



**\$231,930,000**  
**WAYNE COUNTY AIRPORT AUTHORITY**  
**Airport Revenue Bonds**  
**(Detroit Metropolitan Wayne County Airport), Series 2018A-D**



consisting of:

<b>\$147,390,000</b> <b>Airport Revenue Bonds</b> <b>Series 2018A (Non-AMT)</b>	<b>\$6,005,000</b> <b>Airport Revenue Bonds</b> <b>Series 2018B (AMT)</b>
<b>\$35,515,000</b> <b>Airport Revenue Refunding Bonds</b> <b>Series 2018C (Non-AMT)</b>	<b>\$43,020,000</b> <b>Airport Revenue Refunding Bonds</b> <b>Series 2018D (AMT)</b>

**Dated: Date of Delivery**

**Due: December 1, as shown on the inside cover page**

The Wayne County Airport Authority (the "Authority") is issuing its Airport Revenue Bonds, (Detroit Metropolitan Wayne County Airport), Series 2018A in the principal amount of \$147,390,000 (the "Series 2018A Bonds"), its Airport Revenue Bonds, (Detroit Metropolitan Wayne County Airport), Series 2018B in the principal amount of \$6,005,000 (the "Series 2018B Bonds"), its Airport Revenue Refunding Bonds, (Detroit Metropolitan Wayne County Airport), Series 2018C in the principal amount of \$35,515,000 (the "Series 2018C Refunding Bonds"), and its Airport Revenue Refunding Bonds, (Detroit Metropolitan Wayne County Airport), Series 2018D in the principal amount of \$43,020,000 (the "Series 2018D Refunding Bonds" and, collectively, with the Series 2018A Bonds, the Series 2018B Bonds and the Series 2018C Refunding Bonds, the "Series 2018 Bonds"). The Series 2018 Bonds are issued pursuant to the Authority's Master Bond Ordinance (as defined herein), and, with respect to the Series 2018A Bonds and the Series 2018B Bonds, the Authority's Series 2018 Project Ordinance (as defined herein), and, with respect to the Series 2018C Refunding Bonds and the Series 2018D Refunding Bonds, the Authority's Series 2018 Refunding Ordinance (as defined herein).

Proceeds from the Series 2018 Bonds, together with other available funds, will be used to (i) with respect to the Series 2018A Bonds and the Series 2018B Bonds, pay all or portions of the costs of acquiring, constructing and installing the Series 2018 Projects (as defined herein), (ii) with respect to the Series 2018C Refunding Bonds and the Series 2018D Refunding Bonds, provide funds to refund a portion of the Series 2008A Refunded Bonds (as defined herein), (iii) make a deposit to the Bond Reserve Account (as defined herein), (iv) pay capitalized interest on portions of the Series 2018A Bonds and the Series 2018B Bonds, and (v) pay costs of issuance of the Series 2018 Bonds.

The Series 2018 Bonds are revenue obligations of the Authority payable from the Net Revenues derived by the Authority from the operation of the Detroit Metropolitan Wayne County Airport (the "Airport") and are secured by a statutory lien upon and against the Net Revenues of the Airport. U.S. Bank National Association is trustee (the "Trustee") under the Master Bond Ordinance (as defined herein).

The Series 2018 Bonds are issuable as fully registered bonds in denominations of \$5,000 or any integral multiple thereof. Interest on the Series 2018 Bonds is payable semiannually on June 1 and December 1 of each year, commencing June 1, 2019, until maturity or prior redemption. **The Series 2018 Bonds will be subject to optional, mandatory and extraordinary optional redemption prior to maturity in the manner and at the times set forth herein.**

For maturities, principal amounts, interest rates, yields and CUSIP numbers, see the inside cover page.

The Series 2018 Bonds, when issued, will be registered in the name of Cede & Co., as registered owner and nominee of The Depository Trust Company ("DTC"), to which principal, premium and interest payments will be made. DTC will act as securities depository for the Series 2018 Bonds. Purchasers of the Series 2018 Bonds will not receive certificates representing their purchased interests in the Series 2018 Bonds.

This cover page contains information for quick reference only. It is not a summary of this issue. Prospective purchasers must read the entire Official Statement to obtain information essential to making an informed investment decision. See "INVESTMENT CONSIDERATIONS" for a discussion of certain factors that should be considered by prospective purchasers of the Series 2018 Bonds.

In the opinion of Miller, Canfield, Paddock and Stone, P.L.C. ("Bond Counsel"), under existing law, and subject to the conditions described under the caption "TAX MATTERS" herein, (i) the interest on the Series 2018A Bonds and the Series 2018C Refunding Bonds is excludable from gross income for federal income tax purposes and is not an item of tax preference for purposes of the federal alternative minimum tax; and (ii) the interest on the Series 2018B Bonds and the Series 2018D Refunding Bonds is excludable from gross income for federal income tax purposes (except for any period when the Series 2018B Bonds or the Series 2018D Refunding Bonds are held by a "substantial user" of the Airport or a person deemed "related" thereto (as such terms are used in Section 147(a) of the Internal Revenue Code of 1986, as amended (the "Code")), and is an item of tax preference for purposes of the federal alternative minimum tax. It should be noted, however, that, with respect to corporations (as defined for federal income tax purposes), interest on the Series 2018 Bonds is taken into account in determining adjusted current earnings in calculating corporate alternative minimum taxable income for tax years beginning prior to January 1, 2018.

Bond Counsel is also of the opinion that, under existing law, the Series 2018 Bonds and the interest thereon are exempt from all taxation by the State of Michigan or by any taxing authority within the State of Michigan except inheritance and estate taxes and taxes on gains realized from the sale, payment or other disposition thereof. See "TAX MATTERS" herein.

The Series 2018 Bonds are offered when, as and if issued by the Authority and received by the Underwriters (as defined herein), subject to receipt of the approving legal opinion of Miller, Canfield, Paddock and Stone, P.L.C., Detroit, Michigan, Bond Counsel, and certain other conditions. Certain legal matters will be passed upon for the Authority by its General Counsel, and for the Underwriters by McGuireWoods LLP, Chicago, Illinois. PFM Financial Advisors LLC and D+G Consulting Group, LLC have served as Financial Advisors to the Authority with regard to the issuance of the Series 2018 Bonds. It is expected that the Series 2018 Bonds, in book-entry form, will be available for delivery through DTC on or about November 14, 2018.

**Siebert Cisneros Shank & Co., L.L.C.**

**BofA Merrill Lynch**

**Citigroup**

**J.P. Morgan**

**Loop Capital Markets   PNC Capital Markets LLC   RBC Capital Markets, LLC   Wells Fargo Securities**

**MATURITIES, CUSIP NUMBERS<sup>+</sup>, PRINCIPAL AMOUNTS, INTEREST RATES AND PRICES****\$147,390,000  
SERIES 2018A BONDS (NON-AMT)**

<u>Maturity (December 1)</u>	<u>CUSIP No.<sup>+</sup></u>	<u>Amount</u>	<u>Interest Rate</u>	<u>Price</u>
2021	944514YP7	\$ 100,000	5.00%	107.962%
2022	944514YQ5	100,000	5.00	110.010
2023	944514YR3	100,000	5.00	111.683
2024	944514YS1	100,000	5.00	113.049
2025	944514YT9	100,000	5.00	114.255
2026	944514YU6	100,000	5.00	114.742
2027	944514YV4	100,000	5.00	115.314
2028	944514YW2	100,000	5.00	115.639
2029	944514YX0	7,945,000	5.00	115.453*
2030	944514YY8	8,345,000	5.00	114.619*
2031	944514YZ5	8,760,000	5.00	113.610*
2032	944514ZA9	9,200,000	5.00	113.155*
2033	944514ZB7	9,660,000	5.00	112.702*
2034	944514ZC5	16,055,000	5.00	112.251*
2035	944514ZD3	16,860,000	5.00	111.624*
2036	944514ZE1	17,705,000	5.00	111.178*
2037	944514ZF8	18,585,000	5.00	110.912*
2038	944514ZG6	19,515,000	5.00	110.647*

\* Priced to call on December 1, 2028.

\$13,960,000 Term Bond Due December 1, 2043; Interest Rate: 5.00%; Price: 109.942%\*, CUSIP No.+: 944514ZH4

\* Priced to call on December 1, 2028.

**\$6,005,000  
SERIES 2018B BONDS (AMT)**

\$6,005,000 Term Bond Due December 1, 2048; Interest Rate: 5.00%; Price: 107.519%\*, CUSIP No.+: 944514ZJ0

**\$35,515,000  
SERIES 2018C REFUNDING BONDS (NON-AMT)**

<u>Maturity (December 1)</u>	<u>CUSIP No.<sup>+</sup></u>	<u>Amount</u>	<u>Interest Rate</u>	<u>Price</u>
2019	944514ZK7	\$5,290,000	4.00%	102.009%
2020	944514ZL5	5,365,000	4.00	103.583
2021	944514ZM3	5,350,000	5.00	107.962
2022	944514ZN1	5,380,000	5.00	110.010
2023	944514ZP6	5,410,000	5.00	111.683
2024	944514ZQ4	5,445,000	5.00	113.049
2025	944514ZR2	3,275,000	5.00	114.255

<sup>+</sup> Copyright 2018, American Bankers Association (“ABA”). CUSIP data herein is provided by CUSIP Global Services, operated on behalf of the ABA by S&P Global Market Intelligence, a division of S&P Global Inc. This data is not intended to create a database and does not serve in any way as a substitute for the CUSIP Global Services. CUSIP numbers are provided for convenience of reference only. None of the Authority or the Underwriters takes any responsibility for the accuracy of such CUSIP numbers.

**\$43,020,000**  
**SERIES 2018D REFUNDING BONDS (AMT)**

<u>Maturity</u> <u>(December 1)</u>	<u>CUSIP No.</u> <sup>+</sup>	<u>Amount</u>	<u>Interest Rate</u>	<u>Price</u>
2025	944514ZS0	\$2,225,000	5.00%	112.415%
2026	944514ZT8	5,745,000	5.00	112.982
2027	944514ZU5	5,775,000	5.00	113.201
2028	944514ZV3	5,805,000	5.00	113.337
2029	944514ZW1	5,840,000	5.00	112.522*
2030	944514ZX9	5,865,000	5.00	111.803*
2031	944514ZY7	5,880,000	5.00	111.267*
2032	944514ZZ4	5,885,000	5.00	110.912*

\* Priced to call on December 1, 2028.

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<sup>+</sup> Copyright 2017, American Bankers Association. CUSIP data herein is provided by Standard & Poor's CUSIP Service Bureau, a division of The McGraw-Hill Companies, Inc. This data is not intended to create a database and does not serve in any way as a substitute for the CUSIP Service. CUSIP numbers are provided for convenience of reference only. None of the Authority or the Underwriters takes any responsibility for the accuracy of such CUSIP numbers.

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**WAYNE COUNTY AIRPORT AUTHORITY  
DETROIT METROPOLITAN WAYNE COUNTY AIRPORT**

**AUTHORITY BOARD MEMBERS**

Michael Garavaglia, Chairperson  
Ronald E. Hall, Jr., Vice Chairperson  
Nabih H. Ayad, Secretary  
Dr. Curtis L. Ivery  
Mark Ouimet  
Marvin W. Beatty  
Al Haidous

**AUTHORITY STAFF**

Chad Newton	Interim Chief Executive Officer
Istakur Rahman	Interim Chief Financial Officer
Onnie B. Jacque	General Counsel
Angela Frakes	Vice President – Terminal Operations
Bryant Holt	Vice President – Planning, Design & Construction
Thomas Kalbfleisch	Interim Vice President -- Internal Audit
June Lee	Vice President – Administration
James Montgomery	Vice President -- Operations
Michael Smouthers	Interim Vice President – Public Safety
Wendy Sutton	Vice President – Business Development & Real Estate

**FINANCIAL ADVISORS**

PFM Financial Advisors LLC  
D+G Consulting Group, LLC

**BOND COUNSEL**

Miller, Canfield, Paddock and Stone, P.L.C.

**AIRPORT CONSULTANT**

Landrum & Brown, Incorporated  
in association with Airmac LLC

## REGARDING THIS OFFICIAL STATEMENT

This Official Statement does not constitute an offer to sell, or the solicitation of an offer to buy, any Series 2018 Bonds in any jurisdiction to any person to whom it is unlawful to make such offer in such jurisdiction. No dealer, salesman or other person has been authorized by the Wayne County Airport Authority (the "Authority") or the Underwriters (as defined herein) to give any information or to make any representation other than that contained herein and, if given or made, such other information or representation must not be relied upon as having been authorized by the Authority or any other person. The information set forth herein has been obtained from the Authority, The Depository Trust Company ("DTC") and other sources that are believed to be reliable, but the accuracy or completeness of the information is not guaranteed and the information is not to be construed as a representation by the Underwriters (as defined herein). 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 the implication that there has been no change in the affairs of the Authority or the Airport or the other matters described herein since the date hereof.

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 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.

Any statements made in this Official Statement, including the Appendices, 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 estimates will be realized. This Official Statement contains certain forward-looking statements and information based on the Authority's beliefs as well as assumptions made by and information currently available to the Authority. Such statements are subject to certain risks, uncertainties and assumptions. Should one or more of these risks or uncertainties materialize, or should underlying assumptions prove incorrect, actual results may vary materially from those anticipated, estimated or expected.

CUSIP numbers are included in this Official Statement for the convenience of the holders and potential holders of the Series 2018 Bonds. No assurance can be given that the CUSIP numbers for the Series 2018 Bonds will remain the same after the date of issuance and delivery of the Series 2018 Bonds.

The Series 2018 Bonds have not been registered under the Securities Act of 1933, as amended, nor has the Master Bond Ordinance (as defined herein), the Series 2018 Project Ordinance (as defined herein) or the Series 2018 Refunding Ordinance (as defined herein) been qualified under the Trust Indenture Act of 1939, as amended, in reliance upon exemptions contained in such Acts. The registration or qualification of the Series 2018 Bonds in accordance with applicable provisions of securities law of the states in which the Series 2018 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 Authority, DTC and the terms of the offering, including the merits and risks involved. The Series 2018 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.

IN CONNECTION WITH THE OFFERING OF THE SERIES 2018 BONDS, THE UNDERWRITERS MAY OVERALLOT OR EFFECT TRANSACTIONS THAT STABILIZE OR MAINTAIN THE MARKET PRICE OF THE SERIES 2018 BONDS AT A LEVEL ABOVE THE LEVEL THAT MIGHT OTHERWISE PREVAIL IN THE OPEN MARKET. SUCH STABILIZING, IF COMMENCED, MAY BE DISCONTINUED AT ANY TIME WITHOUT NOTICE. THE PRICES AND OTHER TERMS RESPECTING THE OFFERING AND SALE OF THE SERIES 2018 BONDS MAY BE CHANGED FROM TIME TO TIME BY THE UNDERWRITERS AFTER THE SERIES 2018 BONDS ARE RELEASED FOR SALE, AND THE SERIES 2018 BONDS MAY BE OFFERED AND SOLD AT PRICES OTHER THAN THE INITIAL OFFERING PRICES, INCLUDING SALES TO DEALERS WHO MAY SELL THE SERIES 2018 BONDS INTO INVESTMENT ACCOUNTS.

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## OFFICIAL STATEMENT

**\$231,930,000**

### WAYNE COUNTY AIRPORT AUTHORITY

#### Airport Revenue Bonds

**(Detroit Metropolitan Wayne County Airport), Series 2018A-D**

**consisting of:**

**\$147,390,000**

**Airport Revenue Bonds  
Series 2018A (Non-AMT)**

**\$6,005,000**

**Airport Revenue Bonds  
Series 2018B (AMT)**

**\$35,515,000**

**Airport Revenue Refunding Bonds  
Series 2018C (Non-AMT)**

**\$43,020,000**

**Airport Revenue Refunding Bonds  
Series 2018D (AMT)**

## INTRODUCTION

### General

This Official Statement is furnished in order to set forth certain information in connection with the offering and sale by the Wayne County Airport Authority (the "Authority") of its Airport Revenue Bonds, (Detroit Metropolitan Wayne County Airport), Series 2018A in the principal amount of \$147,390,000 (the "Series 2018A Bonds"), its Airport Revenue Bonds, (Detroit Metropolitan Wayne County Airport), Series 2018B in the principal amount of \$6,005,000 (the "Series 2018B Bonds"), its Airport Revenue Refunding Bonds, (Detroit Metropolitan Wayne County Airport), Series 2018C in the principal amount of \$35,515,000 (the "Series 2018C Refunding Bonds") and its Airport Revenue Refunding Bonds, (Detroit Metropolitan Wayne County Airport), Series 2018D in the principal amount of \$43,020,000 (the "Series 2018D Refunding Bonds" and, collectively, with the Series 2018A Bonds, the Series 2018B Bonds and the Series 2018C Refunding Bonds, the "Series 2018 Bonds").

Unless otherwise indicated, capitalized terms used in this Official Statement have the meanings established in the Series 2018 Project Ordinance (as defined herein) or the Series 2018 Refunding Ordinance (as defined herein), as applicable. See APPENDIX C — "SUMMARY OF CERTAIN PROVISIONS OF THE MASTER BOND ORDINANCE, THE SERIES 2018 PROJECT ORDINANCE AND THE SERIES 2018 REFUNDING ORDINANCE — MASTER BOND ORDINANCE — Selected Definitions", " — SERIES 2018 PROJECT ORDINANCE — Selected Definitions," and " — SERIES 2018 REFUNDING ORDINANCE — Selected Definitions." This Official Statement includes the cover page and Appendices hereto.

### The Authority and the Airport

The Authority is a political subdivision and instrumentality of the Charter County of Wayne, Michigan (the "County"), created pursuant to that part of Act 327, Michigan Public Acts of 1945, as amended ("Act 327" or the "State Aeronautics Code"), known as the Public Airport Authority Act, Act 90, Michigan Public Acts of 2002 (the "Authority Act").

Under the Authority Act, the Authority has sole and exclusive operational jurisdiction of Detroit Metropolitan Wayne County Airport (the "Airport") and Willow Run Airport (together with the Airport, the "Airports"), which includes the exclusive right, responsibility and authority to occupy, operate, control and use the Airports and the Airports' facilities.

Pursuant to the Authority Act, the Authority is solely liable for all of the obligations with respect to the Airports, is obligated to perform all of the duties, and is bound by all of the covenants, with respect to the Airports

under any ordinances, agreements or other instruments and under law. Under the Master Bond Ordinance (as defined herein), (i) all airport revenue bonds issued by the Authority may be issued on a parity basis with the Outstanding Senior Lien Bonds and Additional Bonds issued by the Authority under the Master Bond Ordinance, and secured by a statutory lien upon and against the Net Revenues (as such term is defined in “SECURITY FOR THE SERIES 2018 BONDS – Source of Payment” below), and (ii) all junior lien airport revenue bonds issued by the Authority may be issued on a parity basis with the Outstanding Junior Lien Bonds and Additional Junior Lien Bonds issued by the Authority under the Master Bond Ordinance, and secured by a statutory lien upon and against the Net Revenues subordinate to liens on the Net Revenues of the Senior Lien Bonds. See “SECURITY FOR THE SERIES 2018 BONDS.”

As described in the Series 2017 Report and Series 2018 Letter (each as defined herein), the primary Air Service Area for the Airport consists of the Detroit-Warren-Ann Arbor Combined Statistical Area (“CSA”) which includes the following 10 counties in Michigan: Genesee, Lapeer, Lenawee, Livingston, Macomb, Monroe, Oakland, St. Clair, Washtenaw, and Wayne. This 10-county area (the “Air Service Area”) is located within the State of Michigan (the “State”).

According to Federal Aviation Administration (“FAA”) data for calendar year 2017, the Airport ranked 18<sup>th</sup> nationwide in enplanements, enplaning 17,036,090 passengers, an increase of approximately 1.12 percent over calendar year 2016. For the Authority’s Operating Year 2017 (i.e., the 12 months commencing October 1, 2016 and ended on September 30, 2017), enplaned passengers at the Airport totaled 17,281,219, an increase of approximately 0.9 percent as compared to Operating Year 2016. Based upon preliminary Authority results for Operating Year 2018, enplanements at the Airport totaled 17,558,610, an increase of approximately 1.6 percent, as compared to Operating Year 2017.

The Airport ranked 17<sup>th</sup> nationwide in total aircraft operations in calendar year 2016, with 393,427 takeoffs and landings, an increase of approximately 3.7 percent as compared to calendar year 2015, according to Airports Council International N.A. (“ACI”) statistics. For a discussion of these operational trends at the Airport, see APPENDIX A – “SERIES 2017 REPORT OF THE AIRPORT CONSULTANT AND SERIES 2018 LETTER – SERIES 2018 LETTER – Air Service and Air Traffic Analysis” and “– SERIES 2017 REPORT – AIR SERVICE AND AIR TRAFFIC ANALYSIS – AIR TRAFFIC ACTIVITY AND TRENDS – Aircraft Operations.”

The Airport currently provides air service from two terminal buildings: the Edward H. McNamara Terminal (the “McNamara Terminal” or the “South Terminal”) which serves Delta Air Lines, Inc. (“Delta”), its affiliated regional carriers (the “Delta Connection Carriers”) and Delta’s other Sky Team partners, and the North Terminal which serves air carriers not affiliated with Delta. The Airport currently operates with four parallel and two crosswind runways.

Delta maintains one of its busiest connecting hubs and an international gateway at the Airport. Delta and the Delta Connection Carriers accounted for approximately 72.4% of the total enplaned passengers at the Airport based on preliminary results for Operating Year 2018. See “INVESTMENT CONSIDERATIONS — Delta’s Presence at the Airport” below.

### **The Series 2018 Bonds**

The Authority is issuing the Series 2018 Bonds pursuant to the provisions of the State Aeronautics Code and Act 94, Public Acts of Michigan, 1933, as amended (“Act 94,” and together with the State Aeronautics Code, the “Act”), the Master Airport Revenue Bond Ordinance adopted by the Board of the Authority (the “Board” or the “Authority Board”) on September 26, 2003, as amended (the “Master Bond Ordinance”), the Ordinance No. 2018-02 adopted by the Board on August 15, 2018 authorizing the issuance of the Series 2018A Bonds and the Series 2018B Bonds (the “Series 2018 Project Ordinance”), the Ordinance No. 2018-01 adopted by the Board on May 16, 2018, and as amended by the Ordinance No. 2018-03 adopted by the Board on August 15, 2018, authorizing the issuance of the Series 2018C Refunding Bonds and the Series 2018D Refunding Bonds (collectively, the “Series 2018 Refunding Ordinance”), and the Sale Order of the Interim Chief Executive Officer or Interim Chief Financial Officer of the Authority dated October 30, 2018, relating to the Series 2018 Bonds (the “Series 2018 Sale Order,” and, collectively with the Master Bond Ordinance, the Series 2018 Project Ordinance and the Series 2018 Refunding Ordinance, the “2018 Ordinance”).

All Outstanding Bonds, the Series 2018 Bonds and any Additional Bonds issued by the Authority under the Master Bond Ordinance are collectively referred to herein as “Senior Lien Bonds.” All Outstanding Junior Lien Bonds and any Additional Junior Lien Bonds issued by the Authority under the Master Bond Ordinance are collectively referred to herein as “Junior Lien Bonds.”

U.S. Bank National Association is Trustee under the Master Bond Ordinance.

### **Purpose of the Series 2018 Bonds**

The Authority will use the proceeds from the sale of the Series 2018 Bonds, together with other available funds, to (i) with respect to the Series 2018A Bonds and the Series 2018B Bonds, pay all or portions of the costs of acquiring, constructing and installing the Series 2018 Projects (as defined herein), (ii) with respect to the Series 2018C Refunding Bonds and the Series 2018D Refunding Bonds, provide funds to refund all or a portion of the Authority’s Outstanding Airport Revenue Refunding Bonds (Detroit Metropolitan Wayne County Airport), Series 2008A (the “Series 2008A Refunded Bonds”), (iii) make a deposit to the Bond Reserve Account (as defined herein), (iv) pay capitalized interest on portions of the Series 2018A Bonds and the Series 2018B Bonds, and (v) pay costs of issuance of the Series 2018 Bonds.

### **Security for the Series 2018 Bonds**

The Series 2018 Bonds are revenue obligations of the Authority.

The Series 2018 Bonds will be secured by a statutory lien on Net Revenues and will be secured equally and on a parity basis as to Net Revenues with all Outstanding Senior Lien Bonds and any Additional Bonds. Pursuant to the Master Bond Ordinance, the Authority has irrevocably pledged Net Revenues on a senior lien basis for the payment of the Outstanding Senior Lien Bonds, the Series 2018 Bonds and any Additional Bonds, and on a junior lien basis for the payment of Outstanding Junior Lien Bonds and any Additional Junior Lien Bonds.

As of October 1, 2018, without taking into account the issuance of the Series 2018 Bonds, the aggregate principal amount of Outstanding Senior Lien Bonds was \$1,972,170,000, and the aggregate principal amount of Outstanding Junior Lien Bonds was \$133,710,000. As of December 1, 2018, the aggregate principal amount of Outstanding Senior Lien Bonds will be \$2,026,220,000 and the aggregate principal amount of Outstanding Junior Lien Bonds will be \$130,315,000.

As described under “SECURITY FOR THE SERIES 2018 BONDS,” the Master Bond Ordinance requires the maintenance of a Bond Reserve Account to secure all of the Outstanding Senior Lien Bonds, including the Series 2018 Bonds. The Master Bond Ordinance also includes a rate covenant by the Authority, and permits the issuance of Additional Bonds on a parity basis with the Series 2018 Bonds and the other Outstanding Senior Lien Bonds, subject to meeting certain tests under the Master Bond Ordinance.

### **Forward-Looking Statements**

The statements contained in this Official Statement, and in any other information provided by the Authority, that are not purely historical, are forward-looking statements, including statements regarding the Authority’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 Authority on the date hereof, and the Authority assumes no obligation to update any such forward-looking statements. It is important to note that the actual results of the Airport 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 omitted 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 Authority.

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.

### **Additional Information**

Brief descriptions of the Series 2018 Bonds, the Master Bond Ordinance, the Series 2018 Project Ordinance, the Series 2018 Refunding Ordinance, the Series 2018 Sale Order and certain other documents are included in this Official Statement and the appendices hereto. Such descriptions do not purport to be comprehensive or definitive. All references herein to such documents and any other documents, statutes, reports or other instruments described herein are qualified in their entirety by reference to each such document, statute, report or other instrument.

## **DESCRIPTION OF THE SERIES 2018 BONDS**

### **General Provisions**

The following is a summary of certain provisions of the Series 2018 Bonds. Reference is made to the Master Bond Ordinance, the Series 2018 Project Ordinance and the Series 2018 Refunding Ordinance, as applicable, and the Series 2018 Bonds for the complete terms thereof and to APPENDIX C – “SUMMARY OF CERTAIN PROVISIONS OF THE MASTER BOND ORDINANCE, THE SERIES 2018 PROJECT ORDINANCE AND THE SERIES 2018 REFUNDING ORDINANCE” for a more detailed description of such provisions.

Each of the Series of the Series 2018 Bonds will be dated its date of delivery, will be issuable as fully registered bonds in denominations of \$5,000 or any integral multiple thereof and will bear interest from its date to its respective maturity in the amounts and at the interest rates set forth on the inside front cover of this Official Statement.

Interest on the Series 2018 Bonds shall be payable on June 1 and December 1 of each year, commencing June 1, 2019.

All payments of interest on the Series 2018 Bonds shall be paid to the registered owners entitled thereto by check or draft mailed to each registered owner at the address recorded on the registration books maintained by the Trustee as of the 15th day of the month prior to the Bond Payment Date. The principal of, and premium if any, on the Series 2018 Bonds are payable to the registered owners thereof, as shown on the registration books of the Authority maintained by the Trustee, upon maturity or prior redemption thereof and upon presentation and surrender thereof to the Trustee. Holders of at least \$1,000,000 principal amount of the Series 2018 Bonds may request wire transfer of interest payments to a bank within the continental United States as directed by the Holder in writing to the Trustee.

U.S. Bank National Association is Trustee under the Master Bond Ordinance. The designated corporate trust office for its duties as Trustee is located at 535 Griswold Street, Buhl Building, Suite 550, Detroit, Michigan 48226. Although the Trustee has accepted its duties as Trustee under the Master Bond Ordinance, the Trustee has not reviewed this Official Statement and makes no representations as to the information contained herein.

The Series 2018 Bonds are issuable in fully registered form and are initially to be registered in the name of Cede & Co., as nominee for DTC, as securities depository for the Series 2018 Bonds. Purchases by beneficial owners of the Series 2018 Bonds (“Beneficial Owners”) are to be made in book-entry form. Payments to Beneficial Owners are to be made as described in APPENDIX E – “BOOK-ENTRY SYSTEM.”

### **Redemption Provisions**

#### ***Series 2018A Bonds***

*Optional Redemption.* The Series 2018A Bonds maturing on and after December 1, 2029 are subject to redemption by the Authority in whole or in part at any time prior to maturity at the option of the Authority and by lot within a maturity in such manner as the Trustee may determine on any date on or after December 1, 2028 at the principal amount thereof and interest accrued thereon to the date fixed for redemption without premium.

*Mandatory Sinking Fund Redemption.* The Series 2018A Bonds maturing in the year 2043 are subject to Mandatory Sinking Fund Redemption prior to maturity, by lot in such manner as the Trustee may determine, at a redemption price of 100% of the principal amount thereof plus interest accrued to the date fixed for redemption, on the dates and in the principal amounts as follows:

**\$13,960,000 5.00% Term Bond Due December 1, 2043**

<u>Year</u> <u>(December 1)</u>	<u>Principal Amount</u>
2039	\$2,525,000
2040	2,655,000
2041	2,785,000
2042	2,925,000
2043 <sup>†</sup>	3,070,000

† Final maturity

The amounts to be so redeemed may be reduced by the principal amounts of the Series 2018A Bonds theretofore redeemed (otherwise than through operation of the Mandatory Sinking Fund Redemption described above), or otherwise acquired and delivered to the Trustee, at least 45 days prior to the payment date for credit against the Mandatory Sinking Fund Redemption described above and shall be applied in direct order of date of redemption.

***Series 2018B Bonds***

*Optional Redemption.* The Series 2018B Bonds maturing on December 1, 2048 are subject to redemption by the Authority in whole or in part at any time prior to maturity at the option of the Authority and by lot within a maturity in such manner as the Trustee may determine on any date on or after December 1, 2028 at the principal amount thereof and interest accrued thereon to the date fixed for redemption without premium.

*Mandatory Sinking Fund Redemption.* The Series 2018B Bonds maturing in the year 2048 are subject to Mandatory Sinking Fund Redemption prior to maturity, by lot in such manner as the Trustee may determine, at a redemption price of 100% of the principal amount thereof plus interest accrued to the date fixed for redemption, on the dates and in the principal amounts as follows:

**\$6,005,000 5.00% Term Bond Due December 1, 2048**

<u>Year</u> <u>(December 1)</u>	<u>Principal Amount</u>
2044	\$ 100,000
2045	100,000
2046	100,000
2047	100,000
2048 <sup>†</sup>	5,605,000

† Final maturity

The amounts to be so redeemed may be reduced by the principal amounts of the Series 2018B Bonds theretofore redeemed (otherwise than through operation of the Mandatory Sinking Fund Redemption described above), or otherwise acquired and delivered to the Trustee, at least 45 days prior to the payment date for credit against the Mandatory Sinking Fund Redemption described above and shall be applied in direct order of date of redemption.

### ***Series 2018C Refunding Bonds***

*No Optional Redemption.* The Series 2018C Refunding Bonds are not subject to optional redemption by the Authority in whole or in part at any time prior to maturity.

### ***Series 2018D Refunding Bonds***

*Optional Redemption.* The Series 2018D Refunding Bonds maturing on and after December 1, 2029 are subject to redemption by the Authority in whole or in part at any time prior to maturity at the option of the Authority and by lot within a maturity in such manner as the Trustee may determine on any date on or after December 1, 2028 at the principal amount thereof and interest accrued thereon to the date fixed for redemption without premium.

*Extraordinary Optional Redemption.* Each Series of the Series 2018 Bonds is subject to redemption at the option of the Authority, at any time, in whole or in part (by lot in such manner as the Trustee may determine), in the event of destruction or taking of or damage to the Airport; but only if (i) the Airport has been restored to substantially the same condition as prior to such damage, destruction or taking and excess Net Proceeds remain; or (ii) the Authority has determined that the portion of the Airport damaged, destroyed or taken is not necessary to the operation of the Airport and that the failure of the Authority to repair and restore the same will not impair or otherwise adversely affect the revenue-producing capability of the Airport; or (iii) the Airport Consultant cannot provide a statement that Net Proceeds, together with other funds made available or to be made available by the Authority, are projected to be sufficient to pay the costs of the replacement, repair, rebuilding or restoration of the Airport. Such redemption shall be at a price equal to the principal amount of the Series 2018 Bonds to be redeemed plus interest accrued to the date fixed for redemption.

*Order of Redemption.* In the event of an optional redemption or an extraordinary optional redemption, in each case as described above, if less than all of the Outstanding Series 2018 Bonds are to be redeemed, the Trustee shall give notice, in the name of the Authority, of the Series 2018 Bonds to be redeemed, specifying the maturity thereof and within a maturity, selected by lot in such manner as the Trustee may determine. If any Series 2018 Bonds are to be called for redemption prior to maturity, irrevocable instructions to call such Series 2018 Bonds for redemption shall be given to the Trustee after the deposit of funds in connection with any such redemption has been made. The Trustee shall redeem the Outstanding Series 2018 Bonds (other than the Outstanding Series 2018 Bonds being redeemed pursuant to mandatory sinking fund redemption) in such order of maturity as the Authority shall specify.

*Notice of Redemption.* Notice of redemption will be mailed by the Trustee to each owner of Series 2018 Bonds whose Series 2018 Bonds are to be redeemed. Notice of redemption shall be given not less than thirty (30) days nor more than sixty (60) days prior to the date set for redemption. Failure to give notice in the manner described with respect to any Series 2018 Bond, or any defect in such notice, will not affect the validity of the redemption proceedings for any Series 2018 Bond with respect to which notice was properly given. To the extent that Cede & Co. is the registered owner for DTC, the Authority or the Trustee shall send such notice to DTC as registered owner. DTC will be responsible for notifying the Participants who in turn will forward such notice to the Beneficial Owners. See APPENDIX E – “BOOK-ENTRY SYSTEM.” Unless the Trustee has funds on hand available to pay the redemption price of the Series 2018 Bonds to be redeemed, the effectiveness of the redemption shall be conditioned on the receipt by the Trustee of such funds on or before the redemption date.

In case less than the full amount of an outstanding Bond is called for redemption, the Trustee upon presentation of the Series 2018 Bond called in part for redemption shall register, authenticate and deliver to the registered owner a new Series 2018 Bond in the principal amount of the portion of the original Series 2018 Bond not called for redemption.

### **Book-Entry Only System**

The Depository Trust Company (“DTC”), New York, New York, will act as securities depository for the Series 2018 Bonds. The Series 2018 Bonds will be issued as fully-registered bonds registered in the name Cede & Co. (DTC’s partnership nominee) or such other name as may be requested by an authorized representative of DTC. One fully-registered Series 2018 Bond certificate will be issued for each stated maturity of each Series of the Series 2018 Bonds, each in the aggregate principal amount of such maturity, and will be deposited with DTC. See APPENDIX E – “BOOK-ENTRY SYSTEM.”

## SECURITY FOR THE SERIES 2018 BONDS

### General Provisions

Each capitalized term used but not defined in this heading “SECURITY FOR THE SERIES 2018 BONDS” shall have the meaning ascribed thereto in the Master Bond Ordinance, the Series 2018 Project Ordinance or the Series 2018 Refunding Ordinance, as applicable. See APPENDIX C – “SUMMARY OF CERTAIN PROVISIONS OF THE MASTER BOND ORDINANCE, THE SERIES 2018 PROJECT ORDINANCE AND THE SERIES 2018 REFUNDING ORDINANCE – MASTER BOND ORDINANCE – Selected Definitions,” “– SERIES 2018 PROJECT ORDINANCE – Selected Definitions,” and “– SERIES 2018 REFUNDING ORDINANCE – Selected Definitions.”

### Source of Payment

The Series 2018 Bonds will be secured by a statutory lien on the Net Revenues of the Airport and will be secured equally and on parity with all Outstanding Senior Lien Bonds and any Additional Bonds. As of October 1, 2018, without taking into account the impact of the issuance of the Series 2018 Bonds, \$1,972,170,000 aggregate principal amount of Senior Lien Bonds was Outstanding. As of December 1, 2018, the aggregate principal amount of Outstanding Senior Lien Bonds will be \$2,026,220,000. The Series 2018A Bonds and the Series 2018B Bonds are being issued pursuant to the provisions of the Act and the Series 2018 Project Ordinance, and the Series 2018C Refunding Bonds and the Series 2018D Refunding Bonds are being issued pursuant to the provisions of the Act and the Series 2018 Refunding Ordinance.

The Series 2018 Bonds are revenue obligations of the Authority, payable solely from the Net Revenues derived by the Authority from the operation of the Airport. Pursuant to the Master Bond Ordinance, the Authority has irrevocably pledged Net Revenues for the payment of Senior Lien Bonds.

Net Revenues for any period means the excess of Revenues remaining after deducting the Operation and Maintenance Expenses for such period. “Revenues” are the general revenues derived from the operation of the Airport, which shall include all moneys deposited in the Revenue Fund, from whatever source, and all income derived from the charges, fees, rentals and rates charged for services, facilities and commodities furnished by the Airport, whether such income shall be derived from its function as an Airport or not, and including, but not by way of limitation, concessions, rentals, auto parking fees, service charges derived from the operation of the terminal complex buildings and facilities, airplane landing fees, non-airline gasoline fees and miscellaneous charges and rentals from other facilities and services and investment earnings or general revenues derived from the operation of the Airport accumulated by the Authority prior to deposit in the Revenue Fund; provided, however, that the term “Revenues” shall not be construed to include (i) rentals or other amounts to be paid in the future by any Person pursuant to a lease or other agreement with the County or the Authority, which rentals or other amounts are pledged for the payment of bonds issued to provide funds to construct Special Facilities, (ii) the proceeds of federal grants or Passenger Facility Charges, or the proceeds of any other grant, charge or tax intended as a replacement therefor or other capital contributions from any source, (iii) the Net Proceeds of insurance or condemnation proceeds resulting from the damage or destruction or taking of any portion of the Airport or (iv) Special Purpose Revenues.

The land and facilities comprising the Airport have not been pledged or mortgaged pursuant to the Master Bond Ordinance, nor have they been pledged to secure payment of the Series 2018 Bonds, any other Senior Lien Bonds or any Junior Lien Bonds or other Authority obligations.

NEITHER THE LAWS OF THE STATE NOR THE MASTER BOND ORDINANCE PERMITS THE AUTHORITY TO CREATE A LIEN UPON THE AIRPORT, OR TO TRANSFER, ASSIGN, OR OTHERWISE DISPOSE OF ALL OR ANY PORTION OF THE PROPERTIES OF THE AIRPORT SUBJECT TO CERTAIN LIMITED EXCEPTIONS. SEE APPENDIX C – “SUMMARY OF CERTAIN PROVISIONS OF THE MASTER BOND ORDINANCE, THE SERIES 2018 PROJECT ORDINANCE AND THE SERIES 2018 REFUNDING ORDINANCE – MASTER BOND ORDINANCE – SALE OF AIRPORT” AND “– OTHER AUTHORITY COVENANTS.” In addition, the Authority Act requires the County to refrain from selling, transferring or otherwise encumbering or disposing of airport facilities owned by the County, and certain federal laws and regulations of the United States prohibit the use of airport revenue, including revenue generated from any land owned by the County underlying the Airports, for any purpose unrelated to the Airports.

The requirements for the issuance of Additional Bonds under the Master Bond Ordinance will have been satisfied with respect to the Series 2018 Bonds as of the date of delivery thereof. See “SECURITY FOR THE SERIES 2018 BONDS – Additional Senior Lien Bonds.”

### **Bond Reserve Account**

Pursuant to the Master Bond Ordinance, a bond reserve account (the “Bond Reserve Account”) has been established to secure the Bonds. At any time when Bonds are Outstanding, the Bond Reserve Account shall be maintained in an amount equal to the Reserve Requirement. The Reserve Requirement is defined by the Master Bond Ordinance to mean the maximum annual Debt Service requirements for each Series of Outstanding Bonds (subject to limits imposed by the Internal Revenue Code of 1986, as amended), which amount is required to be on deposit or otherwise provided for (*e.g.*, through provision of a letter of credit, surety bond or insurance policy in the same amount) in the Bond Reserve Account. As of the date of issuance of the Series 2018 Bonds, the Reserve Requirement for the Bond Reserve Account is expected to be calculated on the basis of 125% on the average annual Debt Service for the Bonds. A separate subaccount is established for each series of Bonds within the Bond Reserve Account, and is required to be funded at the lesser of (i) the Reserve Requirement for such series or (ii) the amount necessary to assure that the Reserve Requirement for the Bonds of all series is satisfied. The deposit requirement into the Bond Reserve Account may be satisfied by a deposit at the time of issuance of each Series of Bonds or by an accumulation on a scheduled basis of Bond proceeds, investment earnings or other deposits which will result in an amount equal to the Reserve Requirement for such Series of Bonds being on deposit in the Bond Reserve Account no later than the date of the last scheduled application of all capitalized interest, if any, for such Series.

Any deposit requirements to the Bond Reserve Account with respect to the Series 2018 Bonds will be satisfied as of the date of delivery thereof by a deposit of cash in the Bond Reserve Account and by a reallocation of certain existing monies on deposit in the Bond Reserve Account previously pertaining to the Series 2008A Refunded Bonds.

As of the date of issuance of the Series 2018 Bonds, the amount on deposit in the Bond Reserve Account is expected to be \$130,065,389.98. Moneys in the Bond Reserve Account are almost exclusively invested in United States Treasury securities and commercial paper notes rated not less than “A-1” by Standard & Poor’s Ratings Services, a division of The McGraw Hill Companies, Inc., and “P-1” by Moody’s Investors Service, Inc.

### **Rate Covenant**

The Master Bond Ordinance contains a single rate covenant which pertains to both Senior Lien Bonds and Junior Lien Bonds. In the Master Bond Ordinance, the Authority covenants to fix, charge and collect rates, fees, rentals and charges for the use and operation of the Airport as may be necessary or appropriate to produce Revenues in each Operating Year which will be at least sufficient to provide for (i) the payment of Operation and Maintenance Expenses for such Operating Year; (ii) together with passenger facility charge (“PFC”) proceeds deposited with the Trustee with respect to such Operating Year, the amount needed to make the deposits required under the Master Bond Ordinance for such Operating Year to the Bond Fund; and (iii) together with Other Available Moneys deposited with the Trustee with respect to such Operating Year (to the extent not needed to make deposits required under the Master Bond Ordinance for such Operating Year to the Bond Fund) and any unencumbered cash balance held in the Revenue Fund on the last day of the Operating Year preceding the Operating Year for which the calculation is made and not then required to be deposited in any Fund or Account, (A) the amounts needed to make the deposits required under the Master Bond Ordinance for such Operating Year to the Junior Lien Bond Fund, the Operation and Maintenance Reserve Fund, the Renewal and Replacement Fund, the Discretionary Fund and the Airport Development Fund, and (B) an amount not less than twenty-five percent (25%) of the Debt Service due and payable on Senior Lien Bonds during such Operating Year. “Other Available Moneys” means, for any Operating Year, the amount of money determined by the Chief Executive Officer in concurrence with the Chief Financial Officer to be transferred by the Authority for such Operating Year from PFCs or other sources other than Revenues to the Bond Fund or the Junior Lien Bond Fund.

### **Budgetary Procedures**

The Master Bond Ordinance requires the Authority to adopt, prior to the commencement of each Operating Year, a budget sufficient to cover the Operation and Maintenance Expenses of the Airport for such Operating Year,



the principal and interest payable during such Operating Year on Outstanding Senior Lien Bonds and Junior Lien Bonds, and other known financial requirements of the Master Bond Ordinance during such Operating Year.

### **Flow of Funds**

Under the Master Bond Ordinance, the Authority is required to set aside and deposit all Revenues into the Revenue Fund, and to apply all monies on deposit therein at such times and in accordance with the priorities established in the Master Bond Ordinance.

The Master Bond Ordinance requires that the Revenues credited to the Revenue Fund shall be transferred from the Revenue Fund and credited to the following funds and accounts at the following times and in the following order of priority:

(i) Monthly, by the twenty-fifth day of the month, to the Operation and Maintenance Fund, a sum sufficient to provide for payment of the Operation and Maintenance Expenses of the Airport for the next succeeding month;

(ii) Monthly, on the first day of each month, to the Bond and Interest Redemption Fund (the "Bond Fund"), an amount which is equal to 1/6th of the total amount of interest on the Bonds next coming due or such lesser amount as is necessary to assure that the amount set aside in the Bond Fund as of the first of such month is not less than the product of (a) 1/6th of the amount of interest next due on the Bonds and (b) the number of months elapsed since and including the last interest payment date for Bonds with semiannual interest payments or an amount equal to one month's accrued interest on the Bonds as provided in the applicable series ordinance for such Bonds for Bonds with more frequent interest payments; and an amount which is equal to 1/12th of the amount of principal on the Bonds next coming due by maturity or as a Mandatory Redemption Requirement or such lesser amounts as is necessary to assure that the amount set aside in the Bond Fund as of the first of such month is not less than the product of (x) 1/12th of the amount of principal next due on the Bonds and (y) the number of months elapsed since and including the last principal payment date;

(iii) In the event of a deficiency in the amount required to be on deposit in the Bond Reserve Account, an amount required to restore the amount on deposit to required levels in accordance with the terms of the Master Bond Ordinance;

(iv) Monthly, on the first day of each month, to the Junior Lien Bond and Interest Redemption Fund (the "Junior Lien Bond Fund"), an amount equal to 1/6th of the total amount of interest on the Junior Lien Bonds next coming due or such lesser amount as is necessary to assure that any amount set aside in the Junior Lien Bond Fund as of the first of such month is not less than the product of (a) 1/6th of the amount of interest next due on the Junior Lien Bonds and (b) the number of months elapsed since and including the last interest payment date for Junior Lien Bonds with semiannual interest payments or an amount equal to one month's accrued interest on the Junior Lien Bonds as provided in the applicable series ordinance for such Junior Lien Bonds for Junior Lien Bonds with more frequent interest payments; and an amount which is equal to 1/12th of the amount of principal on the Junior Lien Bonds next coming due by maturity or as a Mandatory Redemption Requirement or such lesser amounts as necessary to assure that the amount set aside in the Junior Lien Bond Fund as of the first of such month is not less than the product of (x) 1/12th of the amount of principal next due on the Junior Lien Bonds and (y) the number of months elapsed since and including the last principal payment date;

(v) Any amounts due and owing to a Swap Provider by the Authority pursuant to a Swap Agreement shall be payable when due from a Swap Payment Account established in the Junior Lien Bond Fund (including termination payments);

(vi) If at any time there is not on deposit in the Junior Lien Bond Reserve Account the amount required to be on deposit therein, an amount required to restore such deficiency to required levels in accordance with the terms of the applicable series ordinance for such Junior Lien Bonds;

(vii) Quarterly, on the last day of each fiscal quarter, to the Operation and Maintenance Reserve Fund, an amount equal to 1/48th of the estimated annual Operation and Maintenance Expenses of the Airport until the estimated Operation and Maintenance Expenses for the period of one month as projected in the most recent

Authority budget for the Airport (the “Operating Reserve Amount”) is on deposit in such fund; thereafter, the amount necessary to maintain an amount equal to the Operating Reserve Amount on deposit in such fund;

(viii) Quarterly, on the last day of each fiscal quarter, to the Renewal and Replacement Fund, the sum of \$125,000 until the sum of \$2,500,000 (the “Replacement Requirement”) is on deposit in the Renewal and Replacement Fund; thereafter, the lesser of \$125,000 and the amount necessary to maintain an amount equal to the Replacement Requirement on deposit in such fund;

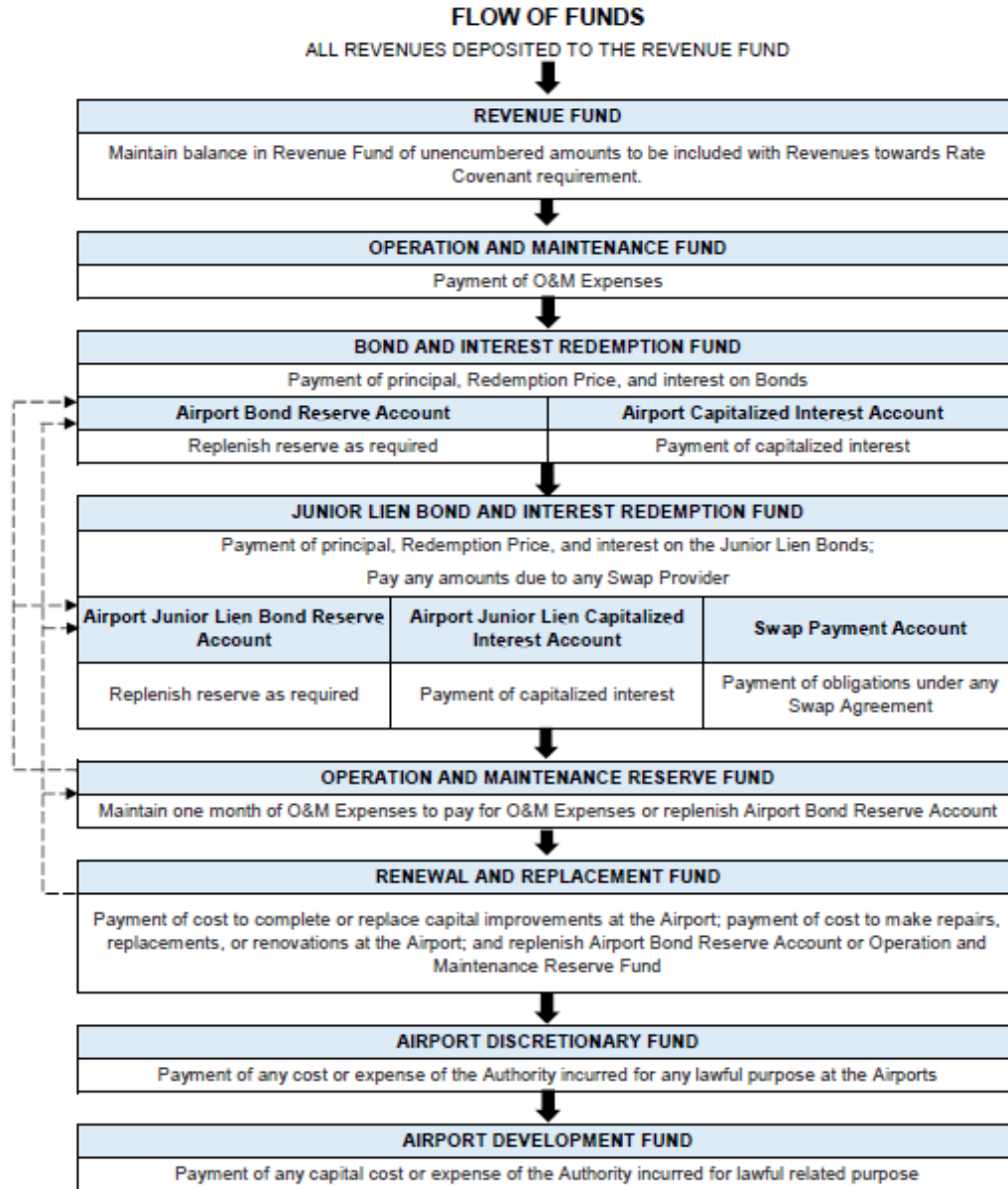
(ix) Quarterly, after satisfying all of the foregoing requirements, to the Airport Discretionary Fund, the sum of \$87,500;

(x) Quarterly, on the last day of each quarter of each Operating Year, to the Airport Development Fund, one-quarter of the amount calculated in accordance with the applicable agreements and included in the budgeted rates and charges for the Airport for the Operating Year for deposit to the Airport Development Fund (See APPENDIX D – “SUMMARY OF THE AIRLINE AGREEMENTS”); and

(xi) Quarterly, prior to the Completion Date for the projects funded from each Series of Bonds, to the Rebate Fund, an amount sufficient to make the amount on deposit in the Rebate Fund equal to ninety percent (90%) of the estimated accrued amount subject to the rebate requirements of Section 148(f) of the Code, and annually, prior to the Completion Date, an amount sufficient to make the amount on deposit in the Rebate Fund equal to 100% of the amount required to be rebated to the United States Government pursuant to Section 148(f) of the Code, and annually, after the Completion Date, from the Revenue Fund, an amount sufficient to make the amount on deposit in the Rebate Fund equal to 100% of the amount required to be rebated to the United States Government pursuant to Section 148(f) of the Code. Neither the Trustee nor any owner of any Bond has a claim on any monies on deposit in the Rebate Fund.

The Master Bond Ordinance provides that all interest earned or profit realized on investments or deposits of money for the funds and accounts established under the Master Bond Ordinance shall be credited and charged as follows. Earnings and profits on the Bond Reserve Account shall be (i) retained therein until the Reserve Requirement is on deposit, then (ii) prior to the Completion Date, credited to the Construction Fund in an amount equal to earnings and profits times a fraction, the numerator of which is the amount of capitalized interest payable on the next ensuing Bond Payment Date and the denominator of which is the total amount of interest payable on such Bond Payment Date, and credited to the general account of the Bond Fund in an amount equal to the remainder of such earnings and profits, and then (iii) on and after the Completion Date with proceeds of a series of Bonds, credited to the general account of the Bond Fund. Earnings and profits on the Capitalized Interest Account of the Bond Fund shall be retained in such account until such account is fully funded and, thereafter, shall be credited to the Construction Fund. Earnings and profits on the Operation and Maintenance Reserve Fund shall be retained therein until the Operating Reserve Requirement is on deposit and, thereafter, shall be credited to the Revenue Fund. Earnings and profits on the Renewal and Replacement Fund shall be retained therein until the Replacement Requirement is on deposit, and, thereafter, shall be credited to the Revenue Fund. Interest earned or profit realized on investments or deposits of money in all other funds, accounts and sub-accounts established under the Master Bond Ordinance, and any losses on investments, shall be credited or charged to the fund, account or sub-account from which such investment was made.

The chart below sets forth the flow of funds as specified in the Master Bond Ordinance.



### Additional Senior Lien Bonds

The Master Bond Ordinance permits the issuance of one or more additional Series of Senior Lien Bonds on a parity with Outstanding Senior Lien Bonds so long as there exists no Default or Event of Default under the Master Bond Ordinance known to the Authority at the time such Series of Senior Lien Bonds is authorized to be issued by adoption of a Series Ordinance. Prior to issuing any additional Series of Senior Lien Bonds, the Authority must obtain an opinion of Bond Counsel that the issuance of such Series of Senior Lien Bonds will not impair the tax-exempt status of any Outstanding Senior Lien Bonds or Junior Lien Bonds.

In addition, unless the purpose for which a Series of Senior Lien Bonds is to be issued is to finance the cost of completing the acquisition, construction and installation of capital projects with respect to which a Series of Senior Lien Bonds has previously been issued, and provided that such Series of Senior Lien Bonds proposed to be issued for such purpose is proposed to be issued in a principal amount not to exceed ten percent (10%) of the face amount of Bonds originally issued to pay for the costs of the Authority's Capital Improvement Program, the Authority must first provide a report of an Airport Consultant projecting Revenues and Revenue Fund balances plus

Other Available Moneys and any amounts estimated to be available to pay capitalized interest for the first three (3) full Operating Years commencing after completion of construction of the capital projects to be funded from the proceeds of the Series of Senior Lien Bonds proposed to be issued sufficient to satisfy the Rate Covenant, taking into account the Series of Bonds proposed to be issued. As an alternative to providing the report of an Airport Consultant described above, the Authority may authorize the issuance of a Series of Senior Lien Bonds if it delivers to the Trustee a certificate of the Chief Financial Officer (accompanied by a report of an independent auditor) certifying that, taking all Outstanding Senior Lien Bonds (other than any Senior Lien Bonds to be refunded by the Series of Senior Lien Bonds proposed to be issued) and the Series of Senior Lien Bonds proposed to be issued into account as if it had been issued at the beginning of the most recent Operating Year for which audited financial statements for the Authority are available, the Net Revenues together with Other Available Moneys actually deposited in the Bond Fund for such Operating Year were not less than 125% of the Debt Service with respect to such Outstanding Senior Lien Bonds and proposed Series of Senior Lien Bonds for such period.

The Master Bond Ordinance permits the issuance of one or more Series of Refunding Bonds for the purpose of (i) refunding any Senior Lien Bonds or Junior Lien Bonds, (ii) paying Issuance Costs therefor, and (iii) making deposits into the Bond Reserve Account; provided that the issuance of Refunding Bonds is subject to the satisfaction of the requirements for the issuance of Additional Bonds if the principal and interest payable on such Refunding Bonds would exceed the principal and interest payable on the Bonds to be refunded by more than twenty percent (20%) in any Operating Year. In addition, the Authority may not deliver any additional Series of Refunding Bonds unless on or prior to the date of delivery thereof, there shall be deposited with the Trustee Sufficient Government Obligations and cash in an amount sufficient to effect payment at maturity or to pay the applicable Redemption Price or purchase price (in the event of tender) of the Bonds to be refunded together with interest on such Bonds to the redemption or payment date, which monies shall be held by the Trustee in a separate irrevocable trust account for the owners of Outstanding Bonds being refunded.

### **Junior Lien Bonds**

Junior Lien Bonds are revenue obligations of the Authority, payable solely from the Net Revenues derived by the Authority from the operation of the Airport but subject to the prior lien on Net Revenues in respect of the Senior Lien Bonds. Pursuant to the Master Bond Ordinance, the Authority has irrevocably pledged Net Revenues available after Net Revenues have first been set aside as required to pay the principal, interest and Redemption Price, if any, on Outstanding Senior Lien Bonds, for the payment of Junior Lien Bonds. As of October 1, 2018, \$133,710,000 aggregate principal amount of Junior Lien Bonds was Outstanding.

The Master Bond Ordinance permits the issuance of one or more Series of Junior Lien Bonds so long as no Event of Default under the Master Bond Ordinance known to the Authority exists at the time such Junior Lien Bonds are authorized to be issued by adoption of a Series Ordinance. Prior to issuing any additional Series of Junior Lien Bonds, the Authority must obtain an opinion of Bond Counsel that the issuance of such Series of Junior Lien Bonds will not impair the tax-exempt status of any prior Series of Senior Lien Bonds or Junior Lien Bonds.

Prior to issuing a Series of Junior Lien Bonds other than Junior Lien Bonds proposed to be issued to refund Senior Lien Bonds or Junior Lien Bonds, the Chief Financial Officer shall certify to the Trustee that the sum of (i) the Net Revenues for the most recently completed Operating Year; (ii) the amount of Other Available Moneys actually deposited in the Bond Fund for the most recently completed Operating Year; and (iii) the average of (A) the amount of Other Available Moneys actually deposited in the Junior Lien Bond Fund for the most recently completed Operating Year, and (B) each annual amount of Other Available Moneys that the Airport Consultant certifies to the Authority may reasonably be expected to be received by the Authority and deposited in the Junior Lien Bond Fund during the period that the proposed and outstanding Series of Junior Lien Bonds are projected to be Outstanding, is not less than 110% of the Debt Service with respect to such Outstanding Bonds and Outstanding Junior Lien Bonds for the most recently completed Operating Year and of the average annual Debt Service with respect to the proposed Series of Junior Lien Bonds. The Chief Financial Officer will also certify that for each of the four (4) Operating Years following the Operating Year in which proposed Series of Junior Lien Bonds is to be issued, the sum of (i) the Net Revenues that the Airport Consultant certifies to the Authority may reasonably be projected to be received for the immediately preceding Operating Year; (ii) the amount of Other Available Moneys which the Airport Consultant certifies to the Authority may reasonably be expected to be deposited in the Bond Fund for the immediately preceding Operating Year, and (iii) the average of (A) the amount of Other Available Moneys actually deposited in the Junior Lien Bond Fund for the most recently completed Operating Year preceding the Operating Year in which the proposed Series of Junior Lien Bonds is to be issued, and (B) each annual amount of Other Available Moneys

that the Airport Consultant certifies to the Authority may reasonably be expected to be received by the Authority and deposited in the Junior Lien Bond Fund over the period that the proposed and outstanding Series of Junior Lien Bonds are projected to be Outstanding, is not less than 110% of the Debt Service with respect to such Outstanding Bonds and Outstanding Junior Lien Bonds for the immediately preceding Operating Year and of the average annual Debt Service with respect to the proposed Series of Junior Lien Bonds.

In calculating Net Revenues and expected Net Revenues, the Chief Financial Officer will take into account the unencumbered fund balance in the Revenue Fund on the last day of the two (2) Operating Years preceding the year of issue, and the expected unencumbered balance in the Revenue Fund on the last day of each of (i) the Operating Year in which the proposed series of Junior Lien Bonds will be issued and (ii) the next two (2) Operating Years, as provided in Section 604 of the Master Bond Ordinance. In making the calculations described herein, the Authority will also take into account Debt Service on (a) all Outstanding Bonds and Outstanding Junior Lien Bonds and (b) the proposed series of Junior Lien Bonds as if they had been issued at the beginning of the preceding Operating Year.

## **SPECIAL FACILITIES REVENUE BONDS AND SPECIAL PURPOSE REVENUES**

### **Special Facilities and Special Purpose Bonds**

The Master Bond Ordinance provides that the Authority may finance any special facilities permitted by law; provided, that (i) any bonds issued to finance such special facilities shall not be secured by Revenues, and (ii) in the opinion of Bond Counsel, the financing of such special facilities does not conflict with the covenants or provisions of the Master Bond Ordinance.

In addition, the Authority may establish, by ordinance, a separate category or portion of revenue of a type not previously included in Revenues, relating to or arising from a definable service, program or facility that will be treated as Special Purpose Revenues and may be pledged for the payment of bonds (“Special Purpose Bonds”) payable solely from such Special Purpose Revenues. On July 15, 2015, the Board adopted an ordinance (the “CFC Ordinance”) providing for the establishment of a car rental customer facility charge (the “CFC”) as a Special Purpose Revenue, starting September 1, 2015. The CFC Ordinance authorized the Authority to initially impose a CFC of \$1.00 per vehicle per transaction day, on every vehicle rental by a car rental company that uses Airport facilities or operates under a permit or license with the Authority. The Authority has adjusted the CFC, effective November 1, 2018, to \$5.50 per vehicle transaction day. The Authority has been using, and will continue to use, the CFCs it collects to pay the costs associated with the planning, design, development, financing, funding, acquisition, construction, operation, maintenance, repair, equipping, and replacement of facilities and related improvements made, used by, in, or connected to, the business of renting or providing cars at the Airport. The Authority is continuing to review and evaluate its options with respect to the Airport’s car rental facilities and related improvements, and the November 1, 2018 increase in the CFC rate is in furtherance of such review and evaluation, which may include (but is not limited to) the planning and development of a consolidated rental car facility.. As Special Purpose Revenues, the CFCs are not included as Revenues and are not pledged for payment of Bonds, but may instead be used for the payment of debt service on Special Purpose Bonds issued to finance such rental car facilities. The Authority has not yet determined to issue Special Purpose Bonds for such purpose, but retains the ability to do so in the future.

### **Outstanding Special Facilities Revenue Bonds**

As of October 1, 2018, the Outstanding special facilities revenue bonds of the Authority are the \$14,335,000 principal amount of Special Airport Facilities Revenue Bonds (Northwest Airlines, Inc. Facilities) Series 1999.

## SERIES 2018 PROJECTS

The Authority maintains an ongoing five-year Capital Improvement Program (the “Capital Improvement Program”) to address the capital development needs of the Airport. On August 15, 2018, the Authority Board approved the Authority’s current five-year Capital Improvement Program for Operating Year 2019 - Operating Year 2023 (the “2019 – 2023 CIP”). See “DETROIT METROPOLITAN WAYNE COUNTY AIRPORT – Capital Improvement Program” below. Certain proceeds of the Series 2018A Bonds and the Series 2018B Bonds will be used to fund all or a portion of the costs of certain capital projects (collectively, the “Series 2018 Projects”) included in the 2019 – 2023 CIP. The total estimated cost of the Series 2018 Projects is \$294.5 million.

Airfield improvement, rehabilitation and reconstruction projects comprise approximately 90% percent of the total cost of the Series 2018 Projects. Most of the airfield improvement and reconstruction projects include costs of planning, design, engineering, construction, escalation for inflation, and contingency amounts, but exclude financing costs. For a further description of the Series 2018 Projects, see APPENDIX A – “SERIES 2017 REPORT OF THE AIRPORT CONSULTANT AND SERIES 2018 LETTER – SERIES 2018 LETTER – Airport Capital Improvement Program.”

The Series 2018 Projects have received the approval of a Weighted Majority (as such term is defined in the Airline Agreements (as defined herein) and more fully described in APPENDIX D – “SUMMARY OF THE AIRLINE AGREEMENTS”).

The following table presents estimated total project costs by category and anticipated funding sources for the Series 2018 Projects:

### THE 2018 PROJECTS (dollars in thousands)

	Estimated Project Cost	ANTICIPATED FUNDING SOURCES			
		Other Funds	Existing Bond Proceeds	Series 2018 Bond Proceeds	Future Bond Proceeds <sup>(1)</sup>
<b><u>SERIES 2018 PROJECTS</u></b>					
<b><u>Airfield</u></b>					
Runway 3L/21R & Associated Taxiways Reconstruction	\$240,000	\$20,000	\$0	\$101,500	\$118,500
Taxilanes U-9 and Q Rehabilitation (Phase 1 – planning and design/engineering)	1,000	0	0	1,000	0
Aircraft Remain Overnight (RON) Parking (design and construction)	14,000	0	0	14,000	0
Apron and Taxilanes Modifications Construction for the North Terminal Gate Expansion	<u>10,900</u>	<u>0</u>	<u>0</u>	<u>10,900</u>	<u>0</u>
<i>Subtotal Airfield Improvements</i>	[A] <u>\$265,900</u>	<u>\$20,000</u>	<u>\$0</u>	<u>\$127,400</u>	<u>\$118,500</u>
<b><u>Site Redevelopment &amp; Demolitions</u></b>					
L.C. Smith Terminal and Berry Terminal Demolition	[B] <u>\$22,500</u>	<u>\$0</u>	<u>\$6,000</u>	<u>\$16,500</u>	<u>\$0</u>
<b><u>Terminals</u></b>					
North Terminal Gate Expansion – Building and Passenger Boarding Bridges Construction	[C] <u>\$6,100</u>	<u>\$0</u>	<u>\$0</u>	<u>\$6,100</u>	<u>\$0</u>
<b>TOTAL SERIES 2018 PROJECTS</b>	<b>[D=A through C] <u>\$294,500</u></b>	<b><u>\$20,000</u></b>	<b><u>\$6,000</u></b>	<b><u>\$150,000</u></b>	<b><u>\$118,500</u></b>

NOTE: Amounts may not add due to rounding.

<sup>(1)</sup> Reflects costs for certain Series 2018 Projects that are planned to be funded with Series 2018 Projects Future Bonds.

SOURCE: Wayne County Airport Authority, September 2018.

Compiled by Landrum & Brown, Incorporated, September 2018.

The Authority anticipates that the Series 2018 Projects will be funded from a combination of proceeds of the Series 2018A Bonds and the Series 2018B Bonds, other Airport funds (including federal grant proceeds), prior Bond proceeds and \$118.5 million of proceeds of future Additional Bonds (the “Series 2018 Projects Future Bonds”). See APPENDIX A – “SERIES 2017 REPORT OF THE AIRPORT CONSULTANT AND SERIES 2018 LETTER – SERIES 2018 LETTER –Airport Capital Improvement Program” for further detail regarding the Series 2018 Projects and the anticipated funding sources for the Series 2018 Projects.

The Authority has no specific timeframe in which the Series 2018 Projects Future Bonds may be issued; however, the Series 2018 Letter assumes that the Series 2018 Projects Future Bonds are issued in Operating Year 2019 and that debt service on the Series 2018 Projects Future Bonds will be payable from Net Revenues commencing in Operating Year 2021. The estimated debt service on the Series 2018 Projects Future Bonds has been included in the financial projections contained in the Series 2018 Letter and summarized in “SERIES 2017 REPORT OF THE AIRPORT CONSULTANT AND SERIES 2018 LETTER” below, and is based upon estimates prepared by PFM Financial Advisors LLC.

## **PLAN OF REFUNDING**

### **General**

The Authority reviews its debt portfolio from time to time to seek debt service savings opportunities through refunding and restructuring of its Outstanding Senior Lien Bonds and Junior Lien Bonds.

The Authority will use certain of the net proceeds of the Series 2018C Refunding Bonds and the Series 2018D Refunding Bonds, together with other available funds, to defease and/or refund all or a portion of the Series 2008A Refunded Bonds, as described below. In addition, pursuant to the Master Bond Ordinance, the Authority shall have fully set aside and deposited from Net Revenues all amounts due on the Series 2008A Refunded Bonds maturing on December 1, 2018. Following the issuance of the Series 2018C Refunding Bonds and the Series 2018D Refunding Bonds, no Series 2008A Refunded Bonds will remain Outstanding.

### **Refunding of the Series 2008A Refunded Bonds**

In order to defease and/or refund all of the Series 2008A Refunded Bonds, certain of the net proceeds of the Series 2018C Refunding Bonds and the Series 2018D Refunding Bonds, together with other available funds of the Authority, if any, in the amounts determined in the Series 2018 Sale Order, will be deposited and held in cash or state and local government securities in an escrow fund (the “Series 2008A Refunded Bonds Escrow Fund”), in amounts, together with investment proceeds, sufficient to pay the principal of and interest on the Series 2008A Refunded Bonds. The Series 2008A Refunded Bonds Escrow Fund will be held by the Trustee pursuant to an escrow agreement (the “Series 2008A Refunded Bonds Escrow Agreement”) which irrevocably directs the Trustee, as Escrow Agent, to take all necessary steps to pay the principal of and interest on the Series 2008A Refunded Bonds when due and to call the Series 2008A Refunded Bonds for redemption on the date specified in the Series 2018 Sale Order following a required 30-day redemption notice. The amounts held in the Series 2008A Refunded Bonds Escrow Fund will be such that the cash or state and local government securities, together with investment proceeds, will be sufficient to pay the principal of and interest on the Series 2008A Refunded Bonds when due at maturity or by call for redemption. See “VERIFICATION OF MATHEMATICAL COMPUTATIONS.”

The Series 2008A Refunded Bonds consist of the following Outstanding Senior Lien Bonds of the Authority:

**WAYNE COUNTY AIRPORT AUTHORITY**  
**Airport Revenue Refunding Bonds**  
**(Detroit Metropolitan Wayne County Airport), Series 2008A**  
**Dated Date: April 30, 2008**

<b><u>Maturity Date</u></b> <b><u>(December 1)</u></b>	<b><u>Amount</u></b>	<b><u>Interest</u></b> <b><u>Rate</u></b>	<b><u>CUSIP+</u></b>	<b><u>Redemption Date</u></b>	<b><u>Redemption</u></b> <b><u>Price</u></b>
2019	\$5,615,000	5.750	944514HX9	December 14, 2018	100%
2020	5,720,000	5.750	944514HY7	December 14, 2018	100
2021	5,820,000	5.750	944514HZ4	December 14, 2018	100
2022	5,920,000	5.750	944514JA7	December 14, 2018	100
2023	6,020,000	5.125	944514JB5	December 14, 2018	100
2024	6,095,000	5.750	944514JC3	December 14, 2018	100
2025	6,210,000	5.750	944514JD1	December 14, 2018	100
2026	6,310,000	5.750	944514JE9	December 14, 2018	100
2027	6,415,000	5.750	944514JF6	December 14, 2018	100
2032	33,530,000	5.375	944514JG4	December 14, 2018	100

\*Copyright 2018, American Bankers Association (“ABA”). CUSIP data herein is provided by CUSIP Global Services, operated on behalf of the ABA by S&P Global Market Intelligence, a division of S&P Global Inc. This data is not intended to create a database and does not serve in any way as a substitute for the CUSIP Global Services. CUSIP numbers are provided for convenience of reference only. None of the Authority or the Underwriters takes any responsibility for the accuracy of such CUSIP numbers.



## ESTIMATED SOURCES AND USES OF FUNDS

The following table sets forth the estimated sources and uses of funds in connection with the issuance of the Series 2018 Bonds.

<b><u>Sources of Funds</u></b>	<b>Series 2018A <u>Bonds</u></b>	<b>Series 2018B <u>Bonds</u></b>	<b>Series 2018C <u>Refunding Bonds</u></b>	<b>Series 2018D <u>Refunding Bonds</u></b>	<b>Series 2018 Bonds <u>Total</u></b>
Par Amounts	\$147,390,000	\$6,005,000	\$35,515,000	\$43,020,000	\$231,930,000
Original Issue Premium	17,579,289	451,516	3,072,429	5,286,822	26,390,056
Release from Bond Reserve Account of Series 2008A Bond Fund	-	-	2,569,347	3,177,428	5,746,775
Transfer from Bond Fund	<u>-</u>	<u>-</u>	<u>3,647,869</u>	<u>4,470,825</u>	<u>8,118,694</u>
<b>TOTAL SOURCES OF FUNDS</b>	<b><u>\$164,969,289</u></b>	<b><u>\$6,456,516</u></b>	<b><u>\$44,804,644</u></b>	<b><u>\$55,955,075</u></b>	<b><u>\$272,185,525</u></b>
<b><u>Uses of Funds</u></b>					
Series 2018 Projects	\$142,720,450	\$6,053,268	-	-	\$148,773,719
Capitalized Interest	16,864,765	187,592	-	-	17,052,357
Deposit to Escrow Fund for Refunded Bonds/Redemption of Refunded Bonds	-	-	\$42,847,968	\$52,945,459	95,793,427
Deposit to Bond Reserve Account	4,550,355	178,090	1,757,458	2,761,157	9,247,059
Costs of Issuance, including Underwriters' Discount*	<u>833,720</u>	<u>37,565</u>	<u>199,219</u>	<u>248,459</u>	<u>1,318,962</u>
<b>TOTAL USES OF FUNDS</b>	<b><u>\$164,969,289</u></b>	<b><u>\$6,456,516</u></b>	<b><u>\$44,804,644</u></b>	<b><u>\$55,955,075</u></b>	<b><u>\$272,185,525</u></b>

\* Includes legal fees, trustee fees, rating agency fees, underwriter fees, financial advisory fees, printing costs and other miscellaneous fees and expenses.

NOTE: Figures may not add due to rounding.

## DETROIT METROPOLITAN WAYNE COUNTY AIRPORT

### General

The Airport is the primary commercial air service facility serving the Detroit metropolitan area and the surrounding region, much of the State and parts of northern Indiana and Ohio. The Airport's Air Service Area is defined as the Detroit-Warren-Ann Arbor CSA, which includes the following 10 counties in Michigan: Genesee, Lapeer, Lenawee, Livingston, Macomb, Monroe, Oakland, St. Clair, Washtenaw, and Wayne. The Detroit-Warren-Ann Arbor CSA is the 12th most populated CSA in the United States, with approximately 5.3 million people in 2010 based on the U.S. Census Bureau's 2010 Census data, and comprises over 53% of the population for the State.

According to FAA data for calendar year 2017, the Airport ranked 18<sup>th</sup> nationwide in enplanements, enplaning 17,036,090 passengers, an increase of approximately 1.12 percent over calendar year 2016. For the Authority's Operating Year 2017 (i.e., the 12 months commencing October 1, 2016 and ended on September 30, 2017), enplaned passengers at the Airport totaled 17,281,219, an increase of approximately 0.9 percent as compared to Operating Year 2016. Based upon preliminary Authority results for Operating Year 2018, enplanements at the Airport totaled 17,558,610, an increase of approximately 1.6 percent, as compared to Operating Year 2017.

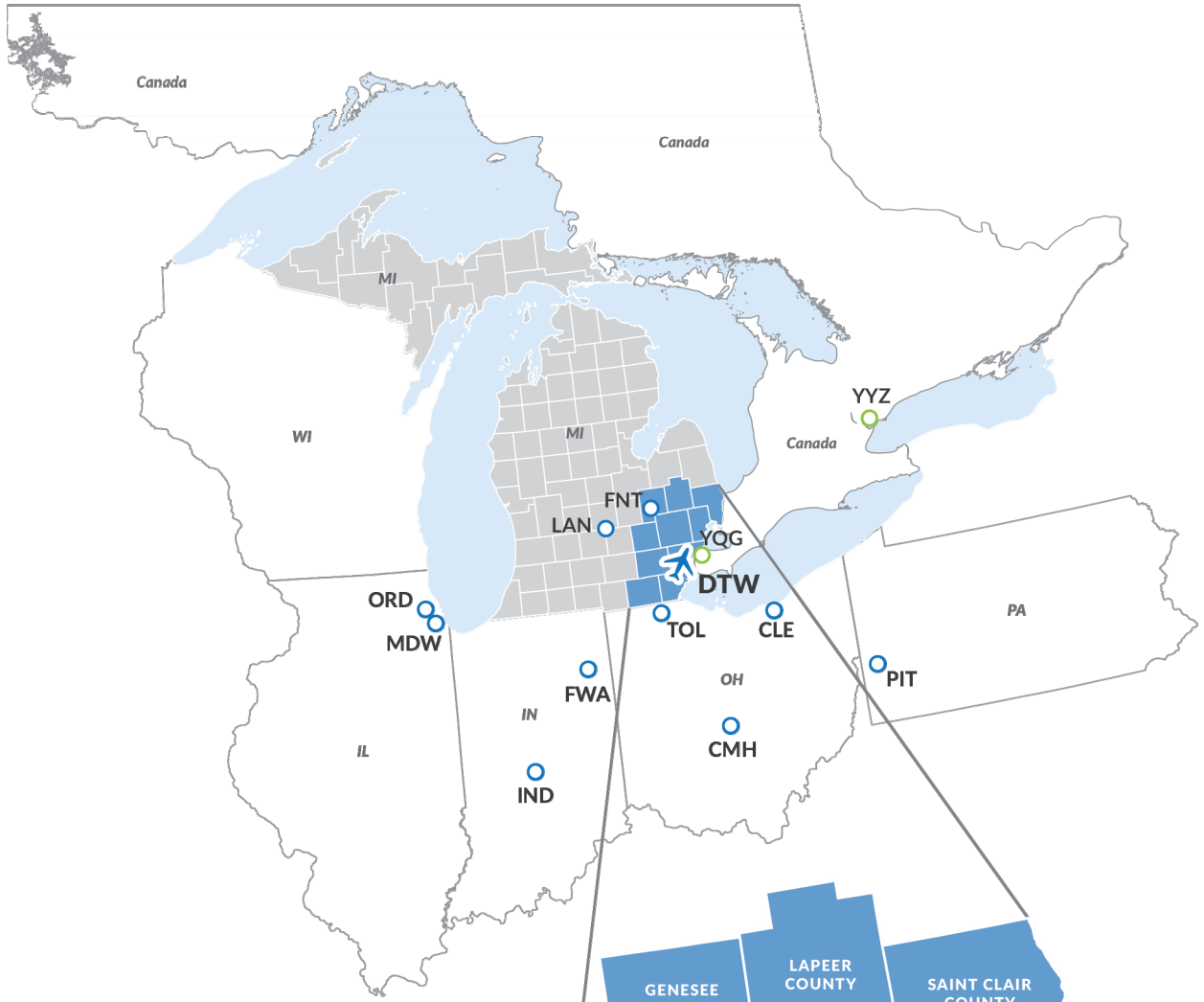
The Airport ranked 17th nationwide in total aircraft operations in calendar year 2016, with 393,427 takeoffs and landings, an increase of approximately 3.7 percent as compared to calendar year 2015, according to ACI statistics. For a discussion of these operational trends at the Airport, see APPENDIX A – "SERIES 2017 REPORT OF THE AIRPORT CONSULTANT AND SERIES 2018 LETTER – SERIES 2018 LETTER – Air Service and Air Traffic Analysis" and "– SERIES 2017 REPORT – AIR SERVICE AND AIR TRAFFIC ANALYSIS – AIR TRAFFIC ACTIVITY AND TRENDS – Aircraft Operations."

The Airport has a diverse, stable base of air carriers, and serves a large origin and destination market. The Airport is also a major connecting hub airport for Delta. See "DETROIT METROPOLITAN WAYNE COUNTY AIRPORT – Airlines Providing Service at the Airport – *Delta Air Lines*." Delta and the Delta Connection Carriers accounted for approximately 72.4% of the total enplaned passengers at the Airport based on preliminary results for Operating Year 2018. The Airport also is an international gateway with significant air service to points in Asia, Europe, Mexico, the Caribbean and Canada.

### The Airport's Air Service Area

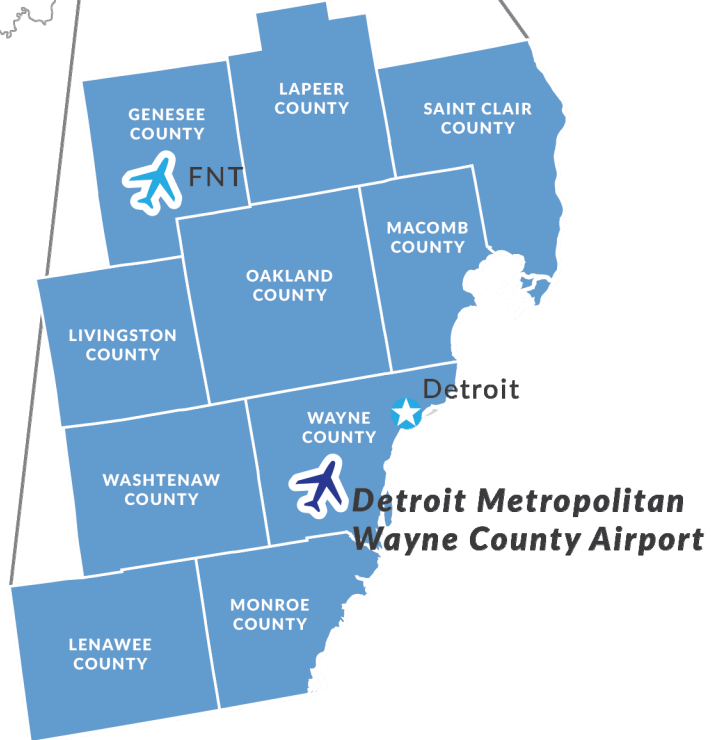
The Air Service Area for the Airport consists of the Detroit-Warren-Ann Arbor CSA. This area is located within the State. The Airport's secondary air service area generally consists of southeastern and south-central Michigan, northwestern Ohio, northeastern Indiana, and the southernmost areas of the Province of Ontario, Canada, generally in the Windsor metropolitan area. The Airport is, by far, the largest airport in the region and, as a result, has somewhat limited competition for air service.


The Airport's Air Service Area and the proximity of the Airport to other airports in its primary and secondary air service areas is shown on the following page.



**Approximate Driving Mileage from The Airport**

Windsor (YQG) .....	30
Toledo (TOL) .....	65
Flint (FNT).....	75
Lansing (LAN).....	95
Cleveland (CLE).....	145
Fort Wayne (FWA).....	160
Columbus (CMH) .....	195
Toronto Pearson (YYZ) .....	240
Pittsburgh (PIT) .....	265
Chicago Midway (MDW).....	270
Chicago O'Hare (ORD).....	290
Indianapolis (IND).....	295



 Air Service Area

## Management of the Airport

The Authority is governed by a seven-member Board. The Authority Act requires that two Board members be appointed by the Governor of the State, four Board members be appointed by the County Executive and one Board member be appointed by the County Commission. Authority Board members serve without compensation for six-year terms, but may not serve for more than two consecutive full terms. The expiration date of the term of office for Board members is October 1 of the year in which the term is to expire, but a Board member holds office until the Board member's successor is appointed and qualified, or until resignation or removal.

*The Board.* The current members of the Authority Board are:

Michael Garavaglia is Chairperson of the Authority Board. Mr. Garavaglia is president and founder of Capitol Relations, LLC, a Farmington Hills-based lobbying and consulting agency. The firm represents a wide range of clients in the health care and insurance industries, as well as county and municipal governments. Prior to establishing his firm, he served as the chief administration officer for the Michigan Department of Attorney General under former Michigan Attorney General Mike Cox. He also was director of legislative affairs for Attorney General Cox. Licensed by the State of Michigan as both a real estate builder and a real estate broker, Mr. Garavaglia was president and CEO of his own real estate development company for more than a decade. He previously worked in key accounting and financial positions for Turner Construction and General Motors. Mr. Garavaglia is a director on the boards of the Detroit Medical Center and Forgotten Harvest. He holds a bachelor's degree in accounting and a master's degree in economics, both from the University of Detroit-Mercy. A resident of Livonia, Michigan, Mr. Garavaglia was appointed to the Authority Board by former County Executive Robert Ficano in November 2014. His term on the Authority Board expires October 1, 2020.

Ronald Hall, Jr. is Vice Chairperson of the Board. Mr. Hall is CEO/President at Bridgewater Interiors, LLC. He previously served as Vice President & General Counsel for the company, after joining in 2007. Prior to joining Bridgewater Interiors, Hall spent five years at Johnson Controls, Inc., first as an attorney in its Law Department, and later in various positions of increasing responsibility in operations and program management. Before joining Johnson Controls, he practiced corporate law for several years at a prominent Detroit regional law firm. Hall earned his Juris Doctor degree at the University of Michigan Law School, where he was an associate editor on the Michigan Journal of International Law, and a recipient of the Dean's Scholarship Award and other awards. Prior to his career in law, Hall was a professional soldier. A West Point graduate, he was commissioned into the Army's field artillery branch, and decorated for meritorious service with the 1st Cavalry Division in the Persian Gulf. He attained the rank of Captain before resigning from active duty. Mr. Hall sits on one corporate and several nonprofit boards, holding several leadership positions thereon, and is an alumnus of Leadership Detroit. Mr. Hall was appointed to the Authority Board in October 2014 by Governor Rick Snyder. His term on the Authority Board expires October 1, 2020.

Nabih H. Ayad is Secretary of the Board. Mr. Ayad is a private practice attorney from Dearborn, Michigan with law offices in Canton, Michigan. Mr. Ayad is Chairman of the Board for the Arab American Civil Rights League (ACRL). From December of 2008 to December of 2011 Mr. Ayad was a Michigan Civil Rights Commissioner, appointed by former Governor Granholm. He is a member of the Advisory Council on Arab and Chaldean Affairs for the State of Michigan since 2007. Mr. Ayad was Vice President of the Arab-American Political Action Committee (AAPAC); On the Detroit NAACP Legal Redress Committee; Chairman of the NAACP Western Wayne County Legal Redress Committee for 18 cities in Western Wayne County and on the ACLU Lawyers Committee for the State of Michigan since 2002. Mr. Ayad was on the National Executive Board for the American-Arab Anti-Discrimination Committee (ADC) and also served as former Chairman of the ADC Advisory Board for the State of Michigan for over 7 years. He was also Co-Chair of ALPACT (Advocates and Leaders for Police and Community Trust), an organization made up of 100 law enforcement and civil rights groups, which he co-chaired with the head of the FBI in Detroit. Mr. Ayad received his Juris Doctorate from the Detroit College of Law at MSU and B.S. in Accounting from Wayne State School of Business in Detroit. He was appointed to the Authority Board by former County Executive Robert Ficano in November 2014. His term on the Authority Board expires October 1, 2020.

Dr. Curtis L. Ivery is Chancellor of Wayne County Community College District ("WCCCD") and has served in that role since September 1995. As the chief executive officer of WCCCD, Dr. Ivery directs a five campus, multi-cultural institution serving more than 72,000 students. He is currently serving on the Board of Directors for the American Association of Community Colleges (AACC). Prior to becoming Chancellor of

WCCCD, Dr. Ivery served as Vice President of Instruction and acting President at Mountain View College of the Dallas County Community College District. In 1996, the Life Extension Foundation selected Ivery as the “Community College President of the Year”, and in 2004 he received the Walter E. Douglas Humanitarian Award from Detroit Omega Foundation Inc. In 2010, Dr. Ivery was chosen as one of the first recipients of the Dr. Charles H. Wright Vision Awards in celebration of higher education. Dr. Ivery is the author of “Journeys of Conscience”, “Reclaiming Integration and the Language of Race in the Post-Racial Era”, and others books, along with publishing over 600 articles for weekly and monthly metropolitan newspapers in the United States. Dr. Ivery was appointed to the Board in 2015 by Wayne County Executive Warren Evans to complete the term of former Authority Board member, Reginald Turner, who resigned from the Board. Dr. Ivery’s initial term on the Authority Board expired on October 1, 2018, and County Executive Evans reappointed Dr. Ivery to a new full six year term, expiring October 1, 2024.

Mark Ouimet currently serves as a member of the Board of Directors of Hantz Bank and Hantz Holding Company. He is a former member of the Michigan House of Representatives and the Washtenaw County Board of Commissioners. He also served as Chief Operating Officer of his alma mater, Northwood University, from 1991 to 2002. Mr. Ouimet holds a bachelor’s degree in business and finance from Northwood. Mr. Ouimet is an Ann Arbor resident and was appointed to the Authority Board by Governor Rick Snyder in 2016. His term on the Board expires October 1, 2022.

Marvin W. Beatty is the Vice President of Community and Public Relations for Greektown Casino and was Executive Director at the Wadsworth Community Center in Detroit. He served for more than 22 years with the City of Detroit Fire Department, retiring as Deputy Fire Commissioner, and was the first African-American to hold that position in the Department's history. From 1995 to 2010, Mr. Beatty served as Chairman on the Board of Zoning Appeals for the City of Detroit. He currently serves as a Board member for the NAACP, Chairman of the Coleman A. Young Foundation, Downtown Detroit Partnership Board of Directors, and is active with the Detroit Economic Growth Corporation, Detroit Riverfront Conservancy, and many other organizations throughout the metropolitan Detroit area. Mr. Beatty received his Bachelor of Arts degree in Urban Management and is a graduate of the National Fire Academy Executive Development Program. He was appointed to the Board by Wayne County Executive Warren Evans in 2017, and his term on the Board expires October 1, 2023.

Al Haidous currently serves on the Wayne County Commission, having been elected in 2014 to represent the County Commission’s 11th District. He is the former Mayor of Wayne, Michigan, and, as mayor, chaired the City of Wayne’s Retirement Board, Risk Management Committee, Real Estate Committee and Downtown Development Authority. He also served on Wayne’s City Council from 1993 to 2001 and its Board of Zoning Appeals from 1990 to 1993. Since 2007, Mr. Haidous has been a board member for the Suburban Mobility Authority for Regional Transportation, better known as SMART, and currently is its chairman. He also has chaired the Southeast Michigan Community Alliance's Southeast Government Alliance, Wayne County Community Development Block Grant Advisory Council, the Conference of Western Wayne and the Central Wayne County Sanitation Authority. Mr. Haidous was appointed to the Authority Board by the County Commission effective on October 1, 2018, and his term on the Board expires October 1, 2024.

The Board must meet not less than quarterly each year, and all meetings must be held in compliance with the Michigan Open Meetings Act. The Board appoints a Chief Executive Officer (“CEO”), who is responsible for, among other things, the day-to-day operation of the Airports, including the control, supervision, management and oversight of the functions of the Airports.

The Board provides for the annual auditing of the accounts of the Authority to be performed by independent auditors. The Board appoints an audit committee of three Board members to supervise this process. The audit committee is to meet at least four times each year with the Chief Executive Officer, the Chief Financial Officer (who is appointed by the Chief Executive Officer) and the Authority’s independent public auditors to review the financial condition, operations, performance and management of the Authority and the Airport. In addition, the Chief Executive Officer appoints an internal auditor to evaluate the Authority’s internal accounting and administrative control system and conduct audits relating to the Authority’s financial activities.

***Authority Staff.***

Chad Newton, A.A.E., ACE, ASC, serves as Interim Chief Executive Officer of the Authority. Mr. Newton began his tenure in July 2018, after being appointed by the Board. In this role, he is responsible for overseeing the

independent governmental entity tasked with management and operation of the Airport and Willow Run Airport. Mr. Newton has more than 19 years of airport experience and nearly 30 years as a law enforcement professional. He graduated cum laude from Eastern Michigan University with a bachelor's degree in Criminology and Criminal Justice, and a master's degree in Technology Studies with a Law Enforcement specialty. He is also a graduate of the FBI National Academy, the Michigan State Leadership Academy and the Eastern Michigan University School of Police Staff and Command. Mr. Newton is only the second public safety executive in the United States certified by the American Association of Airport Executives (AAAE) as an Accredited Airport Executive (A.A.E.).

Istakur Rahman, CPA, CIA, ACA, CGMA, CITP, CRMA, CM, became the Authority's Interim Chief Financial Officer on February 14, 2018. In this role, he has strategic oversight of all financial-related activities at the Airports. Prior to this appointment, Mr. Rahman served as the Vice President of Internal Audit at the Authority beginning in 2003. In that capacity, he was responsible for the effective operation of the internal audit function as a key component of the entity's governance process. His responsibilities included developing and implementing a risk-based annual internal audit plan, as well as directing the overall performance of audit procedures, including planning, organizing and monitoring of internal audit operations and engagements. Prior to that position, he served as a senior assurance manager at KPMG, a Big 4 accounting firm. Mr. Rahman has a Master of Business Administration degree in Finance from Wayne State University. Mr. Rahman is a member of the Michigan Association of Certified Public Accountants, the American Institute of Certified Public Accountants and The Institute of Internal Auditors. He is also a Certified Member of the American Association of Airport Executives.

Onnie B. Jacque was appointed General Counsel for the Authority commencing September 5, 2017. Prior to joining the Authority, she served as Legal Counsel to Precision Inventory Specialists, LLC, with offices in Warren, Michigan and Charlotte, North Carolina. Ms. Jacque's public sector experience includes serving as Assistant General Counsel for the University of Michigan and as Senior Assistant Corporation Counsel and Supervising Attorney for Wayne County, where she helped manage a team of attorneys and staff providing legal expertise in financial, environmental, leasing and development matters. She has a Bachelor of Science degree in Accounting and Management Information Systems from Syracuse University and earned her Juris Doctorate from the University of Buffalo School of Law.

## **Airport Facilities**

The Airport is located in the City of Romulus, County of Wayne, Michigan, approximately 21 miles by road west of the City of Detroit's downtown. The Airport currently provides passenger services from two terminal facilities, the 121-gate McNamara Terminal and the 26-gate North Terminal. Delta, the Delta Connection Carriers and Delta's SkyTeam partners operate at the McNamara Terminal. All of the other airlines at the Airport, including all charter airlines, operate at the North Terminal. Both terminals have federal inspection service facilities for international arrivals.

The Airport has six total air carrier runways, four north-south runways in the primary wind direction and two east-west crosswind runways. Three of the runways are equal to or longer than 10,000 feet and all of the runways are at least 8,500 feet long. Of the twelve current runway approaches, eight are equipped with precision instrument landing systems. Three of the runways are equipped with precision instrument landing systems for both runway approaches. The Airport has an extensive taxiway system providing safe and efficient access to and from runway ends, terminal facilities, apron areas, and cargo and hangar facilities. Each runway has an associated parallel, full-length taxiway.

## **Aviation Activity**

**Enplanements.** In Operating Year 2017, enplaned passengers at the Airport totaled 17,281,219, an increase of approximately 0.9 percent as compared to Operating Year 2016. The number of total domestic enplaned passengers at the Airport increased approximately 0.3 percent in Operating Year 2017, while total international enplaned passengers increased approximately 7.2 percent. Based upon preliminary Authority results for Operating Year 2018, enplanements at the Airport totaled 17,558,610, an increase of approximately 1.6 percent, as compared to Operating Year 2017.

The following table presents enplaned passenger traffic at the Airport for Operating Years 2013 through 2017:

**HISTORICAL ENPLANED PASSENGERS  
OPERATING YEAR 2013 – OPERATING YEAR 2017**

YEAR	DOMESTIC		INTERNATIONAL		TOTAL	INTERNATIONAL	
	ENPLANEMENTS	ANNUAL GROWTH	ENPLANEMENTS	ANNUAL GROWTH	ENPLANED PASSENGERS	ANNUAL GROWTH	ENPLANEMENT SHARE
2013	14,665,317	(0.9%)	1,412,335	3.3%	16,077,652	(0.6%)	8.8%
2014	14,751,873	0.6%	1,464,800	3.7%	16,216,673	0.9%	9.0%
2015	15,008,299	1.7%	1,435,479	(2.0%)	16,443,778	1.4%	8.7%
2016	15,679,556	4.5%	1,451,131	1.1%	17,130,687	4.2%	8.5%
2017	15,725,513	0.3%	1,555,706	7.2%	17,281,219	0.9%	9.0%

NOTE: Figures may not add due to rounding.  
SOURCE: Wayne County Airport Authority, July 2018.

**Originating and Connecting Passenger Activity.** The Airport served 8,123,215 domestic originating passengers in calendar year 2017 and 7,912,712 domestic originating passengers in calendar year 2016. Domestic originating passengers represented 53.1 percent of domestic enplaned passengers in calendar year 2017 and 50.2 percent in calendar year 2016.

In calendar year 2017, the Airport served 7,164,367 domestic connecting passengers, as compared to 7,837,790 domestic connecting passengers in calendar year 2016. Domestic connecting passengers represented 46.9 percent of domestic enplaned passengers in calendar year 2017 and 49.8 percent in calendar year 2016.

The following table presents originating and connecting enplanements at the Airport for Calendar Years 2013 through 2017:

**HISTORICAL DOMESTIC ORIGINATING AND CONNECTING ENPLANEMENTS  
CALENDAR YEAR 2013 – CALENDAR YEAR 2017**

YEAR	DOMESTIC ORIGINATING		DOMESTIC CONNECTING		TOTAL DOMESTIC ENPLANED	ORIGINATING ENPLANEMENT	CONNECTING ENPLANEMENT
	ENPLANEMENTS	ANNUAL GROWTH	ENPLANEMENTS	ANNUAL GROWTH	PASSENGERS	SHARE	SHARE
2013	6,713,171	(0.5%)	8,020,045	0.7%	14,733,216	45.6%	54.4%
2014	6,952,520	3.6%	7,831,959	(2.3%)	14,784,479	47.0%	53.0%
2015	7,303,964	5.1%	7,975,161	1.8%	15,279,125	47.8%	52.2%
2016	7,912,712	8.3%	7,837,790	(1.7%)	15,750,502	50.2%	49.8%
2017	8,378,203	5.9%	7,440,396	(5.1%)	15,818,599	53.0%	47.0%

NOTE: Figures may not add due to rounding.  
SOURCES: Wayne County Airport Authority, October 2018; US DOT Origin & Destination Survey of Airline Passenger Traffic, 298c Commuter Data and Airport Activity Statistics of Certified Route Air Carriers, Schedule T100, December 2017.

## **Airlines Providing Service at the Airport**

As of June 1, 2018, the Airport was served by 20 U.S. flag scheduled passenger air carriers, including eight mainline carriers. In addition, as of June 1, 2018, six foreign flag airlines provided scheduled passenger service at the Airport and three all-cargo carriers provided scheduled cargo service at the Airport.

### **Mainline Carriers**

Alaska Airlines  
American Airlines\*  
Delta Air Lines\*  
Frontier Airlines  
JetBlue Airways\*  
Southwest Airlines\*  
Spirit Airlines\*  
United Airlines\*

### **Foreign Flag Airlines**

Aeromexico  
Air Canada (Air Georgian)  
Air France\*  
Lufthansa German Airlines\*  
Royal Jordanian Airlines  
WOW Air

### **Cargo Airlines**

DHL (Atlas/ATI)  
Federal Express\*  
United Parcel Service\*

### **Regional Carriers**

Air Wisconsin (d/b/a American Eagle)  
Compass Airlines (d/b/a Delta Connection)  
Endeavor Air (d/b/a Delta Connection)  
Envoy Air (d/b/a American Eagle)  
ExpressJet (d/b/a Delta Connection and United Express)  
GoJet (d/b/a Delta Connection and United Express )  
Mesa (d/b/a United Express)  
PSA (d/b/a American Eagle)  
Republic Airlines (d/b/a American Eagle, Delta Connection and United Express)  
Shuttle America (d/b/a United Express)  
SkyWest Airlines (d/b/a American Eagle, Delta Connection and United Express)  
Trans States (d/b/a American Eagle and United Express)

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\* Signatory Airline.

SOURCE: Wayne County Airport Authority.  
Compiled by Landrum & Brown, Incorporated, September 2018.

The historical share of enplaned passengers by airline at the Airport between Operating Year 2013 and Operating Year 2017 is shown in the following table.



**HISTORICAL TOTAL ENPLANED PASSENGERS BY AIRLINE <sup>(1)</sup>  
(OPERATING YEARS ENDING SEPTEMBER 30)**

<u>AIRLINE</u>	<u>OY 2013</u>	<u>%</u>	<u>OY 2014</u>	<u>%</u>	<u>OY 2015</u>	<u>%</u>	<u>OY 2016</u>	<u>%</u>	<u>OY 2017</u>	<u>%</u>
Delta	12,754,063	79.30%	12,620,392	77.80%	12,475,818	75.90%	12,673,112	74.00%	12,647,229	73.18%
Spirit	777,838	4.80%	898,449	5.50%	1,118,682	6.80%	1,311,599	7.70%	1,453,711	8.41%
American <sup>(2)</sup>	1,035,237	6.40%	1,118,762	6.90%	1,135,720	6.90%	1,143,147	6.70%	1,101,588	6.37%
Southwest	843,892	5.20%	840,850	5.20%	784,365	4.80%	845,604	4.90%	848,036	4.91%
United	407,108	2.50%	398,315	2.50%	455,206	2.80%	547,571	3.20%	561,260	3.25%
Frontier	80,496	0.50%	98,958	0.60%	99,869	0.60%	149,124	0.90%	208,426	1.21%
JetBlue	0	0.00%	46,011	0.30%	105,591	0.60%	146,799	0.90%	142,117	0.82%
Lufthansa	66,977	0.40%	77,650	0.50%	76,694	0.50%	71,472	0.40%	77,521	0.45%
Alaska	0	0.00%	3,927	0.00%	57,636	0.40%	66,040	0.40%	72,380	0.42%
Air France	77,751	0.50%	73,512	0.50%	75,576	0.50%	71,642	0.40%	71,462	0.41%
Air Canada	17,156	0.10%	21,253	0.10%	23,980	0.10%	32,392	0.20%	40,781	0.24%
Aeromexico	0	0.00%	0	0.00%	0	0.00%	0	0.00%	19,954	0.12%
Virgin Atlantic	0	0.00%	0	0.00%	20,442	0.10%	47,380	0.30%	19,417	0.11%
Royal Jordanian	14,334	0.10%	14,755	0.10%	12,225	0.10%	13,403	0.10%	14,937	0.09%
Other	2,800	0.00%	3,839	0.00%	1,974	0.00%	11,402	0.10%	2,400	0.01%
<b>TOTAL</b>	<b>16,077,652</b>	<b>100.00%</b>	<b>16,216,673</b>	<b>100.00%</b>	<b>16,443,778</b>	<b>100.00%</b>	<b>17,130,687</b>	<b>100.00%</b>	<b>17,281,219</b>	<b>100.00%</b>

Note: Percentages may not add because of rounding.

(1) Regional affiliates, as applicable, have been included with their appropriate network partner.

(2) American Airlines data includes data for the former US Airways, which was merged with American Airlines in April 2015.

SOURCE: Wayne County Airport Authority, September 2018.

**Delta Air Lines.** Delta maintains one of its busiest connecting hubs and an international gateway at the Airport. Delta and the Delta Connection Carriers accounted for approximately 72.4% of the total enplaned passengers at the Airport based on preliminary results for Operating Year 2018. See APPENDIX A – “SERIES 2017 REPORT OF THE AIRPORT CONSULTANT AND SERIES 2018 LETTER – SERIES 2018 LETTER – Air Service and Air Traffic Analysis” and “– SERIES 2017 REPORT – AIR SERVICE AND AIR TRAFFIC ANALYSIS – AIR SERVICE AT THE AIRPORT – Delta’s Operations at the Airport” for further detail regarding Delta’s activity at the Airport. In addition, see “INVESTMENT CONSIDERATIONS — Delta’s Presence at the Airport” below.

For additional information regarding Delta, see Form 10-K for the fiscal year ended December 31, 2017 filed by Delta with the Securities and Exchange Commission (the “SEC”), and other reports and information filed with the SEC by Delta subsequent to December 31, 2017.

The Authority has no information regarding the financial condition of Delta other than from SEC filings and press releases of Delta. No assurance can be given concerning the present or future viability of Delta.

### **Airport Use Agreements**

**Signatory Airlines.** A large portion of the Revenues deposited by the Authority into the Revenue Fund in accordance with the Master Bond Ordinance is derived from rentals, fees and charges imposed upon airlines operating at the Airport under agreements relating to their use of the Airport. Pursuant to the terms of the Airline Agreements (defined below), the Authority calculates airline landing fee rates under an Airport-wide residual methodology. As such, the Signatory Airlines (defined below) are obligated to pay the net cost of operating the entire Airport, including operating expenses and all debt service requirements. If the Authority incurs a deficit in any particular Operating Year, it has the ability to increase landing fee rates to the Signatory Airlines in order to recover the amount of the deficit. Conversely, if the Authority realizes a surplus, the Authority must refund the surplus to the Signatory Airlines.

Each of the following airlines is a party to an Airline Agreement: Air France, American Airlines, Delta, Federal Express, JetBlue Airways, KLM Royal Dutch Airlines (“KLM”), Lufthansa German Airlines, Southwest

Airlines, Spirit Airlines, United Airlines and United Parcel Service (collectively, the “Signatory Airlines”). KLM is not currently operating at the Airport.

***Airline Agreements.*** Each of the Signatory Airlines is a party to an Airport Use and Lease Agreement with respect to its use of the Airport (each an “Airline Agreement,” and collectively referred to as the “Airline Agreements”). The Airline Agreements expire September 30, 2032. Under the Airline Agreements, the Signatory Airlines pay rentals and use fees for the lease and use of airline premises in the terminals at the Airport and Activity Fees (*i.e.*, landing fees) (as defined in APPENDIX D – “SUMMARY OF THE AIRLINE AGREEMENTS”) for the common use of other terminal and airfield facilities.

See APPENDIX D – “SUMMARY OF THE AIRLINE AGREEMENTS.”

### **Capital Improvement Program**

The Authority maintains an ongoing Capital Improvement Program to address the capital development needs of the Airport. On August 15, 2018, the Authority Board approved the Authority’s 2019 – 2023 CIP. The Authority Board-approved 2019 – 2023 CIP has a total estimated project cost of approximately \$900.2 million, which does not include the costs of a portion of one of the Series 2018 Projects that has been completed. See footnote 3 to Table 5 in APPENDIX A – “REPORT OF THE AIRPORT CONSULTANT – SERIES 2018 LETTER – Airport Capital Improvement Program” for further information. The 2019 – 2023 CIP, as defined in “SERIES 2018 PROJECTS” above, includes primarily airfield improvements, as well as improvements to airport support facilities, including the Airport’s terminals, parking garages and ground transportation facilities, roads and bridges, site redevelopment and demolitions. For a further description of the Authority’s 2019 – 2023 CIP, see APPENDIX A – “SERIES 2017 REPORT OF THE AIRPORT CONSULTANT AND SERIES 2018 LETTER – SERIES 2018 LETTER – Airport Capital Improvement Program.”

The total estimated project cost for the 2019 – 2023 CIP (including the completed portion of one of the Series 2018 Projects referred to above) is approximately \$904.7 million, with airfield projects comprising an estimated \$592.08 million of this total. The Series 2018 Projects, which have a total estimated cost of approximately \$294.5 million and are a subset of the capital projects contained in the 2019 – 2023 CIP, have received approval of a Weighted Majority and are to be funded, in whole or in part, with the net proceeds of the Series 2018A Bonds and the Series 2018B Bonds. See “SERIES 2018 PROJECTS” above.

Certain other capital projects at the Airport having an aggregate project cost of approximately \$130.25 million are included in the 2019 – 2023 CIP and have also received approval of a Weighted Majority (the “Other Approved Capital Projects”), but are not included in the Series 2018 Projects. The Authority anticipates that the Other Approved Capital Projects will be funded from a combination of prior Bond proceeds and \$73.37 million of proceeds of future Additional Bonds (the “Other Approved Capital Projects Future Bonds”). See APPENDIX A – “SERIES 2017 REPORT OF THE AIRPORT CONSULTANT AND SERIES 2018 LETTER – SERIES 2018 LETTER – Airport Capital Improvement Program” for further detail regarding the Other Approved Capital Projects and the anticipated funding sources for the Other Approved Capital Projects. The Authority has no specific timeframe in which the Other Approved Capital Projects Future Bonds may be issued; however, the Series 2018 Letter assumes that the Other Approved Capital Projects Future Bonds are issued in Operating Year 2019 and that debt service on the Other Approved Capital Projects Future Bonds will be payable from Net Revenues commencing in Operating Year 2021. The estimated debt service on the Other Approved Capital Projects Future Bonds has been included in the financial projections contained in the Series 2018 Letter and summarized in “SERIES 2017 REPORT OF THE AIRPORT CONSULTANT AND SERIES 2018 LETTER” below, and is based upon estimates prepared by PFM Financial Advisors LLC.

The Authority has not yet requested Weighted Majority approval for many of the capital projects in the 2019 – 2023 CIP, which approval would be required in order for the Authority to issue Additional Bonds for such projects. The Authority currently anticipates that it will undertake the as-yet unapproved projects in the 2019 – 2023 CIP in accordance with the plan set forth in the 2019 – 2023 CIP (*i.e.*, over the next 5-6 year period). The Authority anticipates that these projects will be funded from a combination of Additional Bond proceeds, federal grants, and Authority discretionary and other funds. See “—*CIP Funding Sources*” below. As a result of the forward-looking nature of the Capital Improvement Program, some of the anticipated funding sources for these projects may not be available and are subject to change. Because the estimated project costs and schedules of such projects are still being developed, and the Authority has not yet requested Weighted Majority approval of such projects, the Authority does not yet have a specific plan for the amount and timing of issuance of Additional Bonds to fund such

projects. For these reasons, the estimated debt service on such Additional Bonds has not been included in the financial projections contained in the Series 2017 Report and Series 2018 Letter and summarized in “SERIES 2017 REPORT OF THE AIRPORT CONSULTANT AND SERIES 2018 LETTER” below.

For further information regarding the Authority’s 2019 – 2023 CIP, including associated costs and anticipated funding sources, see the table below entitled “AIRPORT’S FIVE-YEAR CAPITAL IMPROVEMENT PROGRAM COSTS BY FUNDING SOURCE”.

**Master Plan.** The Authority completed an updated 20-year Master Plan for the Airport in 2017 (the “Airport Master Plan”), which represents the actions to be accomplished for the phased development of the Airport over the 2015 – 2035 planning horizon. The Airport Master Plan reflects all airfield, terminal, landside/ground access and support facility projects necessary to meet the anticipated demand for air travel over the planning horizon. The FAA requires an updated airport master plan from any airport that plans to seek federal funding for airport development projects.

The Authority’s Preferred Development Plan for the Airport includes, among numerous other projects, reconstruction of Runway 3L/21R and associated taxiways, the addition of 3 new aircraft gates at the North Terminal, apron pavement to create more remain over-night (RON) parking positions, and redesign of the maintenance facility. The current estimated cost of the projects recommended by the Airport Master Plan is \$482.8 million of which is represented in the 2019 – 2023 CIP. The likely funding sources for the Airport Master Plan projects would include future Bond proceeds, federal grants, PFCs and third party funding.

The FAA acceptance of the Airport Master Plan is expected within the next 12 months, and an extensive process of design, engineering and impact assessment in connection with the Airport Master Plan is underway. Airport Master Plan projects not already in the 2019 – 2023 CIP will be added to the Airport’s Capital Improvement Program on a phased development basis.

**CIP Funding Sources.** The Authority’s funding sources for the 2019 – 2023 CIP are the proceeds of Outstanding Senior Lien Bonds, proceeds of the Series 2018A Bonds and the Series 2018B Bonds, federal and state grants, proceeds of Additional Bonds (including the Series 2018 Projects Future Bonds and the Other Approved Capital Projects Future Bonds (and for further information on the Series 2018 Projects Future Bonds, see “SERIES 2018 PROJECTS” above, and for further information on the Other Approved Capital Projects Future Bonds, see “DETROIT METROPOLITAN WAYNE COUNTY AIRPORT – Capital Improvement Program” above)), and Authority discretionary and other funds.

**Outstanding Bonds.** The Authority has previously issued Senior Lien Bonds to fund a portion of the costs of certain capital projects in its Capital Improvement Program. The Authority expects to fund a portion of the Series 2018 Projects costs with approximately \$6 million of remaining Senior Lien Bond proceeds.

**Additional Bonds.** The Authority is authorized to issue airport revenue bonds to finance the cost of capital projects at the Airports and include the debt service on such bonds in the fees and charges of the Signatory Airlines, subject to receiving the approval of a Weighted Majority for such capital projects. Some of the projects in the 2019 – 2023 CIP already have been approved by a Weighted Majority and are to be funded from the proceeds of Outstanding Senior Lien Bonds, the Series 2018A Bonds and the Series 2018B Bonds, and the Series 2018 Projects Future Bonds and the Other Approved Capital Projects Future Bonds; other projects will require Weighted Majority approval before the Authority may issue Bonds or spend surplus Bond proceeds on hand to fund any portion of the costs of these projects. The Authority currently has no specific timeframe for the issuance of the Series 2018 Projects Future Bonds and/or the Other Approved Capital Projects Future Bonds; however, the Series 2018 Letter assumes that the Series 2018 Projects Future Bonds and the Other Approved Capital Projects Future Bonds are issued in Operating Year 2019 and that debt service on the Series 2018 Projects Future Bonds and the Other Approved Capital Projects Future Bonds will be payable commencing in Operating Year 2021. See APPENDIX A – “SERIES 2017 REPORT OF THE AIRPORT CONSULTANT AND SERIES 2018 LETTER – SERIES 2018 LETTER – Airport Capital Improvement Program.”

**Grants.** The Airport and Airway Improvement Act of 1982 created a grant program that is administered by the FAA. The FAA allocates federal grants through the Airport Improvement Program (the “AIP”). The AIP grants include entitlement grants, which are allocated among airports by the FAA in accordance with a formula based on enplaned passengers and cargo-landed weight, and discretionary grants, which are allocated by the FAA in accordance with its guidelines. FAA grants are subject to annual Congressional appropriation. On October 5, 2018,

the FAA Reauthorization Act of 2018 was enacted into law, authorizing a total of \$96.7 billion in funding for federal aviation programs over five years (federal fiscal years 2019-2023), while keeping funding for the AIP at \$3.35 billion per year through federal fiscal year 2023.

The Authority expects to use federal grants to pay for a portion of the 2019 – 2023 CIP. No assurance can be made that the FAA will award the additional federal grants that the Authority expects to obtain, or that, if awarded, the federal grant funds will be received in the amount or at the time contemplated by the Authority. The availability of the anticipated grant amounts is subject to future availability of federal discretionary funds that the FAA commits to the projects. In addition, the AIP expires periodically and federal reauthorization is required to continue. FAA's authorization expires on September 30, 2023, and it is not known at this time whether new reauthorization legislation will be passed by Congress by such date.

If the grants are not awarded or received, in whole or in part, the Authority would be able to issue Additional Bonds to pay the unfunded costs of the applicable capital projects, subject to obtaining additional Weighted Majority approval, if required.

The following table presents a summary of the 2019 – 2023 CIP, including associated cost estimates and anticipated funding sources.

**AIRPORT'S FIVE-YEAR CAPITAL IMPROVEMENT PROGRAM COSTS BY FUNDING SOURCE (thousands of dollars)<sup>(1), (2), (3)</sup>**

Project Element	Est. Total Project Costs	Other Funds	Existing Bond Proceeds	Series 2018 Bond Proceeds	Future Bond Proceeds <sup>(4)</sup>	Other CIP Projects Future Bond Proceeds <sup>(5)</sup>
Airfield	\$592,075	\$20,000	\$60,079	\$127,400	\$150,596	\$234,000
Cargo, Hangar & Commercial Development	7,925	0	3,807	0	0	4,118
Power Plants & Electrical Distribution	48,975	0	21,702	0	0	27,273
Fleet & Equipment	10,200	1,200	0	0	0	9,000
Parking & Ground Transportation Facilities	47,800	1,500	21,050	0	6,000	19,250
Bridges & Roadways	37,000	0	1,725	0	7,000	28,275
Security & Communications	26,125	0	9,875	0	0	16,250
Support Facilities	28,300	858	2450	0	10,250	14,742
Site Redevelopment & Demolitions	27,100	0	9,000	16,500	0	1,600
Terminals	65,970	0	41,870	6,100	18,000	0
Water, Sanitary & Stormwater Systems	12,450	0	3,700	0	0	8,750
Other Projects	800	800	0	0	0	0
<b>Total</b>	<b>\$904,720</b>	<b>\$24,358</b>	<b>\$175,258</b>	<b>\$150,000</b>	<b>\$191,846</b>	<b>\$363,258</b>

<sup>(1)</sup> All of the Series 2018 Projects and Other Approved Capital Projects (defined in the Series 2018 Letter) have been approved by a Weighted Majority. Many of the Other CIP Projects (defined in the Series 2018 Letter) require approval by a Weighted Majority in order to fund such projects with bond proceeds, expenditure schedules are subject to change, and projects are subject to demand and available funding.

<sup>(2)</sup> Current cost estimates and construction schedules may vary from the five-year CIP approved by the Board on August 15, 2018.

<sup>(3)</sup> The LC Smith and Berry Terminal Demolition project is a Series 2018 Project, but a portion of that project funded with existing bond proceeds has been completed and is not included in the Board-approved CIP. The Board-approved CIP has a total estimated project cost of \$900.2 million.

<sup>(4)</sup> Future Bond Proceeds with respect to the Series 2018 Projects are the proceeds of bonds currently planned to be issued in the future to fund those portions of the Series 2018 Projects not funded by the Series 2018 Bonds and other sources. Future Bond Proceeds with respect to the Other Approved Capital Projects are the proceeds of bonds currently planned to be issued in future years to fund the Other Approved Capital Projects. Future Bond Proceeds are included as part of the financial analysis included in the Series 2018 Letter.

<sup>(5)</sup> Other CIP Projects Future Bond Proceeds are the proceeds of bonds currently planned to be issued in future years to fund Other CIP Projects that have not been approved yet by a Weighted Majority. The Authority would need to obtain Weighted Majority approval of these projects in order to issue bonds to fund these projects and include the debt service on such Bonds in airline rates and charges. Other CIP Projects Future Bond Proceeds are not included in the financial analysis included in the Series 2018 Letter.

Note: Amounts may not add because of rounding.

Source: Authority management records, September 2018.

Compiled by Landrum & Brown, Incorporated, September 2018.

The Series 2018 Projects are a subset of the capital projects contained in the 2019 – 2023 CIP and are to be funded, in whole or in part, with the net proceeds of the Series 2018A Bonds and the Series 2018B Bonds. For further information regarding the Series 2018 Projects and the estimated costs and funding sources for the Series 2018 Projects, see “SERIES 2018 PROJECTS” above.

## AIRPORT FINANCIAL INFORMATION

### Airport Indebtedness

**General.** Capital improvements at the Airport have been financed through the issuance of Senior Lien Bonds, Junior Lien Bonds and Special Facilities Revenue Bonds, and with PFCs, federal grants and other Airport funds. In addition, the Authority executed an Efficiency Improvement Agreement for Detroit Metropolitan Wayne County Airport in 2008 with Siemens Building Technologies, Inc. (“Siemens”), pursuant to which Siemens agreed to finance certain improvements over a 15-year period, and, as of October 1, 2018, \$1,842,035.24 remains outstanding. The Authority had previously entered into lease purchase agreements with Chase Equipment Leasing Inc., however, as of the date of this Official Statement, all such agreements have been fully paid by the Authority and no amounts remain outstanding.

As of October 1, 2018 and without taking into account the issuance of the Series 2018 Bonds, the aggregate principal amount of Outstanding Senior Lien Bonds was \$1,972,170,000, and the aggregate principal amount of Outstanding Junior Lien Bonds was \$133,710,000. The Series designations and outstanding principal amounts of these bonds are set forth below.

<b>Senior Lien Bonds</b>	<b>Outstanding Principal Amount (as of October 1, 2018)</b>
Series 2008A	\$93,190,000
Series 2010A	32,170,000
Series 2010C	61,910,000
Series 2010D	12,075,000
Series 2011A	152,465,000
Series 2011B	7,900,000
Series 2012A	173,985,000
Series 2012B	24,290,000
Series 2012C	760,000
Series 2012D	40,790,000
Series 2014A <sup>(1)</sup>	29,800,000
Series 2014B	66,495,000
Series 2014C	31,745,000
Series 2015A <sup>(1)</sup>	52,010,000
Series 2015B <sup>(1)</sup>	75,000,000
Series 2015C <sup>(1)</sup>	25,640,000
Series 2015D	213,330,000
Series 2015E	7,755,000
Series 2015F	224,155,000
Series 2015G	72,715,000
Series 2015H <sup>(1)</sup>	23,125,000
Series 2017A	50,670,000
Series 2017B	40,770,000
Series 2017C	78,360,000
Series 2017D <sup>(1)</sup>	198,955,000
Series 2017E <sup>(1)</sup>	67,765,000
Series 2017F <sup>(1)</sup>	<u>114,345,000</u>
<b>TOTAL</b>	<b><u>\$1,972,170,000</u></b>

<sup>(1)</sup> Such Senior Lien Bonds have been directly placed with a financial institution. For further information, see “AIRPORT FINANCIAL INFORMATION – Direct Placements” below.

<b>Junior Lien Bonds</b>	<b>Outstanding Principal Amount (as of October 1, 2018)</b>
Series 2017A	\$63,055,000
Series 2017B	46,040,000
Series 2017C <sup>(1)</sup>	<u>24,615,000</u>
TOTAL	<u>\$133,710,000</u>

<sup>(1)</sup> Such Junior Lien Bonds have been directly placed with a financial institution. For further information, see “AIRPORT FINANCIAL INFORMATION – Direct Placements” below.

### Direct Placements

The Authority has directly placed certain series of the Outstanding Senior Lien Bonds and the Outstanding Junior Lien Bonds referenced under the caption “ – Airport Indebtedness – *General*” above, as of October 1, 2018, with certain financial institutions.

As of the date of issuance of the Series 2018 Bonds, the Authority expects to have outstanding \$611,255,000 principal amount of Senior Lien Bonds and Junior Lien Bonds held as direct placements, as summarized in the table below:

<u>Series</u>	<u>Outstanding Principal Amount</u>	<u>Put Date</u>	<u>Maturity Date</u>	<u>Interest Rate Mode</u>	<u>Purchaser</u>
2014A	\$29,800,000	05/01/2019	12/01/2034	Variable Rate	Banc of America Preferred Funding Corporation
2015A	\$52,010,000	None	12/01/2020	Fixed Rate	PNC Bank, National Association
2015B	\$75,000,000	None	12/01/2024	Fixed Rate	Bank of America, N.A.
2015C	\$25,640,000	None	12/01/2034	Fixed Rate	Citibank, N.A.
2015H	\$23,125,000	10/01/2020	12/01/2039	Variable Rate	Bank of America, N.A.
2017D	\$198,955,000	12/01/2020	12/01/2033	Variable Rate	Bank of America, N.A.
2017E	\$67,765,000	None	12/01/2028	Fixed Rate	Citibank, N.A.
2017F	\$114,345,000	None	12/01/2028	Fixed Rate	Bank of America, N.A.
Junior 2017C	\$24,615,000	None	12/01/2037	Fixed Rate	Citibank, N.A.

SOURCE: Wayne County Airport Authority, September 2018.

**Debt Service Requirements.** The following table sets forth the annual debt service requirements accruing in each Bond Year on the outstanding Senior Lien Bonds, the outstanding Junior Lien Bonds and the Series 2018 Bonds following the date of issuance of the Series 2018 Bonds:

<b>Bond Year Ending December 1</b>	<b>Outstanding Senior Lien Bonds<sup>(1)(2)(3)</sup></b>	<b>Series 2018 Bonds<sup>(3)</sup></b>	<b>Total Outstanding Senior Lien Bonds (1)(2)(3)</b>	<b>Outstanding Junior Lien Bonds</b>	<b>Total Debt Service (1)(2)(3)</b>
2018	\$164,067,585	-	\$164,067,585	\$10,796,537	\$174,864,122
2019	168,884,342	\$ 9,782,261	178,666,603	10,635,050	189,301,653
2020	163,532,313	11,170,202	174,702,516	10,630,550	185,333,066
2021	160,461,058	12,063,981	172,525,039	10,630,550	183,155,589
2022	151,990,805	16,271,250	168,262,055	10,634,300	178,896,355
2023	152,659,661	16,027,250	168,686,911	10,636,050	179,322,961
2024	151,245,888	15,786,750	167,032,638	10,635,300	177,667,938
2025	150,318,800	15,564,500	165,883,300	10,591,550	176,474,850
2026	150,497,828	15,529,500	166,027,328	10,591,300	176,618,628
2027	150,759,089	15,267,250	166,026,339	10,591,800	176,618,139
2028	149,389,097	15,003,500	164,392,597	10,642,300	175,034,897
2029	107,553,200	22,588,250	130,141,450	10,644,550	140,786,000
2030	107,597,350	22,324,000	129,921,350	10,640,050	140,561,400
2031	107,625,788	22,043,500	129,669,288	10,638,300	140,307,588
2032	107,598,450	21,756,500	129,354,950	10,643,300	139,998,250
2033	107,584,800	15,577,250	123,162,050	10,623,800	133,785,850
2034	94,242,650	21,489,250	115,731,900	10,625,250	126,357,150
2035	56,969,250	21,491,500	78,460,750	10,624,050	89,084,800
2036	56,969,500	21,493,500	78,463,000	10,619,550	89,082,550
2037	58,318,500	21,488,250	79,806,750	10,626,000	90,432,750
2038	56,156,950	21,489,000	77,645,950	-	77,645,950
2039	56,153,300	3,523,250	59,676,550	-	59,676,550
2040	47,895,750	3,527,000	51,422,750	-	51,422,750
2041	47,890,250	3,524,250	51,414,500	-	51,414,500
2042	47,887,500	3,525,000	51,412,500	-	51,412,500
2043	35,542,750	3,523,750	39,066,500	-	39,066,500
2044	35,543,250	400,250	35,943,500	-	35,943,500
2045	26,682,500	395,250	27,077,750	-	27,077,750
2046	7,419,750	390,250	7,810,000	-	7,810,000
2047	7,418,250	385,250	7,803,500	-	7,803,500
2048	-	5,885,250	5,885,250	-	5,885,250
<b>Total</b>	<b>\$2,886,856,203</b>	<b>\$379,286,945</b>	<b>\$3,266,143,148</b>	<b>\$212,700,137</b>	<b>\$3,478,843,285</b>

<sup>(1)</sup> Outstanding Senior Lien Bond debt service for 2018 is based on actual interest payments made on June 1, 2018 and estimated deposits for the December 1, 2018 payment, assuming a 3.00% interest rate on variable rate bonds.

<sup>(2)</sup> 2014A Bonds, Series 2015H Bonds and Series 2017D Bonds assume an interest rate of 3.00%.

<sup>(3)</sup> Net of capitalized interest.



**PFC Revenues.** Under the Aviation Safety and Capacity Expansion Act of 1990 (the “PFC Act”), the FAA may authorize a public agency which controls an airport to impose a PFC of up to \$4.50 for each qualifying enplaned passenger at such airport to be used to finance eligible airport-related projects. In order to receive authorization to impose a PFC and use the PFC revenue, the public agency must submit an application requesting that the FAA approve the imposition of a PFC for, and the use of PFC revenues on, specific eligible projects described in such application. PFCs are collected on behalf of airports by air carriers and their agents (the “Collecting Carriers”) and remitted to the public agency.

Many of the PFC-eligible projects in the Capital Improvement Program for the Airport during the period from 1998 to 2007 were funded with the proceeds of Bonds, and the plan of finance for these projects assumed that the Authority would use PFC revenue to pay the Debt Service on the Bonds issued to pay for such PFC-eligible projects to the maximum extent possible. With respect to other PFC-eligible Capital Improvement Program projects, the Authority has funded a portion of the cost of the projects with federal grant funds, and the balance of the cost (the local share) with Bond proceeds, with payment of a portion of the Debt Service on the Bonds to be paid with PFC revenue.

Under its current PFC approvals, the Authority has authority to impose and use \$3.135 billion in PFCs, which includes amounts for the payment of principal, interest and other financing costs on Bonds issued to pay the PFC-eligible costs of the approved projects. The current estimated PFC expiration date is February 1, 2034.

The Authority is obligated under the Airline Agreements with the Signatory Airlines to use PFCs to pay Debt Service on Bonds issued to pay the costs of certain PFC-eligible projects at the Airport. These projects include the construction of portions of both the South Terminal and the North Terminal. Therefore, on a monthly basis, the Authority transfers some of its PFC revenues to the Bond Fund and the Junior Lien Bond Fund for the purpose of paying Debt Service, respectively, on Senior Lien Bonds and Junior Lien Bonds issued to finance such PFC eligible projects.

The amount of PFC revenue collected for the Airport in past years has varied, and in future years will vary, based upon many factors, including compliance with federal law and regulations, passenger enplanement levels, as well as continuation of the PFC program. No assurance can be given that the forecasted level of enplanements will be realized or that any other factor affecting PFC revenue will not occur that adversely impacts the Authority. A shortfall in projected PFC collections could increase the amounts of Net Debt Service included in the rates and charges of the airlines operating at the Airport. See “INVESTMENT CONSIDERATIONS – Availability of PFC Revenues and Other Sources of Funding” herein.

### **Other Post Retirement Benefit Obligations**

The Authority provides hospitalization and other health insurance for certain Authority retirees pursuant to agreements with various collective bargaining units and benefit plans approved by the CEO for at-will employees of the Authority. Healthcare benefits are provided to certain Authority retirees and their eligible dependents, in each case, under the age of 65, and to certain Authority retirees and their eligible dependents, in each case age 65 and older, on a secondary basis as a supplement to Medicare. The Authority also pays the cost of basic retiree life insurance, up to \$5,000 per employee, on a pay-as-you-go basis. No new Authority employee hired after 2012 is eligible for retiree healthcare benefits.

As of the year ended September 30, 2007, the Authority is subject to the Governmental Accounting Standards Board Statement Numbers 43 (“GASB 43”), Financial Reporting for Postemployment Benefits Plans Other Than Pensions, and 45 (“GASB 45”), Accounting and Reporting by Employers for Postemployment Benefits Other Than Pensions. The pronouncements require state and local units of governments to recognize the cost of retiree health care, as well as any “other” postemployment benefits (other than pensions), in their financial statements. Pursuant to GASB 43 and GASB 45, the Authority must recognize the cost of postemployment benefits, including retiree health care coverage, over the working life of an employee, rather than on a pay-as-you-go basis. For the Authority, this has resulted in increased expenses and related liability. In September 2008 the Authority created an Act 149 Health Care Trust (“Act 149 Trust”) that provides a funding mechanism for post-2002 retiree health, dental, and life insurance coverage and other postemployment benefits other than pensions.

