- **International Facility**. The International Facility at HOU is comprised of three sub-cost centers: the West Concourse, the West Concourse Apron, and the FIS area. The FIS area is defined as the portion of the Terminal Complex, together with the sterile corridors; together with all necessary space and equipment required by the Department of Homeland Security, Customs and Border Protection and related regulating agencies.
- **Parking & Ground Transportation**. This includes the public automobile parking structure and surface parking lots accommodating public automobile parking and ground transportation vehicle staging.
- **Other Buildings and Areas**. The Other Buildings and Areas Cost Center includes the other buildings and ground areas of HOU leased or available for lease to other Airport tenants and users.
- **Terminal Roadways**. This includes the loop terminal roadway system within the Airport bounds, serving the Terminal Complex and Parking and Ground Transportation Area.

The Hobby Airport Use and Lease Agreement, initially established in 2013, provides for the operational and financial arrangement between the City and airlines operating at HOU. Airlines operating from Hobby are provided the opportunity to enter into either Short-Term or Long-Term Airport Use and Lease Agreements, with terms extending to five years after authorization or to 2040 for the Short-Term and Long-Term leases, respectively. The Short-Term agreements may be renewed for five-year periods until 2040.

The airline use and lease agreement specifies that only Long-Term Signatory Airlines may lease gates in the West Terminal / West Concourse. Long-Term Signatory Airlines are also provided the opportunity to receive an Inside Concession Revenue Credit which is calculated based on a proportion of total Inside Concession Revenue as measured by enplaned passengers above a set baseline, up to a total Inside Concession Revenue Credit of $3.9 million annually, to be allocated among the Long-Term Signatory Airlines.

Similar to IAH, the cost recovery methodology for HOU is compensatory for all airline cost centers with the exception of the residual airfield. However, the terminal area costs at IAH are related only to airline areas and are recovered at a rate which is calculated based on the square footage of airline leasable space, whereas terminal costs at HOU are related to the entire terminal usable space and are recovered at a rate which is based on the total usable square footage of the terminal.

Apron and gate areas are leased on a preferential use basis, while space such as airline offices are leased on an exclusive use basis. Areas used in common with multiple airlines, such as baggage claim, are leased on a joint use basis. Non-signatory airlines are charged a 25 percent premium on all rates, fees, and charges. The Hobby airline use and lease agreement also includes a provision for extraordinary coverage protection which requires the signatory airlines to provide additional revenues if debt service coverage falls below 1.25.

As described in Chapter 3, an expansion to the Hobby west concourse is planned for construction by Southwest Airlines and HAS. The negotiation of an amendment to the Hobby agreement is nearing completion as of the date of this Report. HAS anticipates that certain terms related to the calculation of airline rates and charges, such as the O&M Expense and amortization costs allocable to the rate base beginning in the FY of the west concourse expansion DBO, are anticipated to be included in the new agreement and are therefore incorporated into the calculations associated with this Report. It is also anticipated that the agreement will include a clause in which revenue sharing is undertaken if the HAS debt service coverage ratio exceeds 1.5.

Additional details on the airline rates and charges at HOU can be found in Section 6.6 of this Report.

6.2 OPERATION AND MAINTENANCE EXPENSES

O&M Expenses include expenses associated with operating, maintaining, and repairing the Airport System, including the airfield, terminal, and landside facilities. Historical, budgeted, and projected O&M Expenses are described in the following sections of this Report.

6.2.1 HISTORICAL OPERATION AND MAINTENANCE EXPENSES

Historical O&M Expenses and the resulting O&M Expenses per enplaned passenger values are presented in **Table 6-1**. Total O&M Expenses include expenses for the Airport System as a whole, including costs associated with IAH, HOU, and EFD.

TABLE 6-1 HISTORICAL OPERATION AND MAINTENANCE EXPENSES, FY 2018 THROUGH FY 2022

(Fiscal Years Ending June 30)

	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	COMPOUND ANNUAL GROWTH RATE
Total O&M Expenses (thousands)	$326,889	$315,153	$314,034	$251,830	$255,377	-6.0%
O&M Expenses Growth Rate	28.4%	-3.6%	-0.4%	-19.8%	1.4%	
Enplaned Passengers (thousands)	27,713	29,808	21,828	14,969	26,080	-1.5%
Enplaned Passengers Growth Rate	1.2%	7.6%	-26.8%	-31.4%	74.2%	
Total O&M Expenses per Enplaned Passenger	$11.80	$10.57	$14.39	$16.82	$9.79	-4.6%

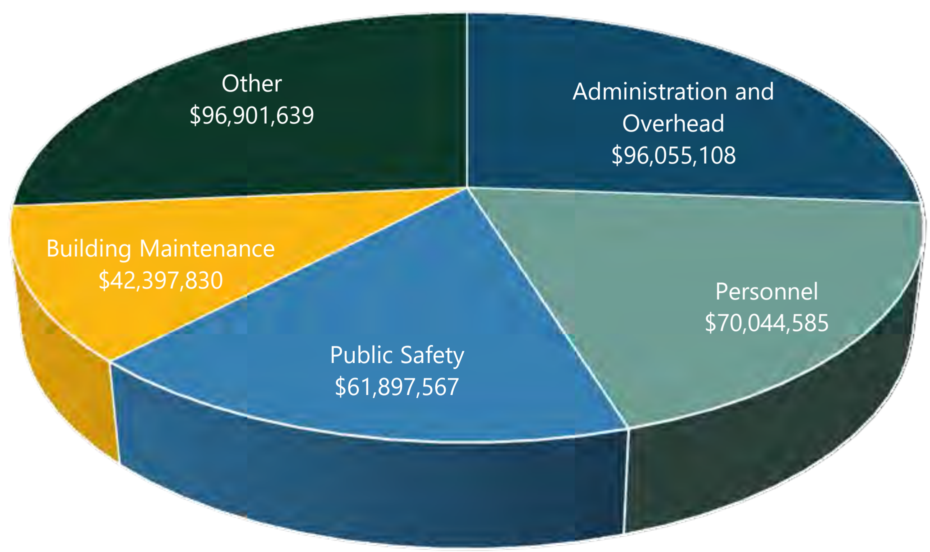
NOTES:
FY – Fiscal Year
O&M – Operation and Maintenance
Total O&M Expenses shown reflect O&M Expenses net of the application of COVID relief funds and other allowable exclusions as defined in the Master Bond Ordinance.
SOURCE: Houston Airport System, *Annual Comprehensive Financial Report for the Fiscal Years Ended June 30, 2022, and June 30, 2021.*

6.2.2 BUDGETED OPERATION AND MAINTENANCE EXPENSES AND GROWTH ASSUMPTIONS

Appendix A of this report includes the financial analysis performed by Ricondo including projected financial information through 2032. As shown in **Table A-1** of Appendix A of this Report, FY 2023 budgeted total O&M Expenses are approximately $366.6 million and are projected to increase to approximately $482.8 million in FY 2032, reflecting a CAGR of 3.1 percent.

Exhibit 6-1 presents the FY 2023 budgeted O&M Expenses by cost category.

EXHIBIT 6-1 FISCAL YEAR 2023 OPERATION AND MAINTENANCE EXPENSES BY COST CATEGORY



NOTE:
Other O&M Expenses include Parking, Utilities, Supplies, Capital Outlays, Noncapital Equipment, Collateralized Pension Note, Pension Obligation Bond Interest, and Other Services.
SOURCE: Houston Airport System, June 2023.

The final approved FY 2023 budget for HAS serves as the base year from which O&M Expenses are projected. O&M Expenses are projected to increase based on the type of expenditure, expectations of future inflation rates, and operational impacts of planned capital programs.

6.2.3 OPERATION AND MAINTENANCE EXPENSES RELATED TO THE AIRPORT SYSTEM CAPITAL PROGRAM

Upon completion of planned terminal expansion projects at IAH and HOU, certain categories of O&M Expenses are anticipated to increase as a direct result of the added space. Three projects in the HAS CIP are anticipated to expand IAH or HOU terminal area footprints during the timeframe of the Projection Period: IAH ITRP, the HOU West Concourse Expansion, and the IAH DRP.

Based on current estimates, total space is projected to increase by the amounts shown in **Table 6-2** below. To account for each of these expansions, an increase in certain categories of O&M Expenses is assumed to occur in the given year of project completion, and those increases are assumed to be equivalent to the percentage increase in space. The categories of O&M Expenses which are increased for this purpose include supplies, electricity, gas, water, sewer, building maintenance services, and other Maintenance and Operational (M&O) services.

TABLE 6-2 ESTIMATED SPACE INCREASES ASSOCIATED WITH THE HAS CAPITAL IMPROVEMENT PROGRAM

(Fiscal Years Ending June 30)

CAPITAL IMPROVEMENT	PROJECT DBO	AREA OF IMPACT	SPACE INCREASE
ITRP (IAH West Pier)	FY 2024	IAH Terminal D	35%
ITRP (IAH ITRP Terminal D Modernization)	FY 2025	IAH Terminal D	13%
ITRP (IAH ITRP ICP and FIS Modifications)	FY 2027	IAH Central FIS	30%
HOU West Concourse Expansion	FY 2030	HOU West Concourse and FIS	32%
IAH Domestic Redevelopment Program	FY 2031	IAH Terminal A	40%

NOTES:
DBO – Date of Beneficial Occupancy
FY – Fiscal Year
IAH – George Bush Intercontinental/Houston Airport
ITRP – IAH Terminal Redevelopment Program
SOURCE: Houston Airport System, June 2023.

6.2.4 OPERATION AND MAINTENANCE EXPENSE PROJECTIONS

O&M Expenses are classified into the categories described in the following subsections. Additional information regarding O&M Expenses projected for FY 2023 through FY 2032 is presented in **Appendix A**.

6.2.4.1 ADMINISTRATION AND OVERHEAD

Administration and overhead expenses include allocated City overhead expenses relating to the administration, operation, and maintenance of the Airport System. Section 6.03 of the Bond Ordinance states that City overhead expenses may be charged to the Airport System provided that the amounts are reasonably allocable to the Airport System based upon a stated policy of allocation, reasonably applied to the Airport System and all other departments of the City. Expenses for administration overhead, which account for 26.1 percent (approximately $96.1 million) of total O&M Expenses budgeted in FY 2023, are projected to increase at a CAGR of 2.0 percent through FY 2032. This is attributable primarily to inflation, although the distribution may shift based on an airport's proportion of operating costs.

6.2.4.2 PERSONNEL

Personnel expenses include HAS staff compensation and benefits. Expenses for salaries, wages, and employee benefits, which account for 19.1 percent (approximately $70.0 million) of total O&M Expenses budgeted in FY 2023, are projected to increase at a CAGR of 3.4 percent through FY 2032. The assumed increase in personnel costs is primarily attributable to annual salary increases and additional staff requirements. Expenses associated with employee pensions is included in the Other Expenses cost category.

6.2.4.3 PUBLIC SAFETY

Public safety expenses include interfund police services, interfund fire protection services, and security services. HAS police and fire services are performed by other City funds on behalf of the Airport System Fund. Therefore, HAS police and fire services costs reflect the amounts charged to HAS by the City for these services. Section 6.03 of the Bond Ordinance states that the City may charge the Airport System for services rendered by the City, provided that such services are reasonably necessary and required for the Airport System and are not otherwise provided to the Airport System.

Public safety expenses account for 16.8 percent (approximately $61.9 million) of total FY 2023 budgeted O&M Expenses and are projected to increase at a CAGR of 3.2 percent through the Projection Period. This is attributable primarily to inflation and additional public safety services requirements related to the Intercontinental terminal expansion.

6.2.4.4 BUILDING MAINTENANCE

Building maintenance O&M Expenses represent costs associated with contracted services to perform ongoing maintenance of HAS facilities. Building maintenance O&M Expenses account for 11.5 percent (approximately $42.4 million) of total FY 2023 budgeted O&M Expenses and are projected to increase at a CAGR of 4.9 percent through the Projection Period. In addition to inflation, the projected growth in O&M Expenses for this category account for the expanded terminal footprints.

6.2.4.5 OTHER EXPENSES

Other HAS O&M Expenses consist of the following categories:

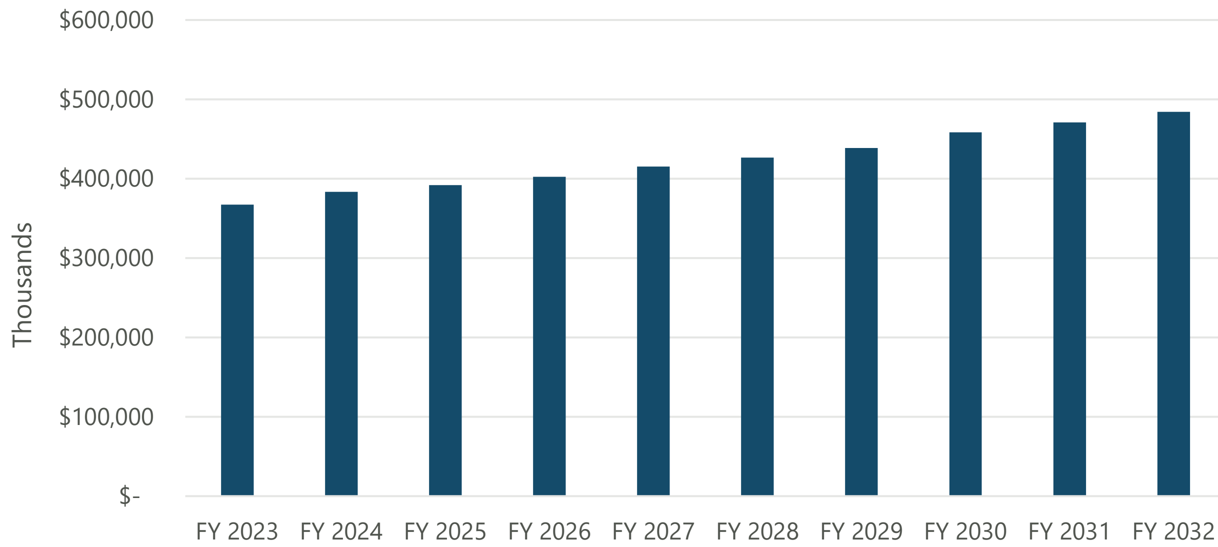
- Parking – Parking facilities, expected to grow due to inflation and terminal expansion projects
- Utilities – Electricity, gas, water, sewer, telephone, and refuse disposal, expected to grow due to inflation and increases to terminal footprints
- Supplies – Miscellaneous supplies expected to grow due to inflation and terminal expansion
- Capital Outlays – Capital Equipment controlled by HAS, expected to grow due to inflation
- Noncapital Equipment – Noncapital equipment controlled by HAS, expected to grow due to inflation
- Other services – Other O&M expenses, expected to grow due to inflation and terminal expansion
- Pension Obligation Bond Interest

In total, these O&M Expenses at HAS account for 26.4 percent (approximately $97.0 million) of the FY 2023 budgeted O&M Expenses and are projected to increase at a CAGR of 3.1 percent through the Projection Period. Although not included in O&M Expenses, a portion of costs related to collateralized pension notes through FY 2024 are included within the amounts assigned to the Airport Cost Centers, in part recoverable through airline rates and charges.

Exhibit 6-2 presents the projected O&M Expenses.

As shown on Exhibit 6-2, total O&M Expenses are projected to increase from $367.4 million in FY 2023 to $484.3 million in FY 2032, reflecting a CAGR of 3.1 percent.

EXHIBIT 6-2 PROJECTED OPERATING AND MAINTENANCE EXPENSES



SOURCE: Houston Airport System, June 2023.

See Table A-1 in Appendix A of this Report for additional information regarding projected O&M Expenses.

6.3 NON-AIRLINE REVENUES

Non-airline revenues include all Gross Revenues[120] generated for the Airport System except for airline rates, fees, and charges.

6.3.1 HISTORICAL NON-AIRLINE REVENUES

Table 6-3 presents historical non-airline revenues, enplaned passengers, and calculated non-airline revenues per enplaned passenger values from FY 2018 through FY 2022. The revenues shown include non-airline operating revenues for the Airport System as a whole, including revenues derived from the operation of IAH, HOU, and EFD. Non-airline revenues totaled approximately $219 million in FY 2018 and increased to approximately $222 million in FY 2022, after decreasing in FY 2020 due to the effects of the COVID-19 pandemic on enplaned passenger activity.

Total non-airline revenues per enplaned passenger have increased at a CAGR of 1.8 percent from $7.91 per enplaned passenger in FY 2018 to $8.51 per enplaned passenger in FY 2022.

[120] Gross Revenues means all income and revenues derived directly or indirectly by the City from the operation and use of and otherwise pertaining to the Airport System, subject to the terms of the definition included in the Bond Ordinance.

TABLE 6-3 HISTORICAL NON-AIRLINE REVENUES, FY 2018 THROUGH FY 2022

(Fiscal Years Ending June 30)

	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	COMPOUND ANNUAL GROWTH RATE
Total Non-Airline Revenues (thousands)	$219,191	$227,607	$181,994	$120,930	$221,899	0.3%
Non-Airline Revenues Growth Rate	3.5%	3.8%	-20.0%	-33.6%	83.5%	
Enplaned Passengers (thousands)	27,713	29,808	21,828	14,969	26,080	-1.5%
Enplaned Passengers Growth Rate	1.2%	7.6%	-26.8%	-31.4%	74.2%	
Total Non-Airline Revenues per Enplaned Passenger	$7.91	$7.64	$8.34	$8.08	$8.51	1.8%

NOTES:

Excludes non-operating revenue.

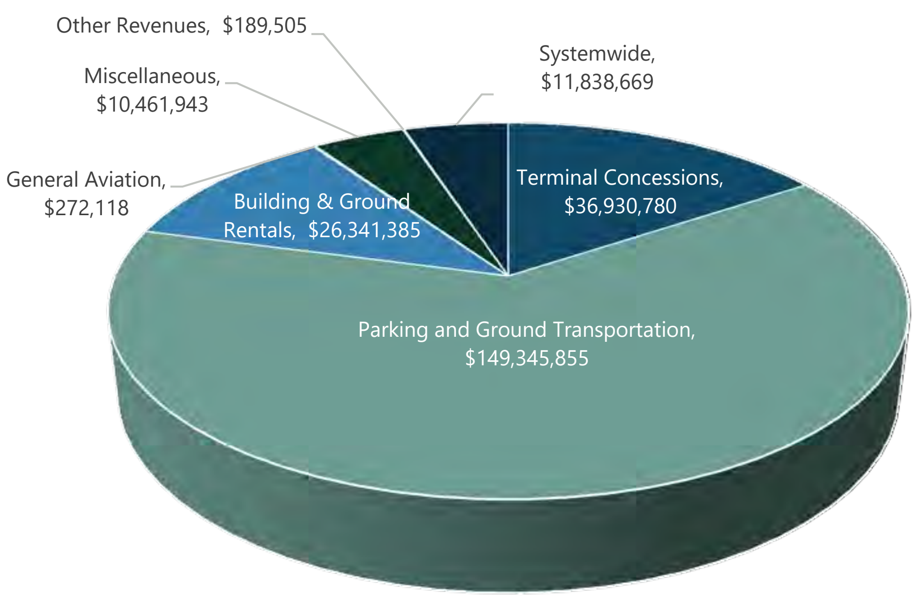
FY – Fiscal Year

SOURCE: Houston Airport System, June 2023.

6.3.2 BUDGETED NON-AIRLINE REVENUES AND GROWTH ASSUMPTIONS

Exhibit 6-3 presents the breakdown of budgeted FY 2023 non-airline revenues. Total non-airline revenues in FY 2023 are budgeted to equal approximately $240.1 million.

EXHIBIT 6-3 FISCAL YEAR 2023 BUDGETED NON-AIRLINE REVENUES BY CATEGORY



NOTE:

Systemwide revenues include construction permits, ground transportation concessions, investment revenues, and systemwide miscellaneous revenue. Miscellaneous revenues include cell tower revenue, disposal fees, badging fees, miscellaneous operating revenue, and operating recoveries and refunds at IAH and HOU. Other revenues include various revenues collected at Ellington, including auto rental concessions, special event concessions, and recoveries and refunds.

SOURCE: Houston Airport System, June 2023.

As of April 2023, estimated non-airline revenues for FY 2023 total approximately $253.8 million, or approximately $14 million above budgeted non-airline revenues. Primary contributors to the non-airline revenue growth above budget for FY 2023 include IAH garage parking revenues (approximately $14 million), IAH rental car concession revenues (approximately $4 million), and HOU retail concession revenues (approximately $4 million). Estimated FY 2023 non-airline revenues serve as the base from which non-airline revenues are projected. Non-airline revenues are projected to increase based on factors such as inflation, passenger activity growth, operational impacts, or a combination thereof, depending upon the category of revenues.

6.3.3 NON-AIRLINE REVENUE IMPACTS FROM CAPITAL PROJECTS

Non-airline revenues are projected to increase annually based on certain factors as described in Section 6.3.4. In addition to annual increases associated with factors such as inflationary or airline activity growth, non-airline revenues may be impacted by one-time increases to concession spending per passenger upon the expansion of IAH and HOU facilities. However, these additional incremental non-airline revenue increases are not assumed for purposes of this analysis. It is anticipated that any such increases to non-airline revenues resulting from additional concessions space would increase HAS Gross Revenues above the figures shown in Appendix A.

6.3.4 NON-AIRLINE REVENUE PROJECTIONS

Non-airline revenues are classified into the categories described in the following subsections. Additional information regarding non-airline revenues projected for FY 2023 through FY 2032 is presented in **Appendix A**.

6.3.4.1 PARKING AND GROUND TRANSPORTATION

Parking and ground transportation revenues include revenues from automobile parking, car rental, and other ground transportation at IAH and HOU.

On-Airport Automobile Parking Revenues

Budgeted parking revenues for FY 2023 are $99.6 million. Two garages with direct connection to terminals exist at IAH, one serving Terminal As and B, and one serving Terminals C, D, and E. Daily parking rates range from $24 and $30 depending on garage and valet/self-parking option. HOU provides two parking garages connected to the terminal, with daily rate of $24 for self-parking and $28 for valet parking.

On-airport economy parking with free shuttle service to terminals is also available at both IAH and HOU. There are two economy parking lots at IAH, with daily rates that range from $6.67 to $8.31 plus tax. The daily rate at the only economy parking lot at HOU is $9.24 plus tax.

Off-airport parking competitors serving IAH and HOU, such as Park ‘N Fly near IAH and PreFlight Airport Parking near HOU, provide parking facilities and shuttle services to and from the airport. Their rates are typically competitive with economy parking offerings on-airport.

Future parking revenues are a function of on-airport parking demand and the availability of parking space demanded. In addition, several factors influence on-airport parking demand and subsequent revenue: the variety of parking products offered (e.g., valet parking, terminal garages, and economy spaces); off-airport parking competition; availability of alternative transportation, such as public transportation and taxis, as well as the impact of transportation network companies (TNCs), such as Uber and Lyft; and the cost and convenience associated with each of these facilities and alternatives. For purposes of the financial analysis included in this report, a shift in demand or modes used to access the airport is not assumed.

Alternative transportation options include public transportation via Houston's METRO buses, which provide direct access to both IAH and HOU, as well as taxi services and TNCs. From FY 2015 to FY 2020 (prior to the impact of COVID-19), HAS annual taxi transactions were decreasing each year as TNC transactions increased.[121] However, this trend was beginning to stabilize prior to the impact of COVID-19. Further shifts in IAH and HOU access during the Projection Period may occur; however, due to the uncertainty of future changes to ground transportation transactions and associated transportation fee structures, revenue projections developed for the financial analysis included in this Report assume no additional impact on parking and car rental demand from TNCs during the Projection Period.

It is assumed that on-airport parking demand will increase at a rate consistent with the increase in originating enplaned passengers described in Chapter 5. However, parking revenues in FY 2024 and FY 2025 are anticipated to be affected by a decrease in parking spaces available during the construction of certain projects, which is taken into account in this analysis. As a result, automobile parking revenues, which account for 41.5 percent of total non-airline revenues budgeted in FY 2023, are projected to increase at a CAGR of 5.6 percent through FY 2032.

For the purpose of this analysis, parking revenues are calculated without taking into account any assumed parking rate increases throughout the Projection Period. However, any planned increases to parking rates would be expected to result in higher parking revenues than the figure shown in Appendix A.

Car Rental

HAS currently holds concession agreements with each of the four rental car operators (representing 10 rental car brands) at the Intercontinental consolidated rental car center. The rental car agreements expire June 2027. It is assumed that the agreements will be renewed with substantially similar terms.

The concession agreements with rental car operators at Hobby operate on a month-to-month basis as of January 1, 2021.

Car rental revenues are budgeted to be approximately $34.9 million in FY 2023 and are projected to increase at a CAGR of 3.2 percent during the Projection Period, which reflects HAS estimates for FY 2024 rental car revenues and incorporates the rate of growth assumed for O&D enplaned passengers for the period from FY 2025 through FY 2032.

Other Ground Transportation

Fees are imposed by the HAS on other ground transportation modes, including off-airport parking, TNCs, taxis, limos, courtesy vehicles, and shuttles.

There are numerous off-airport parking service providers near IAH and HOU. Passengers can park at those facilities and take the complimentary shuttles to the airport terminals. The off-airport parking service providers are required to pay HAS license fees and share part of revenue. During FY 2021, $1.6 million of revenue was collected from off-airport parking.

TNCs, including Uber, Lyft, Wingz and Alto, provide on demand point-to-point service for passengers. TNC trip fees are charged by the HAS for every pick-up and drop-off at IAH or HOU. Like TNC rides, for each taxi ride from IAH or HOU, a departure fee is collected by the HAS. During FY 2021, $4.0 million of revenue was collected from TNCs, and $0.2 million of revenue was collected from taxis.

[121] Transportation Network Company Operating Agreements, Economic Development Committee, Houston Airport System, July 15, 2020.

Limos, courtesy vehicles, and shuttle operators need to pay HAS permit fees to operate at IAH and HOU, Besides, they are also required to pay HAS trip fees based on number of trips made. During FY 2021, 0.2 million of revenue was collected from the limos, courtesy vehicles, and shuttle operators. In addition, the HCTRA pays the HAS a part of toll revenues of Hardy Toll Road Airport Connector]. During FY 2021, the HAS received $0.8 million of revenue from the HCTRA.

Other ground transportation revenues were budgeted for FY 2023 to total approximately $14.9 million and are projected to increase at a CAGR of 8.7 percent throughout the Projection Period, based on inflation and enplaned passenger growth.

6.3.4.2 BUILDING AND GROUND RENTALS

Building and ground rental revenues include rental fees for building space, facilities, cargo buildings, hangars, and other grounds leased by the City, as well as revenues from non-airline terminal space. Ground rentals are charged by the City based on long-term leases of land at Intercontinental, Hobby, and Ellington Airports. The rental rates charged are primarily market-based and are escalated periodically. Land is leased to various corporations and entities for hangars, maintenance facilities, cargo buildings, car rental service and storage, and other buildings and permanent improvements.

Building and ground rental revenues are budgeted to be approximately $26.3 million in FY 2023 and are projected to increase at the rate of inflation during the Projection Period.

6.3.4.3 TERMINAL CONCESSIONS

Terminal concessions revenues include revenues from food and beverage concessions, news and gifts counters, duty-free concessions, advertising concessions, and all other miscellaneous concessions in the terminals at IAH and HOU.

Agreements are currently held between HAS and the following terminal concession providers: JC Decaux (IAH and HOU), International Shoppes Shekinah Group (IAH), Paradies-HOU and Paradies-IAH, WDFG (IAH and HOU), Host International (IAH), SSP America Texas (IAH), Latrelle's Galley (IAH), and 4 Families of Houston (HOU).

Terminal concessions revenues do not include those concessions revenues retained by United Airlines through its net lease agreements with HAS for IAH Terminals B, C, and E. Terminal concessions revenues shown in Table A-2 are net of the Inside Concession Revenue Credit calculated for Long-Term Signatory Airlines at Hobby.

Terminal Concessions Revenues are budgeted to be approximately $39.8 million in FY 2023 and are projected to increase at a CAGR of 7.7 percent during the Projection Period. Projections of concessions revenues were developed by category for each HAS terminal by multiplying the known percentage rent by estimated gross sales, which was in turn projected using a forecast of enplaned passengers by terminal and a gross sales per enplaned passenger value. Estimated gross sales per enplaned passenger is anticipated to increase based on inflation as well as the impact of added concessions space from capital improvement projects.

6.3.4.4 SYSTEMWIDE NON-AIRLINE REVENUES

Primarily consisting of interest income on pooled investments, systemwide non-airline revenues also include revenues derived from construction permits, other service charges, and a portion of ground transportation concessions. Each airport is allocated a share of systemwide non-airline revenues based on their share of total O&M Expenses.

In accordance with the Bond Ordinance's definition of Gross Revenues, the interest income on pooled investments included within the calculation of systemwide non-airline revenues excludes interest revenue earned in restricted bond funds and PFC Revenues.

Systemwide Non-Airline Revenues are budgeted to be $11.8 million in FY 2023, with allocations of $8.7 million for Intercontinental, $2.8 million for Hobby, and $240.0 thousand for Ellington. These amounts represent 73.9 percent, 24.1 percent, and 2.0 percent shares, respectively. Systemwide non-airline revenues are projected to increase based on the assumed rate of inflation throughout the Projection Period.

6.3.4.5 MISCELLANEOUS NON-AIRLINE REVENUES

Miscellaneous non-airline revenues include cell tower revenue, disposal fees, badging fees, miscellaneous operating revenue, and operating recoveries and refunds. Miscellaneous non-airline revenues are budgeted to be $10.5 million in FY 2023 and are assumed to increase at a CAGR of 1.1 percent during the Projection Period.

6.3.4.6 GENERAL AVIATION AND OTHER NON-AIRLINE REVENUES

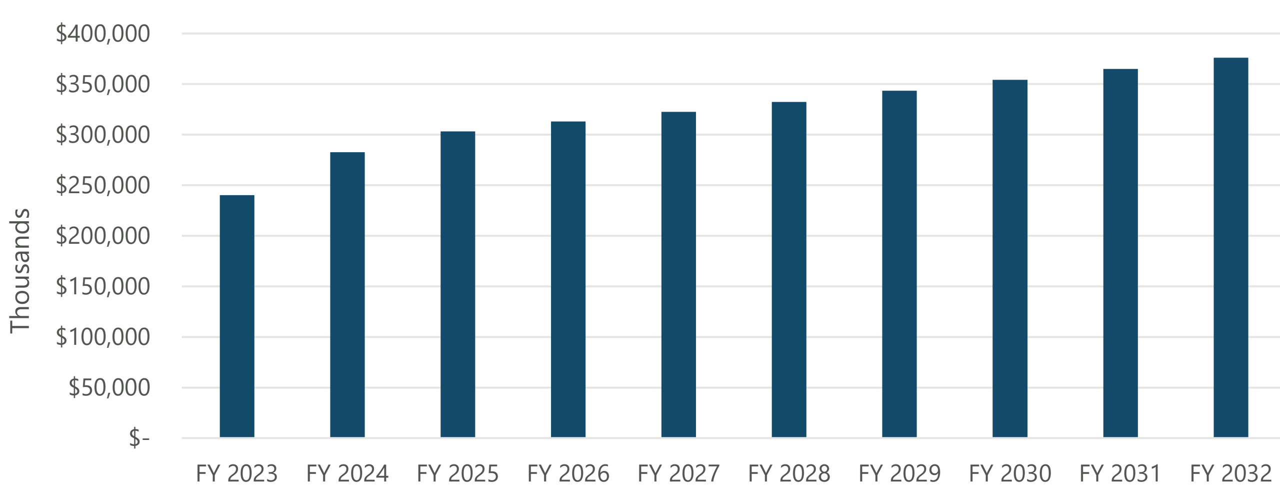
General Aviation Revenues include aviation fuel revenue at Ellington. General aviation revenues are budgeted to be approximately $272,000 in FY 2023 and are projected to increase at the assumed rate of inflation throughout the Projection Period.

Other non-airline revenues include various revenues collected at Ellington, including auto rental concessions, special event concessions, and recoveries and refunds. Other non-airline revenues are budgeted to be approximately $190,000 in FY 2023 and are projected to increase at the assumed rate of inflation throughout the Projection Period.

6.3.5 PROJECTED NON-AIRLINE REVENUES

Exhibit 6-4 shows the projected non-airline revenues. As shown in Exhibit 6-4, non-airline revenues are projected to increase from approximately $240.1 million in FY 2023 to approximately $376.0 million in FY 2032, reflecting a CAGR of 5.6 percent.

EXHIBIT 6-4 PROJECTED NON-AIRLINE REVENUES



SOURCE: Houston Airport System, June 2023.

6.4 OTHER AVAILABLE REVENUE

6.4.1 PASSENGER FACILITY CHARGE REVENUE

HAS is currently collecting a $4.50 PFC per passenger at both IAH and HOU and has received authority from the FAA through four PFC Applications (two for IAH and two for HOU) to impose and use a total of approximately $3.5 billion in PFC revenues for capital projects and associated financing costs. As of September 30, 2022, HAS has collected $1.16 billion in PFC Revenues, including interest income.

The most recent PFC application, PFC #2 for IAH, was approved by the FAA in 2020 and includes approximately $1.4 billion in PFC funding authority for Terminal D rehabilitation and expansion (MLIT), FIS rehabilitation and expansion, enabling landside utilities, and terminal roadway reconstruction, as well as Terminal A baggage handling system, roadway signage replacement, and restroom rehabilitations at Terminals A and D.

The Bond Ordinance allows that PFC Revenues may be committed to the payment of debt service for any Airport Obligation. PFC Revenues are not pledged to the payment of any Airport Obligation; however, periodically, HAS irrevocably commits PFC Revenues to the payment of Subordinate Lien Bonds.

Debt Service Requirements in the Bond Ordinance is defined as the total of the principal and interest due, less any portion of the debt service which has been irrevocably committed to be paid with funds other than Net Revenues, such as PFC Revenues.

Appendix A presents the projected annual PFC Revenue cash flow based on existing FAA approvals and assumed approvals for the west concourse and DRP, forecast enplaned passengers, an assumed PFC level of $4.50 per enplaned passenger through the end of the Projection Period, and an assumed PFC collection ratio of 85 percent of enplaned passengers. See Section 6.5.3 for a discussion of the status of PFC applications for the west concourse and DRP.

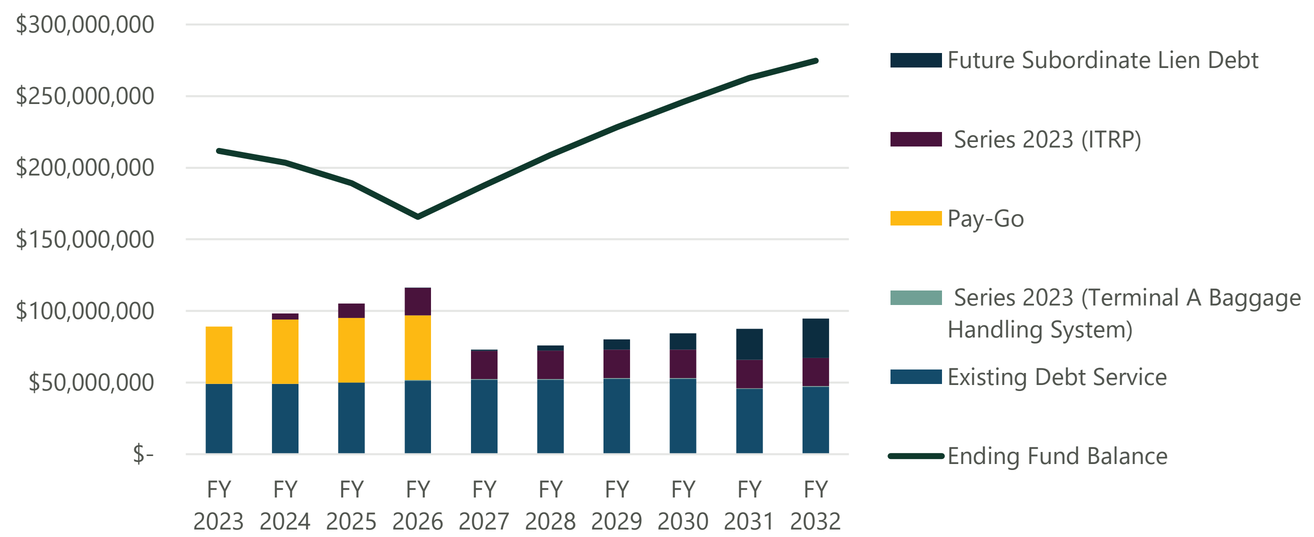
Projected PFC Revenues, as shown on **Exhibit 6-5** and **Exhibit 6-6**, are expected to be sufficient to cover all anticipated PFC commitments to the portion of Subordinate Lien Bonds that finance PFC projects. No PFC Revenues are anticipated to be committed to Senior Lien Obligations or Inferior Lien Obligations throughout the Projection Period.

6.4.2 FEDERAL AVIATION ADMINISTRATION AIRPORT IMPROVEMENT PROGRAM GRANTS AND OTHER FEDERAL FUNDING

The AIP provides grants for planning and development of public-use airports included in the National Plan of Integrated Airport Systems (NPIAS). IAH, HOU, and EFD are all NPIAS airports, so they are all eligible to receive AIP grants for certain projects meeting regulatory criteria. AIP grants are awarded on both an entitlement and discretionary basis. For this analysis, it is conservatively assumed that approximately $2 million and approximately $1 million will be awarded on an entitlement basis and applied annually for improvements at HAS and HOU, respectively.

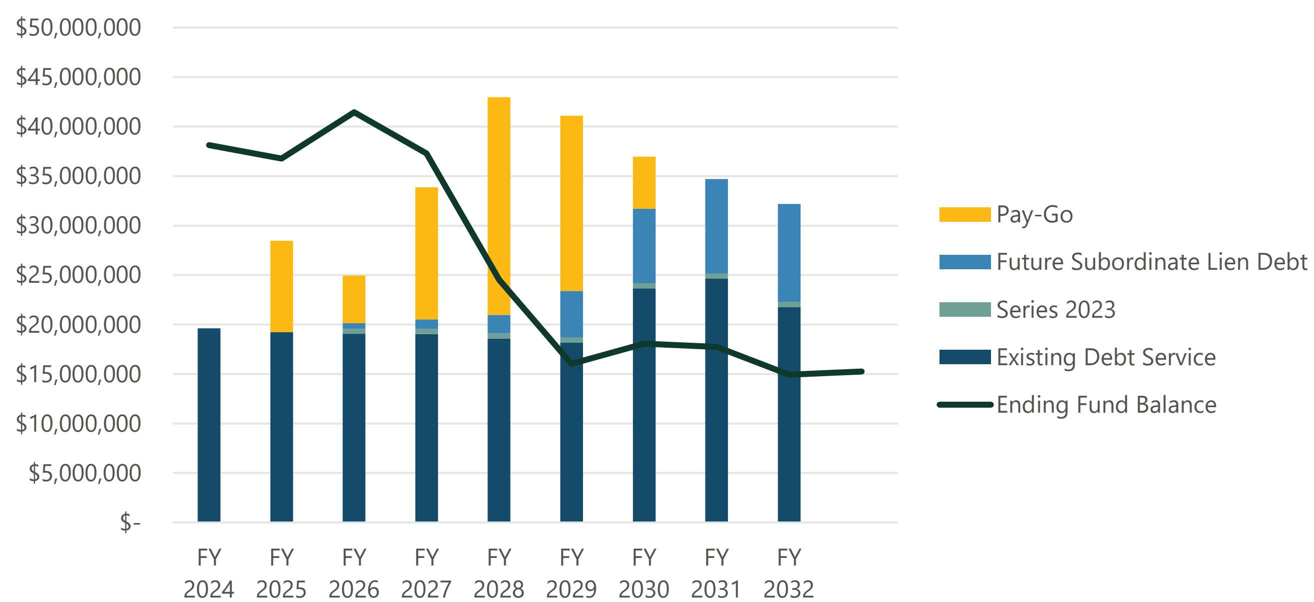
HAS received a total of $458 million of federal COVID relief funding, including approximately $200 million in Coronavirus Aid, Relief, and Economic Security (CARES) Act proceeds, approximately $52 million in Coronavirus Response and Relief Supplemental Appropriations Act (CRRSAA) Proceeds, and approximately $206 million in American Rescue Plan Act (ARPA) proceeds. In FY 2020 through FY 2023, HAS applied COVID relief funds to provide relief to airport concessionaires, reduce airline fees, and offset O&M Expenses and debt service requirements. As of May 2023, approximately $63 million in COVID relief funding remains unspent. Approximately $40 million is anticipated to offset debt service requirements for the Hobby west concourse expansion, and approximately $10 million will be applied to offset existing debt service requirements in FY 2024. The remaining COVID relief funds will be applied to offset debt service in the remaining months of FY 2023.

EXHIBIT 6-5 PROJECTED PASSENGER FACILITY CHARGE COLLECTION AND USES–- INTERCONTINENTAL



NOTES:
PFC – Passenger Facility Charge
Future Subordinate Lien Debt reflects anticipated future PFC approvals for the IAH Domestic Redevelopment Program.
SOURCE: Houston Airport System, June 2023.

EXHIBIT 6-6 PROJECTED PASSENGER FACILITY CHARGE COLLECTION AND USES–- HOBBY



NOTES:
Future Subordinate Lien Debt reflects anticipated future PFC approvals for the HOU West Concourse Expansion.
PFC – Passenger Facility Charge
SOURCE: Houston Airport System, June 2023.

The Bipartisan Infrastructure law (BIL), signed into law by the President on November 15, 2021, provides additional federal funding for airport development. BIL provides for $20 billion in airport funding over a 5-year period (federal fiscal year (FFY) 2022 through 2026), including $15 billion through Airport Infrastructure Grants (AIG), allocated to all eligible airports using an enplanement-based allocation formula, and $5 billion through Airport Terminal Program (ATP), to be awarded for terminal projects on a discretionary basis.

Based on awards received to date and anticipated future BIL allocations, a total of approximately $269 million in AIG funding is anticipated to be awarded to HAS during the period from FY 2022 through FY 2026. In addition, during the period from FY 2022 through FY 2023, the Airport System has received a total of $55 million in ATP funding. Given that the ATP funds are awarded on a discretionary basis, this analysis conservatively assumes that approximately $22 million in ATP funds will be awarded for the period from FY 2024 through FY 2026. To date, none of the ATP or AIG funding has been expended, and all available AIG funding will be applied to projects included in the HAS CIP.

6.5 DEBT SERVICE

Table A-3 in **Appendix A** presents the details of the City's outstanding debt service on existing Airport Obligations, as well as the projected debt service on the 2023 Bonds and projected future Airport Obligations, for the period from FY 2023 through FY 2032.

6.5.1 OUTSTANDING AIRPORT OBLIGATIONS

6.5.1.1 SENIOR LIEN OBLIGATIONS

Currently, there are no Senior Lien Bonds outstanding. The existing HAS Senior Lien Obligations include the outstanding Senior Lien Notes.

The HAS commercial paper program is supported by a direct pay letter of credit issued by Sumitomo Mitsui Banking Corporation and expires in March 2025. The Notes were authorized for $350 million, with $350 million outstanding as of May 2023. The obligations on the commercial paper Notes are budgeted to be $7.8 million in FY 2023.

Once refunded, additional spending funded with commercial paper may be undertaken by HAS. However, for the purpose of this analysis, the use of commercial paper subsequent to the issuance of the 2023 Bonds is not incorporated into the financial projections. Amounts shown in Table A-3 as Senior Lien Obligations reflect anticipated commitment fees related to the commercial paper program at HAS.

6.5.1.2 SUBORDINATE LIEN BONDS

Debt service on existing Subordinate Lien Bonds totals approximately $199.6 million in FY 2023 Budget and is anticipated to increase over the Projection Period to $207.1 million in FY 2032. The increase in existing Subordinate Lien debt service over the Projection Period is primarily due to an increase in the principal payment for the Series 2018B Bonds in FY 2029 and the start of principal payments on the Series 2020B bonds in FY 2026. A portion of the debt service is payable with PFC Revenues, and the remaining portion is payable with Net Revenues.

6.5.1.3 INFERIOR LIEN

In 2015, the City executed a forward bond purchase agreement with the Royal Bank of Canada for the issuance of up to $450 million in Airport System Inferior Lien Revenue Bonds to provide an appropriation facility for future CIP projects. This agreement replaced the $150 million Series C Airport System Inferior Lien Commercial Paper Notes. Currently, no amounts have been issued pursuant to the agreement and the City does not intend to issue bonds against this agreement. An annual commitment fee of 0.167 percent ($751,500) in respect to the forward bond purchase agreement is paid each year. The Inferior Lien commitment fees are not debt service and therefore not included within Debt Service Requirements.

6.5.2 THE 2023 BONDS

The 2023 Bonds include the 2023A and 2023B Bonds and will be issued as Subordinate Lien Bonds. Proceeds from the 2023 Bonds will be used to fund approximately $212 million of planned project costs related to ITRP and to refund approximately $350 million of the City's outstanding commercial paper, as well as to refund the Series 2002 Bonds, tender a portion of the Series 2020C Bonds for purchase and cancellation, and fund capitalized interest and the subordinate lien bond reserve fund, as described in Chapter 1 of this Report.

The 2023 Bonds are assumed to have a term of 30 years. For purposes of this Report, interest on the 2023 Bonds is assumed at current market interest rates as of May 12, 2023, plus 25 basis points.

Net of capitalized interest, initial debt service payments are anticipated to begin in FY 2024. Debt service on the 2023 Bonds is assumed to be approximately $8.9 million in FY 2024 increasing to approximately $41.2 million in FY 2027 and remaining relatively constant at approximately $41.2 million annually throughout the remainder of the Projection Period. A portion of the debt service will be paid with PFC Revenues, and a portion of the debt service will be recovered from the airlines through airline rates and charges each year. The PFC eligibility of the 2023 Bonds is estimated based on existing PFC approvals for the ITRP.

6.5.3 FUTURE AIRPORT OBLIGATIONS

For financial projection purposes, projects included in the HAS FY 2024 through FY 2030 CIP are expected to be funded in part with Subordinate Lien Bonds, as described in Chapter 3 of this Report. As shown in **Table 6-4**, such additional bonds include Subordinate Lien Bonds assumed to be issued in each year from FY 2024 through FY 2030.

TABLE 6-4 ASSUMED FUTURE BOND ISSUANCES

FUTURE SUBORDINATE LIEN BOND ISSUANCES	BOND PAR
Series 2024	$112.5 million
Series 2025	$213.0 million
Series 2026	$423.4 million
Series 2027	$545.6 million
Series 2028	$544.4 million
Series 2029	$365.7 million
Series 2030	$63.1 million
Total	**$2,267.7 million**

NOTE:
Totals may not sum due to rounding.
SOURCE: Houston Airport System, May 2023; Masterson Advisors LLC, May 2023.

For the purpose of this analysis, the average coupon for each future bond issuance is assumed to be approximately 5.0 percent. Each future Subordinate Lien Obligation is assumed to have a 30-year maturity.

A portion of the debt service associated with the future Subordinate Lien Obligations is anticipated to be payable with PFC Revenues, while the remaining debt service will be payable with System Revenues. The anticipated PFC eligibility for each future issuance was calculated by the City based on the breakout of PFC projects currently assumed within the HAS CIP and their assumed eligibility. It is anticipated that PFC approvals for the payment of bond capital and financing and interest will be received for the HOU West Concourse expansion and the DRP. HAS is in the process of preparing a draft application for the HOU West Concourse project, and the DRP is anticipated to be included in subsequent applications.

The estimated total debt service on assumed future bond issuances is included in Table A-3 in Appendix A, and the use of PFC Revenues for debt service can be found in **Table A-7**.

The future debt service assumptions are listed in Table 6-4.

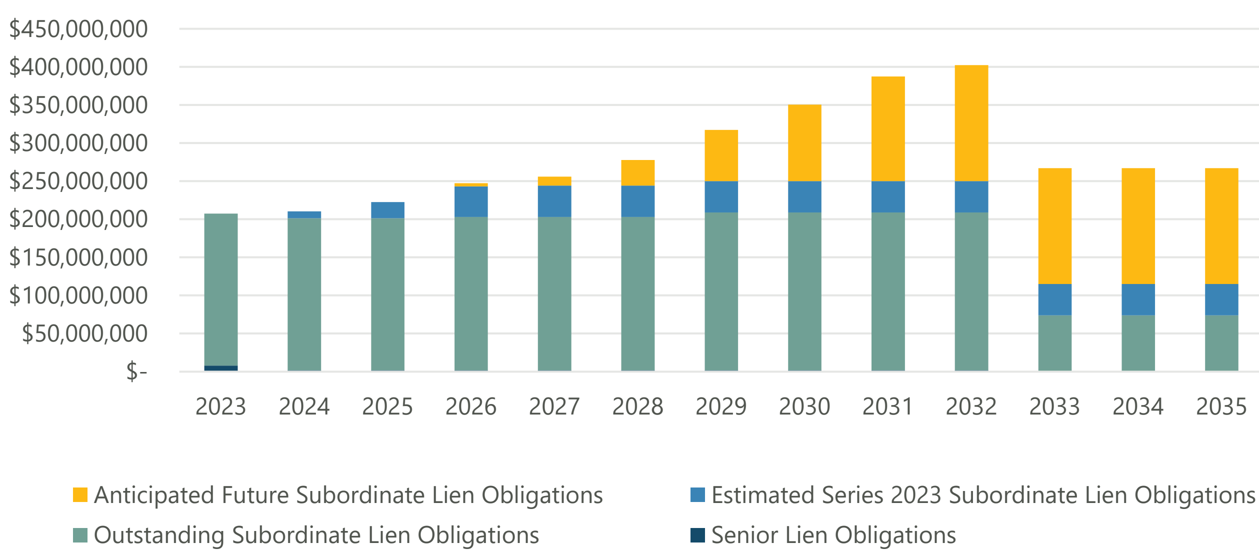
6.5.4 PROJECTED DEBT SERVICE REQUIREMENTS

The HAS debt service on Airport Obligations (including debt service on existing Airport Obligations, the Series 2023 Bonds, and future Airport Obligations) is projected to be approximately $211 million in FY 2024 and is projected to increase throughout the Projection Period to $403 million in FY 2028.

Taking into account the irrevocable commitments of PFC Revenues to be applied to the Airport Obligations and other funds available to offset debt service allowable by the Bond Ordinance, the resulting Debt Service Requirements to be paid with Net Revenues is estimated to be approximately $128 million in FY 2024 and is projected to increase throughout the Projection Period to $281 million in FY 2032.

Exhibit 6-7 presents the Projected Debt Service Requirements at HAS during the period from FY 2023 through FY 2035. In 2033, annual debt service payments on existing Subordinate Lien Bonds are anticipated to decrease by over $100 million, as certain existing series will have reached maturity.

EXHIBIT 6-7 PROJECTED DEBT SERVICE REQUIREMENTS



NOTES:
Net of capitalized interest. Years shown represent Fiscal Years.
Debt Service Requirements, as defined in the Master Ordinance and as shown, reflect interest and principal due, less the amount irrevocably committed to be paid with Airport System funds other than Gross Revenues, including PFC Revenues.
SOURCE: Houston Airport System, May 2023; Masterson Advisors LLC, May 2023.

6.5.5 OUTSTANDING SPECIAL FACILITIES BONDS DEBT SERVICE

At the request of United, the City has authorized the issuance of Special Facilities Bonds to provide financing for various Special Facilities at IAH, including the construction of Terminal E. The payments for all Special Facilities Bonds are remitted directly to a trustee by United as Special Facilities Payments. Debt service on Special Facilities Bonds is not payable with Net Revenues and is not included in the definition of Airport Obligations. Therefore, Special Facilities Bonds is not included in the calculation of debt service coverage on Airport Obligations.

Debt service on existing Special Facilities Bonds totals $81.4 million in FY 2023 and is anticipated to increase to $226 million in FY 2029 before decreasing to $46.5 million in FY 2030. The large increase through FY 2029 is primarily a result of the principal payments for the Series 2018 Special Facilities Bonds.

6.6 AIRLINE REVENUES

HAS airline revenues include landing fees and terminal rentals collected from airlines operating at IAH and HOU. Terminal rentals are comprised of charges for airline leased area in the terminals, as well as charges for the use and lease of aprons, loading bridges, the APM, FIS, and baggage equipment.

Each rate or charge is calculated by first determining the cost requirement allocable to the given Airport Cost Center. Each requirement includes the following general components:

- **O&M Expenses**. This includes the O&M Expenses (direct and allocated indirect) attributable to the specific rate-setting area.
- **Replenishment of Renewal and Replacement Fund**. This includes amounts needed to maintain the required balance of the Renewal and Replacement Fund, if necessary, as required by the Bond Ordinance.
- **Capital Charges**. This includes the charges for certain leased premises and amortization of capital improvement projects allocated to the specific rate-setting area.
- **Reallocation of HAS Space**. This includes direct and indirect cost of the space utilized within the terminal complex by HAS, and applies to the IAH cost centers.

The following subsections present the details for each specific rate calculation.

6.6.1 AIRFIELD

Landing fees for IAH and HOU are calculated using a residual calculation. The landing fees are calculated pursuant to each airline use and lease agreement by adding each cost component, describe above, allocable to the Airfield Cost and Revenue Center to determine the total Airfield requirement for each airport. The total requirement is reduced by fuel flowage fees and non-signatory airline premiums (at HOU) to calculate the net requirement, which is divided by total landed weight to yield a landing fee rate. At HOU, Allegiant and Frontier are charged non-signatory premiums.

6.6.2 TERMINAL

6.6.2.1 IAH TERMINALS A, B, C, AND E

A compensatory rental rate calculation applies to IAH Terminal A, Terminal B, Terminal C, and Terminal E. The total airline requirement for each terminal is equal to the sum of previously described components for each individual IAH airline terminal cost center. Rental rates are set by dividing the given airline terminal requirement by the square footage of airline leased space in the given terminal and charged on a square-foot basis.

6.6.2.2 IAH TERMINAL D

The Terminal D area is divided into several Cost Centers by functions, including Aircraft Loading/Apron, Loading Bridge, Operations/Admin Space, Arrival, Departure, Ticketing, Bag Makeup, Non-FIS Bag Claim, VIP and Clubs, Common VIP and Clubs, Central FIS & Baggage Claim, and Central Ticketing. The requirement components described previously are further allocated to each subcategory of Terminal D. Space-based rates, calculated by dividing net requirements by available rental space, are applicable to leased space areas, including Operations/Admin Space and VIP and Club space and are charged on a square-foot basis. The other subcategories, such as baggage makeup and baggage claim, are subject to passenger-based rates, calculated by dividing net requirements by the number of deplaned and/or enplaned passengers, whichever is appropriate.

6.6.2.3 HOU CONCOURSES

A compensatory rental rate methodology is calculated for both the HOU Central Concourse and HOU West Concourse. The total requirement for each concourse is equal to the sum of the previously described components for each concourse and charged on a square-foot basis.

6.6.3 APRONS

Apron fees are calculated for each terminal at IAH and for both concourse at HOU through a compensatory methodology. However, the apron fee at IAH Terminal D is charged on a per passenger basis, while the remaining apron fees are charged on a square footage basis. The net airline requirement for each apron is equal to the sum of previously described components for each individual Apron Cost Center.

6.6.4 LOADING BRIDGE

HAS charges loading bridge rental fees for 19 loading bridges installed at IAH Terminal A. The total airline requirement for the loading bridges is equal to the sum of previously described components for the loading bridge cost center. The Terminal A loading bridge fee is calculated by dividing the total requirement by the number of rentable loading bridges and charged on a per loading bridge basis. Throughout the Projection Period, 18 of the 19 loading bridges are anticipated to be leased.

Loading bridges at IAH Terminals B, C and E are property of United Airlines. Therefore, no loading bridge fee for these terminals is assessed.

IAH Terminal D loading bridge rate is calculated by dividing the annual expense allocated to Terminal D loading bridges by the sum of annual deplaned and enplaned passengers using Terminal D. As a result, airlines utilizing Terminal D loading bridges are charged an activity-based fee.

HAS charges loading bridge fees for HOU to recover the cost of its 30 loading bridges installed at HOU. The total airline requirement for the loading bridges is equal to the sum of previously described components for the loading bridge cost center. The loading bridge fee is calculated by dividing the total airline loading bridge requirement by the number of rentable loading bridges and charged on a per loading bridge basis. Throughout the Projection Period, 26 of the 30 loading bridges are anticipated to be leased. Southwest receives rent credits for loading bridge fees, given that Southwest provided funding for the construction of the West Concourse.

6.6.5 BAGGAGE HANDLING SYSTEM

For international operations at IAH Terminal D, airlines are currently charged a per use baggage makeup fee and a per use baggage claim fee to recover the costs of the baggage handling system at Terminal D. Upon completion of

ITRP, baggage makeup area costs at Terminal D will be assigned to the ICP cost center and recovered through a ticketing charge. Non-FIS baggage claim area costs will be recovered through a domestic and pre-cleared charge.

At other IAH terminals and HOU, the 20 percent of the baggage handling system requirement is evenly distributed to airlines utilizing the corresponding facilities, and the remaining 80 percent is allocated to each airline proportional to their market share measured by passenger enplanement.

At HOU, Southwest receives rent credits for baggage equipment charges, given that Southwest provided funding for the construction of the West Concourse.

6.6.6 AUTOMATIC PEOPLE MOVER

The total cost requirement for the APM at IAH is equal to the sum of the previously described cost components allocable to the APM Cost Center. The APM fee is calculated by dividing the total APM requirement by the number of annual enplaned passengers at IAH and charged to airlines based on their enplaned passengers. Airlines serving HOU are not charged an APM fee.

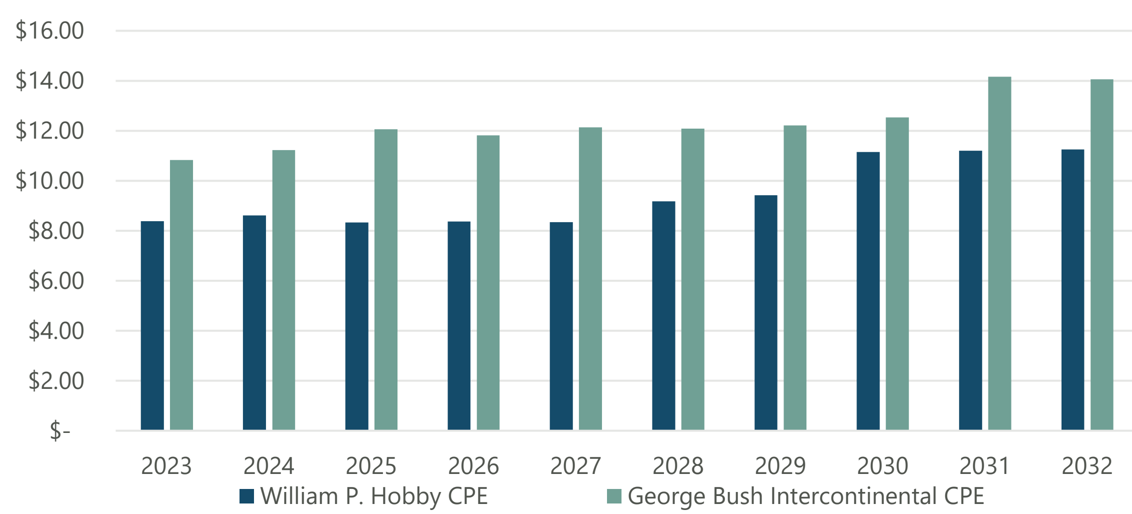
6.6.7 AIRLINE COST PER ENPLANED PASSENGER AND REASONABLENESS OF AIRPORT USER FEES

A general test for the reasonableness of airport user fees is to compare projected airline costs in a manner that accounts for airline activity. One approach is to measure HAS airline revenues on an airline cost-per-enplaned-passenger basis and comparing this metric on a year-over-year basis

Table A-5 in **Appendix A** and **Exhibit 6-8** show the projected airline CPE for IAH and HOU. The IAH CPE is projected to increase from $10.83 in 2023 to $14.06 in 2032, which equates to $10.78 in 2023 dollars, assuming 3.0 percent inflation, though the inflation rate in certain years may vary. Increases in airline CPE are primarily attributable increases in O&M Expenses and amortization costs related to the completion of the CIP. The HOU CPE is projected to increase from $8.39 in 2023 to $11.25 in 2032, which equates to $8.62 in 2023 dollars.

Exhibit 6-8 presents the projected airline cost per enplaned passenger at IAH and HOU.

EXHIBIT 6-8 PROJECTED AIRLINE COST PER ENPLANED PASSENGER



SOURCES: Ricondo & Associates, Inc., June 2023.

6.6.7.1 REASONABLENESS OF AIRPORT USER FEES

The projected CPE amounts shown on Exhibit 6-8 were determined to be reasonable based on the expectation that these fees will not deter forecast demand for air traffic at HAS airports as airlines continue to deploy capacity to airports based on available resources. The projected user fees in this analysis are deemed to be reasonable based on the following combination of factors:

- **Large population and strong economic base** – HAS airports are in the 5th most-populous metropolitan statistical area in the United States and the Air Trade Area was ranked 13th in the nation in terms of O&D passengers in CY 2022. The Air Trade Area has a large, diverse economic base and business climate that supports air travel. Projected economic variables indicate the Air Trade Area will remain a destination that supports the growth of inbound and outbound air travel.
- **Attractive geographical location** – The geographic location of the Air Trade Area naturally supports connectivity between domestic and international destinations to South and Central America. It is also a location that supports domestic travel between the southeast and western United States.
- **Important airports for United and Southwest** – IAH is a major connecting hub for United within their US domestic route networks, and it is an important international gateway for South and Central America passenger traffic, providing strong connectivity to flights of international alliance partners. Southwest has long served HOU and used it as a focus city in its network. The airline currently provides nonstop service to all of HOU's top 30 domestic O&D markets.
- **Increases in debt are associated with capital projects supported by airlines** – User fees during the Projection Period are calculated to recover capital and operating costs partially attributable to significant capital projects designed to accommodate demand at the Airport and these projects are supported by major airlines at the airports.

In summary, airport user fees, although increasing over the Projection Period, are one of many factors that airlines consider when allocating resources or evaluating air service. According to Airlines for America, airport user fees represented approximately 6.4 percent of system-wide total airline operating costs.[122] The projected growth of the population and economic base, along with the geographical location and established role of HAS airports in the airline route network, support the reasonableness of the projected CPE.

6.7 PROJECTION OF FINANCIAL PERFORMANCE AND DEBT SERVICE COVERAGE

Table A-8 in Appendix A presents the application of revenues for FY 2022 through FY 2032 into the appropriate funds as described in the Bond Ordinance. Included in this cash flow are Gross Revenues, O&M Expenses, Reserve Funds Requirements, and Debt Service Requirements. This table also presents the projected balance of the Operation and Maintenance Reserve Fund, Renewal and Replacement Fund, and AIF through the Projection Period.

Table A-9 in Appendix A presents the projection of Gross Revenues, Net Revenues, Airport Obligations, and calculated debt service coverage as defined by the Bond Ordinance.

The Additional Bonds Test required by the Bond Ordinance states the following:

[122] In the fourth quarter of 2022, 1.8 percent of passenger airline operating expenses went to landing fees and 4.6 percent went to non-aircraft rents and ownership, according to data collected by Airlines for America.

Projected Coverage for Additional Bonds. An Airport Management Consultant provides a written report setting forth projections which indicate that the estimated Net Revenues for each of the three consecutive FYs beginning in the earlier of:

a. the first FY following the estimated date of completion and initial use of all revenue-producing facilities to be financed with such series of Bonds, based upon a certified written estimated completion date by the consulting engineer for such facility or facilities, or

b. the first FY in which the City will have scheduled payments of interest on or principal of the series of Bonds to be issued for the payment of which provision has not been made as indicated in the report of such Airport Management Consultant from proceeds of such series of Bonds, investment income thereon or from other appropriated sources (other than Net Revenues),

are equal to at least

(1) 125 percent of the Debt Service Requirements on all Senior Lien Obligations, plus

(2) 110 percent of the Debt Service Requirements on all Subordinate Lien Bonds,

Scheduled to occur during each such respective Fiscal Year after taking into consideration the additional Debt Service Requirements for the additional series of Bonds to be issued.

Debt service coverage ranges from 1.39x to 1.85x through the Projection Period.

6.8 ASSUMPTIONS UNDERLYING THE FINANCIAL PROJECTIONS

The methodologies used in preparing this financial analysis are consistent with industry practices for similar studies in connection with airport revenue bond sales. While Ricondo believes the approach and assumptions are reasonable, some assumptions regarding future trends and events presented in this Report, including the implementation schedule, anticipated PFC approvals, future airline lease agreement terms, and enplaned passenger forecasts, may not materialize. Therefore, achievement of the forecasts and projections presented in this Report is dependent upon the occurrence of future events, which cannot be assured, and the variations may be material.