In accordance with GASB 45, the Authority obtains independent actuarial valuations of the Authority’s Health and Welfare Benefit Plan. The most current actuarial valuation indicated that, as of October 1, 2016, the Authority’s estimated Actuarial Accrued Liability (AAL) was approximately \$130.7 million. The Authority has funded the Annual Required Contribution (ARC) in each year since Operating Year 2008, and the trust balance, as of September 30, 2017, was approximately \$53.5 million.

Additionally, the post-retirement healthcare costs for County employees who retired prior to the Transfer Date with service credit in the County's former Division of Airports (the "Pre-2002 Airport Retirees") are pooled with the post-retirement healthcare costs of all other County retirees who retired prior to September 1, 2002 (the "Pre-2002 County Retiree Pool") and are recognized on the books of the County. The Authority's AAL therefore does not include an estimate of the post-retirement healthcare costs for the Pre-2002 Airport Retirees; however, the Authority has historically reimbursed the County on a pay-as-you-go basis for 11.25% of the actual healthcare costs of this pool of retirees. For the fiscal year ended September 30, 2017, the Authority reimbursed the County \$444,000 for healthcare-related costs paid by the County for the Pre-2002 County Retiree Pool. Since December 1, 2015 these healthcare-related costs have consisted of healthcare stipends paid by the County to the retirees in the Pre-2002 County Retiree Pool, as well as the cost of tail-end healthcare claims paid by the County for healthcare services rendered through November 30, 2015 to the retirees in the Pre-2002 County Retiree Pool under the County's former self-insured healthcare plans.

The County terminated these self-insured healthcare plans as of November 30, 2015. In Operating Year 2018, the Authority made payments to the County in the amount of \$452,510 to finalize the Authority's reimbursement of 11.25% of the December 2015 through March 2018 healthcare stipends paid by the County to the retirees in the Pre-2002 County Retiree Pool. This reimbursement amount is net of other amounts owed by the County to the Authority in final settlement of the Authority's 11.25% of the actual healthcare claims paid by the County for the retirees in the Pre-2002 County Retiree Pool under the County's terminated self-insured healthcare plans.

On a going forward basis, the Authority will continue to reimburse the County for 11.25% of the actual healthcare stipends paid by the County to the retirees in the Pre-2002 County Retiree Pool. The Authority estimates that its post-retirement healthcare-related reimbursement to the County allocable to the Pre-2002 Airport Retirees for Operating Year 2019 will be approximately \$700,000. As the Pre-2002 County Retiree Pool is a closed and aging group and the retirees whose healthcare costs are in the pool are approaching 100% Medicare eligibility, the Authority expects its annual required payments to the County for this closed pool to decrease over time.

In June 2015, the GASB issued Statement No. 75, Accounting and Financial Reporting for Postemployment Benefits Other Than Pensions, which addresses reporting by governments that provide postemployment benefits other than pensions (OPEB) to their employees and for governments that finance OPEB for employees of other governments. This OPEB standard will require the Authority to recognize on the face of the financial statements its proportionate share of the net OPEB liability related to other postemployment benefits provided to its employees. This statement also enhances accountability and transparency through revised note disclosures and required supplementary information (RSI). The Authority is currently evaluating the impact this standard will have on the financial statements when adopted. The provisions of this statement are effective for the Authority's financial statements for the year ending September 30, 2018.

### **Authority Pension Obligations**

Since the Transfer Date, the Authority's employees have continued to participate in retirement plans managed by the Wayne County Employees' Retirement System ("WCERS"). Prior to September 30, 2007, Authority and County pension assets were combined. Since September 30, 2007, WCERS has (i) separately accounted for the pension assets and liabilities associated with the Authority's employees, retirees and beneficiaries (such individuals are collectively referred to as the "Authority Members"), (ii) provided the Authority discretion to modify pension benefits provided to the Authority Members, and (iii) provided the Authority control over various aspects of WCERS as it related to the Authority Members. Authority Members are only eligible to participate in and accrue benefits in the Authority's retirement plans and are not otherwise eligible to participate in or accrue benefits under WCERS.

In 2015, the County Commission and WCERS authorized WCERS to operate as an "agent multiple-employer plan," as defined by the Governmental Accounting Standards Board. The County Commission and WCERS each have confirmed the Authority's status as an independent adopting employer of the agent multiple-employer plans managed by WCERS, and, pursuant to the approval of the Authority Board, effective July 15, 2015, the Authority and WCERS entered into an Agreement to Serve as Investment Fiduciary and Plan Administrator. This agreement memorializes the Authority's status as an independent adopting employer of the agent multiple employer plans managed by WCERS, as well as an agreement between the Authority and WCERS concerning the services to be provided by WCERS to the Authority with respect to the Authority's retirement plans managed by WCERS and the remuneration to be provided to WCERS by the Authority and the retirement plans of the Authority. As a result, the Authority's retirement plans are administered by WCERS, but are no longer considered part of a cost-sharing plan with WCERS. Pursuant to the WCERS Annual Actuarial Valuation Report, as prepared by Gabriel Roeder Smith & Company, as of the September 30,

2017 valuation date, the Authority's pension plans were 71% funded, with approximately \$167,299,000 of accrued liabilities and \$118,565,712 of assets (funding value).

Pursuant to the Authority Act, the Authority has accepted responsibility for the pension funding for the Pre-2002 Airport Retirees. The Authority and the County have agreed that 10.25% of the total unfunded actuarial accrued liability ("UAAL") for County employees who retired prior to September 1, 2002 (the "Pre-2002 Retirees") at any given time shall be allocable to the Pre-2002 Airport Retirees and, by extension, shall be payable by the Authority. The Pre-2002 Airport Retirees represent a subset of all Pre-2002 Retirees. In order to decrease the UAAL allocable to the Pre-2002 Airport Retirees, the Authority agreed to make accelerated payments to WCERS of this liability in a total amount equal to \$22 million, with \$4.4 million payable per Operating Year for Operating Years 2016 to 2020. As of July 1, 2018, the Authority already has paid WCERS \$12.1 million of the \$22 million. The Authority's share of the UAAL for the Pre-2002 Retirees, the amounts and dates of Authority payments to WCERS, and other key terms of this arrangement, are set forth in a Memorandum of Understanding between the Authority, the County and WCERS that became effective August 15, 2017.

## **Financial Operations**

***Historical Operating Results.*** The audited financial statements of the Airport for the Operating Year ended September 30, 2017, together with the report of Plante & Moran, PLLC, independent auditors, relating thereto, are included herein as APPENDIX B.

The following table sets forth audited historical operating results of the Airport for Operating Years 2013 through 2017 under accounting principles generally accepted in the United States.

**HISTORICAL OPERATING RESULTS**  
**Detroit Metropolitan Wayne County Airport**  
**For Operating Years Ended September 30 (In Thousands)**

	<u>OY 2013</u>	<u>OY 2014</u>	<u>OY 2015</u>	<u>OY 2016</u>	<u>OY 2017</u>
Operating revenues:					
Airport landing and related fees	\$ 64,922	\$ 75,780	\$ 73,268	\$ 78,045	\$ 79,494
Concession fees	51,697	54,162	57,615	61,820	64,702
Parking fees	57,829	61,187	68,018	74,498	76,707
Hotel <sup>(a)</sup>	—	—	—	33,890	29,928
Rental facilities	101,474	103,737	105,663	103,430	104,525
Utility service fees	5,152	4,904	4,601	4,691	4,903
Other	<u>5,431</u>	<u>4,098</u>	<u>4,104</u>	<u>3,747</u>	<u>4,795</u>
Total operating revenues	<u>286,505</u>	<u>303,868</u>	<u>313,269</u>	<u>360,121</u>	<u>365,055</u>
Operating expenses:					
Salaries, wages, and fringe benefits	71,656	79,026	75,991	84,453	108,986 <sup>(b)</sup>
Parking management	6,280	6,630	7,882	7,909	7,987
Hotel management <sup>(a)</sup>	—	—	—	22,357	18,049
Janitorial services	11,383	11,792	11,948	11,992	13,515
Security	2,260	2,511	2,558	3,745	5,149
Utilities	26,274	28,089	23,842	21,645	22,662
Repairs, professional services, and other	73,563	79,782	89,118	93,666	84,207
Depreciation	<u>133,335</u>	<u>134,938</u>	<u>159,560</u>	<u>168,646</u>	<u>130,406</u>
Total operating expenses	<u>324,751</u>	<u>342,768</u>	<u>370,898</u>	<u>414,413</u>	<u>390,961</u>
Operating loss	(38,246)	(38,900)	(57,629)	(54,292)	(25,906)
Nonoperating revenues (expenses):					
Passenger facility charges	61,705	62,016	63,841	66,764	68,128
Customer facility charges	—	—	305	4,260	4,442
Federal and state grants	1,353	1,030	1,332	5,551	6,650
Interest income and other	1,622	1,646	1,927	3,854	3,582
Interest expense and other	(82,461)	(79,307)	(76,494)	(80,865)	(80,962)
Amortization of bond issuance costs	<u>(1,663)</u>	<u>(352)</u>	<u>(352)</u>	<u>(175)</u>	<u>(175)</u>
Total nonoperating revenue	<u>(19,444)</u>	<u>(14,967)</u>	<u>(9,442)</u>	<u>(611)</u>	<u>1,664</u>
Net loss before capital contributions and transfers	(57,690)	(53,867)	(67,071)	(54,902)	(24,242)
Capital contributions	27,395	15,026	6,181	32,694	7,278
Transfers out	<u>(5,846)</u>	<u>(5,249)</u>	<u>(4,232)</u>	<u>(2,941)</u>	<u>(3,327)</u>
Changes in net position	(36,141)	(44,089)	(65,123)	(25,149)	(20,291)
Net position – beginning of year	<u>435,196</u>	<u>389,061</u>	<u>301,395</u>	<u>186,405</u>	<u>161,255</u>
Net position – end of year	<u>\$399,055</u>	<u>\$344,972<sup>(3)</sup></u>	<u>\$236,272<sup>(2)</sup></u>	<u>\$161,255<sup>(1)</sup></u>	<u>\$140,964</u>

(a) Effective October 2015, the operations of the Airport Hotel have been included with the operations of Detroit Metro Airport (see Note 2 of the 2016 financial statements for additional discussion).

(b) The increase reflected in this amount relates primarily to accounting treatment of the Authority's payment obligations to WCERS under the Memorandum of Understanding (see Note 10, subsection (f), of the 2017 financial statements for additional discussion and see "AIRPORT FINANCIAL INFORMATION - Authority Pension Obligations" above).

<sup>(1)</sup> In 2016, the Airport restated beginning net position to \$186,405 (see Note 2 of 2016 financial statements for additional discussion). This amount less the 2016 decrease in net position is used to arrive at ending net position.

<sup>(2)</sup> In 2015, the Airport restated beginning net position to \$301,395 (see Note 2 of 2015 financial statements for additional discussion). This amount less the 2015 decrease in net position is used to arrive at ending net position.

<sup>(3)</sup> In 2014, the Airport restated beginning net position to \$389,061 (see Note 2 of 2014 financial statements for additional discussion). This amount less the 2014 decrease in net position is used to arrive at ending net position.

SOURCE: Audited Financial Statements of the Wayne County Airport Authority. See accompanying independent auditor's report.

The financial information presented above is prepared in accordance with U.S. generally accepted accounting principles using the full accrual basis of accounting. Depreciation expense is determined in accordance with the Authority's accounting policies, which provide for straight-line depreciation over the estimated useful lives of the assets acquired. Due to the Authority's major capital expansion program, significant additional depreciation expense has been recorded over the past several years as calculated in accordance with accounting principles generally accepted in the United States. The recording of this additional depreciation expense has resulted in significant operating losses. Depreciation expense is considered a non-cash transaction. The Authority generates enough cash to pay all operating bills and debt service, has positive working capital, and has a strong positive cash flow from operations. Depreciation expense is not considered in calculating required Activity Fees using the Authority's residual rate setting methodology.

Similarly, grants, capital contributions and PFCs are not considered Revenues under the Master Bond Ordinance or the Airline Agreements for purposes of the residual methodology for calculating Activity Fees. However, pursuant to the Airline Agreements, PFCs are included as a credit in the residual Activity Fee calculation as the Authority transfers PFCs, monthly, into the Bond Fund and/or Junior Lien Bond Fund to pay eligible Debt Service.

Interest earnings on the Construction Fund, Bond Fund and Junior Lien Bond Fund accounts are applied in accordance with the Master Bond Ordinance.

***Airline Revenue Requirement.*** The Master Bond Ordinance requires the Authority to adopt, prior to the commencement of each Operating Year, a budget covering the Operation and Maintenance Expenses of the Airport, the Debt Service payable on Senior Lien Bonds and Junior Lien Bonds, and other known monetary requirements of the Master Bond Ordinance and the Airport for such Operating Year. The Airline Agreements require the Authority to provide the Signatory Airlines with a projection of rentals and the Activity Fee rate for each Operating Year at least sixty (60) days prior to the beginning of the Operating Year. As described in APPENDIX D – “SUMMARY OF THE AIRLINE AGREEMENTS,” airline rates, fees and charges currently are calculated based on an Airport-wide residual rate setting methodology for Activity Fees, with terminal rental rates calculated based on costs allocated to the terminal costs centers. Following the end of each Operating Year, the Authority must provide the Signatory Airlines with a report of rentals and Activity Fees actually chargeable for such year based on actual data for the year. The Signatory Airlines are required to pay additional amounts owed, and the Authority is required to refund airline overpayments, if the rates on which Signatory Airline Activity Fee and terminal rental payments had been based during the year were either too low or too high based on actual data. See APPENDIX D – “SUMMARY OF THE AIRLINE AGREEMENTS.”

The following table sets forth the Airport’s operating revenues, operating expenses and non-operating revenues for Operating Year 2014 through Operating Year 2017 and the Authority’s budgeted Airport operating revenues, operating expenses and non-operating revenues for Operating Year 2018 (as approved by the Board on August 15, 2018), in each case shown on the basis of the residual airline rate-making methodology under the Airline Agreements.

**Detroit Metropolitan Wayne County Airport  
Operating and Maintenance Fund  
For Operating Years Ended September 30 (In Thousands, except as noted)**

	OY 2014 <u>Actual</u>	OY 2015 <u>Actual</u>	OY 2016 <u>Actual</u>	OY 2017 <u>Actual</u>	OY 2018 Mid-Year (a)
<b>Airline revenues:</b>					
Landing and related fees	\$ 75,780	\$ 73,268	\$ 78,045	\$ 79,494	\$ 79,269
Terminal building rentals and fees	84,915	86,414	84,286	81,982	89,020
Facility use fees	8,362	8,065	8,036	8,475	8,100
Total airline revenues	<u>169,057</u>	<u>167,747</u>	<u>170,368</u>	<u>169,951</u>	<u>176,389</u>
<b>Non-airline revenues:</b>					
Parking fees	61,187	68,018	74,498	76,707	77,100
Hotel (b)	-	-	33,890	29,928	30,389
Car rental	21,909	22,429	23,872	24,950	25,650
Concession fees	31,874	34,788	37,506	39,290	40,650
Ground transportation	5,453	5,429	5,125	7,814	9,264
Shuttle bus	2,032	2,101	2,317	2,833	2,900
Other	11,722	12,073	11,834	13,267	14,055
Total non-airline revenues	<u>134,177</u>	<u>144,837</u>	<u>189,042</u>	<u>194,790</u>	<u>200,008</u>
<b>Total operating revenues</b>	<u>303,234</u>	<u>312,584</u>	<u>359,410</u>	<u>364,740</u>	<u>376,397</u>
<b>Operating expenses:</b>					
Salaries, wages and fringe benefits	73,688	83,578	88,181	86,231	88,545
Hotel management (b)	-	-	22,678	18,612	18,647
Materials and supplies	8,769	9,334	9,184	9,371	10,801
Parking management expense	6,630	7,882	7,909	7,987	8,708
Shuttle bus services	6,123	6,540	7,194	8,169	7,094
Janitorial services	11,792	11,948	11,992	13,515	15,140
Security	2,511	2,558	3,745	5,149	6,600
Professional & other contractual services	24,490	19,970	24,973	23,980	26,533
Utilities	28,441	24,105	21,939	22,947	24,071
Buildings and grounds maintenance	15,092	15,298	12,927	13,725	16,579
Equipment repair and maintenance	16,051	17,269	20,196	18,526	20,355
Insurance	2,200	2,145	2,075	2,049	2,098
Other operating expenses	4,460	4,638	4,720	4,673	4,481
Operations and maintenance capital	3,371	6,311	10,874	13,216	6,913
<b>Total operating expenses</b>	<u>203,619</u>	<u>211,576</u>	<u>248,587</u>	<u>248,149</u>	<u>256,563</u>
<b>Operating income (loss)</b>	<u>99,615</u>	<u>101,008</u>	<u>110,823</u>	<u>116,591</u>	<u>119,834</u>
<b>Non-operating revenues (expenses):</b>					
Interest income and other	175	532	70	233	276
Federal and state grants	1,030	1,332	3,157	1,713	1,003
Net debt service	(85,855)	(87,085)	(92,272)	(93,681)	(95,328)
Hotel management (b)	-	-	(2,969)	(7,684)	(7,894)
Funding requirements	(14,965)	(15,786)	(18,808)	(17,171)	(17,891)
<b>Total non-operating revenues (expenses)</b>	<u>(99,615)</u>	<u>(101,008)</u>	<u>(110,823)</u>	<u>(116,591)</u>	<u>(119,834)</u>
<b>Net income (loss) before capital contributions &amp; transfers</b>	<u>\$ -</u>	<u>\$ -</u>	<u>\$ -</u>	<u>\$ -</u>	<u>\$ -</u>

<sup>(a)</sup> 2018 Mid-Year is based on actual results through February 28, 2018 and is illustrative of the FY18 Mid-Year Projection as published by the Authority on April 1, 2018.

<sup>(b)</sup> On October 15, 2015, the Authority entered into a new hotel management agreement and the 2001 A Hotel Bonds, which were special facility revenue bonds, were refunded by the 2015G-H Airport Revenue Refunding Bonds. As a result, as of October 15, 2015, the net revenues of the Hotel are included in the Net Revenues pledged toward the repayment of all the Authority's general airport revenue bonds and hotel management expenses are included in the Authority's operation and management expenses. At this time, all outstanding bonds, including the 2015G-H Airport Revenue Refunding Bonds, are all general airport revenue bonds.

Source: Wayne County Airport Authority.

## Management Discussion of Airport Financial Operations

During Operating Year 2014, record-breaking snowfall and extraordinary winter conditions across the Midwest drove increases in Airport contractual snow removal services expenses, bulk chemicals costs, utility expenses, staff overtime costs, and roadway and airfield pavement repairs expenses. The Airport incurred additional expenses attributable to a number of strategic Authority initiatives, including expanded Wi-Fi coverage for passengers in both terminals, an airport sustainability study, FAA transponders for airfield vehicles and airfield signage replacements. Total Airport operating revenue for Operating Year 2014 increased by \$17.5 million (6.1%) as compared to Operating Year 2013, driven by a mid-year adjustment in airline rates and charges needed to offset increased expenses related to winter operations (\$18.1 million). Despite the increase in airline revenue, airline cost per enplanement for Operating Year 2014 remained moderate at \$10.42.

In Operating Year 2015, the Authority began focusing on a number of multi-year corrective maintenance plans, including a plan to address corrective maintenance of the Airport parking decks, which included joint repairs, roof repairs, sealing all levels, and other lifecycle needs. The Authority also completed a number of Airport bridge and roadway pavement repairs in Operating Year 2015. In addition, in Operating Year 2015 the Authority made a \$3.4 million payment to WCERS to complete funding increased pension costs arising from an early retirement incentive program for Authority employees implemented by the Authority in Operating Year 2012. A growth in Airport parking revenue due to an increase in parking rates by the Authority in Operating Year 2015 offset the full impact of these expenses. Total operating revenues for Operating Year 2015 increased by \$9.4 million (3.1%), accompanied by a decrease in airline cost per enplanement to \$10.20.

In Operating Year 2016, in order to continue to reduce the unfunded portion of the Authority's pension plans, the Authority made a \$4 million contribution payment to WCERS above the annual required amount. In addition, in order to reduce the UAAL allocable to the Pre-2002 Airport Retirees, the Authority began its accelerated pension payments to WCERS related to this unfunded liability, and made its first \$4.4 million payment to WCERS. See the discussion under the caption “- Authority Pension Obligations” above for further information regarding these pension liabilities. Additional Airport expenses in Operating Year 2016 included costs for commencement of the Airport Master Plan process and continuation of significant airfield pavement maintenance work and North Terminal facility life cycle projects. In Operating Year 2016, the Authority also entered into a new hotel management agreement related to the Airport Westin Hotel and issued Airport Revenue Refunding Bonds to refinance the Airport Hotel Revenue Bonds issued by the County in 2001 to fund the construction of the Airport Westin Hotel. As a result, the expenses and revenues of the Airport Westin Hotel were first included in the flow of funds under the Master Bond Ordinance during Operating Year 2016, increasing net revenue by \$2.9 million. Enplanement growth in Operating Year 2016 drove increases in parking, concessions and other non-airline revenues of \$10.3 million (7.1%). Including net revenue increases related to the Airport Westin Hotel, total operating revenues for Operating Year 2016 increased by \$44.2 million (30.5%), and airline cost per enplanement was reduced to \$9.95.

In Operating Year 2017, on the expense side, the Authority increased janitorial frequencies for the North Terminal, enhanced employee screening in both terminals, added new shuttle busses and completed one-time technology initiatives. Additional revenue was generated from parking fees and the commencement of operations at the Airport in March 2017 of transportation network companies (“TNC”) Uber and Lyft. In Operating Year 2017, pursuant to state law, the Authority began receiving payments from the State of Michigan for Aviation Fuel Tax revenue that is to be used to offset airfield debt service. Total operating revenues for Operating Year 2017 increased by \$5.3 million (1.5%), and airline cost per enplanement was reduced to \$9.83.

In Operating Year 2018, higher than average snowfall in the region drove increased Airport expenses for contractual snow removal, bulk chemicals, utilities and staff overtime. The Authority also incurred increased expenses from janitorial, and equipment repair and maintenance contract renewals for the McNamara Terminal and various other Airport buildings. Increased security expenses reflect the first full year of the implementation of enhanced employee screening for both terminals which began in Operating Year 2017. Anticipated parking and road maintenance added expense pressure in Operating Year 2017, however the Authority reduced operating capital to offset the full impact of these increases. Concession revenue increased in Operating Year 2018, attributable to a full year impact of a new duty-free concession program for both the McNamara and North Terminals and completion of changeover of the retail concessions in the North Terminal. TNC, car rental and other revenues helped to offset

Operating Year Airport expenses. The Authority anticipates that total operating revenues for Operating Year 2018 increased by \$11.6 million (3.2%). The expected airline cost per enplanement for Operating Year 2018 is \$10.02.

On August 15, 2018, the Authority Board approved the Operating Year 2019 budget, which increases revenues and expenses by \$20.5 million (5.5%) over the Operating Year 2018 budget. Higher salaries and benefits expenses are driven by increased funding for retiree healthcare and additional police staff to offset overtime. The Authority also has developed a more robust snow plan, adding maintenance staff and equipment. Due to an increased demand at the Airport for international travel, the Authority recently entered into an agreement with U.S. Customs and Border Protection to process passengers outside of normal operating hours for both terminals. Capital initiatives for the North Terminal in Operating Year 2019 include the first year of installation of new canopies, and upgrades for the jet bridges, Flight Information Displays and ramp lighting. Both terminals will see an increase in debt service for terminal specific airport revenue bond funded projects. Offsetting the increases in expenses are anticipated growth in parking, TNC, Westin Hotel and other revenues. Terminal rental revenues offset increases specific to expenses in the terminal cost centers, including increased debt service as a result of the Authority's issuance of additional airport revenue bond debt at the end of Operating Year 2017. Airline cost per enplanement is budgeted to increase to \$10.36 for Operating Year 2019.

### Historical Debt Service Coverage

The following table presents the historical debt service coverage for Senior Lien Bonds and Junior Lien Bonds for Operating Years 2013 through 2017.

**HISTORICAL DEBT SERVICE COVERAGE**  
**Detroit Metropolitan Wayne County Airport**  
**For Operating Years Ended September 30**  
**(Amounts in thousands of dollars, except as noted)**  
**(Unaudited)**

	<u>OY 2013</u>	<u>OY 2014</u>	<u>OY 2015</u>	<u>OY 2016</u>	<u>OY 2017</u>
<b>Revenues:</b>					
Revenues	\$ 287,332	\$ 304,621	\$ 314,554	\$ 362,729	\$ 366,807
Revenue Fund Balance at Beginning of Year	66,864	59,456	54,288	59,661	55,163
Other Available Monies:					
PFC Contributions	62,838	62,443	63,596	66,178	66,473
Other	4,201	1,933	1,847	4,604	6,751
Interest Income Generated in Bond Funds and Reserves	5,404	7,056	12,705	8,091	5,649
<b>Total Revenues</b>	<b>\$ 426,639</b>	<b>\$ 435,509</b>	<b>\$ 446,990</b>	<b>\$ 501,263</b>	<b>\$ 500,843</b>
<b>Operation and Maintenance Expenses:</b>	<b>\$ 191,715</b>	<b>\$ 210,219</b>	<b>\$ 218,398</b>	<b>\$ 259,980</b>	<b>\$ 258,266</b>
<b>Net Revenues Available for Senior Lien Debt Service</b>	<b>\$ 234,924</b>	<b>\$ 225,290</b>	<b>\$ 228,592</b>	<b>\$ 241,283</b>	<b>\$ 242,577</b>
<b>Bond Debt Service - Senior Lien</b>	<b>\$ 160,307</b>	<b>\$ 157,187</b>	<b>\$ 161,733</b>	<b>\$ 172,095</b>	<b>\$ 167,681</b>
<b>Debt Service Coverage for Senior Lien Bonds</b>	<b>1.47</b>	<b>1.43</b>	<b>1.41</b>	<b>1.40</b>	<b>1.45</b>
<b>Net Revenues Available for Junior Lien Debt Service</b>	<b>\$ 74,617</b>	<b>\$ 68,103</b>	<b>\$ 66,859</b>	<b>\$ 69,118</b>	<b>\$ 74,896</b>
<b>Bond Debt Service - Junior Lien</b>	<b>\$ 12,239</b>	<b>\$ 12,231</b>	<b>\$ 12,231</b>	<b>\$ 12,270</b>	<b>\$ 12,276</b>
<b>Debt Service Coverage for Junior Lien Bonds</b>	<b>1.36</b>	<b>1.33</b>	<b>1.31</b>	<b>1.31</b>	<b>1.35</b>



For a discussion of forecasted debt service coverage for Operating Years 2018 through 2025 on Outstanding Senior Lien Bonds (including debt service requirements on the Series 2018 Bonds, the Series 2018 Projects Future Bonds and the Other Approved Capital Projects Future Bonds) and on Outstanding Junior Lien Bonds, see “SERIES 2017 REPORT OF THE AIRPORT CONSULTANT AND SERIES 2018 LETTER” below and APPENDIX A – “SERIES 2017 REPORT OF THE AIRPORT CONSULTANT AND SERIES 2018 LETTER.”

### **SERIES 2017 REPORT OF THE AIRPORT CONSULTANT AND SERIES 2018 LETTER**

The firm of Trillion Av, LLC (“Trillion”), in association with Airmac LLC and Partners for Economic Solutions, prepared a Report of the Airport Consultant dated September 23, 2017 (the “Series 2017 Report”), a copy of which is included in this Official Statement as APPENDIX A, in connection with the issuance by the Authority of certain Senior Lien Bonds. On July 31, 2018, Landrum & Brown, Incorporated (“L&B”) acquired Trillion. L&B, in association with Airmac LLC, has further supplemented and updated certain information contained in the Series 2017 Report pursuant to its letter report dated as of October 23, 2018 (the “Series 2018 Letter” and, together with the Series 2017 Report, referred to herein as the “Series 2017 Report and Series 2018 Letter”).

The Series 2017 Report and Series 2018 Letter forecasts Net Revenues, Revenue Fund balances and Other Available Moneys sufficient to meet the requirements of the Rate Covenant with respect to Senior Lien Bonds and the Junior Lien Bonds. The Series 2018 Letter incorporates an estimate of debt service requirements of the Series 2018 Bonds that has been prepared by PFM Financial Advisors LLC.

As described in the Series 2017 Report and Series 2018 Letter, in addition to all Outstanding Senior Lien Bonds and Junior Lien Bonds, the Series 2017 Report and Series 2018 Letter further includes in its financial analysis the issuance and delivery of the Series 2018A Bonds, the Series 2018B Bonds, the Series 2018 Projects Future Bonds and the Other Approved Capital Projects Future Bonds. See APPENDIX A – “SERIES 2017 REPORT OF THE AIRPORT CONSULTANT AND SERIES 2018 LETTER – SERIES 2018 LETTER – Airport Capital Improvement Program.”

The Series 2017 Report and Series 2018 Letter does not reflect the issuance and delivery of the Series 2018C Refunding Bonds or the Series 2018D Refunding Bonds or the financial impact of the defeasance and/or refunding of all of the Series 2008A Refunded Bonds. In addition, the Series 2018 Letter assumes that the final maturity date of the Series 2018B Bonds is December 1, 2043, and does not reflect the actual final maturity date of December 1, 2048.

As further described in the Series 2017 Report and Series 2018 Letter, the Authority currently projects that approximately \$363.3 million will be required from the proceeds of Additional Bonds to complete the funding of the 2019 – 2023 CIP capital projects (which amount does not include the Series 2018 Projects Future Bonds and the Other Approved Capital Projects Future Bonds). The Authority does not yet have a specific plan for the amount and timing of such Additional Bonds because the estimated project costs and schedules of many of the 2019 – 2023 CIP capital projects still are being developed and the Authority has not yet requested Weighted Majority approval for such projects. For these reasons, the estimated debt service on such Additional Bonds has not been included in the financial projections contained in the Series 2017 Report and Series 2018 Letter.

On the basis of the assumptions and analyses described in the Series 2017 Report and Series 2018 Letter, L&B is of the opinion that (i) sufficient revenues will be generated to pay the Authority’s requirements for its Operation and Maintenance (O&M) Fund, Bond Fund, Junior Lien Bond Fund, O&M Reserve Fund, Renewal and Replacement Fund, Authority Discretionary Fund, Airport Development Fund, and other remaining obligations or requirements of the Authority during the projection period from Operating Year 2018 through Operating Year 2025 through a combination of airline rates and charges and nonairline revenue sources, and (ii) projected airline rates and charges are reasonable on an airline cost per enplaned passenger basis compared to other large-hub U.S. airports.

The Series 2017 Report and Series 2018 Letter may include adjustments or other factors that result in debt service coverage, airline cost per enplaned passenger or other information that differs from results presented in the Authority's Comprehensive Annual Financial Report or the Authority’s Operating Year budget or projection.

The information in the table on the following page has been extracted from the Series 2018 Letter.

The following table shows forecasted Operating Years 2018 through 2025 Net Revenues, Revenue Fund balances and Other Available Moneys, debt service requirements on Outstanding Senior Lien Bonds (including debt service requirements on the Series 2018A Bonds, the Series 2018B Bonds, the Series 2018 Projects Future Bonds and the Other Approved Capital Projects Future Bonds) and on Outstanding Junior Lien Bonds, debt service coverage (Senior Lien Bonds and Junior Lien Bonds) and airline cost per enplaned passenger.

**DEBT SERVICE COVERAGE FORECAST AND PASSENGER AIRLINE CPE FORECAST**  
**Forecasted Operating Years 2018 through 2025**  
**(dollars in thousands, except for CPE)**

Operating Year	Net Revenues, Revenue Fund Balances and Other Available Moneys	Total Senior Lien Debt Service Requirements	Senior Lien Debt Service Coverage Ratio	Total Senior Lien and Junior Lien Debt Service Requirements	Senior Lien and Junior Lien Debt Service Coverage Ratio	Airline CPE
2018	\$255,975	\$169,260	1.51	\$181,534	1.41	\$9.98
2019	\$263,091	\$178,020	1.48	\$188,534	1.40	\$10.42
2020	\$260,798	\$176,897	1.47	\$187,529	1.39	\$10.30
2021	\$255,461	\$175,725	1.45	\$186,355	1.37	\$9.98
2022	\$261,798	\$181,729	1.44	\$192,362	1.36	\$10.41
2023	\$263,009	\$182,599	1.44	\$193,234	1.36	\$10.55
2024	\$262,040	\$181,281	1.45	\$191,917	1.37	\$10.58
2025	\$261,101	\$180,021	1.45	\$190,620	1.37	\$10.63

SOURCE: Landrum & Brown, Incorporated.

The Series 2017 Report and Series 2018 Letter should be read in its entirety for an understanding of the forecasts and the underlying assumptions. As noted in the Series 2017 Report and Series 2018 Letter, any financial forecast is subject to uncertainties. Inevitably, some assumptions used to develop the forecasts will not be realized, and unanticipated events and circumstances may occur. The actual financial results achieved will vary from those forecasts, and the variations may be material. See APPENDIX A – “SERIES 2017 REPORT OF THE AIRPORT CONSULTANT AND SERIES 2018 LETTER.”

**INVESTMENT CONSIDERATIONS**

The purchase and ownership of the Series 2018 Bonds involve investment risk. Prospective investors are urged to read this Official Statement, including the appendices hereto, in its entirety. The factors set forth herein, among others, may affect the security for and/or trading value of the Series 2018 Bonds. The information herein does not purport to be a comprehensive or exhaustive discussion of all risks or other considerations that may be relevant to an investment in the Series 2018 Bonds. In addition, the order in which the following information is presented is not intended to reflect the relative importance of any such considerations. There can be no assurance that other risks or considerations not discussed herein are not material or will not become material in the future.

**Delta’s Presence at the Airport**

Delta is the dominant air carrier operating at the Airport and maintains a large connecting hub at the Airport. Delta and the Delta Connection Carriers accounted for approximately 72.4% of the total enplaned passengers at the Airport based on preliminary results for Operating Year 2018, 73.2% in Operating Year 2017 and 74.0% in Operating Year 2016.

As a result of the Airport’s geographic location, facilities and capabilities and Delta’s investment in the Airport, the Authority expects, as supported by the Series 2017 Report and the Series 2018 Letter, that the Airport will remain a system hub for Delta; however, no assurance can be given to that effect or with regard to Delta’s future level of activity at the Airport, regardless of Delta’s financial condition. If, for whatever reason, Delta

discontinues or reduces its hubbing operations at the Airport, its current level of activity at the Airport may not be replaced by other carriers. See “DETROIT METROPOLITAN WAYNE COUNTY AIRPORT – Airlines Providing Service at the Airport – *Delta Air Lines*” above. Such a change in Delta’s activity at the Airport could result in differences to the projections presented in the Series 2017 Report and the Series 2018 Letter. See “DETROIT METROPOLITAN WAYNE COUNTY AIRPORT – Airlines Providing Service at the Airport” above.

### **Effect of Airline Industry Consolidation and Affiliation**

In response to competitive pressures, the United States airline industry has significantly consolidated over the last ten years. In 2009, Delta and Northwest merged into a single entity now operating as Delta. In 2010, United Airlines and Continental Airlines merged and now operate as United Airlines, and in 2011, Southwest Airlines completed its purchase of AirTran Airways. American Airlines and US Airways completed their merger in 2013, creating the world’s largest airline as measured by available seat miles. Further, alliances, joint ventures, and other marketing arrangements may provide airlines with many of the advantages of mergers, and, currently, all of the large U.S. network airlines are members of such alliances with foreign-flag airlines. Alliances typically involve marketing, code-sharing, and scheduling arrangements to facilitate the transfer of passengers between the airlines.

To date, these mergers and alliances have not adversely impacted the Airport, but it is not possible to predict the future impact, if any, on the Airport of these mergers or alliances. Any further airline consolidation could change airline service patterns, particularly at the connecting hub airports of the merging airlines. Furthermore, if Signatory Airlines merge or form other alliances, gate utilization at the Airport could decrease, which could materially adversely affect Airport operations, and ultimately the cost to the airlines of operating at the Airport. At this time, it is not possible to predict the effect of any future airline consolidation on connecting activity or gate utilization at the Airport.

### **Financial Condition of Airlines Serving the Airport**

The number of passengers using the Airport will depend partly on the profitability of the U.S. airline industry and the associated ability of the industry and individual airlines, particularly Delta, to make the necessary investments to continue providing service. The profitability of the airline industry can fluctuate dramatically from quarter to quarter and from year to year, even in the absence of catastrophic events such as the terrorist attacks of September 11, 2001. Historically, the airline industry’s results have correlated with the performance of the economy. Many of the airlines serving the Airport were impacted by the global economic downturn and recession that occurred between 2008 and 2009 and most domestic airlines suffered significant financial losses. While the U.S. and global economies generally have rebounded, there can be no assurances that any such rebound will continue, or that other national or international fiscal concerns will not have an adverse effect on the airline industry or the individual airlines serving the Airport.

The aviation industry is sensitive to a variety of factors, including (a) the cost and availability of labor, fuel, aircraft and insurance, (b) general economic conditions, (c) international trade, (d) currency values, (e) competitive considerations, including the effects of airline ticket pricing, (f) traffic and airport capacity constraints, (g) governmental regulation, including security regulations and taxes imposed on airlines and passengers, and maintenance and environmental requirements, (h) passenger demand for air travel, and (i) disruption caused by airline accidents, criminal incidents and acts of war or terrorism. Such factors are not subject to the control of the Authority.

It is reasonable to assume that any significant financial or operational difficulties incurred by Delta, the predominant airline servicing the Airport, could have a material adverse effect on the Airport, although financial or operational difficulties by any of the other Signatory Airlines also may, whether directly or indirectly, have an adverse impact on Revenues or Airport operations, the effect of which may be material. See “– Delta’s Presence at the Airport” above. At this time, it is not possible to predict the effect that any financial or operational difficulties incurred by Delta or any other airline serving the Airport could have on the Airport.

### **Impact of Regional and National Economic Conditions on the Airport**

The demographic and economic characteristics of the Airport’s Air Service Area comprise the underlying components of air transportation demand for passengers and commercial goods. This relationship is particularly true

for origination and destination passenger traffic, which is an important component of demand at the Airport. Although the economic base of the Air Service Area is considered capable of supporting increased demand for air travel at the Airport, employment and other economic indices of the Air Service Area were negatively impacted, in part, by the general downturn in the automotive industry which resulted in the bankruptcy filings in 2009 of General Motors Corporation and Chrysler LLC, two of the “Big 3” automakers. Although the City of Detroit, which filed for federal bankruptcy protection on July 18, 2013 and exited bankruptcy in December 2014, sits within the Air Service Area, such bankruptcy did not appear to have negatively affected the economic rebound of the Air Service Area or demand for air travel at the Airport. See APPENDIX A – “SERIES 2017 REPORT OF THE AIRPORT CONSULTANT AND SERIES 2018 LETTER.”

In addition, the County, which is the fee simple title holder of the primary real property at the Airports, entered into a consent agreement in August 2015 with the State Treasurer (the “Consent Agreement”), which Consent Agreement granted the County extensive powers to undertake remedial measures to address the County’s then dire financial situation. By October 2016, the County had successfully satisfied the terms of the Consent Agreement and was released from such agreement and the powers of the County Executive of the County were returned to such degree as existed prior to the execution of the Consent Agreement. The County continues to face certain financial challenges, however, and no assurance can be given as to the County’s fiscal health in the future or the impact, if any, of such challenges to the economic base of the Air Service Area. See APPENDIX A – “SERIES 2017 REPORT OF THE AIRPORT CONSULTANT AND SERIES 2018 LETTER.”

### **Factors Affecting Levels of Aviation Activity at the Airport**

Concerns about the safety of airline travel and the effectiveness of security precautions, particularly in the context of international hostilities, terrorist attacks, volcanic or meteorological events and world health concerns, may influence passenger travel behavior and air travel demand. Travel behavior may be affected by anxieties about the safety of travel and by the inconveniences and delays associated with more stringent security screening procedures, both of which may give rise to the avoidance of air travel generally and the selection of surface travel over air travel. The Authority cannot predict the likelihood of any such events or their effect on the patterns of air travel and air transportation systems.

In addition, there is no assurance that the Airport, despite a demonstrated stable level of demand for airline service and operations, will continue to maintain such levels in the future. The continued presence of the airlines serving the Airport, and the levels at which that service will be provided, are a function of a variety of factors, including: local, regional, national and international economic and political conditions; international hostilities; world health concerns; aviation security concerns; airline service and routes; airline fares and competition; airline industry economics, including labor costs and the price of aviation fuel; capacity of the Airport and competition from other airports; and business travel substitutes, including videoconferencing and web-casting. Many of these factors are beyond the control of the Authority. Accordingly, no assurance can be given as to the levels of aviation activity that will be achieved at the Airport.

### **Effect of Signatory Airline Bankruptcies**

In 2001 through 2013, most major airlines restructured their route networks and flight schedules and reached agreement with their employees, lessors, vendors, and creditors to cut costs, under Chapter 11 bankruptcy protection. Many of the airlines, which are, or at one time were, Signatory Airlines, have financially reorganized through the bankruptcy process. Additional bankruptcies, liquidations or major restructurings of other airlines could occur, and it is not possible to predict the impact on the Airport of any such future bankruptcies, liquidations or major restructurings of other airlines. A bankruptcy of a Signatory Airline with significant operations at the Airport could have a material adverse effect on operations at the Airport, Revenues and the cost to the other airlines of operating at the Airport.

Currently, the domestic gates and related facilities at the Airport are preferentially leased to the Signatory Airlines pursuant to respective Airline Agreements. International gates are operated on a shared basis. In the event of bankruptcy proceedings involving any Signatory Airline, the debtor or its bankruptcy trustee must determine whether to assume or reject its agreements with the Authority (a) within 120 days (or later if ordered by the court) with respect to its Airline Agreement or leases of non-residential real property, but in no event later than 210 days after the commencement of the bankruptcy case unless additional time is agreed to by the Authority, or (b) prior to

the confirmation of a plan of reorganization with respect to any other agreement. However, bankruptcy courts are courts of equity and can, and often do, grant exceptions to these statutory limitations. In the event of assumption and/or assignment of any agreement to a third party, the airline would be required to cure any pre- and post-petition monetary defaults and provide adequate assurance of future performance under the applicable Airline Agreement or other agreements.

Rejection of an Airline Agreement or other agreement by any Signatory Airline that is a debtor in a bankruptcy proceeding would give rise to an unsecured claim of the Authority against the debtor's estate for damages, the amount of which may be limited by the Bankruptcy Code. However, the amounts unpaid as a result of a rejection of an Airline Agreement by a Signatory Airline in bankruptcy would be included in the calculation of the fees and charges of the remaining Signatory Airlines under their Airline Agreements. See APPENDIX D – "SUMMARY OF THE AIRLINE AGREEMENTS." There is no assurance that the remaining Signatory Airlines would be financially able to absorb such additional costs resulting from such rejection.

Whether or not an Airline Agreement is assumed or rejected in a bankruptcy proceeding, it is not possible to predict the subsequent level of utilization of the gates leased under such agreement. Decreased utilization of gates could have an adverse effect on the cost to the airlines of operating at the Airport.

With respect to any airline that may seek bankruptcy protection under the laws of a foreign country, the Authority is unable to predict what types of orders or relief could be issued by foreign bankruptcy tribunals, or the extent to which any such orders would be enforceable in the United States. Typically, foreign airline bankruptcy proceedings obtain an order in the United States to support and complement the foreign proceedings and stay the actions of creditors in the United States.

### **Growth of Low Cost Carriers**

A low-cost airline or ultra-low-cost airline (each an "LCC" or "ULCC") is an airline that generally has lower fares for customers and which is able to take advantage of an operating cost structure that is significantly lower than the cost structures of the network carriers. These lower costs can include lower labor costs, a streamlined aircraft fleet and more efficient operations. Because of these lower cost structures, LCCs/ULCCs can conceivably remain profitable while offering lower fares to the traveling public.

Over the last decade, as the larger U.S. carriers consolidated and became more focused on capacity discipline, the ticket prices for their flights began to increase. LCCs/ULCCs emerged in markets where passenger levels were significant enough that the LCCs/ULCCs could overcome any barriers to entry. The low cost structure of the LCCs/ULCCs then stimulated traffic and budget conscious travelers emerged as an underserved segment of the traveling public.

The ULCCs of Frontier Airlines and Spirit Airlines ("Spirit"), together with the LCC of JetBlue Airways, in aggregate, increased their share of the Airport's domestic origination and destination passengers from approximately 10.5% in Operating Year 2006 to approximately 19.2% in Operating Year 2017. Spirit's domestic origination and destination enplaned passengers increased over 45% in since Operating Year 2014. In addition, Spirit had the second largest passenger market share at the Airport in 2017. See APPENDIX A – "SERIES 2017 REPORT OF THE AIRPORT CONSULTANT AND SERIES 2018 LETTER – SERIES 2017 REPORT – AIR SERVICE AND AIR TRAFFIC ANALYSIS – AIR TRAFFIC ACTIVITY AND TRENDS."

There can be no assurance that the LCCs/ULCCs will continue to maintain such levels in the future. The continued presence of the LCCs/ULCCs serving the Airport, and the levels at which such airlines might provide service at the Airport, are a function of a variety of factors, including: airline fares and competition; airline industry economics, including labor costs and the price of aviation fuel; capacity of the Airport and competition from other airports; and the strength of the origination and destination market at the Airport. Most of these factors are beyond the control of the Authority. Accordingly, no assurance can be given as to the levels of aviation activity that the LCCs/ULCCs will provide at the Airport.

## **Regulations and Restrictions Affecting the Airport**

The operations of the Airport are affected by various contractual, statutory and regulatory restrictions and limitations, including, without limitation, the provisions of the Airline Agreements, the PFC Act and other extensive federal legislation and regulations applicable to all airports in the United States. In the aftermath of the events of September 11, 2001, the Airport also has been required to implement enhanced security measures mandated by the FAA, the Transportation Security Administration and the Department of Homeland Security.

It is not possible to predict whether future restrictions or limitations on Airport operations will be imposed, whether future legislation or regulations will affect anticipated federal funding or PFC collections for capital projects for the Airport, whether additional requirements will be funded by the federal government or require funding by the Authority or whether such restrictions or legislation or regulations would adversely affect Revenues. See “DETROIT METROPOLITAN WAYNE COUNTY AIRPORT – Capital Improvement Program” above.

## **Availability of PFC Revenues and Other Sources of Funding**

The Authority’s plan of finance for many of the completed Capital Improvement Program projects at the Airport assumed that PFC revenues would be available in certain amounts and at certain times for the payment of a portion of the Debt Service on the Senior Lien Bonds and the Junior Lien Bonds issued to pay the costs of many of the projects. In addition, the Authority’s plan of finance for the 2019 – 2023 CIP assumes that federal grants will be received in certain amounts and at certain times to pay certain capital project costs. See “DETROIT METROPOLITAN WAYNE COUNTY AIRPORT – Capital Improvement Program” above. No assurance can be given that these sources of funding actually will be available in the amounts or on the schedule assumed.

The amount of PFC revenue collected for the Airport in past years has varied, and in future years will vary, based upon the actual number of passenger enplanements at the Airport. No assurance can be given that any level of enplanements will be realized. This adverse impact of decreased enplanements could be direct or indirect. For example, PFC shortfalls could result in increases in terminal rentals or Activity Fees at the Airport, thereby negatively impacting the airlines’ desire to operate at the Airport. Furthermore, under the terms of the PFC Act, the FAA may terminate the Authority’s authority to impose a PFC if the Authority’s PFC revenues are not being used for approved projects in accordance with the FAA’s approval, the PFC Act or the regulations promulgated thereunder, or if the Authority otherwise violates the PFC Act or regulations. The FAA may also terminate the Authority’s authority to impose a PFC for a violation by the Authority of the Airport Noise and Capacity Act. The PFC termination provisions contained in the regulations provide both informal and formal procedural safeguards. In addition, although the FAA’s PFC regulations require Collecting Carriers (as defined in the PFC Act) to account for PFC collections separately, and indicate that such funds are to be regarded as trust funds held by the Collecting Carriers for the beneficial interest of the public agency imposing the PFC, recent bankruptcy court decisions indicate that in a bankruptcy proceeding involving a Collecting Carrier, it is likely that PFCs will not be treated as trust funds and that airports are not entitled to any priority over other creditors of the Collecting Carrier as to such funds.

Also, as discussed under “DETROIT METROPOLITAN WAYNE COUNTY AIRPORT – Capital Improvement Program – Grants” above, the assumptions with respect to entitlement and discretionary funding, although considered reasonable by the Authority, are inherently subject to certain uncertainties and contingencies. Actual entitlement and/or discretionary funding levels and timing may vary and such differences may be material.

To the extent that any portion of the funding assumed in the plan of finance for capital projects at the Airport is not available as anticipated, the Authority may be required to issue Additional Bonds or Junior Lien Bonds to pay the costs of such capital projects and to increase airline rates and charges to pay Debt Service on the Senior Lien Bonds and the Junior Lien Bonds and to fund the required coverage thereon. As an alternative to issuing Additional Bonds or Junior Lien Bonds, the Authority may ultimately decide not to proceed with certain capital projects or may proceed with them on a different schedule, producing different results than those included in the projections shown in the Series 2017 Report and Series 2018 Letter.

## **CIP Costs and Schedule**

The estimated costs of, and the projected schedule for, the projects in the Capital Improvement Program for the Airport depend on various sources of funding, and are subject to a number of uncertainties. The Series 2018

Projects are part of the Airport's Capital Improvement Program. The ability of the Authority to complete these projects within the current budgets and on the current schedules may be adversely affected by various factors including: (1) estimating errors, (2) design and engineering errors, (3) changes to the scope of the projects, (4) delays in contract awards, (5) material and/or labor shortages, (6) delays due to airline operational needs, (7) unforeseen site conditions, (8) adverse weather conditions, (9) contractor defaults, (10) labor disputes, (11) unanticipated levels of inflation, (12) litigation and (13) environmental issues. No assurance can be given that the costs of the projects will not exceed the current budget for these projects or that the completion will not be delayed beyond the currently projected completion dates. Any schedule delays or cost increases could result in the need to issue Additional Senior Lien Bonds or Junior Lien Bonds, which would require a new Weighted Majority approval for the projects with increased costs. The issuance of Additional Senior Lien Bonds or Junior Lien Bonds may result in increased costs per enplaned passenger to the airlines. No assurance can be given that the Authority would receive the required airline approvals, or that, absent such approvals, an alternative source of funding would be available. At present, the Authority is unable to estimate the costs associated with each of the risks identified above and the total impact of these risks if such events were to occur. In addition, the Authority may ultimately decide not to proceed with certain capital projects or may proceed with them on a different schedule, resulting in different results than those included in the projections shown in the Series 2017 Report and Series 2018 Letter.

### **Cyber-Security**

The Airport, like many other large public and private entities, relies on a large and complex technology environment to conduct its operations, and faces multiple cybersecurity threats including, but not limited to, hacking, phishing, viruses, malware and other attacks on its computing and other digital networks and systems (collectively, "Systems Technology"). As a recipient and provider of personal, private, or sensitive information, the Airport may be the target of cybersecurity incidents that could result in adverse consequences to the Airport and its Systems Technology, requiring a response action to mitigate the consequences.

Cybersecurity incidents could result from unintentional events, or from deliberate attacks by unauthorized entities or individuals attempting to gain access to the Airport's Systems Technology for the purposes of misappropriating assets or information or causing operational disruption and damage. To mitigate the risk of business operations impact and/or damage from cybersecurity incidents or cyber-attacks, the Airport invests in multiple forms of cybersecurity and operational safeguards.

While the Airport cybersecurity and operational safeguards are periodically tested, no assurances can be given by the Authority that such measures will ensure against other cybersecurity threats and attacks. Cybersecurity breaches could cause material disruption to the Airport's finances or operations. The costs of remedying any such damage or protecting against future attacks could be substantial. Further, cybersecurity breaches could expose the Airport to material litigation and other legal risks, which could cause the Airport to incur material costs related to such legal claims or proceedings.

The airlines serving the Airport and other Airport tenants also face cybersecurity threats that could affect their operations and finances. Computer networks and data transmission and collection are vital to the safe and efficient operation of the airlines that serve the Airport and other tenants of the Airport. Despite security measures, information technology and infrastructure of any of the airlines serving the Airport or any other tenants at the Airport may be vulnerable to attacks by outside or internal hackers, or breached by employee error, negligence or malfeasance. Any such breach or attack could compromise systems and the information stored thereon. Any such disruption or other loss of information could result in a disruption in the efficiency of the operation of the airlines serving the Airport and the services provided at the Airport, thereby adversely affecting the ability of the Airport to generate revenue.

### **Alternative Transportation Modes and Future Parking Demand**

One significant source of non-airline revenues at the Airport is from ground transportation activity, including use of on-Airport parking garages; trip fees paid by taxi, TNCs, such as Uber Technologies Inc. and Lyft, Inc.; and rental car transactions by Airport passengers.

New technologies (such as autonomous vehicles and connected vehicles) and innovative business strategies in established markets such as commercial ground transportation and car rental may continue to occur and may result in further changes in the Airport's passengers' choice of ground transportation mode.

While the Authority makes every effort to anticipate demand shifts, there may be times when the Authority's expectations differ from actual outcomes. In such event, revenue from one or more ground transportation modes may be lower than expected. The Authority cannot predict with certainty what impact these innovations in ground transportation will have over time on revenues from parking, other ground transportation services or rental cars. The Authority also cannot predict with certainty whether or to what extent it will collect non-airline revenues in connection with such new technologies or innovative business strategies.

### **Assumptions in the Series 2017 Report and Series 2018 Letter**

The Series 2017 Report and Series 2018 Letter should be read in its entirety for an understanding of the forecasts and the underlying assumptions. As noted in the Series 2017 Report and Series 2018 Letter, any financial forecast is subject to uncertainties. Inevitably, some assumptions used to develop the forecasts will not be realized, and unanticipated events and circumstances may occur. The actual financial results achieved will vary from those forecasts, and the variations may be material. Further, the Series 2017 Report and Series 2018 Letter does not cover the entire period through maturity of the Series 2018 Bonds. See APPENDIX A – "SERIES 2017 REPORT OF THE AIRPORT CONSULTANT AND SERIES 2018 LETTER."

## **TAX MATTERS**

### **General**

In the opinion of Miller, Canfield, Paddock and Stone, P.L.C., Bond Counsel, under existing law, (i) the interest on the Series 2018A Bonds and the Series 2018C Refunding Bonds is excludable from gross income for federal income tax purposes and is not an item of tax preference for purposes of the federal alternative minimum tax; and (ii) the interest on the Series 2018B Bonds and the Series 2018D Refunding Bonds is excludable from gross income for federal income tax purposes (except for any period when the Series 2018B Bonds or the Series 2018D Refunding Bonds are held by a "substantial user" of the Airport or a person deemed "related thereto" (as such terms are used in Section 147(a) of the Internal Revenue Code of 1986, as amended (the "Code"))) and is an item of tax preference for purposes of the federal alternative minimum tax. It should be noted, however, that interest on the Series 2018 Bonds is included in adjusted current earnings in calculating corporate alternative minimum taxable income for tax years beginning prior to January 1, 2018. Bond Counsel is also of the opinion that, under existing law, the Series 2018 Bonds and the interest thereon are exempt from all taxation by the State of Michigan or by any taxing authority within the State of Michigan, except inheritance and estate taxes and taxes on gains realized from the sale, payment or other disposition thereof. Bond Counsel will express no opinion regarding any other federal or state tax consequences arising with respect to the Series 2018 Bonds and the interest thereon.

The opinions on federal and State of Michigan tax matters are based on the accuracy of certain representations and certifications, and continuing compliance with certain covenants, of the Authority contained in the transcript of proceedings and which are intended to evidence and assure the foregoing, including that the Series 2018 Bonds are and will remain obligations the interest on which is excludable from gross income for federal and State of Michigan income tax purposes. The Authority has covenanted to take the actions required of it for the interest on the Series 2018 Bonds to be and to remain excludable from gross income for federal and State of Michigan income tax purposes, and not to take any actions that would adversely affect that exclusion. Bond Counsel's opinions assume the accuracy of the Authority's certifications and representations and the continuing compliance with the Authority's covenants. Noncompliance with these covenants by the Authority may cause the interest on the Series 2018 Bonds to be included in gross income for federal and State of Michigan income tax purposes retroactively to the date of issuance of the Series 2018 Bonds. After the date of issuance of the Series 2018 Bonds, Bond Counsel will not undertake to determine (or to so inform any person) whether any actions taken or not taken, or any events occurring or not occurring, or any other matters coming to Bond Counsel's attention, may adversely affect the exclusion from gross income for federal and State of Michigan income tax purposes of interest on the Series 2018 Bonds or the market prices of the Series 2018 Bonds.



The opinions of Bond Counsel are based on current legal authority and cover certain matters not directly addressed by such authority. They represent Bond Counsel's legal judgment as to the excludability of interest on the Series 2018 Bonds from gross income for federal and State of Michigan income tax purposes but are not a guarantee of that conclusion. The Federal income tax opinion is not binding on the Internal Revenue Service ("IRS") or any court. Bond Counsel cannot give and has not given any opinion or assurance about the effect of future changes in the Code, the applicable regulations, the interpretations thereof or the enforcement thereof by the IRS.

Ownership of the Series 2018 Bonds may result in collateral federal income tax consequences to certain taxpayers, including, without limitation, corporations subject to the branch profits tax, financial institutions, certain insurance companies, certain S corporations, individual recipients of Social Security or Railroad Retirement benefits and taxpayers who may be deemed to have incurred (or continued) indebtedness to purchase or carry the Series 2018 Bonds. Bond Counsel will express no opinion regarding any such consequences.

### **Tax Treatment of Accruals on Original Issue Discount Bonds**

Under existing law, if the initial public offering price to the public (excluding bond houses and brokers) of a Series 2018 Bond is less than the stated redemption price of such Series 2018 Bonds at maturity, then such Series 2018 Bond is considered to have "original issue discount" equal to the difference between such initial offering price and the amount payable at maturity (such Series 2018 Bonds are referred to as "OID Bonds"). Such discount is treated as interest excludable from federal gross income to the extent properly allocable to each registered owner thereof. The original issue discount accrues over the term to maturity of each such OID Bonds on the basis of a constant interest rate compounded at the end of each six-month period (or shorter period) from the date of original issue with straight-line interpolations between compounding dates. The amount of original issue discount accruing during each period is added to the adjusted basis of such OID Bonds to determine taxable gain upon disposition (including sale, redemption or payment on maturity) of such OID Bonds.

The Code contains certain provisions relating to the accrual of original issue discount in the case of purchasers of OID Bonds who purchase such OID Bonds after the initial offering of a substantial amount thereof. Owners who do not purchase such OID Bonds in the initial offering at the initial offering prices should consult their own tax advisors with respect to the tax consequences of ownership of such OID Bonds.

All holders of the OID Bonds should consult their own tax advisors with respect to the allowance of a deduction for any loss on a sale or other disposition of an OID Bond to the extent such loss is attributable to accrued original issue discount.

### **Amortizable Bond Premium**

For federal income tax purposes, the excess of the initial offering price to the public (excluding bond houses and brokers) at which a Series 2018 Bond is sold over the amount payable at maturity thereof constitutes for the original purchasers of such Series 2018 Bonds (collectively, the "Original Premium Bonds") an amortizable bond premium. Series 2018 Bonds other than Original Premium Bonds may also be subject to an amortizable bond premium determined generally with regard to the taxpayer's basis (for purposes of determining loss on a sale or exchange) and the amount payable on maturity or, in certain cases, on an earlier call date (such bonds being referred to herein collectively with the Original Premium Bonds as the "Premium Bonds"). Such amortizable bond premium is not deductible from gross income. The amount of amortizable bond premium allocable to each taxable year is generally determined on the basis of the taxpayer's yield to maturity determined by using the taxpayer's basis (for purposes of determining loss on sale or exchange) of such Premium Bonds and compounding at the close of each six-month accrual period. The amount of amortizable bond premium allocable to each taxable year is deducted from the taxpayer's adjusted basis of such Premium Bonds to determine taxable gain upon disposition (including sale, redemption or payment at maturity) of such Premium Bonds.

All holders of the Premium Bonds should consult with their own tax advisors as to the amount and effect of the amortizable bond premium.

## **Market Discount**

The “market discount rules” of the Code apply to the Series 2018 Bonds. Accordingly, holders acquiring their Series 2018 Bonds subsequent to the initial issuance of the Series 2018 Bonds will generally be required to treat market discount recognized under the provisions of the Code as ordinary taxable income (as opposed to capital gain income). Holders should consult their own tax advisors regarding the application of the market discount provisions of the Code and the advisability of making any of the elections relating to market discount allowed by the Code.

## **Information Reporting and Backup Withholding**

Information reporting requirements apply to interest paid after March 31, 2007 on tax-exempt obligations, including the Series 2018 Bonds. In general, such requirements are satisfied if the interest recipient completes, and provides the payor with, a Form W-9, “Request for Taxpayer Identification Number and Certification,” or unless the recipient is one of a limited class of exempt recipients, including corporations. A recipient not otherwise exempt from information reporting who fails to satisfy the information reporting requirements will be subject to “backup withholding,” which means that the payor is required to deduct and withhold a tax from the interest payment, calculated in the manner set forth in the Code. For the foregoing purpose, a “payor” generally refers to the person or entity from whom a recipient receives its payments of interest or who collects such payments on behalf of the recipient.

If an owner purchasing the Series 2018 Bonds through a brokerage account has executed a Form W-9 in connection with the establishment of such account no backup withholding should occur. In any event, backup withholding does not affect the excludability of the interest on the Series 2018 Bonds from gross income for federal income tax purposes. Any amounts withheld pursuant to backup withholding would be allowed as a refund or a credit against the owner’s federal income tax once the required information is furnished to the IRS.

## **Future Developments**

Bond Counsel’s engagement with respect to the Series 2018 Bonds ends with the issuance of the Series 2018 Bonds and, unless separately engaged, bond counsel is not obligated to defend the Authority in the event of an audit examination by the IRS. The IRS has a program to audit tax-exempt obligations to determine whether the interest thereon is includible in gross income for federal income tax purposes. If the IRS does audit the Series 2018 Bonds, under current IRS procedures, the IRS will treat the Authority as the taxpayer and the beneficial owners of the Series 2018 Bonds will have only limited rights, if any, to obtain and participate in judicial review of such audit.

NO ASSURANCE CAN BE GIVEN THAT ANY FUTURE LEGISLATION OR CLARIFICATIONS OR AMENDMENTS TO THE CODE, IF ENACTED INTO LAW, WILL NOT CONTAIN PROPOSALS WHICH COULD CAUSE THE INTEREST ON THE SERIES 2018 BONDS TO BE SUBJECT DIRECTLY OR INDIRECTLY TO FEDERAL OR STATE OF MICHIGAN INCOME TAXATION, ADVERSELY AFFECT THE MARKET PRICE OR MARKETABILITY OF THE SERIES 2018 BONDS, OR OTHERWISE PREVENT THE HOLDERS FROM REALIZING THE FULL CURRENT BENEFIT OF THE STATUS OF THE INTEREST THEREON. BOND COUNSEL EXPRESSES NO OPINION REGARDING ANY PENDING OR PROPOSED FEDERAL OR STATE OF MICHIGAN TAX LEGISLATION.

FURTHER, NO ASSURANCE CAN BE GIVEN THAT ANY ACTIONS OF THE INTERNAL REVENUE SERVICE, INCLUDING, BUT NOT LIMITED TO, SELECTION OF THE SERIES 2018 BONDS FOR AUDIT EXAMINATION, OR THE COURSE OR RESULT OF ANY EXAMINATION OF THE SERIES 2018 BONDS, OR OTHER BONDS WHICH PRESENT SIMILAR TAX ISSUES, WILL NOT AFFECT THE MARKET PRICE OF THE SERIES 2018 BONDS.

INVESTORS SHOULD CONSULT WITH THEIR TAX ADVISORS AS TO THE TAX CONSEQUENCES OF THEIR ACQUISITION, HOLDING OR DISPOSITION OF THE SERIES 2018 BONDS, INCLUDING THE IMPACT OF ANY PENDING OR PROPOSED FEDERAL OR STATE OF MICHIGAN TAX LEGISLATION.

## LITIGATION

There is no litigation pending, or to the knowledge of the Authority threatened, against or affecting the Authority or the Airport, or, to the Authority's knowledge, any basis therefor, wherein an unfavorable decision, ruling or outcome would have a material impact on the financial condition of the Airport or would adversely affect the transactions contemplated by this Official Statement, or the validity of the Series 2018 Bonds, the Master Bond Ordinance, the Series 2018 Project Ordinance, the Series 2018 Refunding Ordinance or any agreement or instrument to which the Authority is a party and which is used or contemplated for use in the transactions contemplated by this Official Statement.

## RATINGS

Fitch Ratings, Inc. ("Fitch"), Moody's Investors Service, Inc. ("Moody's") and S&P Global Ratings, a division of Standard & Poor's Financial Services, LLC ("Standard & Poor's"), have assigned their municipal bond ratings of "A", "A2" and "A", respectively, to the Series 2018 Bonds, based upon the underlying credit of the Authority.

A rating reflects only the views of the rating agency assigning such rating. As part of the process of obtaining ratings for the Bonds, the Authority has had discussions with, and submitted certain materials to, the rating agencies, which materials are consistent with the information provided in this Official Statement. There is no assurance that such ratings will remain in effect for any given period of time or that they may not be lowered, suspended or withdrawn entirely by such rating agencies, if in their judgment, circumstances so warrant. Any such downward change in or suspension or withdrawal of such ratings may have an adverse effect on the market price of the Series 2018 Bonds. Neither the Authority nor the Underwriters have undertaken any responsibility either to bring to the attention of the registered owners of the Series 2018 Bonds any proposed change in or withdrawal of such ratings or to oppose any such revision or withdrawal.

## LEGAL MATTERS

The authorization, issuance and sale by the Authority of the Series 2018 Bonds are subject to the approval of Miller, Canfield, Paddock and Stone, P.L.C., Detroit, Michigan, as Bond Counsel. The proposed forms of the approving opinions of Bond Counsel are included in this Official Statement as APPENDIX G. Certain legal matters will be passed upon for the Authority by its General Counsel, and for the Underwriters by their counsel, McGuireWoods LLP.

## CONTINUING DISCLOSURE

### Continuing Disclosure Undertaking

In order to permit the Underwriters to comply with the continuing disclosure requirements of Rule 15c2-12 adopted by the Securities and Exchange Commission under the Securities Exchange Act of 1934 (as may be amended from time to time, the "Rule"), the Authority will covenant and agree for the benefit of the Holders or Beneficial Owners of the Series 2018 Bonds in a Continuing Disclosure Undertaking to provide certain annual financial information and operating data and notices of certain enumerated events, if material. See APPENDIX F – "FORM OF CONTINUING DISCLOSURE UNDERTAKING" for the detailed provisions of the Continuing Disclosure Undertaking, including the specific nature of the information to be provided on an annual basis and the events as to which notice is to be given, if material. All capitalized terms used but not defined in this section shall have the meanings ascribed to them in the Continuing Disclosure Undertaking.

Breach of the Continuing Disclosure Undertaking will not constitute a default under the Master Bond Ordinance. The sole and exclusive remedy of any Holder or Beneficial Owner of the Series 2018 Bonds for enforcement of the provisions of the Continuing Disclosure Undertaking shall be an action for mandamus or specific performance to cause the Authority to comply with its obligations thereunder.

In the Continuing Disclosure Undertaking, the Authority will agree to use its best efforts to require certain "obligated persons" (at this time only Delta) to provide certain annual financial information and operating data, unless the Authority is no longer required to do so under the Rule. The Authority has not undertaken to provide

additional information regarding any person that is not obligated under an Airline Agreement, lease or other agreement having a term of more than one year to pay a portion of the debt service on the Series 2018 Bonds and providing at least twenty percent (20%) of the revenues of the Airport for the prior two (2) Operating Years.

Delta has agreed in its Airline Agreement to provide to the Authority such information with respect to Delta as the Authority deems reasonably necessary in order for the Authority to comply with the requirements of the Rule.

### **The Disclosure Dissemination Agent—DAC**

In order to provide certain continuing disclosure with respect to the Series 2018 Bonds in accordance with the Rule, as the same may be amended from time to time, the Authority has entered into a Disclosure Dissemination Agent Agreement (“Disclosure Dissemination Agreement”) for the benefit of the Holders of the Series 2018 Bonds with Digital Assurance Certification, L.L.C. (“DAC”), under which the Authority has designated DAC as Disclosure Dissemination Agent.

The Disclosure Dissemination Agent has only the duties specifically set forth in the Disclosure Dissemination Agreement. The Disclosure Dissemination Agent’s obligation to deliver the information at the times and with the contents described in the Disclosure Dissemination Agreement is limited to the extent the Authority has provided such information to the Disclosure Dissemination Agent as required by the Disclosure Dissemination Agreement. The Disclosure Dissemination Agent has no duty with respect to the content of any disclosures or notice made pursuant to the terms of the Disclosure Dissemination Agreement. The Disclosure Dissemination Agent has no duty or obligation to review or verify any information in the Annual Report, Audited Financial Statements, notice of Notice Event or Voluntary Report, or any other information, disclosures or notices provided to it by the Authority and shall not be deemed to be acting in any fiduciary capacity for the Authority, the Holders of the Series 2018 Bonds or any other party. The Disclosure Dissemination Agent has no responsibility for the Authority’s failure to report to the Disclosure Dissemination Agent a Notice Event or a duty to determine the materiality thereof. The Disclosure Dissemination Agent shall have no duty to determine or liability for failing to determine whether the Authority has complied with the Disclosure Dissemination Agreement. The Disclosure Dissemination Agent may conclusively rely upon certifications of the Authority at all times.

### **Continuing Disclosure Compliance**

To the knowledge of the Authority, except as noted below, the Authority has not, in the previous five years, failed to comply in any material respect with any continuing disclosure undertaking executed by the Authority pursuant to the Rule.

The Authority has timely filed its audited financial statements and annual disclosure information over the past five years in connection with the continuing disclosure undertakings previously executed by the Authority. However, the Authority filed late material event notices with respect to rating changes in 2013 and 2014 affecting the bond insurers (“Bond Insurers”) for certain insured Authority Bonds. To the Authority’s knowledge, at such times, the Authority did not receive any notification from the rating agencies or the Bond Insurers of such rating changes related to the Bond Insurers. All material event disclosures have been filed by the Authority at this time.

## **UNDERWRITING**

The Series 2018 Bonds are being purchased by Siebert Cisneros Shank & Co., L.L.C., Citigroup Global Markets Inc., J.P. Morgan Securities LLC, Loop Capital Markets, LLC, Merrill Lynch, Pierce, Fenner & Smith Incorporated, PNC Capital Markets, LLC, RBC Capital Markets, LLC and Wells Fargo Bank, N.A. (collectively, the “Underwriters”). The Underwriters have agreed, subject to certain conditions, to (i) purchase the Series 2018 Bonds at an aggregate purchase price of \$258,017,571.98 (equal to the par amount of the Series 2018 Bonds plus net original issue premium in the aggregate amount of \$26,390,055.80 less an underwriting discount of \$302,483.82) pursuant to a Bond Purchase Agreement between the Authority and the Underwriters (the “Bond Purchase Agreement”). The Bond Purchase Agreement provides that the Underwriters will purchase all of the Series 2018 Bonds, if any are purchased. The Underwriters reserve the right to join with dealers and other underwriters in offering the Series 2018 Bonds to the public. The obligations of the Underwriters to accept delivery of the Series 2018 Bonds are subject to various conditions of the Bond Purchase Agreement.

The Underwriters may offer and sell the Series 2018 Bonds to certain dealers (including depositing the Series 2018 Bonds into investment trusts, which investment trusts may be sponsored by the Underwriters) and others at prices lower than the public offering prices stated on the inside cover page hereof. The initial public offering prices may be changed from time to time by the related Underwriters.

The Underwriters and their respective affiliates are full service financial institutions engaged in various activities, which may include sales and trading, commercial and investment banking, advisory, investment management, investment research, principal investment, hedging, market making, brokerage and other financial and non-financial activities and services. Under certain circumstances, the Underwriters and their affiliates may have certain creditor and/or other rights against the Authority and its affiliates in connection with such activities.

In the various course of their various business activities, the Underwriters and their respective affiliates, officers, directors and employees may purchase, sell or hold a broad array of investments and actively trade securities, derivatives, loans, commodities, currencies, credit default swaps and other financial instruments for their own account and for the accounts of their customers, and such investment and trading activities may involve or relate to assets, securities and/or instruments of the Authority (directly, as collateral securing other obligations or otherwise) and/or persons and entities with relationships with the Authority.

The Underwriters and their respective affiliates may also communicate independent investment recommendations, market color or trading ideas and/or publish or express independent research views in respect of such assets, securities or instruments and may at any time hold, or recommend to clients that they should acquire, long and/or short positions in such assets, securities and instruments.

One or more of the other Underwriters and their respective affiliates may have previously entered into, and may from time to time in the future, enter into direct placements with the Authority regarding Senior Lien Bonds or Junior Lien Bonds. For further information regarding direct placements currently in effect between the Authority and one or more of the Underwriters or their respective affiliates, see “AIRPORT FINANCIAL INFORMATION – Direct Placements” above.

Certain of the Underwriters may have entered into retail distribution agreements with third party broker-dealers, under which the Underwriters may distribute municipal securities to retail investors through the respective financial advisors or electronic trading platforms of such third party broker-dealers. As part of these arrangements, the Underwriters may share a portion of their underwriting compensation with such third party broker-dealers.

#### **FINANCIAL ADVISORS**

PFM Financial Advisors LLC and D+G Consulting Group, LLC (collectively, the “Financial Advisors”) are serving as Financial Advisors to the Authority in connection with the issuance of the Series 2018 Bonds. The Financial Advisors are financial advisory and consulting organizations and are not engaged in the business of underwriting, marketing or trading municipal securities or any other negotiated instruments. The Financial Advisors have provided advice as to the plan of financing and the structuring of the Series 2018 Bonds and have reviewed and commented on certain legal documentation, including this Official Statement. The advice on the plan of financing and the structuring of the Series 2018 Bonds was based upon materials provided by sources of information believed to be reliable, but the Financial Advisors have not audited, authenticated or otherwise verified such information, including material contained in this Official Statement.

#### **INDEPENDENT ACCOUNTANTS**

The financial statements of the Authority as of and for the year ended September 30, 2017, included as APPENDIX B, have been audited by Plante & Moran, PLLC, independent accountants, as stated in their report appearing in APPENDIX B.

#### **VERIFICATION OF MATHEMATICAL COMPUTATIONS**

Robert Thomas CPA, LLC will deliver to the Authority its attestation report verifying the mathematical accuracy of the mathematical computations of the adequacy of the cash or state and local government securities deposited in the Series 2008A Refunded Bonds Escrow Fund under the Master Bond Ordinance and the Series 2018

Refunding Ordinance, together with investment proceeds, to pay the redemption or purchase price and interest on the Series 2008A Refunded Bonds, supporting the conclusion of Bond Counsel that interest on the Series 2018 Bonds is excludable from gross income for federal income tax purposes as indicated under the caption "TAX MATTERS." Such verification will be based upon information and data provided by the Authority.

**MISCELLANEOUS**

This Official Statement has been duly authorized by the Board of the Authority, and duly executed and delivered by the Interim Chief Financial Officer of the Authority.

The Appendices are integral parts of this Official Statement and must be read together with all other parts of this Official Statement.

**WAYNE COUNTY AIRPORT AUTHORITY**

By: /s/ Istakur Rahman  
Interim Chief Financial Officer

**APPENDIX A**

**SERIES 2017 REPORT OF THE AIRPORT CONSULTANT AND SERIES 2018 LETTER**

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**SERIES 2018 LETTER**

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October 23, 2018



Landrum & Brown, Incorporated  
11279 Cornell Park Drive  
Cincinnati, Ohio 45242  
513.530.5333

Mr. Chad Newton, AAE, ACE, ASC  
Interim Chief Executive Officer  
Wayne County Airport Authority  
Detroit Metropolitan Wayne County Airport  
11050 Rogell Drive, Building 602  
Detroit, Michigan 48242

Re: Letter of the Airport Consultant, Wayne County Airport Authority, Airport Revenue Bonds, (Detroit Metropolitan Wayne County Airport), Series 2018A-B; and Wayne County Airport Authority, Airport Revenue Refunding Bonds, (Detroit Metropolitan Wayne County Airport), Series 2018C-D

Dear Mr. Newton:

Trillion Av, LLC (dba Trillion Aviation), in association with Airmac LLC and Partners for Economic Solutions, prepared the Report of the Airport Consultant, dated September 13, 2017, in conjunction with the issuance by the Wayne County Airport Authority (Authority) of the Wayne County Airport Authority Airport Revenue Bonds (Detroit Metropolitan Wayne County Airport), Series 2017A-C; and the Wayne County Airport Authority Airport Revenue Refunding Bonds (Detroit Metropolitan Wayne County Airport), Junior Lien, Series 2017A-B, referred to collectively as the Series 2017 Bonds (herein such Report of the Airport Consultant is referred to as the Series 2017 Report). The Series 2017 Report was prepared for the Authority to support its obligations pursuant to various provisions in the Master Bond Ordinance, Senior 2017 Ordinance, and the Junior 2017 Ordinance, and was included in the Official Statement for the Series 2017 Bonds as Appendix A dated September 28, 2017.

This letter (herein referred to as this Series 2018 Letter) has been prepared by Landrum & Brown, Incorporated (L&B), a global aviation planning and development firm, in association with Airmac LLC, in conjunction with the proposed issuance by the Authority of the Wayne County Airport Authority Airport Revenue Bonds (Detroit Metropolitan Wayne County Airport), Series 2018A-B; and the Wayne County Airport Authority Airport Revenue Refunding Bonds (Detroit Metropolitan Wayne County Airport), Series 2018C-D, referred to collectively as the Series 2018 Bonds. This Series 2018 Letter has been prepared by L&B as L&B acquired Trillion Aviation in July 2018. This Series 2018 Letter has been prepared for the Authority to support its planned issuance of the Series 2018 Bonds and is intended to be included in the Official Statement for the Series 2018 Bonds as part of Appendix A, Letter of the Airport Consultant. All capitalized terms in this Series 2018 Letter are used as defined in the Official Statement, Master Bond Ordinance, the Series 2018 Project Ordinance relating to the Series 2018A-B Bonds, and the Series 2018 Refunding Ordinance relating to the Series 2018C-D Bonds, except as otherwise defined herein.

# 1 The Series 2018 Bonds

The Series 2018 Bonds are being issued pursuant to the provisions of the Master Bond Ordinance, and with respect to the Series 2018A-B Bonds, the Series 2018 Project Ordinance adopted by the Board on August 15, 2018, and with respect to the Series 2018C-D Bonds, the Series 2018 Refunding Ordinance adopted by the Board on May 16, 2018 and subsequently amended on August 15, 2018. The Master Bond Ordinance, the Series 2018 Project Ordinance, and the Series 2018 Refunding Ordinance are collectively referred to as the Ordinance. The Series 2018 Bonds are payable solely from the Net Revenues of the Airport, certain funds and accounts under the Ordinance, and other amounts available under the Ordinance.

The Authority will use the proceeds of the Series 2018 Bonds, together with other available funds, to (1) with respect to the Series 2018A-B Bonds, pay all or a portion of the costs of acquiring, constructing and installing the Series 2018 Projects, (2) with the respect to the Series 2018C-D Bonds, provide funds to refund a portion of the Series 2008A Bonds, (3) make a deposit to the Airport Bond Reserve Account, (4) pay capitalized interest during construction of the Series 2018 Projects, and (5) pay the costs of issuance of the Series 2018 Bonds.

For the purposes of this Series 2018 Letter, the financial analysis contained herein includes the planned issuance of the Series 2018 Bonds along with the assumed issuance in the future of Additional Bonds expected to be issued to fund remaining portions of the Series 2018 Projects (described herein) and Other Approved Capital Projects (described herein) (Future Bonds). This Series 2018 Letter does not take into consideration any savings associated with the refunding of the Series 2008A Bonds.

## 2 Purpose of this Series 2018 Letter

The purpose of this Series 2018 Letter is to confirm that the assumptions and findings contained in the Series 2017 Report, based on further review and updates described later herein, are still materially valid at this time in regards to the Authority's ability to generate revenues from the operation of the Detroit Metropolitan Wayne County Airport (Airport) sufficient to meet the funding requirements and obligations established by the Master Bond Ordinance during the forecast period of Operating Year (OY) 2018 through OY 2025.<sup>1</sup> For reference, the Series 2017 Report is attached to this Series 2018 Letter within Appendix A of the Official Statement.

This Series 2018 Letter also provides updated forecasts based on recent trends, data, and information related to the operation of the Airport since the Series 2017 Report. **Table 1** below summarizes the key changes to conditions at the Airport since the date of the Series 2017 Report. In summary, while there are some changes to the forecasts contained herein as compared to the Series 2017 Report as summarized in the table below, we do not believe these changes are material in regards to the Authority's ability to generate revenues from the operation of the Airport sufficient to meet the funding requirements and obligations established by the Ordinance during the forecast period of Operating Year (OY) 2018 through OY 2025. Opinions regarding the materiality of changes and trends in this Series 2018 Letter are that of L&B based on our industry knowledge and professional experience within the aviation industry.

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<sup>1</sup> The Authority's Operating Year is the 12-month period ending September 30.

**TABLE 1 Summary of Key Changes Since Series 2017 Report**

	Key Changes since the Series 2017 Report	General Impact of the Change
<p>Economic Base for Air Traffic</p>	<p>Forecasts of key economic variables are substantially the same with two exceptions. (1) Air Service Area total employment forecasts have an increased annual growth rate of 1.1% per year as compared to 0.7% in the Series 2017 Report. (2) Air Service Area gross regional product forecasts show a slight decline with a growth rate of 1.6% per year compared to 1.7% in the Series 2017 Report. The Air Service Area is now forecast to add more than 320,000 jobs and 36,000 in population over the forecast period.</p> <p>While still profitable, second quarter 2018 earnings reports for the largest U.S. automakers located in the Air Service Area reported lower profits as compared to the same quarter in 2017, and cited challenges in international markets and proposed tariffs on imported cars and parts.</p>	<p>Automakers may experience financial challenges in the future based on recent earnings reports; however, it is difficult at this time to predict what impacts, if any, these issues may have on demand for air travel at the Airport.</p> <p>Overall, no material impact to the outlook on the economic base for air traffic at the Airport is forecast at this time.</p>
<p>Air Service and Air Traffic Analysis</p>	<p>The Airport remains a primary connecting hub for Delta. In recent years, the Airport has been experiencing growth especially in domestic O&amp;D and international passengers. In OY 2018, total enplaned passengers were in line with those forecast in the Series 2017 Report. The growth in domestic O&amp;D and international passengers was greater than forecast, but domestic connecting traffic experienced a decrease that was not forecast.</p> <p>The updated forecast of total enplaned passengers is substantially the same as the forecast in the Series 2017 Report, resulting in approximately 18.8 million enplaned passengers by OY 2025.</p>	<p>Overall, no material impact to the forecast of total enplaned passengers. The Airport may experience more favorable growth in key non-airline revenues as compared to the Series 2017 forecast given stronger growth experienced in O&amp;D enplaned passengers.</p>
<p>Airport Capital Improvement Program</p>	<p>The estimated cost of the Airport's CIP for OY 2019 through OY 2023 has increased by approximately \$72.8 million as compared to the estimated cost of the CIP for OY 2018 through OY 2022 contained in the Series 2017 Report. The primary cost increase is reflected in the cost of the airfield capital projects, such as projects to rehabilitate Airport taxiways, taxilanes, and aircraft aprons.</p>	<p>The Airport's updated CIP has been incorporated into this Series 2018 Letter. The financial analysis includes the capital cost of both the Series 2018 Projects and Other Approved Capital Projects (i.e., projects that are not Series 2018 Projects but have received Weighted Majority approval and are expected to be funded with Future Bonds). The inclusion in the financial analysis of the construction costs for the Runway 3L/21R and Associated Taxiways Reconstruction project is a primary driver in forecast increases to airline costs per enplaned passenger during several years of the forecast period.</p>

	Key Changes since the Series 2017 Report	General Impact of the Change
Series 2017 Bonds	Updated to reflect the actual sale of the Series 2017 Bonds including the debt service savings resulting from the refunding of the Series 2007B Bonds and the Series 2007 Junior Lien Bonds.	Actual debt service on the Series 2017 Bonds is less than forecast and the debt service savings associated with the refunding of the Series 2007B Bonds and the Series 2007 Junior Lien Bonds has been incorporated in the financial analysis.
Future Debt Service	Updated to reflect the estimated debt service requirements associated with the Series 2018 Projects and the Other Approved Capital Projects. In addition, the assumed interest rate for outstanding variable rate bonds has been increased to reflect current market conditions and changes in tax law.	Overall, total debt service is forecast to increase by a range of approximately \$609,000 in OY 2021 to approximately \$16.1 million in OY 2023 as compared to the total forecast debt service reflected in the Series 2017 Report. This forecast increase in debt service is related to the assumed bond financing of the Series 2018 Projects and the Other Approved Capital Projects, along with a change in the assumed rate for outstanding variable rate bonds to 3.0% from 2.5%.
Operation and Maintenance (O&M) Expenses	Estimated O&M Expenses for OY 2018 and the Authority's budgeted O&M Expenses for OY 2019 are more than \$6 million higher than previously forecast in the Series 2017 Report. This change is driven primarily by increases in the categories of salaries, wages and fringe benefits; and professional and contractual services.	The updated forecast of O&M Expenses is approximately 2.9% higher throughout the forecast period as compared to the Series 2017 Report.
Non-Airline Revenues	Actual non-airline revenues for OY 2017 were approximately \$194.8 million, which was approximately \$7.7 million or 4.1% higher than the Authority's budget for OY 2017. Estimated OY 2018 non-airline revenues are approximately \$200.0 million, which is about \$6.1 million or 3.1% higher than reflected in the Authority's OY 2018 budget. Budgeted non-airline revenues for OY 2019 are expected to increase over estimated OY 2018 levels by 2.2% to approximately \$204.4 million. These changes in non-airline revenues are primarily driven by revenues from automobile parking and ground transportation, which includes revenues from transportation network companies (TNCs).	The updated forecast of non-airline revenues is based on the Authority's OY 2019 budget, and ranges from approximately 3.6% to 4.5% higher than the forecast contained in the Series 2017 Report.

	Key Changes since the Series 2017 Report	General Impact of the Change
Airline Cost per Enplaned Passenger (CPE)	Updated the forecast to incorporate the above items.	For OYs 2019 and 2020, CPE is forecast to be lower than that contained in the Series 2017 Report by \$0.08 and \$0.26, respectively. For the period of OY 2021 through OY 2025, updated forecasts of CPE are higher than those contained in the Series 2017 Report; ranging from \$0.11 to \$1.11 higher, primarily because of the increases in debt service required to fund the Series 2018 Projects and Other Approved Capital Projects.
Debt Service Coverage Ratio	Updated the forecast to incorporate the above items.	<p>Updated forecasts of Senior Lien debt service coverage ratios have decreased, ranging from 1.48x to 1.44x, which are 0.02 to 0.11 lower than those forecast in the Series 2017 Report. Total debt service forecast ratios including Junior Lien Bonds have also decreased, ranging from 1.40x to 1.36x, which are lower than those forecast in the Series 2017 Report in some years by up to 0.08. Despite these decreases, debt service coverage is forecast to exceed the minimum requirement of 1.25x provided for in the Ordinance.</p> <p>For more information on pledged Net Revenues for the payment of Senior Lien Bonds, see “SECURITY FOR THE SERIES 2018 BONDS – Source of Payment” in the Official Statement.</p>

Compiled by L&B

The remaining sections of this Series 2018 Letter provide a brief overview of the Authority and the Airport and describe the key changes applicable to the operation of the Airport since the date of the Series 2017 Report for the following areas.

- The Authority and the Airport
- Economic base for air traffic
- Air service and air traffic analysis
- Airport capital improvement program
- Financial analysis (including debt service, operation and maintenance expenses, non-airline revenues, airline cost per enplaned passenger, and debt service coverage ratio)

### 3 The Authority and the Airport

The Authority has sole and exclusive operational jurisdiction of the Airport. The Airport serves as the principal commercial service airport for the Detroit metropolitan region, much of Michigan and parts of northern Indiana and Ohio. The Airport is located on approximately 6,255 acres in the City of Romulus, Michigan, about 21 miles west of the City of Detroit's (City) downtown. The airfield at the Airport contains six air carrier runways, including four parallel runways oriented in the northeast-southwest direction and two parallel runways oriented east-west. There are two passenger terminal complexes at the Airport – the McNamara Terminal (also referred to as the South Terminal) and the North Terminal. The McNamara Terminal, which serves Delta Air Lines (Delta), its affiliated regional carriers (Delta Connection Carriers), and Delta's other SkyTeam partners<sup>2</sup>, consists of a terminal building with three concourses accommodating 121 aircraft gates and a hotel. The North Terminal, which services other carriers not affiliated with Delta, consists of a terminal building and a single concourse with 26 aircraft gates. The Airport also has a multi-level parking structure for short-term and long-term parking adjacent to each terminal building along with two surface parking lots for longer-term, economy public parking.

The day-to-day operations of the Authority are managed by the Chief Executive Officer, who is appointed by the Board of the Authority (Board). The Chief Executive Officer appoints the Chief Financial Officer and other senior staff of the Authority. The executive team of the Authority is a full-time staff of professional and technical personnel located at the Airport and at Willow Run Airport, a general aviation, cargo and reliever airport also operated by the Authority.

The Airport serves two distinct roles for passenger air transportation: origin and destination (O&D), for passengers beginning or ending their trip at the Airport, and a primary connecting hub for Delta. Based on data of the Federal Aviation Administration (FAA) for calendar year (CY) 2017, the Airport was classified by the FAA as a Large Hub facility based upon its share of nationwide enplaned passengers.<sup>3</sup> Based on data from the FAA, approximately 17.0 million enplaned passengers boarded aircraft at the Airport in CY 2017, ranking the Airport as the 18th largest in the U.S. The Airport has a diverse, stable base of air carriers, and serves a large O&D market. Per the U.S. Department of Transportation in OY 2017, an estimated 52.5% of the Airport's domestic enplaned passengers were O&D, which is a significant increase from OY 2016 when an estimated 49.7% of domestic enplaned passengers were O&D.<sup>4</sup>

### 4 Economic Base for Air Traffic

The Airport is the primary commercial air service facility serving the Detroit metropolitan area and the surrounding region, and there are no other Large Hub airport facilities comparable to the Airport within 200 driving miles. The geographic region that serves as an airport's primary air service catchment area is referred to as its "Air Service Area." For the purposes of this Series 2018 Letter and the Series 2017 Report, the Airport's Air Service Area is defined as the Detroit-Warren-Ann Arbor Combined Statistical Area (CSA), which includes the following 10 counties in Michigan: Genesee, Lapeer, Lenawee, Livingston, Macomb, Monroe, Oakland, St. Clair, Washtenaw, and Wayne. The Detroit-Warren-Ann Arbor CSA is the 12th most populated CSA in the U.S. as of 2017, with approximately 5.3 million people, and comprises more than 53% of the population of the State of Michigan. The Air Service Area is the region analyzed in this Series 2018 Letter and in the Series 2017 Report for its economic and demographic characteristics and ability to generate demand for air travel. However, it should be noted that demand for air travel extends beyond the Air Service Area into parts of south-central Michigan,

<sup>2</sup> The SkyTeam is an alliance of airlines throughout the world and Delta is the only U.S. carrier currently in the alliance.

<sup>3</sup> The FAA classifies Large Hub airports as those serving over 1.0% of annual U.S. passenger boardings.

<sup>4</sup> U.S. Department of Transportation, July 2018.



northwestern Ohio, northeastern Indiana, and the southernmost areas of the Province of Ontario, Canada, generally in the Windsor metropolitan area.

Data in **Table 2** show 2016 and 2025 economic variables and forecast growth rates for the Air Service Area and for the U.S. including population, employment, personal income, and gross regional and domestic product. Also presented on this table are the forecast growth rates for the same period presented in the Series 2017 Report. Data for 2016 and 2025 in the Series 2017 Report was based on forecasts by Woods and Poole Economics, Inc. (W&P). Data presented in Table 2 below for 2016 has been updated by W&P to incorporate historical results or estimates, and data for 2025 is the updated forecast. As shown, the updated forecast growth rates for these key Air Service Area economic variables are substantially consistent with the economic forecasts contained in the Series 2017 Report with the exception of the Air Service Area's total employment. Total employment for the Air Service Area is now forecast to grow at a compound annual growth rate (CAGR) of 1.1% from 2016 to 2025, which is an increase over the forecast rate of 0.7% for the same period in the Series 2017 Report. While the Air Service Area's total employment growth is still forecast to lag that of the total U.S., it continues its recovery from recessionary levels. The unemployment rate for the Air Service Area for August 2018 was 4.1%, which was lower than that of August 2017 of 5.1%.<sup>5</sup> Additionally, the updated forecast for the Air Service Area's gross regional product (GRP) is down slightly from that in the Series 2017 report or 1.6% versus 1.7%, respectively.

**TABLE 2 Passenger Demand Forecast Variables (2016-2025)**

Variable <sup>1</sup>	2016	2025	2016-2025 CAGR <sup>2</sup>	Series 2017 Report 2016-2025 CAGR <sup>2</sup>
Air Service Area Population	5,318,653	5,354,697	0.1%	0.1%
U.S. Population	323,132,304	350,937,158	0.9%	0.9%
Air Service Area Total Employment	3,087,787	3,410,810	1.1%	0.7%
U.S. Total Employment	189,097,382	218,519,174	1.6%	1.5%
Air Service Area Total Personal Income (\$ billion)	\$254.0	\$297.1	1.8%	1.8%
U.S. Total Personal Income (\$ billion)	\$15,912.8	\$19,530.5	2.3%	2.5%
Air Service Area Per Capita Personal Income	\$47,758	\$55,493	1.7%	1.7%
U.S. Per Capita Personal Income	\$49,245	\$55,652	1.4%	1.5%
Air Service Area Gross Regional Product (\$ billion)	\$296	\$342	1.6%	1.7%
U.S. Gross Domestic Product (\$ billion)	\$18,512	\$22,127	2.0%	2.2%
Air Service Area Per Capita Gross Regional Product	\$55,645	\$63,925	1.6%	1.6%
U.S. Per Capita GDP	\$57,288	\$63,050	1.1%	1.3%

<sup>1</sup> All dollar amounts are in 2016 dollars.

<sup>2</sup> CAGR = Compound annual growth rate.

Source: Woods & Poole Economics, Inc., 2017 Data Projections for Detroit- Ann Arbor-Warren CSA, Michigan, and United States, May 2018.

Compiled by L&B, July 2018

<sup>5</sup> Bureau of Labor Statistics, U.S. Department of Labor, data are not seasonally-adjusted, accessed October 2018.

Also consistent with the Series 2017 Report, growth forecasts for these economic variables are all positive for the Air Service Area as it continues to recover from the recession during the last decade. In particular, the Air Service Area's growth rates for per capita gross regional product and per capita personal income both exceed growth rates for the U.S. Although growth rates for the Air Service Area's employment and population lag those of the U.S., the Air Service Area is forecast to add more than 320,000 jobs and 36,000 in population over the forecast period.

The Air Service Area is known as the automotive capital of the world and is home to the global headquarters of General Motors and Ford, the North American headquarters of Fiat Chrysler, and numerous automotive suppliers. All three of these automakers have remained profitable during CY 2017 and the first two quarters of CY 2018. However, second quarter 2018 earnings reports for all three automakers reported lower profits as compared to that quarter for 2017, and cited challenges in international markets.<sup>6</sup> Additionally, proposed U.S. tariffs on imported cars and parts could increase costs to the automakers in the future. While these issues could cause financial challenges to the automakers in the future, it is difficult at this time to predict what impacts, if any, these issues may have on demand for air travel at the Airport.

Automotive research facilities also have a significant presence in the Air Service Area and include Toyota Research Institute, Ford Research and Innovation Center, and the University of Michigan's Center for Automotive Research. It was announced in June 2018 that Ford purchased the Michigan Central Station in the City's neighborhood of Corktown. Current plans are to renovate the old train station into a center for advanced automotive technology and research.<sup>7</sup>

While known as the automotive capital of the world, the Air Service Area is also home to a number of other business sectors. Other major employers in the Air Service area represent a variety of industries including: education (University of Michigan, Eastern Michigan University, Detroit Public Schools Community District, Wayne State University); financial services (Quicken Loans, Comerica Bank); health care (University of Michigan Health System, Beaumont Health, Trinity Health Michigan, Ascension Michigan, Detroit Medical Center, Henry Ford Health System, Blue Cross Blue Shield of Michigan, McLaren Health Care); and utilities (DTE Energy). In addition to the above, the Air Service Area is also a major location for the defense and homeland security industry. For example, the TACOM Life Cycle Management Command, headquartered in the city of Warren, is responsible for all aspects of the Army's combat vehicles, vehicle armaments, fueling systems, and unmanned ground vehicles. Additional information on the business sectors in the Air Service Area is discussed in Chapter 1 of the Series 2017 Report.

In summary, after comparison of updated key economic variables and forecasts for the Air Service Area in comparison to those presented in the Series 2017 Report, there is no material change to our outlook on the economic base for air traffic at the Airport. The updated review of economic data continues to support the growth of passenger demand within the Air Service Area for air travel services during the forecast period.

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<sup>6</sup> U.S. automakers report lower profits, see pitfalls for rest of year, The Detroit Free Press, July 26, 2018, <https://www.freep.com/story/money/cars/general-motors/2018/07/26/us-automakers-lower-profits-see-pitfalls-2018/834173002/>, accessed August 2018.

<sup>7</sup> Bill Ford: Detroit train station will be place of possibility again, The Detroit Free Press, June 19, 2018, <https://www.freep.com/story/money/cars/2018/06/19/detroit-train-station-party-ford/713159002/>, accessed June 2018.

## 5 Air Service and Air Traffic Analysis

A review of current Airport activity data since the date of the Series 2017 Report was undertaken to assess the reasonableness of the aviation activity forecasts included therein and to update the forecasts, as required, to support the updated financial analysis associated with the feasibility of the issuance of the Series 2018 Bonds. This Series 2018 Letter incorporates actual enplaned passenger data through OY 2018 (preliminary results) and forecasts for OY 2019 through OY 2025. Updated enplaned passenger forecasts contained in this Series 2018 Letter were based, in part, on published schedules of airline service, forecast national and regional economic indicators, and recent activity trends at the Airport since the data included in the Series 2017 Report.

The Airport is a primary connecting hub airport for Delta. Delta's enplaned passenger market share, including the enplaned passengers of Delta Connection Carriers, comprised approximately 72.4% of enplaned passengers at the Airport based on preliminary results for OY 2018. The Airport predominantly serves domestic traffic, which comprised approximately 90.7% of the Airport's enplaned passenger traffic based on preliminary results for OY 2018; with international traffic comprising the remaining 9.3%. Overall, the Airport had nonstop service to 139 airports during OY 2017 with an average of 519 daily nonstop flights. **Figure 1** presents the Airport's enplaned passenger market share by airline based on preliminary results for OY 2018. Overall, enplaned passenger market share at the Airport remained relatively consistent in OY 2018 as compared to OY 2017. Of the airlines serving the Airport, Delta experienced the largest drop in enplaned passenger share, with a decrease in OY 2018 of approximately 0.8 percentage points to 72.4%, as compared to an enplaned passenger share of 73.2% in OY 2017. Spirit Airlines has continued its recent relatively rapid growth in enplaned passengers at the Airport, experiencing the largest gain in enplaned passenger market share at the Airport over the last year, from 8.4% in OY 2017 to 9.4% in OY 2018. For more information on the Airport's enplaned passengers by airline, see "DETROIT METROPOLITAN WAYNE COUNTY AIRPORT – Airlines Providing Service at the Airport" in the Official Statement.

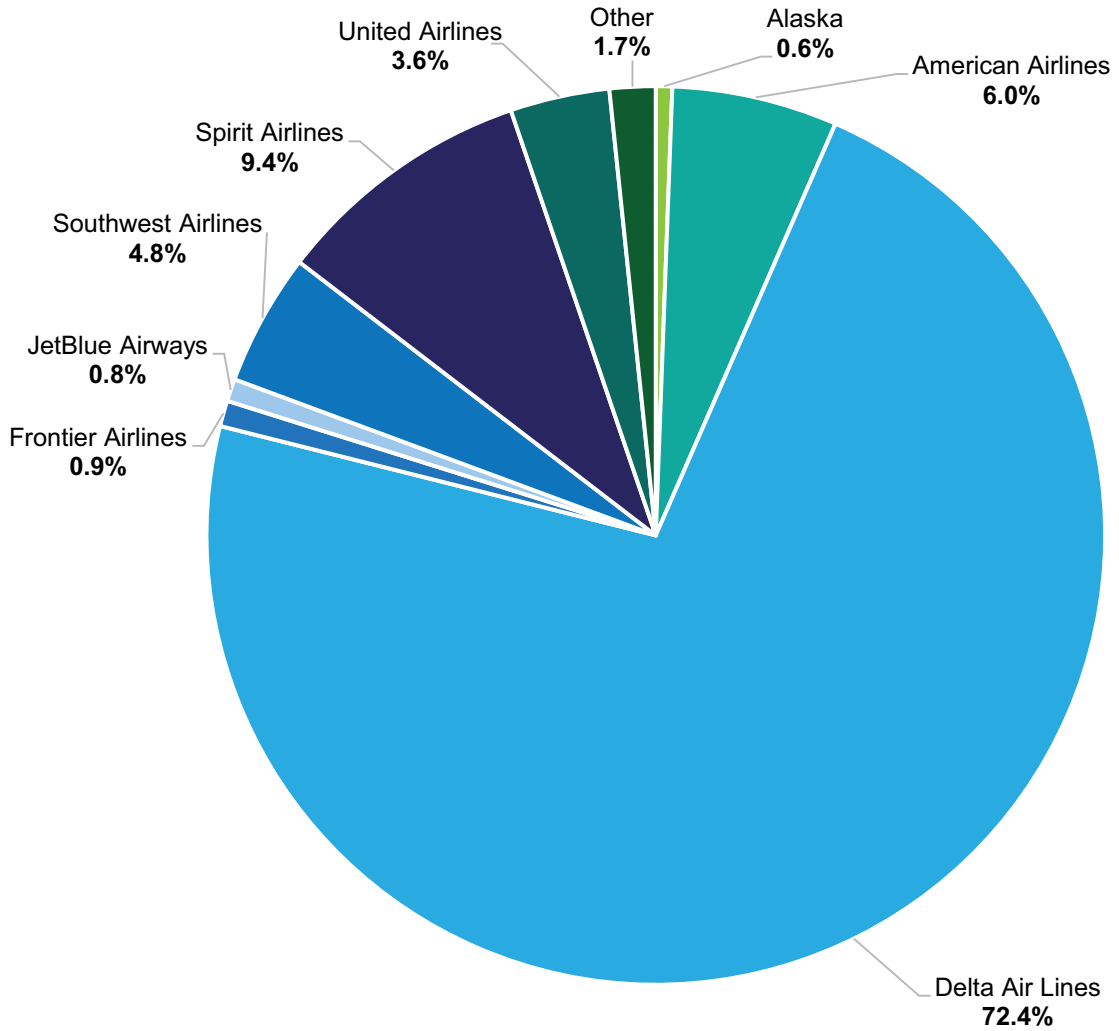
Delta is the Airport's largest carrier and operates a primary connecting hub at the Airport. More than 92% of domestic connecting traffic at the Airport was operated by Delta in OY 2017. Delta accounted for approximately 54% of domestic O&D passengers at the Airport in OY 2017. Delta accounted for approximately 80.2% of international enplaned passenger traffic at the Airport based on preliminary results for OY 2018.

The Airport is also a major international gateway for Delta, ranking as its third largest airport for international departures and departing seats, behind only Atlanta and New York's John F. Kennedy International Airport. Delta operated an average of 17 daily non-stop international flights from the Airport during OY 2017 to destinations in Canada, Mexico, Europe, and Asia. Overall, Delta's trans-oceanic departing seat capacity from the Airport for the period of OY 2013 through that scheduled for OY 2018 has remained stable (CAGR of 0.8%).<sup>8</sup>

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<sup>8</sup> Based on data from Diio Mi accessed July 2018. For the purposes of this Report, trans-oceanic includes flights to Asia, Europe, South America, and the Caribbean.

**Figure 1 THE AIRPORT'S ENPLANED PASSENGER MARKET SHARE (PRELIMINARY OY 2018)**



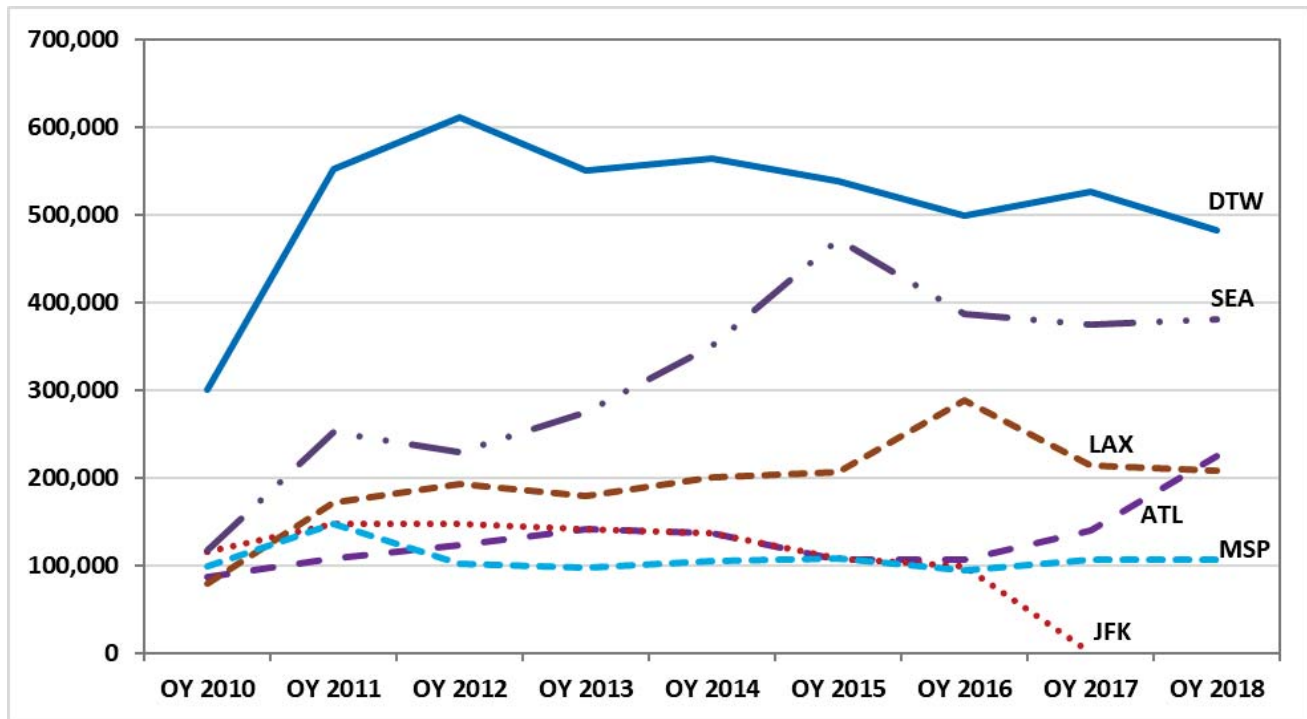
Notes: Regional affiliates, as applicable, have been included with their appropriate network partner. Amounts may not add because of rounding.

Source: Authority management records

Compiled by L&B, October 2018

The Airport continues to be Delta’s largest U.S. gateway to Asia based on number of scheduled departing seats. **Figure 2** illustrates Delta’s departing seat capacity from the Airport to Asia along with Delta’s other U.S. international gateway airports. As shown, the Airport consistently had the most departing seat capacity to Asia for the period of OY 2010 through OY 2018. Scheduled departing seats to Asia on Delta from the Airport are planned to decrease in OY 2018 because of some changes in departing seats to Seoul, Shanghai, and Tokyo-Narita; however, the Airport is scheduled to experience an increase in departing seats to Beijing. Delta scheduled seats to Asia from Atlanta are scheduled to increase in OY 2018 primarily because of increases to Seoul and new service to Shanghai.

**FIGURE 2 Delta Scheduled Departing Seats to Airports in Asia from U.S. Hub/Gateway Airports**



Note: Delta flights from New York-JFK to Tokyo-Narita ceased in October 2016.

Source: Diiio Mi, accessed July 2018

Compiled by L&B

**Table 3** presents a summary of actual OY 2017 and preliminary OY 2018 enplaned passengers as compared to that forecast in the Series 2017 Report. As shown, overall, the Series 2017 Report forecast total Airport enplaned passengers to be approximately 17.25 million in OY 2017, representing an estimated increase of 0.7% over OY 2016 actual enplaned passengers. By comparison, actual OY 2017 enplaned passengers were approximately 17.28 million, representing an increase of 0.9% over OY 2016. While total Airport enplanements were in line with those projected in the Series 2017 Report, actual O&D and connecting domestic enplaned passengers experienced larger variances as compared to those projected in the Series 2017 Report. As shown, domestic O&D enplaned passengers continued their strong growth exhibited over the last four years, experiencing a 6.0% growth over OY 2016 levels. Domestic connecting passengers, however, decreased by 5.3% over OY 2016 levels. International enplaned passengers increased by 7.2% over OY 2016, representing a 4.5% variance over the international enplaned passengers projected in the Series 2017 Report.

**TABLE 3 Comparison of Actual VS Forecast Enplaned Passengers (000s)**

	Domestic Enplaned Passengers		Int'l	Total Enplaned Passengers
	O&D	Connecting		
<b>OY 2017 COMPARISON</b>				
2017 Actual Enplaned Passengers	8,259	7,466	1,556	17,281
2017 Forecast (Series 2017)	7,872	7,890	1,490	17,252
2017 Actual Growth over 2016	6.0%	(5.3%)	7.2%	0.9%
2017 Forecast Growth over 2016 (Series 2017)	1.0%	0.0%	2.7%	0.7%
<b>OY 2018 COMPARISON</b>				
2018 Forecast (Series 2017)	8,058	7,962	1,538	17,558
2018 Preliminary Results	8,739	7,179	1,641	17,559
2018 Preliminary Results Variance from Series 2017 Forecast	8.5%	(9.8%)	6.7%	0.0%
2018 Preliminary Results Growth over 2017 Actual	5.8%	(3.9%)	5.5%	1.6%

Source: Authority management records (historical and preliminary total enplaned passengers); L&B (forecast); USDOT via Diio (O&D enplaned passengers)

Compiled by L&B, October 2018

When the forecast was created for the Series 2017 Report, nine months of OY 2017 data for total enplaned passengers was available to forecast total enplaned passengers. However, because the availability of data for O&D passengers lags by several months, only a few months of actual data was available for the purposes of forecasting the split between domestic O&D and domestic connecting passengers. Therefore, it was assumed that the domestic O&D enplaned passengers would continue to trend to be approximately 50% of total domestic enplaned passengers at the Airport. As presented in Table 3, OY 2017 domestic O&D enplaned passengers actually grew at a rapid pace of 6.0% over OY 2016 levels and domestic connecting passengers decreased by approximately 5.3%. The two largest airlines at the Airport, Delta and Spirit, both experienced growth of over 8% in OY 2017 domestic O&D enplaned passengers as compared to OY 2016 levels and were the primary contributors to this surge in O&D passenger growth during this year.

Table 3 also presents variances for preliminary OY 2018 enplaned passengers over those forecast in the Series 2017 Report. As shown, overall, the Series 2017 Report forecast total Airport enplaned passengers to be approximately 17.56 million in OY 2018. By comparison, preliminary OY 2018 enplaned passengers for this Series 2018 Letter are now estimated to be approximately 17.56 million, which is the same as that forecast in the Series 2017 Report. Preliminary enplaned passengers for OY 2018 are based on actual activity through September 2018, but has not yet been audited. Certain points regarding recent activity trends is summarized below:

- For preliminary OY 2018, total Airport enplaned passengers were up 1.6%, total domestic enplaned passengers were up 1.2%, and international enplaned passengers were up 5.5% versus the same period last year.
- Through the first six months of OY 2018 (latest data available), domestic O&D enplaned passengers were up 5.1% while domestic connecting enplaned passengers were down by 4.6% versus the same period last year.
- For OY 2018 based on available data, total scheduled seats at the Airport are currently expected to have increased by 1.6% over OY 2017. Through the first six months of OY 2019, total scheduled seats are currently planned to increase by 2.5% over the same period in OY 2018.

- Delta's total seat capacity is scheduled to increase at the Airport by 0.8% in OY 2018. For the first six months of OY 2019, Delta's seat capacity is scheduled to increase by approximately 3.9%. Delta has announced new nonstop service from the Airport to San Jose, California starting in November 2018, La Crosse, Wisconsin starting in March 2019, Honolulu starting in June 2019, and Worcester, Massachusetts starting in August 2019. Delta is also expanding its service to London adding another daily flight in May 2019.
- All other airlines in aggregate are scheduled to increase annual seat capacity by approximately 2.5% in OY 2018, and to decrease annual seat capacity by approximately 0.3% for the first six months of OY 2019. Both Spirit Airlines and Aeromexico are currently showing an increase of approximately 63,000 seats and 28,200 seats, respectively, for the first six months of OY 2019. Airlines currently showing decreases in seats for OY 2019 include Alaska Airlines (approximately 19,500 seats), American Airlines (approximately 36,100 seats), Frontier Airlines (approximately 27,200 seats), JetBlue Airways (approximately 5,800 seats), and Southwest Airlines (approximately 42,300 seats). At this time, it is unclear as to whether these airlines have published their full schedules for the first six months of OY 2019.
- For OY 2018, the airlines other than Delta showing the most growth in scheduled seats include:
  - Spirit with 12.9% additional seats in OY 2018, primarily with new nonstop flights to Portland and San Diego, and additional flights to Cancun, Ft. Myers, Minneapolis, Myrtle Beach, Oakland, and Seattle. In addition, for OY 2019, Spirit is also scheduled to add new nonstop service to Jacksonville and Montego Bay, Jamaica in December 2018 and increase seats to a number of other markets in Florida in the first half of OY 2019;
  - Alaska with 52.6% additional seats in OY 2018, primarily with new flights to Portland;
  - United with 4.0% additional seats in OY 2018, primarily with additional flights to Chicago O'Hare and San Francisco;
  - JetBlue with 3.9% additional seats in OY 2018, primarily with larger aircraft to Boston and Ft. Lauderdale;
  - Additional seats by several international carriers in OY 2018 including:
    - Aeromexico started service at the Airport to Mexico City in April 2017, and added additional year-round service to Monterrey in March 2018, Leon in May 2018, and commenced service to Queretaro in September 2018. By October 2018, Aeromexico is scheduled to provide approximately 21 weekly flights and 2,300 seats per week.
    - Air France with 8.5% additional seats and Lufthansa with 12.0% additional seats, both airlines achieved this through up-gauging to larger B-777 and B-747 aircraft, respectively.
    - Wow Air added new nonstop service to Reykjavik, Iceland in April 2018 with four flights per week.

Based on actual activity experienced over the last year since the Series 2017 Report was prepared, L&B updated the enplaned passenger forecast included in this Series 2018 Letter. Similar to the previous report, the underlying economic conditions of the Air Service Area are expected to be the primary driver for O&D passenger demand at the Airport. Longer term, changes in O&D passenger traffic at the Airport are forecast to occur as a function of the growth in population and economy of the Air Service Area and airline competition at the Airport and in the region. The future growth of the Airport's connecting traffic component is primarily based on business decisions by Delta. The growth in U.S. population and gross domestic product (GDP), and Delta's network strategy, are assumed to be the primary drivers of future connecting passenger traffic.

**Table 4** presents historical annual enplaned passengers for OY 2007 through preliminary OY 2018 and forecasted annual enplaned passenger levels for the Airport for the period of OY 2019 through OY 2025. The table has also been categorized into domestic O&D, domestic connecting, and international enplaned passengers. Over the forecast period, total enplaned passengers are forecasted to increase to approximately 18.8 million in OY 2025, representing a CAGR of approximately 1.0%. As shown in Table 4, growth in enplaned

passengers is forecast to be primarily driven by domestic O&D and international passengers over the forecast period. Domestic connecting passengers are forecast to be essentially flat for the period of OY 2017 through OY 2025.

**Table 4 Enplaned Passenger Forecast**

Operating Year	Domestic O&D	% Change	Domestic Connecting	% Change	Int'l.	% Change	Total	% Change
<b>Historical<sup>1</sup></b>								
2007	7,954	8.1%	8,627	(3.8%)	1,527	3.3%	18,108	1.7%
2008	7,806	(1.9%)	8,465	(1.9%)	1,560	2.2%	17,831	(1.5%)
2009	6,709	(14.1%)	7,913	(6.5%)	1,319	(15.4%)	15,941	(10.6%)
2010	6,521	(2.8%)	8,093	2.3%	1,262	(4.3%)	15,876	(0.4%)
2011	6,787	4.1%	8,126	0.4%	1,314	4.1%	16,226	2.2%
2012	6,726	(0.9%)	8,077	(0.6%)	1,367	4.1%	16,170	(0.3%)
2013	6,648	(1.2%)	8,017	(0.7%)	1,412	3.3%	16,078	(0.6%)
2014	6,811	2.4%	7,941	(0.9%)	1,465	3.7%	16,217	0.9%
2015	7,155	5.1%	7,853	(1.1%)	1,435	(2.0%)	16,444	1.4%
2016	7,794	8.9%	7,886	0.4%	1,451	1.1%	17,131	4.2%
2017	8,259	6.0%	7,466	(5.3%)	1,556	7.2%	17,281	0.9%
2018 <sup>2</sup>	8,739	5.8%	7,179	(3.9%)	1,641	5.5%	17,559	1.6%
<b>Forecast</b>								
2019	8,842	1.2%	7,237	0.8%	1,662	1.2%	17,740	1.0%
2020	8,958	1.3%	7,286	0.7%	1,701	2.4%	17,946	1.2%
2021	9,071	1.3%	7,327	0.6%	1,741	2.3%	18,138	1.1%
2022	9,174	1.1%	7,354	0.4%	1,779	2.2%	18,306	0.9%
2023	9,271	1.1%	7,397	0.6%	1,816	2.1%	18,484	1.0%
2024	9,365	1.0%	7,435	0.5%	1,851	1.9%	18,650	0.9%
2025	9,459	1.0%	7,471	0.5%	1,884	1.8%	18,814	0.9%
<b>CAGR<sup>3</sup></b>								
2007-2018	0.9%		(1.7%)		0.7%		(0.3%)	
2010-2018	3.7%		(1.5%)		3.3%		1.3%	
2018-2025	1.1%		0.6%		2.0%		1.0%	

Note: Amounts may not add because of rounding.

<sup>1</sup> The data provider Diio has restated certain USDOT O&D data which has resulted in revised domestic O&D and domestic connecting passenger amounts in OY 2012 through OY 2017. These restatements are minimal and do not have a material impact on the analysis.

<sup>2</sup> Domestic O&D and connecting passengers are estimates based on partial year data. Total enplaned passengers are based on preliminary unaudited data.

<sup>3</sup> CAGR = Compound annual growth rate

Source: Airport records (historical total); USDOT via Diio (historical O&D); L&B (forecast)

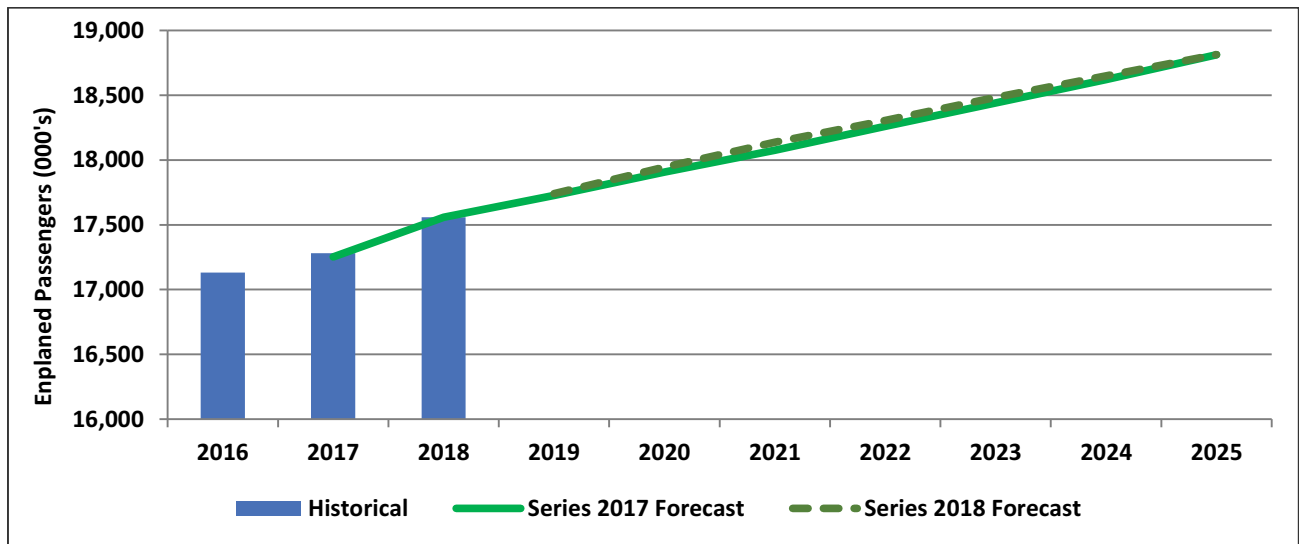
Compiled by L&B



**Figure 3** presents total historical enplaned passengers for OY 2016, OY 2017, and preliminary OY 2018 and a comparison of forecast enplaned passengers from OY 2019 through OY 2025 for the Series 2017 Report and this Series 2018 Letter. As shown, total enplaned passengers are forecast to be generally in line with the Series 2017 Report forecast. At this time, it is our opinion that there are no material impacts associated with the updated forecast as compared to the Series 2017 Report forecast. In fact, the updated forecast with stronger growth expected in domestic O&D enplaned passengers is likely to further stimulate key non-airline revenue categories for the Airport such as parking and rental cars more than the Series 2017 Report forecast, which had more growth in connecting passengers.

Actual landed weight for the Airport for OY 2017 was negligibly higher than that forecast in the Series 2017 Report. For preliminary OY 2018, landed weight at the Airport was approximately 1.6% higher than for the same period in OY 2017. Given these trends, landed weight at the Airport is relatively consistent with that forecast in the Series 2017 Report. Therefore, the forecast of landed weight at the Airport for this Series 2018 Letter remains the same as that forecast in the Series 2017 Report.

**FIGURE 3 Total Enplaned Passenger Forecast Comparison – Series 2018 VS Series 2017 Forecasts**



Note: Enplaned passengers for OY 2018 are preliminary unaudited data.

## 6 Airport Capital Improvement Program

The Authority manages Airport capital projects through an on-going five-year Capital Improvement Program. The current five-year Capital Improvement Program encompasses plans for current and future Airport capital projects for OY 2019 through OY 2023 (CIP). The majority of the capital projects in the CIP tend to be "routine" projects for a major airport, including reconstruction or rehabilitation of runways, taxiways, parking decks, roadways and environmental or planning studies. **Table 5** presents the CIP and projected CIP expenditures from OY 2019 through OY 2023. As shown, the capital projects in the CIP are estimated to cost approximately \$904.7 million.

**TABLE 5** Airport's Five-Year Capital Improvement Program Costs by Project Element (thousands of dollars) <sup>1, 2, 3</sup>

Project Element	Est. Total Project Costs	Expenditures Prior to 9/30/2018	OY 2019	OY 2020	OY 2021	OY 2022	OY 2023+
Airfield	\$592,075	\$39,750	\$192,325	\$169,750	\$96,250	\$56,500	\$37,500
Cargo, Hangar & Commercial Development	7,925	1,325	0	0	0	0	6,600
Power Plants & Electrical Distribution	48,975	3,175	14,550	20,100	1,150	500	9,500
Fleet & Equipment	10,200	0	1,200	3,000	3,000	3,000	0
Parking & Ground Transportation Facilities	47,800	12,750	14,300	7,450	7,100	3,000	3,200
Bridges & Roadways	37,000	1,000	4,000	18,300	5,200	6,800	1,700
Security & Communications	26,125	3,560	9,365	5,000	4,500	3,700	0
Support Facilities	28,300	208	8,458	16,960	144	1,725	805
Site Redevelopment & Demolitions	27,100	9,636	13,900	1,964	160	1,440	0
Terminals	65,970	8,384	40,625	16,961	0	0	0
Water, Sanitary, & Stormwater Systems	12,450	2,950	5,200	4,300	0	0	0
Other Projects	800	0	0	0	800	0	0
<b>Total</b>	<b>\$904,720</b>	<b>\$82,738</b>	<b>\$303,923</b>	<b>\$263,785</b>	<b>\$118,304</b>	<b>\$76,665</b>	<b>\$59,305</b>

<sup>1</sup> All of the Series 2018 Projects and Other Approved Capital Projects (defined herein) have been approved by a Weighted Majority. Many of the Other CIP Projects (defined herein) require approval by a Weighted Majority in order to fund such projects with bond proceeds, expenditure schedules are subject to change, and projects are subject to demand and available funding.

<sup>2</sup> Current cost estimates and construction schedules may vary from the five-year CIP approved by the Board on August 15, 2018.

<sup>3</sup> The LC Smith and Berry Terminal Demolition project is a Series 2018 Project, but a portion of that project funded with existing bond proceeds has been completed and is not included in the Board-approved CIP. The Board-approved CIP has a total estimated project cost of \$900.2 million.

Note: Amounts may not add because of rounding.

Source: Authority management records, September 2018

Compiled by L&B

The estimated cost of the Airport's CIP (OY 2019 through OY 2023) has increased by approximately \$72.8 million as compared to the Capital Improvement Program for OY 2018 through OY 2022 contained in the Series 2017 Report. The primary increase is in the cost of airfield projects. The Authority has included new projects into the CIP to rehabilitate Airport taxiways, taxilanes, and aircraft aprons.

The Authority anticipates that the Airport's CIP projects will be funded from a combination of federal grants, other Airport funds, proceeds from existing bonds, proceeds from the Series 2018 Bonds, and proceeds from Additional Bonds. **Table 6** presents the CIP by project element and anticipated funding sources for the planned \$904.7 million of project costs. As shown on Table 6, future bond proceeds required to fund the CIP are further categorized into two separate groups for the purposes of this Series 2018 Letter: "Future Bond Proceeds" and "Other CIP Projects Future Bond Proceeds." Future Bond Proceeds with respect to the Series 2018 Projects are the proceeds of bonds currently planned to be issued in the future to fund those portions of the Series 2018 Projects not funded by the Series 2018 Bonds and other sources. Future Bond Proceeds with respect to the Other Approved Capital Projects are the proceeds of bonds currently planned to be issued in the future to fund the Other Approved Capital Projects. Future Bond Proceeds of approximately \$191.8 million are included as part of the financial analysis included in this Series 2018 Letter. Other CIP Projects Future Bond Proceeds are the proceeds of bonds currently planned to be issued in the future to fund those Other CIP Projects that have not been approved yet by a Weighted Majority, and are not included in the financial analysis of this Series 2018 Letter.

**TABLE 6** Airport's Five-Year Capital Improvement Program Costs by Funding Source (thousands of dollars) <sup>1, 2, 3</sup>

Project Element	Est. Total Project Costs	Other Funds	Existing Bond Proceeds	Series 2018 Bond Proceeds	Future Bond Proceeds <sup>4</sup>	Other CIP Projects Future Bond Proceeds <sup>5</sup>
Airfield	\$592,075	\$20,000	\$60,079	\$127,400	\$150,596	\$234,000
Cargo, Hangar & Commercial Development	7,925	0	3,807	0	0	4,118
Power Plants & Electrical Distribution	48,975	0	21,702	0	0	27,273
Fleet & Equipment	10,200	1,200	0	0	0	9,000
Parking & Ground Transportation Facilities	47,800	1,500	21,050	0	6,000	19,250
Bridges & Roadways	37,000	0	1,725	0	7,000	28,275
Security & Communications	26,125	0	9,875	0	0	16,250
Support Facilities	28,300	858	2,450	0	10,250	14,742
Site Redevelopment & Demolitions	27,100	0	9,000	16,500	0	1,600
Terminals	65,970	0	41,870	6,100	18,000	0
Water, Sanitary, & Stormwater Systems	12,450	0	3,700	0	0	8,750
Other Projects	800	800	0	0	0	0
<b>Total</b>	<b>\$904,720</b>	<b>\$24,358</b>	<b>\$175,258</b>	<b>\$150,000</b>	<b>\$191,846</b>	<b>\$363,258</b>

<sup>1</sup> All of the Series 2018 Projects and Other Approved Capital Projects (defined herein) have been approved by a Weighted Majority. Many of the Other CIP Projects (defined herein) require approval by a Weighted Majority in order to fund such projects with bond proceeds, expenditure schedules are subject to change, and projects are subject to demand and available funding.

<sup>2</sup> Current cost estimates and construction schedules may vary from the five-year CIP approved by the Board on August 15, 2018.

<sup>3</sup> The LC Smith and Berry Terminal Demolition project is a Series 2018 Project, but a portion of that project funded with existing bond proceeds has been completed and is not included in the Board-approved CIP. The Board-approved CIP has a total estimated project cost of \$900.2 million.

<sup>4</sup> Future Bond Proceeds with respect to the Series 2018 Projects are the proceeds of bonds currently planned to be issued in the future to fund those portions of the Series 2018 Projects not funded by the Series 2018 Bonds and other sources. Future Bond Proceeds with respect to the Other Approved Capital Projects are the proceeds of bonds currently planned to be issued in future years to fund the Other Approved Capital Projects. Future Bond Proceeds are included as part of the financial analysis included in this Series 2018 Letter.

<sup>5</sup> Other CIP Projects Future Bond Proceeds are the proceeds of bonds currently planned to be issued in future years to fund Other CIP Projects that have not been approved yet by a Weighted Majority. The Authority would need to obtain Weighted Majority approval of these projects in order to issue Bonds to fund these projects and include the debt service on such bonds in airline rates and charges. Other CIP Projects Future Bond Proceeds are not included in the financial analysis included in this Series 2018 Letter.

Note: Amounts may not add because of rounding.

Source: Authority management records, September 2018

Compiled by L&B

This Series 2018 Letter divides the capital projects in the CIP into three main categories, described below, for the purposes of identifying the CIP projects included in the financial analysis contained in this Series 2018 Letter.

The funding plan for the CIP by category is presented in **Table 7**.

- **Series 2018 Projects.** This CIP category is comprised of those projects to be funded, either in whole or in part, with proceeds of the Series 2018 Bonds. A Weighted Majority has approved all of the Series 2018 Projects. The capital and operating costs associated with the Series 2018 Projects are included in the financial analysis contained in this Series 2018 Letter.
- **Other Approved Capital Projects.** This CIP category is comprised of additional projects that a Weighted Majority has approved but have not been previously funded in whole and also are not being funded with proceeds of the Series 2018 Bonds. The Authority presently intends to issue Future Bonds during the forecast period of this Series 2018 Letter to fund the balance of the cost of the Other Approved Capital Projects. The capital costs of the Other Approved Capital Projects are included in the financial analysis contained in this Series 2018 Letter.
- **Other CIP Projects.** This CIP category is comprised of all other CIP projects that are neither Series 2018 Projects nor Other Approved Capital Projects as defined above. These projects include (i) those CIP projects that a Weighted Majority has approved and previously have been funded primarily with proceeds of bonds issued by the Authority in the past, and which either currently are in process or have not yet been started, and (ii) those CIP projects that the Authority has not yet fully formulated and/or still are in the conceptual phase, and for which the Authority has not yet requested Weighted Majority approval. It is possible that certain Other CIP Projects may be deferred or not otherwise undertaken by the Authority during the forecast period (depending on circumstances such as whether a Weighted Majority is willing to approve the as-yet unapproved projects, level of aviation demand, the availability of project funding, more refined scope and cost information for various projects, etc.). The capital costs related to the existing bond proceeds for previously funded Other CIP Projects are included in the financial analysis contained in this Series 2018 Letter. However, the capital costs for the Other CIP Projects for which Weighted Majority approval has not yet been requested are not included in the financial analysis.