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APPENDIX A

Financial Projection Tables

TABLE A-1 (1 OF 2) OPERATION AND MAINTENANCE EXPENSES

(For Fiscal Years Ending June 30)

	BUDGET	PROJECTED									COMPOUND ANNUAL
	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	GROWTH RATE (2023-2032)
George Bush Intercontinental Airport											
Administration and Overhead	$ 72,150,277	$ 72,921,021	$ 74,673,958	$ 76,158,262	$ 77,902,978	$ 79,336,841	$ 80,680,199	$ 79,573,074	$ 82,790,145	$ 84,215,807	1.7%
Personnel	$ 48,488,249	$ 51,397,544	$ 52,425,495	$ 53,998,260	$ 55,618,207	$ 57,286,754	$ 59,005,356	$ 60,775,517	$ 62,598,782	$ 64,476,746	3.2%
Public Safety	$ 44,579,625	$ 47,254,403	$ 48,199,491	$ 49,645,475	$ 51,134,840	$ 52,668,885	$ 54,248,951	$ 55,876,420	$ 57,552,712	$ 59,279,294	3.2%
Building Maintenance	$ 33,269,273	$ 35,265,429	$ 37,576,605	$ 38,788,223	$ 40,621,330	$ 41,839,970	$ 43,095,169	$ 44,388,024	$ 47,533,372	$ 48,959,374	4.4%
Parking	$ 28,756,087	$ 30,481,452	$ 31,091,081	$ 32,023,814	$ 32,984,528	$ 33,974,064	$ 34,993,286	$ 36,043,084	$ 37,124,377	$ 38,238,108	3.2%
Utilities	$ 19,582,731	$ 20,757,695	$ 21,742,403	$ 22,387,939	$ 23,315,492	$ 23,976,834	$ 24,657,254	$ 25,357,310	$ 27,077,655	$ 27,848,719	4.0%
Other Services	$ 14,965,952	$ 15,863,909	$ 16,373,992	$ 16,711,497	$ 17,834,284	$ 18,190,969	$ 18,554,789	$ 18,925,884	$ 19,377,051	$ 19,764,592	3.1%
Supplies	$ 4,177,012	$ 4,427,633	$ 4,701,325	$ 4,852,086	$ 5,112,464	$ 5,265,838	$ 5,423,813	$ 5,586,528	$ 6,178,332	$ 6,363,682	4.8%
Capital Outlays	$ 4,665,899	$ 4,945,853	$ 2,522,385	$ 2,572,833	$ 2,624,289	$ 2,676,775	$ 2,730,311	$ 2,784,917	$ 2,840,615	$ 2,897,427	-5.2%
Noncapital Equipment	$ 934,682	$ 990,763	$ 1,010,578	$ 1,030,790	$ 1,051,406	$ 1,072,434	$ 1,093,882	$ 1,115,760	$ 1,138,075	$ 1,160,837	2.4%
Collateralized Pension Note[1]	$ 962,502	$ 1,636,253	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	n/a
Pension Obligation Bond Interest	$ 40,963	$ 72,914	$ 72,914	$ 72,914	$ 72,914	$ 72,914	$ 273,428	$ 273,428	$ 273,428	$ 273,428	23.5%
Total O&M Expenses by Type	**$ 272,573,251**	**$ 286,014,869**	**$ 290,390,227**	**$ 298,242,092**	**$ 308,272,731**	**$ 316,362,278**	**$ 324,756,439**	**$ 330,699,946**	**$ 344,484,547**	**$ 353,478,015**	**2.9%**
Airfield	$ 35,089,775	$ 41,134,608	$ 41,275,052	$ 42,326,358	$ 43,327,794	$ 44,430,282	$ 45,579,370	$ 46,441,711	$ 47,645,516	$ 48,854,468	3.7%
Terminal Area A	$ 35,433,965	$ 34,120,861	$ 33,998,750	$ 34,846,153	$ 35,572,187	$ 36,469,534	$ 37,466,662	$ 38,159,903	$ 45,132,212	$ 46,733,126	3.1%
Terminal Area B	$ 12,884,023	$ 13,923,975	$ 13,748,597	$ 14,063,763	$ 14,304,288	$ 14,642,963	$ 15,035,411	$ 15,316,589	$ 15,615,582	$ 15,980,659	2.4%
Terminal Area C	$ 23,057,865	$ 24,330,343	$ 23,927,537	$ 24,440,914	$ 24,780,974	$ 25,334,429	$ 26,014,435	$ 26,496,630	$ 26,919,356	$ 27,510,169	2.0%
Terminal Area D (IAB)	$ 23,324,796	$ 24,696,508	$ 29,733,804	$ 31,114,995	$ 31,744,654	$ 32,526,326	$ 33,403,331	$ 34,016,788	$ 34,768,401	$ 35,615,937	4.8%
Terminal Area E	$ 12,234,622	$ 12,502,886	$ 12,271,749	$ 12,533,665	$ 12,708,018	$ 12,991,349	$ 13,339,154	$ 13,587,253	$ 13,806,809	$ 14,109,393	1.6%
Central FIS	$ 31,219,634	$ 33,568,418	$ 33,258,118	$ 34,020,246	$ 38,404,771	$ 39,684,761	$ 40,715,162	$ 41,404,929	$ 42,216,260	$ 43,168,649	3.7%
APM	$ 20,138,633	$ 20,519,861	$ 20,647,504	$ 21,203,194	$ 21,707,758	$ 22,291,261	$ 22,882,155	$ 23,307,470	$ 23,926,327	$ 24,565,687	2.2%
Nonairline Cost Centers	$ 79,189,939	$ 81,217,410	$ 81,529,117	$ 83,692,804	$ 85,722,287	$ 87,991,374	$ 90,320,760	$ 91,968,673	$ 94,454,085	$ 96,939,927	2.3%
Total O&M Expenses by Cost Center	**$ 272,573,251**	**$ 286,014,869**	**$ 290,390,227**	**$ 298,242,092**	**$ 308,272,731**	**$ 316,362,278**	**$ 324,756,439**	**$ 330,699,946**	**$ 344,484,547**	**$ 353,478,015**	**2.9%**
William P. Hobby Airport											
Administration and Overhead	$ 22,620,052	$ 21,525,135	$ 21,713,467	$ 22,171,088	$ 22,439,676	$ 23,028,427	$ 23,751,012	$ 27,054,005	$ 25,949,751	$ 26,688,145	1.9%
Personnel	$ 19,153,519	$ 19,728,125	$ 20,319,968	$ 20,929,567	$ 21,557,454	$ 22,204,178	$ 22,870,303	$ 24,013,819	$ 25,214,509	$ 26,475,235	3.7%
Public Safety	$ 17,317,942	$ 17,847,972	$ 18,394,322	$ 18,957,499	$ 19,538,025	$ 20,136,439	$ 20,753,297	$ 21,389,171	$ 22,044,652	$ 22,720,349	3.1%
Parking	$ 5,440,139	$ 5,657,745	$ 5,884,054	$ 6,119,417	$ 6,364,193	$ 6,618,761	$ 6,883,511	$ 7,158,852	$ 7,445,206	$ 7,743,014	4.0%
Utilities	$ 5,220,536	$ 5,368,202	$ 5,520,119	$ 5,676,411	$ 5,837,206	$ 6,048,756	$ 6,220,413	$ 7,004,636	$ 7,204,494	$ 7,410,142	4.0%
Other Services	$ 4,780,686	$ 4,912,189	$ 5,047,442	$ 5,186,555	$ 5,329,639	$ 5,481,746	$ 5,645,133	$ 5,932,984	$ 6,096,127	$ 6,263,916	3.0%
Building Maintenance	$ 8,555,924	$ 8,898,161	$ 9,254,087	$ 9,624,251	$ 10,009,221	$ 10,627,233	$ 11,494,801	$ 18,266,825	$ 15,064,566	$ 15,667,148	7.0%
Supplies	$ 1,856,303	$ 1,911,992	$ 1,969,352	$ 2,028,432	$ 2,089,285	$ 2,160,017	$ 2,248,782	$ 2,560,604	$ 2,637,422	$ 2,716,545	4.3%
Capital Outlays	$ 3,010,907	$ 3,010,907	$ 3,010,907	$ 3,010,907	$ 3,010,907	$ 3,010,907	$ 3,024,604	$ 3,101,365	$ 3,101,365	$ 3,101,365	0.3%
Noncapital Equipment	$ 345,770	$ 352,685	$ 359,739	$ 366,934	$ 374,273	$ 381,758	$ 389,393	$ 397,181	$ 405,125	$ 413,227	2.0%
Collateralized Pension Note[1]	$ 391,754	$ 665,981	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	-100.0%
Pension Obligation Bond Interest	$ 16,673	$ 29,677	$ 29,677	$ 29,677	$ 29,677	$ 29,677	$ 111,290	$ 111,290	$ 111,290	$ 111,290	23.5%
Total O&M Expenses by Type	**$ 88,710,204**	**$ 89,908,771**	**$ 91,503,135**	**$ 94,100,738**	**$ 96,579,557**	**$ 99,727,900**	**$ 103,392,539**	**$ 116,990,730**	**$ 115,274,507**	**$ 119,310,376**	**3.3%**

TABLE A-1 (2 OF 2) OPERATION AND MAINTENANCE EXPENSES

(For Fiscal Years Ending June 30)

	BUDGET	PROJECTED									COMPOUND ANNUAL
	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	GROWTH RATE (2023-2032)
Airfield	$ 20,321,824	$ 20,653,859	$ 20,909,507	$ 21,465,355	$ 21,999,443	$ 22,582,938	$ 23,213,175	$ 23,902,448	$ 24,763,601	$ 25,639,888	2.6%
Central Concourse Apron	$ 1,744,764	$ 1,768,452	$ 1,786,536	$ 1,832,172	$ 1,875,508	$ 1,922,677	$ 1,974,678	$ 2,022,232	$ 2,095,277	$ 2,169,405	2.4%
Terminal Building	$ 32,302,541	$ 32,744,134	$ 33,298,176	$ 34,250,571	$ 35,157,737	$ 36,378,740	$ 38,217,623	$ 47,673,116	$ 43,368,598	$ 44,910,642	3.7%
West Concourse Apron	$ 342,606	$ 347,258	$ 350,807	$ 359,776	$ 368,292	$ 377,562	$ 387,783	$ 397,129	$ 411,489	$ 426,062	2.5%
West Concourse & FIS	$ 13,852,993	$ 14,022,053	$ 14,282,299	$ 14,708,090	$ 15,111,242	$ 15,748,590	$ 16,222,527	$ 19,057,746	$ 19,830,440	$ 20,550,870	4.5%
Parking & Ground Transportation	$ 17,280,696	$ 17,477,822	$ 17,942,454	$ 18,494,306	$ 19,021,820	$ 19,608,861	$ 20,205,683	$ 20,673,206	$ 21,454,008	$ 22,180,349	2.8%
Other	$ 2,864,780	$ 2,895,193	$ 2,933,355	$ 2,990,469	$ 3,045,515	$ 3,108,532	$ 3,171,072	$ 3,264,852	$ 3,351,095	$ 3,433,161	2.0%
Total O&M Expenses by Cost Center	**$ 88,710,204**	**$ 89,908,771**	**$ 91,503,135**	**$ 94,100,738**	**$ 96,579,557**	**$ 99,727,900**	**$ 103,392,539**	**$ 116,990,730**	**$ 115,274,507**	**$ 119,310,376**	**3.3%**
Ellington Field											
Personnel	$ 2,402,817	$ 2,474,902	$ 2,549,149	$ 2,625,624	$ 2,704,392	$ 2,785,524	$ 2,869,090	$ 3,012,544	$ 3,163,171	$ 3,321,330	3.7%
Other Services	$ 1,525,490	$ 1,556,000	$ 1,587,120	$ 1,618,862	$ 1,651,240	$ 1,684,265	$ 1,717,950	$ 1,752,309	$ 1,787,355	$ 1,823,102	2.0%
Administration and Overhead	$ 1,284,779	$ 3,530,054	$ 3,548,309	$ 3,605,099	$ 3,630,483	$ 3,687,333	$ 3,742,442	$ 3,710,047	$ 3,803,971	$ 3,890,794	13.1%
Utilities	$ 1,082,234	$ 1,107,578	$ 1,133,540	$ 1,160,136	$ 1,187,382	$ 1,215,293	$ 1,243,888	$ 1,273,183	$ 1,303,197	$ 1,333,948	2.4%
Building Maintenance	$ 572,633	$ 595,538	$ 619,359	$ 644,134	$ 669,899	$ 696,695	$ 724,563	$ 753,545	$ 783,687	$ 815,035	4.0%
Supplies	$ 341,851	$ 352,106	$ 362,670	$ 373,550	$ 384,756	$ 396,299	$ 408,188	$ 420,433	$ 433,046	$ 446,038	3.0%
Capital Outlays	$ 203,600	$ 203,600	$ 203,600	$ 203,600	$ 203,600	$ 203,600	$ 203,600	$ 203,600	$ 203,600	$ 203,600	0.0%
Collateralized Pension Note[1]	$ 49,863	$ 84,767	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	-100.0%
Noncapital Equipment	$ 10,200	$ 10,404	$ 10,612	$ 10,824	$ 11,041	$ 11,262	$ 11,487	$ 11,717	$ 11,951	$ 12,190	2.0%
Pension Obligation Bond Interest	$ 2,164	$ 3,851	$ 3,851	$ 3,851	$ 3,851	$ 3,851	$ 14,443	$ 14,443	$ 14,443	$ 14,443	23.5%
Parking	$ 1,560	$ 1,622	$ 1,687	$ 1,755	$ 1,825	$ 1,898	$ 1,974	$ 2,053	$ 2,135	$ 2,220	4.0%
Public Safety	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	n/a
Total O&M Expenses by Type	**$ 7,477,191**	**$ 9,920,423**	**$ 10,019,899**	**$ 10,247,435**	**$ 10,448,469**	**$ 10,686,020**	**$ 10,937,624**	**$ 11,153,874**	**$ 11,506,557**	**$ 11,862,699**	**5.3%**
Houston Airport System											
Administration and Overhead	$ 96,055,108	$ 97,976,210	$ 99,935,734	$ 101,934,449	$ 103,973,138	$ 106,052,600	$ 108,173,652	$ 110,337,126	$ 112,543,868	$ 114,794,745	2.0%
Personnel	$ 70,044,585	$ 73,600,571	$ 75,294,612	$ 77,553,451	$ 79,880,054	$ 82,276,456	$ 84,744,749	$ 87,801,880	$ 90,976,463	$ 94,273,311	3.4%
Public Safety	$ 61,897,567	$ 65,102,374	$ 66,593,812	$ 68,602,974	$ 70,672,865	$ 72,805,324	$ 75,002,248	$ 77,265,591	$ 79,597,364	$ 81,999,643	3.2%
Building Maintenance	$ 42,397,830	$ 44,759,128	$ 47,450,051	$ 49,056,607	$ 51,300,450	$ 53,163,898	$ 55,314,532	$ 63,408,394	$ 63,381,625	$ 65,441,556	4.9%
Parking	$ 34,197,786	$ 36,140,819	$ 36,976,823	$ 38,144,985	$ 39,350,546	$ 40,594,723	$ 41,878,771	$ 43,203,989	$ 44,571,718	$ 45,983,343	3.3%
Utilities	$ 25,885,501	$ 27,233,475	$ 28,396,063	$ 29,224,486	$ 30,340,079	$ 31,240,884	$ 32,121,556	$ 33,635,129	$ 35,585,346	$ 36,592,810	3.9%
Other Services	$ 21,272,128	$ 22,332,098	$ 23,008,554	$ 23,516,914	$ 24,815,162	$ 25,356,980	$ 25,917,871	$ 26,611,177	$ 27,260,534	$ 27,851,610	3.0%
Supplies	$ 6,375,166	$ 6,691,731	$ 7,033,346	$ 7,254,068	$ 7,586,506	$ 7,822,154	$ 8,080,783	$ 8,567,565	$ 9,248,801	$ 9,526,265	4.6%
Capital Outlays	$ 7,880,406	$ 8,160,360	$ 5,736,892	$ 5,787,340	$ 5,838,796	$ 5,891,282	$ 5,958,515	$ 6,089,882	$ 6,145,580	$ 6,202,392	-2.6%
Noncapital Equipment	$ 1,290,652	$ 1,353,852	$ 1,380,929	$ 1,408,548	$ 1,436,719	$ 1,465,453	$ 1,494,762	$ 1,524,658	$ 1,555,151	$ 1,586,254	2.3%
Pension Obligation Bond Interest	$ 59,799	$ 106,443	$ 106,443	$ 106,443	$ 106,443	$ 106,443	$ 399,161	$ 399,161	$ 399,161	$ 399,161	23.5%
Total O&M Expenses by Type[1]	**$ 367,356,528**	**$ 383,350,618**	**$ 391,806,817**	**$ 402,483,822**	**$ 415,194,315**	**$ 426,669,754**	**$ 438,687,441**	**$ 458,445,389**	**$ 470,866,450**	**$ 484,251,930**	**3.1%**

NOTES:

1 For the purpose of the rate covenant calculation in the Master Ordinance, total O&M Expenses excludes costs related to the Collateralized Pension Note. Total O&M Expenses shown do not include operation and maintenance expenses paid directly by airlines for Terminals B, C, and E.

SOURCE: Houston Airport System, June 2023; Ricondo & Associates, Inc., June 2023.

TABLE A-2 (1 OF 3) GROSS REVENUES

(For Fiscal Years Ending June 30)

	BUDGET	PROJECTED									COMPOUND ANNUAL
	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	GROWTH RATE (2023-2032)
George Bush Intercontinental Airport											
AIRLINE REVENUES											
Landing fees	$ 66,574,620	$ 80,250,104	$ 83,079,295	$ 83,634,586	$ 85,982,806	$ 86,481,604	$ 87,530,050	$ 86,852,585	$ 87,281,784	$ 88,435,918	3.2%
Cargo Airline landing fees	4,038,850	4,874,442	4,997,890	5,031,295	5,172,560	5,202,567	5,265,639	5,224,884	5,250,704	5,320,134	3.1%
Less: Air service incentive credits	(1,500,000)	(1,646,464)	(1,723,218)	(1,814,134)	(1,909,383)	(2,009,165)	(2,113,799)	(2,223,487)	(2,338,277)	(2,458,478)	5.6%
Total landing fees	**$ 69,113,470**	**$ 83,478,082**	**$ 86,353,967**	**$ 86,851,748**	**$ 89,245,983**	**$ 89,675,006**	**$ 90,681,890**	**$ 89,853,983**	**$ 90,194,211**	**$ 91,297,574**	**3.1%**
Terminal Rentals											
Terminal A	$ 20,790,959	$ 19,410,766	$ 19,394,411	$ 19,993,281	$ 20,338,218	$ 19,158,232	$ 19,534,044	$ 20,112,798	$ 50,690,621	$ 51,373,505	10.6%
Terminal B	11,639,673	11,089,312	10,353,277	10,600,847	10,835,239	10,947,694	11,137,075	11,316,944	11,445,882	11,677,544	0.0%
Terminal C	40,041,174	40,070,629	46,242,037	44,819,606	41,726,523	41,653,303	42,258,070	42,770,037	37,001,193	37,617,136	-0.7%
Terminal D	25,461,333	36,888,305	52,143,784	68,335,694	68,582,646	73,215,348	73,856,288	74,339,849	72,350,230	73,019,239	12.4%
Terminal E	15,656,414	14,524,753	14,252,512	14,410,874	14,485,589	14,452,692	14,485,657	14,740,648	14,815,437	15,128,558	-0.4%
Central FIS	32,041,230	36,792,638	37,672,131	38,573,503	51,937,121	52,927,498	53,828,552	54,451,278	52,336,663	53,196,507	5.8%
Skyway APM	23,508,360	23,471,774	23,625,565	24,888,154	25,695,312	27,277,529	27,879,781	28,226,302	58,212,462	58,908,016	10.7%
Total Terminal Rentals	**$ 169,139,143**	**$ 182,248,177**	**$ 203,683,717**	**$ 221,621,958**	**$ 233,600,647**	**$ 239,632,294**	**$ 242,979,467**	**$ 245,957,857**	**$ 296,852,488**	**$ 300,920,505**	**6.6%**
TOTAL AIRLINE REVENUES	**$ 238,252,613**	**$ 265,726,259**	**$ 290,037,684**	**$ 308,473,706**	**$ 322,846,630**	**$ 329,307,301**	**$ 333,661,357**	**$ 335,811,839**	**$ 387,046,699**	**$ 392,218,079**	**5.7%**
NON-AIRLINE REVENUES											
Terminal Concessions											
Food and Beverage	$ 8,318,224	$ 9,522,709	$ 10,359,934	$ 10,913,586	$ 11,493,964	$ 12,102,295	$ 12,740,583	$ 13,410,073	$ 14,111,084	$ 14,845,540	6.6%
News and Gifts	5,089,108	6,545,023	7,134,841	7,516,138	7,915,842	8,334,797	8,774,383	9,235,458	9,718,241	10,224,057	8.1%
Duty Free	2,283,326	4,104,140	4,359,678	4,592,667	4,836,902	5,092,900	5,361,505	5,643,241	5,938,241	6,247,315	11.8%
Advertising	580,721	773,059	809,097	851,784	896,507	943,357	992,485	1,043,986	1,097,883	1,154,321	7.9%
Other Concessions	6,263,274	8,337,706	8,726,391	9,186,785	9,669,130	10,174,424	10,704,295	11,259,752	11,841,050	12,449,751	7.9%
Subtotal Terminal Concessions	**$ 22,534,652**	**$ 29,282,637**	**$ 31,389,941**	**$ 33,060,961**	**$ 34,812,343**	**$ 36,647,773**	**$ 38,573,252**	**$ 40,592,509**	**$ 42,706,498**	**$ 44,920,985**	**8.0%**
Parking and Ground Transportation											
Automobile Parking	$ 72,277,280	$ 89,994,948	$ 100,689,428	$ 103,580,226	$ 105,911,216	$ 108,268,634	$ 111,741,752	$ 114,187,898	$ 116,657,344	$ 119,154,512	5.7%
Car Rental	26,262,755	30,694,478	31,721,773	32,443,725	33,173,845	33,912,243	34,660,982	35,419,747	36,185,741	36,960,333	3.9%
Ground Transportation	11,713,131	17,690,404	18,515,090	19,491,926	20,515,334	21,587,433	22,711,679	23,890,212	25,123,572	26,415,074	9.5%
Subtotal Parking and Ground Transpo	**$ 110,253,166**	**$ 138,379,829**	**$ 150,926,291**	**$ 155,515,877**	**$ 159,600,395**	**$ 163,768,310**	**$ 169,114,413**	**$ 173,497,857**	**$ 177,966,656.15**	**$ 182,529,919.68**	**5.76%**

TABLE A-2 (2 OF 3) GROSS REVENUES

(For Fiscal Years Ending June 30)

	BUDGET	PROJECTED									COMPOUND ANNUAL
	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	GROWTH RATE (2023-2032)
Other Non-Airline Revenues											
Building & Ground Rentals	$ 19,764,730	$ 20,351,475	$ 20,962,020	$ 21,590,880	$ 22,238,607	$ 22,905,765	$ 23,592,938	$ 24,300,726	$ 25,029,748	$ 25,780,640	3.0%
Allocated systemwide	8,750,675	9,731,152	10,536,443	10,850,300	11,198,045	11,518,304	11,845,012	11,888,216	12,418,793	12,762,497	4.3%
Miscellaneous	8,170,487	7,944,466	8,074,000	8,196,390	8,320,806	8,447,258	8,575,973	8,706,902	8,845,171	8,985,807	1.1%
Subtotal Other Non-Airline Revenues	**$ 36,685,892**	**$ 38,027,093**	**$ 39,572,463**	**$ 40,637,571**	**$ 41,757,457**	**$ 42,871,327**	**$ 44,013,923**	**$ 44,895,843**	**$ 46,293,712**	**$ 47,528,944**	**2.9%**
TOTAL NON-AIRLINE REVENUES	**$ 169,473,710**	**$ 205,689,559**	**$ 221,888,696**	**$ 229,214,408**	**$ 236,170,195**	**$ 243,287,409**	**$ 251,701,588**	**$ 258,986,209**	**$ 266,966,866**	**$ 274,979,849**	**5.5%**
TOTAL REVENUES	**$ 407,726,323**	**$ 471,415,818**	**$ 511,926,379**	**$ 537,688,114**	**$ 559,016,825**	**$ 572,594,710**	**$ 585,362,944**	**$ 594,798,048**	**$ 654,013,565**	**$ 667,197,928**	**5.6%**
William P. Hobby Airport											
AIRLINE REVENUES											
Landing fees	$ 20,409,174	$ 21,144,145	$ 21,238,934	$ 21,696,559	$ 22,412,211	$ 28,689,152	$ 29,851,821	$ 30,536,208	$ 34,044,730	$ 34,899,637	6.1%
Cargo Airline landing fees	$ -	$ 31,187	$ 33,086	$ 33,799	$ 34,914	$ 44,692	$ 46,503	$ 47,569	$ 53,035	$ 54,367	n/a
Total landing fees	**$ 20,409,174**	**$ 21,175,333**	**$ 21,272,020**	**$ 21,730,358**	**$ 22,447,124**	**$ 28,733,844**	**$ 29,898,324**	**$ 30,583,777**	**$ 34,097,765**	**$ 34,954,004**	**6.2%**
Terminal rentals and use fees											
Central Terminal	$ 24,148,297	$ 24,706,720	$ 24,980,683	$ 25,625,921	$ 25,727,672	$ 27,264,616	$ 29,044,885	$ 35,640,505	$ 33,658,867	$ 34,433,526	4.0%
West Terminal	9,300,902	9,370,781	9,504,336	9,752,215	9,961,545	10,123,535	10,406,713	19,875,744	20,366,765	20,784,865	9.3%
FIS Facility	6,945,113	6,998,818	7,112,237	7,280,961	7,394,152	7,437,264	7,628,196	6,786,127	7,020,593	7,241,234	0.5%
Total Terminal Rentals	**$ 40,394,312**	**$ 41,076,319**	**$ 41,597,256**	**$ 42,659,097**	**$ 43,083,369**	**$ 44,825,414**	**$ 47,079,794**	**$ 62,302,376**	**$ 61,046,226**	**$ 62,459,624**	**5.0%**
TOTAL AIRLINE REVENUES	**$ 60,803,486**	**$ 62,251,652**	**$ 62,869,276**	**$ 64,389,455**	**$ 65,530,494**	**$ 73,559,259**	**$ 76,978,118**	**$ 92,886,153**	**$ 95,143,991**	**$ 97,413,628**	**5.4%**
NON-AIRLINE REVENUES											
Terminal Concessions											
Food and Beverage	$ 4,892,729	$ 5,020,680	$ 5,400,099	$ 5,674,807	$ 5,962,488	$ 6,263,738	$ 6,579,503	$ 6,910,387	$ 7,256,561	$ 7,618,955	5.0%
News and Gifts	5,188,039	8,191,805	8,810,870	9,259,086	9,728,471	10,219,994	10,735,200	11,275,073	11,839,896	12,431,183	10.2%
Duty Free	1,258,332	1,363,761	1,475,880	1,552,314	1,631,008	1,713,413	1,799,789	1,890,300	1,984,994	2,084,125	5.8%
Advertising	1,891,565	2,418,898	2,598,487	2,729,094	2,865,800	3,008,879	3,158,772	3,315,760	3,479,922	3,651,689	7.6%
Other Concessions	1,165,463	1,487,368	1,597,796	1,678,106	1,762,165	1,850,144	1,942,313	2,038,844	2,139,786	2,245,405	7.6%
Allocated systemwide	2,847,947	3,058,987	3,320,076	3,423,465	3,508,264	3,630,952	3,771,090	4,205,658	4,155,688	4,307,760	4.7%
Subtotal Terminal Concessions	**$ 17,244,075**	**$ 21,541,500**	**$ 23,203,208**	**$ 24,316,871**	**$ 25,458,196**	**$ 26,687,120**	**$ 27,986,667**	**$ 29,636,022**	**$ 30,856,846**	**$ 32,339,116**	**7.24%**

TABLE A-2 (3 OF 3) GROSS REVENUES

(For Fiscal Years Ending June 30)

	BUDGET	PROJECTED									COMPOUND ANNUAL
	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	GROWTH RATE (2023-2032)
Parking and Ground Transportation											
Automobile Parking	$ 27,301,258	$ 28,106,645	$ 29,468,901	$ 30,051,619	$ 30,655,411	$ 31,266,262	$ 31,885,868	$ 32,513,989	$ 33,148,321	$ 33,790,054	2.40%
Car Rental	8,633,607	7,839,692	8,219,661	8,382,197	8,550,610	8,720,993	8,893,818	9,069,017	9,245,949	9,424,946	0.98%
Ground Transportation	3,157,824	3,423,810	3,678,007	3,862,874	4,056,373	4,258,893	4,471,058	4,693,266	4,925,627	5,168,753	5.63%
Subtotal Parking and Ground Transpo	**$ 39,092,689**	**$ 39,370,147**	**$ 41,366,569**	**$ 42,296,690**	**$ 43,262,394**	**$ 44,246,148**	**$ 45,250,744**	**$ 46,276,272**	**$ 47,319,897**	**$ 48,383,752**	**2.40%**
Other Non-Airline Revenues											
Building & Ground Rentals	$ 6,576,655	$ 6,776,976	$ 6,980,285	$ 7,189,693	$ 7,405,384	$ 7,627,546	$ 7,856,372	$ 8,092,063	$ 8,334,825	$ 8,584,870	3.01%
Allocated systemwide	2,847,947	3,058,987	3,320,076	3,423,465	3,508,264	3,630,952	3,771,090	4,205,658	4,155,688	4,307,760	4.71%
Miscellaneous	2,291,456	2,356,417	2,412,205	2,437,243	2,462,517	2,488,018	2,513,804	2,539,845	2,568,015	2,596,466	1.40%
Subtotal Other Non-Airline Revenues	**$ 11,716,058**	**$ 12,192,380**	**$ 12,712,565**	**$ 13,050,401**	**$ 13,376,165**	**$ 13,746,516**	**$ 14,141,266**	**$ 14,837,567**	**$ 15,058,528**	**$ 15,489,096**	**3.15%**
TOTAL NON-AIRLINE REVENUES	**$ 68,052,822**	**$ 73,104,027**	**$ 77,282,343**	**$ 79,663,962**	**$ 82,096,756**	**$ 84,679,783**	**$ 87,378,677**	**$ 90,749,861**	**$ 93,235,271**	**$ 96,211,964**	**3.92%**
TOTAL REVENUES	**$ 128,856,308**	**$ 135,355,679**	**$ 140,151,618**	**$ 144,053,417**	**$ 147,627,249**	**$ 158,239,041**	**$ 164,356,795**	**$ 183,636,014**	**$ 188,379,262**	**$ 193,625,592**	**4.63%**
Ellington Field											
General aviation	$ 272,118	$ 280,282	$ 288,690	$ 297,351	$ 306,271	$ 315,459	$ 324,923	$ 334,671	$ 344,711	$ 355,052	3.00%
Building and ground rentals	1,847,748	2,965,617	3,054,586	3,146,223	3,240,610	3,337,828	3,437,963	3,541,102	3,647,335	3,756,755	8.20%
Other revenues	189,505	212,726	219,108	225,681	232,451	239,425	246,608	254,006	261,626	269,475	3.99%
Allocated systemwide	240,047	337,525	363,559	372,810	379,542	389,063	398,934	400,967	414,816	428,309	6.64%
Subtotal Revenues	**$ 2,549,418**	**$ 3,796,150**	**$ 3,925,943**	**$ 4,042,065**	**$ 4,158,874**	**$ 4,281,775**	**$ 4,408,428**	**$ 4,530,745**	**$ 4,668,488**	**$ 4,809,591**	**7.31%**
TOTAL SYSTEM REVENUES	**$ 539,132,049**	**$ 610,567,647**	**$ 656,003,941**	**$ 685,783,596**	**$ 710,802,949**	**$ 735,115,527**	**$ 754,128,167**	**$ 782,964,808**	**$ 847,061,315**	**$ 865,633,111**	**5.40%**

SOURCE: Houston Airport System, June 2023; Ricondo & Associates, Inc., June 2023.

TABLE A-3 AIRPORT SYSTEM REVENUE BOND DEBT SERVICE

(For Fiscal Years Ending June 30)

	BUDGET	PROJECTED								
	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
Outstanding Senior Lien Obligations										
Senior Lien Commercial Paper Notes[1]	$ 7,750,000	$ 1,750,000	$ 1,750,000	$ 1,750,000	$ 1,750,000	$ 1,750,000	$ 1,750,000	$ 1,750,000	$ 1,750,000	$ 1,750,000
TOTAL SENIOR LIEN OBLIGATIONS	**$ 7,750,000**	**$ 1,750,000**	**$ 1,750,000**	**$ 1,750,000**	**$ 1,750,000**	**$ 1,750,000**	**$ 1,750,000**	**$ 1,750,000**	**$ 1,750,000**	**$ 1,750,000**
Outstanding Subordinate Lien Obligations										
Series 2000B	$ 17,113,563	$ 17,119,808	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Series 2002A	1,025,256	1,025,256	1,025,256	1,025,256	1,025,256	1,025,256	1,025,256	1,025,256	1,025,256	21,030,256
Series 2002B	1,372,500	1,372,500	1,372,500	1,372,500	1,372,500	1,372,500	1,372,500	1,372,500	1,372,500	28,822,500
Series 2018A	9,678,500	9,677,000	9,676,000	9,680,000	9,683,250	9,680,250	9,675,750	9,679,250	9,674,750	9,677,000
Series 2018B	14,176,500	14,177,250	30,329,250	30,329,750	30,325,750	30,330,250	71,825,500	71,829,500	3,825,500	3,826,000
Series 2018C	22,221,750	22,361,250	22,684,500	22,955,250	23,183,500	23,468,750	23,815,500	24,182,750	16,851,250	17,062,500
Series 2018D	26,028,250	26,032,000	26,029,500	26,029,750	26,031,250	26,032,500	29,032,000	29,028,250	29,032,250	29,031,500
Series 2020A	6,601,000	6,551,000	6,501,000	6,451,000	8,401,000	8,251,000	9,811,000	9,815,500	7,618,000	4,468,000
Series 2020B	3,578,250	3,578,250	3,578,250	16,898,250	16,632,250	16,336,250	16,395,750	16,317,000	-	-
Series 2020C	83,103,949	83,106,709	83,574,279	69,550,722	67,417,628	67,438,924	27,642,499	27,641,581	121,523,485	77,806,612
Series 2021A	14,623,200	14,498,200	14,623,200	16,735,700	16,985,700	17,110,700	16,415,700	16,140,700	16,065,700	15,380,700
Fiscal agent and other fees	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	-
Subtotal Existing Subordinate Lien Obligations	**$ 199,622,718**	**$ 199,599,223**	**$ 199,493,736**	**$ 201,128,178**	**$ 201,158,084**	**$ 201,146,380**	**$ 207,111,455**	**$ 207,132,288**	**$ 207,088,691**	**$ 207,105,068**
Estimated Series 2023 Subordinate Lien Obligations[2]										
Series 2023A (excluding refunding and tendered bonds)[3]	$ -	$ 7,353,863	$ 19,623,058	$ 37,941,480	$ 39,021,250	$ 39,021,000	$ 39,025,250	$ 39,022,500	$ 39,021,750	$ 39,021,500
Series 2023B (excluding refunding and tendered bonds)[3]	-	1,521,663	1,601,750	2,151,750	2,149,250	2,150,500	2,150,250	2,148,500	2,150,250	2,150,250
Subtotal Estimated Series 2023 Subordinate Lien Obligations	**$ -**	**$ 8,875,525**	**$ 21,224,808**	**$ 40,093,230**	**$ 41,170,500**	**$ 41,171,500**	**$ 41,175,500**	**$ 41,171,000**	**$ 41,172,000**	**$ 41,171,750**
Anticipated Future Subordinate Lien Obligations[2]										
Series 2024	$ -	$ -	$ -	$ 4,324,137	$ 7,286,238	$ 7,554,500	$ 7,553,250	$ 7,552,000	$ 7,550,500	$ 7,553,500
Series 2025	-	-	-	-	$ 4,409,894	$ 13,666,137	$ 14,297,250	$ 14,295,750	$ 14,294,750	$ 14,298,750
Series 2026	-	-	-	$ -	$ -	$ 12,395,480	$ 25,492,210	$ 28,422,500	$ 28,421,750	$ 28,422,000
Series 2027	-	-	-	$ -	$ -	$ -	$ 19,800,788	$ 33,441,577	$ 36,622,750	$ 36,622,250
Series 2028	-	-	-	$ -	$ -	$ -	$ -	$ 16,654,348	$ 34,019,927	$ 36,545,750
Series 2029		-	-	$ -	$ -	$ -	$ -	$ -	$ 16,513,141	$ 24,544,750
Series 2030		-	-	$ -	$ -	$ -	$ -	$ -	$ -	$ 4,162,500
Subtotal Future Subordinate Lien Obligations	**$ -**	**$ -**	**$ -**	**$ 4,324,137**	**$ 11,696,133**	**$ 33,616,116**	**$ 67,143,498**	**$ 100,366,176**	**$ 137,422,818**	**$ 152,149,500**
TOTAL SUBORDINATE LIEN OBLIGATIONS	**$ 199,622,718**	**$ 208,474,748**	**$ 220,718,543**	**$ 245,545,546**	**$ 254,024,717**	**$ 275,933,997**	**$ 315,430,454**	**$ 348,669,463**	**$ 385,683,508**	**$ 400,426,318**
Inferior Lien Obligations										
Inferior Lien Obligations	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
TOTAL INFERIOR LIEN OBLIGATIONS	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**
TOTAL DEBT SERVICE REQUIREMENTS	**$ 207,372,718**	**$ 210,224,748**	**$ 222,468,543**	**$ 247,295,546**	**$ 255,774,717**	**$ 277,683,997**	**$ 317,180,454**	**$ 350,419,463**	**$ 387,433,508**	**$ 402,176,318**

NOTES:

1 Amounts shown as projected Senior Lien Obligations for FY 2024 through FY 2032 reflect commitment fees associated with the HAS commercial paper program.

2 Annual debt service payments are shown net of capitalized interest.

3 The Series 2023 Bonds are anticipated to include the refunding of the Series 2002 Bonds and/or the tender of the Series 2020C Bonds. However, the refunding and tender is not reflected in the debt service shown. Any such refunding and/or tender is anticipated to result in lower total annual debt service throughout the Projection Period.

SOURCE: Houston Airport System, June 2023; Ricondo & Associates, Inc., June 2023.

TABLE A-4 SPECIAL FACILITIES REVENUE BOND DEBT SERVICE

(For Fiscal Years Ending June 30)

	BUDGET	PROJECTED								
	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
Outstanding Special Facilities Obligations										
Series 2011	$ 7,460,638	$ 7,460,638	$ 7,460,638	$ 12,481,963	$ 12,468,725	$ 12,457,900	$ 12,447,863	$ 12,432,150	$ 12,419,138	$ 12,397,306
Series 2014	$ 39,239,988	$ 39,284,275	$ 39,098,250	$ 39,363,250	$ 39,178,500	$ 39,347,000	$ 39,322,500	$ -	$ -	$ -
Series 2015B-1	$ 8,832,500	$ 8,832,500	$ 8,832,500	$ 8,832,500	$ 22,526,375	$ 22,506,625	$ 22,490,875	$ 22,472,250	$ 22,449,000	$ 22,429,125
Series 2015B-2	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Series 2018C	$ 2,321,250	$ 2,321,250	$ 2,321,250	$ 2,321,250	$ 2,321,250	$ 2,321,250	$ 47,585,625	$ -	$ -	$ -
Series 2018	$ 4,532,500	$ 4,532,500	$ 4,532,500	$ 4,532,500	$ 4,532,500	$ 4,532,500	$ 92,916,250	$ -	$ -	$ -
Series 2020A	$ 1,708,250	$ 1,708,250	$ 1,708,250	$ 1,708,250	$ 35,873,250	$ -	$ -	$ -	$ -	$ -
Series 2020B-2	$ 2,373,500	$ 2,373,500	$ 2,373,500	$ 2,373,500	$ 2,373,500	$ 48,656,750	$ -	$ -	$ -	$ -
Series 2020C	$ 3,344,500	$ 3,344,500	$ 3,344,500	$ 3,344,500	$ 3,344,500	$ 68,562,250	$ -	$ -	$ -	$ -
Series 2021A	$ 2,807,000	$ 2,807,000	$ 2,807,000	$ 2,807,000	$ 2,807,000	$ 2,807,000	$ 2,807,000	$ 2,807,000	$ 2,807,000	$ 2,807,000
Series 2021B-1	$ 8,772,800	$ 8,772,800	$ 8,772,800	$ 8,772,800	$ 8,772,800	$ 8,772,800	$ 8,772,800	$ 8,772,800	$ 8,772,800	$ 8,772,800
Subtotal Existing Special Facilities Revenue Bonds	**$ 81,392,926**	**$ 81,437,213**	**$ 81,251,188**	**$ 86,537,513**	**$ 134,198,400**	**$ 209,964,075**	**$ 226,342,913**	**$ 46,484,200**	**$ 46,447,938**	**$ 46,406,231**
Assumed Special Facilities Obligations										
Future Special Facilities Obligations	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Subtotal Future Special Facilities Obligations	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**
TOTAL SPECIAL FACILITIES OBLIGATIONS	**$ 81,392,926**	**$ 81,437,213**	**$ 81,251,188**	**$ 86,537,513**	**$ 134,198,400**	**$ 209,964,075**	**$ 226,342,913**	**$ 46,484,200**	**$ 46,447,938**	**$ 46,406,231**

NOTE:

At the request of United Airlines, the City has authorized the issuance of Special Facilities Bonds to provide financing for various Special Facilities at IAH, including the construction of Terminal E. The payments for all Special Facilities Bonds are remitted directly to a trustee by United Airlines as Special Facilities Payments. Debt service on Special Facilities Bonds is not payable with Net Revenues and is not included in the definition of Airport Obligations. Therefore, Special Facilities Bonds is not included in the calculation of debt service coverage on Airport Obligations.

SOURCE: Houston Airport System, June 2023; Ricondo & Associates, Inc., June 2023.

TABLE A-5 COST PER ENPLANED PASSENGER

(For Fiscal Years Ending June 30)

	BUDGET	PROJECTED								
	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
George Bush Intercontinental Airport										
Terminal Rentals and Fees										
Terminal A	$ 20,790,959	$ 19,410,766	$ 19,394,411	$ 19,993,281	$ 20,338,218	$ 19,158,232	$ 19,534,044	$ 20,112,798	$ 50,690,621	$ 51,373,505
Terminal B	11,639,673	11,089,312	10,353,277	10,600,847	10,835,239	10,947,694	11,137,075	11,316,944	11,445,882	11,677,544
Terminal C	40,041,174	40,070,629	46,242,037	44,819,606	41,726,523	41,653,303	42,258,070	42,770,037	37,001,193	37,617,136
Terminal D	25,461,333	36,888,305	52,143,784	68,335,694	68,582,646	73,215,348	73,856,288	74,339,849	72,350,230	73,019,239
Terminal E	15,656,414	14,524,753	14,252,512	14,410,874	14,485,589	14,452,692	14,485,657	14,740,648	14,815,437	15,128,558
Central FIS	32,041,230	36,792,638	37,672,131	38,573,503	51,937,121	52,927,498	53,828,552	54,451,278	52,336,663	53,196,507
Skyway APM	23,508,360	23,471,774	23,625,565	24,888,154	25,695,312	27,277,529	27,879,781	28,226,302	58,212,462	58,908,016
Subtotal Terminal Rentals And Use Fees	**$ 169,139,143**	**$ 182,248,177**	**$ 203,683,717**	**$ 221,621,958**	**$ 233,600,647**	**$ 239,632,294**	**$ 242,979,467**	**$ 245,957,857**	**$ 296,852,488**	**$ 300,920,505**
AIRLINE PAYMENTS TO HAS										
Landing fees	$ 66,574,620	$ 80,250,104	$ 83,079,295	$ 83,634,586	$ 85,982,806	$ 86,481,604	$ 87,530,050	$ 86,852,585	$ 87,281,784	$ 88,435,918
Terminal rentals and use fees	169,139,143	182,248,177	203,683,717	221,621,958	233,600,647	239,632,294	242,979,467	245,957,857	296,852,488	300,920,505
Less: Air service incentive credits	-	(1,646,464)	(1,723,218)	(1,814,134)	(1,909,383)	(2,009,165)	(2,113,799)	(2,223,487)	(2,338,277)	(2,458,478)
Less: Revenue share		-	-	(17,840,542)	(17,712,702)	(18,690,073)	(12,931,932)	-	-	-
Total airline payments	**$ 235,713,763**	**$ 260,851,817**	**$ 285,039,794**	**$ 285,601,869**	**$ 299,961,368**	**$ 305,414,661**	**$ 315,463,786**	**$ 330,586,955**	**$ 381,795,995**	**$ 386,897,944**
Enplaned passengers	21,767,000	23,239,380	23,625,565	24,163,256	24,707,031	25,256,971	25,814,612	26,379,722	26,950,214	27,527,110
Average airline payment to HAS per enplaned passenger	**$ 10.83**	**$ 11.22**	**$ 12.06**	**$ 11.82**	**$ 12.14**	**$ 12.09**	**$ 12.22**	**$ 12.53**	**$ 14.17**	**$ 14.06**
William P. Hobby Airport										
Landing fees	**$ 20,409,174**	**$ 21,144,145**	**$ 21,238,934**	**$ 21,696,559**	**$ 22,412,211**	**$ 28,689,152**	**$ 29,851,821**	**$ 30,536,208**	**$ 34,044,730**	**$ 34,899,637**
Terminal rentals and use fees										
Central Terminal	$ 24,148,297	$ 24,706,720	$ 24,980,683	$ 25,625,921	$ 25,727,672	$ 27,264,616	$ 29,044,885	$ 35,640,505	$ 33,658,867	$ 34,433,526
West Terminal	9,300,902	9,370,781	9,504,336	9,752,215	9,961,545	10,123,535	10,406,713	19,875,744	20,366,765	20,784,865
FIS Facility	6,945,113	6,998,818	7,112,237	7,280,961	7,394,152	7,437,264	7,628,196	6,786,127	7,020,593	7,241,234
Less: Revenue share	-	-	-	-	-	-	-	-	-	-
Total Terminal Rentals	**$ 40,394,312**	**$ 41,076,319**	**$ 41,597,256**	**$ 42,659,097**	**$ 43,083,369**	**$ 44,825,414**	**$ 47,079,794**	**$ 62,302,376**	**$ 61,046,226**	**$ 62,459,624**
Net airline payments	**$ 60,803,486**	**$ 62,220,465**	**$ 62,836,190**	**$ 64,355,656**	**$ 65,495,580**	**$ 73,514,567**	**$ 76,931,615**	**$ 92,838,584**	**$ 95,090,956**	**$ 97,359,262**
Enplaned passengers	7,251,000	7,221,913	7,541,439	7,694,250	7,848,841	8,005,240	8,163,881	8,324,701	8,487,112	8,651,418
Average airline payment to HAS per enplaned passenger	**$ 8.39**	**$ 8.62**	**$ 8.33**	**$ 8.36**	**$ 8.34**	**$ 9.18**	**$ 9.42**	**$ 11.15**	**$ 11.20**	**$ 11.25**

NOTE:

Enplaned passengers reflect budgeted activity for FY 2023 and projected activity for FY 2024 through FY 2032.

SOURCE: Houston Airport System, June 2023; Ricondo & Associates, Inc., June 2023.

TABLE A-6 COST PER ENPLANED PASSENGER - INTERCONTINENTAL

(For Fiscal Years Ending June 30)

	BUDGET	PROJECTED								
	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
George Bush Intercontinental Airport										
Airline payments to HAS	**$ 235,713,763**	**$ 260,851,817**	**$ 285,039,794**	**$ 285,601,869**	**$ 299,961,368**	**$ 305,414,661**	**$ 315,463,786**	**$ 330,586,955**	**$ 381,795,995**	**$ 386,897,944**
Plus: Existing Special Facilities Debt Service	81,392,926	81,437,213	81,251,188	86,537,513	134,198,400	209,964,075	226,342,913	46,484,200	46,447,938	46,406,231
Plus: Future Special Facilities Debt Service	-	-	-	-	-	-	-	-	-	-
Plus: O&M Expenses Paid Directly by Airlines										
Terminal B	9,659,416	9,949,198	10,247,674	10,555,104	10,871,758	11,197,910	11,533,848	11,879,863	12,236,259	12,603,347
Terminal C	20,382,685	20,994,166	21,623,991	22,272,711	22,940,892	23,629,119	24,337,992	25,068,132	25,820,176	26,594,781
Terminal E	15,297,323	15,756,243	16,228,930	16,715,798	17,217,272	17,733,790	18,265,804	18,813,778	19,378,191	19,959,537
Total Payments to HAS	**$ 362,446,113**	**$ 388,988,636**	**$ 414,391,576**	**$ 421,682,994**	**$ 485,189,689**	**$ 567,939,555**	**$ 595,944,342**	**$ 432,832,928**	**$ 485,678,559**	**$ 492,461,840**
Enplaned Passengers	21,767,000	23,239,380	23,625,565	24,163,256	24,707,031	25,256,971	25,814,612	26,379,722	26,950,214	27,527,110
Average payment per enplaned passenger	**$ 16.65**	**$ 16.74**	**$ 17.54**	**$ 17.45**	**$ 19.64**	**$ 22.49**	**$ 23.09**	**$ 16.41**	**$ 18.02**	**$ 17.89**

SOURCE: Houston Airport System, June 2023; Ricondo & Associates, Inc., June 2023.

TABLE A-7 PROJECTED PFC REVENUE COLLECTIONS

(For Fiscal Years Ending June 30)

	BUDGET	PROJECTED								
	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
George Bush Intercontinental Airport										
Enplaned Passengers	21,767,000	23,239,380	23,625,565	24,163,256	24,707,031	25,256,971	25,814,612	26,379,722	26,950,214	27,527,110
Eligibility Ratio	85.0%	85.0%	85.0%	85.0%	85.0%	85.0%	85.0%	85.0%	85.0%	85.0%
Eligible Enplaned Passengers	18,501,950	19,753,473	20,081,730	20,538,768	21,000,976	21,468,425	21,942,420	22,422,763	22,907,682	23,398,044
Beginning Fund Balance	$ 216,563,104	$ 211,830,800	$ 203,385,654	$ 189,195,344	$ 165,681,286	$ 187,563,539	$ 208,837,009	$ 228,330,596	245,846,982	262,643,351
Annual PFC collections	$ 81,223,561	$ 86,717,745	$ 88,158,795	$ 90,165,191	$ 92,194,287	$ 94,246,387	$ 96,327,226	$ 98,435,931	$ 100,564,723	$ 102,717,412
Interest Earnings	$ 3,189,037	$ 3,090,941	$ 2,922,439	$ 2,641,762	$ 2,629,614	$ 2,950,873	$ 3,254,349	$ 3,529,858	$ 3,785,288	$ 4,000,178
Applied as Pay-Go - Future Projects	$ (40,035,216)	$ (45,000,000)	$ (45,000,000)	$ (45,000,000)	$ -	$ -	$ -	$ -	$ -	$ -
PFCs Used To Pay Existing Debt Service	$ (49,109,685)	$ (48,998,538)	$ (50,095,490)	$ (51,413,722)	$ (51,942,509)	$ (52,014,580)	$ (52,753,281)	$ (52,695,659)	(45,533,719)	(47,004,501)
PFCs Used To Pay 2023 Bonds and Future Debt Service[1]	$ -	$ (4,255,295)	$ (10,176,054)	$ (19,907,288)	$ (20,999,139)	$ (23,909,209)	$ (27,334,707)	$ (31,753,744)	$ (42,019,922)	$ (47,642,582)
Ending Fund Balance	$ 211,830,800	$ 203,385,654	$ 189,195,344	$ 165,681,286	$ 187,563,539	$ 208,837,009	$ 228,330,596	$ 245,846,982	$ 262,643,351	$ 274,713,858
William P. Hobby Airport										
Enplaned Passengers	7,251,000	7,221,913	7,541,439	7,694,250	7,848,841	8,005,240	8,163,881	8,324,701	8,487,112	8,651,418
Eligibility Ratio	85.0%	85.0%	85.0%	85.0%	85.0%	85.0%	85.0%	85.0%	85.0%	85.0%
Eligible Enplaned Passengers	6,163,350	6,138,626	6,410,223	6,540,112	6,671,515	6,804,454	6,939,299	7,075,996	7,214,045	7,353,705
Beginning Fund Balance	$ 30,200,000	$ 38,129,020	$ 36,782,800	$ 41,447,986	$ 37,294,952	$ 24,517,065	$ 16,027,003	$ 18,080,613	$ 17,728,115	$ 14,934,208
Annual PFC collections	$ 27,057,107	$ 26,948,568	$ 28,140,878	$ 28,711,093	$ 29,287,952	$ 29,871,554	$ 30,463,521	$ 31,063,623	$ 31,669,659	$ 32,282,766
Interest Earnings	$ 508,653	$ 557,656	$ 582,363	$ 586,176	$ 460,139	$ 301,817	$ 253,903	$ 266,566	$ 243,144	$ 224,700
Applied as Pay-Go - Future Projects	$ -	$ (9,240,608)	$ (4,825,808)	$ (13,328,470)	$ (21,999,394)	$ (17,706,160)	$ (5,278,560)	$ -	$ -	$ -
PFCs Used To Pay Existing Debt Service	$ (19,636,739)	$ (19,611,836)	$ (19,232,248)	$ (19,057,769)	$ (19,039,560)	$ (18,576,211)	$ (18,171,384)	$ (23,656,663)	$ (24,641,378)	$ (21,736,145)
PFCs Used To Pay 2023 Bonds and Future Debt Service[1]	$ -	$ -	$ -	$ (1,064,064)	$ (1,487,024)	$ (2,381,062)	$ (5,213,870)	$ (8,026,024)	$ (10,065,332)	$ (10,455,042)
Ending Fund Balance	$ 38,129,020	$ 36,782,800	$ 41,447,986	$ 37,294,952	$ 24,517,065	$ 16,027,003	$ 18,080,613	$ 17,728,115	$ 14,934,208	$ 15,250,487

NOTE:

1 PFCs Used to Pay Future Debt Service reflect anticipated future approved PFC-eligible debt service related to the Domestic Redevelopment Program at IAH and the West Concourse Expansion at HOU.

SOURCE: Houston Airport System, June 2023; Ricondo & Associates, Inc., June 2023.

TABLE A-8 APPLICATIONS OF REVENUES

(For Fiscal Years Ending June 30)

	BUDGET	PROJECTED								
	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
GROSS REVENUES	$ 539,132,049	$ 610,567,647	$ 656,003,941	$ 685,783,596	$ 710,802,949	$ 735,115,527	$ 754,128,167	$ 782,964,808	$ 847,061,315	$ 865,633,111
Application of Gross Revenues										
1. Operation and Maintenance Expenses	$ 367,356,528	$ 383,350,618	$ 391,806,817	$ 402,483,822	$ 415,194,315	$ 426,669,754	$ 438,687,441	$ 458,445,389	$ 470,866,450	$ 484,251,930
2. Senior Lien Bond Interest and Sinking Fund	$ 7,750,000	$ 1,750,000	$ 1,750,000	$ 1,750,000	$ 1,750,000	$ 1,750,000	$ 1,750,000	$ 1,750,000	$ 1,750,000	$ 1,750,000
Less: PFC revenues to pay debt service										
Less: Grants to pay debt service	-	-	-	-	-	-	-	-	-	-
Less: Interest and other amounts to pay debt service	-	-	-	-	-	-	-	-	-	-
Net Senior Debt Service Requirements	$ 7,750,000	$ 1,750,000	$ 1,750,000	$ 1,750,000	$ 1,750,000	$ 1,750,000	$ 1,750,000	$ 1,750,000	$ 1,750,000	$ 1,750,000
3. Senior Lien Bond Reserve Fund	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
4. Subordinate Lien Bond Interest and Sinking Fund	$ 199,622,718	$ 208,474,748	$ 220,718,543	$ 245,545,546	$ 254,024,717	$ 275,933,997	$ 315,430,454	$ 348,669,463	$ 385,683,508	$ 400,426,318
Less: PFC revenues to pay debt service	(68,746,424)	(72,865,670)	(79,503,792)	(91,442,844)	(93,468,231)	(96,881,062)	(103,473,242)	(116,132,091)	(122,260,351)	(126,838,271)
Less: Grants to pay debt service	(50,000,000)	(10,000,000)	-	-	-	-	-	-	-	-
Less: Interest and other amounts to pay debt service	-	-	-	-	-	-	-	-	-	-
Net Subordinate Debt Service Requirements	$ 80,876,294	$ 125,609,079	$ 141,214,751	$ 154,102,702	$ 160,556,485	$ 179,052,935	$ 211,957,212	$ 232,537,372	$ 263,423,157	$ 273,588,047
5. Subordinate Lien Bond Reserve Fund	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
6. Inferior Lien obligations	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Less: PFC revenues to pay debt service										
Less: Interest and other amounts to pay debt service	-	-	-	-	-	-	-	-	-	-
Net Inferior Debt Service Requirements	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
7. Operation and Maintenance Reserve Fund	$ 4,906,816	$ 2,718,995	$ 1,437,554	$ 1,815,091	$ 2,160,784	$ 1,950,825	$ 2,043,007	$ 3,358,851	$ 2,111,580	$ 2,275,532
8. Renewal and Replacement Fund	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
9. Airports Improvement Fund	$ 78,242,410	$ 97,138,954	$ 119,794,818	$ 125,631,981	$ 131,141,365	$ 125,692,013	$ 99,690,507	$ 86,873,196	$ 108,910,127	$ 103,767,603
Less: Revenue sharing[1]	$ -	$ -	$ -	$ (17,840,542)	$ (17,712,702)	$ (18,690,073)	$ (12,931,932)	$ -	$ -	$ -
Available Airports Improvement Deposits for Capital Improvements	**$ 78,242,410**	**$ 97,138,954**	**$ 119,794,818**	**$ 107,791,439**	**$ 113,428,662**	**$ 107,001,940**	**$ 86,758,576**	**$ 86,873,196**	**$ 108,910,127**	**$ 103,767,603**
TOTAL APPLICATION OF GROSS REVENUES	**$ 539,132,049**	**$ 610,567,647**	**$ 656,003,941**	**$ 685,783,596**	**$ 710,802,949**	**$ 735,115,527**	**$ 754,128,167**	**$ 782,964,808**	**$ 847,061,315**	**$ 865,633,111**

NOTE:

1 Annual revenue sharing is anticipated beginning in the fiscal year after completion of ITRP Phase 1 and Hobby west concourse expansion projects in the amount equal to 50% of net revenues above 1.5 debt service coverage for carriers at IAH and HOU, respectively.

SOURCE: Houston Airport System, June 2023; Ricondo & Associates, Inc., June 2023.

TABLE A-9 DEBT SERVICE COVERAGE

(For Fiscal Years Ending June 30)

	BUDGET	PROJECTED								
	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
Gross Revenues	**$ 539,132,049**	**$ 610,567,647**	**$ 656,003,941**	**$ 685,783,596**	**$ 710,802,949**	**$ 735,115,527**	**$ 754,128,167**	**$ 782,964,808**	**$ 847,061,315**	**$ 865,633,111**
Less: Operation and Maintenance Expenses	(367,356,528)	(383,350,618)	(391,806,817)	(402,483,822)	(415,194,315)	(426,669,754)	(438,687,441)	(458,445,389)	(470,866,450)	(484,251,930)
Plus: Renewal and Replacement Fund transfer	-	-	-	-	-	-	-	-	-	-
Net Revenues	**$ 171,775,520**	**$ 227,217,028**	**$ 264,197,124**	**$ 283,299,774**	**$ 295,608,634**	**$ 308,445,772**	**$ 315,440,726**	**$ 324,519,419**	**$ 376,194,865**	**$ 381,381,181**
Calculation of debt service coverage										
Debt Service Requirements										
Senior Lien Obligations (Commercial Paper)	$ 7,750,000	$ 1,750,000	$ 1,750,000	$ 1,750,000	$ 1,750,000	$ 1,750,000	$ 1,750,000	$ 1,750,000	$ 1,750,000	$ 1,750,000
Subordinate Lien Bonds (General Airport Revenue Bonds)	199,622,718	208,474,748	220,718,543	245,545,546	254,024,717	275,933,997	315,430,454	348,669,463	385,683,508	400,426,318
Less: PFC revenues to pay debt service[1]	(68,746,424)	(72,865,670)	(79,503,792)	(91,442,844)	(93,468,231)	(96,881,062)	(103,473,242)	(116,132,091)	(122,260,351)	(126,838,271)
Less: Grants to pay debt service	(50,000,000)	(10,000,000)	-	-	-	-	-	-	-	-
Total Debt Service Requirements	**$ 88,626,294**	**$ 127,359,079**	**$ 142,964,751**	**$ 155,852,702**	**$ 162,306,485**	**$ 180,802,935**	**$ 213,707,212**	**$ 234,287,372**	**$ 265,173,157**	**$ 275,338,047**
Debt service coverage for all Airport System Revenue Bonds	**1.94 x**	**1.78 x**	**1.85 x**	**1.82 x**	**1.82 x**	**1.71 x**	**1.48 x**	**1.39 x**	**1.42 x**	**1.39 x**

NOTE:

1 PFC revenues to pay debt service are estimated based on existing PFC approvals as well as anticipated approvals for the HOU West Concourse Expansion and the IAH Domestic Redevelopment Program.

SOURCE: Houston Airport System, June 2023; Ricondo & Associates, Inc., June 2023.

APPENDIX B

AIRPORT SYSTEM FUND FINANCIAL STATEMENTS

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Annual Comprehensive Financial Report

THE AIRPORT SYSTEM FUND

AN ENTERPRISE FUND OF THE CITY OF HOUSTON, TEXAS

FOR THE FISCAL YEARS ENDED

JUNE 30, 2022 and JUNE 30, 2021

AIRPORT SYSTEM FUND
An Enterprise Fund of the

City of Houston, Texas

ANNUAL COMPREHENSIVE FINANCIAL REPORT

For the Fiscal Years Ended June 30, 2022 and June 30, 2021

Prepared by:

Office of City Controller

Chris Brown
City Controller

Beverly Riggans
Deputy City Controller

Houston Airport System

Clint Stephen
Chief Financial Officer

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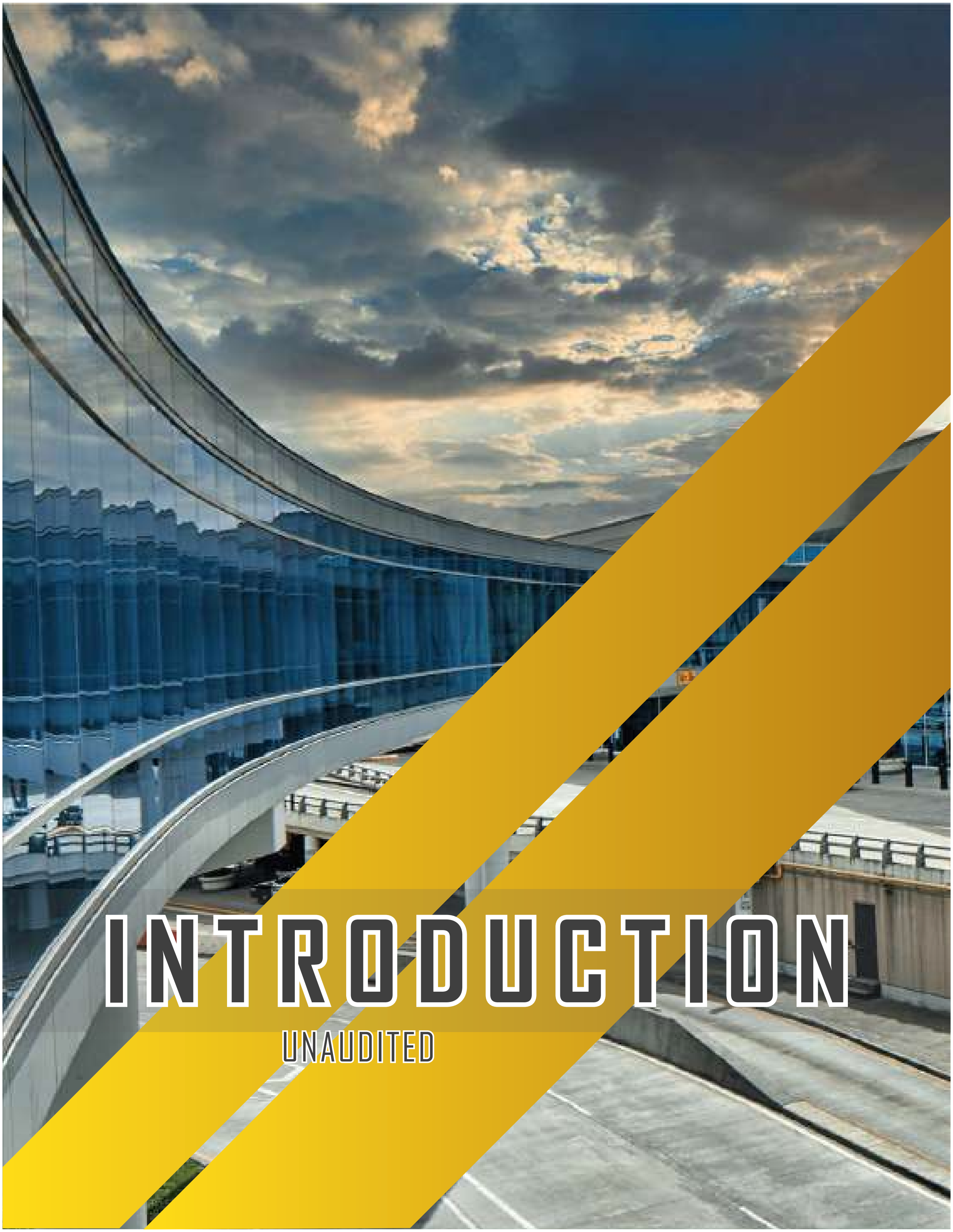
CONTENTS

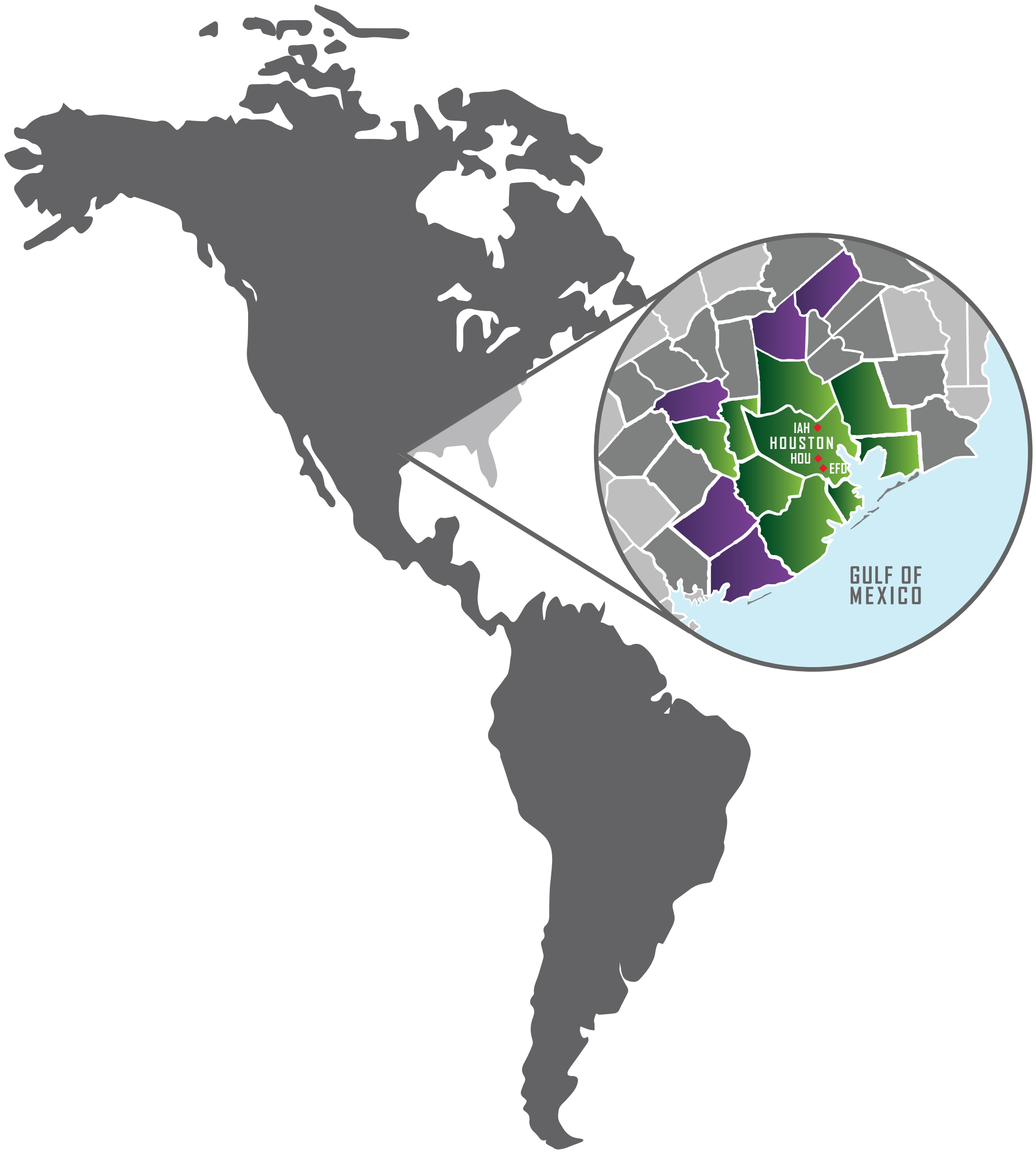


INTRODUCTION

UNAUDITED

CITY OF HOUSTON
TEXAS

HOUSTON AIRPORT SYSTEM



Metropolitan Statistical Area (MSA) of Houston-The Woodlands-Sugar Land, TX includes 9 counties.

Consolidated Statistical Area (CSA) of Houston-The Woodlands, TX adds Matagorda, Trinity, Walker, Washington, and Wharton counties.

Government Finance Officers Association

Certificate of Achievement for Excellence in Financial Reporting

Presented to

City of Houston, Texas
Airport System Fund

For its Annual Comprehensive
Financial Report
For the Fiscal Year Ended

June 30, 2021

Executive Director/CEO

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OFFICE OF THE CITY CONTROLLER
CITY OF HOUSTON, TEXAS

CHRIS B. BROWN

December 19, 2022

To the Citizens, Mayor and Members of the City Council of the City of Houston, Texas:

I am pleased to present you with the Annual Comprehensive Financial Report (“ACFR”) for the City of Houston, Texas (the “City”), Airport System Fund (the “Fund”) for the fiscal years ended June 30, 2022 and June 30, 2021, including the independent auditors’ report. The Controller’s Office and the Houston Airport System (“HAS”) share responsibility for both the accuracy of the data and the completeness and fairness of the presentation, including all disclosures. To the best of our knowledge and belief, the enclosed data is accurate in all material respects and is reported in a manner designed to present fairly the financial position and results of operations of the Fund.

The ACFR includes four sections: Introductory, Financial, Statistical, and Compliance. The Introductory Section includes this transmittal letter, a list of principal officials, and the HAS organizational chart. The Financial Section includes Management’s Discussion and Analysis (“MD&A”), financial statements with accompanying notes, required supplementary information, as well as the independent auditors’ report on the financial statements. The Statistical Section includes selected financial trends, revenue capacity, debt capacity, demographic, economic, and operating information, generally presented on a ten-year basis. The Compliance Section includes the independent auditors’ report on HAS’ compliance with the requirements of the Federal Aviation Administration (the “FAA”) Passenger Facility Charge (“PFC”) Program.

The Financial Section described above is prepared in accordance with accounting principles generally accepted in the United States of America (“GAAP”) for governments as prescribed by the Governmental Accounting Standards Board. The MD&A offers readers an overview and analysis of the financial activities of the Fund and should be read as an introduction to the financial statements. In addition, the notes to the financial statements offer additional important information and are essential to a full understanding of the financial statements.

THE REPORTING ENTITY

The Fund is an enterprise fund of the City and is included in the City’s Annual Comprehensive Financial Report. An enterprise fund is used to account for services provided to the general public on a continuing basis with costs recovered primarily through user charges. HAS, under the administrative control of the Mayor, manages and operates the Fund. The City Controller, as the chief financial officer of the City, maintains the book of accounts, prepares financial statements, and, with the Mayor, co-signs all warrants, contracts, and orders for payment of any public funds or money relating to the Fund.

HAS OVERVIEW

HAS consists of three airports: George Bush Intercontinental Airport (“IAH”), William P. Hobby Airport (“HOU”), and Ellington Airport (“EFD”). United Airlines (“United”) is the hub air carrier operating at IAH, and Southwest Airlines (“Southwest”) is the dominant air carrier operating at HOU.

IAH is the nation’s 13th busiest airport, as measured by enplaned passengers in calendar year 2021, and is classified as a “large hub airport” by the FAA. IAH serves as an international gateway airport and a primary connecting point in the national air transportation system and was the number one largest hub based on number of available seats and the third largest hub in number of departures for United in calendar year 2021. Additionally, IAH is the primary air cargo airport for the region and ranked number 18 in the nation, as measured by cargo landed weight. HOU is the nation's 35th busiest airport, as measured by enplaned passengers in calendar year 2021, and is classified as a "medium hub airport" by the FAA. HOU is one of the major operating bases for Southwest, which offers domestic service and international service, including destinations in Mexico, Central America, and the Caribbean. EFD is primarily used for general aviation, military, and the National Aeronautics and Space Administration's ("NASA") space operations, and currently has no commercial passenger service. In June 2015, HAS obtained a commercial spaceport license from the FAA for EFD, allowing EFD to accommodate horizontal-launch commercial spaceflight operations.

ECONOMIC CONDITIONS AND MAJOR INITIATIVES

The City is the nation's fourth most populous and lies within the fifth largest metropolitan statistical area in the United States - the nine-county, Houston-The Woodlands-Sugar Land metropolitan statistical area (the "MSA"). The City and the MSA continue to see year-over-year population growth. For the year ended December 31, 2021, the estimated population increased to 7.2 million. In addition, overall business environment and available workforce in the State of Texas continues to attract multi-national enterprises and supporting industries to Texas. The MSA is home to several Fortune 500 companies, including Phillips 66, Sysco, KBR, ConocoPhillips, Huntsman, and Group 1 Automotive. As a result, the primary service region for HAS entertains a diverse economic base. Leading industries include energy, petrochemical, engineering and construction, real estate, aerospace, medicine and health care, transportation, biotechnology, and computer technology.

Widely recognized as the "Energy Capital of the World," the City is a global center for virtually every segment of the oil-and-gas industry. The City is also home to the Texas Medical Center, the world's largest concentration of biomedical research and healthcare institutions, and to the Lyndon B. Johnson Space Center, NASA's center for human spaceflight training, research, and flight control. The deep-water Port of Houston is the nation's busiest port as ranked by foreign tonnage and the second-busiest port as ranked by total tonnage.

Fiscal Year 2022 in Review

During Fiscal Year 2022, HAS systemwide passengers increased 75.0% over COVID-19 pandemic impacted FY2021 totals. IAH passengers increased 83.3% in total, including a domestic passenger increase of 76.2% and an international passenger increase of 115.5% over FY2021. At HOU, total passenger traffic increased 53.2%, consisting of a domestic increase of 50.6% and an international increase of 100.4%. HAS systemwide passenger volume returned to 87.4% of the FY2019 traffic level, with IAH reaching 87.9%, and HOU reaching 85.6%. Overall HAS domestic traffic was 89.8% of the FY2019 domestic passenger level and 77.5% of the FY2019 international passenger level. HAS currently connects directly to 191 destinations, of which 127 are domestic and 64 are international. Prior to COVID-19, HAS connected directly to 199 destinations – 127 domestic and 72 international.

Key factors that will affect future airline traffic and passenger volume at HAS include (1) the cost and availability of financing, labor, fuel, aircraft, and insurance, (2) regional, national, and international economic conditions, (3) international trade, (4) competitive considerations, including the effects of airline ticket pricing, (5) traffic and airport capacity constraints of the Houston Airport System and competing airports, (6) passenger demand for air travel. The number of passengers at the Houston Airport System airports depends partly on the profitability of the U.S. airline industry and the associated ability of the industry and individual airlines, particularly United and Southwest, to make the necessary investments to provide service.

As of FY2022, EFD - Houston Spaceport has three prominent tenants. Collins Aerospace announced plans for a new eight-acre, approximately 120,000 square-foot campus that will support spaceflight and host Houston's first spaceflight incubator. Intuitive Machines will expand their 12.5-acre plot at the Houston Spaceport entrance for the company's lunar program, which includes moon lander and deep space communications development. The first commercial space station builder, Axiom Space will construct a campus containing employee offices, astronaut training, mission control facilities, engineering development, testing labs, and a high bay production facility to house space station modules.

Capital Improvement Program

The HAS five-year Capital Improvement Plan ("CIP") for fiscal years 2023-2027 calls for $2.3 billion to expand, update, and maintain the airport system. This CIP was developed in connection with master planning studies for all three system airports. Future improvements will be funded with airport earnings, proceeds from new bond issues, proceeds from the FAA and other grantors, and with PFCs. The CIP excludes projects funded by airline tenants under the terms of special facilities leases. HAS continually reviews and updates its CIP to address changing economic conditions and air traffic demand levels, changing operating conditions, and facility conditions.

At IAH, HAS continues with construction activities for the IAH Terminal Redevelopment Program (the "ITRP"). It advanced significantly in 2022 with the closing of the Terminal D/E parking garage for demolition to make room for the expansion of the Mickey Leland International Terminal (MLIT) with a new International Central Processor. Once complete, the International Central Processor will house ticketing counters, baggage claims and a 17-lane security checkpoint that will be one of the largest in the country. The MLIT program also includes the addition of a new concourse and renovates the remainder of Terminal D, with updated facilities where travelers can board their planes, relax in the many lounges, or explore multiple dining options and vendors. The brand-new D West Concourse space in the MLIT will house an additional 10 new narrow-body gates. It will also have the capacity to accommodate up to 6 wide-body aircraft simultaneously. Due to be substantially completed in late 2024, ITRP will accommodate international airline growth, resolve current and future roadway and curbside capacity constraints, and vastly improve the baggage handling system.