**TABLE 7 CIP Funding Plan By Category (thousands of dollars)<sup>1,2,3</sup>**

CIP Category	Est. Total Project Costs	Other Funds	Existing Bond Proceeds	Series 2018 Bond Proceeds	Future Bond Proceeds <sup>4</sup>	Other CIP Projects Future Bond Proceeds <sup>5</sup>
Series 2018 Projects	\$294,500	\$20,000	\$6,000	\$150,000	\$118,500	\$0
Other Approved Capital Projects	130,250	0	56,904	0	73,346	0
Other CIP Projects	479,970	4,358	112,354	0	0	363,258
<b>Total CIP</b>	<b>\$904,720</b>	<b>\$24,358</b>	<b>\$175,258</b>	<b>\$150,000</b>	<b>\$191,846</b>	<b>\$363,258</b>

<sup>1</sup> A Weighted Majority has approved all of the Series 2018 Projects and Other Approved Capital Projects (defined above) as well as some of the Other CIP Projects. Certain of the Other CIP Projects require approval by a Weighted Majority in order to fund such projects with bond proceeds, expenditure schedules are subject to change, and projects are subject to demand and available funding.

<sup>2</sup> Current cost estimates and construction schedules may vary from the CIP approved by the Board on August 15, 2018.

<sup>3</sup> The LC Smith and Berry Terminal Demolition project is a Series 2018 Project, but a portion of that project funded with existing bond proceeds has been completed and is not included in the Board-approved CIP. The Board-approved CIP has a total estimated project cost of \$900.2 million.

<sup>4</sup> Future Bond Proceeds with respect to the Series 2018 Projects are the proceeds of bonds currently planned to be issued in the future to fund those portions of the Series 2018 Projects not funded by the Series 2018 Bonds or other sources. Future Bond Proceeds with respect to the Other Approved Capital Projects are the proceeds of bonds currently planned to be issued in future years to fund the Other Approved Capital Projects. Future Bond Proceeds are included as part of the financial analysis included in this Series 2018 Letter.

<sup>5</sup> Other CIP Projects Future Bond Proceeds are the proceeds of bonds currently planned to be issued in future years to fund Other CIP Projects that have not been approved yet by a Weighted Majority. The Authority would need to obtain Weighted Majority approval of these projects in order to issue bonds to fund these projects and include the debt service on such bonds in airline rates and charges. Other CIP Projects Future Bond Proceeds are not included in the financial analysis included in this Series 2018 Letter.

Note: Amounts may not add because of rounding.

Source: Authority management records, September 2018

Compiled by L&B

As shown above in Table 7, the Series 2018 Projects are estimated to cost approximately \$294.5 million and are planned to be funded with approximately \$6.0 million of proceeds of previously issued (i.e., existing) bonds, approximately \$150.0 million of proceeds of the Series 2018 Bonds, approximately \$20.0 million of other funds (e.g., federal grants), and approximately \$118.5 million of Future Bond Proceeds (defined in footnote 4 to Table 7 above). The Other Approved Capital Projects are estimated to cost approximately \$130.3 million and are planned to be funded with \$56.9 million of proceeds of existing bonds and approximately \$73.3 million of Future Bond Proceeds (defined above).

The Other CIP Projects are estimated to cost approximately \$480.0 million and are planned to be funded (or currently are being funded) with approximately \$4.4 million of other Airport funds, approximately \$112.4 million of proceeds of existing bonds, and approximately \$363.3 million of Other CIP Projects Future Bond Proceeds (defined above). As indicated previously, and as shown above in Table 7, the vast majority of the Other CIP Projects require Weighted Majority approval in the future in order to be financed with bond proceeds, and the approximately \$363.3 million of Other CIP Projects Future Bond Proceeds is not included in the financial analysis contained in this Series 2018 Letter.

A summary description of the Series 2018 Projects is as follows and is presented on **Exhibit A** following this Series 2018 Letter:

- **Runway 3L/21R and Associated Taxiways Reconstruction.** This project consists of the additional planning, environmental processing, design/engineering, and construction for the replacement of the existing full depth concrete pavement section and improvements to Runway 3L/21R, its connector taxiways, and associated systems. This project also includes the relocation of the deicing pad located near the Runway 21R end. The initial planning, environmental processing, design/engineering for this project was previously included as part of the Series 2017 Projects at a project cost of \$16.0 million. The remaining planning, environmental processing, design/engineering, and construction for this project is a Series 2018 Project estimated to cost \$240.0 million, of which \$101.5 million is planned to be funded with proceeds of the Series 2018 Bonds, \$20.0 million is planned to be funded with other funds (federal grant funds), and \$118.5 million is planned to be funded with proceeds from the Future Bonds.
- **Taxilanes U-9 and Q Rehabilitation – Phase 1 (planning and design/engineering).** This project consists of the planning and design/engineering in CY 2019 for the rehabilitation or reconstruction of failed pavement surfaces of, and long-term capital maintenance reports to, Taxilanes U-9 and Q located between Concourse A and Concourse B/C at the McNamara Terminal. The project cost is estimated at \$1.0 million.
- **Aircraft Remain Overnight (RON) Parking (design and construction).** This project consists of the planning, design/engineering and construction activity necessary to address failed pavement surfaces and long-term capital maintenance repairs to areas currently used for aircraft RON parking, and to pave areas formerly occupied by terminal buildings and/or concourses for future use as aircraft RON parking. The project cost is estimated at \$14.0 million.
- **Apron and Taxilanes Modifications Construction for the North Terminal Gate Expansion.** This project consists of the construction work for the apron and taxilane modifications, hydrant fueling system infrastructure and other site utilities, jet blast barriers, fencing, and other related systems, as required, associated with the North Terminal Gate Expansion. This project consists of construction activity scheduled for CY 2018 and CY 2019 at an estimated cost of \$10.9 million.
- **L.C. Smith Terminal and Berry Terminal Demolition.** This project consists of the design and demolition services for the former L.C. Smith Terminal and Berry Terminal. The Berry Terminal already has been demolished; however, the scope and cost of the overall demolition project for the former L.C. Smith Terminal has increased. The project now also includes removal of the foundations of the building and partial paving needed as a result. The estimated cost for the entire design and demolition project for both former terminals is \$22.5 million, \$16.5 million of which is planned to be funded with proceeds of the Series 2018 Bonds. Prior design and demolition work was funded with \$6.0 million of proceeds of existing bonds.
- **North Terminal Gate Expansion – Building and Passenger Boarding Bridges Construction.** This project consists of the construction services for three additional passengers boarding gates at the north end of the North Terminal, including interior terminal finish details, acquisition and installation of three passenger boarding bridges, and related systems, as required. Additional holdroom space will be accommodated within the existing North Terminal building footprint. This project consists of construction activity scheduled for CY 2018 and CY 2019 at an estimated cost of \$6.1 million.

The Other Approved Capital Projects include the following and are further presented on **Exhibit B** following this Series 2018 Letter:

- Taxiway Kilo (K) Reconstruction (through CY 2019)
- Taxiway Z (Southern Portion) Relocation and AOA Service Road Modification and Extension
- Airfield Pavement Rehabilitation/Reconstruction Plan (design and construction for CY 2019 and CY 2020)
- Blue Deck Rehabilitation – Phase 4 (design and construction)
- McNamara Parking Deck Rehabilitation – Phase 2 (design and construction)
- Bridges & Roadways Rehabilitation Program (design and construction for CY 2019 and CY 2020)
- Fire Training Facility Restoration and Burn Pit Replacement (construction)
- McNamara Baggage Systems Controls (design and construction)
- McNamara Tram Controls (design and construction)

## 7 Financial Analysis

L&B prepared updated financial forecasts to evaluate the ability of the Authority to generate Net Revenues sufficient to meet the funding requirements and obligations established by the Ordinance during the forecast period of OY 2018 through OY 2025. The next several sections of this letter describe the updated forecasts for debt service, operation and maintenance (O&M) expenses, non-airline revenues, PFC revenues, and airline revenues. Exhibits contained at the end of this Series 2018 Letter present Airport financial results for actual OY 2017, estimated OY 2018, budget OY 2019, and forecasts for OY 2020 through OY 2025.

### 7.1 Debt Service

**Table 8** presents a listing of estimated sources and uses of funds for the proposed Series 2018A Bonds and Series 2018B Bonds. The estimated sources and uses of funds and debt service for the proposed Series 2018 Bonds were prepared by the Authority’s financial advisor, PFM Financial Advisors LLC (PFM).

**TABLE 8 Series 2018a Bonds and Series 2018b Bonds Estimated Sources and Uses (dollars in thousands) <sup>1</sup>**

Sources	Series 2018A (Non-AMT)	Series 2018B (AMT)	Total
Bond Proceeds	\$175,120	\$6,805	\$181,926
<b>Total Sources</b>	<b>\$175,120</b>	<b>\$6,805</b>	<b>\$181,926</b>
<b>Uses:</b>			
Project Fund	\$142,726	\$6,054	\$148,780
Capitalized Interest Fund	18,730	200	18,930
Debt Service Reserve Fund	12,845	518	13,363
Cost of Issuance	819	34	853
<b>Total Uses</b>	<b>\$175,120</b>	<b>\$6,805</b>	<b>\$181,926</b>

<sup>1</sup> Amounts in this table will not be updated to reflect the final terms of sale on the Series 2018 Bonds.

Note: Amounts may not add because of rounding.  
 Source: PFM Financial Advisors LLC, September 2018  
 Compiled by L&B



**Exhibit C** presents actual annual Debt Service for OY 2017, estimated annual Debt Service for OY 2018, budgeted annual Debt Service for OY 2019, and forecast annual Debt Service for the period of OY 2020 through OY 2025. Series 2018A Bonds debt service is forecasted to increase from approximately \$1.9 million in OY 2020 to approximately \$8.3 million in OY 2023 and then remain at that level throughout the forecast period. The Series 2018B Bonds debt service is forecasted to increase from approximately \$312,000 in OY 2020 to over \$400,000 in OY 2021 and then remain at that level throughout the forecast period. The debt service on the Series 2018A Bonds and the Series 2018B Bonds, together, is forecasted to increase to approximately \$16 million in OY 2030 and generally remain at that approximate level through maturity. Debt service on the Future Bonds is currently estimated to be approximately \$1.3 million in OY 2021 and increase to approximately \$11.8 million in OY 2023 and then remain at that level throughout the forecast period. Debt Service estimates for the planned Series 2018 Bonds and the Future Bonds were provided by PFM and are based on the assumptions included in **Table 9**.

**TABLE 9 Assumptions for the Series 2018A Bonds, Series 2018B Bonds, and Future Bonds**

Assumption	Series 2018A and Series 2018B Bonds	Future Bonds
Issuance Date	November 15, 2018	October 1, 2019
Estimated Principal Amount	\$170.2 million	\$231.3 million
Estimated Project Fund Deposit	\$148.8 million	\$191.8 million
Estimated Bond Yield <sup>1</sup>	4.48%	4.82%
Final Maturity	December 1, 2043	December 1, 2044

<sup>1</sup> Based on market conditions as of October 15, 2018 plus a cushion of approximately 40 basis points for the Series 2018 Bonds and a cushion of approximately 75 basis points for the Future Bonds.

Source: PFM Financial Advisors LLC, September 2018

Compiled by L&B

The updated debt service forecasts contained in this Series 2018 Letter incorporate the actual debt service requirements resulting from the actual sale of the Series 2017 Bonds including the debt service savings associated with the refunding of the Series 2007B Bonds and the Series 2007 Junior Lien Bonds. The updated forecasts also include the planned issuance of the Series 2018 Bonds and the Future Bonds based on the assumptions above to fund all or a portion of the Series 2018 Projects and the Other Approved Capital Projects. To reflect current market conditions including the impacts of 2017 tax law changes, the assumption for the interest rate on outstanding variable rate bonds was also increased to 3.0% from 2.5% used in the Series 2017 Report. Overall as a result of these changes, total debt service is forecast to decrease in OY 2019 and OY 2020 by approximately \$1.9 million and \$1.3 million, respectively, as compared to the debt service forecast in the Series 2017 Report. Total debt service is forecast to increase by a range of approximately \$609,000 in OY 2021 to approximately \$16.1 million in OY 2023 as compared to the debt service forecasts in the Series 2017 Report.

## 7.2 O&M Expenses

The primary categories of O&M Expenses of the Authority for the Airport include salaries, wages, and employee benefits; contractual services; repairs and maintenance; hotel management, utilities, supplies and other operating expenses, capital expenses, and insurance/other. O&M Expense forecasts in the Series 2017 Report were based from budgeted levels for OY 2018. The updated forecast of O&M Expenses is based from the budget for OY 2019. **Table 10** below presents a comparison of total O&M Expenses forecast for purposes of this Series 2018 Letter and those contained in the Series 2017 Report. Total O&M Expenses for estimated OY 2018 and the budget for OY 2019 are approximately \$6.7 million and \$7.6 million higher, respectively, than previously forecast

in the Series 2017 Report. This change is driven primarily by increases in the categories of salaries, wages and fringe benefits; and professional and contractual services. As a result, the updated forecast of O&M Expenses is approximately 2.9% higher throughout the forecast period as compared to the forecast O&M Expenses in the Series 2017 Report.

**TABLE 10 Forecast O&M Expenses Comparison (millions of dollars)**

Total O&M Expenses by OY	2018	2019	2020	2021	2022	2023	2024	2025
Series 2018 Letter	\$256.6	\$265.2	\$273.3	\$281.7	\$290.4	\$299.4	\$308.7	\$318.3
Series 2017 Report	\$249.9	\$257.6	\$265.5	\$273.7	\$282.2	\$291.0	\$300.1	\$309.4
Variance	\$6.7	\$7.6	\$7.8	\$8.0	\$8.2	\$8.4	\$8.6	\$8.9
Variance (%)	2.7%	3.0%	2.9%	2.9%	2.9%	2.9%	2.9%	2.9%

Note: Amounts may not add because of rounding.

Source: Authority management records, September 2018

Compiled by L&B

Overall, the forecast of O&M Expenses is based on historical trend reviews, the anticipated impacts of inflation, forecasted activity levels, and impacts associated with the capital projects, as applicable. **Exhibit D** presents the updated forecast of O&M Expenses by category and cost center through OY 2025. Total Operating Expenses are forecasted to increase at a CAGR of approximately 3.1% over the forecast period from budget OY 2019 to OY 2025.

### 7.3 Non-Airline Revenues

Non-Airline Revenues at the Airport have continued to experience solid growth. Actual non-airline revenues for OY 2017 were approximately \$194.8 million, which was approximately \$7.7 million or 4.1% better than the budget for OY 2017. **Table 11** below presents a comparison of total non-airline operating revenues forecast for purposes of this Series 2018 Letter and those contained in the Series 2017 Report. Estimated OY 2018 non-airline operating revenues are approximately \$200.0 million, which is about \$6.1 million or 3.1% higher than those forecast in the Series 2017 Report. Budgeted non-airline revenues for OY 2019 are expected to increase over estimated OY 2018 levels by approximately 2.2% to approximately \$204.4 million; however, these budgeted non-airline revenues are approximately \$7.0 million higher than those forecast in the Series 2017 Report. These changes in non-airline revenues are primarily driven by revenues from automobile parking and ground transportation, which includes TNC revenues. The updated forecast of non-airline revenues is based upon the Authority's OY 2019 budget, and are forecast to range from approximately 4.5% to 3.9% higher than the forecast contained in the Series 2017 Report.

**TABLE 11 Forecast Non-Airline Operating Revenues Comparison (millions of dollars)**

Non-Airline Operating Revenues by OY	2018	2019	2020	2021	2022	2023	2024	2025
Series 2018 Letter	\$200.0	\$204.4	\$211.1	\$217.1	\$222.3	\$227.6	\$232.8	\$238.2
Series 2017 Report	\$193.9	\$197.4	\$203.1	\$207.9	\$213.0	\$218.2	\$223.5	\$229.2
Variance	\$6.1	\$7.0	\$8.3	\$9.3	\$9.3	\$9.4	\$9.3	\$9.0
Variance (%)	3.1%	3.6%	4.1%	4.5%	4.4%	4.3%	4.2%	3.9%

Note: Amounts may not add because of rounding.

Source: Authority management records, September 2018

Compiled by L&B

**Exhibit E** presents actual non-airline revenues at the Airport for OY 2017, estimated non-airline revenues for OY 2018, budgeted non-airline revenues for OY 2019, and updated forecasts of non-airline revenues for OY 2020 through OY 2025. Non-airline revenues are budgeted at approximately \$204.4 million in OY 2019. Non-airline revenues are forecasted to increase to approximately \$238.2 million in OY 2025. This increase in non-airline revenues between OY 2019 and OY 2025 represents a CAGR of approximately 2.6%. In general, the forecast of non-airline revenues is based on historical trend reviews, forecasted passenger levels, and impacts associated with the CIP, as applicable.

## 7.4 PFC Revenues

**Exhibit F** presents PFC collections of the Authority for OY 2017, estimated OY 2018, budgeted OY 2019, and updated forecasts for OY 2020 through OY 2025. PFC collections are driven by enplaned passengers at the Airport as presented on the exhibit. Based on historical trends, the forecast assumes that the Authority will collect PFCs from 89% of enplaned passengers at a net collection rate of \$4.39, which is the \$4.50 rate less the \$0.11 administrative fee. In OY 2017, PFC revenues collected were approximately \$66.5 million. In OY 2025, the Authority is forecasted to collect approximately \$73.5 million of PFC revenues. Per the Ordinance Rate Covenant, these forecast PFC revenues are included as Other Available Moneys and are assumed to pay a portion of outstanding Debt Service throughout the forecast period as presented on **Exhibits G, H, and I**. The updated PFC collection forecasts are generally consistent with those contained in the Series 2017 Report.

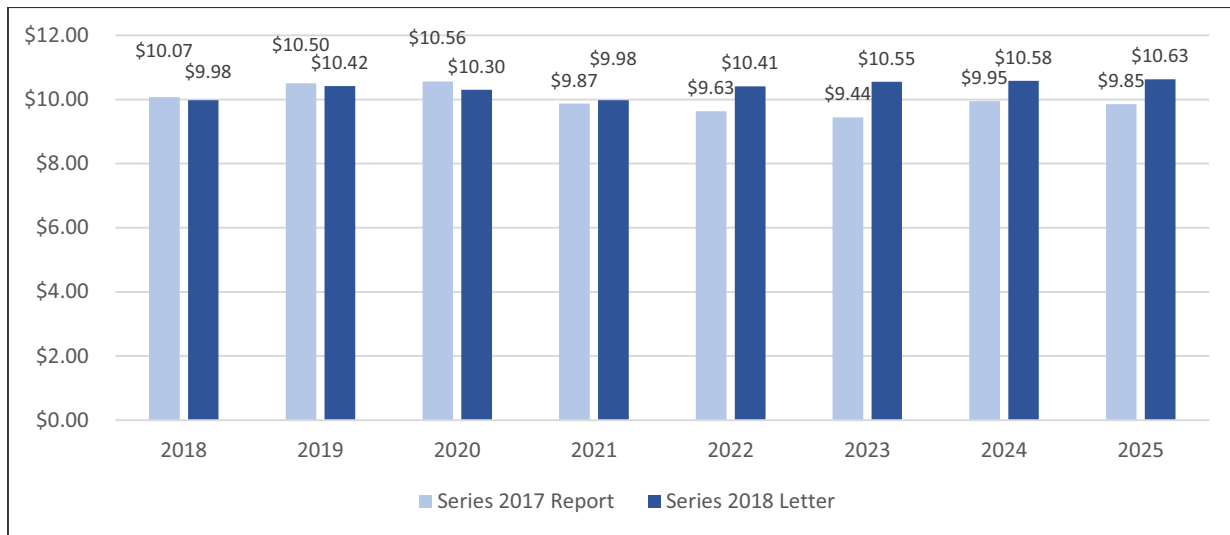
## 7.5 Airline Revenues

Airline revenues at the Airport include Terminal Rentals, Terminal Use Charges for Shared Use Premises, Activity Fees and International Facilities Use Fees. The rate-setting formulas for Terminal Rentals and Activity Fees are consistent with the rate-setting methodologies set forth in the Airline Agreements. Exhibits G, H, and I further illustrate the rate-setting methodologies and present forecast rates and revenues for the South Terminal Rentals, North Terminal Rentals, and Activity Fees, respectively.

A key performance indicator for airline costs at an airport is the average airline CPE. **Exhibit J** presents the forecast of CPE for the airlines at the Airport. As shown, the airline CPE includes the Activity Fees and Terminal Rentals, and other facility use fees divided by total enplaned passengers. The airline CPE for OY 2018 is estimated at \$9.98. Over the forecast period, airline CPE is expected to increase to \$10.63 in OY 2025. For OYs 2019 and 2020, CPE is forecast to be lower than that contained in the Series 2017 Report by \$0.08 and \$0.26, respectively. For the period of OY 2021 through OY 2025, updated forecasts of CPE are higher than those contained in the Series 2017 Report; ranging from \$0.11 to \$1.11 higher primarily because of the increases in

debt service required to fund the Series 2018 Projects and Other Approved Capital Projects as described earlier in this Series 2018 Letter. While CPE is forecast to increase as compared to the forecast in the Series 2017 Report, it is still forecasted to remain within reasonable levels throughout this period as compared to other U.S. Large Hub airports. **Figure 4** graphically illustrates the comparison of forecast CPE between this Series 2018 Letter and the Series 2017 Report.

**FIGURE 4 Forecast CPE Comparison**



## 7.6 Application of Revenues and Debt Service Coverage

**Exhibit K** presents the application of Revenues for the Airport throughout the forecast period consistent with the requirements of the Ordinance. As presented, the Authority is forecasted to have sufficient Revenues to make all required deposits per the Ordinance.

**Exhibit L** presents the debt service coverage ratios for Senior Lien debt service and Junior Lien debt service throughout the forecast period. As presented, the Net Revenues available for Senior Lien debt service are forecasted from approximately \$263.1 million in OY 2019 to approximately \$261.1 million in OY 2025. Per the Ordinance, the Authority is able to include unencumbered amounts available in the Revenue Fund on the last business day of the prior OY for the purposes of calculating debt service coverage. Debt service coverage ratios for Senior Lien Bonds are forecasted to range from 1.51x in OY 2018 to 1.44x in OY 2022 and OY 2023. Debt service coverage ratios including Junior Lien Bonds are forecasted to range from 1.41x in OY 2018 to 1.36x in OY 2022 and OY 2023. Updated forecasts of Senior Lien debt service coverage ratios have decreased, ranging from 0.02 to 0.11 lower than those forecast in the Series 2017 Report. Total debt service forecast ratios including Junior Lien Bonds have also decreased somewhat in some years by up to 0.08 lower than those forecast in the Series 2017 Report. Despite these decreases, debt service coverage is forecast to exceed the minimum requirement of 1.25x pursuant to the Ordinance.

## 7.7 Summary

Per our analysis, the Authority is forecast to produce sufficient Net Revenues, which, together with Other Available Moneys and unencumbered amounts in the Revenue Fund, will at least equal 125% of debt service on Outstanding Bonds as well as the Additional Bonds included in the financial forecasts. In addition, the Authority is

forecast to meet its requirements and obligations established by the Ordinance and maintain reasonable levels of CPE. **Table 12** below presents forecasted debt service coverage ratios and airline CPE.

**TABLE 12 Debt Service Coverage Forecast and Passenger Airline CPE Forecast**

Operating Year	Net Revenues, Revenue Fund Balances and Other Available Moneys	Total Senior Lien Debt Service Requirements	Senior Lien Debt Service Coverage Ratio	Total Senior Lien and Junior Lien Debt Service Requirements	Senior Lien and Junior Lien Debt Service Coverage Ratio	Airline CPE
2018	\$255,975	\$169,260	1.51	\$181,534	1.41	\$9.98
2019	\$263,091	\$178,020	1.48	\$188,534	1.40	\$10.42
2020	\$260,798	\$176,897	1.47	\$187,529	1.39	\$10.30
2021	\$255,461	\$175,725	1.45	\$186,355	1.37	\$9.98
2022	\$261,798	\$181,729	1.44	\$192,362	1.36	\$10.41
2023	\$263,009	\$182,599	1.44	\$193,234	1.36	\$10.55
2024	\$262,040	\$181,281	1.45	\$191,917	1.37	\$10.58
2025	\$261,101	\$180,021	1.45	\$190,620	1.37	\$10.63

Source: L&B

L&B prepared the aviation activity and financial forecasts included in this Series 2018 Letter along with various underlying assumptions. In preparing our findings and conclusions, L&B has relied upon the accuracy and completeness of assumptions, financial data, and other data provided to it by the referenced sources, without independent verification; however, L&B has no reason to believe such data are materially incorrect.

The techniques and methodologies used in preparing this Series 2018 Letter are consistent with industry practices for similar studies in connection with airport revenue bond sales. Although L&B believes that the approach and assumptions used are reasonable and provide an appropriate basis for the financial forecasts, any forecast is subject to uncertainties. Inevitably, some assumptions used to derive the forecast contained herein will not be realized, and unforeseeable events may occur. The actual financial results achieved will vary from those forecasted, and such variations could be material. We have no responsibility to update this Series 2018 Letter for events and/or circumstances occurring after the date of this Series 2018 Letter.

L&B is not registered with the U.S. Securities & Exchange Commission as a municipal advisor, is not acting as a municipal advisor, and does not assume any fiduciary duties or provide advisory services as described in Section 15B of the Securities Exchange Act of 1934 or otherwise. L&B does not make recommendations or advice regarding any action to be taken by our clients with respect to any prospective, new, or existing municipal financial products or issuance of municipal securities including with respect to the structure, timing, terms or other similar matters concerning municipal financial products or the issuance of municipal securities.

L&B, in association with Airmac LLC, appreciates this opportunity to serve as the Authority's Airport Consultant for this proposed financing.

Sincerely,

A handwritten signature in blue ink that reads "Landrum & Brown, Incorporated". The signature is written in a cursive, professional style.

Landrum & Brown, Incorporated

**Exhibit A**

**SERIES 2018 PROJECTS - PLAN OF FINANCE**  
(Dollars in Thousands)

**DETROIT METROPOLITAN WAYNE COUNTY AIRPORT**

		Estimated Project Cost	Other Funds	Existing Bond Proceeds	Series 2018 Bond Proceeds	Future Bond Proceeds <sup>1</sup>
<b><u>SERIES 2018 PROJECTS</u></b>						
<b><u>Airfield</u></b>						
Runway 3L/21R & Associated Taxiways Reconstruction (planning, design, and construction)		\$240,000	\$20,000	\$0	\$101,500	\$118,500
Taxilanes U-9 and Q Rehabilitation (Phase 1 - planning and design)		1,000	0	0	1,000	0
Aircraft Remain Overnight (RON) Parking (design and construction)		14,000	0	0	14,000	0
Apron and Taxilanes Modifications Construction for the North Terminal Gate Expansion		10,900	0	0	10,900	0
Subtotal Airfield Improvements	[A]	\$265,900	\$20,000	\$0	\$127,400	\$118,500
<b><u>Site Redevelopment &amp; Demolitions</u></b>						
L.C. Smith Terminal and Berry Terminal Demolition		\$22,500	\$0	\$6,000	\$16,500	\$0
Subtotal Site Redevelopment & Site Demolitions	[B]	\$22,500	\$0	\$6,000	\$16,500	\$0
<b><u>Terminals</u></b>						
North Terminal Gate Expansion - Building and Passenger Boarding Bridges Construction		\$6,100	\$0	\$0	\$6,100	\$0
Subtotal Terminals	[C]	\$6,100	\$0	\$0	\$6,100	\$0
<b>Total Series 2018 Projects</b>	<b>[D=A+B+C]</b>	<b>\$294,500</b>	<b>\$20,000</b>	<b>\$6,000</b>	<b>\$150,000</b>	<b>\$118,500</b>

Note: Amounts may not add due to rounding.

<sup>1</sup> Reflects costs for certain Series 2018 Projects that are planned to be funded with Future Bond Proceeds.

Source: Authority management records, September 2018.  
Compiled by Landrum & Brown, Inc.

**Exhibit B**

**OTHER APPROVED CAPITAL PROJECTS - PLAN OF FINANCE<sup>1</sup>**  
(Dollars in Thousands)

**DETROIT METROPOLITAN WAYNE COUNTY AIRPORT**

		Estimated Project Cost	Existing Bond Proceeds	Series 2018 Bond Proceeds	Future Bond Proceeds <sup>2</sup>
<b>OTHER APPROVED CAPITAL PROJECTS</b>					
<b><u>Airfield</u></b>					
		\$22,000	\$11,000	\$0	\$11,000
		16,000	4,904	0	11,096
		10,000	0	0	10,000
Subtotal Airfield Improvements	[A]	<u>\$48,000</u>	<u>\$15,904</u>	<u>\$0</u>	<u>\$32,096</u>
<b><u>Parking &amp; Ground Transportation Facilities</u></b>					
		\$6,000	\$3,000	\$0	\$3,000
		4,000	1,000	0	3,000
Subtotal Parking & Ground Transportation Facilities	[B]	<u>\$10,000</u>	<u>\$4,000</u>	<u>\$0</u>	<u>\$6,000</u>
<b><u>Bridges &amp; Roadways</u></b>					
		\$7,000	\$0	\$0	\$7,000
Subtotal Bridges & Roadways	[C]	<u>\$7,000</u>	<u>\$0</u>	<u>\$0</u>	<u>\$7,000</u>
<b><u>Support Facilities</u></b>					
		\$10,250	\$0	\$0	\$10,250
Subtotal Support Facilities	[D]	<u>\$10,250</u>	<u>\$0</u>	<u>\$0</u>	<u>\$10,250</u>
<b><u>Terminals</u></b>					
		\$42,000	\$28,500	\$0	\$13,500
		13,000	8,500	0	4,500
Subtotal Terminals	[E]	<u>\$55,000</u>	<u>\$37,000</u>	<u>\$0</u>	<u>\$18,000</u>
<b>Total Other Approved Projects</b>	<b>[C=A+B+C+D+E]</b>	<b><u>\$130,250</u></b>	<b><u>\$56,904</u></b>	<b><u>\$0</u></b>	<b><u>\$73,346</u></b>

Note: Amounts may not add due to rounding.

<sup>1</sup> Includes costs for projects with Weighted Majority approval, which costs have not been previously funded in whole and are not being funded with the Series 2018 Bond proceeds.

<sup>2</sup> Reflects Future Bond Proceeds for costs of projects with Weighted Majority approval, which costs have not been previously funded in whole and are not being funded with the Series 2018 Bond proceeds.

Source: Authority management records, September 2018.  
Compiled by Landrum & Brown, Inc.



Exhibit C

DEBT SERVICE

DETROIT METROPOLITAN WAYNE COUNTY AIRPORT

(Dollars in Thousands for Operating Years Ending September 30)

	Actual 2017	Estimated 2018	Preliminary Budget 2019	Forecast					
				2020	2021	2022	2023	2024	2025
<b>Senior Lien by series (a)</b>									
2007B	\$ 10,832	\$ 10,841	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
2008A	10,958	10,739	10,527	10,310	10,083	9,849	9,610	9,375	9,140
2010A	33,747	33,774	5,630	-	-	-	-	-	-
2010C	17,108	14,959	15,173	15,325	15,386	11,215	1,730	-	-
2010D	3,393	3,382	3,410	3,445	3,458	577	-	-	-
2011A	7,296	7,296	36,804	42,743	42,793	42,847	7,143	-	-
2011B	2,886	2,884	2,883	2,882	480	-	-	-	-
2012A	11,790	12,346	12,338	12,345	12,358	12,342	12,337	12,335	12,336
2012B	1,850	1,950	1,956	1,950	1,948	1,946	1,950	1,950	1,946
2012C	274	275	276	271	45	-	-	-	-
2012D	7,536	7,532	7,359	2,460	1,487	1,487	1,487	1,487	1,487
2013A (b)	2,883	4,072	-	-	-	-	-	-	-
2013B (b)	1,135	1,586	-	-	-	-	-	-	-
2013C (b)	1,882	2,531	-	-	-	-	-	-	-
2014A (b)	492	659	843	989	986	983	980	977	974
2014B	3,398	3,412	3,408	3,403	3,400	3,396	3,391	3,388	3,385
2014C	1,663	1,677	1,673	1,668	1,665	1,661	1,656	1,652	1,649
2015A	17,872	17,919	17,919	17,919	2,987	-	-	-	-
2015B	2,037	2,037	2,037	2,037	17,041	20,043	20,041	20,036	3,339
2015C	961	962	962	962	962	962	962	962	962
2015D	8,550	10,737	10,751	10,748	10,744	10,740	10,736	10,732	10,728
2015E	388	388	388	388	388	388	388	388	388
2015F	11,208	11,208	11,208	11,208	11,208	11,208	11,208	11,208	27,708
2015G	5,134	5,582	5,982	6,050	6,048	6,049	6,049	6,051	6,051
2015H (b)	303	434	578	694	694	694	694	694	694
2017A	-	44	2,522	2,613	2,626	2,622	2,618	2,614	2,609
2017B	-	35	2,002	2,117	2,130	2,126	2,122	2,118	2,114
2017C	-	-	9,365	9,466	9,473	9,486	9,491	9,506	9,515
2017D (b)	-	-	5,312	6,392	6,318	6,291	24,046	27,777	27,082
2017E	-	-	2,901	2,897	2,897	2,895	13,304	14,141	14,047
2017F	-	-	3,456	3,454	3,452	3,447	20,215	23,468	23,462
Proposed Series 2018A Bonds (c)	-	-	269	1,851	2,980	7,616	8,273	8,269	8,264
Proposed Series 2018B Bonds (d)	-	-	89	312	404	418	414	410	406
Future Bonds (A Series) (e)	-	-	-	-	1,162	9,379	10,554	10,550	10,546
Future Bonds (B Series) (f)	-	-	-	-	123	1,064	1,200	1,196	1,192
<b>Total Senior Lien</b>	<b>\$ 165,577</b>	<b>\$ 169,260</b>	<b>\$ 178,020</b>	<b>\$ 176,897</b>	<b>\$ 175,725</b>	<b>\$ 181,729</b>	<b>\$ 182,599</b>	<b>\$ 181,281</b>	<b>\$ 180,021</b>
<b>Junior Lien by series (a)</b>									
2007A	\$ 12,276	\$ 12,274	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
2017A	-	-	4,867	4,934	4,936	4,935	4,937	4,934	4,918
2017B	-	-	4,417	4,467	4,464	4,468	4,468	4,470	4,451
2017C	-	-	1,231	1,231	1,231	1,231	1,231	1,231	1,231
<b>Total Junior Lien</b>	<b>\$ 12,276</b>	<b>\$ 12,274</b>	<b>\$ 10,514</b>	<b>\$ 10,631</b>	<b>\$ 10,631</b>	<b>\$ 10,634</b>	<b>\$ 10,636</b>	<b>\$ 10,635</b>	<b>\$ 10,599</b>
<b>Total annual Debt Service</b>	<b>\$ 177,853</b>	<b>\$ 181,534</b>	<b>\$ 188,534</b>	<b>\$ 187,529</b>	<b>\$ 186,355</b>	<b>\$ 192,362</b>	<b>\$ 193,234</b>	<b>\$ 191,917</b>	<b>\$ 190,620</b>
Bond Fund interest, Bond Reserve Account interest and transfers	\$ (5,649)	\$ (3,287)	\$ (4,535)	\$ (5,368)	\$ (5,667)	\$ (5,333)	\$ (5,295)	\$ (5,274)	\$ (5,254)
<b>Adjusted debt service (g)</b>	<b>\$ 172,205</b>	<b>\$ 178,247</b>	<b>\$ 183,999</b>	<b>\$ 182,161</b>	<b>\$ 180,688</b>	<b>\$ 187,029</b>	<b>\$ 187,939</b>	<b>\$ 186,643</b>	<b>\$ 185,366</b>
<b>By Cost Center (g)</b>									
North Terminal	\$ 31,872	\$ 31,656	\$ 31,977	\$ 32,400	\$ 32,540	\$ 31,828	\$ 34,015	\$ 34,456	\$ 34,128
South Terminal	54,517	55,211	59,566	60,191	60,215	60,452	60,933	59,934	59,360
Airport	85,816	91,380	92,456	89,569	87,933	94,750	92,992	92,253	91,879
<b>Adjusted debt service (g)</b>	<b>\$ 172,205</b>	<b>\$ 178,247</b>	<b>\$ 183,999</b>	<b>\$ 182,161</b>	<b>\$ 180,688</b>	<b>\$ 187,029</b>	<b>\$ 187,939</b>	<b>\$ 186,643</b>	<b>\$ 185,366</b>

Note: Amounts may not add because of rounding.

Source: Airport records for Outstanding Bonds (actual, estimated, budget and forecast); PFM Financial Advisors LLC for Series 2018 Bonds and Future Bonds.

Compiled by: Landrum & Brown, Inc.

- (a) Debt Service net of capitalized interest.
- (b) Variable rate bonds assume a rate of 3.0% from 2019 through 2025.
- (c) Debt Service assumes \$143.9 million in bond funded project costs.
- (d) Debt Service assumes \$6.1 million in bond funded project costs.
- (e) Debt Service assumes \$173.8 million in bond funded project costs.
- (f) Debt Service assumes \$18.0 million in bond funded project costs.
- (g) Adjusted debt service is net of capitalized interest, Bond Fund interest, and Bond Reserve Account interest and transfers. OY 2017 amounts shown by Cost Center were calculated from information made available by the Authority.

Exhibit D

O&M EXPENSES

DETROIT METROPOLITAN WAYNE COUNTY AIRPORT

(Dollars in Thousands for Operating Years Ending September 30)

	Actual 2017 (a)	Estimated 2018	Preliminary	Forecast					
			Budget 2019	2020	2021	2022	2023	2024	2025
<b>Airport</b>									
Salaries, wages, and fringe benefits	\$ 86,231	\$ 88,544	\$ 92,328	\$ 96,021	\$ 99,862	\$ 103,856	\$ 108,011	\$ 112,331	\$ 116,824
Materials and supplies	7,223	8,529	8,361	8,612	8,870	9,136	9,410	9,693	9,983
Parking management	7,987	8,708	8,908	9,175	9,450	9,734	10,026	10,327	10,637
Shuttle bus	8,169	7,094	7,449	7,672	7,903	8,140	8,384	8,635	8,894
Janitorial	833	1,314	1,528	1,574	1,621	1,670	1,720	1,771	1,825
Security	5,149	3,350	3,800	3,914	4,031	4,152	4,277	4,405	4,537
Professional and contractual services	16,113	18,508	19,110	19,397	19,688	19,983	20,283	20,587	20,896
Buildings and grounds	7,147	9,610	9,130	9,404	9,686	9,977	10,276	10,584	10,902
Equipment repair	5,266	6,224	7,167	7,382	7,603	7,832	8,067	8,309	8,558
Other operating expenses	4,484	4,264	4,126	4,250	4,377	4,509	4,644	4,783	4,927
Utilities	5,471	6,454	7,621	7,773	7,929	8,087	8,249	8,414	8,582
Hotel	18,612	18,647	19,030	19,601	20,189	20,795	21,418	22,061	22,723
Insurance	1,314	1,350	1,465	1,494	1,524	1,554	1,585	1,617	1,649
Operating and maintenance capital	7,477	3,039	1,494	1,539	1,585	1,633	1,682	1,732	1,784
<b>Subtotal Airport</b>	<b>\$ 181,477</b>	<b>\$ 185,634</b>	<b>\$ 191,517</b>	<b>\$ 197,808</b>	<b>\$ 204,319</b>	<b>\$ 211,057</b>	<b>\$ 218,031</b>	<b>\$ 225,250</b>	<b>\$ 232,721</b>
<b>North Terminal</b>									
Materials and supplies	\$ 633	\$ 949	\$ 117	\$ 121	\$ 124	\$ 128	\$ 132	\$ 136	\$ 140
Janitorial	3,992	4,120	4,705	4,846	4,991	5,141	5,295	5,454	5,618
Security	-	475	600	618	637	656	675	696	716
Contractual services	3,544	3,667	3,774	3,830	3,888	3,946	4,005	4,065	4,126
Insurance	222	228	234	238	243	248	253	258	263
Utilities	3,828	3,963	3,765	3,841	3,918	3,996	4,076	4,157	4,240
Buildings and grounds	1,787	1,614	1,422	1,464	1,508	1,553	1,600	1,648	1,698
Equipment repair	3,204	3,646	3,568	3,675	3,785	3,899	4,016	4,136	4,260
Other operating expenses	(54)	50	48	50	51	53	54	56	57
Operating and maintenance capital	1,582	600	1,988	2,028	2,068	2,109	2,152	2,195	2,239
<b>Subtotal North Terminal</b>	<b>\$ 18,739</b>	<b>\$ 19,312</b>	<b>\$ 20,220</b>	<b>\$ 20,710</b>	<b>\$ 21,213</b>	<b>\$ 21,729</b>	<b>\$ 22,258</b>	<b>\$ 22,801</b>	<b>\$ 23,358</b>
<b>South Terminal</b>									
Materials and supplies	\$ 1,516	\$ 1,324	\$ 19	\$ 20	\$ 20	\$ 21	\$ 22	\$ 22	\$ 23
Janitorial	8,690	9,705	12,000	12,360	12,731	13,113	13,506	13,911	14,329
Security	-	2,775	2,200	2,266	2,334	2,404	2,476	2,550	2,627
Contractual services	4,322	4,358	4,785	4,881	4,979	5,078	5,180	5,283	5,389
Insurance	512	520	535	546	557	568	579	591	602
Utilities	13,648	13,655	13,655	13,928	14,206	14,490	14,780	15,076	15,377
Buildings and grounds	4,791	5,355	5,461	5,625	5,793	5,967	6,146	6,331	6,521
Equipment repair	10,055	10,485	10,482	10,796	11,120	11,454	11,797	12,151	12,516
Other operating expenses	242	168	169	174	179	184	190	196	201
Operating and maintenance capital	4,157	3,273	4,123	4,206	4,290	4,376	4,463	4,552	4,644
<b>Subtotal South Terminal</b>	<b>\$ 47,934</b>	<b>\$ 51,618</b>	<b>\$ 53,429</b>	<b>\$ 54,801</b>	<b>\$ 56,209</b>	<b>\$ 57,655</b>	<b>\$ 59,140</b>	<b>\$ 60,664</b>	<b>\$ 62,229</b>
<b>Total O&amp;M Expenses</b>	<b>\$ 248,149</b>	<b>\$ 256,563</b>	<b>\$ 265,166</b>	<b>\$ 273,319</b>	<b>\$ 281,741</b>	<b>\$ 290,441</b>	<b>\$ 299,429</b>	<b>\$ 308,714</b>	<b>\$ 318,308</b>
<b>Summary by Cost Center</b>									
North Terminal O&M Expenses	\$ 18,739	\$ 19,312	\$ 20,220	\$ 20,710	\$ 21,213	\$ 21,729	\$ 22,258	\$ 22,801	\$ 23,358
South Terminal O&M Expenses	47,934	51,618	53,429	54,801	56,209	57,655	59,140	60,664	62,229
Airport O&M Expenses	181,477	185,634	191,517	197,808	204,319	211,057	218,031	225,250	232,721
<b>Total O&amp;M Expenses</b>	<b>\$ 248,149</b>	<b>\$ 256,563</b>	<b>\$ 265,166</b>	<b>\$ 273,319</b>	<b>\$ 281,741</b>	<b>\$ 290,441</b>	<b>\$ 299,429</b>	<b>\$ 308,714</b>	<b>\$ 318,308</b>

Note: Amounts may not add because of rounding.

Source: Airport records (actual, estimated and budget); Landrum & Brown, Inc. (forecast).

Compiled by: Landrum & Brown, Inc.

(a) Amounts shown are those included in airline rates and charges and may vary from the Airport's financial reports for various reasons, including the treatment of non-cash items.

Exhibit E

**NON-AIRLINE OPERATING REVENUES**

**DETROIT METROPOLITAN WAYNE COUNTY AIRPORT**

(Dollars in Thousands for Operating Years Ending September 30)

	Actual	Estimated	Preliminary	Forecast					
	2017 (a)	2018	Budget 2019	2020	2021	2022	2023	2024	2025
<b>Parking</b>									
<b>Total parking</b>	\$ 76,707	\$ 77,100	\$ 80,050	\$ 82,305	\$ 84,571	\$ 86,803	\$ 89,020	\$ 91,261	\$ 93,548
<b>Concessions</b>									
North Terminal									
Food and beverage	\$ 4,656	\$ 4,817	\$ 3,914	\$ 5,891	\$ 6,470	\$ 6,622	\$ 6,781	\$ 6,940	\$ 7,101
News and gift shops	1,807	1,869	2,511	2,576	2,640	2,702	2,767	2,832	2,898
Duty free	137	142	191	195	200	205	210	215	220
Advertising	226	234	240	246	252	258	265	271	277
Other	1,742	1,802	1,583	1,624	1,664	1,704	1,745	1,785	1,827
<b>Total North Terminal</b>	\$ 8,568	\$ 8,865	\$ 8,438	\$ 10,532	\$ 11,227	\$ 11,491	\$ 11,767	\$ 12,043	\$ 12,322
South Terminal									
Food and beverage	\$ 14,771	\$ 15,282	\$ 15,703	\$ 16,124	\$ 16,543	\$ 16,949	\$ 17,372	\$ 17,793	\$ 18,219
News and gift shops	9,303	9,625	9,669	9,929	10,186	10,436	10,697	10,956	11,218
Duty free	2,050	2,121	2,131	2,188	2,245	2,300	2,357	2,414	2,472
Other	2,043	2,114	1,691	1,736	1,782	1,825	1,871	1,916	1,962
Advertising	1,340	1,386	1,307	1,343	1,377	1,411	1,446	1,481	1,517
<b>Total South Terminal</b>	\$ 29,506	\$ 30,527	\$ 30,502	\$ 31,320	\$ 32,134	\$ 32,922	\$ 33,743	\$ 34,560	\$ 35,388
Airsides services									
In-flight catering	\$ 933	\$ 965	\$ 813	\$ 847	\$ 881	\$ 916	\$ 952	\$ 989	\$ 1,028
Flight services	283	293	247	257	268	278	289	301	312
<b>Total airside services</b>	\$ 1,216	\$ 1,258	\$ 1,060	\$ 1,104	\$ 1,149	\$ 1,194	\$ 1,241	\$ 1,290	\$ 1,340
<b>Total concessions</b>	\$ 39,290	\$ 40,650	\$ 40,000	\$ 42,956	\$ 44,510	\$ 45,608	\$ 46,751	\$ 47,893	\$ 49,050
<b>Car rental</b>									
Concession fees	\$ 24,950	\$ 25,650	\$ 26,000	\$ 26,732	\$ 27,468	\$ 28,193	\$ 28,914	\$ 29,641	\$ 30,384
<b>Total car rental</b>	\$ 24,950	\$ 25,650	\$ 26,000	\$ 26,732	\$ 27,468	\$ 28,193	\$ 28,914	\$ 29,641	\$ 30,384

Exhibit E

NON-AIRLINE OPERATING REVENUES

DETROIT METROPOLITAN WAYNE COUNTY AIRPORT

(Dollars in Thousands for Operating Years Ending September 30)

	Actual 2017 (a)	Estimated 2018	Preliminary Budget 2019	Forecast						
				2020	2021	2022	2023	2024	2025	
<b>Ground transportation</b>										
Taxi/Luxury sedan	\$ 2,161	\$ 2,562	\$ 2,040	\$ 2,077	\$ 2,114	\$ 2,152	\$ 2,191	\$ 2,230	\$ 2,270	\$ 2,270
Public vehicle	17	20	9	9	9	9	9	9	9	9
AVI (b)	5,636	6,682	7,500	7,599	7,694	7,782	7,864	7,944	8,024	8,024
<b>Total Ground transportation</b>	<b>\$ 7,814</b>	<b>\$ 9,264</b>	<b>\$ 9,549</b>	<b>\$ 9,684</b>	<b>\$ 9,817</b>	<b>\$ 9,943</b>	<b>\$ 10,064</b>	<b>\$ 10,183</b>	<b>\$ 10,303</b>	<b>\$ 10,303</b>
<b>Facility rent</b>										
South Terminal	\$ 124	\$ 173	\$ 174	\$ 179	\$ 185	\$ 190	\$ 196	\$ 202	\$ 208	\$ 208
North Terminal	481	477	521	537	553	570	587	604	623	623
Cargo/Hangar/Ground transportation rent	2,817	2,875	3,159	3,254	3,351	3,452	3,556	3,662	3,772	3,772
<b>Total Facility rent</b>	<b>\$ 3,422</b>	<b>\$ 3,525</b>	<b>\$ 3,854</b>	<b>\$ 3,970</b>	<b>\$ 4,089</b>	<b>\$ 4,212</b>	<b>\$ 4,338</b>	<b>\$ 4,468</b>	<b>\$ 4,602</b>	<b>\$ 4,602</b>
<b>Airport hotel</b>										
Hotel revenue	\$ 29,928	\$ 30,389	\$ 31,645	\$ 32,303	\$ 32,961	\$ 33,608	\$ 34,275	\$ 34,944	\$ 35,621	\$ 35,621
<b>Total hotel revenue</b>	<b>\$ 29,928</b>	<b>\$ 30,389</b>	<b>\$ 31,645</b>	<b>\$ 32,303</b>	<b>\$ 32,961</b>	<b>\$ 33,608</b>	<b>\$ 34,275</b>	<b>\$ 34,944</b>	<b>\$ 35,621</b>	<b>\$ 35,621</b>
<b>Other non-airline revenue</b>										
Shuttle bus	\$ 2,833	\$ 2,900	\$ 2,900	\$ 2,900	\$ 2,900	\$ 2,900	\$ 2,900	\$ 2,900	\$ 2,900	\$ 2,900
Utility service fee rent - North Terminal	496	532	532	542	553	564	575	587	599	599
Utility service fee rent - South Terminal	1,435	1,351	1,351	1,378	1,406	1,434	1,462	1,492	1,522	1,522
Utility service fee rent - other	2,973	3,000	3,000	3,060	3,121	3,183	3,247	3,312	3,378	3,378
Charges for services - North Terminal	23	12	11	11	11	12	12	13	13	13
Charges for services - South Terminal	33	12	13	13	14	14	15	15	15	15
Charges for services - other	2,607	3,624	3,466	3,570	3,677	3,788	3,901	4,018	4,139	4,139
Other revenue	2,279	1,999	2,000	2,020	2,040	2,061	2,081	2,102	2,123	2,123
<b>Total other non-airline operating revenue</b>	<b>\$ 12,679</b>	<b>\$ 13,430</b>	<b>\$ 13,272</b>	<b>\$ 13,495</b>	<b>\$ 13,722</b>	<b>\$ 13,956</b>	<b>\$ 14,194</b>	<b>\$ 14,439</b>	<b>\$ 14,689</b>	<b>\$ 14,689</b>
<b>Total non-airline operating revenues</b>	<b>\$ 194,790</b>	<b>\$ 200,008</b>	<b>\$ 204,371</b>	<b>\$ 211,445</b>	<b>\$ 217,138</b>	<b>\$ 222,322</b>	<b>\$ 227,557</b>	<b>\$ 232,830</b>	<b>\$ 238,198</b>	<b>\$ 238,198</b>

Note: Amounts may not add because of rounding.

Source: Airport records (actual, estimated and budget); Landrum & Brown, Inc. (forecast).

Compiled by: Landrum & Brown, Inc.

(a) Amounts shown are those included in airline rates and charges and may vary from the Airport's financial reports for various reasons, including the treatment of non-cash items.

(b) Transportation network company (TNC) revenues are included with AVI revenues.

Exhibit F

**PFC REVENUE APPLIED AS OTHER AVAILABLE MONEYS**

**DETROIT METROPOLITAN WAYNE COUNTY AIRPORT**

(Dollars in Thousands for Operating Years Ending September 30)

	Actual	Forecast							
	2017	2018	2019	2020	2021	2022	2023	2024	2025
<b>PFC collections (a)</b>									
Enplaned passengers (000's)	17,281	17,559	17,740	17,946	18,138	18,306	18,484	18,650	18,814
PFC Eligibility %	87.6%	89.0%	89.0%	89.0%	89.0%	89.0%	89.0%	89.0%	89.0%
PFC Eligible Enplanements (000's)	15,142	15,627	15,789	15,972	16,143	16,293	16,450	16,599	16,744
PFC collection level	\$ 4.50	\$ 4.50	\$ 4.50	\$ 4.50	\$ 4.50	\$ 4.50	\$ 4.50	\$ 4.50	\$ 4.50
Less: Administrative Expense	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11
Net PFC collection	\$ 4.39	\$ 4.39	\$ 4.39	\$ 4.39	\$ 4.39	\$ 4.39	\$ 4.39	\$ 4.39	\$ 4.39
<b>Total PFC collections (a)</b>	<b>\$ 66,473</b>	<b>\$ 68,603</b>	<b>\$ 69,313</b>	<b>\$ 70,115</b>	<b>\$ 70,867</b>	<b>\$ 71,525</b>	<b>\$ 72,218</b>	<b>\$ 72,869</b>	<b>\$ 73,507</b>
<b>Allocated to Cost Centers as Other Available Moneys</b>									
North Terminal (Exhibit H)	\$ 24,801	\$ 22,921	\$ 22,456	\$ 22,588	\$ 23,145	\$ 22,192	\$ 23,404	\$ 24,787	\$ 25,564
South Terminal (Exhibit G)	41,171	41,080	43,177	43,611	43,755	43,223	42,850	42,291	42,253
Airport	501	4,602	3,680	3,916	3,968	6,110	5,964	5,791	5,690
<b>Total Allocated PFCs (Exhibit I)</b>	<b>\$ 66,473</b>	<b>\$ 68,603</b>	<b>\$ 69,313</b>	<b>\$ 70,115</b>	<b>\$ 70,867</b>	<b>\$ 71,525</b>	<b>\$ 72,218</b>	<b>\$ 72,869</b>	<b>\$ 73,507</b>

Note: Amounts may not add because of rounding. Airline rates, charges, and fees may not agree to budget due to minimal differences in activity and other assumptions.

Source: Airport records (actual, estimated and budget); Landrum & Brown, Inc. (forecast).

Compiled by: Landrum & Brown, Inc.

(a) PFC collections reflect the amount assumed to be used as part of Other Available Moneys to pay eligible debt service.

Exhibit G

SOUTH TERMINAL RENTALS

DETROIT METROPOLITAN WAYNE COUNTY AIRPORT

(Dollars in Thousands for Operating Years Ending September 30)

		Actual		Forecast						
		2017	2018	2019	2020	2021	2022	2023	2024	2025
South Terminal O&M Expenses		\$ 47,934	\$ 51,618	\$ 53,429	\$ 54,801	\$ 56,209	\$ 57,655	\$ 59,140	\$ 60,664	\$ 62,229
Debt service (a)		54,517	55,211	59,566	60,191	60,215	60,452	60,933	59,934	59,360
Less:										
Other Available Moneys (b)		41,171	41,080	43,177	43,611	43,755	43,223	42,850	42,291	42,253
International Facilities Use Fees		7,768	7,400	8,562	8,767	8,969	9,166	9,358	9,536	9,708
South Terminal Rental Revenue		1,592	1,536	1,538	1,571	1,604	1,638	1,673	1,708	1,745
Other Airline Terminal Rentals	[A]	275	300	300	300	300	300	300	300	300
Net Requirement	[B]	\$ 51,645	\$ 56,512	\$ 59,418	\$ 60,743	\$ 61,796	\$ 63,780	\$ 65,892	\$ 66,762	\$ 67,583
South Terminal Airline Premises (square feet) (c)		911,514	911,514	911,514	911,514	911,514	911,514	911,514	911,514	911,514
South Terminal Rental Rate (per square foot)		\$ 56.66	\$ 62.00	\$ 65.19	\$ 66.64	\$ 67.80	\$ 69.97	\$ 72.29	\$ 73.24	\$ 74.14
Signatory Airline South Terminal Rentals (d)		\$ 51,645	\$ 56,512	\$ 59,418	\$ 60,743	\$ 61,796	\$ 63,780	\$ 65,892	\$ 66,762	\$ 67,583
Rentals from South Terminal										
Signatory Airline South Terminal Rentals	[B]	\$ 51,645	\$ 56,512	\$ 59,418	\$ 60,743	\$ 61,796	\$ 63,780	\$ 65,892	\$ 66,762	\$ 67,583
Other Airline Terminal Rentals	[A]	275	300	300	300	300	300	300	300	300
Rentals from South Terminal	[A+B]	\$ 51,920	\$ 56,812	\$ 59,718	\$ 61,043	\$ 62,096	\$ 64,080	\$ 66,192	\$ 67,062	\$ 67,883

Note: Amounts may not add because of rounding. Airline rates, charges, and fees may not agree to budget due to minimal differences in activity and other assumptions.

Source: Airport records (actual, estimated and budget); Landrum & Brown, Inc. (forecast).

Compiled by: Landrum & Brown, Inc.

- (a) Debt service is net of capitalized interest, Bond Fund interest, and Bond Reserve Account interest and transfers.
- (b) PFC funds transferred to the Bond Fund or Junior Lien Bond Fund for the payment of PFC-eligible debt service.
- (c) Preferential South Terminal Space leased to Signatory Airlines and Shared Use South Terminal Space.
- (d) Includes per deplaned passenger Shared Use fees.

Exhibit H

**NORTH TERMINAL RENTALS**

**DETROIT METROPOLITAN WAYNE COUNTY AIRPORT**

(Dollars in Thousands for Operating Years Ending September 30)

	Actual 2017	Forecast							
		2018	2019	2020	2021	2022	2023	2024	2025
North Terminal O&M Expenses	\$ 18,739	\$ 19,312	\$ 20,220	\$ 20,710	\$ 21,213	\$ 21,729	\$ 22,258	\$ 22,801	\$ 23,358
Debt service (a)	31,872	31,656	31,977	32,400	32,540	31,828	34,015	34,456	34,128
Less:									
Other Available Moneys (b)	24,801	22,921	22,456	22,588	23,145	22,192	23,404	24,787	25,564
International Facilities Use Fees	707	1,123	918	937	958	979	1,000	1,019	1,037
North Terminal Rental Revenues	999	1,021	1,064	1,090	1,118	1,146	1,174	1,204	1,234
Authority-Controlled Airline Space Revenues (c)	[A] 3,359	3,051	3,677	3,715	3,719	3,807	3,986	3,931	3,857
North Terminal Shared Use Fees (d)	[B] 13,991	15,039	16,151	16,566	16,589	16,975	17,861	17,565	17,215
Net Requirement	[C] \$ 6,754	\$ 7,813	\$ 7,931	\$ 8,215	\$ 8,224	\$ 8,458	\$ 8,847	\$ 8,751	\$ 8,578
Preferential North Terminal Space leased to Signatory Airlines (square feet)	60,046	65,581	65,581	65,581	65,581	65,581	65,581	65,581	65,581
North Terminal Rental Rate (per square foot)	\$ 112.48	\$ 119.14	\$ 120.94	\$ 125.26	\$ 125.40	\$ 128.97	\$ 134.91	\$ 133.44	\$ 130.80
Signatory Airline North Terminal Rentals	\$ 6,754	\$ 7,813	\$ 7,931	\$ 8,215	\$ 8,224	\$ 8,458	\$ 8,847	\$ 8,751	\$ 8,578
<b>Rentals from North Terminal</b>									
Signatory Airline North Terminal Rentals	[C] \$ 6,754	\$ 7,813	\$ 7,931	\$ 8,215	\$ 8,224	\$ 8,458	\$ 8,847	\$ 8,751	\$ 8,578
Authority-Controlled Airline Space Revenues (c)	[A] 3,359	3,051	3,677	3,715	3,719	3,807	3,986	3,931	3,857
North Terminal Shared Use Fees (d)	[B] 13,991	15,039	16,151	16,566	16,589	16,975	17,861	17,565	17,215
Rentals from North Terminal	[A+B+C] \$ 24,104	\$ 25,903	\$ 27,760	\$ 28,496	\$ 28,532	\$ 29,240	\$ 30,694	\$ 30,247	\$ 29,650

Note: Amounts may not add because of rounding. Airline rates, charges, and fees may not agree to budget due to minimal differences in activity and other assumptions.

Source: Airport records (actual, estimated and budget); Landrum & Brown, Inc. (forecast).

Compiled by: Landrum & Brown, Inc.

(a) Debt service is net of capitalized interest, Bond Fund interest, and Bond Reserve Account interest and transfers.

(b) PFC funds transferred to the Bond Fund or Junior Lien Bond Fund for the payment of PFC-eligible debt service.

(c) Comprised of revenues received for the use of North Terminal Authority-Controlled Airline Space. Amounts include Common Use Gate Fees, Overnight Common Use Gate Rental, non-signatory airline space rentals, and rental for member-only airline clubs.

(d) Collected on a per enplaned passenger basis from all airlines for the use of approximately 125,000 square feet of shared use space, including baggage claim, baggage make-up, and outbound baggage area.

Exhibit I

ACTIVITY FEES

DETROIT METROPOLITAN WAYNE COUNTY AIRPORT

(dollars in thousands for Operating Years Ending September 30)

	Actual	Forecast							
	2017	2018	2019	2020	2021	2022	2023	2024	2025
<b>Revenue Requirement</b>									
O&M Expenses	\$ 248,149	\$ 256,563	\$ 265,166	\$ 273,319	\$ 281,741	\$ 290,441	\$ 299,429	\$ 308,714	\$ 318,308
Debt service (a)	172,205	178,247	183,999	182,161	180,688	187,029	187,939	186,643	185,366
Other Available Moneys (b)	(73,226)	(78,147)	(78,582)	(76,696)	(77,448)	(78,106)	(78,799)	(79,450)	(80,083)
Fund requirements (c)	17,057	17,367	17,933	16,645	12,482	12,811	13,151	13,499	13,858
Interest expense	122	124	124	124	124	124	124	124	124
<b>Total Revenue Requirement</b>	<b>\$ 364,307</b>	<b>\$ 374,154</b>	<b>\$ 388,640</b>	<b>\$ 395,553</b>	<b>\$ 397,587</b>	<b>\$ 412,300</b>	<b>\$ 421,844</b>	<b>\$ 429,530</b>	<b>\$ 437,573</b>
Less:									
Non-airline revenues	\$ 194,790	\$ 200,008	\$ 204,371	\$ 211,445	\$ 217,138	\$ 222,322	\$ 227,557	\$ 232,830	\$ 238,198
International Facilities Use Fees (d)	8,475	8,523	9,480	9,704	9,927	10,145	10,358	10,555	10,745
Non-signatory Activity Fee revenue	3,832	3,652	2,437	2,344	2,198	2,395	2,412	2,469	2,539
Rentals from North Terminal	24,104	25,903	27,760	28,496	28,532	29,240	30,694	30,247	29,650
Rentals from South Terminal	51,920	56,812	59,718	61,043	62,096	64,080	66,192	67,062	67,883
Airline hangar & other facilities rentals	4,848	4,893	4,783	4,783	4,783	4,783	4,783	4,783	4,783
Supplemental capital cost payments (e)	1,109	988	988	1,718	1,718	1,718	1,718	1,718	1,718
Other grants and transfers	2,067	1,403	1,853	1,853	1,853	1,853	1,853	1,853	1,853
AVI transfer (f)	(2,500)	(2,500)	(2,500)	(2,500)	(2,500)	(2,500)	(2,500)	(2,500)	(2,500)
<b>Net Revenue Requirement</b>	<b>\$ 75,662</b>	<b>\$ 74,471</b>	<b>\$ 79,750</b>	<b>\$ 76,667</b>	<b>\$ 71,841</b>	<b>\$ 78,264</b>	<b>\$ 78,777</b>	<b>\$ 80,513</b>	<b>\$ 82,703</b>
<hr/>									
Signatory landed weight (million-pound units)	20,810	21,114	21,322	21,479	21,611	21,769	21,919	22,072	22,235
Signatory Activity Fee (per 1,000-pound units)	\$ 3.64	\$ 3.53	\$ 3.74	\$ 3.57	\$ 3.32	\$ 3.60	\$ 3.59	\$ 3.65	\$ 3.72
<hr/>									
Non-signatory landed weight (million-pound units)	792	828	521	525	529	533	537	541	546
Non-signatory Activity Fee (per 1,000-pound units)	\$ 4.54	\$ 4.41	\$ 4.68	\$ 4.46	\$ 4.16	\$ 4.49	\$ 4.49	\$ 4.56	\$ 4.65
<hr/>									
Signatory Airline Activity Fee revenue	\$ 75,662	\$ 74,471	\$ 79,750	\$ 76,667	\$ 71,841	\$ 78,264	\$ 78,777	\$ 80,513	\$ 82,703
Non-signatory airline Activity Fee revenue	3,832	3,652	2,437	2,344	2,198	2,395	2,412	2,469	2,539
<b>Total Activity Fee revenue</b>	<b>\$ 79,494</b>	<b>\$ 78,123</b>	<b>\$ 82,187</b>	<b>\$ 79,011</b>	<b>\$ 74,039</b>	<b>\$ 80,659</b>	<b>\$ 81,189</b>	<b>\$ 82,982</b>	<b>\$ 85,243</b>

Note: Amounts may not add because of rounding. Airline rates, charges, and fees may not agree to budget due to minimal differences in activity and other assumptions.

Source: Airport records (actual, estimated and budget); Landrum & Brown, Inc. (forecast).

Compiled by: Landrum & Brown, Inc.

(a) Debt service is net of capitalized interest, Bond Fund interest, and Bond Reserve Account interest and transfers.

(b) Includes PFC funds transferred to the Bond Fund or Junior Lien Bond Fund for the payment of PFC-eligible debt service, and amounts treated as Other Available Moneys from Aviation Fuel Tax, the Airport Development Fund, and the Noise Fund.

(c) Includes all fund and reserve requirements, including the hotel.

(d) Includes revenues from both the South and North terminals.

(e) Annual bond debt service charges in respect of certain projects that were constructed for the sole benefit of Northwest Airlines in its terminal facility prior to February 26, 2002.

(f) AVI transfer up to but not exceeding \$2.5 million per section F(3)(f) of the Airline Agreements, may not agree to non-airline revenues on Exhibit E.



Exhibit J

**AIRLINE COST PER ENPLANED PASSENGER**

**DETROIT METROPOLITAN WAYNE COUNTY AIRPORT**

(Dollars in Thousands for Operating Years Ending September 30)

	Actual	Forecast							
	2017	2018	2019	2020	2021	2022	2023	2024	2025
<b>Airline Revenues</b>									
Terminal Rentals and Shared Use Fees:									
North Terminal	\$ 24,104	\$ 25,903	\$ 27,760	\$ 28,496	\$ 28,532	\$ 29,240	\$ 30,694	\$ 30,247	\$ 29,650
South Terminal	51,920	56,812	59,718	61,043	62,096	64,080	66,192	67,062	67,883
Activity Fee revenue	79,494	78,123	82,187	79,011	74,039	80,659	81,189	82,982	85,243
International Facility Use Fees	8,475	8,523	9,480	9,704	9,927	10,145	10,358	10,555	10,745
Supplemental capital cost payments (a)	1,109	988	988	1,718	1,718	1,718	1,718	1,718	1,718
Airline hangar & other facilities rentals	4,848	4,893	4,783	4,783	4,783	4,783	4,783	4,783	4,783
<b>Total Airline Revenues</b>	<b>\$ 169,950</b>	<b>\$ 175,243</b>	<b>\$ 184,916</b>	<b>\$ 184,755</b>	<b>\$ 181,095</b>	<b>\$ 190,625</b>	<b>\$ 194,935</b>	<b>\$ 197,347</b>	<b>\$ 200,022</b>
Enplaned passengers	17,281	17,559	17,740	17,946	18,138	18,306	18,484	18,650	18,814
<b>Airline cost per enplaned passenger (b)</b>	<b>\$ 9.83</b>	<b>\$ 9.98</b>	<b>\$ 10.42</b>	<b>\$ 10.30</b>	<b>\$ 9.98</b>	<b>\$ 10.41</b>	<b>\$ 10.55</b>	<b>\$ 10.58</b>	<b>\$ 10.63</b>

Note: Amounts may not add because of rounding. Airline rates, charges, and fees may not agree to budget due to minimal differences in activity and other assumptions.

Source: Airport records (actual, estimated and budget); Landrum & Brown, Inc. (forecast).

Compiled by: Landrum & Brown, Inc.

(a) Annual bond debt service charges in respect of certain projects that were constructed for the sole benefit of Northwest Airlines in its terminal facility prior to February 26, 2002.

(b) Cost per enplaned passenger may vary from budget due to minor differences in enplaned passenger forecasts.

Exhibit K

**APPLICATION OF REVENUES**

**DETROIT METROPOLITAN WAYNE COUNTY AIRPORT**

(Dollars in Thousands for Operating Years Ending September 30)

	Actual	Forecast							
	2017	2018	2019	2020	2021	2022	2023	2024	2025
<b>Revenues</b>									
Airline Revenues	\$ 169,950	\$ 175,243	\$ 184,916	\$ 184,755	\$ 181,095	\$ 190,625	\$ 194,935	\$ 197,347	\$ 200,022
Non-Airline Revenues	194,790	200,008	204,371	211,445	217,138	222,322	227,557	232,830	238,198
Other Available Moneys (a)	73,226	78,147	78,582	76,696	77,448	78,106	78,799	79,450	80,083
Bond Fund interest, Bond Reserve Account interest and transfers	5,649	3,287	4,535	5,368	5,667	5,333	5,295	5,274	5,254
<b>Total Revenues and Other Available Moneys</b>	<b>\$ 443,615</b>	<b>\$ 456,686</b>	<b>\$ 472,404</b>	<b>\$ 478,264</b>	<b>\$ 481,349</b>	<b>\$ 496,386</b>	<b>\$ 506,585</b>	<b>\$ 514,901</b>	<b>\$ 523,556</b>
<b>Application of Revenues</b>									
Operation and Maintenance Fund (b)	\$ 248,149	\$ 256,563	\$ 265,166	\$ 273,319	\$ 281,741	\$ 290,441	\$ 299,429	\$ 308,714	\$ 318,308
Bond and Interest Redemption Fund (c)	165,577	169,260	178,020	176,897	175,725	181,729	182,599	181,281	180,021
Junior Lien Bond and Interest Redemption Fund (c)	12,276	12,274	10,514	10,631	10,631	10,634	10,636	10,635	10,599
Operation and Maintenance Reserve Fund	1,050	1,224	2,003	436	451	467	484	502	519
Renewal and Replacement Fund	500	500	500	500	500	500	500	500	500
Airport Discretionary Fund	350	350	350	350	350	350	350	350	350
Hotel FF&E	2,386	1,975	2,057	2,100	2,142	2,185	2,228	2,271	2,315
Airport Development Fund	7,661	7,800	7,901	8,139	8,383	8,634	8,893	9,160	9,435
Other transfer to the Airport Development Fund (d)	5,665	6,739	5,892	5,892	1,427	1,446	1,467	1,487	1,509
<b>Total Application of Revenues</b>	<b>\$ 443,615</b>	<b>\$ 456,686</b>	<b>\$ 472,404</b>	<b>\$ 478,264</b>	<b>\$ 481,349</b>	<b>\$ 496,386</b>	<b>\$ 506,585</b>	<b>\$ 514,901</b>	<b>\$ 523,556</b>

Note: Amounts may not add because of rounding.

Source: Airport records (actual, estimated and budget); Landrum & Brown, Inc. (forecast).

Compiled by: Landrum & Brown, Inc.

- (a) Includes PFC funds transferred to the Bond Fund or Junior Lien Bond Fund for the payment of PFC-eligible debt service, and amounts treated as Other Available Moneys from Aviation Fuel Tax and the Airport Development Fund.
- (b) Includes interest expense and capital acquisition.
- (c) Net of capitalized interest.
- (d) Includes AVI transfer up to \$2.5 million, local government funding, and other miscellaneous deposits to the Airport Development Fund.

Exhibit L

DEBT SERVICE COVERAGE AND RATE COVENANT

DETROIT METROPOLITAN WAYNE COUNTY AIRPORT

(Dollars in Thousands for Operating Years Ending September 30)

	Actual 2017	Forecast							
		2018	2019	2020	2021	2022	2023	2024	2025
<b>Debt Service Coverage</b>									
Revenues and Other Available Moneys	\$ 443,615	\$ 456,686	\$ 472,404	\$ 478,264	\$ 481,349	\$ 496,386	\$ 506,585	\$ 514,901	\$ 523,556
Add: Revenue Fund Balance (a)	55,163	55,853	55,853	55,853	55,853	55,853	55,853	55,853	55,853
Less: Operation and Maintenance Fund (b)	248,149	256,563	265,166	273,319	281,741	290,441	299,429	308,714	318,308
<b>Net Revenues Available for Senior Lien Debt Service (c)</b>	<b>\$ 250,628</b>	<b>\$ 255,975</b>	<b>\$ 263,091</b>	<b>\$ 260,798</b>	<b>\$ 255,461</b>	<b>\$ 261,798</b>	<b>\$ 263,009</b>	<b>\$ 262,040</b>	<b>\$ 261,101</b>
<b>Senior Lien Bonds</b>									
Debt Service (d)	\$ 165,577	\$ 169,260	\$ 178,020	\$ 176,897	\$ 175,725	\$ 181,729	\$ 182,599	\$ 181,281	\$ 180,021
Bond debt service coverage	1.51	1.51	1.48	1.47	1.45	1.44	1.44	1.45	1.45
<b>Senior Lien Bonds and Junior Lien Bonds</b>									
Debt Service (d)	\$ 177,853	\$ 181,534	\$ 188,534	\$ 187,529	\$ 186,355	\$ 192,362	\$ 193,234	\$ 191,917	\$ 190,620
Bond debt service coverage	1.41	1.41	1.40	1.39	1.37	1.36	1.36	1.37	1.37
<b>Rate Covenant</b>									
Net Revenues Available for Senior Lien Debt Service (c)	\$ 250,628	\$ 255,975	\$ 263,091	\$ 260,798	\$ 255,461	\$ 261,798	\$ 263,009	\$ 262,040	\$ 261,101
Less:									
Senior Lien Bond Debt Service	165,577	169,260	178,020	176,897	175,725	181,729	182,599	181,281	180,021
<b>Net Revenues Available for Junior Lien Bond Debt Service (c)</b>	<b>\$ 85,051</b>	<b>\$ 86,715</b>	<b>\$ 85,071</b>	<b>\$ 83,900</b>	<b>\$ 79,736</b>	<b>\$ 80,069</b>	<b>\$ 80,410</b>	<b>\$ 80,758</b>	<b>\$ 81,080</b>
Less:									
Junior Lien Bond Debt Service	\$ 12,276	\$ 12,274	\$ 10,514	\$ 10,631	\$ 10,631	\$ 10,634	\$ 10,636	\$ 10,635	\$ 10,599
Operation and Maintenance Reserve Fund	1,050	1,224	2,003	436	451	467	484	502	519
Renewal and Replacement Fund	500	500	500	500	500	500	500	500	500
Authority Discretionary Fund	350	350	350	350	350	350	350	350	350
25% Senior Lien Bond Debt Service	41,394	42,315	44,505	44,224	43,931	45,432	45,650	45,320	45,005
Hotel FF&E	2,386	1,975	2,057	2,100	2,142	2,185	2,228	2,271	2,315
Airport Development Fund (e)	13,326	14,539	13,794	14,031	9,809	10,080	10,360	10,647	10,944
<b>Subtotal</b>	<b>\$ 71,282</b>	<b>\$ 73,177</b>	<b>\$ 73,723</b>	<b>\$ 72,272</b>	<b>\$ 67,815</b>	<b>\$ 69,648</b>	<b>\$ 70,207</b>	<b>\$ 70,226</b>	<b>\$ 70,233</b>
<b>Net Revenues Remaining in Revenue Fund</b>	<b>\$ 13,769</b>	<b>\$ 13,538</b>	<b>\$ 11,348</b>	<b>\$ 11,628</b>	<b>\$ 11,921</b>	<b>\$ 10,421</b>	<b>\$ 10,203</b>	<b>\$ 10,532</b>	<b>\$ 10,847</b>

Note: Amounts may not add because of rounding. Airline rates, charges, and fees may not agree to budget due to minimal differences in activity and other assumptions.

Source: Airport records (actual, estimated and budget); Landrum & Brown, Inc. (forecast).

Compiled by: Landrum & Brown, Inc.

- (a) Includes certain amounts, generally made up of 25% Senior Lien Bond Debt Service and Net Revenues Remaining in the Revenue Fund, that the Authority has accumulated, which are available for debt service until used for such other purposes.
- (b) Includes interest expense and capital acquisition.
- (c) Because of Airport's residual airline rate-setting methodology, decreases in Net Revenues are related to decreases in Debt Service.
- (d) Debt Service is net of amounts used to pay capitalized interest resulting in coverage that differs from the results presented in the Authority's Comprehensive Annual Financial Report.
- (e) Includes AVI transfer up to \$2.5 million, local government funding, and other miscellaneous deposits to the Airport Development Fund.

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**SERIES 2017 REPORT**

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## Appendix A

### **REPORT OF THE AIRPORT CONSULTANT**

for the planned issuance of

Wayne County Airport Authority

(Detroit Metropolitan Wayne County Airport)

Airport Revenue Bonds, Series 2017A (Non-AMT)

Airport Revenue Bonds, Series 2017B (AMT)

Airport Revenue Refunding Bonds, Series 2017C (Non-AMT)

Airport Revenue Refunding Bonds, Junior Lien, Series 2017A (Non-AMT)

Airport Revenue Refunding Bonds, Junior Lien, Series 2017B (AMT)

Prepared by:

Trillion Av, LLC

Austin, Texas



In association with:

Airmac LLC

Partners for Economic Solutions

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September 13, 2017

Mr. Joseph Nardone  
Chief Executive Officer  
Wayne County Airport Authority  
Detroit Metropolitan Wayne County Airport  
11050 Rogell Drive, Building 602  
Detroit, Michigan 48242

Re: Report of the Airport Consultant, Wayne County Airport Authority, Airport Revenue Bonds, (Detroit Metropolitan Wayne County Airport), Series 2017A-C; and Wayne County Airport Authority, Airport Revenue Refunding Bonds, (Detroit Metropolitan Wayne County Airport), Junior Lien, Series 2017A-B

Dear Mr. Nardone:

Trillion Av, LLC (Trillion Aviation), in association with Airmac LLC and Partners for Economic Solutions, is pleased to submit this Report of the Airport Consultant (Report) for the proposed issuance of the Wayne County Airport Authority, Airport Revenue Bonds, (Detroit Metropolitan Wayne County Airport), Series 2017A-C; and Wayne County Airport Authority, Airport Revenue Refunding Bonds, (Detroit Metropolitan Wayne County Airport), Junior Lien, Series 2017A-B, referred to collectively as the Series 2017 Bonds. This independent Report has been prepared for the Wayne County Airport Authority (Authority) to support its planned issuance of the Series 2017 Bonds, and is intended to be included in the Official Statement for the Series 2017 Bonds as Appendix A, Report of the Airport Consultant. All capitalized terms in this Report are used as defined in the Official Statement, Master Bond Ordinance, Senior 2017 Ordinance, and the Junior 2017 Ordinance relating to the Series 2017 Bonds, except as otherwise defined herein.

The Authority has sole and exclusive operational jurisdiction of the Detroit Metropolitan Wayne County Airport (Airport). The Airport serves as the principal commercial service airport for the Detroit metropolitan region, much of Michigan and parts of northern Indiana and Ohio. The Airport is located on approximately 6,255 acres in the City of Romulus, Michigan, about 21 miles west of the City of Detroit's (City) downtown. The airfield at the Airport contains six air carrier runways, including four parallel runways oriented in the northeast-southwest direction and two parallel runways oriented east-west. There are two passenger terminal complexes at the Airport – the McNamara Terminal (also referred to as the South Terminal) and the North Terminal. The McNamara Terminal, which serves Delta Air Lines (Delta), its affiliated regional carriers (Delta Connection Carriers), and Delta's other SkyTeam partners<sup>1</sup>, consists of a terminal building with three concourses accommodating 121 aircraft gates and a hotel. The North Terminal, which

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<sup>1</sup> The SkyTeam is an alliance of airlines throughout the world and Delta is the only U.S. carrier currently in the alliance.

services other carriers not affiliated with Delta, consists of a terminal building and a single concourse with 26 aircraft gates. The Airport also has a multi-level parking structure for short-term and long-term parking adjacent to each terminal building along with two surface parking lots for longer-term, economy public parking.

The day-to-day operations of the Authority are managed by the Chief Executive Officer, who is appointed by the Board of the Authority (Board). The Chief Executive Officer appoints the Chief Financial Officer and other senior staff of the Authority. The executive team of the Authority is a full-time staff of professional and technical personnel located at the Airport and at Willow Run Airport, a general aviation, cargo and reliever airport also operated by the Authority.

### **The Series 2017 Bonds**

The Series 2017 Bonds are being issued pursuant to the provisions of the Master Bond Ordinance, and, with respect to the Series 2017 Senior Lien Bonds, the Senior 2017 Ordinance, and with respect to the Series 2017 Junior Lien Bonds, the Junior 2017 Ordinance both adopted by the Board on March 15, 2017. The Master Bond Ordinance, the Senior 2017 Ordinance, and the Junior 2017 Ordinance are collectively referred to as the “Ordinance.” The Series 2017 Bonds are payable solely from the Net Revenues of the Airport, certain funds and accounts under the Ordinance, and other amounts payable under the Ordinance.

The Authority will use the proceeds of the Series 2017 Senior Lien Bonds, together with other available funds, to (1) with respect to the Series 2017A Bonds and the Series 2017B Bonds, pay portions of the costs of acquiring, constructing and installing the Series 2017 Projects, (2) with respect to the Series 2017C Bonds, provide funds to refund a portion of the Series 2007B Bonds, (3) make a deposit to the Airport Bond Reserve Account, (4) pay capitalized interest during construction of the Series 2017 Projects, and (5) pay the costs of issuance of the Series 2017 Senior Lien Bonds.

The Authority will use the proceeds from the sale of the Series 2017 Junior Lien Bonds, together with other available funds, to (1) provide funds to refund a portion of the Series 2007 Junior Lien Bonds, (ii) make a deposit to the Junior Lien Bond Reserve Account, and (iii) pay costs of issuance of the Series 2017 Junior Lien Bonds.

For the purposes of this Report, the financial analysis contained herein includes only the planned issuance of the Series 2017A Bonds and the Series 2017B Bonds. The Report does not take into consideration any savings associated with the refunding of the Series 2007B Senior Lien Bonds and the Series 2007 Junior Lien Bonds.

### **Master Bond Ordinance**

The Master Bond Ordinance as adopted by the Board of the Authority on September 26, 2003, and as amended on April 14, 2010 and on November 30, 2011, authorizes the issuance of airport revenue bonds to pay the costs of acquiring and constructing Airport improvements, among other items. Pursuant to the Master Bond Ordinance, the Authority has pledged Net Revenues to the payment of the Series 2017 Bonds. Net Revenues are all Revenues of the Airport remaining after payment of O&M Expenses of the Airport. Revenues include all amounts derived from the operation of the Airport, including all moneys deposited into the Revenue Fund, from whatever

source, and all income derived from the charges, fees, rentals and rates charged for services, facilities and commodities furnished by the Airport, whether such income shall be derived from its function as an Airport or not, and including, but not by way of limitation, concessions, rentals, auto parking fees, service charges derived from the operation of the terminal complex buildings and facilities, airplane landing fees, non-airline gasoline fees and miscellaneous charges and rentals from other facilities and services and investment earnings or general revenues derived from the operation of the Airport accumulated by the Authority prior to deposit in the Revenue Fund. Certain revenue items are excluded from Revenues as identified in Section 4.3.2 of this Report.

The Authority is obligated under the Master Bond Ordinance to fix, charge and collect rates, fees, rentals and charges for the use and operation of the Airport as may be necessary or appropriate to produce Revenues in each Operating Year (OY)<sup>2</sup> which will be at least sufficient to provide for: the payment of Operation and Maintenance (O&M) Expenses; together with Passenger Facility Charge (PFC) proceeds, including interest thereon, deposited with the Trustee with respect to such OY, the amounts needed to make the deposits required for the application of revenues pursuant to the Master Bond Ordinance for such OY to the Bond Fund; and, together with Other Available Moneys deposited with the Trustee with respect to such OY, to the extent not needed to make the deposits required under the Master Bond Ordinance for such OY to the Bond Fund, and any unencumbered cash balance held in the Revenue Fund on the last day of the OY preceding the OY: (i) the amounts needed to make the deposits required under the Master Bond Ordinance for such OY to the Junior Lien Bond Fund, the Operation and Maintenance Reserve Fund, the Renewal and Replacement Fund, the Airport Discretionary Fund, and the Airport Development Fund, and (ii) an amount not less than 25% of the Debt Service due and payable on Bonds during such OY. In addition, the Authority also covenants in the Master Bond Ordinance that the rates, fees, rentals, and charges shall be revised from time to time as may be necessary to produce the above amounts, provided that any fee, rent, charge, or rate fixed pursuant to a lease or contract shall not be revised except as provided in such lease or contract.

### **Airport Use and Lease Agreements**

The Authority has long-term use and lease agreements with certain airlines operating at the Airport (the Signatory Airlines). The Airport Use and Lease Agreements (Airline Agreements) are effective through September 30, 2032. The Airline Agreements establish, among other things, procedures for setting and adjusting Signatory Airline rentals, fees and charges to be collected for the use of Airport facilities. The Signatory Airlines at the Airport include the following: Air France, American Airlines, Delta, Federal Express, KLM Royal Dutch Airlines<sup>3</sup>, Lufthansa German Airlines, Southwest Airlines, Spirit Airlines, United Airlines, and United Parcel Service. Together, the Signatory Airlines and their respective regional affiliates accounted for approximately 97.3% of enplaned passengers at the Airport in OY 2016, and approximately 96.3% of Airport landed weight in OY 2016.

The Airline Agreements govern airline use of certain Airport facilities, including the airfield, aircraft aprons, both terminals, including baggage claim, ticket counters and gate areas and

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<sup>2</sup> The Authority's Operating Year is the 12-month period ending September 30.

<sup>3</sup> KLM Royal Dutch Airlines is not currently operating at the Airport.

permits the Signatory Airlines to lease Preferential Use Premises and Shared Use Premises. Preferential Use Premises generally include holdroom areas and gates, ticket counters, office space, storage areas, airline club lounges, and employee break rooms leased to a Signatory Airline and to which the Signatory Airline has a preferential right of use over all other air carriers. Shared Use Premises is space and facilities at the Airport used jointly or in common by air carriers and generally includes baggage claim areas and baggage makeup equipment, excluding Authority-controlled airline space and FIS facilities.

### **Report of the Airport Consultant**

In our preparation of this independent Report, we evaluated the ability of the Authority to generate revenues from operation of the Airport sufficient to meet the funding requirements and obligations established by the Master Bond Ordinance during the forecast period of FY 2017 through FY 2025. The following provides an overview of the primary findings and conclusions contained in the Report.

### **Role of the Airport**

The Airport serves two distinct roles for passenger air transportation: origin-destination (O&D), for passengers beginning or ending their trip at the Airport, and a major connecting hub for Delta. Based on preliminary data for calendar year (CY) 2016, the Airport was classified by the Federal Aviation Administration (FAA) as a Large Hub facility based upon its share of nationwide enplaned passengers.<sup>4</sup> Based on preliminary data from the FAA, approximately 16.8 million enplaned passengers boarded aircraft at the Airport in CY 2016, ranking the Airport the 18<sup>th</sup> largest in the U.S. The Airport has a diverse, stable base of air carriers, and serves a large O&D market. Per the U.S. Department of Transportation in Federal Fiscal Year 2016, an estimated 50% of the Airport's domestic enplaned passengers were O&D.<sup>5</sup> The Airport is also a major connecting hub airport for Delta. Delta and the Delta Connection Carriers accounted for approximately 74.0% of enplaned passengers at the Airport in OY 2016 consisting of both O&D and connecting passengers.

### **Economic Base for Air Traffic**

The Airport is the primary commercial air service facility serving the Detroit metropolitan area and the surrounding region, and there are no other Large Hub airport facilities comparable to the Airport within 200 driving miles. The geographic region that serves as an airport's primary air service catchment area is referred to as its "Air Service Area." For the purposes of this Report, the Airport's Air Service Area is defined as the Detroit-Warren-Ann Arbor Combined Statistical Area (CSA), which includes the following 10 counties in Michigan: Genesee, Lapeer, Lenawee, Livingston, Macomb, Monroe, Oakland, St. Clair, Washtenaw, and Wayne. The Detroit-Warren-Ann Arbor CSA is the 12<sup>th</sup> most populated CSA in the U.S. as of 2016, with approximately 5.3 million people, and comprises over 53% of the population of the State of Michigan. The Air Service Area is the region analyzed in this Report in Chapter 1 for its economic and demographic characteristics and ability to generate demand for air travel. However, it should be noted that demand for air travel extends beyond the Air Service Area into parts of south-central Michigan,

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<sup>4</sup> The FAA classifies Large Hub airports as those serving over 1.0% of annual U.S. passenger boardings.

<sup>5</sup> U.S. Department of Transportation, March 2017.

northwestern Ohio, northeastern Indiana, and the southernmost areas of the Province of Ontario, Canada, generally in the Windsor metropolitan area.

The Air Service Area's economic strength is evaluated in Chapter 1 of this Report. Annual forecasted growth rates for the Air Service Area's employment and population lag those of the U.S.; however, the Air Service Area is forecasted to add more than 210,000 jobs and 42,000 people to its population by 2025. This level of growth, added to the Air Service Area's existing 3.0 million jobs and 5.3 million in population, indicate the ongoing capacity of the Air Service Area to generate demand for air travel services during the forecast period. Employment continues to improve in the Air Service Area; as of June 2016, the Air Service Area's unemployment rate (not seasonally adjusted) was below that of both Michigan and the U.S. The Air Service Area is known as the automotive capital of the world as it is home to the global headquarters of General Motors and Ford Motor, the North American headquarters for Fiat Chrysler, and numerous automotive suppliers as further described in Chapter 1 of this Report. In addition, the Air Service Area's wide array of cultural choices and entertainment options is an important factor supporting repeat visits.

#### **Air Service and Air Traffic Analysis**

Between OY 2006 and OY 2016, total enplaned passengers at the Airport decreased from approximately 17.8 million to approximately 17.1 million, an overall compound annual growth rate (CAGR) of approximately -0.4% for this period; however, domestic O&D enplaned passengers increased during this period from approximately 7.4 million to 7.8 million for a CAGR of 0.6%. Domestic connecting enplaned passengers decreased from approximately 9.0 million to approximately 7.9 million for a CAGR of approximately -1.3%. International enplaned passengers remained relatively flat over this period and decreased slightly at a CAGR of approximately -0.2%.

During this 10-year period, two events had a dramatic effect on passenger traffic at the Airport: the U.S. economic recession and the acquisition of Northwest Airlines by Delta. The 10-year period is segmented into three periods to further describe enplaned passenger trends as follows:

- **OY 2006 – OY 2008.** Total enplaned passengers remained relatively flat during this period, and the Airport experienced peaks in both domestic O&D enplaned passengers and total enplaned passengers in OY 2007. Domestic O&D passenger growth was primarily driven by Southwest Airlines and the ultra-low-cost carriers (ULCCs as described herein) Frontier and Spirit. Former Northwest Airlines, then the Airport's major hub carrier, operated in Chapter 11 bankruptcy during most of this period and, reduced capacity at the Airport during this period by approximately 1.2%.
- **OY 2008 – OY 2010.** This period was greatly impacted by the U.S. economic recession. Enplaned passengers experienced an annual decrease of approximately 10.6 % in OY 2009. Domestic O&D, international, and total enplaned passengers experienced its lowest levels in OY 2010 during the overall 10-year period as airlines decreased capacity at the Airport and the across the nation.

- **OY 2010 – OY 2016.** This period represented a recovery and included the integration of Delta and Northwest Airlines after the acquisition was completed in 2010. During this period, enplaned passengers increased by approximately 7.9% or at a CAGR of approximately 1.3%. During this period, Delta's O&D passengers at the Airport increased slightly; however, Delta's connecting passengers at the Airport decreased. By OY 2016, approximately 40% of Delta's passengers at the Airport were O&D and the remaining 60% were connecting. Overall, domestic O&D enplaned passenger traffic at the Airport increased during this period at a CAGR of approximately 3.0%.

Air service at the Airport currently appears more profitable as demonstrated in Chapter 2 of the Report than it was during the last enplaned passenger peak experienced in OY 2007. Therefore, passenger air service at the Airport appears more sustainable than it was prior to the last economic recession.

The Airport is an integral component in Delta's overall route network serving as a major connecting hub in the eastern U.S. The following factors, as analyzed in Chapter 2, further describe the Airport's importance to Delta's network.

- Delta's passenger mix at the Airport for OY 2016 was approximately 40% O&D and 60% connecting. This composition of O&D and connecting traffic is similar to other Delta connecting hubs. Therefore, Delta appears to obtain O&D traffic at the Airport at levels which provide solid support for its operation as a hub.
- The Airport's geographic position allows Delta to operate it as an efficient transfer point for traffic in the eastern half of the U.S., particularly in the Great Lakes region. It also allows Delta to augment east-west connecting traffic flows in conjunction with its other hubs.
- The Airport appears to be a profitable operation for Delta as described in the Report. Delta's profitability at the Airport also appears to have improved significantly in OY 2016 as compared to before the recession in OY 2007.
- Finally, the Airport serves as an important international gateway within Delta's network. Numerous European and Asian cities are served nonstop from the Airport on Delta, and, in general, these routes appear to be operating profitably.

Trillion Aviation prepared the aviation activity forecasts included in this Report. The underlying economic conditions of the Air Service Area are expected to be the primary driver for O&D passenger demand at the Airport. The future growth of the Airport's connecting traffic component is primarily based on business decisions by Delta. In general, it was assumed that in the long term, changes in O&D passenger traffic at the Airport will occur as a function of the growth in population and economy of the Air Service Area. The growth in U.S. population and gross domestic product (GDP), and Delta's network strategy, are assumed to be the primary drivers of future connecting passenger traffic. In addition, several other assumptions are incorporated into the long-term forecast including the following:

- The airlines will continue to add capacity that is in line with demand and GDP growth.
- Delta will continue to operate the Airport as a hub, and connecting passengers will continue to represent approximately 60% of Delta's total passengers at the Airport.
- The domestic airlines other than Delta and the Delta Connection Carriers currently serving the Airport will continue to provide air service to support local long-term demand primarily to and from their hub airports, key focus cities, and larger O&D markets, and the Airport will continue as a key city for Spirit Airlines.
- Delta and other airlines will continue to provide trans-oceanic service to European, Asian and South American markets. Other international service will be provided as demand dictates, including service to markets in Canada and Mexico.
- Long-term nationwide growth in air travel will occur over the forecast period consistent with forecast growth in the economy.
- Aviation fuel prices over the forecast period are anticipated to be higher relative to historical levels, but lower than the record prices reached in mid-2008.
- There will be no major disruption of airline service or airline travel behavior as a result of domestic or international terrorist acts or threats.

**Table 1** below presents historical annual enplaned passengers for OY 2006 through OY 2016 and forecasted annual enplaned passenger levels for the Airport for the period of OY 2017 through OY 2025. To identify recent traffic trends, the table also presents enplaned passengers at the Airport for the first nine months of OY 2016 (October 2015 through June 2016) and the same nine-month period for OY 2017 (October 2016 through June 2017). As shown, enplaned passengers for this period in OY 2017 have increased by approximately 0.5% as compared to the same period in OY 2016. Over the forecast period, total enplaned passengers are forecasted to increase at a CAGR of approximately 1.0%.

**Table 1****ENPLANED PASSENGER FORECAST (000s)**

<b>Operating Year</b>	<b>Total Enplaned Passengers</b>	<b>% Change</b>
<b>Historical</b>		
2006	17,800	-
2007	18,108	1.7%
2008	17,831	(1.5%)
2009	15,941	(10.6%)
2010	15,876	(0.4%)
2011	16,226	2.2%
2012	16,170	(0.3%)
2013	16,078	(0.6%)
2014	16,217	0.9%
2015	16,444	1.4%
2016	17,131	4.2%
2016 (Oct.-Jun.)	12,608	-
2017 (Oct.-Jun.)	12,676	0.5%
<b>Forecast</b>		
2017	17,252	0.7%
2018	17,558	1.8%
2019	17,726	1.0%
2020	17,906	1.0%
2021	18,076	1.0%
2022	18,261	1.0%
2023	18,439	1.0%
2024	18,620	1.0%
2025	18,812	1.0%
<b>CAGR <sup>1</sup></b>		
2006-2016	(0.4%)	
2010-2016	2.4%	
2016-2025	1.0%	

<sup>1</sup> CAGR = Compound annual growth rate

Source: Authority management records (historical); Trillion Aviation (forecast)

Compiled by Trillion Aviation

**Airport Capital Improvement Program**

The Authority manages Airport capital projects through an on-going five-year Capital Improvement Program. The current five-year Capital Improvement Program encompasses plans for current and future Airport capital projects for OY 2018 through OY 2022 (CIP). The majority of the capital projects in the CIP tend to be "routine" projects for a major airport, including reconstruction or rehabilitation of runways, taxiways, parking decks, roadways and environmental or planning studies.



This Report divides the capital projects in the CIP into three main categories, described below, for the purposes of identifying the CIP projects included in the financial analysis contained in Chapter 4 of this Report.

The funding plan for the CIP by category is presented in **Table 2**.

- **Series 2017 Projects.** This CIP category is comprised of those projects to be funded, either in whole or in part, with proceeds of the Series 2017 Bonds. A Weighted Majority has approved all of the Series 2017 Projects. The capital and operating costs associated with the Series 2017 Projects are included in the financial analysis contained in Chapter 4 of this Report. The Series 2017 Projects are further described in Chapter 4 of this Report.
- **Other Approved Capital Projects.** This CIP category is comprised of additional projects that a Weighted Majority has approved but have not been previously funded in whole and also are not being funded with proceeds of the Series 2017 Bonds. The Authority presently intends to issue Additional Bonds during the forecast period of this Report to fund the balance of the cost of these Other Approved Capital Projects. The capital costs of the Other Approved Capital Projects are included in the financial analysis contained in Chapter 4 of this Report.
- **Other CIP Projects.** This CIP category is comprised of all other CIP projects that are neither Series 2017 Projects nor Other Approved Capital Projects as defined above. These projects include (i) those CIP projects that a Weighted Majority has approved and have been funded previously with proceeds of bonds issued by the Authority in the past, and which either currently are in process or have not yet been started, and (ii) those CIP projects that the Authority has not yet fully formulated and/or still are in the conceptual phase, and for which the Authority has not yet requested Weighted Majority approval. It is possible that certain Other CIP Projects may be deferred or not otherwise undertaken by the Authority during the forecast period (depending on circumstances such as whether a Weighted Majority is willing to approve the as-yet unapproved projects, level of aviation demand, the availability of project funding, more refined scope and cost information for various projects, etc.). The capital costs related to the existing bond proceeds for previously funded Other CIP Projects are included in the financial analysis contained in Chapter 4 of this Report. However, the capital costs for the Other CIP Projects for which Weighted Majority approval has not yet been requested are not included in the financial analysis contained in Chapter 4 of this Report.

**Table 2****CIP FUNDING PLAN BY CATEGORY (thousands of dollars)<sup>1, 2</sup>**

<b>CIP Category</b>	<b>Est. Total Project Costs</b>	<b>Federal Grants</b>	<b>Other Funds</b>	<b>Existing Bond Proceeds</b>	<b>Series 2017 Bond Proceeds</b>	<b>Future Bond Proceeds<sup>3</sup></b>	<b>Other CIP Projects Future Bond Proceeds<sup>4</sup></b>
Series 2017 Projects	\$153,625	\$ --	\$1,500	\$36,100	\$101,025	\$15,000	\$ --
Other Approved Capital Projects	52,364	--	--	16,000	--	36,364	--
Other CIP Projects	625,925	2,688	4,030	83,625	--	--	535,582
<b>Total CIP</b>	<b>\$831,914</b>	<b>\$2,688</b>	<b>\$5,530</b>	<b>\$135,725</b>	<b>\$101,025</b>	<b>\$51,364</b>	<b>\$535,582</b>

<sup>1</sup> A Weighted Majority has approved all of the Series 2017 Projects and Other Approved Capital Projects (defined herein). Certain of the Other CIP Projects require approval by a Weighted Majority in order to fund such projects with Bond proceeds, expenditure schedules are subject to change, and projects are subject to demand and available funding.

<sup>2</sup> Current cost estimates and construction schedules may vary from the Board-approved CIP. Certain Series 2017 Projects are not included in the CIP because they have been completed or are planned to be completed by early OY 2018. The Board-approved CIP has a total estimated project cost of approximately \$813.1 million.

<sup>3</sup> Future Bond Proceeds with respect to the Series 2017 Projects are the proceeds of bonds currently planned to be issued to fund those portions of the Series 2017 Projects not funded by the Series 2017 Bonds or other sources. Future Bond Proceeds with respect to the Other Approved Capital Projects are the proceeds of bonds currently planned to be issued in future years to fund the Other Approved Capital Projects. Future Bond Proceeds are included as part of the financial analysis included in this Report.

<sup>4</sup> Other CIP Projects Future Bond Proceeds are the proceeds of bonds currently planned to be issued in future years to fund Other CIP Projects for which the Authority would need to obtain Weighted Majority approval in order to fund these projects with Bond proceeds and include the debt service on such Bonds in airline rates and charges. Other CIP Projects Future Bond Proceeds are not included in the financial analysis included in this Report.

Note: Amounts may not add because of rounding.

Source: Authority management records, August 2017

Compiled by Trillion Aviation

As shown above in Table 2, the Series 2017 Projects are estimated to cost approximately \$153.6 million and are planned to be funded with approximately \$36.1 million of proceeds of previously issued (i.e., existing) bonds, approximately \$101.0 million of proceeds of the Series 2017 Bonds, approximately \$1.5 million of other Airport funds, and approximately \$15.0 million of Future Bond Proceeds (defined in footnote 3 to Table 2 above). The Other Approved Capital Projects are estimated to cost approximately \$52.4 million and are planned to be funded with \$16.0 million of proceeds of existing bonds and approximately \$36.4 million of Future Bond Proceeds (defined above). The planned funding for both the Series 2017 Projects and the Other Approved Capital Projects is discussed in more detail in Chapter 4 of this Report.

The Other CIP Projects are estimated to cost approximately \$625.9 million and are planned to be funded with approximately \$2.7 million of federal grants, approximately \$4.0 million of other Airport funds, approximately \$83.6 million of proceeds of existing bonds, and approximately \$535.6 million of Other CIP Projects Future Bond Proceeds (defined above). As indicated previously, and as shown above in Table 2, most of the Other CIP Projects require Weighted Majority approval in the future in order to be financed with Bond proceeds, and the approximately \$535.6 million of Other CIP Projects Future Bond Proceeds is not included in the financial analysis contained in this Report.

## Financial Analysis

Trillion Aviation evaluated the ability of the Authority to generate Net Revenues sufficient to meet the funding requirements and obligations established by the Master Bond Ordinance during the forecast period of OY 2017 through OY 2025. Per our analyses, the Authority is forecasted to produce sufficient Net Revenues, which, together with Other Available Moneys and unencumbered amounts in the Revenue Fund, will at least equal 125% of debt service on Outstanding Bonds as well as the Additional Bonds included in the financial forecasts.

The Authority is forecasted to meet its requirements and obligations established by the Master Bond Ordinance and maintain reasonable levels of airline cost per enplaned passenger (CPE). **Table 3** below presents forecasted debt service coverage ratios and airline CPE.

**Table 3**

**DEBT SERVICE COVERAGE FORECAST AND PASSENGER AIRLINE CPE FORECAST**  
(dollars in thousands, except for CPE)

Operating Year	Net Revenues, Revenue Fund Balances and Other Available Moneys	Total Senior Lien Debt Service Requirements	Senior Lien Debt Service Coverage Ratio	Total Senior Lien and Junior Lien Debt Service Requirements	Senior Lien and Junior Lien Debt Service Coverage Ratio	Airline CPE
2017	\$252,759	\$165,742	1.53	\$178,018	1.42	\$9.93
2018	\$256,829	\$170,956	1.50	\$183,230	1.40	\$10.07
2019	\$266,974	\$178,168	1.50	\$190,443	1.40	\$10.50
2020	\$263,037	\$176,578	1.49	\$188,854	1.39	\$10.56
2021	\$261,259	\$173,471	1.51	\$185,746	1.41	\$9.87
2022	\$251,903	\$165,681	1.52	\$177,955	1.42	\$9.63
2023	\$255,595	\$164,839	1.55	\$177,114	1.44	\$9.44
2024	\$248,097	\$164,900	1.50	\$177,178	1.40	\$9.95
2025	\$250,401	\$164,169	1.53	\$176,412	1.42	\$9.85

Source: Trillion Aviation

Trillion Aviation prepared the aviation activity and financial forecasts included in this Report along with the underlying assumptions. In preparing our findings and conclusions, Trillion Aviation has relied upon the accuracy and completeness of financial and other data provided to it by the referenced sources, without independent verification; however, Trillion Aviation has no reason to believe such data are materially incorrect.

The techniques and methodologies used in preparing this Report are consistent with industry practices for similar studies in connection with airport revenue bond sales. Although Trillion Aviation believes that the approach and assumptions used are reasonable and provide an appropriate basis for the financial forecasts, any forecast is subject to uncertainties. Inevitably, some assumptions used to derive the forecast contained herein will not be realized, and unforeseeable events may occur. The actual financial results achieved will vary from those forecasted, and such variations could be material. We have no responsibility to update this Report for events and/or circumstances occurring after the date of this Report.

Trillion Aviation, in association with Airmac LLC and Partners for Economic Solutions, appreciates this opportunity to serve as the Authority's Airport Consultant for this proposed financing.

Sincerely,

A handwritten signature in blue ink that reads "Trillion Av, LLC". The signature is written in a cursive, slightly slanted style.

Trillion Av, LLC

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# 1 Role of the Airport and Economic Base for Air Traffic

This chapter introduces the Detroit Metropolitan Wayne County Airport (Airport or DTW) and summarizes the role the Airport serves in accommodating air traffic for the nation, the region, and as an important connecting hub in the network of Delta Air Lines, Inc. (Delta). This chapter also describes the Detroit region's economic base and its ability to continue to support demand for air transportation.

## 1.1 Role of the Airport

The Wayne County Airport Authority (Authority) has sole and exclusive operational jurisdiction of the Airport. The Airport serves as the principal commercial service airport for the Detroit metropolitan region, much of Michigan and parts of northern Indiana and Ohio. The Airport is located on approximately 6,255 acres in the City of Romulus, Michigan, about 21 miles west of the City of Detroit's (City) downtown. The airfield at the Airport contains six air carrier runways, including four parallel runways oriented in the northeast-southwest direction and two parallel runways oriented east-west. There are two passenger terminal complexes at the Airport – the McNamara Terminal (also referred to as the South Terminal) and the North Terminal. The McNamara Terminal, which serves Delta Air Lines (Delta), its affiliated regional carriers (Delta Connection Carriers), and Delta's other SkyTeam partners<sup>6</sup>, consists of a terminal building with three concourses accommodating 121 aircraft gates and an on-Airport hotel. The North Terminal, which serves other passenger airlines not affiliated with Delta, consists of a terminal building and a single concourse with 26 aircraft gates. The Airport also has a multi-level parking structure for short-term and long-term parking adjacent to each terminal building along with two surface parking lots for longer-term, economy public parking. More information on Airport facilities is contained in Chapter 3 of this Report.

### 1.1.1 National Role

The Airport is classified by the Federal Aviation Administration (FAA) as a Large Hub facility based upon its share of nationwide enplaned passengers.<sup>7</sup> Based on preliminary data from the FAA, approximately 16.8 million enplaned passengers boarded aircraft at the Airport in calendar year (CY) 2016 ranking it as the 18<sup>th</sup> busiest in the U.S. This was an increase of approximately 3.5% as compared to FAA data for CY 2015. This FAA data is presented on a CY basis and is the source used for determining an airport's hub size. **Table 1-1** below presents ranking of U.S. Large Hub airports in terms of total enplaned passengers per the FAA, based on preliminary data for CY 2016, the latest data available.

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<sup>6</sup> The SkyTeam is an alliance of airlines throughout the world and Delta is the only U.S. carrier currently in the alliance.

<sup>7</sup> The FAA classifies Large Hub airports as those serving at least 1.0% of annual U.S. passenger boardings.

**Table 1-1****U.S. AIRPORT ENPLANED PASSENGER RANKINGS (LARGE HUBS) – PRELIMINARY CY 2016**

Rank	City	Airport	Code	Enplaned Passengers
1	Atlanta	Hartsfield - Jackson Atlanta International	ATL	50,476,272
2	Los Angeles	Los Angeles International	LAX	39,635,691
3	Chicago	Chicago O'Hare International	ORD	37,499,201
4	Fort Worth	Dallas-Fort Worth International	DFW	31,274,875
5	New York	John F Kennedy International	JFK	29,224,554
6	Denver	Denver International	DEN	28,246,269
7	San Francisco	San Francisco International	SFO	25,706,994
8	Las Vegas	McCarran International	LAS	22,665,289
9	Seattle	Seattle-Tacoma International	SEA	21,887,110
10	Charlotte	Charlotte/Douglas International	CLT	21,455,996
11	Phoenix	Phoenix Sky Harbor International	PHX	20,896,229
12	Miami	Miami International	MIA	20,796,994
13	Orlando	Orlando International	MCO	20,283,479
14	Houston	George Bush Intercontinental/Houston	IAH	20,027,073
15	Newark	Newark Liberty International	EWR	19,834,792
16	Minneapolis	Minneapolis-St Paul International/Wold-Chamberlain	MSP	18,109,982
17	Boston	General Edward Lawrence Logan International	BOS	17,749,202
<b>18</b>	<b>Detroit</b>	<b>Detroit Metropolitan Wayne County</b>	<b>DTW</b>	<b>16,826,287</b>
19	New York	LaGuardia	LGA	14,706,123
20	Philadelphia	Philadelphia International	PHL	14,521,408
21	Fort Lauderdale	Fort Lauderdale/Hollywood International	FLL	14,263,202
22	Glen Burnie	Baltimore/Washington International Thurgood Marshall	BWI	12,340,183
23	Arlington	Ronald Reagan Washington National	DCA	11,372,460
24	Salt Lake City	Salt Lake City International	SLC	11,141,970
25	Chicago	Chicago Midway International	MDW	11,044,353
26	Dulles	Washington Dulles International	IAD	10,596,883
27	San Diego	San Diego International	SAN	10,340,164
28	Honolulu	Honolulu International	HNL	9,656,340
29	Tampa	Tampa International	TPA	9,194,576
30	Portland	Portland International	PDX	9,071,154

Source: Federal Aviation Administration, preliminary Air Carrier Activity Information for CY 2016, June 30, 2017 (accessed July 2017)

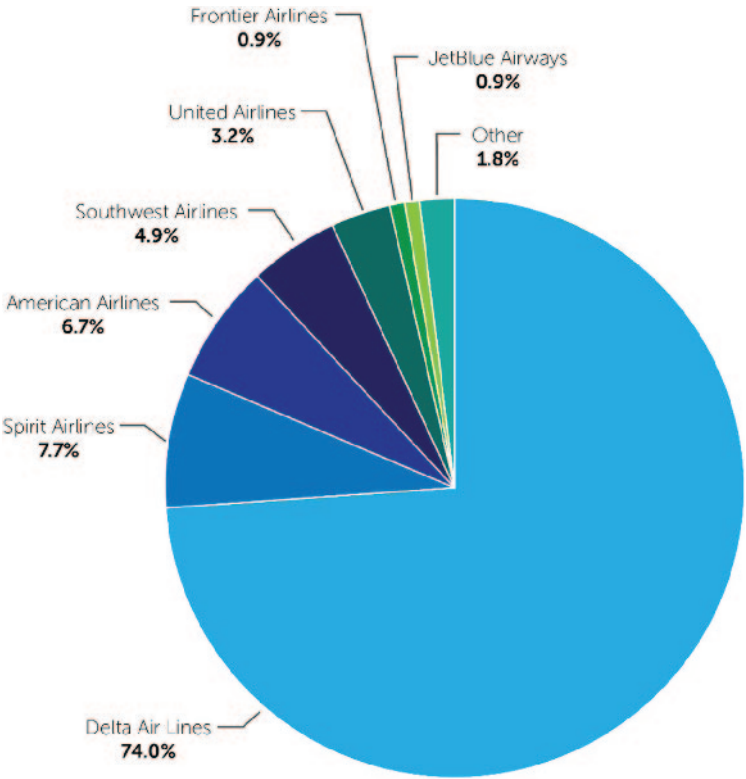
Compiled by Trillion Aviation

The current U.S. passenger airline industry generally consists of three primary business models: network carriers, low-cost carriers (LCCs), and ultra-low-cost carriers (ULCCs). Network carriers are generally considered the major airline brands that have existed, in one form or another, since the deregulation of the airline industry in the late 1970s. Network airlines have extensive route networks and can operate with a “hub and spoke” system or maintain significant market share at focus cities, and generally cater more towards the business traveler segment. LCCs are generally defined as passenger airlines that focus on lower operating costs to be able to provide customers lower fares while still providing some amenities within the cost of the ticket. However, as compared to network airlines, LCCs do not have as extensive route networks. ULCCs are



somewhat similar to LCCs, but generally focus on the leisure traveler, offer the lowest airfares, and do not provide any amenities within the cost of the ticket. Thus, ULCCs will charge for everything outside of the ticket cost such as checked baggage, carry-on baggage, seat selection, etc. Currently operating at the Airport are five U.S. network airlines,<sup>8</sup> one LCC<sup>9</sup>, two ULCCs<sup>10</sup>, and five foreign flag airlines. The Airport is also a major hub airport for Delta. Delta’s enplaned passenger market share, including the Delta Connection Carriers, comprised approximately 74.0% of enplaned passengers at the Airport in Operating Year (OY)<sup>11</sup> 2016. **Figure 1-1** below presents the Airport’s enplaned passenger market share by airline for OY 2016.<sup>12</sup>

**Figure 1-1**  
**THE AIRPORT’S ENPLANED PASSENGER MARKET SHARE (OY 2016)**



Notes: Regional affiliates, as applicable, have been included with their appropriate network partner. Amounts may not add because of rounding.  
Source: Authority management records  
Compiled by Trillion Aviation

<sup>8</sup> For the purposes of this Report, Alaska Airlines, American Airlines, Delta Air Lines, Southwest Airlines and United Airlines are considered network airlines.

<sup>9</sup> For the purposes of this Report, JetBlue Airways is considered a low-cost carrier.

<sup>10</sup> For the purposes of this Report, Frontier Airlines and Spirit Airlines are considered ultra-low-cost-carriers.

<sup>11</sup> The Authority’s Operating Year is the 12-month period ending September 30.

<sup>12</sup> Source: Authority management records, April 2017.

In CY 2015, ACI-NA data indicates the Airport had over 379,000 aircraft movements or operations, which ranked the Airport as 17<sup>th</sup> in the U.S.

**Table 1-2** presents the data from ACI-NA for aircraft movements in CY 2015 for the top 30 U.S. Airports.

**Table 1-2**

**U.S. AIRPORT AIRCRAFT MOVEMENT RANKINGS (TOP 30) – CY 2015**

Rank	City/State	Code	Aircraft Movements
1	Atlanta GA	ATL	882,497
2	Chicago IL	ORD	875,136
3	Dallas/Fort Worth TX	DFW	681,261
4	Los Angeles CA	LAX	655,564
5	Charlotte NC	CLT	543,944
6	Denver CO	DEN	541,213
7	Las Vegas NV	LAS	530,330
8	Houston TX	IAH	502,844
9	Phoenix AZ	PHX	440,411
10	New York NY	JFK	438,897
11	San Francisco CA	SFO	429,815
12	Newark NJ	EWR	415,534
13	Miami FL	MIA	412,915
14	Philadelphia PA	PHL	411,368
15	Minneapolis MN	MSP	404,612
16	Seattle WA	SEA	381,408
<b>17</b>	<b>Detroit MI</b>	<b>DTW</b>	<b>379,376</b>
18	Boston MA	BOS	372,930
19	Phoenix AZ	DVT	369,759
20	New York NY	LGA	360,274
21	Honolulu HI	HNL	312,655
22	Salt Lake City UT	SLC	311,857
23	Orlando FL	MCO	308,169
24	Long Beach CA	LGB	305,655
25	Daytona Beach FL	DAB	297,678
26	Sanford FL	SFB	293,742
27	Washington DC	DCA	292,781
28	Anchorage AK	ANC	289,681
29	Fort Lauderdale FL	FLL	278,002
30	Washington DC	IAD	269,070

Source: Airports Council International-North America, <http://www.aci-na.org/content/airport-traffic-reports> (accessed April 2017)  
Compiled by Trillion Aviation

The Airport also supports air cargo operations. Over 193,000 metric tonnes of freight and mail were loaded and unloaded on and off aircraft in CY 2015 based on data from Airports Council

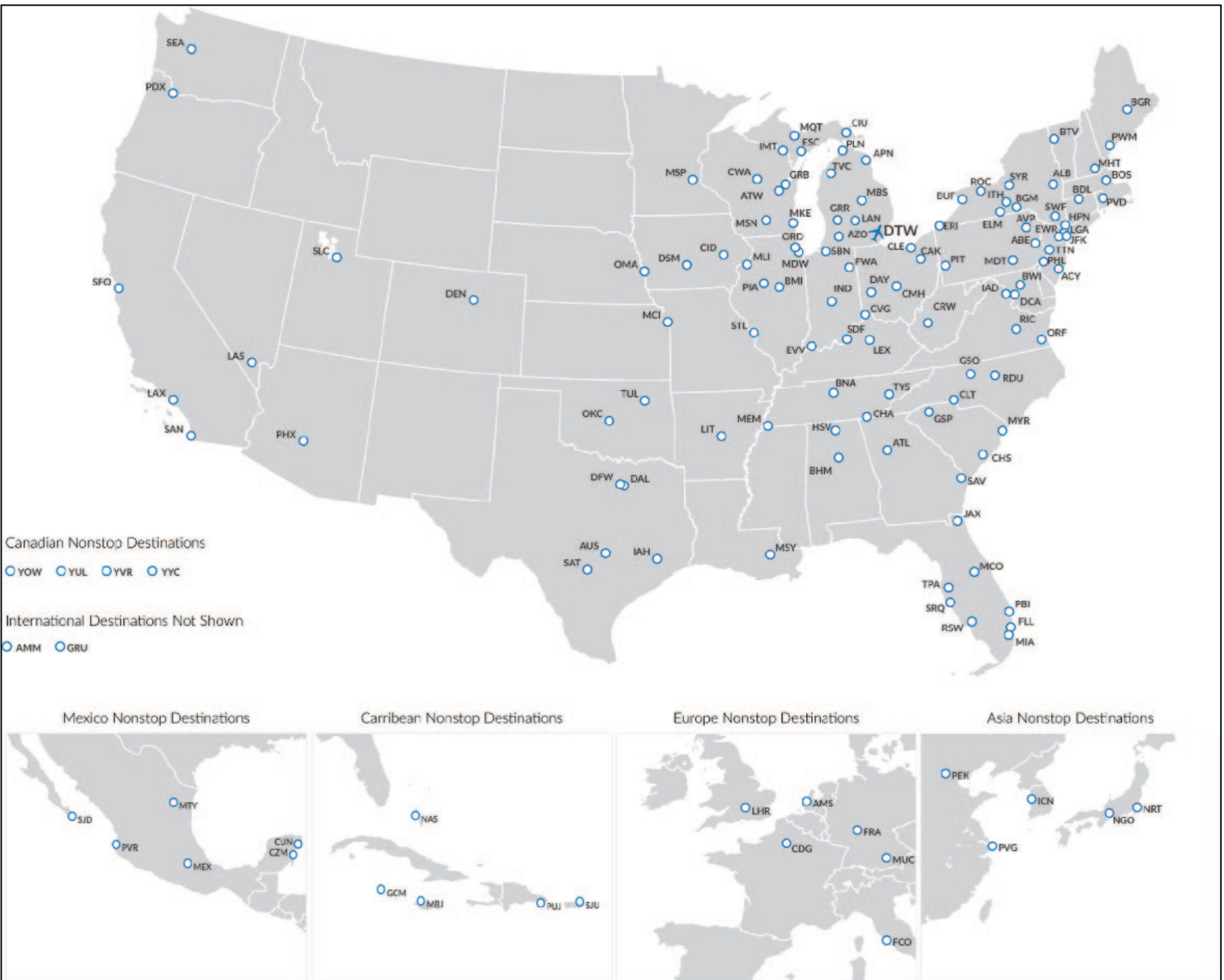
International-North America (ACI-NA),<sup>13</sup> ranking the Airport as the 26<sup>th</sup> busiest cargo airport in the U.S. per ACI-NA data for this period.

The Airport predominantly serves domestic traffic, which comprised approximately 91.5% of the Airport's enplaned passenger traffic in OY 2016; with international traffic comprising approximately 8.5%. Overall, the Airport had nonstop service to 138 airports during OY 2016. A map illustrating the Airport's nonstop service for OY 2016 is presented on **Figure 1-2** below.

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<sup>13</sup> Airports Council International-North America, <http://www.aci-na.org/content/airport-traffic-reports> (accessed April 2017)

Figure 1-2  
NONSTOP SERVICE FROM THE AIRPORT (OY 2016)



Source: Innovata (via Diio) for OY 2016

### 1.1.2 Regional Role

The Airport serves as the primary commercial service airport for the Detroit metropolitan area and surrounding region. Historically, domestic origin-destination (O&D) passenger traffic at the Airport has ranged from approximately 45% to 50% of total domestic enplaned passengers, and has been increasing in recent years. Per U.S. Department of Transportation (USDOT) data for OY 2016, domestic O&D enplaned passengers at the Airport represented approximately 50% of total domestic enplaned passengers.<sup>14</sup>

The geographic region that serves as an airport's primary air service catchment area is referred to as its "Air Service Area". For the purposes of this Report, the Airport's Air Service Area is defined as the Detroit-Warren-Ann Arbor Combined Statistical Area (CSA), which includes the following 10 counties in Michigan: Genesee, Lapeer, Lenawee, Livingston, Macomb, Monroe, Oakland, St. Clair, Washtenaw, and Wayne. The Detroit-Warren-Ann Arbor CSA is the 12<sup>th</sup> most populated CSA in the U.S., with approximately 5.3 million people and about 53% of the population of the State of Michigan. In many cases, an airport's air service area can extend beyond its primary air service area depending on the location of other population centers and availability of other commercial service airports; however, it is generally the economic strength of the Air Service Area that provides the principal demand for supporting O&D air travel. In the case of the Airport, its secondary air service area generally consists of southeastern and south-central Michigan, northwestern Ohio, northeastern Indiana, and the southernmost areas of the Province of Ontario, Canada, generally in the Windsor metropolitan area. The limits of a secondary air service area are generally defined by other airport facilities in the region.

The Airport is, by far, the largest airport in the region and, as a result, has somewhat limited competition for air service. Within a 100-mile driving radius from the Airport, there are four commercial service airports that offer limited scheduled airline service. Passenger levels at these facilities generally ranged from approximately 0.5% to 2.4% of that experienced at the Airport for CY 2016. Additional information on these airports is as follows:

- Windsor International Airport (YQG) located across the U.S. border in Ontario, Canada, is approximately 30 driving miles from the Airport and about nine driving miles east of downtown Detroit. As of August 2017, there were approximately eight daily nonstop departures from YQG to Toronto, along with other seasonal service being offered from time-to-time. YQG served 331,000 total passengers in 2016.<sup>15</sup>
- Toledo Express Airport (TOL) is located approximately 65 driving miles southwest of the Airport. TOL is classified by the FAA as a Non-Hub airport and had approximately 92,000 enplaned passengers in CY 2016 based on preliminary FAA data.

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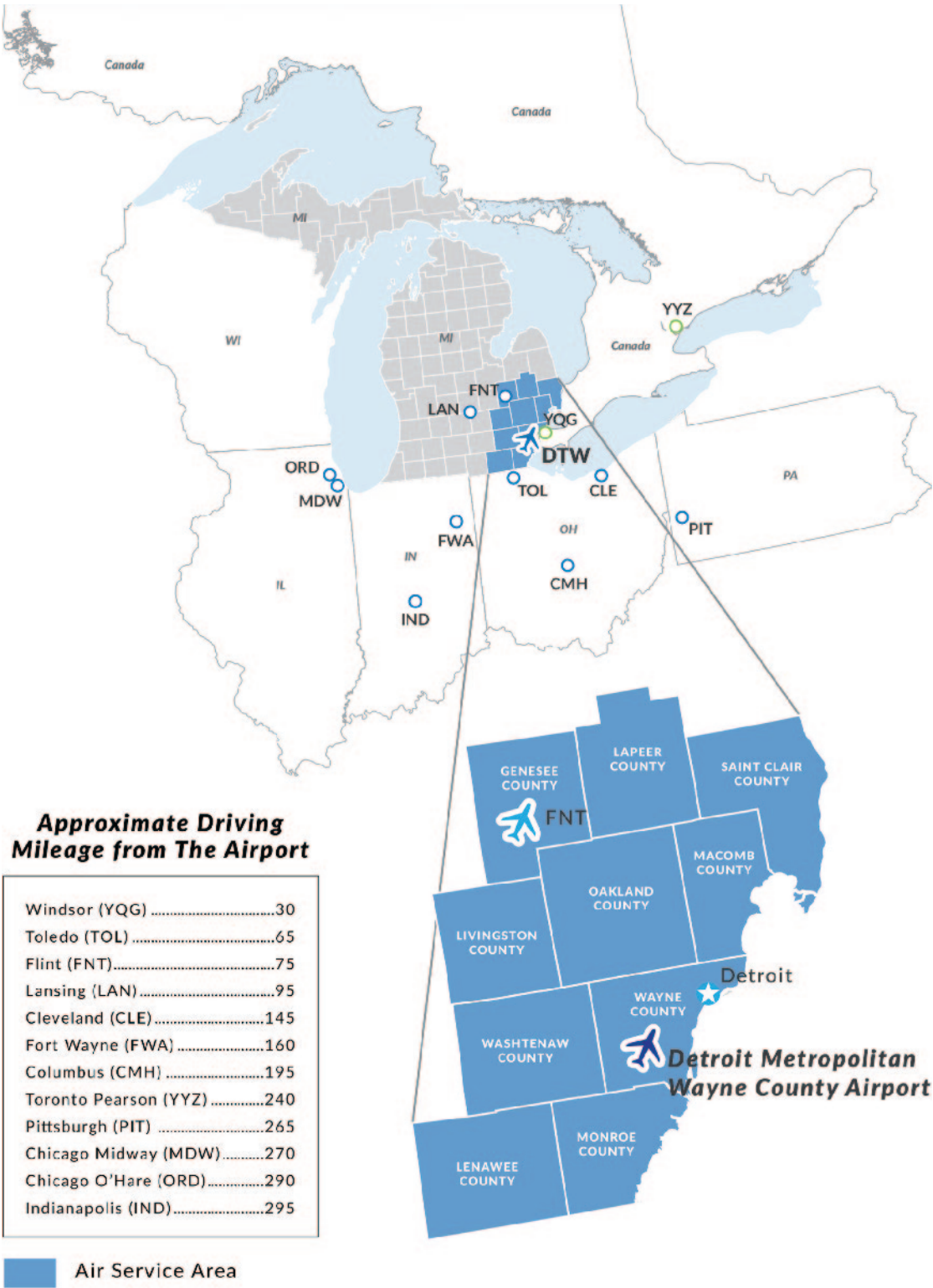
<sup>14</sup> Data used to estimate an airport's share of O&D passengers is from the USDOT. These data are a random 10% sample of tickets either ticketed by a U.S. carrier or where a U.S. carrier operated at least one flight in the ticket's itinerary. Therefore, the calculation of the Airport's share of O&D passengers is an estimate based on this data, which is generally accepted in the industry as the best publicly available data source for such purposes.

<sup>15</sup> "Growth In Air Traffic Opens New Opportunities in Windsor", BlackburnNews.com, <http://blackburnnews.com/windsor/windsor-news/2017/05/15/growth-air-traffic-opens-new-opportunities-windsor/>, 15 May 2017.

- Bishop International Airport (FNT) in Flint, Michigan is located approximately 75 driving miles north of the Airport. FNT is classified by the FAA as a Small Hub airport and had approximately 399,000 enplaned passengers in CY 2016 based on preliminary FAA data.
- Capital Region International Airport (LAN) in Lansing, Michigan is located approximately 95 driving miles northwest of the Airport. LAN is classified by the FAA as a Non-Hub airport and had approximately 162,000 enplaned passengers in CY 2016 based on preliminary FAA data.

Chicago Midway International Airport (MDW) is the nearest Large Hub U.S. airport, and is approximately 270 driving miles from the Airport. Chicago O'Hare International Airport (ORD) is approximately 290 driving miles from the Airport. Toronto Pearson International Airport (YYZ) in Ontario, Canada is the nearest large airport somewhat comparable in size to the Airport; however, it is across the U.S. border in Canada and approximately 240 driving miles from the Airport. The nearest U.S. Medium Hub airport is Cleveland-Hopkins International Airport at approximately 145 driving miles southeast of the Airport. **Figure 1-3** on the next page illustrates the Air Service Area, the nearest smaller commercial service airports in each direction, and other larger airports within 300 driving miles from the Airport. As described above, there are no other Large Hub airport facilities comparable to the Airport within 200 driving miles.

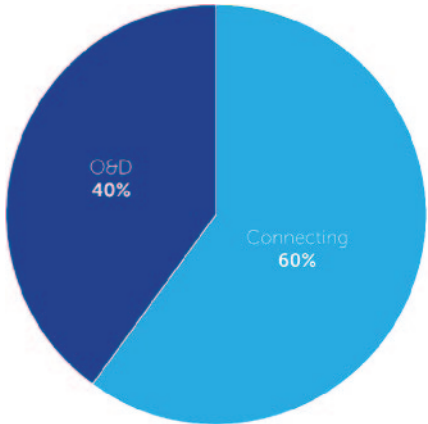
**Figure 1-3**  
**AIR SERVICE AREA AND PROXIMITY TO OTHER AIRPORTS**



**1.1.3 Role as a Hub for Delta**

Delta is the Airport’s largest carrier, and operates an important connecting hub at the Airport. In OY 2016, as reported to the USDOT, approximately 40% of Delta’s passengers at the Airport were considered O&D passengers who either started their trips or ended them at the Airport. The remaining 60% of passengers on Delta were connecting passengers who traveled through the Airport on their way to their final destinations. **Figure 1-4** below illustrates the estimated mix of connecting versus O&D passengers for Delta, including the Delta Connection Carriers, at the Airport in OY 2016. More than 90% of domestic connecting traffic at the Airport was operated by Delta in OY 2016. Delta accounted for approximately 53% of domestic O&D passengers at the Airport in OY 2016. In terms of international enplaned passenger traffic at the Airport, Delta accounted for approximately 81.4% in OY 2016. Delta’s air service at the Airport is described in more detail in Chapter 2 of this Report.