A roadway and curbside component of the modernization and expansion of Terminal A is a part of this CIP along with several taxiways at IAH. This Domestic Redevelopment Plan will address increased airline demand for gates as IAH recovers to pre COVID-19 pandemic projected levels of flying.

At HOU, passenger traffic growth will be supported with a seven-gate expansion to the West Concourse. Other projects include baggage claim expansion, sewer system replacement, and other capital improvements planned for the airfield as required by the FAA, as well as normal pavement management and customer service enhancements for the HOU Central Concourse.

As HAS continues to review its CIP for changes necessary to "right-size" its facilities and to accommodate the growth in passenger volume at its airports, management has committed to financial targets intended to optimize use of resources and to expand facilities in a financially responsible manner. More specifically, financial targets set in the strategic plan for fiscal years 2020-2024 include the following:

FINANCIAL METRIC	TARGET	FY22 ACTUAL
Total debt per enplaned passenger	$120 or Less	$97.18*
Debt service coverage ratio (net of PFC offset)	1.5 or Greater	N/A**
Days of cash on-hand for operations	450 or Greater	695 days

*Note – Total debt excludes special facility debt.

**Note –HAS paid all debt service in fiscal year 2022 from PFC and federal grant proceeds.

FINANCIAL INFORMATION

The Fund's financial accounting system utilizes the accrual basis of accounting. Management of HAS and the City are responsible for establishing and maintaining internal controls designed to ensure that the assets of the Fund are protected from loss, theft, or misuse, and to ensure that adequate accounting data is compiled to allow for preparation of the ACFR in conformity with GAAP.

HAS controls current expenses at all division levels. HAS' Deputy Directors are responsible for the expenses approved by the Division Managers reporting to them; in turn, Division Managers are responsible for budgetary items that are controllable at their organizational level. Budgetary control is maintained at the expenditure category level (e.g., personnel services, supplies, other services, and capital outlay), through the encumbrance of estimated purchase amounts prior to the release of purchase orders or contracts to the vendors. This is accomplished primarily through an automated encumbrance and accounts payable system.

However, the Fund as a whole is not budgeted. The City Council approves the Fund's annual budget for operational expenses and authorizes capital project expenditures through individual appropriation ordinances based on a five-year CIP that is proposed by the Mayor and HAS Director. City Council can legally appropriate only those amounts of money that the City Controller has certified to be available for appropriation.

OTHER INFORMATION

Independent Audit

A joint venture of two independent accounting firms, McConnell & Jones, LLP and Banks, Finley, White & Co., performed the audits of the Fund's financial statements for the years ended June 30, 2022 and 2021. The financial section of this report includes the independent auditors' report on the basic financial statements. The compliance section of this report includes the independent auditors' report on HAS' compliance, and internal control over compliance, applicable to the PFC Program instituted by the FAA.

The City, as a whole, is also required to undergo an annual compliance audit in conformity with the provisions of Title 2 of the U.S. *Code of Federal Regulations Part 200, Uniform Administrative Requirements, Cost Principles, and Audit Requirements for Federal Awards*, and the State of Texas *Uniform Grants Management Standards*. This audit is conducted in conjunction with the City's annual financial statements audit. Information related to this compliance audit, including the schedule of expenditures of federal and state awards and related notes, and the schedule of findings, and questioned costs, are included in the City's Single Audit Report.

Awards/Acknowledgments

The Government Finance Officers Association of the United States and Canada ("GFOA") awarded a Certificate of Achievement for Excellence in Financial Reporting ("COA") to the City of Houston, Texas, Airport System Fund for its Financial Report submitted for the fiscal year ended June 30, 2021. This was the 28th consecutive year that the Fund has achieved this prestigious award. In order to be awarded a COA, a governmental unit must publish an easily readable and efficiently organized ACFR. This report must satisfy both GAAP and applicable legal requirements.

A COA is valid for a period of one year. We believe our current ACFR continues to conform to the COA program requirements, and we are submitting it to GFOA to determine its eligibility for another certificate.

The preparation of this ACFR was made possible by the dedicated service of the Finance Department of HAS and the City Controller's Office.

Respectfully submitted,

DocuSigned by:

Chris Brown

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Chris B. Brown

City Controller

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CITY OF HOUSTON ELECTED OFFICIALS

AS OF JUNE 30, 2022

SYLVESTER TURNER
MAYOR

CHRIS BROWN
CONTROLLER

AMY PECK
DISTRICT A

TARSHA JACKSON
DISTRICT B

ABBIE KAMIN
DISTRICT C

CAROLYN EVANS-SHABAZZ
DISTRICT D

DAVE MARTIN
DISTRICT E

TIFFANY D. THOMAS
DISTRICT F

MARY NAN HUFFMAN
DISTRICT G

KARLA CISNEROS
DISTRICT H

ROBERT GALLEGOS
DISTRICT I

EDWARD POLLARD
DISTRICT J

MARTHA CASTEX-TATUM
DISTRICT K

MIKE KNOX
AT-LARGE POSITION 1

DAVID ROBINSON
AT-LARGE POSITION 2

MICHAEL KUBOSH
AT-LARGE POSITION 3

LETITIA PLUMMER
AT-LARGE POSITION 4

SALLIE ALCORN
AT-LARGE POSITION 5

HOUSTON AIRPORT SYSTEM PRINCIPAL OFFICIALS

AS OF JUNE 30, 2022

Saba Abashawl
Chief External Affairs Officer

Darryl Daniel
Chief Technology Officer

Brant Gary*
Deputy Director
Workforce Innovation and Development

Kertecia Hampton**
Interim Chief Financial Officer

Jocelyn Labove
Chief Aviation Risk and Regulatory Compliance Officer

Mario C. Diaz
Director of Aviation

Arturo Machuca
Director
Ellington Airport & Houston Spaceport

Liliana Rambo
Chief Terminal Management Officer

Steve Runge
Chief of Operations

Jarrett Simmons***
Chief Development Officer

Jim Szczesniak
Chief Operating Officer

Molly Waits
Chief Marketing, Air Service Development & Communications Officer

*As of July 28th, 2022 Brant Gary resigned from HAS and Liliana Rambo was appointed Interim Deputy Director of WID

As of September 9th, 2022 Francisco Cuellar was named HAS' Chief Commercial Officer

**As of October 3rd, 2022 Clint Stephen was named HAS' Chief Financial Officer

***As of November 2nd, 2022 Jarrett Simmons resigned from HAS and Gary High was appointed Interim Deputy Director - Infrastructure

2022 SKYTRAX WORLD AIRPORT AWARDS

Houston now has the only 5-Star rated airport in North America after William P. Hobby Airport achieved a 5-Star Airport status in the Skytrax World Airport Star Rating for 2022

Houston is also the only U.S. city to have two airports in the BEST AIRPORTS IN NORTH AMERICA, CLEANEST AIRPORTS and BEST AIRPORT STAFF IN NORTH AMERICA categories.

IAH

#2 World's Best Website and Digital Services

George Bush Intercontinental Airport (IAH), finished in second place in the World's Best Website and Digital Services rankings and in tenth place in the Best Airport Staff in North America list.

World's Top 100 List

Globally, IAH achieved the #36 ranking among the World's Top 100 list.

Additionally, out of the ten Best World Airports, IAH ranked third in the 30-40 million passengers category.

HOU

First Airport to Earn a 5-Star Rating in North America

William P. Hobby Airport (HOU) excelled in all 29 rating categories and was highlighted for its wide range of substantial guest experience upgrades which include a new children's play area, state-of-the-art restroom facilities, modern signage/information systems, a prayer room and new stage for live music performances. HOU becomes one of just sixteen 5-Star Airports in the world.

Best Regional Airport in North America

Hobby Airport received one of the top honors as the Best Regional Airport in North America.

Hobby also climbed in the World's Top 100 list and achieved the second-highest ranking among US airports, climbing to #33 globally.

Additionally, Hobby ranked third in the Best Airport in North America and fourth Cleanest Airports in North America.

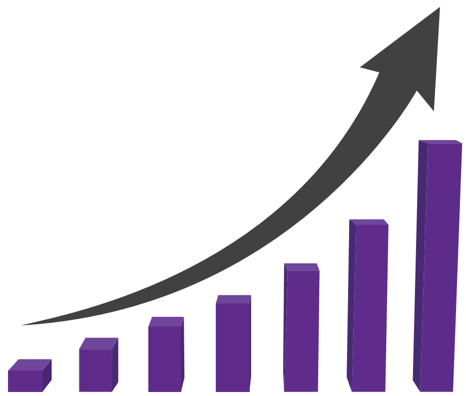
Finally, Hobby Airport made the Top 10 list for Best Airport Staff in North America.

GOVERNMENT FINANCE OFFICERS ASSOCIATION

The City of Houston Airport System Fund was awarded the Certificate of Achievement for Excellence in Financial Reporting for the 28th consecutive year for its Annual Comprehensive Financial Report (ACFR) for the fiscal year ended June 30, 2021.

ACI INTERNATIONAL HEALTH ACCREDITATION

For the second consecutive year, Airports Council International (ACI), has designated both George Bush Intercontinental (IAH) and William P. Hobby (HOU) airports as safe and secure airports for the traveling public. The accreditation recognizes the effectiveness of Houston Airports' FlySafeHouston program, which was launched in June 2020 to directly combat and mitigate the deadly COVID-19 pandemic. FlySafeHouston offers a detailed commitment to new safety measures to safeguard a healthy airport experience. Priorities include mask and face coverings for all Houston Airports employees, touchless kiosks at select airline ticketing counters, facial comparison technology at select international departing gates and all immigration entry points, deep cleanings, social distancing markers and queues, safety shields, additional installment of hand sanitizer stations, increased frequency of air filter replacement and public announcements and signage to promote good hygiene and social distancing.

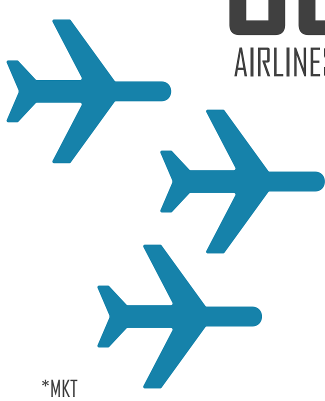


$481M
OPERATING REVENUE

52
MILLION PASSENGERS

199 [(A)]
NON-STOP DESTINATIONS

30 [(A)]
AIRLINES*



*MKT

35 [(A)]
COUNTRIES

(A) Data presented for the Houston Airport System as a whole, not by airport; for fiscal year 2022

7.4 MILLION

POPULATION SERVICE AREA

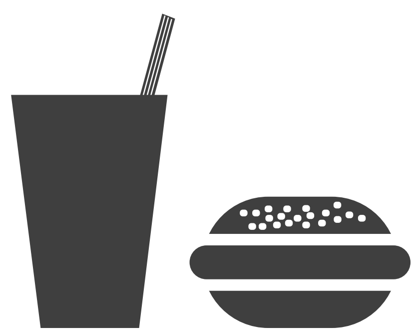
692[(A)]

DAILY DEPARTURES*

*AVG flights

32,952

PUBLIC PARKING SPACES

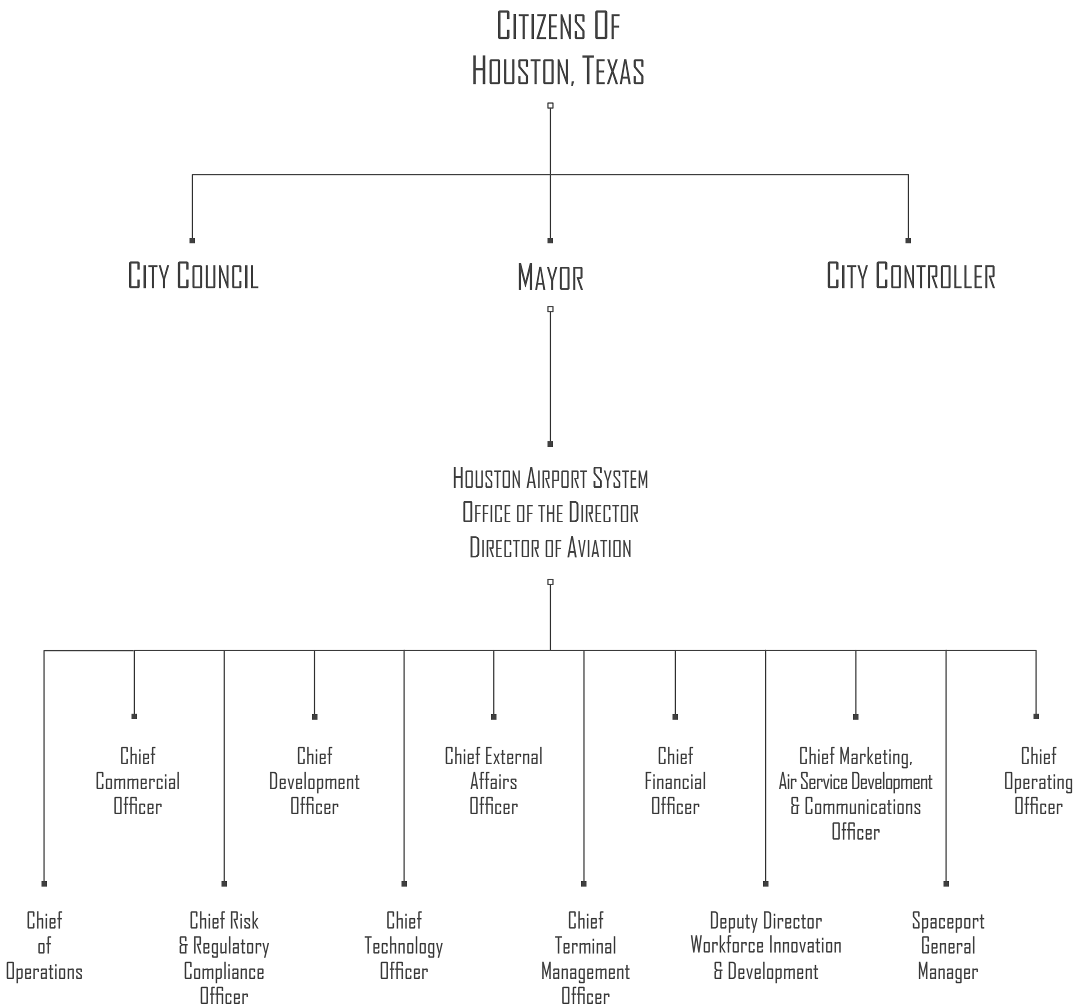


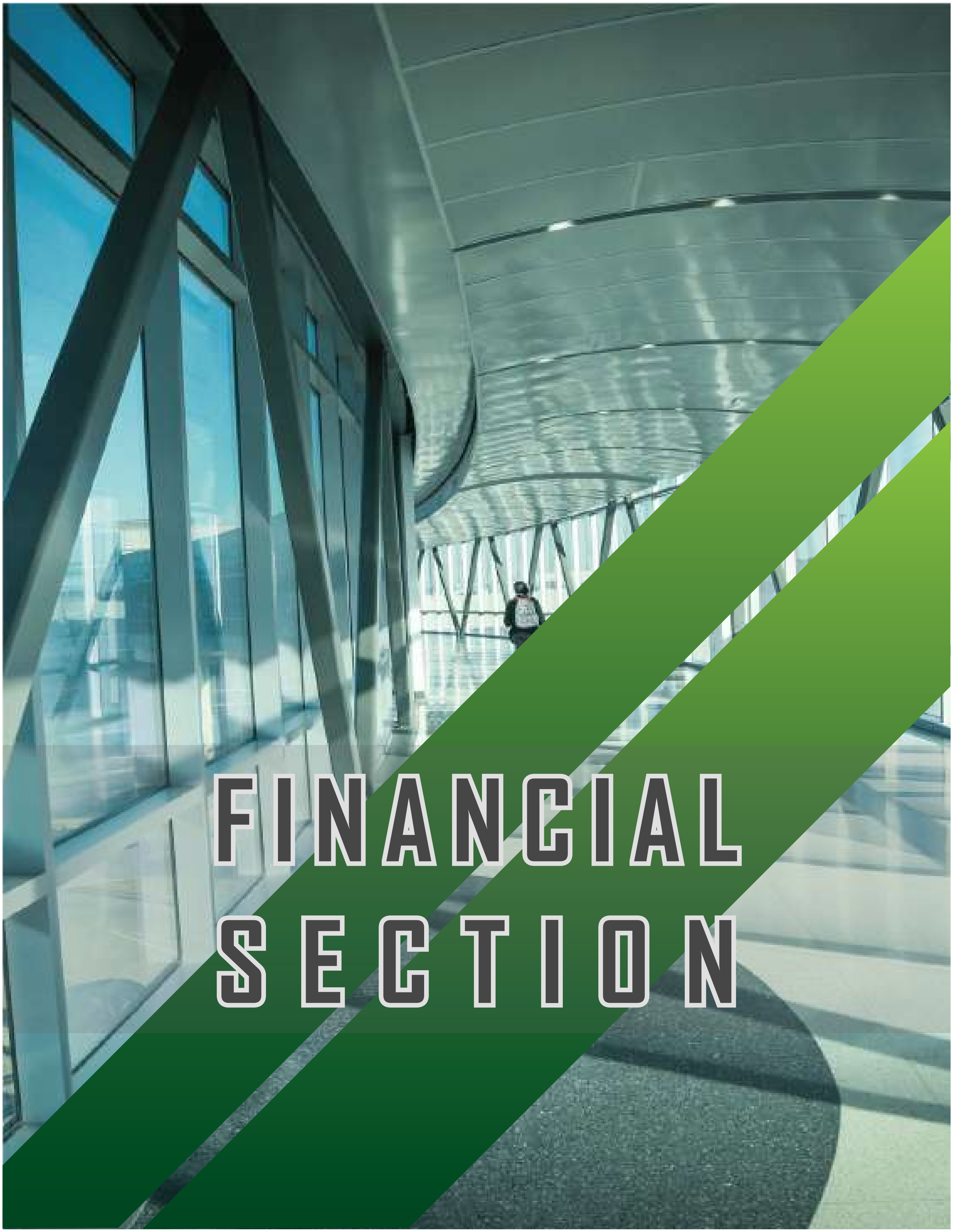
130,734 sq ft

CONCESSION SPACE

(A) Data presented for the Houston Airport System as a whole, not by airport; for fiscal year 2022

ORGANIZATIONAL CHART





FINANCIAL SECTION

CITY OF HOUSTON
TEXAS

INDEPENDENT AUDITOR'S REPORT

To the Honorable Mayor,
Members of City Council, and City Controller
City of Houston, Texas

Opinion

We have audited the accompanying financial statements of the Airport System Fund of the City of Houston Texas, as of and for the year ended June 30, 2022 and 2021, and the related notes to the financial statements, as listed in the table of contents.

In our opinion, the financial statements referred to above present fairly, in all material respects, the financial position of the Airport System Fund of the City of Houston, Texas, as of June 30, 2022 and 2021, and the changes in its financial position and cash flows for the year then ended in accordance with accounting principles generally accepted in the United States of America.

Basis for Opinion

We conducted our audits in accordance with auditing standards generally accepted in the United States of America. Our responsibilities under those standards are further described in the Auditor's Responsibilities for the Audit of the Financial Statements section of our report. We are required to be independent of the City of Houston, Texas, and to meet our other ethical responsibilities, in accordance with the relevant ethical requirements relating to our audits. We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinion.

Emphasis of Matter

As discussed in Note 1, the financial statements present only the Airport System Fund and do not purport to, and do not, present fairly the financial position of the City of Houston, Texas, as of June 30, 2022 and 2021, the changes in its financial position, or, where applicable, its cash flows for the year then ended in accordance with accounting principles generally accepted in the United States of America. Our opinion is not modified with respect to this matter.

Responsibilities of Management for the Financial Statements

Management is responsible for the preparation and fair presentation of the financial statements in accordance with accounting principles generally accepted in the United States of America, and for the design, implementation, and maintenance of internal control relevant to the preparation and fair presentation of financial statements that are free from material misstatement, whether due to fraud or error.

Auditor's Responsibilities for the Audit of the Financial Statements

Our objectives are to obtain reasonable assurance about whether the financial statements as a whole are free from material misstatement, whether due to fraud or error, and to issue an auditor's report that includes our opinion.

4828 Loop Central Drive • Suite 1000 • Houston, Texas 77081

To the Honorable Mayor,
Members of the City Council, and City Controller
City of Houston, Texas
Page 2

Reasonable assurance is a high level of assurance but is not absolute assurance and therefore is not a guarantee that an audit conducted in accordance with generally accepted auditing standards will always detect a material misstatement when it exists. The risk of not detecting a material misstatement resulting from fraud is higher than for one resulting from error, as fraud may involve collusion, forgery, intentional omissions, misrepresentations, or the override of internal control. Misstatements are considered material if there is a substantial likelihood that, individually or in the aggregate, they would influence the judgment made by a reasonable user based on the financial statements.

In performing an audit in accordance with generally accepted auditing standards, we:

- Exercise professional judgment and maintain professional skepticism throughout the audit.
- Identify and assess the risks of material misstatement of the financial statements, whether due to fraud or error, and design and perform audit procedures responsive to those risks. Such procedures include examining, on a test basis, evidence regarding the amounts and disclosures in the financial statements.
- Obtain an understanding of internal control relevant to the audit in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the City of Houston, Texas' internal control. Accordingly, no such opinion is expressed.
- Evaluate the appropriateness of accounting policies used and the reasonableness of significant accounting estimates made by management, as well as evaluate the overall presentation of the financial statements.

We are required to communicate with those charged with governance regarding, among other matters, the planned scope and timing of the audit, significant audit findings, and certain internal control-related matters that we identified during the audit.

Required Supplementary Information

Accounting principles generally accepted in the United States of America require that the management's discussion and analysis (pages 4-15) and the Pension System Supplementary Information and Other Post-Employment Benefits Supplementary Information (pages 67-74) be presented to supplement the basic financial statements. Such information is the responsibility of management and, although not a part of the basic financial statements, is required by the Governmental Accounting Standards Board, who considers it to be an essential part of financial reporting for placing the basic financial statements in an appropriate operational, economic, or historical context. We have applied certain limited procedures to the required supplementary information in accordance with auditing standards generally accepted in the United States of America, which consisted of inquiries of management about the methods of preparing the information and comparing the information for consistency with management's responses to our inquiries, the basic financial statements, and other knowledge we obtained during our audit of the basic financial statements. We do not express an opinion or provide any assurance on the information because the limited procedures do not provide us with sufficient evidence to express an opinion or provide any assurance.

Other Information

Management is responsible for the other information included in the annual report. The other information comprises the Introductory, Statistical and Compliance sections but does not include the basic financial statements and our auditor's report thereon.

The Passenger Facility Charge Revenues and Disbursements Schedule and accompanying notes (pages 102-104) are the responsibility of management and were derived from, and relate directly to the underlying accounting and other records used to prepare the financial statements.

Our opinions on the basic financial statements do not cover the other information, and we do not express an opinion or any form of assurance thereon.

In connection with our audits of the basic financial statements, our responsibility is to read the other information and consider whether a material inconsistency exists between the other information and the basic financial statements, or the other information otherwise appears to be materially misstated. If, based on the work performed, we conclude that an uncorrected material misstatement of the other information exists, we are required to describe it in our report.

Other Reporting Required by *Government Auditing Standards*

In accordance with *Government Auditing Standards*, we have also issued our report dated December 19, 2022, on our consideration of the Airport System Fund of the City of Houston, Texas' internal control over financial reporting and on our tests of its compliance with certain provisions of laws, regulations, contracts, and grant agreements and other matters. The purpose of that report is solely to describe the scope of our testing of internal control over financial reporting and compliance and the results of that testing, and not to provide an opinion on the effectiveness of the Airport System Fund of the City of Houston, internal control over financial reporting or on compliance. That report is an integral part of an audit performed in accordance with *Government Auditing Standards* in considering the Airport System Fund of the City of Houston, Texas's internal control over financial reporting and compliance.

McConnell & Jones LLP Banks, Finley, White & Co.

December 19, 2022

The Houston Airport System ("HAS") is an independent, financially self-sufficient department of the City of Houston, Texas (the "City") that owns George Bush Intercontinental Airport ("IAH"), William P. Hobby Airport ("HOU"), and Ellington Airport ("EFD"). The Airport System Fund (the "Fund") is an enterprise fund of the City. HAS, under the administrative control of the Mayor, manages and operates the Fund. Management of HAS offers readers of the Fund's financial statements this overview and analysis of the financial activities for the fiscal years ended June 30, 2022 ("FY2022") and June 30, 2021 ("FY2021"). This discussion and analysis should be read in conjunction with the Fund's financial statements that begin on page 16.

Operational and Financial Highlights

Impact of COVID-19

On March 11, 2020, the World Health Organization declared the novel strain of coronavirus ("COVID-19") a global health pandemic and recommended containment and mitigation measures worldwide. Many state and local governments in the United States issued "stay-at-home" or "shelter-in-place" orders, which severely restricted movement and limited businesses and activities to essential functions. The COVID-19 outbreak and resulting restrictions have severely disrupted, and continue to disrupt, the economies of the United States and other countries. The outbreak has adversely affected both domestic and international travel and travel-related industries. Airports and airlines have been acutely impacted by the reductions in passenger volumes and flights, as well as by the broader economic shutdowns and continued restrictions. In response, airlines have reduced flight frequency and aircraft size to attempt to match capacity to the reduced demand for air travel.

The United States government, the Federal Reserve Board, and foreign governments took regulatory actions and implemented other measures to mitigate the broad disruptive effects of the COVID-19 outbreak on the U.S. and global economies.

The Coronavirus Aid, Relief, and Economic Security Act ("CARES Act") signed into law on March 27, 2020 provided $10 billion of assistance to U.S. airports, which was apportioned among such airports based on various formulas. HAS is eligible to receive a total of $200.2 million of CARES Act funds, on a reimbursement basis, through the Federal Aviation Administration (the "FAA") over a four-year period per the CARES Act. In addition, the Coronavirus Response and Relief Supplemental Appropriation Act ("CRRSA Act"), passed by the U.S. Congress on December 27, 2020, provided relief to airports to prevent, prepare for, and respond to the COVID-19 pandemic, including relief from rent and minimum annual guarantees for eligible airport concessions at various airports. HAS and its airport concessions are eligible to receive approximately $45.8 million and $6.2 million, respectively, of CRRSA Act funds on a reimbursement basis over a four-year period. Furthermore, the American Rescue Plan Act of 2021 ("ARP Act") was signed into law by the President of the United States on March 11, 2021 to provide additional financial assistance to the airports. HAS and its concessions are eligible to receive approximately a total of $181.0 million and $24.8 million, respectively, of ARP Act funds, on a reimbursement basis, over a four-year period. A summary of related expenditures are as follows:

($ in thousands)

	Year Ended June 30, 2022	Year Ended June 30, 2021	Year Ended June 30, 2020
Debt service	$85,387	$157,034	$8,057
Operation and maintenance expenses	49,234	30,335	-
Total	$134,621	$187,369	$8,057
Conessions Relief	31,028	-	-

Key Performance Indicators

The following table highlights changes in some of HAS' operating and financial key performance indicators for the years ended June 30, 2022, 2021, and 2020. Additional detail can be found in the Statistical section of this Annual Comprehensive Financial Report in the Operational Information sub-section.

For the Years Ended	June 30, 2022	June 30, 2021	June 30, 2020
Total passengers (in millions)	52.0	29.7	43.6
Aircraft operations (in thousands)	690.9	511.7	623.8
Passenger landed weight* (in millions of pounds)	31,550.4	21,171.0	27,872.1
Cargo landed weight* (in millions of pounds)	2,285.9	2,283.4	2,473.2
Cargo metric tons* (in thousands)	533.5	462.8	484.4

*FY2021 was adjusted

Adoption of New Accounting Standards – Accounting for Interest Cost Incurred before the End of a Construction Period

The Fund implemented Government Accounting Standards Board Statement No. 89, Accounting for Interest Cost Incurred Before the End of a Construction Period ("GASBS 89"), for the fiscal year beginning July 1, 2021. Upon adoption of the new standard, the Fund recognized the interest cost incurred before the end of a construction period as an expense in the period in which the cost incurred for financial statements prepared using the economic resources measurement focus.

Overview of the Financial Statements

This discussion and analysis is an introduction to the Fund's financial statements, which consists of the following components: management's discussion and analysis ("MD&A"), financial statements, notes to the financial statements, and required supplementary information. The notes are essential to a full understanding of the financial statements. A statistical section is included for further analysis.

A fund is a group of related accounts used to maintain control over resources that have been segregated for specific activities or objectives. An enterprise fund is used to account for a business-like activity within a government. The Fund is an enterprise fund of the City; thus, it is included in the City's Annual Comprehensive Financial Report.

The Statements of Net Position present information on the Fund's assets, deferred outflows of resources, liabilities, and deferred inflows of resources, with the difference between these sections reported as net position. Changes in net position from year to year may serve as useful indicators of whether the financial position of the Fund is improving or deteriorating.

The Statements of Revenues, Expenses, and Changes in Net Position present information showing how the Fund's net position changed during the two most recent fiscal years. All changes in net position are reported as soon as the underlying event giving rise to the change occurs, regardless of the timing of related cash flows.

The Statements of Cash Flows report how much cash was provided by or used for the Fund's operations, investing activities, non-capital financing activities, and capital and related financing activities.

The financial statements also include note disclosures as well as required supplementary information that provide additional explanations and details on significant accounting policies and significant financial statement line items.

NET POSITION
JUNE 30, 2022, JUNE 30, 2021, and JUNE 30, 2020
(in thousands)

	June 30, 2022	June 30, 2021	June 30, 2020
Assets			
Current assets	$ 740,025	$ 681,939	$ 547,960
Noncurrent assets	1,492,113	1,442,828	999,035
Net capital assets	2,866,640	2,745,216	2,731,583
Total assets	5,098,778	4,869,983	4,278,578
Deferred outflows of resources	34,065	31,340	44,948
Liabilities			
Current liabilities	285,644	228,190	218,481
Noncurrent liabilities	2,752,905	2,698,330	2,470,138
Total liabilities	3,038,549	2,926,520	2,688,619
Deferred inflows of resources	296,569	341,420	30,925
Net Position			
Net investment in capital assets	507,167	495,497	514,164
Restricted net position	1,209,671	1,128,325	1,204,076
Unrestricted (deficit)	80,887	9,561	(114,258)
Total net position	$ 1,797,725	$ 1,633,383	$ 1,603,982

Assets, Deferred Outflows of Resources, Liabilities, Deferred Inflows of Resources, and Net Position

Total net position at June 30, 2022 was $1,797.7 million, a $164.3 million or 10.1% increase from June 30, 2021. Total net position at June 30, 2021 was $1,633.4 million, a $29.4 million or 1.8% increase from June 30, 2020.

Approximately a third of the Fund's total net position, 28.2% and 30.3% as of June 30, 2022 and 2021, respectively, reflects net investment in capital assets (e.g., land, buildings, runways, equipment and infrastructure), net of related outstanding debt used to acquire those assets, offset by bond proceeds remaining in cash and investment accounts at fiscal year-end.

FY2022

Total assets increased by $228.8 million or 4.7% from $4,870.0 million at June 30, 2021 to $5,098.8 million at June 30, 2022. There were decreases in unrestricted and restricted cash and cash & cash equivalents by $153.8 million or 28.7% and increases in investments by $273.7 million or 22.8% compared to June 30, 2021 mainly due to the recovery from the pandemic to a more normalized operating activities which increased our investments and subsequent fundings of the Terminal Construction activity at IAH which reduced unrestricted and restricted cash. As travel demand recovered during the second half of FY2021 and all of FY2022, accounts receivable decreased by $50.9 million or 91.1% compared to the balance at the end of FY2021. Restricted receivables for Passenger Facility Charges ("PFC") and Customer Facility Charges ("CFC") decreased by $5.3 million or 34.6% due to higher travel demand during the fourth quarter of FY2022 and the timing between charges and collections by the airlines and rental car companies. In addition, as described in the Adoption of New Accounting Standards - Leases section above, the Fund established lease receivable as of July 1, 2020 and had an outstanding balance of $260.5 million at June 30, 2022. See Note 4 to the financial statements for additional discussion on the leases. Balance due from other governments increased by $58.6 million or 283.4% compared to June 30, 2021 as HAS requested reimbursements from the FAA for eligible capital expenditures under the Airport Improvement Program ("AIP") as well as eligible expenditures under the CARES, CCRSA, and ARPA Acts. Furthermore, construction in progress increased by $147.2 million or 35.9% due to costs capitalized for expansion and renovation projects during FY2022. There was also an increase in buildings and improvements of $132.2 million or 2.4%. See Capital Assets section in this MD&A for further discussion and analysis on current and future capital projects.

Deferred outflows of resources increased by $2.7 million or 8.7% mainly attributable to an increase of $2.1 million or 100.0% in pension related deferred outflows. In addition, due to actuarial changes of assumptions for the other post-employment benefits – health benefit plan ("OPEB-HB"), deferred outflows increased by $1.1 million or 12.2% compared to FY2021.

Total liabilities increased by $112.0 million or 4.2% compared to June 30, 2021 primarily due to $165 million in draws for commercial paper in FY22 partially offset by principal payments on bonds of $75.6M and a $7.5 million or 11.1% decrease in special facility bonds for principal payments made during FY2022. Contracts and retainages payable increased by $22.8 million or 33.9% as significant construction work is being performed at all HAS airports. Notes payable increased by $1.6 million or 10.9% as HAS drew down available funds from the two loans with the Texas State Energy Conservation Office and incurred interest during the construction period. Net pension liability increased by $3.9 million or 2.4% There was also a decrease of $12.5 million or 15.1% for OPEB-HB due to plan changes.

Total deferred inflows of resources decreased by $44.9 million or 13.1% mainly due to reduced inflows from leases of 22.4M due to normal lease amortization. In addition, deferred inflows related to pension plan decreased by $18.0 million or 32.0% compared to June 30, 2021 mainly due to appreciation in fair value of plan investments being less than projected earnings for FY2022. Deferred inflows for OPEB-HB decreased by $4.6 million or 28.5% due to FY2022 amortization of prior year deferred amounts.

FY2021

Total assets increased by $591.4 million or 13.8% from $4,278.6 million at June 30, 2020 to $4,870.0 million at June 30, 2021. Increases in unrestricted and restricted cash and cash & cash equivalents by $128.0 million or 31.4% and investments by $152.9 million or 14.6% compared to June 30, 2020 mainly due to a draw on the commercial paper up to the maximum available credit in May 2021. The outstanding balance on commercial paper was subsequently refunded in June 2021 by the issuance of 2021A series subordinate lien revenue refunding bonds. As travel demand started to recover during the second half of FY2021, accounts receivable decreased by $19.8 million or 26.2% compared to the balance at the end of FY2020. Restricted receivables for Passenger Facility Charges ("PFC") and Customer Facility Charges ("CFC") increased by $12.8 million or 489.6% due to higher travel demand during the fourth quarter of FY2021 and the timing between charges and collections by the airlines and rental car companies. In addition, as described in the Adoption of New Accounting Standards - Leases section above, the Fund established lease receivable as of July 1, 2020 and had an outstanding balance of $276.3 million at June 30, 2021. See Note 4 to the financial statements for additional discussion on the leases. Balance due from other governments increased by $27.1 million or 555.5% compared to June 30, 2020 as HAS requested reimbursements from the FAA for eligible capital expenditures under the Airport Improvement Program ("AIP") as well as eligible expenditures under CARES Act. Furthermore, construction in progress increased by $154.6 million or 60.6% due to costs capitalized for expansion and renovation projects during FY2021, offset by a decrease in buildings and improvements of $60.0 million or 1.1% for early retirement of garage D/E at IAH. See Capital Assets section in this MD&A for further discussion and analysis on current and future capital projects.

Deferred outflows of resources decreased by $13.6 million or 30.3% mainly attributable to a decrease of $25.9 million or 100.0% in pension related deferred outflows as prior year deferred amounts were fully amortized by the end of FY2021. The decrease was offset by a $5.0 million or 28.7% increase in debt refunding related deferred outflows for the refunding in October 2020. In addition, due to actuarial changes of assumptions for the other post-employment benefits – health benefit plan ("OPEB-HB"), deferred outflows increased by $7.3 million or 28.7% compared to FY2020.

Total liabilities increased by $238.0 million or 8.8% compared to June 30, 2020 due to an increase in bonds payable of $404.3 million or 20.0% for the issuance of 2020A, 2020B, 2020C, and 2021A series subordinate lien revenue refunding bonds during FY2021, offset by a $113.0 million or 85% decrease in commercial paper and a $6.2 million or 8.3% decrease in special facility bonds for principal payments made during FY2021. Contracts and retainages payable increased by $27.1 million or 67.5% as significant construction work being performed at all HAS airports. Notes payable increased by $13.9 million or 4,280.9% as HAS drew down available funds from the two loans with the Texas State Energy Conservation Office. Net pension liability decreased by $96.7 million or 37.4% due to a significant increase in fiduciary net position for the pension plan from $2.9 billion to $3.9 billion mainly as a result of net appreciation in investments at fair value. The decrease in net pension liability was offset by an increase of $11.6 million or 16.4% for OPEB-HB due to actuarial changes of assumptions.

Total deferred inflows of resources increased by $310.5 million or 1,004.0% mainly due to the adoption of GASBS 87. In addition, deferred inflows related to pension plan increased by $52.9 million or 1,544.5% compared to June 30, 2020 mainly due to appreciation in fair value of plan investments greatly exceeded projected earnings for FY2021. Deferred inflows for OPEB-HB decreased by $11.3 million or 41.4% due to FY2021 amortization of prior year deferred amounts.

Changes in Net Position

For FY2022 and FY2021, net position of the Fund increased by $164.3 million or 10.1% and $29.4 million or 1.8%, respectively.

CHANGES IN NET POSITION
FOR THE YEARS ENDED JUNE 30, 2022, JUNE 30, 2021, and JUNE 30, 2020
(in thousands)

	June 30, 2022	June 30, 2021	June 30, 2020
Operating revenues	$ 481,174	$ 318,555	$ 471,912
Operating expenses	482,793	489,388	546,003
Operating loss	(1,619)	(170,833)	(74,091)
Nonoperating revenues	257,450	271,280	154,316
Nonoperating expenses	132,536	95,803	85,426
Nonoperating income	124,914	175,477	68,890
Income (loss) before capital contributions	123,295	4,644	(5,201)
Capital contributions	41,047	24,757	10,927
Change in net position	164,342	29,401	5,726
Total net position, July 1	1,633,383	1,603,982	1,598,256
Total net position, June 30	$ 1,797,725	$ 1,633,383	$ 1,603,982

TOTAL REVENUES AND CAPITAL CONTRIBUTION
FOR THE YEARS ENDED JUNE 30, 2022, JUNE 30, 2021, and JUNE 30, 2020
(in thousands)

	June 30, 2022	June 30, 2021	June 30, 2020
Operating Revenues			
Landing area fees	$ 94,253	$ 70,578	$ 95,862
Rentals, building and ground areas	192,029	155,598	223,301
Parking and concessions	187,235	85,908	146,910
Other operating revenues	7,657	6,471	5,839
Nonoperating Revenues			
Passenger Facility Charges	98,446	62,541	78,418
Customer Facility Charges	13,723	8,769	13,320
Investment income	-	1,523	43,701
CARES Act/CRRSAA/ARPA grants	134,621	187,369	8,057
Other nonoperating revenues	10,660	11,078	10,820
Total revenues	738,624	589,835	626,228
Capital contributions	41,047	24,757	10,927
Total revenues and capital contributions	$ 779,671	$ 614,592	$ 637,155

FY2022

Operating revenues increased by $162.6 million or 51.0% as total enplaned and deplaned passenger volume at IAH and HOU increased by 74.1% due to the COVID-19 pandemic recovery compared to FY2021. Airline landing fees increased by $23.7 million or 33.5% compared to FY2021, and rental revenues increased by $36.4 million or 23.4% mainly due to a significantly higher number of enplaned passengers for FY2022. In addition, garage parking rates were increased throughout FY2022, in conjunction with a higher number of enplaned passengers, which resulted in an increase in parking revenues by $54.6 million or 124.6% compared to FY2021. Concession revenues also increased by $46.7 million or 111.0% due to the pandemic recovery.

Nonoperating revenues decreased by $13.8 million or 5.1% mainly due to a decrease in COVID-19 related grants of $52.7 million or 28.2% and a decrease of $48.6 million or 3,193.2% in investment income, due to low interest rates for investments as well as depreciation in fair value (unrealized loss). In addition, interest expense increased by $14.6 million or 23.5% due to the effect of a full year's interest for the issuances occurring in FY2021. This is partially offset by an increase in PFC revenues $35.9 million or 57.4% due to higher number of passengers compared to FY2021. Additionally, losses on disposal of assets decreased by $19.0 million or 68.9%. CFC charges increased by $5.0 million or 56.5% due to higher numbers of passengers compared to FY2021. Cost of Issuance charges of $6.0 million were incurred in FY2021 while none were incurred in FY2022.

Capital contributions from the FAA increased by $16.3 million or 65.8% as HAS continues with various renovation and expansion projects at IAH and HOU.

FY2021

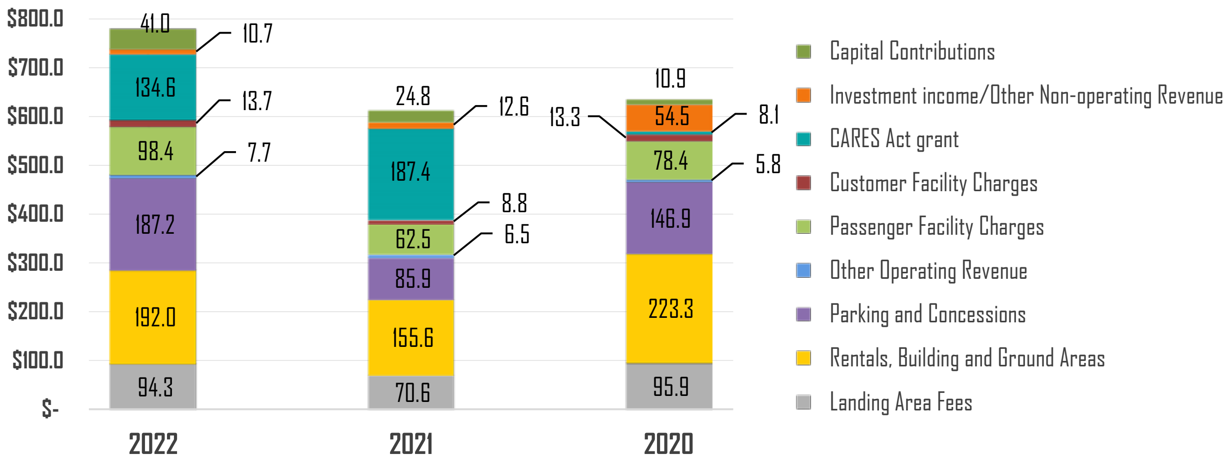
Operating revenues decreased by $153.4 million or 32.5% as total enplaned and deplaned passenger volume at IAH and HOU decreased by 31.9% due to the COVID-19 pandemic compared to FY2020. Airline landing fees decreased by $25.3 million or 26.4% compared to FY2020, and rental revenues decreased by $67.7 million or 30.3% mainly due to a significantly lower number of enplaned passengers for FY2021. In addition, garage parking rates were reduced throughout FY2021, in conjunction with a lower number of enplaned passengers, which resulted a decrease in parking revenues by $37.4 million or 46.0% compared to FY2020. Concession revenues also decreased by $23.6 million or 36.0% due to the pandemic.

Nonoperating revenues increased by $117.0 million or 75.8% mainly due to an increase in CARES Act grant of $179.3 million or 2,225.4%, offset by a decrease of $42.2 million or 96.5% in investment income due to low interest rates for investments as well as depreciation in fair value (unrealized loss). In addition, PFC decreased by $15.9 million or 20.2% due to lower number of passengers compared to FY2020.

Capital contributions from the FAA increased by $13.8 million or 126.6% as HAS continue with various renovation and expansion projects at IAH and HOU.

TOTAL REVENUES and CAPITAL CONTRIBUTIONS

(in millions)



TOTAL EXPENSES
FOR THE YEARS ENDED JUNE 30, 2022, JUNE 30, 2021, and JUNE 30, 2020
(in thousands)

	June 30, 2022	June 30, 2021	June 30, 2020
Operating Expenses			
Maintenance and operating	$ 316,001	$ 318,568	$ 370,430
Depreciation and amortization	166,792	170,820	175,573
Interest expense	76,705	62,107	74,533
Other nonoperating expenses	55,831	33,696	10,893
Total expenses	$ 615,329	$ 585,191	$ 631,429

FY2022

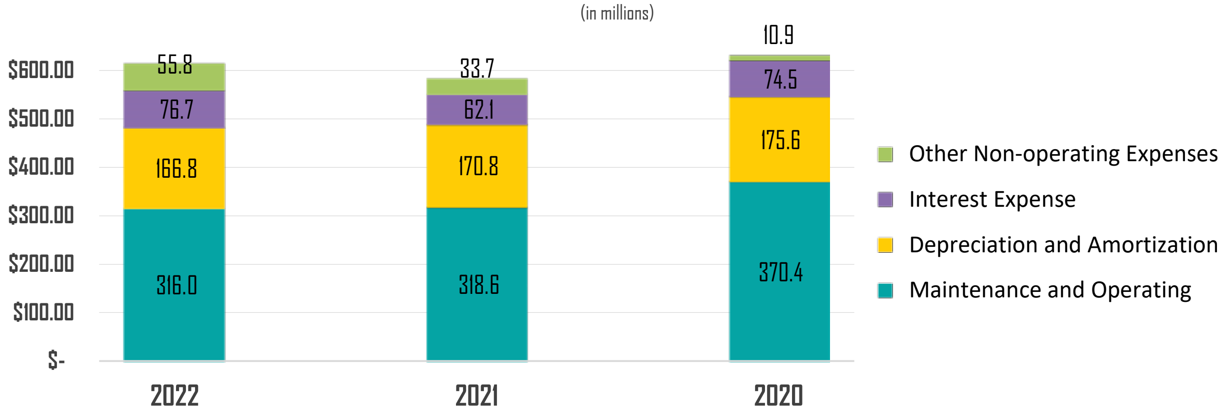
Total operating expenses decreased by $6.6 million or 1.3%. Depreciation expense decreased by $4.0 million or 2.3% due to assets becoming fully depreciated in FY2022. Personnel costs decreased by $5.1 million or 6.1% due to a significant reduction, $11.2 million or 213.4%, in the OPEB, Other Postemployment Benefits, due to change in benefit terms which is not deferred and is recognized in the current year. Overtime pay increased by $1.9 million or 114.0% due to on-going construction activity in FY22. Salaries increased by $2.6 million or 3.9% due to HOPE increase in FY22. Expenses for professional services increased by $5.6 million or 2.5% compared to FY21. Expenses for non-capital outlay decreased by $3.0 million or 62.9% compared to FY21.

FY2021

Total operating expenses decreased by $56.6 million or 10.4% primarily attributable to a decrease of $39.8 million or 179.4% in pension and OPEB-HB expenses, offset by an increase in regular salary of $4.2 million or 6.81%. Significant appreciation in fair value of pension plan assets in FY2021 resulted a large amount of deferred inflows to be amortized over 5 years, including FY2021. Expenses for professional services (construction related) increased by $13.8 million or 81% compared to FY2020. During FY2020, HAS made a one-time $36.5 million lease buyout payment associated with the IAH Terminal Redevelopment Program; thus, other operating expenses decreased by $33.4 million or 91.2% in FY2021 compared to FY2020. Depreciation expense decreased by $4.8 million or 2.7% mainly due to early retirement of garage D/E at IAH.

Interest expense decreased by $12.4 million or 16.7% compared to FY2020 due to additional savings realized from the 2020 series refunding bonds. However, loss on disposal of assets increased by $16.7 million or 154.2% due to early retirement of garage D/E at IAH.

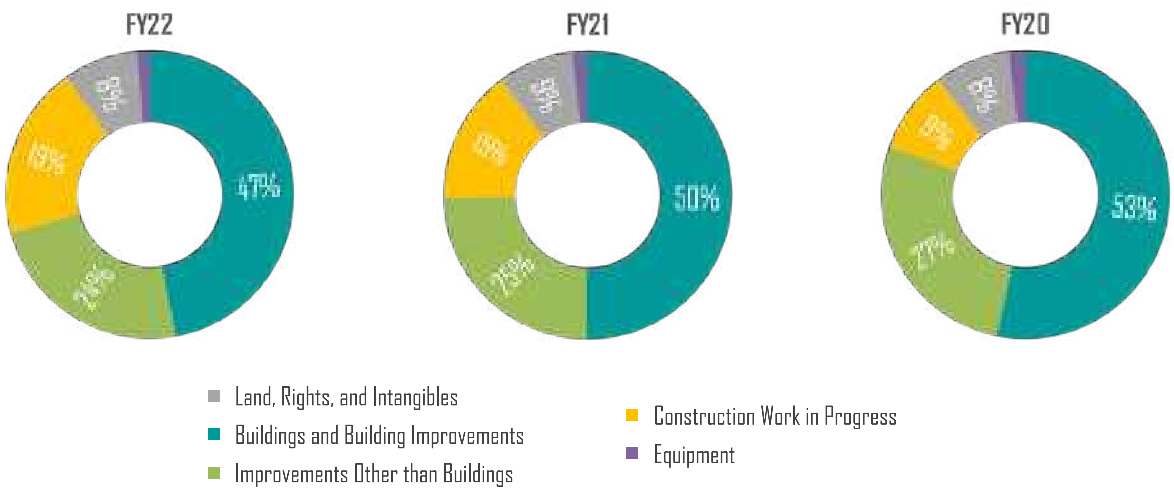
TOTAL EXPENSES
(in millions)



Capital Assets

CAPITAL ASSETS
JUNE 30, 2022, JUNE 30, 2021, and JUNE 30, 2020
(Net of Depreciation and Amortization)
(in thousands)

	June 30, 2022	June 30, 2021	June 30, 2020
Land	$ 216,039	$ 216,100	$ 216,100
Rights and intangibles	20,988	18,333	13,406
Buildings and building improvements	1,352,792	1,374,518	1,452,751
Improvements other than buildings	676,088	678,694	742,419
Equipment	43,819	47,891	51,837
Construction work in progress	556,914	409,680	255,070
	$ 2,866,640	$ 2,745,216	$ 2,731,583



The Fund's investment in capital assets, net of accumulated depreciation and amortization, amounted to $2.87 billion at June 30, 2022, an increase of $121.4 million or 4.4% compared to June 30, 2021 During FY2022, the Fund added approximately $147.2 million, net of transfers, to its construction work in progress balance. The additions were mainly related to the ITRP with more than $80 million in additions, $20.0 million for the Southwest Airlines gate expansion at HOU, as well as $40.0 million for the Spaceport expansion at EFD. FY2022 depreciation expense was approximately $166.8 million.

The Fund's investment in capital assets, net of accumulated depreciation and amortization, amounted to $2.75 billion at June 30, 2021, an increase of $13.6 million or 0.5% compared to June 30, 2020. At the end of March 2021, HAS closed one of the garages at IAH as part of the IAH Terminal Redevelopment Program (the "ITRP"). Due to early retirement of the garage, the Fund derecognized $111.4 million of historic costs associated with the garage and $83.8 million of accumulated depreciation, which resulted a loss on disposal of approximately $27.6 million. During FY2021, the Fund added approximately $154.6 million, net of transfers, to its construction work in progress balance. The additions were mainly related to the ITRP with more than $100 million in additions, $30.2 million for taxiway Ws at IAH, as well as $26.6 million renovation projects at IAH's terminal A. FY2021 depreciation expense was approximately $170.6 million.

Capital Improvement Program ("CIP")

The City updates and adopts annually a rolling five-year comprehensive plan that determines and prioritizes its capital and infrastructure needs, including HAS. Management of HAS continuously monitors and adjusts the CIP based upon financial capacity, air travel demand, and airline industry developments. The HAS five-year Capital Improvement Plan ("CIP") for fiscal years 2023-2027 calls for $2.3 billion to expand, update, and maintain the airport system.

Major projects, greater than $100 million individually, are as follows:

1. IAH – IAH Terminal Redevelopment Program: $1,024 million
2. HOU – Seven gate expansion: $230 million
3. EFD – Taxiway L: $118 million

The remainder of the budget consists of improvement and rehabilitation of infrastructure for IAH, HOU, and EFD/Spaceport.

In addition, on August 25, 2021 (fiscal year 2022), the City issued Special Facilities Bonds in the approximate aggregate principal amount of $289.5 million to finance improvements to the baggage handling system at IAH, which will include an early baggage storage system, and other terminal facilities. These Special Facilities Bonds will be limited special obligations of the City and not secured by the Fund's Net Revenues. Additional information on conduit debt obligations is disclosed in Note 10 to the financial statements.

Debt

OUTSTANDING DEBT
JUNE 30, 2022, JUNE 30, 2021, AND JUNE 30, 2020
(in thousands)

	June 30, 2022	June 30, 2021	June 30, 2020
Senior Lien Debt			
Commercial paper	$ 185,000	$ 20,000	$ 132,973
Total senior lien debt	185,000	20,000	132,973
Subordinate Lien Debt			
Revenue bonds	2,133,665	2,209,245	1,855,340
Unamortized discount and premium	197,747	214,880 *	162,351
Total subordinate lien debt	2,331,412	2,424,125	2,017,691
Other Debt			
Direct borrowing debt	15,993	14,421	324
Pension obligation bonds	2,006	2,006	2,006
Special facility revenue bonds			
Consolidated rental car facility	60,680	68,185	74,425
Total other debt	78,679	84,612	76,755
Total outstanding debt	$ 2,595,091	$ 2,528,737	$ 2,227,419
Deferred Outflows of Resources			
Deferred outflows from debt refunding	$ (21,823)	$ (24,219) *	$ (17,263)

*FY2021 was adjusted

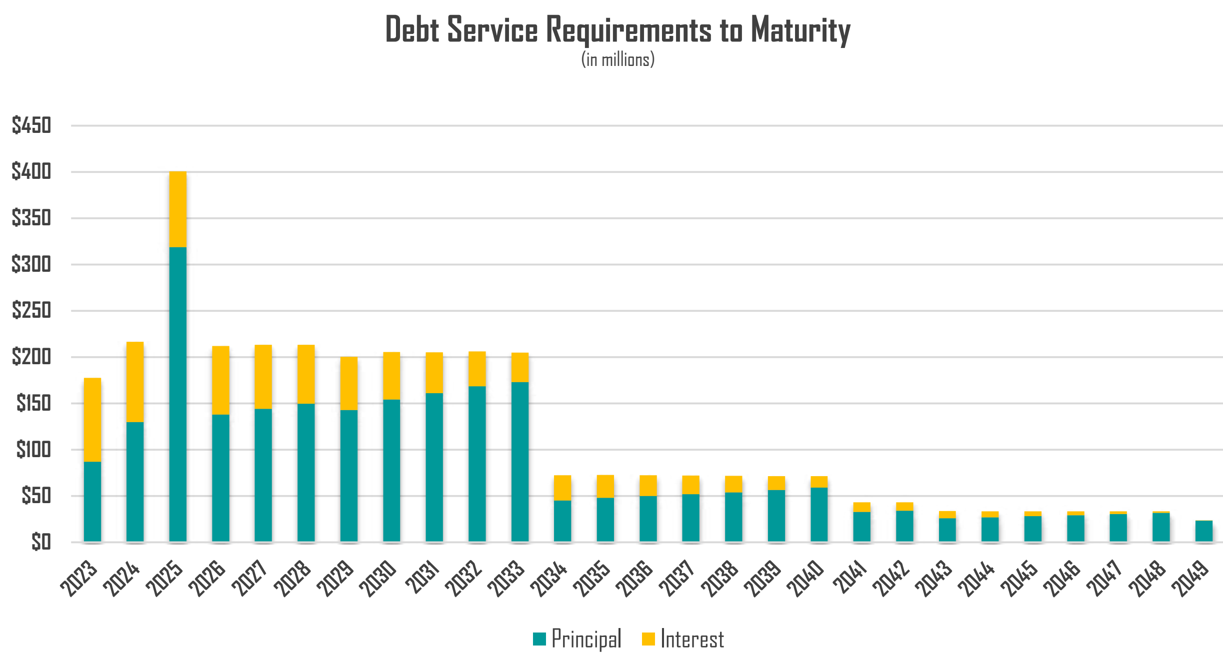
HAS funds major projects like terminal expansion/renovations, runway improvements, and other expansion projects through the issuance of debt, net of available FAA discretionary funding. Minor renewals and replacements are generally funded out of the Fund's "Renewal & Replacement Fund" and "Airports Improvement Fund." HAS continuously monitors the cash flow and contracting requirements for all approved capital projects.

At June 30, 2022 and 2021, the Fund's outstanding senior lien and subordinate lien debt, net of unamortized discount and premium totaled $2.52 billion and $2.44 billion, respectively. In addition, the Fund is responsible for other debt totaling $78.7 million and $84.6 million as summarized in the above table at June 30, 2022 and 2021, respectively.

During FY2022, HAS borrowed an additional $165.0 million of commercial paper.

During FY2021, HAS issued Series 2020A, 2020B, 2020C, and 2021A Airport System Subordinate Lien Revenue Refunding Bonds. Series 2020A was issued for $131.6 million for the purpose of refund $151.0 million of Commercial Paper Notes and pay related costs of issuance. Series 2020B was issued for $71.6 million for the purpose of fully refund $91.9 million of Subordinate Lien Revenue Refunding Bonds Series 2010 and pay related costs of issuance. Series 2020C was issued for $660.5 million for the purpose of refund and defease $614.8 million of Subordinate Lien Revenue Refunding Bonds Series 2000B, 2011A, 2011B, 2012A, and 2012B and pay related costs of issuance. Net present value savings related to the Series 2020 bonds was approximately $94.8 million, and debt service was reduced by approximately $98.2 million. In addition, Series 2021A was issued for $286.0 million for the purpose of refund $345.8 million of Commercial Paper Notes and pay related costs of issuance.

The graph below represents the required principal and interest payments on outstanding debt through the year ending June 30, 2049.



The underlying ratings of the Fund's obligations at June 30, 2022 are as follows:

	Senior Lien	Subordinate Lien	Consolidated Rental Car SFRB
Fitch's Bond Rating:	No bonds outstanding	A	A-
Moody's Bond Rating:	No bonds outstanding	A1	A3
Standard & Poor's Bond Rating:	No bonds outstanding	A	BBB+

Additional information on long-term capital asset activity and debt activity are disclosed in Notes 3 and 5 to the financial statements.

Requests for Information

This financial report is designed to provide a general overview of the City of Houston, Texas, Airport System Fund's finances for all of those with an interest. Questions concerning any of the information provided in this report or requests for additional financial information should be addressed to Finance Department, Houston Airport System, 16930 JFK Boulevard, Houston, Texas 77032.

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FINANCIAL STATEMENTS (in thousands)

JUNE 30, 2022 and 2021

	2022	2021
Assets		
Current assets		
Cash and cash equivalents	$ 206,842	$ 275,677
Restricted cash and cash equivalents	175,229	260,168
Investments	142,190	10,260
Restricted investments	86,238	7,783
Accounts receivable (net of allowance for doubtful accounts of $4,925 and $7,731 in 2022 and 2021, respectively)	4,841	55,708
Restricted accounts receivable	10,089	15,415
Lease receivable	13,859	15,687
Due from City of Houston	695	1,523
Inventory	2,563	2,079
Prepaids	6,975	5,705
Due from other governments - grants receivable	90,504	31,934
Total current assets	740,025	681,939
Noncurrent assets		
Investments	6,645	6,084
Restricted investments	1,238,485	1,175,761
Prepaids	160	173
Lease receivable, non-current	246,716	260,575
Lease right-of-use assets, net of accumulated amortization	107	235
Capital assets		
Land	216,039	216,100
Rights and intangibles	21,010	23,030
Buildings, improvements and equipment	5,690,946	5,558,736
Construction in progress	556,914	409,680
Total capital assets	6,484,909	6,207,546
Less accumulated depreciation and amortization	(3,618,269)	(3,462,330)
Net capital assets	2,866,640	2,745,216
Total noncurrent assets	4,358,753	4,188,044
Total assets	5,098,778	4,869,983
Deferred outflows of resources		
Deferred outflows from debt refunding	21,823	22,218
Deferred outflows from pensions	2,083	2
Deferred outflows from OPEB health benefits	9,903	8,827
Deferred outflows from OPEB LTD	256	293
Total deferred outflows of resources	$ 34,065	$ 31,340

The accompanying notes are an integral part of these financial statements.

(continued)

FINANCIAL STATEMENTS (in thousands)

	2022	2021
Liabilities		
Current liabilities		
Accounts payable	$ 11,728	$ 10,383
Accrued payroll liabilities	4,580	4,161
Due to City of Houston	1,466	99
Due to other governments	1,846	1,846
Advances and deposits	2,790	2,320
Unearned revenue	32,719	8,278
Claims for workers' compensation	1,181	903
Compensated absences	6,820	5,477
Revenue bonds payable	77,700	75,580
Special facility revenue bonds payable	8,165	7,505
Notes payable	1,193	1,068
Accrued interest payable	44,118	41,334
Contracts and retainages payable	89,933	67,161
Lease liabilities	77	128
Other current liabilities	1,328	1,947
Total current liabilities	285,644	228,190
Noncurrent liabilities		
Revenue bonds payable, net of current portion	2,253,712	2,346,426
Special facility revenue bonds payable, net of current portion	52,515	60,680
Commercial paper payable	185,000	20,000
Pension obligation bonds payable	2,006	2,006
Lease liabilities, net of current portion	34	111
Notes payable, net of current portion	14,800	13,353
Claims for workers' compensation	1,043	2,174
Compensated absences	7,460	8,541
Net pension liability	165,413	161,545
Other post employment benefits - health benefits	69,874	82,344
Other post employment benefits - LTD	1,048	1,150
Total noncurrent liabilities	2,752,905	2,698,330
Total liabilities	3,038,549	2,926,520
Deferred inflows of resources		
Deferred inflows from leases	246,505	268,881
Deferred inflows from pensions	38,282	56,331
Deferred inflows from OPEB - health benefits	11,496	16,075
Deferred inflows from OPEB LTD	286	133
Total deferred inflows of resources	296,569	341,420
Net Position		
Net investment in capital assets	507,167	495,497
Restricted net position		
Restricted for debt service	412,293	384,267
Restricted for maintenance and operations	55,332	54,232
Restricted for special facility	50,953	52,362
Restricted for renewal and replacement	10,000	10,000
Restricted for capital improvements	681,093	627,464
Unrestricted (deficit)	80,887	9,561
Total net position	$ 1,797,725	$ 1,633,383

The accompanying notes are an integral part of these financial statements.

FINANCIAL STATEMENTS (in thousands)

REVENUES, EXPENSES & CHANGES IN NET POSITION

FOR YEARS ENDED JUNE 30, 2022 and 2021

	2022	2021
Operating revenues		
Landing area fees	$ 94,253	$ 70,578
Rentals, building, and ground area	192,029	155,598
Parking	98,418	43,815
Concessions	88,817	42,093
Other	7,657	6,471
Total operating revenues	481,174	318,555
Operating expenses		
Maintenance and operating	316,001	318,568
Depreciation and amortization	166,792	170,820
Total operating expenses	482,793	489,388
Operating loss	(1,619)	(170,833)
Nonoperating revenues (expenses)		
Investment income	(47,109)	1,523
Interest expense	(76,705)	(62,107)
Loss on disposal of assets and incompleted projects	(8,594)	(27,601)
Passenger Facility Charges	98,446	62,541
Customer Facility Charges	13,723	8,769
Special facility cost	(128)	(75)
Cost of issuance for debt	-	(6,020)
CARES Act/CRRSAA/ARPA grants	134,621	187,369
Other revenues	10,660	11,078
Total nonoperating revenues (expenses), net	124,914	175,477
Loss before capital contributions	123,295	4,644
Capital contributions	41,047	24,757
Change in net position	164,342	29,401
Total net position, July 1	1,633,383	1,603,982
Total net position, June 30	$ 1,797,725	$ 1,633,383

The accompanying notes are an integral part of these financial statements.

FINANCIAL STATEMENTS (in thousands)

CASHFLOWS

FOR YEARS ENDED JUNE 30, 2022 and 2021

	2022	2021
Cash Flows from Operating Activities		
Receipts from customers	$ 552,383	$ 337,232
Payments to employees	(113,985)	(106,283)
Payments to suppliers	(165,416)	(168,061)
Interfund activity payments to other funds	(69,895)	(69,604)
Other receipts	7,657	6,470
Net cash provided by (used for) operating activities	210,744	(246)
Cash Flows from Investing Activities		
Sale of investments	2,696,088	2,066,830
Purchase of investments	(3,029,491)	(2,233,546)
Investment income	12,625	15,388
Net cash used for investing activities	(320,778)	(151,328)
Cash Flows from Noncapital Financing Activities		
CARES Act/CRRSAA/ARPA grants	57,097	180,867
Net cash provided by noncapital financing activities	57,097	180,867
Cash Flows from Capital and Related Financing Activities		
Proceeds from issuance of revenue bonds	-	1,216,043
Retirement of revenue bonds	(75,580)	(795,780)
Interest expense on debt	(88,539)	(99,233)
Proceeds from issuance of commercial paper	165,000	383,800
Proceeds from SECO loans	1,572	14,097
Retirement of commercial paper	-	(496,773)
Retirement of special facility bonds	(7,505)	(6,240)
Cost of issuance for revenue bonds	-	(6,020)
Passenger Facility Charges	103,850	50,319
Customer Facility Charges	13,645	8,191
Grant receipts	60,885	5,082
Acquisition of capital assets	(273,909)	(174,533)
Lease liabilities	(128)	(192)
Special facility cost	(128)	(75)
Net cash (used for) provided by capital and related financing activities	(100,837)	98,686
Net increase in cash and cash equivalents	(153,774)	127,979
Cash and cash equivalents, beginning of year	535,845	407,866
Cash and Cash Equivalents, End of the Year	$ 382,071	$ 535,845
Cash and cash equivalents	$ 206,842	$ 275,677
Restricted cash and cash equivalents	175,229	260,168
Cash and Cash Equivalents, End of the Year	$ 382,071	$ 535,845

The accompanying notes are an integral part of these financial statements.

(continued)

FINANCIAL STATEMENTS (in thousands)

FOR YEARS ENDED JUNE 30, 2022 and 2021

	2022	2021
Reconciliation of Operating Loss to Net Cash (Used for) Provided by Operating Activities		
Operating income	$ (1,619)	$ (170,833)
Adjustments to reconcile operating loss to net cash provided by operating activities		
Depreciation and amortization	166,792	170,820
Changes in assets and liabilities		
Accounts receivable, net of allowance	50,868	19,794
Due from City of Houston	828	223
Inventory and prepaids	(1,745)	(600)
Lease receivable	25,463	(1,456)
Accounts payable	1,345	(1,808)
Accrued payroll liabilities	419	610
Other current and non-current liabilities	23,820	841
Due to City of Houston and other governments	1,367	(548)
Advances and deposits	470	685
Other post-employment benefits and deferred amounts	(18,037)	(6,623)
Pension related payables and deferred amounts	(16,261)	(17,899)
Deferred inflows - leases	(22,375)	4,268
Claims for workers' compensation	(852)	1,555
Compensated absences	261	725
Net cash provided by (used for) operating activities	$ 210,744	$ (246)
Noncash Transactions		
Capitalized interest expense	$ -	$ 10,248
Capital additions in payables	$ (51,712)	$ (67,161)
Amortization of premium and discount	$ (15,014)	$ (15,948)
Loss on disposal of assets	$ (8,594)	$ (27,601)
Unrealized gain and (loss) on investments	$ (59,734)	$ (13,865)

The accompanying notes are an integral part of these financial statements.

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Reporting Entity

The Airport System Fund (the "Fund"), an enterprise fund of the City of Houston (the "City"), is responsible for the operations, maintenance, and development of the City's Airport System. The Airport System consists of George Bush Intercontinental Airport ("IAH" or "Intercontinental"), William P. Hobby Airport ("HOU" or "Hobby") and Ellington Airport ("EFD" or "Ellington").

The Mayor and City Council members serve as the governing body that oversees operation of the Fund. The Fund is operated by the Houston Airport System ("HAS") as a self-sufficient enterprise and is administered by the HAS Director, who reports to the Mayor.

The Fund is not financially accountable for any other operations of the City, and accordingly, is accounted for as a single major enterprise fund. The Fund is included in the City's Annual Comprehensive Financial Report ("Financial Report"), which is a matter of public record.

Created on September 15, 2021, Houston Spaceport Development Corporation ("HSDC") has a seven-member board of directors, including the Director of Aviation of Houston Airport System, appointed by the mayor. This corporation is responsible for managing and promoting the development of Houston Spaceport as well as applying for funds under the Texas Spaceport Trust Fund. In Accordance with Governmental Accounting Standards Board ("GASB"): Statement No. 14 and Statement No. 61, the HSDC is considered a blended component of the City, the primary government, because the component unit's governing body is substantively the same as primary government. In addition, HSDC provides direct benefits exclusively or almost exclusively to the Houston Airport System. Therefore, HSDC is incorporated into the financial statements of the Fund. As of and for the year ended June 30, 2022, HSDC did not have any financial activities and had no impact to the operating results of the Fund.

Basis of Accounting

The City accounts for the Fund as a proprietary fund. Proprietary funds are used to account for operations that are financed and operated in a manner similar to private business enterprises where the intent of the City is that the cost of operations, including depreciation, be financed or recovered through user charges. The Fund is accounted for on a cost of services or "economic resources" measurement focus using the accrual basis of accounting, under which revenues are recognized in the accounting period in which they are earned and the related expenses are recorded in the accounting period incurred, if measurable. All assets and liabilities, current and noncurrent, as well as deferred outflows and inflows of resources are included on the statements of net position.

The financial statements presented in this report conform to the reporting requirements of the Governmental Accounting Standards Board ("GASB") which establishes combined statements ("GASBS") as the required level for governmental entities that present financial statements in accordance with generally accepted accounting principles ("GAAP"). The Fund defines operating revenues as receipts from customers and other receipts that do not result from transactions defined as capital and related financing, non-capital financing, or investing activities. All other revenue is recognized as non-operating. The Fund defines operating expenses as personnel and supply costs, utilities and other charges for service, the purchase of furniture and equipment with a value of less than $5,000, and other expenses that do not result from transactions defined as capital or related financing, non-capital financing, or investing activities. All other expense is recognized as non-operating.

Recent Accounting Pronouncements

In June 2018, the GASB issued Statement No. 89, "Accounting for Interest Cost Incurred before the End of a Construction Period". This statement will enhance the relevance and comparability of information about capital assets and the cost of borrowing for a reporting period and will simplify accounting for interest cost incurred before the end of a construction period. The requirements of this statement are effective for reporting periods beginning after December 15, 2020. The City and the Fund have implemented Statement No. 89 in this annual report.

In May 2019, the GASB issued Statement No. 91, “Conduit Debt Obligations”. This statement is to provide a single method of reporting conduit debt obligations by issuers and eliminate diversity in practice associated with 1) commitments extended by issuers, 2) arrangements associated with conduit debt obligations, and 3) related note disclosures. The requirements of this statement are effective for reporting periods beginning after December 15, 2021. The City and the Fund are evaluating the effect that Statement No. 91 will have on the financial statements.