**Figure 1-4**  
**DELTA’S PASSENGER TRAFFIC AT THE AIRPORT: ESTIMATED MIX OF O&D AND CONNECTING PASSENGERS (OY 2016)**



Source: U.S. Department of Transportation (via Diio), accessed March 2017  
Compiled by Trillion Aviation

**1.2 Economic Base for Air Traffic**

Air travel demand for O&D traffic is largely correlated with a region’s demographic and economic characteristics. The economic strength of the Air Service Area has a major impact on the aviation activity at the Airport since approximately 50% of the Airport's domestic passenger traffic is O&D and that share and amount have grown in recent years. The next sections review current economic trends and conditions in the Airport’s Air Service Area and present data indicative of the Air Service Area’s capability to generate growing demand for air transportation throughout the forecast period.

**1.2.1 Socio-Economic Trends**

Data for population, age distribution, educational attainment, income, and gross regional product for the Air Service Area are discussed below and are presented in **Tables 1-3** through **1-**



10. Parallel data for Michigan and the United States also are shown to provide a basis of comparison to trends in the Air Service Area. Where available, historical data will be presented for the 2006-2016 period, which represents the most recent 10 years of historical data. Also, where available, forecast data will be presented through 2025 to be consistent with air traffic and financial forecasts presented later in this Report.

### **Historical and Forecast Population**

With a population of more than 5.3 million in CY 2016, the 10-county Air Service Area is the 12<sup>th</sup> most populous metropolitan region in the United States (see **Table 1-3**).

**Table 1-3**

#### **TOP 20 COMBINED STATISTICAL AREAS IN THE UNITED STATES**

<b>Rank</b>	<b>Combined Statistical Area</b>	<b>CY 2016 Population</b>
1	New York-Newark	23,849,286
2	Los Angeles-Long Beach	18,899,054
3	Chicago-Naperville	10,031,427
4	Washington-Baltimore-Arlington	9,786,694
5	San Jose-San Francisco-Oakland	8,749,052
6	Boston-Worcester-Providence	8,183,797
7	Dallas-Fort Worth	7,608,918
8	Philadelphia-Reading-Camden	7,230,588
9	Houston-The Woodlands	6,925,913
10	Miami-Fort Lauderdale-Port St. Lucie	6,735,758
11	Atlanta--Athens-Clarke County--Sandy Springs	6,450,293
<b>12</b>	<b>Detroit-Warren-Ann Arbor</b>	<b>5,321,165</b>
13	Seattle-Tacoma	4,640,749
14	Minneapolis-St. Paul	3,915,884
15	Cleveland-Akron-Canton	3,497,557
16	Denver-Aurora	3,437,362
17	Portland-Vancouver-Salem	3,137,776
18	Orlando-Deltona-Daytona Beach	3,146,970
19	St. Louis-St. Charles-Farmington	2,934,125
20	Pittsburgh-New Castle-Weirton	2,647,888

Source: Woods & Poole Economics, Inc., 2016 Data Projections for Detroit-Ann Arbor-Warren CSA, Michigan, and United States, April 2016  
Compiled by Partners for Economic Solutions, April 2017

**Table 1-4** includes 2006, 2011, and 2016 population data and trends in the Air Service Area, Michigan, and the U.S. during this period. Data forecasts for 2025 are also included. Data in Table 1-4 show that between 2006 and 2011, the population in the Air Service Area fell by 2.6%, from approximately 5.4 million to 5.3 million. During the same period, Michigan's population decreased by 1.6% and the U.S. population increased by 4.5%. However, between 2011 and 2016, the Air Service Area had a population gain of approximately 12,000, representing a total

gain of 0.2% - lower than that of Michigan's population (0.8%) and substantially lower than that of the U.S. (4.1%). In 2016, the Air Service Area accounted for approximately 53% of Michigan's population.

**Table 1-4****HISTORICAL AND FORECAST POPULATION (2006-2025) <sup>1/</sup>**

Historical Population	Area		
	Air Service Area	Michigan	United States
2006	5,450,054	10,036,081	298,379,912
2011	5,308,901	9,875,736	311,721,632
2016	5,321,165	9,959,646	324,506,944
<b>Projected</b>			
2025	5,363,636	10,218,238	352,566,429
<b>Percent Change</b>			
2006-2011	(2.6%)	(1.6%)	4.5%
2011-2016	0.2%	0.8%	4.1%
2016-2025	0.8%	2.6%	8.6%
<b>CAGR<sup>2/</sup></b>			
2006-2011	(0.5%)	(0.3%)	0.9%
2011-2016	0.1%	0.2%	0.8%
2016-2025	0.1%	0.3%	0.9%

Notes:

1/ Population growth data are based on estimates of the Air Service Area's birth rate, death rate, and net in-migration.

2/ Compound annual growth rate.

Source: Woods & Poole Economics, Inc., 2016 Data Projections for Detroit- Ann Arbor-Warren CSA, Michigan, and United States, April 2016  
Compiled by Partners for Economic Solutions, July 2017

The forecasted population increase in the Air Service Area for the period 2016 to 2025 reflects a forecasted CAGR of 0.1% and is lower than the forecasted CAGR for Michigan (0.3%) and lower than the forecasted U.S. rate during the same period (0.9%). The modest increase in new residents in the Air Service Area, approximately 42,000 between 2016 and 2025, is expected to contribute to stable demand for air service at the Airport.

**Age Distribution**

**Table 1-5** includes 2016 age data for the Air Service Area, Michigan, and the U.S. The median age in the Air Service Area is 39.8 years, equal to that of Michigan and higher than that of the U.S. (37.9 years). Demand for air travel varies by age group. According to Consumer

Expenditure Survey data from the U.S. Bureau of Labor Statistics, persons between the ages of 45 and 64 account for 44% of expenditures on airline fares.<sup>16</sup>

Table 1-5 shows that in 2016, residents in the Air Service Area aged 45 to 64 made up 28.1% of the population, compared with 27.6% of the population in Michigan, and 26.0% in the U.S. This is the age group that generates the most expenditures on airline fares and it is represented in the Air Service Area in a proportion that is higher than that of both Michigan and the U.S.

**Table 1-5****AGE DISTRIBUTION (2016)**

	Air Service Area	Michigan	United States
<b>Total Population</b>	5,321,165	9,959,646	324,506,944
<b>Age Range</b>			
19 and under	24.9%	24.9%	25.5%
20 to 24 years	6.5%	6.9%	6.9%
25 to 34 years	12.8%	12.6%	13.8%
35 to 44 years	12.0%	11.6%	12.5%
45 to 54 years	14.2%	13.6%	13.2%
55 to 64	13.9%	14.0%	12.8%
65 and above	15.5%	16.3%	15.2%
<b>Total</b>	100.0%	100.0%	100.0%
<b>Median Age</b>			
	39.8 years	39.8 years	37.9 years

Source: Woods & Poole Economics, Inc., 2016 Data Projections for Detroit- Ann Arbor-Warren CSA, Michigan, and United States, April 2016  
Compiled by Partners for Economic Solutions, April 2017

**Educational Attainment**

**Table 1-6** includes 2016 educational attainment data for the Air Service Area, Michigan, and the U.S. The Air Service Area is home to a substantial number of educated adults. According to data shown in Table 1-6, more than 1.4 million people, or nearly 40% of the Air Service Area's population over the age of 25, have a post-secondary degree (associate, bachelor's, or graduate). This percentage is higher than that of both Michigan and the U.S. where, respectively, 37.4% and 38.6% of the population over the age of 25 have a post-secondary degree. Air Service Area residents account for approximately 57% of all Michigan residents with a post-secondary degree.

Educational attainment is higher in four of Detroit's "collar" counties (Livingston, Macomb, Oakland, Washtenaw) than in the Air Service Area as a whole.<sup>17</sup> These four counties contain 50.4% of the Air Service Area's population aged 25 and over. Approximately 48% of residents aged 25 and over in these four counties have a post-secondary degree.

<sup>16</sup> *Who's Buying for Travel*, 11<sup>th</sup> Edition, 2015, New Strategist Publications. Data in *Who's Buying for Travel* are based on the U.S. Bureau of Labor Statistics' Consumer Expenditure Survey, a nationwide survey of household spending.

<sup>17</sup> Collar counties are defined as suburban counties that surround a central city county.

According to Consumer Expenditure Survey data from the U.S. Bureau of Labor Statistics, persons with a college degree generate a high percentage of expenditures on air travel. Data indicate that 77% of airline fares are purchased by college graduates, while 17% of airline fares are purchased by consumers who have had some college or have earned an associate degree. Six percent of airline fares are purchased by consumers who never attended college.<sup>18</sup>

In addition to having a highly-educated population, the Air Service Area is also home to more than 35 colleges and universities such as the University of Michigan, Wayne State University, Central Michigan University, Oakland Community College, Macomb Community College, Eastern Michigan University, Oakland University, Henry Ford College, and others. Educational institutions in the Air Service Area have a total enrollment of approximately 340,000 students and generate demand for air travel through academic conferences, visiting professorships, study abroad programs, and individual student and faculty travel.<sup>19</sup>

**Table 1-6****EDUCATIONAL ATTAINMENT (2016)**

	Air Service Area	Michigan	United States
<b>Population 25 years and over</b>	3,645,824	6,792,848	219,330,589
Less than 9th Grade	3.2%	3.1%	5.5%
9th - 12th Grade, No Diploma	6.9%	6.7%	7.3%
High School Graduate	23.3%	25.3%	23.6%
GED/Alternative Credential	3.7%	4.1%	4.0%
Some College, No Degree	23.4%	23.4%	20.9%
Post-Secondary Degree	39.5%	37.4%	38.6%
<i>Associate Degree</i>	9.1%	9.5%	8.2%
<i>Bachelor's Degree</i>	17.8%	16.8%	18.8%
<i>Master's Degree or Doctorate</i>	12.6%	11.1%	11.6%
Total	100.0%	100.0%	100.0%

Source: Esri Market Profiles for Detroit- Ann Arbor-Warren CSA, Michigan, and United States, June 2016

Compiled by Partners for Economic Solutions, April 2017

**Household Income**

**Table 1-7** includes actual 2016 and forecasted 2025 median household income data for the Air Service Area, Michigan, and the U.S. The Air Service Area's estimated 2016 median household income was higher than that of Michigan and slightly below that of the U.S. Table 1-7 shows that in 2016, the Air Service Area's median household income of \$53,667 was 5.8% above Michigan's (\$50,744) and 0.9% lower than that of the U.S. (\$54,149).<sup>20</sup> Forecasts for 2025 show that the median household income in the Air Service Area (\$67,133) will continue to exceed Michigan's (\$62,023) and will also be higher compared to the U.S. (\$64,113).<sup>21</sup>

<sup>18</sup> *Who's Buying for Travel*, 11<sup>th</sup> Edition, 2015, New Strategist Publications.

<sup>19</sup> National Center for Education Statistics, April 2017.

<sup>20</sup> In 2016 dollars.

<sup>21</sup> In 2025 dollars.

In Detroit's four collar counties, median household income exceeds that of the Air Service Area as a whole. In 2016, median household income in these counties was \$63,112;<sup>22</sup> forecasts indicate that median household income in the four collar counties will be \$81,831 in 2025.<sup>23</sup>

**Table 1-7****MEDIAN HOUSEHOLD INCOME AND INCOME DISTRIBUTION (2016-2025)**

	Air Service Area	Michigan	United States
<b>2016 Median Household Income</b>	\$53,667	\$50,744	\$54,149
<b>2025 Median Household Income</b>	\$67,133	\$62,023	\$64,113
	Household Income Distribution (Percent)		
	Air Service Area	Michigan	United States
<b>2016 Household Income</b>			
Less than \$24,999	23.0%	24.2%	22.6%
\$25,000 to \$49,999	23.4%	24.9%	23.4%
\$50,000 - \$74,999	17.5%	18.4%	17.7%
\$75,000 - \$99,999	12.6%	12.4%	12.3%
\$100,000 - \$199,999	19.0%	16.5%	18.7%
\$200,000 or more	4.5%	3.6%	5.3%
<b>Total</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>
<b>2025 Household Income</b>			
Less than \$24,999	20.9%	22.7%	22.0%
\$25,000 to \$49,999	14.0%	14.9%	16.9%
\$50,000 - \$74,999	18.6%	19.7%	14.8%
\$75,000 - \$99,999	14.8%	15.2%	14.6%
\$100,000 - \$199,999	26.8%	23.4%	25.9%
\$200,000 or more	5.0%	4.1%	5.9%
<b>Total</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>

## Notes:

1/ Amounts are shown in current dollars, i.e., 2016 data are shown in 2016 dollars and 2025 data are shown in 2025 dollars.

2/ Calculations of 2025 median income and household income distribution are based on 2021 estimates from Esri.

Source: Esri Market Profiles for Detroit- Ann Arbor-Warren CSA, Michigan, and United States, June 2016

Compiled by Partners for Economic Solutions, April 2017

The percentage of higher income households, defined as those earning \$100,000 or more annually, within the Air Service Area is another key indicator of potential demand for air travel services. In 2016, approximately 492,000 Air Service Area households had an income of \$100,000 or more. This is equal to over 23% of all Air Service Area households. According to Consumer Expenditure Survey data from the U.S. Bureau of Labor Statistics, households with annual income of \$100,000 or more typically generate 51% to 54% of airline fare expenditures.<sup>24</sup>

<sup>22</sup> In 2016 dollars.

<sup>23</sup> In 2025 dollars.

<sup>24</sup> *Who's Buying for Travel*, 7<sup>th</sup> Edition; 2010; *Who's Buying for Travel*, 8<sup>th</sup> Edition; 2011; *Who's Buying for Travel*, 9<sup>th</sup> Edition; 2012; *Who's Buying for Travel*, 10<sup>th</sup> Edition, 2014; *Who's Buying for Travel*, 11<sup>th</sup> Edition, 2015, New Strategist Publications.

Data in **Table 1-8** forecast that between 2016 and 2025, the Air Service Area will gain an additional 184,000 households with annual income greater than \$100,000.

**Table 1-8****HOUSEHOLDS WITH INCOME OF \$100,000 AND ABOVE (2016-2025)**

	<u>Air Service Area</u>	<u>Michigan</u>	<u>United States</u>
<b>Total Households</b>			
2016 estimate	2,094,295	3,920,995	121,784,504
2025 forecast	2,129,909	4,031,008	131,798,373
Increase in households	35,614	110,013	10,013,869
CAGR <sup>1/</sup> 2016-2025	0.3%	0.6%	1.6%
<b>Households with Income of \$100,000 and Above<sup>2/</sup></b>			
2016 estimate	492,159	788,120	29,228,281
2025 forecast	676,765	1,108,617	41,900,085
Increase in households with income of \$100,000 and above	184,606	320,497	12,671,804
CAGR 2016-2025	0.3%	0.4%	0.4%
<b>% of Households with Income of \$100,000 and Above<sup>2/</sup></b>			
2016 estimate	23.5%	20.1%	24.0%
2025 forecast	31.8%	27.5%	31.8%

Notes:

1/ Compound annual growth rate.

2/ In current dollars.

3/ Calculations of 2025 households and income distribution are based on 2021 estimates from Esri.

Source: Esri Market Profiles for Detroit- Ann Arbor-Warren CSA, Michigan, and United States, June 2016

Compiled by Partners for Economic Solutions, April 2017

**Per Capita Personal Income**

Personal income is a key indicator of a region's demand for air travel and includes the sum of wages and salaries, other labor income, proprietors' income, rental income of persons, dividend income, personal interest income, and transfer payments less personal contributions for government social insurance. Per capita personal income is a measure of the relative affluence of a region's residents and, consequently, of their ability to afford air travel.

**Table 1-9** shows annual per capita personal income for the Air Service Area, Michigan, and the U.S. From 2006 and 2016, per capita personal income in the Air Service Area was higher than that of Michigan by an average of 7.6% and was below that of the U.S. by an average of 5.7%. Between 2006 and 2016, per capita personal income for the Air Service Area increased at a CAGR of 0.6%, below the CAGR for both Michigan and the U.S. during the same period (0.8%).

Forecasts for 2025 in Table 1-9 show that per capita income in the Air Service Area is forecasted to increase from \$45,822 in 2016 to \$53,358 in 2025. This increase represents a CAGR of 1.7% for the Air Service Area and is higher than the CAGR for Michigan (1.6%) and for the U.S. (1.5%).

**Table 1-9**  
**HISTORICAL AND FORECAST PER CAPITA PERSONAL INCOME (2006-2025)**

Year	Per Capita Personal Income (in 2016 dollars)		
	Air Service Area	Michigan	U.S.
2006	\$43,193	\$39,433	\$44,440
2007	\$43,351	\$39,617	\$45,261
2008	\$42,701	\$39,517	\$45,311
2009	\$40,438	\$37,700	\$43,458
2010	\$40,764	\$38,216	\$43,729
2011	\$42,251	\$39,572	\$44,987
2012	\$43,151	\$40,198	\$46,037
2013	\$43,048	\$40,215	\$45,592
2014	\$44,166	\$41,211	\$46,582
2015	\$45,012	\$41,964	\$47,378
2016	\$45,822	\$42,681	\$48,134
<b>Forecast</b>			
2025	\$53,358	\$49,257	\$55,090
<b>CAGR<sup>1/</sup></b>			
2006-2016	0.6%	0.8%	0.8%
2016-2025	1.7%	1.6%	1.5%

Note:

1/ Compound annual growth rate.

Source: Woods & Poole Economics, Inc., 2016 Data Projections for Detroit- Ann Arbor-Warren CSA, Michigan, and United States, April 2016

Compiled by Partners for Economic Solutions, April 2017

### **Per Capita Gross Regional Product / Gross Domestic Product**

Per capita gross domestic product (national level) and per capita gross regional product (state- and county-level) are measures of the value of all final goods and services produced within a geographic area, divided by the total population. These per capita measures are general indicators of the economic health of a geographic area and, consequently, of the area's potential demand for air transportation services.

**Table 1-10** shows the per capita gross regional product for the Air Service Area and Michigan, and per capita gross domestic product data for the U.S. from 2006 through 2016. Table 1-10 shows that the Air Service Area's per capita gross regional product declined from \$52,449 in 2006 to \$47,827 in 2011, reflecting a CAGR of -1.8% and a greater decline compared to Michigan (-1.5%) and the U.S. (-0.5%). However, between 2011 and 2016, gross regional product in the Air Service Area had a CAGR of 2.4%--higher than that of both Michigan (2.2%) and the U.S. (1.4%) during the same period.

Forecasts for 2025 in Table 1-10 show that per capita gross regional product for the Air Service Area is forecasted to increase from \$53,726 in 2016 to \$61,763 in 2025. This forecasted increase

represents a CAGR of 1.6% for the Air Service Area and is higher than the CAGR for Michigan (1.4%) and the U.S. (1.3%) between 2016 and 2025.

**Table 1-10****HISTORICAL AND FORECAST PER CAPITA GROSS REGIONAL AND GROSS DOMESTIC PRODUCT (2006-2025)**

<u>Year</u>	<u>Per Capita Gross Regional &amp; Gross Domestic Product (in 2016 dollars)</u>		
	<u>Air Service Area</u>	<u>Michigan</u>	<u>U.S.</u>
2006	\$52,449	\$46,121	\$53,811
2007	\$52,080	\$45,730	\$54,300
2008	\$48,321	\$42,713	\$53,050
2009	\$45,380	\$40,705	\$51,519
2010	\$47,071	\$42,411	\$52,153
2011	\$47,827	\$42,797	\$52,373
2012	\$49,091	\$43,564	\$53,111
2013	\$50,291	\$44,745	\$53,647
2014	\$51,763	\$46,049	\$55,017
2015	\$52,784	\$46,896	\$55,957
2016	\$53,726	\$47,662	\$56,786
<b><u>Forecast</u></b>			
2025	\$61,763	\$53,958	\$63,690
<b><u>CAGR<sup>1/</sup></u></b>			
2006-2011	(1.8%)	(1.5%)	(0.5%)
2011-2016	2.4%	2.2%	1.6%
2016-2025	1.6%	1.4%	1.3%

Note:

1/ Compound annual growth rate.

Source: Woods & Poole Economics, Inc., 2016 Data Projections for Detroit- Ann Arbor-Warren CSA, Michigan, and United States, April 2016

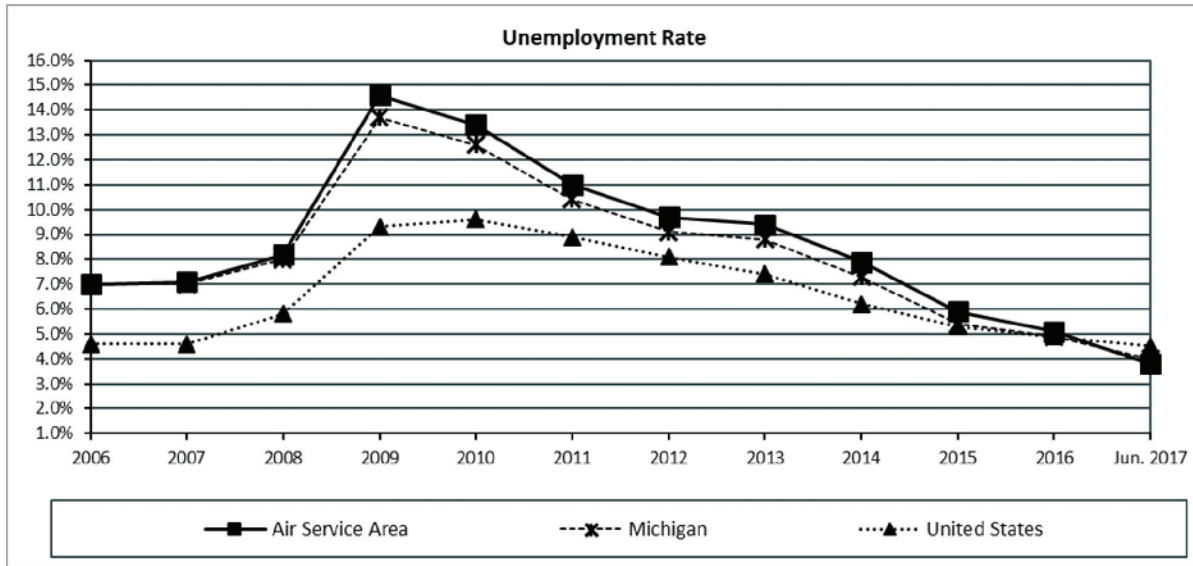
Compiled by Partners for Economic Solutions, April 2017

### 1.2.2 Labor Market Trends

Civilian labor force data, unemployment rates, and employment by industry data for the Air Service Area are discussed below and are presented in **Tables 1-11** and **1-12**. **Figure 1-5** also presents 2016 employment by industry for the Air Service Area. Parallel data for Michigan and the U.S. are also shown to provide a basis of comparison for trends in the Air Service Area.



**Table 1-11**  
**CIVILIAN LABOR FORCE AND UNEMPLOYMENT RATE (2006-June 2017)**



Year	Civilian Labor Force			Year	Unemployment Rate		
	Air Service Area	Michigan	United States		Air Service Area	Michigan	United States
2006	2,719,940	5,076,656	151,428,000	2006	7.0%	7.0%	4.6%
2007	2,676,964	5,011,120	153,124,000	2007	7.1%	7.0%	4.6%
2008	2,616,546	4,921,466	154,287,000	2008	8.2%	8.0%	5.8%
2009	2,618,121	4,903,544	154,142,000	2009	14.6%	13.7%	9.3%
2010	2,554,998	4,798,954	153,889,000	2010	13.4%	12.6%	9.6%
2011	2,486,623	4,685,164	153,617,000	2011	11.0%	10.4%	8.9%
2012	2,484,285	4,672,695	154,975,000	2012	9.7%	9.1%	8.1%
2013	2,511,932	4,727,619	155,389,000	2013	9.4%	8.8%	7.4%
2014	2,509,111	4,754,159	155,922,000	2014	7.9%	7.3%	6.2%
2015	2,495,843	4,757,457	157,130,000	2015	5.9%	5.4%	5.3%
2016	2,566,544	4,836,760	159,187,000	2016	5.1%	4.9%	4.9%
Jun. 2017 <sup>1/</sup>	2,587,582	4,889,522	161,337,000	Jun. 2017 <sup>1/</sup>	3.8%	4.0%	4.5%

CAGR <sup>2/</sup>		
2006 – 2016	(0.6%)	(0.5%)

Notes:

1/ June 2017 data are not seasonally adjusted. In June 2017, the seasonally adjusted unemployment rate was 3.8% in Michigan and 4.4% in the U.S. Seasonally adjusted civilian labor force data are not available for the Air Service Area.

2/ Compound annual growth rate.

Source: Bureau of Labor Statistics, U.S. Department of Labor; July 2017  
Compiled by Partners for Economic Solutions, August 2017

**Table 1-12**  
**HISTORICAL AND FORECAST EMPLOYMENT BY INDUSTRY (2006-2025)**

Industry <sup>1/</sup>	Air Service Area					United States (000s)				
	2006	2011	2016	CAGR <sup>2/</sup> 2006- 11	CAGR 2011- 16	2006	2011	2016	CAGR 2006- 11	CAGR 2011- 16
Construction <sup>3/</sup>	150,845	117,099	136,620	(4.9%)	3.1%	13,200	10,871	12,815	(3.8%)	3.3%
Manufacturing	334,904	252,802	292,169	(5.5%)	2.9%	14,685	12,387	13,181	(3.3%)	1.3%
Wholesale/Retail Trade	432,413	391,393	417,772	(2.0%)	1.3%	25,338	24,117	26,136	(1.0%)	1.6%
Transportation/Utilities	92,646	87,358	97,970	(1.2%)	2.3%	6,334	6,261	6,837	(0.2%)	1.8%
Information	48,215	44,967	48,661	(1.4%)	1.6%	3,546	3,230	3,348	(1.8%)	0.7%
Fin/Ins/Real Estate	241,956	251,105	261,888	0.7%	0.8%	15,833	17,688	18,781	2.2%	1.2%
Health Care	345,463	372,490	390,490	1.5%	0.9%	17,358	19,417	21,738	2.3%	2.3%
Leisure/Hospitality	258,414	250,897	272,386	(0.6%)	1.7%	15,553	16,218	18,199	0.8%	2.3%
Services	736,982	722,553	795,485	(0.4%)	1.9%	37,690	39,161	43,508	0.8%	2.1%
Government	341,351	310,269	337,711	(1.9%)	1.7%	21,967	22,208	22,212	0.2%	0.0%
Total	2,983,189	2,800,933	3,051,152	(1.3%)	1.7%	171,505	171,559	186,754	0.0%	1.7%
<b>Forecast</b>										
	<b>Air Service Area</b>					<b>United States</b>				
2025 Employment	3,261,730					212,927,611				
CAGR 2016-2025	0.7%					1.5%				

## Notes:

1/ Civilian, non-agricultural employment only.

2/ Compound annual growth rate.

3/ Includes mining and forestry employment.

Source: Woods &amp; Poole Economics, Inc., 2016 Data Projections for Detroit- Ann Arbor-Warren CSA, Michigan, and United States, April 2016.

Compiled by Partners for Economic Solutions, April 2017

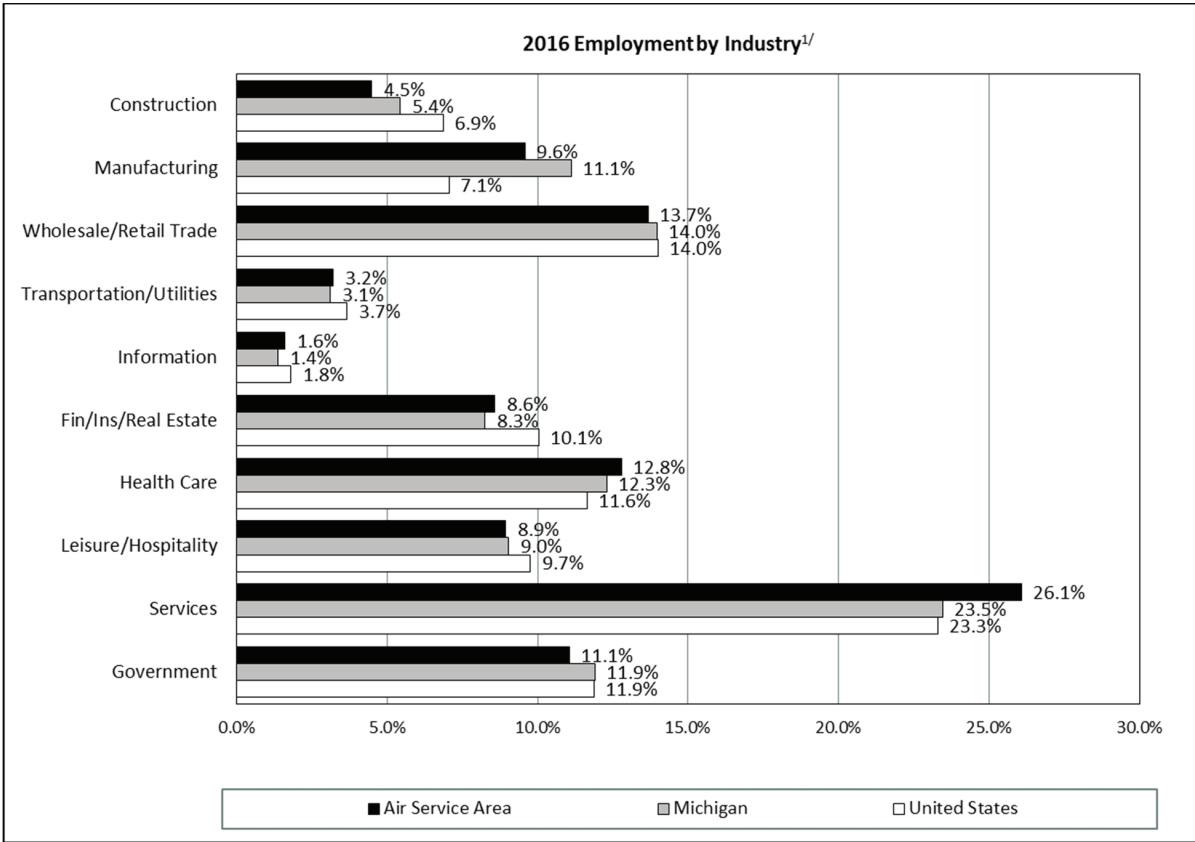
**2006 – 2016 Labor Force and Unemployment Trends** Table 1-11 includes annual civilian labor force and unemployment data from 2006 through 2016 for the Air Service Area, Michigan, and the U.S. Data in Table 1-11 show that between 2006 and 2016, the Air Service Area labor force decreased at a CAGR of -0.6%—contracting slightly more than the labor force CAGR in Michigan (-0.5%). Between 2006 and 2016, the U.S. labor force had a CAGR of 0.5%. In absolute terms, the labor force in the Air Service Area decreased by approximately 153,000 workers between 2006 and 2016.

The Air Service Area’s annual unemployment rate was equal to or higher than Michigan’s in all years from 2006 through 2016. The annual unemployment rate in the Air Service Area was higher than that of the U.S. from 2006 through 2016. Table 1-11 shows that in June 2017, the non-seasonally adjusted unemployment rate in the Air Service Area was 3.8%.<sup>25</sup> The Air Service Area’s June 2017 non-seasonally adjusted unemployment rate was lower than the rate in both Michigan (4.0%) and the U.S. (4.5%).<sup>26</sup>

<sup>25</sup> Monthly civilian labor force data published for the Air Service Area are not seasonally adjusted.

<sup>26</sup> In June 2017, the seasonally adjusted unemployment rate was 3.8% in Michigan and 4.4% in the U.S.

**Figure 1-5**  
**EMPLOYMENT BY INDUSTRY (2016)**



Notes:  
 1/ Civilian, non-agricultural employment only. Construction includes mining and forestry employment.  
 Source: Woods & Poole Economics, Inc., 2016 Data Projections for Detroit- Ann Arbor-Warren CSA, Michigan, and United States, April 2016.  
 Compiled by Partners for Economic Solutions, April 2017

**Employment by Industry**

Table 1-12 shows the number of jobs by major industry sector in the Air Service Area and the U.S. in 2006, 2011, and 2016. The Air Service Area lost over 182,000 jobs between 2006 and 2011 and had relatively higher rates of job loss in nearly every industry category compared to the U.S. during this period. However, between 2011 and 2016, the Air Service Area gained 250,000 jobs and experienced relatively stronger job growth in manufacturing, transportation/utilities, finance/insurance/real estate, and government compared to the U.S. The Air Service Area’s overall job growth between 2011 and 2016 experienced a 1.7% CAGR and is equal to that of the U.S. during this period.

Figure 1-5 shows that in 2016 the Air Service Area had a higher percentage of jobs in manufacturing, health care, and services compared to the U.S. In the wholesale/retail trade and information industries, the Air Service Area had a similar proportion of workers compared with the U.S. The Air Service Area had a lower percentage of jobs in construction,

transportation/utilities, finance/insurance/real estate, leisure/hospitality, and government compared to the U.S. in 2016.

The Air Service Area is known as the automotive capital of the world and is home to the global headquarters of General Motors and Ford Motor, the North American headquarters of Fiat Chrysler, and numerous automotive suppliers such as Magna International of America, Inc., Lear Corp., Adient PLC, Delphi Automotive PLC, ZF, BorgWarner Inc., Robert Bosch LLC, Faurecia North America, and Autoliv North America.<sup>27</sup> Automotive research facilities also have a significant presence in the Air Service Area and include Toyota Research Institute, Ford Research and Innovation Center, and the University of Michigan's Center for Automotive Research. Additional information on the automotive employers and industry are discussed later in this chapter.

The Air Service Area's employment forecast for 2016 through 2025 reflects a CAGR of 0.7%, compared with a CAGR of 1.5% for the U.S. The forecasted gain of approximately 210,000 jobs in the Air Service Area during this period is expected to generate additional demand for airline service at the Airport.

Data in Table 1-12 and Figure 1-5 indicate that the Air Service Area has a diversified employment base that is expected to provide the region with support for increased air travel demand and with a foundation for recovery following periodic downturns in the business cycle.

### **1.2.3 Regional Economic Profile**

This section discusses the Air Service Area's major employers, Detroit post-bankruptcy redevelopment initiatives, restructuring and reinvestment, regional collaboration, cost advantages, the automotive industry, and the tourism industry.

#### **Major Employers**

*Fortune* magazine publishes a yearly list of the top 500 publicly traded companies in the U.S., ranked by annual revenue. **Table 1-13** shows 10 Fortune 500 corporations are headquartered in the Air Service Area, including: General Motors (ranked 8<sup>th</sup>); Ford Motor (9<sup>th</sup>); Penske Automotive Group (143<sup>rd</sup>); and Lear (154<sup>th</sup>). As of 2015, the 10 Fortune 500 companies headquartered in the Air Service Area had combined annual revenue of approximately \$390 billion.

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<sup>27</sup> Largest Original Equipment Manufacturer (OEM) parts suppliers ranked by 2016 sales, *Crain's Detroit Business*, 3 July 2017.

**Table 1-13**  
**AIR SERVICE AREA FORTUNE 500 COMPANY HEADQUARTERS (2016)<sup>1/</sup>**

Company	Fortune 500 Rank	2015 Revenue (\$ billions)	Location	Industry
General Motors	8	\$152.4	Detroit	Automobile Manufacturing
Ford Motor	9	\$149.6	Dearborn	Automobile Manufacturing
Penske Automotive Group	143	\$19.4	Bloomfield Hills	Automotive Retailing, Services
Lear Corp.	154	\$18.2	Southfield	Automotive Supplier
DTE Energy	274	\$10.3	Detroit	Utility
Ally Financial	298	\$9.5	Detroit	Financial Services
Autoliv	310	\$9.2	Auburn Hills	Automotive Supplier
BorgWarner Inc.	339	\$8.0	Auburn Hills	Automotive Supplier
Masco	345	\$7.9	Livonia	Home Equipment, Furnishings
Kelly Services	467	\$5.5	Troy	Staffing Services

Note:

1/ Based on 2015 revenue.

Source: "Fortune 500," *Fortune*, June 15, 2016

Compiled by: Partners for Economic Solutions, April 2017

Major employers in the Air Service Area for which employment data are available are shown in **Table 1-14**. These firms represent a variety of industries including: automobile manufacturing and automotive suppliers (General Motors, Ford Motor, Fiat Chrysler, Lear, Faurecia North America); education (University of Michigan, Detroit Public Schools Community District, Wayne State University); financial services (Rock Ventures, Comerica Bank); health care (Beaumont Health, Trinity Health Michigan, Ascension Michigan, Detroit Medical Center, Henry Ford Health System, Blue Cross Blue Shield of Michigan, McLaren Health Care); and utilities (DTE Energy).

In addition to contributing to the Air Service Area's diverse economic base, these companies depend on air passenger and freight service for the continued health and expansion of their business enterprises.

In addition to the above, the Air Service Area is also a major location for the defense and homeland security industry. In 2015, the region was home to 3,307 businesses serving the defense industry. Together, these businesses employ over 94,000, with annual average wages of over \$91,257. The Air Service Area is a central site for military research and development facilities and purchasing centers. Specifically, the TACOM Life Cycle Management Command, headquartered in the city of Warren, sustains and manages the Army's investment in warfighting capacities through research, development, engineering, and advanced systems-integration for ground system and support equipment, and ensures warfighting readiness for the soldier by purchasing ground combat, combat support and combat service support items for the military. Selfridge Air National Guard Base located in Macomb County hosts all four Department of Defense services plus the Department of Homeland Security.<sup>28</sup>

<sup>28</sup> Detroit Regional Chamber, <http://www.detroitchamber.com/destinationdetroit/defense/>, accessed August 2017.

**Table 1-14****MAJOR AIR SERVICE AREA EMPLOYERS**

<b>Company</b>	<b>Industry</b>	<b>Local Employees</b>
Ford Motor (#9) <sup>1/</sup>	Automobile Manufacturing	47,000
General Motors (#8)	Automobile Manufacturing	36,624
Fiat Chrysler U.S.	Automobile Manufacturing	32,508
University of Michigan	Education/Health Care	31,655
Beaumont Health	Health Care	25,515
U.S. Government	Government	17,954
Henry Ford Health System	Health Care	16,919
Trinity Health Michigan	Health Care	14,842
Rock Ventures <sup>2/</sup>	Financial Services	14,237
Ascension Michigan	Health Care	10,799
Detroit Medical Center	Health Care	10,439
U.S. Postal Service	Government	9,685
City of Detroit	Government	8,918
State of Michigan	Government	8,123
Ilitch Companies	Entertainment	7,616
Blue Cross Blue Shield of Michigan	Health Care	6,936
Detroit Public Schools Community District	Education	6,300
Wayne State University	Education	5,806
DTE Energy (#274)	Utility	5,708
McLaren Health Care Corp.	Health Care	5,603
Comerica Bank	Financial Services	4,485
Oakland County	Government	3,432
Lear Corp. (#154)	Automotive Supplier	2,936
Faurecia North America	Automotive Supplier	2,560
MGM Grand Detroit	Entertainment	2,420

Note:

1/ (#) indicates 2016 Fortune 500 Ranking.

2/ Umbrella organization managing a portfolio of companies, investments, and real estate.

Source: Largest Employers in Detroit and Livingston, Macomb, Oakland, Washtenaw, and Wayne counties, Book of Lists, *Crain's Business Detroit*, December 2016

Compiled by Partners for Economic Solutions, April 2017

### **Transition to Mobility City from Motor City**

Nicknamed Motor City, the City has been the center of the auto industry in America for over 100 years. The Air Service Area is home to the global headquarters of General Motors and Ford Motor, and the North American headquarters of Fiat Chrysler. Michigan is also the headquarters of 63 of the world's largest 100 automotive suppliers. In addition, the Air Service Area ranks first for North American car, truck, and motor vehicle manufacturing, producing one in six of all vehicles built in North America. The Air Service Area is also a center of advanced battery technology and is the top developer of electric and plug-in hybrid vehicles in the world, with over \$6 billion invested in battery technology since 2008.<sup>29</sup>

<sup>29</sup> Michigan is Auto, [detroitchamber.com/econdev/chamber-initiatives/michauto-universal-name](http://detroitchamber.com/econdev/chamber-initiatives/michauto-universal-name), accessed July 2017.

Recent innovations in the automobile industry are positioning the Air Service Area as the global leader in the next generation of mobility technology: connected and automated vehicle (CAV) research and development (R&D). Connected vehicles are vehicles that use any of a number of different communication technologies to communicate with the driver, other cars on the road, roadside infrastructure, and the “cloud”. Fully automated (sometimes called autonomous) or “self-driving” vehicles are defined by the U.S. Department of Transportation’s National Highway Traffic Safety Administration (NHTSA) as “those in which operation of the vehicle occurs without direct driver input to control the steering, acceleration, and braking and are designed so that the driver is not expected to constantly monitor the roadway while operating in self-driving mode.” While other states debate how to accommodate driverless cars, or even question the advantages of CAV technology, Michigan passed legislation to allow testing of autonomous vehicles on its roads in 2013.<sup>30</sup> Over 10 years ago, in 2006, the Michigan Department of Transportation (MDOT) inaugurated the Southeast Michigan Connected Vehicle Test Bed, the most extensive test bed in North America offering real-world operational conditions to the state’s auto industry. Because of its close proximity to the region’s auto manufacturers and suppliers, this test bed has been in constant use as a facility for R&D testing and certification for new and innovative safety, mobility, and environmental components and applications.<sup>31</sup>

In 2012, the University of Michigan (UM) established the Mobility Transformation Center in Ann Arbor with a \$25 million connected vehicle testing program. In 2015, in partnership with MDOT, UM opened the 32-acre MCity in Ann Arbor. This facility provides researchers and industry participants with a CAV testing environment that includes urban and suburban streetscapes and intersections, buildings, streetlights, construction barriers, etc.<sup>32</sup> CAV researchers in the Air Service Area also have access to the federally-funded Detroit Test Bed located in the City’s downtown. As the only urban test bed environment in the U.S., it provides V2I (vehicle to infrastructure) researchers with real-world conditions and obstacles to wireless technology such as “urban canyons” and building tunnels.<sup>33</sup> Another V2I partnership is underway between MDOT, UM, and General Motors on the Smart Corridor initiative, the largest deployment of dedicated roadside units (DRSU) for connected vehicle research along 120 miles of Air Service Area roadways.<sup>34</sup> DRSUs facilitate the communication between vehicles and transportation infrastructure and other devices by transferring data.

In November 2016, Governor Snyder, auto executives, researchers, and officials from MDOT held a ground-breaking ceremony for the \$100 million American Center for Mobility (ACM) in Ypsilanti Township. Located on 335 acres at GM’s former Willow Run power train plant, ACM will provide a massive, purpose-built, non-profit testing facility for CAV and other mobility technologies. The

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<sup>30</sup> State of the Region 2017, Detroit Regional Chamber, 2017-State-of-the-Region.pdf, January 2017, accessed April 2017.

<sup>31</sup> Michigan: Global Center of Mobility, MICHAuto, May 2016, MICHAuto-Mobility-Map-5.25.16.pdf, accessed April 2017.

<sup>32</sup> “State of Mobility”, *Crain’s Business Detroit*, 9 January 2017.

<sup>33</sup> State of the Region 2017, Detroit Regional Chamber, 2017-State-of-the-Region.pdf, January 2017, accessed April 2017.

<sup>34</sup> Michigan: Global Center of Mobility, MICHAuto, May 2016, MICHAuto-Mobility-Map-5.25.16.pdf, accessed April 2017.

project's first phase will include a unique 2.5-mile highway loop that will allow high-speed driverless vehicle testing in all weather conditions.<sup>35</sup>

As a result of this commitment to mobility by Michigan's public and private sectors, the Air Service Area leads the U.S. in connected vehicle projects (49 in 2015), followed by California (35 in 2015).<sup>36</sup>

### **Detroit Post-Bankruptcy Redevelopment Initiatives**

Despite numerous austerity measures following the recession occurring primarily during 2007-2009, the City was ultimately unable to meet its debt obligations and filed for Chapter 9 bankruptcy in July 2013. Since exiting bankruptcy in December 2014, the City has been executing a Plan of Adjustment that extinguished \$1.7 billion of funded debt obligations and payables, eliminated \$5.5 billion in unfunded pension and retiree health care liabilities, established ongoing financial supervision by the state-mandated Financial Review Committee, and provided \$1.4 billion for infrastructure investment and economic revitalization initiatives through 2023.<sup>37</sup>

Although the bankruptcy settlement imposed losses on many City creditors, as part of a settlement of their claims, some creditors were granted the opportunity to participate in future real estate developments in prime locations. Developments funded through this mechanism include portions of the 400-acre Rivertown District, which is undergoing redevelopment from a brownfield industrial area to an attractive riverfront community. Proposed projects include a high-density, mixed-use project with the potential for 2.2 million square feet of office, residential, retail, and other commercial space.<sup>38</sup>

Other development projects include the True North artist and entrepreneur incubator, City Modern, a \$100 million, 400-unit residential project in Brush Park, and six projects from Olympia Development that will provide 686 residential units to Detroit.<sup>39</sup>

In addition, the new 20,000-seat, \$732 million Little Caesars Arena is currently under construction and will be the home of the National Hockey League's Detroit Red Wings and the National Basketball Association's Detroit Pistons.<sup>40</sup>

The new \$180-million, 3.3-mile QLine streetcar line in downtown Detroit is a significant mass transit infrastructure investment that has been a catalyst for revitalizing blighted areas and creating a cohesive downtown core. The QLine runs along Woodward Avenue and several

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<sup>35</sup> Michigan Connected and Automated Vehicle Working Group Meeting Presentations, 31 January 2017, Michigan\_CV\_Working\_Group\_January\_31\_2017\_553486\_7.pdf, accessed April 2017.

<sup>36</sup> State of the Region 2017, Detroit Regional Chamber, 2017-State-of-the-Region.pdf, January 2017, accessed April 2017.

<sup>37</sup> Detroit and the Property Tax: Strategies to Improve Equity and Enhance Revenue, Lincoln Institute of Land Policy, November 2015, detroit-and-the-property-tax-full\_0.pdf, accessed April 2017.

<sup>38</sup> Develop Rivertown, WCRE Advising, CD109537321.pdf, accessed April 2017.

<sup>39</sup> 2017 Mackinac Policy Conference, 31 May 2017, Detroit Mayor Mike Duggan Keynote Address, Detroit Public TV, video.dptv.org/video/2365776186, accessed June 2017.

<sup>40</sup> Construction builds up hope for Detroit's 2017, The Detroit News, January 2, 2017, <http://www.detroitnews.com/story/news/local/detroit-city/2017/01/02/development-detroit/96095320>, accessed April 2017.



businesses and developers cite proximity to the QLine as an important factor in their location decision.<sup>41</sup>

### **Wayne County**

Not unlike its largest city, Wayne County experienced financial strain over a period of several years culminating in Wayne County entering into a consent agreement (Consent Agreement) with the State of Michigan in August 2015. The Consent Agreement granted Wayne County, subject to certain limitations, broad powers to address the financial emergency within Wayne County and to provide for Wayne County's financial stability. By October 2016, Wayne County had satisfied the terms of the Consent Agreement, and was released from that agreement and the powers of the Wayne County Executive were returned to those which existed prior to the execution of the Consent Agreement. Although Wayne County has fee simple title to the real estate at the Airport and Willow Run Airport, as mentioned previously the Authority has sole and exclusive operational jurisdiction of the Airport, and the Authority funds the operations of the Airport and Willow Run Airport with Revenues generated from airlines, other tenant fees, and other sources generated by the operation of these airports. Wayne County does not provide financial support for the operation of the Authority and/or the Airport.

### **Restructuring and Reinvestment**

Incentives and tax rates in Michigan have been restructured to assist existing businesses and encourage new investment.<sup>42</sup> In 2012, Michigan replaced its tax on business activity and gross receipts with a simpler and more competitive six percent corporate income tax. Michigan's personal property tax was phased out for many businesses beginning in 2014 and the State sales tax rate is six percent.

Michigan has adopted programs that provide immediate benefits such as loans, grants, or other economic assistance to businesses. Also available are 12-year, 50 percent property tax abatements for new manufacturing or high-tech companies. Michigan has also designated approximately 100 sites as tax-free "Renaissance Zones" or "Renewable Energy Renaissance Zones" where new investment can be eligible for a 100 percent property tax abatement.

These programs encourage the replacement, restoration, or new construction of job creating facilities. As a result of this restructuring, Michigan currently ranks 12<sup>th</sup> among the 50 states in the Tax Foundation's Business Tax Climate Index; Michigan's ranking improves to 8<sup>th</sup> place among states with the lowest corporate tax rates.<sup>43</sup>

Michigan adopted right-to-work legislation in 2013, making Michigan the 24<sup>th</sup> right-to-work state in the U.S. At the time, Michigan's overall unionization rate was 16.1%. That figure

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<sup>41</sup> M-1 Rail Development & Construction Inclusion Report 2013-2017, May 2017, <https://qlinedetroit.com/about/economic-impact>, accessed June 2017.

<sup>42</sup> Taxes and Incentives, Detroit Regional Chamber, [detroitchamber.com/econdev/competitive-advantages/taxes-and-incentives](http://detroitchamber.com/econdev/competitive-advantages/taxes-and-incentives), accessed April 2017.

<sup>43</sup> 2017 State Business Climate Tax Index, Tax Foundation, September 2016, <https://taxfoundation.org/2017-state-business-tax-climate-index>, accessed April 2017.

dropped to 15.2% in 2015 and currently 20 other states have higher rates of union membership compared to Michigan.<sup>44</sup>

### **Regional Collaboration**

Economic development officials throughout the Air Service Area work collaboratively to attract national and foreign investment to the region. Partners include the Detroit Regional Chamber, Detroit Economic Growth Corp., Wayne County Economic Development, Ann Arbor SPARK, Oakland County Department of Economic Development and Community Affairs, Economic Development Alliance of St. Clair County, Flint and Genesee Chamber of Commerce, Lapeer Development Corp., Lenawee Economic Development Corp., Macomb County Department of Planning and Economic Development, and Monroe County Business Development Corp.<sup>45</sup>

These organizations work with the Michigan Economic Development Corp. and numerous foreign chambers of commerce to help Air Service Area companies gain greater access to international markets. Foreign delegations from Austria, Czech Republic, Korea, Malaysia, Switzerland and Taiwan have visited the Air Service Area in the past year to explore the region's available facilities, vacant sites, and other investment opportunities.<sup>46</sup>

In addition, the Detroit Region Aerotropolis is a seven-community, two-county public-private partnership focused on investment, corporate expansion, and economic development in industrial areas surrounding the Airport and Willow Run Airport.<sup>47</sup> Successful business attraction efforts include Amazon's recent announcements of Southeast Michigan distribution centers. The first one, which is planned to open in October 2017, is an approximately one-million square foot facility being built in Livonia, and is expected to create up to 1,500 new jobs.<sup>48</sup> The second one is, an approximately one-million-square-foot facility to be built north of the Airport in Romulus, and is expected to open next year and employ about 1,600 people.<sup>49</sup> In 2018, Amazon is also expected to open its third distribution center in the Air Service Area; the facility is expected to be located in Shelby Township (Macomb County) and will employ up to 1,000 workers.<sup>50</sup> Amazon is also opening a new technology hub and corporate office in downtown Detroit. In August 2017, Penske Logistics, a subsidiary of Penske Truck Leasing, announced it will build a \$98.5 million, 606,000-square-foot Midwest regional distribution center in Romulus (near the Airport). The distribution center is estimated to create over 400 jobs, and will serve as a warehouse operation for cold and frozen products for a corporate client.<sup>51</sup>

In February 2017, Microsoft announced that it is relocating its Michigan Technology Center to downtown Detroit from Southfield, Michigan (also in the Air Service Area) where it provides IT

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<sup>44</sup> Michigan's Industry Unionization, Detroit Regional Chamber, Labor \_ Detroit Regional Chamber.htm, accessed April 2017.

<sup>45</sup> Detroit Regional Chamber, [detroitchamber.com/detroit-regional-chamber-and-county-partners-sign-agreement-to-collaborate-on-businessattraction-for-southeast-michigan](http://detroitchamber.com/detroit-regional-chamber-and-county-partners-sign-agreement-to-collaborate-on-businessattraction-for-southeast-michigan), accessed April 2017.

<sup>46</sup> Forward Detroit, Detroit Regional Chamber, April 2016, [FD-Annual-Report-2016.pdf](http://FD-Annual-Report-2016.pdf), accessed April 2017.

<sup>47</sup> About Detroit Region Aerotropolis, [detroitaero.org/about](http://detroitaero.org/about), accessed July 2017.

<sup>48</sup> "Dignitaries get preview of Amazon's Livonia Warehouse," *Detroit Free Press*, 26 July 2017.

<sup>49</sup> "Amazon plans fulfillment center in Romulus that would employ 1,600," *Crain's Detroit Business*, 26 June 2017.

<sup>50</sup> "Amazon plans distribution center in Shelby Township," *Crain's Detroit Business*, 18 July 2017.

<sup>51</sup> "Penske's latest deal is nearly \$100M warehouse distribution center in Romulus," *Detroit Free Press*, 22 August 2017.

consulting services. In 2016, Nike opened a new downtown store, joining over 125 new restaurants, retailers, and other businesses that have recently opened in the central business district.<sup>52</sup>

The tax-free, 200-acre I-94 Industrial Park located near General Motors' Detroit-Hamtramck assembly plant has recently attracted two new tenants: steel producer ArcelorMittal has announced plans for an \$83 million manufacturing plant that will produce high-strength, laser-welded steel blanks for the auto industry at its Detroit facility,<sup>53</sup> and Flex-N-Gate, an automotive parts supplier, is building a new \$95 million facility that will employ 400 workers.<sup>54</sup> Sakthi Automotive Group, a maker of auto safety mechanisms based in India, is building a \$31 million aluminum casting plant and training facility in the City that will employ 650 workers. Lear Corp., an automotive seating and electrical distribution systems company based in Southfield, a City suburb, opened its Innovation and Design Center in the City's downtown in 2016.

Also in 2016, Ally Financial consolidated its regional operations in the City's downtown. Ally Financial, a bank holding company that specializes in car finance and online banking, brought an additional 600 employees to its downtown location, bringing its downtown headcount to a total of 1,500 workers. JPMorgan Chase pledged to invest through loans \$100 million in the City over five years as part of its "New Skills at Work" initiative. According to JPMorgan, they have exceeded this \$100 million investment, and now expect to loan \$150 million in the City by 2019.<sup>55</sup> This workforce development program trains local residents in high-demand occupations requiring post-secondary education (an associate's or bachelor's degree) and places them in jobs.

Investments in real estate, facilities, and businesses by Quicken Loans and its chairman Dan Gilbert have been among the highest-profile ventures in the Air Service Area in recent years. Quicken Loans relocated to the City's downtown from elsewhere in the Air Service Area in 2010, bringing 1,800 workers. Several of Quicken Loans' sister companies have also moved to the City. Including real estate company Bedrock Detroit, Rock Ventures,<sup>56</sup> and start-up companies funded and expanded by Rock Ventures, Quicken Loans and its affiliated companies employ over 14,000 workers in the Air Service Area.<sup>57</sup>

Economic development officials in the Air Service Area underscore the importance of the Airport's links to destinations in the U.S. and around the world. Because access to domestic and international markets is a major factor in the site selection process, the Airport plays a significant

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<sup>52</sup> 2015 State of the Region, Detroit Regional Chamber, 2015-State-of-the-Region.pdf; "Microsoft Moving Michigan Tech Center to Downtown Detroit," 3 February 2017, [xeconomy.com](http://xeconomy.com), accessed April 2017.

<sup>53</sup> "ArcelorMittal to open manufacturing plant in Detroit, create at least 120 jobs," *Crain's Business Detroit*, 22 November 2016, <http://www.crainsdetroit.com/article/20161122/NEWS/161129961/arcelormittal-to-open-manufacturing-plant-in-detroit-create-at>, accessed June 2017.

<sup>54</sup> "Ground broken for \$95M auto facility in Detroit," *Detroit Free Press*, 24 April 2017, <http://www.freep.com/story/news/local/michigan/detroit/2017/04/24/ground-broken-95m-auto-facility-detroit/100840004>, accessed June 2017.

<sup>55</sup> JPMorgan: <https://www.jpmorganchase.com/corporate/Corporate-Responsibility/detroit.htm>, accessed June 2017.

<sup>56</sup> Umbrella organization managing a portfolio of companies, investments, and real estate.

<sup>57</sup> Metro Economic Outlook: Detroit, Society for Human Resources Management, December 2016, [www.shrm.org/research](http://www.shrm.org/research), accessed April 2017.

role in attracting new businesses and the expansion of existing enterprises in the Air Service Area.

### **Cost Advantages**

Another important factor in business attraction and employee retention is the Air Service Area's favorable cost of living. According to the Council for Community and Economic Research which assumes the national average cost of living is 100, at 95.3, the Air Service Area's cost of living is 4.7 percent below the national average (see **Figure 1-6**).<sup>58</sup> Because costs in the Air Service Area for housing, utilities, transportation, health care, groceries, and miscellaneous goods and services (dry cleaning, veterinary services, hair salons, appliance repairs, movie tickets, fast food meals, etc.) are low compared with other U.S. metro areas, the Air Service Area receives a high rating as an affordable place to live.<sup>59</sup>

Furthermore, in addition to low living costs, the Air Service Area offers desirable urban amenities such as professional sports teams, nationally recognized art museums and cultural institutions, internationally renowned performing arts companies, and other attractions (see Tourism Industry below). As a result, Air Service Area residents enjoy a high quality of life in terms of numerous cultural and entertainment amenities compared to other low-cost regions in the U.S.<sup>60</sup>

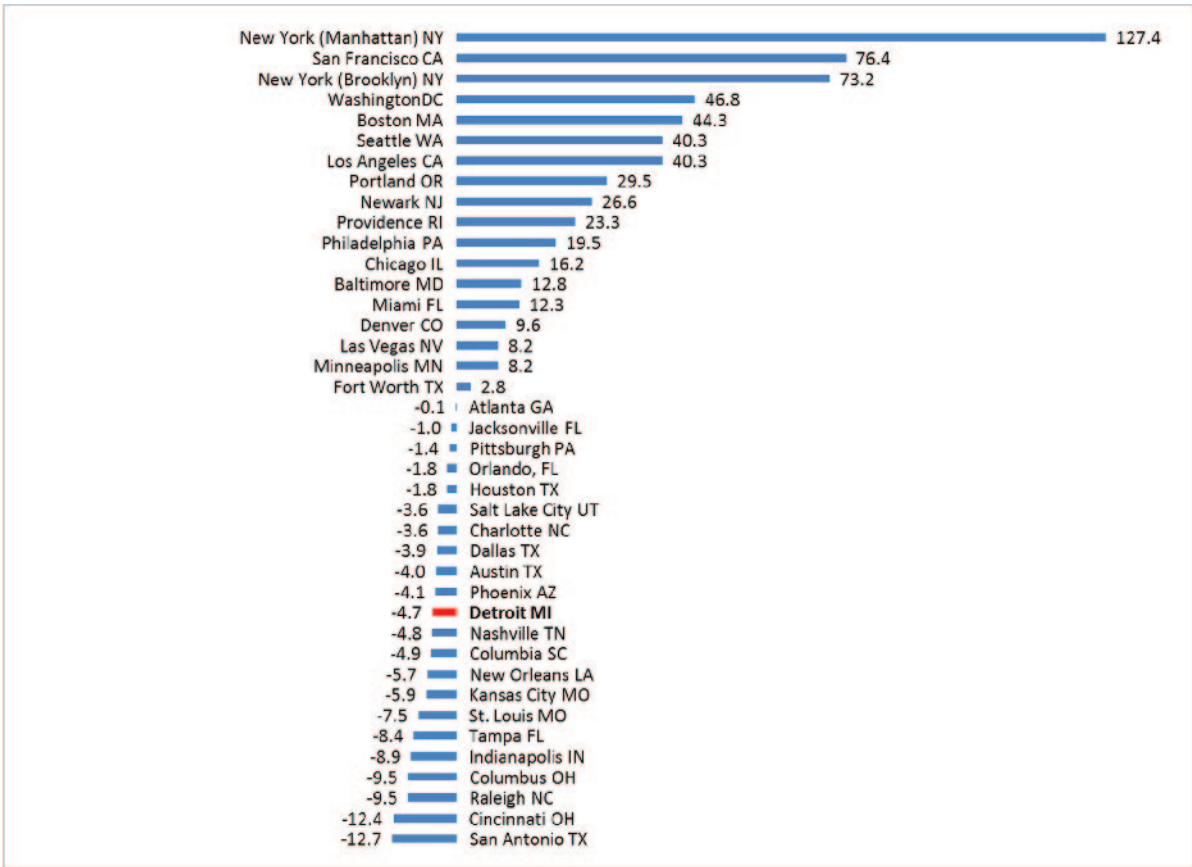
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<sup>58</sup> The U.S. average is 100 in the Council for Community and Economic Research Cost of Living Index.

<sup>59</sup> Council for Community and Economic Research, Cost of Living Index, [www.coli.org](http://www.coli.org), accessed April 2017.

<sup>60</sup> "The Cities Where Your Paycheck Will Go The Furthest," 17 June 2016, [forbes.com](http://forbes.com), accessed April 2017.

**Figure 1-6**  
**COST OF LIVING INDEX FOR TOP 40 METRO AREAS (2015 ANNUAL AVERAGES)**



Notes:  
 1/ Data not available for San Jose CA.  
 2/ Average U.S. Cost of Living Index = 100.  
 Source: Cost of Living Index, Council for Community and Economic Research  
 Compiled by Partners for Economic Solutions, April 2017

**Tourism Industry**

The Air Service Area is home to a rich variety of cultural, educational, and entertainment attractions including: the Detroit Institute of Arts, the sixth largest comprehensive fine arts museum in the U.S.; Cranbrook Art Museum; the Charles H. Wright Museum of African American History, the largest collection of African-American art and artifacts in the world; Motown Museum; the Henry Ford Museum; Greenfield Village; Detroit Historical Museum; Museum of Contemporary Art Detroit; Automotive Hall of Fame; Birmingham Bloomfield Art Center; Michigan Science Center; Sea Life Michigan Aquarium; Legoland Discovery Center Michigan; and others.

Performing arts companies include: the Detroit Symphony Orchestra under music director Leonard Slatkin; Michigan Opera Theatre; Ann Arbor Symphony; Dearborn Symphony; Livonia Symphony Orchestra; Macomb Symphony; Academy of Early Music; Cranbrook Music Guild; Rackham Symphony Choir; Detroit Children’s Choir; Michigan Philharmonic, Detroit Chamber Winds & Strings; Chamber Music Society of Detroit; Civic Jazz Orchestra; Motor City Brass Band;

Birmingham Concert Band; Eisenhower Dance Ensemble; the Purple Rose Theatre Company; the Detroit Public Theatre; Shakespeare in Detroit; and Detroit Repertory Theatre.

The City has hosted auto shows for over 100 years. The North American International Auto Show has been held in Cobo Center in the City's downtown each January since 1987 and attracts approximately 5,000 journalists and 800,000 attendees annually. Other automobile- or transportation-related shows held annually in the Air Service Area include: Autorama; Autopalooza; Concours d'Elegance of America; Fall Camper Show; Snowmobile USA Show; Detroit Boat Show; and Novi Boat Show.

Festivals and events held throughout the year in the Air Service Area include: Michigan State Fair; Detroit International Jazz Festival; Great Lakes Chamber Music Festival; Detroit Music Awards; Movement Electronics Music Festival; Royal Starr Film Festival; Detroit Free Press Talmer Bank Marathon; ArtWorks Detroit; Fall Beer Festival; Maker Faire at the Henry Ford; Plymouth International Ice Sculpture Festival; the Ann Arbor Art Fair; and others.

The District Detroit is a 50-block, mixed-use \$1.2 billion entertainment complex under development that features three professional sports facilities: Comerica Park, Ford Field, and Little Caesar's Arena (planned to open in the fall of 2017). It brings together the Air Service Area's four professional sports teams within three blocks of each other: the National Football League's Detroit Lions; Major League Baseball's Detroit Tigers; National Basketball Association's Detroit Pistons; and National Hockey League's Detroit Red Wings. The Air Service Area is among only 12 metro regions that has teams from all four major U.S. professional sports organizations. The UM Wolverines also offer major collegiate sports in Air Service Area. Nicknamed "The Big House", the football stadium for UM in Ann Arbor hosts crowds in excess of 100,000. Crisler Center is the UM basketball arena and has a capacity of over 12,700.<sup>61</sup> Other universities in the Air Service Area also offer National Collegiate Athletic Association (NCAA) sports including Detroit-Mercy, Eastern Michigan, Oakland, and Wayne State.

The Air Service Area's wide array of cultural choices and entertainment options is an important factor supporting repeat visits. The ability to see attractions or undertake activities that were missed on a previous visit has been cited as a significant element in a visitor's intent to return to a travel destination.<sup>62</sup>

#### **1.2.4 Economic Outlook**

The U.S. economy expanded at a modest and steady level in 2016, with employment growing by an average of 173,000 jobs per month.<sup>63</sup> This continuous monthly job growth supports forecasts

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<sup>61</sup> University of Michigan, <http://www.mgoblue.com/facilities/>, accessed May 2017.

<sup>62</sup> Jeffrey M. Caneen, "Cultural Determinants of Tourist Intention to Return," published in *Consumer Psychology of Tourism, Hospitality and Leisure*, CABI Publishing, 2004.

<sup>63</sup> 2016 Employment Situation, Bureau of Labor Statistics, U.S. Department of Commerce, [www.bls.gov/schedule/archives/empisit\\_nr.htm](http://www.bls.gov/schedule/archives/empisit_nr.htm), accessed March 2017.

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for wage gains and further declines in unemployment. In addition, consumer confidence is positive and inflationary pressures are modest.<sup>64</sup>

The most recently published forecast by business economists from the National Association for Business Economics (NABE) indicates consensus for real GDP growth of 2.3% in 2017 and 2.5% in 2018. The NABE forecast estimates that the average annual U.S. unemployment rate will be 4.6% in 2017 and 4.5% in 2018.<sup>65</sup>

Likewise, the most recent Michigan Economic and Revenue Outlook projects rising employment and wage and salary growth from 2017 through 2019. The University of Michigan Research Seminar in Quantitative Economics (RSQE) forecasts job growth in professional and business services, construction, leisure and hospitality, education, and health care in 2017 and 2018.

Data in **Table 1-15** show 2016 and 2025 economic variables for the Air Service Area and for the U.S. including population, employment, personal income, and gross regional and domestic product. Growth forecasts for these variables are all positive for the Air Service Area as it continues to recover in the aftermath of the Great Recession. In particular, the Air Service Area's growth rates for per capita gross regional product and per capita personal income both exceed growth rates for the U.S. Although growth rates for the Air Service Area's employment and population lag those of the U.S., the Air Service Area will nevertheless add more than 210,000 jobs and 42,000 in population over the forecast period. This level of growth, added to the Air Service Area's existing 3.0 million jobs and 5.3 million in population, indicate the ongoing capacity of the Air Service Area to generate demand for air travel services during the forecast period.

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<sup>64</sup> National Association for Business Economics, *NABE Outlook*, March 2017; January 18, 2017 Summary of Commentary on Current Economic Conditions by Federal Reserve District, [www.federalreserve.gov/monetarypolicy/beigebookto/beigebook201701.htm?summary](http://www.federalreserve.gov/monetarypolicy/beigebookto/beigebook201701.htm?summary), accessed March 2017.

<sup>65</sup> National Association for Business Economics, *NABE Outlook*, March 2017.

**Table 1-15**  
**PASSENGER DEMAND FORECAST VARIABLES (2016-2025)**

<b>Variable<sup>1/</sup></b>	<b>2016</b>	<b>2025</b>	<b>CAGR<sup>2/</sup></b> <b>2016-2025</b>
Air Service Area Population	5,321,165	5,363,636	0.1%
U.S. Population	324,506,944	352,566,429	0.9%
Air Service Area Total Employment	3,051,152	3,261,730	0.7%
U.S. Total Employment	186,753,846	212,927,611	1.5%
Air Service Area Total Personal Income (\$ billion)	\$243.8	\$286.2	1.8%
U.S. Total Personal Income (\$ billion)	\$15,619.8	\$19,423.0	2.5%
Air Service Area Per Capita Personal Income	\$45,822	\$53,358	1.7%
U.S. Per Capita Personal Income	\$48,134	\$55,090	1.5%
Air Service Area Gross Regional Product (\$ billion)	\$285.9	\$331.3	1.7%
U.S. Gross Domestic Product (\$ billion)	\$18,427.4	\$22,455.0	2.2%
Air Service Area Per Capita Gross Regional Product	\$53,726	\$61,763	1.6%
U.S. Per Capita GDP	\$56,786	\$63,690	1.3%

## Notes:

1/ All dollar amounts are in 2016 dollars.

2/ CAGR = Compound annual growth rate.

Source: Woods & Poole Economics, Inc., 2016 Data Projections for Detroit- Ann Arbor-Warren CSA, Michigan, and United States, April 2016.

Compiled by Partners for Economic Solutions, April 2017



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## 2 Air Service and Air Traffic Analysis

This chapter evaluates and describes the current state of air service at the Airport, analyzes historical trends in air traffic, identifies key factors that generally affect demand for air travel, and provides forecasts of air traffic activity through OY 2025.

### 2.1 Air Service at the Airport

The following sections will evaluate current air service capacity and operating performance for the passenger airlines serving the Airport. Airline performance will be evaluated from an economic perspective, by evaluating airline revenue, yield and load factor generated at the Airport and, in some cases, generated at the route level to generally ascertain current airline profitability. Because of its significant presence, Delta's air service at the Airport will be evaluated in greater detail. The Airport's overall O&D market will also be assessed at the market level, comparing current performance with prior years.

#### 2.1.1 Airlines Operating at the Airport

The Airport has historically had the benefit of air service by the largest U.S. airlines in the industry, and as indicated previously, has service from U.S. network carriers, LCCs, and ULCCs. The Airport also offers scheduled service on international airlines. In June 2017, the Airport had scheduled passenger service by 20 U.S. airlines and five foreign flag carriers. In addition, cargo service is provided by three all-cargo airlines. **Table 2-1** below lists the scheduled passenger and all-cargo airlines that served the Airport during June 2017. Virgin Atlantic Airways ceased service at the Airport in March 2017; however, its daily nonstop service to London was replaced by its affiliated carrier Delta.<sup>66</sup> Aeromexico, also a Delta affiliated carrier, started operation from the Airport in April 2017. In August 2017, WOW Air, an Iceland-based airline, announced it will start service at the Airport in April 2018, and will offer four non-stop departures per week from the Airport to Keflavik International Airport in Iceland.<sup>67</sup>

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<sup>66</sup> Virgin Atlantic Airlines, <https://www.virgin.com/news/virgin-atlantic-announces-route-changes>, accessed March 2017.

<sup>67</sup> Crain's Detroit Business, <http://www.crainsdetroit.com/article/20170823/news/637116/wow-air-to-offer-flights-from-detroit-to-europe-starting-at-99>, August 23, 2017, accessed September 2017.

**Table 2-1****AIRLINES OPERATING AT THE AIRPORT (JUNE 2017)**

U.S. Scheduled Airlines (20)		Foreign Flag Airlines (5) <sup>1</sup>
Mainline Carriers:	Regional Carriers:	
Alaska Airlines	Air Wisconsin (dba American Eagle)	Aeromexico <sup>2</sup>
American Airlines	Compass (dba Delta Connection)	Air Canada (Air Georgian)
Delta Air Lines	Endeavor (dba Delta Connection)	Air France
Frontier Airlines	Envoy Air (dba American Eagle)	Lufthansa German Airlines
JetBlue Airways	ExpressJet (dba Delta Connection and United Express)	Royal Jordanian Airlines
Southwest Airlines	GoJet (dba Delta Connection and United Express)	<b>All-Cargo Airlines (3)</b>
Spirit Airlines	Mesa (dba United Express)	DHL (Atlas/ATI)
United Airlines	PSA (dba American Eagle)	Federal Express
	Republic Airlines (dba American Eagle, Delta Connection and United Express)	United Parcel Service
	Shuttle America (dba United Express)	
	SkyWest Airlines (dba American Eagle, Delta Connection and United Express)	
	Trans States (dba American Eagle and United Express)	

<sup>1</sup> Virgin Atlantic Airways ceased service to the Airport in March 2017.

<sup>2</sup> Aeromexico started service to the Airport in April 2017.

Source: Authority management records  
Compiled by Trillion Aviation, August 2017

**Table 2-2** below presents enplaned passenger market share at the Airport for the past five years or from OY 2012 through OY 2016. Factoring in airline mergers, 10 of the 13 airlines currently serving the Airport (not including regional affiliates) have been operating there for at minimum the past five years, and in many cases, much longer. Delta, including the Delta Connection Carriers, has the largest passenger market share at the Airport with approximately 74.0% of enplaned passengers in OY 2016. Delta's enplaned passenger market share at the Airport decreased by over five percentage points from OY 2012 through OY 2016; however, the number of Delta's enplaned passengers at the Airport decreased only by approximately 1.2% during this period. More importantly, however, for the period of OY 2012 through OY 2016, the number of enplaned passengers at the Airport for all airlines in total has increased by approximately 5.9%. In summary, while Delta and the Delta Connection Carriers have experienced a slight decrease, the aggregate enplaned passenger growth by the other airlines at the Airport represents an overall increase in enplaned passengers of approximately 5.9% during this five-year period. Such growth during this period is attributed to the increase of O&D passenger traffic at the Airport. Specific points on this growth by the other airlines are as follows:

- Spirit Airlines (Spirit) is the second largest carrier at the Airport had an enplaned passenger market share of approximately 7.7% in OY 2016. Over the period of OY 2012 to OY 2016, Spirit had the largest gain in market share at the Airport, increasing by approximately 3.2 percentage points.

- American had an enplaned passenger market share of approximately 6.7% in OY 2016, increasing its share by approximately 0.5 percentage points over the five-year period.
- Other airlines gaining in market share over this five-year period include United Airlines (United) at a 0.5 percentage point increase, and JetBlue Airways (JetBlue) and Alaska Airlines (Alaska), both of which started operating at the Airport during this period.

**Table 2-2****ENPLANED PASSENGER MARKET SHARE AT THE AIRPORT <sup>1</sup>**

Airline	OY 2012	%	OY 2013	%	OY 2014	%	OY 2015	%	OY 2016	%
Delta	12,829,785	79.3%	12,754,063	79.3%	12,620,392	77.8%	12,475,818	75.9%	12,673,112	74.0%
Spirit	734,473	4.5%	777,838	4.8%	898,449	5.5%	1,118,682	6.8%	1,311,599	7.7%
American <sup>2</sup>	1,008,004	6.2%	1,035,237	6.4%	1,118,762	6.9%	1,135,720	6.9%	1,143,147	6.7%
Southwest	853,027	5.3%	843,892	5.2%	840,850	5.2%	784,365	4.8%	845,604	4.9%
United <sup>3</sup>	437,550	2.7%	407,108	2.5%	398,315	2.5%	455,206	2.8%	547,571	3.2%
Frontier	125,186	0.8%	80,496	0.5%	98,958	0.6%	99,869	0.6%	149,124	0.9%
JetBlue	0	0.0%	0	0.0%	46,011	0.3%	105,591	0.6%	146,799	0.9%
Air France	82,675	0.5%	77,751	0.5%	73,512	0.5%	75,576	0.5%	71,642	0.4%
Lufthansa	64,854	0.4%	66,977	0.4%	77,650	0.5%	76,694	0.5%	71,472	0.4%
Alaska	0	0.0%	0	0.0%	3,927	0.0%	57,636	0.4%	66,040	0.4%
Virgin Atlantic	0	0.0%	0	0.0%	0	0.0%	20,442	0.1%	47,380	0.3%
Air Canada	14,887	0.1%	17,156	0.1%	21,253	0.1%	23,980	0.1%	32,392	0.2%
Royal Jordanian	15,143	0.1%	14,334	0.1%	14,755	0.1%	12,225	0.1%	13,403	0.1%
Other	4,000	3.0%	2,800	0.0%	3,839	0.0%	1,974	0.0%	11,402	0.1%
<b>Total</b>	<b>16,169,584</b>	<b>100.0%</b>	<b>16,077,652</b>	<b>100.0%</b>	<b>16,216,673</b>	<b>100.0%</b>	<b>16,443,778</b>	<b>100.0%</b>	<b>17,130,687</b>	<b>100.0%</b>

Note: Percentages may not add because of rounding.

<sup>1</sup> Regional affiliates, as applicable, have been included with their appropriate network partner.

<sup>2</sup> American Airlines data includes data for the former US Airways, which was merged with American Airlines in April 2015.

<sup>3</sup> Former Continental Airlines enplaned passengers have been included with United Airlines as a single operating certificate was issued by the FAA in November 2011.

Source: Authority management records, March 2017

Compiled by Trillion Aviation

**Airline Revenue Performance at the Airport: OY 2016 vs OY 2007**

**Table 2-3** below compares key airline revenue metrics for the four largest network airlines serving the Airport specific to their performance at the Airport for OY 2016 versus OY 2007. These airlines carried approximately 88.8% of the Airport's enplaned passengers in OY 2016 as shown above on Table 2-2. To provide some context, this table also presents the same information for the average of all airlines in the U.S. This comparison period was chosen because OY 2016 is the latest full year for which data are available, and OY 2007 is the latest full year representative of results prior to the U.S. economic recession. In summary, key airline revenue metrics have improved since CY 2007 for the largest airlines serving the Airport. Delta's revenue per available seat mile (RASM), described below, increased nearly 18%, which is slightly above the U.S. average. Delta's revenue improvement was almost entirely driven by higher yields and air fares, as their load factor was almost unchanged. Other airlines also realized significant improvement at the Airport. Spirit is not included in this table because of changes to the airline's

business model over the past decade, and such comparisons over this period would not be indicative of changes in revenue performance.<sup>68</sup>

**Table 2-3****KEY AIRLINE REVENUE METRICS AT THE AIRPORT – OY 2016 VS. OY 2007<sup>1</sup>**

Airline	RASM <sup>2</sup>			Load Factor			Yield		
	2016 (cents)	2007 (cents)	% Change	2016	2007	Change (pts.)	2016 (cents)	2007 (cents)	% Change
Delta Air Lines <sup>3</sup>	13.4	11.4	17.8%	84.7%	84.6%	0.1	15.8	13.5	17.7%
American Airlines <sup>4</sup>	14.8	12.1	22.2%	84.6%	78.3%	6.3	17.5	15.5	13.1%
Southwest Airlines <sup>5</sup>	12.1	8.0	51.3%	86.3%	67.3%	19.0	14.0	11.9	17.6%
United Airlines <sup>6</sup>	19.4	16.0	21.2%	84.5%	81.0%	3.5	22.9	19.7	16.2%
<b>U.S. Average</b>	<b>11.3</b>	<b>9.6</b>	<b>17.2%</b>	<b>83.5%</b>	<b>80.1%</b>	<b>3.4</b>	<b>13.5</b>	<b>12.0</b>	<b>12.5%</b>

Note: Amounts may not add because of rounding.

<sup>1</sup> Data include regional affiliates, as applicable, and do not include airline ancillary fees such as charges for checked baggage, etc. Spirit is not included because of significant changes to the airline's business model over the past decade, and such comparisons over this period would not be indicative of changes in revenue performance.

<sup>2</sup> RASM = Revenue per available seat mile

<sup>3</sup> Includes former Northwest Airlines

<sup>4</sup> Includes former US Airways

<sup>5</sup> Includes former AirTran Airways

<sup>6</sup> Includes former Continental Airlines

Source: Diio, US DOT Reports DB1A and T100, accessed July 2017

Compiled by Trillion Aviation

Key airline revenue metrics presented above include RASM, load factor, and yield. RASM is the unit metric used by airlines, expressed in cents, to measure revenue received for each available seat mile (ASM). ASMs are measured by airlines for the purpose of determining capacity, and an ASM unit is one seat flying one mile. For example, an aircraft with 100 seats operating on a route of 1,000 miles would equate to 100,000 ASMs. For the purposes of this analysis, RASM only measures passenger revenue and does not include other operating revenue received by airlines such as baggage fees. Load Factor measures how an airline is performing on a specific route or in aggregate in terms of filling available seat capacity. Load Factor is calculated as total revenue passenger miles (RPMs) divided by ASMs. RPMs are the general airline metric for traffic. For example, a revenue passenger flying one mile equates to one RPM. The last measure is airline yield or revenue per passenger mile. While RASM measures revenue on an ASM basis, yield measures it on an RPM basis. In other words, yield measures revenue for each unit sold, whereas, RASM measures revenue for each unit available to be sold. Yield is the industry measurement for price, while load factor is a volume-related measurement. RASM factors in both and, thus, is considered the key airline revenue metric.

An important point to note regarding RASM and yield is that these measures tend to decrease as the overall length of the trip or stage length increases. In theory, the higher the RASM or yield, the more profitable an airline should be. However, this assumes that costs per ASM, or CASM, remain constant. Therefore, if an airline increases its overall stage length, it should be expected

<sup>68</sup> Currently, a significant portion of Spirit's revenue is related to ancillary fees and charges – more so than the airlines presented in the Table 2-3. Data in Table 2-3 includes only passenger revenue and does not include revenue for ancillary fees.

that RASM and yield will decrease, as would its CASM. This is discussed further in the sections below for Delta.

### 2.1.2 Delta's Operations at the Airport

As described previously, the Airport serves as an important connecting hub for Delta. Delta is the dominant airline at the Airport enplaning approximately 74% of passengers during OY 2016. The Airport is one of Delta's primary connecting hubs within its network, along with Hartsfield-Jackson Atlanta International Airport (ATL), Minneapolis-St. Paul International Airport (MSP), and Salt Lake International Airport (SLC). As shown in **Table 2-4** below, the Airport is Delta's second largest airport based upon departing flights, and is currently its third largest international gateway, again based upon departing flights. Data presented in Tables 2-4 is for the month of June 2017. As presented in **Table 2-5**, the Airport ranked third in Delta's network in terms of total departing seats and total international departing seats for June 2017. Data presented in Tables 2-5 is for the month of June 2017.

**Table 2-4**

**DELTA: TOP 10 AIRPORTS BASED ON SCHEDULED DEPARTURES (JUNE 2017)**

Total Scheduled Departures			International Scheduled Departures		
Rank	Market	Flights	Rank	Market	Flights
1	Atlanta	29,845	1	Atlanta	3,024
2	<b>Detroit</b>	<b>12,792</b>	2	New York-JFK	1,760
3	Minneapolis	12,158	3	<b>Detroit</b>	<b>847</b>
4	Salt Lake City	7,416	4	Minneapolis	741
5	New York-LaGuardia	7,300	5	Seattle	638
6	New York-JFK	6,578	6	Los Angeles	401
7	Los Angeles	4,943	7	Salt Lake City	327
8	Seattle	4,372	8	Boston	194
9	Boston	2,537	9	New York-LaGuardia	162
10	Cincinnati	2,144	10	Honolulu	136

Source: Diio Mi, June 2017  
Compiled by Trillion Aviation, March 2017

**Table 2-5****DELTA: TOP 10 AIRPORTS BASED ON SCHEDULED DEPARTING SEATS (JUNE 2017)**

Total Scheduled Departing Seats			International Scheduled Departing Seats		
Rank	Market	Seats	Rank	Market	Seats
1	Atlanta	4,130,650	1	Atlanta	535,213
2	Minneapolis	1,407,139	2	New York-JFK	328,557
3	<b>Detroit</b>	<b>1,344,126</b>	3	<b>Detroit</b>	<b>156,168</b>
4	New York-JFK	907,291	4	Minneapolis	109,660
5	Salt Lake City	844,207	5	Seattle	84,754
6	Los Angeles	694,884	6	Los Angeles	72,298
7	New York-LaGuardia	672,053	7	Salt Lake City	45,513
8	Seattle	552,707	8	Boston	41,676
9	Boston	326,968	9	Honolulu	33,332
10	Orlando	292,230	10	Tokyo-Narita	20,702

Source: Diao Mi, June 2017

Compiled by Trillion Aviation, June 2017

**Delta O&D Traffic at the Airport**

The Airport is a major O&D market for Delta as it generated approximately \$2.6 billion in estimated revenue, on a roundtrip basis, for Delta in OY 2016, and was the fourth largest U.S. airport in Delta's system based on estimated revenue; although, it was only slightly lower than MSP, which ranked third (see **Table 2-6**).

**Table 2-6****DELTA: TOP 10 US O&D AIRPORTS BASED ON ESTIMATED REVENUE – OY 2016**

Rank	City	Airport Code	O&D Passengers (millions)	Average Roundtrip Fare	Roundtrip Revenue (billions)
1	Atlanta	ATL	9.9	\$451	\$4.5
2	New York	JFK	5.3	\$547	\$2.9
3	Minneapolis	MSP	5.2	\$507	\$2.6
4	<b>Detroit</b>	<b>DTW</b>	<b>4.8</b>	<b>\$541</b>	<b>\$2.6</b>
5	New York	LGA	4.6	\$372	\$1.7
6	Los Angeles	LAX	4.2	\$487	\$2.1
7	Salt Lake City	SLC	3.1	\$471	\$1.5
8	Orlando	MCO	2.8	\$388	\$1.1
9	Seattle	SEA	2.6	\$538	\$1.4
10	Boston	BOS	2.4	\$489	\$1.2

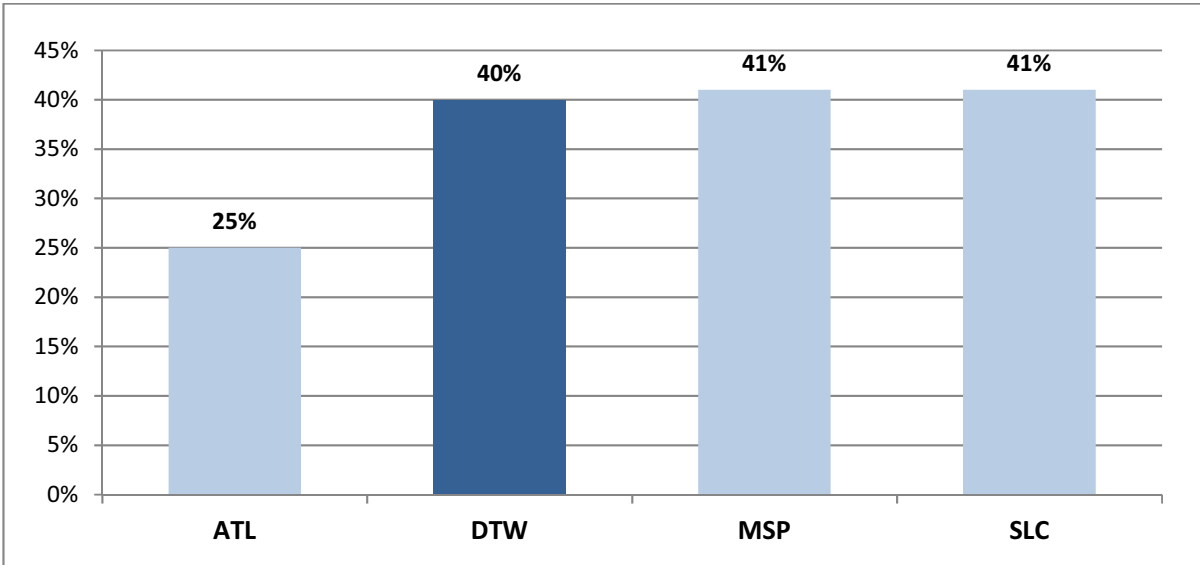
Source: U.S. Department of Transportation via Diao, accessed February 2017

Compiled by Trillion Aviation

While the Airport is a major O&D market for Delta, as presented previously, it is also one of Delta's primary connecting hubs as approximately 60% of its domestic passengers are connecting. This share of traffic is generally in-line with its other major connecting hubs. Delta's share of O&D traffic at the Airport is essentially similar to that at both MSP and SLC as shown

in **Figure 2-1**. Delta’s share of O&D traffic at the Airport is also well above that for Delta’s ATL hub; however, it should be noted that ATL is, by a significant margin, the largest airport in Delta’s network, and, as a result, any comparisons to other airports in Delta’s network may not be applicable. Based on these comparisons, maintaining a ratio of approximately 40% of O&D traffic at its primary connecting hubs, with the exception of ATL, appears to be a sustainable balance for its network. Over the past several years, other Delta connecting hubs that were unable to provide a similar percent of O&D passenger traffic were either significantly downsized or discontinued as connecting hubs within the network. These include the Cincinnati/Northern Kentucky International (CVG) and Memphis International (MEM) Airports. The Airport being in-line with Delta’s other connecting hubs suggests that it is capable of providing sufficient O&D demand along with being a major connecting airport.

**Figure 2-1**  
**DELTA AIR LINES: ESTIMATED PERCENT OF O&D DOMESTIC PASSENGERS AT MAJOR CONNECTING HUBS (OY 2016)**

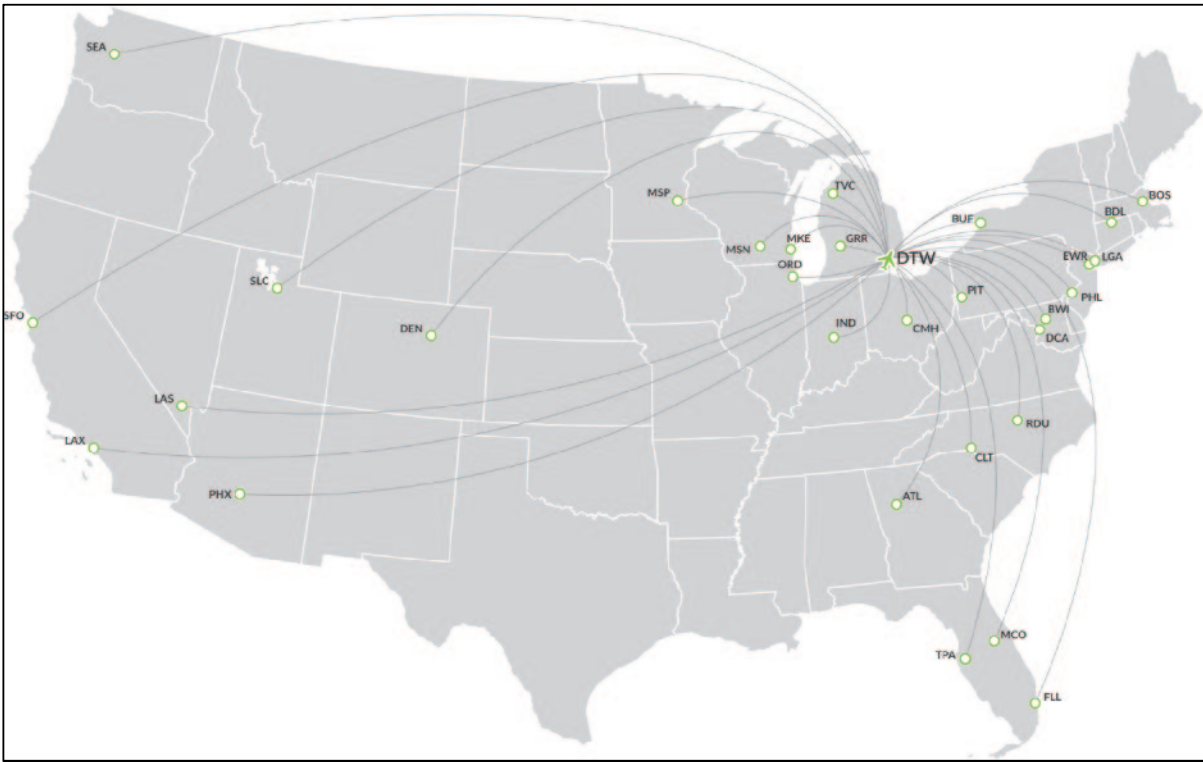


Source: U.S. Department of Transportation via Diio, accessed March 2017  
Compiled by Trillion Aviation

**Delta Connecting Traffic at the Airport**

In addition to being one of the largest O&D markets in the Delta system, the Airport is also a major connecting hub, and a key international gateway for the airline. The geographic location of the Airport provides Delta an effective connecting point in the eastern half of the U.S. **Figure 2-2** depicts the Airport’s top domestic connecting markets in terms of passengers. As shown, top connecting markets are somewhat concentrated in the Great Lakes region and major markets along the U.S. east coast.

**Figure 2-2**  
**DELTA AIR LINES: TOP 30 AIRPORTS WITH DOMESTIC PASSENGERS CONNECTING AT THE AIRPORT (OY 2016)**



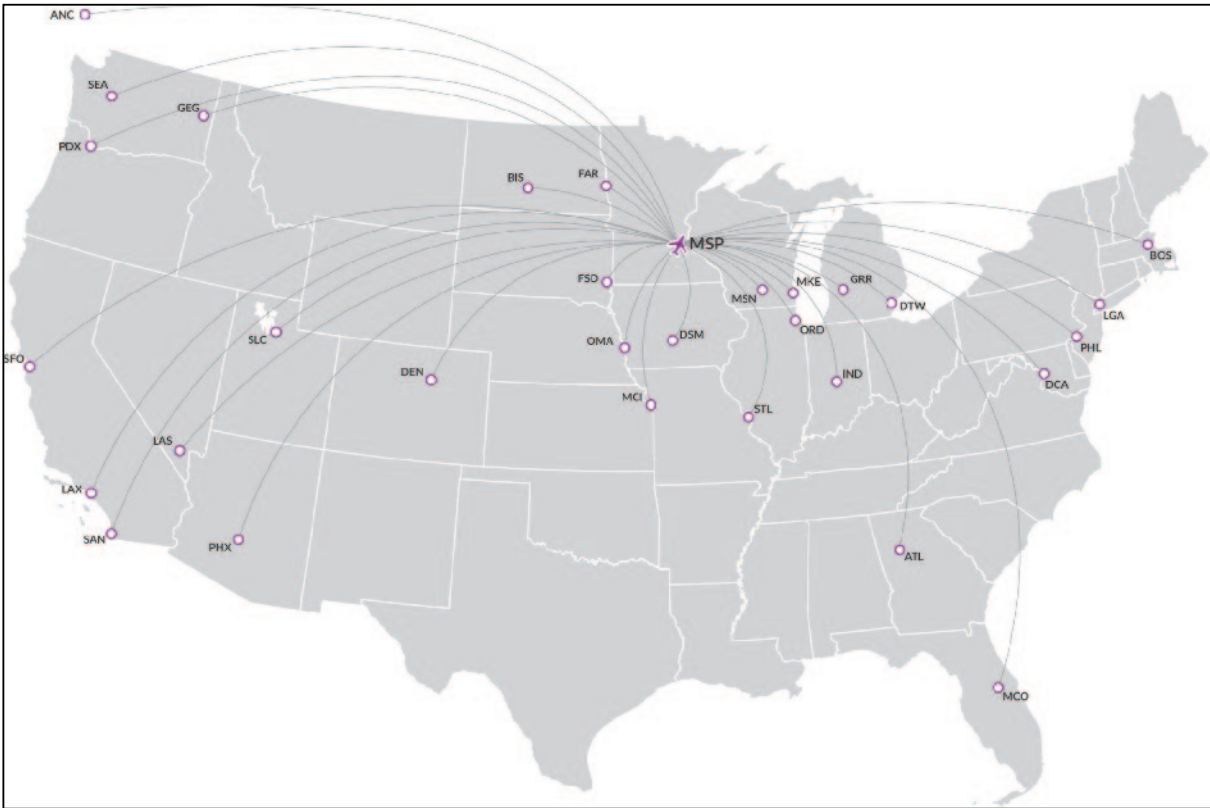
Source: USDOT via Diio, accessed March 2017  
Compiled by Trillion Aviation

The Airport also provides another connecting airport for Delta, other than MSP or ATL, particularly on east-west traffic flows in very large O&D markets. The Airport enhances Delta’s presence in these markets. **Figure 2-3** illustrates the top 30 connecting airports with domestic passengers connecting at MSP. **Table 2-7** below presents the top 30 airports where passengers either began or ended their trips while connecting through the Airport while traveling on Delta in OY 2016. The right half of the table also presents the same information for MSP. The data provides some insight as to the primary differences between these two Delta connecting hubs. As presented, MSP primarily serves domestic markets in the upper Midwest U.S., with more of an emphasis on connections to the U.S. west coast. Note that the top four airports connecting through MSP are on the U.S. west coast, and that seven of the top nine are in the western U.S. The other two top connecting airports to MSP are Milwaukee and Fargo.

As presented on Table 2-7, the Airport also generated connectivity to the U.S. west coast; however, it is less reliant on these connections. The Airport’s west coast connecting traffic is approximately 40% less than that connecting at MSP. The Airport’s connecting traffic is more geared to the eastern half of the U.S.



**Figure 2-3**  
**DELTA AIR LINES: TOP 30 AIRPORTS WITH DOMESTIC PASSENGERS CONNECTING AT MSP (OY 2016)**



Source: USDOT via Diio, accessed March 2017  
Compiled by Trillion Aviation

While all Delta hubs offer domestic connectivity to major west coast markets, SLC is more geared toward connectivity to the mountain region of the U.S. and to secondary west coast destinations as compared to Delta’s other hubs.

In summary, the Airport is unique within the Delta system in that it connects smaller eastern region markets, with an emphasis in the U.S. Great Lakes region, to the rest of the U.S., while MSP is similarly unique in that it serves markets in the upper Midwest and central U.S. SLC is strategically important within the Delta network in that SLC offers service to the mountain region of the U.S. Finally, Delta’s service at ATL has a focus in the southeast U.S., but ATL is also Delta’s largest hub airport and serves passenger traffic throughout the U.S. and internationally. All four of these hubs offer connecting service to major markets along the U.S. East and West Coast.

Table 2-7

## TOP 30 DELTA AIR LINES DOMESTIC CONNECTING MARKETS AT DTW AND MSP (OY 2016)

Top Airports Connecting at DTW					Top Airports Connecting at MSP				
Rank	Airport	Airport Code	% Passengers	Cumulative %	Rank	Airport	Airport Code	% Passengers	Cumulative %
1	Boston	BOS	2.3%	2.3%	1	Los Angeles	LAX	2.8%	2.8%
2	Grand Rapids	GRR	2.2%	4.5%	2	Seattle	SEA	2.6%	5.4%
3	Minneapolis	MSP	2.1%	6.6%	3	San Francisco	SFO	2.3%	7.7%
4	San Francisco	SFO	2.0%	8.5%	4	Las Vegas	LAS	2.1%	9.8%
5	Philadelphia	PHL	1.9%	10.4%	5	Fargo	FAR	2.0%	11.8%
6	Seattle	SEA	1.9%	12.3%	6	Milwaukee	MKE	2.0%	13.9%
7	Los Angeles	LAX	1.8%	14.1%	7	Portland	PDX	2.0%	15.9%
8	Milwaukee	MKE	1.8%	15.8%	8	Phoenix	PHX	1.8%	17.7%
9	Orlando	MCO	1.7%	17.5%	9	Denver	DEN	1.8%	19.4%
10	Madison	MSN	1.7%	19.3%	10	Boston	BOS	1.7%	21.2%
11	Hartford	BDL	1.7%	21.0%	11	Madison	MSN	1.7%	22.9%
12	Atlanta	ATL	1.7%	22.7%	12	Detroit	DTW	1.6%	24.5%
13	Las Vegas	LAS	1.7%	24.3%	13	Wash-National	DCA	1.6%	26.1%
14	Indianapolis	IND	1.6%	25.9%	14	Sioux Falls	FSD	1.6%	27.7%
15	Wash-National	DCA	1.6%	27.5%	15	Grand Rapids	GRR	1.6%	29.3%
16	NY-LaGuardia	LGA	1.4%	29.0%	16	Salt Lake City	SLC	1.5%	30.8%
17	Chicago-O'Hare	ORD	1.4%	30.4%	17	Kansas City	MCI	1.5%	32.4%
18	Baltimore	BWI	1.4%	31.8%	18	Omaha	OMA	1.5%	33.9%
19	Newark	EWR	1.4%	33.2%	19	NY-LaGuardia	LGA	1.5%	35.3%
20	Phoenix	PHX	1.3%	34.4%	20	St. Louis	STL	1.4%	36.7%
21	Buffalo	BUF	1.3%	35.7%	21	Indianapolis	IND	1.4%	38.1%
22	Charlotte	CLT	1.2%	36.9%	22	Spokane	GEG	1.3%	39.4%
23	Pittsburgh	PIT	1.2%	38.2%	23	Bismarck	BIS	1.3%	40.8%
24	Salt Lake City	SLC	1.2%	39.4%	24	San Diego	SAN	1.3%	42.1%
25	Columbus	CMH	1.2%	40.5%	25	Orlando	MCO	1.3%	43.5%
26	Tampa	TPA	1.1%	41.7%	26	Chi-O'Hare	ORD	1.3%	44.7%
27	Raleigh/Durham	RDU	1.1%	42.8%	27	Philadelphia	PHL	1.3%	46.0%
28	Traverse City	TVC	1.1%	43.9%	28	Anchorage	ANC	1.3%	47.3%
29	Fort Lauderdale	FLL	1.1%	45.0%	29	Atlanta	ATL	1.2%	48.5%
30	Denver	DEN	1.1%	46.0%	30	Des Moines	DSM	1.1%	49.6%
	<b>Other</b>		<b>54.0%</b>	<b>100.0%</b>		<b>Other</b>		<b>50.4%</b>	<b>100.0%</b>

Source: U.S. Department of Transportation via Diio, accessed March 2017

Compiled by Trillion Aviation

### **Delta Estimated Profitability at the Airport**

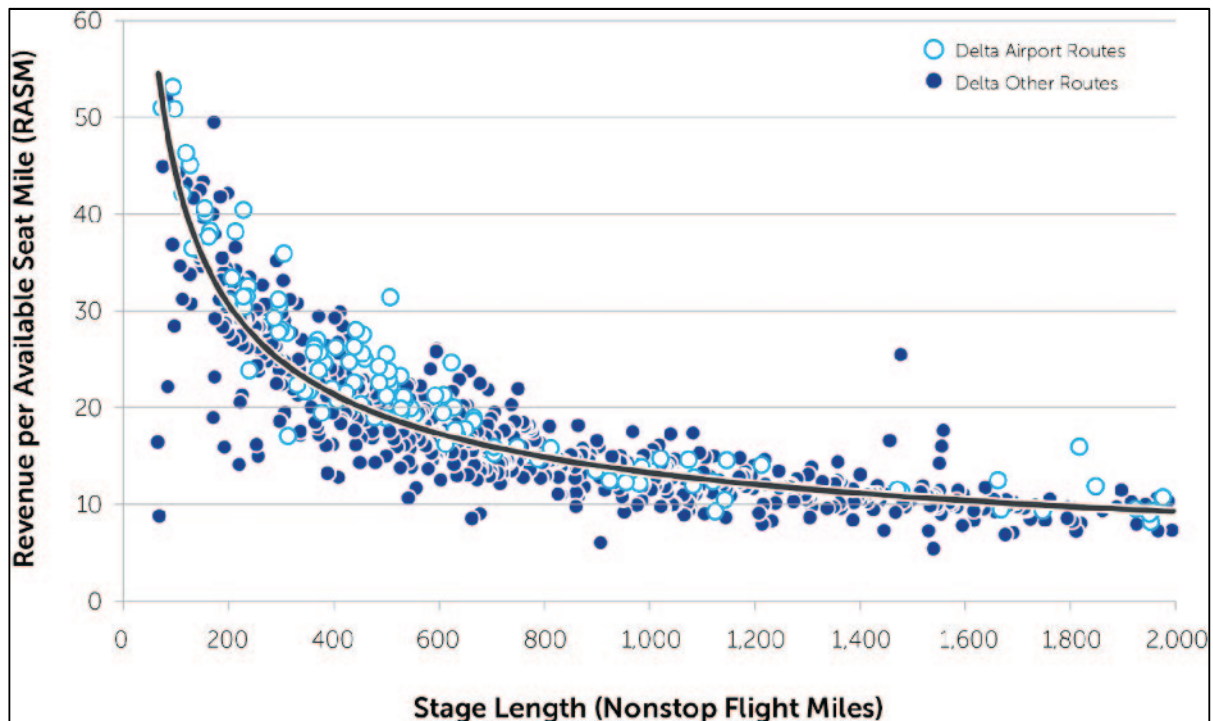
The Airport's importance to Delta is further enhanced by its overall estimated profitability at the Airport. Given that Delta is the Airport's largest airline, Trillion Aviation performed an assessment of Delta's revenue performance for each non-stop route served from the Airport fewer than 2,000 miles during OY 2016. Relative route profitability is a critical factor to assess when evaluating an airline's performance at an airport. Unit revenue or RASM was analyzed for each

of the Airport's nonstop routes operated by Delta. In conjunction with this, load factors and yield performance on each nonstop Delta route from the Airport were also assessed.

**Figure 2-4** below graphically presents mileage-adjusted RASM for U.S. domestic Delta nonstop routes for OY 2016. The trend line or curve represents the calculated system average RASM for Delta routes based on stage length, or nonstop flight miles. Because RASM tends to decrease as the stage length increases, it is critical to consider stage length when assessing RASM or yield. The trend line presented on Figure 2-4 represents a typical airline trend when comparing RASM and stage length. Markets for the Airport are depicted as the circles without shading. The route data points that appear above or to the right of the trendline performed more favorably than Delta's system average for RASM or unit revenue. As presented on Figure 2-4, the vast majority of Delta routes from the Airport performed near or above system mileage-adjusted RASM, which is indicative of Delta's relative profitability at the Airport.

**Figure 2-4**

**DELTA DOMESTIC RASM FOR ROUTES LESS THAN 2,000 MILES (OY 2016)**



Note: Essential Air Service markets from the Airport are not depicted.

Source: Diio, US DOT Reports DB1a and T100, accessed February 2017

Compiled by Trillion Aviation

In particular, note the relative outperformance of markets in the range of 400-600 miles from the Airport. These are generally large metropolitan areas on the U.S. east coast, Ohio Valley, southeastern U.S., or other large Delta hubs (i.e., ATL and MSP). These routes, typically, are large O&D markets with relatively high yields, where Delta generally has a sizeable presence. These routes are among the highest profit margin markets in the Delta system.

Longer-haul Delta routes from the Airport, or those greater than 1,000 miles, are generally profitable, albeit closer to system mileage-adjusted RASM averages. These markets are generally more impacted by competition, which can limit yields. In particular, many of these routes have been impacted by the growth of LCCs and ULCCs, especially Spirit Airlines, which has the second largest passenger market share at the Airport. Typical routes in this range include Florida airports, the U.S. west coast, and the Caribbean. Delta has recently implemented certain strategies in attempts to compete with LCCs and ULCCs such as segmenting its inflight cabin to add basic economy seats and selectively adding capacity.

### **Delta International Traffic at the Airport**

As noted earlier in Tables 2-4 and 2-5, the Airport is also a major international gateway for Delta, ranking as its third largest airport for international departures and departing seats, behind only ATL and New York's John F. Kennedy International Airport (JFK). With approximately half of Delta's international passengers at the Airport being O&D in OY 2016, the Airport is also a major O&D market for international travel. This is largely attributable to the size of the manufacturing sector in the Air Service Area, particularly with regard to the automobile industry and the need to have access to international supply chains around the globe, as discussed in detail in Chapter 1 of this Report. Delta operated non-stop flights during OY 2016 to Delta's top 23 international destinations from the Airport. Approximately 30% of the O&D passengers on these non-stop international Delta flights went to Mexican destinations, approximately 26% to European destinations, approximately 23% to Asian destinations, and the remaining 21% of O&D international passengers on Delta went to destinations in the Caribbean, Canada, and South America.

Delta served six destinations to Mexico in OY 2016 including Cancun, Cozumel, Mexico City, Monterrey, Puerto Vallarta, and San José del Cabo. As mentioned above, Mexico is a significant destination for international O&D passenger traffic on Delta. Additionally, Aeromexico, a Delta SkyTeam partner, started operating from the Airport to Mexico City in April 2017.

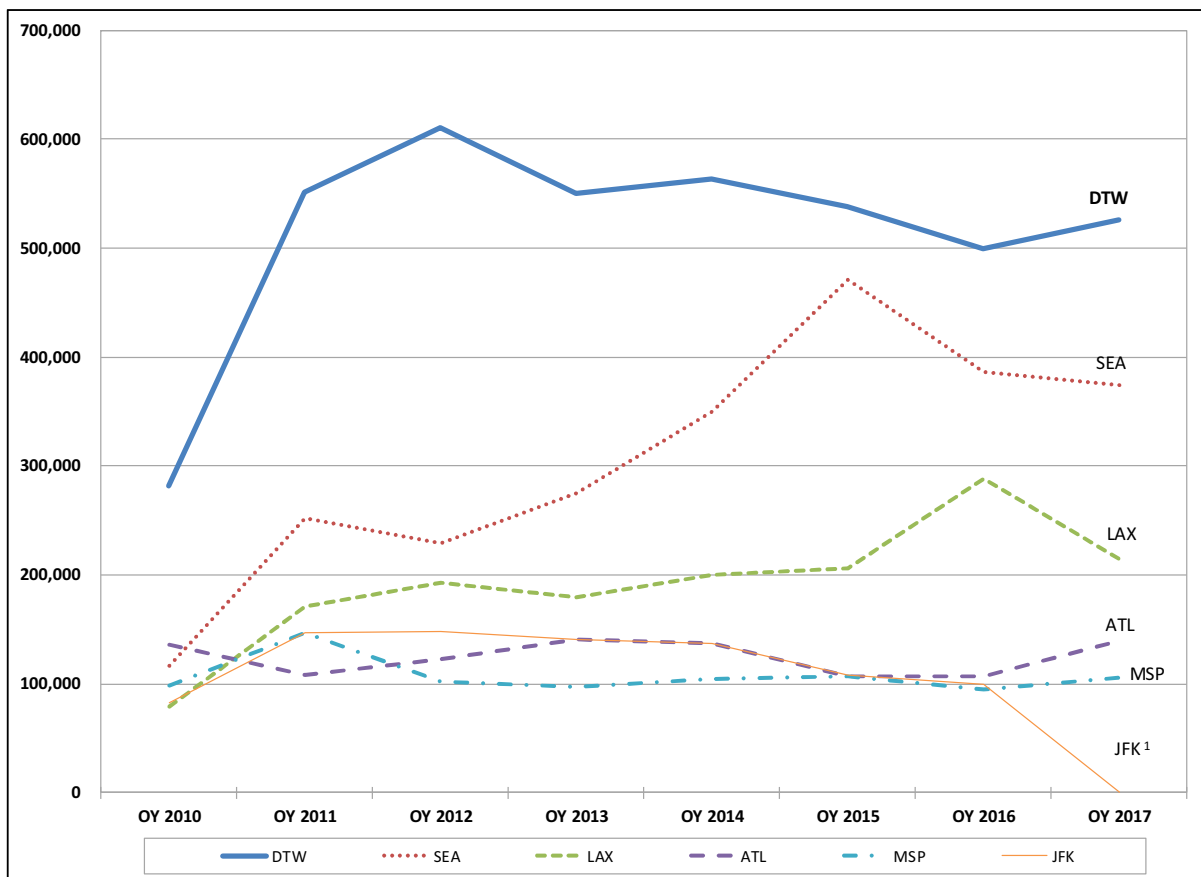
European traffic is a significant segment of Delta's international operations at the Airport. Delta has been operating non-stop service to London Heathrow Airport (LHR) from the Airport since 2008. In addition, a Delta partner, Virgin Atlantic, operated to LHR from the Airport from June 2015 until its cessation of service at the Airport in March 2017. Delta added another nonstop in April 2017 to LHR to replace the discontinued service from Virgin Atlantic. As indicated previously, a significant portion of Delta's international O&D passengers fly to European destinations, including Frankfurt, London, and Rome. From a connecting passenger standpoint, Delta also provides non-stop service from the Airport to SkyTeam partner airline hubs in both Amsterdam and Paris. Delta SkyTeam partner, Air France, also offers non-stop service to Paris from the Airport. This non-stop service provides connectivity to the world on Delta-affiliated SkyTeam airlines.

The Airport is Delta's largest U.S. gateway to Asia based on number of scheduled departing seats. **Figure 2-5** illustrates Delta's departing seat capacity from the Airport to Asia along with Delta's other U.S. international gateway airports. As shown, the Airport consistently had the most departing seat capacity to Asia for the period of OY 2010 through OY 2017. Also shown, the

Airport experienced growth in OY 2017 as departing seats increased in the five Asian destinations it serves (i.e., Beijing, Nagoya, Seoul, Shanghai, and Tokyo-Narita). However, the other Delta U.S. gateways shown have been somewhat impacted by a recent strategy by Delta in Tokyo. Delta has been reducing overall service to Tokyo-Narita over the past year, and has been re-evaluating its operations to Japan as slots to the closer-in Tokyo-Haneda airport have become available. The recent decline in OY 2017 departing seats to Asia from the three airports of Seattle (SEA), Los Angeles (LAX), and New York (JFK) is primarily attributed to Delta either decreasing or ceasing service from these airports to Tokyo-Narita.

Figure 2-5

**DELTA SCHEDULED DEPARTING SEATS TO AIRPORTS IN ASIA FROM U.S. HUB/GATEWAY AIRPORTS**



<sup>1</sup>Delta flights from New York-JFK to Tokyo-Narita ceased in October 2016.

Source: Diio Mi, accessed June 2017

Compiled by Trillion Aviation

**Figure 2-6** depicts Delta’s European and Asian route maps from the Airport for July 2017. Delta expands seat capacity during the summer, particularly to Europe. As shown Delta has non-stop service to six European destinations and five Asian destinations.

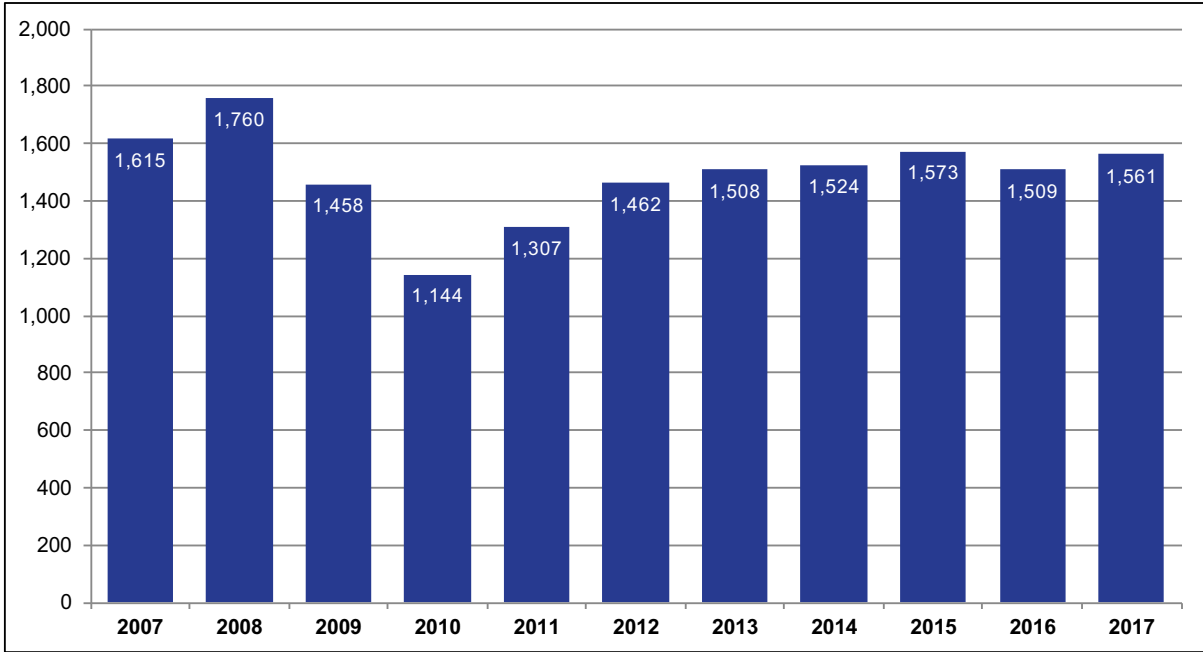
**Figure 2-6**  
**DELTA AIR LINES EUROPEAN AND ASIAN DESTINATIONS FROM THE AIRPORT (JULY 2017)**



Source: Diio Mi, accessed March 2017  
Compiled by Trillion Aviation

**Figure 2-7** below illustrates Delta’s trans-oceanic departing seat capacity trend over the past 11 OYs at the Airport. For the purposes of this Report, trans-oceanic includes flights to Asia, Europe, South America, and the Caribbean. As shown, the seat capacity for OY 2017 is expected to be down approximately 3.3% compared to levels in OY 2007. Delta’s trans-oceanic seat capacity from the Airport was at its lowest during this period in OY 2010, which coincides with the major U.S. economic recession. Since the end of the recession in OY 2010, Delta’s trans-oceanic seat capacity at the Airport has rebounded and for OY 2017 is expected to be up 36.5% since OY 2010 to a level of approximately 1.56 million departing seats. Over the past 10 years, Delta has eliminated under-performing routes and has selectively added service at the Airport to better-performing markets such as Munich, Sao Paulo and Shanghai.

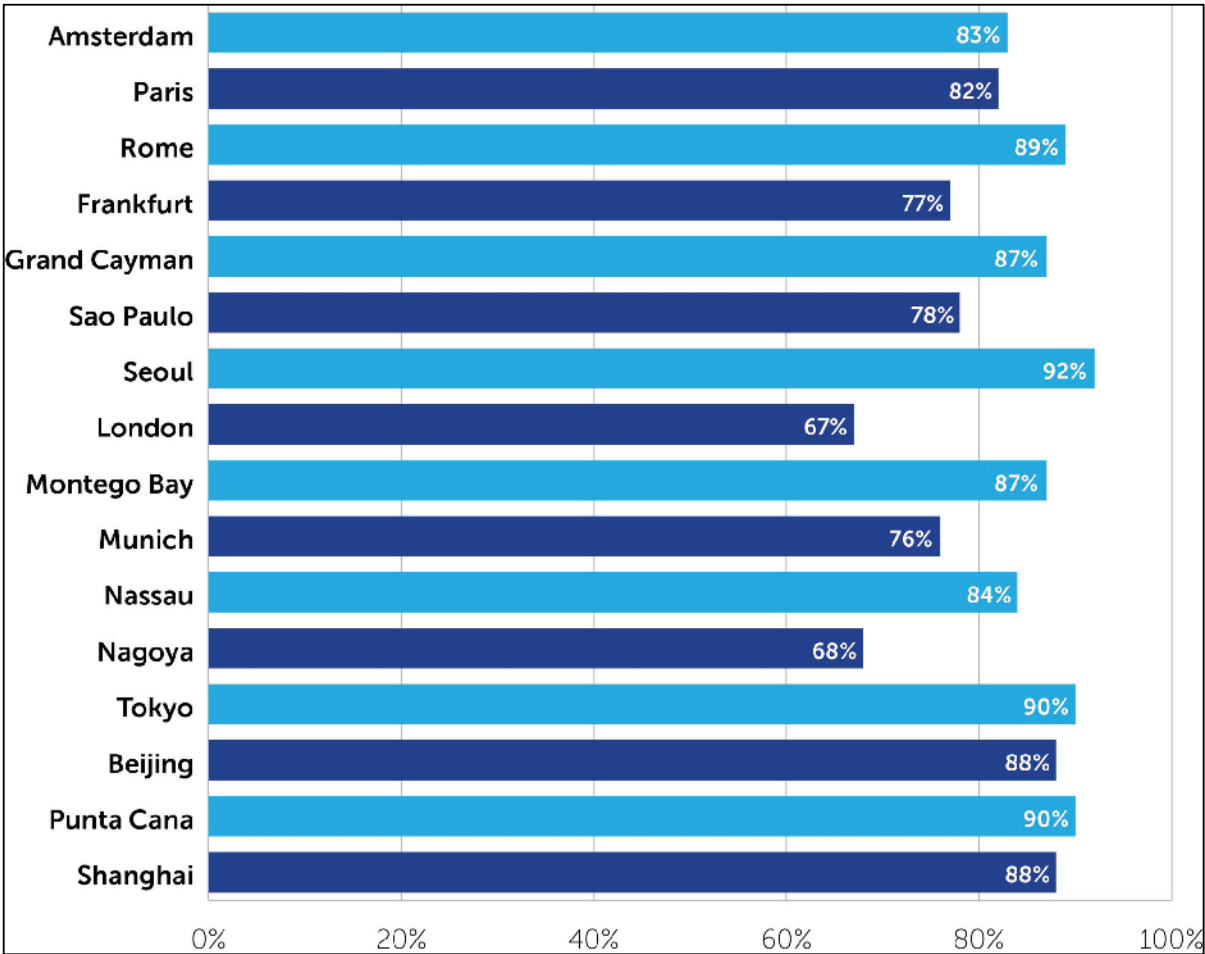
**Figure 2-7**  
**DELTA: TRANS-OCEANIC DEPARTING SEAT CAPACITY FROM THE AIRPORT: OY 2007 – OY 2017 <sup>1</sup> (000s)**



Source: Innovata via Diio, accessed August 2017  
Compiled by Trillion Aviation

Currently, Delta appears to have right-sized its international operations at the Airport. As shown on **Figure 2-8**, 11 of its 16 trans-oceanic routes are operating at load factors in excess of 80% for the 12 months ended June 2016. Furthermore, the only routes below an 80% load factor are Frankfurt (77%), Sao Paulo (78%), London (67%), Munich (76%), and Nagoya (68%).

**Figure 2-8**  
**DELTA AIR LINES TRANS-OCEANIC LOAD FACTORS AT THE AIRPORT (12-MONTHS ENDED JUNE 2016) <sup>1</sup>**

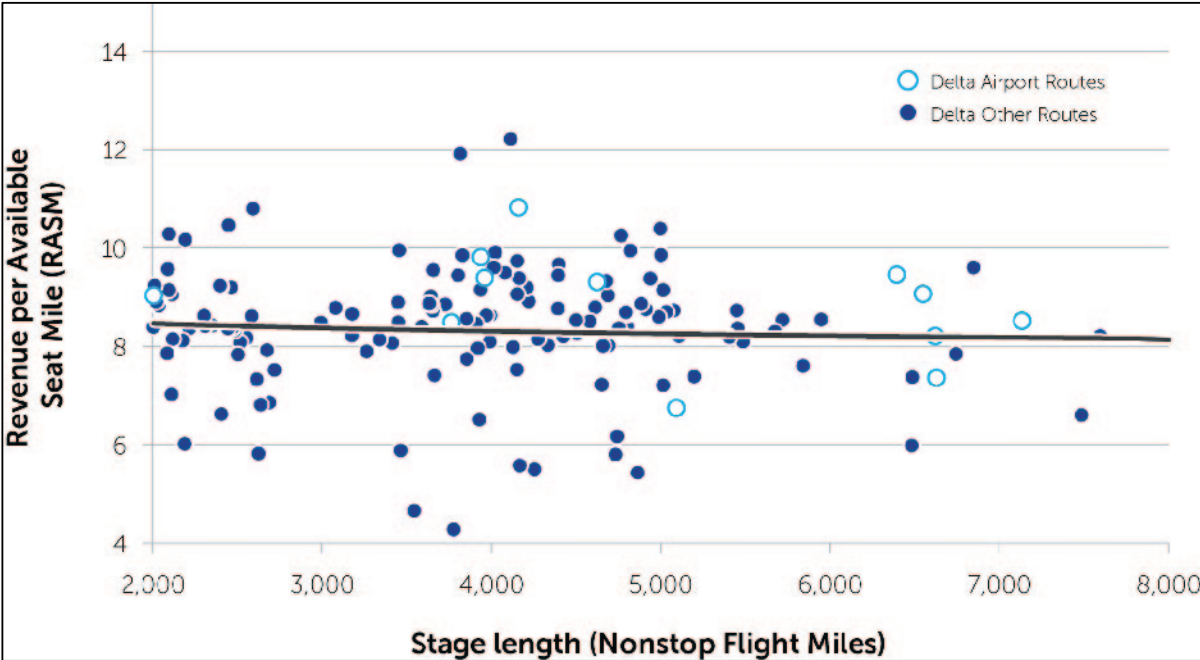


Source: U.S. Department of Transportation via Diiio, accessed March 2017  
 Compiled by Trillion Aviation

As shown on **Figure 2-9**, Delta’s trans-oceanic service from the Airport appears profitable as the majority of Delta’s trans-oceanic routes from the Airport are performing better from a RASM standpoint than Delta’s estimated trans-oceanic system average, which is represented by the black trendline. This analysis is similar to the analysis for Delta’s domestic operation at the Airport above. Routes for the Airport are shown as the circles without shading.



Figure 2-9  
DELTA AIR LINES TRANS-OCEANIC RASM (12 months ending June 2016) <sup>1</sup>



Source: Diio, US DOT Reports DB1a and T100, accessed February 2017  
Compiled by Trillion Aviation

For Delta’s trans-oceanic services at the Airport, the majority of service operated at or above Delta’s comparable mileage-adjusted RASM averages. This is indicative of the relative profitability of these routes. Based upon these results, including the aforementioned load factor comparisons, trans-oceanic international service for Delta at the Airport has performed well. This is particularly true with regard to Asian destinations, which have generated relatively high yields, due in large part to the amount of business class flying from the Airport. Yields from the Airport are in line, and generally higher relative to comparable routes at ATL, JFK and MSP. As the region’s economy continues to improve, demand in these markets could also grow.

**Summary**

In summary, the Airport is integral to Delta’s overall route network. As analyzed above, the following four factors provide the basis as to why, in our opinion, the Airport should remain a critical hub for Delta into the foreseeable future.

1. Delta’s passenger mix at the Airport for OY 2016 was approximately 40% O&D and 60% connecting. This composition of O&D and connecting traffic is similar to that of its other connecting hubs of MSP and SLC. Therefore, Delta appears able to obtain an acceptable level of O&D traffic at the Airport to sustain its operation as a hub.
2. The Airport’s geographic position allows Delta to operate it as an efficient transfer point for traffic in the eastern half of the U.S. It also allows Delta to serve connecting east-west traffic flows in conjunction with its other hubs at MSP, SLC, and ATL.

3. The Airport appears to be a profitable operation for Delta as RASMs are generally above mileage-adjusted system averages. Delta's profitability at the Airport also appears to have improved significantly by OY 2016 as compared to before the recession in OY 2007 as shown previously on Table 2-3.
4. Finally, the Airport serves as an important international gateway within Delta's network. Numerous European and Asian cities are served nonstop from the Airport on Delta, and, in general, these routes appear to be operating profitably. The Airport is also Delta's largest U.S. airport serving Asian airports non-stop in terms of scheduled departing seats.

### 2.1.3 Spirit's Operations at the Airport

Spirit has a long history at the Airport as it started its operations at the Airport as a charter tour operator providing travel packages in the 1980s. In 1992, Spirit began adding scheduled passenger airline service, and it relocated its headquarters to Miramar, Florida in 1999. Starting in 2006, Spirit had approximately 20 daily departures and over 3,000 departing seats per day at the Airport. However, by the summer of 2009, during the U.S. economic recession, Spirit had reduced its operations at the Airport to a total of approximately 11 daily departures and about 1,700 daily departing seats. Since 2009, flights and seats have steadily increased at the Airport. By the fall of 2016, Spirit offered approximately 25 daily flights from the Airport and over 4,000 departing seats, surpassing its operation in 2006. Major route additions from the Airport over the past five years include the following:

- Dallas-Fort Worth International Airport (DFW) in June 2012
- Denver International Airport (DEN) in February 2013
- George Bush Intercontinental/Houston Airport (IAH) in June 2013
- MSP in May 2014
- Kansas City International Airport (MCI) in August 2014
- ATL and Louis Armstrong New Orleans International Airport (MSY) in October 2014
- General Edward Lawrence Logan International Airport (BOS) in Boston in April 2015

Today, the Airport is Spirit's fourth largest airport operation, offering ULCC service to a variety of large U.S. metropolitan areas, in addition to leisure destinations across the U.S., Mexico and the Caribbean. The Airport is also one of 12 maintenance bases for Spirit; however, the Airport is the only maintenance base with a hangar. In May 2017, Spirit opened a new \$32 million, 132,000 square-foot maintenance hangar at the Airport.<sup>69</sup>

### 2.1.4 O&D Markets at the Airport

This section assesses domestic O&D traffic at the Airport for all airlines operating at the Airport. As discussed in Chapter 1, approximately 50% of the Airport's domestic enplaned passenger

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<sup>69</sup> "State-of-the-art Spirit hangar at Metro Airport opens", *The Detroit News*, May 24, 2017, <http://www.detroitnews.com/story/business/2017/05/23/detroit-metro-spirit-hangar/102083122/>, accessed July 2017

activity for all airlines consisted of O&D passengers in OY 2016. **Table 2-8** presents the Airport's top 20 domestic O&D markets, including estimated annual passengers, share of passengers by market, the primary and secondary carrier serving each market along associated O&D passenger market share for the carriers. Non-stop flights operate on all 20 of the Airport's top 20 domestic O&D markets; in fact, there are nonstop flights serving 49 of the top 50 O&D markets for the Airport.

The Airport's top domestic O&D markets reflect travel demand from the region, and, consequently, where airline capacity is allocated. As expected, the Airport's O&D demand is somewhat emphasized within the eastern U.S., primarily because of the Airport's geographic position. There is also demand from the Airport to major cities in the western half of the U.S. This has resulted in an average passenger haul or trip length from the Airport of 1,022 miles. This is moderately less than the average of all U.S. airports of 1,126 miles.<sup>70</sup>

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<sup>70</sup> USDOT Report DB1A for OY 2016

**Table 2-8**  
**TOP 20 DOMESTIC O&D MARKETS FROM THE AIRPORT (OY 2016)**

Rank	Market	Total O&D Passengers (000s)	Share of O&D Passengers	Primary Carrier	Market Share	Secondary Carrier	Market Share	Non-Stop Service
1	New York <sup>1</sup>	1,001	7.1%	Delta	52.0%	American	17.8%	Yes
2	Florida South <sup>2</sup>	962	6.2%	Delta	56.2%	Spirit	23.9%	Yes
3	Orlando	941	6.0%	Delta	53.7%	Spirit	28.9%	Yes
4	Washington, DC <sup>3</sup>	732	4.7%	Delta	58.1%	Southwest	19.7%	Yes
5	Los Angeles <sup>4</sup>	729	4.7%	Delta	51.4%	Spirit	16.4%	Yes
6	Las Vegas	727	4.7%	Delta	43.5%	Spirit	39.5%	Yes
7	Atlanta	644	4.1%	Delta	52.9%	Spirit	23.7%	Yes
8	Dallas <sup>5</sup>	557	3.6%	American	40.2%	Delta	27.3%	Yes
9	Tampa	537	3.4%	Delta	56.9%	Spirit	32.4%	Yes
10	Denver	513	3.3%	Delta	34.8%	Southwest	20.8%	Yes
11	Chicago <sup>6</sup>	493	3.2%	Delta	47.3%	American	18.9%	Yes
12	Fort Myers	493	3.2%	Delta	55.4%	Spirit	34.5%	Yes
13	SF Bay Area <sup>7</sup>	476	3.1%	Delta	63.8%	Southwest	11.8%	Yes
14	Boston	460	2.9%	Delta	56.9%	JetBlue	28.7%	Yes
15	Phoenix	454	2.9%	Delta	42.2%	American	27.9%	Yes
16	Houston <sup>8</sup>	339	2.2%	Delta	30.0%	Spirit	28.1%	Yes
17	Philadelphia <sup>9</sup>	304	2.0%	Delta	33.8%	American	28.5%	Yes
18	Seattle	299	1.9%	Delta	65.1%	Alaska	24.5%	Yes
19	Nashville	254	1.6%	Delta	64.5%	Southwest	32.0%	Yes
20	Minneapolis	250	1.6%	Delta	68.0%	Spirit	19.0%	Yes
Other O&D Markets		4,319	27.7%					
Total Domestic O&D		15,584						
Domestic O&D Share		50%						

<sup>1</sup> Includes La Guardia (LGA), John F Kennedy International (JFK), and Newark Liberty International (EWR) Airports

<sup>2</sup> Includes Fort Lauderdale/Hollywood International (FLL) and Miami International (MIA) Airports

<sup>3</sup> Includes Ronald Reagan Washington National (DCA), Washington Dulles International (IAD), and Baltimore/Washington International Thurgood Marshall Airports

<sup>4</sup> Includes Los Angeles International (LAX), Ontario International (ONT), John Wayne-Orange County (SNA), Long Beach (LGB), and Hollywood Burbank (BUR) Airports

<sup>5</sup> Includes Dallas/Fort Worth International Airport (DFW) and Dallas Love Field (DAL)

<sup>6</sup> Includes Chicago O'Hare International (ORD) and Chicago Midway International (MDW) Airports

<sup>7</sup> Includes Metropolitan Oakland International (OAK), Norman Y Mineta San Jose International (SJC) and San Francisco International (SFO) Airports

<sup>8</sup> Includes George Bush Intercontinental (IAH) and William P Hobby (HOU) Airports

<sup>9</sup> Includes Philadelphia International (PHL) and Trenton Mercer (TTN) Airports

Source: Diio; US DOT Reports DB1A, accessed February 2017

Compiled by Trillion Aviation

**Table 2-9** presents the top 20 international airports served from the Airport as ranked by scheduled departing seats for OY 2016. As shown, Amsterdam and Paris are the top two airports, and are also Delta SkyTeam partner hubs offering major connectivity from the Airport to the world. Delta serves all 20 of the non-stop international markets, and other airlines provide non-stop service on five of these markets.