In January 2020, the GASB issued Statement No. 92, “Omnibus 2020”. This statement establishes accounting and financial reporting requirements for specific issues related to leases, intra-entity transfers of assets, postemployment benefits, government acquisitions, risk financing and insurance-related activities of public entity risk pools, fair value measurements, and derivative instruments. The requirements of this statement are effective for reporting periods beginning after June 15, 2021. The City and the Fund have implemented Statement No. 92 in this annual report. There was no material effect to the Fund’s financial statements.

In March 2020, the GASB issued Statement No. 93, “Replacement of Interbank Offered Rates”. This Statement establishes accounting and financial reporting requirements related to the replacement of interbank offered rate in hedging derivative instruments and leases. It also identifies appropriate benchmark interest rates for hedging derivative instruments. The requirements of this statement are effective for reporting periods ending after December 31, 2021. The City and the Fund have implemented Statement No. 93 in this annual report. There was no material effect to the Fund’s financial statements.

In March 2020, the GASB issued Statement No. 94, “Public-Private and Public-Public Partnerships and Availability Payment Arrangements”. This Statement establishes standards of accounting and financial reporting for Public-Public Partnerships and Availability Payment Arrangements for governments. The requirements of this statement are effective for reporting periods beginning after June 15, 2022. The City and the Fund are evaluating the effect that Statement No. 94 will have on the financial statements.

The GASB has issued Statement No. 96, “Subscription-Based Information Technology Arrangements.” Effective for financial statements for fiscal years beginning after June 15, 2022, this statement (1) defines subscription-based information technology arrangements (SBITAs); (2) establishes that a SBITA results in a right-to-use subscription asset—an intangible asset— and a corresponding subscription liability; (3) provides the capitalization criteria for outlays other than subscription payments, including implementation costs of a SBITA; and (4) requires note disclosures regarding a SBITA. The City and the Fund are evaluating the effect that Statement No. 96 will have on the financial statements.

The GASB has issued Statement No. 97, “Certain Component Unit Criteria, and Accounting and Financial Reporting for Internal Revenue Code Section 457 Deferred Compensation Plans.” Paragraph 4 and 5 are effective immediately and paragraphs 6 to 9 are effective for fiscal years beginning after June 15, 2021. All other requirements of this statement are effective for financial statements for reporting periods beginning after June 15, 2021. This statement (1) clarifies rules related to reporting of fiduciary activities under Statements No. 14 and No. 84; (2) mitigate costs for defined contribution plans; and (3) enhance the relevance, consistency, and comparability of the accounting and financial reporting of Code section 457 plans that meet the definition of a pension plan. The requirements in paragraphs 4 and 5 are effective upon issuance. The City and the Fund have implemented Statement No. 97 in this annual report. There was no material effect to the Fund’s financial statements.

In April 2022, the GASB issued Statement No. 99, “Omnibus 2022”. The objectives of this Statement are to enhance comparability in accounting and financial reporting and to improve the consistency of authoritative literature by addressing (1) practice issues that have been identified during implementation and application of certain GASB Statements and (2) accounting and financial reporting for financial guarantees. The requirements related to extension of the use of LIBOR, accounting for SNAP distributions, disclosures of nonmonetary transactions, pledges of future revenues by pledging governments, clarification of certain provisions in Statement 34, as amended, and terminology updates related to Statement 53 and Statement 63 are effective upon issuance. The requirements related to leases, PPPs, and SBITAs are effective for fiscal years beginning after June 15, 2022. The requirements related to financial guarantees and the classification and reporting of derivative instruments within the scope of Statement 53 are effective for fiscal years beginning after June 15, 2023.

The City and the Fund have implemented the provisions of Statement No. 99 that are effective upon issuance in this annual report. The City and the Fund are evaluating the effect of other provisions of Statement No. 99 not yet effective will have on the financial statements.

In June 2022, the GASB issued Statement No. 100, "Accounting Changes and Error Corrections – Amendment of GASB Statement No. 62". This Statement prescribes the accounting and financial reporting for (1) each type of accounting change and (2) error corrections. This Statement requires that (a) changes in accounting principles and error corrections be reported retroactively by restating prior period, (b) changes to or within the financial reporting entity be reported by adjusting beginning balances of the current period, and (c) changes in accounting estimates be reported prospectively by recognizing the change in the current period. The requirements of this statement are effective for financial statement for reporting period beginning after June 15, 2023. The City and the Fund are evaluating the impact that adoption of this Statement will have on its financial statements.

In June 2022, the GASB issued Statement No. 101, "Compensated Absences". This Statement clarifies the recognition and measurement guidance for compensated absences. This Statement requires that liabilities for compensated absences be recognized for (1) leave that has not been used and (2) leave that has been used but not yet paid in cash or settled through noncash means. The requirements of this Statement are effective for financial statements for reporting periods beginning after December 15, 2023. The City and the Fund are evaluating the impact that adoption of this Statement will have on its financial statements.

Operating and Nonoperating Revenues and Expenses

The Fund distinguishes between operating revenues and expenses and nonoperating revenues and expenses. Operating revenues and expenses generally result from providing services and producing and delivering goods in connection with HAS' principal ongoing operations. All revenues and expenses not meeting this definition are reported as nonoperating revenues and expenses. HAS derives its operating revenues primarily from landing fees, terminal space rental, auto parking, and concessions. HAS' major operating expenses include salaries and employee benefits, fees for contractual services including professional services, parking operations and shuttle services, and other expenses including depreciation and amortization, maintenance, insurance, and utilities.

Non-operating revenues, such as interest income, passenger facility charges ("PFC"), and customer facility charges ("CFC"), result from non-exchange transactions or ancillary activities. Non-operating expenses primarily consist of the interest expense on revenue bonds.

Passenger Facility Charges

The Federal Aviation Administration ("FAA") approved a $3.00 PFC per enplaned passenger to be used for the construction of FAA approved airport capital assets at IAH effective December 1, 2008 and at HOU effective November 1, 2006. On January 20, 2015, the FAA approved an amendment to the existing PFC at both IAH and HOU increasing the rate from $3.00 to $4.50 per enplaned passenger effective March 1, 2015. On April 20, 2016, a second PFC application was approved for HOU with an earliest collection date of August 1, 2017. On September 24, 2020, a second PFC application was approved for IAH with an earliest collection date of January 1, 2028. The collection expiration dates are estimated to be April 1, 2039 for IAH and September 1, 2038 for HOU. The airlines collect and remit this revenue to HAS. See Compliance Section for further information.

Federal Grants

When a grant agreement is approved and eligible expenditures are incurred, the amount is recorded as a grant receivable and as nonoperating revenue (operating grants) or capital grant contributions in the statements of revenues, expenses, and changes in net position.

Cash, Cash Equivalents, and Investments

The Fund's cash, cash equivalents, investments, and a significant portion of its restricted cash and investments are maintained as part of the City's pool of cash and investments. The Fund's portion of the pool is presented on the statements of net position as 'Cash and Cash Equivalents' and 'Investments.' Interest earned on such pooled investments is allocated to the participating City funds based on each fund's average daily cash balance during the allocation period. The Fund considers its unrestricted and restricted cash and investments held in the City treasury as demand deposits and/or investments. The Fund also has funds that are held by fiscal agents. Investments with maturities of three months or less at the time of purchase are considered cash equivalents. Investments are recorded at fair value. Investment income and expenses, including changes in the fair value of the investments, are recognized in the Statements of Revenues, Expenses, and Changes in Net Position.

Accounts Receivable

Receivables are reported at their gross value when earned. The Fund's collection terms are 30 days. The allowance for uncollectible accounts is based on specific identification of past due accounts and balances. As a customer's balance is deemed uncollectible, the receivable is cleared and the amount is written off. If the balance is subsequently collected, such payments are applied to the allowance account. The allowance for doubtful accounts was approximately $4.9 million and $7.7 million as of June 30, 2022 and 2021, respectively. This allowance is netted against the accounts receivable balance. For the years ended June 30, 2022 and 2021, no accounts receivable balance was written off.

Inventories of Material and Supplies

Inventories of material and supplies are valued at average cost and charged to expense as used. Fuel is carried at the lower of average cost or market.

Capital Assets

The Fund defines capital assets as assets with an initial cost of $5,000 or more and a useful life of more than one year. Acquired or constructed property is recorded at historical cost or estimated historical cost. Donated property is recorded at acquisition value. Capital assets received in a service concession arrangement are recorded at acquisition value. Construction costs (excluding land and equipment) are added to construction work-in-progress until the assets are placed in service and are depreciated following completion. Depreciation on equipment begins on the date it is placed in service. Prior to the adoption of GASBS No. 89, interest costs on funds borrowed to finance the construction of capital assets are capitalized based on the weighted average interest rate of the outstanding debt applied to the average on-going construction in progress during the fiscal year. For the years ended June 30, 2021, $10.2 million of interest costs was capitalized.

Depreciation on buildings and improvements is computed using the straight-line method on the component asset base over the estimated useful life, ranging from fifteen (15) to fifty (50) years. Depreciation on equipment is computed using the straight-line method over the estimated useful life, ranging from three (3) to fifteen (15) years. Depreciation on depreciable intangibles is computed using the straight-line method over a useful life that is dependent on the nature of the individual asset.

Leases

HAS as Lessee

The Fund recognizes a lease liability and an intangible right-of-use lease asset at the beginning of a lease, unless the lease is considered a short-term lease or transfers ownership of the underlying assets. Right-of-use lease asset is measured based on the net present value of the payment, using the HAS' weighted average cost of capital ("WACC"), which approximates HAS' incremental borrowing rate, required to the lessor under long-term lease contracts. Remeasurement of lease liability occurs when there is a change in the lease term and/or other changes that are likely to have a significant impact on the lease liability.

HAS calculates amortization of the discount on the lease liability and report that amount as outflow of resources in that period. Payments are allocated first to accrued interest liability and then to the lease liability. Variable lease payments based on the usage of the underlying assets are not included in the lease liability calculations and are recognized as outflows of resources in the periods in which the obligation for the payments are incurred.

HAS as Lessor

The Fund recognizes a lease receivable, measured using a present value of lease payments - based on a discount rate that HAS charges the lessee or HAS' WACC - to be received for the lease term, and a deferred inflow of receivables at the beginning of the lease term. Periodic amortization of the discount on the receivable are reported as interest revenue for that period. Deferred inflows of resources are recognized as inflows on a straight-line basis over the term of the lease. This recognition does not apply to short-term leases, contracts that transfer ownership, leases of assets that are investments, or certain regulated leases. Any initial direct costs are reported as an outflow of resources for that period. Remeasurement of lease receivable occurs when there are modifications, including but not limited to changes in the contract price, lease term, and adding or removing an underlying asset to the lease agreements. In the case of a partial or full lease termination, the Fund will reduce the carrying value of the lease receivable and the related deferred inflow of resources and include a gain or loss for the difference.

For lease contracts that are short-term, the Fund recognizes short-term lease payments as inflows of resources (revenues) based on the payment provisions of the lease contract. Liabilities are only recognized if payments are received in advance, and receivables are only recognized if payments are received subsequent to the reporting period.

Regulated Leases

The leases between HAS and air carriers and other aeronautical users are subject to external laws and regulations. As permitted by GASBS No. 87, paragraph 43, the Fund recognizes inflows of resources based on the payment provisions of the lease contract, and the accounting policies under "HAS as Lessor" do not apply to regulated leases. Additional disclosures regarding regulated leases are in Note 4.

Compensated Absences

Full-time civilian employees of the City are eligible for 10 days of vacation leave per year. After four years, employees receive 15 days. The amount of vacation time gradually increases after that, reaching a maximum of 25 days per year after 18 years of service. Employees may accumulate up to 105 days of vacation leave (60 days for employees hired after December 31, 1999). Upon termination or retirement, full-time employees are paid a maximum of 90 days of unused vacation leave (45 days for employees with a computation date after December 31, 1999), which is based on the average rate of pay during the employee's highest paid 60 days of employment. Part-time and temporary employees (those working less than 30 hours per week) are not eligible for vacation or sick leave benefits.

Most full-time civilian employees are covered under the compensatory sick leave plan and receive a leave time allowance of 2.5 hours per payroll period (bi-weekly) up to a maximum of 65 hours per year. Employees who use fewer than 65 hours during the benefit year will receive a match of additional hours equal to the number of hours accrued minus the number of hours used. Once an employee's balance has reached 1,040 hours, no additional match for unused hours is given. Upon termination, all unused sick leave time allowances in excess of 1,040 hours are payable to the employee at the employee's rate of pay at the time of termination. An employee who uses less than 16 hours of sick leave in any benefit year receives up to three days of personal leave in the next year. Personal leave may be used in place of vacation leave, but will not accumulate and will not be paid out at termination. The other remaining full-time civilian employees are covered by a sick plan that was closed to employees in 1985. That plan accumulates a cash value for every sick hour not used, which is payable upon resignation or retirement.

The City also has adopted policies of compensatory time to comply with the Fair Labor Standards Act as amended in 1985. These policies provide limits to the accumulation of compensatory time and provide that time not used will be paid in cash. Only classified employees and civilian employees in certain pay grades routinely earn compensatory time.

Vacation and other compensatory time benefits are accrued as liabilities as the benefits are earned, to the extent that the Fund's obligation is attributable to employees' services already rendered, and it is probable that the Fund will compensate the employees for the benefits through paid time off or some other means, such as cash payments.

Self-Insurance/Risk Management

The City is self-insured for general liability, workers' compensation, and unemployment compensation. The accrued liability for the various types of claims represents an estimate by management of the eventual loss on the claims. Estimated expenses and recoveries are based on a case by case review.

Environmental Remediation Expenses and Recoveries

HAS incurs costs associated with environmental remediation activities, which arise during the normal course of business. These costs are recorded as a liability when HAS is required to perform the remediation and if the costs can be reasonably estimated. HAS records environmental remediation cost recoveries as nonoperating revenues in the financial statements. See Note 11 for 'Environmental Liabilities.'

Bond Premiums, Discounts, and Issuance Costs

Bond premiums, discounts, and prepaid bond insurance are amortized over the term of the bonds using effective interest method for fixed rate bonds and straight-line method for variable rate bonds. Debt issuance costs are recognized as expense when incurred.

Net Pension Liability

For the purposes of measuring net pension liability, deferred outflows of resources, and deferred inflows of resources related to pension and pension expense, information about the fiduciary net position of the Houston Municipal Employees' Pension System, and additions to/deductions from the pension system's fiduciary net position have been determined on the same basis as they are reported by the pension system. For this purpose, benefit payments (including refunds of employee contribution) are recognized when due and payable in accordance with the benefit terms. Additional information regarding net pension liability can be found in Note 6.

Other Postemployment Liability

For purposes of measuring total/net other postemployment liability ("OPEB"), deferred outflows of resources and deferred inflows of resources related to OPEB and OPEB expense have been determined on the same basis as they are reported by the OPEB Plan. For this purpose, benefit payments (including refunds of employee contributions) are recognized when due and payable in accordance with the benefit terms. Additional information regarding total/net other postemployment liability can be found in Note 7.

Deferred Inflows/Outflows of Resources

Deferred outflows of resources represent a consumption of net assets that applies to future periods and so will not be recognized as an outflow of resources (expense) until then. Deferred inflows of resources represent an acquisition of net assets that applies to future periods. The deferred charge on refunding recorded on the statements of net position results from the difference in carrying value of refunded debt and its reacquisition price. This amount is deferred and amortized over the shorter of the life of the refunded or refunding debt.

Deferred inflows and outflows have been recognized for the net difference between the projected and actual investment earnings, this amount is deferred and amortized over a period of five years. In addition, deferred inflows and outflows have been recognized for the differences between the actuarial expectation and the actual economic experience and changes in actuarial assumptions related to the defined benefit pension plan and the other post-retirement benefit plan. These amounts are deferred and amortized over the average of the expected service lives of pension plan members. See Note 6 and Note 7 for additional information on deferred inflows and outflows related to the pension plan and the other post-retirement benefits plans, respectively.

Accounting policies for deferred inflows and outflows related to leases are described under the caption – 'Leases' in Note 1.

Net Position Classification

Net position is displayed in three separate categories based on the accessibility of the underlying assets: net investment in capital assets; restricted net position; and unrestricted net position. Net investment in capital assets includes all capital assets, however acquired, including accumulated depreciation, and the outstanding debt and deferred resources used to finance the construction, acquisition, or improvement of capital assets.

Restricted net position includes assets, net of related liabilities, which are limited as to the timing or purpose for which they may be used. Restrictions reported by the Fund are imposed either by other governments, as in grants or passenger facility charges, or through legally enforceable City ordinances passed by City Council as a protection to HAS' bondholders.

Net Position Flow Assumption

Sometimes the Fund will fund outlays for a particular purpose from both restricted (e.g. restricted bond or grant proceeds) and unrestricted resources. In order to calculate the amounts to report as restricted net position and unrestricted net position, a flow assumption must be made about the order in which the resources are considered to be applied. The Fund's policy is to consider restricted net position to have been depleted before unrestricted net position is applied.

Restricted Net Position – Restricted for Debt Service

This category includes net position in the interest and sinking funds, debt service funds, and debt reserve funds that pay principal and interest for the revenue bonds, commercial paper notes, inferior lien contract, and special facility revenue bonds. Unexpended PFC are also included in this category as they are primarily held, through agreements with the FAA, for the repayment of capital financing.

Restricted Net Position – Restricted for Maintenance and Operations

This category primarily consists of a reserve fund dedicated to operating and maintenance expense, mandated by the various City ordinances which authorized the issuance of revenue and revenue refunding bonds. At fiscal year end the reserve fund is required to hold a balance representing at least 60 days of operating expenses, based on the annual operating budget authorized by City Council for the next fiscal year.

Restricted Net Position – Restricted for Special Facility

This category holds CFC dedicated to administrative costs and facility improvements for the Consolidated Rental Car Facility ("CRCF"). These funds are held by The Bank of New York Mellon Trust Company, under a trust indenture authorized by City Council in conjunction with the issuance of the Special Facility Revenue Bonds and Revenue Refunding Bonds - CRCF Project.

Restricted Net Position – Restricted for Renewal and Replacement

The Renewal and Replacement Fund (the "R&R") was created by the various City ordinances which authorized the issuance of airport revenue and revenue refunding bonds. The R&R is intended to replace depreciable assets, and to make major repairs and renovations. Net revenue is transferred to this fund if it is not needed for maintenance and operations, for the debt service reserve funds, or for the operating and maintenance reserve fund. The R&R fund can also be used for operations or debt service, if other funds are exhausted. If the R&R does not have a net position of at least $10 million at the end of each fiscal year, then additional revenue funding must be transferred in during the next fiscal year. If the R&R has a net position that is greater than $10 million, then the excess is restricted for capital improvements.

Restricted Net Position – Restricted for Capital Improvements

This category consists primarily of the Airport Improvement Fund (the "AIF"), created by the various City ordinances which authorized the issuance of revenue bonds. After maintenance and operating expenses are paid, and after all other transfers mandated by City ordinances are made, any net revenue remaining is required to be transferred to the AIF. The AIF is intended for capital expenditures, but it can also be used to cure deficiencies in the R&R. If the unappropriated AIF balance is (1) sufficient to cover the capital improvement program for 24 months, or (2) $50 million, whichever is greater, then the AIF may be used by the City for any lawful purpose not inconsistent with the terms of any federal grants or aid or any contracts to which the City is a party. Net position restricted for capital improvements also includes grant or contract funds received from the FAA or Transportation Security Administration ("TSA") for the construction or acquisition of capital assets.

Net Position – Unrestricted (Deficit)

This category is defined as any portion of net position that is not classified as either net investment in capital assets or restricted net position. The Fund's Master Ordinance for the Issuance of Revenue Obligations requires that system revenue not used for specific defined purposes be restricted for capital improvement.

Use of Estimates

The preparation of financial statements in conformity with GAAP requires management to make estimates and assumptions that affect the recorded amounts of assets and liabilities and disclosure of contingent assets and liabilities as of the date of the financial statements and the recorded amounts of revenue and expenditures during the period. Actual results could differ from those estimates.

Deposits

The City's investment policy (the "Policy") requires all deposits to be fully collateralized with depository insurance; obligations of the United States of America or its agencies and instrumentalities (excluding those mortgage-backed securities prohibited by the Public Funds Investment Act); or in any other manner and amount provided by law for the deposits of the City. At all times, such securities should have a fair value of not less than 102% of the amount of the deposits collateralized thereby, adjusted by the amount of applicable depository insurance. There were no deposits with custodial risk as of and during the years ended June 30, 2022 and 2021.

Cash and Investments

The City maintains a cash and investment pool (the "Pool") that is available for use by all funds and City departments. Participation in the Pool is limited to normal operating activities of the Fund and other activities that are restricted due to contractual considerations. Petty cash and change funds are included in non-pooled cash. The Fund's balance in pooled and non-pooled accounts at June 30, 2022 and 2021 are as follows:

Fiscal Year	Pooled Cash and Cash Equivalents	Pooled Investments	Total Pooled Cash and Investment	Non-pooled cash	Total Cash and Investments
2022	$ 332,287,053	$ 1,473,557,446	$ 1,805,844,499	$ 49,783,685	$ 1,855,628,184
2021	$ 484,805,017	$ 1,199,888,433	$ 1,684,693,450	$ 51,039,974	$ 1,735,733,424

Investments and Risk Disclosures

The following describes the investment positions of the City's operating funds as of June 30, 2022 and June 30, 2021. On these dates, the City had $5.3 billion and $5.2 billion, respectively, in high grade, fixed income investments. All investments are governed by state law and the Policy, which dictates the following objectives, in order of priority:

1. Safety
2. Liquidity
3. Return on Investment
4. Legal Requirements

These funds are managed internally by City personnel. The investments listed below do not include the City's pension funds, which are described separately in Note 6 as well as the City's ACFR. The Pool consists of all working capital, construction, and debt service funds which are not subject to yield restriction under Internal Revenue Service arbitrage regulations. The funds of the City's enterprise systems, which include the Fund, as well as the general fund, are commingled in this pool in order to gain operational efficiency. Approximately 98.7% and 98.6% of the City's total investable funds are contained in this portfolio on June 30, 2022 and June 30, 2021, respectively.

City of Houston Investment	(1)(2) FY2022 & FY2021 Credit Quality Ratings	June 30, 2022 Fair Value ($ in millions)	June 30, 2022 WAM* (years)	June 30, 2021 Fair Value ($ in millions)	June 30, 2021 WAM* (years)
U.S. Treasury Securities	AAA	$ 2,595.39	1.490	$ 1,605.40	2.513
Government Agency Securities (3)	AAA	1,028.52	1.790	1,116.87	2.233
Government Agency Securities (State of Israel Bond)	AA	9.75	1.088	10.00	0.088
Government Agency Securities (3) (4)	Not Rated	288.28	1.684	400.61	2.260
Government Mortgaged Backed Securities (3) (4)	Not Rated	0.65	0.743	1.63	0.970
MMF - TexSTAR Cash Reserves (5)	AAA Short Term	293.08	0.003	708.02	0.101
Commercial Paper	A-1/P-1 Short Term	705.36	0.276	969.55	0.273
Municipal Securities	AAA Long Term	174.72	1.695	191.43	2.228
Municipal Securities	AA Long Term	199.86	2.093	181.49	2.144
Total Investments		$ 5,295.61		$ 5,185.00	

* Weighted Average Maturity ("WAM") is computed using average life of mortgage-backed securities and effective maturity of callable securities.

(1) Fitch Ratings Inc. has assigned an AAA credit quality rating and S1 volatility rating to the City's General Investment Pool. The AAA signifies the highest level of credit protection, and the S1 rating signifies volatility consistent with a portfolio of government securities maturing from one to three years.

(2) All credit ratings shown are either actual Fitch ratings, or if a Fitch credit rating is not available, the equivalent Fitch credit rating is shown to represent the actual Moody's or Standard & Poor's credit rating.

(3) These are securities issued by government sponsored enterprises, including the Federal Home Loan Bank, Federal Home Loan Mortgage Corporation (Freddie Mac), Federal National Mortgage Corporation (Fannie Mae), and Federal Farm Credit Bank.

(4) These securities were issued by the Federal Home Loan Bank, Freddie Mac, Fannie Mae, and Farmer Mac. While these individual issues were not rated, senior lien debt of these entities is rated AAA.

(5) For additional disclosures and program information, visit texstar.org/ProgramInformation.aspx.

Risk Disclosures:

Interest Rate Risk. In order to ensure the ability of the City to meet obligations and to minimize potential fair value losses arising from rising interest rate environments, the Policy limits this investment portfolio's dollar-weighted average maturity to 2.5 years maximum. As of June 30, 2022 and 2021, this investment portfolio's dollar-weighted average maturity was 1.343 years and 1.65 years, respectively. Modified duration was 1.305 and 1.63 years at June 30, 2022 and 2021, respectively. Modified duration can be used as a multiplier to determine the percent change in price of a bond portfolio for every 100 basis point (1%) change in yield. For example, a portfolio with a modified duration of 1.305 years would experience approximately a 1.305% change in market price for every 100 basis point change in yield.

Credit Risk – Investments. The U.S. treasury securities and housing and urban development securities are direct obligations of the United States government. Government agency securities and mortgage backed securities are issued by government sponsored enterprises but are not direct obligations of the U.S. Government. The money market mutual funds are rated AAA. Municipal securities are rated at least AA. The Policy limits investments in the Pool to high quality securities with maximum maturity of five years for all U.S. treasuries, government agency, and municipal securities with the exception of government mortgaged backed securities which can have maximum maturity of 15 years. Certificates of deposit maximum maturity is two years, and commercial paper maximum maturity is 365 days. The Pool's maximum sector exposure are as follow: U.S. treasuries up to 100%; government agency securities up to 85% with maximum exposure to any one agency issuer is 35%; mortgage backed securities up to 20%; municipal securities up to 20% with a rating not less than A by a nationally recognized rating agency; money market mutual funds up to 25%; Certificates of Deposit up to 15%; and commercial paper up to 20%.

Credit Risk – Securities Lending. Under its securities lending program, the City receives 102% of fair value for its U.S. treasury securities at the time the repurchase agreements are signed, and agreements are limited to 90 days by policy and have been less than 35 days by practice. At June 30, 2022 and 2021, there were no securities lending agreements outstanding.

Custodial Credit Risk. The custodial credit risk for investments is the risk that in the event of failure of a counterparty, the City will not be able to recover the value of its investment or collateral securities that are in the possession of an outside party. Investment securities are exposed to custodial credit risk if the securities are not registered in the name of the City and are held by either the counterparty, the counterparty's trust department or agent. As of June 30, 2022 and 2021, none of the City's investments in the Pool were subject to custodial credit risk.

Foreign Currency Risk. Foreign currency risk is the risk that investments will change value due to changes in exchange rates between time of purchase and reporting or sale. The investments in the Pool are limited by the Policy to US dollar denominated investments and not subject to this risk.

Fair Value Measurements

To the extent available, the City's investments are recorded at fair value as of December 31, 2022 and 2021. GASBS No. 72 — "Fair Value Measurement and Application," defines fair value as the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date. This statement establishes a hierarchy of valuation inputs based on the extent to which the inputs are observable in the marketplace. Inputs are used in applying the various valuation techniques and take into account the assumptions that market participants use to make valuation decisions. Inputs may include price information, credit data, interest and yield curve data, and other factors specific to the financial instrument. Observable inputs reflect market data obtained from independent sources. In contrast, unobservable inputs reflect the entity's assumptions about how market participants would value the financial instrument. Valuation techniques should maximize the use of observable inputs to the extent available.

A financial instrument's level within the fair value hierarchy is based on the lowest level of any input that is significant to the fair value measurement. The following describes the hierarchy of inputs used to measure fair value and the primary valuation methodologies used for financial instruments measured at fair value on a recurring basis.

The framework provides a fair value hierarchy that prioritizes the inputs to valuation techniques used to measure fair value. The hierarchy gives the highest priority to unadjusted quoted prices in active markets for identical assets or liabilities (level 1 measurements) and the lowest priority to unobservable inputs (level 3 measurements).

The three levels of the fair value hierarchy are described as follows:

Level 1: Inputs to the valuation methodology are unadjusted quoted prices for identical assets or liabilities in active markets that the Board has the ability to access at the measurement date.

Level 2: Inputs to the valuation methodology include quoted prices for similar assets or liabilities in active markets; quoted prices for identical or similar assets or liabilities in inactive markets; inputs other than quoted prices that are observable for the asset or liability; inputs that are derived principally from or corroborated by observable market data by correlation or other means. If the asset or liability has a specified (contractual) term, the level 2 input must be observable for substantially the full term of the asset or liability.

Level 3: Inputs to the valuation methodology are unobservable and significant to the fair value measurement determined using model-based techniques that include option pricing models, discounted cash flow models, and similar techniques.

The asset's or liability's fair value measurement level within the fair value hierarchy is based on the lowest level of any input that is significant to the fair value measurement. Valuation techniques used need to maximize the use of observable inputs and minimize the use of unobservable inputs.

TexSTAR uses the fair value method to determine the Net Asset Value ("NAV") per unit of the Cash Reserve Fund. Under the fair value method, fixed income securities are valued each day by independent or affiliated commercial pricing services or third party broker-dealers. In instances where sufficient market activity exists, the pricing services or broker-dealers may utilize a market-based approach through which quotes from market makers are used to determine fair value. In instances where sufficient market activity may not exist or is limited, the broker-dealers or pricing services also utilize proprietary valuation models which may consider market transactions in comparable securities and the various relationships between securities in determining value and/or market characteristics such as benchmark yield curves, option adjusted spreads, credit spreads, estimated default rates, coupon-rates, anticipated timing of principal repayments, underlying collateral, and other unique security features in order to estimate the relevant cash flows, which are then discounted to calculate the fair values.

TexSTAR Cash Reserve Fund has not been classified in the fair value hierarchy table. The fair value amounts presented in this table are intended to permit reconciliation of the fair value hierarchy to the line items presented in the statements of net position.

A summary of the Pool's investment under the requirements of the fair value hierarchy follows:

	FAIR VALUE MEASUREMENTS USING ($ in millions)							
Investments by Fair Value Level	**Total June 30, 2022**	**Level 1**	**Level 2**	**Level 3**	**Total June 30, 2021**	**Level 1**	**Level 2**	**Level 3**
U.S. Treasury Securities	$ 2,595.39	$ 2,595.39	$ -	$ -	$ 1,605.40	$ 1,605.40	$ -	$ -
Government Agency Securities	1,316.80	-	1,316.80	-	1,517.48	-	1,517.48	-
Government Agency Securities (State of Israel Bd)	9.75	-	-	9.75	10.00	-	-	10.00
Government Mortgaged Backed Securities	0.65	-	0.65	-	1.63	-	1.63	-
Municipal Securities	374.58	-	374.58	-	372.92	-	372.92	-
Commercial Paper	705.36	-	705.36	-	969.55	-	969.55	-
Total Investments by Fair Value Level	5,002.53	$ 2,595.39	$ 2,397.39	$ 9.75	4,476.98	$ 1,605.40	$ 2,861.58	$ 10.00
Investments Measured at NAV								
MMF - TexSTAR Cash Reserves	293.08				708.02			
Total investments measured at NAV	293.08				708.02			
Total investments measured at fair value and NAV	$ 5,295.61				$ 5,185.00			

Restricted Cash and Cash Equivalents - Miscellaneous Money Market Accounts

In addition to the Pool, the City maintains several money market accounts for various purposes. These accounts are considered cash and cash equivalents on the Statements of Cash Flows because they maintain a weighted average maturity of less than three months. The Fund's portion of these is as follows:

	Fair Value June 30, 2022 ($ in millions)	Credit Quality Ratings	Fair Value June 30, 2021 ($ in millions)	Credit Quality Ratings	FY2022 & FY2021 Weighted Average Maturity
Blackrock Federal Institutional Fund: Balances held for Consolidated Rental Car Facility operations, improvements, debt service	$ 49.769	AAA	$ 51.024	AAA	< 60 days
First American US Treasury Money Market Fund: Balance held for commercial paper debt service	0.010	AAA	0.010	AAA	< 60 days
TOTAL FAIR VALUE - MONEY MARKET ACCOUNTS	$ 49.779		$ 51.034		

Risk Disclosures:

Interest Rate Risk. These money market funds maintain an average maturity of less than 60 days and seek to maintain a stable net asset value of $1.00. These funds are redeemable on a same day notice.

Credit Risk. These funds hold only US dollar denominated securities that present minimal credit risk. They have the highest credit ratings.

Custodial Credit Risk. As of June 30, 2022, none of the City's investments in this pool were subject to custodial credit risk.

Foreign Currency Risk. The City's investments in this pool are all US dollar denominated and not subject to foreign currency risk.

Fair Value Measurements – Money Market Accounts

The money market accounts have not been classified in the fair value hierarchy table. The fair value amounts presented in this table are intended to permit reconciliation of the fair value hierarchy to the line items presented in the statements of net position.

A summary of investments under the requirements of the fair value hierarchy follows:

FAIR VALUE MEASUREMENTS USING ($ in millions)

Investments Measured at NAV	Total June 30, 2022	Total June 30, 2021
BlackRock FedFund-Institutional	$ 49.769	$ 51.024
First American US Treasury MMF	0.010	0.010
Total Investments Measured at NAV	$ 49.779	$ 51.034

Summaries of changes in capital assets for the years ended June 30, 2022 and June 30, 2021 are as follows (in thousands):

	Balance June 30, 2021	Additions	Retirements	Transfers	Balance June 30, 2022
Capital assets not being depreciated:					
Land	$ 216,100	-	(61)	-	$ 216,039
Rights & Intangibles - Non-Amortizable	18,333	-	-	2,655	20,988
Construction work in progress	409,680	287,838	-	(140,604)	556,914
Total capital assets not being depreciated	644,113	287,838	(61)	(137,949)	793,941
Other capital assets:					
Buildings and building improvements	3,036,287	823	(921)	73,370	3,109,559
Improvements other than buildings	2,217,998	76	(8,226)	60,318	2,270,166
Equipment	304,451	2,975	(466)	4,261	311,221
Rights & Intangibles - Amortizable	4,697	-	(4,675)	-	22
Total other capital asset	5,563,433	3,874	(14,288)	137,949	5,690,968
Less accumulated depreciation for:					
Buildings and building improvements	(1,661,770)	(95,919)	922	-	(1,756,767)
Improvements other than buildings	(1,539,306)	(59,438)	4,666	-	(1,594,078)
Equipment	(256,557)	(11,307)	462	-	(267,402)
Rights & Intangibles	(4,697)	-	4,675	-	(22)
Total accumulated depreciation	(3,462,330)	(166,664)	10,725	-	(3,618,269)
Other capital assets, net	2,101,103	(162,790)	(3,563)	137,949	2,072,699
Total capital assets, net	$ 2,745,216	$ 125,048	$ (3,624)	$ -	$ 2,866,640

	Balance June 30, 2020	Additions	Retirements	Transfers	Balance June 30, 2021
Capital assets not being depreciated:					
Land	$ 216,100	-	-	-	$ 216,100
Rights & Intangibles - Non-Amortizable	13,394	-	-	4,939	18,333
Construction work in progress	255,070	202,807	-	(48,197)	409,680
Total capital assets not being depreciated	484,564	202,807	-	(43,258)	644,113
Other capital assets:					
Buildings and building improvements	3,076,131	49	(68,380)	28,487	3,036,287
Improvements other than buildings	2,248,793	164	(43,214)	12,255	2,217,998
Equipment	293,845	8,838	(748)	2,516	304,451
Rights & Intangibles - Amortizable	4,697	-	-	-	4,697
Total other capital asset	5,623,466	9,051	(112,342)	43,258	5,563,433
Less accumulated depreciation for:					
Buildings and building improvements	(1,623,380)	(95,299)	56,909	-	(1,661,770)
Improvements other than buildings	(1,506,375)	(60,015)	27,084	-	(1,539,306)
Equipment	(242,007)	(15,298)	748	-	(256,557)
Rights & Intangibles	(4,685)	(12)	-	-	(4,697)
Total accumulated depreciation	(3,376,447)	(170,624)	84,741	-	(3,462,330)
Other capital assets, net	2,247,019	(161,573)	(27,601)	43,258	2,101,103
Total capital assets, net	$ 2,731,583	$ 41,234	$ (27,601)	$ -	$ 2,745,216

Interest expenses and capitalized interest for the years ended June 30, 2022 and June 30, 2021 are as follows (in thousands):

Interest Cost	2022	2021
Total Interest Cost	$ 76,705	$ 72,355
Capitalized Interest	-	(10,248)
Interest Expense	$ 76,705	$ 62,107

HAS as Lessee

HAS' operating leases are primarily for equipment. The terms and conditions for these leases vary by the type of underlying asset. All leases have fixed, periodic, payments over the lease term, which ranges between 36 and 72 months, and do not contain variable payments or guaranteed residual values in the lease agreements. These operating leases are cancellable by the lessors or HAS with an advance notice or non-cancellable.

At June 30, 2022 and 2021, HAS' right-of-use assets for operating leases are as follows (in thousands):

	2022	2021
Total right-of-use assets	$ 263	$ 431
Less: accumulated amortization	(156)	(196)
Right-of-use assets, net	$ 107	$ 235

For the year ended June 30, 2022 and 2021, no variable or other payments were made by HAS other than the periodic rental payments in accordance with the lease agreements. In addition, there were no commitments under leases prior to the commencement of the lease term, and no impairment related loss were recognized by the Fund.

Principal and interest requirement to maturity for the lease liability at June 30, 2022 are as follows (in thousands):

Year ending June 30	Principal	Interest	Total
2023	$ 77	$ 2	$ 79
2024	34	1	35
Total	$ 111	$ 3	$ 114

HAS as Lessor

HAS leases terminal space (except for regulated leases), aircraft maintenance and overhaul facilities, cargo facilities, hangars, and other structures to air carriers and other tenants under various operating leases, a majority of which is non-cancellable and terminate no later than July 2058. Certain provisions of the leases provide for fixed and variable rental payments, and all are generally designed to allow HAS to meet its debt service requirements and recover certain operating and maintenance costs. In addition, certain of the agreements under which HAS receives revenue from the operation of concessions at IAH and HOU provide for the payment of a fee based on the greater of an aggregated percentage of gross receipts or a guaranteed minimum.

For the years ended June 30, 2022 and 2021, the Fund recognized the following balances related to the leases (in thousands):

June 30, 2022		Fixed Payments		Variable Payments
Rentals, Building, and Ground Area	$	20,767	$	-
Concessions (Hotel and Auto Rental)	$	1,608	$	28,617
Interest Revenue	$	9,776	$	-

June 30, 2021		Fixed Payments		Variable Payments
Rentals, Building, and Ground Area	$	20,621	$	-
Concessions (Hotel and Auto Rental)	$	1,608	$	16,637
Interest Revenue	$	10,193	$	-

Expected future payments, which are included in the measurement of the lease receivable, at June 30, 2022 are as follows (in thousands):

Year ending June 30		Principal		Interest		Total
2023	$	13,859	$	9,237	$	23,096
2024		11,495		8,775		20,270
2025		11,025		8,365		19,390
2026		11,062		7,968		19,030
2027		11,447		7,557		19,004
2028 - 2032		37,923		33,166		71,089
2033 - 2037		33,339		26,855		60,194
2038 - 2042		40,856		20,125		60,981
2043 - 2047		35,744		13,048		48,792
2048 - 2052		38,974		6,013		44,987
2053 - 2057		14,196		887		15,083
2058 - 2059		655		12		667
Total	$	260,575	$	142,008	$	402,583

Regulated Leases

The City and United Airlines ("United"), Southwest Airlines ("Southwest"), Delta Air Lines, American Airlines, Spirit Airlines, and Air Canada (collectively, the "Signatory Airlines") entered into Airport Use and Lease agreements ("Regulated Leases"), for usage of IAH and HOU facilities for the purpose of conducting business as air transportation businesses. These agreements are non-cancellable and terminate no later than 2042, with options to extend, or month-to-month and cancellable with 30 days' notice. Under the terms of these agreements, Signatory Airlines pay HAS monthly based on the annual rental rate/fee schedule. Rate calculations are based on total estimates of costs and expenses, estimates of passengers and total landed weight, and other factors. Final settlements are made each year after the audit of the Fund's Financial Report. Other airlines operating at IAH and HOU are billed at rates established by the City ordinances.

Under the agreements with United, United has exclusive and preferential use of certain space and facilities of terminals A, B, C, and E at IAH and preferential use of certain apron areas. And under these agreements, all or part of the concession revenues and related costs generated from terminals B, C, and E of IAH are excluded from the Fund's concession revenues and operating expenses on the statements of revenues, expenses, and changes in net position, as United operates, retains revenues, and pay related costs of operations for those concessions in accordance with the agreements. In addition, one of the agreements with Southwest grants Southwest preferential use of West Terminal/West Concourse, boarding gates, and other areas at HOU. Another agreement grants Southwest exclusive and preferential use of certain terminal areas of terminal A at IAH. No other airlines have exclusive or preferential use of more than ten (10) percent of terminal space or other areas of HAS as of June 30, 2022 and 2021. See Note 9 for major customers of HAS. Exclusive and preferential use of space are summarized as follows:

IAH

	United		Southwest		Total IAH	
Terminal areas - leasable airline space (in thousands)	2,380	sq. ft.	10	sq. ft.	3,824	sq. ft.
Apron - leasable airline space (in thousands)	2,728	sq. ft.	94	sq. ft.	3,871	sq. ft.
Number of gates and remote stands	96		3		135	

HOU

	Southwest		Total HOU	
Terminal areas - leasable airline space (in thousands)	381	sq. ft.	467	sq. ft.
Apron - leasable airline space (in thousands)	516	sq. ft.	815	sq. ft.
Number of gates and remote stands	24		30	

For the year ended June 30, 2022 and 2021, the Fund recognized the following balances related to Regulated Leases (in thousands):

June 30, 2022	Fixed Payments	Variable Payments
United	$ 106,618	$ 37,161
Southwest	$ 35,542	$ 18,750
Other Signatory Airlines	$ 20,100	$ 8,556

June 30, 2021	Fixed Payments	Variable Payments
United	$ 73,107	$ 24,064
Southwest	$ 19,720	$ 16,839
Other Signatory Airlines	$ 12,842	$ 6,099

Expected future minimum lease payments from Regulated Leases at June 30, 2022 are as follows (in thousands), projected by management of HAS using the following assumptions: 1) revenues earned from the Signatory Airlines during the year ended June 30, 2022, 2) through the expiration of the agreements with the Signatory Airlines or the next five (5) years, whichever is longer, 3) compounded at three (3) percent per annum without considering possible effect of the ongoing COVID-19 pandemic, and 4) without considering future expansion and changes in operations by HAS or the Signatory Airlines:

Year ending June 30	Total
2023	$ 229,865
2024	236,761
2025	243,864
2026	251,180
2027	222,661
2028 - 2032	1,217,603
2033 - 2037	1,411,536
2038 - 2042	1,464,461
Total	$ 5,277,931

HAS' senior lien and subordinate lien revenue refunding bonds are secured by net revenues earned from the airlines. See additional disclosures in Note 5, Security for Airport Debt.

Changes in long-term liabilities for the years ended June 30, 2022 and 2021 are summarized as follows (in thousands):

	Balance June 30, 2021	Additions	Reduction	Balance June 30, 2022	Due within One Year
Revenue bonds payable	$ 2,209,245	$ -	$ (75,580)	$ 2,133,665	$ 77,700
Plus: unamortized premium	213,263	-	(15,082)	198,181	-
Less: unamortized discount	(502)	-	68	(434)	-
Revenue Bonds Payable, Net	2,422,006	-	(90,594)	2,331,412	77,700
Special facility bonds payable	68,185	-	(7,505)	60,680	8,165
Commercial paper payable	20,000	165,000	-	185,000	-
Pension obligation bonds	2,006	-	-	2,006	-
Notes payable	14,421	1,572	-	15,993	1,193
Claims for workers compensation	3,077	278	(1,131)	2,224	1,181
Compensated absences	14,018	262	-	14,280	6,820
Lease Liabilities	239	-	(128)	111	77
Net pension liability	161,545	3,868	-	165,413	-
Other post employment benefits - health	82,344		(12,470)	69,874	-
Other post employment benefits - LTD	1,150	-	(102)	1,048	-
Total Long Term Liabilities	$ 2,788,991	$ 170,980	$ (111,930)	$ 2,848,041	$ 95,136

	Balance June 30, 2020	Additions	Reduction	Balance June 30, 2021	Due within One Year
Revenue bonds payable	$ 1,855,340	$ 1,149,685	$ (795,780)	$ 2,209,245	$ 75,580
Plus: unamortized premium	162,949	101,783	(51,469)	213,263	-
Less: unamortized discount	(598)	-	96	(502)	-
Revenue Bonds Payable, Net	2,017,691	1,251,468	(847,153)	2,422,006	75,580
Special facility bonds payable	74,425	-	(6,240)	68,185	7,505
Commercial paper payable	132,973	383,800	(496,773)	20,000	-
Pension obligation bonds	2,006	-	-	2,006	-
Notes payable	324	14,097	-	14,421	1,068
Claims for workers compensation	1,521	2,457	(901)	3,077	903
Compensated absences	13,293	6,122	(5,397)	14,018	5,477
Lease Liabilities	-	431	(192)	239	128
Accrued arbitrage rebate liability	109	-	(109)	-	-
Net pension liability	258,223	-	(96,678)	161,545	-
Other post employment benefits - health	70,738	13,571	(1,965)	82,344	-
Other post employment benefits - LTD	774	376	-	1,150	-
Total Long Term Liabilities	$ 2,572,077	$ 1,672,322	$ (1,455,408)	$ 2,788,991	$ 90,661

Revenue Bonds

A summary of revenue bonds outstanding as of June 30, 2022 and 2021 are as follows (in thousands):

	Maturity Year	Original Interest Rate Range	Face Value Outstanding June 30, 2022	Face Value Outstanding June 30, 2021
Airport System Subordinate Revenue Bonds				
Series 2000B, $269,240,000 original principal	2024	5.45%-5.7%	$ 38,315	$ 38,315
Series 2002A, $200,050,000 original principal	2032	5%-5.625%	20,005	20,005
Series 2002B, $274,455,000 original principal	2032	5%-5.5%	27,450	27,450
Airport System Subordinate Lien Revenue Refunding Bonds				
Series 2011A, $449,975,000 original principal	2026	3%-5%	-	28,600
Series 2011B, $116,930,000 original principal	2026	3%-5%	-	1,550
Series 2012A, $286,585,000 original principal	2032	5%	5,035	13,820
Series 2012B, $217,135,000 original principal	2032	5%	4,845	9,775
Series 2018A, $130,550,000 original principal	2041	5%	120,615	124,090
Series 2018B, $285,220,000 original principal	2048	5%	262,740	266,785
Series 2018C, $212,820,000 original principal	2032	5%	182,980	194,860
Series 2018D, $356,290,000 original principal	2039	5%	321,995	334,310
Series 2020A, $131,620,000 original principal	2047	4%-5%	131,620	131,620
Series 2020B, $71,565,000 original principal	2030	5%	71,565	71,565
Series 2020C, $660,490,000 original principal	2032	0.883%-2.485%	660,490	660,490
Series 2021A, $286,010,000 original principal	2048	4%-5%	286,010	286,010
Total Principal			2,133,665	2,209,245
Less: Total current maturities			(77,700)	(75,580)
Unamortized discount			(434)	(502)
Unamortized premium			198,181	213,263
Total Revenue Bonds Payable - Long Term			$ 2,253,712	$ 2,346,426

Senior Lien Revenue Bonds

At June 30, 2022 and 2021, there were no senior lien revenue bonds issued and outstanding.

Subordinate Lien Revenue Bonds

On October 20, 2020, HAS issued $863,675,000 in Airport System Subordinate Lien Revenue Refunding Bonds in three series: Series 2020A (AMT) in the amount of $131,620,000, 2020B (NON-AMT) in the amount of $71,565,000, and 2020C (Taxable) in the amount of $660,490,000, with interest rates at 0.883% to 5.0%. The proceeds were used for the purpose of generating resources for debt service payments of the refunded and defeased portions of Series: 2010 (AMT), 2000B (NON-AMT), 2011A (AMT), 2011B (AMT), 2012A (AMT), 2012B (NON-AMT); to refund $150,973,000 of Airport System Commercial Paper Notes; and to pay costs of issuance of the bonds. A deferred refunding loss of $20,123,091 was recognized for this refunding transaction. The bonds mature in varying amounts from year 2022 to 2047. Net present value savings related to the bond refundings totaled $94,799,712 and reduced future debt service by $98,213,180. In addition, as of June 30, 2022, $452,540,000 of defeased bonds are still outstanding.

On June 22, 2021, HAS issued Series 2021A (AMT) Airport System Subordinate Lien Revenue Refunding Bonds in the amount of $286,010,000 with interest rates at 4.0% to 5.0%. The proceeds were used for the purpose of refunding $345,800,000 of Houston Airport System Commercial Paper Notes and to pay costs of issuance of the bonds. No deferred gain or loss was recognized for this refunding transaction. The bonds mature in varying amounts from year 2023 to 2048.

Arbitrage Rebate

Arbitrage rebate rules, under the Internal Revenue Code Section 148 and related Treasury Regulations, require generally that a tax-exempt bond issuer forward to the federal government any profits made from investing bond proceeds at a yield above the bond yield, when investing in a taxable market. Payments based on cumulative profits earned by bonds are due, in general, every five years. At June 30, 2022 and 2021, a yield restriction/arbitrage rebate of $0 and $0, respectively, was accrued.

Commercial Paper

During the year ended June 30, 2013, the City authorized up to $150 million in Airport System Commercial Paper Notes ("Commercial Paper"). On November 20, 2013, the City re-authorized and amended the Series A and B Commercial Paper. A new direct pay letter of credit was issued on December 18, 2013, covering $150 million in face value of Series A and B Commercial Paper, plus $11.1 million in respect of 270 days accrued interest computed at 10%. This letter of credit expired on December 16, 2016 and was replaced by a letter of credit for the same amount issued by Sumitomo Mitsui Banking Corporation ("SMBC"), which expires on December 15, 2025. Any advances made under the letter of credit and not repaid within 90 days will be converted to term loans payable in twenty quarterly installments, subject to the greater of several options for interest rates. The maximum interest rate permitted under the ordinance is 15%.

On April 1, 2020, the agreement with SMBC was expanded to $350 million, plus interest. During the year ended June 30, 2020, HAS drew down $84.5 million, bringing the total outstanding balance at June 30, 2020 to $133.0 million, with interest rates ranging from 0.20% to 1.40%.

On Oct 20, 2020 and June 22, 2021, the outstanding balance of Commercial Paper in the amount of $151.0 million and $345.8 million was refunded by the issuance of Series 2020A and Series 2021A bonds, respectively.

At June 30, 2022, the outstanding balance of Commercial Paper was $185.0 million, with interest rate of 1.24%, and the available limit for additional borrowings was approximately $145.0 million. At June 30, 2021, the outstanding balance of Commercial Paper was $20.0 million, with interest rate of 0.11%, and the available limit for additional borrowings was approximately $330.0 million.

Pension Obligation Bonds

In 2005, the Fund was assigned the responsibility to pay principal and interest on a portion of the City's Pension Obligation Bonds, Series 2005 (Taxable), with a par value of $2,005,656, a coupon rate of 5.31%, and final maturity on March 1, 2035. The annual interest payment for the Pension Obligation Bonds is $106,500.

Security for Airport Debt

To the extent it legally may do so, as described in the Master Bond Ordinance, HAS may charge rates for use of the airports in order that, for each fiscal year, the net revenues will be not less than 125% of the debt service requirements for Senior Lien Revenue Bonds and 110% of the debt service requirements for Subordinate Lien Revenue Bonds. Generally, the bonds may be redeemed prior to their maturities in accordance with the bond ordinances and at prices which include premiums ranging downward from 1%.

The Fund presently has three outstanding Senior Lien Debt Service Reserve Fund Surety Policies issued by Financial Guaranty Insurance Corporation ("FGIC") and reinsured by National Public Finance Guarantee Corporation for any outstanding Senior Lien Revenue Bonds and Commercial Paper. These policies have an aggregate maximum amount of $12,374,996 and terminate on October 25, 2023 and July 1, 2030.

The Fund has also purchased Subordinate Lien Debt Service Reserve Fund Surety Policies that unconditionally guarantee the payment of the current principal and interest on all outstanding subordinate lien issues. The surety policies have termination dates ranging from July 1, 2022 to July 1, 2032. Each of the draws made against the surety policies shall bear interest at the prime rate plus two percent, not to exceed a maximum interest rate of 12%. The repayment provisions require one-twelfth of the policy costs for each draw to be repaid monthly, beginning the first month following the date of each draw. The policies were issued by (1) FGIC in the aggregate maximum amount of $102,949,865, reinsured by National Public Finance Guarantee Corporation; and (2) Assured Guarantee Municipal Corporation in the aggregate maximum amount of $31,921,384. The Fund also has a cash reserve of $83,960,003 and $83,960,003 in the Subordinate Lien Bond Reserve Fund as of June 30, 2022 and June 30, 2021, respectively.

Pledged Revenues

The Fund has pledged its revenues, net of operation and maintenance expenses, ("Net Revenue") to pay principal and interest on outstanding Commercial Paper, Senior Lien Revenue Bonds, Subordinate Lien Revenue Bonds, and Inferior Lien Revenue Bonds.

Pledged revenues exclude any bond proceeds, replacement proceeds, investment income earned by bond proceeds, fair value adjustments, PFC, grants or gifts for construction or acquisition, insurance proceeds, revenue from special facilities pledged to Special Facility Bonds, taxes collected for others, and proceeds from the sale of properties.

For the years ended June 30, 2022 and 2021, Net Revenues totaled $233.4 million and $77.3 million, respectively. In addition to PFC and grants totaling $163.5 million and $145.3 million for the years ended June 30, 2022 and 2021, respectively, were available to pay debt service. For the years ended June 30, 2022 and 2021, debt service coverage ratio was not calculated as the debt service was entirely funded by PFC and grants.

Special Facility Bonds

The Airport System Special Facilities Taxable Revenue Bonds, (CRCF Project), Series 2001, original par value $130,250,000, financed the design and construction of a common car customer service building, a parking structure, maintenance, storage and administrative facilities for each car rental company lessee, a common bus fleet and maintenance facility, and related infrastructure at Intercontinental. The City holds legal title to the completed CRCF, as it was constructed on airport property, but the facility is operated and maintained by IAH RACS, LLC, a limited liability company formed by various car rental companies. The bonds are payable from CFC collected by the car rental companies from their customers and remitted to a trustee for payment of debt service and other uses allowable by a trust indenture. As of June 30, 2022 and 2021, the daily usage charge per customer is set at $4.00. The trust indenture determines when and how the City is responsible for changing the rate, which under the Bond covenants must be set to provide a debt service coverage ratio of at least 125%. The bonds are limited special obligations of the City, payable solely from and secured by pledged CFC. There is no pledge of car rental company revenues, or of any general revenue of the City.

At June 30, 2022 and 2021, special facilities revenue and refunding bonds (CRCF) outstanding totaled $60.7 million and $68.2 million, respectively.

Forward Delivery Bond Purchase Agreement

On October 21, 2015, the City authorized up to $450 million in Airport System Inferior Lien Revenue Bonds, in one or more series. On November 5, 2015 the City authorized execution of a forward delivery purchase agreement with the Royal Bank of Canada, to expire November 5, 2022, for the issuance of $450 million in Inferior Lien Revenue Bonds. City Council must reauthorize this liquidity arrangement annually. For the years ended June 30, 2022 and 2021, no Inferior Lien Revenue Bonds have been issued and outstanding.

Direct Borrowing Loans

During the year ended June 30, 2020, HAS began to borrow and incur interest on two loans obtained from the State Energy Conservation Office (“SECO”), a segment within the State of Texas Comptroller. The SECO program affords low-rate 2% loans for borrowers approved to build or acquire energy efficient equipment or other assets.

HAS entered into two reimbursement loan agreements with SECO, each with a SECO-approved list of projects to be completed within approximately eighteen months, and with the initial repayment to commence shortly thereafter. After HAS has incurred the construction or acquisition costs, it submits the charges to SECO for reimbursement. Upon reimbursement by SECO, interest expense accrues at two percent.

Loan No. 1 has a maximum amount of $8.0 million to be repaid over approximately ten years, with repayment to commence once all projects are completed. Loan #2 has a maximum amount of $7.5 million, and similar terms to Loan No. 1. At June 30, 2022 and 2021, HAS has a total of $16.0 million and $14.4 million, respectively, loan balance outstanding including interest accrued during the construction period of 0.5M. The replacement projects continued throughout the year ended June 30, 2021 and have been completed as of June 30, 2022.

There are no unique default provisions, payment provisions, or collateral pledged to either of these loans. In the event of default, such as failing to make timely payments in accordance with the agreements, the outstanding balances, including accrued interest, may become due immediately. As of June 30, 2022 and 2021, HAS is in compliance with terms and conditions of these loan agreements.

Debt Service Requirements to Maturity

Aggregate future debt service payments to maturity as of June 30, 2022 are as follows (in thousands):

Year Ending June 30	Airport System Total Future Requirements		
	Principal	Interest	Total
2023	$ 87,058	$ 90,505	$ 177,563
2024	129,797	86,881	216,678
2025	318,796	81,691	400,487
2026	138,061	73,903	211,964
2027	144,242	69,037	213,279
2028 - 2032	776,493	254,027	1,030,520
2033 - 2037	368,622	126,224	494,846
2038 - 2042	236,995	64,344	301,339
2043 - 2047	141,865	26,472	168,337
2048 - 2049	55,415	2,119	57,534
Total	$ 2,397,344	$ 875,203	$ 3,272,547

Year Ending June 30	SECO Direct Borrowing	
	Principal	Interest
2023	$ 1,193	312
2024	1,217	287
2025	1,241	263
2026	1,266	238
2027	1,292	212
2028 - 2032	6,861	660
2033 - 2037	2,923	149
2038 - 2042	-	-
2043 - 2047	-	-
2048 - 2049	-	-
Total	$ 15,993	$ 2,121

Year Ending June 30	Airport System Subordinate Lien Revenue Bonds	
	Principal	Interest
2023	$ 77,700	$ 81,237
2024	119,710	78,193
2025	122,925	74,809
2026	126,350	71,218
2027	131,635	67,096
2028 - 2032	756,110	252,088
2033 - 2037	364,960	125,996
2038 - 2042	236,995	64,344
2043 - 2047	141,865	26,472
2048 - 2049	55,415	2,119
Total	$ 2,133,665	$ 843,572

Year Ending June 30	Airport System Commercial Paper	
	Principal	Interest
2023	$ -	$ 4,674
2024	-	4,681
2025	185,000	3,509
2026	-	-
2027	-	-
2028 - 2032	-	-
2033 - 2037	-	-
2038 - 2042	-	-
2043 - 2047	-	-
2048 - 2049	-	-
Total	$ 185,000	$ 12,864

Year Ending June 30	Airport System Special Facility Bonds - Rental Car Facility	
	Principal	Interest
2023	$ 8,165	$ 4,175
2024	8,870	3,613
2025	9,630	3,003
2026	10,445	2,340
2027	11,315	1,622
2028 - 2032	12,255	843
2033 - 2037	-	-
2038 - 2042	-	-
2043 - 2047	-	-
2048 - 2049	-	-
Total	$ 60,680	$ 15,596

Year Ending June 30	Airport System Pension Obligations	
	Principal	Interest
2023	$ -	$ 107
2024	-	107
2025	-	107
2026	-	107
2027	-	107
2028 - 2032	1,267	436
2033 - 2037	739	79
2038 - 2042	-	-
2043 - 2047	-	-
2048 - 2049	-	-
Total	$ 2,006	$ 1,050

As a department of the City, HAS participates in the Houston Municipal Employees' Pension System ("HMEPS" or the "Plan"), which publishes its separate financial statements and is a blended component unit of the City. A complete copy of the summary plan description and the stand-alone financial reports can be obtained from HMEPS at 1201 Louisiana St., Suite 900, Houston, Texas 77002-5608 or via http://www.hmeps.org.

A. General Information

Plan Description

HMEPS is a single employer, defined benefit pension plan, which covers all eligible municipal employees of the City, including all employees of HAS. HMEPS was created under Chapter 358, Acts of the 48th Texas Legislature, Regular Session, 1943 (Article 6243g, Vernon's Texas Civil Statutes) and reenacted and continued under HB1573, 77th Texas Legislature, Article 6243h, Vernon's Texas Civil Statutes, (the "Pension Statute") as amended. An independent Board of Trustees administers the Plan. The fiscal year of HMEPS ends June 30. In this Financial Report, the Fund reports separately from the City and is required to report as a cost-sharing plan since the Fund is allocated a proportionate share of the net pension liability ("NPL"). The schedules of Net Pension Liability, Pension Expense, and Deferred Outflows and Inflows of Resources show the Fund's proportionate share of the Plan.

Benefits Provided

HMEPS includes three contributory groups, groups A, B, and D, and provides for service-connected disability and death benefits to eligible members and surviving spouse and/or dependents, with no age or service eligibility requirements. Pension benefits are based on a participant's average monthly salary and years of credited service, as defined in the Pension Statute. Pension benefits are adjusted annually for a fixed cost of living adjustment of between 0% and 2% depending on investment returns. The maximum pension benefit is 90% of the participant's average monthly salary. A Deferred Retirement Option Plan (DROP) is available to eligible members.

Contributions

For HMEPS, employer and employee obligations to contribute, as well as employee contribution rates, are included in the Pension Statute, and some requirements are delineated in an amended and restated meet and confer agreement, effective July 1, 2011. Additionally, these laws provide that employer funding be based on periodic actuarial valuations, statutorily approved amounts, or amounts agreed to in meet and confer agreements.

All active participants are required to contribute to the Plan. Effective July 2017, group A participants contribute 7% of salary, group B participants contribute 2% of salary, and group D participants contribute 2% of salary. Effective July 2018, group A and group B participants contribute 8% and 4%, respectively. Beginning in January of 2018, group D participants contributed an additional 1% of salary.

As a result of Senate Bill 2190 of the 85th Texas Legislature ("SB 2190"), beginning in fiscal year 2018, the City is required to contribute the "Total City Contribution" to the Plan, which consists of the sum of (a) an actuarially determined percentage of payroll ("City Contribution Rate") multiplied by actual payroll and (b) a fixed dollar amount ("City Contribution Amount") which is based on the Unfunded Actuarial Accrued Liability as of July 1, 2016 ("Legacy Liability"). The Legacy Liability payment is amortized over 30 years, beginning on July 1, 2017 and grows at 2.75% per year regardless of the actual payroll growth rate.

The City as a whole and for the years ended June 30, 2022 and 2021, the City Contribution Rate was 8.41% and 8.36% of payroll, respectively, and the City Contribution Amount was $138,246,872 and $134,546,835, respectively.

Also, SB 2190 required a one-time payment of $250 million to the Plan in Pension Obligation Bond proceeds during the year ended June 30, 2018.

As of the most recent measurement date, June 30, 2022, of the net pension liability, membership data for the Plan are as follows:

Retirees and beneficiaries currently receiving benefits	11,481
Former members entitled to benefits but not yet receiving them	7,626
Active members	11,579
Total participants	30,686

B. Net Pension Liability

The Fund's proportionate share of NPL in the Plan was allocated and reported on the accompanying statements of net position.

NPL is the difference between the "Total Pension Liability" ("TPL") and the Plan's "Fiduciary Net Position" ("FNP"). TPL is the present value of pension benefits that are allocated to current members due to past service by entry age normal actuarial cost method. TPL includes benefits related to projected salary and service, and automatic cost of living adjustments ("COLA's"). In addition, ad hoc COLA's are also included in TPL to the extent they are substantively automatic. FNP is determined on the same basis used by the Plan. NPL and certain sensitivity information are based on an actuarial valuation performed as of July 1, 2021 and 2020. TPL was rolled forward from that valuation date to the measurement date of June 30, 2022 and 2021 using generally accepted actuarial principles. A Schedule of Net Pension Liability, including multi-year trend information (beginning with the year ended June 30, 2015), is presented in the Required Supplementary Information section of this ACFR.

Net Pension Liability (in thousands)

	June 30, 2022		June 30, 2021	
	Municipal Employees' Pension	The Fund's proportionate share of NPL	Municipal Employees' Pension	The Fund's proportionate share of NPL
Total pension liability	$ 5,562,146	$ 571,532	$ 5,440,062	$ 558,694
Less: Fiduciary net position	(3,952,351)	(406,120)	(3,867,087)	(397,149)
Net pension liability	$ 1,609,795	$ 165,413	$ 1,572,975	$ 161,545

The Fund's proportionate percentage of NPL is 10.28% and 10.27% for the years ended June 30, 2022 and 2022, respectively.

C. Schedule of Changes in Net Pension Liability (in thousands)

	June 30, 2022			June 30, 2021		
	Total Pension Liability	Plan Fiduciary Net Position	Net Pension Liability	Total Pension Liability	Plan Fiduciary Net Position	Net Pension Liability
Service cost	$ 82,080	$ -	$ 82,080	$ 78,564	$ -	$ 78,564
Interest on the total pension liability	371,952	-	371,952	363,611	-	363,611
Difference between expected and						
actual experience	26,473	-	26,473	(20,427)	-	(20,427)
Assumption Changes	(29,516)		(29,516)	-	-	-
Employer contributions	-	197,341	(197,341)	-	184,762	(184,762)
Employees contributions	-	32,654	(32,654)	-	33,325	(33,325)
Pension plan net investment income	-	189,389	(189,389)	-	1,084,388	(1,084,388)
Benefit payments	(327,773)	(327,773)	-	(314,149)	(314,149)	-
Refunds	(1,132)	(1,132)	-	(402)	(402)	-
Administrative expense	-	(5,681)	5,681	-	(3,111)	3,111
Other	-	466	(466)	-	486	(486)
Net change	122,084	85,264	36,820	107,197	985,299	(878,102)
Net pension liability beginning	5,440,062	3,867,087	1,572,975	5,332,865	2,881,788	2,451,077
Net pension liability ending	$ 5,562,146	$ 3,952,351	$ 1,609,795	$ 5,440,062	$ 3,867,087	$ 1,572,975

D. Schedule of Assumptions

Inflation	2.25%
Salary changes	3.00% to 5.25% including inflation
Investment rate of return	7.00%
Valuation date	July 1, 2021 and 2020
Actuarial cost method	Entry Age Normal Cost
Amortization method	Level Percent of Payroll, Open
Remaining amortization period	26 and 27 years
Asset valuation method	5 Year smoothed market, direct offset of deferred gains and losses
Mortality assumption	RP-2000 Table scaled by 125% for males and 112% for females
	The rates are then projected on a fully generational basis by scale BB

The long-term expected rate of return on pension plan investments was determined using a building-block method in which best-estimate ranges of expected future real rates of return (expected returns, net of pension plan investment expense and inflation) are developed for each major asset class. The actuary utilized the forward-looking return expectations developed by twelve investment consulting firms that work with pension systems similar to HMEPS. These ranges are combined to produce the long-term expected rate of return by weighting the expected future real rates of return by the target asset allocation percentage and by adding expected inflation.

The Plan's target asset allocation and actual allocation as of June 30, 2022 and 2021 are summarized as follows:

	June 30, 2022		June 30, 2021	
Asset Class	**Target Allocation**	**Actual Allocation**	**Target Allocation**	**Actual Allocation**
Global equity	32.5%	26.4%	32.5%	31.2%
Private equity	17.0	31.4	17.0	28.8
Fixed income	10.0	6.5	10.0	8.1
Real estate	12.5	10.7	12.5	9.9
Absolute return	8.0	3.3	8.0	3.8
Inflation linked	15.0	15.1	15.0	13.0
Private debt	5.0	2.5	5.0	2.5
Cash/liquidation	-	4.1	-	2.7
	100.0%	100.0%	100.0%	100.0%

E. Pension Expense

For the years ended June 30, 2022 and June 30, 2021, the City recognized pension expense as follows (in thousands):

	June 30, 2022	June 30, 2021
Service cost	$ 82,080	$ 78,564
Interest	371,952	363,611
Difference between expected and actual experience	(9,242)	(12,474)
Assumption changes	(7,828)	8,104
Differences between projected and actual earnings on plan investments	(103,681)	(144,415)
Member contributions	(32,655)	(33,325)
Project earnings on plan investments	(267,052)	(198,257)
Administrative expense	5,681	3,111
Other	(466)	(487)
Total pension expense	$ 38,789	$ 64,432

The Fund's proportionate shares of pension expense are $4.0 million and $6.6 million for the years ended June 30, 2022 and June 30, 2021, respectively.

F. Schedule of Deferred Outflows and Inflows of Resources

Deferred outflows of resources and deferred inflows of resources by source reported by the Fund at June 30, 2022 and June 30, 2021 (in thousands):

	June 30, 2022			June 30, 2021		
	Deferred Outflows of Resources	Deferred Inflows of Resources	Total Fund	Deferred Outflows of Resources	Deferred Inflows of Resources	Total Fund
Differences between expected and actual experience	$ 1,999	$ 1,428	$ 571	$ 2	$ 3,100	$ (3,098)
Change of assumptions	-	2,229	(2,229)	-	-	-
Net difference between projected and actual earnings on pension plan investments	-	34,625	(34,625)	-	53,231	(53,231)
Change in proportion	84	-	84	-	-	-
Total	$ 2,083	$ 38,282	$ (36,199)	$ 2	$ 56,331	$ (56,329)

Amounts reported as deferred outflows of resources and deferred inflows of resources at June 30, 2022 will be recognized in pension expense as follows (in thousands):

Year Ending June 30	
2023	$ (10,900)
2024	(10,240)
2025	(16,655)
2026	1,596
2027	-
Thereafter	-
Total	$ (36,199)

G. Sensitivity of the net pension liability to changes in the discount rate

The following presents TPL and NPL, calculated using the current discount rate, as well as what the Fund's TPL and NPL would have been if they were calculated using a discount rate that is 1-percent-point lower and 1-percent-point higher than the current rate (in thousands):

June 30, 2022	1% Decrease	Current Discount Rate	1% Increase
	6.00%	7.00%	8.00%
Municipal Employees' Pension	$ 2,180,572	$ 1,609,795	$ 1,129,984
The Fund's proportionate share of NPL	$ 224,062	$ 165,413	$ 116,110

June 30, 2021	1% Decrease	Current Discount Rate	1% Increase
	6.00%	7.00%	8.00%
Municipal Employees' Pension	$ 2,143,095	$ 1,572,975	$ 1,095,299
The Fund's proportionate share of NPL	$ 220,096	$ 161,545	$ 112,487

A. Retiree Health Insurance Benefits

Pursuant to a City Ordinance, the City provides certain Other Postemployment Benefits ("OPEB") for retired employees. Substantially all employees become eligible for these benefits if they reach normal retirement age while working for the City. The City is not required by law or contractual agreement to provide funding for OPEB other than the pay-as-you-go amounts necessary to provide current benefits to retirees, eligible dependent, and beneficiaries. The cost of retiree health care premiums incurred by the City (employer and subscriber) amounted to approximately $61.5 million and $62.4 million for the years ended June 30, 2022 and 2021, respectively. Retiree health care is accounted for in the Health Benefits Fund, an Internal Service Fund for the City. At June 30, 2022 and 2021, there were 10,726 retirees including active survivors eligible to receive benefits. Effective August 1, 2011, all Medicare eligible retirees must enroll in an insured Medicare Advantage Program Plan.

The City's OPEB plan is a single-employer plan, and calculations are based on the OPEB benefits provided under the terms of the plan in effect at the time of each valuation and on the pattern of sharing of costs between the employer and plan members to that point. As a department of the City, HAS participates in the OPEB plan of the City. A separate accounting is not done for the Fund's portion. It is allocated its share of expense on an annual basis. For the years ended June 30, 2022 and 2021, the Fund made "pay-as-you-go" payments totaling approximately $1.8 million and $2.0 million, respectively, for the OPEB plan.

1. Membership

As of the most recent actuarial valuation of the net OPEB liability, membership data is as follows:

	City
Retirees and beneficiaries currently receiving benefits	10,726
Active members:	21,057
Total participants	31,783

2. Schedule of Assumptions

The total OPEB liability is based on an actuarial valuation as of June 30, 2020 using the following assumptions, applied to all periods included in the measurement, unless otherwise specified:

Inflation	2.25%
Salary Increases	2.75% to 22.75%, varies by job classification, service, and age
Discount Rate	2.16% at June 30, 2022 and 2.21% at June 30, 2021
Measurement Date	June 30, 2021
Healthcare Costs Trend Rates:	
Medicare	6.75% trending down to 4.50%
Prescription Drug	7.75% trending down to 4.50%
Medicare Advantage	5.75% trending down to 4.5%
Administrative Costs	2.00%
Healthy Mortality Rates	Rates that vary by job classification and employee status. The rates are consistent with the pension plans valuation assumptions for the same employees.

3. Net OPEB Liability

The total OPEB liability was measured as of June 30, 2021 and 2020. The total OPEB liability was determined from an actuarial valuation as of June 30, 2020. The net OPEB liability is the total OPEB liability less the plan fiduciary net position. The total OPEB liability is the present value of all future benefit payments for current retirees and active employees, considering assumptions about demographics, turnover, mortality, disability, retirement, health care trends, and other actuarial assumptions.

The Fund's Net OPEB Liability (in thousands)

Measurement Date: **June 30, 2021 and 2020**

Reporting Date: **June 30, 2022 and 2021**

		2022		2021
Total OPEB liability	$	69,874	$	82,344
Less: Fiduciary net position		-		-
Net OPEB liability	$	69,874	$	82,344

The Fund's proportionate share of the net OPEB liability at June 30, 2022 and 2021 was 2.99% and 3.15%, respectively. A schedule of net OPEB liability, in addition to the information above, includes multi-year trend information (beginning with fiscal year 2018) and is presented in the Required Supplementary Information section.

4. Schedule of Changes in Net OPEB Liability

Change in Net OPEB Liability (in thousands)		2022		2021
Service cost	$	140,185	$	115,672
Interest		60,194		80,598
Change of benefit terms		(461,192)		-
Difference between expected and actual experience		(2,523)		(64,790)
Assumptions changes		47,150		326,935
Benefit payments		(61,487)		(62,373)
Net change		(277,673)		396,042
Net OPEB liability beginning		2,614,099		2,218,057
Net OPEB liability ending	$	2,336,426	$	2,614,099

5. OPEB Expense

For the years ended June 30, 2022 and 2021, the City recognized OPEB expense of $(335.8) million and $114.9 million, respectively. The Fund recognized OPEB expense of $(16.4) million and $3.6 million for the years ended June 30, 2022 and 2021, respectively. Components of OPEB expense are as follows (in thousands):

Components of OPEB Expense		2022		2021
Service Cost	$	140,185	$	115,672
Interest		60,194		80,598
Expensed portion of current-period benefit changes		(461,192)		-
Expensed portion of current difference in experience		(360)		(9,256)
Expensed Portion of current period changes of assumptions		6,736		46,705
Amortization of beginning of year deferred amounts		(81,383)		(118,832)
OPEB expense	$	(335,820)	$	114,887

6. Schedule of Deferred Outflows and Inflows of Resources

Deferred inflows and outflows of resources related to the OPEB plan reported by the Fund at June 30, 2022 and 2021 are as follows (in thousands):

	Deferred Outflows and Inflows of Resources (in thousands)			
	2022		2021	
	Deferred Outflows of Resources	Deferred Inflows of Resources	Deferred Outflows of Resources	Deferred Inflows of Resources
Changes of assumptions	$ 8,193	$ (8,341)	$ 8,827	$ (11,933)
Difference between expected and actual experience	-	(3,155)	-	(4,142)
Contributions made subsequent to measurement date and prior to reporting date	1,710	-	-	-
Total	$ 9,903	$ (11,496)	$ 8,827	$ (16,075)

Amounts reported as deferred outflows of resources and deferred inflows of resources related to net OPEB liability at June 30, 2022 will be recognized in OPEB expense as follows (in thousands):

Year Ending June 30	HAS
2023	$ (2,243)
2024	(2,243)
2025	(850)
2026	531
2027	1,311
Thereafter	191
Total	$ (3,303)

7. Sensitivity of the Net OPEB Liability to Changes in the Discount Rate and Healthcare Trend

The following presents the net OPEB liability, calculated using the discount rate, as well as what the Fund's net OPEB liability would have been if it were calculated using a discount rate that is 1 percentage point lower and 1 percentage point higher than the current rate (in thousands):

	1% Decrease	Current Discount Rate	1% Increase
June 30, 2022	1.16%	2.16%	3.16%
Net OPEB liability	$ 82,707	$ 69,874	$ 59,911

	1% Decrease	Current Discount Rate	1% Increase
June 30, 2021	1.21%	2.21%	3.21%
Net OPEB liability	$ 98,096	$ 82,344	$ 70,178

The following presents the net OPEB liability calculated using the current healthcare cost trend rate as of June 30, 2021 and 2020, as well as what the net OPEB liability would be if it were calculated using a healthcare cost trend rate that is 1 percentage point lower and 1 percentage point higher than the current rate (in thousands):

June 30, 2022	1% Decrease	Current Healthcare Cost Trend Rate	1% Increase
Net OPEB liability	$ 57,823	$ 69,874	$ 85,992

June 30, 2021	1% Decrease	Current Healthcare Cost Trend Rate	1% Increase
Net OPEB liability	$ 68,381	$ 82,344	$ 101,059

B. Long-Term Disability Plan (LTD)

The long-term disability plan (the "LTD"), accounted for as an internal service fund of the City, is a part of the Income Protection Plan implemented on September 1, 1985 (renamed to the Compensable Sick Leave Plan ("CSL") in October 1996) and is provided at no cost to City employees who are CSL members. Coverage is effective upon completion of one year of continuous service. When an employee cannot work because of injury or illness, the plan provides income equal to 50% of base pay plus longevity, or 70% of base pay plus longevity when combined with income benefits available from other sources. The LTD benefits may be payable after all CSL scheduled sick leave benefits, including frozen sick leave days, have been used, however, not before six months of absence from work. The LTD is administered by Reed Group, which is reimbursed by the internal service fund as claims are paid, plus an administrative services fee. As a department of the City, HAS participates in the LTD.

Actuarially Determined Contribution and Total Claim Liability

For the years ended June 30, 2022 and 2021, there were a decrease of $1,259 thousand and $147 thousand, respectively, in the amount of disabled life reserves.

	June 30, 2022	June 30, 2021
Total claim liability at beginning of period	$ 7,101	$ 7,248
Changes due to assumption changes	(338)	19
Increase attributable to additions	963	771
Decrease attributable to terminations	(82)	(357)
Change attributable to passage of time and adjustments	(1,802)	(580)
Net change	$ (1,259)	$ (147)
Total Claim Liability at End of Period	$ 5,842	$ 7,101

1. Changes in Total OPEB Liability

Total OPEB Liability - LTD	June 30,2022		June 30,2021	
Beginning balance	$	15,546	$	15,568
Changes for the year:				
Service cost		1,705		1,436
Interest		363		365
Experience		(1,800)		(914)
Employer contributions		-		-
Benefit payments		(901)		(942)
Assumption changes		(743)		33
Net changes		(1,376)		(22)
Ending Balance	$	14,170	$	15,546

The Fund's proportionate share of the total OPEB liability for the LTD at June 30, 2022 and 2021 was $1,140 thousand and $1,150 thousand, respectively.

2. OPEB LTD Expense Components

LTD OPEB Expense Components	June 30, 2022		June 30, 2021	
Service cost	$	1,705	$	1,436
Interest on total OPEB liability		363		365
Differences between expected and actual experience		(243)		(63)
Changes in assumptions		280		354
Total OPEB Expense	$	2,105	$	2,092

For the years ended June 30, 2022 and 2021, the Fund recognized expense of $89 thousand and $155 thousand, respectively, related to the LTD.

3. Deferred Outflows of Resources and Deferred Inflows of Resources

At June 30, 2022 and 2021, the Fund reports deferred outflows of resources and deferred inflows of resources related to the LTD from the following sources:

	June 30, 2022				June 30, 2021			
	Deferred Outflows of Resources		Deferred Inflows of Resources		Deferred Outflows of Resources		Deferred Inflows of Resources	
Differences between expected and actual experience	$	61	$	231	$	71	$	126
Changes in assumptions		195		55		222		7
	$	256	$	286	$	293	$	133

Amounts reported as deferred outflows of resources and deferred inflows of resources related to the LTD will be recognized in OPEB expense by the Fund as follows:

Deferred Outflows and Inflows of Resources

Year Ending June 30		
2023	$	3
2024		3
2025		3
2026		3
2027		2
Thereafter		(44)
Total	$	(30)

4. Sensitivity of the Net OPEB Liability to Changes in the Discount Rate

The following presents the total OPEB liability - LTD, calculated using the discount rate of 3.54% and 2.16%, at June 30, 2022 and 2021, respectively, as well as what the total OPEB liability would be if it were calculated using a discount rate that is 1 percentage point lower or 1 percentage point higher than the current rate (in thousands):

June 30, 2022	1% Decrease 2.54%	Current Discount Rate 3.54%	1% Increase 4.54%
Net OPEB Liability	$ 1,088	$ 1,048	$ 1,007

June 30, 2021	1% Decrease 1.16%	Current Discount Rate 2.16%	1% Decrease 3.16%
Net OPEB Liability	$ 1,198	$ 1,150	$ 1,027

C. Deferred Compensation Plan

The City offers its employees a deferred compensation plan (the "DCP"), created in accordance with Internal Revenue Code Section 457 as a separately administered trust. The DCP, available to all City employees, permits employees to defer a portion of their salary until future years. The City does not make any matching or discretionary contributions to the DCP. The DCP is considered as an other employee benefit plan in accordance with paragraph 6 of GASBS No. 97. And the DCP is not considered as a fiduciary activity of the City under the provisions of GASBS No. 84. The deferred compensation funds are not available until termination, retirement, death, or unforeseeable emergency. However, the Plan now offers loans to participant employees. The maximum loan amount is the lesser of $50,000 or 50% of the total account balance, less any outstanding loans. The minimum loan amount is $1,000. The DCP's assets are not subject to the City's general creditors and are not included in the accompanying financial statements.

D. Workers' Compensation Self-Insurance Plan

The City has established a Workers' Compensation Self-Insurance Plan (the "WCSP"), accounted for within the various operating funds. The WCSP is administered by Tristar Insurance Group, Inc. Funds are wire-transferred to Tristar as needed to pay claims.

At June 30, 2022 and 2021, the City has an accumulated liability of approximately $148.7 million and $135.5 million, respectively, covering estimates for approved but unpaid claims and incurred but not reported claims recorded in the City's government-wide statements of net position. The amount of liability is based on an actuarial study each year. The Fund's share of the liability totaled approximately $1.0 million and $2.2 million at June 30, 2022 and 2021, respectively.

Schedule of Changes in Liability
(in thousands)

	June 30, 2022		June 30, 2021	
Beginning actuarial estimate of claims liability, July 1	$	135,520	$	114,216
Incurred claims for fiscal year		45,759		34,284
Payments on claims		(32,416)		(27,318)
Actuarial adjustment		(165)		14,338
Ending actuarial estimate of claims liability, June 30	$	148,698	$	135,520

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Due to and Due from the City of Houston

Amounts due to and due from other funds of the City at June 30, 2022 and 2021 are as follows (in thousands):

	June 30, 2022		June 30, 2021	
	Due to	Due from	Due to	Due from
Combined Utility System	$ -	$ -	$ -	$ 29
General Fund	1,466	561	98	1,389
Nonmajor Governmental Funds	-	134	1	6
Recovery Fund	-	-	-	99
Total	$ 1,466	$ 695	$ 99	$ 1,523

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NOTE 9

MAJOR CUSTOMERS

For the years ended June 30, 2022 and 2021, the Fund earned 42.2% and 46.1%, respectively, of its operating revenues from two major customers, United and Southwest. No other companies or customers individually represent more than 2.1% of total operating revenues. The two major companies and their respective percentage of outstanding receivable (billed receivable) and revenue as of and for the years ended June 30, 2022 and 2021 are as follows:

	Percentage of Operating Revenue	
	2022	2021
United	31.5%	35.5%
Southwest	10.7%	10.6%

	Percentage of Accounts Receivable	
	2022	2021
United	42.0%	58.0%
Southwest	0.0%	0.0%

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CONDUIT DEBT OBLIGATIONS

The City has authorized various issues of Special Facilities Bonds to enable United (formerly known as Continental Airlines, Inc.), a publicly traded company, to construct facilities at Intercontinental ("Special Facilities") that were deemed to be in the public interest. These bonds are limited special obligations of the City, payable solely from and secured by a pledge of revenues generated from lease agreements with United. Collected pledged revenues are remitted directly to a trustee by United. Under the terms of the related lease agreements, United operates, maintains, and insures the terminals, and manages and retains revenues from all concessions operated in the Terminal B and E Special Facilities. The City operates, maintains, insures, and manages and retains revenues from all concessions operated in all other terminal facilities.

The City holds legal title to the completed facilities, as they are constructed on airport property, but the constructed facilities are operated and controlled by United through long-term leases, and the Fund will enjoy no direct financial benefit from these facilities for the term of the lease agreements. Accordingly, the Fund accounts for the Special Facilities Bonds shown in the following table as conduit debt, and neither the debt nor the related assets have been recorded in the accompanying financial statements.

Conduit Debt Outstanding at June 30, 2022 and 2021 (in thousands)	June 30, 2022	June 30, 2021
Airport System Special Facilities Revenue Bonds (Continental Airlines, Inc. Terminal Improvement Projects), Series 2011 (AMT), $113,305,000 original principal, matures in 2038	$ 113,305	$ 113,305
Airport System Special Facilities Revenue Refunding Bonds (United Airlines, Inc. Terminal E Project), Series 2014 (AMT), $308,660,000 original principal, matures in 2029	238,890	274,480
Airport System Special Facilities Revenue Bonds (United Airlines, Inc. Terminal Improvement Projects), Series 2015B-1 (AMT), $176,650,000 original principal, matures in 2035	176,650	176,650
Airport System Special Facilities Revenue Refunding Bonds (United Airlines, Inc. Technical Operations Center), Series 2018 (AMT), $90,650,000 original principal, matures in 2028	90,650	90,650
Airport System Special Facilities Revenue Refunding Bonds (United Airlines, Inc. Airport Improvement Projects), Series 2018C (AMT), $46,425,000 original principal, matures in 2028	46,425	46,425
Airport System Special Facilities Revenue Refunding Bonds (United Airlines, Inc. Terminal Improvement Projects), Series 2020A (AMT), $34,165,000 original principal, matures in 2027	34,165	34,165
Airport System Special Facilities Revenue Refunding Bonds (United Airlines, Inc. Terminal Improvement Projects), Series 2020B-2 (AMT), $47,470,000 original principal, matures in 2027	47,470	47,470
Airport System Special Facilities Revenue Refunding Bonds (United Airlines, Inc. Airport Improvement Projects), Series 2020C (AMT), $66,890,000 original principal, matures in 2027	66,890	66,890
Airport System Special Facilities Revenue Refunding Bonds (United Airlines, Inc. Airport Improvement Projects), Series 2021A (AMT), $70,175,000 original principal, matures in 2041	70,175	
Airport System Special Facilities Revenue Refunding Bonds (United Airlines, Inc. Airport Improvement Projects), Series 2021B-1 (AMT), $219,320,000 original principal, matures in 2041	219,320	
Total Conduit Debt Outstanding	$ 1,103,940	$ 850,035

CONDUIT DEBT OBLIGATIONS

On August 25, 2021, the City issued $70,175,000 and $219,320,000 in Airport System Special Facilities Revenue Bonds (United Airlines, Inc. Terminal E Project and Terminal Improvement Projects), Series 2021A and 2021B-1, respectively, on behalf of United, for the purpose of 1) financing the costs of development, construction, and acquisition of a new multi-terminal baggage handling system and other infrastructure improvements at IAH and 2) paying related costs of issuance. Interest rate for both series is 4% per annum. Maturity dates are July 1, 2041 and July 15, 2041 for Series 2021A and 2021B-1, respectively.

On June 29, 2020, the City issued $34,165,000 in Airport System Special Facilities Revenue Bonds (United Airlines, Inc. Airport Improvement Projects), Series 2020A (AMT) on behalf of United, to refund certain outstanding Special Facilities Revenue Bonds, and to pay the Series 2020A costs of issuance. The bonds were issued as a 5% Term Bond due July 1, 2027, with a yield of 4.375%.

On June 29, 2020, the City issued $47,470,000 in Airport System Special Facilities Revenue Bonds (United Airlines, Inc. Airport Improvement Projects), Series 2020B-2 (AMT) on behalf of United, to refund certain outstanding Special Facilities Revenue Bonds, and to pay the Series 2020B-2 costs of issuance. The bonds were issued as a 5% Term Bond due July 15, 2027, with a yield of 4.375%.

On June 29, 2020, the City issued $66,890,000 in Airport System Special Facilities Revenue Bonds (United Airlines, Inc. Airport Improvement Projects), Series 2020C (AMT) on behalf of United, to refund certain outstanding Special Facilities Revenue Bonds, and to pay the Series 2020C costs of issuance. The bonds were issued as a 5% Term Bond due July 15, 2027, with a yield of 4.625%.

On February 20, 2018, the City issued $90,650,000 in Airport System Special Facilities Revenue Bonds (United Airlines, Inc. Technical Operations Center Project), Series 2018 (AMT) on behalf of United, to finance the construction of a technical operations center and related facilities at IAH. The bonds were issued as a 5% Term Bond due July 15, 2028, with a yield of 3.60%.

On February 20, 2018, the City issued $46,425,000 in Airport System Special Facilities Revenue Bonds (United Airlines, Inc. Airport Improvement Projects), Series 2018C (AMT) on behalf of United, to finance the improvement, renovation, expansion and repair of certain special facilities at IAH, including improvements to an existing aircraft maintenance hangar facility, construction of an aircraft shops facility, and renovation of a maintenance and parts storage facility. The bonds were issued as a 5% Term Bond due July 15, 2028, with a yield of 3.60%.

On March 16, 2015, the City issued $176,650,000 in Airport System Special Facilities Revenue Bonds (United Airlines, Inc. Terminal Improvement Projects), Series 2015B-1 (AMT) on behalf of United, to finance the construction of a new North Concourse building at Terminal B with jet bridge loading, and to make improvements to related facilities. The bonds were issued with a coupon rate of 5.00%, and a yield of 4.75%, to mature in varying amounts from 2026 to 2035.

On May 8, 2014, the City issued $308,660,000 in Airport System Special Facilities Revenue Refunding Bonds (United Airlines, Inc. Terminal E Project) Series 2014 on behalf of United, at coupon rates ranging from 4.50% to 5.00%. The bonds mature in varying amounts from 2020 to 2029. Proceeds of the bonds were used to refund a portion of the City's outstanding Airport System Special Facilities Revenue Bonds (Continental Airlines, Inc. Terminal E project) Series 2001 and to pay costs of issuance.

On November 17, 2011, the City issued $113,305,000 in Airport System Special Facilities Revenue Bonds (Continental Airlines, Inc. Terminal Improvement Projects), Series 2011 (AMT), at coupon rates ranging from 6.50% to 6.625%, to finance the replacement of two flight stations at Terminal B, with a new South Concourse building to serve United Airlines' regional jet operations.

Environmental Liabilities

The Fund recorded a $2.2 million environmental liability for the year ended June 30, 2020, for pollution remediation at IAH. The scope of work includes disposal of contaminated soils at the Mickey Leland International Terminal. At June 30, 2022, the outstanding balance is $1.3 million and is recorded as other current liabilities in the accompanying financial statements.

The Fund recorded a $10 million environmental liability for the year ended June 30, 2017, for pollution remediation associated with a hangar addition project at IAH. The scope of work encompasses vapor intrusion mitigation and soil & groundwater remediation. During the years ended June 30, 2020 and 2019, $0.3 million and $8.9 million, respectively, of this environmental liability was realized. At June 30, 2020 the remaining environmental liability was $0.8 million. The Fund is expected to recover the $10 million through a Customer Facility Charge on rental car transactions at William P. Hobby Airport beginning January 2021, following the approval by the City Council on March 20, 2019. The Fund recorded a $10 million receivable as June 30, 2020. The outstanding balance of the receivable at June 30, 2022 and 2021 was $3.7 million and $8.5 million, respectively.

In addition, HAS has received results for supplemental site testing from an independent study that will result in additional environmental remediation costs associated with the afore-mentioned hangar addition project. Additional cost of approximately $5.0 million has been estimated. No additional pollution remediation liability has been recorded in these financial statements in accordance with GASBS No. 49 as the Fund is expected to recover the full $5.0 million from United.

Management of HAS is aware of additional sites polluted by asbestos, mold, and soil contamination. The assessment and remediation of asbestos, mold and groundwater contamination are ongoing and included in the costs of the capital project at the time it becomes an obligating event under GASBS No. 49. Management has determined the costs of this additional remediation for which the Fund is ultimately liable would not be material in these financial statements.

Federal Grants

HAS has received federal grants for specific purposes under Airport Improvement Program that are subject to review and audit by the grantor agency. Such audits could lead to requests for reimbursement to the grantor agency for expenditures disallowed under terms of the grant. In the opinion of management of HAS, disallowed costs, if any, would not be material.

Commitments for Capital Facilities

At June 30, 2022 and 2021, the Fund had contracted for, but not spent, approximately $904.9 million and $786.4 million, respectively, for capital projects.

Litigation and Claims

The City is the defendant in various lawsuits and is aware of pending claims arising in the ordinary course of its municipal and enterprise activities, certain of which seek substantial damages. These matters affecting the Fund are primarily contract and real property disputes. The status of such litigation ranges from early discovery to various levels of appeal, against which the City will continue to vigorously defend itself. Additionally, there are also various personal injury claims filed against HAS which will also be vigorously defended. The amount of damages is limited in certain cases under the Texas Torts Claim Act and is subject to appeal. Management has determined the amounts of loss, if any, would not be material in these financial statements.

Risk Management

The City purchases fidelity coverage to comply with City ordinance, boiler and machinery insurance with a per occurrence loss limit of $125 million and commercial property insurance with a per occurrence loss limit of $200 million. The commercial property insurance sub-limit for flood is $200 million. The commercial property insurance provides deductibles as follows: $2 million per occurrence for all perils except; 3% of the damaged insured value for windstorm or hail from a named storm, subject to a $2.5 million minimum and a $15 million maximum deductible; and 3% of the damaged insured value for flood, subject to a $2.5 million minimum and a $15 million maximum deductible. Should a named storm event occur that involves both perils of windstorm and flood, the maximum deductible is $15 million.

The City has a separate terrorism policy which covers insured property value. The policy insures up to $250 million aggregate loss limit (including $25 million sub-limit for nuclear, chemical, biological, and biochemical coverage) with a $500,000 deductible on all claims except a 48-hour waiting period deductible on business interruption.

Electricity Futures Contracts

On July 1, 2020, the City entered into an electricity supply agreement with Reliant Energy Retail Services, Inc. for a 5-year term with two 1-year options, with locked rates for the duration of the contract terms. The total committed price is approximately $634 million for expected usage of the potentially 7-year contract.

On November 13, 2015, the City entered into a solar energy supply agreement with ENGIE to supply solar power to the City from a facility located in Alpine, Texas, for a 20-year term starting in April 2017. The contract value is approximately $124.7 million.

Risk and Uncertainties Related to COVID-19 Pandemic

The outbreak of COVID-19, a respiratory disease caused by a new strain of coronavirus, has been characterized as a pandemic (the “Pandemic”) by the World Health Organization and is currently affecting many parts of the world.

The Pandemic has negatively affected travel, commerce, and financial markets globally and is widely expected to continue negatively affecting economic growth and financial markets worldwide. The City continues to monitor the Pandemic and work with local, State, and national agencies to address its potential impact on the City. The impact of COVID-19 had and continue to have a negative financial impact on local, State, and national economies.

The City and HAS have identified several funding sources to assist with expenses related to the COVID-19 outbreak. HAS received a total of $200.2 million of CARES Act funds through the Federal Aviation Administration (the “FAA”). The Airport System also received funds under the Coronavirus Response and Relief Supplemental Appropriation Act (“CRRSA Act”), passed by the U.S. Congress on December 27, 2020. The Airport System and its airport concessions were awarded approximately $45.8 million and $6.2 million, respectively, of CRRSA Act funds through the FAA. Under ARPA, the Airport System and its concessions are eligible to receive approximately a total of $84.1 million and $24.8 million, respectively, in addition to the CRRSA Act funds. As of June 30, 2022, a total of $330.0 million of CARES Act, CRRSA, and ARPA funds have been expended, excluding amounts available for the concessionaires.

Management has evaluated subsequent events through the date that the financial statements were available to be issued, December 19, 2022, and determined that the following items require disclosure. No events occurring after this date have been evaluated for inclusion in these financial statements.

Fitch Ratings

On September 29, 2022, Fitch Ratings. upgraded its long-term unenhanced rating to ‘A+’ from ‘A’ on HAS’ outstanding Subordinate Lien Bonds.

S&P Global Ratings

On November 18, 2022, S&P Global Ratings upgraded its long-term rating and underlying rating (SPUR) to ‘A+’ from ‘A’ on HAS’ outstanding Subordinate Lien Bonds.

On November 18, 2022, S&P Global Ratings upgraded its underlying rating (SPUR) to ‘A’ from ‘BBB+” on HAS’ outstanding special facilities taxable revenue bonds (George Bush Intercontinental Airport consolidated rental car facility or CONRAC).

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Schedule of Changes in the Fund's Net Pension Liability and Related Ratios
For Fiscal Years Ended June 30
(in thousands)

	The Fund's proportionate percentage	Total pension liability (TPL)	Plan fiduciary net position	Net pension liability (NPL)	Covered Payroll	The Fund's proportionate share of NPL as a percentage of covered payroll	Plan fiduciary net position as a percentage of TPL
2015	10.76%	$512,642	(264,294)	$248,348	65,542	378.92%	51.56%
2016	10.74%	$540,464	(257,653)	$282,811	67,704	417.72%	47.67%
2017	10.79%	$535,376	(280,956)	$254,420	61,881	411.15%	52.48%
2018	10.87%	$555,982	(324,983)	$230,999	61,638	374.76%	58.45%
2019	10.76%	$563,449	(333,692)	$229,757	61,076	376.18%	59.22%
2020	10.54%	$561,822	(303,599)	$258,223	65,881	391.95%	54.04%
2021	10.27%	$558,694	(397,149)	$161,545	66,028	244.66%	71.09%
2022	10.28%	$571,532	(406,120)	$165,412	69,703	237.31%	71.06%

Schedule of the Fund's Contributions for Municipal Pension Plans
For Fiscal Years Ended June 30
(in thousands)

	Actuarially determined contribution	Contributions in relation to the actuarially determined contribution	Contribution deficiency (excess)	Covered payroll	Contributions as a percentage of covered payroll
2015	$16,306	15,226	$1,081	65,542	23.2%
2016	$17,148	16,908	$240	67,704	25.0%
2017	$18,898	18,676	$223	61,881	30.2%
2018	$42,738	42,493	$245	61,638	68.9%
2019	$17,719	17,520	$198	61,076	28.7%
2020	$19,283	18,596	$687	65,881	28.2%
2021	$19,338	18,975	$363	66,028	28.7%
2022	$20,067	20,278	($210)	69,703	29.1%

Schedule of the Fund's Investment Returns
For Fiscal Years Ended June 30
(in thousands)

	2022	2021	2020	2019	2018	2017	2016	2015
Annual Return	5.2%	38.6%	-3.7%	6.2%	8.7%	12.2%	90.0%	3.5%

Schedules are intended to show information for 10 years. Additional years will be included as they become available.

Schedule of Changes in the Municipal Net Pension Liability and Related Ratios
For Fiscal Years Ended June 30
(in thousands)

Total Pension Liability	2022	2021	2020	2019
Service cost	$ 82,080	$ 78,564	$ 77,819	$ 77,175
Interest	371,952	363,611	356,430	349,592
Changes of benefit terms	-	-	-	-
Differences between expected and actual experience	26,473	(20,427)	(28,865)	(11,538)
Changes of assumptions	(29,515)	-	-	-
Benefit payments including refunds of employee contributions	(327,773)	(314,149)	(308,002)	(291,060)
Refunds	(1,133)	(402)	(650)	(1,394)
Net change in total pension liability	122,084	107,197	96,732	122,775
Total pension liability - beginning	5,440,062	5,332,865	5,236,133	5,113,358
Total pension liability - ending (a)	5,562,146	5,440,062	5,332,865	5,236,133
Plan Fiduciary Net Position				
Contributions-employer	197,340	184,762	176,430	176,261
Contributions-employee	32,654	33,325	32,582	32,536
Net investment income	189,390	1,084,388	(115,165)	200,445
Benefit payments, including refunds of employee contributions	(327,772)	(314,150)	(308,002)	(291,060)
Administrative expense	(5,681)	(3,111)	(4,891)	(1,394)
Refunds	(1,133)	(402)	(650)	(5,363)
Other	466	487	484	710
Net change in plan fiduciary net position	85,264	985,299	(219,212)	112,135
Plan fiduciary net position - beginning	3,867,087	2,881,788	3,101,000	2,988,865
Plan fiduciary net position - ending (b)	3,952,351	3,867,087	2,881,788	3,101,000
City's Net Pension Liability-Ending (a)-(b)	$ 1,609,795	$ 1,572,975	$ 2,451,077	$ 2,135,133
Plan fiduciary net position as percentage of the total pension Liability	71.06%	71.09%	54.04%	59.22%
Covered payroll	$ 678,350	$ 642,917	$ 625,056	$ 614,451
Net pension liability as a percentage of covered payroll	237.31%	244.66%	392.14%	347.49%

(continued)

Schedules are intended to show information for 10 years. Additional years will be included as they become available.

Schedule of Changes in the Municipal Net Pension Liability and Related Ratios
For Fiscal Years Ended June 30
(in thousands)

Total Pension Liability	2018	2017	2016	2015
Service cost	$ 78,149	$ 75,961	$ 68,968	$ 65,810
Interest	341,276	331,166	379,781	361,007
Changes of benefit terms	-	(724,683)	-	-
Differences between expected and actual experience	19,158	(38,387)	(16,194)	(23,380)
Changes of assumptions	-	562,237	91,248	-
Benefit payments including refunds of employee contributions	(283,928)	(280,456)	(253,178)	(234,955)
Refunds	(807)	(718)	(1,105)	(1,549)
Net change in total pension liability	153,848	(74,880)	269,520	166,933
Total pension liability - beginning	4,959,510	5,034,390	4,764,870	4,597,937
Total pension liability - ending (a)	5,113,358	4,959,510	5,034,390	4,764,870
Plan Fiduciary Net Position				
Contributions-employer	421,562	182,558	159,958	145,007
Contributions-employee	27,905	15,902	15,874	16,198
Net investment income	231,815	290,911	27,639	73,370
Benefit payments, including refunds of employee contributions	(283,928)	(280,456)	(253,178)	(234,955)
Administrative expense	(807)	(718)	(1,105)	(1,549)
Refunds	(6,442)	(6,827)	(7,360)	(7,007)
Other	(3,905)	1,272	1,651	1,041
Net change in plan fiduciary net position	386,200	202,642	(56,521)	(7,895)
Plan fiduciary net position - beginning	2,602,665	2,400,023	2,456,544	2,464,439
Plan fiduciary net position - ending (b)	2,988,865	2,602,665	2,400,023	2,456,544
City's Net Pension Liability-Ending (a)-(b)	$ 2,124,493	$ 2,356,845	$ 2,634,367	$ 2,308,326
Plan fiduciary net position as percentage of the total pension Liability	58.45%	52.48%	47.67%	51.56%
Covered payroll	$ 611,493	$ 604,895	$ 640,529	$ 624,205
Net pension liability as a percentage of covered payroll	347.43%	389.63%	411.28%	369.80%

Schedules are intended to show information for 10 years. Additional years will be included as they become available.

Notes to Required Pension Supplementary Information

Valuation Date:	July 1, 2021 and 2020
Notes:	Actuarially determined contribution rates are calculated as of July 1, which is 12 months prior to the beginning of the fiscal year in which they are contributed. The assumptions shown below apply to the Actuarially Determined Employer Contribution for fiscal year 2022 and 2021 which was determined by the July 1, 2020 and 2019 actuarial valuation. These assumptions are the same as those used to determine the Net Pension Liability as of June 30, 2022 and 2021.

Methods and Assumptions Used to Determine Contribution Rates:

Actuarial cost method:	Entry Age Normal
Amortization method:	Level Percentage of Payroll, Open
Remaining amortization period:	26 years as of July 1, 2021
Assets valuation method:	5 year smoothed market, direct offset of deferred gains and losses
Inflation:	2.25%
Salary increases:	3.00% to 5.25% including inflation
Investment rate of return:	7.00%
Retirement age:	Experience-based table of rates that are specific to the type of eligibility condition. Last updated for the 2015 valuation pursuant to an experience study of the period 2009 – 2014.
Mortality:	RP-2000 Mortality Table scaled by 125% for males and 112% for females. The rates are then projected on a fully generational basis by scale BB.
Other information:	1. The actuarially determined contribution includes the Legacy Liability payment as specified by the January 1, 2017 Risk Sharing Valuation and a calculated employer rate equal to the normal cost and the amortization of any new unfunded liabilities over a closed 30 year period from the valuation date the liability base was created. 2. Investment rate of return was lowered from 8.50% to 8.00% as of July 1, 2015 and subsequently lowered to 7.00% as of July 1, 2017. 3. Salary increases were changed as of July 1, 2016 from 3.25% - 6.00%, including inflation, to 3.25% - 5.50%, including inflation.

Schedule of the Fund's Proportionate Share of OPEB Liability and Related Ratios
(in thousands)

	Health Benefits				
	2022	2021	2020	2019	2018
Total OPEB liability	$ 69,874	$ 82,344	$ 70,738	$ 73,286	$ 89,450
Plan fiduciary net position	-	-	-	-	-
Net OPEB liability	$ 69,874	$ 82,344	$ 70,738	$ 73,286	$ 89,450
Fund's proportion of TOPEBL	2.99%	3.15%	3.19%	3.25%	3.67%
Fund's covered-employee payroll	$ 66,028	$ 65,881	$ 61,076	$ 61,638	$ 61,881
Total OPEB liability as a percentage of the Fund's covered-employee payroll	105.83%	124.99%	115.82%	118.90%	144.55%

Schedule of Changes in the City's Total OPEB Liability and Related Ratios
(in thousands)

	Health Benefits				
	2022	2021	2020	2019	2018
Total OPEB Liability					
Service cost	$ 140,185	$ 115,672	$ 118,901	$ 110,793	$ 139,332
Interest	60,193	80,598	90,952	90,245	73,306
Changes of benefit terms	(461,191)	-	(17,819)	(5,007)	-
Differences between expected and actual experience	(2,523)	(64,790)	(17,603)	(99,153)	(15,727)
Changes of assumptions	47,150	326,935	(164,752)	(224,161)	(310,431)
Benefit payments including refunds of employee contributions	(61,487)	(62,373)	(45,811)	(57,100)	(39,820)
Net change	(277,673)	396,042	(36,132)	(184,383)	(153,340)
Total OPEB liability - beginning	2,614,099	2,218,057	2,254,189	2,438,572	2,591,912
Net OPEB liability - ending (a)	$ 2,336,426	$ 2,614,099	$ 2,218,057	$ 2,254,189	$ 2,438,572
Plan Fiduciary Net Position					
Service Cost	-	-	-	-	-
Employer contributions	-	-	-	-	-
Benefit payments including refunds of employee contributions	-	-	-	-	-
Net change in plan fiduciary net position	-	-	-	-	-
Net OPEB liability - beginning	-	-	-	-	-
Net OPEB liability - ending (b)	-	-	-	-	-
City's Total OPEB Liability-Ending	$ 2,336,426	$ 2,614,099	$ 2,218,057	$ 2,254,189	$ 2,438,572
Plan fiduciary net position as percentage of the total OPEB liability	0.00%	0.00%	0.00%	0.00%	0.00%
Covered-employee payroll	$ 1,344,442	$ 1,308,459	$ 1,332,000	$ 1,285,000	$ 1,235,000
Total OPEB liability as a percentage of covered-employee payroll	173.78%	199.78%	166.52%	175.42%	197.46%

Schedules are intended to show information for 10 years. Additional years will be included as they become available.

Schedule of the Fund's Proportionate Share of OPEB Liability and Related Ratios

(in thousands)

	Long Term Disability				
	2022	2021	2020	2019	2018
Total OPEB liability	$ 1,048	$ 1,150	$ 774	$ 586	$ 457
Plan fiduciary net position	-	-	-	-	-
Net OPEB liability	$ 1,048	$ 1,150	$ 774	$ 586	$ 457
Fund's proportion of TOPEBL	7.40%	7.40%	4.97%	6.94%	4.14%
Fund's covered-employee payroll	$ 69,703	$ 66,028	$ 65,881	$ 61,076	$ 61,638
Total OPEB liability as a percentage of the Fund's covered-employee payroll	1.50%	1.74%	1.17%	0.96%	0.74%

Schedule of Changes in the City's Total OPEB Liability and Related Ratios

(in thousands)

	Long Term Disability				
	2022	2021	2020	2019	2018
Total OPEB Liability					
Service cost	$ 1,705	$ 1,436	$ 719	$ 776	$ 730
Interest	363	365	461	409	379
Changes of benefit terms	-	-	-	-	-
Differences between expected and actual experience	(1,799)	(914)	(1,079)	1,369	(14)
Changes of assumptions	(744)	33	3,476	255	(158)
Benefit payments including refunds of employee contributions	(901)	(942)	(901)	(957) *	(975)
Net change	(1,376)	(22)	2,676	1,852	(38)
Total OPEB liability - beginning	15,536	15,558	12,882	11,030 *	11,068
Net OPEB liability - ending (a)	$ 14,160	$ 15,536	$ 15,558	$ 12,882 *	$ 11,030
Plan Fiduciary Net Position					
Service Cost	-	-	-	-	-
Employer contributions	-	-	-	-	-
Benefit payments including refunds of employee contributions	-	-	-	-	-
Net change in plan fiduciary net position	-	-	-	-	-
Net OPEB liability - beginning	-	-	-	-	-
Net OPEB liability - ending (b)	-	-	-	-	-
City's Total OPEB Liability-Ending	$ 14,160	$ 15,536	$ 15,558	$ 12,882 *	$ 11,030
Plan fiduciary net position as percentage of the total OPEB liability	0.00%	0.00%	0.00%	0.00%	0.00%
Covered-employee payroll	$ 895,800	$ 794,600	$ 777,400	$ 833,500	$ 788,500
Total OPEB liability as a percentage of covered-employee payroll	1.58%	1.96%	2.00%	1.55%	1.40%

Notes to Required Other Post-Employment Benefits Supplementary Information

	Retiree Health Insurance Benefits
Note:	There are no assets in a trust compliant with GASB codification P22.101 or P52.101 to pay related benefits.
Measurement Date:	June 30, 2021 for reporting date as of June 30, 2022.

Benefit Changes:

Reflected June 30, 2021

• Texas Plus, Cigna Health Spring, and UHC Plan F plans have all been terminated as of 12/31/2020 and a new plan, Aetna PO1 PPO Basic, was added as of 1/1/2021.

Reflected June 30, 2020

No changes.

Reflected June 30, 2019

Effective May 1, 2019:
For Cigna Limited Network Plan:
• Deductible increased from $150 / $450 (individual / family) to $200 / $600.
• OOP maximum increased from $4,500 / $9,000 to $7,900 / $15,800.
• Prescription Drug deductible increased from $100 /$300 to $150 /$450.
For Cigna Open Access Plan:
• Deductible increased from $750 / $1,500 (individual / family) to $850 / $1,700
• OOP maximum increased from $6,840 / $13,700 to $7,900 / $15,800.
For Consumer Driven Plan:
• OOP maximum increased from $6,840 / $13,700 to $7,900 / $15,800.
Retirees of Texas plan has been discontinued.

Effective May 1, 2020:
For Cigna Limited Network Plan:
• OOP Maximum increased from $7,900 to $15,800 to $8,150/$16,300.
For Cigna Open Access Plan:
• OOP Maximum increased from $7,900 to $15,800 to $8,150/$16,300.
For Consumer Driven Health Plan:
• OOP Maximum increased from $7,900 to $15,800 to $8,150/$16,300 in network and $12,000/$24,000 to $16,000/$32,000 out of network.
• Prescription coinsurance increased from 40% to 60%.

For Kelsey Care Advantage:
• Specialist copay increased from $15 to $20.
For Cigna Health Spring
• Emergency Room Copay increased from $100 to $120.
• Non-preferred generic pharmacy copay increased from $10 to $45.
• Mail order prescription drugs moved to two times retail for all tiers.
Aetna PPO:
• Inpatient copay increased from $80 to $250 for in network and from $80 to 20% per stay for out of network.
• Non-preferred generic pharmacy copay increased from $20 to $40 for out of network.
• Preferred brand name pharmacy copay increased from $40 to $80 for out of network.

Reflected June 30, 2018

• KelseyCare Advantage HMO – Specialty Drug copay increased to $75
• Texas Plus – Inpatient copay increased to $325, emergency room copay rates to $100, prescription drug copays increased to $10/$15/$40/$55/$75.
• Cigna HealthSpring – Emergency room copay increased to $100, mail order prescription drugs move to two times retail for all tiers.

Notes to Required Other Post-Employment Benefits Supplementary Information, continued:

Changes of Assumptions:

Effective June 30, 2021

• The basis for the discount rate remained the same (20-year, general obligation, municipal bond index), resulting in a change in discount rate to 2.16% compared to 2.21% in prior year.
• The demographic assumptions (mortality, turnover, disability and retirement) for the Fire department were updated to be consistent with the Houston Firefighter's Relief and Retirement Fund Actuarial Certification as of July 1, 2020, dated September 16, 2021, completed by Buck Consulting.

Effective June 30, 2020

• Medical and prescription drug claims costs and trend rates were updated to reflect recent experience.
• The basis for the discount rate remained the same (20-year, general obligation, municipal bond index), resulting in a change in discount rate to 2.21 compared to 3.50% in prior year.
• Active participation rates upon retirement were updated to reflect recent experience.
• Life insurance to be fully retiree paid and is no longer being valued.

Effective June 30, 2019

• The excise tax regulation was repealed by Congress in December 2019.
• The basis for the discount rate remained the same (20-year, general obligation, municipal bond index), resulting in a change in the discount rate to 3.50% compared to 3.87% in the prior year.
• Post-Medicare starting costs were adjusted for the actual premiums charged. Similar adjustments were made for contribution rates.
• Prescription drug trend rates were changed to reflect future expectations by extending the number of years until the ultimate trend is reached.

Reflected June 30, 2018

• Medical, prescription drug, Medicare Plan, and administrative expected claims and payments were changed, based on experience through June 30, 2018.
• Medical, prescription drug, Medicare Plan, and administrative trend rates were changed to reflect future expectations.
• Demographic changes included mortality changes for all participants, changes to the salary scale for
• Municipal and Police participants, and changes to the retirement rates for Police and Fire participants.
• The basis for the discount rate remained the same (20-year, general obligation, municipal bond index), resulting in a change in the discount rate to 3.87% compared to 3.58% in the prior year.

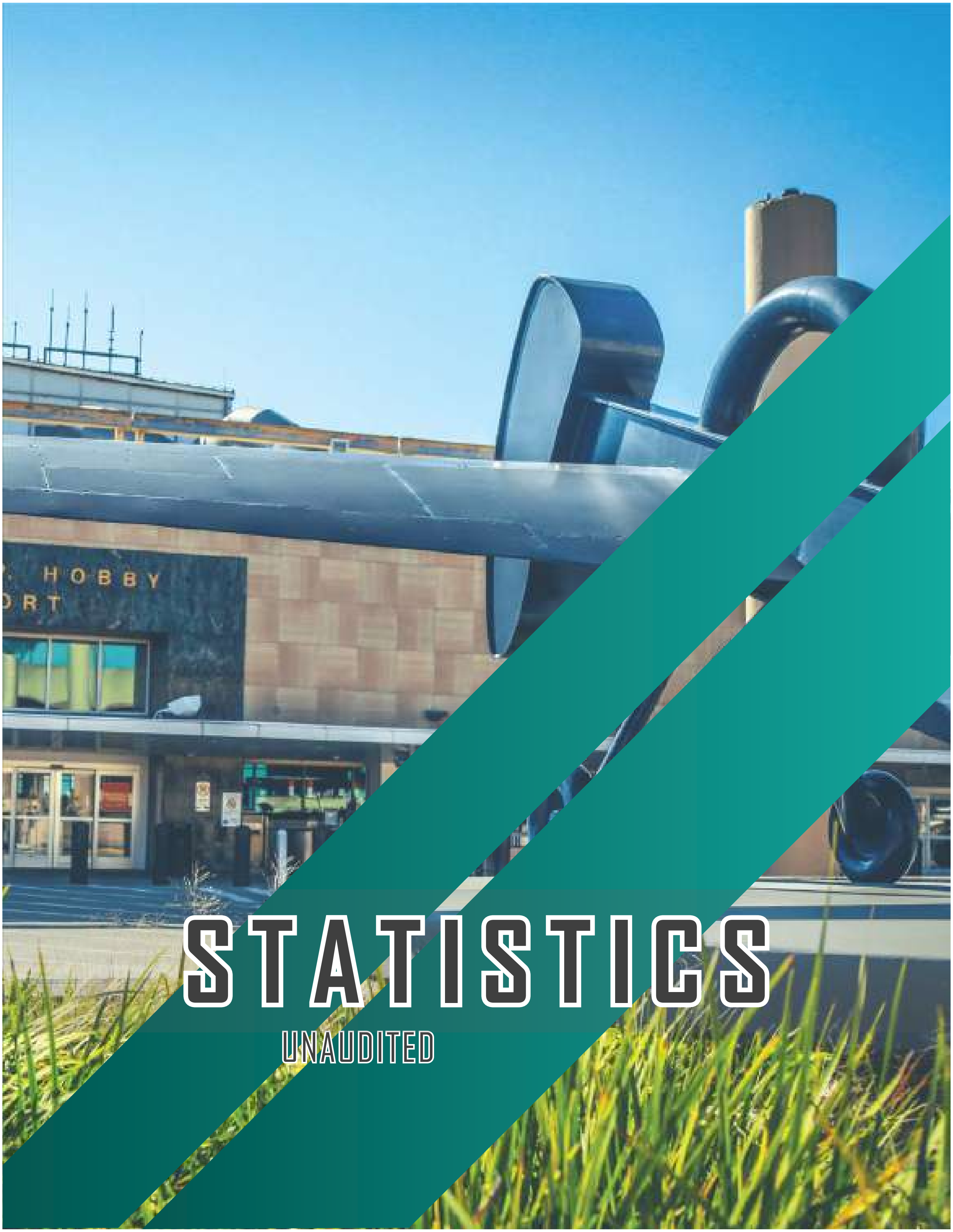
Long Term Disability

Note: There are no assets in a trust compliant with GASB codification P22.101 or P52.101 to pay related benefits.

Measurement Date: June 30, 2022 for reporting date as of June 30, 2022.

Changes of Assumptions: Discount rate - FY2022: 3.54% FY2021: 2.16%; FY2020: 3.50%; FY2019: 3.50%; FY2018: 3.87%.

Employees Covered: Houston Fire Department is covered by this LTD Plan in addition to all municipal employees. Houston Police Department is not covered by this LTD Plan.



STATISTICS

UNAUDITED

CITY OF HOUSTON

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STATISTICAL SECTION

This section contains statistical information and differs from the financial statements because it usually covers more than one fiscal year and may present non-accounting data.

This information is presented in five categories:

FINANCIAL TREND – intended to assist users in understanding and assessing how the Houston Airport System's financial position has changed over time.

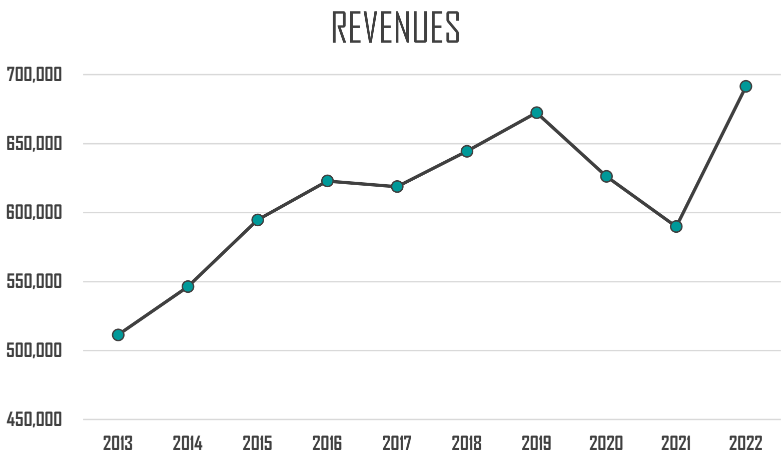
REVENUE CAPACITY – intended to assist users in understanding and assessing the factors affecting the Houston Airport System's ability to generate its own sources of revenues.

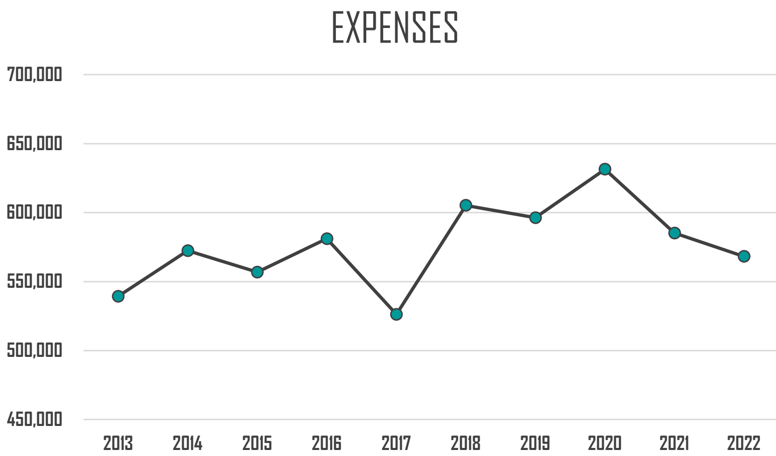
DEBT CAPACITY – intended to assist users in understanding and assessing the Houston Airport System's debt burden and its ability to cover and issue additional debt.

OPERATIONAL INFORMATION – intended to provide contextual information about the Houston Airport System's operations and resources to assist readers in using financial statement information to understand and assess the Houston Airport System economic condition.

DEMOGRAPHIC AND ECONOMIC – intended to assist users in understanding the socioeconomic environment within which the Houston Airport System operates and to provide information that facilitates comparisons of financial statement information over time and among similiar entities.

TOTAL ANNUAL REVENUES AND EXPENSES (in thousands)





SOURCE: Houston Airport System

TOTAL ANNUAL REVENUES AND EXPENSES (in thousands)

CHANGE IN NET POSITION	2022	2021	2020	2019	2018	2017	2016	2015	2014	2013
Operating Revenues										
Landing area fees	$ 94,253	$ 70,578	$ 95,862	$ 87,767	$ 95,779	$ 88,046	$ 86,870	$ 93,575	$ 88,342	$ 91,059
Building and ground area fees	192,029	155,598	223,301	211,323	220,214	221,181	216,018	197,039	186,505	181,701
Concession, parking, and other revenues	194,892	92,379	152,749	199,374	194,871	184,814	186,009	185,668	177,260	160,234
Total Operating Revenues	481,174	318,555	471,912	498,464	510,864	494,041	488,897	476,282	452,107	432,994
Nonoperating Revenues										
Investment income (loss)	(47,109)	1,523	43,701	45,067	8,591	3,403	13,260	7,496	11,170	(1,934)
Passenger Facility Charges	98,446	62,541	78,418	111,155	109,021	101,539	104,230	85,392	62,602	61,195
Customer Facility Charges	13,723	8,769	13,320	17,439	17,374	14,200	16,417	17,535	17,152	17,104
Other nonoperating revenues	145,281	198,447	18,877	340	(1,420)	5,596	124	7,969	3,225	1,978
Total Nonoperating Revenues	210,341	271,280	154,316	174,001	133,566	124,738	134,031	118,392	94,149	78,343
TOTAL REVENUES	691,515	589,835	626,228	672,465	644,430	618,779	622,928	594,674	546,256	511,337
Operating Expenses										
Maintenance and operating										
Personnel costs	79,515	84,653	119,481	119,841	133,253	56,721	123,872	114,947	108,520	104,162
Supplies	7,089	7,176	8,223	8,390	5,219	7,794	8,140	7,933	8,823	7,344
Services	227,656	222,047	204,811	196,608	184,826	184,032	177,677	159,577	149,957	140,019
Non-capital outlay	1,741	4,692	37,915	12,638	8,806	5,912	5,730	4,072	10,202	14,052
Impairment to capital assets				-	-		-	-	7,710	6,514
Total M & O expenses	316,001	318,568	370,430	337,477	335,104	254,459	315,419	286,529	285,212	272,091
Depreciation expense	166,792	170,820	175,573	174,266	176,053	184,203	179,398	177,512	174,825	173,448
Total Operating Expenses	482,793	489,388	546,003	511,743	511,157	438,662	494,817	464,041	460,037	445,539
Nonoperating Expenses										
Interest expense and others	85,427	95,803	85,426	84,578	94,061	87,574	86,259	92,803	112,350	93,749
Total Nonoperating Expenses	85,427	95,803	85,426	84,578	94,061	87,574	86,259	92,803	112,350	93,749
TOTAL EXPENSES	568,220	585,191	631,429	596,321	605,218	526,236	581,076	556,844	572,387	539,288
Contributions	41,047	24,757	10,927	16,599	13,784	35,513	22,542	36,432	44,614	12,761
TOTAL CHANGE IN NET POSITION	$ 164,342	$ 29,401	$ 5,726	$ 92,743	$ 52,996	$ 128,056	$ 64,394	$ 74,262	$ 18,483	$ (15,190)

SOURCE: Houston Airport System

CHANGES IN NET POSITION AND PASSENGER FACILITY CHARGE COLLECTIONS (in thousands)

NET POSITION AT YEAR END	2022	2021	2020	2019	2018	2017	2016	2015	2014	2013
Net investment in capital assets	$ 507,167	$ 495,497	$ 514,164	$ 542,125	$ 531,232	$ 542,363	$ 537,172	$ 466,196	$ 469,971	$ 518,464
Restricted net position										
Restricted for debt service	412,293	384,267	464,280	428,856	357,588	287,858	333,635	303,371	242,558	213,064
Restricted for maintenance and operations	55,332	54,232	54,807	60,525	56,891	54,805	54,942	53,912	49,736	46,309
Restricted for special facility	50,953	52,362	55,105	43,442	36,049	29,369	26,944	25,732	30,986	26,026
Restricted for renewal and replacement	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000
Restricted for capital improvement	681,093	627,464	619,884	651,664	657,050	676,360	561,071	600,159	581,857	552,762
Unrestricted (deficit)	80,887	9,561	(114,258)	(138,356)	(143,297)	(126,938)	(178,003)	(178,003)	-	-
TOTAL NET POSITION	$ 1,797,725	$ 1,633,383	$ 1,603,982	$ 1,598,256	$ 1,505,513	$ 1,473,817	$ 1,345,761	$ 1,281,367	$ 1,385,108	$ 1,366,625

PASSENGER FACILITY CHARGE COLLECTIONS (in thousands)

	2022	2021	2020	2019	2018	2017	2016	2015	2014	2013
Intercontinental	$ 76,422	$ 46,994	$ 61,120	$ 85,167	$ 83,220	$ 77,351	$ 80,574	$ 66,491	$ 48,181	$ 47,464
Hobby	22,024	15,547	17,298	25,988	25,801	24,188	23,656	18,901	14,421	13,731
Total	$ 98,446	$ 62,541	$ 78,418	$ 111,155	$ 109,021	$ 101,539	$ 104,230	$ 85,392	$ 62,602	$ 61,195
Year-over-Year Change	**57.41%**	**-20.25%**	**-29.45%**	**1.96%**	**7.37%**	**-2.58%**	**22.06%**	**36.40%**	**2.30%**	**-3.71%**

SOURCE: Houston Airport System

PLEDGED REVENUES (in thousands)

	2022	2021	2020	2019	2018	2017	2016	2015	2014	2013
OPERATING REVENUES										
Landing area fees										
Landing fees	$ 88,757	$ 65,550	$ 91,271	$ 83,318	$ 91,258	$ 84,036	$ 82,703	$ 89,426	$ 84,098	$ 86,911
Aviation fuel	1,705	1,302	1,249	1,554	1,679	1,350	1,527	1,521	1,529	1,444
Aircraft parking	3,791	3,726	3,343	2,895	2,842	2,660	2,640	2,628	2,715	2,704
Subtotal	94,253	70,578	95,863	87,767	95,779	88,046	86,870	93,575	88,342	91,059
Building and ground area revenues										
Terminal space rentals	166,444	129,527	196,844	185,943	195,198	196,162	191,321	173,392	163,297	158,237
Cargo building rentals	2,078	2,164	2,378	2,391	2,390	2,448	2,484	2,506	2,432	2,397
Other rentals	6,332	6,256	6,574	6,454	6,460	6,453	6,808	6,252	6,174	5,848
Hangar rental	5,921	6,339	6,821	6,530	6,691	6,813	6,577	6,355	6,605	6,675
Ground rental	11,254	11,312	10,684	10,005	9,475	9,305	8,828	8,534	7,997	8,544
Subtotal	192,029	155,598	223,301	211,323	220,214	221,181	216,018	197,039	186,505	181,701
Parking, concession, and other revenues										
Retail concessions	39,570	14,584	32,265	41,521	41,245	39,999	35,215	41,855	41,444	41,604
Auto parking	98,417	43,815	81,172	110,136	103,961	99,752	101,650	97,515	90,173	77,596
Auto rental concession	34,056	20,596	23,400	28,949	28,767	28,735	30,737	31,991	32,783	29,522
Ground transportation	15,192	6,913	10,072	12,645	11,062	10,402	10,083	9,323	8,301	6,639
Other operating revenues	7,657	6,471	5,839	6,123	9,836	5,926	8,324	4,984	4,559	4,873
Subtotal	194,892	92,379	152,748	199,374	194,871	184,814	186,009	185,668	177,260	160,234
TOTAL OPERATING REVENUES	$ 481,174	$ 318,555	$ 471,912	$ 498,464	$ 510,864	$ 494,041	$ 488,897	$ 476,282	$ 452,107	$ 432,994

Gross revenues include all operating revenue of the Airport Fund, and all nonoperating revenue except for revenue with legal spending restrictions. Maintenance and operating expenses include all operating expenses of the system except for depreciation and capital expenses. Net revenues in each fiscal year are required to be at least equal to the larger of either: (1) the debt service and reserve transfer requirements of each fiscal year or; (2) 125%, 110% and 100% of the debt service requirements for such fiscal year of the Senior Lien Bonds (or Commercial Paper assumed to be refinanced as Senior Lien Revenue Bonds), Subordinate Lien Revenue Bonds and Inferior Lien debt, respectively.

SOURCE: Houston Airport System

PLEDGED REVENUES (in thousands)

	2022	2021	2020	2019	2018	2017	2016	2015	2014	2013
NET REVENUE										
Operating revenue	$ 481,174	$ 318,555	$ 471,912	$ 498,464	$ 510,864	$ 494,041	$ 488,897	$ 476,282	$ 452,107	$ 432,994
Interest on investments - revenue fund	7,556	10,403	19,503	19,681	13,348	9,306	6,986	6,014	5,499	7,029
Other nonoperating revenues	77	152	122	47	(1,805)	7,177	(52)	7,526	3,162	1,222
Gross revenues	488,807	329,110	491,537	518,192	522,407	510,524	495,831	489,822	460,768	441,245
Less: Maintenance and operating expenses	(255,377)	(251,830)	(314,034)	(315,153)	(326,889)	(254,506)	(314,715)	(283,557)	(268,745)	(252,745)
Net pledged revenue	$ 233,430	$ 77,280	$ 177,503	$ 203,039	$ 195,518	$ 256,018	$ 181,116	$ 206,265	$ 192,023	$ 188,500
DEBT SERVICE										
Principal	$ 77,700	$ 75,580	$ 89,090	$ 80,110	$ 81,137	$ 82,707	$ 79,093	$ 71,999	$ 60,419	$ 56,800
Interest	85,803	69,769	91,641	96,202	93,319	92,316	84,811	91,320	96,005	97,138
	163,503	145,349	180,731	176,312	174,456	175,023	163,904	163,319	156,424	153,938
Less PFC revenue available for debt service	(59,819)	(56,365)	(55,040)	(60,646)	(50,642)	(54,673)	(42,320)	(38,054)	(35,614)	(34,390)
Less grant revenue available for debt service	(103,684)	(88,984)	(14,169)	-	-	-	(13,888)	(16,399)	(22,942)	-
Total debt service	$ -	$ -	$ 111,522	$ 115,666	$ 123,814	$ 120,350	$ 107,696	$ 108,866	$ 97,868	$ 119,548
COVERAGE OF DEBT SERVICE	(1)	(1)	1.59	1.76	1.58	2.13	1.68	1.89	1.96	1.58
Net Required revenue per bond rate covenant	$ -	$ -	$ 122,935	$ 127,430	$ 137,474	$ 134,348	$ 120,125	$ 122,822	$ 108,369	$ 133,552
RATIO OF REQUIRED REVENUE	(1)	(1)	1.44	1.59	1.42	1.91	1.51	1.68	1.77	1.41

(1) Calculations not performed for the year ended 6/30/21 and 6/30/22 as HAS paid all debt service in fiscal year 2021 and 2022 from PFC's along with CARES, CCRSA, and ARPA Act proceeds.

Debt service requirements is equal to interest expense (excluding amortization of bond discount and amounts provided for payment of interest by bond proceeds and other sources and deposited into a restricted fund for that purpose) for each respective fiscal year ended June 30, plus principal payment payable on the next July 1. Certain grant revenue and passenger facility charge revenue is available to cover net required revenue and required debt service. In Fiscal Year 2016, $6,250,000 in remaining series 2009A proceeds were used to pay senior lien bond debt service.

Net revenues in each fiscal year are required to be at least equal to the larger of either: (1) the debt service and reserve transfer requirements of each fiscal year or; (2) 125%, 110% and 100% of the debt service requirements for such fiscal year of the Senior Lien Bonds (or Commercial Paper assumed to be refinanced as Senior Lien Revenue Bonds), Subordinate Lien Revenue Bonds and Inferior Lien debt, respectively.

Revenues and expenses cannot be included in net pledged revenue if they are accounted for outside of the Airport Revenue Fund, and do not affect amounts available for transfer to debt service funds.

SOURCE: Houston Airport System

RECONCILIATION OF HISTORICAL FINANCIAL RESULTS (in thousands)

	2022	2021	2020	2019
Net Revenues under Bond Resolution				
Revenues	$ 488,807	$ 329,110	$ 491,537	$ 518,192
Operation and Maintenance Expenses	(255,377)	(251,830)	(314,034)	(315,153)
Net Revenues under Bond Resolution	233,430	77,280	177,503	203,039
Reconciliation of Change in Net Assets to Bond Resolution Net Revenues				
Change in Net Assets	164,342	29,401	5,726	92,743
Exclusion:				
Passenger Facility Charge Revenues Collected	98,446	62,541	78,418	111,155
Interest Income - Total	(47,109)	1,523	43,701	45,067
Interest Expenses	(76,705)	(62,107)	(74,533)	(81,575)
Gain/(Loss) on Disposal of Assets	(8,594)	(27,601)	(10,856)	119
Customer Facility Charges	13,723	8,769	13,320	17,439
Specialist Facility Cost	(128)	(75)	(37)	(43)
Cost of Issuance for Debt	-	(6,020)	-	(2,960)
Other Revenue (Expenses)	10,660	11,078	10,820	221
CARES Act/CRRSAA/ARPA	134,621	187,369	-	-
Capital Contributions	41,047	24,757	18,984	16,599
Total Exclusion	165,961	200,234	79,817	106,022
Inclusion:				
Net Expense Adjustment under Bond Resolution				
Operating Expenses Exc. Depreciation & Amortization in other funds				
Fund 8000 HAS Grants	-	12	-	994
Fund 8010 Renewal & Replacement Fund	18,877	31,697	19,310	10,189
Fund 8011 Airport Improvement Fund	9,940	5,044	56	9,437
Fund 8037 HAS - O&M Grants	-		425	636
Fund 8044 HAS Disaster Recovery O&M	-		-	15
Fund 8045 CARES Act	-	29,981	-	-
Fund 8051 HAS State Energy Conservation Loan CL311	-		214	-
Fund 8052 HAS State Energy Conservation Loan CL312	-		110	-
Fund 8062 ARPA grant fund	30,671		-	-
Fund 8206 HAS-Consolidated2011 Construction	1,585		-	-
Fund 8207 HAS Consolidated ITRP AMT Construction	-	250	36,500	1,165
Miscellaneous	(449)	(246)	(219)	(111)
Total Inclusion	60,624	66,738	56,396	22,325
Changes in Net Assets less Exclusion plus Inclusion	59,005	(104,095)	(17,695)	9,046
Depreciation & Amortization	166,792	170,820	175,573	174,266
Interest on investments - Eligible per Bond Resolution	7,556	10,403	19,503	19,681
Other revenues - Eligible per Bond Resolution	77	152	122	46
Net Revenues Per Bond Resolution	233,430	77,280	$ 177,503	$ 203,039

SOURCE: Houston Airport System

Schedule is intended to show information for 10 years. Additional years will be included as they become available.

RECONCILIATION OF HISTORICAL FINANCIAL RESULTS (in thousands)

	2022	2021	2020	2019
Operations and Maintenance Expense Reconciliation				
Operations and Maintenance Expense per Financial Statement	$ 482,793	$ 489,388	$ 546,003	$ 511,743
Exclusion:				
Depreciation & Amortization	(166,792)	(170,820)	(175,573)	(174,266)
Allowable Exclusions per Bond Resolution				
Fund 8000 HAS Grants	-	(12)	-	(994)
Fund 8010 Renewal & Replacement Fund	(18,877)	(31,697)	(19,310)	(10,189)
Fund 8011 Airport Improvement Fund	(9,940)	(5,044)	(56)	(9,437)
Fund 8037 HAS - O&M Grants	39	58	(425)	(636)
Fund 8012 AIF Capital Outlay	-	-	-	-
Fund 8044 HAS Disaster Recovery O&M	-	-	-	(15)
Fund 8045 CARES Act	-	(29,981)	-	-
Fund 8051 HAS State Energy Conservation Loan CL311	-	-	(214)	-
Fund 8052 HAS State Energy Conservation Loan CL312	-	-	(110)	-
Fund 8062 ARPA grant fund	(30,671)	-	-	-
Fund 8206 HAS-Consolidated2011 Construction	(1,585)	-	-	-
Fund 8207 HAS Consolidated ITRP AMT Construction	-	(250)	(36,500)	(1,165)
Miscellaneous	410	188	219	112
Total Operation and Maintenance Expense per Bond Resolution	$ 255,377	$ 251,830	$ 314,034	$ 315,153

The Airport System's operation and maintenance expense per our Statement of Revenues, Expenditures and Changes in Net Position (financial statement) and our Master Bond Ordinance (bond resolution) differ due to allowable exclusions in the definition of operation and maintenance expense in the Master Bond Ordinance. The Operations and Maintenance Expense Reconciliation above provides a listing of allowable exclusions by fund.

Schedule is intended to show information for 10 years. Additional years will be included as they become available.

SOURCE: Houston Airport System

PLEDGED REVENUES FOR CONSOLIDATED RENTAL CAR FACILITY

(not rounded to the nearest thousand) — For Years Ended December 31:

Resources Available for Debt Service	2021	2020	2019	2018	2017	2016	2015	2014	2013	2012
Customer facility charge collections	$ 11,360,307	$ 8,761,929	$ 17,615,108	$ 17,311,972	$ 15,669,757	$ 14,822,377	$ 17,359,920	$ 17,451,368	$ 17,317,058	$ 16,444,942
Interest income	2,139	36,807	167,666	131,162	56,976	29,003	3,840	785	731	318
Transfers from Facility Improvement Fund	8,500,000	11,250,000	-	-	-	-	-	-	-	-
Transfers from Coverage Account	3,169,143	3,169,143	3,169,143	3,169,143	3,169,143	3,169,143	3,169,143	3,169,143	3,169,143	3,169,143
Total Resources Available for Debt Service	$ 23,031,589	$ 23,217,879	$ 20,951,917	$ 20,612,277	$ 18,895,876	$ 18,020,523	$ 20,532,903	$ 20,621,296	$ 20,486,932	$ 19,614,403
Annual Debt Service										
Special Facility Revenue Bonds, Series 2001:										
Principal	$ 7,505,000	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 3,590,000	$ 3,260,000
Interest	4,691,128	4,691,128	4,691,128	4,691,128	4,691,128	4,691,128	4,691,128	6,006,288	7,552,645	7,759,329
Subtotal Series 2001	12,196,128	4,691,128	4,691,128	4,691,128	4,691,128	4,691,128	4,691,128	6,006,288	11,142,645	11,019,329
Special Facility Refunding Bonds, Series 2014:										
Principal		6,240,000	5,960,000	5,715,000	5,490,000	5,305,000	5,160,000	4,355,000	-	-
Interest		186,389	346,534	478,893	584,082	652,835	691,019	230,243	-	-
Subtotal Series 2014	-	6,426,389	6,306,534	6,193,893	6,074,082	5,957,835	5,851,019	4,585,243	-	-
Total Annual Debt Service	$ 12,196,128	$ 11,117,517	$ 10,997,662	$ 10,885,021	$ 10,765,210	$ 10,648,963	$ 10,542,147	$ 10,591,531	$ 11,142,645	$ 11,019,329
DEBT SERVICE COVERAGE RATIO	1.89	2.09	1.91	1.89	1.76	1.69	1.95	1.95	1.84	1.78

Customer Facility Charges are used first to pay debt service on the Airport System Special Facilities Taxable Revenue Bonds (Consolidated Rental Car Facility Project), Series 2001 and on the Airport System Special Facilities Taxable Revenue Refunding Bonds (Consolidated Rental Car Facility Project), Series 2014. Additional collections are used to pay administrative costs for the special facility agreement, and then for capital improvements and major repairs on the special facility. Customer facility charges are kept and invested separately by BNYMellon Bank as trustee, and cannot be used for any other City or Airport Fund purpose as long as any Special Facility Revenue Bonds (CRCF) remain outstanding.

No other City or Airport Fund revenues are pledged toward the payment of Special Facility Revenue Bonds (CRCF).

The Special Facilities Revenue Bond (CRCF) covenants require the Airport Fund to maintain a debt service coverage ratio of at least 125%

The City imposed a $3.00 Customer Facility Charge as of April 1, 2001, which was increased to $3.50 effective July 1, 2003, reduced to $3.25 effective April 1, 2005, reduced to $3.00 effective July 1, 2006, increased to $3.75 effective November 1, 2009, increased to $4.25 effective April 1, 2011, reduced to $4.00 effective April 1, 2013, and reduced again to $3.00 effective April 1, 2016, and increased to $4.00 effective April 1, 2017.

For purposes of coverage calculation, collections are considered available for debt service when they are received by the trustee.

For purposes of coverage calculation, interest and principal is calculated on the accrual basis, for instance, in 2008, funding is accumulated for payments due on 7/1/2008 and 1/1/2009.