Table 2-9

**TOP 20 INTERNATIONAL AIRPORTS FROM THE AIRPORT BASED ON SCHEDULED DEPARTING SEATS  
(OY 2016)**

Rank	Market	Airport Code	Annual Non-stop Departures	Annual Scheduled Departing Seats	Primary Carrier	Secondary Carrier
1	Amsterdam, Netherlands	AMS	1,268	315,453	Delta	
2	Paris, France	CDG	690	193,660	Delta	Air France
3	Frankfurt, Germany	FRA	719	188,837	Lufthansa	Delta
4	Toronto, Canada	YYZ	2,888	179,968	Delta	Air Canada
5	London, England	LHR	662	169,364	Virgin Atlantic <sup>1</sup>	Delta
6	Tokyo, Japan	NRT	367	127,342	Delta	
7	Shanghai, China	PVG	349	119,324	Delta	
8	Seoul, South Korea	ICN	313	117,688	Delta	
9	Cancun, Mexico	CUN	625	113,580	Delta	Spirit
10	Montreal, Canada	YUL	1,315	87,525	Delta	
11	Beijing, China	PEK	340	79,560	Delta	
12	Nagoya, Japan	NGO	236	55,224	Delta	
13	Rome, Italy	FCO	175	51,275	Delta	
14	Mexico City, Mexico	MEX	358	48,824	Delta	
15	Sao Paulo, Brazil	GRU	160	35,600	Delta	
16	Ottawa, Canada	YOW	643	32,410	Delta	
17	Munich, Germany	MUC	128	31,488	Delta	
18	Monterrey, Mexico	MTY	356	29,420	Delta	
19	Puerto Vallarta, Mexico	PVR	90	13,526	Delta	
20	San José del Cabo, Mexico	SJD	85	13,230	Delta	

<sup>1</sup> Virgin Atlantic ceased service to London in March 2017; however, Delta added a second flight to London in April 2017.

Source: Diio Mi, accessed July 2017  
Compiled by Trillion Aviation

## 2.2 Air Traffic Activity and Trends

This section analyzes historical trends in air traffic activity at the Airport including enplaned passengers, aircraft operations, and landed weight. It also discusses the primary factors affecting these trends.

### 2.2.1 Enplaned Passengers

Passenger activity at an airport drives numerous revenues and financial measures including such items as non-airline revenues, e.g., parking, rental car, and terminal concessions, Passenger Facility Charge (PFC) revenues and FAA Airport Improvement Program (AIP) entitlement grant distributions. **Table 2-10** presents historical domestic O&D, domestic connecting, international, and total enplaned passenger trends at the Airport between OYs 2006 and 2016. The table also presents the Airport's total enplaned passengers for the first nine months of OY 2016 and OY 2017 to show how traffic is trending in OY 2017. It is important to separately state O&D and connecting enplaned passengers given the fact that the Airport

operates as a connecting hub for Delta. The table also presents overall U.S. enplaned passenger activity on a federal fiscal year basis<sup>71</sup> for 2006 through 2016.

**Table 2-10****HISTORICAL ENPLANED PASSENGER TRENDS AT THE AIRPORT AND THE U.S. (in thousands, except rates)**

Operating Year	Domestic O&D	% Change	Domestic Connecting	% Change	Int'l.	% Change	Total	% Change	Federal Fiscal Year <sup>1</sup>	U.S. Enplaned Passengers	% Change
2006	7,358	-	8,964	-	1,478	-	17,800	-	2006	740,000	-
2007	7,954	8.1%	8,627	(3.8%)	1,527	3.3%	18,108	1.7%	2007	765,300	3.4%
2008	7,806	(1.9%)	8,465	(1.9%)	1,560	2.2%	17,831	(1.5%)	2008	759,000	(0.8%)
2009	6,709	(14.1%)	7,913	(6.5%)	1,319	(15.5%)	15,941	(10.6%)	2009	704,000	(7.2%)
2010	6,521	(2.8%)	8,093	2.3%	1,262	(4.3%)	15,876	(0.4%)	2010	712,000	1.1%
2011	6,787	4.1%	8,126	0.4%	1,314	4.1%	16,226	2.2%	2011	731,000	2.7%
2012	6,766	(0.3%)	8,036	(1.1%)	1,367	4.1%	16,170	(0.3%)	2012	739,000	0.8%
2013	6,732	(0.5%)	7,933	(1.3%)	1,412	3.3%	16,078	(0.6%)	2013	757,000	0.3%
2014	6,898	2.5%	7,854	(1.0%)	1,465	3.7%	16,217	0.9%	2014	786,000	2.4%
2015	7,169	3.9%	7,839	(0.2%)	1,435	(2.0%)	16,444	1.4%	2015	786,000	3.8%
2016	7,792	8.7%	7,888	0.6%	1,451	1.1%	17,131	4.2%	2016 <sup>1</sup>	820,000	4.3%
OYTD 16 <sup>2</sup>							12,608	-			
OYTD 17 <sup>2</sup>							12,676	0.5%			
<b>CAGR<sup>3</sup></b>									<b>CAGR<sup>3</sup></b>		
2006-16	0.6%		(1.3%)		(0.2%)		(0.4%)		2006-16	1.1%	
2006-08	3.0%		(2.8%)		2.7%		0.1%		2006-08	1.4%	
2008-10	(8.6%)		(2.2%)		(10.0%)		(5.6%)		2008-10	(3.0%)	
2010-16	3.0%		(0.4%)		2.4%		1.3%		2010-16	2.4%	

<sup>1</sup> Federal fiscal year is the 12-month period ending September 30, which is consistent with the Authority's OY. FAA data for 2016 is an estimate.

<sup>2</sup> Operating Year to-date period includes the nine months of October through June.

<sup>3</sup> CAGR = Compound annual growth rate

Sources: Authority management records for international and total enplaned passengers; USDOT (via Diio) for domestic O&D enplaned passengers; and FAA Aerospace Forecast, Fiscal Years 2016-2036; domestic connecting enplaned passengers were derived by subtracting DOT-reported domestic O&D enplaned passengers from Authority-reported domestic enplaned passengers

Compiled by Trillion Aviation, April 2017

Between OY 2006 and OY 2016, total enplaned passengers at the Airport decreased from approximately 17.8 million to approximately 17.1 million, an overall CAGR of approximately -0.4% for this period; however, domestic O&D enplaned passengers increased during this period from approximately 7.4 million to 7.8 million for a CAGR of 0.6%. Domestic connecting enplaned passengers decreased from approximately 9.0 million to approximately 7.9 million for a CAGR of -1.3% because of Delta's shifting of connecting capacity as described earlier.

Given the overall dynamic nature of the aviation industry, there were unique factors driving trends at the Airport during specific time periods over the past 10 years. Two events greatly

<sup>71</sup> Federal fiscal years are the 12-months ended September 30<sup>th</sup>, the same as the Authority's OY.

affected air travel demand during this time period. First, the U.S. economic recession affected air demand nationwide, and also had a major impact within the Air Service Area. The Airport's domestic O&D enplaned passenger decline in OY 2009 of approximately 14.1% was significantly greater than that experienced in the U.S. overall of approximately 7.2%. The second event was the acquisition of Northwest Airlines by Delta. While the acquisition was completed in 2010, the full integration of the airlines continued for at least another two to three years. In general, the acquisition has, in part, resulted in less connecting traffic being carried through the Airport by Delta, as was analyzed earlier. To further describe these trends, the past 10 years have been segregated into certain time periods and discussed below.

### **OY 2006 – OY 2008**

Total Airport enplaned passengers remained relatively flat during the period of OY 2006 through OY 2008, slightly increasing at a CAGR of approximately 0.1%. However, the Airport did experience growth in both domestic O&D and international enplaned passengers during this period with CAGRs of approximately 3.0% and 2.7%, respectively. However, a generally similar decrease in domestic connecting enplaned passenger traffic offset the increases in O&D and international passengers to keep total enplaned passengers generally flat over this period. The Airport's domestic O&D traffic increase was primarily driven by Southwest with an approximate 8.5% seat capacity growth, and the ULCCs serving the Airport with Frontier increasing seats by over 36% and Spirit by over 20%. Northwest Airlines, then the major hub carrier at the Airport, was operating in Chapter 11 bankruptcy during this period, and prior to its merger with Delta, its seat capacity was down approximately 1.2% during this time period, and its O&D traffic was down similarly.

The Airport's domestic O&D enplaned passenger increase in OY 2007 was the second largest during the past 10 years, only behind OY 2016, and total enplaned passengers peaked at the Airport in OY 2007 at 18.1 million, prior to the U.S. economic recession. O&D traffic increases occurred simultaneous with a 3.1% decline in the average airline fare at the Airport, primarily because of the aforementioned increase in service by ULCCs.

### **OY 2008 - OY 2010**

Total enplaned passengers at the Airport declined from the peak of approximately 18.1 million in OY 2007 to approximately 17.8 million in OY 2008, and then to approximately 15.9 million in OY 2009. This annual decrease of approximately 10.6% represented the largest traffic decline at the Airport over the past 10 years. Enplaned passengers further decreased by a moderate 0.4% in OY 2010, which was the Airport's lowest annual total enplaned passenger level over the past 10 years at just fewer than 15.9 million.

From the peak in OY 2007 to OY 2010, enplaned passenger traffic declined in total by approximately 12.3%, while seat capacity declined over 15%. Domestic O&D enplaned passenger volume declined by approximately 18.0% during this time period, while domestic connecting enplaned passengers decreased at a lower rate of approximately 6.2%.

During this time period, Northwest's and Delta's combined enplaned passenger volume declined about 9% with seat capacity declining over 11%. Northwest's and Delta's combined domestic O&D enplaned passenger volume decreased by over 13%, with almost the entire decline

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occurring between OY 2008 and OY 2009. During this economically difficult period, other airlines also reduced capacity sharply, with enplaned passengers following in a similar fashion.

- Spirit: departing seats declined over 43%, with enplaned passengers down over 40%
- Southwest (including former AirTran Airways): departing seats declined over 25%, with enplaned passenger volume down almost 10%; although load factors increased by about 11 percentage points to approximately 78%.
- United (including former Continental Airlines): departing seats declined over 20%, while enplaned passengers declined over 26%.

OY 2010 marked the lowest level of annual domestic O&D passenger activity at the Airport over the past 10 years; however, domestic connecting passenger volumes continued to decline marginally over the next six years, with the lowest level in OY 2015.

### **OY 2010 – OY 2016**

During the period of OY 2010 through OY 2016, total Airport enplaned passengers increased approximately 7.9% or at a CAGR of about 1.3%, to approximately 17.1 million. During this time period, domestic O&D passengers increased at a CAGR of approximately 3.0%, increasing to about 7.8 million in OY 2016, just below the prior peak in OY 2007. Domestic connecting enplaned passengers decreased at a CAGR of approximately -0.4%. The Airport had an estimated 7.9 million domestic connecting passengers in OY 2016. International enplaned passengers increased at the Airport during this time period by approximately 15% or at a CAGR of approximately 2.4%. Currently, international enplaned passenger levels are approximately 1.5 million, comprising about 8.5% of total enplaned passengers.

During this six-year time period, Delta reduced scheduled seat capacity at the Airport by about 4.5%. Delta's domestic O&D passenger volume increased by approximately 2.5%, while the average fare paid by O&D passengers increased 12.7%, which resulted in an over 16% increase in Delta's estimated O&D revenue at the Airport. At the same time, Delta's domestic connecting passenger volume declined over 3%. By OY 2016, approximately 40% of Delta's passengers at the Airport were O&D and the remaining 60% were connecting.

With Delta reducing capacity during this time period, it essentially helped create an opportunity for other airlines at the Airport as demand improved. The following are certain examples of this:

- Spirit experienced an increase in enplaned passengers by over 740,000, or about 130%. During this six-year period, Spirit added new service to Boston, Denver, Houston, Kansas City, Orlando, Minneapolis-St. Paul, Chicago and Philadelphia.
- JetBlue started service in 2014 to Boston and later started service to Fort Lauderdale in 2015. In OY 2016, JetBlue had over 146,000 enplaned passengers at the Airport.
- Alaska started service to the Airport in September 2014, with daily service to Seattle. In OY 2016, Alaska had over 66,000 enplaned passengers at the Airport.



- Southwest (including former AirTran Airways) increased enplaned passengers at the Airport by over 11%, United (including former Continental Airlines) by over 12%, and American (including former US Airways) by over 17% during this six-year time period.

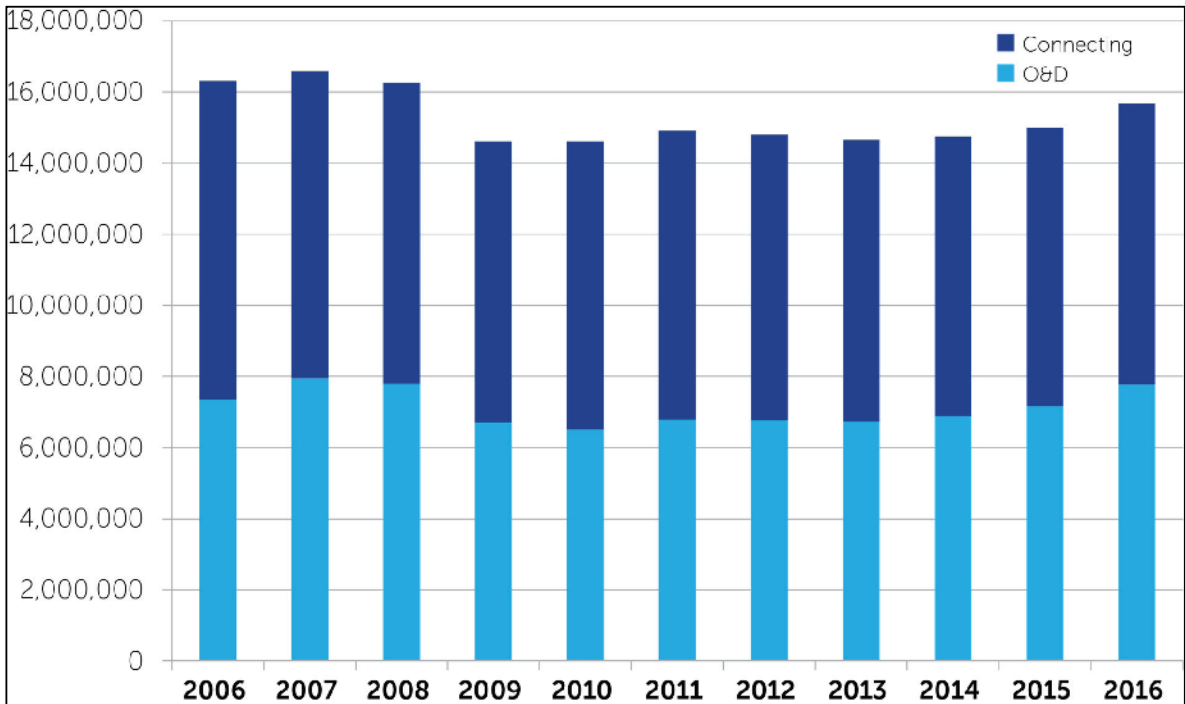
OY 2016 was a particularly strong growth period at the Airport in terms of enplaned passengers. Total enplaned passengers increased by 4.2% in OY 2016 as compared to OY 2015. This is essentially similar to growth experienced in the U.S. where enplaned passengers were estimated by the FAA to increase by 4.3% during the same period. However, when comparing the U.S. trend to the Airport's domestic O&D enplaned passengers, the Airport experienced significantly higher growth at approximately 8.7%. For the first nine months of OY 2017, total enplaned passengers are up by approximately 0.5% compared to the same period in OY 2016.

### **Domestic O&D and Connecting Passenger Trends**

**Figure 2-10** below depicts domestic O&D and connecting enplaned passenger trends at the Airport over the past 10 years. The Airport's domestic O&D passenger volume grew 5.9% over the 10-year period. This equates to a CAGR of 0.6%. In fact, through OY 2015 domestic O&D enplaned passenger volumes were still below OY 2006 levels, until OY 2016 when the Airport experienced annual growth of approximately 8.7%. Much of this can be traced to the lack of economic growth in the Air Service Area during the U.S. economic recession through OY 2010. Also contributing was that the average fare paid increased 24% over this time period. Domestic connecting enplaned passengers, primarily driven by Northwest and then Delta route network decisions, decreased by approximately 12.0% over the 10-year period, a CAGR of approximately -1.3%. Connecting traffic trends tie closely to the changes Delta has implemented with seat capacity at the Airport. From OY 2006 until OY 2016, Northwest's/Delta's seat capacity at the Airport has decreased by 16.7%. Most of this decline took place by OY 2012, as by this time Delta had completed its integration of Northwest Airlines after the 2010 acquisition was completed and the economic recession had ended. As a result, the Airport's mix of total domestic O&D enplaned passengers increased from approximately 45.1% in OY 2006 to approximately 49.7% in OY 2016.

**Figure 2-10**

**DOMESTIC O&D AND CONNECTING ENPLANED PASSENGER TRENDS AT THE AIRPORT: OY 2006 – OY 2016 <sup>1</sup>**



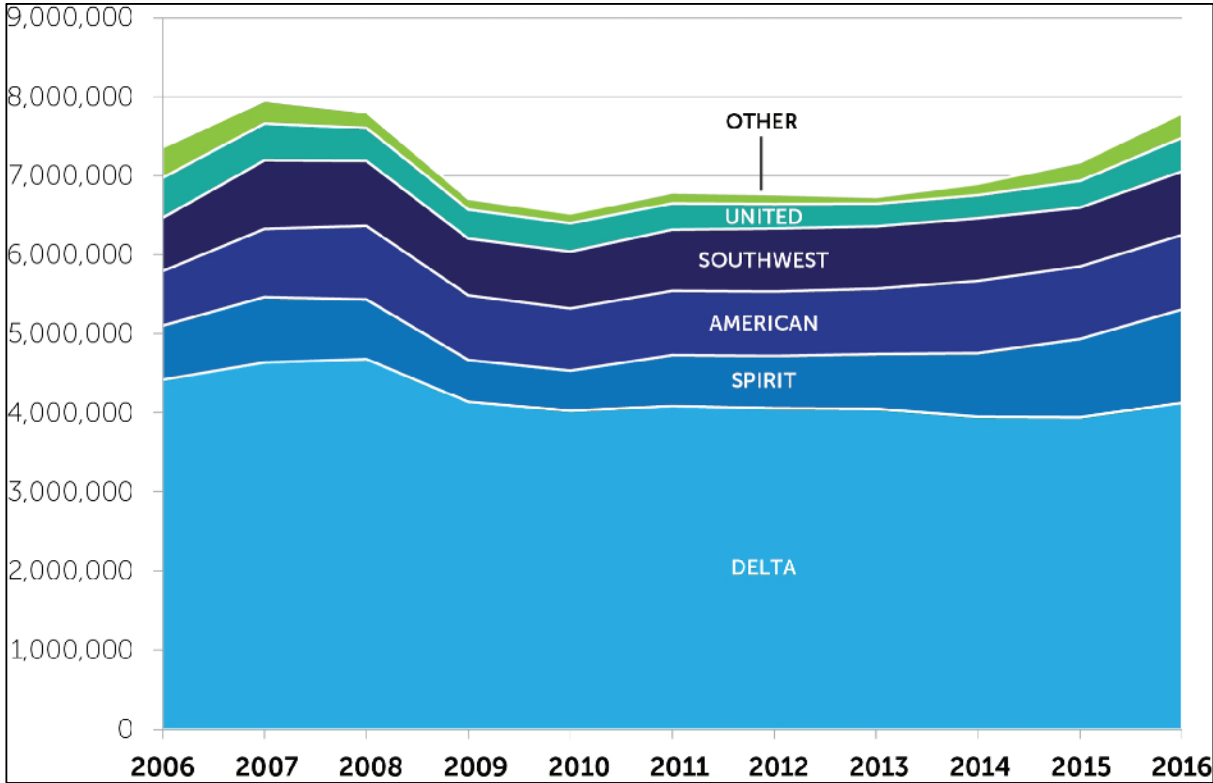
Source: Diio Mi, US DOT Reports DB1A, accessed February 2017  
 Compiled by Trillion Aviation, March 2017

**Figure 2-11** below shows O&D enplaned passenger trends by airline over the past 10 years. Overall, as depicted, Northwest/Delta domestic O&D enplaned passenger volume during this 10-year period has decreased while other airlines have increased their domestic O&D enplaned passenger levels at the Airport.

**Table 2-11** provides additional detail on domestic O&D enplaned passengers by airline since the end of the economic recession or for the period of OY 2010 through OY 2016. As shown, Delta, including former Northwest as applicable, has experienced a slight increase in domestic O&D enplaned passengers, with a CAGR of approximately 0.4%. Since OY 2010, Northwest’s/Delta’s domestic share of the Airport’s domestic O&D enplaned passengers has fallen from approximately 60% in OY 2010 to approximately 53% in OY 2016. Delta’s average domestic air fare paid during this time increased from \$345 round-trip, including taxes and fees to \$472, or approximately 36.8%. During this time, Delta was essentially discontinuing lower yielding, less profitable traffic from the Airport.

Figure 2-11

**DOMESTIC O&D ENPLANED PASSENGER TRENDS BY AIRLINE AT THE AIRPORT: OY 2006 – OY 2016 <sup>1</sup>**



- Notes:
1. Regional affiliates, as applicable, have been included with their appropriate network partner.
  2. Former Northwest Airlines enplaned passengers have been included with Delta Air Lines.
  3. American data includes the former US Airways, which was merged with American in April 2015.
  4. Former Continental Airlines enplaned passengers have been included with United.
  5. Former AirTran Airways enplaned passengers have been included with Southwest.

Source: Diio Mi, US DOT Reports DB1A, accessed February 2017  
 Compiled by Trillion Aviation, February 2017

While Delta’s domestic O&D enplaned passengers have been essentially flat since OY 2010, other airlines, particularly Spirit, have generally experienced increases. Spirit’s domestic O&D enplaned passenger traffic at the Airport has increased by over 130% since OY 2010, with Spirit’s share of domestic O&D enplaned passengers growing from approximately 8% to approximately 15%. For the year ending June 2017, the Airport is currently the fourth largest market in Spirit’s system, based upon departing seats. Spirit offered nonstop service to 21 destinations across North America in June 2017.

**Table 2-11****DOMESTIC O&D ENPLANED PASSENGER TRENDS BY AIRLINE AT THE AIRPORT: OY 2010 – OY 2016 <sup>1</sup> (000s)**

Airline	OY 2010	%	OY 2011	%	OY 2012	%	OY 2013	%	OY 2014	%	OY 2015	%	OY 2016	%	CAGR <sup>7</sup>
Delta <sup>2</sup>	4,025	62%	4,084	60%	4,056	60%	4,048	60%	3,949	57%	3,943	55%	4,124	53%	0.4%
Spirit	510	8%	647	10%	665	10%	697	10%	808	12%	993	14%	1,185	15%	15.1%
American <sup>3</sup>	787	12%	814	12%	815	12%	827	12%	914	13%	917	13%	940	12%	3.0%
Southwest <sup>4</sup>	717	11%	773	11%	796	12%	787	12%	792	11%	744	10%	803	10%	1.9%
United <sup>5</sup>	359	6%	332	5%	311	5%	288	4%	291	4%	338	5%	426	5%	2.9%
Other <sup>6</sup>	123	2%	137	2%	123	2%	86	1%	145	2%	235	3%	312	4%	16.8%
<b>Total</b>	<b>6,521</b>	<b>100%</b>	<b>6,787</b>	<b>100%</b>	<b>6,766</b>	<b>100%</b>	<b>6,732</b>	<b>100%</b>	<b>6,898</b>	<b>100%</b>	<b>7,169</b>	<b>100%</b>	<b>7,792</b>	<b>100%</b>	<b>3.0%</b>

Note: Amounts may not add because of rounding.

<sup>1</sup> Regional affiliates, as applicable, have been included with their appropriate network partner.

<sup>2</sup> Former Northwest Airlines enplaned passengers have been included with Delta Air Lines.

<sup>3</sup> Former US Airways enplaned passengers have been included with American.

<sup>4</sup> Former AirTran Airways enplaned passengers have been included with Southwest.

<sup>5</sup> Former Continental Airlines enplaned passengers have been included with United.

<sup>6</sup> Includes Alaska, Frontier, JetBlue, among other airlines.

<sup>7</sup> Compound annual growth rate for OY 2011 through OY 2016.

Source: Diio Mi, US DOT Reports DB1A, accessed February 2017  
Compiled by Trillion Aviation, February 2017

In addition to Spirit, other airlines have also experienced domestic O&D enplaned passenger growth at the Airport. Comparing OY 2016 to OY 2010, four airlines have experienced growth in domestic O&D enplaned passengers as follows: Frontier 35.3% (not shown), American 19.4%, United 18.6%, and Southwest 12.0%. In addition, other airlines have started service, with JetBlue having over 100,000 domestic O&D enplaned passengers in OY 2016 and Alaska with approximately 62,000. Finally, similar trends are continuing into 2017. Based on scheduled departing seats for June 2017 as compared to June 2016, Delta is relatively flat at 0.2%, while most other airlines are demonstrating strong growth: Alaska at a 21.1% increase compared to OY 2016, Frontier up 14.5%, Spirit up 12.6%, United up 12.6%, Air Canada up 9.1%, Southwest up 6.2%, and American up 4.0%.

## 2.2.2 Aircraft Operations

Airlines are constantly evaluating how to best serve passenger demand based on their available aircraft fleet. In markets that exhibit strong business travel, an airline may choose to serve that particular market by offering more daily frequency; in other words, it may choose to operate smaller aircraft on the route several times per day to offer customers more choice and redundancy. In other cases, an airline may choose to offer larger aircraft and less frequency. Airlines also make decisions to change aircraft capacity on particular routes in reaction to load factors and, ultimately, profitability. Aircraft fleet mix and operations are important considerations for airport operators when planning for appropriately-sized airport facilities and ensuring an airport has sufficient capacity to accommodate operations into the future. From an airport financial standpoint, aircraft operations have minimal impact on revenue performance, although aircraft operations do impact decisions regarding airport capital programs. Also, airline decisions on aircraft type and number of operations to accommodate passenger demand ultimately determine overall aircraft landed weight, which is discussed in the following section.

Across the U.S., airlines have restructured their flight schedules, effectively decreasing aircraft operations by adding more seats by using larger aircraft, also known as “up-gauging.” As a result, passenger growth has been and will likely be generated by airlines flying larger aircraft and generating higher load factors as opposed to growth in the frequency of aircraft operations.

**Table 2-12** presents historical aircraft operations for the Airport for OY 2006 through OY 2016 for the categories of air carrier airlines, air taxi and commuter airlines, general aviation, and military. Overall, during this period, total aircraft operations have decreased at a CAGR of approximately -2.1%. During this same 10-year period, air carrier airlines operations were essentially flat with a CAGR of approximately -0.1%. Air taxi and commuter aircraft operations have experienced a more significant decrease over this period with a CAGR of -6.0% as airlines increase aircraft size and move to retire smaller 50-seat regional jets. These declines in aircraft operations are comparatively higher than the more modest CAGR decrease of approximately -0.4% in enplaned passenger traffic at the Airport during this same period of time. This relative difference is consistent with industry trends, as airlines continue to “up-gauge” to larger aircraft.

**Table 2-12****HISTORICAL AIRCRAFT OPERATIONS AT THE AIRPORT**

Operating Year	Air Carrier <sup>1</sup>	Air Taxi and Commuter <sup>2</sup>	General Aviation	Military	Total	% Change
2006	287,793	185,109	12,280	91	485,273	-
2007	280,062	181,025	11,335	100	472,522	(2.6%)
2008	253,024	203,629	10,580	153	467,386	(1.1%)
2009	211,998	218,172	7,006	140	437,316	(6.4%)
2010	195,916	242,697	6,777	110	445,500	1.9%
2011	191,893	248,390	6,662	100	447,045	0.3%
2012	208,358	217,951	6,127	247	432,683	(3.2%)
2013	228,398	191,274	5,855	96	425,623	(1.6%)
2014	237,863	155,405	6,511	117	399,896	(6.0%)
2015	268,876	105,649	5,540	95	380,160	(4.9%)
2016	286,336	99,811	6,104	132	392,383	3.2%

**CAGR <sup>3</sup>**

2006-16	(0.1%)	(6.0%)	(6.8%)	3.8%	(2.1%)
2006-10	(9.2%)	7.0%	(13.8%)	4.9%	(2.1%)
2010-16	6.5%	(13.8%)	(1.7%)	3.1%	(2.1%)

<sup>1</sup> Air carrier companies which operates aircraft originally designed to have more than 60 passenger seats or a cargo payload of 18,000 lbs. and carries cargo or mail on either a scheduled or charter basis.

<sup>2</sup> Air carrier companies which operates aircraft originally designed to have no more than 60 passenger seats or a cargo payload of 18,000 lbs. and carries cargo or mail on either a scheduled or charter basis.

<sup>3</sup> CAGR = Compound annual growth rate

Source: Authority management records  
Compiled by Trillion Aviation

Total aircraft operations decreased 19.1% from OY 2006 to OY 2016. This decrease has been relatively steady at a CAGR of -2.1% throughout the past 10 years. However, in OY 2016, total passenger aircraft operations increased by approximately 3.2% from OY 2015 levels. Air taxi and commuter operations decreased annually by 5.5% in OY 2016, but air carrier operations increased by 6.5% during this period, as LCCs and ULCCs have expanded service at the Airport and smaller regional aircraft continue to be replaced by larger aircraft. Given current industry trends, it would be expected that aircraft operational activity will continue to lag enplaned passenger growth as airlines, generally, continue to accommodate passenger demand through increases in load factors, higher air fares, and larger aircraft types.

### **2.2.3 Landed Weight**

Aircraft landed weight, expressed in 1,000-pound units, is the sum of the maximum gross certificated landing weight as certified by the FAA for passenger and all-cargo aircraft landing at the Airport. Per the Airport Use and Lease Agreement with the Signatory Airlines that operate at the Airport, as later described in Section 4.3.3, aircraft landed weight is used as the denominator in the calculation of activity fees (landing fees) that are used to recover the net cost of the Airport as described in Section 4.3.1. Therefore, landed weight is an important measure for the Authority as it provides a method to recover costs from each airline based on its share of landed weight.

**Table 2-13** presents landed weight activity at the Airport for the period of OY 2006 through OY 2016 for passenger airlines, cargo airlines, and in total. As shown, total landed weight decreased moderately over this period, at a CAGR of approximately -1.2% for total and for passenger airlines. From OY 2006 to OY 2010, the landed weight at the Airport declined at a CAGR of -4.4%, during a time period when passenger volume at the Airport decreased by a CAGR of approximately -2.8%. Subsequently, from OY 2010 to OY 2016, landed weight increased at a CAGR of 1.0%, during a time period when passenger volumes grew at an approximate 1.3% CAGR.

In general, airlines reduced aircraft operations at the Airport, while generally adding marginally larger aircraft to increase seat capacity. Overall, this resulted in marginally higher landed weight. Given recent trends, it would be expected that landed weight will grow marginally higher as airlines continue to add larger aircraft, although landed weight growth will likely lag growth in enplaned passengers.

**Table 2-13****HISTORICAL LANDED WEIGHT AT THE AIRPORT (thousand-pound units)**

Operating Year	Passenger Airlines	Cargo Airlines	Total	% Change
2006	23,415,940	693,700	24,109,640	-
2007	23,946,751	409,952	24,356,703	1.0%
2008	22,686,225	672,685	23,358,910	(4.1%)
2009	20,458,757	545,889	21,004,646	(10.1%)
2010	19,634,224	533,041	20,167,265	(4.0%)
2011	20,333,331	590,382	20,923,713	3.8%
2012	19,947,028	661,323	20,608,351	(1.5%)
2013	19,962,169	666,692	20,628,861	0.1%
2014	19,701,071	681,630	20,382,701	(1.2%)
2015	19,970,936	654,716	20,625,652	1.2%
2016	20,684,339	782,255	21,466,594	4.1%
<b>CAGR <sup>1</sup></b>				
2006-16	(1.2%)	0.4%	(1.2%)	
2006-10	(4.2%)	(8.6%)	(4.4%)	
2010-16	0.8%	7.0%	1.0%	

Note: Amounts may not add because of rounding.

<sup>1</sup> CAGR = Compound annual growth rate

Source: Authority management records  
Compiled by Trillion Aviation

## 2.3 Key Factors Affecting Air Traffic Demand

The forecast of future air traffic activity at the Airport, provided later in this chapter, was prepared partly on the basis of quantitative factors including regression versus socioeconomic variables such as population, employment and income. The following section addresses certain qualitative factors that potentially could impact air traffic activity both nationwide and at the Airport.

### 2.3.1 Economic Conditions and Events

Historical growth in the demand for aviation activity generally has been driven by economic conditions and events. The most significant economic variables driving passenger and freight demand include real GDP, consumer prices, fuel prices, non-farm employment, and real disposable personal income.

In 2008, the U.S. economy experienced an economic recession that many economists portray as the worst economic period in the U.S. since the Great Depression in the 1930s. During this recession, oil prices also spiked to nearly \$150 per barrel. The combination of these two events caused significant turmoil within the U.S. airline industry, with most airports across the U.S.

greatly affected. Between 2007 and 2010, the U.S. unemployment rates increased from 4.6% to 9.6%.<sup>72</sup>

Since the recession, the U.S. economy has experienced a slow economic recovery. According to the U.S. Bureau of Transportation Statistics (BTS) data, the aviation industry started to rebound during the latter part of 2009 as the nation initiated recovery from the economic recession. In recent years, real GDP has generally experienced growth of approximately two percent annually, which is well below most historical post-recovery growth rates. Unemployment has dropped from the peak of 9.6% in 2010 to the June 2017 level of 4.4% (seasonally adjusted).<sup>73</sup> However, consumer spending has experienced some faster growth as it increased at approximately 4.3% for the 12 months ended May 31, 2017, as compared to the same prior 12-month period. Spending for transportation grew approximately 2.3% during this same period. Air Travel expenditures were affected by lower air fares during this time period.<sup>74</sup>

The most recent forecast from the Woods & Poole Economics, Inc. estimates that U.S. GDP is forecasted to grow, on average, by about 2.2% per year between 2013 and 2025.<sup>75</sup> Should the U.S. economy deviate greatly from these estimates, aviation activity could vary from the forecasts presented herein.

### **2.3.2 The U.S. Airline Industry**

Over the past several years, the U.S. airline industry has undergone a significant transformation. Although it has been profitable in recent years, the U.S. airline industry cumulatively experienced losses of approximately \$40 billion from airline de-regulation (1978) through 2008.<sup>76</sup> Many airlines filed for Chapter 11 bankruptcy protection and several ceased operations altogether. During this period, airlines suffered from excess capacity, which had the effect of driving down yields. Yields adjusted for inflation had dropped by approximately 70%. With oil prices spiking to near \$150 per barrel, industry changes were critical. As a result, the network airlines restructured their route systems, and reached agreements with lenders, employees, vendors, and creditors to decrease their costs. Many airlines sought Chapter 11 bankruptcy protection to achieve such cost cuts.

Since 2008, the U.S. airline industry has cut capacity, particularly in short-haul markets, served primarily with smaller, short-range aircraft types. This contributed to a significant improvement in yields, RASM and subsequently, profitability. In recent years, the U.S. airline industry has been at its most stable, profitable point in its history. The industry operating margin in 2016 was approximately 15.5%.<sup>77</sup> In addition to aforementioned yield improvement, recent profitability can also be attributed to historically low fuel costs and to airlines unbundling services and increasing the use of ancillary fees such as charges for checked baggage.

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<sup>72</sup> Bureau of Labor Statistics, U.S. Department of Labor, accessed March 2017.

<sup>73</sup> Bureau of Labor Statistics, U.S. Department of Labor, accessed August 2017.

<sup>74</sup> Bureau of Economic Analysis, U.S. Department of Commerce, accessed July 2017.

<sup>75</sup> Woods & Poole Economic, Inc., 2016 Data Projections for United States, accessed April 2017.

<sup>76</sup> Airlines for America, [www.airlines.org](http://www.airlines.org), accessed March 2017

<sup>77</sup> As reported by 8 largest publicly traded U.S. airlines, accessed April 2017.



Industry consolidation has taken place as a result of competitive pressures and economic conditions. Since 2005, numerous airline mergers have taken place, including the consolidation of (1) US Airways and America West Airlines, (2) Delta and Northwest Airlines, (3) United Airlines (United) and Continental Airlines, (4) Southwest and AirTran Airways, and (5) American and US Airways. Additionally, Republic Airways Holdings purchased Frontier and Midwest Airlines in October 2009, operating the combined carrier as Frontier. Republic Airways Holdings sold Frontier in 2013. In December 2016, Alaska Air Group acquired Virgin America. The four largest U.S. airlines control approximately 81% of domestic industry seat capacity.<sup>78</sup> The impacts associated with consolidation include limited industry seat capacity growth and continued increases in yields (fares). Given the number of mergers that have taken place, it is likely that industry consolidation is at or nearing completion.

### 2.3.3 Aviation Fuel

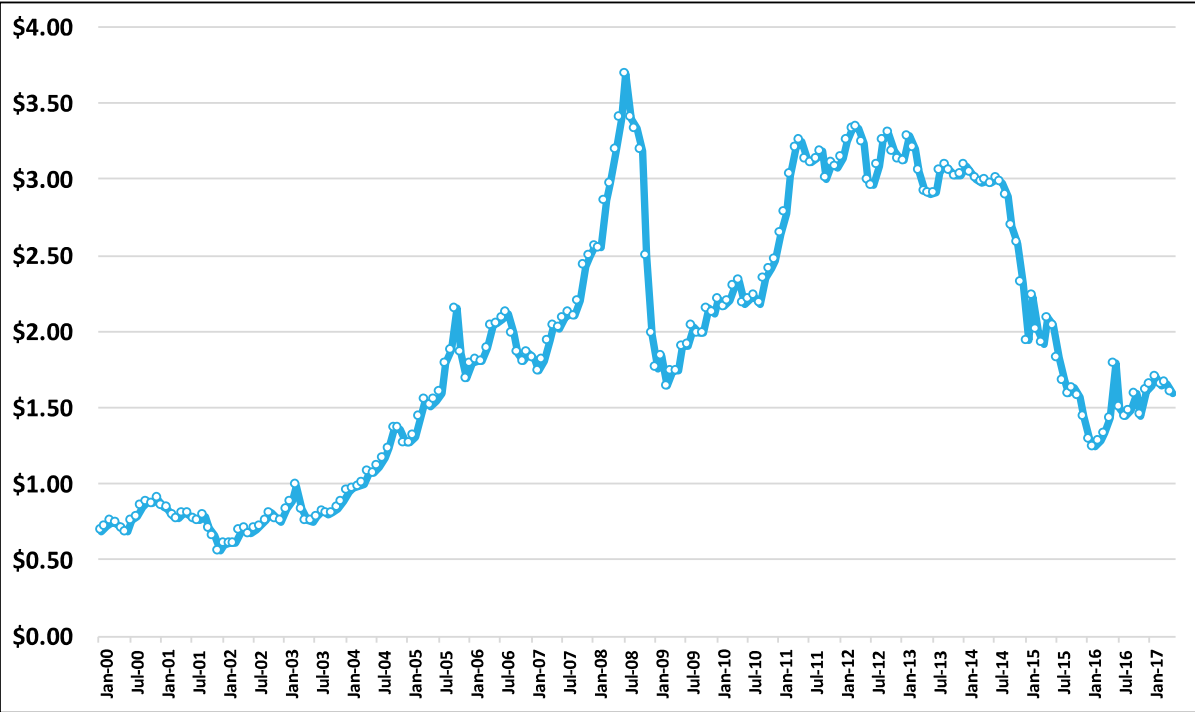
The average price of jet fuel per gallon in the U.S. was \$0.78 in CY 2000. It peaked at \$3.69 per gallon in July 2008.<sup>79</sup> The cost of jet fuel was the major influence that drove the aforementioned capacity trends in the industry. The cost of jet fuel was around \$3.00 per gallon throughout much of CY 2014, before prices began to fall in late CY 2014. The average cost of domestic jet fuel during CY 2015 was \$1.82 and decreased to \$1.46 during CY 2016. Fuel cost has trended upwards in recent months with the most current available data for fuel cost at \$1.60 for the month of May 2017. Jet fuel price trends are presented below in **Figure 2-12**.

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<sup>78</sup> Innovata data for June 2017, accessed April 2017

<sup>79</sup> U.S. Department of Transportation, Bureau of Transportation Statistics, <https://www.transtats.bts.gov/fuel.asp>, accessed July 2017.

**Figure 2-12**  
**U.S. DOMESTIC COST OF JET FUEL (Per Gallon)**  
**(January 2000 through May 2017)**



Source: US Bureau of Transportation Statistics, accessed July 2017

Although fuel cost is of major importance to the airline industry, future prices and availability are uncertain and fluctuate based on numerous factors. These can include supply and demand expectations, geopolitical events, fuel inventory levels, monetary policies, and economic growth forecasts. Although it is impossible to predict future prices, experts generally agree that longer-term prices are expected to increase from today’s relatively low levels, although they are expected to remain at levels well below peak levels experienced during most of the last decade.

It is expected that aviation fuel costs will continue to impact the airline industry in the future. If aviation fuel costs increase significantly over current levels, air traffic activity could again be negatively affected as airlines attempt to pass costs on to consumers through higher fares and fees in order to remain profitable. At this time, alternative fuels to jet fuel are not yet commercially cost-effective.

**2.3.4 Aviation Security**

Since September 11, 2001, government agencies, airlines, and airport operators have upgraded security measures to guard against threats and maintain the public’s confidence in the safety of air travel. Security measures have included cargo and baggage screening requirements, deployment of explosive detection devices, strengthening of aircraft cockpit doors, increased presence of armed air marshals, awareness programs for personnel at airports, deployment of

passenger screening canine teams, and programs for flight crews. Aviation security is under the control of the federal government through the Transportation Security Administration (TSA).

The threat of terrorism poses risks to the continued growth of the aviation industry. Although terrorist events targeting aviation interests would likely have negative and immediate impacts on the demand for air travel, the industry and demand have historically recovered from such events. There have been relatively recent terror attacks at airports domestically including in Fort Lauderdale, Florida in January 2017 and Flint, Michigan in June 2017, and internationally in Brussels, Belgium in March 2016 and Istanbul, Turkey in June 2016. So long as government agencies continue to seek processes and procedures to mitigate potential risks and to maintain confidence in the safety of air travel, without requiring unreasonable levels of cost or inconvenience to passengers (which has been a factor of late at many larger airports, but is expected to be mitigated over the long-run), economic influences are expected to be the primary driver for aviation demand, as opposed to security and safety.

### **2.3.5 National Air Traffic Capacity**

The U.S. aviation system has a major impact on the national economy because it provides a means of transporting people and cargo over long distances in a relatively short period of time. As demand for air travel increases, the national aviation system must maintain sufficient capacity to allow for travel without unacceptable delays or congestion. It generally is assumed that the required infrastructure improvements needed to maintain capacity will keep pace with demand. Although not likely over the forecast period evaluated herein, the inability of the national aviation system to keep pace with demand could create congestion and delays on a national level that could adversely affect the passenger experience and impact future demand for air travel.

## **2.4 Air Traffic Activity Forecasts**

Trillion Aviation has prepared Airport air traffic activity forecasts for use as the basis for the financial analysis performed later in this Report. Trillion Aviation's analysis consisted of two primary steps: a short-term forecast (OY 2017 and OY 2018) and a long-term forecast (OY 2019 through 2025), and is described in the sections below.

### **2.4.1 Forecast Assumptions**

Forecasts of air traffic activity were developed based on an analysis of the underlying economic conditions of the Air Service Area, airline traffic trends, and an assessment of Delta's continued operation of hubbing activity at the Airport. In general, it was assumed that in the long-term, changes in O&D passenger traffic at the Airport will occur as a function of the growth in population and economy of the Air Service Area. The growth in U.S. population and GDP, and Delta's network strategy are assumed to be the primary drivers of future connecting passenger traffic. In addition, several other assumptions are incorporated into the long-term forecast including the following:

- The airlines will continue to add capacity that is in line with demand and GDP growth.

- Delta will continue to operate the Airport as a hub, and connecting passengers will continue to represent approximately 60% of its total passengers at the Airport.
- The domestic airlines other than Delta and the Delta Connection Carriers currently serving the Airport will continue to provide air service to support local long-term demand primarily to and from their hub airports, key focus cities, and larger O&D markets, and the Airport will continue as a key city for Spirit Airlines.
- Delta and other airlines will continue to provide trans-oceanic service to European, Asian, Caribbean, and South American markets. Other international service will be provided as demand dictates, including service to markets in Canada and Mexico.
- Long-term nationwide growth in air travel will occur over the forecast period consistent with forecast growth in the economy.
- Aviation fuel prices over the forecast period are anticipated to be higher relative to historical levels, but lower than the record prices reached in mid-2008.
- There will be no major disruption of airline service or airline travel behavior as a result of domestic or international terrorist acts or threats or public health concerns.

Many of the factors that may affect air travel demand are not necessarily quantifiable. As a result, all forecasts of aviation activity are subject to various uncertainties. Therefore, this forecast, as with any forecast, should be viewed as a general indication of future aviation activity as opposed to a precise prediction. Actual future traffic may vary from these forecasts and such variances could be material.

#### **2.4.2 Enplaned Passenger Forecast**

The Airport's enplaned passenger base consists of O&D passengers driven by regional and national economic activity and connecting passengers primarily driven by Delta's strategic decisions. Specific assumptions and points regarding forecasted enplaned passengers for the short-term (OY 2017 and OY 2018) and the longer-term (OY 2019 to OY 2025) are discussed below.

##### **Short-Term Forecast**

The short-term enplaned passenger forecast developed an appropriate estimate for OY 2017 and OY 2018. This included a review of actual enplaned passengers from October 2016 through June 2017 and a review of scheduled departing aircraft seats through June 2018, obtained from published airline schedules. Recent or expected airline service announcements have been incorporated. Enplaned passengers in OY 2017 are estimated to increase by approximately 0.7% over OY 2016 to approximately 17.3 million. This forecast takes into account that currently published schedules indicate that OY 2017 seat capacity will be approximately 2.0% above OY 2016 results. Currently published schedules for the first nine months of OY 2018, through June 2018, indicate that seat capacity for this period is over 3% more than the same period in OY

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2017. Given this, enplaned passengers for OY 2018 are forecasted to increase by approximately 1.8% over estimated OY 2017 levels to approximately 17.6 million.

Key information and assumptions used for the short-term forecast for OY 2017 and OY 2018 include the following:

- Total Airport enplaned passengers have increased by approximately 0.5% through the first 9 months of OY 2017 (October through June). Seat capacity for the remaining three months of OY 2017 is approximately 2.4% more than for the same months in OY 2016. As a result, OY 2017 enplaned passengers are forecast to increase by approximately 0.7% as compared to OY 2016.
- Delta's total seat capacity is scheduled to increase at the Airport by 0.6% in OY 2017. For the first nine months of OY 2018, Delta's seat capacity is scheduled to increase by approximately 2.0%. Delta has announced it will begin new daily nonstop service from the Airport to John Wayne Airport in Orange County, California in September 2017.
- All other airlines in aggregate are scheduled to increase annual seat capacity by approximately 6.9% in OY 2017, and by approximately 6.3% for the first nine months of OY 2018. The other airlines showing the most growth in scheduled seats from the Airport or with new announced service include:
  - Frontier with 43.0% additional seats in OY 2017, primarily with additional flights to Phoenix, and new service in OY 2018 to Islip and Miami
  - Air Canada with 15.0% additional seats in OY 2017, primarily with additional flights to Toronto
  - Spirit with 12.7% additional seats in OY 2017, primarily with additional flights to Baltimore, Los Angeles, Oakland, Philadelphia, and Seattle
  - United with 10.0% additional seats in OY 2017, primarily with new service to San Francisco in May 2017 and additional flights to Denver
  - Aeromexico with new service to Mexico City that started in April 2017
  - Alaska is scheduled to start new nonstop daily service to Portland in September 2017
  - Southwest is scheduled to start new seasonal nonstop service to Tampa in March 2018

Based on actual Airport enplanements through June 2017 and the airlines' scheduled seat capacity through June 2018, it is estimated that the Airport's domestic O&D enplaned passengers will increase approximately 1.0% in OY 2017 and an additional 2.4% in OY 2018, while domestic connecting enplaned passengers are forecasted to remain flat in OY 2017 and increase by approximately 0.9% in OY 2018. International enplaned passengers are projected to increase by 2.7% in OY 2017 and by approximately 3.2% in OY 2018. Total enplaned passenger traffic is forecasted to increase by 0.7% in OY 2017 and then by 1.8% in OY 2018.

### **Long-Term Forecast**

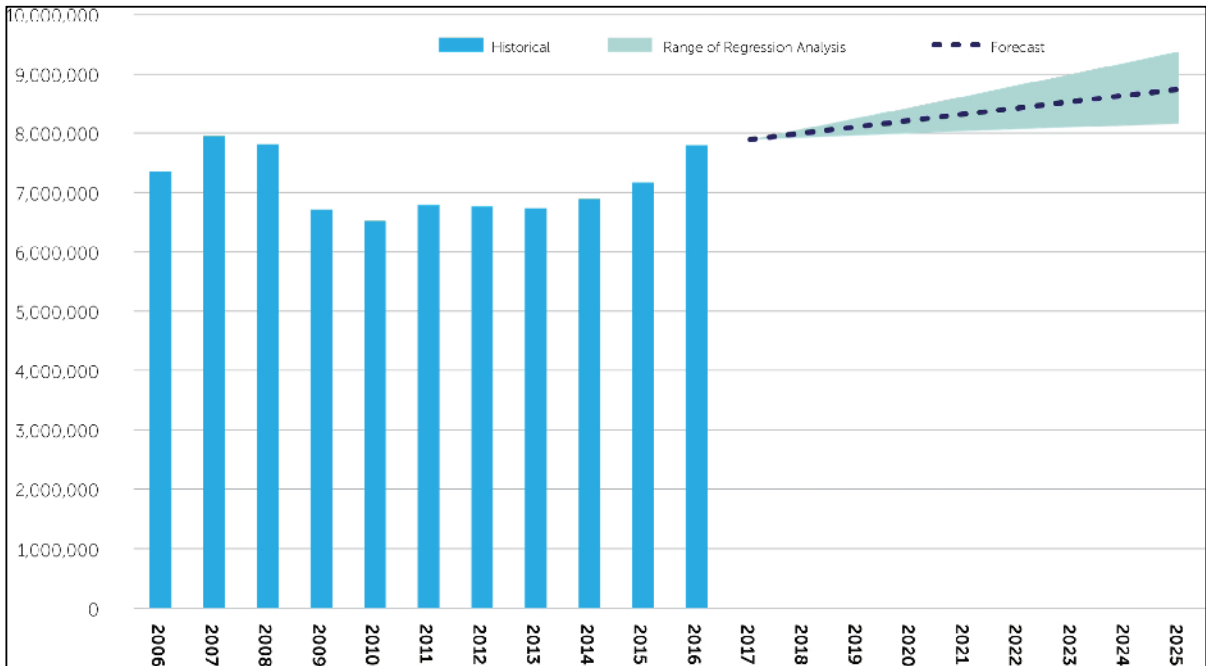
The long-term enplanement forecast is based on the ability of the Air Service Area's economic base to generate continued O&D passenger growth and the business decisions of Delta to continue operating the Airport as a major connecting hub, primarily serving the eastern region of the U.S., and as an international gateway for Delta to Europe, Asia, and other international destinations. Given this, the Airport's long-term enplanement forecast was developed in three parts: for domestic O&D, domestic connecting, and international enplaned passengers. O&D enplaned passenger traffic is driven by the Air Service Area's economic base and was forecasted using a socioeconomic regression analysis. The Airport's connecting enplaned passengers were then forecasted based on maintaining Delta's current mix of connecting enplaned passenger traffic, which represents approximately 60% of Delta's enplaned passengers at the Airport.

The key socioeconomic forecast variables that have been found to have a strong correlation with an airport's O&D passenger demand generally include population, employment, income and gross regional product. With the exception of gross regional product, these variables for the Air Service Area are expected to grow somewhat slower as compared to those of the overall U.S. To develop an understanding of how domestic O&D passengers may trend into the future, regression analyses of O&D enplaned passengers versus these key economic and demographic drivers were performed. A single regression for each Air Service Area economic and demographic factor as the independent variable, and Airport domestic O&D enplaned passengers as the dependent variable was undertaken. For example, the Air Service Area historical population was analyzed versus historical Airport domestic O&D enplaned passengers to determine an understanding of how future domestic O&D enplaned passengers may trend based on forecasted population.

**Figure 2-13** presents the resulting domestic O&D enplaned passenger forecast trends based on the regression analysis. Resulting CAGRs ranged from 0.5% to 2.1% for the period of OY 2016 through OY 2025, and forecasted domestic O&D enplaned passenger levels for OY 2025 ranged from 8.2 million to 9.6 million. The Airport's historical domestic O&D passenger CAGR for the period between OY 2006 and OY 2016 was 0.6%. The dashed line represents the selected domestic O&D enplaned passenger forecast trend for the Airport and the shaded area represents the range of outcomes based on the various regression analyses. Domestic O&D enplaned passengers grew rapidly in both OY 2015 and OY 2016, at 3.9% and 8.7%, respectively. Longer-term, the forecast assumes that this growth will stabilize and become more in-line with the overall growth rate sustainable from the economic base of the Air Service Area. As presented on Figure 2-13, forecasted domestic O&D enplaned passengers trend towards the middle of the range for the regression analysis by OY 2025. Domestic O&D enplaned passengers from the Airport are forecasted to grow to approximately 8.7 million by OY 2025, or at a CAGR of 1.3% during the period of OY 2016 to OY 2025. This growth rate is higher than the CAGR of 0.6% experienced over the past 10 years; however, it is below the growth experienced in the past three years.

Figure 2-13

DOMESTIC O&D ENPLANED PASSENGER REGRESSION ANALYSIS



Sources: Authority management records (historical), Trillion Aviation (forecast)  
 Compiled by Trillion Aviation

It is assumed that Delta will continue to operate the Airport as one of its key connecting hubs in a similar fashion as it does today throughout the forecast period. As discussed earlier in this Chapter, the Airport is of key strategic importance for Delta, and continues to provide needed domestic connection capacity in the eastern region of the U.S. Connecting enplaned passenger traffic is somewhat indirectly linked to the economic base of the Air Service Area; however, it is also significantly impacted by business decisions by Delta. Therefore, for the purposes of this passenger forecast, it is assumed that connecting enplaned passengers will continue to grow based on historical trends. Since the most recent transformation of the airline industry in 2008 and 2009, Delta’s connecting enplaned passenger traffic at the Airport has remained relatively constant at around 7.9 million enplaned passengers. In OY 2016, connecting traffic was up 0.6% over OY 2015. Beyond OY 2016, Delta’s connecting passengers at the Airport are assumed to remain at approximately 60% of Delta’s total enplaned passengers at the Airport. Overall, total connecting enplaned passengers at the Airport are forecasted to increase modestly at a CAGR of 0.6% for the period of OY 2016 through OY 2025.

**Table 2-14** below presents the forecast for domestic O&D, domestic connecting, international, and total enplaned passengers for the Airport through OY 2025. As shown, total enplaned passengers at the Airport are projected to increase to approximately 18.8 million in OY 2025, representing a CAGR of 1.1% from OY 2016 to OY 2025.

It should be noted that economic disturbances could occur over the forecast period; however, the Airport’s current air service appears more profitable and, hence, more stable than it was

during the last peak experienced in the 2007-2008 period. Therefore, year-over-year variations are likely to occur from any disturbances, but are expected to be milder and shorter in duration than experienced during prior recessionary periods.

**Table 2-14****ENPLANED PASSENGER FORECAST**

Operating Year	Domestic O&D	% Change	Domestic Connecting	% Change	Int'l.	% Change	Total	% Change
<b>Historical</b>								
2006	7,358	-	8,964	-	1,478	-	17,800	-
2007	7,954	8.1%	8,627	(3.8%)	1,527	3.3%	18,108	1.7%
2008	7,806	(1.9%)	8,465	(1.9%)	1,560	2.2%	17,831	(1.5%)
2009	6,709	(14.1%)	7,913	(6.5%)	1,319	(15.4%)	15,941	(10.6%)
2010	6,521	(2.8%)	8,093	2.3%	1,262	(4.3%)	15,876	(0.4%)
2011	6,787	4.1%	8,126	0.4%	1,314	4.1%	16,226	2.2%
2012	6,766	(0.3%)	8,036	(1.1%)	1,367	4.1%	16,170	(0.3%)
2013	6,732	(0.5%)	7,933	(1.3%)	1,412	3.3%	16,078	(0.6%)
2014	6,898	2.5%	7,854	(1.0%)	1,465	3.7%	16,217	0.9%
2015	7,169	3.9%	7,839	(0.2%)	1,435	(2.0%)	16,444	1.4%
2016	7,792	8.7%	7,888	0.6%	1,451	1.1%	17,131	4.2%
OYTD 16 <sup>1</sup>							12,608	-
OYTD 17 <sup>1</sup>							12,676	0.5%
<b>Forecast</b>								
2017	7,872	1.0%	7,890	0.0%	1,490	2.7%	17,252	0.7%
2018	8,058	2.4%	7,962	0.9%	1,538	3.2%	17,558	1.8%
2019	8,135	1.0%	8,018	0.7%	1,573	2.3%	17,726	1.0%
2020	8,224	1.1%	8,074	0.7%	1,608	2.2%	17,906	1.0%
2021	8,310	1.1%	8,122	0.6%	1,643	2.2%	18,076	1.0%
2022	8,410	1.2%	8,171	0.6%	1,680	2.2%	18,261	1.0%
2023	8,511	1.2%	8,212	0.5%	1,716	2.2%	18,439	1.0%
2024	8,613	1.2%	8,253	0.5%	1,754	2.2%	18,620	1.0%
2025	8,725	1.3%	8,294	0.5%	1,793	2.2%	18,812	1.0%
<b>CAGR <sup>1</sup></b>								
2006-2016	0.6%		(1.3%)		(0.2%)		(0.4%)	
2016-2025	1.3%		0.6%		2.4%		1.0%	
2017-2025	1.3%		0.6%		2.3%		1.1%	

Notes: Amounts may not because of rounding. Enplaned passengers for OY-to-date period includes the nine months of October through June.

<sup>1</sup> CAGR = Compounded annual growth rate

Source: Airport records (historical total); USDOT via Diio (historical O&D); Trillion Aviation (forecast)

Compiled by Trillion Aviation

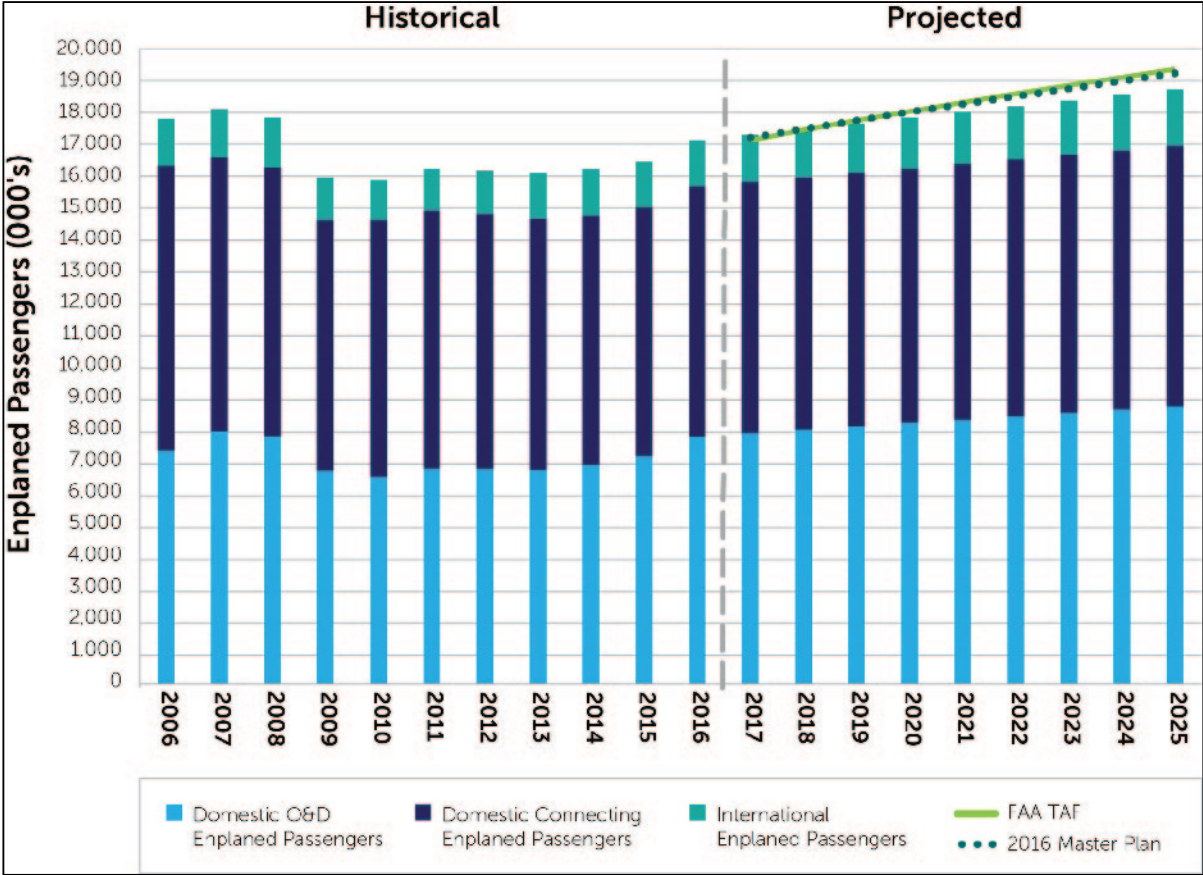
**Figure 2-14** presents forecasted O&D, connecting, international and total enplaned passengers compared to the FAA's most recent Terminal Area Forecast (TAF) and the Authority's 2016 Master Plan for the Airport. For comparative purposes, the FAA's TAF for the Airport forecasted 19.4 million enplaned passengers by OY 2025, a 1.4% CAGR when measured from OY 2016. The



2016 Master Plan enplaned passenger forecasted 19.2 million enplaned passengers by OY 2025, a 1.3% CAGR when measured from OY 2016. The FAA TAF and the 2016 Airport Master Plan forecasts are approximately 3.2% and 2.1% higher, respectively, than the enplaned passenger forecast contained herein for OY 2025. It is important to note that the FAA TAF and Master Plan forecasts are generally used for facility planning purposes as opposed to financial planning; therefore, it is not uncommon for them to be higher than forecasts used for financial purposes.

Figure 2-14

COMPARISON OF ENPLANED PASSENGER FORECAST



Sources: FAA Terminal Area Forecast (FAA TAF), 2016 Airport Master Plan, and Trillion Aviation.  
Compiled by Trillion Aviation

2.4.3 Aircraft Operations Forecast

Table 2-15 presents historical and forecasted aircraft operations. Total passenger airline aircraft operations are expected to increase modestly at a 0.5% CAGR from OY 2016 through OY 2025. It is assumed that the current industry shift towards larger aircraft will continue to occur for the foreseeable future. In addition, the forecast assume further decreases in the use of smaller regional jets, especially 50-seat aircraft, as they are retired. Cargo airlines are forecasted to increase operations at a 1.1% CAGR through OY 2025. General aviation aircraft are forecasted to continue to decrease at a -1.0% CAGR through OY 2025. For the purposes of this Report,

military aircraft operations are forecasted to remain flat at 8,000 annually. Total aircraft operations at the Airport are forecasted to increase from 315,585 in OY 2016 to 324,100 in OY 2025, a CAGR of 0.3% during this period.

**Table 2-15****AIRCRAFT OPERATIONS FORECAST**

Operating Year	Passenger Airlines	Cargo Airlines	General Aviation	Military	Total	% Change
<b>Historical</b>						
2009	280,906	19,236	69,606	1,980	371,728	(10.1%)
2010	277,174	19,916	69,887	2,181	369,158	(0.7%)
2011	272,550	16,746	69,796	2,649	361,741	(2.0%)
2012	249,040	16,520	73,389	4,170	343,119	(5.1%)
2013	236,860	17,942	74,145	2,044	330,991	(3.5%)
2014	237,646	18,102	66,670	2,190	324,608	(1.9%)
2015	237,948	18,484	60,824	2,738	319,994	(1.4%)
2016	237,294	19,434	50,879	7,978	315,585	(1.4%)
<b>Forecast</b>						
2017	237,700	19,700	50,400	8,000	315,800	0.1%
2018	240,500	19,900	49,900	8,000	318,300	0.8%
2019	241,500	20,100	49,400	8,000	319,000	0.2%
2020	242,700	20,300	48,900	8,000	319,900	0.3%
2021	243,600	20,500	48,400	8,000	320,500	0.2%
2022	244,800	20,700	47,900	8,000	321,400	0.3%
2023	245,900	20,900	47,400	8,000	322,200	0.2%
2024	247,000	21,200	46,900	8,000	323,100	0.3%
2025	248,200	21,500	46,400	8,000	324,100	0.3%
<b>CAGR <sup>1</sup></b>						
2009-2016	(2.4%)	0.1%	(4.4%)	22.0%	(2.3%)	
2016-2025	0.5%	1.1%	(1.0%)	0.0%	0.3%	
2017-2025	0.5%	1.1%	(1.0%)	0.0%	0.3%	

<sup>1</sup> CAGR = Compounded annual growth rate

Source: Airport records (historical); Trillion Aviation (forecast)  
Compiled by Trillion Aviation

#### 2.4.4 Aircraft Landed Weight Forecast

**Table 2-16** presents historical and forecasted aircraft landed weight. Total scheduled passenger airline landed weight is expected to increase at 0.7% CAGR from OY 2016 through OY 2025. Landed weight growth is forecasted to be lower than enplaned passenger growth as the airlines are expected to continue the trend of capacity discipline through increases in load factors and increasing aircraft size when demand warrants. Cargo airline landed weight is forecasted to increase at a 1.2% CAGR through OY 2025. Total commercial aircraft landed weight at the Airport is forecasted to increase from 21.5 million units in OY 2016 to approximately 22.8 million units in OY 2025, a CAGR of 0.7% during this period.

**Table 2-16**  
**AIRCRAFT LANDED WEIGHT FORECAST (thousand-pound units)**

Operating Year	Passenger Airlines	Cargo Airlines	Total	% Change
<b>Historical</b>				
2006	23,415,940	693,700	24,109,640	-
2007	23,946,751	409,952	24,356,703	1.0%
2008	22,686,225	672,685	23,358,910	(4.1%)
2009	20,458,757	545,889	21,004,646	(10.1%)
2010	19,634,224	533,041	20,167,265	(4.0%)
2011	20,333,331	590,382	20,923,713	3.8%
2012	19,947,028	661,323	20,608,351	(1.5%)
2013	19,962,169	666,692	20,628,861	0.1%
2014	19,701,071	681,630	20,382,701	(1.2%)
2015	19,970,936	654,716	20,625,652	1.2%
2016	20,684,339	782,255	21,466,594	4.1%
<b>Forecast</b>				
2017	20,800,000	800,000	21,600,000	0.6%
2018	20,896,000	804,000	21,700,000	0.5%
2019	21,031,186	812,080	21,843,266	0.7%
2020	21,184,228	820,161	22,004,389	0.7%
2021	21,311,506	828,241	22,139,747	0.6%
2022	21,465,448	836,322	22,301,770	0.7%
2023	21,611,083	844,402	22,455,485	0.7%
2024	21,757,157	856,523	22,613,679	0.7%
2025	21,912,500	868,643	22,781,143	0.7%
<b>CAGR <sup>1</sup></b>				
2006-2016	(1.2%)	1.2%	(1.2%)	
2016-2025	0.6%	1.2%	0.7%	
2017-2025	0.7%	1.0%	0.7%	

Note: Amounts may not add because of rounding.

<sup>1</sup> CAGR = Compounded annual growth rate

Source: Airport records (historical); Trillion Aviation (forecast)  
 Compiled by Trillion Aviation

### **3 Airport Facilities and Capital Program**

This Chapter provides an overview of existing Airport facilities and describes the Airport's Capital Improvement Program (CIP), the Series 2017 Projects, and other planned capital improvements at the Airport with Weighted Majority approval from the Signatory Airlines, referred to as Other Approved Capital Projects for the purposes of this Report.

#### **3.1 Existing Airport Facilities**

The Airport comprises approximately 6,255 acres of land in Wayne County, Michigan and the City of Romulus. It is located approximately 21 miles southwest of the City of Detroit's downtown. Access to the Airport is primarily from Interstate 94 (north of the Airport), Interstate 275 (west of the Airport), and Interstate 75 and the Southfield Freeway (east of the Airport). Existing Airport facilities are described in sections below and are graphically illustrated on **Figure 3-1**.

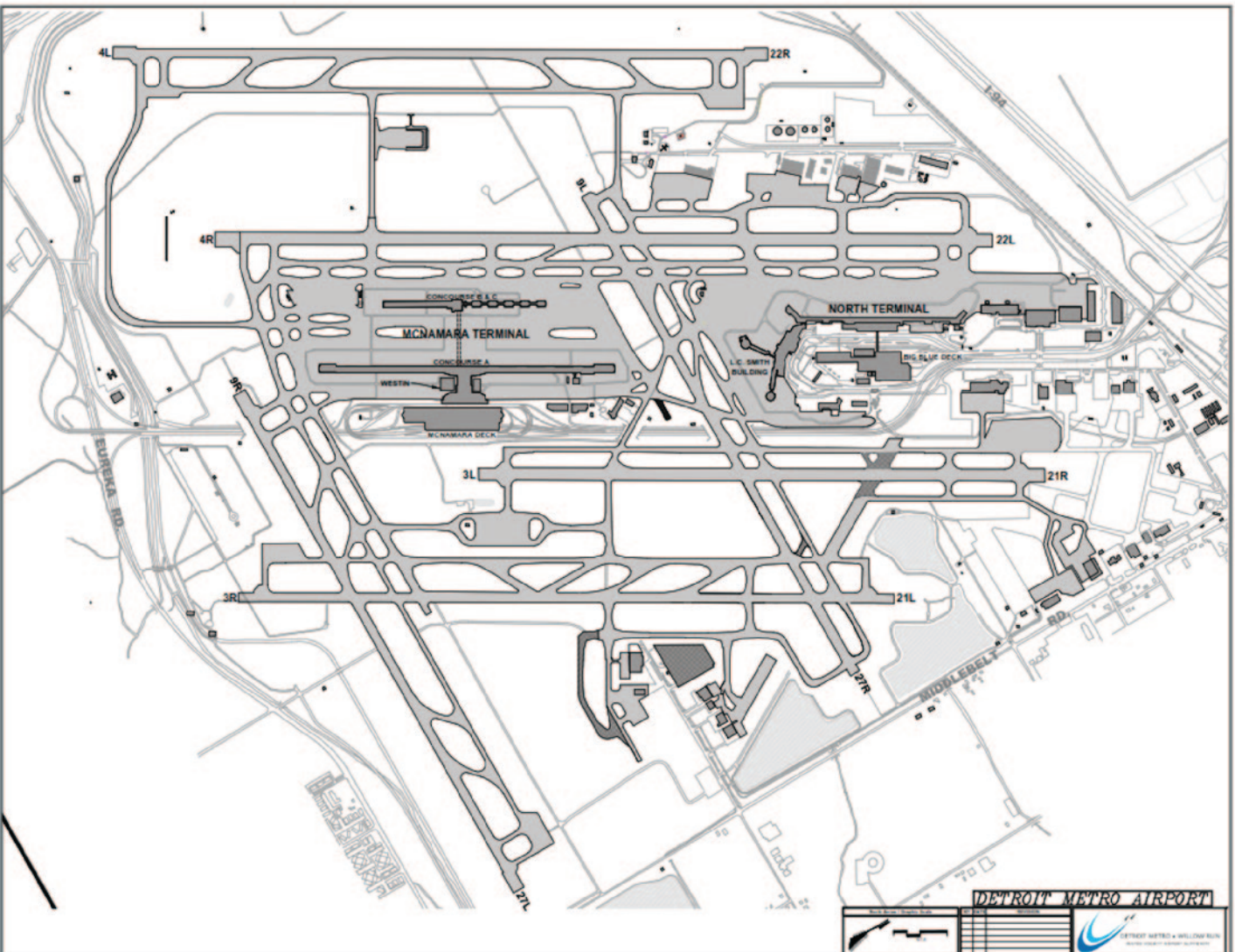
##### **3.1.1 Airport History**

The plan to build a major commercial airport in Detroit was conceived on April 12, 1927. Originally called Wayne County Airport, the Airport served as a general aviation facility. In 1929, a landing strip was installed along with several maintenance buildings, and the Wayne County Airport was dedicated and opened to the public in September 1929. Thompson Aeronautical Corporation, a predecessor company of American Airlines, inaugurated service from Wayne County Airport and, in 1931, the Airport became the base for the Michigan Air National Guard. In 1958, the Airport was renamed Detroit Metropolitan Wayne County Airport. A history of the Airport's growth over certain historical time periods is summarized below.<sup>80</sup>

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<sup>80</sup> Wayne County Airport Authority website, <http://www.metroairport.com/TravelerInfo/GeneralInfo/AboutDTW/AirportHistory.aspx>, accessed April 2017.

Figure 3-1  
AIRPORT LAYOUT



Source: Authority management records

- **1960s and 1970s.** In the 1960s several Airport facilities were completed including those for general aviation, freight forwarders, a new fire station, power plant, a United Airlines Cargo building and an in-flight kitchen, a Hertz Rent-A-Car Service building, an addition to the American Airlines Air Freight building, and a parking structure. In 1966, Terminal 2 was constructed. In 1967, L.C. Smith Terminal, Runway 9-27, and Runway 3L-21R were expanded. In 1974, the Michael Berry International Terminal was completed. In 1975, Terminal 2 was renamed J. M. Davey Terminal, honoring former Airport Manager, James M. Davey. In 1976, the third parallel runway (3R-21L) was completed.
- **1980s and 1990s.** In 1984, Republic Airlines created its hub at the Airport, spurring a boom in air traffic. Later in 1986, Northwest Airlines and Republic Airlines merged creating an even larger hub at the Airport. That same year the renovation and expansion of facilities at the Airport including new taxiways and hold pads on the airfield to better facilitate the flow of aircraft traffic were financed. In 1993, a second Crosswind Runway, 9R-27L, opened with a length and width of 8,500 feet by 150 feet. In 1997, Northwest Airlines opened an extension to Concourse C, including a new moving walkway to accommodate passengers to six new gates. The Airport's gate total increased to 99 gates.
- **2000s to Present.** In December 2001, the Authority opened its fourth parallel runway (4L-22R). February 24, 2002 marked the opening of the new \$1.2 billion state-of-the-art Edward H. McNamara Terminal/Northwest World Gateway. This terminal had 97 gates for Northwest Airlines, more than 80 shops and restaurants, an indoor express tram that travels the mile-long Concourse A in less than three minutes, international and domestic connections in the same facility, and an 11,500-space parking garage. On March 26, 2002, Michigan Public Act 90 (the Authority Act) was enacted, establishing the Wayne County Airport Authority and transferring sole and exclusive operational jurisdiction of the Airport and Willow Run Airport to the Authority on August 9, 2002. In 2005, the James M. Davey Terminal, formerly the home of Northwest Airlines' hub at Detroit, was demolished to make room for a new North Terminal, which opened on September 17, 2008. At the same time, the Airport's Smith and Berry terminals were retired as passenger facilities. On December 31, 2009, Delta and Northwest Airlines officially merged operating certificates, operating under the Delta Air Lines name and continuing to operate a major hub at the Airport.

### 3.1.2 Airfield Facilities

The Airport has six runways, including four parallel runways oriented northeast-southwest (designated 4L-22R, 4R-22L, 3L-21R, and 3R-21L) and two parallel runways oriented east-west (designated 9L-27R and 9R-27L). **Table 3-1** summarizes the published lengths and widths of each runway, and the runways are also depicted on Figure 3-1.

**Table 3-1****RUNWAY DIMENSIONS**

<b>Runway</b>	<b>Length (Feet)</b>	<b>Width (Feet)</b>
4L-22R	10,000	150
4R-22L	12,003	200
3L-21R	8,501	200
3R-21L	10,001	150
9L-27R	8,708	150
9R-27L	8,500	150

Source: Federal Aviation Administration, Airport Facility Directory.  
Compiled by Trillion Aviation

The Airport's runways are equipped with high intensity runway lighting systems and centerline lighting (except for Runway 9L-27R). Precision instrument landing systems (ILS) have been installed on the ends of Runway 4L-22R, Runway 4R-22L, and 3R-21L for approaches during instrument flight rules (IFR) conditions. An ILS is also installed on runway ends 27R and 27L. Runway 3L-21R and runway ends 9L and 9R are not equipped with an ILS.

The Airport has an extensive taxiway system providing safe and efficient access to and from runway ends, terminal facilities, apron areas, and cargo and hangar facilities. Each runway has an associated parallel, full-length taxiway.

### 3.1.3 Terminal Facilities

The Airport has two passenger terminal complexes, one comprised of – the Edward H. McNamara Terminal, located on the south side of the Airport; and the other comprised of the North Terminal, located on the north side. Figure 3-1 also depicts the Airport's existing terminal complexes.

The Edward H. McNamara Terminal (McNamara Terminal or South Terminal) and a parking structure opened in February 2002. The terminal was originally constructed to serve as a hub for Northwest Airlines, and is now used exclusively by Delta, the Delta Connection Carriers and Delta's SkyTeam Alliance partners. At the time of its opening, the terminal and concourses provided 97 aircraft gates, and in December 2002, the Westin Hotel, with direct connection to the terminal, opened. The one-mile long Concourse A was the first in the U.S. to have an indoor tram that traverses the length of the concourse. Concourses B and C are located in the midfield with an underground tunnel and moving walkways connecting with Concourse A. The Lower Level contains the Federal Inspections Services (FIS), customs facility, and international passenger baggage claim. It also contains offices for Customs and Border Protection (CBP), as well as airline support space, and security recheck for connecting passengers. In 2005, Concourses B and C were expanded to accommodate increased service, raising the aircraft gate total to 121 gates, and total terminal space to approximately 2.28 million square feet. In 2015 and 2016, because of changes in aircraft fleet mix and the ongoing phase out of 50-seat regional jets, Delta closed 16 gates on the north end of Concourse C; but continues to lease these now unoccupied gates. While the 16 gates are not currently in operation, they could be re-opened

for use if demand warrants. A pedestrian bridge connects the McNamara Terminal to level 6 of the parking garage and provides vertical circulation to a Ground Transportation Center.

The North Terminal was opened for operation in September 2008 and accommodates all domestic and foreign flag passenger airlines except Delta, the Delta Connection Carriers, and certain other SkyTeam affiliated airlines. It was constructed to replace the Berry and Smith Terminals. The North Terminal provides a total of 26 gates and approximately 923,000 square feet of space on two levels. Five of the gates are common use, and four of the five common use gates can serve both international and domestic flights. The facility is designed to be expandable as demand warrants. The North Terminal includes a central terminal facility, a 26-aircraft gate airside concourse, approximately 50,200 square feet of concessions space, and an FIS facility of approximately 26,000 square feet with the capacity to process up to 800 passengers per hour.

The Lower Level contains both the passenger baggage claim and the baggage handling and sorting areas used by airline personnel. Additionally, there are airline office spaces adjacent to the claim areas to support passenger luggage retrieval, Airport police, Authority building maintenance office space, and storage and mechanical spaces. The Upper Level contains ticket counter check-in positions, airline electronic kiosks for passenger check-in, airline office space, two passenger security screening checkpoints, several concessions spaces in the secure areas of the building, and building mechanical rooms. A vertical circulation core at the front of the building provides access to a bridge over the departures level roadway which connects to the Ground Transportation Center and parking garage.

**Table 3-2** presents the current number of aircraft gate positions at the Airport by concourse and used by the airlines.

**Table 3-2**

**AIRCRAFT GATE USE AT THE AIRPORT**

Airline	McNamara Terminal			North Terminal	Total
	Conc. A	Conc. B	Conc. C	Conc. D	
American				7	7
Delta	63	17	41 <sup>1</sup>		121
Frontier				1	1
JetBlue				1	1
Southwest				4	4
Spirit				3	3
United				5	5
Authority				5	5
<b>Total</b>	<b>63</b>	<b>17</b>	<b>41</b>	<b>26</b>	<b>147</b>

<sup>1</sup>In 2015 and 2016, because of changes in aircraft fleet mix and the ongoing phase out of 50-seat regional jets, Delta closed 16 gates on the north end of Concourse C; however, Delta is still leasing these now unoccupied gates and they have been included in the amounts on the table.

Source: Detroit Metropolitan Wayne County Airport Master Plan Update  
Compiled by Trillion Aviation



### **3.1.4 Public Parking Facilities**

Public parking at the Airport currently consists of 18,911 spaces at both structured facilities and surface lots. Structured parking is currently available adjacent to both the McNamara Terminal and North Terminal to allow for convenient pedestrian access. The various parking products offered to passengers at the Airport are described below.

- The McNamara Terminal provides a 10-level garage containing long-term parking for 8,686 vehicles and short-term parking for 706 vehicles. This garage also provides 396 spaces for valet parking.
- The Big Blue Deck, a six-level garage, provides public parking at the North Terminal. The Big Blue Deck provides long-term parking for 6,530 vehicles and short-term parking for 196 vehicles.
- The Airport also provides additional public parking for a flat daily rate at two surface lots located near the North Terminal. Green Lot 1 contains 1,501 long-term parking spaces and Green Lot 2 contains 896 economy and long-term spaces available for public use. Free continuous shuttles are available to both the North and McNamara Terminals from these lots.
- In addition, two cell phone lots are available near the northern and southern entrances of the Airport. These lots were created as part of an initiative to reduce curbside waiting at the Airport.

The Airport currently provides over 6,000 employee parking spaces primarily at three separate locations. The South Employee Lot is designated as an employee-only surface lot with approximately 4,500 spaces, situated off Eureka Road just east of the south Airport entrance. The North Employee Lot provides approximately 600 employee parking spaces, and the McNamara Parking Garage contains approximately 780 designated employee parking spaces. Additional locations for employee parking are the parking lots adjacent to the L.C. Smith Terminal with approximately 250 spaces and 172 parking spaces for use outside of the Authority's Public Safety building.

### **3.1.5 Rental Car Facilities**

The rental car facilities are located in the northeast corner of Airport property and encompass approximately 65 acres. These areas include ready/return spaces, service areas, quick turn-around facilities, and customer service buildings and areas. The rental car facilities are bounded by Goddard Road (north), Middlebelt Road (east), and East Service Drive (west). Lucas Drive bisects the rental car area and provides the primary access and egress to each of the on-Airport rental car sites. There are six on-Airport rental car sites (Budget-Payless, Hertz-Firefly, Avis, Alamo-National, Dollar-Thrifty, and Enterprise). All rental car facilities are accessed by arriving passengers by following signage to each terminal's ground transportation center (GTC) and then riding the rental car company's shuttle. Most rental car companies operate two independent shuttle routes, one for each terminal.

### 3.1.6 Ancillary Facilities

Ancillary facilities support the aviation-related activities at the Airport. The facilities identified as ancillary are categorized as general aviation, cargo facilities, aircraft maintenance facilities, fuel farm, the public safety building, and other airport facilities.

- **General Aviation.** General aviation and corporate aviation facilities are generally located on the southern portion of the Airport with one facility on the northern end. The fixed base operator (FBO) at the Airport is Signature Flight Support, which accommodates aircraft parking, fuel, hangars, catering, and other flight support services.
- **Air Cargo/Mail Facilities.** Air cargo facilities at the Airport are located in three general areas of Airport property. The largest air cargo tenants, DHL, FedEx and United Parcel Service, are in different areas of the airfield. DHL and FedEx are in the northwest area of the Airport in Building 714A adjacent to Taxiway Z. United Parcel Service's facility is located on the southern portion of the Airport between the ends of Runways 27R and 27L. Delta Cargo operates out of Building 536, located adjacent to the Green Lot 2. Several other passenger airline and smaller cargo facilities are also located in the northern area of the Airport with access from Merriman Road.
- **Aircraft Maintenance Facilities.** Several aircraft maintenance operation facilities are based at the Airport. These facilities are located in various areas of the of the North Terminal core area. Some of these include facilities for Delta, Spirit, United Parcel Service, and FedEx. Aircraft serviced at these facilities include large wide-body aircraft (i.e., Boeing 747s) to smaller general aviation type aircraft.
- **Fuel Farm.** The fuel farm at the Airport is located in the northwestern section of the airfield, and consists of four 20,000-barrel fuel storage tanks and two 65,000-barrel fuel storage tanks. The fuel farm has a capacity of over four million gallons and an estimated five days of storage capacity. The fuel facilities at the Airport also include a truck load rack, underground pipelines and underground hydrant systems that serve the McNamara Terminal and North Terminal. Delta operates the entire fuel system at the Airport for its benefit as well as the benefit of the other air carriers at the Airport under an operating agreement with Servisair.
- **Public Safety Building.** This building houses the consolidated functions related to the Airport Response Center (ARC), Emergency Operations Center (EOC), Badging and Credentials, and the Police Operations Facility (POC) within a "state of the art" single story building.
- **Berry Administration Building.** In August 2017, the Authority moved its administration offices from the Smith Building (formerly the Smith Terminal) to the Berry Administration Building. This new facility is a four-story, 85,600 square-foot office building connected to the north end of the North Terminal. The Berry Administration Building is connected to the non-secure side of the North Terminal through a pedestrian bridge. The building's design considers modern workplace best

practices along with security concerns, and sustainable principles. The Authority is seeking Leadership in Energy and Environmental Design (LEED) certification with the United States Green Building Council (USGBC) for the building.

- Other Airport support facilities include, but are not limited to, aircraft rescue and firefighting (ARFF) facilities, flight kitchens, and an airport traffic control tower (ATCT). The primary ARFF station is located just north of the McNamara Terminal and south of Runway 9L-27R. The Airport also has a smaller secondary ARFF facility located near Taxiway V adjacent to the FedEx cargo apron. Additionally, the Airport has a landside ARFF station serving the roadways and terminals located along Rogell Drive to the north of the Smith and Berry Buildings (retired as passenger facilities). LSG Sky Chefs prepares meals for flights departing from the Airport and operates out of the one flight kitchen facility at the Airport (Building 505), which is leased to Delta and subleased to LSG Sky Chefs. The ATCT is located north of the McNamara Terminal and it also houses the Terminal Radar Approach Control (TRACON) facility that serves the Airport and other regional airports.

### 3.2 Willow Run Airport

The Authority also operates and maintains Willow Run Airport, which is approximately 11 driving miles west of the Airport. Willow Run is situated between Ypsilanti and Van Buren townships (between Wayne and Washtenaw counties) on approximately 2,600 acres of land north of I-94 and southeast of Michigan Avenue. Willow Run is classified in the FAA's National Plan of Integrated Airport Systems (NPIAS) as a "reliever" airport to Detroit Metro. It does not have any commercial passenger airline service and accommodates general aviation activity, as well as on demand air cargo operators. According to 2014 data published by the FAA's Air Carrier Activity Information System (ACAIS), Willow Run is the nation's fifth busiest general aviation airport in terms of landed air cargo tonnage.

Willow Run Airport was originally constructed in 1941 during World War II to support aircraft production. The original airfield consisted of six runways, three of which remain today. The airport's main hangar was used as a passenger terminal from 1946 to 1966 when Willow Run served as the primary commercial service airport for the region. Following development of the Airport, Willow Run was used exclusively for general aviation activity. Beginning in the early 1990's, on-demand/just-in-time air cargo operators specializing in transportation of automotive-related parts and supplies and other freight began to use the facility. Today, Willow Run serves as a base for many of the Detroit region's on-demand/just-in-time cargo operators, including USA Jet, Kalitta Charters, IFL Group, and Ameristar.

The following briefly summarizes the key facilities at Willow Run:

- **Airfield.** The airfield includes three runways (two northeast-southwest oriented parallel runways and one crosswind east-west oriented runway), and associated taxiways, aprons, and other safety-related protection zones.

- **Air Cargo.** Willow Run accommodates air cargo operators who provide on-demand air cargo services that support the timely movement of manufactured components for the automobile industry in Southeast Michigan. Cargo operators are currently located in the southwest section of the airport.
- **General Aviation.** A number of prominent businesses in the region base aircraft at the airport, as well as recreational general aviation aircraft owners. There are three general aviation terminals located at the airport operated by AvFlight and Active Aero. Eastern Michigan University's Eagle Flight Centre is based at the airport and conducts a significant amount of flight training activity. In addition, the Yankee Air Museum bases a number of historical World War II military aircraft at the airport.
- **Ground Transportation and Parking.** Tyler Road provides the primary access to Willow Run Airport from both the east via Beck Road and the west via Interstate 94 and U.S. Route 12. Parking is available at a surface lot west of Hangar 1 on the west side of the airfield, and at a number of individually maintained lots located adjacent to hangar facilities on the east side of the airfield. Parking is also located adjacent to Kalitta Charters on the south side of the airfield and the Hanz Air hangar on the north side of the airfield.
- **Aviation Support Facilities.** The ARFF building and the airfield electrical vault are located adjacent to the east apron. The snow removal equipment/maintenance facility is also located on the east side of the airfield along Tyler Road and the fuel farm is located on Tyler Road to the south. The ATCT is located midfield of the airport with access provided via the east apron.

### 3.3 Airport Capital Improvement Program

The Authority manages Airport capital projects through an on-going five-year Capital Improvement Program. The current Capital Improvement Program encompasses plans for current and future Airport capital projects for OY 2018 through OY 2022 (CIP). The CIP is an important tool used for formulating future project financing plans, maximizing federal and state grant opportunities and pro-actively planning for the replacement or reconstruction of essential infrastructure components that are nearing the end of their useful or service life. The CIP provides a framework for scheduling and coordinating execution of multiple projects to minimize operational impact. The majority of the capital projects in the CIP tend to be "routine" projects for a major airport, including reconstruction or rehabilitation of runways, taxiways, parking decks, roadways and environmental or planning studies.

This Report divides the capital projects in the CIP into three main categories, described below, for the purpose of identifying the CIP projects included in the financial analysis contained in Chapter 4 of this Report.

The categories of the Airport's five-year CIP used in this Report are further described as follows.

- **Series 2017 Projects.** This CIP category is comprised of those projects to be funded, either in whole or in part, with proceeds of the Series 2017 Bonds. A Weighted Majority has approved all of the Series 2017 Projects. The capital and operating costs associated

with the Series 2017 Projects are included in the financial analysis contained in Chapter 4 of this Report. The Series 2017 Projects are further described later in this chapter.

- **Other Approved Capital Projects.** This CIP category is comprised of additional projects that a Weighted Majority has approved but have not been previously funded in whole and also are not being funded with proceeds of the Series 2017 Bonds. The Authority presently intends to issue Additional Bonds during the forecast period of this Report to fund the balance of the cost of these Other Approved Capital Projects. The capital costs of the Other Approved Capital Projects are included in the financial analysis contained in Chapter 4 of this Report. The Other Approved Capital Projects are described later in this chapter.
- **Other CIP Projects.** This CIP is comprised of all other CIP projects that are neither Series 2017 Projects nor Other Approved Capital Projects as defined above. These projects include: (i) those CIP projects that a Weighted Majority has approved and have been funded previously with proceeds of bonds issued by the Authority in the past, and which either currently are in process or have not yet been started, and (ii) those CIP projects that the Authority has not yet fully formulated and/or still are in the conceptual phase, and for which the Authority has not yet requested Weighted Majority approval. It is possible that certain Other CIP Projects may be deferred or not otherwise undertaken by the Authority during the forecast period (depending on circumstances such as whether a Weighted Majority is willing to approve the as-yet unapproved projects, level of aviation demand, the availability of project funding, more refined scope and cost information for various projects, etc.). The capital costs related to the existing bond proceeds for previously funded Other CIP Projects are included in the financial analysis contained in Chapter 4 of this Report. However, the capital costs for the Other CIP Projects for which Weighted Majority approval has not yet been requested are not included in the financial analysis contained in Chapter 4 of this Report.

The following sections describe in more detail the CIP, the Series 2017 Projects, and the Other Approved Capital Projects.

### **3.3.1 Overall Five-Year Capital Improvement Program**

As described above, the Authority plans for its overall capital development program through an on-going five-year Capital Improvement Program. The CIP includes all three of the categories of projects described above for the purposes of this Report. **Table 3-3** presents the CIP and projected expenditures from OY 2018 through OY 2022. As shown, the capital projects in the CIP are estimated to cost approximately \$831.9 million.

**Table 3-3****AIRPORT'S FIVE-YEAR CAPITAL IMPROVEMENT PROGRAM COSTS BY ELEMENT (thousands of dollars) <sup>1, 2</sup>**

Project Element	Est. Total Project Costs	Expenditures					
		Prior to 9/30/2017	OY 2018	OY 2019	OY 2020	OY 2021	OY 2022+
Airfield <sup>3</sup>	\$483,275	\$27,400	\$80,550	\$147,075	\$142,000	\$64,250	\$22,000
Cargo, Hangar & Commercial Development	7,925	1,325	--	--	--	--	6600
Power Plants & Electrical Distribution	54,535	3,415	19,195	18,300	3,100	6,725	3,800
Fleet & Equipment	20,560	--	5,000	4,000	3,000	3,000	5,560
Parking & Ground Transportation Facilities	51,240	11,040	14,600	9,500	5,900	4,500	5,700
Bridges & Roadways <sup>3</sup>	54,300	14,800	11,200	14,550	4,750	3,000	6,000
Security & Communications	22,800	3,160	4,840	3,800	7,000	4,000	--
Support Facilities	21,885	370	4,408	14,433	144	1,725	805
Site Redevelopment & Demolitions	26,374	3,460	9,350	10,000	1,964	160	1,440
Terminals	76,870	4,384	53,425	19,061	--	--	--
Water Mains & Stormwater System	11,350	1,000	3,200	7150	--	--	--
Other Projects	800	--	800	--	--	--	--
<b>Total</b>	<b>\$831,914</b>	<b>\$70,354</b>	<b>\$206,568</b>	<b>\$247,869</b>	<b>\$167,858</b>	<b>\$87,360</b>	<b>\$51,905</b>

<sup>1</sup> All of the Series 2017 Projects and Other Approved Capital Projects (defined herein) have been approved by a Weighted Majority. Many of the Other CIP Projects require approval by a Weighted Majority in order to fund such projects with Bond proceeds, expenditure schedules are subject to change, and projects are subject to demand and available funding.

<sup>2</sup> Current cost estimates and construction schedules may vary from the Board-approved five-year CIP.

<sup>3</sup> Certain Series 2017 Projects are not included in the CIP because they have been completed or are planned to be completed by early OY 2018. The Board-approved CIP has a total estimated project cost of approximately \$813.1 million.

Note: Amounts may not add because of rounding.

Source: Authority management records, September 2017

Compiled by Trillion Aviation

The Authority anticipates that the CIP projects will be funded from a combination of federal grants, other Airport funds, proceeds from existing bonds, proceeds from the Series 2017 Bonds, and proceeds from Additional Bonds. **Table 3-4** presents the CIP by project element and anticipated funding sources for the planned \$831.9 million of project costs. As shown on Table 3-4, future bond proceeds required to fund the CIP are further categorized into two separate groups for the purposes of this Report: "Future Bond Proceeds" and "Other CIP Projects Future Bond Proceeds." Future Bond Proceeds with respect to the Series 2017 Projects are the proceeds of Bonds currently planned to be issued in the future to fund those portions of the Series 2017 Projects not funded by the Series 2017 Bonds or other sources. Future Bond Proceeds with respect to the Other Approved Capital Projects are the proceeds of Bonds currently planned to be issued in the future to fund the Other Approved Capital Projects. Future Bond Proceeds of approximately \$51.4 million are included as part of the financial analysis included in this Report. Other CIP Projects Future Bond Proceeds are the proceeds of Bonds currently planned to be issued in the future to fund those Other CIP Projects that have not been approved yet by a Weighted Majority, and are not included in the financial analysis of this Report.

**Table 3-4****AIRPORT'S FIVE-YEAR CAPITAL IMPROVEMENT PROGRAM COSTS BY FUNDING SOURCE (thousands of dollars)<sup>1,2</sup>**

Project Element	Est. Total Project Costs	Federal Grants	Other Funds	Existing Bond Proceeds	Series 2017 Bond Proceeds	Future Bond Proceeds <sup>3</sup>	Other CIP Projects Future Bond Proceeds <sup>4</sup>
Airfield <sup>5</sup>	\$483,275	\$ --	\$ --	\$44,225	\$33,450	\$39,400	\$366,200
Cargo, Hangar & Commercial Development	7,925	--	--	1,325	--	--	6,600
Power Plants & Electrical Distribution	54,535	--	600	34,800	3,125	--	16,010
Fleet & Equipment	20,560	2,048	512	--	5,000	--	13,000
Parking & Ground Transportation Facilities	51,240	--	1,500	23,340	4,000	--	22,400
Bridges & Roadways <sup>5</sup>	54,300	--	1,500	6,325	12,000	--	34,475
Security & Communications	22,800	--	--	7,800	--	--	15,000
Support Facilities	21,885	--	1,258	--	2,450	--	18,177
Site Redevelopment & Demolitions	26,374	--	--	12,810	--	11,964	1,600
Terminals	76,870	--	--	1,000	41,000	--	34,870
Water Mains & Stormwater System	11,350	--	--	4,100	--	--	7,250
Other Projects	800	640	160	--	--	--	--
<b>Total</b>	<b>\$831,914</b>	<b>\$2,688</b>	<b>\$5,530</b>	<b>\$135,725</b>	<b>\$101,025</b>	<b>\$51,364</b>	<b>\$535,582</b>

<sup>1</sup> A Weighted Majority has approved all of the of the Series 2017 Projects and Other Approved Capital Projects (defined herein). Certain of the Other CIP Projects require approval by a Weighted Majority in order to fund such projects with Bond proceeds, expenditure schedules are subject to change, and projects are subject to demand and available funding.

<sup>2</sup> Current cost estimates and construction schedules may vary from the Board-approved CIP.

<sup>3</sup> Future Bond Proceeds with respect to the Series 2017 Projects are the proceeds of bonds currently planned to be issued to fund those portions of the Series 2017 Projects not funded by the Series 2017 Bonds or other sources. Future Bond Proceeds with respect to the Other Approved Capital Projects are the proceeds of bonds currently planned to be issued in future years to fund the Other Approved Capital Projects. Future Bond Proceeds are included as part of the financial analysis included in this Report.

<sup>4</sup> Other CIP Projects Future Bond Proceeds are the proceeds of bonds currently planned to be issued in future years to fund Other CIP Projects for which the Authority would need to obtain Weighted Majority approval in order to fund the projects with Bond proceeds and include the debt service on such Bonds in airline rates and charges. Other CIP Projects Future Bond Proceeds are not included in the financial analysis included in this Report.

<sup>5</sup> Certain Series 2017 Projects are not included in the CIP because they have been completed or are planned to be completed by OY early 2018. The Board-approved CIP has a total estimated project cost of approximately \$813.1 million.

Note: Amounts may not add because of rounding.

Source: Authority management records, September 2017

Compiled by Trillion Aviation

To further summarize the five-year CIP, **Table 3-5** presents the funding plan for the three main CIP categories used in this Report.

**Table 3-5****AIRPORT'S FIVE-YEAR CAPITAL IMPROVEMENT PROGRAM FUNDING PLAN BY CATEGORY**  
**(thousands of dollars)<sup>1,2</sup>**

<b>CIP Category</b>	<b>Est. Total Project Costs</b>	<b>Federal Grants</b>	<b>Other Funds</b>	<b>Existing Bond Proceeds</b>	<b>Series 2017 Bond Proceeds</b>	<b>Future Bond Proceeds<sup>3</sup></b>	<b>Other CIP Projects Future Bond Proceeds<sup>4</sup></b>
Series 2017 Projects	\$153,625	\$ --	\$1,500	\$36,100	\$101,025	\$15,000	\$ --
Other Approved Capital Projects	52,364	--	--	16,000	--	36,364	--
Other CIP Projects	627,425	2,688	4,030	83,625	--	--	535,582
<b>Total CIP</b>	<b>\$831,914</b>	<b>\$2,688</b>	<b>\$5,530</b>	<b>\$135,725</b>	<b>\$101,025</b>	<b>\$51,364</b>	<b>\$535,582</b>

<sup>1</sup> A Weighted Majority has approved all of the of the Series 2017 Projects and Other Approved Capital Projects (defined herein). Certain of the Other CIP Projects require approval by a Weighted Majority in order to fund such projects with Bond proceeds, expenditure schedules are subject to change, and projects are subject to demand and available funding.

<sup>2</sup> Current cost estimates and construction schedules may vary from the Board-approved CIP. Certain Series 2017 Projects are not included in the CIP because they have been completed or are planned to be completed by early OY 2018. The Board-approved CIP has a total estimated project cost of approximately \$813.1 million.

<sup>3</sup> Future Bond Proceeds with respect to the Series 2017 Projects are the proceeds of bonds currently planned to be issued to fund those portions of the Series 2017 Projects not funded by the Series 2017 Bonds or other sources. Future Bond Proceeds with respect to the Other Approved Capital Projects are the proceeds of bonds currently planned to be issued in future years to fund the Other Approved Capital Projects. Future Bond Proceeds are included as part of the financial analysis included in this Report.

<sup>4</sup> Other CIP Projects Future Bond Proceeds are the proceeds of bonds currently planned to be issued in future years to fund Other CIP Projects for which the Authority would need to obtain Weighted Majority approval in order to fund the projects with Bond proceeds and include the debt service on such Bonds in airline rates and charges. Other CIP Projects Future Bond Proceeds are not included in the financial analysis included in this Report.

Note: Amounts may not add because of rounding.

Source: Authority management records, September 2017

Compiled by Trillion Aviation

As shown above in Table 3-5, the Series 2017 Projects have estimated project costs of approximately \$153.6 million and are planned to be funded by approximately \$1.5 million of other Airport funds, approximately \$36.1 million of proceeds from existing bonds, approximately \$101.0 million of proceeds of the Series 2017 Bonds, and approximately \$15.0 million of Future Bond Proceeds.

The Other Approved Capital Projects have estimated project costs of approximately \$52.4 million and are planned to be funded by \$16.0 million of proceeds from existing bonds and approximately \$36.4 million of Future Bond Proceeds. The planned funding for both the Series 2017 Projects and the Other Approved Capital Projects is discussed in more detail in Chapter 4 of this Report.

The Other CIP Projects have estimated project costs of approximately \$625.9 million and are planned to be funded by approximately \$2.7 million of federal grants, approximately \$4.0 million of other Airport funds, approximately \$83.6 million of proceeds of existing bonds, and approximately \$535.6 million of Other CIP Future Bond Proceeds. As indicated previously, many of the Other CIP Projects still require Weighted Majority approval in order to be funded by Bond proceeds, and, the Other CIP Projects Future Bond Proceeds are not included in the financial analysis contained in this Report.



### 3.3.2 The Series 2017 Projects

As described earlier, the Series 2017 Projects include those CIP projects to be funded in whole or in part with proceeds of the Series 2017 Bonds. The Series 2017 Projects include various airfield reconstruction and/or rehabilitation, fleet and equipment purchases, parking rehabilitation, bridges and roadway rehabilitation, and design and engineering of a North Terminal Gate Expansion project, among others, and are described in detail in the following sections. **Exhibit A** presents detail on the estimated project costs for the Series 2017 Projects along with planned funding sources.

The Series 2017 Projects are estimated to cost approximately \$153.6 million (including design, engineering, construction, escalation for inflation, and contingency amounts, but excluding financing costs). Sources of funding for the Series 2017 Projects are presented in Exhibit A of this Report and are described above. The Series 2017 Projects were subject to the Weighted Majority approval process described in Section 4.3.3, Airline Approval of Capital Improvement Projects, and a Weighted Majority has approved all of the Series 2017 Projects. A description of each of the Series 2017 Projects is contained in the following subsections.

#### **Runway 3L-21R & Associated Taxiways Reconstruction (planning, environmental processing and design/engineering)**

Runway 3L-21R, one of the Airport's primary departure runways, requires full-depth replacement. This Series 2017 Project consists of the planning, environmental processing, and design/engineering, for the reconstruction of the 8,501-foot runway and associated taxiways (Taxiway M, Taxiway P, and Taxiway PP) and their associated systems (i.e., drainage, lighting, signage, etc.). The total estimated cost of this Series 2017 Project is \$16.0 million. The Authority is planning to fund \$6.0 million of this project cost with proceeds of the Series 2017 Bonds and \$10.0 million with the proceeds of existing bonds previously issued for the project. The Authority intends to seek Weighted Majority approval of the subsequent reconstruction of the runway, taxiway and associated systems, currently estimated to cost \$164 million, in contemplation of the issuance of future bonds to fund this cost and the commencement of construction in 2019.

#### **Airfield Pavement Rehabilitation/Reconstruction Plan**

The Authority has developed an airfield pavement rehabilitation/reconstruction plan to address failed pavement surfaces and long-term capital improvements. The method of rehabilitation or reconstruction is selected based on severity of deterioration, timing of future reconstruction, operational constraints, and other factors affecting the safe and efficient operation of the airfield. This Series 2017 Project is estimated to cost \$5.0 million and is anticipated to address certain airfield pavement needs in OY 2017 and OY 2018. The work consists of the planning, design/engineering, and construction required to provide as needed pavement rehabilitation, reconstruction, or removal of aged sections of airfield pavement (e.g., runways, taxiways, taxilanes, shoulders, deicing pads, aprons, etc.) to maintain safe airport operations. Rehabilitation and/or reconstruction of the pavement will extend the useful life for a term of five to 15 years. In the future, the Authority will request Weighted Majority approval for additional airfield pavement work in OY 2018 and beyond as required, in order to issue future bonds to fund this work.

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**McNamara Terminal Apron Rehabilitation/Joint Improvements (through OY 2018)**

The Authority has developed a McNamara Terminal Apron and Joint Rehabilitation/Reconstruction Plan to address failed pavement surfaces and long-term capital improvements for the pavement at the narrow-body gates at the McNamara Terminal. The method of rehabilitation or reconstruction will be determined based on severity of deterioration, existing pavement cross-section, operational constraints, and other factors affecting the safe and efficient operation of the airfield. The condition of gate positions along the McNamara Terminal, Concourses A, B, and C necessitates multiple closures for improvements, pavement sweeping and painting. Rehabilitation of the terminal's 12 wide-body aircraft gate positions was completed as a project funded with Series 2015 Bond proceeds. The scope of this Series 2017 Project will address failed concrete and apron replacements for certain of the remaining 93 gates at the McNamara Terminal to minimize aircraft exposure to foreign object debris (FOD) resulting from failed concrete. This Series 2017 Project is estimated to cost \$30 million. A total of \$10 million of project costs is to be funded with proceeds of the Series 2017 Bonds and \$5 million of project costs is to be funded with existing bond proceeds for construction activity scheduled for OY 2017. The remaining \$15 million of project costs for construction activity scheduled in OY 2018 is planned to be funded with Future Bond Proceeds.

**Hangar 516 and 518 Apron Reconstruction**

This Series 2017 Project provides for the design and construction efforts related to the full depth reconstruction of apron pavement, near Hangar 516 and Hangar 518, for which the Authority is responsible. Concrete pavement adjacent to Hangar 516 and Hangar 518 is in need of rehabilitation. A bituminous overlay has been installed as a temporary solution pending full-depth reconstruction needed within the next two to five years. This project will provide for removal of existing pavement and replacement with a pavement cross-section consistent with current Authority airfield standards. The project is anticipated to cost \$2.25 million, all of which is intended to be funded with Series 2017 Bond proceeds.

**McNamara Terminal Apron Modifications and New Hardstand Positions**

This Series 2017 Project is estimated to cost approximately \$25 million and consists of the planning, design/engineering, and construction activity related to infill four existing grass islands, located between Concourse A and Concourses B/C at the McNamara Terminal, with concrete pavement. The scope of the project includes all efforts necessary to provide for a paved surface that meets the standard Authority aircraft movement area cross-section and installation of related systems. The area located between Concourses A, B, and C at the McNamara Terminal is critical to the movement of aircraft from runways to the terminal gates. Currently, aircraft movement inbound and outbound aircraft sequencing and pushbacks from terminal gates are restricted by existing grass islands between the Terminal's multiple taxilanes. This project will improve flow and reduce taxi time by eliminating bottlenecks between Taxilane U-9 and Taxilane Q. Included in this project is the infill of the grass area immediately north of McNamara Concourse C and removal of jet bridges at gates no longer in use, to provide additional needed space for overnight aircraft parking. This project initially was a Series 2015 Project funded with \$14.8 million of Series 2015 Bond proceeds. The project has increased in scope and estimated cost since 2015, and additional Weighted Majority approval for the revised project was required. The remaining \$10.2 million of estimated project costs is intended to be funded with Series 2017 Bond proceeds.

**Primary Electrical Loops Numbers 1- 3 Upgrade and Expansion**

The Airport's North Campus electrical distribution system consists of three basic loops. All three loops were built in the late 1950s and early 1960s and all cells are full. This Series 2017 Project will involve efforts necessary to examine existing electrical loops, verify duct bank capacity, inspect power plant gear and provide for the design and construction of necessary upgrades to the loops. The project is anticipated to span a three-year period beginning in 2017 and is estimated to cost approximately \$5.1 million. The Authority intends to fund approximately \$3.1 million of the cost of this project with Series 2017 Bond proceeds and the remainder with existing bond proceeds.

**Fleet and Heavy Equipment Acquisitions (through CY 2018)**

The Airport's five-year fleet and equipment replacement program for heavy and specialty equipment includes, but is not limited to, the purchase of snow removal equipment, ARFF vehicles, ambulances, dump trucks and other large maintenance equipment. This Series 2017 Project, which provides for the delivery of long lead time equipment in CY 2018, is estimated to cost \$5 million, all of which is planned to be funded with \$5.0 million of Series 2017 Bond proceeds. Weighted Majority approval for additional fleet and equipment acquisitions will be requested in the future.

**Blue Deck Rehabilitation - Phase 4 (design and initial construction)**

Phase 4 of the Blue Deck Rehabilitation provides for design/engineering and construction efforts necessary to address structural systems within the Big Blue Parking Deck. Parking garages are designed with structural tee flanges, shear connectors, and tee beams supporting the parking surfaces. Condition studies completed in 2011 and 2015 indicate that a comprehensive rehabilitation of the structural systems, as well as waterproofing systems should be designed, scheduled and executed over the next five years. Phase 4 of the overall rehabilitation project is estimated to cost approximately \$13.2 million. The Series 2017 Project provides for design/engineering and initial construction services to address needed improvements associated with the replacement of joint sealant throughout the deck, concrete rehabilitation of columns, tee stems, corbels and other associated structural systems, waterproofing of critical areas, replacement of portions of steel roof systems, or other systems. This Series 2017 Project is estimated to cost \$3 million, all of which is intended to be funded with Series 2017 Bond proceeds. In the future, the Authority will request Weighted Majority approval for the remaining portions of Phase 4 as required in order to issue future bonds to fund this work.

**McNamara Parking Deck Rehabilitation - Phase 2 (design)**

Condition studies completed in 2011 and 2015 indicate that a comprehensive rehabilitation of the structural systems of the McNamara Parking Deck, as well as additional waterproofing systems should be designed, scheduled and executed over the next five years. This Series 2017 Project will provide for design/engineering in anticipation of construction of needed improvements associated with the replacement of joint sealant throughout the deck, waterproofing critical areas of the deck, elastomeric coating to address alkali silica reactivity (ASR) issues within the concrete and other rehabilitation items, as recommended. This Series 2017 Project is estimated to cost \$1.0 million, which will be funded with proceeds of the Series 2017 Bonds. In the future, the Authority will request Weighted Majority approval for the

construction elements for Phase 2 and future project phases as required in order to issue future bonds to fund this work.

**Bridges and Roadways Rehabilitation Program (through OY 2018)**

The Authority has an on-going 10-year Bridge and Roadway Improvement Program which outlines rehabilitation efforts required on roads and bridges under Authority control. The Program, designed using industry standard practices, provides for rehabilitation of pavement surfaces along with curb and joint replacements on roads and bridges in order to extend the useful life of the assets. The Program is replacing deteriorated portions of roadway pavement, curbs and associated components/systems on Dingell Drive, McNamara Terminal roadways, Old Goddard Road, Lucas Drive and other roadway and bridges, as needed. Also included in the Program is replacement of expansion joints on bridges and ramps near the McNamara Terminal and bridges on Dingell Drive. The Series 2017 Project work is anticipated to address bridge and roadway rehabilitation needs in OY 2017 beyond what was previously funded, as well as work in OY 2018, and is intended to be funded with \$3.0 million of proceeds of the Series 2017 Bonds. In the future, the Authority will request Weighted Majority approval for additional bridge and roadway project work as required in order to issue future bonds to fund this work.

**Rogell and Burton Drive Intersection Reconfiguration**

The intersection of Rogell Drive at Burton Drive provides access to the East and West Service Drives through a signaled intersection allowing direct left turns on eastbound and westbound Burton Drive approaches and southbound Rogell Drive with a protected left turn phase (green left turn arrow). Long delays and queues typically develop at the intersection. This project will provide for the study, design and construction efforts necessary to rework the intersection to a more typical boulevard intersection with an expanded footprint to provide for development opportunities, including the realignment of both northbound and southbound Rogell Drive to provide improved traffic flow, to make available an expanded median for potential development and future waiting lot areas and enhanced wayfinding signage. The project also includes the installation of two traffic signals and relocating of utilities that may require realignment. This project is estimated to cost approximately \$14.8 million, of which approximately \$1.5 million is planned to be funded with other Airport funds, approximately \$4.3 million with existing bond proceeds, and approximately \$9.0 million is intended to be funded with Series 2017 Bond proceeds.

**Fire Training Facility Restoration and Burn Pit Replacement (design)**

Code 14 of Federal Regulations part 139 requires all ARFF personnel to participate in at least one live fire drill every 12 months. In 1998, the current Airport ARFF training facility was expanded and upgraded to comply with FAA standards. The facility has been in service since that time and the equipment is nearing the end of its useful life, utilizes outdated technology and is currently situated on a gravel pad with surface drainage that limits training and requires water shut-down of the entire facility during the winter months. The current facility utilizes liquefied petroleum gas (LPG) for fire simulation, but does not have the necessary infrastructure to use hydrocarbon fuels similar to Jet A fuel for simulation or to utilize foam for extinguishing the fire. This project will provide for consultant and design services for facility upgrades necessary to better simulate real-life training conditions for Airport fire personnel. This Series 2017 Project is estimated to cost \$1.25 million and will provide for planning and design services associated

with improvements to the existing ARFF Training Facility, including, but not limited to: construction of a permanent building to house the control panel, training room, toilet facilities, lockers and shower facilities; refurbishment of the existing aircraft simulator burn unit including new programmable logic controller; replacement of the existing burn pits with new "water bed" pans and propane delivery system, and the installation of hydrocarbon burn pan/pit; replacement of the existing site civil infrastructure that will permit the use of other fuel and extinguishing material, including hydrocarbons, and permit year-round training. The Authority intends to fund the entire cost of this Series 2017 Project with Series 2017 Bond proceeds. In the future, the Authority will request Weighted Majority approval of the construction portions of the anticipated improvements as required in order to issue future bonds to fund this work.

#### **ARFF Station 100 Improvements**

The footprint of ARFF Station 100 will be increased to add locker room facilities for female fire fighters while existing spaces will be repurposed or renovated for better building utilization. This project is estimated to cost \$1.2 million and provides for planning, design/engineering and construction services required for improvements to existing ARFF Station 100, including: construction of a permanent women's locker room, upgrades to the dormitory facility and relocation of training facilities within the building. The Authority intends to fund the entire cost of this Series 2017 Project with Series 2017 Bond proceeds.

#### **North Terminal Gate Expansion (design)**

The 26-gate North Terminal was designed with an ultimate build-out footprint of 30 gates. Because of increased activity in the terminal, it is anticipated that three additional gates at the north end of the terminal will be built-out, including the addition of jet-bridges, installation of hydrant fueling infrastructure and placement of apron paving. The bulk of the work required for the gate expansion is outside of the terminal and consists of site work, including: apron paving, hydrant fueling infrastructure, fencing, and site utilities. The gate expansion project also includes acquisition and installation of three passenger boarding bridges, including related systems and interior terminal finish details, as required. This Series 2017 Project includes the design work for this gate expansion and is estimated to cost \$4.0 million, all of which is intended to be funded with Series 2017 Bond proceeds. In the future, the Authority will request Weighted Majority approval of the construction of the gate expansion as required in order to issue future bonds to fund this work.

#### **McNamara Terminal Baggage System Controls (design and initial construction)**

This Series 2017 Project provides for planning, design/engineering and initial construction services required to engineer and install improvements to the baggage system at the McNamara Terminal. The estimated cost of this Series 2017 Project is \$28.5 million, all of which is planned to be funded with Series 2017 Bond proceeds. In the future, the Authority will request Weighted Majority approval of the completion of construction (currently estimated to cost \$13.5 million) as required in order to issue future bonds to fund this work.

#### **McNamara Terminal Tram Controls (design and initial construction)**

This Series 2017 Project provides for planning, design/engineering and initial construction services required to engineer and install improvements to the passenger tram control system at the McNamara Terminal. This Series 2017 Project is estimated to cost approximately \$8.5

million, all of which is planned to be funded with Series 2017 Bond proceeds. In the future, the Authority will request Weighted Majority approval of the completion of construction (currently estimated to cost \$4.5 million) as required in order to issue future bonds to fund this work.

### **3.3.3 Other Approved Capital Projects**

As described earlier, the Other Approved Capital Projects are those CIP projects that a Weighted Majority has approved but have not been previously funded in whole and also are not being funded with Series 2017 Bond proceeds. The Authority presently intends to issue Additional Bonds during the forecast period of this Report to fund the balance of the cost of these Other Approved Capital Projects. The Other Approved Capital Projects are shown in **Exhibit B**. Preliminary cost estimates for the Other Approved Capital Projects total approximately \$52.4 million. The capital costs of the Other Approved Capital Projects are included in the financial analysis contained in Chapter 4 of this Report.

The Other Approved Capital Projects include the following:

- Taxiway Kilo (K) Reconstruction (through CY 2018)
- Taxiway Z (Southern Portion) Relocation and AOA Service Road Modification and Extension
- L.C. Smith Terminal and Berry Terminal Demolition

### **3.3.4 Financial Impact for the Series 2017 Projects and the Other Approved Capital Projects**

Sources of funding for the Series 2017 Projects and the Other Approved Capital Projects are described in Chapter 4 of this Report and presented on Exhibits A and B. The estimated financial impacts of the Series 2017 Projects and Other Approved Capital Projects are incorporated in this Report.

Also, as indicated previously, the capital costs related to the existing bond proceeds for previously funded Other CIP Projects are included in the financial analysis contained in Chapter 4 of this Report. However, the capital costs of the Other CIP Projects for which Weighted Majority approval has not yet been requested are not included in the financial analysis in Chapter 4 of this Report.

It is likely that the Authority will issue Additional Bonds during the forecast period to fund certain Other CIP Projects not yet approved by a Weighted Majority. In addition, it is possible that during the forecast period, the Authority could consider other future Airport improvements not planned at this time. However, it is assumed that the Authority will only undertake other future projects when demand warrants, necessary environmental reviews have been completed, approvals have been obtained, and associated project costs can be supported by a reasonable level of Airport user fees or other discrete funding sources such as state and federal grants, PFCs, and third-party funds.

## **4 Financial Framework and Analysis**

This Chapter discusses the financial framework for the Airport, including an overview of the governing body, management structure of the Authority, financial structure including Airport cost centers, certain obligations of the Master Airport Revenue Bond Ordinance (Master Bond Ordinance), and certain provisions contained in the Airport Use and Lease Agreements (Airline Agreements) with the Signatory Airlines (defined herein) and in other key agreements at the Airport. Additionally, the plan of finance for the Series 2017 Projects and the Other Approved Capital Projects including the planned Series 2017 Bonds and Additional Bonds, Debt Service forecasts, Operating Expenses, Revenues forecasts, debt service coverage, and other key financial analyses are described in this Chapter.

Exhibits contained at the end of this Chapter present results for actual OY 2016, budget OY 2017, budget OY 2018, and forecasts for OY 2019 through OY 2025, also referred to as the forecast period.

### **4.1 Airport Governing Body**

Pursuant to the Authority Act the Authority has sole and exclusive operational jurisdiction for the Airport and Willow Run Airport, with the exclusive right, responsibility and authority to occupy, operate, control and use them. The Authority is a political subdivision and instrumentality of the Charter County of Wayne, Michigan (Wayne County) and a public agency of Wayne County for the purposes of federal and state laws, but is not subject to any county charter requirements or the direction or control of either the Wayne County Executive or Commission. The Authority is managed by an independent, seven-member Board. Four members are appointed by the Wayne County Executive, two members are appointed by the Governor of the State of Michigan, and one member is appointed by the Wayne County Commission.

### **4.2 Management Structure**

The day-to-day operations of the Authority are managed by the Chief Executive Officer, who is appointed by the Board of Directors. The Chief Executive Officer appoints the Chief Financial Officer and other senior staff of the Authority. The Chief Executive Officer and senior management team lead eight Authority Divisions: Chief Executive Officer Division, Finance Division, Administration Division, Public Safety Division, Operations & Maintenance Division, Planning Design & Construction Division, Terminal Operations Division, and Business Development & Real Estate Division. Each Division of the Authority is responsible for several Departments. The executive team of the Authority is a full-time staff of professional and technical personnel located at the Airport.

### **4.3 Financial Structure**

The Authority's airports include both the Airport and Willow Run Airport (together, the Airports). For accounting purposes, the Authority segregates expenses and revenues into cost centers, which can be units of activities, groups of employees, and geographical areas of the Airports.

The Authority funds its operation of the Airports with Revenues generated from Airports rentals, fees, and charges. The Authority is financially self-sustaining with Revenues generated from airline and other tenant fees, grants, Passenger Facility Charges (PFCs), concession fees, and other Revenues of the Airports. Airport capital improvements are funded by the Authority with: (1) federal, state, and other grants-in-aid, (2) Revenues generated from the Airports rentals, fees and charges; (3) Airport revenue bond proceeds; (4) PFC revenues, (5) CFC revenues, and (6) other Authority funds.

#### **4.3.1 Accounting Structure**

Pursuant to the Airline Agreements, the Authority created various cost centers for the purpose of accounting for and allocating costs and revenues of the Airport in order to establish airline rentals, fees, and charges for the use of the Airfield and the Terminals. Per the Airline Agreements, the airline cost centers are the South Terminal Cost Center, North Terminal Cost Center, and the Airport Cost Center. As described below, rate-setting at the Airport is per a residual methodology, where Activity Fees (landing fees) are calculated on an Airport-wide residual basis and Terminal Rentals are calculated to recover the costs of each respective cost center. The Signatory Airlines have the financial risk for the Airport operation and benefit from non-airline revenue credits in the calculation of Activity Fees. The Airline Agreements also have an annual settlement provision that sets a process for the reconciliation of rates and charges with the airlines at the end of each OY.

The Airline Agreements specifically indicate how Operation and Maintenance (O&M) Expenses, Bond Debt Service, Other Available Moneys, and Revenues of the Airport are allocated to each cost center. The Series 2017 Bonds are payable from the Net Revenues from all cost centers of the Airport. A definition of each cost center per the Agreement is contained below.

#### **Cost Centers:**

- **South Terminal Cost Center** shall mean the Cost Center which includes the land identified as the South Terminal and all facilities, equipment and improvements now or hereafter located thereon, including all passenger terminal buildings, connecting structures, passenger walkways and tunnels, concourses, hold areas and FIS facilities, and any additions and improvements thereto, as that land, facilities, equipment and improvements may change from time to time.
- **North Terminal Cost Center** shall mean the Cost Center which includes the land identified as the North Terminal and all facilities, equipment and improvements now or hereafter located thereon, including all passenger terminal buildings, connecting structures, passenger walkways and tunnels, concourses, hold areas and FIS facilities, and any additions and improvements thereto, as that land, facilities, equipment and improvements may change from time to time.
- **Airport Cost Center** shall mean the Cost Center which includes the land identified as the Airport and all facilities, equipment and improvements now or hereafter located



thereon, and any additions and improvements thereto, as that land, facilities, equipment and improvements may change from time to time with the exception of those Areas of the Airport that are the South Terminal Cost Center and North Terminal Cost Center.

#### **4.3.2 Master Bond Ordinance**

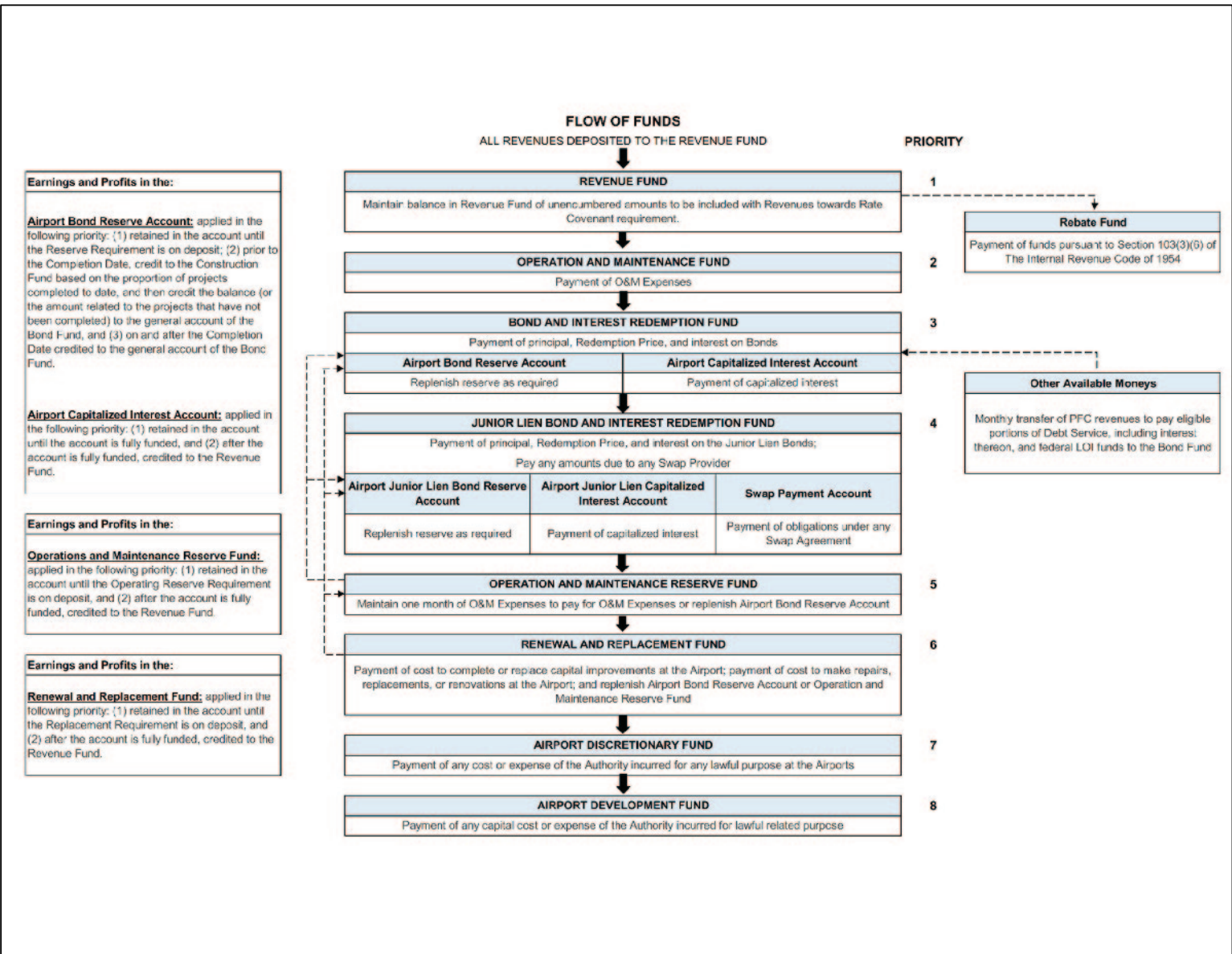
The Master Bond Ordinance as adopted by the Board of the Authority on September 26, 2003, and as amended, authorizes the issuance of airport revenue bonds to pay the costs of acquiring and constructing Airport improvements, among other items. The Series 2017 Bonds are being issued pursuant to the provisions of the Master Bond Ordinance, and, with respect to the Series 2017 Senior Lien Bonds, the Senior 2017 Ordinance, and with respect to the Series 2017 Junior Lien Bonds, the Junior 2017 Ordinance both adopted by the Board on March 15, 2017. The Master Bond Ordinance, the Senior 2017 Ordinance, and the Junior 2017 Ordinance are collectively referred to as the “Ordinance.” The Series 2017 Bonds are payable solely from the Net Revenues of the Authority, certain funds and accounts under the Ordinance, and other amounts payable under the Ordinance. Those Series 2017 Bonds that are Junior Lien Bonds are subordinate to those that are Senior Lien Bonds.