For more information on the Consolidated Rental Car Facility assets and debt, see Notes 1 and 5.

SOURCE: Houston Airport System

OUTSTANDING DEBT (in thousands)

	2022	2021	2020	2019	2018	2017	2016	2015	2014	2013
OUTSTANDING DEBT BY TYPE (1)										
Senior lien revenue bonds, fixed rate	$ -	$ -	$ -	$ -	$ 420,420	$ 430,645	$ 440,385	$ 449,660	$ 449,660	$ 449,660
Subordinate lien revenue bonds, fixed rate	2,133,665	2,209,245	1,763,235	1,843,145	1,331,795	1,232,585	1,284,860	1,331,765	1,376,505	1,419,125
Subordinate lien revenue bonds, periodic auction rate	-	-	-	-	242,275	254,475	266,925	276,275	286,300	298,525
Subordinate lien revenue bonds, variable rate	-	-	92,105	92,305	92,505	92,705	92,905	93,105	93,305	93,505
Subtotal, revenue bonds payable	2,133,665	2,209,245	1,855,340	1,935,450	2,086,995	2,010,410	2,085,075	2,150,805	2,205,770	2,260,815
Unamortized discount	(434)	(502)	(599)	(675)	(2,422)	(2,717)	(3,016)	(3,317)	(3,619)	(3,905)
Unamortized premium	198,181	213,263	162,949	179,927	112,362	61,302	68,118	75,141	82,318	89,587
Revenue bonds payable, net	2,331,412	2,422,006	2,017,690	2,114,702	2,196,935	2,068,995	2,150,177	2,222,629	2,284,469	2,346,497
Senior lien commercial paper payable	185,000	20,000	132,973	48,473	21,473	87,000	87,000	49,500	1,200	-
Inferior lien contract payable	-	-	-	-	-	6,240	12,155	17,760	23,075	28,115
Pension obligation bonds payable (2)	2,006	2,006	2,006	2,006	29,616	2,006	2,006	2,006	2,006	2,006
Note payable (3)	-	-	-	-	-	115,421	120,439	-	-	-
Direct borrowing loans (4)	15,993	14,421	324	-	-	-	-	-	-	-
Special facilities revenue bonds, rental car (5)	60,680	68,185	74,425	80,385	86,100	91,590	96,895	102,055	105,430	109,020
TOTAL OUTSTANDING DEBT PAYABLE	$ 2,595,091	$ 2,526,618	$ 2,227,418	$ 2,245,566	$ 2,334,124	$ 2,371,252	$ 2,468,672	$ 2,393,950	$ 2,416,180	$ 2,485,638
Total enplaned passengers	26,080,096	14,969,109	21,828,780	29,807,599	27,712,789	27,390,397	27,815,031	26,903,968	25,941,181	25,132,791
Outstanding debt per enplaned passenger	$ 99.50	$ 168.79	$ 102.04	$ 75.34	$ 84.23	$ 86.57	$ 88.75	$ 88.98	$ 93.14	$ 98.90
OUTSTANDING CONDUIT DEBT										
Special facilities revenue bonds (6)	$ 1,103,940	$ 850,035	$ 850,035	$ 848,865	$ 848,865	$ 711,790	$ 711,790	$ 711,790	$ 561,470	$ 565,090

(1) Includes both current and long-term liabilities.

(2) A portion of the City of Houston Taxable General Obligation Pension Bonds, Series 2005 and Series 2017, have been allocated to the Airport Fund for payment. Series 2017 was paid on March 1, 2019.

(3) A Note payable to Southwest Airlines for the construction of the Hobby International Terminal project was paid with Revenue and Refunding Bond Series 2018A proceeds on March 20, 2018.

(4) Two flex loans were executed in 2019 with the Texas State Energy Conservation Office (SECO). These 2% loans are capped at $8.2 and $7.8 million including interest during the construction period, payable over 14.6 and 10 years with the first payments to be made on August 31, 2022.

(5) The Special Facilities Revenue and Refunding Bonds (Consolidated Rental Car Facility), Series 2001 and Series 2014, are included in the Airport Fund financial statements (See Note 5).

(6) These Special Facilities Revenue Bonds are conduit debt secured solely by lease payments from United Airlines. No revenues of the Airport System Fund are pledged to pay these bonds.

SOURCE: Houston Airport System

SUMMARY OF CERTAIN FEES AND CHARGES

IAH	2022	2021	2020	2019	2018	2017	2016	2015	2014	2013
Landing Rates (1) (3)	2.630	2.821	3.108	2.561	2.763	2.571	2.635	2.803	2.844	2.850
Terminal Space Rentals (2) (3)	19.04 - 73.85	20.37 - 41.67	24.63 - 68.98	24.02 - 69.27	24.26-72.69	22.95-72.46	22.88-76.08	21.75-75.45	20.77-72.51	21.67-78.25
Apron Rentals (2) (3)	2.213 - 2.423	2.280 - 2.438	2.447 - 2.675	2.697 - 2.984	2.453-2.780	2.236-2.649	2.155-2.703	2.114-2.597	2.051-2.576	1.927-2.702
Aircraft Parking (per day)	100.00 - 400.00	100.00 - 400.00	100.00 - 400.00	100.00-400.00	100.00-400.00	100.00-400.00	100.00-400.00	100.00-400.00	100.00-400.00	100.00-400.00
Cargo (per day)	200.00 - 600.00	200.00 - 600.00	200.00 - 600.00	200.00-600.00	200.00-600.00	200.00-600.00	200.00-600.00	200.00-600.00	200.00-600.00	200.00-600.00
Parking Rates (4)										
Economy (Ecopark) Uncovered (5)	7.00	6.00	6.00	6.00	6.00	6.00	6.00	6.00	6.00	5.00
Economy (Ecopark) Covered (5)	9.00	8.00	8.00	8.00	8.00	8.00	8.00	8.00	8.00	7.00
Economy (Ecopark2) Covered (5)	8.00	7.00	7.00	7.00	6.00	6.00	5.00	-	-	-
Structured (6)	24.00	15.00	10.00	24.00	22.00	22.00	20.00	19.00	19.00	17.00
Sure Park (7)	-	26.00	26.00	26.00	24.00	24.00	24.00	23.00	23.00	20.00
Valet (8) (11)	28.00 - 30.00	28.00	28.00	28.00	26.00	26.00	26.00	25.00	25.00	23.00

HOU	2022	2021	2020	2019	2018	2017	2016	2015	2014	2013
Landing Rates (1) (3)	2.692	2.914	2.722	2.000	2.013	1.982	1.835	2.113	1.768	1.925
Terminal Space Rentals (2) (3)	58.41 - 73.01	40.94 - 48.15	55.04 - 66.46	54.33 - 73.42	48.10-68.15	64.79-67.29	87.62-90.12	92.77-95.27	87.73-90.23	85.95-88.45
Apron Rentals (2) (3)	2.567 - 2.582	2.067 - 2.108	2.139 - 2.149	1.874 - 1.924	1.791-1.848	1.652-1.853	1.765	2.209	1.891	1.815
Aircraft Parking (per day)	100.00 - 400.00	100.00 - 400.00	100.00 - 400.00	100.00-400.00	100.00-400.00	100.00-400.00	100.00-400.00	100.00-400.00	100.00-400.00	100.00-400.00
Cargo (per day)	200.00 - 600.00	200.00 - 600.00	200.00 - 600.00	200.00-600.00	200.00-600.00	200.00-600.00	200.00-600.00	200.00-600.00	200.00-600.00	200.00-600.00
Parking Rates (4)										
Economy (Ecopark) (9)	-	-	-	-	-	-	-	-	12.00	10.00
Economy (Ecopark2) (10)	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	6.00
Structured (6)	24.00	15.00	10.00	24.00	22.00	22.00	20.00	19.00	19.00	17.00
Valet (8)	28.00	28.00	28.00	28.00	26.00	26.00	26.00	25.00	25.00	23.00

(1) Per 1,000 pounds of landing weight
(2) Range per square foot
(3) 2013-2021 actual rates provided; 2022 budgeted rates provided.
(4) Maximum per day
(5) New rates effective January 15, 2022
(6) New rates of $20.00/Day and $24.00/Day effective on July 29, 2021 and October 1, 2021, respectively
(7) Sure Park ceased as an offered product in March 2021
(8) New rates effective February 4, 2019
(9) Ecopark 1 at Hobby closed March 18, 2014
(10) New rates effective May 5, 2014
(11) New rates for Terminal C effective May 1, 2022

SOURCE: Houston Airport System

PASSENGER STATISTICS

LAST TEN YEARS

DOMESTIC PASSENGERS

	2022	2021	2020	2019	2018	2017	2016	2015	2014	2013
IAH										
Enplanements & Deplanements	31,059	17,648	25,068	33,972	31,102	30,809	31,959	31,967	30,832	30,830
Percentage Change	76.0%	-29.6%	-26.2%	9.2%	1.0%	-3.6%	-0.0%	3.7%	0.0%	-3.0%
HOU										
Enplanements & Deplanements	11,656	7,738	9,998	13,629	12,864	12,423	12,209	11,837	11,609	10,690
Percentage Change	50.6%	-22.6%	-26.6%	5.9%	3.5%	1.8%	3.1%	2.0%	8.6%	4.9%
DOMESTIC TOTAL										
Enplanements & Deplanements	42,715	25,386	35,066	47,601	43,966	43,232	44,168	43,804	42,441	41,520
Percentage Change	68.3%	-27.6%	-26.3%	8.3%	1.7%	-2.1%	0.8%	3.2%	2.2%	-1.1%

INTERNATIONAL PASSENGERS

	2022	2021	2020	2019	2018	2017	2016	2015	2014	2013
IAH										
Enplanements & Deplanements	8,423	3,885	7,969	10,939	10,404	10,662	10,904	10,018	9,470	8,795
Percentage Change	116.8%	-51.2%	-27.2%	5.1%	-2.4%	-2.2%	8.8%	5.8%	7.7%	1.3%
HOU										
Enplanements & Deplanements	843	421	591	965	957	860	519	4	-	-
Percentage Change	100.2%	-28.8%	-38.8%	0.8%	11.3%	65.7%	12875.0%	0.0%	0.0%	0.0%
INTERNATIONAL TOTAL										
Enplanements & Deplanements	9,266	4,306	8,560	11,904	11,361	11,522	11,423	10,022	9,470	8,795
Percentage Change	115.2%	-49.7%	-28.1%	4.8%	-1.4%	0.9%	14.0%	5.8%	7.7%	1.3%

TOTAL PASSENGERS

	2022	2021	2020	2019	2018	2017	2016	2015	2014	2013
HAS PASSENGERS GRAND TOTAL										
Enplanements & Deplanements	51,981	29,692	43,626	59,505	55,327	54,754	55,591	53,826	51,911	50,315
Percentage Change	75.1%	-31.9%	-26.7%	7.6%	1.0%	-1.5%	3.3%	3.7%	3.2%	1.7%

SOURCE: Houston Airport System

Information presented is based on the most current statistical data available; numbers from prior years are subject to change.

PASSENGER STATISTICS BY CARRIER

LAST TEN YEARS

MAJOR AIRLINE MARKET SHARE

CARRIER	FY2022	%	FY2021	%	FY2020	%	FY2019	%	FY2018	%
United Airlines*	29,357,278	56.5%	15,894,776	53.5%	25,081,324	57.5%	34,793,301	58.5%	32,094,388	58.0%
Southwest	12,787,950	24.6%	7,829,259	26.4%	9,994,165	22.9%	13,674,536	23.0%	12,893,987	23.3%
Spirit Airlines	2,477,109	4.8%	1,869,558	6.3%	1,948,341	4.5%	2,426,727	4.1%	2,144,740	3.9%
American Airlines	2,276,838	4.4%	1,383,845	4.7%	1,992,113	4.6%	2,764,225	4.6%	2,592,345	4.7%
Delta Air Lines	1,993,556	3.8%	1,050,260	3.5%	1,567,170	3.6%	2,024,867	3.4%	1,963,878	3.5%
Frontier Airlines	347,902	0.7%	314,269	1.1%	297,303	0.7%	192,057	0.3%	285,337	0.5%
Lufthansa	150,965	0.3%	52,200	0.2%	186,610	0.4%	290,560	0.5%	279,421	0.5%
Air Canada	134,785	0.3%	12,833	0.0%	231,407	0.5%	329,540	0.6%	349,571	0.6%
Emirates	130,832	0.3%	53,558	0.2%	177,930	0.4%	261,321	0.4%	207,496	0.4%
British Airways	84,184	0.2%	12,858	0.0%	160,264	0.4%	239,024	0.4%	226,636	0.4%
Other Airlines*	2,239,414	4.1%	1,222,177	4.1%	1,989,713	4.5%	2,508,936	4.2%	2,289,531	4.2%
	51,980,813	100.0%	29,695,593	100.0%	43,626,340	100.0%	59,505,094	100.0%	55,327,330	100.0%

*FY2021 was adjusted

CARRIER	FY2017	%	FY2016	%	FY2015	%	FY2014	%	FY2013	%
United Airlines	32,130,930	58.7%	33,251,479	59.8%	33,603,263	62.4%	32,963,901	64%	33,275,496	66.1%
Southwest	12,344,834	22.5%	11,791,308	21.2%	10,886,616	20.2%	10,720,872	21%	9,910,216	19.7%
Spirit Airlines	1,889,818	3.5%	1,896,577	3.4%	1,192,125	2.2%	675,458	1%	292,159	0.6%
American Airlines	2,542,485	4.6%	2,951,244	5.3%	3,057,991	5.7%	2,898,507	6%	2,784,328	5.5%
Delta Air Lines	1,922,778	3.5%	1,889,715	3.4%	1,897,776	3.5%	1,772,122	3%	1,700,158	3.4%
Frontier Airlines	421,754	0.8%	494,804	0.9%	307,506	0.6%	236,060	1%	152,663	0.3%
Lufthansa	291,713	0.5%	278,409	0.5%	281,261	0.5%	300,824	1%	305,906	0.6%
Air Canada	353,721	0.6%	293,193	0.5%	278,194	0.5%	251,713	1%	238,810	0.5%
Emirates	202,812	0.4%	253,140	0.5%	221,455	0.4%	199,903	0%	186,130	0.4%
British Airways	240,874	0.4%	243,464	0.4%	264,830	0.5%	281,057	1%	270,814	0.5%
Other Airlines	2,412,279	4.5%	2,247,663	4.1%	1,835,436	3.5%	1,610,928	3.0%	1,198,682	2.4%
	54,753,998	100.0%	55,590,996	100.0%	53,826,453	100.0%	51,911,345	100.0%	50,315,362	100.0%

SOURCE: Houston Airport System

Information presented is based on the most current statistical data available; numbers from prior years are subject to change.

CARRIERS BY AIRPORT

AS OF JUNE 30, 2022

IAH			HOU		
Mainline Carriers	**Regional Carriers**	**Cargo Carriers**	**Mainline Carriers**	**Regional Carriers**	**Cargo Carriers**
Aeromexico	Champlain Enterprises	Air France Cargo	Allegiant Air	Envoy Air	
Air Canada	Envoy Air	Atlas Air/ Southern Air	American Airlines	Mesa Airlines	
Air France	Mesa Airlines	C.A.L Cargo	Delta Airlines	Skywest Airlines	
Air New Zealand	PSA Airlines	Cargolux	Frontier		
Alaska Airlines	Republic Airlines	Cathay Pacific Cargo	Southwest Airlines		
All Nippon Airways	Skywest Airlines	DHL			
American Airlines		Emirates Sky Cargo			
AVIANCA S.A.		Federal Express			
British Airways		Lufthansa Cargo			
Caribbean Airlines		Qatar Airways Cargo			
Delta Airlines		Turkish Cargo			
Emirates		UPS			
EVA Air					
Frontier Airlines					
JetBlue Airways					
KLM Royal Dutch Airlines					
Lufthansa					
Qatar Airways					
Singapore Airlines					
Southwest Airlines					
Spirit Airlines					
Sun Country					
Turkish Airlines					
United Airlines					
VivaAerobus					
Volaris					
WestJet					

SOURCE: Houston Airport System

Information presented is based on the most current statistical data available; numbers from prior years are subject to change.

ORIGINATING PASSENGER ENPLANEMENTS

IAH	2022	2021	2020	2019	2018	2017	2016	2015	2014	2013
Originating Enplanements	11,511,784	6,416,622	9,274,821	12,410,801	11,332,305	11,127,432	11,130,370	10,453,670	9,653,120	9,235,098
Connecting Enplanements	8,300,608	4,444,726	7,252,407	10,067,653	9,443,423	9,602,708	10,301,326	10,504,885	10,452,170	10,521,105
Total Enplaned Passengers	19,812,392	10,861,348	16,527,228	22,478,454	20,775,728	20,730,140	21,431,696	20,958,555	20,105,290	19,756,203
Originating Enplanement Percentage	58.1%	59.1%	56.1%	55.2%	54.5%	53.7%	51.9%	49.9%	48.0%	46.7%
HOU										
Originating Enplanements	4,112,068	2,710,793	3,656,831	4,996,510	4,829,823	4,852,811	4,695,633	4,271,166	4,134,726	3,959,666
Connecting Enplanements	2,155,636	1,396,968	1,644,721	2,332,635	2,107,238	1,807,446	1,687,702	1,674,247	1,701,165	1,416,922
Total Enplaned Passengers	6,267,704	4,107,761	5,301,552	7,329,145	6,937,061	6,660,257	6,383,335	5,945,413	5,835,891	5,376,588
Originating Enplanement Percentage	65.6%	66.0%	69.0%	68.2%	69.6%	72.9%	73.6%	71.8%	70.8%	73.6%
HOUSTON AIRPORT SYSTEM										
Originating Enplanements	15,623,852	9,127,415	12,931,652	17,407,311	16,162,128	15,980,243	15,826,003	14,724,836	13,787,846	13,194,764
Connecting Enplanements	10,456,244	5,841,694	8,897,128	12,400,288	11,550,661	11,410,154	11,989,028	12,179,132	12,153,335	11,938,027
Total Enplaned Passengers	26,080,096	14,969,109	21,828,780	29,807,599	27,712,789	27,390,397	27,815,031	26,903,968	25,941,181	25,132,791
Originating Enplanement Percentage	59.9%	61.0%	59.2%	58.4%	58.3%	58.3%	56.9%	54.7%	53.2%	52.5%

SOURCE: Houston Airport System

Information presented is based on the most current statistical data available; numbers from prior years are subject to change.

AIRCRAFT OPERATIONS, LANDING WEIGHT AND CARGO ACTIVITY

AIRCRAFT OPERATIONS
(in thousands)

	2022	2021	2020	2019	2018	2017	2016	2015	2014	2013
Total	691	512	624	752	735	760	787	816	811	799
Increase (Decrease)	179	(112)	(128)	17	(25)	(27)	(29)	5	12	(39)
Percentage Change	34.96%	-17.95%	-17.02%	2.31%	-3.29%	-3.43%	-3.55%	0.62%	1.50%	-4.65%

AIRCRAFT LANDED WEIGHT
(in million pounds)

	2022	2021*	2020	2019	2018	2017	2016	2015	2014	2013
Total	33,836	23,454	30,345	37,210	34,814	34,648	35,519	34,969	33,881	33,044
Increase (Decrease)	10,382	(6,891)	(6,865)	2,396	166	(871)	550	1,088	837	203
Percentage Change	44.27%	-22.71%	-18.45%	6.88%	0.48%	-2.45%	1.57%	3.21%	2.53%	0.62%

CARGO ACTIVITY
(in metric tons)

	2022	2021*	2020	2019	2018	2017	2016	2015	2014	2013
Domestic Freight	348,799	333,224	303,119	270,965	231,670	209,343	195,644	192,331	193,776	203,082
International Freight	184,699	129,598	181,244	240,260	234,384	224,226	205,361	252,876	225,400	216,693
Mail	26,760	21,197	19,857	23,413	23,790	24,983	25,713	30,026	27,333	27,142
Total Cargo	560,258	484,019	504,220	534,638	489,844	458,552	426,718	475,233	446,509	446,917
Year-over-Year Change	15.8%	-4.0%	-5.7%	9.1%	6.8%	7.5%	-10.2%	6.4%	-0.1%	-1.4%

*FY2021 was adjusted

SOURCE: Houston Airport System

Information presented is based on the most current statistical data available; numbers from prior years are subject to change.

PERFORMANCE MEASURES

PERFORMANCE MEASURES	2022	2021	2020	2019	2018	2017	2016	2015	2014	2013
Revenue per Enplaned Passenger	$ 28.32	$ 39.40	$ 28.69	$ 22.56	$ 23.25	$ 22.59	$ 22.40	$ 22.10	$ 21.06	$ 20.35
Maintenance and Operations Expenses per Enplaned Passenger	$ 12.12	$ 21.28	$ 16.97	$ 11.32	$ 12.09	$ 9.29	$ 11.34	$ 10.65	$ 10.99	$ 10.83
Debt Service per Enplaned Passenger	$ 6.75	$ 11.31	$ 8.83	$ 6.33	$ 6.77	$ 7.06	$ 6.69	$ 6.54	$ 6.47	$ 6.58
Outstanding Debt per Enplaned Passenger (1)	$ 91.92	$ 154.58	$ 94.60	$ 69.32	$ 80.26	$ 84.43	$ 86.41	$ 86.31	$ 90.11	$ 95.49
Intercontinental Budgeted Airline Cost per Est. Enplaned Passenger (2)	$ 15.70	$ 19.28	$ 10.48	$ 11.57	$ 11.38	$ 11.31	$ 10.94	$ 11.28	$ 11.21	$ 10.72
Intercontinental Actual Airline Cost per Enplaned Passenger (2)	$ 10.47	$ 14.50	$ 14.19	$ 10.48	$ 11.39	$ 11.08	$ 10.62	$ 10.56	$ 10.61	$ 10.52
Hobby Budgeted Airline Cost per Est. Enplaned Passenger (2)	$ 10.16	$ 13.92	$ 6.44	$ 6.52	$ 6.22	$ 6.48	$ 6.76	$ 6.99	$ 7.37	$ 7.34
Hobby Actual Airline Cost per Enplaned Passenger (2)	$ 8.72	$ 9.58	$ 9.21	$ 6.64	$ 6.40	$ 6.15	$ 7.15	$ 6.43	$ 6.19	$ 6.64

(1) The calculation of outstanding debt per enplaned passenger does not include unamortized discount and premium.

(2) Airline Costs include terminal building charges, aircraft parking apron charges, and landing fees only for passenger carriers. The costs are calculated during the rates and charges process based on budget and estimate of passengers. They are then recalculated, after the annual audit, during the rates and charges reconciliation process. The estimated costs utilized are based on projected results and are subjected to change.

SOURCE: Houston Airport System

CASH AVAILABLE BY DAYS FUNDED (in thousands)

	2022	2021	2020	2019	2018	2017	2016	2015	2014	2013
Airport System Revenue Fund (1) (2)	$ 123,032	$ 74,384	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Operating & Maintenance Reserve	58,820	55,845	55,845	55,845	52,686	51,807	51,615	50,754	49,633	46,397
Renewal & Replacement Fund (3)	(601)	15,628	(15,378)	18,770	11,483	10,514	10,001	10,011	11,822	11,822
Airport Improvement Fund (3)	304,805	330,419	384,169	410,795	444,464	417,930	449,768	396,631	487,974	460,634
Total cash available for operations	$ 486,056	$ 476,276	$ 424,636	$ 485,410	$ 508,633	$ 480,251	$ 511,384	$ 457,396	$ 549,429	$ 518,853
Maintenance and operating expense (4) (5)	$ 255,377	$ 251,830	$ 314,034	$ 315,153	$ 326,889	$ 254,506	$ 314,715	$ 283,557	$ 268,745	$ 252,745
Days in fiscal year	365	365	366	365	365	365	366	365	365	365
Daily cash requirement	$ 700	$ 690	$ 858	$ 863	$ 896	$ 697	$ 860	$ 777	$ 736	$ 692
Days funded	695	690	495	562	568	689	595	589	746	749
TOTAL AIRPORT SYSTEM CASH AND INVESTMENTS	$ 1,907,143	$ 1,727,514	$ 1,454,903	$ 1,456,679	$ 1,362,459	$ 1,259,622	$ 1,248,346	$ 1,222,307	$ 1,139,956	$ 1,087,394

(1) The funds are listed in order of availability; each fund must be fully depleted before the next can be used. In 2021, includes CARES money

(2) Available funding in the Airport System Revenue Fund on June 30th is transferred to the Airports Improvement Fund to comply with airport bond ordinances.

(3) Excludes cash required for accrued liabilities and capital appropriations.

(4) Excludes capital asset impairments and retirements, and expense incurred on cancelled capital projects. Includes interest expense for the Series 2005 pension obligation bonds and the debt service on the note payable to Southwest Airlines.

(5) Maintenance and operating expense funded by cash available for operations decreased by $60.2 million between Fiscal Year 2017 and Fiscal Year 2016, primarily due to a $67.4 million decrease in pension expense associated with pension reform enacted in 2017. Without the reform, it is estimated that days funded at June 30, 2017 would be 557.

*Fiscal Year 2019 maintenance and operating expenses is updated due to allowable exclusions in the definition of maintenance and operating expense in the Master Bond Ordinance

**Fiscal Year 2019 daily cash requirement and days funded are updated accordingly.

SOURCE: Houston Airport System

AIRPORT INFORMATION

	IAH		HOU		EFD (1)	
LOCATION	22 miles N of downtown Houston		7 miles SE of downtown Houston		15 miles SE of downtown Houston	
AREA	10,125 acres		1,502 acres		1,945 acres	
ELEVATION	97 MSL		46 MSL		32 MSL	
AIRPORT CODE	IAH		HOU		EFD	
RUNWAYS	8R-26L	9,402x150 ft	13L-31R	5,148x100 ft	17L-35R	4,609x80 ft
	9-27	10,000x150 ft	13R-31L	7,602x150 ft	17R-35L	9,001x150 ft
	15L-33R	12,001x150 ft	4-22	7,602x150 ft	4-22	8,001x150 ft
	15R-33L	9,999x150 ft				
	8L-26R	9,000x150 ft				
TERMINAL SPACE	Airlines	3,373,816 sf	Airlines	531,197 sf	n/a	
	Tenants	208,888 sf	Tenants	63,672 sf		
	Public/Common	612,155 sf	Public/Common	152,648 sf		
	Mechanical	245,332 sf	Mechanical	115,815 sf		
	Other	310,031 sf	Other	47,615 sf		
	Total	4,750,222 sf	Total	910,947 sf		
NUMBER OF GATES/HARDSTAND POSITIONS	127/7		30/n/a		n/a	
COMMERCIAL AIRLINES APRON	3,878,047 sf		815,019 sf		n/a	
RENTAL CAR FACILITY	9 Rental Car Agencies		10 Rental Car Agencies		1 Rental Car Agency	
PARKING SPACES	S-T Hourly	12,824	S-T Hourly	5,611		
	L-T ECO	8,612	L-T ECO	958		
	Employee	3,068	Employee	1879	Employee	27
	Total	24,504	Total	8,448	Total	27

(1) No scheduled commercial flights

SOURCE: Houston Airport System

PRINCIPAL EMPLOYERS

PRINCIPAL EMPLOYERS
Last Ten Years (1)
(Listed alphabetically)

2022	2021	2020	2019	2018
CHI St. Luke's Health	ExxonMobil	ExxonMobil	HEB	Exxon Mobil
ExxonMobil	HEB	HEB	Houston Methodist	HEB
HCA Houston Healthcare	HCA Houston Healthcare	HCA Houston Healthcare	Kroger	Houston Methodist
HEB	Houston Methodist	Houston Methodist	McDonald's Corp	Kroger Company
Houston Methodist	Kroger	Kroger	Memorial Hermann Health System	McDonald's Corp
Kroger	Memorial Hermann Health System	Memorial Hermann Health System	Schlumberger	Memorial Hermann Health System
Memorial Hermann Health System	Schlumberger	Shell Oil Company	Shell Oil Company	Texas Children Hospital
Schlumberger	UT MD Anderson Cancer Center	UT MD Anderson Cancer Center	UT MD Anderson Cancer Center	UT MD Anderson Cancer Center
UT MD Anderson Cancer Center	United Airlines	United Airlines	United Airlines	United Airlines
Walmart	Walmart	Walmart	Walmart	Walmart

2017	2016	2015	2014	2013
HEB	ExxonMobil	Cameron International	B.P. America, Inc.	Baylor College of Medicine
Houston Methodist	Houston Methodist Hospital System	ExxonMobil	ExxonMobil	B.P. America, Inc.
Kroger Company	Kroger Company	HEB	Houston Methodist	ExxonMobil
McDonald's Corp	Memorial Hermann Health System	Houston Methodist	Kroger	Kroger
Memorial Hermann Health System	National Oilwell Varco	Kroger	Memorial Hermann Health System	Memorial Hermann Health System
UT MD Anderson Cancer Center	Schlumberger Limited	Memorial Hermann Health System	National Oilwell Varco	National Oilwell Varco
United Airlines	Shell Oil Company	National Oilwell Varco	Schlumberger Limited	Schlumberger Limited
Schlumberger Limited	UTMB Health	Shell Oil Company	Shell Oil Company	Shell Oil Company
Shell Oil Company	UT MD Anderson Cancer Center	UT MD Anderson Cancer Center	UT MD Anderson Cancer Center	The Methodist Hospital System
Walmart	United Airlines	United Airlines	United Airlines	United Continental Holdings

SOURCE: Greater Houston Partnership

(1) Starting fiscal year 2022, information such as the number of employees or the employers' percentage of total employment is not available for disclosure. Prior year information has been modified to the format consistent with fiscal year 2022 for presentation purposes.

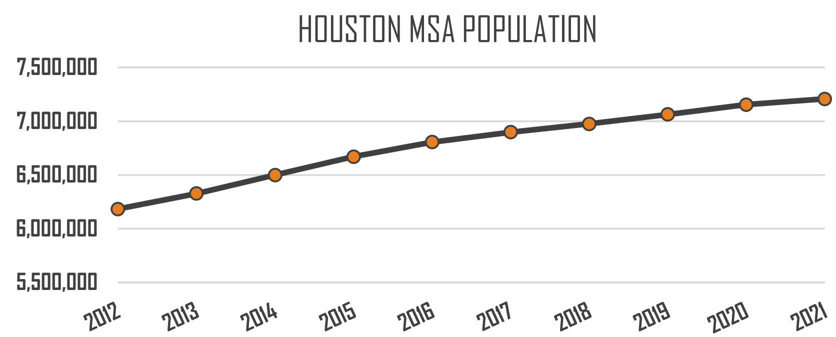
SERVICE AREA AND SERVICE AREA POPULATION/CAREER SERVICE EMPLOYEES

The primary service region for the Houston Airport System, the 9-county Houston-The Woodlands-Sugar Land Metropolitan Statistical Area (MSA), has a diverse economic base and is recognized as a major national and international energy, financial, medical, transportation, retail, and distribution center. The MSA extends out five additional counties of Matagorda, Trinity, Walker, Washington, and Wharton for the broader The Houston-The Woodlands Combined Statistical Area (CSA). According to U.S. Bureau of the Census, the population estimate was 7.21 million for the MSA and 7.40 million for the CSA as of July 1, 2021.

Houston, the nation's fourth most populous city, is the largest in the South and Southwest. The Houston MSA ranks fifth in population among the nation's metropolitan areas.

SERVICE AREA POPULATION

As of July 1,	Houston MSA Population
2012	6,183,119
2013	6,327,622
2014	6,499,375
2015	6,670,803
2016	6,806,315
2017	6,898,912
2018	6,974,948
2019	7,063,400
2020	7,154,478
2021	7,206,841



SOURCE: Greater Houston Partnership and U.S. Census Bureau.

Career Service Employees
Last Ten Years

Fiscal Year	2022	2021	2020	2019	2018	2017	2016	2015	2014	2013
Total Employees	1,127	1,147	1,110	1,091	1,113	1,141	1,191	1,234	1,294	1,268

SOURCE: Houston Airport System

DEMOGRAPHIC AND ECONOMIC

Fiscal Year	Population (1)(2)	Personal Income (in thousands) (3)	Per Capita Income (3)	Median Age (4)	Education Level in Years of Formal Schooling (4)	School Enrollment (4)	Average Umemployment Rate (percentage) (5)
2013	2,158,700	$ 332,017	$ 52,471	32.1	13.0	1,794,210	6.6
2014	2,196,367	$ 360,298	$ 55,436	32.3	13.0	1,790,150	5.4
2015	2,238,653	$ 366,978	$ 55,013	32.4	13.0	1,829,867	4.8
2016	2,283,616	$ 351,012	$ 51,572	32.6	13.0	1,849,065	5.6
2017	2,306,360	$ 377,978	$ 54,788	32.6	13.1	1,874,344	5.2
2018	2,313,079	$ 403,674	$ 57,875	32.7	13.2	1,893,312	4.7
2019	2,314,478	$ 415,920	$ 58,884	32.9	13.2	1,932,292	4.0
2020	2,315,720	$ 428,501	$ 59,893	32.9	13.44	1,915,864	11.6
2021	2,300,027	Not available	Not available	33.4	13.38	1,920,741	7.4
2022	2,288,250	Not available	Not available	35.3	13.4	1,911,456	4.8

(1) SOURCE: U.S. Census Bureau - City and Town Populations, Subcounty Resident Population Estimates: April 1, 2012 to July 1, 2019.

(2) SOURCE: U.S. Census Bureau - Annual Estimates of the Resident Population for Incorporated Places of 50,000 or More: estimate as of July 1, 2020 and July 1, 2021 for fiscal year 2021 and 2022, respectively.

(3) SOURCE: U.S. Department of Commerce, Bureau of Economic Analysis. Amounts as of year ended December 31 for the nine-county Metropolitan Statistical Area (MSA). Information for the years ended December 31, 2022 and 2021 are not yet available.

(4) SOURCE: U.S. Census Bureau - ACS Demographic and Housing Estimates for or the nine-county Metropolitan Statistical Area.

(5) SOURCE: U.S. Bureau of Labor Statistics. Information as of June each year for the nine-country Metropolitan Statistical Area.

Information presented is based on the most current statistical data available; numbers from prior years are subject to change.

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5-STAR AIRPORT
SKYTRAX
This is to Certify that
William P. Hobby Airport
is awarded the 5-Star Airport Rating

COMPLIANCE

McConnell Jones

BANKS, FINLEY, WHITE & CO.
CERTIFIED PUBLIC ACCOUNTANTS

INDEPENDENT AUDITORS' REPORT ON COMPLIANCE WITH REQUIREMENTS APPLICABLE TO THE PASSENGER FACILITY CHARGE PROGRAM AND ON INTERNAL CONTROL OVER COMPLIANCE IN ACCORDANCE WITH REQUIREMENTS ISSUED BY THE FEDERAL AVIATION ADMINISTRATION

To the Honorable Mayor, Members of City Council
and City Controller of the City of Houston, Texas

Report on Compliance

We have audited the City of Houston, Texas' ("the City") compliance with the types of compliance requirements described in the *Passenger Facility Charge Audit Guide for Public Agencies*, issued by the Federal Aviation Administration ("the Guide"), that could have a direct and material effect on its Passenger Facility Charge ("PFC") Program for the year ended June 30, 2022.

Management's Responsibility

Management is responsible for compliance with the requirements of laws, regulations, contracts and grants applicable to its PFC.

Auditors' Responsibility

Our responsibility is to express an opinion on compliance for the City's PFC program based on our audit of the types of compliance requirements referred to above. We conducted our audit of compliance in accordance with auditing standards generally accepted in the United States of America; the standards applicable to financial audits contained in *Government Auditing Standards*, issued by the Comptroller General of the United States; and the Guide. Those standards and the Guide require that we plan and perform the audit to obtain reasonable assurance about whether noncompliance with the types of compliance requirements referred to above that could have a direct and material effect on the PFC program occurred. An audit includes examining, on a test basis, evidence about the City's compliance with those requirements and performing such other procedures as we considered necessary in the circumstances.

We believe that our audit provides a reasonable basis for our opinion on compliance for the PFC program; however, our audit does not provide a legal determination on the City's compliance.

4828 Loop Central Drive • Suite 1000 • Houston, Texas 77081

Opinion

In our opinion, the City complied, in all material respects, with the types of compliance requirements referred to above that could have a direct and material effect on the PFC program for the year ended June 30, 2022.

Report on Internal Control over Compliance

Management of the City is responsible for establishing and maintaining effective internal control over compliance with the requirements referred to above. In planning and performing our audit of compliance, we considered the City's internal control over compliance with the types of requirements that could have a direct and material effect on the PFC program to determine the auditing procedures that are appropriate in the circumstances for the purpose of expressing an opinion on compliance for the PFC program and to test and report on internal control over compliance in accordance with the Guide, but not for the purpose of expressing an opinion of the effectiveness of internal control over compliance. Accordingly, we do not express an opinion on the effectiveness of the City's internal control over compliance.

A *deficiency in internal control over compliance* exists when the design or operation of a control over compliance does not allow management or employees, in the normal course of performing their assigned functions, to prevent, or to detect and correct, noncompliance with a type of compliance requirement of the Guide on a timely basis. A *material weakness in internal control over compliance* is a deficiency, or combination of deficiencies, in internal control over compliance, such that there is a reasonable possibility that material noncompliance with a type of compliance requirement of the Guide will not be prevented, or detected and corrected, on a timely basis. A *significant deficiency in internal control over compliance* is a deficiency, or a combination of deficiencies, in internal control over compliance with a type of compliance requirement of a PFC program that is less severe than a material weakness in internal control over compliance, yet important enough to merit attention by those charged with governance.

Our consideration of internal control over compliance was for the limited purpose described in the first paragraph of this section and was not designed to identify all deficiencies in internal control over compliance that might be material weaknesses or significant deficiencies. We did not identify any deficiencies in internal control over compliance that we consider to be material weaknesses. However, material weaknesses may exist that have not been identified.

The purpose of this report on internal control over compliance is solely to describe the scope of our testing of internal control over compliance and the results of that testing based on the requirements of the Guide. Accordingly, this report is not suitable for any other purpose.

McConnell Jones

BANKS, FINLEY, WHITE & CO.
CERTIFIED PUBLIC ACCOUNTANTS

Report on Passenger Facility Charge Revenues and Disbursements Schedules

We have audited the basic financial statements of the City, as of and for the year ended June 30, 2022, and have issued our report thereon dated December 19, 2022, which contained an unmodified opinion on those financial statements and a reference to other auditors. Our audit was performed for the purpose of forming an opinion on the basic financial statements taken as a whole. The accompanying passenger facility charge revenues and disbursements schedules are presented for purposes of additional analysis as required by the Guide and are not a required part of the basic financial statements. Such information is the responsibility of management and was derived from and relates directly to the underlying accounting and other records used to prepare the financial statements. The information has been subjected to the auditing procedures applied in the audit of the financial statements and certain additional procedures, including comparing and reconciling such information directly to the underlying accounting and other records used to prepare the financial statements or to the financial statements themselves, and other additional procedures in accordance with auditing standards generally accepted in the United States of America. In our opinion, the passenger facility charge revenues and disbursements schedules are fairly stated, in all material respects, in relation to the financial statements as a whole.

I

McConnell & Jones LLP Banks, Finley, White & Co.

December 19, 2022

IAH REVENUES AND DISBURSEMENTS

FOR THE YEAR ENDED JUNE 30, 2022

	FY 2021 Program Total	Quarter 1 Jul-Sept	Quarter 2 Oct-Dec	Quarter 3 Jan-Mar	Quarter 4 Apr-Jun	FY 2022 Total	FY 2022 Program Total
REVENUES							
Collections (Note 3)	$ 761,468,869	18,909,667	19,685,401	22,039,965	21,038,572	81,673,605	$ 843,142,474
Other revenue-insurance (Note 3)	2,059,629	-	-	-	-	-	2,059,629
Interest	21,070,011 *	335,273	339,059	356,795	468,741	1,499,868	22,569,879
Total Revenues	784,598,509	19,244,940	20,024,460	22,396,760	21,507,313	83,173,473	867,771,982
DISBURSEMENTS							
1.01 Automated People Mover System	$ 230,643,206	-	3,051,322	-	12,114,584	15,165,906	$ 245,809,112
1.02 Terminal B Expansion & Improvemts	125,428,655	-	575,184	-	865,780	1,440,964	126,869,619
1.03 Central FIS Facility	115,428,359	-	2,416,635	-	8,259,864	10,676,499	126,104,858
1.04 North Parallel Runway 8L/26R	36,962,130	-	435,133	-	2,236,458	2,671,591	39,633,721
1.05 Administrative Costs	112,917	-	-	-	-	-	112,917
1.06 Central Plant HVAC Upgrades	18,007,210	-	352,470	-	605,187	957,657	18,964,867
1.07 Terminal A/B South Taxiways	18,289,911	-	379,281	-	528,647	907,928	19,197,839
Total Disbursements	544,872,388	-	7,210,025	-	24,610,520	31,820,545	576,692,933
2.01 Mickey Leland International Terminal (MLIT), Rehabilitation and Expansion	40,305,309	-	2,164,148	-	2,164,148	4,328,296	$ 44,633,605
2.02 Federal Inspection Services (FIS) Rehabilitation and Expansion	7,049,153	-	3,689,501	-	3,689,501	7,379,002	14,428,155
2.03 Terminal Facilities Utilities (Enabling Utilities Landside)	306,706	-	57,346	-	57,346	114,692	421,398
2.04 IAH Terminal Roadway Reconstruction	-	-	-	-	-	-	-
2.05 Terminal A Baggage Handling System	-	-	144,179	-	144,179	288,358	288,358
2.06 IAH Roadway Signage Replacement	14,738,134	-	3,148	-	3,148	6,296	14,744,430
2.07 Terminal A Restroom Rehabilitation	-	-	-	-	-	-	-
2.08 Terminal D Restroom Rehabilitation	-	-	-	-	-	-	-
Total Disbursements	62,399,302	-	6,058,322	-	6,058,322	12,116,644	74,515,946
Net PFC Revenues	$ 177,326,819	19,244,940	6,756,113	22,396,760	(9,161,529)	39,236,284	$ 216,563,103
PFC Account Balance	$ 177,326,819	196,571,759	203,327,872	225,724,632	216,563,103	216,563,103	$ 216,563,103

*FY21 beginning balance adjusted

HOU REVENUES AND DISBURSEMENTS
FOR THE YEAR ENDED JUNE 30, 2022

	FY 2021 Program Total	Quarter 1 Jul-Sept	Quarter 2 Oct-Dec	Quarter 3 Jan-Mar	Quarter 4 Apr-Jun	FY 2022 Total	FY 2022 Program Total
REVENUES							
Collections (Note 3)	$ 241,111,331	5,388,447	5,187,965	5,232,225	6,367,661	22,176,298	$ 263,287,629
Other revenue-insurance (Note 3)	755,196	-	-	-	-	-	755,196
Interest	5,419,559	47,092	50,710	51,634	73,536	222,972	5,642,531
Total Revenues	247,286,086	5,435,539	5,238,675	5,283,859	6,441,197	22,399,270	269,685,356
DISBURSEMENTS							
1.01 Rehab Runways	3,924,161	-	(5,955)	-	(20,404)	(26,359)	3,897,802
1.02 Rehab & Modification to Taxiways	15,755,980	-	(13,867)	-	(54,443)	(68,310)	15,687,670
1.03 Expand Taxiway Electrical System	3,220,026	-	-	-	-	-	3,220,026
1.04 Arpt Drainage & Stormwater Improvs	5,152,258	-	72,847	-	300,709	373,556	5,525,814
1.05 Acquire Runway 17 Protection Zone	675,593	-	2,948	-	6,187	9,135	684,728
1.06 Airfield Lighting & Control	7,471,567	-	14,191	-	53,475	67,666	7,539,233
1.07 Central Terminal Expansion	32,731,574	-	27,031	-	(16,616)	10,415	32,741,989
1.08 Conduct Master Plan	393,948	-	-	-	-	-	393,948
1.09 Central Concourse Equipment	13,932,644	-	64,767	-	106,635	171,402	14,104,046
1.10 Apron Reconstruction	4,041,779	-	86,321	-	145,389	231,710	4,273,489
1.11 Taxiway & Taxilane Reconstruction	8,461,009	-	180,703	-	304,356	485,059	8,946,068
1.12 Overlay Runway 12R/30L	5,408,664	-	22,925	-	38,275	61,200	5,469,864
1.13 Perimeter Fencing & Obstruction	1,523,058	-	877	-	1,465	2,342	1,525,400
1.14 Access Controls & Telecom	887,032	-	25,833	-	43,129	68,962	955,994
1.15 Environmental Impact Statement	297,126	-	208	-	12,384	12,592	309,718
1.16 Land Acquisition RW4 RPZ	625,542	-	-	-	-	-	625,542
1.17 Drainage/Stormwater Plan	1,375,000	-	(359)	-	(1,410)	(1,769)	1,373,231
1.18 PFC Consulting, Admin, Audit	97,621	-	-	-	-	-	97,621
Subtotal HOU 1.00 Projects	105,974,582	-	478,470	-	919,131	1,397,601	107,372,183
2.01 International Terminal Expansion	21,112,270	-	1,760,936	-	4,143,153	5,904,089	27,016,359
2.02 International Terminal - Apron	3,406,966	-	284,169	-	668,596	952,765	4,359,731
2.03 International Terminal - Roadways	5,665,605	-	232,445	-	423,168	655,613	6,321,218
2.04 Elevated passenger walkway	1,224,539	-	76,579	-	138,448	215,027	1,439,566
2.05 Satellite utilities plant - Phase I	4,458,511	-	250,601	-	587,687	838,288	5,296,799
2.06 Passenger walkway canopy	-	-	-	-	-	-	-
2.07 Central concourse expansion	75,863,120	-	1,502,279	-	2,284,274	3,786,553	79,649,673
2.08 Explosive detection baggage equip.	5,295,282	-	-	-	-	-	5,295,282
2.09 Partial reconstruction R/W 4-22	675,989	-	662,623	-	902,422	1,565,045	2,241,034
2.10 Partial reconstruction Taxiway C	216,419	-	152,484	-	199,247	351,731	568,150
2.11 Partial reconstruct NE perimeter rd	132,257	-	93,185	-	121,762	214,947	347,204
2.12 Air units - central concourse	-	-	-	-	-	-	-
Subtotal HOU 2.00 Projects	118,050,958	-	5,015,301	-	9,468,757	14,484,058	132,535,016
Total Disbursements	224,025,540	-	5,493,771	-	10,387,888	15,881,659	239,907,199
Net PFC Revenues	$ 23,260,546	5,435,539	(255,096)	5,283,859	(3,946,691)	6,517,611	$ 29,778,157
PFC Account Balance	$ 23,260,546	28,696,085	28,440,989	33,724,848	29,778,157	29,778,157	$ 29,778,157

NOTE 1 – Passenger Facility Charge Program

The Passenger Facility Charge ("PFC") was established by Title 49, United States Code ("U.S.C."), Section 40117, which authorizes the Secretary of Transportation (further delegated to the FAA Administrator) to approve the local imposition of an airport PFC of $1, $2, $3, $4, or $4.50 per enplaned passenger for use on certain airport projects. Under Part 158, public agencies (as defined in the statute and regulation) controlling commercial service airports can apply to the FAA for authority to impose a PFC for use on eligible projects.

NOTE 2 – Summary of Significant Accounting Policies

Basis of Accounting - The accompanying passenger facility charge revenues and disbursements schedules present revenues received on a cash basis, while expenditures are reported based upon the allocation of costs to approved projects.

NOTE 3 – Reconciliation to Statement of Revenues, Expenses and Changes in Net Position

Passenger facility charges are reported on an accrual basis in the City of Houston Airport System Fund Statement of Revenues, Expenses and changes in Net Position in the Annual Comprehensive Financial Report. Reporting standards adopted by the FAA require for purposes of the PFC Revenues and Disbursements Schedule such charges be reported on a cash basis. A reconciliation between cash collections and revenue reported on the accrual basis is as follows:

For the Fiscal Year Ended June 30, 2022

Passenger Facility Charges	HOU	IAH	HAS Total
Amounts per Statement of Revenues, Expenses and Changes in Net Position - accrual basis	$ 22,023,748	$ 76,422,231	$ 98,445,979
Add: prior year accrual	2,584,240	11,719,897	14,304,137
Less: current year accrual	(2,431,690)	(6,468,523)	(8,900,213)
Collection amounts per Passenger Facility Charge Revenue and Disbursement Schedule - cash basis	$ 22,176,298	$ 81,673,605	$ 103,849,903

1.	Type of report issued on PFC financial statements.	Unmodified	
2.	Type of report on PFC compliance.	Unmodified	
3.	Quarterly Revenues and Disbursements reconcile with submitted quarterly reports and reported un-liquidated revenue matches actual amounts.	X Yes	___ No
4.	PFC Revenues and Interest are accurately reported.	X Yes	___ No
5.	The Public Agency maintains a separate financial accounting record for each application.	X Yes	___ No
6.	Funds disbursed were for PFC-eligible items as identified in the FAA Decision to pay only for the allowable costs of the projects.	X Yes	___ No
7.	Monthly carrier receipts were reconciled with quarterly carrier reports.	X Yes	___ No
8.	PFC revenues were maintained in a separate interest-bearing capital account or commingled only with other interest-bearing airport capital funds.	X Yes	___ No
9.	Serving carriers were notified of PFC program actions/changes approved by the FAA.	X Yes	___ No
10.	Quarterly Reports were transmitted (or available via website) to remitting carriers.	X Yes	___ No
11.	The Public Agency is in compliance with Assurances 5, 6, 7 and 8.	X Yes	___ No
12.	Project design and implementation are carried out in accordance with Assurance 9.	X Yes	___ No
13.	Program administration is carried out in accordance with Assurance 10.	X Yes	___ No
14.	For those public agencies with excess revenue, a plan for the use of this revenue has been submitted to the FAA for review and concurrence.	X Yes	___ No

A. Summary of Auditors' Results

1) There were no material weaknesses identified during the audit of the passenger facility charge program.

2) There were no significant deficiencies identified during the audit of the passenger facility charge program.

3) The auditors' report on compliance for the passenger facility charge program expresses an unmodified opinion.

B. Findings and Questioned Costs

None reported

HOUSTON
AIRPORTS

HOUSTON
SPACEPORT

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APPENDIX C-1
GLOSSARY OF TERMS AND EXCERPTS OF THE MASTER ORDINANCE

Glossary of Terms

"Act" means, collectively, Chapters 1201-1205, 1207, 1371, and 1503, Texas Government Code, as amended.

"Additional Senior Lien Bonds" means the additional senior lien revenue bonds and obligations permitted to be issued by the City pursuant to Section 5.01 of the Master Ordinance.

"Additional Senior Lien Notes" means the additional senior lien revenue notes permitted to be issued by the City pursuant to Section 5.01 of the Master Ordinance.

"Additional Senior Lien Obligations" means Additional Senior Lien Bonds and/or Additional Senior Lien Notes.

"Additional Subordinate Lien Bonds" means the additional subordinate lien revenue bonds, notes and obligations permitted to be issued by the City pursuant to Section 5.01 of the Master Ordinance.

"Airports Improvement Fund" means the fund described in Section 3.14 of the Master Ordinance.

"Airport Management Consultant" means a nationally recognized independent firm, person or corporation having a widely known and favorable reputation for special skill, knowledge and experience in methods of development, operation, financing and management of airports of approximately the same size as the properties constituting the Airport System.

"Airport Obligations" means any or all of the Bonds and Inferior Lien Bonds.

"Airport System" means all airport, heliport and aviation facilities, or any interest therein, now or from time to time hereafter owned, operated or controlled in whole or in part by the City, together with all properties, facilities and services thereof, and all additions, extensions, replacements and improvements thereto, and all services provided or to be provided by the City in connection therewith, but expressly excluding Special Facilities. The Airport System currently includes the present airports of the City, known as "George Bush Intercontinental Airport/Houston," "William P. Hobby Airport," and "Ellington Airport" (formerly known as "Ellington Field").

"Authorized System Purposes" means, collectively, the purposes of establishing, improving, enlarging, extending and repairing the airports of the City or buildings, improvements, landing fields or other facilities or services which are necessary, desirable or convenient for the efficient operation and maintenance of the airports of the City, and acquiring land for the airports of the City, as further described by the Act.

"Aviation Director" means the Director of the Houston Airport System (a department of the City that operates the Airport System), or his successor or person acting in such capacity.

"Bonds" means any or all of the Senior Lien Bonds, Senior Lien Notes, and the Subordinate Lien Bonds, as the context may indicate, including Completion Bonds and Short Term/Demand Obligations.

"Business Day" means any day other than a Saturday, Sunday or other day on which the New York Stock Exchange is closed or on which banks are authorized or required to be closed in any of the City of Houston, Texas, the City of New York, New York, or any other municipality in which the principal office of the applicable Paying Agent/Registrar is located.

"City" means the City of Houston, Texas, and, where appropriate, the City Council thereof, or any successor thereto as the owner and operator of the Airport System.

"Completion Bonds" means each series of Bonds permitted to be issued by the City pursuant to Section 5.03 of the Master Ordinance.

"Credit Agreement" means any agreement between the City and a third party financial institution pursuant to which such third party financial institution issues a letter of credit, municipal bond insurance policy, line of credit, standby bond purchase agreement, surety policy, surety bond or other guarantee for the purpose of enhancing the creditworthiness or liquidity of any of the City's obligations pursuant to any Airport Obligations or Qualified Hedge Agreements and in consideration for which the City may agree to pay, but solely from Net Revenues as provided herein, (i) periodic payments for the availability of such Credit Agreement and/or (ii) reimbursements or repayments of any amounts advanced under such Credit Agreement, together with interest and other stipulated costs and charges related to such amounts advanced. Obligations of the City pursuant to a Credit Agreement shall be deemed to be, and shall be included within, the Debt Service Requirements for the series of Airport Obligations to which the Credit Agreement relates. Further, obligations of the City to make payments under a Credit Agreement as reimbursements or repayments of amounts paid or advanced under such Credit Agreement for interest on or principal of any Airport Obligations (including interest and other stipulated costs and charges related to such amounts advanced) shall be deemed to be payments of interest on or principal of such Airport Obligations. Each Credit Agreement (and related Credit Agreement Obligations) shall be deemed to be a part of the Airport Obligations of the series to which it relates for the purpose of securing its payment or repayment by the pledge of Net Revenues as provided in Articles III, V and VI of the Master Ordinance. However, unless otherwise provided in any Supplemental Ordinance, issuers of Credit Agreements shall not be treated as Owners of Airport Obligations for purposes of any voting rights to approve amendments or to direct the exercise of any remedies under the Master Ordinance.

"Credit Agreement Obligations" means Airport Obligations held by or on behalf of the provider of a credit or liquidity facility in the form of a credit agreement loan, credit agreement note or other obligation of a provider of a Credit Agreement.

"Debt Service Requirements" means, as of any date of calculation, an amount equal to the sum of the following for any period and with respect to all or any portion of the Airport Obligations:

A. Current interest scheduled to accrue during such period on such Airport Obligations, except to the extent that provision for the payment of such interest has been made by (i) appropriating for such purpose amounts sufficient to provide for the full and timely payment of such interest either from proceeds of Airport Obligations, from interest earned or to be earned thereon, from other Airport System funds other than Net Revenues, or from any combination of such sources and (ii) depositing such amounts (except in the case of interest to be earned, which shall be deposited as received) into a fund or account for capitalized interest, the proceeds of which are required to be transferred as needed into the Senior Lien Bond Interest and Sinking Fund, the Subordinate Lien Bond Interest and Sinking Fund or the Inferior Lien Bond Interest and Sinking Fund, as the case may be;

Plus

B. That portion of the principal amount of, or compounded interest on, such Airport Obligations scheduled to be payable on or before the next July 1 (either at maturity, by reason of amortization of bank bonds, or by reason of scheduled mandatory redemptions, but after taking into account all prior optional and mandatory bond redemptions) which would accrue if such principal amount were deemed to accrue daily in equal amounts from the next preceding July 1;

Less

C. In addition to (and without duplicating) the amounts credited under paragraph A. above, any portion or all of the interest on or principal of Airport Obligations which has been irrevocably committed by the City to be paid from other Airport System funds other than Net Revenues, including but not limited to PFC Revenues or Excluded Fee and Charge Revenues;

provided, however, that the following rules shall apply to the computation of Debt Service Requirements on certain series of Short Term/Demand Obligations and on any series of Airport Obligations bearing interest at a floating or variable rate:

(i) For any series of Short Term/Demand Obligations issued pursuant to a commercial paper program or similar program, Debt Service Requirements shall be computed on the assumption that the principal amount shall continuously be refinanced under such program and remain outstanding until the first Fiscal Year for which interest on such Short Term/Demand Obligations has not been capitalized or otherwise funded or provided for, at which time (which shall not be beyond the term of such program) it shall be assumed that the outstanding principal amount thereof shall be refinanced with a series of Airport Obligations which shall be assumed to be amortized over a period not to exceed 25 years and shall be assumed to be amortized in such a manner that the maximum Debt Service Requirements in any twelve (12) month period shall not exceed 110% of the minimum Debt Service Requirements for any other twelve (12) month period, and shall be assumed to bear interest at a fixed interest rate estimated by the City's financial advisor or underwriter to be the interest rate such series of Airport Obligations would bear if issued on such terms on the date of such estimate;

(ii) For any series of Airport Obligations bearing interest at a variable or adjustable rate or a rate to be negotiated or revised from time to time such that the actual future rate of interest thereon cannot be ascertained at the time of calculation, it shall be assumed that such Airport Obligations will bear interest at the higher of (1) a long-term interest rate estimated by the City's financial advisor or underwriter to be the average rate of interest such Airport Obligations would bear if issued as long-term bonds bearing interest at fixed interest rates to be amortized over 30 years with level debt service or (2) a short-term interest rate calculated as follows: (a) for any series of Airport Obligations then Outstanding, at the greater of (i) the average interest rate derived from the variable or adjustable interest rate formula or computation applicable to, or average interest rate borne by, such series of Airport Obligations during a twelve (12) month period ending within 30 days prior to the date of computation or (ii) the actual interest rate derived from such variable or adjustable interest rate formula or computation, or the actual interest rate payable on such series of Airport Obligations, on the date of such calculation, and (b) for any series of Airport Obligations then proposed to be issued, at an interest rate estimated by the City's financial advisor or underwriter to be the average rate of interest such series of Airport Obligations will bear during the period or periods for which the Debt Service Requirements are being calculated.

Debt Service Requirements shall be calculated on the assumption that no Airport Obligations Outstanding on the date of calculation will cease to be Outstanding except by reason of the payment of scheduled principal maturities or scheduled mandatory redemptions of such Airport Obligations, except as provided above for Short Term/Demand Obligations.

Credit Agreements shall cause Debt Service Requirements to be increased only to the extent of scheduled payments and charges for the availability of the Credit Agreement without regard to any repayment or reimbursement obligations or interest thereon or other stipulated costs or charges related thereto.

Qualified Hedge Agreements shall cause Debt Service Requirements to be (i) increased by the amount of any scheduled payments and charges for the availability of the Qualified Hedge Agreement, (ii) decreased by the amount of any scheduled interest payments on the related Airport Obligations which the City's financial advisor certifies to be substantially hedged pursuant to the Qualified Hedge Agreement, and (iii) increased by the gross payments of the City under the Qualified Hedge Agreement (without regard to netting); provided, however, that any variable or adjustable payment obligation of the City under the Qualified Hedge Agreement shall be deemed to be a fixed rate obligation based upon the provisions contained in paragraph (ii) of the definition of Debt Service Requirements, as certified by the City's financial advisor.

"Excluded Fee and Charge Revenues" means all income and revenues derived from fees and charges imposed by any City ordinance adopted after July 1, 2007 and declared in such ordinance to constitute fees and charges of the kind that will generate Excluded Fee and Charge Revenues. Such Excluded Fee and Charge Revenues may be authorized pursuant to any federal, state or local authority and may include, but not be limited to, any charge or fee relating to providing, enhancing or maintaining security for the Airport System or any fee or charge imposed on any commercial cargo activity of the Airport System.

"Federal Payments" means those funds received by the Airport System from the federal government or any agency thereof as payments for the use of any facilities or services of the Airport System.

"Fiscal Year" means the City's fiscal year as from time to time designated by the City, which is currently July 1 to June 30.

"Funds" means any fund or account established or maintained under the Master Ordinance, including but not limited to the Revenue Fund, the Senior Lien Bond Interest and Sinking Fund, the Senior Lien Bond Reserve Fund and the accounts created therein, the Subordinate Lien Bond Interest and Sinking Fund, the Subordinate Lien Bond Reserve Fund and the accounts created therein, the Inferior Lien Bond Interest and Sinking Fund, the Inferior Lien Bond Reserve Fund and the accounts created therein, the Operation and Maintenance Reserve Fund, the Renewal and Replacement Fund and the Airports Improvement Fund.

"Gross Revenues" means all income and revenues derived directly or indirectly by the City from the operation and use of and otherwise pertaining to the Airport System, or any part thereof, whether resulting from extensions, enlargements, repairs, betterments or other improvements to the Airport System, or otherwise, and includes, except to the extent hereinafter expressly excluded, all revenues received by the City from the Airport System, including, without limitation, all rentals, rates, fees and other charges for the use of the Airport System, or for any service rendered by the City in the operation thereof, interest and other income realized from the investment or deposit of amounts credited to any fund required to be maintained pursuant to the Master Ordinance or any other ordinance authorizing the issuance of Airport Obligations. Gross Revenues expressly exclude:

(i) proceeds of any Airport Obligations;

(ii) interest or other investment income derived from Airport Obligation proceeds deposited to the credit of any construction fund, or applied to fund capitalized interest, or interest or investment income required to be retained in the Senior Lien Bond Reserve Fund, the Subordinate Lien Bond Reserve Fund, the Inferior Lien Bond Reserve Fund, the Operation and Maintenance Reserve Fund or any escrow fund in order to accumulate therein any amount or balance required to be accumulated or maintained therein pursuant to any ordinance authorizing any series of Airport Obligations;

(iii) any monies received as grants, appropriations, or gifts, the use of which is limited by the grantor or donor to the construction or acquisition of Airport System facilities, except to the extent any such monies shall be received as payments for the use of the Airport System facilities;

(iv) any revenues derived from any Special Facilities which are pledged to the payment of Special Facilities Bonds;

(v) insurance proceeds other than loss of use or business interruption insurance proceeds;

(vi) the proceeds of any passenger facility charge or other per-passenger charge as may be hereafter authorized under federal law, including, but not limited to, those revenues defined as PFC Revenues;

(vii) sales and other taxes collected by the Airport System on behalf of the State of Texas and any other taxing entities;

(viii) Federal Payments received by the Airport System unless the City first receives an opinion from nationally recognized bond counsel to the effect that such payments, if included in Gross Revenues, would not cause the interest on the Airport Obligations to be includable within the gross income of the Owners thereof for federal income tax purposes;

(ix) the net proceeds received by the City from the disposition of any Airport System property;

(x) any Excluded Fee and Charge Revenues; and

(xi) any Taxable Bond Credit Revenues.

"Inferior Lien Bonds" means each series of inferior lien bonds Outstanding from time to time issued pursuant to the Prior Ordinances or any additional Inferior Lien Bonds issued pursuant to a Supplemental Ordinance payable from and secured in whole or in part by a lien on and pledge of Net Revenues junior and subordinate to the lien on Net Revenues securing payment of the Senior Lien Obligations and Subordinate Lien Bonds.

"Net Revenues" means that portion of the Gross Revenues remaining after the deduction of the Operation and Maintenance Expenses.

"Operation and Maintenance Expenses" means all reasonable and necessary current expenses of the City, paid or accrued, of operating, maintaining and repairing the Airport System, including, without limitation, those reasonably allocated City overhead expenses relating to the administration, operation and maintenance of the Airport System; insurance and fidelity bond premiums; payments to pension and other funds and to any self insurance fund not in excess of premiums which would otherwise be required for such insurance; any general and excise taxes or other governmental charges imposed by entities other than the City; costs of contractual and professional services, labor, materials and supplies for current operations, including the costs of such direct City services rendered to the Airport System as are requested from the City by the Airport System and as are reasonably necessary for the operation of the Airport System; costs of issuance of Airport Obligations for the Airport System (except to the extent paid from the proceeds thereof); fiduciary costs; costs of collecting and refunding Gross Revenues; utility costs; any lawful refunds of any Gross Revenues; and all other administrative, general and commercial expenses, but excluding:

(a) any allowance for depreciation;

(b) costs of capital improvements;

(c) reserves for major capital improvements, Airport System operations, maintenance or repair;

(d) any allowance for redemption of, or payment of interest or premium on, Airport Obligations;

(e) any liabilities incurred in acquiring or improving properties of the Airport System;

(f) expenses of lessees under Special Facilities Leases and operation and maintenance expenses pertaining to Special Facilities to the extent they are required to be paid by such lessees pursuant to the terms of the Special Facilities Leases;

(g) any charges or obligations incurred in connection with any lawful Airport System purpose, including the lease, acquisition, operation or maintenance of any facility or property benefiting the Airport System, provided that the payment of such charges or obligations is expressly agreed by the payee to be payable solely from proceeds of the Airports Improvement Fund;

(h) liabilities based upon the City's negligence or other grounds not based on contract; and

(i) so long as Federal Payments are excluded from Gross Revenues, an amount of expenses that would otherwise constitute Operation and Maintenance Expenses for such period equal to the Federal Payments for such period.

Operation and Maintenance Expenses shall only include those current expenses due or payable within the next 30 days.

"Outstanding" when used with reference to the Senior Lien Bonds, Senior Lien Notes, Subordinate Lien Bonds, or Inferior Lien Bonds, as the case may be, means, as of a particular date, all such bonds or notes theretofore and thereupon delivered except: (a) any such bond or note cancelled by or on behalf of the City at or before said date; (b) any such bond or note defeased pursuant to the defeasance provisions of the ordinance authorizing its issuance, or otherwise defeased as permitted by applicable law; and (c) any such bond or note in lieu of or in substitution for which another bond or note shall have been delivered pursuant to the ordinance authorizing the issuance of such bond or note.

"Owner" or "Registered Owner," when used with respect to any Airport Obligation, means the person or entity in whose name such bond or note is registered in the register maintained by the paying agent for such series of bonds or notes. Any reference to a particular percentage or proportion of the Owners shall mean the Owners at a particular time of the specified percentage or proportion in aggregate principal amount of all Senior Lien Bonds, Senior Lien Notes, Subordinate Lien Bonds or Inferior Lien Bonds then Outstanding under the Master Ordinance and any Supplemental Ordinance authorizing their issuance.

"PFC Revenues" means, during any Fiscal Year, proceeds of any charges and fees collected by the Airport System, including passenger facility charges collected by the City, pursuant to the authority granted by the Aviation Safety and Capacity Expansion Act of 1990 and 14 CFR Part 158, as amended from time to time, in respect to any component of the Airport System, and interest earnings thereon.

"Prior Ordinances" means City Ordinance Nos: 98-904, 2000-878, 2002-656, 2007-287, 2009-600, 2010-893, 2011-484, 2012-100, 2013-1064 and 2015-1004, pursuant to which the City has previously issued certain bonds, notes and obligations secured by and payable from the Net Revenues.

"Qualified Hedge Agreement" means any agreement between the City and a qualifying financial institution (as described in the following sentence) for the purpose of providing an interest rate swap, exchange, cap, collar, floor, forward or other hedging mechanism, arrangement or security, however denominated, expressly identified pursuant to its terms as being entered into in connection with and in order to hedge interest rate fluctuations on any portion of any Airport Obligations and in consideration for which the City may agree to pay, but solely from Net Revenues as herein provided, (i) periodic payments for the availability of such Qualified Hedge Agreement and/or (ii) net amounts as a result of fluctuation in hedged interest rates or in the value of any index of payment and/or (iii) termination charges. A Qualified Hedge Agreement may only be entered into with a financial institution that has long-term credit ratings or the obligations of which are unconditionally guaranteed by a financial institution with long-term credit ratings in one of the two highest generic rating categories by two of the nationally recognized rating services then rating the Airport Obligations. Obligations of the City pursuant to a Qualified Hedge Agreement shall be included within the definition of Debt Service Requirements for the series of Airport Obligations to which the Qualified Hedge Agreement relates. Further, obligations of the City to make payments under a Qualified Hedge Agreement derived from or resulting from a fluctuation in hedged interest rates or in the value of any index of payment shall be deemed to be payments of interest on the Airport Obligations so hedged. Each Qualified Hedge Agreement shall be deemed to be a part of the Airport Obligations of the series to which it relates for the purpose of securing its payment by the pledge of Net Revenues as provided in Articles III, V and VI of the Master Ordinance. However, issuers of and counterparties to Qualified Hedge Agreements shall not be treated as Owners of Airport Obligations for purposes of any voting rights to approve amendments or direct the exercise of any remedies under the Master Ordinance.

"Renewal and Replacement Fund" means the fund described in Section 3.13 of the Master Ordinance.

"Renewal and Replacement Fund Requirement" means Ten Million Dollars ($10,000,000) or any greater amount required by any Supplemental Ordinance.

"Reserve Fund Non-Participants" means, with respect to any Airport Obligations, any series designated as "Reserve Fund Non-Participants" and secured by a lien on an account of the applicable reserve fund that is created and held for the sole benefit of that series of Airport Obligations.

"Reserve Fund Participants" means:

(i) with respect to Senior Lien Bonds, any series of Senior Lien Bonds designated by the City as "Reserve Fund Participants" and secured by a lien on the Senior Lien Bond Reserve Fund Participant Account of the Senior Lien Bond Reserve Fund, and

(ii) with respect to Senior Lien Notes, any series of Senior Lien Notes secured by a lien on the Senior Lien Note Reserve Fund Participant Account of the Senior Lien Bond Reserve Fund, and

(iii) with respect to the Subordinate Lien Bonds, any series of Subordinate Lien Bonds designated by the City as "Reserve Fund Participants" and secured by a lien on the Subordinate Lien Bond Reserve Fund Participant Account of the Subordinate Lien Bond Reserve Fund, and

(iv) with respect to the Inferior Lien Bonds, any series of Inferior Lien Bonds designated by the City as "Reserve Fund Participants" and secured by a lien on the Inferior Lien Bond Reserve Fund Participant Account of the Inferior Lien Bond Reserve Fund.

"Reserve Fund Requirement" means the amount required to be maintained in the Senior Lien Bond Reserve Fund (and the accounts therein), the Subordinate Lien Bond Reserve Fund (and the accounts therein), or the Inferior Lien Bond Reserve Fund (and the accounts therein), as the case may be, as further set forth in the applicable Supplemental Ordinance and/or officers pricing certificate authorizing one or more series of Airport Obligations. Upon the issuance of any series of Airport Obligations, the amount of the Reserve Fund Requirement for such Airport Obligations shall be as set forth in the related Supplemental Ordinance or officers pricing certificate.

A. For Senior Lien Notes, such amount shall be computed and recomputed upon the issuance of each series of Senior Lien Notes to be the arithmetic average of the Debt Service Requirements scheduled to occur in the then current and each future Fiscal Year for all Senior Lien Notes then Outstanding, including the series of Senior Lien Notes then being issued.

B. For Senior Lien Bonds that are Reserve Fund Participants, such amount shall be computed upon the issuance of each series of Senior Lien Bonds that are Reserve Fund Participants and on each date on which Senior Lien Bonds that are Reserve Fund Participants are paid at maturity or optionally or mandatorily redeemed, to be the greatest amount of the Debt Service Requirements scheduled to occur in the then current and each future Fiscal Year for all Senior Lien Bonds then Outstanding that are Reserve Fund Participants.