Pursuant to the Master Bond Ordinance, the Authority has pledged Net Revenues to the payment of the Series 2017 Bonds. Net Revenues are all Revenues of the Authority remaining after payment of O&M Expenses at the Airport. Revenues include all amounts derived from the operation of the Airport, including all moneys deposited into the Revenue Fund, from whatever source, and all income derived from the charges, fees, rentals and rates charged for services, facilities and commodities furnished by the Airport, whether such income shall be derived from its function as an Airport or not, and including, but not by way of limitation, concessions, rentals, auto parking fees, service charges derived from the operation of the terminal complex buildings and facilities, airplane landing fees, non-airline gasoline fees and miscellaneous charges and rentals from other facilities and services and investment earnings or general revenues derived from the operation of the Airport accumulated by the Authority prior to deposit in the Revenue Fund. Revenues do not include (i) rentals or other amounts to be paid in the future by any Person pursuant to a lease or other agreement with the County or the Authority, which rentals or other amounts are pledged for the payment of bonds issued to provide funds to construct Special Facilities, (ii) the proceeds of federal grants or PFCs, or the proceeds of any other grant, charge or tax intended as a replacement therefor or other capital contributions from any source, (iii) the Net Proceeds of insurance or condemnation proceeds resulting from the damage or destruction or taking of any portion of the Airport, or (iv) Special Purpose Revenues, which include Customer Facility Charges (CFCs) imposed on Airport rental car customers.

#### **Flow of Funds**

Article V of the Master Bond Ordinance establishes certain funds and accounts and the priority for the flow of Revenues and certain other amounts to such funds and accounts, as described below. **Figure 4-1** illustrates the flow of funds as set forth in the Master Bond Ordinance.

Figure 4-1  
FLOW OF FUNDS



Source: Master Bond Ordinance

As long as there are Bonds outstanding, all Revenues are required to be deposited into the Revenue Fund. Revenues will be set aside for the payment of the following amounts or deposited or transferred to the following funds and accounts in the following order of priority:

**First: to the Operation and Maintenance Fund.** On or prior to the 25<sup>th</sup> day of the month by the Trustee at the direction of an Authorized Officer, a sum sufficient to provide for the payment of the next calendar month's O&M Expenses for the Airport. Moneys in the Operation and Maintenance Fund, held by Trustee, shall be used only for the purpose of paying O&M Expenses, including payments on lines of credit, notes or other obligations issued for operating cash flow purposes.

**Second: to the Bond and Interest Redemption Fund (Bond Fund).** Except as otherwise provided in the Master Bond Ordinance, moneys on deposit in the Bond Fund are used for the purpose of paying the principal, Redemption Price, and interest on Bonds, or paying obligations under a Swap Agreement entered into by the County prior to January 1, 1998. Separate accounts created in the Bond Fund include the Airport Bond Reserve Account and the Airport Capitalized Interest Account. Out of the Revenues and other moneys remaining in the Revenue Fund, after transfers, if required, for deposit into the Operation and Maintenance Fund, there shall be set aside monthly on the first day of the month and transferred to the Bond Fund a sum sufficient to provide for the next payment when due of the principal and interest on the Bonds or in the subaccount in the Airport Capitalized Interest Account for Bonds of a particular Series available to pay capitalized interest for the current OY on such Series of Bonds, and less (i) the sum of any funds, including Other Available Moneys, actually on deposit in the Bond Fund and (ii) payments received from a Swap Provider. In the event of a deficiency in the amount required to be on deposit in the Airport Bond Reserve Account, an amount from Revenues is required to restore the amount on deposit in the Airport Bond Reserve Account to required levels in accordance with the terms of the Master Bond Ordinance.

**Third: to the Junior Lien Bond and Interest Redemption Fund (Junior Lien Bond Fund).** Except as otherwise provided in the Master Bond Ordinance, moneys on deposit in the Junior Lien Bond Fund are used for the purpose of paying the principal, Redemption Price, and interest on Junior Lien Bonds. Separate accounts created in the Junior Lien Bond Fund include the Airport Junior Lien Bond Reserve Account and the Airport Junior Lien Capitalized Interest Account. Out of the Revenues and other moneys remaining in the Revenue Fund, after transfers, if required, for deposit into the Operation and Maintenance Fund and Bond Fund, there shall be set aside monthly on the first day of the month and transferred to the Junior Lien Bond Fund a sum sufficient to provide for the next payment when due of the principal and interest on the Junior Lien Bonds or in the subaccount in the Airport Capitalized Interest Account for Junior Lien Bonds of a particular Series available to pay capitalized interest for the current OY on such Series of Junior Lien Bonds, and less (i) the sum of any funds, including Other Available Moneys, actually on deposit in the Junior Lien Bond Fund and (ii) payments received from a Swap Provider.

**Fourth: to the Operation and Maintenance Reserve Fund.** On the last day of each fiscal quarter, from the Revenues and other moneys remaining in the Revenue Fund after satisfying the requirements of the above Funds there shall be transferred to and deposited into the Operation and Maintenance Reserve Fund an amount equal to one forty-eighth of the estimated annual O&M Expenses of the Airport until the estimated annual O&M Expenses for the period of one month as projected in the most recent Authority budget for the Airport (the Operating Reserve Amount) is on deposit in the Operation and Maintenance Reserve Fund. While any of the Bonds remain Outstanding, the Operating Reserve Amount shall be adjusted to reflect changes in O&M Expenses as the same are estimated by the Authority in its budgets for the Airport. Transfers from the Operation and Maintenance Reserve Fund for the payment of O&M Expenses, or for the restoration of the Senior Lien Bond Reserve Account or Junior Lien Bond Reserve Account as provided for in the Ordinance, to be replaced from Revenues first received thereafter in the Revenue Fund which are not required for O&M Expenses, current debt service requirements, or to restore the Senior Lien Bond Reserve Account or the Junior Lien Bond Reserve Account. In addition, when required by a Swap Agreement, a reserve requirement as established by that agreement, and is held in in the Operation and Maintenance Reserve Fund.

**Fifth: to the Renewal and Replacement Fund.** Except as otherwise provided in the Master Bond Ordinance, the money credited to the Renewal and Replacement Fund shall be disbursed to the Authority by the Trustee at the request of an Authorized Officer, confirmed in writing, for the purpose of paying (i) cost of completing or replacing capital improvements at the Airport, and (ii) making repairs, replacements or renovations at the Airport. Moneys in the Renewal and Replacement Fund shall also be used to restore the Bond Reserve Account or the Junior Lien Bond Reserve Account to the Reserve Requirement to the extent moneys in the Revenue Fund and the Operation and Maintenance Reserve Fund are insufficient therefor and to restore the Operation and Maintenance Reserve Fund to the Operating Reserve Amount to the extent moneys in the Revenue Fund are insufficient therefor. On the last day of each fiscal quarter, there shall be transferred from the Revenues on deposit in the Revenue Fund after satisfying the funds described above, the sum of \$125,000 until the sum of \$2,500,000 (the Replacement Requirement) is on deposit in the Renewal and Replacement Fund. Transfers from the Renewal and Replacement Fund are replaced in quarterly installments of \$125,000 from moneys in the Revenue Fund not required by the Ordinance to be used for the Operation and Maintenance Fund, the Bond Fund, the Senior Lien Bond Reserve Account, the Junior Lien Bond Reserve Account, or the Operation and Maintenance Reserve Fund.

**Sixth: to the Airport Discretionary Fund.** After satisfying the requirement of the Ordinance, quarterly, the sum of \$87,500 shall be transferred from the Revenue Fund to the Airport Discretionary Fund and applied, in the discretion of the Chief Executive Officer subject to applicable agreements, to the payment of any cost or expense of the Authority incurred for any lawful purpose at the Airports. In the event of a deficiency in any \$87,500 quarterly transfer, the amount of such deficiency shall be added to the deposit required to be made by the Authority in the next quarterly transfer.

**Seventh: to the Airport Development Fund.** In addition to and after satisfying the foregoing requirements of the Ordinance, on the last day of each quarter of each OY, one quarter of the amount calculated in accordance with applicable agreements and included in the budgeted rates and charges for the Airport for the OY for deposit in the Airport Development Fund shall be transferred from the Revenue Fund to the Airport Development Fund and applied, at the written discretion of the Chief Executive Officer, to the payment of any capital cost or expense of the Authority incurred for any lawful related purpose. In the event of any deficiency in the required quarterly transfer, the amount of such deficiency shall be added to the deposit required to be made to the Airport Development Fund in the next quarterly transfer. As later described in this Report, the Airport Development Fund as defined in the Agreement is an amount of \$5 million, which such amount has been and shall be escalated each OY beginning in OY 2002 to reflect percentage increases in the Producer Price index. The amount budgeted for OY 2017 for the Airport Development Fund is \$7.7 million.

#### **Rate Covenant**

In Section 604 of the Master Bond Ordinance, the Authority covenants, while any Bonds are Outstanding, to fix, charge and collect rates, fees, rentals and charges for the use and operation of the Airport as may be necessary or appropriate to produce Revenues in each OY which will be at least sufficient to provide for:

- i. the payment of O&M Expenses for the OY;
- ii. together with PFC proceeds, including interest thereon, deposited with the Trustee with respect to such OY, the amounts needed to make the deposits required for the Application of Revenues pursuant to the Master Bond Ordinance for such OY to the Bond Fund; and
- iii. together with Other Available Moneys deposited with the Trustee with respect to such OY, to the extent not needed to make the deposits required under the Master Bond Ordinance for such OY to the Bond Fund, and any unencumbered cash balance held in the Revenue Fund on the last day of the OY preceding the OY for which the calculation is made not then required to be deposited in any Fund or Account.
  - (a) the amounts needed to make the deposits required under the Master Bond Ordinance for such OY to the Junior Lien Bond Fund, the Operation and Maintenance Reserve Fund, the Renewal and Replacement Fund, the Airport Discretionary Fund, and the Airport Development Fund, and
  - (b) an amount not less than 25% of the Debt Service due and payable on Bonds during such OY.

The Authority also covenants that the rates, fees, rentals, and charges shall be revised from time to time as may be necessary to produce the above amounts, provided that any fee, rent, charge,

or rate fixed pursuant to a lease or contract shall not be revised except as provided in such lease or contract.

**Additional Bonds**

Pursuant to the Master Bond Ordinance in Section 208, the Authority is permitted to issue a Series of Bonds on a parity basis with Outstanding Bonds or Additional Bonds as long as no Default or Event of Default under the Master Bond Ordinance is known to the Authority at the time of adoption of such Series Ordinance. Prior to issuing any Additional Bonds, the Authority must obtain an opinion of Bond Counsel that the issuance will not impair the tax-exempt status of any prior Series of Bonds or Junior Lien Bonds. For Additional Bonds, either of the following is required, unless the purpose for which a Series of Bonds to be issued is to finance the cost of completing the acquisition, construction and installation of an element of the CIP with respect to which a Series of Bonds proposed to be issued for such purpose are proposed to be issued in principal amount of not to exceed 10% of the face amount of Series of Bonds originally issued to pay for the costs of that element of the CIP.

1. a report of an Airport Consultant projecting (i) Revenues and Revenue Fund balances plus (ii) Other Available Moneys and any amounts estimated to be available to pay capitalized interest sufficient for the first three full OYs commencing after completion of construction of the capital projects to be funded from the proceeds of the Series of Bonds proposed to be issued to satisfy the rate covenant described in Section 604 of the Master Bond Ordinance and any other applicable covenants contained in any Series Ordinance taking into account the Series of Bonds proposed to be issued; or
2. the Authority may authorize the issuance of a Series of Bonds if it delivers to the Trustee a certificate of the Chief Financial Officer, accompanied by an Accountant's report, certifying that, taking all Outstanding Bonds, other than any Bonds proposed to be refunded by the Series of Bonds proposed to be issued, and the Series of Bonds proposed to be issued into account as if it had been issued at the beginning of the most recent OY for which audited financial statements for the Authority are available, the Net Revenues together with Other Available Moneys actually deposited in the Bond Fund for such OY were not less than 125% of the Debt Service with respect to such Outstanding Bonds and proposed Series of Bonds for such period. In calculating Net Revenues, any unencumbered fund balance in the Revenue Fund on the last day of the OY preceding the OY for which the calculation is made may be taken into account as provided in Section 604 of the Master Bond Ordinance.

**Additional Junior Lien Bonds**

Pursuant to the Master Bond Ordinance in Section 208A, the Authority is permitted to issue one or more additional series of Junior Lien Bonds upon the satisfaction of the following conditions: (1) the Authority is not aware of the existence of any Default or Event of Default under the Master Bond Ordinance at the time the Series Ordinance for such Series of Junior Lien Bonds is adopted; and (2) the issuance of the Junior Lien Bonds will not, in the opinion of Bond Counsel, impair the tax exempt status of any prior Series of Bonds or Junior Lien Bonds.

In addition, prior to issuing a Series of Junior Lien Bonds, other than Junior Lien Bonds proposed to be issued to refund Bonds or Junior Lien Bonds, the Chief Financial Officer shall certify to the Trustee that the sum of the following is not less than 110% of the Debt Service with respect to such Outstanding Bonds and Outstanding Junior Lien Bonds and of the average annual Debt Service with respect to the proposed Series of Junior Lien, in each case for the OY in which the Series of Junior Lien Bonds is proposed to be issued and the four next succeeding OYs.

- a) the Net Revenues for the most recently completed OY,
- b) the amount of Other Available Moneys actually deposited in the Bond Fund for the most recently completed OY, and
- c) the average of (i) the amount of Other Available Moneys actually deposited in the Junior Lien Bond Fund for the most recently completed OY, and (ii) each annual amount of Other Available Moneys which the Airport Consultant certifies to the Authority may reasonably be expected to be received by the Authority and deposited in the Junior Lien Bond Fund over the period that the proposed and outstanding Series of Junior Lien Bonds are projected to be Outstanding.

In calculating Net Revenues, any unencumbered fund balance in the Revenue Fund on the last day of the OY preceding the OY for which the calculation is made may be taken into account as provided in Section 604 of the Master Bond Ordinance. In making the calculations required, the Authority shall also take into account (a) all Outstanding Bonds and Outstanding Junior Lien Bonds, other than Bonds or Junior Lien Bonds proposed to be refunded by the Series of Junior Lien Bonds proposed to be issued, and (b) the Series of Junior Lien Bonds proposed to be issued as if it had been issued at the beginning of the most recent OY for which audited financial statements for the Airport are available. The certificate of the Chief Financial Officer shall also be accompanied by an Accountant's report verifying compliance with the requirements for the Master Bond Ordinance.

#### **4.3.3 Airport Use and Lease Agreements**

The Authority has long-term Airline Agreements with certain airlines operating at the Airport (Signatory Airlines). The Airline Agreements are effective through September 30, 2032. The Agreements establish, among other things, procedures for setting and adjusting Signatory Airline rentals, fees and charges to be collected for the use of Airport facilities. The Signatory Airlines at the Airport include the following: Air France, American, Delta, Federal Express, KLM Royal Dutch Airlines<sup>81</sup>, Lufthansa German Airlines, Southwest, Spirit, United, and United Parcel Service. Together, the Signatory Airlines and their respective regional affiliates accounted for approximately 97.3% of enplaned passengers at the Airport in OY 2016, and approximately 96.5% of Airport landed weight in OY 2016.

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<sup>81</sup> KLM Royal Dutch Airlines is not currently operating at the Airport.

The Airline Agreements govern airline use of certain Airport facilities, including the Airfield, aircraft aprons, both Terminals, including baggage claim, ticket counters and gate areas and permits the Signatory Airlines to lease Preferential Use Premises and Shared Use Premises. Preferential Use Premises generally include holdroom areas and gates, ticket counters, office space, storage areas, airline club lounges, and employee break rooms leased to a Signatory Airline and to which the Signatory Airline has a preferential right over all other air carriers. Shared Use Premises are space and facilities at the Airport used jointly or in common by air carriers and generally include baggage claim areas and baggage makeup equipment, excluding Authority-controlled airline space and FIS facilities.

The airline rate-setting approach and capital projects approval provisions of the Airline Agreements are summarized in the following sections. The airline rate-setting methodology is used as the basis for forecasting airline revenues for this Report.

### **Airline Rate-Setting Methodology**

As described earlier in this Chapter, the Airport has been segregated into three cost centers for the purposes of setting rates and charges: the South Terminal Cost Center, the North Terminal Cost Center, and the Airport Cost Center. Overall, the airline rate-setting approach per the Airline Agreements is considered an Airport-wide residual methodology. Per this approach, the Signatory Airlines are obligated to pay the net cost of operating the entire Airport, including O&M Expenses, Debt Service, and other obligations of the Master Bond Ordinance. Therefore, the Signatory Airlines ensure that the Authority will meet its Rate Covenant obligations set forth in the Master Bond Ordinance.

Pursuant to the Agreements, the Terminal Rental Rates for the South Terminal and North Terminal are calculated by dividing the cost for each by the total preferential space and shared use space of each terminal. The cost for each of the terminals is calculated as the sum of the following for each OY:

- i. O&M Expenses allocated to each terminal cost center; and
- ii. Bond Debt Service allocated to each terminal cost center;

Minus, for such OY:

- iii. Other Available Moneys, including PFC revenues, allocated to each terminal cost center and used by the Authority in such OY to pay Bond Debt Service allocated to each cost center;
- iv. The total amount of International Facilities Use Fees allocated to each cost center; and
- v. The total amount of Authority-Controlled Airline Space Revenue other Terminal Rental Revenue allocated to each terminal.

The remaining costs of the Airport, including O&M Expenses, Debt Service, and other obligations of the Master Bond Ordinance, not paid for through other Revenues, such as South Terminal Rentals, North Terminal Rentals, and other non-airline Revenues, are paid for by the airlines through Activity Fees. The Activity Fee Rate is established through the Airline Agreements, and



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is a rate charged on the basis of a thousand pounds of aircraft maximum landing weight. As described above, Activity Fees under the Airline Agreements are calculated on an Airport-wide residual basis where the Authority recovers the net Revenue Requirement from the Signatory Airlines. This net Revenue Requirement is calculated per the sum of the following for each OY:

- i. Total Airport O&M Expenses; plus
  - ii. 125% of the amount of principal and interest due, net of any capitalized interest on all then Outstanding Bonds, less (a) any unencumbered amounts on deposit in the Revenue Fund on the last day of the OY preceding such OY that are useable to satisfy the rate covenant requirements of the Master Bond Ordinance and (b) Other Available Moneys used in such OY to pay Bond Debt Service; plus
  - iii. Deposits into the Bond Reserve Account, the Junior Lien Bond Reserve Account, the Operation and Maintenance Reserve Fund and the Renewal and Replacement Fund required for such OY pursuant to the provisions of all applicable Ordinances; plus
  - iv. An amount equal to the Airport Development Fund transfer for such OY (this amount is escalated each OY to reflect percentage increases in the Producer Price Index and was budgeted at \$7.7 million in OY 2017); plus
  - v. The annual Airport Discretionary Fund transfer, which is established as an amount of \$350,000 for each OY;
- minus:
- vi. All Terminal Charges collected by the Authority for such OY, taking into account all end-of-year payments by the Signatory Airlines or end-of-year refunds by the Authority pursuant to Articles III.H.4 and III.H.5 of the Agreements and as described below;
  - vii. All International Use Fees collected by the Authority during such OY;
  - viii. All Authority-Controlled Airline Space Revenue, North Terminal Rental Revenue, and South Terminal Rental Revenue;
  - ix. All concession and parking revenue; and
  - x. All other Revenues received during such OY, except (a) up to but not exceeding \$2.5 million of Revenues attributable to an automated vehicle identification program for the entire Airport, and (b) all proceeds received by the Authority from the sale of certain parcels of Airport property located on the west side of the Airfield.

The Airline Agreements allow for the annual calculation, adjustment, and settlement of Signatory Airline rentals, fees, and charges for each OY. Per Article III.H.4 of the Agreements, the Authority calculates a “Mid-Year Projection” of Signatory Airline rentals, fees, and charges. If the Mid-Year

Projection results in a variation to the budgeted rentals, fees, and charges, the Authority may adjust such accordingly to conform to the Mid-Year Projection. Article III.H.5 of the Agreements also allows for an annual settlement of Signatory Airline rentals, fees, and charges. Any resulting adjustment-to-actual resulting from the settlement calculation is either refunded to the Signatory Airlines or collected by the Authority from the Signatory Airlines as the case may be.

**Signatory Airline Approval of Capital Improvement Projects (Weighted Majority approval)**

The Authority and the Signatory Airlines agreed in the Airline Agreements that certain Capital Projects are subject to Signatory Airline approval, referred to as Weighted Majority approval. Article IV.B of the Airline Agreements specifies that the Authority may issue bonds to finance the costs of capital projects and may include the Bond Debt Service, including among other things, coverage requirements) on such bonds in Signatory Airline rentals, fees, and charges only after receiving approval of a Weighted Majority for such capital projects. A Weighted Majority is defined as either (a) Signatory Airlines which, in the aggregate, landed 85% or more of the landed weight of all Signatory Airlines for the preceding 12-month period for which records are available, or (b) all but one of the Signatory Airlines regardless of landed weight. The Authority has received all required approvals from the Signatory Airlines to undertake the Series 2017 Projects as described in Chapter 3 and on Exhibit A, and to include the Series 2017 Bond Debt Service in the calculation of Signatory Airline rentals, fees, and charges.

The Authority may, at any time, make capital expenditures for any lawful Authority purpose that are not subject to Signatory Airline approval from the Airport Discretionary Fund and the Airport Development Fund with some limitations as outlined in the Airline Agreements.

**4.3.4 Other Agreements**

The Authority has agreements with other entities that operate, provide services or occupy space at the Airport, including food court restaurants, cafes, pubs, full service restaurants, newsstands, retail shops, and display advertising, among other specialties. In addition, several Airport tenants have executed lease agreements with the Authority governing their occupancy and use of space on Airport property. In regard to terminal food and beverage, the Authority has contracts with nine concessionaires at both terminals. For retail, the Authority also has contracts with nine concessionaires at both terminals

The following rental car brands operate at the Airport: Budget-Payless, Hertz-Firefly, Avis, Alamo-National, Dollar-Thrifty, and Enterprise. All of these rental car companies pay privilege fees and must collect and remit CFCs, which are excluded from Revenues per the Master Bond Ordinance. The Authority contracts with National Garages, Inc. doing business as Central Parking Systems, Inc. to manage and operate on-Airport automobile parking facilities. In addition, the Authority has agreements with cargo facility and fixed base operators and tenants leasing hangars and buildings.

In general, the business terms of these Airport non-airline agreements are based on industry standards and practices. Additional summaries of key non-airline agreement terms are provided below:

- **Terminal Food and Beverage Agreements:**
  - Concession fees average approximately 17% of gross revenues
  - Minimum annual guarantee (MAG) equal to 85% of prior year gross revenues or prior year MAG, whichever is greater annually
  - Total MAG amounts for OY 2016 were approximately \$11.7 million
  
- **Terminal Retail Agreements:**
  - Percentage rents average approximately 19% of gross revenues
  - MAG equal to 85% of prior year gross revenues or prior year MAG, whichever is greater annually
  - Total MAG amounts for OY 2016 were approximately \$9.8 million
  
- **Parking Management Agreement:**
  - Includes automobile parking facilities
  - Term of agreement with Central Parking Systems, Inc. is through September 30, 2016 with up to two additional one-year extensions at the option of the Authority. The Authority exercised both one-year extensions of the agreement through September 30, 2018.
  
- **Rental Car Concession Agreement:**
  - Concession fees equal to 10% gross revenues or the MAG, whichever is greater annually
  - MAG equal to 85% of prior year gross revenues or prior year MAG, whichever is greater annually
  - Total MAG amounts for OY 2016 were approximately \$19.4 million
  - Term of agreement is six years expiring on June 30, 2020
  
- **Transportation Network Company Permits:**
  - As of June 2017, Authority currently has permits with Uber Technologies, Inc. and Lyft that went into effect in March 2017
  - Permittees pay access fee of \$5 per Airport pick-up and drop-off
  - Term of permit is one year with one-year extension periods at Authority's option. Authority and permittees may terminate at any time.

#### 4.4 Plan of Finance

Exhibits A and B, respectively, present the total project costs along with estimated funding sources for the Series 2017 Projects and the Other Approved Capital Projects discussed previously in Chapter 3. These estimates are based on currently available information regarding the estimated cost and timing of the Series 2017 Projects and Other Approved Capital Projects. As presented in Exhibit A, the Series 2017 Projects are estimated to cost approximately \$153.6 million and the Other Approved Capital Projects are estimated to cost approximately \$52.4 million as shown on Exhibit B. Additional detail regarding the estimated funding sources for the Series 2017 Projects and Other Approved Capital Projects is presented in this section.

The Series 2017 Projects and Other Approved Capital Projects are planned to be funded entirely with proceeds of Bonds, including proceeds of Bonds issued previously, proceeds of the Series 2017 Bonds, and Future Bonds Proceeds or proceeds of other Additional Bonds expected to be issued in the future. Specifically, the Authority plans to issue the Series 2017 Bonds to pay the costs of the Series 2017 Projects in whole or in part. Currently, the Authority is planning to issue Additional Bonds over the next several years to fund the cost of remaining portions of certain Series 2017 Projects and the cost of the Other Approved Capital Projects based on future timing and cash flow needs. As presented on Exhibit A, the Series 2017 Projects are estimated to be funded by approximately \$1.5 million of other Airport funds, approximately \$36.1 million of existing Bond proceeds, \$101.0 million of Series 2017 Bond proceeds, and approximately \$15.0 million of Future Bond Proceeds. As shown on Exhibit B, approximately \$16.0 million of existing Bond proceeds and approximately \$36.4 million of Future Bond Proceeds are expected to fund costs of the Other Approved Capital Projects. Assumptions related to the issuance of the Series 2017 Bonds and future Bonds associated with the Future Bonds Proceeds are provided below in Section 4.5.

#### **4.5 The Series 2017 Bonds and Future Bonds**

The Authority is planning to use the proceeds of the Series 2017 Bonds, together with other available funds, to (1) with respect to the Series 2017A Bonds and the Series 2017B Bonds, pay the costs of acquiring, constructing and installing the Series 2017 Projects, (2) with the respect to the Series 2017C Bonds, provide funds to refund a portion of the Series 2007B Bonds, (3) make a deposit to the Airport Bond Reserve Account, (4) pay capitalized interest during construction of the Series 2017 Projects, and (5) pay the costs of issuance of the Series 2017 Bonds.

The Authority is also planning to use the proceeds from the sale of the Series 2017 Junior Lien Bonds, together with other available funds, to (1) provide funds to refund all or a portion of the Series 2007 Junior Lien Bonds, (ii) make a deposit to the Junior Lien Bond Reserve Account, and (iii) pay costs of issuance of the Series 2017 Junior Lien Bonds.

Certain portions of some of the Series 2017 Projects and the Other Approved Capital Projects are planned to be funded by Future Bond Proceeds as identified in Chapter 3 of this Report.

For the purposes of this Report, the financial analysis contained herein includes, in addition to all Outstanding Bonds, the planned issuance of the Series 2017A Bonds, the Series 2017B Bonds, and Additional Bonds assumed to be issued to fund certain portions of some of the Series 2017 Projects and the Other Approved Capital Projects. The Report does not take into consideration any savings associated with the refunding of the Series 2007B Bonds and the Series 2007 Junior Lien Bonds.

**Table 4-1** presents a listing of estimated sources and uses of funds for the proposed Series 2017A Bonds and Series 2017B Bonds. The estimated sources and uses of funds and debt service for the proposed Series 2017 Bonds were prepared by the Authority's financial advisor, PFM Financial Advisors LLC (PFM).

**Exhibit C** presents annual Debt Service for the OY 2016, budgeted OY 2017 and 2018, and forecast period of OY 2019 through OY 2025. Series 2017A Bonds debt service is forecasted to increase from approximately \$1.4 million in OY 2018 to approximately \$2.8 million in OY 2020 and then remain at that level throughout the forecast period. The Series 2017B Bonds debt service is forecasted to increase from approximately \$354,000 in OY 2018 to approximately \$2.3 million in OY 2020 and then remain at that level throughout the forecast period. The debt service on the Series 2017A Bonds and the Series 2017B Bonds debt service, together, is forecasted to increase to approximately \$8.0 million in OY 2030 and generally remain at that approximate level through maturity. Debt service on a future series of Bonds associated with the Future Bond Proceeds is currently estimated to be approximately \$2.4 million in OY 2020 and increase to approximately \$3.0 million in OY 2021 and then remain at that level throughout the forecast period. Debt Service estimates for the Series 2017 Bonds and future Bonds were provided by PFM and are based on the assumptions included in **Table 4-2**.

**Table 4-1****SERIES 2017A BONDS AND SERIES 2017B BONDS ESTIMATED SOURCES AND USES (dollars in thousands) <sup>1</sup>**

Sources	Series 2017A (Non-AMT)	Series 2017B (AMT)	Total
Par Amount	\$54,540	\$44,260	\$98,800
Premium	4,075	2,195	6,270
<b>Total Sources</b>	<b>\$58,615</b>	<b>\$46,455</b>	<b>\$105,070</b>
<b>Uses:</b>			
Project Fund	\$56,884	\$44,107	\$100,991
Capitalized Interest Fund	1,401	2,081	3,483
Cost of Issuance	330	267	596
<b>Total Uses</b>	<b>\$58,615</b>	<b>\$46,455</b>	<b>\$105,070</b>

Note: Amounts may not add because of rounding.

<sup>1</sup> Amounts in this table will not be updated to reflect the final terms of sale on the Series 2017 Bonds.

Source: PFM Financial Advisors LLC, July 2017

Compiled by Trillion Aviation

**Table 4-2****ASSUMPTIONS FOR THE SERIES 2017A BONDS, SERIES 2017B BONDS, AND FUTURE BONDS**

Assumption	Series 2017A and Series 2017B Bonds	Future Bonds
Issuance Date	October 1, 2017	October 1, 2018
Estimated Principal Amount	\$98.8 million	\$59.8 million
Estimated Project Fund Deposit	\$101.0 million	\$51.4 million
Bond Yield	4.6%	4.8%
Final Maturity	December 1, 2047	December 1, 2048

Source: PFM Financial Advisors LLC, August 2017

Compiled by Trillion Aviation

## 4.6 O&M Expenses

**Table 4-3** below presents historical O&M Expenses of the Authority for the last five OYs or for OY 2012 through OY 2016. For the period of OY 2012 through OY 2016, total O&M Expenses increased from approximately \$186.8 million in OY 2012 to approximately \$248.6 million in OY 2016, a CAGR of approximately 7.4%. However, as also presented on the table, the Authority entered into a new hotel management agreement during OY 2016 for the Westin Hotel at the Airport. As part of this undertaking and a refinancing of special facility bonds issued to finance the hotel, Revenues, O&M Expenses, and debt service related to the Westin Hotel are now included in the Flow of Funds under the Master Bond Ordinance. When excluding the hotel management expenses in OY 2016, total O&M expenses experienced a CAGR of approximately 4.9% during this five-year period.

The primary categories of O&M Expenses include salaries, wages, and employee benefits; contractual services; repairs and maintenance; hotel management, utilities, supplies and other operating expenses, capital expenses, and insurance/other. Additionally, **Exhibit D** after this Chapter presents annual forecasted O&M Expenses of the Authority for the period of OY 2016 through forecasted OY 2025.

**Table 4-3**

### HISTORICAL O&M EXPENSES (dollars in thousands) <sup>1</sup>

Category	OY 2012	OY 2013	OY 2014	OY 2015	OY 2016	2012-16 CAGR
Salaries, wages, and employee benefits	\$68,427	\$67,488	\$73,688	\$83,578	\$88,181	6.5%
Contractual services	44,370	44,818	51,408	48,739	55,710	5.9%
Repairs and maintenance	31,661	29,296	31,144	32,567	33,123	1.1%
Hotel management <sup>2</sup>	--	--	--	--	22,678	n/a
Utilities	26,280	26,628	28,441	24,105	21,939	(4.4%)
Supplies and other operating expenses	8,930	10,499	12,511	13,252	13,791	11.5%
Capital expenses	3,898	3,647	3,371	6,311	10,874	29.2%
Insurance/other	3,226	3,133	3,056	3,024	2,291	(8.2%)
<b>Total O&amp;M Expenses <sup>3</sup></b>	<b>\$186,792</b>	<b>\$185,509</b>	<b>\$203,619</b>	<b>\$211,576</b>	<b>\$248,587</b>	<b>7.4%</b>

Note: Amounts may not add because of rounding.

<sup>1</sup> Does not include interest expense and trustee fees. Amounts in this table may vary from those presented in other Authority financial reports because of certain reclassifications consistent with financial reporting standards.

<sup>2</sup> On October 15, 2015, the Authority entered into a new hotel management agreement. As a result of the new agreement and the refinancing of special facility bonds issued to finance the hotel, as of October 15, 2015, hotel management expenses are included in the Flow of Funds under the Master Bond Ordinance.

<sup>3</sup> Excluding the hotel management expenses for OY 2016, the total O&M Expenses increased at a CAGR of approximately 4.9%.

Source: Authority Comprehensive Annual Financial Report for OY 2016

Compiled by Trillion Aviation, April 2017

Key O&M Expenses categories and assumptions in forecasting future growth are summarized below.

- **Salaries, wages, and employee benefits.** This expense category includes salaries, wages, and benefits associated with Authority staff for 677 employees. Employee benefits includes expenses for active and retired employee health care, pension contributions, Federal Insurance Contributions Act (FICA) taxes, workers' compensation insurance, disability insurance, unemployment insurance, and tuition reimbursements. Salaries, wages, and employee benefits is the largest single category of O&M Expenses as it represents approximately 36% of total O&M Expenses for OY 2016. As presented above, these expenses increased at a CAGR of approximately 6.5% for the period OY 2012 through OY 2016, and are budgeted to decrease by approximately 5.8% in OY 2017 to approximately \$83.1 million. These expenses in OY 2016 included an approximately \$4 million, one-time payment into the Authority's pension fund, which was the primary reason for the decrease for OY 2017. In OY 2018, these expenses are budgeted to increase by 2.9% to approximately \$85.5 million. Salaries, wages, and employee benefits expenses are forecasted to increase at a CAGR of 4.0% from budget OY 2018 through OY 2025.
- **Contractual services.** This expense category includes costs associated with the Authority's outsourcing for parking management, shuttle bus services, janitorial services, security, professional services, and other contractual services. It is the second largest category of O&M Expenses at the Airport as it represents approximately 22% of total O&M Expenses for OY 2016. This category of expenses increased at a CAGR of approximately 5.9% for the period OY 2012 through OY 2016, and is budgeted to increase by another 6.3% in OY 2017 at approximately \$59.2 million. Primary reasons for the increase in expenses for this category is the year-round utilization of a parking lot that was previously only open seasonally to accommodate passenger demand, the purchase of four new shuttle buses to accommodate this parking lot, the introduction of employee security screening at both terminals, and technological enhancements to the Authority's maintenance management system. For OY 2018, these expenses are budgeted to increase by another 1.7% to approximately \$60.3 million. Future contractual services expenses are forecasted to increase at a CAGR of 1.5% for OY 2018 through OY 2025.
- **Repairs and maintenance.** This expense category includes corrective and preventative maintenance expenses for facilities, equipment, systems, and non-capital infrastructure repairs and maintenance. Repairs and maintenance expenses comprised approximately 13% of total O&M Expenses for OY 2016. This category of expenses increased at a CAGR of approximately 1.1% for the period OY 2012 through OY 2016, and is budgeted to increase by approximately 8.6% in budget OY 2017 to approximately \$36.0 million. This increase is primarily attributable to maintenance and changes to the security card access system, planned improvements to the North Terminal baggage handling system, and contractual increases for elevator and escalator maintenance. For OY 2018, these expenses are budgeted to increase by another 3.1% to approximately \$37.1 million. Future repairs and maintenance O&M Expenses are forecasted to increase at a CAGR of 3.0% for OY 2018 through OY 2025.
- **Hotel management.** As described above, the Authority entered into a new hotel management agreement on October 15, 2015. As a result, the O&M Expenses of the

Airport's Westin Hotel are now included in the Flow of Funds under the Master Bond Ordinance. The first year the Authority included such O&M Expenses in its financial budget was in OY 2016 and were approximately \$22.7 million. The budget for hotel management expenses for OY 2017 is approximately \$19.3 million, which is about a 15% decrease from OY 2016. The primary reasons are lower budgeted expenses for furniture, fixtures and equipment. For OY 2018, these expenses are budgeted to decrease by another 3.3% to approximately \$18.6 million. Future hotel management O&M Expenses are forecasted to increase at a CAGR of approximately 3.0% for OY 2018 through OY 2025.

- **Utilities.** This expense category includes expenses for electricity, gas, water, and heating, ventilation, and air conditioning (HVAC). Utilities expenses comprised approximately 9% of total O&M Expenses for OY 2016. This category of expenses decreased at a CAGR of approximately -4.4% for the period OY 2012 through OY 2016, and is budgeted to increase by approximately 10.2% in budget OY 2017 to approximately \$24.2 million. Utilities expenses are budgeted based on a three-year average for rate and volume. For OY 2018, these expenses are budgeted to decrease by 1.6% to approximately \$23.8 million reflecting anticipated efficiencies because of ongoing investments in power plant improvements. Future utilities O&M Expenses are forecasted to increase at a CAGR of 2.0% for OY 2018 through OY 2025.
- **Supplies and other operating expenses.** This expense category includes costs associated with materials and supplies needed for Airport operations and the most significant components of these are bulk chemicals for snow and ice removal, gasoline and diesel fuel, and janitorial supplies for the terminals. Also, included in this category are other miscellaneous expenses such as property taxes, telephone charges, travel, professional development and advertising. This category of O&M Expenses represented approximately 6% of total O&M Expenses for OY 2016, and increased at a CAGR of approximately 11.5% for the period OY 2012 through OY 2016. Supplies and other operating expenses are budgeted to increase by approximately 1.7% in OY 2017 to approximately \$14.0 million. For OY 2018, these expenses are budgeted to increase by 3.2% to approximately \$14.5 million. Future contractual services expenses are forecasted to increase at a CAGR of approximately 3.0% through OY 2025.
- **Capital expenses.** This expense category includes expenditures to (1) buy fixed assets with an individual unit value of \$5,000 or greater and a useful life beyond one year, or (2) add to the value of an existing fixed asset with a useful life that extends beyond one year. Capital expenses comprised approximately 4% of total O&M Expenses for OY 2016. This category of expenses increased at a CAGR of approximately 29.2% for the period OY 2012 through OY 2016, and is budgeted to decrease by approximately 23.0% in budget OY 2017 to approximately \$8.4 million. Budgeted capital expenses primarily include the replacement of servers and network equipment, vehicles, trailers, mowers, and certain renovations to the South Terminal. For OY 2018, these expenses are budgeted to decrease to approximately \$7.8 million. Future capital O&M Expenses are forecasted to increase at a CAGR of approximately 2.4% for OY 2018 through OY 2025.



- **Insurance/other.** This expense category includes both property and liability insurance at the Airport along with other minor expenses not included in the categories above. Insurance/other expenses comprised just under 1% of total O&M Expenses for OY 2016. This category of expenses decreased at a CAGR of approximately -8.2% for the period OY 2012 through OY 2016, and is budgeted to decrease by approximately 4.0% in budget OY 2017 to approximately \$2.2 million. For OY 2018, these expenses are budgeted to decrease to approximately \$2.1 million. Future insurance/other O&M Expenses are forecasted to increase at a CAGR of approximately 2.0% for OY 2018 through OY 2025.

Overall, the forecast of O&M Expenses is based on historical trend reviews, the anticipated impacts of inflation, forecasted activity levels, and impacts associated with the capital projects, as applicable. Exhibit C presents the O&M Expenses by category and cost center through OY 2025. Total Operating Expenses are forecasted to increase at a CAGR of approximately 3.1% over the forecast period from budget OY 2018 to OY 2025.

#### 4.7 Non-Airline Revenues

**Table 4-4** below presents historical non-airline revenues for the Airport for the period of OY 2012 to OY 2016. As shown, the five primary categories of non-airline revenues (e.g., automobile parking, other concessions, hotel, rental car, and other) accounted for approximately 88% of the Airport's total non-airline revenues and are presented along with growth rates during this period. Total non-airline revenues increased from approximately \$129.0 million in OY 2012 to approximately \$192.4 million in OY 2016, for a CAGR of approximately 10.5% over this period. However, as also presented on the table, the Authority entered into a new hotel management agreement during OY 2016 where it included Revenues associated with the Westin Hotel at the Airport in the Flow of Funds under the Master Bond Ordinance. When excluding the hotel revenues in OY 2016, total non-airline revenues experienced a CAGR of approximately 5.3% during this five-year period. Additionally, non-airline revenues per enplaned passenger increased through this period from approximately \$7.98 in OY 2012 to approximately \$11.23 in OY 2016, as also presented on the table. Excluding the hotel revenues for OY 2016, total non-airline revenues per enplaned passenger were \$9.25 and still experienced growth over OY 2015.

**Exhibit E** presents non-airline revenues at the Airport for OY 2016, budgeted OY 2017 and OY 2018, and forecasts for OY 2019 through OY 2025. Non-airline revenues are budgeted at approximately \$187.1 million in OY 2017 and \$193.9 million in OY 2018. Non-airline revenues are forecasted to increase to approximately \$229.2 million in OY 2025. This increase in non-airline revenues between OY 2018 and OY 2025 represents a CAGR of approximately 2.4%. In general, the forecast of non-airline revenues is based on historical trend reviews, forecasted passenger levels, and impacts associated with the CIP, as applicable. Non-airline revenues are further described in the following sections.

**Table 4-4****HISTORICAL AIRPORT NON-AIRLINE REVENUES (dollars in thousands) <sup>1</sup>**

<b>Category</b>	<b>OY 2012</b>	<b>OY 2013</b>	<b>OY 2014</b>	<b>OY 2015</b>	<b>OY 2016</b>	<b>2012-16 CAGR</b>
Automobile Parking	\$56,091	\$57,829	\$61,187	\$68,018	\$74,498	7.4%
Other Concessions	31,714	31,187	31,874	34,788	37,506	4.3%
Hotel <sup>2</sup>	--	--	--	--	33,890	n/a
Rental car	19,626	20,160	21,909	22,429	23,872	5.0%
Other	21,569	21,968	20,594	21,573	22,595	1.2%
<b>Total Non-Airline Revenues <sup>2</sup></b>	<b>\$129,001</b>	<b>\$131,144</b>	<b>\$135,564</b>	<b>\$146,808</b>	<b>\$192,361</b>	<b>10.5%</b>
Enplaned Passengers (000s)	16,170	16,078	16,217	16,444	17,131	
Non-Airline Revenues per Enplaned Passenger <sup>2</sup>	\$7.98	\$8.16	\$8.36	\$8.93	\$11.23	

<sup>1</sup> Amounts in this table include non-operating revenues and may vary from those presented in other Authority financial reports because of certain reclassifications consistent with financial reporting standards.

<sup>2</sup> Revenues of the Airport's Westin Hotel are now included in the Flow of Funds under the Master Bond Ordinance. Excluding the hotel revenues for OY 2016, the total non-airline revenues increased at a CAGR of approximately 5.3%, and total non-airline revenues per enplaned passenger were \$9.25.

Source Authority Comprehensive Annual Financial Report for OY 2016

Compiled by Trillion Aviation, April 2017

#### 4.7.1 Automobile Parking

Automobile parking revenues represent the largest component of non-airline revenues at the Airport, accounting for approximately 39% of total non-airline revenues for OY 2016. As presented on Table 4-5, auto parking revenues increased at a CAGR of approximately 7.4% from OY 2012 to OY 2016 as they increased from approximately \$56.1 million to \$74.5 million. The Authority offers several parking products to Airport parkers including short-term structured parking, long-term structured parking, economy parking at surface lots, and premium valet service at the McNamara Terminal. These parking products are priced based on level of service. **Table 4-5** below tracks public parking rates at the Airport in recent years. As shown in the table, the Authority monitors public parking rates and implements rate changes periodically. The Authority has been able to realize revenue gains resulting from these increases and the differing products as demand has continued to increase.

As of April 2017, four off-airport parking companies also provide parking services to passengers, in competition with the Authority. These off-airport operators include Qwik Park (and Qwik Park's overflow lot), Airlines Parking, Park-N-Go, and US Park. Combined, these operators have an inventory of approximately 13,875 parking spaces.

**Table 4-5**  
**PUBLIC PARKING RATES AT THE AIRPORT (daily maximum rates)**

Parking Facility	Prior to May 19, 2014	May 19, 2014	Feb. 2, 2015	Dec. 19, 2015	Current
Valet (McNamara parking garage)	\$33.00	\$35.00	\$36.00	\$40.00	\$40.00
Short-term (both parking structures)	\$25.00	\$28.00	\$29.00	\$33.00	\$33.00
Long-term (McNamara parking garage)	\$20.00	\$21.00	\$22.00	\$23.00	\$23.00
Long-term (Big Blue Deck)	\$10.00	\$11.00	\$12.00	\$13.00	\$13.00
Economy (Green Lots)	\$8.00	\$9.00	\$10.00	\$11.00	\$11.00

Source: Authority management records  
 Compiled by Trillion Aviation

For the period of OY 2018 through OY 2025, auto parking revenues are forecasted to have a CAGR of 2.6%. The forecast assumes rate increases generally in line with inflationary trends along with the increase in O&D enplaned passengers at the Airport.

#### 4.7.2 Other Concessions

As shown on Table 4-4, other concessions increased at a CAGR of approximately 4.3% from OY 2012 to OY 2016 as they increased from approximately \$31.7 million to \$37.5 million. Other concessions include food and beverage, retail, advertising, inflight catering, and other miscellaneous concession revenues at the Airport. The Authority completed a new food and beverage program at the McNamara Terminal in March 2016. This program opened 24 new concepts plus the addition of two new locations. Budgeted other concession revenues for OY 2017 are expected to increase slightly by approximately 0.9% as compared to OY 2016. This was primarily driven by budget timing as actual results for OY 2016 were not available when the budget for OY 2017 was developed. OY 2016 other concession revenues were up by approximately 7.8% as compared to OY 2015. The significant factor driving this increase was passenger growth along with the new food and beverage program at the McNamara Terminal. For the period of OY 2018 through OY 2025, other concession revenues are forecasted to have a CAGR of 2.5%. The forecast assumes increases generally in line with inflationary trends and passenger growth.

#### 4.7.3 Hotel

As described above, the Authority entered into a new hotel management agreement on October 15, 2015 and refinanced the special facility bonds issued to finance the construction of the hotel as general airport revenue bonds. As a result, the revenues of the Airport's Westin Hotel are now included in the Flow of Funds under the Master Bond Ordinance. The first year the Authority included hotel revenues in the Flow of Funds per the Master Bond Ordinance was in OY 2016. In OY 2016, hotel revenues were approximately \$33.9 million. The budget for hotel revenues for OY 2017 is approximately \$31.0 million, which is about an 8.6% decrease from OY 2016. The primary reason for this is that OY 2016 included tax revenues. For budget and forecasting purposes, tax revenues are not included as part of hotel revenues. For OY 2018, hotel revenues are budgeted to decrease to approximately \$30.4 million partially because of ongoing

renovations. Future hotel revenues are forecasted to increase at a CAGR of approximately 2.0% through OY 2025.

#### **4.7.4 Rental Car**

Rental car revenues at the Airport increased at a CAGR of approximately 5.0% during the period of OY 2012 through OY 2016; increasing in the aggregate by more than \$4.0 million. The increase in rental car revenues was driven by increased demand. For the period of OY 2018 through OY 2025, rental car revenues are forecasted to have a CAGR of 2.6%. The forecast assumes increases generally in line with inflationary trends and forecasted increases in O&D passengers at the Airport.

#### **4.7.5 Transportation Network Companies**

The Authority entered into permits with two transportation network companies (TNCs) in March 2017. These companies offer vehicle-for-hire access to the Airport and pay a fee of \$5 per passenger drop off or pick-up on Airport property. As of June 2017, the Authority has received approximately \$2.1 million of TNC revenues. For OY 2018, the Authority is budgeting it will receive approximately \$2.7 million of TNC revenues. For the period of OY 2018 through OY 2025, TNC revenues are forecasted to increase at a CAGR of 1.3%.

#### **4.7.6 Other**

Other non-airline revenues primarily include other non-airline tenant leases, cargo building rents, hangar rents, ground transportation, utility service fees, shuttle bus revenue, and other buildings at the Airport leased by the Authority. Over the last five years, these revenues had a CAGR of approximately 1.2%. These revenues totaled approximately \$22.6 million in OY 2016, and are budgeted to increase to approximately \$23.9 million for OY 2017. The forecast for other non-airline revenues assumes increases generally in line with about half of the rate of inflation.

### **4.8 PFC Revenues**

PFC revenues are used to pay for certain FAA-approved, PFC-eligible projects, either by using certain PFC revenues to pay for approved project costs on a pay-as-you-go basis or by applying certain PFC revenues to pay debt service associated with Bonds issued to fund approved projects. Pursuant to the Master Bond Ordinance, PFC revenues are excluded from the definition of Revenues, and therefore, are not pledged to the payment of debt service on the Bonds or Junior Lien Bonds. However, PFC revenues are applied to pay a portion of the debt service on Bonds and Junior Lien Bonds issued to pay for PFC eligible projects, and are considered Other Available Moneys as defined in the Master Bond Ordinance. Other Available Moneys for any OY is the amount of money determined by the Chief Financial Officer in concurrence with the Chief Executive Officer to be transferred by the Authority for such OY from PFC revenues or other sources other than Revenues to the Bond Fund or the Junior Lien Bond Fund.

As of September 1, 2017, the Authority is authorized by the FAA to impose and use approximately \$3.1 billion of PFC revenues (at the \$4.50 level) for various projects. Based on Final Agency Decisions, the FAA estimates the charge-expiration date to be February 1, 2034. As of June 2017, the Authority had collected approximately \$1.43 billion of its total approved collection,

and had spent approximately \$1.42 billion on approved projects. The Authority is obligated under the Airline Agreements to use PFCs to pay debt service on airport revenue bonds issued to pay the costs of certain PFC-eligible projects at the Airport. The vast majority of the Authority's PFC eligible projects were funded with Bonds or Junior Lien Bonds and the Authority has dedicated its PFC revenues toward the payment of debt service on Bonds issued to fund these projects, which is assumed to continue at least through the FAA's current charge-expiration date of February 2034. Therefore, at the current PFC rate of \$4.50, the Authority is not forecasted to have additional PFC capacity for additional projects during the forecast period.

**Exhibit F** presents the PFC revenues of the Authority for OY 2016, budgeted OY 2017, and forecasts for OYs 2018 through 2025. PFC revenues are driven by enplaned passengers at the Airport as presented on the exhibit. Based on historical trends, the forecast assumes that the Authority will collect PFC revenues from 89% of enplaned passengers at a net collection rate of \$4.39, which is the \$4.50 rate less the \$0.11 administrative fee. In OY 2016, PFC revenues collected were approximately \$66.2 million. In OY 2025, the Authority is forecasted to collect approximately \$73.5 million of PFC revenues. Per the Master Bond Ordinance Rate Covenant, these PFC revenues are assumed to be included as Other Available Moneys and are assumed to pay a portion of outstanding Debt Service throughout the forecast period as presented on **Exhibits G, H, and I**.

#### 4.9 Aviation Fuel Tax

Beginning on October 1, 2016, the State of Michigan approved a number of senate bills amending various statutes to earmark 2% of the sales tax revenue on aviation fuel and use tax revenue in order to fund the State Aeronautics Fund and a Qualified Airport Fund for the State. These funds are used to support capital improvement projects to air traffic landing areas (i.e., airfield areas) throughout Michigan. The State Aeronautics Fund receives 35% of this amount and the remaining 65% is directed to the Qualified Airport Fund. A Qualified Airport is defined in the State Aeronautics Code as an airport with 10 million or more enplaned passengers within any 12-month period. Currently, the Airport is the only Qualified Airport in the State. The Authority receives approximately \$5 million per year of aviation fuel tax revenue and includes this amount as part of Other Available Moneys to pay a portion of debt service associated with airfield capital projects.<sup>82</sup>

#### 4.10 Airline Revenues

Airline revenues at the Airport include Terminal Rentals, Terminal Use Charges for Shared Use Premises, Activity Fees and International Facilities Use Fees. The rate-setting formulas for Terminal Rentals and Activity Fees are consistent with the rate-setting methodologies set forth in the Airline Agreements and described earlier in this Chapter. Exhibits G, H, and I further illustrate the rate-setting methodologies for the South Terminal Rentals, North Terminal Rentals, and Activity Fees, respectively. The business terms of the Airline Agreements are used as the basis for forecasting airline revenues for the purposes of this Report.

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<sup>82</sup> The State of Michigan, [http://www.michigan.gov/documents/aero/Aviation\\_in\\_Michigan\\_482063\\_7.pdf](http://www.michigan.gov/documents/aero/Aviation_in_Michigan_482063_7.pdf), accessed August 2017.

#### 4.10.1 South Terminal Rentals

Exhibit G presents the calculation of South Terminal Rentals for OY 2016 through OY 2025. Per the rate-setting methodology, the Authority receives South Terminal Rentals from Signatory Airlines leasing space in the South Terminal, calculated on a cost center residual basis, but excluding from such calculation South Terminal non-airline revenues which instead are taken into account in the Airport-wide residual Activity Fee calculation. The Signatory Airlines South Terminal Rental Rate per square foot forecasted for OY 2018 is \$61.98. Over the forecast period, the Signatory Airlines South Terminal Rental Rate is expected to increase to \$72.57 by OY 2025. Exhibit G presents the forecast South Terminal Rentals and Rental Rates over the forecast period. Total South Terminal Rentals are forecasted to increase from approximately \$56.8 million in OY 2018 to approximately \$66.4 million in OY 2025. This represents a CAGR of approximately 2.3%.

#### 4.10.2 North Terminal Rentals

Exhibit H presents the calculation of North Terminal Rentals for OY 2016 through OY 2025. Per the rate-setting methodology, the Authority receives North Terminal Rentals from Signatory Airlines leasing space in the North Terminal, calculated on a cost center residual basis, but excluding from such calculation North Terminal non-airline revenues which instead are taken into account in the Airport-wide residual Activity Fee calculation. The Signatory Airlines North Terminal Rental Rate per square foot forecasted for OY 2018 is \$115.49. Over the forecast period, the Signatory Airlines North Terminal Rental Rate is expected to increase to a peak of \$125.52 in OY 2024. Exhibit H presents the forecasted North Terminal Rentals and Rental Rates over the forecast period. Total North Terminal Rentals are forecasted to increase from approximately \$25.0 million in OY 2018 to a peak of approximately \$28.2 million in OY 2024.

#### 4.10.3 Activity Fees

Exhibit I presents the calculation of Activity Fees for OY 2016 through OY 2025. Per the Airport-wide residual rate-setting methodology, the Authority fully recovers the Revenue Requirement of the Airport Cost Center. The Revenue Requirement for any OY is the amount of Revenue required to produce total net Revenue as described in the Activity Fee calculation methodology described earlier in this Report in Section 4.3.3.

As presented in Exhibit I, the Signatory Airline Activity Fee Rate per 1,000-pound units of landed weight is currently forecasted at \$3.72 for OY 2018. Over the forecast period, the Signatory Airline Activity Fee Rate is forecasted to increase to \$3.94 by OY 2019, and then decrease at modest levels and reaching \$3.35 in OY 2025. Activity Fees are forecasted to decrease from approximately \$81.2 million in OY 2018 to approximately \$76.8 million in OY 2025. This represents a CAGR of approximately -0.8%.

#### 4.10.4 Airline Cost per Enplaned Passenger

A key performance indicator for airline costs at an airport is the average airline cost per enplaned passenger (CPE). **Exhibit J** presents the forecast of CPE for the airlines at the Airport. As shown, the airline CPE includes the Activity Fees and Terminal Rentals, and other facility use fees divided by total enplaned passengers. The airline CPE for OY 2018 is estimated at \$10.07. Over

the forecast period, airline CPE is expected to increase and peak in OY 2020 at \$10.56, and then decrease at modest levels for the remainder of the forecast period. Airline CPE throughout this period is forecasted to remain within reasonable levels as compared to other U.S. Large Hub airports.

#### 4.11 Application of Revenues

**Exhibit K** presents the application of Revenues for the Airport throughout the forecast period consistent with the requirements of the Master Bond Ordinance. As presented, the Authority is forecasted to have sufficient Revenues to make all required deposits per the Master Bond Ordinance.

#### 4.12 Debt Service Coverage

**Exhibit L** presents the debt service coverage ratios for Senior Lien debt service and Junior Lien debt service throughout the forecast period. As presented, the Net Revenues available for Senior Lien debt service are forecasted from approximately \$252.8 million in OY 2017 to approximately \$250.4 million in OY 2025. Per the Master Bond Ordinance, the Authority is able to include unencumbered amounts available in the Revenue Fund on the last business day of the prior OY for the purposes of calculating debt service coverage. Debt service coverage ratios for Senior Lien Bonds are forecasted to range from 1.55 in OY 2023 to 1.49 in OY 2020. Debt service coverage ratios including Junior Lien Bonds are forecasted to range from 1.44 in OY 2023 to 1.39 in OY 2020.

As required pursuant to the Rate Covenant in the Master Bond Ordinance, Revenues must be sufficient in each OY to pay the following amounts:

- i. the payment of O&M Expenses for the OY;
  - ii. together with PFC proceeds, including interest thereon, deposited with the Trustee with respect to such OY, the amounts needed to make the deposits required for the Application of Revenues pursuant to the Master Bond Ordinance for such OY to the Bond Fund; and
  - iii. together with Other Available Moneys deposited with the Trustee with respect to such OY, to the extent not needed to make the deposits required under the Master Bond Ordinance for such OY to the Bond Fund, and any unencumbered cash balance held in the Revenue Fund on the last day of the OY preceding the OY for which the calculation is made not then required to be deposited in any Fund or Account.
- A. the amounts needed to make the deposits required under the Master Bond Ordinance for such OY to the Junior Lien Bond Fund, the Operation and Maintenance Reserve Fund, the Renewal and Replacement Fund, the Airport Discretionary Fund, and the Airport Development Fund, and

- B. an amount not less than 25% of the Debt Service due and payable on Bonds during such OY.

As presented on Exhibit L, the Authority is forecasted to satisfy the Rate Covenant requirement in each year of the forecast. A summary of debt service coverage and CPE forecasts is also presented below in **Table 4-6**.

**Table 4-6**

**DEBT SERVICE COVERAGE FORECAST AND PASSENGER AIRLINE CPE FORECAST**  
(dollars in thousands, except for CPE)

Operating Year	Net Revenues, Revenue Fund Balances and Other Available Moneys	Total Senior Lien Debt Service Requirements	Senior Lien Debt Service Coverage Ratio	Total Senior Lien and Junior Lien Debt Service Requirements	Senior Lien and Junior Lien Debt Service Coverage Ratio	Airline CPE
2017	\$252,759	\$165,742	1.53	\$178,018	1.42	\$9.93
2018	\$256,829	\$170,956	1.50	\$183,230	1.40	\$10.07
2019	\$266,974	\$178,168	1.50	\$190,443	1.40	\$10.50
2020	\$263,037	\$176,578	1.49	\$188,854	1.39	\$10.56
2021	\$261,259	\$173,471	1.51	\$185,746	1.41	\$9.87
2022	\$251,903	\$165,681	1.52	\$177,955	1.42	\$9.63
2023	\$255,595	\$164,839	1.55	\$177,114	1.44	\$9.44
2024	\$248,097	\$164,900	1.50	\$177,178	1.40	\$9.95
2025	\$250,401	\$164,169	1.53	\$176,412	1.42	\$9.85

Source: Trillion Aviation

### 4.13 Sensitivity Analysis

To assess the sensitivity of the baseline financial forecasts presented herein, an additional scenario was developed associated with a hypothetical decrease in passenger activity at the Airport. This sensitivity analysis is provided only for informational purposes and should not be considered an expected forecast of future results. A description of the scenario and results is provided below.

#### 4.13.1 Sensitivity Analysis Scenario

In preparing financial feasibility analyses for airports that operate as airline connecting hubs, it is common to assess the sensitivity of financial impacts under a reduced connecting passenger scenario. While considered unlikely given Delta's commitment to the Airport through its execution of a long-term Airline Agreement and the Airport's importance as a hub within Delta's overall network as demonstrated, the hypothetical loss of a significant portion of connecting traffic at the Airport was assessed as a sensitivity scenario for the purposes of this Report. As described in Chapter 2 and for the primary reasons restated below, the importance of the Airport as a hub within Delta's route network suggests that a reduction in connecting traffic is not a likely scenario over the forecast period.



- Delta's passenger mix at the Airport for OY 2016 was approximately 40% O&D and 60% connecting. This composition of O&D and connecting traffic for Delta at the Airport is similar to that of its other connecting hubs of MSP and SLC. Therefore, Delta appears able to obtain an acceptable level of O&D traffic at the Airport to sustain its operation as a hub.
- The Airport's geographic position allows Delta to operate it as an efficient transfer point for traffic in the eastern half of the U.S., particularly in the Great Lakes region. It also allows Delta to serve connecting east-west traffic flows in conjunction with its other hubs at MSP, SLC, and ATL.
- The Airport appears to be a profitable operation for Delta as RASMs are generally above mileage-adjusted system averages. Delta's profitability at the Airport also appears to have improved significantly by OY 2016 as compared to before the recession in OY 2007 as shown previously on Table 2-3.
- Finally, the Airport serves as an important international gateway within Delta's network. Numerous European and Asian cities are served nonstop from the Airport on Delta, and, in general, these routes appear to be operating profitably. The Airport is also Delta's largest U.S. airport serving Asian airports non-stop in terms of scheduled departing seats.

For financial feasibility purposes, the sensitivity analysis scenario is assumed to occur in OY 2019. Key assumptions related to the sensitivity analysis scenario are as follows:

- An approximate 66% reduction of connecting passenger traffic occurs in OY 2019.
- Upon the reduction of traffic, the Airport's domestic connecting passengers would represent approximately 25% of total Airport passengers, and domestic O&D passengers would represent approximately 75%.
- PFC revenues decrease starting in OY 2019 to reflect the reduced passengers at the Airport. Therefore, fewer PFC revenues are available as Other Available Moneys to pay eligible future debt service starting in OY 2019.
- A reduction of 15% is assumed for O&M Expenses starting in OY 2019.
- Certain non-airline revenues decrease starting in OY 2019 to reflect the reduced passengers at the Airport. These categories primarily included terminal concession revenues and other traffic-driven revenues. However, rental car revenues and auto parking revenues were not reduced as these are driven by O&D passengers.
- Current Airline Agreements business terms and conditions remain in effect through the forecast period.

#### 4.13.2 Sensitivity Analysis Results

**Table 4-6** below presents enplaned passengers and the share of O&D passengers assumed for the sensitivity analysis. As shown, enplaned passengers decrease starting in OY 2019 to reflect a loss of connecting traffic, which results in a higher share of O&D passengers. The table also presents the debt service coverage impacts associated with this sensitivity analysis. As shown, debt service coverage exceeds the requirements set forth in the Master Bond Ordinance throughout the forecast period. Future Senior Lien Bonds debt service coverage ranges from 1.46 in OY 2019 and 1.51 in OY 2025. Airline CPE, also presented, is forecasted to peak at \$13.73 in OY 2020, and increases overall as compared to levels in the baseline forecast.

Under this sensitivity analysis scenario, the Authority is forecasted to satisfy its obligations pursuant to the Master Bond Ordinance and maintain airline CPE levels consistent with other U.S. large hub airports. Given the Airport's residual Agreement methodology, the Signatory Airlines bear the financial risk of the Airport and, thus, ensure that the obligations of the Master Bond Ordinance are maintained throughout the forecast period.

**Table 4-6**

#### SENSITIVITY ANALYSIS RESULTS: DEBT SERVICE COVERAGE AND AIRLINE CPE

Operating Year	Enplaned Passengers (000s)	% of Domestic O&D Enplaned Passengers	Senior Lien Debt Service Coverage Ratio	Senior Lien and Junior Lien Debt Service Coverage Ratio	Airline CPE
2017	17,252	50%	1.53	1.42	\$9.93
2018	17,558	50%	1.50	1.40	\$10.07
2019	12,434	75%	1.46	1.37	\$13.49
2020	12,558	75%	1.49	1.39	\$13.73
2021	12,684	75%	1.47	1.37	\$12.68
2022	12,811	75%	1.49	1.39	\$12.30
2023	12,939	75%	1.50	1.40	\$11.98
2024	13,068	75%	1.50	1.40	\$12.67
2025	13,199	75%	1.51	1.40	\$12.49

It is important to note that, while not considered as part of this sensitivity analysis, if this type of scenario were to occur, the Authority would conduct a thorough analysis of its facilities and operating conditions to develop a comprehensive plan for the future. It would be expected that the Authority would consider various operational changes to adjust to a reduced traffic level and reduce O&M Expenses by more than assumed in this analysis.

Exhibit A

SERIES 2017 PROJECTS - PLAN OF FINANCE  
(Dollars in Thousands)

DETROIT METROPOLITAN WAYNE COUNTY AIRPORT

		Estimated Project Cost	Other Funds	Existing Bond Proceeds	Series 2017 Bond Proceeds	Future Bond Proceeds <sup>2</sup>
<b>SERIES 2017 PROJECTS</b>						
<b>Airfield</b>						
Runway 3L/21R & Associated Taxiways Reconstruction (planning, environmental processing and design/engineering)		\$16,000	\$0	\$10,000	\$6,000	\$0
Airfield Pavement Rehabilitation/Reconstruction Plan		5,000	0	0	5,000	0
McNamara Terminal Apron Rehabilitation/Joint Improvements (through OY 2018)		30,000	0	5,000	10,000	15,000
Hangar 516 & 518 Apron Reconstruction <sup>1</sup>		2,250	0	0	2,250	0
McNamara Terminal Apron Modifications & New Hardstand Positions		25,000	0	14,800	10,200	0
Subtotal Airfield Improvements	[A]	\$78,250	\$0	\$29,800	\$33,450	\$15,000
<b>Power Plant &amp; Electrical Distribution System</b>						
Primary Electrical Loops Numbers 1-3 Upgrade & Expansion		\$5,125	\$0	\$2,000	\$3,125	\$0
Subtotal Power Plan & Electrical Distribution System	[B]	\$5,125	\$0	\$2,000	\$3,125	\$0
<b>Fleet &amp; Equipment</b>						
Fleet & Heavy Equipment Acquisitions (through CY 2018)		\$5,000	\$0	\$0	\$5,000	\$0
Subtotal Power Plan & Electrical Distribution System	[C]	\$5,000	\$0	\$0	\$5,000	\$0
<b>Parking &amp; Ground Transportation Facilities</b>						
Blue Deck Rehabilitation - Phase 4 (design and initial construction)		\$3,000	\$0	\$0	\$3,000	\$0
McNamara Parking Deck Rehabilitation - Phase 2 (design)		1,000	0	0	1,000	0
Subtotal Parking & Ground Transportation Facilities	[D]	\$4,000	\$0	\$0	\$4,000	\$0
<b>Bridges &amp; Roadways</b>						
Bridges & Roadways Rehabilitation Program (through OY 2018)		\$3,000	\$0	\$0	\$3,000	\$0
Rogell & Burton Drive Intersection Reconfiguration		14,800	1,500	4,300	9,000	0
Subtotal Bridges & Roadways	[E]	\$17,800	\$1,500	\$4,300	\$12,000	\$0
<b>Support Facilities</b>						
Fire Training Facility Restoration & Burn Pit Replacement (design)		\$1,250	\$0	\$0	\$1,250	\$0
ARFF Station 100 Improvements		1,200	0	0	1,200	0
Subtotal Support Facilities	[F]	\$2,450	\$0	\$0	\$2,450	\$0
<b>Terminals</b>						
North Terminal Gate Expansion (design)		\$4,000	\$0	\$0	\$4,000	\$0
McNamara Terminal Baggage System Controls (design and initial construction)		28,500	0	0	28,500	0
McNamara Terminal Tram Controls (design and initial construction)		8,500	0	0	8,500	0
Subtotal Terminals	[G]	\$41,000	\$0	\$0	\$41,000	\$0
<b>Total Series 2017 Projects</b>	<b>[H=A through G]</b>	<b>\$153,625</b>	<b>\$1,500</b>	<b>\$36,100</b>	<b>\$101,025</b>	<b>\$15,000</b>

Note: Amounts may not add due to rounding.

<sup>1</sup> Reflects only Authority's share of project costs.

<sup>2</sup> Reflects costs for certain Series 2017 Projects that are planned to be funded with Future Bond Proceeds.

Source: Authority management records, September 2017.  
Compiled by Trillion Aviation

**Exhibit B**

**OTHER APPROVED CAPITAL PROJECTS - PLAN OF FINANCE <sup>1</sup>**  
(Dollars in Thousands)

**DETROIT METROPOLITAN WAYNE COUNTY AIRPORT**

		Estimated Project Cost	Existing Bond Proceeds	Series 2017 Bond Proceeds	Future Bond Proceeds <sup>2</sup>
<b>OTHER APPROVED CAPITAL PROJECTS</b>					
<b>Airfield</b>					
Taxiway Kilo (K) Reconstruction (through CY 2018)		\$22,000	\$11,000	\$0	\$11,000
Taxiway Z (Southern Portion) Relocation and AOA Service Road Modification and Extension		15,400	2,000	0	13,400
Subtotal Airfield Improvements	[A]	\$37,400	\$13,000	\$0	\$24,400
<b>Site Redevelopment &amp; Demolitions</b>					
L.C. Smith Terminal and Berry Terminal Demolition		\$14,964	\$3,000	\$0	\$11,964
Subtotal Site Redevelopment & Site Demolitions	[B]	\$14,964	\$3,000	\$0	\$11,964
<b>Total Other Approved Projects</b>	<b>[C=A+B]</b>	<b>\$52,364</b>	<b>\$16,000</b>	<b>\$0</b>	<b>\$36,364</b>

Note: Amounts may not add due to rounding.

<sup>1</sup> Includes costs for projects with Weighted Majority approval, which costs have not been previously funded in whole and are not being funded with the Series 2017 Bond proceeds.

<sup>2</sup> Reflects Future Bond Proceeds for costs of projects with Weighted Majority approval, which costs have not been previously funded in whole and are not being funded with the Series 2017 Bond proceeds.

Source: Authority management records, September 2017.  
Compiled by Trillion Aviation

Exhibit C

DEBT SERVICE

DETROIT METROPOLITAN WAYNE COUNTY AIRPORT

(Dollars in Thousands for Operating Years Ending September 30)

	Actual 2016	Budget 2017	Forecast							
			2018	2019	2020	2021	2022	2023	2024	2025
Senior Lien by series (a)										
2005A	\$ 3,114	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
2007B	10,827	10,832	10,841	10,838	10,849	10,857	10,868	10,875	10,887	10,898
2008A	11,160	10,958	10,739	10,527	10,310	10,083	9,849	9,610	9,375	9,140
2010A	33,701	33,747	33,774	5,630	-	-	-	-	-	-
2010C	27,300	17,108	14,959	15,173	15,325	15,386	11,215	1,730	-	-
2010D	3,381	3,393	3,382	3,410	3,445	3,458	577	-	-	-
2011A	7,296	7,296	7,296	36,804	42,743	42,793	42,847	7,143	-	-
2011B	2,891	2,886	2,884	2,883	2,882	480	-	-	-	-
2012A	8,960	11,790	12,346	12,338	12,345	12,358	12,342	12,337	12,335	12,336
2012B	1,338	1,850	1,950	1,956	1,950	1,948	1,946	1,950	1,950	1,946
2012C	272	274	275	276	271	45	-	-	-	-
2012D	7,919	7,536	7,532	7,359	2,460	1,487	1,487	1,487	1,487	1,487
2013A (f)	2,225	2,981	4,072	5,310	5,394	5,322	5,297	23,054	26,663	26,255
2013B (f)	887	1,175	1,586	2,050	2,046	2,049	2,050	12,820	15,029	15,108
2013C (f)	1,499	1,898	2,531	3,246	3,242	3,241	3,236	19,898	23,271	23,326
2014A (f)	378	496	659	843	840	838	835	833	830	828
2014B	3,005	3,398	3,412	3,408	3,403	3,400	3,396	3,391	3,388	3,385
2014C	428	1,663	1,677	1,673	1,668	1,665	1,661	1,656	1,652	1,649
2015A	14,976	17,872	17,919	17,919	17,919	2,987	-	-	-	-
2015B	2,094	2,037	2,037	2,037	2,037	17,041	20,043	20,041	20,036	3,339
2015C	988	962	962	962	962	962	962	962	962	962
2015D	10	8,554	10,737	10,751	10,748	10,744	10,740	10,736	10,732	10,728
2015E	32	388	388	388	388	388	388	388	388	388
2015F	9,995	11,208	11,208	11,208	11,208	11,208	11,208	11,208	11,208	27,708
2015G	3,998	5,134	5,582	5,982	6,050	6,048	6,049	6,049	6,051	6,051
2015H (f)	203	306	434	578	578	578	578	578	578	578
Proposed Series 2017A Bonds (b)	-	-	1,421	2,630	2,810	2,823	2,818	2,813	2,807	2,798
Proposed Series 2017B Bonds (c)	-	-	354	1,989	2,296	2,309	2,304	2,299	2,294	2,289
Future bond series (d)	-	-	-	-	2,409	2,974	2,986	2,981	2,976	2,971
<b>Total Senior Lien</b>	<b>\$ 158,876</b>	<b>\$ 165,742</b>	<b>\$ 170,956</b>	<b>\$ 178,168</b>	<b>\$ 176,578</b>	<b>\$ 173,471</b>	<b>\$ 165,681</b>	<b>\$ 164,839</b>	<b>\$ 164,900</b>	<b>\$ 164,169</b>
Junior Lien by series (a)										
2007A	\$ 12,270	\$ 12,276	\$ 12,274	\$ 12,275	\$ 12,276	\$ 12,274	\$ 12,274	\$ 12,276	\$ 12,278	\$ 12,243
<b>Total Junior Lien</b>	<b>\$ 12,270</b>	<b>\$ 12,276</b>	<b>\$ 12,274</b>	<b>\$ 12,275</b>	<b>\$ 12,276</b>	<b>\$ 12,274</b>	<b>\$ 12,274</b>	<b>\$ 12,276</b>	<b>\$ 12,278</b>	<b>\$ 12,243</b>
<b>Total annual Debt Service</b>	<b>\$ 171,146</b>	<b>\$ 178,018</b>	<b>\$ 183,230</b>	<b>\$ 190,443</b>	<b>\$ 188,854</b>	<b>\$ 185,746</b>	<b>\$ 177,955</b>	<b>\$ 177,114</b>	<b>\$ 177,178</b>	<b>\$ 176,412</b>
Bond Fund interest, Bond Reserve Account interest and transfers	\$ (8,091)	\$ (2,159)	\$ (3,287)	\$ (6,788)	\$ (4,062)	\$ (9,887)	\$ (7,756)	\$ (11,909)	\$ (4,002)	\$ (6,698)
<b>Adjusted debt service (e)</b>	<b>\$ 163,055</b>	<b>\$ 175,859</b>	<b>\$ 179,943</b>	<b>\$ 183,655</b>	<b>\$ 184,792</b>	<b>\$ 175,859</b>	<b>\$ 170,199</b>	<b>\$ 165,206</b>	<b>\$ 173,175</b>	<b>\$ 169,714</b>
By Cost Center (e)										
North Terminal	\$ 36,080	\$ 31,872	\$ 31,773	\$ 32,087	\$ 32,104	\$ 30,074	\$ 31,106	\$ 33,225	\$ 33,888	\$ 31,563
South Terminal	54,596	54,517	55,397	56,874	59,799	59,303	57,609	53,670	59,705	59,033
Airport	72,380	89,470	92,773	94,694	92,889	86,482	81,483	78,311	79,582	79,118
<b>Adjusted debt service (e)</b>	<b>\$ 163,055</b>	<b>\$ 175,859</b>	<b>\$ 179,943</b>	<b>\$ 183,655</b>	<b>\$ 184,792</b>	<b>\$ 175,859</b>	<b>\$ 170,199</b>	<b>\$ 165,206</b>	<b>\$ 173,175</b>	<b>\$ 169,714</b>

Note: Amounts may not add because of rounding.

Source: Airport records for Outstanding Bonds (actual, budget and forecast); PFM Financial Advisors LLC for Series 2017 Bonds and future bond series.

Compiled by: Trillion Aviation

(a) Debt Service net of capitalized interest.

(b) Debt Service assumes \$56.9 million in bond funded project costs.

(c) Debt Service assumes \$44.1 million in bond funded project costs.

(d) Debt Service assumes \$51.4 million in bond funded project costs.

(e) Adjusted debt service is net of capitalized interest, Bond Fund interest, and Bond Reserve Account interest and transfers. OY 2016 amounts shown by Cost Center were calculated from information made available by the Authority.

(f) Variable rate bonds assume a rate of 2.5% from 2019 through 2025.

Exhibit D

O&M EXPENSES

DETROIT METROPOLITAN WAYNE COUNTY AIRPORT

(Dollars in Thousands for Operating Years Ending September 30)

	Actual 2016 (a)	Budget 2017	Budget 2018	Forecast						
				2019	2020	2021	2022	2023	2024	2025
<b>Airport</b>										
Salaries, wages, and fringe benefits	\$ 88,181	\$ 83,102	\$ 85,545	\$ 88,966	\$ 92,525	\$ 96,226	\$ 100,075	\$ 104,078	\$ 108,241	\$ 112,571
Materials and supplies	7,022	7,594	7,729	7,961	8,200	8,446	8,699	8,960	9,229	9,506
Parking management	7,909	8,641	8,908	9,175	9,450	9,734	10,026	10,326	10,636	10,955
Shuttle bus	7,194	8,600	7,194	7,410	7,632	7,861	8,097	8,340	8,590	8,847
Janitorial	711	752	1,014	1,044	1,075	1,108	1,141	1,175	1,210	1,247
Security	3,745	4,992	3,350	3,450	3,554	3,660	3,770	3,883	4,000	4,120
Professional and contractual services	17,331	16,413	16,008	16,248	16,491	16,739	16,990	17,245	17,503	17,766
Buildings and grounds	6,633	9,852	9,610	9,898	10,195	10,501	10,816	11,140	11,474	11,819
Equipment repair	5,543	5,873	6,224	6,411	6,603	6,801	7,005	7,215	7,432	7,655
Other operating expenses	4,519	4,026	4,264	4,392	4,523	4,659	4,799	4,943	5,091	5,244
Utilities	5,384	6,903	6,454	6,583	6,714	6,849	6,986	7,125	7,268	7,413
Hotel	22,678	19,286	18,647	19,207	19,783	20,376	20,988	21,617	22,266	22,934
Insurance	1,372	1,407	1,350	1,377	1,405	1,433	1,461	1,491	1,520	1,551
Operating and maintenance capital	7,450	4,494	3,039	3,130	3,224	3,321	3,421	3,523	3,629	3,738
<b>Subtotal Airport</b>	<b>\$ 185,672</b>	<b>\$ 181,934</b>	<b>\$ 179,334</b>	<b>\$ 185,251</b>	<b>\$ 191,375</b>	<b>\$ 197,713</b>	<b>\$ 204,273</b>	<b>\$ 211,062</b>	<b>\$ 218,090</b>	<b>\$ 225,365</b>
<b>North Terminal</b>										
Materials and supplies	\$ 672	\$ 739	\$ 949	\$ 977	\$ 1,007	\$ 1,037	\$ 1,068	\$ 1,100	\$ 1,133	\$ 1,167
Janitorial	2,804	3,223	3,720	3,832	3,947	4,065	4,187	4,313	4,442	4,576
Security	-	-	475	489	504	519	535	551	567	584
Contractual services	3,446	3,695	3,667	3,722	3,778	3,835	3,893	3,951	4,010	4,070
Insurance	216	245	228	232	237	241	246	251	256	261
Utilities	3,578	3,573	3,963	4,042	4,123	4,205	4,289	4,375	4,463	4,552
Buildings and grounds	1,462	1,042	1,614	1,663	1,713	1,764	1,817	1,871	1,927	1,985
Equipment repair	4,692	3,611	3,646	3,755	3,868	3,984	4,104	4,227	4,353	4,484
Other operating expenses	13	8	50	51	53	54	56	57	59	61
Operating and maintenance capital	455	747	600	612	624	637	649	662	676	689
<b>Subtotal North Terminal</b>	<b>\$ 17,338</b>	<b>\$ 16,884</b>	<b>\$ 18,912</b>	<b>\$ 19,376</b>	<b>\$ 19,853</b>	<b>\$ 20,342</b>	<b>\$ 20,844</b>	<b>\$ 21,359</b>	<b>\$ 21,888</b>	<b>\$ 22,430</b>
<b>South Terminal</b>										
Materials and supplies	\$ 1,490	\$ 1,488	\$ 1,324	\$ 1,363	\$ 1,404	\$ 1,446	\$ 1,490	\$ 1,534	\$ 1,580	\$ 1,628
Janitorial	8,477	8,543	8,705	8,967	9,236	9,513	9,798	10,092	10,395	10,707
Security	-	-	2,775	2,859	2,944	3,033	3,124	3,217	3,314	3,413
Contractual services	4,196	4,380	4,358	4,445	4,534	4,625	4,717	4,812	4,908	5,006
Insurance	486	547	520	530	541	552	563	574	586	597
Utilities	12,977	13,691	13,655	13,928	14,206	14,490	14,780	15,076	15,377	15,685
Buildings and grounds	4,831	5,280	5,355	5,516	5,681	5,851	6,027	6,208	6,394	6,586
Equipment repair	9,962	10,329	10,635	10,954	11,282	11,621	11,969	12,328	12,698	13,079
Other operating expenses	188	176	168	173	178	183	189	195	201	207
Operating and maintenance capital	2,969	3,128	4,123	4,206	4,290	4,376	4,463	4,552	4,644	4,736
<b>Subtotal South Terminal</b>	<b>\$ 45,577</b>	<b>\$ 47,561</b>	<b>\$ 51,618</b>	<b>\$ 52,940</b>	<b>\$ 54,297</b>	<b>\$ 55,690</b>	<b>\$ 57,120</b>	<b>\$ 58,589</b>	<b>\$ 60,096</b>	<b>\$ 61,644</b>
<b>Total O&amp;M Expenses</b>	<b>\$ 248,587</b>	<b>\$ 246,379</b>	<b>\$ 249,863</b>	<b>\$ 257,567</b>	<b>\$ 265,525</b>	<b>\$ 273,745</b>	<b>\$ 282,237</b>	<b>\$ 291,010</b>	<b>\$ 300,074</b>	<b>\$ 309,439</b>
<b>Summary By Cost Center</b>										
North Terminal O&M Expenses	\$ 17,338	\$ 16,884	\$ 18,912	\$ 19,376	\$ 19,853	\$ 20,342	\$ 20,844	\$ 21,359	\$ 21,888	\$ 22,430
South Terminal O&M Expenses	45,577	47,561	51,618	52,940	54,297	55,690	57,120	58,589	60,096	61,644
Remaining Airport O&M Expenses	185,672	181,934	179,334	185,251	191,375	197,713	204,273	211,062	218,090	225,365
<b>Total O&amp;M Expenses</b>	<b>\$ 248,587</b>	<b>\$ 246,379</b>	<b>\$ 249,863</b>	<b>\$ 257,567</b>	<b>\$ 265,525</b>	<b>\$ 273,745</b>	<b>\$ 282,237</b>	<b>\$ 291,010</b>	<b>\$ 300,074</b>	<b>\$ 309,439</b>

Note: Amounts may not add because of rounding.

Source: Airport records (actual and budget); Trillion Aviation (forecast).

Compiled by: Trillion Aviation

(a) Amounts shown are those included in airline rates and charges and may vary from the Airport's financial reports for various reasons, including the treatment of non-cash items.

Exhibit E

NON-AIRLINE OPERATING REVENUES

DETROIT METROPOLITAN WAYNE COUNTY AIRPORT

(Dollars in Thousands for Operating Years Ending September 30)

A-145

	Actual 2016 (a)	Budget 2017	Budget 2018	Forecast						
				2019	2020	2021	2022	2023	2024	2025
<b>Parking</b>										
Blue Deck	\$ 19,934	\$ 19,457	\$ 19,457	\$ 19,934	\$ 20,452	\$ 20,974	\$ 21,540	\$ 22,122	\$ 22,719	\$ 23,355
Green Lot	4,107	4,633	4,633	4,747	4,870	4,995	5,129	5,268	5,410	5,562
Green Lot 2 (formerly Yellow Lot)	711	1,418	1,418	1,453	1,491	1,529	1,570	1,613	1,656	1,703
McNamara Deck	46,881	48,000	48,000	49,176	50,455	51,741	53,138	54,573	56,046	57,616
McNamara Valet	2,865	2,491	2,491	2,552	2,618	2,685	2,758	2,832	2,908	2,990
<b>Total parking</b>	<b>\$ 74,498</b>	<b>\$ 76,000</b>	<b>\$ 76,000</b>	<b>\$ 77,862</b>	<b>\$ 79,886</b>	<b>\$ 81,924</b>	<b>\$ 84,135</b>	<b>\$ 86,407</b>	<b>\$ 88,740</b>	<b>\$ 91,225</b>
<b>Concessions</b>										
North Terminal										
Food and beverage	\$ 4,371	\$ 4,376	\$ 4,708	\$ 3,766	\$ 4,896	\$ 5,017	\$ 5,142	\$ 5,266	\$ 5,393	\$ 5,520
News and gift shops	2,056	1,740	1,872	1,900	1,947	1,995	2,045	2,094	2,145	2,195
Duty free	156	110	119	120	123	126	130	133	136	139
Advertising	148	143	154	156	160	164	168	172	176	181
Other	1,766	1,587	1,707	1,733	1,776	1,820	1,865	1,910	1,956	2,002
<b>Total North Terminal</b>	<b>\$ 8,498</b>	<b>\$ 7,955</b>	<b>\$ 8,559</b>	<b>\$ 7,677</b>	<b>\$ 8,903</b>	<b>\$ 9,123</b>	<b>\$ 9,350</b>	<b>\$ 9,576</b>	<b>\$ 9,806</b>	<b>\$ 10,037</b>
South Terminal										
Food and beverage	\$ 13,644	\$ 14,362	\$ 15,452	\$ 15,879	\$ 16,282	\$ 16,679	\$ 17,101	\$ 17,529	\$ 17,969	\$ 18,434
News and gift shops	8,631	8,932	9,609	9,875	10,125	10,373	10,635	10,901	11,175	11,464
Duty free	1,902	2,004	2,156	2,215	2,271	2,327	2,386	2,445	2,507	2,572
Other	2,108	1,898	2,042	2,099	2,152	2,204	2,260	2,317	2,375	2,436
Advertising	1,487	929	999	1,027	1,053	1,078	1,106	1,133	1,162	1,192
<b>Total South Terminal</b>	<b>\$ 27,772</b>	<b>\$ 28,124</b>	<b>\$ 30,258</b>	<b>\$ 31,095</b>	<b>\$ 31,883</b>	<b>\$ 32,661</b>	<b>\$ 33,489</b>	<b>\$ 34,326</b>	<b>\$ 35,186</b>	<b>\$ 36,097</b>
Airside services										
In-flight catering	\$ 948	\$ 840	\$ 904	\$ 939	\$ 977	\$ 1,016	\$ 1,057	\$ 1,099	\$ 1,142	\$ 1,188
Flight services	288	260	279	290	302	314	327	340	353	367
<b>Total airside services</b>	<b>\$ 1,236</b>	<b>\$ 1,100</b>	<b>\$ 1,183</b>	<b>\$ 1,230</b>	<b>\$ 1,279</b>	<b>\$ 1,330</b>	<b>\$ 1,383</b>	<b>\$ 1,438</b>	<b>\$ 1,496</b>	<b>\$ 1,556</b>
<b>Total concessions</b>	<b>\$ 37,506</b>	<b>\$ 37,179</b>	<b>\$ 40,000</b>	<b>\$ 40,001</b>	<b>\$ 42,065</b>	<b>\$ 43,115</b>	<b>\$ 44,222</b>	<b>\$ 45,340</b>	<b>\$ 46,488</b>	<b>\$ 47,691</b>
<b>Car rental</b>										
Concession fees	\$ 23,872	\$ 23,600	\$ 25,000	\$ 25,613	\$ 26,278	\$ 26,949	\$ 27,676	\$ 28,423	\$ 29,191	\$ 30,008
<b>Total car rental</b>	<b>\$ 23,872</b>	<b>\$ 23,600</b>	<b>\$ 25,000</b>	<b>\$ 25,613</b>	<b>\$ 26,278</b>	<b>\$ 26,949</b>	<b>\$ 27,676</b>	<b>\$ 28,423</b>	<b>\$ 29,191</b>	<b>\$ 30,008</b>

Exhibit E

NON-AIRLINE OPERATING REVENUES

DETROIT METROPOLITAN WAYNE COUNTY AIRPORT

(Dollars in Thousands for Operating Years Ending September 30)

	Actual 2016 (a)	Budget 2017	Budget 2018	Forecast						
				2019	2020	2021	2022	2023	2024	2025
<b>Ground transportation</b>										
Taxi/Luxury sedan	\$ 2,644	\$ 2,340	\$ 2,071	\$ 2,108	\$ 2,146	\$ 2,185	\$ 2,224	\$ 2,264	\$ 2,305	\$ 2,347
Public vehicle	18	9	9	9	9	9	9	9	9	9
AVI (b)	2,463	2,500	5,184	5,233	5,291	5,347	5,411	5,476	5,541	5,613
<b>Total Ground transportation</b>	<b>\$ 5,125</b>	<b>\$ 4,849</b>	<b>\$ 7,264</b>	<b>\$ 7,351</b>	<b>\$ 7,446</b>	<b>\$ 7,541</b>	<b>\$ 7,644</b>	<b>\$ 7,749</b>	<b>\$ 7,856</b>	<b>\$ 7,969</b>
<b>Facility rent</b>										
South Terminal	\$ 27	\$ 174	\$ 173	\$ 178	\$ 184	\$ 189	\$ 195	\$ 201	\$ 207	\$ 213
North Terminal	417	422	477	491	506	521	537	553	570	587
Cargo/Hangar/Ground transportation rent	3,222	3,231	2,875	2,961	3,050	3,142	3,236	3,333	3,433	3,536
<b>Total Facility rent</b>	<b>\$ 3,666</b>	<b>\$ 3,827</b>	<b>\$ 3,525</b>	<b>\$ 3,631</b>	<b>\$ 3,740</b>	<b>\$ 3,852</b>	<b>\$ 3,967</b>	<b>\$ 4,086</b>	<b>\$ 4,209</b>	<b>\$ 4,335</b>
<b>Airport hotel</b>										
Hotel revenue (c)	\$ 33,890	\$ 30,973	\$ 30,389	\$ 30,989	\$ 31,612	\$ 32,236	\$ 32,884	\$ 33,539	\$ 34,206	\$ 34,895
<b>Total hotel revenue</b>	<b>\$33,890</b>	<b>\$ 30,973</b>	<b>\$ 30,389</b>	<b>\$ 30,989</b>	<b>\$ 31,612</b>	<b>\$ 32,236</b>	<b>\$ 32,884</b>	<b>\$ 33,539</b>	<b>\$ 34,206</b>	<b>\$ 34,895</b>
<b>Other non-airline revenue</b>										
Shuttle bus	\$ 2,317	\$ 2,362	\$ 2,900	\$ 2,900	\$ 2,900	\$ 2,900	\$ 2,900	\$ 2,900	\$ 2,900	\$ 2,900
Utility service fee rent - North Terminal	489	515	532	543	553	565	576	587	599	611
Utility service fee rent - South Terminal	1,349	1,293	1,351	1,378	1,406	1,434	1,462	1,492	1,521	1,552
Utility service fee rent - other	2,853	2,842	3,000	3,060	3,121	3,184	3,247	3,312	3,378	3,446
Charges for services - North Terminal	74	30	12	13	13	14	14	14	15	15
Charges for services - South Terminal	26	26	12	13	13	13	14	14	15	15
Charges for services - other	1,559	1,714	1,924	1,982	2,041	2,103	2,166	2,231	2,298	2,367
Other revenue	1,819	1,881	1,999	2,019	2,039	2,059	2,080	2,101	2,122	2,143
<b>Total other non-airline operating revenue</b>	<b>\$ 10,486</b>	<b>\$ 10,662</b>	<b>\$ 11,730</b>	<b>\$ 11,906</b>	<b>\$ 12,086</b>	<b>\$ 12,270</b>	<b>\$ 12,458</b>	<b>\$ 12,651</b>	<b>\$ 12,847</b>	<b>\$ 13,048</b>
<b>Total non-airline operating revenues</b>	<b>\$ 189,042</b>	<b>\$ 187,089</b>	<b>\$ 193,908</b>	<b>\$ 197,353</b>	<b>\$ 203,114</b>	<b>\$ 207,886</b>	<b>\$ 212,988</b>	<b>\$ 218,196</b>	<b>\$ 223,538</b>	<b>\$ 229,172</b>

Note: Amounts may not add because of rounding.

Source: Airport records (actual and budget); Trillion Aviation (forecast)

Compiled by: Trillion Aviation

(a) Amounts shown are those included in airline rates and charges and may vary from the Airport's financial reports for various reasons, including the treatment of non-cash items.

(b) Starting in OY 2018, transportation network company (TNC) revenues are included with AVI revenues.

(c) OY 2016 revenues include taxes, for Budget and forecasting purposes, taxes have been excluded.



**Exhibit F**

**PFC REVENUE APPLIED AS OTHER AVAILABLE MONEYS**

**DETROIT METROPOLITAN WAYNE COUNTY AIRPORT**

(Dollars in Thousands for Operating Years Ending September 30)

	Actual	Forecast								
	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
<b>PFC collections (a)</b>										
Enplaned passengers (000's)	17,131	17,252	17,558	17,726	17,906	18,076	18,261	18,439	18,620	18,812
PFC Eligibility %	88.0%	89.2%	89.0%	89.0%	89.0%	89.0%	89.0%	89.0%	89.0%	89.0%
PFC Eligible Enplanements (000's)	15,075	15,397	15,627	15,776	15,936	16,088	16,252	16,411	16,572	16,743
PFC collection level	\$ 4.50	\$ 4.50	\$ 4.50	\$ 4.50	\$ 4.50	\$ 4.50	\$ 4.50	\$ 4.50	\$ 4.50	\$ 4.50
Less: Administrative Expense	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11
Net PFC collection	\$ 4.39	\$ 4.39	\$ 4.39	\$ 4.39	\$ 4.39	\$ 4.39	\$ 4.39	\$ 4.39	\$ 4.39	\$ 4.39
<b>Total PFC collections (a)</b>	<b>\$ 66,178</b>	<b>\$ 67,593</b>	<b>\$ 68,601</b>	<b>\$ 69,257</b>	<b>\$ 69,961</b>	<b>\$ 70,625</b>	<b>\$ 71,348</b>	<b>\$ 72,043</b>	<b>\$ 72,750</b>	<b>\$ 73,500</b>
<b>Allocated to Cost Centers as Other Available Moneys</b>										
North Terminal (Exhibit H)	\$ 25,555	\$ 23,375	\$ 24,051	\$ 22,368	\$ 22,729	\$ 23,252	\$ 23,953	\$ 24,956	\$ 25,533	\$ 26,134
South Terminal (Exhibit G)	39,364	40,160	41,287	42,545	42,856	42,991	43,009	42,773	42,902	43,044
Airport	1,259	4,058	3,264	4,344	4,375	4,381	4,386	4,314	4,315	4,321
<b>Total Allocated PFCs (Exhibit I)</b>	<b>\$ 66,178</b>	<b>\$ 67,593</b>	<b>\$ 68,601</b>	<b>\$ 69,257</b>	<b>\$ 69,961</b>	<b>\$ 70,625</b>	<b>\$ 71,348</b>	<b>\$ 72,043</b>	<b>\$ 72,750</b>	<b>\$ 73,500</b>

Note: Amounts may not add because of rounding. Airline rates, charges, and fees may not agree to budget due to minimal differences in activity and other assumptions.

Source: Airport records (actual and budget); Trillion Aviation (forecast)

Compiled by: Trillion Aviation

(a) PFC collections reflect the amount assumed to be used as part of Other Available Moneys to pay eligible debt service.

Exhibit G

**SOUTH TERMINAL RENTALS**

**DETROIT METROPOLITAN WAYNE COUNTY AIRPORT**

(Dollars in Thousands for Operating Years Ending September 30)

	Actual 2016	Forecast								
		2017	2018	2019	2020	2021	2022	2023	2024	2025
South Terminal O&M Expenses	\$ 45,577	\$ 47,561	\$ 51,618	\$ 52,940	\$ 54,297	\$ 55,690	\$ 57,120	\$ 58,589	\$ 60,096	\$ 61,644
Debt service (a)	54,596	54,517	55,397	56,874	59,799	59,303	57,609	53,670	59,705	59,033
Less:										
Other Available Moneys (b)	39,364	40,160	41,287	42,545	42,856	42,991	43,009	42,773	42,902	43,044
International Facilities Use Fees	7,387	7,183	7,400	8,258	8,440	8,624	8,814	9,008	9,204	9,406
South Terminal Rental Revenue	1,403	1,492	1,536	1,569	1,602	1,636	1,671	1,706	1,743	1,780
Other Airline Terminal Rents [A]	150	150	300	300	300	300	300	300	300	300
Net Requirement [B]	\$ 51,869	\$ 53,093	\$ 56,492	\$ 57,142	\$ 60,897	\$ 61,442	\$ 60,936	\$ 58,471	\$ 65,652	\$ 66,147
South Terminal Airline Premises (square feet) (c)	911,514	911,514	911,514	911,514	911,514	911,514	911,514	911,514	911,514	911,514
South Terminal Rental Rate (per square foot)	\$ 56.90	\$ 58.25	\$ 61.98	\$ 62.69	\$ 66.81	\$ 67.41	\$ 66.85	\$ 64.15	\$ 72.03	\$ 72.57
Signatory Airline South Terminal Rentals (d)	\$ 51,869	\$ 53,093	\$ 56,492	\$ 57,142	\$ 60,897	\$ 61,442	\$ 60,936	\$ 58,471	\$ 65,652	\$ 66,147
Rentals from South Terminal										
Signatory Airline South Terminal Rentals [B]	\$ 51,869	\$ 53,093	\$ 56,492	\$ 57,142	\$ 60,897	\$ 61,442	\$ 60,936	\$ 58,471	\$ 65,652	\$ 66,147
Other Airline Terminal Rents [A]	150	150	300	300	300	300	300	300	300	300
Rentals from South Terminal [A+B]	\$ 52,019	\$ 53,243	\$ 56,792	\$ 57,442	\$ 61,197	\$ 61,742	\$ 61,236	\$ 58,771	\$ 65,952	\$ 66,447

Note: Amounts may not add because of rounding. Airline rates, charges, and fees may not agree to budget due to minimal differences in activity and other assumptions.

Source: Airport records (actual and budget); Trillion Aviation (forecast)

Compiled by: Trillion Aviation

(a) Debt service is net of capitalized interest, Bond Fund interest, and Bond Reserve Account interest and transfers.

(b) PFC funds transferred to the Bond Fund or Junior Lien Bond Fund for the payment of PFC-eligible debt service.

(c) Preferential South Terminal Space leased to Signatory Airlines and Shared Use South Terminal Space.

(d) Includes per deplaned passenger Shared Use fees.

Exhibit H

**NORTH TERMINAL RENTALS**

**DETROIT METROPOLITAN WAYNE COUNTY AIRPORT**

(Dollars in Thousands for Operating Years Ending September 30)

	Actual 2016	Forecast								
		2017	2018	2019	2020	2021	2022	2023	2024	2025
North Terminal O&M Expenses	\$ 17,338	\$ 16,884	\$ 18,912	\$ 19,376	\$ 19,853	\$ 20,342	\$ 20,844	\$ 21,359	\$ 21,888	\$ 22,430
Debt service (a)	36,080	31,872	31,773	32,087	32,104	30,074	31,106	33,225	33,888	31,563
Less:										
Other Available Moneys (b)	25,555	23,375	24,051	22,368	22,729	23,252	23,953	24,956	25,533	26,134
International Facilities Use Fees	648	660	700	768	786	810	834	846	876	894
North Terminal Rental Revenues	979	966	1,021	1,047	1,073	1,099	1,127	1,155	1,183	1,213
Authority-Controlled Airline Space Revenues (c)	[A] 2,049	3,555	3,491	3,813	3,834	3,832	3,695	3,927	3,977	3,929
North Terminal Shared Use Fees (d)	[B] 15,431	13,885	14,487	15,944	16,008	15,978	15,438	16,423	16,670	16,426
Net Requirement	[C] \$ 8,755	\$ 6,315	\$ 6,935	\$ 7,523	\$ 7,527	\$ 5,444	\$ 6,904	\$ 7,277	\$ 7,537	\$ 5,397
Preferential North Terminal Space leased to Signatory Airlines (square feet)	60,046	60,046	60,046	60,046	60,046	60,046	60,046	60,046	60,046	60,046
North Terminal Rental Rate (per square foot)	\$ 145.80	\$ 105.17	\$ 115.49	\$ 125.29	\$ 125.35	\$ 90.67	\$ 114.98	\$ 121.19	\$ 125.52	\$ 89.88
Signatory Airline North Terminal Rentals	\$ 8,755	\$ 6,315	\$ 6,935	\$ 7,523	\$ 7,527	\$ 5,444	\$ 6,904	\$ 7,277	\$ 7,537	\$ 5,397
Rentals from North Terminal										
Signatory Airline North Terminal Rentals	[C] \$ 8,755	\$ 6,315	\$ 6,935	\$ 7,523	\$ 7,527	\$ 5,444	\$ 6,904	\$ 7,277	\$ 7,537	\$ 5,397
Authority-Controlled Airline Space Revenues (c)	[A] 2,049	3,555	3,491	3,813	3,834	3,832	3,695	3,927	3,977	3,929
North Terminal Shared Use Fees (d)	[B] 15,431	13,885	14,487	15,944	16,008	15,978	15,438	16,423	16,670	16,426
Rentals from North Terminal	[A+B+C] \$ 26,235	\$ 23,755	\$ 24,913	\$ 27,280	\$ 27,369	\$ 25,254	\$ 26,037	\$ 27,627	\$ 28,183	\$ 25,752

Note: Amounts may not add because of rounding. Airline rates, charges, and fees may not agree to budget due to minimal differences in activity and other assumptions.

Source: Airport records (actual and budget); Trillion Aviation (forecast)

Compiled by: Trillion Aviation

(a) Debt service is net of capitalized interest, Bond Fund interest, and Bond Reserve Account interest and transfers.

(b) PFC funds transferred to the Bond Fund or Junior Lien Bond Fund for the payment of PFC-eligible debt service.

(c) Comprised of revenues received for the use of North Terminal Authority-Controlled Airline Space. Amounts include Common Use Gate Fees, Overnight Common Use Gate Rental, non-signatory airline space rentals, and rental for member-only airline clubs.

(d) Collected on a per enplaned passenger basis from all airlines for the use of approximately 125,000 square feet of shared use space, including baggage claim, baggage make-up, and outbound baggage area.

Exhibit I

ACTIVITY FEES

DETROIT METROPOLITAN WAYNE COUNTY AIRPORT

(dollars in thousands for Operating Years Ending September 30)

	Actual	Forecast								
	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
<b>Revenue Requirement</b>										
O&M Expenses	\$ 248,587	\$ 246,379	\$ 249,863	\$ 257,567	\$ 265,525	\$ 273,745	\$ 282,237	\$ 291,010	\$ 300,074	\$ 309,439
Debt service (a)	163,055	175,859	179,943	183,655	184,792	175,859	170,199	165,206	173,175	169,714
Other Available Moneys (b)	(70,782)	(83,447)	(77,445)	(76,097)	(76,800)	(77,464)	(78,186)	(78,882)	(79,589)	(80,334)
Fund requirements (c)	19,314	18,041	17,490	16,983	17,283	12,729	13,067	13,414	13,770	14,138
Interest expense	92	140	140	140	140	140	140	140	140	140
<b>Total Revenue Requirement</b>	<b>\$ 360,266</b>	<b>\$ 356,972</b>	<b>\$ 369,992</b>	<b>\$ 382,248</b>	<b>\$ 390,940</b>	<b>\$ 385,009</b>	<b>\$ 387,456</b>	<b>\$ 390,887</b>	<b>\$ 407,570</b>	<b>\$ 413,097</b>
Less:										
Non-airline revenues	\$ 189,042	\$ 187,089	\$ 193,908	\$ 197,353	\$ 203,114	\$ 207,886	\$ 212,988	\$ 218,196	\$ 223,538	\$ 229,172
International Facilities Use Fees (d)	8,036	7,843	8,100	9,026	9,226	9,434	9,648	9,854	10,080	10,300
Non-signatory Activity Fee revenue	4,310	2,878	2,897	2,566	2,535	2,259	2,167	2,135	2,238	2,289
Rentals from North Terminal	26,235	23,755	24,913	27,280	27,369	25,254	26,037	27,627	28,183	25,752
Rentals from South Terminal	52,019	53,243	56,792	57,442	61,197	61,742	61,236	58,771	65,952	66,447
Airline hangar & other facilities rentals	4,314	4,323	4,163	4,163	4,163	4,163	4,163	4,163	4,163	4,163
Supplemental capital cost payments (e)	1,718	1,718	1,718	1,718	1,718	1,718	1,718	1,718	1,718	1,718
Other grants and transfers	3,319	1,103	1,203	1,203	1,203	1,203	1,203	1,203	1,203	1,203
AVI transfer (f)	(2,463)	(2,500)	(2,500)	(2,500)	(2,500)	(2,500)	(2,500)	(2,500)	(2,500)	(2,500)
<b>Net Revenue Requirement</b>	<b>\$ 73,736</b>	<b>\$ 77,521</b>	<b>\$ 78,798</b>	<b>\$ 83,996</b>	<b>\$ 82,915</b>	<b>\$ 73,850</b>	<b>\$ 70,796</b>	<b>\$ 69,720</b>	<b>\$ 72,995</b>	<b>\$ 74,553</b>
<hr/>										
Signatory landed weight (million-pound units)	20,508	20,977	21,183	21,322	21,479	21,611	21,769	21,919	22,072	22,235
Signatory Activity Fee (per 1,000-pound units)	\$ 3.60	\$ 3.70	\$ 3.72	\$ 3.94	\$ 3.86	\$ 3.42	\$ 3.25	\$ 3.18	\$ 3.31	\$ 3.35
<hr/>										
Non-signatory landed weight (million-pound units)	959	623	517	521	525	529	533	537	541	546
Non-signatory Activity Fee (per 1,000-pound units)	\$ 4.49	\$ 4.62	\$ 4.65	\$ 4.92	\$ 4.83	\$ 4.27	\$ 4.07	\$ 3.98	\$ 4.13	\$ 4.19
<hr/>										
Signatory Airline Activity Fee revenue	\$ 73,736	\$ 77,521	\$ 78,798	\$ 83,996	\$ 82,915	\$ 73,850	\$ 70,796	\$ 69,720	\$ 72,995	\$ 74,553
Non-signatory airline Activity Fee revenue	4,310	2,878	2,406	2,566	2,535	2,259	2,167	2,135	2,238	2,289
<b>Total Activity Fee revenue</b>	<b>\$ 78,046</b>	<b>\$ 80,399</b>	<b>\$ 81,204</b>	<b>\$ 86,563</b>	<b>\$ 85,449</b>	<b>\$ 76,109</b>	<b>\$ 72,962</b>	<b>\$ 71,855</b>	<b>\$ 75,233</b>	<b>\$ 76,842</b>

Note: Amounts may not add because of rounding. Airline rates, charges, and fees may not agree to budget due to minimal differences in activity and other assumptions.

Source: Airport records (actual and budget); Trillion Aviation (forecast)

Compiled by: Trillion Aviation

- (a) Debt service is net of capitalized interest, Bond Fund interest, and Bond Reserve Account interest and transfers; in 2018, includes debt service for proposed Series 2017 Bonds.
- (b) Includes PFC funds transferred to the Bond Fund or Junior Lien Bond Fund for the payment of PFC-eligible debt service, and amounts treated as Other Available Moneys from Aviation Fuel Tax, the Airport Discretionary Fund, and the Noise Fund.
- (c) Includes all fund and reserve requirements, including the hotel.
- (d) Includes revenues from both the South and North terminals.
- (e) Annual bond debt service charges in respect of certain projects that were constructed for the sole benefit of Northwest Airlines in its terminal facility prior to February 26, 2002.
- (f) AVI transfer up to \$2.5 million, may not agree to non-airline revenues on Exhibit E.

Exhibit J

**AIRLINE COST PER ENPLANED PASSENGER**

**DETROIT METROPOLITAN WAYNE COUNTY AIRPORT**

(Dollars in Thousands for Operating Years Ending September 30)

	Actual	Forecast								
	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
<b>Airline Revenues</b>										
Terminal Rentals and Shared Use Fees:										
North Terminal	\$ 26,235	\$ 23,755	\$ 24,913	\$ 27,280	\$ 27,369	\$ 25,254	\$ 26,037	\$ 27,627	\$ 28,183	\$ 25,752
South Terminal	52,019	53,243	56,792	57,442	61,197	61,742	61,236	58,771	65,952	66,447
Activity Fee revenue	78,046	80,399	81,204	86,563	85,449	76,109	72,962	71,855	75,233	76,842
International Facility Use Fees	8,036	7,843	8,100	9,026	9,226	9,434	9,648	9,854	10,080	10,300
Supplemental capital cost payments (a)	1,718	1,718	1,718	1,718	1,718	1,718	1,718	1,718	1,718	1,718
Airline hangar & other facilities rentals	4,314	4,323	4,163	4,163	4,163	4,163	4,163	4,163	4,163	4,163
<b>Total Airline Revenues</b>	<b>\$ 170,368</b>	<b>\$ 171,280</b>	<b>\$ 176,890</b>	<b>\$ 186,192</b>	<b>\$ 189,123</b>	<b>\$ 178,421</b>	<b>\$ 175,764</b>	<b>\$ 173,988</b>	<b>\$ 185,330</b>	<b>\$ 185,222</b>
Enplaned passengers	17,131	17,252	17,558	17,726	17,906	18,076	18,261	18,439	18,620	18,812
<b>Airline cost per enplaned passenger (b)</b>	<b>\$ 9.95</b>	<b>\$ 9.93</b>	<b>\$ 10.07</b>	<b>\$ 10.50</b>	<b>\$ 10.56</b>	<b>\$ 9.87</b>	<b>\$ 9.63</b>	<b>\$ 9.44</b>	<b>\$ 9.95</b>	<b>\$ 9.85</b>

Note: Amounts may not add because of rounding. Airline rates, charges, and fees may not agree to budget due to minimal differences in activity and other assumptions.

Source: Airport records (actual and budget); Trillion Aviation (forecast)

Compiled by: Trillion Aviation

(a) Annual bond debt service charges in respect of certain projects that were constructed for the sole benefit of Northwest Airlines in its terminal facility prior to February 26, 2002.

(b) Cost per enplaned passenger may vary from budget due to minor differences in enplaned passenger forecasts.

Exhibit K

APPLICATION OF REVENUES

DETROIT METROPOLITAN WAYNE COUNTY AIRPORT

(Dollars in Thousands for Operating Years Ending September 30)

	Actual	Forecast								
	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
<b>Revenues</b>										
Airline Revenues	\$ 170,368	\$ 171,280	\$ 176,890	\$ 186,192	\$ 189,123	\$ 178,421	\$ 175,764	\$ 173,988	\$ 185,330	\$ 185,222
Non-Airline Revenues	189,042	187,089	193,908	197,353	203,114	207,886	212,988	218,196	223,538	229,172
Other Available Moneys (a)	70,782	83,447	77,445	76,097	76,800	77,464	78,186	78,882	79,589	80,334
Bond Fund interest, Bond Reserve Account interest and transfers	8,091	2,159	3,287	6,788	4,062	9,887	7,756	11,909	4,002	6,698
<b>Total Revenues and Other Available Moneys</b>	<b>\$ 438,283</b>	<b>\$ 443,975</b>	<b>\$ 451,530</b>	<b>\$ 469,378</b>	<b>\$ 473,399</b>	<b>\$ 479,841</b>	<b>\$ 478,976</b>	<b>\$ 491,441</b>	<b>\$ 493,008</b>	<b>\$ 504,677</b>
<b>Application of Revenues</b>										
Operation and Maintenance Fund (b)	\$ 248,587	\$ 246,379	\$ 249,863	\$ 257,567	\$ 265,525	\$ 273,745	\$ 282,237	\$ 291,010	\$ 300,074	\$ 309,439
Bond and Interest Redemption Fund (c)	158,876	165,742	170,956	178,168	176,578	173,471	165,681	164,839	164,900	164,169
Junior Lien Bond and Interest Redemption Fund (c)	12,270	12,276	12,274	12,275	12,276	12,274	12,274	12,276	12,278	12,243
Operation and Maintenance Reserve Fund	1,965	1,224	83	432	447	462	477	494	511	528
Renewal and Replacement Fund	500	500	500	500	500	500	500	500	500	500
Airport Discretionary Fund	350	350	350	350	350	350	350	350	350	350
Hotel FF&E	2,969	2,750	1,975	2,014	2,055	2,095	2,137	2,180	2,223	2,268
Airport Development Fund	7,661	7,700	7,931	8,169	8,414	8,666	8,926	9,194	9,470	9,754
Other transfer to the Airport Development Fund (d)	5,105	7,054	7,597	9,903	7,254	8,277	6,393	10,599	2,703	5,426
<b>Total Application of Revenues</b>	<b>\$ 438,283</b>	<b>\$ 443,975</b>	<b>\$ 451,530</b>	<b>\$ 469,378</b>	<b>\$ 473,399</b>	<b>\$ 479,841</b>	<b>\$ 478,976</b>	<b>\$ 491,441</b>	<b>\$ 493,008</b>	<b>\$ 504,677</b>

Note: Amounts may not add because of rounding.

Source: Airport records (actual and budget); Trillion Aviation (forecast)

Compiled by: Trillion Aviation

- (a) Includes PFC funds transferred to the Bond Fund or Junior Lien Bond Fund for the payment of PFC-eligible debt service, and amounts treated as Other Available Moneys from Aviation Fuel Tax and the Airport Discretionary Fund.
- (b) Includes interest expense and capital acquisition.
- (c) Net of capitalized interest.
- (d) Includes AVI transfer up to \$2.5 million, local government funding, and other miscellaneous deposits to the Airport Development Fund.

Exhibit L

DEBT SERVICE COVERAGE AND RATE COVENANT

DETROIT METROPOLITAN WAYNE COUNTY AIRPORT

(Dollars in Thousands for Operating Years Ending September 30)

	Actual	Forecast								
	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
<b>Debt Service Coverage</b>										
Revenues and Other Available Moneys	\$ 438,283	\$ 443,975	\$ 451,530	\$ 469,378	\$ 473,399	\$ 479,841	\$ 478,976	\$ 491,441	\$ 493,008	\$ 504,677
Add: Revenue Fund Balance (a)	59,661	55,163	55,163	55,163	55,163	55,163	55,163	55,163	55,163	55,163
Less: Operation and Maintenance Fund (b)	248,587	246,379	249,863	257,567	265,525	273,745	282,237	291,010	300,074	309,439
<b>Net Revenues Available for Senior Lien Debt Service (c)</b>	<b>\$ 249,357</b>	<b>\$ 252,759</b>	<b>\$ 256,829</b>	<b>\$ 266,974</b>	<b>\$ 263,037</b>	<b>\$ 261,259</b>	<b>\$ 251,903</b>	<b>\$ 255,595</b>	<b>\$ 248,097</b>	<b>\$ 250,401</b>
<b>Senior Lien Bonds</b>										
Debt Service (d)	\$ 158,876	\$ 165,742	\$ 170,956	\$ 178,168	\$ 176,578	\$ 173,471	\$ 165,681	\$ 164,839	\$ 164,900	\$ 164,169
Bond debt service coverage	1.57	1.53	1.50	1.50	1.49	1.51	1.52	1.55	1.50	1.53
<b>Senior Lien Bonds and Junior Lien Bonds</b>										
Debt Service (d)	\$ 171,146	\$ 178,018	\$ 183,230	\$ 190,443	\$ 188,854	\$ 185,746	\$ 177,955	\$ 177,114	\$ 177,178	\$ 176,412
Bond debt service coverage	1.46	1.42	1.40	1.40	1.39	1.41	1.42	1.44	1.40	1.42
<b>Rate Covenant</b>										
Net Revenues Available for Senior Lien Debt Service (c)	\$ 249,357	\$ 252,759	\$ 256,829	\$ 266,974	\$ 263,037	\$ 261,259	\$ 251,903	\$ 255,595	\$ 248,097	\$ 250,401
Less:										
Senior Lien Bond Debt Service	158,876	165,742	170,956	178,168	176,578	173,471	165,681	164,839	164,900	164,169
<b>Net Revenues Available for Junior Lien Bond Debt Service (c)</b>	<b>\$ 90,481</b>	<b>\$ 87,017</b>	<b>\$ 85,873</b>	<b>\$ 88,806</b>	<b>\$ 86,459</b>	<b>\$ 87,788</b>	<b>\$ 86,222</b>	<b>\$ 90,756</b>	<b>\$ 83,198</b>	<b>\$ 86,232</b>
Less:										
Junior Lien Bond Debt Service	\$ 12,270	\$ 12,276	\$ 12,274	\$ 12,275	\$ 12,276	\$ 12,274	\$ 12,274	\$ 12,276	\$ 12,278	\$ 12,243
Operation and Maintenance Reserve Fund	1,965	1,224	83	432	447	462	477	494	511	528
Renewal and Replacement Fund	500	500	500	500	500	500	500	500	500	500
Authority Discretionary Fund	350	350	350	350	350	350	350	350	350	350
25% Senior Lien Bond Debt Service	39,719	41,435	42,739	44,542	44,145	43,368	41,420	41,210	41,225	41,042
Hotel FF&E	2,969	2,750	1,975	2,014	2,055	2,095	2,137	2,180	2,223	2,268
Airport Development Fund (e)	12,766	14,754	15,528	18,072	15,668	16,943	15,320	19,793	12,173	15,180
<b>Subtotal</b>	<b>\$ 70,539</b>	<b>\$ 73,290</b>	<b>\$ 73,449</b>	<b>\$ 78,185</b>	<b>\$ 75,440</b>	<b>\$ 75,992</b>	<b>\$ 72,479</b>	<b>\$ 76,803</b>	<b>\$ 69,260</b>	<b>\$ 72,111</b>
<b>Net Revenues Remaining in Revenue Fund</b>	<b>\$ 19,942</b>	<b>\$ 13,728</b>	<b>\$ 12,424</b>	<b>\$ 10,621</b>	<b>\$ 11,018</b>	<b>\$ 11,795</b>	<b>\$ 13,743</b>	<b>\$ 13,953</b>	<b>\$ 13,938</b>	<b>\$ 14,121</b>

Note: Amounts may not add because of rounding. Airline rates, charges, and fees may not agree to budget due to minimal differences in activity and other assumptions.

Source: Airport records (actual and budget); Trillion Aviation (forecast)

Compiled by: Trillion Aviation

(a) Includes certain amounts, generally made up of 25% Senior Lien Bond Debt Service and Net Revenues Remaining in the Revenue Fund,

that the Authority has accumulated, which are available for debt service until used for such other purposes.

(b) Includes interest expense and capital acquisition.

(c) Because of Airport's residual airline rate-setting methodology, decreases in Net Revenues are related to decreases in Debt Service.

(d) Debt Service is net of amounts used to pay capitalized interest resulting in coverage that differs from the results presented in the Authority's Comprehensive Annual Financial Report.

(e) Includes AVI transfer up to \$2.5 million, local government funding, and other miscellaneous deposits to the Airport Development Fund.

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**APPENDIX B**  
**AUDITED FINANCIAL STATEMENTS OF THE AUTHORITY**

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**WAYNE COUNTY AIRPORT AUTHORITY**

Detroit, Michigan

Comprehensive Annual Financial Report

Year Ended September 30, 2017

Prepared by:  
Controller's Office

# WAYNE COUNTY AIRPORT AUTHORITY

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Michael Berry Administration Building  
11050 Rogell Drive, Bldg. #602  
Detroit, MI 48242  
Ph 734 247-7678  
[www.metroairport.com](http://www.metroairport.com)

March 2, 2018

To the Wayne County Airport Authority Board:

The Comprehensive Annual Financial Report (CAFR) of the Wayne County Airport Authority (the Authority) as of and for the year ended September 30, 2017 is submitted herewith. Responsibility for both the accuracy of the presented data and completeness and fairness of the presentation, including all disclosures, rests with the Authority. To the best of our knowledge and belief, this report fairly presents and fully discloses the Authority's financial position, results of operations and cash flows in accordance with accounting principles generally accepted in the United States of America (GAAP). It includes disclosures necessary to enable the reader to gain an understanding of the Authority's financial activities included within the CAFR. The report of the independent auditors on the financial statements is included on pages 1 – 3 of the CAFR.

The CAFR was prepared following the guidelines recommended by the Government Finance Officers Association of the United States and Canada (GFOA). The GFOA awards Certificates of Achievement to those governments whose annual financial reports are judged to conform substantially to the high standards of public financial reporting, including GAAP promulgated by the Governmental Accounting Standards Board (GASB).

The management of the Authority is responsible for establishing and maintaining an internal control structure that is designed to ensure that the assets of the Authority are safeguarded. In addition, as a recipient of federal financial assistance, the Authority is responsible to make certain that an adequate internal control structure is in place to ensure compliance with general and specific laws and regulations related to the Airport Improvement Program and the Aviation Safety and Capacity Expansion Act.

The objectives of an internal control structure are to provide management with reasonable assurance that the resources are safeguarded against waste, loss and misuse and reliable data are recorded, maintained and fairly disclosed in reports. The current internal controls provide the Authority with a solid base of reliable financial records from which the financial statements are prepared. These accounting controls ensure that accounting data are reliable and available to facilitate the preparation of financial statements on a timely basis. Inherent limitations should be recognized in considering the potential effectiveness of any system of internal control. The concept of reasonable assurance is based on the recognition that the cost of a system of internal control should not exceed the benefits derived and that the evaluation of those factors requires estimates and judgment by management.

State laws require an annual audit of the financial records and transactions of the Authority by a firm of independent licensed certified public accountants. The Board appoints an Audit Committee of three Board members to ensure compliance with this requirement. The Audit Committee is to meet at least four times each year with the Chief Executive Officer, the Chief Financial Officer (who is appointed by the Chief Executive Officer) and the Authority's independent public auditors to review the financial condition, operations, performance and management of the Authority. In addition, the Chief Executive Officer appoints an Internal Auditor to evaluate the Authority's internal accounting and administrative control system and conduct audits relating to the Authority's financial activities.

The Authority's financial statements for the year ended September 30, 2017 have received an "unmodified opinion" from Plante & Moran, PLLC, the Authority's independent certified public accountants. An unmodified opinion is the best opinion that an organization can receive on its financial statements. It indicates that the auditor's examination has disclosed no conditions that cause them to believe that the financial statements are not fairly stated in all material respects.

An independent audit was also performed by Plante & Moran, PLLC, in accordance with the requirements of the Uniform Grant Guidance (2 CFR Part 200), i.e., Single Audit. The auditor's reports related specifically to the Single Audit are immediately following the CAFR in the Compliance Section.

A third audit was performed by Plante & Moran, PLLC, as required under Federal Aviation Regulation, Part 158 (Passenger Facility Charges). The auditor's reports related to the Schedule of Passenger Facility Charges are immediately following the CAFR in the Compliance Section.

This CAFR was prepared to meet the needs of a broad spectrum of financial statement readers and is divided into the following major sections:

**Introductory Section** – In addition to serving as a transmittal letter, this section provides the reader an introduction to the CAFR and the Authority. The introductory section includes background information on the reporting entity, its operations and services, accounting systems and budgetary controls, overview of the local economic conditions, its long-term financial planning and certain other pertinent information. It is complementary to financial and analytical data offered in the Management Discussion and Analysis (MD&A) and the Statistical Section of the CAFR discussed below.

**Financial Section** – The independent auditor's report, MD&A, financial statements, notes to the financial statements and required supplementary information are included here. These are the Authority's basic financial statements and provide an overview of the Authority's financial position. MD&A immediately follows the independent auditor's report and complements this letter of transmittal and should be read in conjunction with it.

**Statistical Section** – The supplementary information presented in this section is designed to provide additional historical perspective, context and detail to assist a reader to understand and assess the Authority's economic condition beyond what is provided in the financial statements and notes to the financial statements. The information contained in this section is prepared by the Authority and is not part of the independent auditor's report.



**Continuing Disclosure Section** – The continuing disclosure schedules reflect information in accordance with the requirements of Rule 15c2-12 promulgated by the Securities and Exchange Commission and as set forth in the Continuing Disclosure Undertaking for issued debt. The information contained in this section is prepared by the Authority and is not part of the independent auditor’s report.

**Compliance Section** – This section presents schedules and footnotes prepared to meet the requirements of the U.S. Office of Management & Budget 2 CFR Part 200 as well as Federal Aviation Administration requirements applicable to The Passenger Facility Charge Program and in accordance with 14 CFR Part 158.

## **REPORTING ENTITY BACKGROUND**

The Authority is an independent public benefit agency and considered an agency of the Charter County of Wayne, Michigan (the County), which owns the Detroit Metropolitan Wayne County Airport (DTW) and Willow Run Airport (YIP), (collectively, the “Airports”). Until August 9, 2002, the County operated the Airports. Pursuant to an amendment to the Aeronautics Code of the State of Michigan, known as the Public Airport Authority Act (the Authority Act), Public Act 90, Michigan Public Acts of 2002, effective March 26, 2002, the Authority has operational jurisdiction of the Airports, with the exclusive right, responsibility and authority to occupy, operate, control and use the Airports and the Airport Hotel.

Pursuant to the Authority Act, the Authority is liable for all of the obligations with respect to the Airports and the Airport Hotel.

The Authority is directed and governed by a Board consisting of seven members. The governor of the State appoints two members of the Board; one member is appointed by the legislative body of the County and four members of the Board are appointed by the Chief Executive Officer of the County. The Board appoints the Chief Executive Officer of the Authority.

## **AUTHORITY OPERATIONS AND SERVICES**

The Authority is self-supporting, using aircraft landing fees, fees from terminal and other rentals and revenue from parking, concessions and various additional sources to fund operating expenses. The Authority is not taxpayer-funded. The Capital Improvement Program (CIP) is funded by bonds issued by the Authority, federal and state grants, passenger facility charges (PFCs) and other discretionary funds.

### *Airline Use and Lease Agreement (the Agreement)*

*Leases.* Revenues received by the Authority in accordance with the Master Airport Revenue Bond Ordinance (Master Bond Ordinance) are derived from rentals, fees and charges imposed upon airlines operating at the Airport under Airline Use and Lease Agreements relating to their use of the Airport. The following airlines are parties to such agreements: Air France, American Airlines, Delta Air Lines, Federal Express, Lufthansa German Airlines, Southwest, Spirit Airlines, United Airlines and United Parcel Service (collectively, the “Signatory Airlines”).

*Activity Fees.* Under the Airline Use and Lease Agreements, the Signatory Airlines also are obligated to pay activity fees, which are calculated on an Airport residual basis (Activity Fees). Essentially, the Activity Fee calculation for each Operating Year is based on all airport revenue bond Debt Service (net of Debt Service paid by PFCs and federal grant funds) and all Operation and Maintenance (O&M) Expenses for such Operating Year minus all non-airline revenue for such Operating Year, all airline rental payments for such Operating Year, all international facility use fees for such Operating Year and all payments for use of the Authority-controlled airline space, if any, in each terminal for such Operating Year.

*Amendment to End of Year True-Up of Fees and Charges.* In order to enable the Authority to issue airport revenue bonds for airfield-related capital projects without the bonds being subject to the federal alternative minimum tax, all of the Signatory Airlines agreed in 2012 to an amendment of the Airline Use and Lease Agreements that revised the end of year true-up provision so that the amount to be refunded would include the Signatory and Non-Signatory Airlines. Prior to 2012, Non-Signatory Airlines did not participate in year-end refunds.

*Weighted Majority Approval.* The Airline Use and Lease Agreements provide that a Weighted Majority of the Signatory Airlines can approve additional capital projects for which airport revenue bonds may be issued to pay the costs. A Weighted Majority is defined as either Signatory Airlines which, in the aggregate, landed eighty-five percent (85%) or more of the landed weight of all Signatory Airlines for the preceding 12-month period for which records are available or all but one of the Signatory Airlines regardless of landed weight.

*Passenger Facility Charges.* The Authority is obligated under the Airline Use and Lease Agreements to use PFCs to pay Debt Service on airport revenue bonds issued to pay the costs of certain PFC-eligible projects at the Airport. These projects include the construction of both the South Terminal and the North Terminal. The Airline Use and Lease Agreements also set forth a required priority for the application of PFCs to pay Debt Service in the event there is insufficient PFC revenue available in any Operating Year to pay all PFC-eligible debt service.

### *The Airline Industry*

The industry is susceptible to world events and global economic conditions. In the aftermath of the events of September 11, 2001, the US airline industry saw a material adverse shift in the demand for air travel. The result was five years of reported industry operating losses between 2001 and 2005, totaling more than \$28 billion (excluding extraordinary charges and gains). The airline industry finally gained ground in 2007 with virtually every US airline posting a profit. In 2008 and through the first half of 2009, the combination of record-high fuel prices, weakening economic conditions and a weak dollar resulted in many of the domestic network competitors announcing changes in business strategies. These included mergers, significant capacity reductions and increases in fares and fees to mitigate these challenges.

Following a period of consolidations and mergers, the airlines have returned to profitability. Building upon earnings of \$35.3 billion in net post-tax profits for the global airline industry in 2016 and \$34.5 billion in 2017, the International Air Transport Association (IATA) forecasts the airlines' net profit will be \$38.4 billion in 2018. Global passenger departures grew 7 percent and 7.1 percent in 2016 and 2017, respectively. IATA forecasts passenger traffic to grow by 5.6 percent in 2018. Performance among the industry is uneven across global regions.

Over the past three years, North American airlines have fared best with profits of approximately \$16.5 billion in 2016 and \$15.6 billion in 2017. Latin American airlines have fared as one of the worst with weak home markets and currencies, but that is turning around and further recovery is expected in 2018. A net profit of \$0.9 billion is forecast next year, following losses of \$1.6 billion in 2015 and profits of \$.07 billion in 2016.

Cutting capacity during the economic downturn has been a key strategy to the airlines' return to profitability in recent years. In response to changes in demand, airlines have selectively added back domestic and international seat capacity over the past three years. To take advantage of strong demand for air travel, domestic air carriers are adding capacity that was trimmed over the past decade following a series of mergers and economic recession. The capacity growth is a result of additional seats on fewer flights. To accomplish this:

- The major airlines are up-gauging equipment by replacing smaller aircraft with larger aircraft.
- Small airlines are adding new planes to their fleets.

The year-over-year growth in the system-wide domestic capacity for the twelve months ended September 30, 2017 was 0.4 percent for flights and 3.3 percent for seats. Capacity growth at DTW was slightly less during that time period for flights and seats by 0.2 percent and 2 percent, respectively. The change does not correlate proportionately as seat growth outpaces operations, demonstrating the effect of the airlines' equipment up-gauging.

#### *Airport Activity*

DTW ended fiscal year 2017 with a 0.9 percent increase in enplaned passengers, a 0.3 percent increase in operations, a 4.5 percent increase in cargo and a 0.6 percent increase in landed weight compared to the prior fiscal year. DTW's activities for the years ended September 30, 2017 and 2016 were as follows:

	2017	2016	% Change
Enplanements	17,281,219	17,130,687	0.9%
Operations	393,723	392,383	0.3%
Cargo (in metric tons)	213,980	204,858	4.5%
Landed Weight (in thousands, lbs.)	21,601,812	21,466,594	0.6%

A modest increase in demand for air travel is expected for the next fiscal year.

## **ACCOUNTING SYSTEM AND BUDGETARY CONTROLS**

### *The Authority's Budget*

Prior to the commencement of each fiscal year (currently October 1 to September 30), the Authority is required by the Master Bond Ordinance and Public Act 90 to prepare and adopt a budget. The budget contains an itemized statement of the estimated current operational expenses and the expenses for capital, including funds for the operation and development of the Airports under the jurisdiction of the Authority and the amount necessary to pay the principal and interest of any outstanding bonds or other obligations of the Authority maturing during the ensuing fiscal year. The budget also contains an estimate of the revenues of the Authority from all sources for the next fiscal year.

Budgeting serves as an important management tool to plan, control and evaluate the operations of the Authority. DTW, including the Westin Hotel, and YIP Operation & Maintenance funds budgets are the Authority's annual financial plan for operating and maintaining the airports and hotel. These budgets must be sufficient to cover the operation and maintenance expenses of the Airports, the debt service payable on bonds and other known financial requirements for the ensuing fiscal year. The Capital Improvement Program budget is the Authority's plan for the design and construction of major improvements and new facilities at the Airports with a five-year horizon.

The Authority's basis of budgeting is in accordance to the terms of the Airline Use & Lease Agreements with the Airlines, which differs from Accounting Principles Generally Accepted in the United States of America – the Authority's accounting basis.

Budgetary control is required to ensure that expenditures do not exceed appropriations. The Authority maintains this control through the use of an encumbrance system. As purchase orders are issued, corresponding amounts of appropriations are reserved by the use of encumbrances to prevent overspending. Amendments to the budget are subject to approval by the Board in accordance with the terms contained in the Board resolution adopted with the budget. The independent monitoring of the budget continues throughout the fiscal year for management control purposes. Each month, Financial Planning & Analysis (FP&A) reviews and analyzes all revenue and expense accounts to compare actual to prior year actual and to budget. The findings are reported to the Board in the monthly management report.

## **AUTHORITY'S ECONOMIC CONDITION**

### *Population and Air Trade Area*

DTW resides in a region which the United States Office of Management and Budget (OMB) defines as the Detroit-Warren-Ann Arbor Metropolitan Statistical Area (MSA) and is composed of the six Michigan counties of Lapeer, Livingston, Macomb, Oakland, St. Clair and Wayne. Also part of the geographic area served by DTW are the Flint MSA, which includes Genesee County; the Monroe MSA, which includes Monroe County; and the Adrian MSA, which includes Lenawee County. These counties represent the primary geographical area served by DTW and are commonly called the "Air Trade Area." The estimated population of the Air Trade Area is 5.3 million according to Woods and Poole Economic Inc. (April 2016).

Based on location, accessibility and services available at other commercial service airports within nearby service areas, the borders of the Air Trade Area are generally established by Toledo Express Airport (TOL) to the south, Fort Wayne International Airport (FWA) to the southwest, Lansing Capital City Airport (LAN) to the west, and Bishop International Airport (FNT) to the north. The closest large hub airport to the Air Trade Area is Cleveland-Hopkins International Airport (CLE), which primarily serves its own air trade area of approximately 150 miles southeast of TW across Lake Erie.

Other nearby airport facilities in close proximity to DTW include YIP, Coleman A. Young International Airport (formerly Detroit City Airport) and Windsor International Airport across the U.S. border in Ontario, Canada. YIP, also operated by the Authority, is located seven miles west of DTW and serves cargo, corporate and general aviation clients. Coleman A. Young International Airport (DET) is approximately eight miles northeast of downtown Detroit; however, it has not had commercial passenger airline service since 2000. Windsor International Airport (YQG) is located approximately nine miles southeast of downtown Detroit and provides year-round service to Toronto-Pearson Airport (YYZ) and Toronto City Airport (YTZ) along with seasonal service to four additional destinations in Canada and Cuba.

DTW is the primary air carrier airport serving the Detroit Metropolitan area. In calendar year 2016, DTW ranked 17<sup>th</sup> nationwide in total aircraft operations with 393,427 aircraft movements and 18<sup>th</sup> nationwide in total passengers, enplaning and deplaning, with approximately 34.4 million passengers.

### *Economy*

The demand for air transportation is, to a large extent, dependent upon the demographic and economic characteristics of the geographical area served by an airport (i.e., the Air Trade Area). Home to a number of Fortune 500 companies, the Air Trade Area has seen recent improvement in employment rates and a high percentage of households in the uppermost income categories when compared to Michigan and the nation. The Air Trade area is home to 11 Fortune 500 Company Headquarters. Seven of the Air Trade Area's Fortune 500 companies are part of the automotive industry. The three largest employers in the Air Trade Area as of July 2017 are automobile manufacturers: Ford Motor (48,000 employees), General Motors (37,713 employees) and FCA US (32,514 employees). The University of Michigan (32,749 employees) and Beaumont Health (28,038 employees) complete the top five employers. Consistently appearing near the top of the Fortune 500 Rankings, in 2016 General Motors and Ford Motor were ranked 8<sup>th</sup> and 9<sup>th</sup>, respectively.

The Air Trade Area has experienced a significant recovery from high unemployment rates between 2009 and 2016. As of June 2017, the unemployment rate in the Air Trade Area was 3.8 percent (non-seasonally adjusted). This rate is lower than the unemployment rate in the State of Michigan (4.0 percent) and in the United States of America (4.5 percent). The Air Trade Area's unemployment rate is lower than it was a year ago (5.1 percent in October 2016). Employment growth is the greatest in professional-business services, leisure-hospitality and financial activities industries.

Personal income is a composite measurement of market potential and indicates the general level of affluence of local residents, which corresponds to an area's ability to afford air travel, as well as the area's attractiveness to business and leisure travelers (lower income areas often have weaker business ties to the rest of the nation and a less developed tourism infrastructure). Since the economic recession, per capita personal income for the Air Trade Area increased at a compounded annual growth rate (CAGR) of 2.4 percent from 2011-2016, rising from \$47,827 to \$53,726. In the same time period, the CAGR for Michigan was 2.2 percent and the CAGR for the United States was 1.6 percent. An additional measurement of the market's potential to generate demand for air transportation is the percentage of households in higher income categories. In 2016, 36.1 percent of households in the Air Trade Area had household incomes of \$75,000 or more, which was higher than the 32.5 percent of households in this income category for Michigan, but less than the nation as a whole at 36.3 percent.

## **LONG-TERM FINANCIAL PLANNING**

The Authority's long-term financial planning includes the completion of certain approved capital projects and the accumulation of sufficient resources required to service the debt issued to finance these projects, as well as to operate and maintain the Airports. Under the terms of the Airline Use and Lease Agreement, fees and charges paid by the Airlines are used along with other income from DTW to service the debt issued to finance the construction program.

The Authority covenants in the Master Bond Ordinance (the Ordinance) state that DTW's net revenues plus other available monies as defined by the Ordinance are sufficient to provide debt service coverage of 125% of the average annual debt service requirement on senior lien bonds. This coverage ratio for the year ended September 30, 2017 was in excess of the requirements at 145% of senior lien debt service and 135% of total debt service.

### *Capital Improvement Program*

The Authority maintains an ongoing Capital Improvement Program (CIP) for the Airports to expand, modernize and maintain the Airports. In addition to renovations and modernization of certain existing facilities, the CIP includes construction of the principal elements of the Master Plan for each Airport. The Master Plans establish the framework for the CIP that is necessary for the development of the Airports.

The Authority's CIP represents current expectations of future capital needs. The current five-year plan for 2018-2022 includes planned funding of approximately \$750.0 million and \$98.3 million for Detroit Metropolitan and Willow Run Airports, respectively.

The Authority's funding sources for the CIP are airport revenue bonds, PFCs, grants and Authority discretionary funds. Given the multiple funding sources that comprise this plan, Board approval of the CIP does not imply that the source of funding has been determined. A detailed review of the CIP is published in the Authority's budget book.

### *Airport Improvement Program*

Since 1986, the Authority has participated in the Airport Improvement Program (AIP), the Federal government's airport grant program. The AIP provides funding for airport development, airport planning and noise compatibility programs from the Airport and Airway Trust Fund. The AIP also provides both entitlement and discretionary grants for eligible projects. The Authority also receives grants from the State of Michigan.

### *Passenger Facility Charges*

In 1990, Congress approved the Aviation Safety and Capacity Expansion Act, which authorized domestic airports to impose a PFC on enplaning passengers. In May 1991, the FAA issued the regulations for the use and reporting of PFCs. PFCs may be used for projects which meet at least one of the following criteria: preserve or enhance safety, security, or capacity of the national air transportation system; reduce noise or mitigate noise impacts resulting from an airport; or furnish opportunities for enhanced competition between or among carriers.

Since 1992, the FAA has approved six PFC applications and amendments submitted by the Authority. The Authority is currently authorized to impose and use a PFC of \$4.50 per enplaned passenger up to \$3.2 billion, which includes amounts for the payment of principal, interest and other financing costs on bonds for which the proceeds are used to pay PFC-eligible costs on approved projects.

As of September 30, 2017, the Authority received approximately \$1.4 billion of PFC revenue and interest earnings of approximately \$73.6 million. The Authority expended approximately \$1.4 billion on approved projects. The current PFC expiration date is estimated at February 1, 2034.

## **OTHER INFORMATION**

### *Awards and Achievement*

The GFOA awarded the Authority a "Certificate of Achievement" for Excellence in Financial Reporting for its CAFR for the year ended September 30, 2016. This was the fourteenth consecutive year that the Authority has achieved this prestigious award. In order to be awarded a Certificate of Achievement, a government must publish an easily readable and efficiently organized CAFR. Such a CAFR must satisfy both accounting principles generally accepted in the United States of America and applicable legal requirements.

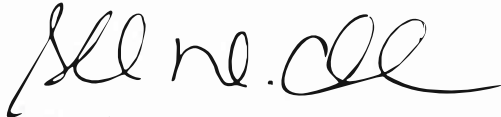
A Certificate of Achievement is valid for a period of one year only. We believe our current report continues to conform to the Certificate of Achievement program requirements and are submitting this 2017 CAFR to the GFOA for consideration.

*Acknowledgments*


The preparation of this report could not have been accomplished without the efficient and dedicated services of the entire staff of the Finance Division. We would like to express our appreciation to all members of this division.

This report also could not have been possible without the leadership and support of the governing body of the Authority's Board.

Respectfully submitted,



Genelle M. Allen  
*Interim Chief Executive Officer*



Istakur Rahman  
*Interim Chief Financial Officer*





Government Finance Officers Association

**Certificate of  
Achievement  
for Excellence  
in Financial  
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Presented to

**Wayne County Airport Authority  
Michigan**

For its Comprehensive Annual  
Financial Report  
for the Fiscal Year Ended

**September 30, 2016**

*Christopher P. Morrill*

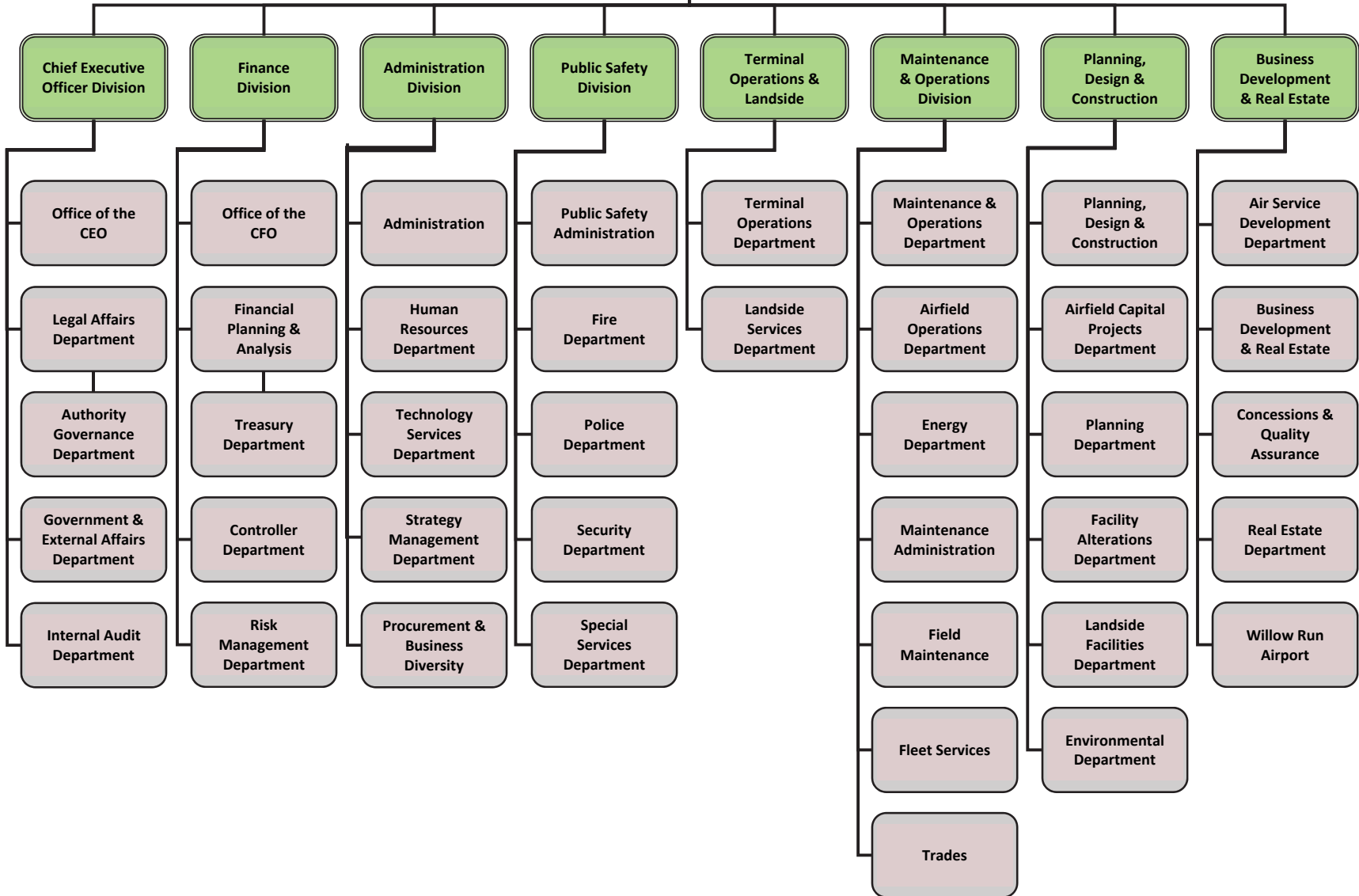
Executive Director/CEO



DETROIT METRO • WILLOW RUN  
WAYNE COUNTY AIRPORT AUTHORITY

# Organizational Chart

Wayne County Airport Authority  
Chief Executive Officer



IIX

## LIST OF PRINCIPAL OFFICIALS

### **Authority Board**

<b><u>Authority Board</u></b>	<b><u>Position</u></b>	<b><u>Term Expires</u></b>
Nabih H. Ayad	Secretary	October 2020
Marvin W. Beatty	Board Member	October 2023
Irma Clark-Coleman	Board Member	October 2018
Michael Garavaglia	Chairperson	October 2020
Ronald Hall, Jr.	Vice-Chairperson	October 2020
Dr. Curtis L. Ivery	Board Member	October 2018
Mark Ouimet	Board Member	October 2022

### **Airport Management**

<b><u>Airport Management</u></b>	<b><u>Position</u></b>
Genelle M. Allen	Interim Chief Executive Officer
Istakur Rahman	Interim Chief Financial Officer
Onnie Jacque	General Counsel
Kenneth Dobson	Vice President – Government & External Affairs
Angela Frakes	Vice President – Terminal Operations
June Lee	Vice President – Administration
James Montgomery	Vice President – Operations and Maintenance
Thomas J. McCarthy	Vice President – Facilities Design & Construction
Chad Newton	Vice President – Public Safety
Samuel A. Nouhan	Vice President – Procurement
Thomas Kalbfleisch	Interim Vice President – Internal Audit
Wendy Sutton	Vice President – Business Development & Real Estate

## **Independent Auditor's Report**

To the Board of Directors  
Wayne County Airport Authority

### **Report on the Financial Statements**

We have audited the accompanying financial statements of each major fund of the Wayne County Airport Authority (the "Authority") as of and for the year ended September 30, 2017 and the related notes to the financial statements, which collectively comprise the Wayne County Airport Authority's basic financial statements, as listed in the table of contents.

### ***Management's Responsibility for the Financial Statements***

Management is responsible for the preparation and fair presentation of these financial statements in accordance with accounting principles generally accepted in the United States of America; this includes 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 Responsibility***

Our responsibility is to express an opinion on these financial statements based on our audit. We conducted our audit in accordance with auditing standards generally accepted in the United States of America. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free from material misstatement.

An audit involves performing procedures to obtain audit evidence about the amounts and disclosures in the financial statements. The procedures selected depend on the auditor's judgment, including the assessment of the risks of material misstatement of the financial statements, whether due to fraud or error. In making those risk assessments, the auditor considers internal control relevant to the entity's preparation and fair presentation of the financial statements 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 entity's internal control. Accordingly, we express no such opinion. An audit also includes evaluating the appropriateness of accounting policies used and the reasonableness of significant accounting estimates made by management, as well as evaluating the overall presentation of the financial statements.

We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinions.

### ***Opinions***

In our opinion, the financial statements referred to above present fairly, in all material respects, the respective financial position of each major fund of the Wayne County Airport Authority as of September 30, 2017 and the respective changes in its financial position and, where applicable, cash flows for the year then ended, in accordance with accounting principles generally accepted in the United States of America.

To the Board of Directors  
Wayne County Airport Authority

***Required Supplemental Information***

Accounting principles generally accepted in the United States of America require that the management's discussion and analysis and the required supplemental information, be presented to supplement the basic financial statements. Such information, although not a part of the basic financial statements, is required by the Governmental Accounting Standards Board, which 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 supplemental 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***

Our audit was conducted for the purpose of forming opinions on the financial statements that collectively comprise the Wayne County Airport Authority's basic financial statements. The introductory section, statistical section, and continuing disclosure section are presented for purposes of additional analysis and are not a required part of the basic financial statements. The introductory section, statistical section, and continuing disclosure section has not been subjected to the auditing procedures applied in the audit of the basic financial statements and, accordingly, we do not express an opinion or provide any assurance on it.

*Alante & Moran, PLLC*

March 2, 2018

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# **WAYNE COUNTY AIRPORT AUTHORITY MANAGEMENT DISCUSSION AND ANALYSIS**

**September 30, 2017**

The following discussion and analysis provides an overview of the financial performance and activities of the Wayne County Airport Authority (the Authority) as of and for the year ended September 30, 2017, with selected comparative information for the year ended September 30, 2016. This discussion and analysis has been prepared by the Authority's management and should be read in conjunction with the basic financial statements and notes thereto, which follow this section.

The Authority is a business-type entity and, as such, the basic financial statements consist of three statements and notes to the basic financial statements. The three basic statements are: (a) Statement of Net Position, which presents the assets, liabilities, deferred inflows and outflows of resources and net position of the Authority as of the end of the fiscal year (b) Statement of Revenues, Expenses, and Changes in Net Position, which reflects revenues and expenses recognized during the fiscal year and (c) Statement of Cash Flows, which provides information on all the cash inflows and outflows for the Authority by major category during the fiscal year.

The financial statements are prepared in accordance with accounting principles generally accepted in the United States of America (U.S.) as promulgated by Governmental Accounting Standards Board (GASB) principles.

The financial statements include the operations of Detroit Metropolitan Wayne County Airport, including the Airport Hotel (the Airport) and Willow Run Airport.

## **THE AIRPORT FUNDING METHODOLOGY**

Funding for the Airport's operations is predicated upon the stipulations in the Airport Use and Lease Agreements (the agreements) between the Authority and the Airlines. The agreements set the terms of the business relationship between the Authority and the Airlines. Key terms in the agreements include rental rates, activity fee methodology, utilities, etc. Once an airline signs an agreement, they are designated a "Signatory Airline." The agreements also determine the budget and financing (activity fee) methodology that the Authority and Airlines agree to follow. Airport budget methodologies throughout the United States are usually characterized as either compensatory or residual, although some airports have a hybrid methodology that combines both features.

The Airport operates under a residual methodology. The methodology places additional risk on the Airlines as these Airlines guarantee the net cost of operating the entire Airport. This obligation includes operating expenses and all debt service requirements of the Airport. If the Airport incurs a deficit in a particular year, it has the ability to increase rates to all Airlines up to the amount of the deficit. Conversely, if the Airport realizes a surplus, the Airport must refund the surplus to all the Airlines. The total amount to be charged or refunded is based on a pro rata allocation between the Signatory Airlines and the Non-Signatory Airlines, which reflects the same ratio as the ratio of total activity fees paid by each group.

# **WAYNE COUNTY AIRPORT AUTHORITY MANAGEMENT DISCUSSION AND ANALYSIS**

**September 30, 2017**

The residual methodology agreed upon by the Signatory Airlines and the Authority creates a funding mechanism that is not congruent with financial statement reporting standards. Although the Airlines are required to fund any deficit of the Airport, this deficit is not equivalent to “Operating Loss” or any other designation on the financial statements. Since the Airport utilizes the residual methodology, all annual operating costs and debt service requirements of the Airport have been funded.

## **FINANCIAL HIGHLIGHTS**

Operating revenues increased \$5.1 million in 2017 as compared to 2016. Authority airline revenues decreased by \$0.3 million (0.2 percent) compared to 2016, primarily due to an increase in landing fee revenue (\$1.5 million) and facility use fees (\$0.5 million) offset by a decrease of terminal building rental revenue (\$2.3 million). Authority non-airline revenues increased by \$5.4 million (2.8 percent) compared to 2016 and outperformed budgeted non-airline revenues by \$7.5 million (4.0 percent).

Operating expenses are \$24.3 million (5.7 percent) less than fiscal year 2016. The primary category that increased was salaries, wages and fringe benefits (\$24.7 million). This expense was offset by decreases in depreciation (\$38.3 million), buildings and ground maintenance (\$5.8 million), professional and other contractual services (\$4.7 million) and hotel management (\$4.3 million).

Nonoperating revenues in 2017 increased by \$2.4 million compared to 2016. The primary categories that increased were passenger facility charges by \$1.4 million and federal and state sources by \$1.1 million. Nonoperating expenses are \$0.1 million (or 0.1 percent) more than fiscal year 2016. The increase is primarily due to an increase in interest expense (\$1.4 million) offset by a decrease in the loss on disposal of assets (\$1.3 million). In addition, capital contributions decreased \$25.7 million over the prior year.

## **STATEMENT OF NET POSITION**

The Statement of Net Position includes all assets, liabilities, deferred inflows and outflows of resources and the resulting net position. Assets and liabilities are generally measured using current values. One exception is capital assets, which are stated at historical cost less an allowance for depreciation. The condensed summary of the Authority’s net position as of September 30, 2017 and 2016 is as follows:



**WAYNE COUNTY AIRPORT AUTHORITY  
MANAGEMENT DISCUSSION AND ANALYSIS**

**September 30, 2017**

	<u>2017</u> <u>(000's)</u>	<u>2016</u> <u>(000's)</u>
ASSETS:		
Current unrestricted assets	\$ 214,794	\$ 158,837
Restricted assets	371,935	556,797
Capital assets (net)	1,991,353	2,009,208
Other assets	<u>9,082</u>	<u>7,350</u>
Total assets	<u>2,587,164</u>	<u>2,732,192</u>
DEFERRED OUTFLOWS	<u>48,455</u>	<u>51,392</u>
LIABILITIES:		
Current liabilities	90,066	118,049
Liabilities payable from restricted assets	127,324	135,242
Long-term liabilities	<u>2,200,923</u>	<u>2,287,412</u>
Total liabilities	<u>2,418,313</u>	<u>2,540,703</u>
DEFERRED INFLOWS	<u>-</u>	<u>1,377</u>
NET POSITION:		
Net investment in capital assets	(90,041)	(97,448)
Restricted	295,809	319,728
Unrestricted	<u>11,538</u>	<u>19,224</u>
TOTAL NET POSITION	<u>\$ 217,306</u>	<u>\$ 241,504</u>

Current unrestricted assets consist mainly of cash and investments, accounts receivable, prepaids and deposits and amounts due from other governmental units. Current unrestricted assets increased \$56.0 million over 2016, primarily due to an increase in unrestricted cash (\$74.2 million) and accounts receivable (\$10.6 million) offset by a reduction in grants receivable (\$28.5 million) at year-end 2017. Restricted assets consist of cash and investments, accounts receivable and amounts due from other governmental units. Restricted assets decreased approximately \$184.9 million over the prior year due to a change in the classification of certain restricted assets in the current year

# WAYNE COUNTY AIRPORT AUTHORITY MANAGEMENT DISCUSSION AND ANALYSIS

September 30, 2017

upon consultation with bond counsel and due to the spending of construction funds on projects. All cash and investments of the Authority are invested according to legal requirements established by the legislature of the State of Michigan. In accordance with State law, investments are restricted to various U.S. government securities, certificates of deposit, commercial paper and repurchase agreements. Other assets consist primarily of prepaid bond insurance premiums, net of related amortization and net OPEB asset. Deferred outflows of resources represent the consumption of net position in one period that is applicable to future periods. They are reported separately from assets in accordance with GASB 65 and consist of the deferred amount on debt refunding and deferred outflows related to pensions.

In accordance with the terms of applicable ordinances, the Authority is required to restrict assets for various purposes. The components of net position have been reserved related to certain restrictions on the use of those assets. Net position has been restricted for operations and maintenance, replacement and improvements, construction, bond and interest redemption, passenger facility charges, customer facility charges and drug enforcement.

Current liabilities consist mainly of accounts payable, payroll-related liabilities, self-insurance liabilities, accrued vacation and sick time, amounts due to other governmental units and security/performance deposits. Long-term liabilities consist primarily of long-term debt, net pension liability and other accrued liabilities. Long-term liabilities decreased approximately \$86.5 million in fiscal year 2017. The primary reasons for the decrease were cash payments on debt. Deferred inflows of resources represent an acquisition of net position that is applicable to future periods.

Net position decreased by \$24.2 million in the fiscal year ended September 30, 2017, which was an improvement over the decrease in net position in 2016 of \$30.2 million and in 2015 of \$104.9 million. In 2015, \$44.4 million of the \$104.9 million decrease in net position was due to the restatement of beginning net position for GASB 68. Without this restatement, net position in 2015 would have decreased \$60.5 million.

The chart below illustrates a breakdown of total net position as of September 30, 2017:



# **WAYNE COUNTY AIRPORT AUTHORITY MANAGEMENT DISCUSSION AND ANALYSIS**

**September 30, 2017**

Total net position at September 30, 2017 was approximately \$217.3 million. A total of \$295.8 million of the components of the Airport's 2017 net position is restricted for future debt service, capital construction and replacement, bond and interest redemption and passenger facility charges, subject to federal regulations. Net investment in capital assets was a negative \$90 million and represents land, intangible assets, buildings, improvements and equipment, net of accumulated depreciation and outstanding principal balances of debt attributable to the acquisition, construction or improvement of those assets. The remainder of net position includes an unrestricted amount of \$11.5 million, which may be used to meet any of the Authority's ongoing operations.

## **CAPITAL ASSETS AND LONG-TERM DEBT ACTIVITY**

The Authority is authorized to issue airport revenue bonds to finance the cost of capital projects and include the debt service on such bonds in the fees and charges of the Signatory Airlines only after receiving approval of a Weighted Majority for such capital projects. As of September 30, 2017, the Authority had approximately \$2.2 billion in outstanding bonds and other debt, both senior and subordinate, paying fixed and variable rates. The total annual debt service (principal and interest) was approximately \$185.9 million in 2017 and long-term debt amounting to \$96 million was paid off during the year. More detailed information on capital assets and long-term debt activity can be found in Notes 7 and 8 included in the Notes to Basic Financial Statements section of this report.

## **STATEMENT OF REVENUES, EXPENSES, AND CHANGES IN NET POSITION**

The Statement of Revenues, Expenses, and Changes in Net Position presents the operating results of the Authority, as well as the nonoperating revenues and expenses. Operating revenues include both airline and non-airline revenues and consist primarily of landing and related fees, terminal building rental and fees, parking fees, concession fees, car rental and hotel revenues. Nonoperating revenues consist primarily of passenger facility charges, federal and state sources and interest income. Interest expense is the most significant nonoperating expense.

A summarized comparison of the Authority's revenues, expenses, and changes in net position for the years ended September 30, 2017 and 2016 follows:

# WAYNE COUNTY AIRPORT AUTHORITY MANAGEMENT DISCUSSION AND ANALYSIS

**September 30, 2017**

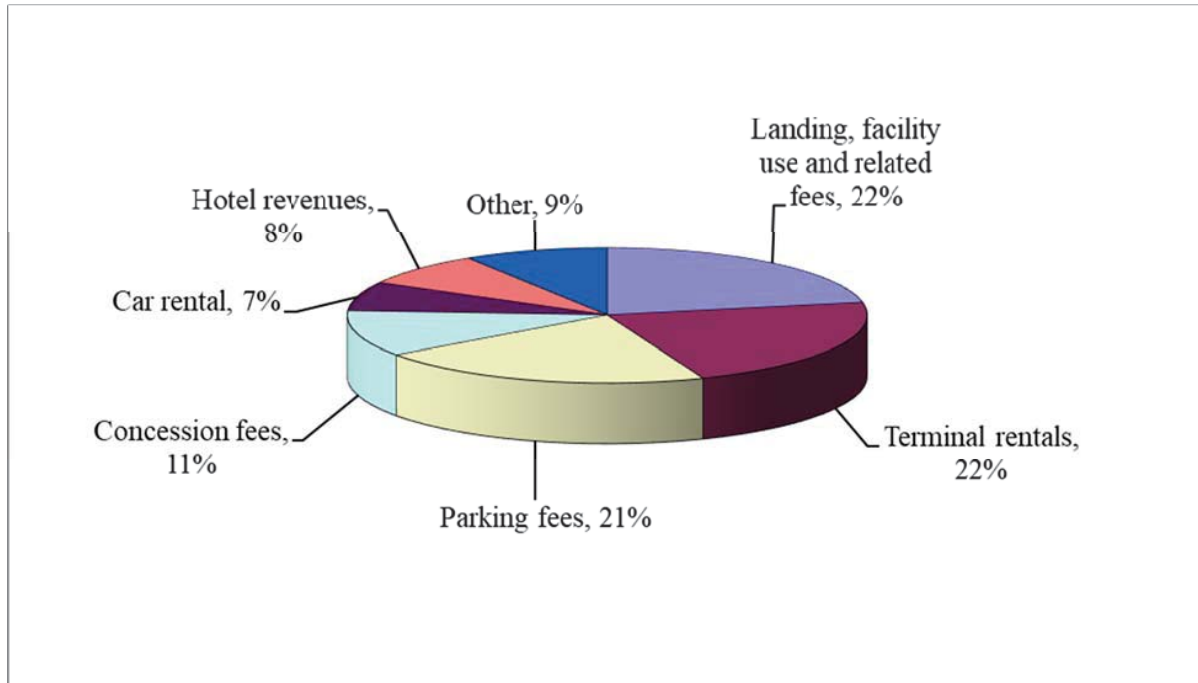
	<b>2017</b>	<b>2016</b>
	<u>(000's)</u>	<u>(000's)</u>
<b>Operating revenues:</b>		
Airline revenues:		
Airport landing and related fees	\$ 80,160	\$ 78,662
Terminal building rentals and fees	82,231	84,580
Facility use fees	8,829	8,288
Non-airline revenues		
Parking fees	76,707	74,498
Concession fees	39,753	37,948
Car rental	24,950	23,872
Hotel	29,928	33,890
Other	<u>25,574</u>	<u>21,332</u>
Total operating revenues	<u>368,132</u>	<u>363,070</u>
<b>Operating expenses:</b>		
Salaries, wages and fringe benefits	110,656	85,907
Parking management	7,987	7,909
Hotel management	18,049	22,357
Depreciation	134,754	173,102
Professional and contractual services	25,925	30,584
Utilities	23,259	22,221
Building, ground, equipment maintenance	36,863	44,676
Other	<u>43,898</u>	<u>38,957</u>
Total operating expenses	<u>401,391</u>	<u>425,713</u>
Operating loss	(33,259)	(62,643)
<b>Nonoperating revenues (expense):</b>		
Passenger facility charges	68,128	66,764
Other nonoperating revenues	14,779	13,785
Interest expense	(72,739)	(71,351)
Other nonoperating expenses	<u>(8,385)</u>	<u>(9,689)</u>
Net nonoperating expenses (revenues)	<u>1,783</u>	<u>(491)</u>
Net loss before capital contribution	(31,476)	(63,134)
<b>Capital Contribution</b>	<u>7,278</u>	<u>32,953</u>
Changes in net position	(24,198)	(30,181)
<b>Net position, beginning of the year</b>	<u>241,504</u>	<u>271,685</u>
<b>Net position, end of the year</b>	<u>\$ 217,306</u>	<u>\$ 241,504</u>

# WAYNE COUNTY AIRPORT AUTHORITY MANAGEMENT DISCUSSION AND ANALYSIS

September 30, 2017

## Operating Revenues

The chart below illustrates the sources of total operating revenue for the year ended September 30, 2017:



Operating revenues for the Authority increased \$5.1 million in 2017 as compared to 2016.

Airline revenues, a major category of operating revenues, includes revenues collected from the airlines. The chart above references terminal rentals, landing, facility use and related fees, which are all part of Airline revenues. Total Airline revenues decreased 0.2 percent to \$171.2 million in 2017 from \$171.5 million in 2016. Landing fee revenues increased 1.9 percent in 2017 to \$80.1 million from \$78.7 million in 2016. The change in landing rate (which drives landing fee revenues) was a 0.8 percent increase from the prior year, with a final Signatory rate of \$3.65 per 1,000 pounds landed weight. In addition, total landed weight reported by the airlines increased 0.6 percent over the prior year. Another aspect of Airline revenues is terminal building rentals and fees, which are driven by the terminal rental rates. Terminal building rentals and fees decreased \$2.3 million (2.8 percent) over the prior year. The change in terminal rental rates was a decrease from the prior year of 5.8 percent, with a final Signatory rate of \$56.81 for the South Terminal and \$109.26 for the North Terminal.

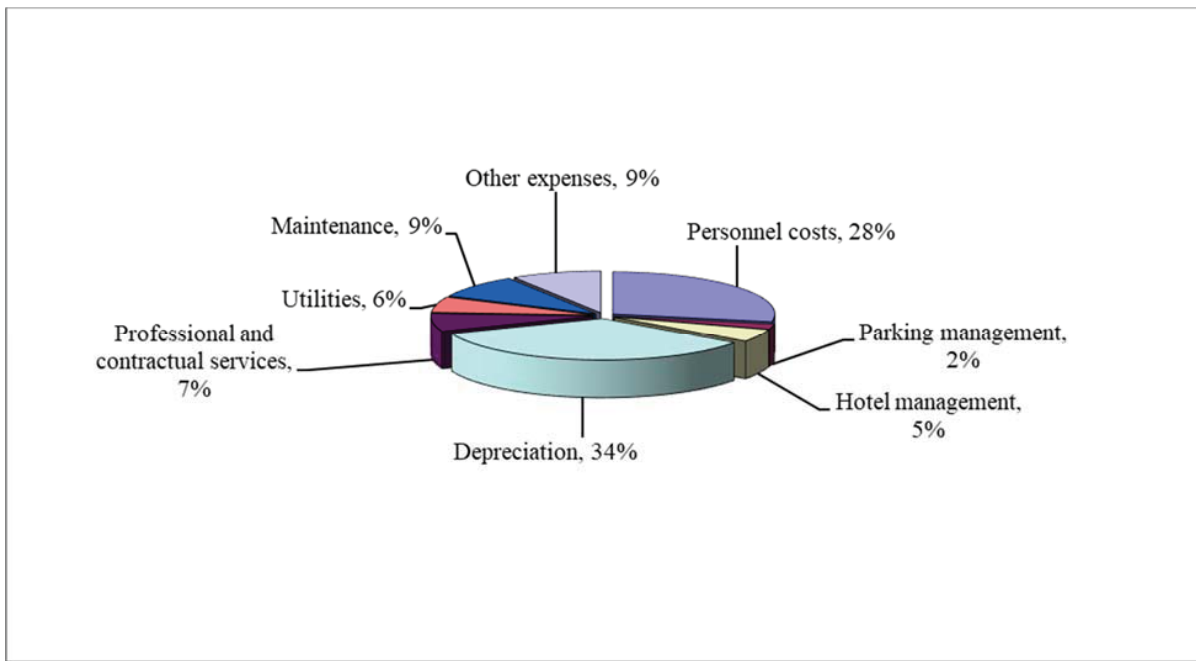
# WAYNE COUNTY AIRPORT AUTHORITY MANAGEMENT DISCUSSION AND ANALYSIS

September 30, 2017

Non-Airline revenues, the other major category of operating revenues, includes revenue collected for activities unrelated to aviation. In fiscal year 2017, total non-Airline operating revenues rose by 2.8 percent to \$196.9 million compared to \$191.5 million in 2016. The growth was largely due to an increase in parking fees, ground transportation and concession fees offset by a decrease in hotel revenue. Parking fees increased \$2.2 million over 2016. Concession fees rose \$1.8 million (4.8 percent) over 2016, resulting from the new food and beverage program at the McNamara Terminal starting in 2016. Ground transportation revenue increased \$2.7 million over 2016 primarily due to transportation network companies (TNC's), Uber and Lyft, which began operating at the Airport in March 2017. The hotel revenue decreased by \$4 million (11.7 percent) primarily from a renovation performed at the hotel which resulted in a decreased number of rooms that were available for rent.

## Operating Expenses

The chart below illustrates the components of total operating expenses for the year ended September 30, 2017:



Operating expenses for the Authority decreased by 5.7 percent to \$401.4 million in 2017 from \$425.7 million in 2016. The primary categories that had significant decreases were depreciation (\$38.3 million), building and ground maintenance (\$5.8 million), professional and other contractual services (\$4.7 million) and hotel management (\$4.3 million). These expenses were offset by increases in salaries, wages and fringe benefits (\$24.7 million).

# WAYNE COUNTY AIRPORT AUTHORITY MANAGEMENT DISCUSSION AND ANALYSIS

September 30, 2017

Depreciation expense decreased 22.2 percent to \$134.8 million from 2016 as a result of an estimate made during 2015. During fiscal year 2015, a Pavement Condition Index (PCI) study was completed which showed that Runway 4L/22R and its associated Taxiways Alpha and Quebec were deteriorating rapidly due to an alkali-silica reaction (ASR). It was determined that both the runway and taxiway would need to be rehabilitated by removing and replacing the concrete level of the pavement. The work was completed by September 30, 2016. As a result, the estimated useful lives of the concrete portion of the runway and taxiways were reduced down to two years from the remaining eight years. The runway and taxiways were fully depreciated in 2016, resulting in a reduction of depreciation expense of approximately \$23 million in 2017.

Building and ground maintenance decreased \$5.8 million (24.2 percent) in fiscal year 2017. The overall decrease is due to the decline in amount needed to maintain the parking decks and roadway from 2017 to 2016.

Professional and contractual services decreased by \$4.7 million (15.2 percent) in fiscal year 2017. The overall decrease is due to a decrease in demolition expense of \$1.5 million, professional fees related to bond issuance of \$900 thousand and the master plan of \$700 thousand compared to 2016.

Hotel operating expenses decreased by \$4.3 million (19.3 percent) in fiscal year 2017. During fiscal year 2017, the hotel went through a renovation, resulting in a decrease in the amount of room available for occupancy, which resulted in lower operating costs.

Salaries, wages and fringe benefits increased \$24.7 million (28.8 percent) in fiscal year 2017. During 2017, the Authority, Wayne County and Wayne County Employee Retirement System (WCERS) entered into a memorandum of understanding in which the Authority committed to pay \$22 million for the Authority's share of pre-2002 retirees. See Note 10 for additional information.

## **Nonoperating Revenues, Expenses and Contributed Capital**

Nonoperating revenue increased \$2.4 million in 2017 over 2016. The improvement in nonoperating revenue was primarily due to an increase in passenger facility charges (PFC) of \$1.4 million, and revenue from federal and state sources of \$1.1 million. The Authority collects \$4.50 of PFCs per enplaned passenger and enplanements increased 0.8 percent in 2017. The increase in federal and state sources were primarily the result of a \$2.5 million increase in aviation fuel tax offset by a decrease of \$1.6 million of grants related to the master plan. First, effective April 1, 2016, the State of Michigan amended various statutes to earmark a portion of sales tax revenue from the retail sale of aviation fuel and a portion of use tax revenue from the use, storage and consumption of aviation fuel to the State Aeronautics Fund and created a "Qualified Airport Fund". Beginning on October 1, 2016, the amount in the Qualified Airport Fund will be transferred to the Authority on a quarterly basis. These deposits must be used to pay (in the following order of priority) the next scheduled payments for revenue bonds issued by the Authority to finance capital improvements to landing areas at the Airport or to defray the costs of capital improvements to

**WAYNE COUNTY AIRPORT AUTHORITY  
MANAGEMENT DISCUSSION AND ANALYSIS**

**September 30, 2017**

landing areas of the Airport. The increase of \$2.5 million in 2017 is a result of a full year of aviation fuel tax collections.

Nonoperating expense increased \$0.1 million in 2017. The primary reason for the increase in nonoperating expense was additional interest expense of \$1.4 million offset by a decrease in the loss on disposal of assets of \$1.3 million.

Capital contributions decreased \$25.7 million over the prior year. There were two primary reasons for the decrease. The Metro Airport Runway 4L/22R reconstruction and Taxiway Whiskey were substantially complete in 2016/2017, which led to the decrease of grant revenue of \$20.7 million and \$5.7 million respectively.



**WAYNE COUNTY AIRPORT AUTHORITY**

Statement of Net Position

September 30, 2017

	<b>Detroit Metropolitan Airport Fund</b>	<b>Willow Run Airport Fund</b>	<b>Total</b>
Assets:			
Current assets:			
Cash and investments (note 4)	\$ 174,264,895	\$ 1,068,316	\$ 175,333,211
Accounts receivable, less allowance (note 2)	27,803,417	437,824	28,241,241
Due from other governmental units	10,250,897	8,615	10,259,512
Due from other funds	17,311	—	17,311
Prepays and deposits	928,935	13,381	942,316
Total current assets	213,265,455	1,528,136	214,793,591
Restricted assets (notes 4 and 6):			
Cash and investments	371,186,490	—	371,186,490
Accounts receivable	748,745	—	748,745
Capital assets (note 7):			
Capital assets not being depreciated:			
Land and nondepreciable assets	227,361,355	17,476,885	244,838,240
Construction in progress	95,687,316	832,382	96,519,698
Capital assets being depreciated:			
Buildings and improvements	2,163,704,347	13,934,137	2,177,638,484
Equipment	93,152,159	5,622,798	98,774,957
Infrastructure	1,368,375,923	145,842,337	1,514,218,260
Total capital assets	3,948,281,100	183,708,539	4,131,989,639
Less accumulated depreciation	2,034,981,012	105,655,212	2,140,636,224
Net capital assets	1,913,300,088	78,053,327	1,991,353,415
Other assets:			
Prepays and deposits	450,000	—	450,000
Prepaid bond insurance premiums (note 2)	2,865,215	—	2,865,215
Net OPEB asset (note 11)	5,766,648	—	5,766,648
Total noncurrent assets	2,294,317,186	78,053,327	2,372,370,513
Total assets	\$ 2,507,582,641	\$ 79,581,463	\$ 2,587,164,104
Deferred outflows of resources:			
Deferred amount on refunding (note 2)	\$ 25,250,350	\$ —	\$ 25,250,350
Deferred outflows from pensions (note 10)	22,864,187	340,534	23,204,721
Total deferred outflows of resources	\$ 48,114,537	\$ 340,534	\$ 48,455,071

See accompanying notes to basic financial statements.

**WAYNE COUNTY AIRPORT AUTHORITY**

Statement of Net Position

September 30, 2017

	<b>Detroit Metropolitan Airport Fund</b>	<b>Willow Run Airport Fund</b>	<b>Total</b>
<b>Liabilities:</b>			
Current liabilities:			
Accounts payable	\$ 58,467,949	\$ 713,155	\$ 59,181,104
Accrued wages and benefits	3,424,732	55,232	3,479,964
Due to other governmental units	3,100,217	—	3,100,217
Due to other funds	—	17,311	17,311
Advance billings and payments received in advance	1,691,708	7,157	1,698,865
Bonds payable and other debt (note 8)	—	19,476	19,476
Other accrued liabilities	22,171,004	398,077	22,569,081
Total current liabilities	88,855,610	1,210,408	90,066,018
Payable from restricted assets:			
Accrued interest and other payables	34,691,521	—	34,691,521
Bonds payable and other debt (note 8)	92,632,782	—	92,632,782
Other accrued liabilities (note 8)	1,148,810	942,600	2,091,410
Advance billings and payments received in advance	8,709	—	8,709
Net pension liability (note 10)	67,600,745	922,161	68,522,906
Bonds payable and other debt, net (note 8)	2,129,795,392	504,344	2,130,299,736
Total noncurrent liabilities	2,325,877,959	2,369,105	2,328,247,064
Total liabilities	\$ 2,414,733,569	\$ 3,579,513	\$ 2,418,313,082
<b>Net position:</b>			
Net investment in capital assets	\$ (168,050,743)	\$ 78,009,509	\$ (90,041,234)
Restricted for:			
Capital assets	14,566,143	—	14,566,143
Debt service	240,805,658	—	240,805,658
Operations	39,348,762	—	39,348,762
Drug enforcement	1,088,522	—	1,088,522
Unrestricted (deficit)	13,205,267	(1,667,025)	11,538,242
Total net position	\$ 140,963,609	\$ 76,342,484	\$ 217,306,093

See accompanying notes to basic financial statements.

**WAYNE COUNTY AIRPORT AUTHORITY**

Statement of Revenues, Expenses, and Changes in Net Position

Year ended September 30, 2017

	<b>Detroit Metropolitan Airport Fund</b>	<b>Willow Run Airport Fund</b>	<b>Total</b>
Operating revenues:			
Airline revenues:			
Airport landing and related fees	\$ 79,493,985	\$ 666,115	\$ 80,160,100
Terminal building rentals and related fees	81,981,928	249,117	82,231,045
Facility use fees	8,474,697	354,679	8,829,376
Nonairline revenues:			
Parking fees	76,706,962	—	76,706,962
Concession fees	39,752,574	—	39,752,574
Car rental	24,949,539	—	24,949,539
Hotel	29,928,448	—	29,928,448
Employee shuttle bus	2,833,329	—	2,833,329
Ground transportation	7,813,795	—	7,813,795
Utility service fees	4,902,937	123,116	5,026,053
Rental facilities	3,421,535	992,665	4,414,200
Other	4,795,315	691,672	5,486,987
Total operating revenues	<u>365,055,044</u>	<u>3,077,364</u>	<u>368,132,408</u>
Operating expenses:			
Salaries, wages, and fringe benefits	108,985,562	1,670,435	110,655,997
Parking management	7,986,688	—	7,986,688
Hotel management	18,049,328	—	18,049,328
Shuttle bus services	8,168,722	—	8,168,722
Janitorial services	13,514,913	22,311	13,537,224
Security	5,149,362	—	5,149,362
Professional and other contractual services	24,551,592	1,373,412	25,925,004
Utilities	22,661,637	596,870	23,258,507
Buildings and grounds maintenance	16,555,722	1,617,993	18,173,715
Equipment repair and maintenance	18,525,591	163,125	18,688,716
Materials and supplies	9,626,087	81,283	9,707,370
Insurance	2,048,581	31,313	2,079,894
Other	4,730,795	526,973	5,257,768
Depreciation	130,406,303	4,347,231	134,753,534
Total operating expenses	<u>390,960,883</u>	<u>10,430,946</u>	<u>401,391,829</u>
Operating loss	<u>(25,905,839)</u>	<u>(7,353,582)</u>	<u>(33,259,421)</u>
Nonoperating revenues (expenses):			
Passenger facility charges	68,128,397	—	68,128,397
Customer facility charges	4,442,148	—	4,442,148
Federal and state sources	6,649,645	5,909	6,655,554
Net insurance recovery	17,575	96,209	113,784
Interest income	3,564,262	3,692	3,567,954
Interest expense	(72,739,426)	—	(72,739,426)
(Loss) gain on disposal of assets	(8,222,918)	13,200	(8,209,718)
Amortization of bond insurance premiums	(175,438)	—	(175,438)
Net nonoperating revenues	<u>1,664,245</u>	<u>119,010</u>	<u>1,783,255</u>
Net loss before capital contributions and transfers	<u>(24,241,594)</u>	<u>(7,234,572)</u>	<u>(31,476,166)</u>
Capital contributions	7,277,683	477	7,278,160
Transfers (out) in	<u>(3,327,263)</u>	<u>3,327,263</u>	<u>—</u>
Changes in net position	<u>(20,291,174)</u>	<u>(3,906,832)</u>	<u>(24,198,006)</u>
Net position – Beginning of year	<u>161,254,783</u>	<u>80,249,316</u>	<u>241,504,099</u>
Net position – End of year	<u>\$ 140,963,609</u>	<u>\$ 76,342,484</u>	<u>\$ 217,306,093</u>

See accompanying notes to basic financial statements.

**WAYNE COUNTY AIRPORT AUTHORITY**

Statement of Cash Flows

Year ended September 30, 2017

	<b>Detroit Metropolitan Airport Fund</b>	<b>Willow Run Airport Fund</b>	<b>Total</b>
Cash flows from operating activities:			
Receipts from customers and users	\$ 364,863,997	\$ 3,071,436	\$ 367,935,433
Payments to suppliers	(157,938,449)	(4,395,650)	(162,334,099)
Payments to employees	(90,892,747)	(1,613,969)	(92,506,716)
Payments (to) from other funds for services provided	(1,280,623)	1,280,623	—
Advances (to) from other funds for services provided	112,424	(112,424)	—
Return of customer deposits	(579,285)	(3,192)	(582,477)
Collection of customer deposits	637,831	18,481	656,312
Net cash provided by (used in) operating activities	<u>114,923,148</u>	<u>(1,754,695)</u>	<u>113,168,453</u>
Cash flows from noncapital financing activities:			
Passenger facility charges received	419,756	—	419,756
Customer facility charges received	69,962	—	69,962
Transfers (to) from other funds	(1,142,872)	1,142,872	—
Insurance proceeds received from settlement	17,575	104,209	121,784
Grants from federal/state government	8,774,929	13,021	8,787,950
Net cash provided by noncapital financing activities	<u>8,139,350</u>	<u>1,260,102</u>	<u>9,399,452</u>
Cash flows from capital and related financing activities:			
Capital contributions received (reimbursed)	32,507,591	186,476	32,694,067
Passenger facility charges received	66,723,188	—	66,723,188
Customer facility charges received	4,340,965	—	4,340,965
Transfers (to) from other funds	(921,206)	921,206	—
Principal paid on capital debt	(95,974,704)	(19,474)	(95,994,178)
Acquisition and construction of capital assets	(142,404,800)	(911,192)	(143,315,992)
Proceeds from disposal of capital assets	296,964	13,200	310,164
Interest paid on capital debt	(88,738,583)	—	(88,738,583)
Net cash (used in) provided by capital and related financing activities	<u>(224,170,585)</u>	<u>190,216</u>	<u>(223,980,369)</u>
Cash flows from investing activities:			
Interest and dividends received	3,713,387	3,692	3,717,079
Purchases of investments	(368,892,156)	—	(368,892,156)
Maturities of investments	433,846,804	—	433,846,804
Net cash provided by investing activities	<u>68,668,035</u>	<u>3,692</u>	<u>68,671,727</u>
Net decrease in cash and cash equivalents	(32,440,052)	(300,685)	(32,740,737)
Cash and cash equivalents – Beginning of year	<u>365,202,337</u>	<u>1,369,001</u>	<u>366,571,338</u>
Cash and cash equivalents – End of year	<u>\$ 332,762,285</u>	<u>\$ 1,068,316</u>	<u>\$ 333,830,601</u>

**WAYNE COUNTY AIRPORT AUTHORITY**

Statement of Cash Flows

Year ended September 30, 2017

	<u>Detroit Metropolitan Airport Fund</u>	<u>Willow Run Airport Fund</u>	<u>Total</u>
Reconciliation of operating loss to net cash provided by (used in) operating activities:			
Operating loss	\$ (25,905,839)	\$ (7,353,582)	\$ (33,259,421)
Adjustments to reconcile operating loss to net cash provided by (used in) operating activities:			
Depreciation expense	130,406,303	4,347,231	134,753,534
Decrease in accounts receivable	779,468	26,428	805,896
(Decrease) increase in due from/to other funds	(1,168,199)	1,168,199	—
Decrease in prepaids/deposits	221,780	443	222,223
Decrease in due from other governmental units	—	4,976	4,976
Increase in net OPEB asset	(1,907,161)	—	(1,907,161)
Decrease in accounts payable	(6,096,557)	(14,980)	(6,111,537)
Increase in accrued wages and benefits	687,537	14,474	702,011
Decrease in unearned revenue	(270,938)	(356)	(271,294)
Increase in due to other governmental units	385,537	—	385,537
(Decrease) increase in other accrued liabilities	(1,394,210)	27,531	(1,366,679)
Increase in net pension liability	19,185,427	24,941	19,210,368
Total adjustments	<u>140,828,987</u>	<u>5,598,887</u>	<u>146,427,874</u>
Net cash provided by (used in) operating activities	\$ <u>114,923,148</u>	\$ <u>(1,754,695)</u>	\$ <u>113,168,453</u>
Cash and investments at September 30, 2017 consist of:			
Cash and cash equivalents	\$ 332,762,285	\$ 1,068,316	\$ 333,830,601
Investments	<u>212,689,100</u>	<u>—</u>	<u>212,689,100</u>
Total cash and investments	\$ <u>545,451,385</u>	\$ <u>1,068,316</u>	\$ <u>546,519,701</u>

Noncash operating activities:

- Loans due from Willow Run Airport Fund to Detroit Metropolitan Airport Fund of \$1,263,184 were forgiven during fiscal year 2017.

Noncash capital and related financing activities:

- Interest expense of approximately \$6 million was capitalized into Detroit Metropolitan Airport capital assets during 2017.

Noncash investing activities

- Detroit Metropolitan Airport Fund had a noncash change in the fair market value of investments of approximately \$235,000 in 2017.

See accompanying notes to basic financial statements.

# WAYNE COUNTY AIRPORT AUTHORITY

## Notes to Basic Financial Statements

September 30, 2017

### (1) The Reporting Entity

The Wayne County Airport Authority (the Authority) is an independent public benefit agency and considered an agency of the Charter County of Wayne, Michigan (the County) for the purposes of federal and state laws, but is not subject to any County charter requirements or the direction or control of either the Wayne County Executive or Commission. Pursuant to Public Act 90 (the Authority Act), Michigan Public Acts of 2002 (effective March 26, 2002), the Authority has operational jurisdiction of the Detroit Metropolitan Wayne County Airport (Metro Airport), the Willow Run Airport, and the Airport Hotel, with the exclusive right, responsibility, and authority to occupy, operate, control, and use them. The financial statements of the Authority include the operations of Metro Airport (which includes the Airport Hotel) and Willow Run Airport. The Authority is not deemed a component unit of the County.

The Authority is directed and governed by a board consisting of seven members. The governor of the State appoints two members of the board, one member is appointed by the legislative body of the County that owns Metro Airport, and four members of the board are appointed by the chief executive officer of the County.

Metro Airport has airport use contracts with 10 airlines. These airlines, along with their affiliates, constitute approximately 96 percent of total landed weight in 2017. Metro Airport has agreements with various concessionaires (parking, food service, rental car agencies, etc.) for which Metro Airport pays a management fee or receives a commission.

### (2) Summary of Significant Accounting Policies

#### (a) Basis of Presentation

The Authority reports the following major funds:

**Detroit Metropolitan Airport Fund** – This fund is used to account for the operations and maintenance of the Detroit Metropolitan Wayne County Airport, which includes the Airport Hotel.

**Willow Run Airport Fund** – This fund is used to account for the operations and maintenance of the Willow Run Airport.

#### (b) Basis of Accounting and Measurement Focus

The financial statements of the Authority are presented on the accrual basis of accounting and are accounted for on the flow-of-economic-resources measurement focus as applicable to governmental units; revenues are recorded when earned, and expenses are recorded as incurred.

#### (c) Cash and Investments

Cash resources of the individual funds of the Authority, except as specifically stated by ordinance, are pooled and invested. Interest on pooled investments is allocated monthly among the respective funds based on average investment balances. Interest earned but not received at year end is accrued. Investments are stated at fair value.

#### (d) Cash Flows

For the purpose of the statement of cash flows, the Authority considers all highly liquid investments, including restricted assets, with a maturity of three months or less when purchased to be cash equivalents. All pooled investments qualify as cash equivalents.

## WAYNE COUNTY AIRPORT AUTHORITY

### Notes to Basic Financial Statements

September 30, 2017

**(e) Passenger Facility Charges**

The Authority assesses passenger facility charges of \$4.50 per passenger enplanement. The passenger facility charges are recorded as nonoperating revenues and may only be expended on capital and noncapital projects approved by the federal government. Passenger facility charges are recorded from airlines on an accrual basis. Unspent PFC cash and accounts receivable are classified as restricted net position for eligible debt service.

**(f) Customer Facility Charges**

The Authority collects customer facility charges (CFC) from all rental car concessionaires that operate at Detroit Metropolitan Airport. Currently, \$1.00 is charged to each airport rental car concessionaire customer on a per transaction day basis. CFC revenues are classified as nonoperating on the statement of revenue, expenses, and changes in net position. Such amounts are restricted for operating and maintenance expense, capital improvements, and debt service related to the rental car operations at Detroit Metropolitan Airport.

**(g) Revenue Recognition**

Operating revenues are recorded as revenues at the time services are rendered. Nonexchange transactions, in which the Authority receives value without directly giving equal value in return, include grants and capital contributions. Federal and state grants and capital contributions are recognized as revenues when the eligibility requirements, if any, are met.

**(h) Net Position**

Equity is displayed in three components, as follows:

**Net Investment in Capital Assets** – This consists of capital assets, net of accumulated depreciation, less the outstanding balances of any bonds, notes, or other borrowings that are attributable to the acquisition, construction, or improvement of those assets.

**Restricted** – This consists of net position that is legally restricted by outside parties or by law through constitutional provisions or enabling legislation. When both restricted and unrestricted resources are available for use, generally it is the Authority's policy to use restricted resources first and then unrestricted resources when they are needed.

**Unrestricted** – This consists of net position that does not meet the definition of "restricted" or "net investment in capital assets."

**(i) Classification of Revenues and Expenses**

The Authority has classified its revenues and expenses as either operating or nonoperating according to the following criteria:

**Operating** – Operating revenues and expenses include activities that have the characteristics of exchange transactions, such as revenues from landing and related fees and concession fees, and expenses paid to employees and vendors.

**Nonoperating** – Nonoperating revenues and expenses include activities that have the characteristics of nonexchange transactions that are defined as nonoperating by GASB No. 9, *Reporting Cash Flows of Proprietary and Nonexpendable Trust Funds and Governmental Entities That Use Proprietary Fund*

**WAYNE COUNTY AIRPORT AUTHORITY**

Notes to Basic Financial Statements

September 30, 2017

*Accounting*, such as revenue from federal and state grants and contributions and investment income, and expenses for capital debt.

**(j) Use of Estimates**

The preparation of financial statements in conformity with U.S. generally accepted accounting principles requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities and disclosure of contingent assets and liabilities at the date of the financial statements and the reported amounts of revenues and expenses during the reporting period. Actual results could differ from those estimates.

**(k) Capital Assets**

Capital assets are stated at the estimated historical cost. Depreciation is computed using the straight-line method over the estimated useful lives of the assets as follows:

Buildings and improvements	10 – 50 years
Equipment/Vehicles	3 – 12 years
Infrastructure	10 – 40 years

Expenditures with a cost of \$5,000 or more for capital assets and for major renewals and betterments that extend the estimated useful life of the assets are capitalized; routine maintenance and repairs are charged to expense as incurred. All costs relating to the construction of property and equipment owned by the Authority are capitalized, including interest costs during construction. At the time capital assets are sold, retired, or disposed of, the costs of such assets and related accumulated depreciation are removed from the accounts, and any gain or loss is reflected in the results of operations.

**(l) Compensated Absences**

The Authority’s employees earn vacation and sick leave benefits based, in part, on length of service. Vacation pay is fully vested when earned, and sick pay vests upon completion of two years of service. Upon separation from service, employees are paid accumulated vacation and sick pay based upon the nature of separation (death, retirement, or termination). Certain limitations have been placed on the hours of vacation and sick leave that employees may accumulate and carry over for payment at termination, retirement, or death. Unused hours exceeding these limitations are forfeited. A liability for accumulated unpaid vacation and sick pay has been recorded in the financial statements as a current “other accrued liability”. Activity for the year ended September 30, 2017 was as follows:

<b>Beginning balance</b>	<b>Increases</b>	<b>Decreases</b>	<b>Ending balance</b>
\$ 5,536,860	\$ 6,586,170	\$ (6,331,067)	\$ 5,791,963

**(m) Retirement Contributions and Other Postemployment Benefit Costs**

The Wayne County Airport Authority offers defined benefit and defined contribution retirement benefits through the Wayne County Employees’ Retirement System (WCERS), an agent multiemployer retirement system. Related to the defined benefit plans, the Authority records a net pension liability for the difference between the total pension liability calculated by the actuary and the pension plan’s fiduciary net position. For purposes of measuring the net pension liability, deferred outflows of resources and deferred inflows of resources related to pensions, and pension expense, information about the fiduciary net position of the



## WAYNE COUNTY AIRPORT AUTHORITY

### Notes to Basic Financial Statements

September 30, 2017

pension plan and additions to/deductions from the pension plan's fiduciary net position have been determined on the same basis as they are reported by WCERS. For this purpose, benefit payments (including refunds of employee contributions) are recognized when due and payable in accordance with the benefit terms. Investments are reported at fair value. Related to the defined contribution plans, employer and employee contributions are recognized in the period in which the contributions are due.

The Authority offers retiree healthcare benefits to retirees. The Authority receives an actuarial valuation to compute the annual required contribution (ARC) necessary to fund the obligation over the remaining amortization period. The Authority reports the full accrual cost equal to the current year required contribution, adjusted for interest and "adjustment to the ARC" on the beginning of year underpaid amount, if any.

#### **(n) Accounts Receivable**

Net receivables at September 30, 2017 consist of trade receivables incurred by customers during the normal course of business. Total allowance for uncollectible accounts at September 30, 2017 was \$348,003, of which \$311,003 was for the Detroit Metropolitan Airport Fund and \$37,000 was for the Willow Run Airport Fund.

#### **(o) Accounts Payable**

Total payables at September 30, 2017 consist of payables due to vendors used during the normal course of business.

#### **(p) Restricted Assets and Liabilities**

Restricted assets consist of cash, investments, and accounts receivable that are legally required to be trustee or maintained in separate depository accounts. Capital program funds are restricted to pay the costs of certain capital projects as defined in various bond agreements. Debt service funds are restricted to make payments for principal and interest as required by the specific bond agreements. Liabilities payable from restricted assets are the accrued interest and current portion of long-term debt associated with the purchase and construction of the capital projects funded by the restricted assets.

#### **(q) Interfund Balances, Advances, and Transfers**

The interfund balances resulted from (1) the time lag between the dates interfund goods and services are provided or reimbursable expenses occur, (2) the time lag between the dates payment between funds is made, and (3) overdrafts by individual funds of its share of pooled cash. Noncurrent balances arising in connection with interfund loans are reported as advances. *Due from other funds* is an asset account used to record current portions of loans from one fund to another fund within the same reporting entity. Similarly, *due to other funds* is a liability account used to record current portions of debt owed by one fund to another fund within the same reporting entity.

Interfund transfers are used to transfer unrestricted resources from one reporting fund to another to fund operations and capital projects.

#### **(r) Prepaid Bond Insurance Premiums**

Prepaid bond insurance premium costs are amortized over the period the bond is outstanding using the straight-line method. Accumulated amortization at September 30, 2017 is \$680,106.

## WAYNE COUNTY AIRPORT AUTHORITY

### Notes to Basic Financial Statements

September 30, 2017

#### *(s) Deferred Outflows of Resources*

In addition to assets, the statement of net position will sometimes report a separate section for deferred outflows of resources. This separate financial statement element represents a consumption of net position that applies to future periods and so will not be recognized as an outflow of resources (expense) until then. The Authority has two items that qualify for reporting in this category. One is the deferred charge on refunding reported on the statement of net position. A deferred charge on refunding results from the difference in the carrying value of refunded debt and its reacquisition price. The amount is deferred and amortized over the shorter of the life of the refunded or refunding debt. The second is the deferred outflow for pensions. See the detailed categories of the deferred outflows in Note 10.

#### *(t) Environmental Matters*

Environmental accruals are calculated and recorded using an expected cash flow technique applied to probabilities, ranges, and assumptions developed in response to a potential remediation liability as based on current law and existing technologies. These accruals are evaluated periodically for changes due to additional assessment and remediation efforts, as well as more detailed legal or technical information. Environmental liabilities are included in the statement of net position as current and long-term “other accrued liabilities.”

In certain instances, environmental remediation costs cannot be reasonably estimated; however, the nature of the matters is disclosed in the notes to the basic financial statements as commitments and contingencies. As components of the remediation efforts are able to be projected, they are calculated using an expected cash flow technique and recorded accordingly.

#### *(u) Self-Insurance*

During the year ended September 30, 2004, the Authority became self-insured for disability, unemployment, and liability insurance. The Authority charges its departments a specified percentage of the department’s regular biweekly payroll for these liabilities. Claims related to unemployment, disability, claim administration, deductibles, self-insured retentions, and legal bills are paid out of these funds. Until November 30, 2010, the Authority purchased commercial insurance for general liability claims in excess of \$50,000. Since September 30, 2004, there have been four losses that have exceeded this \$50,000 retention wherein the insurer has been responsible for settlement and legal fees. Beginning December 1, 2010, the maximum amount paid for legal bills and claims paid out of these funds was reduced to \$10,000 per general liability claim and \$25,000 per auto liability claim. The Authority now purchases general liability and auto liability insurance for claims in excess of \$10,000 and \$25,000, respectively. Since December 1, 2010, there have been two losses that have exceeded the \$10,000 retention and no losses that exceeded the \$25,000 retention. In December 2010, the Authority purchased Law Enforcement liability insurance with a \$50,000 SIR. There have been two losses that have exceeded this \$50,000 retention. In December 2015, the Law Enforcement liability insurance SIR was increased to \$75,000. Since that time, there have been no losses that have exceeded this retention.

During the year ended September 30, 2005, the Authority became self-insured for health insurance and workers’ compensation. The Authority charges its departments a specified percentage of the department’s regular biweekly payroll for these liabilities. The funds collected for workers’ compensation are used to pay claims (wages and medical), third-party administration services, and loss control services. The Authority purchases workers’ compensation excess insurance for claims that exceed \$1 million. Since September 30, 2005, there have been two claims that have exceeded the \$1 million retention wherein the insurer has been responsible for settlement of all future wages, medical, and legal costs. The funds

## WAYNE COUNTY AIRPORT AUTHORITY

### Notes to Basic Financial Statements

September 30, 2017

collected for health insurance are used to pay self-insured claims to Blue Cross, the primary healthcare provider, and premiums for Health Alliance Plan, dental, and life insurance. Prior to January 2016, the Authority, as part of the County's umbrella, paid Blue Cross an amount quarterly for each participant for additional stop/loss coverage. This aggregate stop/loss coverage would become effective only when a claim would exceed approximately 120 percent of average medical claims experience within the group (which included the County). This stop/loss threshold has not been met since the Authority became self-insured. In January 2016, the Authority separated their contracts from the County and pays Blue Cross directly for stop/loss coverage. The amount of the stop/loss coverage is \$1 million. Since that time, there have been no claims that have exceeded this threshold.

The liability for self-insurance claims has been recorded in the financial statements as a current "other accrued liability". A reconciliation of the Authority's self-insured claims liability at September 30, 2017 follows:

	<u>Health Insurance</u>	<u>Workers' Compensation</u>	<u>Other Claims</u>	<u>Total</u>
Claims liability, September 30, 2015	\$ 4,768,622	\$ 673,017	\$ 402,934	\$ 5,844,573
Claims incurred during fiscal year 2016	14,475,807	247,402	475,477	15,198,686
Payments on claims	(14,958,023)	(302,076)	(332,530)	(15,592,629)
Increase (decrease) in the reserve	<u>(511,688)</u>	<u>137,103</u>	<u>(118,761)</u>	<u>(493,346)</u>
Claims liability, September 30, 2016	\$ 3,774,718	\$ 755,446	\$ 427,120	\$ 4,957,284
Claims incurred during fiscal year 2017	12,538,802	459,483	205,375	13,203,660
Payments on claims	(11,922,836)	(409,625)	(317,223)	(12,649,684)
Increase (decrease) in the reserve	<u>(647,725)</u>	<u>54,099</u>	<u>(76,365)</u>	<u>(669,991)</u>
Claims liability, September 30, 2017	<u>\$ 3,742,959</u>	<u>\$ 859,403</u>	<u>\$ 238,907</u>	<u>\$ 4,841,269</u>

### (3) Major Customer

Delta Air Lines (Delta) and its affiliates account for approximately 32 percent of total Authority operating revenues for the year ended September 30, 2017, including 71 percent of landing and related fees, 68 percent of airline rental and related fees, and 80 percent of facility use fees. Approximately 73 percent of total 2017 enplanements are attributable to Delta's (and affiliates) operations. In the event that Delta discontinues its operations, there are no assurances that another airline would replace its hub activities.

Existing operating agreements with all Signatory Airlines servicing the Authority require that all remaining airlines would continue to pay the net operating costs and debt service requirements of the Authority. The Authority had approximately \$6.5 million in receivables from Delta at September 30, 2017.

The airlines serving the Airport have been impacted by global events to varying degrees. American Airlines filed for bankruptcy reorganization in November 2011. With its emergence from bankruptcy in 2013, American Airlines began merger plans with US Airways. Delta Air Lines filed for bankruptcy reorganization in 2005 (it has since emerged). During 2008, Delta Air Lines completed a merger with Northwest Airlines, which was formerly the primary carrier servicing the Airport. This consolidation has affected Detroit Metropolitan Airport positively as Delta has continued to utilize Detroit as a hub and remains the primary carrier.

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It is reasonable to assume that any additional financial or operational difficulties incurred by Delta, the predominant airline servicing the Airport, could have a material adverse effect on the Airport. Any financial or operational difficulties by a Signatory Airline may, whether directly or indirectly, have a material adverse impact on Airport operations.

### (4) Deposits and Investments

Michigan Compiled Laws Section 129.9 1 (Public Act 20 of 1943, as amended), authorizes the Authority to make deposits and invest in the accounts of federally insured banks, credit unions, and savings and loan associations that have offices in Michigan. The Authority is allowed to invest in bonds, securities, and other direct obligations of the United States or any agency or instrumentality of the United States; repurchase agreements; bankers' acceptances of United States banks; commercial paper rated within the two highest classifications that matures not more than 270 days after the date of purchase; obligations of the State of Michigan or its political subdivisions, which are rated as investment grade; and mutual funds composed of investment vehicles that are legal for direct investment by local units of government in Michigan.

The investment policy adopted by the Authority in accordance with Public Act 20 of 1943, as amended, authorizes investments in U.S. Treasuries, U.S. agencies and instrumentalities (date-specific maturities only), non-negotiable certificates of deposit, commercial paper (rated A2/P2 or above), bankers' acceptances, repurchase agreements, overnight deposits, or mutual funds. For overnight deposits, the treasurer may invest overnight or short-term liquid assets to cover cash flow requirements in the following types of pools: investment pools organized under the Surplus Funds Investment Pool Act of 1982, PA 367, 1 MCL 129.111 to MCL 129.118, or investment pools organized under the Urban Cooperation Act of 1967, PA 7, MCL 124.501 to 124.512. For mutual funds, the treasurer may invest in no-load fixed-income mutual funds composed of investment vehicles that are legal for direct investment by local units of government in Michigan, either taxable or tax-exempt. This authorization is limited to mutual funds whose intent is to maintain a net asset value of \$1.00 per share.

The Authority cash and investments are subject to several types of risk, which are examined in more detail below.

**Credit risk** – In compliance with state law, the Authority's investment policy limits investments of commercial paper to the two top ratings issued by nationally recognized statistical rating organizations. As of year end, the credit quality ratings of investments (other than the U.S. government and municipal bonds) are as follows:

<u>Investment</u>	<u>Fair value</u>	<u>Rating</u>	<u>Organization</u>
Money market funds	\$ 4,966,933	AAA	S&P
Commercial paper	40,087,951	A1+, P1	S&P, Moody
Commercial paper	126,337,509	A1, P1	S&P, Moody

**Custodial credit risk of bank deposits** – Custodial credit risk is the risk that in the event of a bank failure, the government's deposits may not be returned to it. The Authority's investment policy requires that deposits over the \$250,000 insured limit in a commercial bank shall not equal more than 25 percent of the combined capital and surplus of that bank, and that bank must meet the minimum standards of at least one standard rating service. At year end, the Authority had \$88,598,359 of bank deposits (certificates of deposit and checking and savings accounts) that were uninsured and uncollateralized. The Authority believes that due to the dollar amounts of cash deposits and the limits of FDIC insurance, it is impractical to insure all deposits. As a result, the Authority evaluates each financial institution with which it deposits funds and

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assesses the level of risk of each institution. Only those institutions with an acceptable estimated risk level are used as depositories.

**Custodial credit risk of investments** – Custodial credit risk is the risk that in the event of the failure of the counterparty, the Authority will not be able to recover the value of its investments or collateral securities that are in the possession of an outside party. The Authority’s investment policy requires that all investments not purchased directly from an issuer must be held in the name of the Authority, be purchased using the delivery vs. payment procedure, and be held in third-party safekeeping. At year end, none of the Authority’s investments was subject to custodial credit risk due to one of the following:

- Investments were held by a third-party safe-keeper in the Authority’s name.
- Investments were held by the Authority’s trustee in the Authority’s name.
- Investments were part of a mutual fund.

**Interest rate risk** – Interest rate risk is the risk that the value of investments will decrease as a result of a rise in interest rates. The Authority’s investment policy addresses this risk by setting limits by investment fund type as follows:

<u>Investment fund</u>	<u>Maturity maximum</u>
General Pool	1 year
Bond Reserve	5 years
Bond Payment and Capital Interest Funds	1 business day prior to bond payment date
Construction Funds	Must match draw schedule or less

Note: All Commercial Paper is limited by state statute to 270 days maximum

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At year end, the average maturities of investments subject to interest rate risk are as follows:

	<b>Fair value</b>	<b>Average maturity</b>
Investments subject to risk:		
General pool funds:		
U.S. Agencies	\$ 2,998,560	2.6 months
Municipal Bonds	5,033,550	8 months
Bond reserves:		
U.S. Agencies	125,296,654	1.5 years
Municipal Bonds	1,496,760	2.6 years
Long-term repo	3,629,278	4.2 years
Commercial paper	8,074,971	2.9 months
Bond payment funds:		
U.S. Treasuries	103,486,893	2 months
Construction funds:		
2007 Construction:		
Commercial paper	8,095,973	17 days
2012A Construction:		
Commercial paper	11,994,071	17 days
2012B Construction:		
Commercial paper	8,995,625	17 days
2014A Construction:		
Commercial paper	4,998,168	13 days
2014B Construction:		
Commercial paper	24,069,198	1.3 months
2014C Construction:		
Commercial paper	22,575,789	1.1 months
2015D Construction:		
Commercial paper	24,894,619	8 days
2015E Construction:		
Commercial paper	4,697,335	19 days
Other construction and operating funds:		
Commercial paper	48,029,711	1.4 months
Investments subject to risk	408,367,155	
Deposits/investments not subject to risk:		
Deposits	133,185,613	
Money market funds	4,966,933	
Total deposits and investments	\$ 546,519,701	

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**Concentration of credit risk** – Through its investment policy, the Authority places limits on the amount the Authority may invest in any one issuer, along with the minimal capital strength of those issuers. There are also limits as to use of specific types of instruments, along with limits upon use of a single institution. These limits are as follows:

*Limits using capital strength test* – Maximum investment is 25 percent of combined capital and surplus position of that financial institution.

*Limits based upon use of specific instruments:*

<u>Investment type</u>	<u>Limit</u>	<u>Actual at year-end</u>
Bankers' acceptances	50%	-
Repurchase agreements	25	0.7
Certificates of deposit (bank)	50	8.6
Money market funds	50	0.9
Commercial paper	60	30.5
U.S. Government	100	42.4

*Authority limits based upon use of a single issuer:*

<u>Investment type</u>	<u>Limit</u>
Bankers' acceptances	25% of total portfolio
Repurchase agreements	10% of total portfolio
Certificates of Deposit (bank)	33% of total portfolio
Certificates of Deposit (S&L)	5% of total portfolio

Actual year-end investments in a single issuer exceeding 5 percent of total portfolio are as follows:

<u>Issuer</u>	<u>Investment type</u>	<u>Fair value</u>	<u>Percentage of portfolio</u>	<u>Rating</u>
Abbey National NA LLC	Commercial paper	\$ 47,623,755	8.71%	A1, P1
Bank of Tokyo-Mitsubishi	Commercial paper	43,681,759	7.99	A1, P1
Toyota Motor Credit	Commercial paper	34,390,801	6.29	A1+, P1

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### (5) Fair Market Measurement

The Authority categorizes its fair value measurements within the fair value hierarchy established by generally accepted accounting principles. The hierarchy is based on the valuation inputs used to measure the fair value of the asset. Level 1 inputs are quoted prices in active markets for identical assets; Level 2 inputs are significant other observable inputs; Level 3 inputs are significant unobservable inputs. Investments that are measured at fair value using the net asset value per share (or its equivalent) as a practical expedient are not classified in the fair value hierarchy below.

In instances whereby inputs used to measure fair value fall into different levels in the above fair value hierarchy, fair value measurements in their entirety are categorized based on the lowest level input that is significant to the valuation. The Authority's assessment of the significance of particular inputs to these fair value measurements requires judgment and considers factors specific to each asset or liability.

The Authority has the following recurring fair value measurements as of September 30, 2017:

- U.S. Treasury securities of \$103,486,893 are valued using quoted market prices (Level 1 inputs).
- Commercial paper of \$166,425,460 is valued using a matrix pricing model and par value (Level 2 inputs).
- Money market mutual funds of \$4,966,933 are valued using \$1 per share (Level 2 inputs).
- U.S. Government Agency securities of \$128,295,214 are valued using quoted market prices and various market and industry inputs (Level 2 inputs).
- Municipal securities of \$6,530,310 are valued using observable inputs, either directly or indirectly (Level 2 inputs).
- Repurchase agreements of \$3,629,278 are valued using par value (Level 2 inputs).

### (6) Restricted Assets

In accordance with the terms of applicable ordinances, the Authority is required to restrict assets for various purposes. Net position has been restricted related to certain of the restricted assets. A summary of the restricted assets at September 30, 2017 is as follows:

Construction:	
Cash and investments	125,903,905
Accounts receivable	<u>113,489</u>
Total	<u>126,017,394</u>
Bond and interest redemption:	
Cash and investments	245,282,585
Accounts receivable	<u>635,256</u>
Total	<u>245,917,841</u>
Total restricted assets	<u>\$ 371,935,235</u>



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**(7) Capital Assets**

Capital asset activity for the year ended September 30, 2017 was as follows:

	<u>Beginning balance</u>	<u>Increases</u>	<u>Decreases</u>	<u>Ending balance</u>
Detroit Metropolitan Airport Fund:				
Capital assets not being depreciated:				
Land and nondepreciable assets \$	227,361,355	\$ -	\$ -	\$ 227,361,355
Construction in progress	161,416,125	112,803,581	(178,532,390)	95,687,316
Total capital assets not being depreciated	<u>388,777,480</u>	<u>112,803,581</u>	<u>(178,532,390)</u>	<u>323,048,671</u>
Capital assets being depreciated:				
Buildings and improvements	2,111,082,335	52,707,799	(85,787)	2,163,704,347
Equipment	87,390,079	11,726,656	(5,964,576)	93,152,159
Infrastructure	1,380,159,352	126,049,684	(137,833,113)	1,368,375,923
Total capital assets being depreciated	<u>3,578,631,766</u>	<u>190,484,139</u>	<u>(143,883,476)</u>	<u>3,625,232,429</u>
Less accumulated depreciation for:				
Buildings and improvements	1,183,594,334	73,140,929	(85,787)	1,256,649,476
Equipment	57,792,470	6,753,605	(5,948,951)	58,597,124
Infrastructure	798,532,000	50,511,768	(129,309,356)	719,734,412
Total accumulated depreciation	<u>2,039,918,804</u>	<u>130,406,302</u>	<u>(135,344,094)</u>	<u>2,034,981,012</u>
Total capital assets being depreciated, net	<u>1,538,712,962</u>	<u>60,077,837</u>	<u>(8,539,382)</u>	<u>1,590,251,417</u>
Total Detroit Metropolitan Airport Fund capital assets, net	<u>1,927,490,442</u>	<u>172,881,418</u>	<u>(187,071,772)</u>	<u>1,913,300,088</u>

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	<u>Beginning balance</u>	<u>Increases</u>	<u>Decreases</u>	<u>Ending balance</u>
Willow Run Airport Fund:				
Capital assets not being depreciated:				
Land and nondepreciable assets \$	17,476,885	\$ -	\$ -	\$ 17,476,885
Construction in progress	521,878	595,017	(284,513)	832,382
Total capital assets not being depreciated	<u>17,998,763</u>	<u>595,017</u>	<u>(284,513)</u>	<u>18,309,267</u>
Capital assets being depreciated:				
Buildings and improvements	13,759,595	174,542	-	13,934,137
Equipment	5,779,724	88,195	(245,121)	5,622,798
Infrastructure	145,732,367	109,970	-	145,842,337
Total capital assets being depreciated	<u>165,271,686</u>	<u>372,707</u>	<u>(245,121)</u>	<u>165,399,272</u>
Less accumulated depreciation for:				
Buildings and improvements	5,277,085	539,020	-	5,816,105
Equipment	4,876,866	249,742	(245,121)	4,881,487
Infrastructure	91,399,151	3,558,469	-	94,957,620
Total accumulated depreciation	<u>101,553,102</u>	<u>4,347,231</u>	<u>(245,121)</u>	<u>105,655,212</u>
Total capital assets being depreciated, net	<u>63,718,584</u>	<u>(3,974,524)</u>	<u>-</u>	<u>59,744,060</u>
Total Willow Run Airport Fund capital assets, net	<u>81,717,347</u>	<u>(3,379,507)</u>	<u>(284,513)</u>	<u>78,053,327</u>
Total Authority capital assets, net	<u>\$ 2,009,207,789</u>	<u>\$ 169,501,911</u>	<u>\$ (187,356,285)</u>	<u>\$ 1,991,353,415</u>

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**(8) Long-term Debt**

The detail of long-term debt at September 30, 2017 is as follows:

Detroit Metropolitan Airport Fund:

Airport Revenue Bonds:

Series 2007A Jr. Lien, 4.85% to 5.00%, due 12/1/2037	\$ 157,970,000
Series 2007B, 4.00% to 5.382%, due 12/1/2028	97,830,000
Series 2008A, 4.00% to 5.75%, due 12/1/2032	98,660,000
Series 2010A, 2.00% to 5.00%, due 12/1/2018	62,785,000
Series 2010C, 1.50% to 5.50%, due 12/1/2022	73,200,000
Series 2010D, 1.50% to 5.50%, due 12/1/2021	14,705,000
Series 2011A, 4.00% to 5.00%, due 12/1/2022	152,465,000
Series 2011B, 3.00% to 5.00%, due 12/1/2020	10,320,000
Series 2012A, 3.00% to 5.00%, due 12/1/2042	177,465,000
Series 2012B, 5.00%, due 12/1/2037	24,990,000
Series 2012C, 3.00% to 4.00%, due 12/1/2020	995,000
Series 2012D, 3.00% to 5.00%, due 12/1/2028	46,030,000
Series 2013A, Variable, Current Yield at 9/30/17, 1.528937%, due 12/1/2033	199,070,000
Series 2013B, Variable, Current Yield at 9/30/17, 1.536054%, due 12/1/2028	74,375,000
Series 2013C, Variable, Current Yield at 9/30/17, 1.57606%, due 12/1/2028	114,610,000
Series 2014A, Variable, Current Yield at 9/30/17, 1.576054%, due 12/1/2034	29,900,000
Series 2014B, 3.00% to 5.00%, due 12/1/2044	66,595,000
Series 2014C, 3.00% to 5.00%, due 12/1/2044	31,845,000
Series 2015A, 1.67%, due 12/1/2020	68,780,000
Series 2015B, 2.716%, due 12/1/2024	75,000,000
Series 2015C, 3.75%, due 12/1/2034	25,640,000
Series 2015D, 3.00% to 5.00%, due 12/1/2045	213,330,000
Series 2015E, 5.00%, due 12/1/2038	7,755,000
Series 2015F, 5.00%, due 12/1/2034	224,155,000
Series 2015G, 2.00% to 5.00%, due 12/1/2036	74,315,000
Series 2015H, Variable, Current Yield at 9/30/17, 1.576054%, due 12/1/2039	23,125,000
Installment purchase contract, 4.33%, due 5/21/2023	2,125,317
Installment purchase contract, 4.05%, due 4/8/2018	27,448
Total Detroit Metropolitan Airport Fund	2,148,062,765

Willow Run Airport Fund:

Notes payable – Washtenaw County, 0%, due 12/31/2019	43,820
Notes payable – Downriver Community Conference, 0%, due 5/1/2027	480,000
Total Willow Run Airport Fund	523,820
Total Authority bonds payable and other debt	2,148,586,585

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Add (less):	
Certain bond discounts	(490,528)
Certain bond premiums	<u>74,855,937</u>
Total Authority bonds payable and other debt, net	2,222,951,994
Less current portion	<u>92,652,258</u>
Total Authority bonds payable and other debt, noncurrent	<u><u>\$ 2,130,299,736</u></u>

The annual requirements to pay principal and interest on the Authority's debt outstanding at September 30, 2017 are summarized as follows:

	<b>Principal</b>			
	<u>Airport</u>	<u>Installment</u>	<u>Willow Run</u>	
	<u>Revenue Bonds</u>	<u>Purchase</u>	<u>Debt</u>	<u>Total</u>
		<u>Contracts</u>		
2018	\$ 92,295,000	\$ 337,782	\$ 19,476	\$ 92,652,258
2019	96,440,000	336,439	39,476	96,815,915
2020	102,545,000	363,758	64,868	102,973,626
2021	101,355,000	392,636	60,000	101,807,636
2022	102,345,000	423,497	60,000	102,828,497
2023 to 2027	531,430,000	298,653	280,000	532,008,653
2028 to 2032	484,585,000	—	—	484,585,000
2033 to 2037	340,915,000	—	—	340,915,000
2038 to 2042	189,805,000	—	—	189,805,000
2043 to 2047	104,195,000	—	—	104,195,000
Total	<u>\$ 2,145,910,000</u>	<u>\$ 2,152,765</u>	<u>\$ 523,820</u>	<u>\$ 2,148,586,585</u>

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	<b>Interest</b>			
	Airport Revenue Bonds	Installment Purchase Contracts	Willow Run Debt	Total
2018	\$ 84,626,590	\$ 86,346	\$ —	\$ 84,712,936
2019	80,526,938	72,022	—	80,598,960
2020	76,158,668	56,917	—	76,215,585
2021	71,745,972	40,602	—	71,786,574
2022	67,261,756	22,993	—	67,284,749
2023 to 2027	281,683,678	4,870	—	281,688,548
2028 to 2032	192,217,871	—	—	192,217,871
2033 to 2037	103,260,876	—	—	103,260,876
2038 to 2042	46,699,222	—	—	46,699,222
2043 to 2047	9,181,625	—	—	9,181,625
<b>Total</b>	<b>\$ 1,013,363,196</b>	<b>\$ 283,750</b>	<b>\$ —</b>	<b>\$ 1,013,646,946</b>

Pursuant to the Authority Act, the Authority is liable for all of the obligations with respect to the Authority and is obligated to perform all of the duties, and is bound by all of the covenants, with respect to the Authority under any ordinances (including Ordinance 319), agreements or other instruments and under law. Under the Authority Act, all airport revenue bonds issued by the Authority may be issued on a parity basis with the Outstanding Senior Lien Bonds and Additional Bonds issued by the Authority under the Master Bond Ordinance and secured by net revenues.

Net revenues of Metro Airport are pledged toward the repayment of the Airport Revenue Bonds and the Installment Purchase Contracts for the life of the agreements. Net revenues consist of operating revenues, interest income and other, federal and state sources, passenger facility charges, and customer facility charges reduced by operating expenses not including depreciation. For fiscal year 2017, the net revenue was \$184,401,950 compared to the net debt service (principal and interest) of \$185,868,778.

The Airport Revenue Bond Ordinances require that Metro Airport restrict assets to provide for the operations, maintenance, and administrative expenses of the subsequent month, the redemption of bond principal and interest, and for other purposes as defined in those ordinances.

In June 1999, the County entered into agreements with Northwest to issue approximately \$15.2 million in Airport Special Facility Revenue Bonds to finance the construction of an aircraft maintenance facility. All debt service costs will be paid by the airline through a trustee. The County and the Authority are not obligated in any manner to pay debt service in the event of default by Northwest. As these bonds are payable from special facility lease rentals payable in full by Northwest, the related debt has not been reflected in the financial statements of the Authority. An “Event of Default” occurred as a result of the Northwest Airlines bankruptcy filing on September 14, 2005. Northwest Airlines has since emerged from bankruptcy and affirmed its obligation for the Series 1999 Special Facility Bonds and is no longer in default. Effective December 31, 2009, the FAA issued a single operating certificate for the integrated airline, and on the same date Northwest legally merged into Delta, resulting in a single surviving corporation known as Delta Air Lines, Inc. As a result of the merger, by operation of law, Delta has succeeded to all of the rights and obligations of Northwest.

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In December 2001, the County entered into a \$292,133 note payable with Washtenaw County to allow Washtenaw County to use its Michigan Community Development Block Grant to assist Willow Run Airport in renovating Hangar I. The agreement calls for the principal to be paid in quarterly installments commencing on March 31, 2005.

In June 2007, the Authority issued \$180.4 million in Wayne County Airport Authority Airport Revenue Bonds to provide funds to pay a portion of the costs of certain capital improvements at Metro Airport. These projects include the reconstruction and rehabilitation of airfield pavement, the design and construction of a centralized luggage screening facility with an in-line explosive detection system for both the McNamara and North Terminals, and improvements to parking facilities and roadways. The Series 2007A Bonds are revenue obligations of the Authority payable solely from the net revenues derived by the Authority from the operation of Metro Airport and available after net revenues have first been set aside as required to pay the principal and interest and redemption price, if any, of Senior Lien Bonds as provided in the Ordinance. The Series 2007A Bonds are “Junior Lien Bonds” under the Ordinance, and a statutory lien subordinate to the prior lien in respect of Senior Lien Bonds has been established under the Ordinance upon and against the net revenues to secure the payment of the Series 2007A Bonds.

In September 2007, the Authority executed a Master Lease Purchase Agreement to finance up to \$8 million in major equipment purchases over a three-year period. The Authority used \$5,397,299 of this agreement and entered into five Installment Purchase Contracts to pay for equipment and additional energy conservation improvements at Metro Airport. As of September 30, 2017, three of the five Installment Purchase Contracts were paid in full.

In November 2007, the Authority issued \$119.4 million in Wayne County Airport Authority Airport Revenue Refunding Bonds, Series 2007B. The Series 2007B Bonds were issued to refund a portion of the Series 1998B Bonds, which were initially issued to finance the cost of various capital projects at Metro Airport. The Series 2007B Bonds are revenue obligations of the Authority payable solely from the new revenues derived by the Authority from the operations of Metro Airport.

The Authority defeased a portion of the Series 1998B Bonds by placing the proceeds of the Series 2007B Bonds in an irrevocable trust to provide for all future debt service payments. The Series 1998B Bonds were subsequently called and paid in full in December 2008. The difference between the cash flows required to service the new debt and complete the refunding was approximately \$6.3 million. The Authority estimates its minimum economic gain (difference between the present value of the debt service payments on the old and new debt) was approximately \$7 million.

In April 2008, the Authority issued \$142.3 million in Wayne County Airport Authority Airport Revenue Refunding Bonds, Series 2008A. The Series 2008A Fixed Rate Refunding Bonds were issued to refund the Series 2002A Variable Rate Bonds which were initially issued to finance the cost of various capital projects at Metro Airport. The Series 2008A Bonds are revenue obligations of the Authority payable solely from the new revenues derived by the Authority from the operations of Metro Airport.

The Authority defeased the Series 2002A Bonds by placing the proceeds of the Series 2008A Bonds in an irrevocable trust to provide for all future debt service payments. The Series 2002A Bonds were subsequently called and paid in full in May 2008.

## WAYNE COUNTY AIRPORT AUTHORITY

### Notes to Basic Financial Statements

September 30, 2017

In December 2010, the Authority issued \$722.7 million in Wayne County Airport Authority Airport Revenue Refunding Bonds, Series 2010A, 2010B, 2010C, 2010D, 2010E-1, 2010E-2, and 2010F. The Series 2010A, 2010B, 2010C, 2010D, 2010E-1, 2010E-2, and 2010F Bonds were issued to refund certain outstanding indebtedness previously issued to finance or refinance the cost of various capital projects at Metro Airport. The Series 2010A Refunding Bonds were issued to refund a portion of the Series 1998A Bonds. The Series 2010B Refunding Bonds were issued to refund a portion of the Series 1998B Bonds. The Series 2010C Refunding Bonds were issued to refund a portion of the Series 2008B Bonds, a portion of the Series 2008C Bonds, the Series 2008E Bonds, and the Series 2008F Bonds. The Series 2010D Refunding Bonds were issued to refund the Series 2008D Bonds. The Series 2010E-1 Refunding Bonds were issued to refund a portion of the Series 1998A Bonds. The Series 2010E-2 Refunding Bonds were issued to refund a portion of the Series 1998A Bonds. The Series 2010F Refunding Bonds were issued to refund a portion of the Series 2008B Bonds and a portion of the Series 2008C Bonds. The Series 2010A Bonds, Series 2010B Bonds, Series 2010C Bonds, Series 2010D Bonds, Series 2010E-1 Bonds, Series 2010E-2 Bonds, and Series 2010F Bonds are revenue obligations of the Authority payable solely from the net revenues derived by the Authority from the operations of Metro Airport.

The Authority defeased the refunded portions of the Series 1998A Bonds, Series 1998B Bonds, Series 2008B Bonds, Series 2008C Bonds, Series 2008D Bonds, Series 2008E Bonds, and Series 2008F Bonds by placing the proceeds of the Series 2010A Bonds, Series 2010B Bonds, Series 2010C Bonds, Series 2010D Bonds, Series 2010E-1 Bonds, Series 2010E-2 Bonds, and Series 2010F Bonds in an irrevocable trust to provide for all future debt service payments. The Series 1998A Bonds, Series 1998B Bonds, Series 2008B Bonds, Series 2008C Bonds, Series 2008D Bonds, Series 2008E Bonds, and Series 2008F Bonds were subsequently called and paid in full in January 2011 and February 2011. The difference between the cash flows required to service the new debt and complete the refunding was approximately \$52.2 million. The Authority estimates its minimum economic gain (difference between the present value of the debt service payments on the old and new debt) was approximately \$25.5 million.

In November 2011, the Authority issued \$169.4 million in Wayne County Airport Authority Airport Revenue Refunding Bonds, Series 2011A and 2011B. The Series 2011A and 2011B Bonds were issued to refund certain outstanding indebtedness previously issued to finance or refinance the cost of various capital projects at Metro Airport. The Series 2011A Refunding Bonds were issued to refund a portion of the Series 1998A Bonds. The Series 2011B Bonds were issued to refund a portion of the Series 2002C Refunding Bonds. The Series 2011A Bonds and Series 2011B Bonds are revenue obligations of the Authority payable solely from the net revenues derived by the Authority from the operations of Metro Airport.

The Authority defeased the refunded portions of the Series 1998A Bonds and the refunded portions of the Series 2002C Bonds by placing the proceeds of the Series 2011A Bonds and Series 2011B Bonds in an irrevocable trust to provide for all future debt service payments. The Series 1998A Bonds and Series 2002C Bonds were subsequently called and paid in full in December 2011 and December 2012. The difference between the cash flows required to service the new debt and complete the refunding was approximately \$10.6 million. The Authority estimates its minimum economic gain (difference between the present value of the debt service payments on the old and new debt) was approximately \$8.1 million.

In September 2012, the Authority issued \$202.7 million in Wayne County Airport Authority Airport Revenue Bonds to provide funds to pay a portion of the costs of certain capital improvements at Metro Airport. These projects include the reconstruction and rehabilitation of airfield pavement and parking decks/lots, the replacement and construction of support facilities, acquisition of fleet and heavy equipment, design of a powerhouse control room, watermain replacements, security network upgrades, and roof

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### Notes to Basic Financial Statements

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replacements. The Series 2012A Bonds and Series 2012B Bonds are revenue obligations of the Authority payable solely from the net revenues derived by the Authority from the operations of Metro Airport.

In September 2012, the Authority issued \$75.4 million in Wayne County Airport Authority Airport Revenue Refunding Bonds, Series 2012C and 2012D. The Series 2012C and 2012D Bonds were issued to refund certain outstanding indebtedness previously issued to finance or refinance the cost of various capital projects at Metro Airport. The Series 2012C Refunding Bonds were issued to refund a portion of the Series 2002C Refunding Bonds. The Series 2012D Bonds were issued to refund a portion of the Series 1998A Bonds and the Series 2002D Refunding Bonds. The Series 2012C Bonds and Series 2012D Bonds are revenue obligations of the Authority payable solely from the net revenues derived by the Authority from the operations of Metro Airport.

The Authority defeased the refunded portions of the Series 1998A Bonds, the refunded portions of the Series 2002C Bonds, and the refunded Series 2002D Bonds by placing the proceeds of the Series 2012C Bonds and Series 2012D Bonds in an irrevocable trust to provide for all future debt service payments. The Series 1998A Bonds, Series 2002C Bonds, and Series 2002D Bonds were subsequently called and paid in full in October 2012 and December 2012. The difference between the cash flows required to service the new debt and complete the refunding was approximately \$10.0 million. The Authority estimates its minimum economic gain (difference between the present value of the debt service payments on the old and new debt) was approximately \$7.8 million.

In November 2013, the Authority issued a \$200 million Direct Placement Bond with JPMorgan Chase Bank, N.A., Series 2013A Bonds. The Series 2013A Bonds were issued to refund the Series 2010E-1 Revenue Refunding Bonds and the Series 2010F Revenue Refunding Bonds. The Series 2013A Bonds are revenue obligations of the Authority payable solely from the revenues derived by the Authority from the operations of Metro Airport.

The Authority defeased the Series 2010E-1 Bonds and the Series 2010F Bonds by placing the proceeds of the Series 2013A Bonds in an irrevocable trust to provide for all future debt service payments. The Series 2010E-1 Bonds and Series 2010F Bonds were subsequently called and paid in full in November 2013 and December 2013.

The Series 2013A Bonds are variable-rate bonds. JPMorgan Chase Bank, N.A. is responsible under an agreement with Metro Airport to establish the interest rate monthly. The interest rate is determined as the rate of interest which, in the judgment of JPMorgan Chase Bank, N.A., would cause the Series 2013A Bonds to have a market value as of the date of determination equal to the principal amount, taking into account prevailing market provisions.

In November 2013, the Authority issued a \$74.9 million Direct Placement Bond with PNC Bank, N.A., Series 2013B Bonds. The Series 2013B Bonds were issued to refund the Series 2010E-2 Revenue Refunding Bonds. The Series 2013B Bonds are revenue obligations of the Authority payable solely from the revenues derived by the Authority from the operations of Metro Airport.

The Authority defeased the Series 2010E-2 Bonds by placing the proceeds of the Series 2013B Bonds in an irrevocable trust to provide for all future debt service payments. The Series 2010E-2 Bonds were subsequently called and paid in full in December 2013.



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The Series 2013B Bonds are variable-rate bonds. PNC Bank, N.A. is responsible under an agreement with Metro Airport to establish the interest rate monthly. The interest rate is determined as the rate of interest which, in the judgment of PNC Bank, N.A., would cause the Series 2013B Bonds to have a market value as of the date of determination equal to the principal amount, taking into account prevailing market provisions.

In November 2013, the Authority issued a \$115.6 million Direct Placement Bond with Wells Fargo Bank, N.A., Series 2013C Bonds. The Series 2013C Bonds were issued to refund the Series 2010G Direct Placement Bond. The Series 2013C Bonds are revenue obligations of the Authority payable solely from the revenues derived by the Authority from the operations of Metro Airport.

The Authority defeased the Series 2010G Direct Placement Bond by paying Wells Fargo Bank, N.A. directly with the proceeds of the Series 2013C Bonds. The Series 2010G Direct Placement Bond was paid in full in November 2013.

The Series 2013C Bonds are variable-rate bonds. Wells Fargo Bank, N.A. is responsible under an agreement with Metro Airport to establish the interest rate monthly. The interest rate is determined as the rate of interest which, in the judgment of Wells Fargo Bank, N.A., would cause the Series 2013C Bonds to have a market value as of the date of determination equal to the principal amount, taking into account prevailing market provisions.

In May 2014, the Authority issued a \$30 million Direct Placement Bond with Banc of America Preferred Funding Corporation, Series 2014A Bonds. The Series 2014A Bonds were issued to provide funds to pay a portion of the costs of certain capital improvements at Metro Airport. These projects include airfield pavement rehabilitation and reconstruction, development of wide-body aircraft parking apron, various electrical upgrades throughout the airport grounds, north power plant chillers, support systems and HVAC/air handler replacements, roadway reconstructions, demolition costs for various buildings and site improvement costs related to those demolition sites. The Series 2014A Bonds are revenue obligations of the Authority payable solely from the revenues derived by the Authority from the operations of Metro Airport.

The Series 2014A Bonds are variable-rate bonds. Banc of America Preferred Funding Corporation is responsible under an agreement with Metro Airport to establish the interest rate monthly. The interest rate is determined as the rate of interest which, in the judgment of Banc of America Preferred Funding Corporation, would cause the Series 2014A Bonds to have a market value as of the date of determination equal to the principal amount, taking into account prevailing market provisions.

In August 2014, the Authority issued \$98.4 million in Wayne County Airport Authority Airport Revenue Bonds to provide funds to pay a portion of the costs of certain capital improvements at Metro Airport. These projects include taxiway rehabilitation and reconstruction, road reconstruction, bridges and roadway rehabilitation, fleet and heavy equipment acquisitions, various electrical projects, power plant equipment replacements and demolition of various buildings. The Series 2014B Bonds and Series 2014C Bonds are revenue obligations of the Authority payable solely from the net revenues derived by the Authority from the operations of Metro Airport.

In January and March 2015, the Authority received \$600,000 from a note payable signed in May 2014 with the Downriver Community Conference to assist Willow Run Airport with the demolition of Hangar 2. In May 2015, \$120,000 of the funds borrowed was converted into a grant, thereby reducing the amount of the note payable to \$480,000. The agreement calls for principal to be paid in monthly installments commencing on June 1, 2019.

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### Notes to Basic Financial Statements

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In September 2015, the Authority issued an \$85 million Direct Placement Bond with PNC Bank, N.A., Series 2015A Bonds. The Series 2015A Bonds were issued to refund a portion of the Series 2005A Revenue Bonds which were initially issued to finance the cost of various capital projects at Metro Airport. The Series 2015A Bonds are revenue obligations of the Authority payable solely from the revenues derived by the Authority from the operations of Metro Airport.

The Authority defeased the Series 2005A Bonds by placing the proceeds of the Series 2015A Bonds in an irrevocable trust to provide for all future debt service payments. The Series 2005A Bonds were subsequently called and paid in full in December 2015. The difference between the cash flows required to service the new debt and complete the refunding was approximately \$10.5 million. The Authority estimates its minimum economic gain (difference between the present value of the debt service payments on the old and new debt) was approximately \$8.3 million.

In September 2015, the Authority issued a \$75 million Direct Placement Bond with Bank of America, N.A., Series 2015B Bonds. The Series 2015B Bonds were issued to refund a portion of the Series 2005A Revenue Bonds which were initially issued to finance the cost of various capital projects at Metro Airport. The Series 2015B Bonds are revenue obligations of the Authority payable solely from the revenues derived by the Authority from the operations of Metro Airport.

The Authority defeased the Series 2005A Bonds by placing the proceeds of the Series 2015B Bonds in an irrevocable trust to provide for all future debt service payments. The Series 2005A Bonds were subsequently called and paid in full in December 2015. The difference between the cash flows required to service the new debt and complete the refunding was approximately \$16 million. The Authority estimates its minimum economic gain (difference between the present value of the debt service payments on the old and new debt) was approximately \$12.7 million.

In September 2015, the Authority issued a \$25.6 million Direct Placement Bond with Citibank, N.A., Series 2015C Bonds. The Series 2015C Bonds were issued to refund a portion of the Series 2005A Revenue Bonds which were initially issued to finance the cost of various capital projects at Metro Airport. The Series 2015C Bonds are revenue obligations of the Authority payable solely from the revenues derived by the Authority from the operations of Metro Airport.

The Authority defeased the Series 2005A Bonds by placing the proceeds of the Series 2015C Bonds in an irrevocable trust to provide for all future debt service payments. The Series 2005A Bonds were subsequently tendered and paid in full in September 2015. The difference between the cash flows required to service the new debt and complete the refunding was approximately \$4.4 million. The Authority estimates its minimum economic gain (difference between the present value of the debt service payments on the old and new debt) was approximately \$3.5 million.

In October 2015, the Authority issued \$221.1 million in Wayne County Airport Authority Airport Revenue Bonds to provide funds to pay a portion of the costs of certain capital improvements at Metro Airport. These projects include reconstruction and rehabilitation of airfield pavement, acquisition of fleet and heavy equipment, roadway rehabilitation and lighting, GTC heating system reconfiguration, retaining wall reconstruction, construction of administration building, power plant building rehabilitation and security system upgrades. The Series 2015D Bonds and Series 2015E Bonds are revenue obligations of the Authority payable solely from the net revenues derived by the Authority from the operations of Metro Airport.

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In October 2015, the Authority issued \$299 million in Wayne County Airport Authority Airport Revenue Refunding Bonds, Series 2015F and 2015G. The Series 2015F and 2015G Bonds were issued to refund certain outstanding indebtedness previously issued to finance or refinance the cost of various capital projects at Metro Airport. The Series 2015F Refunding Bonds were issued to refund a portion of the Series 2005A Revenue Bonds. The Series 2015G Refunding Bonds were issued to refund a portion of the Series 2001A Airport Hotel Revenue Bonds. The Series 2015F Bonds and the Series 2015G Bonds are revenue obligations of the Authority payable solely from the revenues derived by the Authority from the operations of Metro Airport.

The Authority defeased the refunded portion of the Series 2005A Bonds and the refunded portion of the Series 2001A Bonds by placing the proceeds of the Series 2015F Bonds and Series 2015G Bonds in an irrevocable trust to provide for all future debt service payments. The Series 2005A Bonds and the Series 2001A Bonds were subsequently called and paid in full in December 2015.

The difference between the cash flows required to service the new debt and complete the refunding was approximately \$27.1 million. The Authority estimates its minimum economic gain (difference between the present value of the debt service payments on the old and new debt) was approximately \$29.6 million.

In October 2015, the Authority issued a \$23.1 million Direct Placement Bond with Bank of America, N.A., Series 2015H Bonds. The Series 2015H Bonds were issued to refund a portion of the Series 2001A Airport Hotel Revenue Bonds which were initially issued to finance the cost of the Westin Hotel located in the McNamara Terminal. The Series 2015H Bonds are revenue obligations of the Authority payable solely from the revenues derived by the Authority from the operations of Metro Airport.

The Authority defeased the Series 2001A Bonds by placing the proceeds of the Series 2015H Bonds in an irrevocable trust to provide for all future debt service payments. The Series 2001A Bonds were subsequently called and paid in full in December 2015.

The Series 2015H Bonds are variable-rate bonds. Bank of America, N.A. is responsible under an agreement with Metro Airport to establish the interest rate monthly. The interest rate is determined as the rate of interest which, in the judgment of Bank of America, N.A., would cause the Series 2015H Bonds to have a market value as of the date of determination equal to the principal amount, taking into account prevailing market provisions.

The Authority capitalizes net financing costs during construction for debt issues specifically related to construction projects. During the year ended September 30, 2017, interest expense incurred on these debt issues totaled \$89,874,600. For 2017, net financing costs capitalized were \$6,015,071.

**WAYNE COUNTY AIRPORT AUTHORITY**

Notes to Basic Financial Statements

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Long-term debt activity for the year ended September 30, 2017 was as follows:

	Beginning balance	Additions	Reductions	Ending balance	Due within one year
Detroit Metropolitan Airport Fund:					
Airport revenue bonds	\$ 2,241,105,000	\$ —	\$ (95,195,000)	\$ 2,145,910,000	\$ 92,295,000
Installment purchase contracts	2,932,469	—	(779,704)	2,152,765	337,782
Add (less):					
Certain bond discounts	(521,022)	30,494	—	(490,528)	—
Certain bond premiums	89,758,579	—	(14,902,642)	74,855,937	—
Total Detroit Metropolitan Airport Fund	<u>2,333,275,026</u>	<u>30,494</u>	<u>(110,877,346)</u>	<u>2,222,428,174</u>	<u>92,632,782</u>
Willow Run Airport Fund:					
Notes payable	543,294	—	(19,474)	523,820	19,476
Total Willow Run Airport Fund	<u>543,294</u>	<u>—</u>	<u>(19,474)</u>	<u>523,820</u>	<u>19,476</u>
Total Long-Term Debt	<u>\$ 2,333,818,320</u>	<u>\$ 30,494</u>	<u>\$ (110,896,820)</u>	<u>\$ 2,222,951,994</u>	<u>\$ 92,652,258</u>

Other long-term liability activity for the year ended September 30, 2017 was as follows:

	Beginning balance	Additions	Reductions	Ending balance	Due within one year
Detroit Metropolitan Airport Fund:					
Accrued interest and other payables	\$ 39,267,760	\$ 8,727,822	\$ (13,304,061)	\$ 34,691,521	\$ —
Other accrued liabilities	3,764,010	105,300	(572,961)	3,296,349	2,147,539
Net pension liability	46,379,916	21,220,829	—	67,600,745	—
Willow Run Airport Fund:					
Other accrued liabilities	962,700	—	—	962,700	20,100
Net pension liability	862,039	60,122	—	922,161	—
Total Other Long-Term Liabilities	<u>\$ 91,236,425</u>	<u>\$ 30,114,073</u>	<u>\$ (13,877,022)</u>	<u>\$ 107,473,476</u>	<u>\$ 2,167,639</u>

**(9) Commitments and Contingencies**

**(a) Litigation**

The Authority is a defendant in a number of lawsuits and claims that have resulted from the ordinary course of providing services. The ultimate effect on the Authority's financial statements of the resolution of these matters is, in the opinion of the Authority's counsel, not expected to be material.

**(b) Construction**

The estimated costs to complete Metro Airport's current capital improvement program totaled \$666.5 million at September 30, 2017, which will be funded by previously issued and anticipated debt, federal grants, and passenger facility charges. Unexpended commitments on construction and professional services contracts in connection with Metro Airport's program totaled \$61.5 million at September 30, 2017.

## WAYNE COUNTY AIRPORT AUTHORITY

### Notes to Basic Financial Statements

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The estimated costs to complete Willow Run Airport's current capital improvement program totaled \$172.5 million at September 30, 2017, which will be funded with federal and state grants. Unexpended commitments on construction and professional services contracts in connection with Willow Run Airport's program totaled \$1.3 million at September 30, 2017.

#### *(c) Environmental Matters*

Environmental accruals are calculated and recorded using an expected cash flow technique applied to probabilities, ranges, and assumptions developed in response to a potential remediation liability as based on current law and existing technologies. At September 30, 2017, the Authority had accrued obligations of \$3.8 million for environmental remediation and restoration costs. This is management's best estimate of the costs with respect to environmental matters; however, these estimates contain inherent uncertainties primarily due to unknown conditions, changing regulations, and developing technologies. In accordance with GASB Statement 49, *Accounting and Financial Reporting for Pollution Remediation Obligations*, the liability has been recorded at the current value estimated using the expected cash flow technique, a probability-weighted approach. Twenty-four percent of the recorded environmental liabilities are related to a Consent Decree and judgment issued during 1994 that identifies the Airport as one of the fourteen responsible parties to the improvements to the Wayne County Downriver Sewage Disposal System (the System). The bulk of the remainder is for asbestos remediation estimates. See additional discussion on both below.

#### *Downriver Sewage Disposal System*

In 1994, the Environmental Protection Agency (EPA) and Michigan Department of Natural Resources (MDNR) through a federal court ruling issued a mandate for environmental remediation of the System noting in their Financing Plan and Final Judgment RE: 1994 Court-Ordered Improvements, "Whereas, it is immediately necessary and imperative for the public health and welfare of the present and future residents of Wayne and the Downriver Communities that the improvements for the System required by the Consent Decree be planned, designed, acquired, constructed and financed to service the Downriver Communities."

The "Downriver Communities" listed as responsible parties to this decree included 13 communities as well as Metro Airport, which utilize the plant for water and sewage disposal. Total project costs were initially estimated at \$230 million and financed by Wayne County (the County) through the issuance of bonds and additional State Revolving Fund (SRF) financing. Each responsible party is required to pay its allocated portion of principal and interest on the bonds and SRF bonds, as well as its portion of any subsequent debt issued to pay project costs. In August 2007, a series of completion bonds were issued to finance the estimated final costs of the project. Metro Airport has paid \$7.88 million to the City of Romulus, Michigan for prior year debt service as of September 30, 2017 and an additional \$400 thousand to fund a bond reserve. The amounts recorded by the Authority for future debt service payments are believed to materially encompass the remaining obligation.

#### *Asbestos Remediation*

It is known that certain Metro Airport and Willow Run Airport buildings hold asbestos-containing materials (ACMs) that will need to be disposed of upon demolition of affected structures. While the pollutant is currently contained due to prior remediation efforts during the late 1980s and early 1990s, the environmental assessments have indicated that remediation will be necessary during the demolition of the affected buildings to ensure containment of the pollutants and proper disposal.

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WCAA personnel, with the assistance of WCAA contractors, have performed preliminary assessments of the nature and extent of the material. Based upon the information gathered and provided, the remediation costs, the Authority recorded asbestos-related liabilities of \$1.9 million and \$963 thousand at Detroit Metro and Willow Run Airports, respectively, as of September 30, 2017.

#### *Additional Remediation Matters*

In the mid-1990s, it was discovered that areas at or near the Willow Run airport were contaminated with toxic materials. Various public and private entities (including the County of Wayne, Michigan, the predecessor entity to WCAA) were tasked by the EPA to remediate the areas. Toxic materials were dredged from Tyler Pond, and then encapsulated in a controlled facility located on a plot of land owned by WCAA. Pursuant to the various documents and orders governing the remediation, title to the real property where the controlled facility is located was required to be transferred to General Motors or Ford Motor Company, as both entities were jointly and severally liable. In June 2009, before taking title to the real property where the controlled facility is located, General Motors filed for bankruptcy protection. While Ford Motor Company has continued to operate the controlled facility to date, and despite WCAA's attempts, Ford Motor Company has not taken title to the real property where the controlled facility is located. WCAA is in negotiation to facilitate the transfer of real property where the controlled facility is located to Ford Motor Company.

#### **(10) Employee Benefits**

##### **(a) Plan Description**

The Authority provides retirement benefits to its employees through the Wayne County Employees' Retirement System (WCERS of the Retirement System), an agent multi-employer public employee retirement system that is governed by the Wayne County Retirement Ordinance as amended. The Retirement System provides five defined benefit retirement options, two of which are contributory and two of which are hybrids between a defined benefit and a defined contribution (together, the Defined Benefit Plan), and two Defined Contribution Plans. The Retirement System provides retirement, survivor, and disability benefits to substantially all County and Authority employees. The Retirement Board issues separate financial statements annually. Copies of these financial statements for each plan can be obtained at 28 W. Adams, Suite 1900, Detroit, Michigan 48226. The statements are also available on WCERS' website at [www.wcers.org](http://www.wcers.org).

The Defined Benefit Plan consists of Plan Option 1, Plan Option 2, Plan Option 3, Plan Option 5, and Plan Option 5A (collectively, the Plan) and the Defined Contribution Plan, which consists of Plan Option 4, Plan Option 4A, Plan Option 5, and Plan Option 5A.

In 1983, the County closed the Plan 1 option of the WCERS to new hires and added two new options under the Defined Benefit Plan, which resulted in a lower final benefit to the participant.

On October 1, 2001, WCERS established the Wayne County Hybrid Retirement Plan #5 (Plan Option 5), which contains both a defined benefit component and a defined contribution component. Participants in the plan options previously in existence (Plan Option 1, Plan Option 2, and Plan Option 3) could elect to transfer their account balances to Plan Option 5 between October 1, 2001 and June 30, 2002. New employees could elect to participate in Plan Option 4 through September 30, 2001.

# WAYNE COUNTY AIRPORT AUTHORITY

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Effective October 1, 2012, WCERS established the Wayne County Defined Contribution Plan Option 4A and Wayne County Hybrid Retirement Plan Option 5A, which contains both a defined benefit component and a defined contribution component. Participants in the plan options previously in existence (Plan Option 4 and Plan Option 5) could elect to transfer their account balances to Plan Option 5A. Plan Options 1, 2, 3, and 4 were closed to new hires.

At the September 30, 2016 measurement date, the following employees were covered by the defined pension benefit terms:

Inactive Plan Members or Beneficiaries Currently Receiving Benefits	205
Inactive Plan Members Entitled to But Not Yet Receiving Benefits	6
Active Plan Members	<u>348</u>
Total Plan Members	559

### **(b) Pension Benefits**

Benefits are paid monthly over the member's or survivor's lifetime, after meeting normal retirement or duty disability retirement requirements, which vary by option, based on the following percentages of average final compensation, for each year of credited service:

**Plan Option 1** – 2.65 percent for each year of service. Maximum Authority-financed portion is 75 percent of average final compensation (less workers' compensation payments). Minimum monthly pension is \$5 times years of service.

**Plan Option 2** – 1 percent for each year up to 20 years and 1.25 percent for each year over 20 years. Maximum Authority-financed portion is 75 percent of average final compensation (less workers' compensation payments).

**Plan Option 3** – 1.5 percent for each year up to 20 years, 2 percent for each year between 20 and 25 years, and 2.5 percent for each year over 25 years. Maximum Authority-financed portion is 75 percent of average final compensation (less workers' compensation payments).

**Plan Option 5** – 1.25 percent for each year up to 20 years and 1.5 percent for each year over 20 years. Maximum pension is 75 percent of average final compensation (less workers' compensation payments).

**Plan Option 5A** – 1.50 percent for each year up to 20 years and 1.75 percent for each year over 20 years. Maximum pension is 75 percent of average final compensation (less workers' compensation payments).

**Death and disability benefits** – The Plan also provides nonduty death and disability benefits to members after 10 years of credited service for Plan Options 1, 5 and 5A, along with nonduty disability for Plan Option 2 and nonduty death benefits for Plan Option 3. The 10-year service provision is waived for duty disability and death benefits for Plan Options 1, 5, and 5A and duty disability for Plan Option 2.

### **(c) Contributions**

Participants in Plan Option 1 contribute 2.00 percent to 6.58 percent of annual compensation, depending on years of credited service. Participants in Plan Option 2 do not make plan contributions, but receive a lower final benefit. Plan Option 3 participants make contributions of 3.0 percent of covered compensation and receive a lower final benefit. Participants in Plan Option 5 with 1.25/1.5 percent multiplier contribute 0 percent of covered compensation depending on the collective bargaining agreement. Participants in Plan 5A contribute 2.00 percent of annual compensation, unless the Annual Actuarial Valuation Report of the

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Wayne County Employees' Retirement System shows the Authority's funding level is less than 100 percent, then the participants' contribution level will increase to 3 percent until the funding level is at 100 percent.

The obligation to contribute and to maintain the Plan for these employees was established by negotiations with the County's and subsequently the Authority's collective bargaining units. For the year ended September 30, 2016, the Authority's average contribution rate was 24.63 percent of annual payroll.

### **(d) Pension Plan Investments – Policy and Rate of Return**

The authority for the purchase and sale of investments rests with the Retirement Commission. Investments made are subject to statutory regulations imposed under the Michigan Public Pension Investment Act 314 of 1965, as amended (Act 55, P.A. 1982), and investment policy established by the Retirement Commission. The Investment Act incorporates the prudent person rule and requires investment fiduciaries to act solely in the interest of the Plan's participants and beneficiaries.

Accordingly, the Retirement Commission has the authority to invest the Plan's assets in common and preferred stock; obligations of the United States, its agencies or United States government-sponsored enterprises; obligations of any state or political subdivision of a state having the power to levy taxes; bankers' acceptances; certificates of deposit; commercial paper; repurchase agreements; reverse repurchase agreements; real and personal property; mortgages; and certain other investments.

*Investment Allocation Policy.* The Plan's policy in regard to the allocation of invested assets is established and may be amended by the Retirement Commission. The policy pursues an investment strategy that protects the financial health of the Plan and reduces risk through prudent diversification of the portfolio across a broad selection of distinct asset classes. Plan assets are invested in the broad investment categories and asset classes to achieve the allocation targets below. Recognizing that asset returns may vary, causing fluctuations in the relative dollar value levels of assets within classes, the Plan may not maintain strict adherence to the targets in the short-term, but may allow the values to fluctuate within these ranges. Over the long-term, the Plan will strive to adhere to the given targets as financially practicable and move toward target allocations in a prudent manner consistent with its fiduciary duty.

The adopted asset allocation policy as of September 30, 2016, was as follows:

<u>Asset Class</u>	<u>Target Allocation</u>
Domestic Equity	41.17%
International Equity	17.65%
Domestic Bonds	17.65%
International Bonds	5.88%
Real Estate	17.65%
	<u>100%</u>

*Rate of Return.* For the year ended September 30, 2016, the annual money-weighted rate of return on plan investments, net of investment expenses, was 9.8 percent. The money-weighted rate of return expresses investment performance, net of investment expense, adjusted for the changing amounts actually invested.



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**(e) Net Pension Liability**

The Authority has chosen to use September 30, 2016 as its measurement date for the net pension liability. The September 30, 2017 reported net pension liability was determined using a measure of the total pension liability and the pension net position as of September 30, 2016. The September 30, 2016 total pension liability was determined by an actuarial valuation performed as of September 30, 2016.

Changes in the net pension liability during the measurement year were as follows:

	Total Pension Liability	Plan Net Position	Net Pension Liability
Balance at 9/30/15	\$ 144,137,305	\$ 96,895,350	\$ 47,241,955
Changes for the year:			
Service cost	2,035,141	-	2,035,141
Interest	10,943,315	-	10,943,315
Difference between expected and actual experience	3,004,584	-	3,004,584
Changes in actuarial assumptions	8,982,156	-	8,982,156
Contributions - employer	-	11,021,191	(11,021,191)
Contributions - employee	-	334,437	(334,437)
Net investment income	-	10,247,311	(10,247,311)
Benefit payments, including refunds	(7,901,621)	(7,901,621)	-
Administrative expenses	-	(318,694)	318,694
Balance at 9/30/16	\$ 161,200,880	\$ 110,277,974	\$ 50,922,906

For the fiscal year ended September 30, 2017, the Authority recognized pension expense of \$7,981,959. At fiscal year end, the Authority reported deferred outflows of resources related to pensions from the following sources:

	Deferred Outflows of Resources
Net difference between projected and actual earnings on pension plan investments	\$ 918,936
Changes in actuarial assumptions	7,385,328
Difference between projected and actual experience	4,128,866
Employer contributions to the plan subsequent to the measurement date	6,371,591
Total	\$ 18,804,721

Deferred outflows of pension resources related to contributions after the measurement date will be a reduction of the net pension liability at September 30, 2018. Amounts reported as deferred outflows of resources related to pensions will be recognized in pension expense as follows:

## WAYNE COUNTY AIRPORT AUTHORITY

### Notes to Basic Financial Statements

September 30, 2017

Year Ended September 30,	
2018	\$ 2,774,658
2019	2,774,658
2020	3,233,635
2021	1,956,832
2022	1,573,163
Thereafter	<u>120,184</u>
Total	<u>\$ 12,433,130</u>

*Actuarial Assumptions.* The total pension liability in the September 30, 2016 actuarial valuation was determined using the following actuarial assumptions applied to all periods included in the measurement:

Inflation	3.0%
Salary increases	3.0% to 10.51% including inflation
Investment rate of return	7.25%

Mortality rates were based on the RP-2014 Healthy Annuitant Mortality Table for males and females, adjusted for mortality improvement back to the base year of 2006.

The actuarial assumptions used to calculate contribution rates in the September 30, 2016 valuation were determined using an experience-based table of rates specific to the type of eligibility condition. The experience-based table of rates was last updated for the 2016 valuation pursuant to an experience study of the period beginning October 1, 2010 and ending September 30, 2015.

*Discount Rate.* The discount rate used to measure the total pension liability was 7.25 percent. The projection of cash flows used to determine this rate assumed that plan member contributions will be made at the current contribution rate and that employer contributions will be made at rates equal to the difference between actuarially determined contribution rates and the member rate.

Based on these assumptions, the pension plan's fiduciary net position was projected to be available to make all projected future benefit payments of current plan members. Therefore, the long-term expected rate of return on pension plan investments was applied to all periods of projected benefit payments to determine the total pension liability.

The assumed rate of investment return was adopted by the plan's trustees after considering input from the plan's investment consultant(s) and actuary. Additional information about the assumed rate of investment return is included in the September 30, 2016 actuarial valuation report.

The long-term expected rate of return on pension plan investments was determined using a building-block method in which expected future real rate of returns (expected returns, net of pension plan investment expense and inflation) are developed for each major asset class, and in conjunction with a formal study of experience during the period October 1, 2010 through September 30, 2015. These real rates of return 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. For each major asset class that is included in the pension plan's target asset allocation as of September 30, 2016, these best estimates are as follows:

## WAYNE COUNTY AIRPORT AUTHORITY

### Notes to Basic Financial Statements

September 30, 2017

<u>Asset Class</u>	<u>Long-term Real Return</u>
Domestic Equity	7.5%
International Equity	8.5%
Domestic Bonds	2.5%
International Bonds	3.5%
Real Estate	4.5%

*Sensitivity of the Net Pension Liability to Changes in the Discount Rate.* The following presents the net pension liability of the Authority, calculated using the discounted rate of 7.25 percent, as well as what the Authority's net pension liability would be if it were calculated using a discount rate that is one percentage point lower (6.25 percent) or one percentage point higher (8.25 percent) than the current rate.

	<u>1% Decrease 6.25%</u>	<u>Current Rate 7.25%</u>	<u>1% Increase 8.25%</u>
Net Pension Liability	\$ 69,697,405	\$ 50,922,906	\$ 35,105,769

*Pension Plan Fiduciary Net Position.* Detailed information about the Plan's fiduciary net position is available in the separately issued financial report. For purposes of measuring the net pension liability, deferred outflows of resources or deferred inflows of resources related to pension and pension expense, information about the Plan's fiduciary net position and addition to/deduction from fiduciary net position has been determined on the same basis as they are reported by the Plan. The Plan uses the economic resources measurement focus and the full accrual basis of accounting; investments are stated at fair value. Contribution revenue is recorded as contributions are due, pursuant to legal requirements. Benefit payments and refunds of employee contribution are recognized as expense when due and payable in accordance with the benefit terms.

**(f) Pre-2002 Retirees**

The Authority participates in the Wayne County Employees' Retirement System (WCERS) with the County, an agent multiple-employer defined benefit plan. Pursuant to Public Act 90 and Michigan Public Act of 2002, the Authority was granted operational jurisdiction of the Detroit Metropolitan Wayne County Airport, the Willow Run Airport, and the Airport Hotel, with the exclusive right, responsibility, and authority to occupy, operate, control, and use them. Prior to the Act, the Authority and its employees were employees of the County. In connection with the Authority's assumption of control and operations of the Airports pursuant to Act 90, the Authority was responsible for funding any retirement obligations it has for those employees that were previously County employees. During fiscal year 2016, the Authority committed to a five-year payment schedule of \$1.1 million per quarter for its estimated share (10.25 percent) of the Combined Pre-2002 Retiree Liability of \$20,948,822 as of September 30, 2015. Prior to the end of the fifth payment year, an actuarial valuation will be prepared to determine the Authority's remaining estimated share of the liability (if any). The funding requirement and payment amortization of any remaining liability will be determined at that time. The terms of this commitment were memorialized in a memorandum of understanding between the Authority, Wayne County and WCERS in fiscal year 2017. The Authority has concluded that this arrangement represents a special funding situation under GASB Statement No. 68. The Authority's liability under this arrangement is reflected as of the Authority's measurement date of September 30, 2016, and is presented on the Authority's balance sheet as of September 30, 2017 in accordance with GASB 68. The \$4.4 million of payments made during fiscal year

## WAYNE COUNTY AIRPORT AUTHORITY

### Notes to Basic Financial Statements

September 30, 2017

2017 are presented on the balance sheet as deferred outflows of resources for contributions to the plan subsequent to the measurement date. The net pension liability and deferred outflows from pensions for pre-2002 and post-2002 retirees at the September 30, 2016 measurement date were as follows:

	Net Pension Liability	Deferred Outflows from Pensions
Pre-2002 Retirees	\$ 17,600,000	\$ 4,400,000
Post-2002 Retirees	50,922,906	18,804,721
Total	<u>\$ 68,522,906</u>	<u>\$ 23,204,721</u>

**(g) Retirement System Wayne County Employees' Defined Contribution Plan**

The Wayne County Employees' Retirement System instituted a Defined Contribution Plan (Plan Option 4, Plan Option 4A, Plan Option 5, and Plan Option 5A) under the County's Enrolled Ordinance No. 86-486 (November 20, 1986), as amended. The Plan was established to provide retirement, survivor, and disability benefits to County and Authority employees. The administration, management, and responsibility for the proper operation of the Plan are vested in the trustees of the Wayne County Retirement Commission.

Under Plan Option 4, the Authority contributes \$4.00 for every \$1.00 contributed by each member or, for eligible executives, \$5.00 for every \$1.00 contributed by each member, with the member contributions ranging from 1.0 percent to 2.5 percent (3 percent for employees with 20 or more years of service and 3 percent for eligible executives with 10 or more years of service) of base compensation. Employees hired prior to July 1, 1984 were eligible to transfer from the WCERS Defined Benefit Plan to the Plan through September 30, 2002. Effective September 30, 2012, the Authority closed the Plan Option 4 to new hires.

Classified employees are vested as to employer contributions after three years of service, and executive members are vested after two years of service.

In Plan Option 4, members are able to receive loans from the Defined Contribution Plan. Only active employees with a vested account balance of \$2,000 or more are eligible. Interest on the loans is at the rate of five-year Treasury notes plus 300 basis points (3 percent), rounded to the nearest quarter of a percent.

Participants in Plan Option 4A must contribute 4 percent and can elect to contribute an additional 7.5 percent of their compensation. The Authority makes matching contribution of 8 percent of an employee's compensation. Employees are vested after three years.