C. For any series of Senior Lien Bonds that are Reserve Fund Non-Participants, such amount shall be computed upon the issuance of such series of Senior Lien Bonds and on each date on which any of such series of Senior Lien Bonds are paid at maturity or optionally or mandatorily redeemed, to be the greatest amount of the Debt Service Requirements scheduled to occur in the then current and each future Fiscal Year for such Senior Lien Bonds then Outstanding.

D. For Subordinate Lien Bonds that are Reserve Fund Participants, such amount shall be computed and recomputed upon the issuance of each series of Subordinate Lien Bonds that are Reserve Fund Participants and on each date on which Subordinate Lien Bonds that are Reserve Fund Participants are paid at maturity or optionally or mandatorily redeemed, to be the greatest amount of the Debt Service Requirements scheduled to occur in the then current and each future Fiscal Year for all Subordinate Lien Bonds then Outstanding that are Reserve Fund Participants, including any series of Subordinate Lien Bonds then being issued that are Reserve Fund Participants.

E. For any series of Subordinate Lien Bonds that are Reserve Fund Non-Participants, such amount shall be computed upon the issuance of such series of Subordinate Lien Bonds and on each date on which any of such series of Subordinate Lien Bonds are paid at maturity or optionally or mandatorily redeemed, to be the greatest amount of the Debt Service Requirements scheduled to occur in the then current and each future Fiscal Year for such series of Subordinate Lien Bonds then Outstanding.

F. For Inferior Lien Bonds that are Reserve Fund Participants, such amount shall be computed and recomputed upon the issuance of each series of Inferior Lien Bonds that are Reserve Fund Participants and on each date on which Inferior Lien Bonds that are Reserve Fund Participants are paid at maturity or optionally or mandatorily redeemed, to be the greatest amount of the Debt Service Requirements scheduled to occur in the then current and each future Fiscal Year for all Inferior Lien Bonds then Outstanding that are Reserve Fund Participants, including any series of Inferior Lien Bonds then being issued that are Reserve Fund Participants.

G. For any series of Inferior Lien Bonds that are Reserve Fund Non-Participants, such amount shall be computed upon the issuance of such series of Inferior Lien Bonds and on each date on which any of such series of Inferior Lien Bonds are paid at maturity or optionally or mandatorily redeemed, to be the greatest amount of the Debt Service Requirements scheduled to occur in the then current and each future Fiscal Year for such series of Inferior Lien Bonds then Outstanding.

"Senior Lien Bonds" means each series of senior lien bonds Outstanding from time to time issued pursuant to the Prior Ordinances or any Additional Senior Lien Bonds issued pursuant to a Supplemental Ordinance payable from and secured by a lien on and pledge of Net Revenues.

"Senior Lien Notes" means each series of senior lien notes Outstanding from time to time issued pursuant to the Prior Ordinances or any Additional Senior Lien Notes issued pursuant to a Supplemental Ordinance payable from and secured by a lien on and pledge of Net Revenues.

"Senior Lien Obligations" means either or both of the Senior Lien Bonds and the Senior Lien Notes, as applicable.

"Short Term/Demand Obligations" means each series of bonds, notes and other obligations issued pursuant to Section 5.02 of the Master Ordinance, (a) the payment of principal of which is either (i) payable on demand by or at the option of the holder at a time sooner than a date on which such principal is deemed to be payable for purposes of computing Debt Service Requirements, or (ii) scheduled to be payable within one year from the date of issuance and is contemplated to be refinanced for a specified period or term through the issuance of additional Short Term/Demand Obligations pursuant to a commercial paper or other similar financing program, and (b) the purchase price, payment or refinancing of which is additionally secured by a letter of credit, line of credit, standby bond purchase agreement, bond insurance, surety bond or other credit or liquidity facility which does not impose upon the City a reimbursement obligation payable over a period shorter than three years.

"Special Facilities" means structures, hangars, aircraft overhaul, maintenance or repair shops, heliports, hotels, storage facilities, garages, in-flight kitchens, training facilities, consolidated rental car facilities, terminal facilities, cargo facilities and any and all other facilities and appurtenances being a part of or related to the Airport System, the cost of the construction or other acquisition of which is financed with the proceeds of Special Facilities Bonds.

"Special Facilities Bonds" means any bonds heretofore or from time to time hereafter issued by the City pursuant to Section 5.05 of the Master Ordinance.

"Special Facilities Lease" means any lease or agreement, howsoever denominated, pursuant to which Special Facilities are leased by the City to the lessee in consideration for which the lessee agrees to pay (i) all debt service on the Special Facilities Bonds issued to finance the Special Facilities (which payments are pledged to secure the Special Facilities Bonds) and (ii) the operation and maintenance expenses of the Special Facilities.

"Subordinate Lien Bond Interest and Sinking Fund" means the fund established pursuant to the Prior Ordinances and ratified, confirmed and maintained pursuant to Sections 3.04 and 3.08 of the Master Ordinance.

"Subordinate Lien Bond Reserve Fund" means the fund, including the accounts established therein, established pursuant to the Prior Ordinances and ratified, confirmed and maintained pursuant to Sections 3.04 and 3.09 of the Master Ordinance.

"Subordinate Lien Bond Reserve Fund Participant Account" means the account within the Subordinate Lien Bond Reserve Fund established pursuant to the Prior Ordinances and ratified, confirmed and maintained pursuant to Sections 3.04 and 3.09 of the Master Ordinance.

"Subordinate Lien Bond Reserve Fund Surety Policy" means, whether heretofore or hereafter acquired, for the purpose of satisfying all or any part of the Reserve Fund Requirement for the Subordinate Lien Bonds, any one or more of a surety bond, insurance policy or letter of credit in a principal amount equal to the amount required to be funded, provided that, at the time of deposit, either the rating for the long-term unsecured debt of the issuer of such surety bond, insurance policy or letter of credit or the rating for obligations insured, secured or guaranteed by such issuer are required to be in one of the two highest letter categories by at least one major municipal securities evaluation service (or, if such entities are no longer in existence, by comparable services) and which surety bond, insurance policy or letter of credit shall be payable on demand of the City for the benefit of the Owners of the Subordinate Lien Bonds that are secured thereby.

"Subordinate Lien Bonds" means each series of subordinate lien bonds Outstanding from time to time issued pursuant to the Prior Ordinances or any Additional Subordinate Lien Bonds issued pursuant to a Supplemental Ordinance payable from and secured by a lien on and pledge of Net Revenues junior and subordinate to the lien and pledge securing the Senior Lien Obligations.

"Supplemental Ordinance" as used in the Master Ordinance, means any ordinance supplementing the Master Ordinance to provide for the issuance of Airport Obligations or any other obligations authorized by the Master Ordinance.

"Taxable Bond Credit Revenues" means payments made to the City from the federal government or any agency or department thereof with respect to the return to the City of a portion of the interest paid by the City on any taxable Bonds, including but not limited to any such payments received pursuant to the American Recovery and Reinvestment Act of 2009 or any legislation in amendment or succession thereto.

Excerpts of the Master Ordinance

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ARTICLE II

ESTABLISHMENT OF THE FINANCING PROGRAM

SECTION 2.01 MASTER ORDINANCE. This Master Ordinance hereby sets forth the terms, conditions, covenants and provisions for the security of obligations to be issued hereafter by the City for Authorized System Purposes and secured by a senior, subordinate or inferior lien on Net Revenues.

SECTION 2.02 SUPPLEMENTAL ORDINANCES. Each series of Airport Obligations issued hereafter shall be issued pursuant to the terms and conditions of this Master Ordinance and a Supplemental Ordinance that shall provide the specific terms, conditions, covenants and provisions relating to each such series of Airport Obligations, including, without limitation, (i) the authorization, issuance, sale, delivery, form, title, characteristics, interest rate(s) (which may be fixed, variable, adjustable or computed by any other method), (ii) the provisions for payment, redemption, transfer and exchange and any other matters related thereto (including, without limitation, matters related to the delegation of the sale to an authorized representative of the City and the execution and delivery of a Credit Agreement or Qualified Hedge Agreement, if any), (iii) the application of proceeds, (iv) the funding of any Reserve Fund Requirement and the designation of Reserve Fund Participants, if any, and (v) covenants relating to the federal income tax status.

ARTICLE III

SECURITY AND SOURCE OF PAYMENT FOR ALL BONDS

SECTION 3.01 PLEDGE AND SOURCE OF PAYMENT.

(a) The City hereby covenants and agrees that all Gross Revenues shall be deposited and paid into the special funds established under the Prior Ordinances and incorporated and confirmed herein for all purposes, and shall be applied in the manner hereinafter set forth to provide for the payment of all Operation and Maintenance Expenses of the Airport System and all principal, interest and any redemption premiums on the Airport Obligations and all expenses of providing for their full and timely payment in accordance with their terms.

(b) The Senior Lien Obligations shall constitute special obligations of the City that shall be payable from, and shall be equally and ratably secured by a lien on, the Net Revenues. Such Net Revenues, together with certain proceeds of the Senior Lien Obligations or other lawfully available funds of the City, shall, in the manner herein provided, be set aside for and pledged to the payment of the Senior Lien Obligations in the Senior Lien Bond Interest and Sinking Fund and the Senior Lien Bond Reserve Fund as hereinafter provided. For the benefit of the Owners of the Senior Lien Obligations, the City hereby grants a lien on the Net Revenues and further grants a lien on the Senior Lien Bond Interest and Sinking Fund to secure the payment of principal of, redemption premium, if any, and interest on the Senior Lien Obligations and all expenses of providing for their full and timely payment in accordance with their terms. Additionally, to further assure the payment of principal of, redemption premium, if any, and interest on the Senior Lien Obligations:

(i) the City hereby grants a lien on the Senior Lien Note Reserve Fund Participant Account of the Senior Lien Bond Reserve Fund for the additional benefit of Owners of the Senior Lien Notes;

(ii) the City hereby grants a lien on the Senior Lien Bond Reserve Fund Participant Account of the Senior Lien Bond Reserve Fund for the additional benefit of Owners of the Senior Lien Bonds that are Reserve Fund Participants; and

(iii) the City has created a separate account and shall create one or more additional separate accounts within the Senior Lien Bond Reserve Fund and has granted and shall grant a lien on such account(s) for the additional benefit of the Owners of any one or more series of Senior Lien Bonds that are Reserve Fund Non-Participants.

Except with respect to the separate accounts of the Senior Lien Bond Reserve Fund described in this Section 3.01(b), all Senior Lien Obligations shall be in all respects on a parity with and of equal dignity with one another. The Owners of the Senior Lien Obligations shall never have the right to demand payment of either the principal of, interest on or any redemption premium on the Senior Lien Obligations out of any funds raised or to be raised by taxation.

(c) The Subordinate Lien Bonds shall constitute special obligations of the City that shall be payable from, and, subject to the prior and superior lien of the Senior Lien Obligations, shall be equally and ratably secured by a lien on, the Net Revenues. Such Net Revenues, together with certain proceeds of the Subordinate Lien Bonds or other lawfully available funds of the City, shall, in the manner herein provided, be set aside for and pledged to the payment of the Subordinate Lien Bonds in the Subordinate Lien Bond Interest and Sinking Fund and the Subordinate Lien Bond Reserve Fund as hereinafter provided. For the benefit of the Owners of the Subordinate Lien Bonds, the City hereby grants a lien on the Net Revenues (subject to the prior and superior lien of the Senior Lien Obligations) and further grants a lien on the Subordinate Lien Bond Interest and Sinking Fund to secure the payment of principal of, redemption premium, if any, and interest on the Subordinate Lien Bonds and all expenses of providing for their full and timely payment in accordance with their terms. Additionally, to further assure the payment of principal of, redemption premium, if any, and interest on the Subordinate Lien Bonds:

(i) the City hereby grants a lien on the Subordinate Lien Bond Reserve Fund Participant Account of the Subordinate Lien Bond Reserve Fund for the additional benefit of Owners of the Subordinate Lien Bonds that are Reserve Fund Participants; and

(ii) the City shall create one or more separate accounts within the Subordinate Lien Bond Reserve Fund and grant a lien on such account(s) for the additional benefit of the Owners of any one or more series of Subordinate Lien Bonds that are Reserve Fund Non-Participants.

Except with respect to the separate accounts of the Subordinate Lien Bond Reserve Fund described in this Section 3.01(c), all Subordinate Lien Bonds shall be in all respects on a parity with and of equal dignity with one another. The Owners of the Subordinate Lien Bonds shall never have the right to demand payment of either the principal of, interest on or any redemption premium on the Subordinate Lien Bonds out of any funds raised or to be raised by taxation.

(d) The Inferior Lien Bonds shall constitute special obligations of the City that shall be payable from, and, subject to the prior and superior liens of the Senior Lien Obligations and the Subordinate Lien Bonds, shall be equally and ratably secured by a lien on, the Net Revenues. Such Net Revenues, together with certain proceeds of the Inferior Lien Bonds or other lawfully available funds of the City, shall, in the manner herein provided, be set aside for and pledged to the payment of the Inferior Lien Bonds in the Inferior Lien Bond Interest and Sinking Fund and the Inferior Lien Bond Reserve Fund as hereinafter provided. For the benefit of the Owners of the Inferior Lien Bonds, the City hereby grants a lien on the Net Revenues (subject to the prior and superior liens of the Senior Lien Obligations and the Subordinate Lien Bonds) and further grants a lien on the Inferior Lien Bond Interest and Sinking Fund to secure the payment of principal of, redemption premium, if any, and interest on the Inferior Lien Bonds and all expenses of providing for their full and timely payment in accordance with their terms. Additionally, to further assure the payment of principal of, redemption premium, if any, and interest on the Inferior Lien Bonds:

(i) the City hereby grants a lien on the Inferior Lien Bond Reserve Fund Participant Account of the Inferior Lien Bond Reserve Fund for the additional benefit of Owners of the Inferior Lien Bonds that are Reserve Fund Participants; and

(ii) the City shall create one or more separate accounts within the Inferior Lien Bond Reserve Fund and grant a lien on such account(s) for the additional benefit of the Owners of any one or more series of Inferior Lien Bonds that are Reserve Fund Non-Participants.

Except with respect to the separate accounts of the Inferior Lien Bond Reserve Fund described in this Section 3.01(d), all Inferior Lien Bonds shall be in all respects on a parity with and of equal dignity with one another. The Owners of the Inferior Lien Bonds shall never have the right to demand payment of either the principal of, interest on or any redemption premium on the Inferior Lien Bonds out of any funds raised or to be raised by taxation.

(e) Pursuant to Chapter 1208, Texas Government Code, the liens on Net Revenues created hereunder are valid, effective, and perfected.

SECTION 3.02 ANNUAL BUDGET. So long as any Airport Obligations remain Outstanding, the Aviation Director shall, prior to the commencement of each Fiscal Year, prepare and deliver to the Mayor, for submission to the City Council, a recommended annual budget for the Airport System for such Fiscal Year which contains detailed estimates of Gross Revenues, Operation and Maintenance Expenses, Net Revenues and Debt Service Requirements for such Fiscal Year, classified in a manner consistent with the definitional and accounting requirements contained herein, and which contains a computation demonstrating that the estimate of Net Revenues set forth therein is in compliance with the rate covenant contained in Section 3.03 below. The City shall adopt annual budgets for the Airport System for each Fiscal Year, each of which shall contain an estimate of revenues and only such budgeted expenditures as will produce Net Revenues in an amount not less than the Net Revenues necessary to comply with the rate covenant in Section 3.03 below. After the adoption of the annual Airport System budget by the City, the total expenditures for Operation and Maintenance Expenses will not exceed the total expenditures authorized for such purposes by such budget, as it may from time to time be amended.

SECTION 3.03 RATE COVENANT.

(a) The City covenants that it will at all times fix, charge, impose and collect rentals, rates, fees and other charges for the use of the Airport System, and, to the extent it legally may do so, revise the same as may be necessary or appropriate, in order that in each Fiscal Year the Net Revenues will at all times be at least sufficient to equal the larger of either:

(i) all amounts required to be deposited in such Fiscal Year to the credit of the Senior Lien Bond Interest and Sinking Fund, the Senior Lien Bond Reserve Fund, the Subordinate Lien Bond Interest and Sinking Fund, the Subordinate Lien Bond Reserve Fund, the Inferior Lien Bond Interest and Sinking Fund and the Inferior Lien Bond Reserve Fund; or

(ii) an amount not less than (1) 125% of the Debt Service Requirements for the Outstanding Senior Lien Obligations for such Fiscal Year, plus (2) 110% of the Debt Service Requirements for the Outstanding Subordinate Lien Bonds for such Fiscal Year, plus (3) 100% of the Debt Service Requirements for the Outstanding Inferior Lien Bonds for such Fiscal Year.

(b) If the Net Revenues in any Fiscal Year are less than the amounts specified above, the City, promptly upon receipt of the annual audit for such Fiscal Year, must request an Airport Management Consultant to make its recommendations, if any, as to a revision of the City's rentals, rates, fees and other charges, its Operation and Maintenance Expenses or the method of operation of the Airport System in order to satisfy as quickly as practicable the foregoing requirements. Copies of such request and the recommendations of the Airport Management Consultant, if any, shall be filed with the City Secretary. So long as the City substantially complies in a timely fashion with the recommendations of the Airport Management Consultant, the City will not be deemed to have defaulted in the performance of its duties under this Master Ordinance even if the resulting Net Revenues are not sufficient to be in compliance with the covenant set forth above, so long as there is no other default hereunder.

SECTION 3.04 SPECIAL FUNDS.

(a) The following special funds have been established pursuant to the Prior Ordinances and are hereby ratified and confirmed, and shall be maintained and accounted for as hereinafter provided so long as any of the Airport Obligations remain Outstanding:

(i) Revenue Fund;

(ii) Senior Lien Bond Interest and Sinking Fund;

(iii) Senior Lien Bond Reserve Fund;

(iv) Subordinate Lien Bond Interest and Sinking Fund;

(v) Subordinate Lien Bond Reserve Fund;

(vi) Inferior Lien Bond Interest and Sinking Fund;

(vii) Inferior Lien Bond Reserve Fund;

(viii) Operation and Maintenance Reserve Fund;

(ix) Renewal and Replacement Fund; and

(x) Airports Improvement Fund.

(b) The Revenue Fund, the Operation and Maintenance Reserve Fund, the Renewal and Replacement Fund and the Airports Improvement Fund shall be maintained as separate funds or accounts on the books of the City, and all amounts credited to such Funds shall be maintained in an official depository bank of the City or in a trustee bank designated by the City. The Senior Lien Bond Interest and Sinking Fund, the Senior Lien Bond Reserve Fund, the Subordinate Lien Bond Interest and Sinking Fund, the Subordinate Lien Bond Reserve Fund, the Inferior Lien Bond Interest and Sinking Fund and the Inferior Lien Bond Reserve Fund shall be maintained at an official depository bank of the City or in a trustee bank designated by the City separate and apart from all other funds and accounts of the City.

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(e) Subordinate Lien Bond Interest and Sinking Fund. The Subordinate Lien Bond Interest and Sinking Fund shall constitute a trust fund which shall be held in trust for the Owners of the Subordinate Lien Bonds to which they are pledged and the proceeds of which (other than the interest income thereon, which may be transferred to the Revenue Fund or, if such interest income is earned on amounts that are capitalized interest financed with proceeds of Subordinate Lien Bonds, to such other Fund as permitted under federal tax law) shall be pledged to the payment of such Subordinate Lien Bonds.

(f) Subordinate Lien Bond Reserve Fund. The Subordinate Lien Bond Reserve Fund and any accounts created therein shall constitute trust funds which shall be held in trust for the Owners of the particular Subordinate Lien Bonds to which they are pledged and the proceeds of which (other than the interest income thereon, which shall be transferred to the extent provided in Section 3.09(c)) shall be pledged to the payment of the Subordinate Lien Bonds. Within the Subordinate Lien Bond Reserve Fund, there has been established and there is hereby ratified and confirmed a Subordinate Lien Bond Reserve Fund Participant Account, and there may be created other designated accounts therein.

(i) Subordinate Lien Bond Reserve Fund Participant Account. The Subordinate Lien Bond Reserve Fund Participant Account shall constitute a trust fund and shall be held in trust for Owners of the Subordinate Lien Bonds that are Reserve Fund Participants. The proceeds of the Subordinate Lien Bond Reserve Fund Participant Account (other than the interest income thereon, which shall be transferred to the extent provided in Section 3.09(c)) shall be pledged to the payment of the Subordinate Lien Bonds that are Reserve Fund Participants.

(ii) Additional Subordinate Lien Bonds May Be Participants or Non-Participants. The City may issue Additional Subordinate Lien Bonds which may be designated as Reserve Fund Participants. The City also reserves the right to issue Additional Subordinate Lien Bonds which may be designated as Reserve Fund Non-Participants and are not secured by the Subordinate Lien Bond Reserve Fund Participant Account; provided that the City shall create a separate account(s) within the Subordinate Lien Bond Reserve Fund for the benefit of any such series that is a Reserve Fund Non-Participant, the proceeds of which account (other than the interest income thereon, which shall be transferred to the extent provided in Section 3.09(c)) shall be pledged to the payment of such Reserve Fund Non-Participant.

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(j) The City reserves the right to create additional funds and additional accounts within any Fund as necessary or desirable in furtherance of the intent and purpose of this Master Ordinance, including the purpose of causing the supplemental funding of any reserve fund.

SECTION 3.05 REVENUE FUND; FLOW OF FUNDS. All Gross Revenues shall be deposited as received into the Revenue Fund. In addition, the City may deposit into the Revenue Fund any Federal Payments, provided that, so long as such Federal Payments are excluded from the definition of Gross Revenues, such Federal Payments shall be applied solely to the payment of Operation and Maintenance Expenses. Moneys from time to time credited to the Revenue Fund shall be applied in the following order of priority:

(a) First, to pay and to provide by encumbrance for the payment of all current Operation and Maintenance Expenses;

(b) Second, to transfer all amounts to the Senior Lien Bond Interest and Sinking Fund required by this Master Ordinance and any Supplemental Ordinance;

(c) Third, to transfer all amounts to the Senior Lien Bond Reserve Fund required by this Master Ordinance and any Supplemental Ordinance;

(d) Fourth, to transfer all amounts to the Subordinate Lien Bond Interest and Sinking Fund required by this Master Ordinance and any Supplemental Ordinance;

(e) Fifth, to transfer all amounts to the Subordinate Lien Bond Reserve Fund required by this Master Ordinance and any Supplemental Ordinance;

(f) Sixth, to transfer all amounts to the Inferior Lien Bond Interest and Sinking Fund required by this Master Ordinance and any Supplemental Ordinance;

(g) Seventh, to transfer all amounts to the Inferior Lien Bond Reserve Fund required by this Master Ordinance and any Supplemental Ordinance;

(h) Eighth, to transfer all amounts to the Operation and Maintenance Reserve Fund required by this Master Ordinance and any Supplemental Ordinance;

(i) Ninth, to transfer all amounts to the Renewal and Replacement Fund required by this Master Ordinance and any Supplemental Ordinance; and

(j) Tenth, the balance shall be transferred to the Airports Improvement Fund.

SECTION 3.06 SENIOR LIEN BOND INTEREST AND SINKING FUND.

(a) On or before the last Business Day of each month so long as any Senior Lien Obligations remain Outstanding, after making all required payments and provision for payment of Operation and Maintenance Expenses, there shall be transferred to the Senior Lien Bond Interest and Sinking Fund from the Revenue Fund the following amounts:

(i) Such amounts as shall be necessary so that the balance in the Senior Lien Bond Interest and Sinking Fund equals the Debt Service Requirements on all Senior Lien Obligations accrued to the end of the current month; plus

(ii) Such amounts as shall be necessary to enable the City to pay when due all expenses of providing for the full and timely payment of the principal of, premium, if any, and interest on the Senior Lien Obligations in accordance with their terms, including without limitation, all fees charged or obligations incurred in connection with any Credit Agreements, Qualified Hedge Agreements and other related agreements in connection with the Senior Lien Obligations.

(b) Whenever the total amounts on deposit to the credit of the Senior Lien Bond Interest and Sinking Fund and the Senior Lien Bond Reserve Fund shall be equivalent to the sum of the aggregate principal amount of all Outstanding Senior Lien Obligations plus the aggregate amount of all interest accrued and to accrue thereon, no further transfers need be made into the Senior Lien Bond Interest and Sinking Fund or the Senior Lien Bond Reserve Fund, and such Senior Lien Obligations shall not be regarded as being Outstanding except for the purpose of being paid with the moneys credited to such Funds. Moneys credited to the Senior Lien Bond Interest and Sinking Fund shall be used solely for the purpose of paying principal (at maturity or prior redemption or to purchase Senior Lien Obligations issued as term bonds in the open market to be credited against mandatory redemption requirements), interest and redemption premiums on the Senior Lien Obligations, plus all bank charges and other costs and expenses relating to such payment, including those described in clause (a)(ii) above. On or before each principal and/or interest payment date on the Senior Lien Obligations, the City shall transfer from the Senior Lien Bond Interest and Sinking Fund to the Paying Agent/Registrar(s) for the Senior Lien Obligations an amount equal to the principal, interest and redemption premiums payable on the Senior Lien Obligations on such date, including all amounts due and payable on Credit Agreements, Qualified Hedge Agreements and other related agreements in connection with such Senior Lien Obligations.

SECTION 3.07 SENIOR LIEN BOND RESERVE FUND.

(a) <u>Maintenance of Reserve Fund Requirement for Participants and Non-Participants</u>. The City shall establish and maintain as hereinafter provided a balance in the Senior Lien Bond Reserve Fund Participant Account and a balance in the Senior Lien Note Reserve Fund Participant Account equal to the Reserve Fund Requirement for the Senior Lien Bonds and the Senior Lien Notes, respectively, that are secured thereby. Each Supplemental Ordinance authorizing Senior Lien Obligations shall designate such series of Senior Lien Obligations authorized thereby as "Reserve Fund Participants" or "Reserve Fund Non-Participants." With respect to any series of Senior Lien Bonds that are Reserve Fund Non-Participants, pursuant to the Supplemental Ordinance authorizing such Senior Lien Bonds, the City shall establish an account within the

Senior Lien Bond Reserve Fund for the benefit of such Senior Lien Bonds and shall maintain an amount in such account equal to the Reserve Fund Requirement for each such series of Senior Lien Bonds secured thereby.

(b) Reserve Fund Requirement at Issuance. Each increase in the Reserve Fund Requirement resulting from the issuance of any Additional Senior Lien Obligations shall be satisfied at the time of issuance and delivery of such series of Additional Senior Lien Obligations. The Reserve Fund Requirement shall be satisfied by depositing to the credit of the Senior Lien Bond Reserve Fund Participant Account (in the case of Additional Senior Lien Bonds that are Reserve Fund Participants) or the Senior Lien Note Reserve Fund Participant Account (in the case of Additional Senior Lien Notes) or such other designated accounts (in the case of Additional Senior Lien Bonds that are Reserve Fund Non-Participants) of the Senior Lien Bond Reserve Fund either:

(i) proceeds of such Additional Senior Lien Obligations or other lawfully appropriated funds in not less than the amount which, together with investment earnings thereon as estimated by the City, will be sufficient to fund fully the Reserve Fund Requirement by no later than the end of the period of time for which the payment of interest on such Additional Senior Lien Obligations has been provided out of proceeds of such Additional Senior Lien Obligations or investment earnings thereon as estimated by the City or from other lawfully available funds other than Net Revenues; or

(ii) a Senior Lien Bond Reserve Fund Surety Policy.

(c) Deficiencies and Excess in the Senior Lien Bond Reserve Fund. In any month in which any account of the Senior Lien Bond Reserve Fund contains less than the applicable Reserve Fund Requirement (or so much thereof as shall then be required to be therein if the City has elected to accumulate the Reserve Fund Requirement for any series of Additional Senior Lien Obligations as above provided), then on or before the last Business Day of such month, after making all required payments and provision for payment of Operation and Maintenance Expenses, and after making all required transfers to the Senior Lien Bond Interest and Sinking Fund, there shall be transferred on a pro rata basis into the Senior Lien Bond Reserve Fund Participant Account (in the case of Senior Lien Bonds that are Reserve Fund Participants) and the Senior Lien Note Reserve Fund Participant Account (in the case of Senior Lien Notes) and such other designated accounts (in the case of Senior Lien Bonds that are Reserve Fund Non-Participants) of the Senior Lien Bond Reserve Fund from the Revenue Fund, such amounts as shall be required to permit the City to pay all reimbursement obligations under the Senior Lien Bond Reserve Fund Surety Policies allocable to the Senior Lien Bond Reserve Fund Participant Account or Senior Lien Note Reserve Fund Participant Account or such other designated accounts, as applicable, within a twelve (12) month period and such additional amounts as shall be sufficient to enable the City within a twelve (12) month period to reestablish in the Senior Lien Bond Reserve Fund Participant Account or Senior Lien Note Reserve Fund Participant Account or such other designated accounts, as applicable, the Reserve Fund Requirement for the Senior Lien Bonds or Senior Lien Notes secured thereby; provided, however, that in the event that such monthly transfer requirements ever exceed one-twelfth (1/12th) of the maximum Debt Service Requirements scheduled to occur in any future Fiscal Year on all Senior Lien Obligations then Outstanding, any remaining required transfers shall be accomplished pursuant to Section 3.15 below. After such amounts have been accumulated in the Senior Lien Bond Reserve Fund Participant Account and Senior Lien Note Reserve Fund Participant Account and such other designated accounts (as described above), and so long thereafter as such accounts contain such amounts, no further transfers shall be required to be made into the Senior Lien Bond Reserve Fund Participant Account or Senior Lien Note Reserve Fund Participant Account or such other designated accounts, and, to the extent any excess is attributable to the portion of the Senior Lien Bond Reserve Fund allocable to any tax-exempt Senior Lien Obligations, any excess amounts in such accounts shall be transferred to the Senior Lien Bond Interest and Sinking Fund or such other Fund as may be permitted by federal tax law, and otherwise shall be transferred to the Revenue Fund. But, if and whenever the balance in the Senior Lien Bond Reserve Fund Participant Account or Senior Lien Note Reserve Fund Participant Account or such other designated accounts is reduced below such amount, monthly transfers to such accounts shall be resumed and continued in such amounts as shall be required to restore the Senior Lien Bond Reserve Fund Participant Account and the Senior Lien Note Reserve Fund Participant Account or such other designated accounts, as applicable, to the applicable Reserve Fund Requirement within a twelve (12) month period.

(d) Account for Senior Lien Bond Reserve Fund Participants. The Senior Lien Bond Reserve Fund Participant Account shall be used to pay the principal of and interest on the Senior Lien Bonds that are Reserve Fund Participants at any time when there is not sufficient money available in the Senior Lien Bond Interest and Sinking Fund for such purpose (with the requirement that all cash and investments on deposit in such account be depleted before drawing upon any Senior Lien Bond Reserve Fund Surety Policy, unless provided otherwise in each of the Senior Lien Bond Reserve Fund Surety Policies allocable to the Senior Lien Bond Reserve Fund Participant Account) and to repay amounts drawn under any Senior Lien Bond Reserve Fund Surety Policy allocable to the Senior Lien Bond Reserve Fund Participant Account for such purpose, together with interest thereon, in accordance with the terms of the City's reimbursement obligations incurred in connection with such Senior Lien Bond Reserve Fund Surety Policy. The Senior Lien Bond Reserve Fund Participant Account may also be used to make the final payments for the retirement or defeasance of all Senior Lien Bonds then Outstanding that are secured thereby.

(e) Account for Senior Lien Note Reserve Fund Participants. The Senior Lien Note Reserve Fund Participant Account shall be used to pay the principal of and interest on the Senior Lien Notes at any time when there is not sufficient money available in the Senior Lien Bond Interest and Sinking Fund for such purpose (with the requirement that all cash and investments on deposit in such account be depleted before drawing upon any Senior Lien Bond Reserve Fund Surety Policy, unless provided otherwise in each of the Senior Lien Bond Reserve Fund Surety Policies allocable to the Senior Lien Note Reserve Fund Participant Account) and to repay amounts drawn under any Senior Lien Bond Reserve Fund Surety Policy allocable to the Senior Lien Note Reserve Fund Participant Account for such purpose, together with interest thereon, in accordance with the terms of the City's reimbursement obligations incurred in connection with such Senior Lien Bond Reserve Fund Surety Policy. The Senior Lien Note Reserve Fund Participant Account may also be used to make the final payments for the retirement or defeasance of all Senior Lien Notes then Outstanding that are secured thereby.

(f) Accounts for Senior Lien Bond Reserve Fund Non-Participants. With respect to any series of Senior Lien Bonds that are Reserve Fund Non-Participants, any account created within the Senior Lien Bond Reserve Fund for the benefit of such series of Senior Lien Bonds shall be used to pay the principal of and interest on such series of Senior Lien Bonds at any time when there is not sufficient money available if the Senior Lien Bond Interest and Sinking Fund for such purpose (with the requirement that all cash and investments on deposit in such account be depleted before drawing upon any Senior Lien Bond Reserve Fund Surety Policy, unless provided otherwise in each of the Senior Lien Bond Reserve Fund Surety Policies allocable to such account) and to repay amounts drawn under any Senior Lien Bond Reserve Fund Surety Policy allocable to such account for such purpose, together with interest thereon, in accordance with the terms of the City's reimbursement obligations incurred in connection with such Senior Lien Bond Reserve Fund Surety Policy. Any such account may also be used to make the final payments for the retirement and defeasance of the series of Senior Lien Bonds then Outstanding that are secured thereby.

(g) Draws on Senior Lien Bond Reserve Fund Surety Policies. The City directs and requires the Paying Agent/Registrar for any series of Senior Lien Obligations to ascertain the necessity for a claim or draw upon the applicable Senior Lien Bond Reserve Fund Surety Policy, and to provide notice to the issuer thereof in accordance with its terms, and to make such claims or draws thereon as may be necessary to provide for the timely payment of principal of and interest on the Senior Lien Obligations to which it pertains.

SECTION 3.08 SUBORDINATE LIEN BOND INTEREST AND SINKING FUND.

(a) On or before the last Business Day of each month so long as any Subordinate Lien Bonds remain Outstanding, after making all required payments and provision for payment of Operation and Maintenance Expenses and making all required transfers to the Senior Lien Bond Interest and Sinking Fund and the Senior Lien Bond Reserve Fund, there shall be transferred into the Subordinate Lien Bond Interest and Sinking Fund from the Revenue Fund the following amounts:

(i) Such amounts as shall be necessary so that the balance in the Subordinate Lien Bond Interest and Sinking Fund equals the Debt Service Requirements on all Subordinate Lien Bonds accrued to the end of the current month; plus

(ii) Such amounts as shall be necessary to enable the City to pay when due all expenses of providing for the full and timely payment of the principal of, premium, if any, and interest on the Subordinate Lien Bonds in accordance with their terms, including without limitation, all fees charged or obligations incurred in connection with any Credit Agreements, Qualified Hedge Agreements and other related agreements in connection with the Subordinate Lien Bonds.

(b) Whenever the total amounts on deposit to the credit of the Subordinate Lien Bond Interest and Sinking Fund and the Subordinate Lien Bond Reserve Fund shall be equivalent to the sum of the aggregate principal amount of all Outstanding Subordinate Lien Bonds plus the aggregate amount of all interest accrued and to accrue thereon, no further transfers need be made into the Subordinate Lien Bond Interest and Sinking Fund or the Subordinate Lien Bond Reserve Fund, and such Subordinate Lien Bonds shall not be regarded as being Outstanding except for the purpose of being paid with the moneys credited to such Funds. Moneys credited to the Subordinate Lien Bond Interest and Sinking Fund shall be used solely for the purpose of paying principal (at maturity or prior redemption or to purchase Subordinate Lien Bonds issued as term bonds in the open market to be credited against mandatory redemption requirements), interest and redemption premiums on the Subordinate Lien Bonds, plus all bank charges and other costs and expenses relating to such payment, including those described in clause (a)(ii) above. On or before each principal and/or interest payment date on the Subordinate Lien Bonds, the City shall transfer from the Subordinate Lien Bond Interest and Sinking Fund to the Paying Agent/Registrar(s) for the Subordinate Lien Bonds an amount equal to the principal, interest and redemption premiums payable on the Subordinate Lien Bonds on such date, including all amounts due and payable on Credit Agreements, Qualified Hedge Agreements and other related agreements in connection with such Subordinate Lien Bonds.

SECTION 3.09 SUBORDINATE LIEN BOND RESERVE FUND.

(a) Maintenance of Reserve Fund Requirement for Participants and Non-Participants. The City shall establish and maintain as hereinafter provided a balance in the Subordinate Lien Bond Reserve Fund Participant Account equal to the Reserve Fund Requirement for the Subordinate Lien Bonds that are secured thereby. Each Supplemental Ordinance authorizing Subordinate Lien Bonds shall designate such series of Subordinate Lien Bonds authorized thereby as "Reserve Fund Participants" or "Reserve Fund Non-Participants." With respect to any series of Subordinate Lien Bonds that are Reserve Fund Non-Participants, pursuant to the Supplemental Ordinance authorizing such Subordinate Lien Bonds, the City shall establish an account within the Subordinate Lien Bond Reserve Fund for the benefit of such Subordinate Lien Bonds and shall maintain an amount in such account equal to the Reserve Fund Requirement for each such series of Subordinate Lien Bonds secured thereby.

(b) Reserve Fund Requirement at Issuance. Each increase in the Reserve Fund Requirement resulting from the issuance of any Additional Subordinate Lien Bonds shall be satisfied at the time of issuance and delivery of such series of Additional Subordinate Lien Bonds. The Reserve Fund Requirement shall be satisfied by depositing to the credit of the Subordinate Lien Bond Reserve Fund Participant Account (in the case of Additional Subordinate Lien Bonds that are Reserve Fund Participants) or such other designated accounts (in the case of Additional Subordinate Lien Bonds that are Reserve Fund Non-Participants) of the Subordinate Lien Bond Reserve Fund either:

(i) proceeds of such Additional Subordinate Lien Bonds or other lawfully appropriated funds in not less than the amount which, together with investment earnings thereon as estimated by the City, will be sufficient to fund fully the Reserve Fund Requirement by no later than the end of the period of time for which the payment of interest on such Additional Subordinate Lien Bonds has been provided out of proceeds of such Additional Subordinate Lien Bonds or investment earnings thereon as estimated by the City or from other lawfully available funds other than Net Revenues; or

(ii) a Subordinate Lien Bond Reserve Fund Surety Policy.

(c) Deficiencies and Excess in the Subordinate Lien Bond Reserve Fund. In any month in which any account of the Subordinate Lien Bond Reserve Fund contains less than the applicable Reserve Fund Requirement (or so much thereof as shall then be required to be therein if the City has elected to accumulate the Reserve Fund Requirement for any series of Additional Subordinate Lien Bonds as above provided), then on or before the last Business Day of such month, after making all required payments and provision for payment of Operation and Maintenance Expenses, and after making all required transfers to the Senior Lien Bond Interest and Sinking Fund, the Senior Lien Bond Reserve Fund and the Subordinate Lien

Bond Interest and Sinking Fund, there shall be transferred on a pro rata basis into the Subordinate Lien Bond Reserve Fund Participant Account (in the case of Subordinate Lien Bonds that are Reserve Fund Participants) and such other designated accounts (in the case of Subordinate Lien Bonds that are Reserve Fund Non-Participants) of the Subordinate Lien Bond Reserve Fund from the Revenue Fund, such amounts as shall be required to permit the City to pay all reimbursement obligations under the Subordinate Lien Bond Reserve Fund Surety Policies allocable to the Subordinate Lien Bond Reserve Fund Participant Account or such other designated accounts, as applicable, within a twelve (12) month period and such additional amounts as shall be sufficient to enable the City within a twelve (12) month period to reestablish in the Subordinate Lien Bond Reserve Fund Participant Account or such other designated accounts, as applicable, the Reserve Fund Requirement for the Subordinate Lien Bonds secured thereby; provided, however, that in the event that such monthly transfer requirements ever exceed one-twelfth (1/12th) of the maximum Debt Service Requirements scheduled to occur in any future Fiscal Year on all Subordinate Lien Bonds then Outstanding, any remaining required transfers shall be accomplished pursuant to Section 3.15 below. After such amounts have been accumulated in the Subordinate Lien Bond Reserve Fund Participant Account and such other designated accounts (as described above), and so long thereafter as such accounts contain such amounts, no further transfers shall be required to be made into the Subordinate Lien Bond Reserve Fund Participant Account or such other designated accounts, and, to the extent any excess is attributable to the portion of the Subordinate Lien Bond Reserve Fund allocable to any tax-exempt Subordinate Lien Bonds, any excess amounts in such accounts shall be transferred to the Subordinate Lien Bond Interest and Sinking Fund or such other Fund as may be permitted by federal tax law, and otherwise shall be transferred to the Revenue Fund. But, if and whenever the balance in the Subordinate Lien Bond Reserve Fund Participant Account or such other designated accounts is reduced below such amount, monthly transfers to such accounts shall be resumed and continued in such amounts as shall be required to restore the Subordinate Lien Bond Reserve Fund Participant Account or such other designated accounts, as applicable, to such amount within a twelve (12) month period.

(d) Account for Subordinate Lien Bond Reserve Fund Participants. The Subordinate Lien Bond Reserve Fund Participant Account shall be used to pay the principal of and interest on the Subordinate Lien Bonds that are Reserve Fund Participants at any time when there is not sufficient money available in the Subordinate Lien Bond Interest and Sinking Fund for such purpose (with the requirement that all cash and investments on deposit in such account be depleted before drawing upon any Subordinate Lien Bond Reserve Fund Surety Policy, unless provided otherwise in each of the Subordinate Lien Bond Reserve Fund Surety Policies allocable to the Subordinate Lien Bond Reserve Fund Participant Account) and to repay amounts drawn under any Subordinate Lien Bond Reserve Fund Surety Policy allocable to such Subordinate Lien Bond Reserve Fund Participant Account for such purpose, together with interest thereon, in accordance with the terms of the City's reimbursement obligations incurred in connection with such Subordinate Lien Bond Reserve Fund Surety Policy. The Subordinate Lien Bond Reserve Fund Participant Account may also be used to make the final payments for the retirement or defeasance of all Subordinate Lien Bonds then Outstanding that are secured thereby.

(e) Accounts for Subordinate Lien Bond Reserve Fund Non-Participants. With respect to any series of Subordinate Lien Bonds that are Reserve Fund Non-Participants, any account created within the Subordinate Lien Bond Reserve Fund for the benefit of such series of Subordinate Lien Bonds shall be used to pay the principal of and interest on such series of Subordinate Lien Bonds at any time when there is not sufficient money available if the Subordinate Lien Bond Interest and Sinking Fund for such purpose (with the requirement that all cash and investments on deposit in such account be depleted before drawing upon any Subordinate Lien Bond Reserve Fund Surety Policy, unless provided otherwise in each of the Subordinate Lien Bond Reserve Fund Surety Policies allocable to such account) and to repay amounts drawn under any Subordinate Lien Bond Reserve Fund Surety Policy allocable to such account for such purpose, together with interest thereon, in accordance with the terms of the City's reimbursement obligations incurred in connection with such Subordinate Lien Bond Reserve Fund Surety Policy. Any such account may also be used to make the final payments for the retirement and defeasance of the series of Subordinate Lien Bonds then Outstanding that are secured thereby.

(f) Draws on Subordinate Lien Bond Reserve Fund Surety Policies. The City directs and requires the Paying Agent/Registrar for any series of Subordinate Lien Bonds to ascertain the necessity for a claim or draw upon the applicable Subordinate Lien Bond Reserve Fund Surety Policy, and to provide notice to the issuer thereof in accordance with its terms, and to make such claims or draws thereon as may be necessary to provide for the timely payment of principal of and interest on the Subordinate Lien Bonds to which it pertains.

SECTION 3.10 INFERIOR LIEN BOND INTEREST AND SINKING FUND.

(a) On or before the last Business Day of each month so long as any Inferior Lien Bonds remain Outstanding, after making all required payments and provision for payment of Operation and Maintenance Expenses and making all required transfers to the Senior Lien Bond Interest and Sinking Fund, the Senior Lien Bond Reserve Fund, the Subordinate Lien Bond Interest and Sinking Fund and the Subordinate Lien Bond Reserve Fund, there shall be transferred into the Inferior Lien Bond Interest and Sinking Fund from the Revenue Fund the following amounts:

(i) Such amounts as shall be necessary so that the balance in the Inferior Lien Bond Interest and Sinking Fund equals the Debt Service Requirements on all Inferior Lien Bonds accrued to the end of the current month; plus

(ii) Such amounts as shall be necessary to enable the City to pay when due all expenses of providing for the full and timely payment of the principal of, premium, if any, and interest on the Inferior Lien Bonds in accordance with their terms, including without limitation, all fees charged or obligations incurred in connection with any Credit Agreements, Qualified Hedge Agreements and other related agreements in connection with the Inferior Lien Bonds.

(b) Whenever the total amounts on deposit to the credit of the Inferior Lien Bond Interest and Sinking Fund and the Inferior Lien Bond Reserve Fund shall be equivalent to the sum of the aggregate principal amount of all Outstanding Inferior Lien Bonds plus the aggregate amount of all interest accrued and to accrue thereon, no further transfers need be made into the Inferior Lien Bond Interest and Sinking Fund or the Inferior Lien Bond Reserve Fund, and such Inferior Lien Bonds shall not be regarded as being Outstanding except for the purpose of being paid with the moneys credited to such Funds. Moneys credited to the Inferior Lien Bond Interest and Sinking Fund shall be used solely for the purpose of paying principal (at maturity or prior redemption or to purchase Inferior Lien Bonds issued as term bonds in the open market to be credited against mandatory redemption requirements), interest and redemption premiums on the Inferior Lien Bonds, plus all bank charges and other costs and expenses relating to such payment, including those described in clause (a)(ii) above. On or before each principal and/or interest payment date on the Inferior Lien Bonds, the City shall transfer from the Inferior Lien Bond Interest and Sinking Fund to the Paying Agent/Registrar(s) for the Inferior Lien Bonds an amount equal to the principal, interest and redemption premiums payable on the Inferior Lien Bonds on such date including all amounts due and payable on Credit Agreements, Qualified Hedge Agreements and other related agreements in connection with such Inferior Lien Bonds.

SECTION 3.11 INFERIOR LIEN BOND RESERVE FUND.

(a) <u>Maintenance of Reserve Fund Requirement for Participants and Non-Participants</u>. The City shall establish and maintain as hereinafter provided a balance in the Inferior Lien Bond Reserve Fund Participant Account equal to the Reserve Fund Requirement for the Inferior Lien Bonds that are secured thereby. Each Supplemental Ordinance authorizing Inferior Lien Bonds shall designate such series of Inferior Lien Bonds authorized thereby as “Reserve Fund Participants” or “Reserve Fund Non-Participants.” With respect to any series of Inferior Lien Bonds that are Reserve Fund Non-Participants, pursuant to the Supplemental Ordinance authorizing such Inferior Lien Bonds, the City shall establish an account within the Inferior Lien Bond Reserve Fund for the benefit of such Inferior Lien Bonds and shall maintain an amount in such account equal to the Reserve Fund Requirement for each such series of Inferior Lien Bonds secured thereby.

(b) <u>Reserve Fund Requirement at Issuance</u>. Each increase in the Reserve Fund Requirement resulting from the issuance of any additional Inferior Lien Bonds shall be satisfied at the time of issuance and delivery of such series of additional Inferior Lien Bonds. The Reserve Fund Requirement shall be satisfied by depositing to the credit of the Inferior Lien Bond Reserve Fund Participant Account (in the case of additional Inferior Lien Bonds that are Reserve Fund Participants) or such other designated accounts (in the case of additional Inferior Lien Bonds that are Reserve Fund Non-Participants) of the Inferior Lien Bond Reserve Fund either:

(i) proceeds of such additional Inferior Lien Bonds or other lawfully appropriated funds in not less than the amount which, together with investment earnings thereon as estimated by the City, will be sufficient to fund fully the Reserve Fund Requirement by no later than the end of the period of time for which the payment of interest on such additional Inferior Lien Bonds has been provided out of proceeds of such additional Inferior Lien Bonds or investment earnings thereon as estimated by the City or from other lawfully available funds other than Net Revenues; or

(ii) an Inferior Lien Bond Reserve Fund Surety Policy.

(c) Deficiencies and Excess in the Inferior Lien Bond Reserve Fund. In any month in which any account of the Inferior Lien Bond Reserve Fund contains less than the applicable Reserve Fund Requirement (or so much thereof as shall then be required to be therein if the City has elected to accumulate the Reserve Fund Requirement for any series of additional Inferior Lien Bonds as above provided), then on or before the last Business Day of such month, after making all required payments and provision for payment of Operation and Maintenance Expenses, and after making all required transfers to the Senior Lien Bond Interest and Sinking Fund, the Senior Lien Bond Reserve Fund, the Subordinate Lien Bond Interest and Sinking Fund, the Subordinate Lien Bond Reserve Fund and the Inferior Lien Bond Interest and Sinking Fund, there shall be transferred on a pro rata basis into the Inferior Lien Bond Reserve Fund Participant Account (in the case of Inferior Lien Bonds that are Reserve Fund Participants) and such other designated accounts (in the case of Inferior Lien Bonds that are Reserve Fund Non-Participants) of the Inferior Lien Bond Reserve Fund from the Revenue Fund, such amounts as shall be required to permit the City to pay all reimbursement obligations under the Inferior Lien Bond Reserve Fund Surety Policies allocable to the Inferior Lien Bond Reserve Fund Participant Account or such other designated accounts, as applicable, within a twelve (12) month period and such additional amounts as shall be sufficient to enable the City within a twelve (12) month period to reestablish in the Inferior Lien Bond Reserve Fund Participant Account or such other designated accounts, as applicable, the Reserve Fund Requirement for the Inferior Lien Bonds secured thereby. After such amounts have been accumulated in the Inferior Lien Bond Reserve Fund Participant Account and such other designated accounts (as described above), and so long thereafter as such accounts contain such amounts, no further transfers shall be required to be made into the Inferior Lien Bond Reserve Fund Participant Account or such other designated accounts, and, to the extent any excess is attributable to the portion of the Inferior Lien Bond Reserve Fund allocable to any tax-exempt Inferior Lien Bonds, any excess amounts in such accounts shall be transferred to the Inferior Lien Bond Interest and Sinking Fund or such other Funds as may be permitted by federal tax law, and otherwise shall be transferred to the Revenue Fund. But, if and whenever the balance in the Inferior Lien Bond Reserve Fund Participant Account or such other designated accounts is reduced below such amount, monthly transfers to such accounts shall be resumed and continued in such amounts as shall be required to restore the Inferior Lien Bond Reserve Fund Participant Account or such other designated accounts, as applicable, to such amount within a twelve (12) month period.

(d) Account for Inferior Lien Bond Reserve Fund Participants. The Inferior Lien Bond Reserve Fund Participant Account shall be used to pay the principal of and interest on the Inferior Lien Bonds that are Reserve Fund Participants at any time when there is not sufficient money available in the Inferior Lien Bond Interest and Sinking Fund for such purpose (with the requirement that all cash and investments on deposit in such account be depleted before drawing upon any Inferior Lien Bond Reserve Fund Surety Policies, unless provided otherwise in each of the Inferior Lien Bond Reserve Fund Surety Policies allocable to the Inferior Lien Bond Reserve Fund Participant Account) and to repay amounts drawn under any Inferior Lien Bond Reserve Fund Surety Policy allocable to such Inferior Lien Bond Reserve Fund Participant Account for such purpose, together with interest thereon, in accordance with the terms of the City's reimbursement obligations incurred in connection with such Inferior Lien Bond Reserve Fund Surety Policy. The Inferior Lien Bond Reserve Fund Participant Account may also be used to make the final payments for the retirement or defeasance of all Inferior Lien Bonds then Outstanding that are secured thereby.

(e) Accounts for Inferior Lien Bond Reserve Fund Non-Participants. With respect to any series of Inferior Lien Bonds that are Reserve Fund Non-Participants, any account created within the Inferior Lien Bond Reserve Fund for the benefit of such series of Inferior Lien Bonds shall be used to pay the principal of and interest on such series of Inferior Lien Bonds at any time when there is not sufficient money available if the Inferior Lien Bond Interest and Sinking Fund for such purpose (with the requirement that all cash and investments on deposit in such account be depleted before drawing upon any Inferior Lien Bond Reserve Fund Surety Policy, unless provided otherwise in each of the Inferior Lien Bond Reserve Fund Surety Policies allocable to such account) and to repay amounts drawn under any Inferior Lien Bond Reserve Fund Surety

Policy allocable to such account for such purpose, together with interest thereon, in accordance with the terms of the City's reimbursement obligations incurred in connection with such Inferior Lien Bond Reserve Fund Surety Policy. Any such account may also be used to make the final payments for the retirement and defeasance of the series of Inferior Lien Bonds then Outstanding that are secured thereby.

(f) Draws on Inferior Lien Bond Reserve Fund Surety Policies. The City directs and requires the Paying Agent/Registrar for any series of Inferior Lien Bonds to ascertain the necessity for a claim or draw upon the applicable Inferior Lien Bond Reserve Fund Surety Policy, and to provide notice to the issuer thereof in accordance with its terms, and to make such claims or draws thereon as may be necessary to provide for the timely payment of principal of and interest on the Inferior Lien Bonds to which it pertains.

SECTION 3.12 OPERATION AND MAINTENANCE RESERVE FUND. The City shall fund and maintain as hereinafter provided a balance of money and investments in the Operation and Maintenance Reserve Fund at least equal to two (2) months' current Operation and Maintenance Expenses, which amount shall annually be redetermined by the Aviation Director at the time the department submits its recommended budget for the Airport System pursuant to Section 3.02 based upon either such official's recommended budget for Operation and Maintenance Expenses or such official's estimate of actual Operation and Maintenance Expenses for the then current Fiscal Year.

On or before the last Business Day of each month, after making all required payments and provision for payment of Operation and Maintenance Expenses and all required transfers to the Senior Lien Bond Interest and Sinking Fund, the Senior Lien Bond Reserve Fund, the Subordinate Lien Bond Interest and Sinking Fund, the Subordinate Lien Bond Reserve Fund, the Inferior Lien Bond Interest and Sinking Fund, and the Inferior Lien Bond Reserve Fund, there shall be transferred from the Revenue Fund, to the extent amounts are available therein, to the Operation and Maintenance Reserve Fund the amount required to reestablish the required balance in the Operation and Maintenance Reserve Fund. Amounts from time to time credited to the Operation and Maintenance Reserve Fund may be used at any time first, to pay for any Operation and Maintenance Expenses for which amounts are not otherwise available in the Revenue Fund; second, to pay any costs or expenses payable from the Renewal and Replacement Fund for which there are insufficient amounts in the Renewal and Replacement Fund; and third, to the extent any amounts are remaining, to be transferred to the Senior Lien Bond Interest and Sinking Fund, the Senior Lien Bond Reserve Fund, the Subordinate Lien Bond Interest and Sinking Fund, the Subordinate Lien Bond Reserve Fund, the Inferior Lien Bond Interest and Sinking Fund or the Inferior Lien Bond Reserve Fund, to the extent of any deficiency therein.

SECTION 3.13 RENEWAL AND REPLACEMENT FUND. The City shall fund and maintain as hereinafter provided a balance of money and investments in the Renewal and Replacement Fund at least equal to the Renewal and Replacement Fund Requirement. On or before the last Business Day of each month, if the Renewal and Replacement Fund contains less than the Renewal and Replacement Fund Requirement, then after making all required payments and provision for payment of Operation and Maintenance Expenses and all required transfers to the Senior Lien Bond Interest and Sinking Fund, to the Senior Lien Bond Reserve Fund, to the Subordinate Lien Bond Interest and Sinking Fund, to the Subordinate Lien Bond Reserve Fund, to the Inferior Lien Bond Interest and Sinking Fund, to the Inferior Lien Bond Reserve Fund, and to the Operation and Maintenance Reserve Fund, there shall be transferred from the Revenue Fund, to the extent funds are available therein, an amount equal to one-twelfth (1/12th) of the deficiency (being the amount by which the Renewal and Replacement Fund Requirement exceeded the unappropriated balance therein) as of the last day of the previous Fiscal Year, to the Renewal and Replacement Fund and, at the discretion of the City, to pay directly from the Revenue Fund any other costs that could be paid from amounts on deposit in the Renewal and Replacement Fund. Such transfers shall be required to be made into the Renewal and Replacement Fund until such time as the Renewal and Replacement Fund Requirement has again been accumulated in the Renewal and Replacement Fund.

Amounts from time to time credited to the Renewal and Replacement Fund may be used at any time:

(a) First, to pay for any costs of replacing depreciable property and equipment of the Airport System and making repairs, replacements or renovations of the Airport System;

(b) Second, to pay any Operation and Maintenance Expenses for which insufficient amounts are available in the Revenue Fund and the Operation and Maintenance Reserve Fund; and

(c) Third, to the extent any amounts are remaining, to be transferred to the Senior Lien Bond Interest and Sinking Fund, the Senior Lien Bond Reserve Fund, the Subordinate Lien Bond Interest and Sinking Fund, the Subordinate Lien Bond Reserve Fund, the Inferior Lien Bond Interest and Sinking Fund, or the Inferior Lien Bond Reserve Fund, to the extent of any deficiency therein.

SECTION 3.14 AIRPORTS IMPROVEMENT FUND.

(a) After making all payments and transfers hereinabove required, all amounts remaining in the Revenue Fund shall be transferred to the Airports Improvement Fund. Amounts credited to the Airports Improvement Fund may be used only for lawful Airport System purposes, including without limitation, to pay for any capital expenditures, to pay costs of replacing any depreciable property or equipment of the Airport System, to make any major or extraordinary repairs, replacements or renewals of the Airport System, to acquire land or any interest therein, to pay any lease or contractual obligations not paid as Operation and Maintenance Expenses, and to make any transfers required to cure any deficiencies in the Renewal and Replacement Fund; provided, however, that any unappropriated, unbudgeted, unreserved or otherwise unencumbered amounts in the Airports Improvement Fund in excess of (i) the unfunded portion of the Airport System's capital improvement program for the next 24 months as approved by the City Council or as proposed by the Aviation Director or (ii) $50,000,000, whichever is greater, may be used by the City for any lawful purpose permitted by the laws of the United States of America and the State of Texas and not inconsistent with the terms and provisions of any federal grants or aid or any contracts to which the City is a party.

(b) The Airport System may create, within the Airports Improvement Fund, additional sub-accounts and funds, including a Capital Outlay Fund. All such sub-accounts and funds may be established and used for the purposes of the Airports Improvement Fund as above provided in subsection (a).

SECTION 3.15 DEFICIENCIES IN FUNDS. If in any month there shall not be transferred into any Fund maintained pursuant to this Article the full amounts required herein, amounts equivalent to such deficiency shall be set apart and transferred to such Fund or Funds from the first available and unallocated moneys in the Revenue Fund, and such transfer shall be in addition to the amounts otherwise required to be transferred to such Funds during any succeeding month or months.

SECTION 3.16 INVESTMENT OF FUNDS; TRANSFER OF INVESTMENT INCOME.

(a) Money in the Revenue Fund, the Senior Lien Bond Interest and Sinking Fund, the Senior Lien Bond Reserve Fund, the Subordinate Lien Bond Interest and Sinking Fund, the Subordinate Lien Bond Reserve Fund, the Inferior Lien Bond Interest and Sinking Fund, the Inferior Lien Bond Reserve Fund, the Operation and Maintenance Reserve Fund, the Renewal and Replacement Fund and the Airports Improvement Fund shall, at the option of the City, be invested in time deposits or certificates of deposit secured in the manner required by law for public funds, or be invested in direct obligations of, or obligations the principal of and interest on which are unconditionally guaranteed by, the United States of America, in obligations of any agencies or instrumentalities of the United States of America or in any other investments authorized by Texas law; provided that all such deposits and investments shall be made in such manner that the money required to be expended from any Fund will be available at the proper time or times. All such investments shall be valued no less frequently than the last Business Day of the City's Fiscal Year at their market value, except that any direct obligations of the United States of America - State and Local Government Series shall be continuously valued at their par value or principal face amount. For purposes of maximizing investment returns, money in such Funds may be invested, together with money in other Funds or with other money of the City, in common investments of the kind described above, or in a common pool of such investments maintained by the City which shall be kept and held at an official depository of the City, which shall not be deemed to be a loss of the segregation of such money or Funds provided that safekeeping receipts, certificates of participation or other documents clearly evidencing the investment or investment pool in which such money is invested and the share thereof purchased with such money or owned by such Fund are held by or on behalf of each such Fund. If and to the extent necessary, such investments or participations therein shall be promptly sold to prevent any default.

(b) All interest and income derived from deposits and investments credited to the Senior Lien Bond Reserve Fund, the Subordinate Lien Bond Reserve Fund, the Inferior Lien Bond Reserve Fund and the Operation and Maintenance Reserve Fund shall remain in such funds to the extent necessary to accumulate the Reserve Fund Requirements or other required balance therein.

(c) All interest and income derived from deposits and investments of any amounts held in any construction fund, including amounts held therein as capitalized interest, created by any Supplemental Ordinance authorizing the issuance of Airport Obligations, shall remain in such construction fund for application in the manner provided in such Supplemental Ordinance.

(d) To the extent not otherwise provided for above in this Article III (including Section 3.04) or specifically excluded from the definition of Gross Revenues, all interest and income derived from deposits and investments credited to the Revenue Fund, the Senior Lien Bond Interest and Sinking Fund, the Senior Lien Bond Reserve Fund, the Subordinate Lien Bond Interest and Sinking Fund, the Subordinate Lien Bond Reserve Fund, the Inferior Lien Bond Interest and Sinking Fund, the Inferior Lien Bond Reserve Fund, the Operation and Maintenance Reserve Fund, the Renewal and Replacement Fund and the Airports Improvement Fund, shall be transferred or credited monthly to the Revenue Fund or to such other Funds as may be required under federal tax law.

(e) Notwithstanding anything to the contrary contained herein, any interest and income derived from deposits and investments of any amounts credited to any fund or account may be paid to the federal government if, in the opinion of nationally recognized bond counsel, such payment is required in order to prevent interest on any Airport Obligations from being includable within the gross income of the owners thereof for federal income tax purposes, if such Airport Obligations were issued on a tax-exempt basis.

SECTION 3.17 SECURITY FOR UNINVESTED FUNDS. So long as any Airport Obligations remain Outstanding, all uninvested moneys on deposit in, or credited to, the Revenue Fund, the Senior Lien Bond Interest and Sinking Fund, the Senior Lien Bond Reserve Fund, the Subordinate Lien Bond Interest and Sinking Fund, the Subordinate Lien Bond Reserve Fund, the Inferior Lien Bond Interest and Sinking Fund and the Inferior Lien Bond Reserve Fund shall be secured by the pledge of security, as provided by law for cities in the State of Texas.

SECTION 3.18 DETERMINATION OF RESERVE FUND PARTICIPANTS. The determination of whether any series of Airport Obligations issued pursuant to the terms of this Master Ordinance shall be Reserve Fund Participants shall be made in the related Supplemental Ordinance or, as the case may be, the applicable officers pricing certificate.

ARTICLE IV

PFC REVENUES

SECTION 4.01 PURPOSE. The City hereby reserves the right to commit, pledge, encumber or otherwise use all or any portion of PFC Revenues solely for the purposes of the Airport System, including, but not limited to: (a) committing all or any portion of PFC Revenues to the payment of debt service for any Airport Obligations; (b) pledging all or any portion of PFC Revenues to the payment of certain obligations secured by a pledge of all or a designated portion of PFC Revenues; or (c) using all or any portion of PFC Revenues for payment of certain projects of the Airport System or other purposes that benefit the Airport System.

SECTION 4.02 PFC ORDINANCE; COMMITTING OR PLEDGING PFC REVENUES. Prior to committing or pledging PFC Revenues under subparagraphs 4.01(a) and (b) above, the City shall adopt one or more ordinances (which may be in the form of a Supplemental Ordinance to the Master Ordinance, a separate ordinance or a combination of both) to determine, as appropriate, (i) the eligible PFC Revenues available for such purpose and the manner by which such available PFC Revenues may be committed or pledged for the purposes described in such subparagraphs; (ii) the disposition of available PFC Revenues during a given Fiscal Year(s); (iii) the flow of funds of such PFC Revenues for the purposes described such subparagraphs; and (iv) any determinations, findings, appropriations, reservations, and covenants that are appropriate and necessary to give effect to such ordinance. Any such ordinances shall be accompanied by an opinion of bond counsel to the Airport System to the effect that the ordinance is not in conflict with any provisions or covenants of this Master Ordinance or any other ordinance authorizing the issuance of Airport Obligations.

ARTICLE V

ADDITIONAL BONDS

SECTION 5.01 SENIOR LIEN OBLIGATIONS AND SUBORDINATE LIEN BONDS.

(a) The City reserves the right to issue, for any lawful Airport System purpose, one or more installments of Additional Senior Lien Obligations and Additional Subordinate Lien Bonds; provided, however, that no such Additional Senior Lien Obligations or Additional Subordinate Lien Bonds shall be issued unless:

(i) No Default. The Mayor and the Aviation Director certify that, upon the issuance of such series of Bonds, the City will not be in default under any term or provision of any Bonds then Outstanding or any ordinance pursuant to which any of such Bonds were issued;

(ii) Proper Fund Balances. The City Controller shall certify that, upon the issuance of such series of Bonds, the Senior Lien Bond Interest and Sinking Fund and the Subordinate Lien Bond Interest and Sinking Fund will have the required amounts on deposit therein and that the Senior Lien Bond Reserve Fund and the Subordinate Lien Bond Reserve Fund will contain the applicable Reserve Fund Requirement or so much thereof as is required to be funded at such time;

(iii) Historical Coverage on Outstanding Bonds. The City Controller shall certify that, for either the City's most recent complete Fiscal Year or for any consecutive 12 out of the most recent 18 months, the Net Revenues were equal to at least:

(A) 125% of the Debt Service Requirements on all Senior Lien Obligations for such period, plus

(B) 110% of the Debt Service Requirements on all Subordinate Lien Bonds for such period;

(iv) Projected Coverage for Additional Bonds. An Airport Management Consultant provides a written report setting forth projections which indicate that the estimated Net Revenues for each of the three consecutive Fiscal Years beginning in the earlier of:

(A) the first Fiscal Year following the estimated date of completion and initial use of all revenue-producing facilities to be financed with such series of Bonds, based upon a certified written estimated completion date by the consulting engineer for such facility or facilities, or

(B) the first Fiscal Year in which the City will have scheduled payments of interest on or principal of the series of Bonds to be issued for the payment of which provision has not been made as indicated in the report of such Airport Management Consultant from proceeds of such series of Bonds, investment income thereon or from other appropriated sources (other than Net Revenues),

are equal to at least:

(1) 125% of the Debt Service Requirements on all Senior Lien Obligations, plus

(2) 110% of the Debt Service Requirements on all Subordinate Lien Bonds,

scheduled to occur during each such respective Fiscal Year after taking into consideration the additional Debt Service Requirements for the additional series of Bonds to be issued;

(v) Alternate Coverage for Additional Bonds. In lieu of the certification described in (iv) above, the City Controller may provide a certificate showing that, for either the City's most recent complete Fiscal Year or for any consecutive 12 out of the most recent 18 months, the Net Revenues were equal to at least:

(A) 125% of the maximum Debt Service Requirements on all Senior Lien Obligations, plus

(B) 110% of the maximum Debt Service Requirements on all Subordinate Lien Bonds

scheduled to occur in the then current or any future Fiscal Year after taking into consideration the issuance of the series of Bonds proposed to be issued;

(vi) Refunding Bonds. If Bonds are being issued for the purpose of refunding less than all previously issued Bonds which are then Outstanding, none of the certifications described in (iii), (iv) or (v) above are required (except in the event Senior Lien Obligations are issued to refund Subordinate Lien Bonds) so long as the Debt Service Requirements in any Fiscal Year after the issuance of such Bonds will not exceed the scheduled Debt Service Requirements in the same Fiscal Year prior to the issuance of such Bonds; and

(vii) Supplemental Ordinance Requirements. Provision is made in the Supplemental Ordinance authorizing the series of Bonds proposed to be issued for:

(A) additional payments into the Senior Lien Bond Interest and Sinking Fund or the Subordinate Lien Bond Interest and Sinking Fund (as the case may be) sufficient to provide for any principal and interest requirements resulting from the issuance of the Bonds including, in the event that interest on the additional series of Bonds is capitalized and/or to be paid from investment earnings, a requirement for the transfer from the capitalized interest fund or account and/or from the construction fund to the Senior Lien Bond Interest and Sinking Fund or the Subordinate Lien Bond Interest and Sinking Fund (as the case may be) of amounts fully sufficient to pay interest on such series of Bonds during the period specified in the ordinance; and

(B) satisfaction of the Reserve Fund Requirement by not later than the date required by this Master Ordinance or any Supplemental Ordinance authorizing any Additional Senior Lien Obligations or Additional Subordinate Lien Bonds, as applicable.

(b) Special Provisions for Refunding Short Term/Demand Obligations. The provisions of paragraphs (iv), (v) and (vi) above shall not apply to the issuance of Additional Senior Lien Obligations or Additional Subordinate Lien Bonds for the purpose of refunding Short Term/Demand Obligations.

(c) Special Provisions for Completion Bonds. The provisions of paragraphs (iii), (iv) and (v) above shall not apply to the issuance of Completion Bonds in accordance with Section 5.03 hereof.

(d) Special Provisions for Credit Agreements. The City may enter into Credit Agreements with respect to any Bonds or Qualified Hedge Agreements if:

(i) prior to entering into such Credit Agreement, the City, to the extent required by law, shall cause the proceedings authorizing the Credit Agreement and any contracts or reimbursement agreements relating thereto to be submitted to and approved by the Attorney General of Texas;

(ii) for any Credit Agreement that obligates the City to make any future payments for the availability of such Credit Agreement, the City's financial advisor must certify that the inclusion of such payments within the Debt Service Requirements on the Bonds or Qualified Hedge Agreement to which the Credit Agreement relates will not cause such Bonds or Qualified Hedge Agreement to fail to comply with the applicable coverage requirements for their issuance or incurrence; and

(iii) to the extent that Bonds are issued with a credit facility or a liquidity facility, the City authorizes the inclusion of additional provisions in a Supplemental Ordinance, as needed, to provide security for the payment of the principal and interest when due on Credit Agreement Obligations.

The issuer of any Credit Agreement shall be entitled to be subrogated to the rights of the Owners of the Bonds or the counterparty to the Qualified Hedge Agreement secured by such Credit Agreement, and the City's reimbursement and repayment obligations to the issuer of the Credit Agreement shall be secured by Net Revenues as herein provided.

(e) Special Provisions for Qualified Hedge Agreements. The City may enter into Qualified Hedge Agreements contemporaneously with or following the issuance of any Bonds or in conjunction with the payment, sale, resale or exchange of any Bonds for any purpose authorized by law if the following requirements are satisfied:

(i) the proceedings authorizing the Qualified Hedge Agreement and any contracts or reimbursement agreements relating thereto shall, to the extent required by law, be submitted to and approved by the Attorney General of Texas;

(ii) the City shall have received written confirmations from each rating agency then rating the Bonds that entering into such Qualified Hedge Agreement will not, in and of itself, result in a withdrawal or reduction of any rating assigned to the Bonds; and

(iii) the City's financial advisor shall certify that the Bonds to which the Qualified Hedge Agreement relates could have been issued in satisfaction of all of the coverage requirements of this Article V if the Debt Service Requirements with respect to such Bonds are recalculated (as provided in the definition of Debt Service Requirements) to take into account payments due under the Qualified Hedge Agreement.

SECTION 5.02 SHORT TERM/DEMAND OBLIGATIONS. The City reserves the right to issue, from time to time, one or more series of Additional Senior Lien Obligations and/or Additional Subordinate Lien Bonds as "Short Term/Demand Obligations" provided that the aggregate principal amount of Short Term/Demand Obligations Outstanding at any time may not exceed the greater of $150,000,000 or 30% of the aggregate principal amount of Bonds Outstanding at the time of issuance of the last series of Short Term/Demand Obligations; provided, however, that no such Short Term/Demand Obligations may be issued without satisfying the applicable provisions of Section 5.01 above; provided further, however, that no Short Term/Demand Obligation shall be subject to the limitations as to maximum principal amount as set forth above during any period of time that the City's financial advisor certifies that the City's variable or adjustable interest rate exposure under such Short Term/Demand Obligation is substantially hedged pursuant to an interest rate swap, interest rate cap or other interest rate hedging mechanism with a counterparty having a rating in one of the two highest credit rating categories by at least two major rating agencies (or with a counterparty whose payment obligations under such interest rate swap, interest rate cap or other interest rate hedging mechanism are insured or guaranteed by an entity having such rating) pursuant to which the maximum net rate of interest that the City is obligated to pay (after taking into account all payments to be made by such counterparty) does not exceed the interest rate certified with respect to such Short Term/Demand Obligation by such financial advisor pursuant to paragraph (ii) clause (2) of the definition of Debt Service Requirements.

SECTION 5.03 COMPLETION BONDS.

(a) The City reserves the right to issue one or more series of either: (i) Additional Senior Lien Obligations to pay the cost of completing any Airport Project (as defined in this Section below) for which Senior Lien Obligations have previously been issued or (ii) Additional Subordinate Lien Bonds to pay the cost of completing any Airport Project for which Subordinate Lien Bonds have previously been issued.

(b) Prior to the issuance of any series of Completion Bonds the City must provide, in addition to all of the applicable certificates required by Section 5.01, the following documents:

(i) a certificate of the consulting engineer engaged by the City to design the Airport Project for which the Completion Bonds are to be issued stating that such Airport Project has not materially changed in scope since the issuance of the most recent series of Bonds for such purpose (except as permitted in the applicable ordinance authorizing such Bonds) and setting forth the aggregate cost of the Airport Project which, in the opinion of such consulting engineer, has been or will be incurred; and

(ii) a certificate of the Aviation Director (i) stating that all amounts allocated to pay costs of the Airport Project from the proceeds of the most recent series of Bonds issued in connection with the Airport Project for which the Completion Bonds are being issued were used or are still available to be used to pay costs of such Airport Project; (ii) containing a calculation of the amount by which the aggregate cost of that Airport Project (furnished in the consulting engineer's certificate described above) exceeds the sum of the costs of the Airport Project paid to such date plus the moneys available at such date within any construction fund established therefor or other like account applicable to the Airport Project plus any other moneys which the Aviation Director, in his discretion, has determined are available to pay such costs in any other fund; and

(iii) certifying that, in the opinion of the Aviation Director, the issuance of the Completion Bonds is necessary to provide funds for the completion of the Airport Project.

(c) For purposes of this Section, the term "Airport Project" shall mean any Airport System facility or project which shall be defined as an Airport Project in any Supplemental Ordinance authorizing the issuance of Additional Senior Lien Obligations or Additional Subordinate Lien Bonds for the purpose of financing such Airport Project. Any such Supplemental Ordinance may contain such further provisions as the City shall deem appropriate with regard to the use, completion, modification or abandonment of such Airport Project.

SECTION 5.04 INFERIOR LIEN OBLIGATIONS. The City reserves the right to issue or incur, for any lawful Airport System purpose, bonds, notes or other obligations secured in whole or in part by liens on the Net Revenues that are junior and subordinate to the lien on Net Revenues securing payment of the Senior Lien Obligations and Subordinate Lien Bonds. Such Inferior Lien Bonds may be further secured by any other source of payment lawfully available for such purposes.

SECTION 5.05 SPECIAL FACILITIES BONDS. The City reserves the right to issue, from time to time, in one or more series, Special Facilities Bonds as herein provided to finance and refinance the cost of any Special Facilities, including all reserves required therefor, all related costs of issuance and other amounts reasonably relating thereto, provided that such Special Facilities Bonds shall be payable solely from payments by Special Facilities lessees and/or other security not provided by the City. In no event shall any Gross Revenues or any other amounts held in any other fund or account maintained by the City as security for the Bonds or for the construction, operation, maintenance or repair of the Airport System be pledged to the payment of Special Facilities Bonds or to the payment of any expenses of maintenance and operation of Special Facilities.

SECTION 5.06 PFC OBLIGATIONS. The City reserves the right to issue or incur, for any lawful Airport System purpose, bonds, notes or other obligations secured in whole or in part by a lien on all or any designated portion of the PFC Revenues. Such PFC obligations may be further secured by any other source of payment lawfully available for such purposes.

SECTION 5.07 EXCLUDED FEE AND CHARGE REVENUES OBLIGATIONS. The City reserves the right to issue or incur, for any lawful Airport System purpose, bonds, notes or other obligations secured in whole or in part by a lien on all or any designated portion of Excluded Fee and Charge Revenues. Such obligations may be further secured by any other source of payment lawfully available for such purposes.

ARTICLE VI

COVENANTS AND PROVISIONS RELATING TO ALL BONDS

SECTION 6.01 PUNCTUAL PAYMENT OF OBLIGATIONS. The City will punctually pay or cause to be paid the interest on and principal of all Airport Obligations according to the terms thereof and will faithfully do and perform, and at all times fully observe, any and all covenants, undertakings, stipulations and provisions contained in this Master Ordinance and in any Supplemental Ordinance.

SECTION 6.02 MAINTENANCE OF AIRPORT SYSTEM. The City covenants that it will at all times maintain and operate the Airport System, or, within the limits of its authority, cause the same to be maintained and operated, in good and serviceable condition.

SECTION 6.03 LIMITATION ON CITY CHARGES FOR OPERATION AND MAINTENANCE EXPENSES. The City covenants that it will not charge the Airport System any amounts for overhead expenses relating to the administration, operation and maintenance of the Airport System except to the extent that such amounts are reasonably allocable to the Airport System based upon a stated policy of allocation, reasonably applied to the Airport System and all other departments of the City and further covenants that the City will not charge the Airport System for any property provided or services rendered by the City unless such services are reasonably necessary and required for the Airport System and are not otherwise provided to the Airport System. All such charges imposed by the City upon the Airport System shall be reasonable, fair and consistent with similar charges imposed upon other departments of the City and shall be consistent with all applicable federal laws, regulations and other requirements applicable to the Airport System or imposed upon the Airport System in connection with the acceptance by the Airport System of any federal grants or aid.

SECTION 6.04 SALE OR ENCUMBRANCE OF AIRPORT SYSTEM.

(a) Except for the use of the Airport System or services pertaining thereto in the normal course of business, neither all nor a substantial part of the Airport System shall be sold, leased, mortgaged, pledged, encumbered, alienated, or otherwise disposed of until all Airport Obligations have been paid in full, or unless provision has been made therefor, and the City shall not dispose of its title to the Airport System or to any useful part thereof, including, without limitation, any property necessary to the operation and use of the Airport System, (i) except for the execution of leases, licenses, easements, or other agreements in connection with the operation of the Airport System by the City, or in connection with any Special Facilities, (ii) except for any pledges of and liens on revenues derived from the operation and use of the Airport System, or any part thereof, or any Special Facilities pertaining thereto, for the payment of Airport Obligations, Special Facilities Bonds and any other obligations pertaining to the Airport System, and (iii) except as otherwise provided in the next two paragraphs.

(b) The City may sell, exchange, lease, or otherwise dispose of, or exclude from the Airport System, any property constituting a part of the Airport System which the Aviation Director certifies (i) to be no longer useful in the construction or operation of the Airport System, or (ii) to be no longer necessary for the efficient operation of the Airport System, or (iii) to have been replaced by other property of at least equal value. The net proceeds of the sale or disposition of any Airport System property (or the fair market value of any property so excluded) pursuant to this paragraph shall be used for the purpose of replacing properties at the Airport System, or shall be paid into the Airports Improvement Fund for the purposes thereof.

(c) Nothing herein shall prevent any transfer of all or a substantial part of the Airport System to another body corporate or politic (including, but not necessarily limited to a joint action agency or an airport authority) which assumes the City's obligations under this Master Ordinance and any Supplemental Ordinance, wholly or in part, if, in the written opinion of the Airport Management Consultant, the ability to meet the rate covenant and other covenants under this Master Ordinance and any Supplemental Ordinance are not materially and adversely affected. In the event of any such transfer and assumption, nothing herein shall prevent the retention by the City of any facility of the Airport System if, in the written opinion of the Airport Management Consultant, such retention will not materially and adversely affect nor unreasonably restrict such other body's ability to comply with the requirements of the rate covenant and the other covenants of this Master Ordinance and any Supplemental Ordinance.

SECTION 6.05 INSURANCE. The City further covenants and agrees that it will keep the Airport System insured with insurers of good standing against risks, accidents or casualties against which and to the extent customarily insured against by political subdivisions of the State of Texas operating similar properties, to the extent that such insurance is available. All net proceeds of such insurance shall be applied to repair or replace the insured property that is damaged or destroyed or to make other capital improvements to the Airport System or to redeem Airport Obligations except for proceeds of business interruption insurance, which shall be credited to the Revenue Fund.

SECTION 6.06 ACCOUNTS, RECORDS, AND AUDITS. The City covenants and agrees that it will maintain a proper and complete system of records and accounts pertaining to the Gross Revenues and the operation of the Airport System in which full, true and proper entries will be made of all dealings, transactions, business and affairs that in any way affect or pertain to the Gross Revenues and the Airport System. The City shall, within 120 days after the close of each of its Fiscal Years or as soon thereafter as practicable, cause an audit report of such records and accounts to be prepared by an independent certified public accountant or independent firm of certified public accountants, which shall calculate the Gross Revenues, Net Revenues and Debt Service Requirements for such Fiscal Year and shall set forth a calculation to demonstrate whether the City has satisfied the rate covenant contained in Section 3.03 hereof. In addition, the City shall each year, as a part of its annual audit, cause an independent certified public accountant or independent firm of certified public accountants to prepare a report containing an analysis of any overhead and direct charges imposed on the Airport System by the City to determine whether such charges were imposed in conformity with the covenant contained in Section 6.03 hereof. Each year promptly after such reports are prepared, the City shall furnish copies thereof to any Owners of Airport Obligations who shall request the same. All expenses of obtaining such reports shall constitute Operation and Maintenance Expenses of the Airport System.

SECTION 6.07 PLEDGE AND ENCUMBRANCE OF REVENUES. The City covenants and represents that it has the lawful power to create a lien on and to pledge the Net Revenues to secure the payment of the Airport Obligations and has lawfully exercised such power under the Constitution and laws of the State of Texas. The City further covenants and represents that, other than to the payment of Operation and Maintenance Expenses and the Airport Obligations, the Gross Revenues are not and will not be made subject to any other lien, pledge or encumbrance to secure the payment of any debt or obligation of the City, unless such lien, pledge or encumbrance is junior and subordinate to the lien and pledge securing payment of the Airport Obligations.

SECTION 6.08 BONDHOLDERS REMEDIES. This Master Ordinance and all Supplemental Ordinances shall constitute a contract between the City and the Owners of the Airport Obligations from time to time Outstanding and this Master Ordinance and all Supplemental Ordinances shall be and remain irrepealable until the Airport Obligations authorized thereby and the interest thereon shall be fully paid or discharged or provision therefor shall have been made as provided herein. In the event of a default in the payment of the principal of or interest on any of the Airport Obligations or a default in the performance of any duty or covenant provided by law or in this Master Ordinance or any Supplemental Ordinance, the Owner or Owners of any of the Airport Obligations authorized thereby may pursue all legal remedies afforded by the Constitution and laws of the State of Texas to compel the City to remedy such default and to prevent further default or defaults.

Without in any way limiting the generality of the foregoing, it is expressly provided that any Owner of any of the Airport Obligations may at law or in equity, by suit, action, mandamus, or other proceedings, enforce and compel performance of all duties required to be performed by the City under this Master Ordinance and any Supplemental Ordinance, including the making and setting of reasonably required rates and charges for the use and services of the Airport System, the deposit of the Gross Revenues thereof into the special Funds herein provided, and the application of such Gross Revenues in the manner required in this Master Ordinance and any Supplemental Ordinance.

SECTION 6.09 LEGAL HOLIDAYS. In any case where the date of maturity of interest on or principal of any series of Airport Obligations or the date fixed for redemption of any series of Airport Obligations shall be in the City a legal holiday or a day on which a Paying Agent/Registrar for such Airport Obligations is authorized by law to close, then payment of interest or principal need not be made on such date but may be made on the next succeeding day not in the City a legal holiday or a day on which such Paying Agent/Registrar is authorized by law to close with the same force and effect as if made on the date of maturity or the date fixed for redemption and no interest shall accrue for the period from the date of maturity or redemption to the date of actual payment.

ARTICLE VII

ALTERATION OF RIGHTS AND DUTIES; AMENDMENT OF ORDINANCE

SECTION 7.01 ALTERATION OF RIGHTS AND DUTIES. The rights, duties, and obligations of the City and the Owners of the Airport Obligations are subject in all respects to all applicable federal and state laws including, without limitation, the provisions of federal law regarding the composition of indebtedness of political subdivisions, as the same now exist or may hereafter be amended. Inconsistencies among the provisions of the ordinances authorizing the issuance of Airport Obligations shall be resolved by the City in any manner or by any action to conform such provisions as it deems necessary or advisable in accordance with applicable law. The City may consult with and rely on the opinion of nationally recognized bond counsel with regard to any or all matters in this Article VII.

SECTION 7.02 AMENDMENT WITHOUT CONSENT. The City may, without the consent of or notice to any of the Owners of the Airport Obligations, amend this Master Ordinance or any Supplemental Ordinance for any one or more of the following purposes:

(a) To cure any ambiguity, defect, omission or inconsistent provision in this Master Ordinance, any Supplemental Ordinance, or in the Airport Obligations; or to comply with any applicable provision of state or federal law or regulation of federal agencies; provided, however, that such action shall not adversely affect the interests of the Owners of the Airport Obligations;

(b) To change the terms or provisions of this Master Ordinance or any Supplemental Ordinance to the extent necessary to prevent the interest on the Airport Obligations from being includable within the gross income of the Owners thereof for federal income tax purposes;

(c) To grant to or confer upon the Owners of the Airport Obligations any additional rights, remedies, powers or authority that may lawfully be granted to or conferred upon the Owners of the Airport Obligations;

(d) To add to the covenants and agreements of the City contained in this Master Ordinance or any Supplemental Ordinance other covenants and agreements of, or conditions or restrictions upon, the City, or to surrender or eliminate any right or power reserved to or conferred upon the City in this Master Ordinance or any Supplemental Ordinance;

(e) To subject to the lien and pledge of this Master Ordinance or any Supplemental Ordinance additional Net Revenues which may include revenues, properties or other collateral;

(f) To add requirements or incorporate modifications the compliance with which is required by a rating agency in connection with issuing or confirming a rating with respect to any series of Airport Obligations;

(g) To authorize any series of Additional Senior Lien Bonds, Additional Senior Lien Notes, Additional Subordinate Lien Bonds or additional Inferior Lien Bonds, and, in connection therewith: (i) to specify and determine the terms, forms and details thereof and (ii) to create such additional funds and accounts and to effect such amendments of this Master Ordinance which may be necessary for such issuance, provided in each case that no such amendment or supplement shall be contrary to or inconsistent with the limitations set forth in this Master Ordinance;

(h) To evidence any sale, transfer or encumbrance of the Airport System in accordance with the provisions of Section 6.04;

(i) To make any other modification, amendment or supplement that shall not materially adversely affect the interests of the Owners of the Airport Obligations;

(j) To cure or correct any technical defect in connection with the terms, conditions or procedures relating to the variable rate provisions contained in any Supplemental Ordinance; provided, however, that such action shall not adversely affect the interests of the owners of the Airport Obligations; and

(k) Prior to the conversion of any variable rate Airport Obligations to a different interest rate mode, to change the terms, conditions or procedures relating to the new interest rate mode.

SECTION 7.03 AMENDMENTS REQUIRING CONSENT. The City may at any time adopt one or more ordinances (which may be in the form of a Supplemental Ordinance) amending, modifying, adding to or eliminating any of the provisions of this Master Ordinance or any Supplemental Ordinance, but, if such amendment is not of the character described in Section 7.02 hereof, only with the consent given in accordance with Section 7.04 hereof of the Owner or Owners of not less than a majority in aggregate unpaid principal amount of the Airport Obligations then Outstanding and affected by such amendment, modification, addition, or elimination; provided, however, that nothing in this Section 7.03 shall permit (a) an extension of the maturity of the principal of or interest on any Airport Obligation issued hereunder, or (b) a reduction in the principal amount of any Airport Obligation or the rate of interest on any Airport Obligation, or (c) a privilege or priority of (i) any Senior Lien Obligation(s) over any other Senior Lien Obligation(s), (ii) any Subordinate Lien Bond(s) over any other Subordinate Lien Bond(s), or (iii) any Inferior Lien Bond(s) over any other Inferior Lien Bond(s), or (d) a reduction in the aggregate principal amount of the Airport Obligations required for consent to such amendment, unless the Owner or Owners of 100% in aggregate principal amount of the Airport Obligations shall consent to any of said changes. Before the City shall adopt one or more of such ordinances pursuant to this Section 7.03, the City must receive an opinion from nationally recognized bond counsel to the effect that such ordinance or ordinances does not adversely affect the exclusion from gross income for federal income tax purposes of interest on the Airport Obligations.

SECTION 7.04 CONSENT OF OWNERS.

(a) Any consent required by Section 7.03 hereof by any Owner of Airport Obligations shall be in writing, may be in any number of concurrent writings of similar tenor, and may be signed by such Owner or his duly authorized attorney. Proof of the execution of any such consent or of the writing appointing any such attorney and of the ownership Airport Obligations, if made in the following manner, shall be sufficient for any of the purposes of this Master Ordinance, and shall be conclusive in favor of the City with regard to any action taken, suffered or omitted to be taken by the City under such instrument, namely:

(i) The fact and date of the execution by any person of any such writing may be proved by the certificate of any officer in any jurisdiction who by law has power to take acknowledgments within such jurisdiction that the person signing such writing acknowledged before him the execution thereof, or by affidavit of any witness to such execution; and

(ii) The fact of the ownership by any person of any Airport Obligations and the date of the ownership of same may be proved by a certificate executed by an appropriate officer of the Paying Agent/Registrar for such Airport Obligations, stating that at the date thereof such Airport Obligations were registered in the name of such party in the register for such Airport Obligations.

In lieu of the foregoing the City may accept such other proofs of the foregoing as it shall deem appropriate.

(b) Consents required pursuant to Section 7.03 shall be valid only if given following the giving of notice by or on behalf of the City requesting such consent and setting forth the substance of the proposed amendment of this Master Ordinance or any Supplemental Ordinance in respect of which such consent is sought and stating that copies thereof are available at the office of the City Secretary for inspection. Such notice shall be given by certified mail, postage prepaid, to each Registered Owner of the Airport Obligations affected at the address shown on the register for such Airport Obligations.

SECTION 7.05 REVOCATION OF CONSENT. Any consent by any Owner of an Airport Obligation pursuant to the provisions of this Article shall be irrevocable for a period of six months from the date of mailing of the notice provided for in this Article, and shall be conclusive and binding upon all future Owners of the same Airport Obligation and any Airport Obligation delivered in transfer thereof or in exchange for or replacement thereof during such period. Such consent may be revoked at any time after six months from the date of the first mailing of such notice by the Owner who gave such consent or by a successor in title, by filing notice thereof with the Paying Agent/Registrar for such Airport Obligation, but such revocation shall not be effective if the Owners of a majority in aggregate principal amount of the Airport Obligations then Outstanding and affected thereby have, prior to the attempted revocation, consented to and approved the amendment.

SECTION 7.06 BOND INSURER MAY BE DEEMED OWNER. For purposes of giving any consent under this Article VII, the bond insurer of any series of Airport Obligations may be deemed by the City to be the Owner of such series of Airport Obligations, as provided in the related Supplemental Ordinance or officers pricing certificate.

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APPENDIX C-2
PROPOSED AMENDMENTS TO THE MASTER ORDINANCE

The following amendments described in this Appendix C-2 are described in the Official Statement as the "Proposed 2016 Amendments."

Amendment Effective Date

The Proposed 2016 Amendments to the Master Ordinance have been incorporated into the Bonds, but will not become effective until the Proposed 2016 Amendments (or portions thereof) have become incorporated or deemed incorporated into every ordinance pursuant to which Airport Obligations are then Outstanding, subject to satisfaction of the required conditions (the "Amendment Effective Date"). The City may not exercise its rights under any portion of the Proposed 2016 Amendments until the Amendment Effective Date.

As of the date of this Official Statement, the Proposed 2016 Amendments have been incorporated into the following Outstanding obligations of the Houston Airport System:

(1) City of Houston, Texas Airport System Senior Lien Commercial Paper Notes, Series A and B;

(2) City of Houston, Texas Airport System Subordinate Lien Revenue and Refunding Bonds, Series 2018A (AMT) and Series 2018B (Non-AMT);

(3) City of Houston, Texas Airport System Subordinate Lien Revenue Refunding Bonds, Series 2018C (AMT) and Series 2018D (Non-AMT);

(4) City of Houston, Texas Airport System Subordinate Lien Revenue Refunding Bonds Series 2020A (AMT), Series 2020B (Non-AMT) and Series 2020C (Taxable); and

(5) City of Houston, Texas Airport System Subordinate Lien Revenue Refunding Bonds, Series 2021A (AMT).

As of the date of this Official Statement, the Proposed 2016 Amendments have <u>not</u> been incorporated into the following Outstanding obligations of the Houston Airport System:

(1) City of Houston, Texas Airport System Subordinate Lien Revenue Bonds, Series 2000B (Non-AMT); and

(2) City of Houston, Texas Airport System Subordinate Lien Revenue Bonds, Series 2002A (AMT) and Series 2002B (Non-AMT).

Proposed 2016 Amendments

Short Term/Demand Obligations. On the Amendment Effective Date, Section 5.02 of the Master Ordinance shall read:

> SECTION 5.02 <u>SHORT TERM/DEMAND OBLIGATIONS</u>. The City reserves the right to issue, from time to time, one or more series of Additional Senior Lien Obligations and/or Additional Subordinate Lien Bonds as "Short Term/Demand Obligations"; provided, however, that no such Short Term/Demand Obligations may be issued without satisfying the applicable provisions of Section 5.01 above.

On the Amendment Effective Date, the definition of "Short Term/Demand Obligations" shall read:

> "**<u>Short Term/Demand Obligations</u>**" means each series of bonds, notes and other obligations, the payment of principal of which is either (i) payable on demand by or at the option of the holder at a time sooner than a date on which such principal is deemed to be payable for purposes of computing Debt Service Requirements, or (ii) scheduled to be payable within one year from the date of issuance and is contemplated to be refinanced for a specified period or term through the issuance of additional Short Term/Demand

Obligations pursuant to a commercial paper or other similar financing program. The purchase price, payment or refinancing of such principal may be additionally secured by a letter of credit, line of credit, standby bond purchase agreement, bond insurance, surety bond or other credit or liquidity facility.

Released Revenues. On the Amendment Effective Date, the definition of "Gross Revenues" shall read as follows, and the definition of "Released Revenues" set forth below shall be added to the Master Ordinance.

"*Gross Revenues*" means all income and revenues derived directly or indirectly by the City from the operation and use of and otherwise pertaining to the Airport System, or any part thereof, whether resulting from extensions, enlargements, repairs, betterments or other improvements to the Airport System, or otherwise, and includes, except to the extent hereinafter expressly excluded, all revenues received by the City from the Airport System, including, without limitation, all rentals, rates, fees and other charges for the use of the Airport System, or for any service rendered by the City in the operation thereof, interest and other income realized from the investment or deposit of amounts credited to any fund required to be maintained pursuant to this Master Ordinance or any other ordinance authorizing the issuance of Airport Obligations. Gross Revenues expressly exclude:

(i) proceeds of any Airport Obligations;

(ii) interest or other investment income derived from Airport Obligation proceeds deposited to the credit of any construction fund, or applied to fund capitalized interest, or interest or investment income required to be retained in the Senior Lien Bond Reserve Fund, the Subordinate Lien Bond Reserve Fund, the Inferior Lien Bond Reserve Fund, the Operation and Maintenance Reserve Fund or any escrow fund in order to accumulate therein any amount or balance required to be accumulated or maintained therein pursuant to any ordinance authorizing any series of Airport Obligations;

(iii) any monies received as grants, appropriations, or gifts, the use of which is limited by the grantor or donor to the construction or acquisition of Airport System facilities, except to the extent any such monies shall be received as payments for the use of the Airport System facilities;

(iv) any revenues derived from any Special Facilities which are pledged to the payment of Special Facilities Bonds;

(v) insurance proceeds other than loss of use or business interruption insurance proceeds;

(vi) the proceeds of any passenger facility charge or other per-passenger charge as may be hereafter authorized under federal law, including, but not limited to, those revenues defined as PFC Revenues;

(vii) sales and other taxes collected by the Airport System on behalf of the State of Texas and any other taxing entities;

(viii) Federal Payments received by the Airport System unless the City first receives an opinion from nationally recognized bond counsel to the effect that such payments, if included in Gross Revenues, would not cause the interest on the Airport Obligations to be includable within the gross income of the Owners thereof for federal income tax purposes;

(ix) the net proceeds received by the City from the disposition of any Airport System property;

(x) any Excluded Fee and Charge Revenues;

(xi) any Taxable Bond Credit Revenues; and

(xii) <u>any Released Revenues</u>

"*Released Revenues*" means a specific, identifiable portion of the income and revenues otherwise constituting Gross Revenues (the "Identified Revenues") with respect to which the City has adopted a Supplemental Ordinance authorizing the Identified Revenues to be excluded from the definition of Gross Revenues and finding and determining that the following conditions have been met:

(i) either (x) the City Controller of the City has certified that, after the Identified Revenues were excluded from Gross Revenues, Net Revenues for each of the two most recent completed Fiscal Years were sufficient to satisfy the rate covenant set forth in Section 3.03(a) of this Master Ordinance in each of those Fiscal Years or (y) an Airport Management Consultant has certified, based upon reasonable assumptions, that after the Identified Revenues are excluded from Gross Revenues, Net Revenues for each of the following three (3) full Fiscal Years will be sufficient to enable the City to satisfy the rate covenant set forth in Section 3.03(a) of this Master Ordinance in each of those five Fiscal Years;

(ii) the City has received an opinion of nationally recognized bond counsel to the effect that the exclusion of the Identified Revenues from the definition of Gross Revenues and from the pledge and lien of this Master Ordinance will not, in and of itself, cause the interest on any Outstanding Airport Obligations to be included in gross income for purposes of federal income tax; and

(iii) the City has received written confirmation from each rating agency then rating the Outstanding Airport Obligations to the effect that the exclusion of the Identified Revenues from the definition of Gross Revenues and from the pledge and lien of this Master Ordinance will not cause a withdrawal or reduction in any unenhanced rating then assigned to any Outstanding Airport Obligation.

Beginning the first full Fiscal Year following the adoption of the Supplemental Ordinance that meets the requirements set forth above, the Identified Revenues shall become "Released Revenues" and shall be excluded from the pledge and lien of this Master Ordinance. The City shall file a notice with the MSRB describing the Released Revenues and the effective date of the exclusion of the Released Revenues from the pledge and lien of this Master Ordinance.

Reserve Fund Requirement for Non-Participant Accounts. On the Amendment Effective Date, the definition of "Reserve Fund Requirement" shall read:

"**<u>Reserve Fund Requirement</u>**" means the amount required to be maintained in the Senior Lien Bond Reserve Fund (and the accounts therein), the Subordinate Lien Bond Reserve Fund (and the accounts therein), or the Inferior Lien Bond Reserve Fund (and the accounts therein), as the case may be, as further set forth in the applicable Supplemental Ordinance and/or officers pricing certificate authorizing one or more series of Airport Obligations. Upon the issuance of any series of Airport Obligations, the amount of the Reserve Fund Requirement for such Airport Obligations shall be as set forth in the related Supplemental Ordinance or officers pricing certificate.

A. For Senior Lien Notes, such amount shall be computed and recomputed upon the issuance of each series of Senior Lien Notes to be the arithmetic average of the Debt Service Requirements scheduled to occur in the then current and each future Fiscal Year for all Senior Lien Notes then Outstanding, including the series of Senior Lien Notes then being issued.

B. For Senior Lien Bonds that are Reserve Fund Participants, such amount shall be computed upon the issuance of each series of Senior Lien Bonds that are Reserve Fund Participants and on each date on which Senior Lien Bonds that are Reserve Fund Participants are paid at maturity or optionally or mandatorily redeemed, to be the greatest amount of the Debt Service Requirements scheduled to occur in the then current and each future Fiscal Year for all Senior Lien Bonds then Outstanding that are Reserve Fund Participants.

C. For any series of Senior Lien Bonds that are Reserve Fund Non-Participants, such amount shall be computed upon the issuance of such series of Senior Lien Bonds and on each date on which any of such series of Senior Lien Bonds are paid at maturity or optionally or mandatorily redeemed, to be an amount, if any, as set forth and determined in the related Supplemental Ordinance.

D. For Subordinate Lien Bonds that are Reserve Fund Participants, such amount shall be computed and recomputed upon the issuance of each series of Subordinate Lien Bonds that are Reserve Fund Participants and on each date on which Subordinate Lien Bonds that are Reserve Fund Participants are paid at maturity or optionally or mandatorily redeemed, to be the greatest amount of the Debt Service Requirements scheduled to occur in the then current and each future Fiscal Year for all Subordinate Lien Bonds then Outstanding that are Reserve Fund Participants, including any series of Subordinate Lien Bonds then being issued that are Reserve Fund Participants.

E. For any series of Subordinate Lien Bonds that are Reserve Fund Non-Participants, such amount shall be computed upon the issuance of such series of Subordinate Lien Bonds and on each date on which any of such series of Subordinate Lien Bonds are paid at maturity or optionally or mandatorily redeemed, to be an amount, if any, as set forth and determined in the related Supplemental Ordinance.

F. For Inferior Lien Bonds that are Reserve Fund Participants, such amount shall be computed and recomputed upon the issuance of each series of Inferior Lien Bonds that are Reserve Fund Participants and on each date on which Inferior Lien Bonds that are Reserve Fund Participants are paid at maturity or optionally or mandatorily redeemed, to be the greatest amount of the Debt Service Requirements scheduled to occur in the then current and each future Fiscal Year for all Inferior Lien Bonds then Outstanding that are Reserve Fund Participants, including any series of Inferior Lien Bonds then being issued that are Reserve Fund Participants.

G. For any series of Inferior Lien Bonds that are Reserve Fund Non-Participants, such amount shall be computed upon the issuance of such series of Inferior Lien Bonds and on each date on which any of such series of Inferior Lien Bonds are paid at maturity or optionally or mandatorily redeemed, to be an amount, if any, as set forth and determined in the related Supplemental Ordinance.

Definition of Qualified Hedge Agreement. On the Amendment Effective Date, the definition of "Qualified Hedge Agreement" shall read:

"**Qualified Hedge Agreement**" means any agreement between the City and a qualifying financial institution (as described in the following sentence) for the purpose of providing an interest rate swap, exchange, cap, collar, floor, forward or other hedging mechanism, arrangement or security, however denominated, expressly identified pursuant to its terms as being entered into in connection with and in order to hedge interest rate fluctuations on any portion of any Airport Obligations and in consideration for which the City may agree to pay, but solely from Net Revenues as herein provided, (i) periodic payments for the availability of such Qualified Hedge Agreement and/or (ii) net amounts as a result of fluctuation in hedged interest rates or in the value of any index of payment and/or (iii) termination charges. A Qualified Hedge Agreement may only be entered into with a financial institution that has long-term credit ratings or the obligations of which are unconditionally guaranteed by a financial institution with long-term credit ratings in one of the two highest generic rating categories by one nationally recognized rating service. Obligations of the City pursuant to a Qualified Hedge Agreement shall be included within the definition of Debt Service Requirements for the series of Airport Obligations to which the Qualified Hedge Agreement relates. Further, obligations of the City to make payments under a Qualified Hedge Agreement derived from or resulting from a fluctuation in hedged interest rates or in the value of any index of payment shall be deemed to be payments of interest on the Airport Obligations so hedged. Each Qualified Hedge Agreement shall be deemed to be a part of the Airport Obligations of the series to which it relates for the purpose of securing its payment by the pledge of Net Revenues as provided in Articles III, V and VI of this Master Ordinance. However, issuers of and counterparties to Qualified Hedge Agreements shall not be treated as Owners of Airport Obligations for purposes of any voting rights to approve amendments or direct the exercise of any remedies under this Master Ordinance.

APPENDIX D
FORMS OF OPINIONS OF CO-BOND COUNSEL AND TAX COUNSEL

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[CLOSING DATE]

We have acted as co-bond counsel for the City of Houston, Texas (the "City") in connection with the issuance of the bonds described as follows:

> CITY OF HOUSTON, TEXAS AIRPORT SYSTEM SUBORDINATE LIEN REVENUE AND REFUNDING BONDS, SERIES 2023A (AMT) in the original aggregate principal amount of $647,865,000 (the "Series 2023A Bonds"); and
>
> CITY OF HOUSTON, TEXAS AIRPORT SYSTEM SUBORDINATE LIEN REVENUE AND REFUNDING BONDS, SERIES 2023B (NON-AMT) in the original aggregate principal amount of $108,185,000 (the "Series 2023B Bonds," and together with the Series 2023A Bonds, the "Series 2023 Bonds").

The Series 2023 Bonds mature, bear interest and may be transferred and exchanged as set forth in the Series 2023 Bonds, City of Houston Ordinance No. 2023-0378 (the "Seventh Supplemental Ordinance") and the officers pricing certificate executed pursuant thereto (the "Officers Pricing Certificate"). The Series 2023 Bonds are also authorized pursuant to City of Houston Ordinance No. 2016-846 (the "Master Ordinance"). The Master Ordinance, the Seventh Supplemental Ordinance and the Officers Pricing Certificate are referred to collectively herein as the "Ordinance." Capitalized terms used herein but not otherwise defined have the meanings assigned in the Ordinance.

We have acted as co-bond counsel for the sole purpose of rendering an opinion with respect to the legality and validity of the Series 2023 Bonds under the Constitution and laws of the State of Texas. We have not investigated or verified original proceedings, records, data or other material, but have relied solely upon the transcript of certified proceedings described in the following paragraph. We have not assumed any responsibility with respect to the financial condition or capabilities of the City, including the Airport System, or the reporting or disclosure thereof in connection with the offer and sale of the Series 2023 Bonds. Our role in connection with the Preliminary Official Statement, dated as of June 12, 2023, and the Official Statement, dated as of June 29, 2023, prepared for use in connection with the offer and sale of the Series 2023 Bonds has been limited as described therein.

In our capacity as co-bond counsel, we have participated in the preparation of and have examined a transcript of certified proceedings pertaining to the authorization and issuance of the Series 2023 Bonds, the bonds being refunded with a portion of the proceeds of the Series 2023A Bonds (the "2023A Refunded Bonds"), the bonds being refunded with a portion of the proceeds of the Series 2023B Bonds (the "2023B Refunded Bonds," and together with the 2023A Refunded Bonds, the "Refunded Bonds"), the bonds being refunded (through purchase and cancellation) with a portion of the proceeds of the Series 2023A Bonds (the "2023A Refunded Target Bonds"), the bonds being refunded (through purchase and cancellation) with a portion of the proceeds of the Series 2023B Bonds (the "2023B Refunded Target Bonds," and together with the 2023A Refunded Target Bonds, the "Refunded Target Bonds"), the commercial paper notes being refunded with a portion of the proceeds of the Series 2023A Bonds (the "2023A Refunded Notes"), the commercial paper notes being refunded with a portion of the proceeds

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of the Series 2023B Bonds (the "Series 2023B Refunded Notes," and together with the Series 2023A Refunded Notes, the "Refunded Notes"), on which we have relied in giving our opinion. The transcript contains certified copies of certain proceedings of the City Council of the City; the report jointly prepared by Samuel Klein and Company, a firm of independent certified public accountants, and Public Finance Partners LLC (the "Report") verifying (i) the sufficiency of the deposits made with the escrow agent for the Refunded Bonds (the "Escrow Agent") for the defeasance and redemption of such bonds; and (ii) the sufficiency of the deposits made with the paying agent/registrar for the Refunded Target Bonds (the "Paying Agent/Registrar for the Refunded Target Bonds") for the refunding (through purchase and cancellation) of such bonds; a sufficiency certificate of the issuing and paying agent for the Refunded Notes (the "Refunded Notes Paying Agent"), with calculations from the City's co-financial advisors (the "Sufficiency Certificate"); customary certificates of officials, agents and representatives of the City, the Escrow Agent, the Paying Agent/Registrar for the Refunded Target Bonds, the Refunded Notes Paying Agent, and certain other persons; and other certified showings relating to the authorization and issuance of the Series 2023 Bonds and firm banking and financial arrangements for the discharge and final payment of the Refunded Bonds, Refunded Target Bonds and Refunded Notes. We have also examined a specimen of the form of registered bond of each series of the Series 2023 Bonds.

Based on such examination, it is our opinion that:

1. The transcript of certified proceedings referenced above evidence complete legal authority for the issuance of the Series 2023 Bonds in full compliance with the Constitution and the laws of the State of Texas presently effective and that therefore the Series 2023 Bonds constitute legal, valid and binding special obligations of the City.

2. The Series 2023 Bonds, together with all outstanding Subordinate Lien Bonds and any additional Subordinate Lien Bonds hereafter issued, are payable from and equally and ratably secured by a lien on Net Revenues (subject to the prior and superior lien on Net Revenues securing the outstanding Senior Lien Obligations and any additional Senior Lien Obligations hereafter issued) and the Subordinate Lien Bond Interest and Sinking Fund, as provided in the Ordinance. The Series 2023 Bonds are Reserve Fund Participants and are also secured by a lien on the Subordinate Lien Bond Reserve Fund Participant Account, as provided in the Ordinance.

3. Under the terms of the Ordinance and certain reports, certificates, letters of instruction delivered thereunder, firm banking and financial arrangements have been made for the discharge and final payment of the Refunded Bonds pursuant to the Escrow Agreement, and therefore the Refunded Bonds are deemed to be fully paid and no longer outstanding except for the purpose of being paid from funds provided for such purpose pursuant to the Escrow Agreement.

4. Firm banking and financial arrangements have been made for the discharge and final payment (through purchase and cancellation) of the Refunded Target Bonds pursuant to the terms of the Ordinance and the deposit to the Paying Agent/Registrar for the Refunded

Target Bonds, as described and certified in the Report, and therefore the Refunded Target Bonds are deemed to be fully paid and no longer outstanding.

5. Firm banking and financial arrangements have been made for the discharge and final payment of the Refunded Notes pursuant to the terms of the Ordinance and the deposit to the Refunded Notes Paying Agent, as described and certified in the Sufficiency Certificate, and therefore the Refunded Notes are deemed to be fully paid and no longer outstanding.

The rights of the Owners of the Series 2023 Bonds are subject to the applicable provisions of the federal bankruptcy laws and any other similar laws affecting the rights of creditors of political subdivisions, and may be limited by general principles of equity that permit the exercise of judicial discretion. The Series 2023 Bonds are secured solely by a lien on and pledge of Net Revenues as described above and certain funds as provided in the Ordinance and do not constitute an indebtedness or general obligation of the City. Owners of the Series 2023 Bonds shall never have the right to demand payment of principal or interest out of any funds raised or to be raised by taxation.

The City has reserved the right to issue additional Senior Lien Obligations, additional Subordinate Lien Bonds and Inferior Lien Bonds, subject to the restrictions contained in the Ordinance, secured by liens on the Net Revenues that are prior and superior to, on a parity with, or junior and inferior to, respectively, the lien on Net Revenues securing the Series 2023 Bonds.

Our opinions are based on existing law and our knowledge of facts as of the date hereof. We assume no duty to update or supplement our opinions, and this opinion letter may not be relied upon in connection with any changes to the law or facts, or actions taken or omitted, after the date hereof.

WEST & ASSOCIATES L.L.P.

ATTORNEYS AND COUNSELORS AT LAW

July 19, 2023

We have acted as co-bond counsel for the City of Houston, Texas (the "City") in connection with the issuance of the bonds described as follows:

CITY OF HOUSTON, TEXAS AIRPORT SYSTEM SUBORDINATE LIEN REVENUE AND REFUNDING BONDS, SERIES 2023A (AMT) in the aggregate principal amount of $647,865,000 (the "Series 2023A Bonds").

CITY OF HOUSTON, TEXAS AIRPORT SYSTEM SUBORDINATE LIEN REVENUE AND REFUNDING BONDS, SERIES 2023B (NON-AMT) in the aggregate principal amount of $108,185,000 (the "Series 2023B Bonds and together with the Series 2023A Bonds, the "Series 2023 Bonds").

The Series 2023 Bonds mature, bear interest and may be transferred and exchanged as set forth in the Series 2023 Bonds, City of Houston Ordinance No. 2023-0378 (the "Seventh Supplemental Ordinance") and the officers pricing certificate executed pursuant thereto (the "Officers Pricing Certificate"). The Series 2023 Bonds are also authorized pursuant to City of Houston Ordinance No. 2016-846 (the "Master Ordinance"). The Master Ordinance, the Supplemental Ordinance and the Officers Pricing Certificate are referred to collectively herein as the "Ordinance." Capitalized terms used herein but not otherwise defined have the meanings assigned in the Ordinance.

We have acted as co-bond counsel for the sole purpose of rendering an opinion with respect to the legality and validity of the Series 2023 Bonds under the Constitution and laws of the State of Texas. We have not investigated or verified original proceedings, records, data or other material, but have relied solely upon the transcript of certified proceedings described in the following paragraph. We have not assumed any responsibility with respect to the financial condition or capabilities of the City, including the Airport System, or the reporting or disclosure thereof in connection with the offer and sale of the Series 2023 Bonds. Our role in connection with the Preliminary Official Statement, dated as of June 12, 2023, and the Official Statement, dated as of June 29, 2023, prepared for use in connection with the offer and sale of the Series 2023 Bonds has been limited as described therein.

In our capacity as co-bond counsel, we have participated in the preparation of and have examined a transcript of certified proceedings pertaining to the authorization and issuance of the Series 2023 Bonds, the bonds being refunded with a portion of the proceeds of the Series 2023A Bonds (the "2023A Refunded Bonds"), the bonds being refunded with a portion of the proceeds of the Series 2023B Bonds (the "2023B Refunded Bonds" and, together with the 2023A Refunded Bonds, the "Refunded Bonds"), the bonds being refunded (through purchase and cancellation) with a portion of the proceeds of the Series 2023A Bonds (the "2023A Refunded Target Bonds"), the bonds being refunded (through purchase and cancellation) with a portion of the proceeds of the Series 2023B

Bonds (the "2023B Refunded Target Bonds" and, together with the 2023A Refunded Target Bonds, the "Refunded Target Bonds"), the commercial paper notes being refunded with a portion of the proceeds of the Series 2023A Bonds (the "2023A Refunded Notes"), the commercial paper notes being refunded with a portion of the proceeds of the Series 2023B Bonds (the "Series 2023B Refunded Notes" and, together with the Series 2023A Refunded Notes, the "Refunded Notes"), on which we have relied in giving our opinion. The transcript contains certified copies of certain proceedings of the City Council of the City; the report jointly prepared by Samuel Klein and Company, a firm of independent certified public accountants, and Public Finance Partners LLC (the "Report") verifying (i) the sufficiency of the deposits made with the escrow agent for the Refunded Bonds (the "Escrow Agent") for the defeasance and redemption of such bonds; and (ii) the sufficiency of the deposits made with the paying agent/registrar for the Refunded Target Bonds (the "Paying Agent/Registrar for the Refunded Target Bonds") for the refunding (through purchase and cancellation) of such bonds; a sufficiency certificate of the issuing and paying agent for the Refunded Notes (the "Refunded Notes Paying Agent"), with calculations from the City's co-financial advisors (the "Sufficiency Certificate"); customary certificates of officials, agents and representatives of the City, the Escrow Agent, the Paying Agent/Registrar for the Refunded Target Bonds, the Refunded Notes Paying Agent, and certain other persons; and other certified showings relating to the authorization and issuance of the Series 2023 Bonds and firm banking and financial arrangements for the discharge and final payment of the Refunded Bonds, the Refunded Target Bonds and the Refunded Notes. We have also examined a specimen of the form of registered bond of each series of the Series 2023 Bonds.

Based on such examination, it is our opinion that:

1. The transcript of certified proceedings referenced above evidences complete legal authority for the issuance of the Series 2023 Bonds in full compliance with the Constitution and the laws of the State of Texas presently effective and that therefore the Series 2023 Bonds constitute legal, valid and binding special obligations of the City.

2. The Series 2023 Bonds, together with all outstanding Subordinate Lien Bonds and any additional Subordinate Lien Bonds hereafter issued, are payable from and equally and ratably secured by a lien on Net Revenues (subject to the prior and superior lien on Net Revenues securing the outstanding Senior Lien Obligations and any additional Senior Lien Obligations hereafter issued) and the Subordinate Lien Bond Interest and Sinking Fund, as provided in the Ordinance. The Series 2023 Bonds are Reserve Fund Participants and are also secured by a lien on the Subordinate Lien Bond Reserve Fund Participant Account, as provided in the Ordinance.

3. Under the terms of the Ordinance and certain certificates and letters of instruction delivered thereunder, firm banking and financial arrangements have been made for the discharge and final payment of the Refunded Bonds pursuant to the Escrow Agreement , and therefore the Refunded Bonds are deemed to be fully paid and no longer

outstanding except for the purpose of being paid from funds provided for such purpose pursuant to the Escrow Agreement.

4. Firm banking and financial arrangements have been made for the discharge and final payment (through purchase and cancellation) of the Refunded Target Bonds pursuant to the terms of the Ordinance and the deposit to the Paying Agent/Registrar for the Refunded Target Bonds, as described and certified in the Report, and therefore the Refunded Target Bonds are deemed to be fully paid and no longer outstanding.

5. Firm banking and financial arrangements have been made for the discharge and final payment of the Refunded Notes pursuant to the terms of the Ordinance and the deposit to the Refunded Notes Paying Agent, as described and certified in the Sufficiency Certificate, and therefore the Refunded Notes are deemed to be fully paid and no longer outstanding.

The rights of the Owners of the Series 2023 Bonds are subject to the applicable provisions of the federal bankruptcy laws and any other similar laws affecting the rights of creditors of political subdivisions, and may be limited by general principles of equity that permit the exercise of judicial discretion. The Series 2023 Bonds are secured solely by a lien on and pledge of Net Revenues as described above and certain funds as provided in the Ordinance and do not constitute an indebtedness or general obligation of the City. Owners of the Series 2023 Bonds shall never have the right to demand payment of principal or interest out of any funds raised or to be raised by taxation.

The City has reserved the right to issue additional Senior Lien Obligations, additional Subordinate Lien Bonds and Inferior Lien Bonds, subject to the restrictions contained in the Ordinance, secured by liens on the Net Revenues that are prior and superior to, on a parity with, or junior and inferior to, respectively, the lien on Net Revenues securing the Series 2023 Bonds.

Our opinions are based on existing law and our knowledge of facts as of the date hereof. We assume no duty to update or supplement our opinions, and this opinion letter may not be relied upon in connection with any changes to the law or facts, or actions taken or omitted, after the date hereof.

West & Associates, L.L.P.

BRACEWELL

[CLOSING DATE]

We have acted as special tax counsel for the City of Houston, Texas (the "City") in connection with the issuance of the bonds described as follows:

> CITY OF HOUSTON, TEXAS AIRPORT SYSTEM SUBORDINATE LIEN REVENUE AND REFUNDING BONDS, SERIES 2023A (AMT) in the original aggregate principal amount of $647,865,000 (the "Series 2023A Bonds"); and
>
> CITY OF HOUSTON, TEXAS AIRPORT SYSTEM SUBORDINATE LIEN REVENUE AND REFUNDING BONDS, SERIES 2023B (NON-AMT) in the original aggregate principal amount of $108,185,000 (the "Series 2023B Bonds" and, collectively with the Series 2023A Bonds, the "Series 2023 Bonds").

The Series 2023 Bonds mature, bear interest and may be transferred and exchanged as set forth in the Series 2023 Bonds, City Ordinance No. 2023-0378 (the "Seventh Supplemental Ordinance") and the officers pricing certificate executed pursuant thereto (the "Officers Pricing Certificate"). The Series 2023 Bonds are also authorized pursuant to City Ordinance No. 2016-0846 (the "Master Ordinance"). The Master Ordinance, the Seventh Supplemental Ordinance and the Officers Pricing Certificate are referred to collectively herein as the "Ordinance." Capitalized terms used herein but not otherwise defined have the meanings assigned in the Ordinance.

We have acted as special tax counsel for the sole purpose of rendering an opinion with respect to the excludability of interest on the Series 2023 Bonds from gross income for federal income tax purposes. In our capacity as special tax counsel, we have assumed no responsibility with respect to the financial condition or capabilities of the City, including the Airport System, or the reporting or disclosure thereof in connection with the offer and sale of the Series 2023 Bonds. Our role in connection with the Preliminary Official Statement, dated as of June 12, 2023, and the Official Statement, dated as of June 29, 2023, prepared for use in connection with the offer and sale of the Series 2023 Bonds has been limited as described therein.

We acknowledge that West & Associates L.L.P., with whom our firm serves as co-bond counsel ("Co-Bond Counsel") with respect to the Series 2023 Bonds, is not responsible for our opinion as special tax counsel. The two firms are not part of a partnership and each firm is an independent entity.

In our capacity as special tax counsel, we have participated in the preparation of and have examined a transcript of certified proceedings pertaining to the authorization and issuance of the Series 2023 Bonds, on which we have relied in giving our opinion. The transcript contains certified copies of certain proceedings of the City Council of the City; the report jointly prepared by Samuel Klein and Company, a firm of independent certified public accountants, and Public Finance Partners LLC (the "Report") verifying the mathematical accuracy of the computation of the yield of the Series 2023 Bonds; a sufficiency certificate of the issuing and paying agent for the commercial paper notes, with calculations from the City's co-financial advisors; customary certificates of officials, agents and representatives of the City and certain other persons; and other certified showings relating to the authorization and issuance of the Series 2023 Bonds. We also have analyzed such laws, regulations, guidance, documents and other materials as we have deemed necessary to render the opinions herein.

In providing the opinions set forth herein, we have relied on representations and certifications of the City and other parties involved with the issuance of the Series 2023 Bonds with respect to matters solely within the knowledge of the City and such parties, which we have not independently verified. In addition, we have assumed for purposes of this opinion continuing compliance with the covenants in the Ordinance, including, but not limited to, covenants relating to the tax-exempt status of the Series 2023 Bonds. Further, we have relied on the legal opinion of Co-Bond Counsel of even date herewith regarding the legality and validity of the Series 2023 Bonds under the Constitution and laws of the State of Texas.

Based on such examination, it is our opinion that:

1. Interest on the Series 2023A Bonds is excludable from gross income for federal income tax purposes under section 103 of the Internal Revenue Code of 1986, as amended (the "Code"), except with respect to interest on any Series 2023A Bond for any period during which such Series 2023A Bond is held by a person who is a "substantial user" of the facilities financed or refinanced with the proceeds of the Series 2023A Bonds or a "related person" to such a "substantial user," each within the meaning of section 147(a) of the Code;

2. Interest on the Series 2023A Bonds is an item of tax preference that is includable in alternative minimum taxable income for purposes of determining the alternative minimum tax on individuals;

3. Interest on the Series 2023B Bonds is excludable from gross income for federal income tax purposes under section 103 of the Code; and

4. Interest on the Series 2023B Bonds is not an item of tax preference for purposes of the alternative minimum tax on individuals.

We observe that, for tax years beginning after December 31, 2022, interest on the Series 2023 Bonds is taken into account in computing the alternative minimum tax imposed on certain corporations.

Except as stated above, we express no opinion as to the amount or timing of interest on the Series 2023 Bonds or any federal, state or local tax consequences resulting from the receipt or accrual of interest on, or the acquisition, ownership or disposition of, the Series 2023 Bonds. This opinion is specifically limited to the laws of the United States of America. Further, in the event that the representations of the City or other parties upon which we have relied are determined to be inaccurate or incomplete or the City fails to comply with the covenants of the Ordinance, interest on the Series 2023 Bonds could become includable in gross income for federal income tax purposes from the date of the original delivery of the Series 2023 Bonds, regardless of the date on which the event causing such inclusion occurs.

Our opinions are based on existing law and our knowledge of facts as of the date hereof and may be affected by certain actions that may be taken or omitted on a later date. We assume no duty to update or supplement our opinions, and this opinion letter may not be relied upon in connection with any changes to the law or facts, or actions taken or omitted, after the date hereof.

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APPENDIX E
SUMMARY OF SCHEDULES RELATED TO
CONTINUING DISCLOSURE OF INFORMATION

Schedule A PFC Collections

Schedule 1 Passenger Statistics (including Schedule 1-A – Total Enplaned Passengers for the Houston Airport System)

Schedule 2 Airline Market Shares

Schedule 3 Total Aircraft Operations and Aircraft Landed Weight

Schedule 4 Total System Cargo Activity

Schedule 5 Selected Financial Information

Schedule 6 Summary of Certain Fees and Charges

Schedule 7 Houston Airport System Debt Service Requirements Schedule

Schedule 8 Houston Airport System Outstanding Debt

Schedule 8A Cash and Liquidity

Schedule 9:* Actuarially Determined Contribution Amounts and Changes in Pension Plan Assets

Schedule 9A:* Municipal System Pension Plan Assets, Liabilities and Unfunded Actuarial Accrued Liability

Schedule 9B:* Police System Pension Plan Assets, Liabilities and Unfunded Actuarial Accrued Liability

Schedule 9C:* Firefighter Fund Pension Plan Assets, Liabilities and Unfunded Actuarial Accrued Liability

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* The City agrees to update Schedules 9, 9A, 9B, and 9C only to the extent that the City receives updated actuarial reports from the boards of the pension systems. While required by State law, the City is not empowered to require the boards of the pension systems to obtain updated actuarial reports. The pension systems will periodically receive additional actuarial reports with regard to the City's pension plans, to the extent required under State law or requested by the boards of the pension systems. Accordingly, updated Schedules 9, 9A, 9B and 9C may not be available in every annual continuing disclosure filing.

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APPENDIX F
DEPOSITORY TRUST COMPANY

The information in this APPENDIX describes the securities clearance procedures of The Depository Trust Company ("DTC") in the United States. The information in this APPENDIX concerning DTC has been obtained from sources that the City believes to be reliable, but the City takes no responsibility for the accuracy of such information.

The Depository Trust Company

The Depository Trust Company ("DTC"), New York, NY, will act as securities depository for the Series 2023 Bonds. The Series 2023 Bonds will be issued as fully-registered securities registered in the name of Cede & Co. (DTC's partnership nominee) or such other name as may be requested by an authorized representative of DTC. One fully-registered Bond certificate will be issued for the Series 2023 Bonds, in the aggregate principal amount of such issue, and will be deposited with DTC.

DTC, the world's largest securities depository, is a limited-purpose trust company organized under the New York Banking Law, a "banking organization" within the meaning of the New York Banking Law, a member of the Federal Reserve System, a "clearing corporation" within the meaning of the New York Uniform Commercial Code, and a "clearing agency" registered pursuant to the provisions of Section 17A of the Securities Exchange Act of 1934. DTC holds and provides asset servicing for over 3.5 million issues of U.S. and non-U.S. equity issues, corporate and municipal debt issues, and money market instruments (from over 100 countries) that DTC's participants ("Direct Participants") deposit with DTC. DTC also facilitates the post-trade settlement among Direct Participants of sales and other securities transactions in deposited securities, through electronic computerized book-entry transfers and pledges between Direct Participants' accounts. This eliminates the need for physical movement of securities certificates. Direct Participants include both U.S. and non-U.S. securities brokers and dealers, banks, trust companies, clearing corporations, and certain other organizations. DTC is a wholly-owned subsidiary of The Depository Trust & Clearing Corporation ("DTCC"). DTCC is the holding company for DTC, National Securities Clearing Corporation and Fixed Income Clearing Corporation, all of which are registered clearing agencies. DTCC is owned by the users of its regulated subsidiaries. Access to the DTC system is also available to others such as both U.S. and non-U.S. securities brokers and dealers, banks, trust companies, and clearing corporations that clear through or maintain a custodial relationship with a Direct Participant, either directly or indirectly ("Indirect Participants"). DTC has a Standard & Poor's rating of AA+. The DTC Rules applicable to its Participants are on file with the Securities and Exchange Commission. More information about DTC can be found at www.dtcc.com.

Purchases of Bonds under the DTC system must be made by or through Direct Participants, which will receive a credit for the Series 2023 Bonds on DTC's records. The ownership interest of each actual purchaser of each Series 2023 Bond ("Beneficial Owner") is in turn to be recorded on the Direct and Indirect Participants' records. Beneficial Owners will not receive written confirmation from DTC of their purchase. Beneficial Owners are, however, expected to receive written confirmations providing details of the transaction, as well as periodic statements of their holdings, from the Direct or Indirect Participant through which the Beneficial Owner entered into the transaction. Transfers of ownership interests in the Series 2023 Bonds are to be accomplished by entries made on the books of Direct and Indirect Participants acting on behalf of Beneficial Owners. Beneficial Owners will not receive certificates representing their ownership interests in the Series 2023 Bonds, except in the event that use of the book-entry system for the Series 2023 Bonds is discontinued.

To facilitate subsequent transfers, all Bonds deposited by Direct Participants with DTC are registered in the name of DTC's partnership nominee, Cede & Co., or such other name as may be requested by an authorized representative of DTC. The deposit of the Series 2023 Bonds with DTC and their registration in the name of Cede & Co. or such other DTC nominee do not effect any change in beneficial ownership. DTC has no knowledge of the actual Beneficial Owners of the Series 2023 Bonds; DTC's records reflect only the identity of the Direct Participants to whose accounts such Series 2023 Bonds are credited, which may or may not be the Beneficial Owners. The Direct and Indirect Participants will remain responsible for keeping account of their holdings on behalf of their customers.

Conveyance of notices and other communications by DTC to Direct Participants, by Direct Participants to Indirect Participants, and by Direct Participants and Indirect Participants to Beneficial Owners will be governed by arrangements among them, subject to any statutory or regulatory requirements as may be in effect from time to time. Beneficial Owners of the Series 2023 Bonds may wish to take certain steps to augment the transmission to them of notices of significant events with respect to the Series 2023 Bonds, such as redemptions, tenders, defaults, and proposed amendments to the financing documents. For example, Beneficial Owners of the Series 2023 Bonds may wish to ascertain that the nominee holding the Series 2023 Bonds for their benefit has agreed to obtain and transmit notices to Beneficial Owners. In the alternative, Beneficial Owners may wish to provide their names and addresses to the registrar and request that copies of notices be provided directly to them.

Redemption notices shall be sent to DTC. If less than all of the Series 2023 Bonds are being redeemed, DTC's practice is to determine by lot the amount of the interest of each Direct Participant in such issue to be redeemed.

Neither DTC nor Cede & Co. (nor any other DTC nominee) will consent or vote with respect to the Series 2023 Bonds unless authorized by a Direct Participant in accordance with DTC's MMI Procedures. Under its usual procedures, DTC mails an Omnibus Proxy to the City as soon as possible after the record date. The Omnibus Proxy assigns Cede & Co.'s consenting or voting rights to those Direct Participants to whose accounts the Series 2023 Bonds are credited on the record date (identified in a listing attached to the Omnibus Proxy).

Principal and interest payments on the Series 2023 Bonds will be made to Cede & Co., or such other nominee as may be requested by an authorized representative of DTC. DTC's practice is to credit Direct Participants' accounts, upon DTC's receipt of funds and corresponding detail information from the City or paying agent, on payable date in accordance with their respective holdings shown on DTC's records. Payments by Participants to Beneficial Owners will be governed by standing instructions and customary practices, as is the case with securities held for the accounts of customers in bearer form or registered in "street name," and will be the responsibility of such Participant and not of DTC, the paying agent, or the City, subject to any statutory or regulatory requirements as may be in effect from time to time. Payment of principal and interest on the Series 2023 Bonds to Cede & Co. (or such other nominee as may be requested by an authorized representative of DTC) is the responsibility of the City or the paying agent, disbursement of such payments to Direct Participants will be the responsibility of DTC, and disbursement of such payments to the Beneficial Owners will be the responsibility of Direct and Indirect Participants.

A Beneficial Owner shall give notice to elect to have its Bonds purchased or tendered, through its Participant, to the Remarketing Agent, and shall effect delivery of such Series 2023 Bonds by causing the Direct Participant to transfer the Participant's interest in the Series 2023 Bonds, on DTC's records, to the Remarketing Agent. The requirement for physical delivery of Bonds in connection with an optional tender or a mandatory purchase will be deemed satisfied when the ownership rights in the Series 2023 Bonds are transferred by Direct Participants on DTC's records and followed by a book-entry credit of tendered Bonds to the Remarketing Agent's DTC account.

DTC may discontinue providing its services as depository with respect to the Series 2023 Bonds at any time by giving reasonable notice to the City or the paying agent. Under such circumstances, in the event that a successor depository is not obtained, Bond certificates are required to be printed and delivered.

The City may decide to discontinue use of the system of book-entry-only transfers through DTC (or a successor securities depository). In that event, Bond certificates will be printed and delivered to DTC.

The information in this section concerning DTC and DTC's book-entry system has been obtained from sources that the City believes to be reliable, but the City takes no responsibility for the accuracy thereof.

Each person for whom a Participant acquires an interest in the Series 2023 Bonds, as nominee, may desire to make arrangements with such Participant to receive a credit balance in the records of such Participant, and may desire to make arrangements with such Participant to have all notices of redemption or other communications to DTC, which may affect such persons, to be forwarded in writing by such Participant and to have notification made of all interest payments.

NONE OF THE CITY, THE UNDERWRITERS OR THE PAYING AGENT/REGISTRAR WILL HAVE ANY RESPONSIBILITY OR OBLIGATION TO SUCH PARTICIPANTS OR THE PERSONS FOR WHOM THEY ACT AS NOMINEES WITH RESPECT TO THE SERIES 2023 BONDS.

So long as Cede & Co. is the registered owner of the Series 2023 Bonds, as nominee for DTC, references herein to Bondholders or registered owners of the Series 2023 Bonds shall mean Cede & Co. and shall not mean the Beneficial Owners of the Series 2023 Bonds.

When reference is made to any action which is required or permitted to be taken by the Beneficial Owners, such reference shall only relate to those permitted to act (by statute, regulation or otherwise) on behalf of such Beneficial Owners for such purposes. When notices are given, they shall be sent by the Paying Agent/Registrar to DTC only.

For every transfer and exchange of Bonds, the Beneficial Owner may be charged a sum sufficient to cover any tax, fee or other governmental charge that may be imposed in relation thereto.

The City, in its sole discretion and without the consent of any other person, may terminate the services of DTC with respect to the Series 2023 Bonds if the City determines that (i) DTC is unable to discharge its responsibilities with respect to the Series 2023 Bonds, or (ii) a continuation of the requirement that all of the outstanding Bonds be registered in the registration books kept by the Paying Agent/Registrar in the name of Cede & Co., as nominee of DTC, is not in the best interests of the Beneficial Owners.

NONE OF THE CITY, THE UNDERWRITER OR THE PAYING AGENT/REGISTRAR WILL HAVE ANY RESPONSIBILITY OR OBLIGATION TO DIRECT PARTICIPANTS, TO INDIRECT PARTICIPANTS, OR TO ANY BENEFICIAL OWNER WITH RESPECT TO: (I) THE ACCURACY OF ANY RECORDS MAINTAINED BY DTC, ANY DIRECT PARTICIPANT, OR ANY INDIRECT PARTICIPANT; (II) ANY NOTICE THAT IS PERMITTED OR REQUIRED TO BE GIVEN TO THE OWNERS OF THE SERIES 2023 BONDS UNDER THE ORDINANCE; (III) THE SELECTION BY DTC OR ANY DIRECT PARTICIPANT OR INDIRECT PARTICIPANT OF ANY PERSON TO RECEIVE PAYMENT IN THE EVENT OF A PARTIAL REDEMPTION OF THE SERIES 2023 BONDS; (IV) THE PAYMENT BY DTC OR ANY DIRECT PARTICIPANT OR INDIRECT PARTICIPANT OF ANY AMOUNT WITH RESPECT TO THE PRINCIPAL, REDEMPTION PRICE OR INTEREST DUE WITH RESPECT TO THE SERIES 2023 BONDS; (V) ANY CONSENT GIVEN OR OTHER ACTION TAKEN BY DTC AS THE OWNER OF THE SERIES 2023 BONDS; OR (VI) ANY OTHER MATTER.

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APPENDIX G
SPECIMEN MUNICIPAL BOND INSURANCE POLICY

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MUNICIPAL BOND INSURANCE POLICY

ISSUER:

Policy No: -N

BONDS: $ in aggregate principal amount of

Effective Date:

Premium: $

ASSURED GUARANTY MUNICIPAL CORP. ("AGM"), for consideration received, hereby UNCONDITIONALLY AND IRREVOCABLY agrees to pay to the trustee (the "Trustee") or paying agent (the "Paying Agent") (as set forth in the documentation providing for the issuance of and securing the Bonds) for the Bonds, for the benefit of the Owners or, at the election of AGM, directly to each Owner, subject only to the terms of this Policy (which includes each endorsement hereto), that portion of the principal of and interest on the Bonds that shall become Due for Payment but shall be unpaid by reason of Nonpayment by the Issuer.

On the later of the day on which such principal and interest becomes Due for Payment or the Business Day next following the Business Day on which AGM shall have received Notice of Nonpayment, AGM will disburse to or for the benefit of each Owner of a Bond the face amount of principal of and interest on the Bond that is then Due for Payment but is then unpaid by reason of Nonpayment by the Issuer, but only upon receipt by AGM, in a form reasonably satisfactory to it, of (a) evidence of the Owner's right to receive payment of the principal or interest then Due for Payment and (b) evidence, including any appropriate instruments of assignment, that all of the Owner's rights with respect to payment of such principal or interest that is Due for Payment shall thereupon vest in AGM. A Notice of Nonpayment will be deemed received on a given Business Day if it is received prior to 1:00 p.m. (New York time) on such Business Day; otherwise, it will be deemed received on the next Business Day. If any Notice of Nonpayment received by AGM is incomplete, it shall be deemed not to have been received by AGM for purposes of the preceding sentence and AGM shall promptly so advise the Trustee, Paying Agent or Owner, as appropriate, who may submit an amended Notice of Nonpayment. Upon disbursement in respect of a Bond, AGM shall become the owner of the Bond, any appurtenant coupon to the Bond or right to receipt of payment of principal of or interest on the Bond and shall be fully subrogated to the rights of the Owner, including the Owner's right to receive payments under the Bond, to the extent of any payment by AGM hereunder. Payment by AGM to the Trustee or Paying Agent for the benefit of the Owners shall, to the extent thereof, discharge the obligation of AGM under this Policy.

Except to the extent expressly modified by an endorsement hereto, the following terms shall have the meanings specified for all purposes of this Policy. "Business Day" means any day other than (a) a Saturday or Sunday or (b) a day on which banking institutions in the State of New York or the Insurer's Fiscal Agent are authorized or required by law or executive order to remain closed. "Due for Payment" means (a) when referring to the principal of a Bond, payable on the stated maturity date thereof or the date on which the same shall have been duly called for mandatory sinking fund redemption and does not refer to any earlier date on which payment is due by reason of call for redemption (other than by mandatory sinking fund redemption), acceleration or other advancement of maturity unless AGM shall elect, in its sole discretion, to pay such principal due upon such acceleration together with any accrued interest to the date of acceleration and (b) when referring to interest on a Bond, payable on the stated date for payment of interest. "Nonpayment" means, in respect of a Bond, the failure of the Issuer to have provided sufficient funds to the Trustee or, if there is no Trustee, to the Paying Agent for payment in full of all principal and interest that is Due for Payment on such Bond. "Nonpayment" shall also include, in respect of a Bond, any payment of principal or interest that is Due for Payment made to an Owner by or on behalf of the Issuer which has been recovered from such Owner pursuant to the

United States Bankruptcy Code by a trustee in bankruptcy in accordance with a final, nonappealable order of a court having competent jurisdiction. "Notice" means telephonic or telecopied notice, subsequently confirmed in a signed writing, or written notice by registered or certified mail, from an Owner, the Trustee or the Paying Agent to AGM which notice shall specify (a) the person or entity making the claim, (b) the Policy Number, (c) the claimed amount and (d) the date such claimed amount became Due for Payment. "Owner" means, in respect of a Bond, the person or entity who, at the time of Nonpayment, is entitled under the terms of such Bond to payment thereof, except that "Owner" shall not include the Issuer or any person or entity whose direct or indirect obligation constitutes the underlying security for the Bonds.

AGM may appoint a fiscal agent (the "Insurer's Fiscal Agent") for purposes of this Policy by giving written notice to the Trustee and the Paying Agent specifying the name and notice address of the Insurer's Fiscal Agent. From and after the date of receipt of such notice by the Trustee and the Paying Agent, (a) copies of all notices required to be delivered to AGM pursuant to this Policy shall be simultaneously delivered to the Insurer's Fiscal Agent and to AGM and shall not be deemed received until received by both and (b) all payments required to be made by AGM under this Policy may be made directly by AGM or by the Insurer's Fiscal Agent on behalf of AGM. The Insurer's Fiscal Agent is the agent of AGM only and the Insurer's Fiscal Agent shall in no event be liable to any Owner for any act of the Insurer's Fiscal Agent or any failure of AGM to deposit or cause to be deposited sufficient funds to make payments due under this Policy.

To the fullest extent permitted by applicable law, AGM agrees not to assert, and hereby waives, only for the benefit of each Owner, all rights (whether by counterclaim, setoff or otherwise) and defenses (including, without limitation, the defense of fraud), whether acquired by subrogation, assignment or otherwise, to the extent that such rights and defenses may be available to AGM to avoid payment of its obligations under this Policy in accordance with the express provisions of this Policy.

This Policy sets forth in full the undertaking of AGM, and shall not be modified, altered or affected by any other agreement or instrument, including any modification or amendment thereto. Except to the extent expressly modified by an endorsement hereto, (a) any premium paid in respect of this Policy is nonrefundable for any reason whatsoever, including payment, or provision being made for payment, of the Bonds prior to maturity and (b) this Policy may not be canceled or revoked. THIS POLICY IS NOT COVERED BY THE PROPERTY/CASUALTY INSURANCE SECURITY FUND SPECIFIED IN ARTICLE 76 OF THE NEW YORK INSURANCE LAW.

In witness whereof, ASSURED GUARANTY MUNICIPAL CORP. has caused this Policy to be executed on its behalf by its Authorized Officer.

ASSURED GUARANTY MUNICIPAL CORP.

By ______________________________
Authorized Officer

A subsidiary of Assured Guaranty Municipal Holdings Inc.
1633 Broadway, New York, N.Y. 10019
(212) 974-0100

Form 500NY (5/90)

CITY OF HOUSTON, TEXAS
AIRPORT SYSTEM SUBORDINATE LIEN REVENUE AND REFUNDING BONDS, SERIES 2023A AND SERIES 2023B

HOUSTON AIRPORT SYSTEM

Mixed Sources
Product group from well managed forests, controlled sources and recycled wood or fiber.

Printed by: ImageMaster, LLC
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