Participants in Plan Option 5 and Plan Option 5A contribute 3 percent of gross pay. The Authority makes matching contributions at a rate equal to the amount contributed by each employee. Employees are vested at 50 percent after one year of service, 75 percent after two years of service, and 100 percent after three years of service.

The obligation to contribute and to maintain the Plan for these employees was established by negotiations with the Authority's collective bargaining units. Total Authority employer and employee contributions to the Plan during 2017 were \$3,617,356 and \$1,790,033, respectively.

## WAYNE COUNTY AIRPORT AUTHORITY

### Notes to Basic Financial Statements

September 30, 2017

#### (11) Other Postemployment Benefits

##### **Wayne County Airport Authority Act 149 Health Care Fund**

###### ***(a) Plan Description***

As provided for in the Authority Act, the Authority, through the County, provides hospitalization and other health insurance for retirees pursuant to agreements with various collective bargaining units or other actions of the Wayne County Board of Commissioners, the Wayne County Retirement Board, or the Authority Board. Benefits are provided to retirees under the age of 65 and their eligible dependents, and the cost of federal Medicare premiums and supplemental hospitalization is paid for retirees over 65 and their eligible dependents, as these costs are incurred by the retirees. The County also pays the cost of basic retiree life insurance, up to \$5,000 per employee, on a pay-as-you-go basis. Currently, the plan has 639 members (including 413 Authority employees in active service and 226 retired Authority employees and beneficiaries currently receiving benefits who retired after September 1, 2002).

This is a single-employer defined benefit plan administered by the Municipal Employees' Retirement System (MERS). The plan does not issue a separate stand-alone financial statement.

###### ***(b) Funding Policy***

In accordance with GASB Statement No. 43, *Financial Reporting for Postemployment Benefit Plans Other than Pension Plans* and GASB No. 45, *Accounting and Financial Reporting by Employers for Postemployment Benefits Other Than Pensions*, the Authority created in September 2008 an Act 149 Health Care Trust. This trust provides a funding mechanism for post-2002 retiree health, dental and life insurance coverage and other postemployment benefits other than pensions. The Authority began funding the trust and fully implemented GASB Statements No. 43 and No. 45 in September 2008. In September 2012, the Authority transferred these funds into a MERS of Michigan Retiree Health Funding Vehicle, which is held in a separate reserve, but invested on a pooled basis by MERS with other governmental units. The balance as of September 30, 2017 in this restricted plan is \$53,539,546. Non-Medicare retirees are required to contribute either 10 percent of the Blue Cross-Blue Shield illustrative rate or 10 percent of the lesser of HAP active and HAP retiree premium. The Authority has no obligation to make contributions in advance of when the costs are incurred; however, the Authority's financial plan is to fund these obligations annually based upon the actuarial recommended contribution. Administrative costs of the trust are paid with employer contributions to the trust. Since the Authority does not administer the assets or retain fiduciary responsibility for the assets, the assets of the Plan are not reported as a fiduciary fund in the Authority's financial statements.

###### ***(c) Funding Progress***

For the year ended September 30, 2017, the Authority has estimated the cost of providing retiree health care benefits through an actuarial valuation as of October 1, 2016. The valuation computes an annual required contribution, which represents a level of funding that, if paid on an ongoing basis, is projected to cover normal cost each year and amortize any unfunded actuarial liabilities over a period not to exceed 25 years. This valuation's computed contribution and actual funding are summarized as follows:

**WAYNE COUNTY AIRPORT AUTHORITY**

Notes to Basic Financial Statements

September 30, 2017

Annual required contribution (recommended)	\$	7,443,898
Interest on the prior year's net OPEB obligation		(229,110)
Add adjustment to the annual required contribution		<u>232,716</u>
Annual OPEB cost		7,447,504
Amounts contributed:		
Payments of current premiums		(6,661,429)
Advance funding		<u>(2,693,236)</u>
Change in net OPEB asset		(1,907,161)
OPEB asset - beginning of year		<u>(3,859,487)</u>
OPEB asset - end of year	\$	<u><u>(5,766,648)</u></u>

The annual OPEB costs, the percentage contributed to the plan and the net OPEB asset for the current and two preceding years were as follows:

	Fiscal Year Ended September 30		
	2015	2016	2017
Annual OPEB Costs	\$ 7,039,057	7,228,999	7,447,504
Percentage contributed	100.4%	107.1%	125.6%
Net OPEB asset	\$ (3,347,958)	(3,859,487)	(5,766,648)

The funding progress of the plan as of the most recent valuation date is as follows:

Valuation as of October 1, 2016

Actuarial value of assets	\$	45,131,814
Actuarial accrued liability (AAL)	\$	130,697,085
Unfunded AAL (UAAL)	\$	85,565,271
Funded ratio		34.5%
Annual covered payroll	\$	32,944,698
Ratio of UAAL to covered payroll		259.7%

**(d) Actuarial Methods and Assumptions**

Actuarial valuations of an ongoing plan involve estimates of the value of reported amounts and assumptions about the probability of occurrence of events far into the future. Examples include assumptions about future employment, mortality, and the healthcare cost trend. Amounts determined regarding the funded status of the plan and the annual required contributions of the employer are subject to continual revision as actual results are compared with past expectations and new estimates are made about the future. The schedule of funding progress, presented as required as supplementary information following the notes to the financial statements, presents multiyear trend information about whether the actuarial value of plan assets is increasing or decreasing over time relative to the actuarial accrued liabilities for benefits.

Projections of benefits for financial reporting purposes are based on the substantive plan (the plan as understood by the employer and the plan members) and include the types of benefits provided at the time

# WAYNE COUNTY AIRPORT AUTHORITY

## Notes to Basic Financial Statements

September 30, 2017

of each valuation and the historical pattern of sharing of benefit costs between the employer and plan members to that point. The actuarial methods and assumptions used include techniques that are designed to reduce the effects of short-term volatility in actuarial accrued liabilities and the actuarial value of assets, consistent with the long-term perspective of the calculations.

In the October 1, 2016 actuarial valuation, the entry age normal level percent of pay method was used. The actuarial assumptions included a 7.75 percent investment rate of return, which is the expected long-term investment return on plan assets, a projected 3 percent salary increase, and an annual healthcare cost trend rate of 7 percent initially, reduced to an ultimate rate of 4.1 percent after 2040. The UAAL is being amortized on a closed basis using the straight-line method (level percent of pay amortized annually) over 25 years.

### **Wayne County Health and Welfare Plan (Pre-2002)**

#### ***(a) Plan Description***

As provided for in the Authority Act, the Authority, through the County, provides hospitalization and other health insurance for retirees pursuant to agreements with various collective bargaining units or other actions of the Wayne County Board of Commissioners, the Wayne County Retirement Board, or the Authority Board. Benefits are provided to retirees under the age of 65 and their eligible dependents, and the cost of federal Medicare premiums and supplemental hospitalization is paid for retirees over 65 and their eligible dependents as these costs are incurred by the retirees. The County also pays the cost of basic retiree life insurance, up to \$5,000 per employee, on a pay-as-you-go basis. Currently, the plan's members include retirees for the County and the Authority that retired before September 1, 2002. The plan is closed to new members.

During the year ended September 30, 2016, the County Commission adopted an ordinance amending the 1990 Wayne County Health and Welfare Plan. The ordinance provided for stipend payments in lieu of healthcare benefits for Plan members that meet certain eligibility requirements. Plan members that receive the stipend benefit are required to file annual certifications related to the use of this stipend for healthcare benefits. Plan members may become ineligible for this stipend benefit upon eligibility for another healthcare plan. To date, the Authority has not made any payments related to these stipend benefits.

This is a single-employer defined benefit plan administered by the County. The Authority has agreed to contribute 11.25 percent of incurred costs to the plan related to retirees from the Airport. The plan does not issue stand-alone financial statements.

#### ***(b) Funding Policy***

The benefits of the plan are established by the various collective bargaining agreements. Employees are not required to contribute to the plan. The required and actual contributions for the current and two preceding years were as follows:

	Fiscal Year Ended September 30		
	2015	2016	2017
Required contribution	\$ 2,604,514	\$ 1,353,345	\$ 444,274
Actual contribution	\$ 2,604,514	\$ 1,353,345	\$ 444,274
% of required contribution made	100.0%	100.0%	100.0%

## WAYNE COUNTY AIRPORT AUTHORITY

### Notes to Basic Financial Statements

September 30, 2017

#### (12) Subsequent Events

On October 12, 2017, the Authority issued \$91.4 million in Wayne County Airport Authority Revenue Bonds at the following amounts: Series 2017A - \$50.7 million and Series 2017B - \$40.7 million. These bonds were issued to provide funds to pay a portion of the costs of certain capital acquisitions and improvements at Metro Airport.

On October 12, 2017, the Authority also issued \$212 million in Wayne County Airport Authority Revenue Refunding Bonds at the following amounts: Series 2017C - \$78.4 million, Series 2017A - \$63 million, Series 2017B - \$46 million and Series 2017C - \$24.6 million.

The Senior 2017C Refunding Bonds were issued to provide funds to refund a portion of the Series 2007 Senior Lien Refunded Bonds, make a deposit to the Bond Reserve Account, pay capitalized interest on portions of the Senior 2017A Bonds and the Senior 2017B Bonds and pay costs of issuance of the Senior 2017 Bonds. Proceeds for the Junior 2017A-C Bonds will be used to provide funds to refund a portion of the Series 2007 Junior Lien Refunded Bonds, make a deposit to the 2017 Junior Lien Bond Reserve Account, and pay cost of issuances of the Junior 2017 Bonds.

On December 21, 2017, the Authority also issued \$381.1 million in Wayne County Airport Authority Revenue Refunding Bonds at the following amounts: Series 2017D - \$199 million, Series 2017E - \$67.8 million, and Series 2017F - \$114.3 million.

The Series 2017D Airport Revenue Refunding Bonds were issued to redeem the outstanding Airport Revenue Bonds, Series 2013A. The 2017E Airport Revenue Refunding Bonds were issued to redeem the outstanding Airport Revenue Bonds, Series 2013B. The 2017F Airport Revenue Refunding Bonds were issued to redeem the outstanding Airport Revenue Bonds, Series 2013C.

#### (13) Upcoming Reporting Changes

In June 2015, the GASB issued Statement No. 75, *Accounting and Financial Reporting for Postemployment Benefits Other Than Pensions*, which addresses reporting by governments that provide postemployment benefits other than pensions (OPEB) to their employees and for governments that finance OPEB for employees of other governments. This OPEB standard will require the Authority to recognize on the face of the financial statements its proportionate share of the net OPEB liability related to other postemployment benefits provided to its employees. The statement also enhances accountability and transparency through revised note disclosures and required supplementary information (RSI). The Authority is currently evaluating the impact this standard will have on the financial statements when adopted. The provisions of this statement are effective for the Authority's financial statements for the year ending September 30, 2018.

In November 2016, the GASB issued Statement No. 83, *Certain Asset Retirement Obligations*, which addresses accounting and financial reporting for legally enforceable liabilities associated with the retirement of a tangible capital asset. This standard will require entities that have legal obligations to perform future asset retirement activities related to its tangible assets to recognize an estimated liability based on the current value of outlays expected to be incurred. The Authority is currently evaluating the impact this standard will have on the financial statements when adopted. The provisions of this statement are effective for the Authority's financial statements for the year ending September 30, 2019.

In March 2017, the GASB issued Statement No. 85, *Omnibus 2017*, which addresses practice issues that have been identified during implementation and application of certain GASB statements. The statement addresses a variety of topics including issues related to blending component units, goodwill, fair value



## WAYNE COUNTY AIRPORT AUTHORITY

### Notes to Basic Financial Statements

September 30, 2017

measurement and application, and postemployment benefits (pension and other postemployment benefits (OPEB)). The Authority is currently evaluating the impact this standard will have on the financial statements when adopted. The provisions of this statement are effective for the Authority's financial statements for the year ending September 30, 2018.

In May 2017, the Governmental Accounting Standards Board issued GASB Statement No. 86, *Certain Debt Extinguishment Issues*, which improves consistency in accounting and financial reporting for in-substance defeasance of debt by providing guidance for transactions in which cash and other monetary assets acquired with only existing resources—resources other than the proceeds of refunding debt—are placed in an irrevocable trust for the sole purpose of extinguishing debt. This statement also improves accounting and financial reporting for prepaid insurance on debt that is extinguished and notes to financial statements for debt that is defeased in substance. The Authority is currently evaluating the impact this standard will have on the financial statements when adopted. The provisions of this statement are effective for the Authority's financial statements for the year ending September 30, 2018.

In June 2017, the GASB issued Statement No. 87, *Leases*, which improves accounting and financial reporting for leases by governments. This statement requires recognition of certain lease assets and liabilities for leases that previously were classified as operating leases and recognized as inflows of resources or outflows of resources based on the payment provisions of the contract. It establishes a single model for lease accounting based on the foundational principle that leases are financings of the right to use an underlying asset. Under this statement, a lessee is required to recognize a lease liability and an intangible right-to-use lease asset, and a lessor is required to recognize a lease receivable and a deferred inflow of resources. The Authority is currently evaluating the impact this standard will have on the financial statements when adopted. The provisions of this statement are effective for the Authority's financial statements for the year ending September 30, 2021.

**REQUIRED SUPPLEMENTARY INFORMATION**

## WAYNE COUNTY AIRPORT AUTHORITY

### Required Supplementary Information

September 30, 2017

#### Schedule of Changes in the Authority's Net Pension Liability and Related Ratios

Measurement Date of:	<u>2016</u>	<u>2015</u>	<u>2014</u>
<b>Total Pension Liability</b>			
Service cost	\$ 2,035,141	\$ 1,910,254	\$ 1,784,942
Interest	10,943,315	10,408,880	10,007,566
Changes in benefits	-	-	1,083,361
Difference between expected and actual experience	3,004,584	2,360,317	-
Changes in actuarial assumptions	8,982,156	-	-
Benefit payments, including refunds	(7,901,621)	(7,790,299)	(7,621,347)
<b>Net Change in Total Pension Liability</b>	17,063,575	6,889,152	5,254,522
<b>Total Pension Liability - Beginning of Year</b>	144,137,305	137,248,153	131,993,631
<b>Total Pension Liability - End of Year</b>	<b>\$ 161,200,880</b>	<b>\$ 144,137,305</b>	<b>\$ 137,248,153</b>
<b>Plan Fiduciary Net Position</b>			
Contributions - Employer	\$ 11,021,191	\$ 13,105,600	\$ 8,475,718
Contributions - Member	334,437	2,168,732	1,359,927
Net investment income	10,247,311	786,957	8,502,195
Administrative expenses	(318,694)	(919,758)	(319,237)
Benefit payments, including refunds	(7,901,621)	(7,790,299)	(7,621,347)
<b>Net Change in Plan Fiduciary Net Position</b>	13,382,624	7,351,232	10,397,256
<b>Plan Fiduciary Net Position - Beginning of Year</b>	96,895,350	89,544,118	79,146,862
<b>Plan Fiduciary Net Position - End of Year</b>	<b>\$ 110,277,974</b>	<b>\$ 96,895,350</b>	<b>\$ 89,544,118</b>
<b>Authority's Net Pension Liability - Ending</b>	<b>\$ 50,922,906</b>	<b>\$ 47,241,955</b>	<b>\$ 47,704,035</b>
<b>Plan Fiduciary Net Position as a % of Total Pension Liability</b>	68.41%	67.22%	65.24%
<b>Covered Employee Payroll</b>	<b>\$ 30,105,635</b>	<b>\$ 28,300,056</b>	<b>\$ 27,197,880</b>
<b>Authority's Net Pension Liability as a % of Covered Employee Payroll</b>	169.15%	166.93%	175.40%

#### Schedule of Contributions

Measurement Date of:	<u>2016</u>	<u>2015</u>	<u>2014</u>
Actuarially determined contribution	\$ 6,924,296	\$ 7,001,434	\$ 5,782,269
Contributions in relation to the actuarially determined contribution	11,021,191	13,105,600	8,475,718
<b>Contribution Deficiency (Excess)</b>	<b>\$ (4,096,895)</b>	<b>\$ (6,104,166)</b>	<b>\$ (2,693,449)</b>
<b>Covered Employee Payroll</b>	<b>\$ 30,105,635</b>	<b>\$ 28,300,056</b>	<b>\$ 27,197,880</b>
<b>Contributions as a Percentage of Covered Employee Payroll</b>	36.61%	46.31%	31.16%

For the measurement date September 30, 2016, the investment rate of return used was 7.25 percent which was a decrease from previous year of 7.75 percent.

GASB Statement No. 68 was implemented September 30, 2015 and does not require retroactive implementation. Data will be added as information is available until 10 years of such information is available.

## WAYNE COUNTY AIRPORT AUTHORITY

Required Supplementary Information

September 30, 2017

### Notes to Schedule of Authority Contributions

**Valuation date** Actuarial determined contribution rates are calculated as of September 30 each year, which is one period prior to the beginning of the fiscal year in which contributions are reported.

#### **Methods and assumptions used to determine contribution rates:**

Actuarial cost method	Entry Age Normal
Amortization method	Level Dollar, Closed
Remaining amortization period	20 years from September 30, 2016 decreased by 2 years annually. 10 years for assumption changes first implemented in the 2016 valuation report decreased by 1 year annually.
Asset valuation method	4-year smoothed market; 20% corridor
Wage inflation	3.0% as of September 30, 2016. Before that, 3.5%.
Salary increases	3.0% to 10.51% including inflation as of September 30, 2016. Before that, 3.5% to 8.8% including inflation.
Investment rate of return	7.25% as of September 30, 2016. Before that, 7.75%.
Retirement age	Experience-based table of rates that are specific to the type of eligibility condition. Last updated for the 2016 valuation pursuant to an experience study of the period October 1, 2010 - September 30, 2015.
Mortality	<b>As of September 30, 2016:</b> RP-2014 Healthy Annuitant Mortality table for males and females, adjusted for mortality improvement back to the base year of 2006. Mortality rates for a particular calendar year are determined by applying the MP-2016 Mortality Improvement scale to the above described tables. The corresponding Disabled and Employee tables were used for disability and pre-retirement mortality, respectively. <b>Before September 30, 2016:</b> RP-2000 Combined Healthy Mortality Table projected 20 years. Set forward 5 years for disabled retirees.
Cost of living adjustment	None

#### **Other Information**

None

**WAYNE COUNTY AIRPORT AUTHORITY**

Required Supplementary Information

September 30, 2017

**Wayne County Airport Authority Act 149 Health Care Fund**

The schedule of funding progress is as follows (in millions):

Actuarial Valuation Date	Actuarial Value of Assets (a)	Actuarial Accrued Liability (AAL) (b)	Unfunded AAL (UAAL) (b-a)	Funded Ratio (a/b)	Covered Payroll (c)	UAAL as a Percentage of Covered Payroll
10/1/2012	\$ 18.9	\$ 97.7	\$ 58.1	30.9%	\$ 34.2	170.1%
10/1/2014	\$ 33.3	\$ 107.8	\$ 74.5	30.9%	\$ 36.0	207.1%
10/1/2016	\$ 45.1	\$ 130.7	\$ 85.6	34.5%	\$ 33.0	259.6%

The information presented above was determined as part of the actuarial valuations at the dates indicated. Additional information as of October 1, 2016 the latest actuarial valuation follows:

Actuarial Cost Method	Entry Age Normal Level Percent of Pay
Amortization method	Level percent of pay amortized annually
Amortization period (closed)	25 years
Asset valuation method	Market value
Actuarial assumptions:	
Investment rate of return	7.75%
Projected salary increases	3.00%

## STATISTICAL SECTION

This section of the Wayne County Airport Authority's comprehensive annual financial report presents detailed information as a context for understanding what the information in the financial statements, note disclosures, and required supplementary information says about the Authority's overall financial health.

### CONTENTS

#### Financial Trends – Exhibits S-1, S-2

These exhibits contain trend information to help the reader understand how the Authority's financial performance and well-being have changed over time.

#### Revenue Capacity – Exhibits S-3, S-5

These exhibits contain information to help the reader assess the factors affecting the Authority's ability to generate revenue.

#### Debt Capacity – Exhibits S-6 to S-8

These exhibits present information to help the reader assess the affordability of the Authority's current levels of outstanding debt and the Authority's ability to issue additional debt in the future.

#### Demographic & Economic Information – Exhibits S-10 series

These exhibits offer demographic and economic indicators to help the reader understand the environment within which the Authority's financial activities take place and to help make comparisons over time with other entities. In certain instances, due to the nature of the Authority's operations, 10 years of data may not be necessary for readers to understand the Authority's environment or to make comparisons with other entities. In these instances, less than 10 years of data may be presented.

#### Operating Information – Exhibits S-4, S-5, S-9, S-11, S-12

These exhibits contain information about the Authority's operations and resources to help the reader understand how the Authority's financial information relates to the services the Authority provides and the activities it performs. In the case of S-11 and S-12, due to the nature of the Authority's operations, 10 years of data may not be necessary for readers to understand the Authority's environment or to make comparisons with other entities. In these instances, less than 10 years of data may be presented.

**Sources:** Unless otherwise noted, the information in these exhibits is derived from the comprehensive annual financial reports of the relevant year.

WAYNE COUNTY AIRPORT AUTHORITY

Exhibit S-1

Annual Revenues, Expenses, and Changes in Net Position

(Unaudited)

	2017	2016	2015	2014	2013	2012	2011	2010	2009	2008
<b>Operating revenues:</b>										
Airport landing and related fees	\$ 80,160,100	78,661,781	73,888,139	76,406,397	65,493,268	67,299,967	69,099,578	70,172,024	60,059,740	84,607,837
Concession fees	64,702,113	61,820,000	57,615,102	54,161,908	51,696,676	51,689,387	50,575,848	47,974,977	48,424,882	51,851,089
Parking fees	76,706,962	74,497,683	68,017,761	61,187,198	57,828,811	56,091,494	54,145,257	48,309,486	49,911,261	58,682,741
Hotel	29,928,448	33,889,957	33,345,294	32,922,844	29,301,463	27,611,922	29,372,498	26,828,936	23,246,792	31,496,580
Rental facilities	106,121,745	104,913,627	107,356,129	105,234,040	103,155,137	107,353,758	96,449,901	91,822,952	90,110,146	53,748,737
Expense recoveries	5,026,053	4,812,705	4,722,477	5,027,074	5,282,902	4,927,372	5,010,457	4,445,747	4,535,773	4,721,175
Other	5,486,987	4,473,948	4,790,511	4,784,310	6,007,508	3,664,924	6,406,295	7,542,765	4,470,468	5,603,796
<b>Total operating revenues</b>	<b>368,132,408</b>	<b>363,069,701</b>	<b>349,735,413</b>	<b>339,723,771</b>	<b>318,765,765</b>	<b>318,638,824</b>	<b>311,059,834</b>	<b>297,096,887</b>	<b>280,759,062</b>	<b>290,711,955</b>
<b>Nonoperating revenues:</b>										
Passenger facility charges	68,128,397	66,764,363	63,840,589	62,016,364	61,705,013	62,134,255	62,197,495	60,305,754	59,711,453	68,202,594
Customer facility charges	4,442,148	4,260,370	304,510	—	—	—	—	—	—	—
Federal and state sources	6,655,554	5,568,130	1,339,342	1,029,619	1,353,122	1,378,911	1,326,034	1,264,891	1,089,499	2,192,613
Interest income and other	3,681,738	3,956,859	2,209,999	2,808,958	2,048,283	1,834,241	3,390,214	5,021,589	7,310,241	28,603,234
<b>Total nonoperating revenues</b>	<b>82,907,837</b>	<b>80,549,722</b>	<b>67,694,440</b>	<b>65,854,941</b>	<b>65,106,418</b>	<b>65,347,407</b>	<b>66,913,743</b>	<b>66,592,234</b>	<b>68,111,193</b>	<b>98,998,441</b>
<b>Total revenues</b>	<b>451,040,245</b>	<b>443,619,423</b>	<b>417,429,853</b>	<b>405,578,712</b>	<b>383,872,183</b>	<b>383,986,231</b>	<b>377,973,577</b>	<b>363,689,121</b>	<b>348,870,255</b>	<b>389,710,396</b>
<b>Operating expenses:</b>										
Salaries, wages, and fringe benefits	110,655,997	85,906,812	77,278,115	80,339,925	72,891,273	70,105,901	71,489,016	70,060,439	75,098,962	77,942,240
Parking management	7,986,688	7,908,549	7,882,292	6,630,160	6,280,332	6,048,290	6,794,062	6,504,949	7,082,235	8,905,534
Hotel management	18,049,328	22,357,224	18,793,497	23,063,942	21,064,105	20,888,610	22,644,120	20,032,541	18,693,537	23,032,852
Janitorial services	13,537,224	12,014,456	11,967,572	11,809,916	11,400,627	11,498,166	11,164,616	10,988,244	10,599,304	2,422,889
Security	5,149,362	3,745,339	2,557,818	2,511,402	2,260,167	2,288,013	2,401,473	2,293,067	2,657,120	2,757,886
Utilities	23,258,507	22,220,804	24,499,913	28,939,467	27,035,597	26,676,454	24,886,104	26,691,836	27,700,377	30,429,231
Repairs, professional services, and other	88,001,189	98,458,024	94,162,429	82,616,234	75,658,752	71,689,848	79,689,990	74,617,012	69,556,874	84,887,031
Depreciation	134,753,534	173,101,695	167,105,516	141,539,710	140,526,973	142,828,398	142,754,436	146,151,075	146,151,805	129,574,853
<b>Total operating expenses</b>	<b>401,391,829</b>	<b>425,712,903</b>	<b>404,247,152</b>	<b>377,450,756</b>	<b>357,117,826</b>	<b>352,023,680</b>	<b>361,823,817</b>	<b>357,339,163</b>	<b>357,540,214</b>	<b>359,952,516</b>
<b>Nonoperating expenses:</b>										
Interest expense	72,739,426	71,351,499	80,334,978	82,352,146	82,825,198	85,514,177	91,549,044	105,913,828	116,392,802	94,925,971
Loss on disposal of assets	8,209,718	9,513,323	1,564,607	1,016,927	5,488,973	2,555,076	—	—	1,104,513	6,214,429
Amortization of bond insurance premiums	175,438	175,438	371,068	371,068	—	—	—	—	—	—
Amortization of bond issuance costs	—	—	—	—	1,968,924	2,035,607	1,902,952	2,161,678	1,942,959	2,315,453
<b>Total nonoperating expenses</b>	<b>81,124,582</b>	<b>81,040,260</b>	<b>82,270,653</b>	<b>83,740,141</b>	<b>90,283,095</b>	<b>90,104,860</b>	<b>93,451,996</b>	<b>108,075,506</b>	<b>119,440,274</b>	<b>103,455,853</b>
<b>Total expenses</b>	<b>482,516,411</b>	<b>506,753,163</b>	<b>486,517,805</b>	<b>461,190,897</b>	<b>447,400,921</b>	<b>442,128,540</b>	<b>455,275,813</b>	<b>465,414,669</b>	<b>476,980,488</b>	<b>463,408,369</b>
<b>Capital contributions</b>	<b>7,278,160</b>	<b>32,953,269</b>	<b>8,560,699</b>	<b>32,679,821</b>	<b>41,637,536</b>	<b>27,121,478</b>	<b>17,750,671</b>	<b>29,137,352</b>	<b>36,318,566</b>	<b>54,816,676</b>
<b>Change in net position</b>	<b>\$ (24,198,006)</b>	<b>(30,180,471)</b>	<b>(60,527,253)</b>	<b>(22,932,364)</b>	<b>(21,891,202)</b>	<b>(31,020,831)</b>	<b>(59,551,565)</b>	<b>(72,588,196)</b>	<b>(91,791,667)</b>	<b>(18,881,297)</b>
<b>Net position at year end composed of:</b>										
Net investment in capital assets	(90,041,234)	(97,448,351)	(6,890,342)	39,760,424	27,234,267	36,778,052	86,906,586	120,302,294	151,759,863	170,385,938
Restricted	295,809,085	319,728,265	287,087,714	314,707,433	323,698,561	338,786,218	322,488,477	358,386,114	405,007,255	430,322,283
Unrestricted	11,538,242	19,224,185	(8,512,802)	(22,256,034)	48,582,410	58,895,731	56,085,769	46,343,989	40,853,475	37,745,179
<b>Total net position</b>	<b>\$ 217,306,093</b>	<b>241,504,099</b>	<b>271,684,570</b>	<b>332,211,823</b>	<b>399,515,238</b>	<b>434,460,001</b>	<b>465,480,832</b>	<b>525,032,397</b>	<b>597,620,593</b>	<b>638,453,400</b>

<sup>1</sup> In 2010, the Authority restated beginning net position by \$50,958,860. This amount less the increase/decrease in net position is used to arrive at ending net position.

<sup>2</sup> In 2014, the Authority restated beginning net position by \$13,053,561. This amount less the increase/decrease in net position is used to arrive at ending net position.

<sup>3</sup> In 2015, the Authority restated beginning net position by \$44,371,051. This amount less the increase/decrease in net position is used to arrive at ending net position.

Source: Audited Financial Statements of the Wayne County Airport Authority.

See accompanying independent auditor's report.

**WAYNE COUNTY AIRPORT AUTHORITY**

Exhibit S-2

Principal Revenue Sources and Revenues per Enplaned Passenger

(Unaudited)

	<u>2017</u>	<u>2016</u>	<u>2015</u>	<u>2014</u>	<u>2013</u>	<u>2012</u>	<u>2011</u>	<u>2010</u>	<u>2009</u>	<u>2008</u>
<b>Airline revenues:</b>										
Airport landing and related fees	\$ 80,160,100	\$ 78,661,781	\$ 73,888,139	\$ 76,406,397	\$ 65,493,268	\$ 67,299,967	\$ 69,099,578	\$ 70,172,024	\$ 60,059,740	\$ 84,607,837
Terminal building rentals and fees	82,231,045	84,580,455	86,816,124	85,169,050	84,354,836	86,463,382	74,347,911	71,852,635	67,703,125	28,972,704
Facility use fees	8,829,376	8,288,005	8,367,454	8,608,737	7,552,051	7,489,497	7,143,733	6,302,145	6,468,964	8,159,193
<b>Total airline revenues</b>	<b>171,220,521</b>	<b>171,530,241</b>	<b>169,071,717</b>	<b>170,184,184</b>	<b>157,400,155</b>	<b>161,252,846</b>	<b>150,591,222</b>	<b>148,326,804</b>	<b>134,231,829</b>	<b>121,739,734</b>
Percentage of total revenues	38.0%	38.7%	40.5%	42.0%	41.0%	42.0%	39.8%	40.8%	38.5%	31.2%
<b>Non-Airline revenues:</b>										
Parking fees	76,706,962	74,497,683	68,017,761	61,187,198	57,828,811	56,091,494	54,145,257	48,309,486	49,911,261	58,682,741
Concession fees	39,752,574	37,947,768	35,185,895	32,253,029	31,536,249	32,063,017	31,592,316	30,702,401	30,885,107	30,358,313
Car rental	24,949,539	23,872,232	22,429,207	21,908,879	20,160,427	19,626,370	18,983,532	17,272,576	17,539,775	21,492,776
Hotel	29,928,448	33,889,957	33,345,294	32,922,844	29,301,463	27,611,922	29,372,498	26,828,936	23,246,792	31,496,580
Employee shuttle bus	2,833,329	2,316,970	2,100,820	2,032,346	2,502,311	5,210,640	5,869,315	5,467,240	5,655,355	5,773,430
Ground transportation	7,813,795	5,125,120	5,428,501	5,452,612	5,094,540	4,882,553	4,944,291	4,738,700	6,510,045	7,055,550
Utility service fees	5,026,053	4,812,705	4,722,477	5,027,074	5,282,902	4,927,372	5,010,457	4,445,747	4,535,773	4,721,175
Rental facilities	4,414,200	4,603,077	4,643,230	3,971,295	3,651,399	3,307,686	4,144,651	3,462,232	3,772,657	3,787,860
Other	5,486,987	4,473,948	4,790,511	4,784,310	6,007,508	3,664,924	6,406,295	7,542,765	4,470,468	5,603,796
<b>Total non-Airline revenues</b>	<b>196,911,887</b>	<b>191,539,460</b>	<b>180,663,696</b>	<b>169,539,587</b>	<b>161,365,610</b>	<b>157,385,978</b>	<b>160,468,612</b>	<b>148,770,083</b>	<b>146,527,233</b>	<b>168,972,221</b>
Percentage of total revenues	43.7%	43.2%	43.3%	41.8%	42.0%	41.0%	42.5%	40.9%	42.0%	43.4%
<b>Nonoperating revenues:</b>										
Passenger facility charges	68,128,397	66,764,363	63,840,589	62,016,364	61,705,013	62,134,255	62,197,495	60,305,754	59,711,453	68,202,594
Customer facility charges	4,442,148	4,260,370	304,510	—	—	—	—	—	—	—
Federal and state grants	6,655,554	5,568,130	1,339,342	1,029,619	1,353,122	1,378,911	1,326,034	1,264,891	1,089,499	2,192,613
Interest	3,567,954	3,856,859	1,454,197	1,388,246	1,616,192	1,810,277	3,241,109	4,941,344	7,310,241	28,082,306
Other	113,784	100,000	755,802	1,420,712	432,091	23,964	149,105	80,245	—	520,928
<b>Total nonoperating revenues</b>	<b>82,907,837</b>	<b>80,549,722</b>	<b>67,694,440</b>	<b>65,854,941</b>	<b>65,106,418</b>	<b>65,347,407</b>	<b>66,913,743</b>	<b>66,592,234</b>	<b>68,111,193</b>	<b>98,998,441</b>
Percentage of total revenues	18.3%	18.1%	16.2%	16.2%	17.0%	17.0%	17.7%	18.3%	19.5%	25.4%
<b>Total revenues</b>	<b>\$ 451,040,245</b>	<b>\$ 443,619,423</b>	<b>\$ 417,429,853</b>	<b>\$ 405,578,712</b>	<b>\$ 383,872,183</b>	<b>\$ 383,986,231</b>	<b>\$ 377,973,577</b>	<b>\$ 363,689,121</b>	<b>\$ 348,870,255</b>	<b>\$ 389,710,396</b>
<b>Enplaned passengers</b>	<b>17,281,219</b>	<b>17,130,687</b>	<b>16,443,778</b>	<b>16,216,673</b>	<b>16,077,652</b>	<b>16,169,584</b>	<b>16,226,201</b>	<b>15,876,381</b>	<b>15,941,132</b>	<b>17,831,231</b>
<b>Total revenue per enplaned passenger</b>	<b>\$ 26.10</b>	<b>25.90</b>	<b>25.39</b>	<b>25.01</b>	<b>23.88</b>	<b>23.75</b>	<b>23.29</b>	<b>22.91</b>	<b>21.88</b>	<b>21.86</b>
<b>Airline revenue per enplaned passenger</b>	<b>\$ 9.91</b>	<b>10.01</b>	<b>10.28</b>	<b>10.49</b>	<b>9.79</b>	<b>9.97</b>	<b>9.28</b>	<b>9.34</b>	<b>8.42</b>	<b>6.83</b>

Source: Audited Financial Statements of the Wayne County Airport Authority.

See accompanying independent auditor's report.



WAYNE COUNTY AIRPORT AUTHORITY

Exhibit S-3

Airlines Rates and Charges \*\*

(Unaudited)

	2017	2016	2015	2014	2013	2012	2011	2010	2009	2008
Landing Fees:										
Signatory Airlines <sup>1</sup>	\$ 3.65	3.62	3.54	3.71	3.14	3.23	3.26	3.44	2.83	3.58
Non-Signatory Airlines <sup>2</sup>	4.56	4.52	4.43	4.64	3.93	4.04	4.08	4.30	3.39	3.79
General Aviation <sup>3</sup>	2.32	2.25	2.00	2.00	1.75	1.50	1.50	1.50	1.50	1.50
Facility Use Fees:										
South Terminal	\$ 5.50	5.50	5.50	5.50	5.00	5.00	5.00	5.00	5.00	4.50
North Terminal	5.50	5.50	5.50	5.50	5.00	5.00	5.00	5.00	5.00	—
Smith/Berry Terminals	—	—	—	—	—	—	—	—	—	3.50
Terminal Rental Rates (per SF per year):										
Office Space – Airline	\$ —	—	—	—	—	—	—	—	—	19.71
South Terminal - Signatory Airlines <sup>1</sup>	56.81	56.90	58.74	60.00	57.71	60.00	57.70	54.51	52.00	—
South Terminal - Non-Signatory Airlines:	65.33	65.44	67.55	69.00	66.36	69.00	69.00	68.00	60.00	—
North Terminal - Signatory Airlines <sup>1</sup>	109.26	119.35	124.12	117.00	118.95	118.00	51.20	65.17	61.00	—
North Terminal - Non-Signatory Airlines:	125.65	137.25	142.74	134.00	136.79	136.00	78.00	88.00	71.00	—
Cargo Building/Warehouse	8.00	8.00	8.00	8.00	8.00	8.00	8.00	8.00	8.00	8.00
Aircraft Ramp	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Unimproved Land	0.31	0.31	0.31	0.31	0.31	0.31	0.31	0.31	0.31	0.31
Electric	4.67	4.67	4.67	4.67	4.67	4.67	4.67	4.67	1.24	1.24

\*\* The revenue bases to which these rates are applied and their principal payers can be found in Schedules S-2 and S-4.

<sup>1</sup> Calculated pursuant to the formulas set forth in the Airport Use and Lease Agreement. The agreement provides the calculation of the annual landing fee and terminal rental rates, with rate adjustments at mid-year, if required

<sup>2</sup> Average billed rate per 1,000 lbs. MGLW.

<sup>3</sup> General aviation rates are charged at Willow Run Airport only and represent an average of the tiered rates applied per 1,000 lbs. MGLW.

Source: WCAA Finance Department Records

See accompanying independent auditor's report.

WAYNE COUNTY AIRPORT AUTHORITY

Exhibit S-4

Airline Landed Weights

(in thousands of pounds)

(Unaudited)

Detroit Metropolitan Airport

Airline <sup>1</sup>	2017		2016		2015		2014		2013	
	Landed weights	Share	Landed weights	Share	Landed weights	Share	Landed weights	Share	Landed weights	Share
Delta	10,505,297	48.6%	10,616,006	49.5%	10,615,528	51.5%	10,273,955	50.4%	10,051,320	48.7%
Delta (Sky West)	1,643,645	7.6	864,151	4.0	465,842	2.3	294,404	1.4	—	—
Delta (Endeavor) <sup>5</sup>	1,439,231	6.7	1,960,734	9.1	1,824,960	8.8	2,523,978	12.4	3,661,163	17.7
Spirit Airlines	1,405,062	6.5	1,293,177	6.0	1,129,323	5.5	886,234	4.3	765,188	3.7
Southwest/AirTran Airways <sup>3</sup>	931,658	4.3	898,636	4.2	854,196	4.1	904,127	4.4	969,194	4.7
Delta (GoJet)	888,262	4.1	271,737	1.3	128,707	0.6	190,615	0.9	—	—
American/US Airways <sup>7</sup>	855,276	4.0	861,963	4.0	843,916	4.1	842,150	4.1	785,631	3.8
Delta (ExpressJet) <sup>2</sup>	680,318	3.2	1,423,967	6.6	1,544,732	7.5	1,351,443	6.6	1,260,107	6.1
Federal Express	470,760	2.2	483,114	2.3	479,295	2.3	493,528	2.4	446,450	2.2
United/Continental <sup>4</sup>	275,721	1.3	209,604	1.0	136,885	0.7	100,958	0.5	95,890	0.5
Frontier	189,950	0.9	140,122	0.7	100,624	0.5	105,448	0.5	84,124	0.4
United Parcel Service	189,156	0.9	179,533	0.8	175,421	0.9	170,445	0.8	167,762	0.8
United/Continental (Mesa) <sup>4</sup>	183,080	0.8	157,475	0.7	91,642	0.4	—	—	—	—
Lufthansa	170,089	0.8	165,418	0.8	162,237	0.8	180,296	0.9	153,106	0.7
United/Continental (Republic) <sup>4</sup>	169,454	0.8	114,619	0.5	—	—	—	—	—	—
JetBlue Airways	162,534	0.8	168,108	0.8	129,654	0.6	—	—	—	—
Delta (Compass)	149,528	0.7	154,667	0.7	165,734	0.8	252,328	1.2	225,942	1.1
American/US Airways (Republic)	149,076	0.7	194,949	0.9	225,467	1.1	107,669	0.5	—	—
Air France	134,507	0.6	134,644	0.6	138,530	0.7	136,291	0.7	142,397	0.7
Delta (Republic) <sup>5</sup>	130,371	0.6	—	—	—	—	—	—	—	—
DHL (Atlas)	118,096	0.5	119,608	0.6	—	—	—	—	—	—
American/US Airways (PSA)	102,934	0.5	—	—	—	—	—	—	—	—
Alaska Airlines	76,993	0.4	—	—	—	—	—	—	—	—
American/US Airways (SkyWest)	76,389	0.4	—	—	—	—	—	—	—	—
Air Canada (Air Georgian)	61,194	0.3	—	—	—	—	—	—	—	—
Virgin Atlantic Airways	61,014	0.3	135,699	0.6	—	—	—	—	—	—
Delta (Shuttle America)	58,320	0.3	276,165	1.3	480,607	2.3	97,562	0.5	139,035	0.7
American/US Airways (Air Wisconsin)	53,580	0.2	—	—	—	—	—	—	—	—
United/Continental (SkyWest) <sup>4</sup>	53,126	0.2	73,679	0.4	—	—	—	—	—	—
American/US Airways (Envoy) <sup>6</sup>	52,670	0.2	77,245	0.4	176,287	0.9	209,816	1.0	207,170	1.0
Aeromexico	30,883	0.1	—	—	—	—	—	—	—	—
Delta (Chataqua)	—	—	—	—	141,015	0.7	564,145	2.8	467,713	2.3
United/Continental (ExpressJet) <sup>2,4</sup>	—	—	—	—	78,571	0.4	147,800	0.7	—	—
Lufthansa Cargo	—	—	—	—	—	—	17,657	0.1	52,480	0.3
Delta (Comair)	—	—	—	—	—	—	—	—	—	—
Mesaba	—	—	—	—	—	—	—	—	—	—
KLM	—	—	—	—	—	—	—	—	—	—
British Airways	—	—	—	—	—	—	—	—	—	—
United (Air Canada)	—	—	—	—	—	—	—	—	—	—
Other <sup>8</sup>	133,638	0.5	491,574	2.2	536,479	2.5	531,852	2.9	954,189	4.6
Total	21,601,812	100.0%	21,466,594	100.0%	20,625,652	100.0%	20,382,701	100.0%	20,628,861	100.0%

<sup>1</sup> Signatory Affiliate Airlines are associated based on 2017 affiliations and shown in parentheses to major carrier name.

All historical landed weights for these affiliates are shown on one line regardless of prior affiliation

<sup>2</sup> Atlantic Southwest Airlines acquired ExpressJet on November 22, 2011 and began operating as ExpressJet. For comparative purposes, entities are shown as one on this report.

<sup>3</sup> Southwest Airlines acquired AirTran Airways on May 2, 2011 and for comparative purposes, are shown as one on this report.

<sup>4</sup> Continental Airlines merged with and into United Airlines on October 1, 2010, and for comparative purposes, are shown as one on this report.

<sup>5</sup> Effective August 1, 2013, Pinnacle Airlines changed its legal name to Endeavor Air.

<sup>6</sup> Effective April 15, 2014, American Eagle changed its legal name to Envoy Air.

<sup>7</sup> US Airways merged with American Airlines on April 8, 2015 and, for comparative purposes, are shown as one on this report.

<sup>8</sup> Includes airlines no longer serving Detroit Metro or carriers with insignificant activity. Several airlines reported in the "Other" category in prior years have been reported individually in the current year. Prior year numbers were not reclassified and remain in "Other".

Source: WCAA Finance Department Records

See accompanying independent auditor's report.

(Continued)

**Detroit Metropolitan Airport**

2012		2011		2010		2009		2008	
Landed weights	Share	Landed weights	Share	Landed weights	Share	Landed weights	Share	Landed weights	Share
9,655,644	46.9%	10,153,498	48.5%	10,369,432	51.4%	11,333,666	54.0%	13,604,011	58.2%
—	—	—	—	—	—	—	—	—	—
3,237,417	15.7	2,743,336	13.1	2,817,713	14.0	2,616,584	12.5	2,516,756	10.8
749,026	3.6	752,623	3.6	637,083	3.2	690,048	3.3	925,981	4.0
942,596	4.6	973,682	4.6	894,080	4.4	946,536	4.5	1,073,878	4.6
—	—	—	—	—	—	—	—	—	—
755,222	3.7	741,329	3.5	692,460	3.4	776,576	3.7	904,599	3.9
1,110,252	5.4	795,381	3.8	104,058	0.5	1,474	—	64,185	0.3
461,450	2.2	409,567	2.0	361,807	1.8	374,202	1.8	477,212	2.0
166,107	0.8	242,335	1.2	238,808	1.2	394,117	1.9	572,105	2.5
124,080	0.6	143,844	0.7	126,776	0.6	140,742	0.7	147,774	0.6
168,483	0.8	171,832	0.8	171,234	0.8	171,687	0.8	195,473	0.8
—	—	—	—	—	—	—	—	—	—
146,790	0.7	147,477	0.7	142,243	0.7	174,062	0.8	243,753	1.0
—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—
288,096	1.4	371,436	1.8	438,616	2.2	596,054	2.8	173,768	0.7
—	—	—	—	—	—	—	—	—	—
146,639	0.7	146,476	0.7	138,582	0.7	122,641	0.6	114,617	0.5
—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—
221,668	1.1	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—
195,133	0.9	180,815	0.9	193,235	1.0	155,625	0.7	107,737	0.5
—	—	—	—	—	—	—	—	9,432	—
217,005	1.1	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—
31,390	0.2	—	—	—	—	—	—	—	—
942,080	4.6	1,115,580	5.3	669,929	3.3	187,696	0.9	125,020	0.5
144,408	0.7	872,731	4.2	1,202,839	6.0	1,484,510	7.1	1,118,993	4.8
—	—	—	—	—	—	74,970	0.4	80,214	0.3
—	—	—	—	—	—	—	—	107,202	0.5
—	—	—	—	—	—	—	—	28,994	0.1
904,865	4.3	961,771	4.6	968,370	4.8	763,456	3.5	767,206	3.4
<b>20,608,351</b>	<b>100.0%</b>	<b>20,923,713</b>	<b>100.0%</b>	<b>20,167,265</b>	<b>100.0%</b>	<b>21,004,646</b>	<b>100.0%</b>	<b>23,358,910</b>	<b>100.0%</b>

WAYNE COUNTY AIRPORT AUTHORITY

Exhibit S-5

Enplaned Passengers  
(Unaudited)

Airline <sup>1</sup>	Detroit Metropolitan Airport									
	2017		2016		2015		2014		2013	
	Passenger enplanements	Share	Passenger enplanements	Share	Passenger enplanements	Share	Passenger enplanements	Share	Passenger enplanements	Share
Domestic:										
Alaska Airlines	72,380	0.42	66,040	0.39	57,636	0.35	—	—	—	—
American/US Airways (Air Wisconsin) <sup>7</sup>	45,400	0.26	63,898	0.37	34,465	0.21	57,178	0.35	63,752	0.40
American/US Airways (Envoy) <sup>6,7</sup>	44,914	0.26	67,414	0.39	136,328	0.83	169,854	1.05	169,407	1.05
American/US Airways (Mesa) <sup>7</sup>	—	—	—	—	13,713	0.08	29,246	0.18	26,173	0.16
American/US Airways (PSA) <sup>7</sup>	81,867	0.47	58,585	0.34	39,344	0.24	5,492	0.03	6,519	0.04
American/US Airways (Republic) <sup>7</sup>	118,354	0.68	156,144	0.91	178,734	1.09	92,224	0.57	96,509	0.60
American/US Airways (SkyWest) <sup>7</sup>	63,056	0.36	—	—	—	—	—	—	—	—
American/US Airways <sup>7</sup>	725,334	4.20	761,214	4.44	732,616	4.46	725,183	4.47	662,355	4.12
Delta (Chautauqua)	—	—	—	—	140,318	0.85	560,376	3.46	448,754	2.79
Delta (Comair)	—	—	—	—	—	—	—	—	—	—
Delta (Compass)	117,490	0.68	111,614	0.65	120,847	0.73	207,036	1.28	175,829	1.09
Delta (Endeavor) <sup>4</sup>	1,223,918	7.08	1,677,874	9.79	1,556,601	9.46	2,159,842	13.32	3,080,866	19.16
Delta (ExpressJet) <sup>3,3</sup>	547,541	3.17	1,150,700	6.72	1,276,020	7.76	1,098,157	6.77	978,390	6.09
Delta (GoJet)	745,286	4.31	230,733	1.35	107,108	0.65	160,650	0.99	—	—
Delta (Mesaba Aviation)	—	—	—	—	—	—	—	—	—	—
Delta (Republic)	111,888	0.65	—	—	—	—	—	—	—	—
Delta (Shuttle America)	48,860	0.28	264,188	1.54	475,505	2.89	86,319	0.53	121,712	0.76
Delta (Sky West)	1,114,479	6.45	570,927	3.33	353,817	2.15	251,177	1.55	—	—
Delta Air Lines	7,456,453	43.15	7,486,766	43.70	7,249,879	44.09	6,856,076	42.28	6,568,924	40.86
Frontier	208,426	1.21	149,124	0.87	92,038	0.56	98,958	0.61	80,496	0.50
JetBlue Airways	142,117	0.82	146,799	0.86	105,591	0.64	—	—	—	—
Southwest/Airtran Airlines <sup>5</sup>	848,036	4.91	845,604	4.94	784,365	4.77	828,595	5.11	832,772	5.18
Spirit Airlines	1,424,905	8.25	1,289,024	7.52	1,096,225	6.67	875,463	5.40	755,169	4.70
United/Continental (ExpressJet) <sup>2,3</sup>	5,268	0.03	9,002	0.05	76,704	0.47	143,587	0.89	130,342	0.81
United/Continental (GoJet) <sup>2</sup>	7,011	0.04	31,741	0.19	42,751	0.26	40,249	0.25	44,311	0.28
United/Continental (Mesa) <sup>7</sup>	153,771	0.89	140,502	0.82	80,084	0.49	18,478	0.11	42,346	0.26
United/Continental (Republic) <sup>3</sup>	124,655	0.72	92,302	0.54	—	—	—	—	—	—
United/Continental (Skywest) <sup>2</sup>	46,470	0.27	69,388	0.41	65,860	0.40	31,384	0.19	58,464	0.36
United/Continental Airlines <sup>2</sup>	218,781	1.27	171,058	1.00	105,188	0.64	78,956	0.49	70,789	0.44
USA 3000	—	—	—	—	—	—	—	—	—	—
Other <sup>8</sup>	28,853	0.17	68,915	0.40	86,562	0.53	177,393	1.09	251,438	1.56
Total Domestic	15,725,513	91.00	15,679,556	91.52	15,008,299	91.27	14,751,873	90.97	14,665,317	91.21
International:										
Aeromexico	19,954	0.12	—	—	—	—	—	—	—	—
Air Canada	40,781	0.24	32,392	0.19	23,980	0.15	21,253	0.13	17,156	0.11
Air France	71,462	0.41	71,642	0.42	75,576	0.46	73,512	0.45	77,751	0.48
American/US Airways <sup>7</sup>	—	—	566	—	520	—	1,256	0.01	1,302	0.01
British Airways	—	—	—	—	—	—	—	—	—	—
Delta (Comair)	—	—	—	—	—	—	—	—	—	—
Delta (Compass)	5,841	0.03	18,703	0.11	17,102	0.10	8,691	0.05	—	—
Delta (Endeavor) <sup>4</sup>	—	—	—	—	—	—	—	—	2,175	0.01
Delta (Mesaba Aviation)	—	—	—	—	—	—	—	—	—	—
Delta Air Lines	1,275,473	7.38	1,161,607	6.78	1,178,621	7.17	1,226,121	7.56	1,180,193	7.34
KLM-Royal Dutch Airlines	—	—	—	—	—	—	—	—	—	—
Lufthansa	77,521	0.45	71,472	0.42	76,694	0.47	77,650	0.48	66,977	0.42
Royal Jordanian Airlines	14,937	0.09	13,403	0.08	12,225	0.07	14,755	0.09	14,334	0.09
Southwest/Airtran Airlines <sup>5</sup>	—	—	—	—	—	—	12,255	0.08	11,120	0.07
Spirit Airlines	28,806	0.17	22,575	0.13	22,457	0.14	22,986	0.14	22,669	0.14
Virgin Atlantic Airways	19,417	0.11	47,380	0.28	20,442	0.12	—	—	—	—
Other <sup>8</sup>	1,514	0.01	11,391	0.07	7,862	0.05	6,321	0.04	18,658	0.12
Total International	1,555,706	9.01	1,451,131	8.48	1,435,479	8.73	1,464,800	9.03	1,412,335	8.79
Grand Total	17,281,219	100.01%	17,130,687	100.00%	16,443,778	100.00%	16,216,673	100.00%	16,077,652	100.00%

<sup>1</sup> Signatory Affiliate Airlines are associated based on 2017 affiliations and shown in parentheses to major carrier name.

All historical enplanements for these affiliates are shown on one line regardless of prior affiliations.

<sup>2</sup> Continental Airlines merged with and into United Airlines on October 1, 2010 and for comparative purposes, are shown as one in this report.

<sup>3</sup> Atlantic Southeast Airlines acquired ExpressJet on November 22, 2011 and began operating as ExpressJet. For comparative purposes, entities are shown as one in this report

<sup>4</sup> Effective August 1, 2013, Pinnacle Airlines changed its legal name to Endeavor Air.

<sup>5</sup> Southwest Airlines acquired AirTran Airways on May 2, 2011 and for comparative purposes, are shown as one in this report.

<sup>6</sup> Effective April 15, 2014, American Eagle changed its legal name to Envoy Air.

<sup>7</sup> US Airways merged with American Airlines on April 8, 2015 and for comparative purposes, are shown as one in this report.

<sup>8</sup> Includes airlines no longer serving Detroit Metro or carriers with insignificant activity. Activity previously recorded as Other remains as Other even if a carrier subsequently has significant activity.

Source: WCAA Finance Department Records

See accompanying independent auditor's report.

(Continued)

Detroit Metropolitan Airport									
2012		2011		2010		2009		2008	
Passenger enplanements	Share	Passenger enplanements	Share	Passenger enplanements	Share	Passenger enplanements	Share	Passenger enplanements	Share
—	—	—	—	—	—	—	—	—	—
71,394	0.44	81,860	0.50	76,414	0.48	95,658	0.60	104,993	0.59
162,633	1.01	154,136	0.95	161,692	1.02	125,766	0.79	85,637	0.48
37,154	0.23	19,074	0.12	22,387	0.14	22,640	0.14	47,464	0.27
10,716	0.07	5,990	0.04	5,860	0.04	15,747	0.10	38,059	0.21
80,347	0.50	111,361	0.69	112,838	0.71	74,785	0.47	23,992	0.13
—	—	—	—	—	—	—	—	—	—
635,870	3.95	616,654	3.80	588,264	3.70	660,549	4.15	773,946	4.34
217,573	1.35	168,194	1.04	95,086	0.60	4,798	0.03	9,211	0.05
811,218	5.02	945,095	5.82	540,781	3.41	145,990	0.92	90,839	0.51
241,508	1.49	312,578	1.93	340,262	2.14	439,785	2.76	144,644	0.81
2,698,992	16.69	2,254,208	13.89	2,186,627	13.77	2,066,229	12.96	2,043,385	11.46
885,230	5.47	650,836	4.01	83,690	0.53	1,289	0.01	58,351	0.33
—	—	—	—	—	—	—	—	—	—
123,066	0.76	721,808	4.45	949,610	5.98	1,042,785	6.54	811,681	4.55
—	—	—	—	—	—	—	—	—	—
190,663	1.18	85,863	0.53	4,462	0.03	10,599	0.07	36,813	0.21
—	—	—	—	—	—	—	—	—	—
6,349,263	39.27	6,651,576	40.99	7,328,799	46.16	7,894,790	49.52	9,555,525	53.59
125,186	0.77	140,291	0.86	117,044	0.74	117,396	0.74	126,580	0.71
—	—	—	—	—	—	—	—	—	—
842,732	5.21	813,744	5.02	755,276	4.76	742,389	4.65	812,093	4.55
711,134	4.40	703,335	4.33	558,596	3.52	591,150	3.71	802,424	4.50
123,199	0.76	112,402	0.69	118,001	0.74	63,765	0.40	63,856	0.36
34,532	0.21	57,089	0.35	66,206	0.42	56,837	0.36	—	—
43,702	0.27	19,733	0.12	29,999	0.19	47,908	0.30	43,380	0.24
—	—	—	—	—	—	—	—	—	—
43,592	0.27	29,789	0.18	68,400	0.43	31,407	0.20	24,640	0.14
128,634	0.80	195,711	1.21	186,520	1.17	287,568	1.80	450,079	2.52
—	—	153	—	2,226	0.01	19,823	0.12	79,304	0.44
233,942	1.45	61,052	0.37	215,005	1.36	62,738	0.40	44,232	0.26
14,802,280	91.57	14,912,532	91.89	14,614,045	92.05	14,622,391	91.74	16,271,128	91.25
—	—	—	—	—	—	2,053	0.01	5,942	0.03
14,887	0.09	12,340	0.08	6,875	0.04	5,956	0.04	13,678	0.08
82,675	0.51	76,568	0.47	70,685	0.45	55,233	0.35	45,947	0.26
1,459	0.01	1,493	0.01	1,997	0.01	1,853	0.01	—	—
—	—	—	—	—	—	—	—	20,491	0.11
—	—	—	—	20,851	0.13	—	—	—	—
—	—	—	—	13,301	0.08	26,608	0.17	—	—
18,094	0.11	44,711	0.28	97,518	0.61	—	—	—	—
—	—	67	—	19,583	0.12	45,248	0.28	37,906	0.21
1,119,589	6.92	1,065,984	6.57	921,973	5.81	1,009,773	6.33	1,204,927	6.76
—	—	—	—	—	—	40,196	0.25	41,753	0.23
64,854	0.40	67,952	0.42	65,568	0.41	72,884	0.46	102,121	0.57
15,143	0.09	14,051	0.09	15,258	0.10	14,822	0.09	16,434	0.09
10,295	0.06	11,436	0.07	5,849	0.04	271	—	—	—
23,339	0.14	15,579	0.10	12,274	0.08	16,928	0.11	19,464	0.11
—	—	—	—	—	—	—	—	—	—
16,969	0.10	3,488	0.02	10,604	0.07	26,916	0.16	51,440	0.30
1,367,304	8.43	1,313,669	8.11	1,262,336	7.95	1,318,741	8.26	1,560,103	8.75
16,169,584	100.00%	16,226,201	100.00%	15,876,381	100.00%	15,941,132	100.00%	17,831,231	100.00%

WAYNE COUNTY AIRPORT AUTHORITY

Exhibit S-6

Debt Service Detail

(Unaudited)

Detroit Metropolitan and Willow Run Airports (a)										
	2017		2016		2015		2014		2013	
	Principal	Interest <sup>1</sup>	Principal	Interest <sup>1</sup>	Principal	Interest <sup>1</sup>	Principal	Interest <sup>1</sup>	Principal	Interest <sup>1</sup>
Airport Revenue Bonds:										
Series 1994A	\$ —	—	—	—	—	—	—	—	—	—
Series 1996A	—	—	—	—	—	—	—	—	—	—
Series 1996B	—	—	—	—	—	—	—	—	—	—
Series 1998A	—	—	—	—	—	—	—	—	—	—
Series 1998B	—	—	—	—	—	—	—	—	—	—
Series 2001 Jr. Lien	—	—	—	—	—	—	—	—	—	—
Series 2002A	—	—	—	—	—	—	—	—	—	—
Series 2002C	—	—	—	—	—	—	—	—	2,105,000	17,542
Series 2002D	—	—	—	—	—	—	—	—	6,920,000	59,508
Series 2003A-1	—	—	—	—	—	—	—	—	—	—
Series 2003A-2	—	—	—	—	—	—	—	—	—	—
Series 2003A-3	—	—	—	—	—	—	—	—	—	—
Series 2003B	—	—	—	—	—	—	—	—	—	—
Series 2003C	—	—	—	—	—	—	—	—	—	—
Series 2004	—	—	—	—	—	—	—	—	—	—
Series 2005	—	—	257,075,000	539,025	196,950,000	22,271,263	11,720,000	23,153,925	11,130,000	23,759,217
Series 2007A Jr. Lien	4,230,000	7,870,983	3,985,000	8,080,440	3,795,000	8,278,108	3,615,000	8,466,358	3,480,000	8,645,983
Series 2007B	5,870,000	4,695,100	5,580,000	5,004,850	5,305,000	5,281,558	—	5,502,600	4,805,000	5,542,642
Series 2008A	5,390,000	5,501,725	5,305,000	5,783,957	5,225,000	6,061,768	5,155,000	6,335,469	5,100,000	6,603,500
Series 2008B	—	—	—	—	—	—	—	—	—	—
Series 2008C	—	—	—	—	—	—	—	—	—	—
Series 2008D	—	—	—	—	—	—	—	—	—	—
Series 2008E	—	—	—	—	—	—	—	—	—	—
Series 2008F	—	—	—	—	—	—	—	—	—	—
Series 2009A	—	—	—	—	—	—	—	—	—	—
Series 2010A	29,115,000	3,381,875	27,680,000	4,825,667	26,310,000	6,198,250	27,560,000	7,478,233	26,185,000	8,527,825
Series 2010B	—	—	—	—	—	—	4,800,000	40,000	—	240,000
Series 2010C	22,700,000	3,916,192	21,275,000	5,039,317	20,305,000	6,094,983	18,675,000	7,096,650	16,990,000	8,016,358
Series 2010D	2,490,000	786,175	2,380,000	909,759	2,310,000	1,028,175	2,165,000	1,135,250	2,055,000	1,196,225
Series 2010E-1	—	—	—	—	—	—	75,275,000	17,663	85,000	104,432
Series 2010E-2	—	—	—	—	—	—	74,895,000	21,997	105,000	97,698
Series 2010F	—	—	—	—	—	—	124,640,000	28,990	—	171,296
Series 2010G	—	—	—	—	—	—	115,760,000	106,848	240,000	1,279,419
Series 2011A	—	7,296,000	—	7,296,000	—	7,296,000	—	7,296,000	—	7,296,000
Series 2011B	2,310,000	484,450	2,200,000	599,034	2,135,000	701,375	—	754,750	—	754,750
Series 2012A	100,000	8,873,750	—	8,876,250	—	8,876,250	—	8,876,250	—	8,900,906
Series 2012B	100,000	1,250,333	—	1,254,500	—	1,254,500	—	1,254,500	—	1,257,985
Series 2012C	225,000	40,925	220,000	47,650	215,000	54,225	2,230,000	70,750	—	126,852
Series 2012D	4,960,000	2,342,834	7,965,000	2,608,375	7,000,000	2,961,083	6,470,000	3,285,100	—	3,456,425
Series 2013A	330,000	2,619,794	330,000	1,953,055	—	280,000	1,654,399	1,494,922	—	—
Series 2013B	185,000	976,469	180,000	716,561	120,000	600,329	—	541,947	—	—
Series 2013C	370,000	1,551,374	365,000	1,151,923	270,000	973,334	—	880,323	—	—
Series 2014A	100,000	404,728	—	300,414	—	253,070	—	104,169	—	—
Series 2014B	—	3,314,625	—	3,314,625	—	3,072,166	—	619,958	—	—
Series 2014C	—	1,579,250	—	1,579,250	—	1,463,732	—	295,378	—	—
Series 2015A	16,220,000	1,193,771	—	1,458,931	—	—	—	—	—	—
Series 2015B	—	2,037,000	—	2,093,583	—	—	—	—	—	—
Series 2015C	—	961,500	—	988,208	—	—	—	—	—	—
Series 2015D	—	12,996,670	—	7,896,028	—	—	—	—	—	—
Series 2015E	—	452,375	—	308,046	—	—	—	—	—	—
Series 2015F	—	11,207,750	—	10,771,893	—	—	—	—	—	—
Series 2015G	500,000	3,717,416	—	3,580,860	—	—	—	—	—	—
Series 2015H	—	312,880	—	223,981	—	—	—	—	—	—
Airport Hotel Bonds:										
Series 2001A	—	—	99,630,000	212,057	—	—	—	—	—	—
Installment Purchase Contracts	779,704	108,657	747,395	129,884	774,760	150,941	818,958	173,405	846,437	198,465
Willow Run Notes Payable:										
Washtenaw County	19,474	—	19,476	—	19,476	—	19,476	—	19,476	—
University of Michigan	—	—	—	—	—	—	—	—	401,148	24,251
Less: Bond Refundings <sup>2</sup>	—	—	(343,700,000)	—	(184,605,000)	—	(390,570,000)	—	—	—
Totals	\$ 95,994,178	\$ 89,874,600	\$ 90,336,871	\$ 87,544,123	\$ 86,409,236	\$ 84,525,509	\$ 83,228,434	\$ 85,031,425	\$ 80,467,061	\$ 86,277,279

Airport Hotel (a)										
	2017		2016		2015		2014		2013	
	Principal	Interest <sup>1</sup>	Principal	Interest <sup>1</sup>	Principal	Interest <sup>1</sup>	Principal	Interest <sup>1</sup>	Principal	Interest <sup>1</sup>
Airport Hotel Bonds:										
Series 2001A	\$ —	—	—	—	—	—	—	—	—	—
Series 2001B	—	—	—	—	4,185,000	5,089,375	1,645,000	5,089,375	1,480,000	5,089,375
Less: Bond Refundings <sup>2</sup>	—	—	—	—	—	194,535	—	294,305	—	401,060
Other Hotel Debt:										
Capital/FF&E Reserve Loan	—	—	—	—	—	—	—	—	2,922,147	93,522
Working Capital Loan	—	—	—	—	—	—	1,500,000	80,000	—	120,000
Totals	\$ —	—	—	—	4,185,000	5,283,910	3,145,000	5,463,680	4,402,147	5,703,957

<sup>1</sup> Interest does not include adjustments for capitalized interest, amortization of issuance costs, discount, premium, or refunding costs, and arbitrage.

<sup>2</sup> Amount of debt service paid through issuance of refunding bonds.

(a) In October 2015, the Authority entered into a new hotel management agreement and the 2001A Hotel Bonds, which were special facility revenue bonds, were refunded by the 2016G-H Airport Revenue Refunding Bonds. As a result, the operations of the Airport Hotel have been included with the operations of Detroit Metro Airport (see Note 2 of 2016 financial statements for additional discussion).

Source: WCAA Finance Department Records

See accompanying independent auditor's report.

(Continued)



**WAYNE COUNTY AIRPORT AUTHORITY**

Exhibit S-7

Revenue Coverage

(Unaudited)

	2017	2016	2015	2014	2013	2012	2011	2010	2009	2008
<b>Detroit Metro and Willow Run Airports (a)</b>										
Net revenues:										
Operating revenues	\$ 368,132,408	\$ 363,069,701	\$ 316,390,119	\$ 306,800,927	\$ 289,464,302	\$ 291,026,902	\$ 281,687,336	\$ 270,267,951	\$ 257,512,270	\$ 259,215,375
Interest income and other	3,681,738	3,956,859	2,157,671	2,789,211	2,026,745	1,798,471	3,354,863	4,992,574	7,143,858	28,101,968
Federal and state sources	6,655,554	5,568,130	1,339,342	1,029,619	1,353,122	1,378,911	1,326,034	1,264,891	1,089,499	2,192,613
Passenger facility charges	68,128,397	66,764,363	63,840,589	62,016,364	61,705,013	62,134,255	62,197,495	60,305,754	59,711,453	68,202,594
Customer facility charges	4,442,148	4,260,370	304,510	—	—	—	—	—	—	—
Total revenues	451,040,245	443,619,423	384,032,231	372,636,121	354,549,182	356,338,539	348,565,728	336,831,170	325,457,080	357,712,550
Less operating expenses, not including depreciation	(266,638,295)	(252,611,208)	(218,348,139)	(212,847,104)	(195,526,748)	(188,306,672)	(196,428,761)	(191,159,047)	(192,698,372)	(207,318,908)
Net revenues	184,401,950	191,008,215	165,684,092	159,789,017	159,022,434	168,031,867	152,136,967	145,672,123	132,758,708	150,393,642
Net debt service:										
Principal <sup>1</sup>	95,994,178	90,336,871	86,409,236	83,228,434	80,467,061	69,627,483	70,086,416	75,938,312	46,738,501	98,301,428
Interest <sup>1</sup>	89,874,600	87,544,123	84,525,509	85,031,425	86,277,279	79,703,054	84,231,580	97,323,384	105,019,840	111,590,379
Net debt service	185,868,778	177,880,994	170,934,745	168,259,859	166,744,340	149,330,537	154,317,996	173,261,696	151,758,341	209,891,807
Debt Service Coverage <sup>2</sup>	0.99	1.07	0.97	0.95	0.95	1.13	0.99	0.84	0.87	0.72
<b>Pledged Revenue Coverage – Airport Hotel (a)</b>										
Net revenues:										
Operating revenues	—	—	33,345,294	32,922,844	29,301,463	27,611,922	29,372,498	26,828,936	23,246,792	31,496,580
Interest income and other	—	—	52,328	19,747	21,538	43,320	35,351	29,015	166,383	501,266
Total revenues	—	—	33,397,622	32,942,591	29,323,001	27,655,242	29,407,849	26,857,951	23,413,175	31,997,846
Less operating expenses, not including depreciation	—	—	(18,793,497)	(23,063,942)	(21,064,105)	(20,888,610)	(22,640,620)	(20,029,041)	(18,690,037)	(23,058,755)
Net revenues	—	—	14,604,125	9,878,649	8,258,896	6,766,632	6,767,229	6,828,910	4,723,138	8,939,091
Net debt service:										
Principal	—	—	4,185,000	3,145,000	4,402,147	1,639,308	1,385,640	1,139,553	935,848	529,342
Interest <sup>1</sup>	—	—	5,283,910	5,463,680	5,703,957	5,957,275	6,062,988	6,152,079	6,225,621	6,283,971
Net debt service	—	—	9,468,910	8,608,680	10,106,104	7,596,583	7,448,628	7,291,632	7,161,469	6,813,313
Debt Service Coverage <sup>2</sup>	—	—	1.54	1.15	0.82	0.89	0.91	0.94	0.66	1.31
Combined net debt service:										
Principal	95,994,178	90,336,871	90,594,236	86,373,434	84,869,208	71,266,791	71,472,056	77,077,865	47,674,349	98,830,770
Interest <sup>1</sup>	89,874,600	87,544,123	89,809,419	90,495,105	91,981,236	85,660,329	90,294,568	103,475,463	111,245,461	117,874,350
Total combined net debt service	\$ 185,868,778	\$ 177,880,994	\$ 180,403,655	\$ 176,868,539	\$ 176,850,444	\$ 156,927,120	\$ 161,766,624	\$ 180,553,328	\$ 158,919,810	\$ 216,705,120

Notes: The Authority has pledged all net Airport revenues solely for the payment of the Airport Revenue Bonds and the Parity Obligations, and a statutory first lien has been granted upon all net revenues for such purpose.

<sup>1</sup> Interest does not include adjustments for capitalized interest, amortization of issuance costs/ bond insurance premiums, discount, premium, refunding costs, or arbitrage.

<sup>2</sup> Coverage calculations presented in this schedule differ from those required by the Master Bond Ordinance and all series ordinances as shown in the Continuing Disclosures.

<sup>3</sup> Principal payments do not include bond refunding payoffs

(a) In October 2015, the Authority entered into a new hotel agreement and the 2001A Hotel Bonds, which were special facility bonds, were refunded by the 2016G-H Airport Revenue Refunding Bonds. As a result, the operations of the Airport Hotel have been included with the operations of Detroit Metro Airport (see Note 2 of 2016 financial statements for additional discussion).

Source: WCAA Finance Department Records

See accompanying independent auditor's report.



WAYNE COUNTY AIRPORT AUTHORITY

Exhibit S-8

Ratios of Outstanding Debt

(Unaudited)

<b>Outstanding Debt per Enplaned Passenger</b>	<b>2017</b>	<b>2016</b>	<b>2015</b>	<b>2014</b>	<b>2013</b>	<b>2012</b>	<b>2011</b>	<b>2010</b>	<b>2009</b>	<b>2008</b>
Outstanding debt by type: <sup>1</sup>										
Airport revenue bonds	\$ 2,145,910,000	\$ 2,241,105,000	\$ 2,031,565,000	\$ 2,116,145,000	\$ 2,070,180,000	\$ 2,149,380,000	\$ 2,026,685,000	\$ 2,121,835,000	\$ 2,188,500,000	\$ 2,231,195,000
Installment purchase contract	2,152,765	2,932,469	3,679,864	4,454,624	5,273,582	6,120,019	4,354,379	6,608,280	8,853,973	10,508,525
Willow Run notes payable	523,820	543,294	562,770	102,246	102,246	542,346	569,365	591,879	619,498	644,465
Airport hotel bonds	—	—	99,630,000	103,815,000	105,460,000	106,940,000	108,140,000	109,120,000	109,885,000	110,475,000
Other hotel debt	—	—	—	—	1,500,000	4,422,147	4,861,455	5,267,095	5,641,648	5,987,496
Total outstanding debt	\$ 2,148,586,585	\$ 2,244,580,763	\$ 2,135,437,634	\$ 2,224,516,870	\$ 2,182,515,828	\$ 2,267,404,512	\$ 2,144,610,199	\$ 2,243,422,254	\$ 2,313,500,119	\$ 2,358,810,486
Enplaned passengers	17,281,219	17,130,687	16,443,778	16,216,673	16,077,652	16,169,584	16,226,201	15,876,381	15,941,132	17,831,231
Outstanding debt per enplaned passenger	\$ 124.33	\$ 131.03	\$ 129.86	\$ 137.17	\$ 135.75	\$ 140.23	\$ 132.17	\$ 141.31	\$ 145.13	\$ 132.29
<b>Combined Net Debt Service per Enplaned Passenger</b>										
Combined net debt service <sup>2</sup>	\$ 185,868,778	\$ 177,880,994	\$ 180,403,655	\$ 176,868,539	\$ 176,850,444	\$ 156,927,120	\$ 161,766,624	\$ 180,553,328	\$ 158,919,810	\$ 216,705,120
Enplaned passengers	17,281,219	17,130,687	16,443,778	16,216,673	16,077,652	16,169,584	16,226,201	15,876,381	15,941,132	17,831,231
Net debt service per enplaned passenger	\$ 10.76	\$ 10.38	\$ 10.97	\$ 10.91	\$ 11.00	\$ 9.71	\$ 9.97	\$ 11.37	\$ 9.97	\$ 12.15

<sup>1</sup> Outstanding Debt amounts do not include refundings, discounts, or premiums.

<sup>2</sup> Combined Net Debt Service does not include adjustments for capitalized interest, amortization of issuance costs/bond insurance premiums, discount, premium, refunding costs, or arbitrage

Source: WCAA Finance Department Records

See accompanying independent auditor's report.

**WAYNE COUNTY AIRPORT AUTHORITY**

Exhibit S-9

Authority Employees

(Unaudited)

	Authority Full-Time Positions *									
	2017	2016	2015	2014	2013	2012	2011	2010	2009	2008
Administration	12	10	11	9	8	8	16	11	15	18
Internal Audit	3	3	3	3	3	3	3	2	2	3
Legal	5	5	5	5	5	5	5	5	5	7
North Terminal Development Team	—	—	—	—	—	—	—	—	—	4
Finance	33	33	32	33	32	31	34	35	31	36
Information Technology/Telecommunications	20	17	18	15	14	12	13	14	14	14
Procurement & Compliance	16	19	16	15	14	14	18	24	20	25
Human Resources	12	13	13	11	11	11	14	12	14	15
Maintenance/Facilities	235	216	196	199	194	192	206	204	203	223
Airfield Operations	47	47	42	40	39	40	44	44	44	47
Public Safety	224	223	205	204	203	204	209	207	207	247
Planning & Development	29	32	31	25	28	24	19	17	16	14
Business Development	46	41	37	37	32	33	34	35	37	52
Willow	13	13	11	11	11	11	11	11	11	27
<b>Totals</b>	<b>695</b>	<b>672</b>	<b>620</b>	<b>607</b>	<b>594</b>	<b>588</b>	<b>626</b>	<b>621</b>	<b>619</b>	<b>732</b>

\* Represents both filled and budget-approved full-time positions as of each fiscal year end. Headcount actuals are lower due to employee turnover and amount of available positions at different times during the year.

Source: WCAA Finance Department Records

See accompanying independent auditor's report.

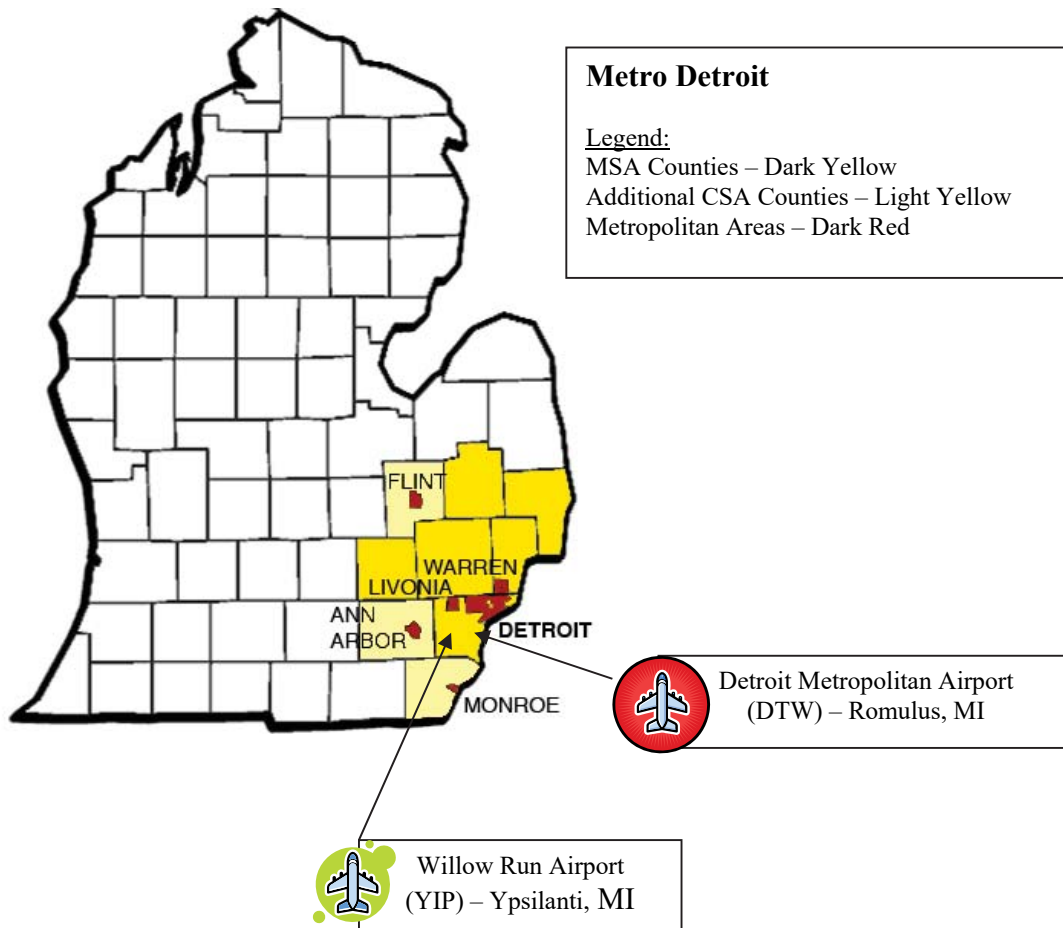
## Exhibit S-10: Demographic and Economic Information

Wayne County Airport Authority (the Authority) is a regional entity that spans multiple jurisdictions. The Authority has operational jurisdiction of Detroit Metropolitan Wayne County Airport (DTW) and Willow Run Airport (YIP), as well as an Airport Hotel.

Detroit Metropolitan Wayne County Airport is a major commercial airport located in Romulus, Michigan classified a large hub by the FAA with 1 percent or more of total U.S. passengers enplaned. As of 2016, Detroit Metro Airport is the seventeenth busiest airport in the United States and the thirty-third busiest airport in the world. Nearby to DTW is the smaller non-commercial airport Willow Run that serves freight, corporate, and general aviation clients. Together, these airports serve a Primary Air Trade Area commonly referred to as Metropolitan Detroit (Metro Detroit).

The United States Office of Management and Budget (OMB) defines the six counties of Lapeer, Livingston, Macomb, Oakland, St. Clair, and Wayne the *Detroit-Warren-Livonia Metropolitan Statistical Area (MSA)*. Further, the larger OMB designated *Detroit-Warren-Flint Combined Statistical Area (CSA)* incorporates both the above MSA and the metropolitan areas of Flint, Ann Arbor, and Monroe. This area is defined based on commuting patterns and results in the nine-county labor market region of Metro Detroit with a population of 5.2 million as of the 2010 census.

Detroit Metro Airport also serves the Toledo, Ohio, area, which is located approximately 47 miles south of the airport, and the city of Windsor, Ontario in nearby Canada. The Total Air Trade Area incorporates these regions along with the Primary Air Trade Area of Metro Detroit.



**WAYNE COUNTY AIRPORT AUTHORITY**

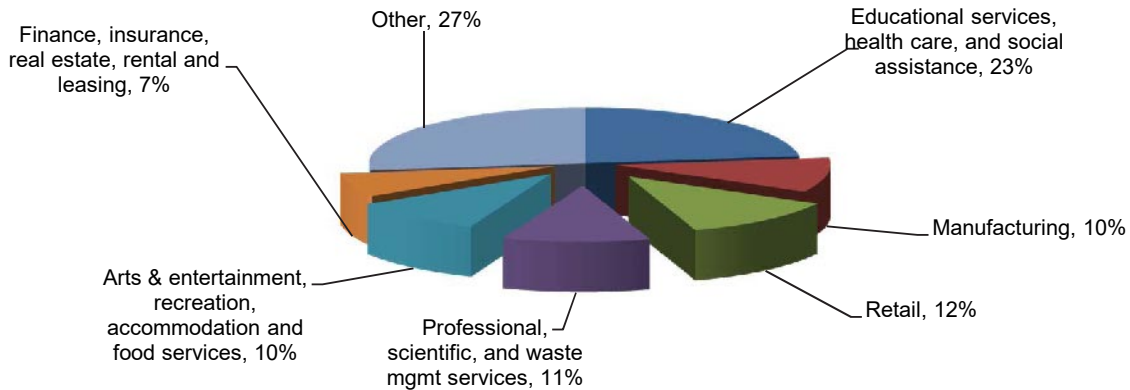
Exhibit S-10A

Selected Demographic and Economic Information for the Primary Air Trade Area  
(Unaudited)

Population (2016) Est.	5,318,653
Population (2010)	5,218,852
Population (2000)	5,357,538
Population (1990)	5,095,695
Percentage Increase in Population - 2010 to 2016	1.9%
Percentage Female	51.3%
Percentage Male	48.7%
Personal Income (millions) (2016)	\$250,372
Percent of U.S. Total	1.8%
Per Capita Personal Income (2016)	\$48,692
Per Capita Personal Income (2016) - U.S.	\$51,075
Unemployment Rate (2017 September)	4.4%
Unemployment Rate (2016 Annual)	5.4%
Unemployment Rate (2015 Annual)	5.9%
Total Households (millions)	2.0
Average Household Size (people)	2.5

**Leading Industries**

(% of employed population 16 years and older)




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Sources: U.S. Census Bureau, U.S. Bureau of Economic Analysis, and Bureau of Labor Statistics

See accompanying independent auditor's report.

**WAYNE COUNTY AIRPORT AUTHORITY**

Exhibit S-10B

Principal Employers in Primary Air Trade Area

(Unaudited)

<b>Employer</b>	<b>City</b>	<b>Metro Employees 2017 *</b>	<b>Metro Employees 2016 **</b>	<b>Percentage (%) Change</b>	<b>Type of Business</b>
Ford Motor Co.	Dearborn	48,000	47,000	2.1%	Automobile Manufacturer
General Motors Corp.	Detroit	37,713	36,628	3.0%	Automobile Manufacturer
University of Michigan	Ann Arbor	32,749	31,655	3.5%	Public University & Health Care System
FCA US LLC	Auburn Hills	32,514	32,508	0.0%	Automobile Manufacturer
Beaumont Health	Southfield	28,038	25,721	9.0%	Health Care System
U.S. Government	Detroit	18,920	18,862	0.3%	Federal Government
Henry Ford Health System	Detroit	17,608	16,919	4.1%	Health Care System
Rock Ventures	Detroit	16,617	14,237	16.7%	Financial Services/Real Estate
Trinity Health Michigan	Livonia	14,676	15,214	(3.5)%	Health Care System
Ascension Michigan	Warren	11,893	11,271	5.5%	Health Care System

\* Data as of July 2017

\*\* Data as of July 2016

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Source: Crain's Detroit Business, August 28, 2017

See accompanying independent auditor's report.

**WAYNE COUNTY AIRPORT AUTHORITY**

Exhibit S-11

Airport Information

(Unaudited)

**Detroit Metropolitan Airport**

Location:	20 miles southwest of Detroit in the city of Romulus		
Area:	7,380 acres		
Airport Code:	DTW		
Runways:	3R/21L 3L/21R 9R/27L 9L/27R 4R/22L 4L/22R		
Terminal:	McNamara Terminal Airlines	911,853	sq ft
	North Terminal Airlines	215,699	sq ft (b)
	Tenants/Concessionaires	223,296	sq ft (b)
	TSA/FIS	245,924	sq ft
	Public/Common	1,609,988	sq ft (b)
	Number of In-Service Passenger Gates	131	
	Number of Concessionaires	30	(b)
	Number of Rental Car Agencies On-Airport	6	
Airfield:	Runways	15,320,346	sq ft
	Taxiways	26,996,429	sq ft (a)
	Aprons	21,568,712	sq ft (a)
Parking:	Spaces Available:		
	McNamara Parking Structure	10,117	
	Big Blue Deck and Short-Term	6,530	
	Green Lot 1	1,517	
	Green Lot 2	900	
		<hr/>	
		19,064	spaces
Cargo:	Cargo/Hangar Buildings	1,224,989	sq ft
International:	Customs/Immigration F.I.S. Facility		
Tower(s):	AIR TRAFFIC CONTROL TOWER 24/7/365 Delta Air Lines Ramp Control Tower 24/7/365 North Terminal Ramp Control Tower 24/7/365		
FBO(s):	Signature Flight Support		

(a) These totals have changed from the prior year due to physical inventory reconciliation and construction activity.

(b) These numbers changed from the prior year due to changes in agreements.

Source: WCAA Finance Department Records

See accompanying independent auditor's report.

**WAYNE COUNTY AIRPORT AUTHORITY**

Exhibit S-12

Airport Information

(Unaudited)

**Willow Run Airport**

Location:	7 miles west of Detroit Metropolitan Airport bordering on Wayne and Washtenaw Counties		
Area:	2,360 acres		
Airport Code:	YIP		
Runways:	5L/23R 5R/23L 9/27		
Airfield:	Runways	3,147,605 sq ft	
	Taxiways	4,282,931 sq ft	
	Ramps/Aprons	5,094,432 sq ft	(a)
Corporate/Private Space:	Hangar	409,900 sq ft	(b)
	Tenants Other	98,300 sq ft	(b)
	T-Hangars (qty. 110)	44,800 sq ft	
	Number of Rental Car Agencies On-Airport	1	
Additional Space:	WCAA Admin, Maintenance, Ops, Public Safety	56,200 sq ft	
	Yankee Air Museum	53,400 sq ft	
	FAA	35,000 sq ft	
International:	U.S. Customs (user fee airport)		
Tower:	FAA 24/7		
FBOs:	Avflight Odyssey Aviation		

(a) These totals have changed from the prior year due to physical inventory reconciliation and construction activity.

(b) These numbers changed from the prior year due to changes in agreements.

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Source: WCAA Finance Department Records

See accompanying independent auditor's report.

**DETROIT METROPOLITAN WAYNE COUNTY AIRPORT**

Documents Incorporated By Reference

Operating Years Ended September 30, 2017

Portions of the following documents are incorporated herein by reference into sections of the Comprehensive Annual Financial Report (CAFR) as indicated:

<u>Document</u>	<u>Part of CAFR into which incorporated</u>
Official Statement, \$520,055,000 Wayne County Airport Authority Airport Revenue Bonds, Series 2015D-E; and Wayne County Authority Airport Revenue Refunding Bonds, Series 2015F-G	Continuing Disclosures



**DETROIT METROPOLITAN WAYNE COUNTY AIRPORT**

Continuing Disclosure Table #1  
Debt Service Requirements and Coverage  
Operating Year 2017  
(Unaudited)

	<b>Net revenues, revenue fund balance, and other available monies (thousands)</b>	<b>Total debt service requirements (thousands)</b>	<b>Debt service coverage</b>	<b>Airline cost per enplaned passenger</b>
Senior Lien	\$ 242,577	\$ 167,681	1.45	\$ 9.83
Total Senior Lien and Junior Lien	\$ 242,577	\$ 179,957	1.35	\$ 9.83

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Source: Wayne County Airport Authority

See accompanying independent auditor's report.

**DETROIT METROPOLITAN WAYNE COUNTY AIRPORT**

Continuing Disclosure Table #2

Operation and Maintenance Expenses

Operating years ending September 30

(In thousands of dollars, except as noted)

(Unaudited)

Description	Historical				
	2017	2016	2015	2014	2013
Salaries and wages	\$ 57,511	52,684	49,221	46,661	41,975
Employee benefits	28,720	35,497	34,357	27,027	25,513
	<u>86,231</u>	<u>88,181</u>	<u>83,578</u>	<u>73,688</u>	<u>67,488</u>
Contractual services:					
Parking management	7,987	7,909	7,882	6,630	6,280
Hotel management (a)	18,612	22,678	—	—	—
Security expenses	5,149	3,745	2,558	2,511	2,260
Janitorial services	13,515	11,992	11,948	11,792	11,383
Shuttle bus	8,169	7,194	6,540	6,123	6,501
Other services	23,893	24,870	19,811	24,352	18,394
Total contractual services	<u>77,325</u>	<u>78,388</u>	<u>48,739</u>	<u>51,408</u>	<u>44,818</u>
Wayne County administrative services	86	103	159	138	130
Repairs and maintenance	32,251	33,123	32,567	31,144	29,296
Supplies and other operating expenses	13,921	13,791	13,252	12,511	10,499
Insurance	2,049	2,075	2,145	2,200	2,298
Utilities	22,947	21,939	24,105	28,441	26,628
Rentals	123	113	720	718	705
Interest expense and paying agent fees	121	92	107	182	163
Capital expenses	13,216	10,874	6,311	3,371	3,647
	<u>84,714</u>	<u>82,110</u>	<u>79,366</u>	<u>78,705</u>	<u>73,366</u>
Total O&M expenses	<u>\$ 248,270</u>	<u>248,679</u>	<u>211,683</u>	<u>203,801</u>	<u>185,672</u>

- (a) On October 15, 2015, the Authority entered into a new hotel management agreement and the 2001A Hotel Bonds, which were special facility revenue bonds, were refunded by the 2016G-H Airport Revenue Refunding Bonds. As a result, as of October 15, 2015, the net revenues of the Hotel are included in the Net Revenues pledged toward the repayment of all the Authority's general airport revenue bonds and hotel management expenses are included in the Authority's operation and management expenses. At this time, all outstanding bonds, including the 2016G-H Airport Revenue Refunding Bonds, are all general airport revenue bonds.

Source: Wayne County Airport Authority

See accompanying independent auditor's report.

**DETROIT METROPOLITAN WAYNE COUNTY AIRPORT**

Continuing Disclosure Table #3

Operating Revenues

Operating years ending September 30

(In thousands of dollars, except as noted)

(Unaudited)

Description	Historical				
	2017	2016	2015	2014	2013
Airline revenues:					
Rental and use fees:					
Terminal building rentals and fees	\$ 60,688	61,227	62,776	63,523	64,322
Common-use/shared-use area rentals	22,632	24,161	26,779	25,988	23,098
Debt service recapture	1,109	1,718	1,718	1,718	1,718
Facilities use fees	8,475	8,036	8,065	8,361	7,262
Less rental fee adjustment	(2,447)	(2,820)	(4,859)	(6,313)	(5,134)
Total rental and use fees	90,457	92,322	94,479	93,277	91,266
Activity fees:					
Signatory airlines	76,305	75,525	72,369	75,360	64,394
Nonsignatory airlines	3,832	3,452	1,967	1,393	953
Less rental fee adjustment	(643)	(931)	(1,069)	(973)	(425)
Total activity fees	79,494	78,046	73,267	75,780	64,922
Total airline revenues	169,951	170,368	167,746	169,057	156,188
Nonairline revenues:					
Concessions:					
Automobile parking	76,707	74,498	68,018	61,187	57,829
Hotel (b)	29,928	33,890	—	—	—
Rental car	24,949	23,872	22,429	21,909	20,160
Food and beverage	19,427	18,016	14,149	12,948	12,877
Retail	13,296	12,745	13,347	12,526	11,663
Marketing and communications	1,566	1,635	2,235	2,388	2,603
Other concessions	5,001	5,110	5,057	4,012	4,044
Total concessions	170,874	169,766	125,235	114,970	109,176
Rentals	3,422	3,666	3,654	2,975	2,612
Utility fees	4,903	4,691	4,601	4,904	5,152
Interest income	337	162	110	76	138
Ground transportation	7,814	5,125	5,428	5,453	5,095
Other (a)	9,506	8,951	7,780	7,186	8,971
Total nonairline revenues	196,856	192,361	146,808	135,564	131,144
Total operating revenues	\$ 366,807	362,729	314,554	304,621	287,332

- (a) Includes shuttle bus revenue, badging fees, miscellaneous fees, chargebacks, insurance recoveries, and state and federal grants
- (b) On October 15, 2015, the Authority entered into a new hotel management agreement and the 2001A Hotel Bonds, which were special facility revenue bonds, were refunded by the 2016G-H Airport Revenue Refunding Bonds. As a result, as of October 15, 2015, the net revenues of the Hotel are included in the Net Revenues pledged toward the repayment of all the Authority's general airport revenue bonds and hotel management expenses are included in the Authority's operation and management expenses. At this time, all outstanding bonds, including the 2016G-H Airport Revenue Refunding Bonds, are all general airport revenue bonds.

Source: Wayne County Airport Authority

See accompanying independent auditor's report.

**DETROIT METROPOLITAN WAYNE COUNTY AIRPORT**

Continuing Disclosure Table #4

Application of Revenues

Operating years ending September 30

(In thousands of dollars, except as noted)

(Unaudited)

	<u>2017</u>	<u>2016</u>	<u>2015</u>	<u>2014</u>	<u>2013</u>
Revenues:					
Airline revenues	\$ 169,951	170,368	167,746	169,057	156,188
Nonairline revenues	196,856	192,361	146,808	135,564	131,144
Interest income generated in bond funds and reserves	5,649	8,091	12,705	7,056	5,404
Other available monies:					
PFC contributions	66,473	66,178	63,596	62,443	62,838
Capitalized interest contribution	2,104	13,219	8,731	12,131	12,621
Other	6,751	4,604	1,847	1,933	4,201
Total revenues	\$ <u>447,784</u>	<u>454,821</u>	<u>401,433</u>	<u>388,184</u>	<u>372,396</u>
<b>Priority</b>					
Application of revenues:					
1 Operation and Maintenance Fund (a)	\$ 258,266	259,980	218,398	210,219	191,715
2 Bond Fund	167,681	172,095	161,733	157,187	160,307
3 Junior Lien Bond Fund	12,276	12,270	12,231	12,231	12,239
4 Operation and Maintenance Reserve Fund	1,050	1,965	560	412	—
5 Renewal and Replacement Fund	500	500	500	500	500
6 County Discretionary Fund	350	350	350	350	350
7 Airport Development Fund	7,661	7,661	7,661	7,285	7,285
Total application of revenues	\$ <u>447,784</u>	<u>454,821</u>	<u>401,433</u>	<u>388,184</u>	<u>372,396</u>

(a) Includes amounts applied to the Hotel Furniture, Fixtures and Equipment Account established under the Authority's hotel management agreement effective October 15, 2015.

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See accompanying independent auditor's report.

**DETROIT METROPOLITAN WAYNE COUNTY AIRPORT**

Continuing Disclosure Table #5

Net Revenues and Debt Service Coverage

Operating year ending September 30, 2017

(In thousands of dollars, except as noted)

(Unaudited)

Revenues:		
Revenues		\$ 366,807
Revenue fund balance at beginning of year		55,163
Other available monies:		
PFC contributions		66,473
Other		6,751
Interest income generated in bond funds and reserves		<u>5,649</u>
Total revenues	[A]	500,843
Operation and maintenance expenses	[B]	<u>258,266</u>
Net revenues available for Sr. Lien debt service	[A - B] = [C]	242,577
Bond debt service - Senior Lien	[D]	<u>167,681</u>
Net revenues available for Jr. Lien debt service	[C - D] = [E]	74,896
Bond debt service - Junior Lien	[F]	<u>12,276</u>
Net revenues remaining in revenue fund		62,620
Debt service coverage:		
Senior Lien bonds	[C]/[D]	1.45
Senior Lien and Junior Lien bonds	[C]/[D + F]	1.35
Rate covenant elements:		
Operation and maintenance expenses		\$ 258,266
125% debt service – Bonds	[(1.25 x D) + F]	221,877
Other fund requirements		<u>9,561</u>
Total rate covenant elements		<u><u>\$ 489,704</u></u>

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Source: Wayne County Airport Authority

See accompanying independent auditor's report.

**DETROIT METROPOLITAN WAYNE COUNTY AIRPORT**

Continuing Disclosure Table #6

Historical Airline Passenger Enplanements

Operating years ending September 30

(Unaudited)

<b>Operating year</b>	<b>Domestic</b>	<b>International</b>	<b>Total</b>	<b>Percent increase (decrease)</b>
2017	15,725,513	1,555,706	17,281,219	0.9%
2016	15,679,556	1,451,131	17,130,687	4.2
2015	15,008,299	1,435,479	16,443,778	1.4
2014	14,751,873	1,464,800	16,216,673	0.9
2013	14,665,317	1,412,335	16,077,652	(0.6)

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Source: Wayne County Airport Authority records

See accompanying independent auditor's report.

**DETROIT METROPOLITAN WAYNE COUNTY AIRPORT**

Continuing Disclosure Table #7

Historical Comparative Total Enplanements

Calendar years ending December 31

(Unaudited)

Calendar year	Detroit Metro		United States		Detroit as a percentage of U.S. total
	Number of passengers	Percent increase (decrease)	Number of passengers	Percent increase (decrease)	
2017	16,306,916	(1.8)%	764,071,274	(1.4)%	2.1%
2016	16,613,139	3.6	774,740,631	3.3	2.1
2015	16,038,743	2.9	750,164,431	4.8	2.1
2014	15,587,638	0.5	715,681,042	2.7	2.2
2013	15,507,719	0.5	696,930,821	0.7	2.2

Note: 2017 estimate based on six months of data; 2016 updated with final data

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Source: U.S. Department of Transportation, Bureau of Transportation Statistics, Airport Activity Statistics of Certificated Route Air Carriers, Form 41, Schedule T3

See accompanying independent auditor's report.

**DETROIT METROPOLITAN WAYNE COUNTY AIRPORT**

Continuing Disclosure Table #8

Historical Airline Departures

Calendar years ending December 31

(Unaudited)

Calendar year	Departures by carrier type			Total departures	
	Majors	Nationals	Regionals	Total (a)	Percent increase (decrease)
2017	134,400	51,058	458	185,916	(1.3)%
2016	134,536	52,760	1,043	188,339	3.6
2015	126,785	54,522	459	181,766	(3.4)
2014	119,462	68,043	609	188,114	(8.0)
2013	107,804	96,650	70	204,524	(0.6)

(a) Total does not include departures by commuters or charters.

Note: 2017 estimate based on six months of data; 2016 updated with final data

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Source: U.S. Department of Transportation, Bureau of Transportation Statistics, Airport Activity Statistics of Certificated Route Air Carriers, Form 41, Schedule T3

See accompanying independent auditor's report.



**DETROIT METROPOLITAN WAYNE COUNTY AIRPORT**

Continuing Disclosure Table #9

Historical Domestic Originations and Connections

Calendar years ending December 31

(Unaudited)

Calendar year	Domestic originations		Domestic connections	
	Number	Percent of total	Number	Percent of total
2017	8,123,215	53.1%	7,164,367	46.9%
2016	7,912,712	50.2	7,837,790	49.8
2015	7,303,964	47.8	7,975,161	52.2
2014	6,952,520	47.0	7,831,959	53.0
2013	6,713,171	45.6	8,020,045	54.4

Note: 2017 estimate based on six months of data; 2016 updated with final data

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Source: U.S. Department of Transportation Origin and Destination Passenger Ticket Survey, 298c  
Commuter Data, Airport Activity Statistics of Certificated Route Air Carriers, and Wayne County  
Airport Authority records.

See accompanying independent auditor's report.

**DETROIT METROPOLITAN WAYNE COUNTY AIRPORT**

Continuing Disclosure Table #10

Historical Airline Market Shares

Operating years ending September 30

(Unaudited)

Airline	OY 2017		OY 2016		OY 2015	
	Enplaned passengers	Percent of market	Enplaned passengers	Percent of market	Enplaned passengers	Percent of market
<b>Domestic:</b>						
Alaska Airlines	72,380	0.5%	66,040	0.4%	57,636	0.4%
American/US Airways (Air Wisconsin) <sup>(3)</sup>	45,400	0.3	63,898	0.4	34,465	0.2
American/US Airways (Chautauqua) <sup>(2)</sup>	—	—	—	—	—	—
American/US Airways (Envoy) <sup>(2)(3)</sup>	44,914	0.3	67,414	0.4	136,328	0.9
American/US Airways (Mesa) <sup>(3)</sup>	—	—	—	—	13,713	0.1
American/US Airways (Piedmont) <sup>(2)</sup>	8,985	0.1	3,621	—	—	—
American/US Airways (PSA) <sup>(3)</sup>	81,867	0.5	58,585	0.4	39,344	0.3
American/US Airways (Republic) <sup>(3)</sup>	118,354	0.8	156,144	1.0	178,734	1.2
American/US Airways (SkyWest) <sup>(3)</sup>	63,056	0.4	—	—	—	—
American/US Airways (TransStates) <sup>(3)</sup>	13,678	0.1	31,705	0.2	—	—
American/US Airways <sup>(3)</sup>	725,334	4.6	761,214	4.9	732,616	4.9
Delta (Chautauqua)	—	—	—	—	140,318	0.9
Delta (Compass)	117,490	0.7	111,614	0.7	120,847	0.8
Delta (Endeavor) <sup>(4)</sup>	1,223,918	7.8	1,677,874	10.7	1,556,601	10.4
Delta (ExpressJet)	547,541	3.5	1,150,700	7.3	1,276,020	8.5
Delta (GoJet)	745,286	4.7	230,733	1.5	107,108	0.7
Delta (Republic)	111,888	0.7	—	—	—	—
Delta (Shuttle America)	48,860	0.3	264,188	1.7	475,505	3.2
Delta (SkyWest)	1,114,479	7.1	570,927	3.6	353,817	2.4
Delta Air Lines	7,456,453	47.4	7,486,766	47.8	7,249,879	48.3
Frontier	208,426	1.3	149,124	1.0	92,038	0.6
JetBlue Airways	142,117	0.9	146,799	0.9	105,591	0.7
Southwest Airlines	848,036	5.4	845,604	5.4	784,365	5.2
Spirit Airlines	1,424,905	9.1	1,289,024	8.2	1,096,225	7.3
United Airlines (ExpressJet)	5,268	—	9,002	0.1	76,704	0.5
United Airlines (GoJet)	7,011	—	31,741	0.2	42,751	0.3
United Airlines (Mesa)	153,771	1.0	140,502	0.9	80,084	0.5
United Airlines (Republic)	124,655	0.8	92,302	0.6	11,580	0.1
United Airlines (Shuttle America)	4,036	—	32,527	0.2	52,359	0.4
United Airlines (SkyWest)	46,470	0.3	69,388	0.4	65,860	0.4
United Airlines (TransStates)	1,268	—	1,051	—	20,680	0.1
United Airlines	218,781	1.4	171,058	1.1	105,188	0.7
Other <sup>(4)</sup>	886	—	11	—	1,943	—
<b>Subtotal – Domestic</b>	<b>15,725,513</b>	<b>100.0%</b>	<b>15,679,556</b>	<b>100.0%</b>	<b>15,008,299</b>	<b>100.0%</b>
<b>International:</b>						
Aeromexico	19,954	1.3	—	—	—	—
Air Canada (Jazz)	—	—	4,502	0.3	11,011	0.8
Air Canada (Air Georgian)	40,781	2.6	27,890	1.9	12,969	0.9
Air France	71,462	4.6	71,642	4.9	75,576	5.3
American/US Airways <sup>(3)</sup>	—	—	566	—	520	—
Delta (Chautauqua)	—	—	—	—	—	—
Delta (Compass)	5,841	0.4	18,703	1.3	17,102	1.2
Delta (Endeavor) <sup>(4)</sup>	—	—	—	—	—	—
Delta (ExpressJet)	—	—	—	—	—	—
Delta Air Lines	1,275,473	82.0	1,161,607	80.1	1,178,621	82.1
Frontier	—	—	—	—	7,831	0.5
Lufthansa	77,521	5.0	71,472	4.9	76,694	5.3
Royal Jordanian Airlines	14,937	1.0	13,403	0.9	12,225	0.9
Southwest Airlines	—	—	—	—	—	—
Spirit	28,806	1.8	22,575	1.6	22,457	1.6
Virgin Atlantic Airways	19,417	1.2	47,380	3.3	20,442	1.4
Other <sup>(4)</sup>	1,514	0.1	11,391	0.8	31	—
<b>Subtotal – International</b>	<b>1,555,706</b>	<b>100.0%</b>	<b>1,451,131</b>	<b>100.0%</b>	<b>1,435,479</b>	<b>100.0%</b>
<b>Total – All Markets</b>	<b>17,281,219</b>		<b>17,130,687</b>		<b>16,443,778</b>	

<sup>(1)</sup> Effective August 1, 2013, Pinnacle Airlines changed its legal name to Endeavor Air.

<sup>(2)</sup> American Eagle Airlines was rebranded as Envoy Air on April 15, 2014, and for comparative purposes all American Eagle data has been combined with Envoy Air in this report.

<sup>(3)</sup> US Airways merged with and into American Airlines on April 8, 2015, and for comparative purposes, all US Airways data has been combined with American Airlines in this report.

<sup>(4)</sup> Includes airlines with minimal market share or that may not operate at the Airport as of Operating Year 2017.

**DETROIT METROPOLITAN WAYNE COUNTY AIRPORT**

Continuing Disclosure Table #10  
 Historical Airline Market Shares  
 Operating years ending September 30  
 (Unaudited)

Airline	OY 2014		OY 2013	
	Enplaned passengers	Percent of market	Enplaned passengers	Percent of market
<b>Domestic:</b>				
Alaska Airlines	3,927	—%	—	—%
American/US Airways (Air Wisconsin) <sup>(2)</sup>	57,178	0.4	63,752	0.4
American/US Airways (Chautauqua) <sup>(3)</sup>	—	—	9,220	0.1
American/US Airways (Envoy) <sup>(2)(3)</sup>	169,854	1.2	169,407	1.2
American/US Airways (Mesa) <sup>(3)</sup>	29,246	0.2	26,173	0.2
American/US Airways (Piedmont) <sup>(2)</sup>	—	—	—	—
American/US Airways (PSA) <sup>(2)</sup>	5,492	—	6,519	—
American/US Airways (Republic) <sup>(3)</sup>	130,553	0.9	96,509	0.7
American/US Airways (SkyWest) <sup>(3)</sup>	—	—	—	—
American/US Airways (TransStates) <sup>(3)</sup>	—	—	—	—
American/US Airways <sup>(3)</sup>	725,183	4.9	662,355	4.5
Delta (Chautauqua)	560,376	3.8	448,754	3.1
Delta (Compass)	207,036	1.4	175,829	1.2
Delta (Endeavor) <sup>(1)</sup>	2,159,842	14.6	3,080,866	21.0
Delta (ExpressJet)	1,098,157	7.5	978,390	6.7
Delta (GoJet)	160,650	1.1	87,296	0.6
Delta (Republic)	—	—	—	—
Delta (Shuttle America)	86,319	0.6	121,712	0.8
Delta (SkyWest)	251,177	1.7	91,610	0.6
Delta Air Lines	6,856,076	46.5	6,568,924	44.8
Frontier	98,958	0.7	80,496	0.5
JetBlue Airways	46,011	0.3	—	—
Southwest Airlines	828,595	5.6	832,772	5.7
Spirit Airlines	875,463	5.9	755,169	5.1
United Airlines (ExpressJet)	143,587	1.0	130,342	0.9
United Airlines (GoJet)	40,249	0.3	44,311	0.3
United Airlines (Mesa)	18,478	0.1	42,346	0.3
United Airlines (Republic)	—	—	—	—
United Airlines (Shuttle America)	70,345	0.5	60,856	0.4
United Airlines (SkyWest)	31,384	0.2	58,464	0.4
United Airlines (TransStates)	15,316	0.1	—	—
United Airlines	78,956	0.5	70,789	0.5
Other <sup>(4)</sup>	3,465	—	2,456	—
<b>Subtotal – Domestic</b>	<b>14,751,873</b>	<b>100.0%</b>	<b>14,665,317</b>	<b>100.0%</b>
<b>International:</b>				
Aeromexico	—	—	—	—
Air Canada (Jazz)	7,976	0.6	9,706	0.7
Air Canada (Air Georgian)	13,277	0.9	7,450	0.5
Air France	73,512	5.0	77,751	5.5
American/US Airways <sup>(3)</sup>	1,256	0.1	1,302	0.1
Delta (Chautauqua)	—	—	3,608	0.3
Delta (Compass)	8,691	0.6	—	—
Delta (Endeavor) <sup>(1)</sup>	—	—	2,175	0.2
Delta (ExpressJet)	5,947	0.4	14,706	1.0
Delta Air Lines	1,226,121	83.7	1,180,193	83.6
Frontier	—	—	—	—
Lufthansa	77,650	5.3	66,977	4.7
Royal Jordanian Airlines	14,755	1.0	14,334	1.0
Southwest Airlines	12,255	0.8	11,120	0.8
Spirit	22,986	1.6	22,669	1.6
Virgin Atlantic Airways	—	—	—	—
Other <sup>(4)</sup>	374	—	344	—
<b>Subtotal – International</b>	<b>1,464,800</b>	<b>100.0%</b>	<b>1,412,335</b>	<b>100.0%</b>
<b>Total – All Markets</b>	<b>16,216,673</b>		<b>16,077,652</b>	

<sup>(1)</sup> Effective August 1, 2013, Pinnacle Airlines changed its legal name to Endeavor Air.

<sup>(2)</sup> American Eagle Airlines was rebranded as Envoy Air on April 15, 2014, and for comparative purposes all American Eagle data has been combined with Envoy Air in this report.

<sup>(3)</sup> US Airways merged with and into American Airlines on April 8, 2015, and for comparative purposes, all US Airways data has been combined with American Airlines in this report.

<sup>(4)</sup> Includes airlines with minimal market share or that may not operate at the Airport as of Operating Year 2017.

Source: Wayne County Airport Authority records  
 See accompanying independent auditor's report.

**DETROIT METROPOLITAN WAYNE COUNTY AIRPORT**

Continuing Disclosure Table #11

Historical Airline Cargo

Operating years ending September 30

(Unaudited)

Operating year	Cargo by type (metric tons)				Total Cargo	
	Freight and Express (a)		Mail		Total Cargo	Percent increase (decrease)
	Enplaned	Deplaned	Enplaned	Deplaned		
2017	78,041	115,305	11,381	9,253	213,980	4.5%
2016	81,744	106,500	8,975	7,639	204,858	7.4
2015	77,043	97,381	8,225	8,009	190,658	(8.7)
2014	85,475	107,634	8,543	7,187	208,839	(3.0)
2013	85,072	114,892	8,965	6,434	215,363	(1.0)

(a) Includes small packages

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Source: Wayne County Airport Authority records

See accompanying independent auditor's report.

**DETROIT METROPOLITAN WAYNE COUNTY AIRPORT**

Continuing Disclosure Table #12

Historical Aircraft Landed Weight

Operating years ending September 30

(Unaudited)

Airline	OY 2017		OY 2016		OY 2015	
	Landed Weight (per 1,000 lbs.)	Percent of Market	Landed Weight (per 1,000 lbs.)	Percent of Market	Landed Weight (per 1,000 lbs.)	Percent of Market
Aeromexico	30,883	0.1%	—	—%	—	—%
Air Canada (Jazz)	—	—	9,413	—	20,584	0.1
Air Canada (Air Georgian)	61,194	0.3	43,749	0.2	18,548	0.1
Air France	134,507	0.6	134,644	0.6	138,530	0.7
Alaska Airlines	76,993	0.4	65,210	0.3	55,208	0.3
American/US Airways (Air Wisconsin) <sup>(3)</sup>	53,580	0.2	72,615	0.4	48,927	0.2
American/US Airways (Chautauqua) <sup>(2)</sup>	—	—	—	—	—	—
American/US Airways (Envoy) <sup>(2)(3)</sup>	52,670	0.2	77,245	0.4	176,287	0.9
American/US Airways (Mesa) <sup>(3)</sup>	—	—	—	—	14,333	0.1
American/US Airways (Piedmont) <sup>(3)</sup>	9,909	—	4,540	—	—	—
American/US Airways (PSA) <sup>(3)</sup>	102,934	0.5	68,183	0.3	40,838	0.2
American/US Airways (Republic) <sup>(3)</sup>	149,076	0.7	194,949	0.9	225,467	1.1
American/US Airways (SkyWest) <sup>(3)</sup>	76,389	0.4	—	—	—	—
American/US Airways (TransStates) <sup>(3)</sup>	13,613	0.1	28,674	0.1	—	—
American/US Airways <sup>(3)</sup>	855,276	4.0	861,963	4.0	843,916	4.1
Delta (Chautauqua)	—	—	—	—	141,015	0.7
Delta (Compass)	149,528	0.7	154,667	0.7	165,734	0.8
Delta (Endeavor) <sup>(1)</sup>	1,439,231	6.7	1,960,734	9.1	1,824,960	8.8
Delta (ExpressJet)	680,318	3.2	1,423,967	6.6	1,544,732	7.5
Delta (GoJet)	888,262	4.1	271,737	1.3	128,707	0.6
Delta (Republic)	130,371	0.6	—	—	—	—
Delta (Shuttle America)	58,320	0.3	276,165	1.3	480,607	2.3
Delta (SkyWest)	1,643,645	7.6	864,151	4.0	465,842	2.3
Delta Air Lines	10,505,297	48.6	10,616,006	49.5	10,615,528	51.5
DHL/Atlas	118,096	0.5	119,608	0.6	—	—
DHL/ATI	198	—	4,950	—	—	—
Federal Express	470,760	2.2	483,114	2.3	479,295	2.3
Frontier	189,950	0.9	140,122	0.7	100,624	0.5
JetBlue Airways	162,534	0.8	168,108	0.8	129,654	0.6
Lufthansa	170,089	0.8	165,418	0.8	162,237	0.8
Lufthansa Cargo	—	—	—	—	—	—
Royal Jordanian Airlines	38,380	0.2	39,520	0.2	38,257	0.2
Southwest Airlines	931,658	4.3	898,636	4.2	854,196	4.1
Spirit Airlines	1,405,062	6.5	1,293,177	6.0	1,129,323	5.5
United Airlines (ExpressJet)	5,001	—	8,508	—	78,571	0.4
United Airlines (GoJet)	7,705	—	36,917	0.2	46,297	0.2
United Airlines (Mesa)	183,080	0.8	157,475	0.7	91,642	0.4
United Airlines (Republic)	169,454	0.8	114,619	0.5	15,275	0.1
United Airlines (Shuttle America)	5,062	—	40,929	0.2	64,068	0.3
United Airlines (SkyWest)	53,126	0.2	73,679	0.4	69,752	0.3
United Airlines (TransStates)	1,361	—	1,129	—	21,159	0.1
United Airlines	275,721	1.3	209,604	1.0	136,885	0.7
United Parcel Service	189,156	0.9	179,533	0.8	175,421	0.8
Virgin Atlantic Airways	61,014	0.3	135,699	0.6	49,683	0.2
Other <sup>(4)</sup>	52,409	0.2	67,237	0.3	33,550	0.2
<b>Total</b>	<b>21,601,812</b>	<b>100.0%</b>	<b>21,466,594</b>	<b>100.0%</b>	<b>20,625,652</b>	<b>100.0%</b>

<sup>(1)</sup> Effective August 1, 2013, Pinnacle Airlines changed its legal name to Endeavor Air.

<sup>(2)</sup> American Eagle Airlines was rebranded as Envoy Air on April 15, 2014, and for comparative purposes all American Eagle data has been combined with Envoy Air in this report.

<sup>(3)</sup> US Airways merged with and into American Airlines on April 8, 2015, and for comparative purposes, all US Airways data has been combined with American Airlines in this report.

<sup>(4)</sup> Includes airlines with minimal market share or that may not operate at the Airport as of Operating Year 2017.

Source: Wayne County Airport Authority records  
See accompanying independent auditor's report.

**DETROIT METROPOLITAN WAYNE COUNTY AIRPORT**

Continuing Disclosure Table #12  
 Historical Aircraft Landed Weight  
 Operating years ending September 30  
 (Unaudited)

Airline	OY 2014		OY 2013	
	Landed Weight (per 1,000 lbs.)	Percent of Market	Landed Weight (per 1,000 lbs.)	Percent of Market
Aeromexico	—	—%	—	—%
Air Canada (Jazz)	13,916	0.1	19,403	0.1
Air Canada (Air Georgian)	16,600	0.1	10,790	0.1
Air France	136,291	0.7	142,397	0.7
Alaska Airlines	4,199	—	—	—
American/US Airways (Air Wisconsin) <sup>(2)</sup>	69,466	0.3	77,597	0.4
American/US Airways (Chautauqua) <sup>(3)</sup>	—	—	10,935	0.1
American/US Airways (Envoy) <sup>(2)(3)</sup>	209,816	1.0	207,170	1.0
American/US Airways (Mesa) <sup>(3)</sup>	29,594	0.2	27,342	0.1
American/US Airways (Piedmont) <sup>(3)</sup>	—	—	—	—
American/US Airways (PSA) <sup>(3)</sup>	6,025	—	7,744	—
American/US Airways (Republic) <sup>(3)</sup>	153,468	0.8	107,113	0.5
American/US Airways (SkyWest) <sup>(3)</sup>	—	—	—	—
American/US Airways (TransStates) <sup>(3)</sup>	—	—	—	—
American/US Airways <sup>(3)</sup>	842,150	4.1	785,631	3.8
Delta (Chautauqua)	564,145	2.8	467,713	2.3
Delta (Compass)	252,328	1.3	225,942	1.1
Delta (Endeavor) <sup>(1)</sup>	2,523,978	12.4	3,661,163	17.7
Delta (ExpressJet)	1,351,443	6.6	1,260,108	6.1
Delta (GoJet)	190,615	0.9	105,190	0.5
Delta (Republic)	—	—	—	—
Delta (Shuttle America)	97,562	0.5	139,035	0.7
Delta (SkyWest)	294,404	1.5	115,235	0.6
Delta Air Lines	10,273,955	50.4	10,051,320	48.7
DHL/Atlas	—	—	—	—
DHL/ATI	—	—	—	—
Federal Express	493,528	2.4	446,450	2.2
Frontier	105,448	0.5	84,124	0.4
JetBlue Airways	58,298	0.3	—	—
Lufthansa	180,296	0.9	153,106	0.7
Lufthansa Cargo	17,657	0.1	52,480	0.3
Royal Jordanian Airlines	40,645	0.2	42,452	0.2
Southwest Airlines	904,127	4.4	969,194	4.7
Spirit Airlines	886,234	4.3	765,188	3.7
United Airlines (ExpressJet)	147,800	0.7	139,629	0.7
United Airlines (GoJet)	45,091	0.2	51,389	0.2
United Airlines (Mesa)	23,919	0.1	51,657	0.2
United Airlines (Republic)	—	—	—	—
United Airlines (Shuttle America)	86,919	0.4	80,628	0.4
United Airlines (SkyWest)	33,738	0.2	65,129	0.3
United Airlines (TransStates)	15,871	0.1	—	—
United Airlines	100,958	0.5	95,890	0.5
United Parcel Service	170,445	0.8	167,762	0.8
Virgin Atlantic Airways	—	—	—	—
Other <sup>(4)</sup>	41,772	0.2	41,955	0.2
<b>Total</b>	<b>20,382,701</b>	<b>100.0%</b>	<b>20,628,861</b>	<b>100.0%</b>

<sup>(1)</sup> Effective August 1, 2013, Pinnacle Airlines changed its legal name to Endeavor Air.

<sup>(2)</sup> American Eagle Airlines was rebranded as Envoy Air on April 15, 2014, and for comparative purposes all American Eagle data has been combined with Envoy Air in this report.

<sup>(3)</sup> US Airways merged with and into American Airlines on April 8, 2015, and for comparative purposes, all US Airways data has been combined with American Airlines in this report.

<sup>(4)</sup> Includes airlines with minimal market share or that may not operate at the Airport as of Operating Year 2017.

Source: Wayne County Airport Authority records  
 See accompanying independent auditor's report.

**DETROIT METROPOLITAN WAYNE COUNTY AIRPORT**

Continuing Disclosure Table #13

Historical Aircraft Operations

Operating years ending September 30

(Unaudited)

Operating year	Operations by class of carrier				Total operations	
	Air carrier	Air taxi and commuter	General aviation	Military	Total	Percent increase (decrease)
2017	298,125	89,369	6,111	108	393,713	0.3%
2016	286,336	99,811	6,104	132	392,383	3.2
2015	268,876	105,649	5,540	95	380,160	(4.9)
2014	237,863	155,405	6,511	117	399,896	(6.0)
2013	228,398	191,274	5,855	96	425,623	(1.6)

Source: Wayne County Airport Authority records

See accompanying independent auditor's report.

**DETROIT METROPOLITAN WAYNE COUNTY AIRPORT**

Continuing Disclosure Table #14  
 Historical Aviation Demand Statistics  
 Operating years ending September 30  
 (Unaudited)

	<u>2017</u>	<u>2016</u>	<u>Historical 2015</u>	<u>2014</u>	<u>2013</u>
Enplaned passengers:					
Domestic:					
Scheduled:					
Originating (a)	8,355,443	7,877,070	7,173,571	6,935,557	6,681,114
Connecting (a)	7,369,184	7,802,486	7,832,785	7,812,851	7,981,747
Subtotal – scheduled	<u>15,724,627</u>	<u>15,679,556</u>	<u>15,006,356</u>	<u>14,748,408</u>	<u>14,662,861</u>
Percentage connecting	46.9%	49.8%	52.2%	53.0%	54.4%
Charter	886	—	1,943	3,465	2,456
Subtotal – domestic	<u>15,725,513</u>	<u>15,679,556</u>	<u>15,008,299</u>	<u>14,751,873</u>	<u>14,665,317</u>
International:					
Scheduled:					
U.S. airlines	1,310,120	1,203,451	1,226,531	1,277,256	1,235,773
Foreign flag	244,072	236,289	208,917	187,170	176,218
Subtotal – scheduled	<u>1,554,192</u>	<u>1,439,740</u>	<u>1,435,448</u>	<u>1,464,426</u>	<u>1,411,991</u>
Charter	1,514	11,391	31	374	344
Subtotal – international	<u>1,555,706</u>	<u>1,451,131</u>	<u>1,435,479</u>	<u>1,464,800</u>	<u>1,412,335</u>
Total enplaned passengers	<u>17,281,219</u>	<u>17,130,687</u>	<u>16,443,778</u>	<u>16,216,673</u>	<u>16,077,652</u>
Enplaned cargo (tons):					
Freight	78,041	81,744	77,043	85,475	85,072
Mail	11,381	8,975	8,225	8,543	8,965
Total cargo	<u>89,422</u>	<u>90,719</u>	<u>85,268</u>	<u>94,018</u>	<u>94,037</u>
Aircraft departures (b):					
Domestic	177,685	178,050	172,440	180,546	193,214
International	12,453	11,988	12,197	13,157	13,222
Total aircraft departures	<u>190,138</u>	<u>190,038</u>	<u>184,637</u>	<u>193,703</u>	<u>206,436</u>
Aircraft operations:					
Air carrier	298,125	286,336	268,876	237,863	228,398
Air taxi and commuter	89,369	99,811	105,649	155,405	191,274
General aviation	6,111	6,104	5,540	6,511	5,855
Military	108	132	95	117	96
Total aircraft operations	<u>393,713</u>	<u>392,383</u>	<u>380,160</u>	<u>399,896</u>	<u>425,623</u>
Landed weight (1,000-pound units):					
Passenger:					
U.S. carriers:					
Major/national	14,402,492	14,252,825	13,865,334	13,175,369	12,752,997
Commuter/regional	5,872,633	5,830,936	5,648,967	6,102,680	6,803,630
Subtotal – U.S. carriers	<u>20,275,125</u>	<u>20,083,761</u>	<u>19,514,301</u>	<u>19,278,049</u>	<u>19,556,627</u>
Foreign flag	496,067	546,473	427,839	387,749	368,149
Subtotal – passenger	<u>20,771,192</u>	<u>20,630,234</u>	<u>19,942,140</u>	<u>19,665,798</u>	<u>19,924,776</u>
All cargo	830,620	836,360	683,512	716,903	704,085
Total landed weight	<u>21,601,812</u>	<u>21,466,594</u>	<u>20,625,652</u>	<u>20,382,701</u>	<u>20,628,861</u>

(a) 2017 originating and connecting activity statistics are estimated based on calendar-year percentages.

(b) 2017 departures are estimated based on both actual and scheduled data.

Sources: Wayne County Airport Authority records, U.S. Department of Transportation data,  
 and the Dlio MI Database.

See accompanying independent auditor's report.



**DETROIT METROPOLITAN WAYNE COUNTY AIRPORT**

Continuing Disclosure Table #15  
Nonstop International Destinations Added and Dropped  
Calendar years ending December 31  
(Unaudited)

<u>Year</u>	<u>Cities added</u>	<u>Cities dropped</u>	<u>Net change</u>
2017	No Nonstop International Destinations Added or Dropped		—
2016	Munich, Germany		1
2015		Halifax, Canada	(1)
2014		Quebec City, Canada	(1)
2013		Hong Kong, China Tokyo (Haneda), Japan	(2)

Notes: Data reflects new and discontinued nonstop international destinations served from DTW during the entire calendar year.

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Source: Diio MI Database

See accompanying independent auditor's report.

**DETROIT METROPOLITAN WAYNE COUNTY AIRPORT**

Continuing Disclosure Table #16

Historical Operating Results

Operating Years Ended September 30

(Unaudited)

	<u>OY 2017</u>	<u>OY 2016</u>	<u>OY 2015</u>	<u>OY 2014</u>	<u>OY 2013</u>
<b>Operating revenues:</b>					
Airport landing and related fees	\$ 79,494	78,045	73,268	75,780	64,922
Concession fees	64,702	61,820	57,615	54,162	51,697
Parking fees	76,707	74,498	68,018	61,187	57,829
Hotel (a)	29,929	33,890	—	—	—
Rental facilities/ground transportator	104,525	103,430	105,663	103,737	101,474
Utility service fees	4,903	4,691	4,601	4,904	5,152
Other	4,795	3,747	4,104	4,098	5,431
<b>Total operating revenues</b>	<b>365,055</b>	<b>360,121</b>	<b>313,269</b>	<b>303,868</b>	<b>286,505</b>
<b>Operating expenses:</b>					
Salaries, wages, and fringe benefits	108,986	84,453	75,991	79,026	71,656
Parking management	7,987	7,909	7,882	6,630	6,280
Hotel management (a)	18,049	22,357	—	—	—
Janitorial services	13,515	11,992	11,948	11,792	11,383
Security	5,149	3,745	2,558	2,511	2,260
Utilities	22,662	21,645	23,842	28,089	26,274
Repairs, professional services, and other	84,207	93,666	89,118	79,781	73,563
Depreciation	130,406	168,646	159,560	134,938	133,335
<b>Total operating expenses</b>	<b>390,961</b>	<b>414,413</b>	<b>370,899</b>	<b>342,767</b>	<b>324,751</b>
<b>Operating loss</b>	<b>(25,906)</b>	<b>(54,292)</b>	<b>(57,630)</b>	<b>(38,899)</b>	<b>(38,246)</b>
<b>Nonoperating revenues (expenses):</b>					
Passenger facility charges	68,128	66,764	63,841	62,016	61,705
Customer facility charges	4,442	4,260	304	—	—
Federal and state sources	6,650	5,551	1,332	1,030	1,353
Interest income and other	3,582	3,854	1,927	1,646	1,622
Interest expense and other	(80,963)	(80,865)	(76,494)	(79,307)	(82,461)
Amortization of bond insurance premium:	(175)	(175)	(352)	(352)	—
Amortization of bond issuance costs	—	—	—	—	(1,663)
<b>Total nonoperating expenses</b>	<b>1,664</b>	<b>(611)</b>	<b>(9,442)</b>	<b>(14,967)</b>	<b>(19,444)</b>
<b>Net loss before capital contributions and transfers</b>	<b>(24,242)</b>	<b>(54,903)</b>	<b>(67,072)</b>	<b>(53,866)</b>	<b>(57,690)</b>
Capital contributions	7,278	32,694	6,181	15,026	27,395
Transfers out	(3,327)	(2,941)	(4,232)	(5,249)	(5,846)
<b>Changes in net position</b>	<b>(20,291)</b>	<b>(25,150)</b>	<b>(65,123)</b>	<b>(44,089)</b>	<b>(36,141)</b>
Net position – beginning of year	161,255	186,405 <sup>1</sup>	301,395 <sup>2</sup>	389,061 <sup>3</sup>	435,196
Net position – end of year	\$ <u>140,964</u>	<u>161,255</u>	<u>236,272</u>	<u>344,972</u>	<u>399,055</u>

(a) Effective October 2015, the operations of the Airport Hotel have been included with the operations of Detroit Metro Airport (see Note 2 of 2016 financial statements for additional discussion)

<sup>1</sup> In 2016, Detroit Metro Airport restated beginning net position to \$186,405 (see Note 2 of 2016 financial statements for additional discussion). This amount less the 2016 decrease in net position is used to arrive at ending net position

<sup>2</sup> In 2015, Detroit Metro Airport restated beginning net position to \$301,395 (see Note 2 of 2015 financial statements for additional discussion). This amount less the 2015 decrease in net position is used to arrive at ending net position

<sup>3</sup> In 2014, Detroit Metro Airport restated beginning net position to \$389,061 (see Note 2 of 2014 financial statements for additional discussion). This amount less the 2014 decrease in net position is used to arrive at ending net position

Source: Audited Financial Statements of the Wayne County Airport Authority.

See accompanying independent auditor's report.

**DETROIT METROPOLITAN WAYNE COUNTY AIRPORT**

Continuing Disclosure Table #17

Top 20 Domestic O&D Markets

Calendar year ended December 31, 2016

(Unaudited)

<b>Rank</b>	<b>Market</b>	<b>Total O&amp;D Passengers</b>	<b>Percentage of O&amp;D Passengers</b>	<b>Primary Carrier</b>	<b>Market Share</b>	<b>Secondary Carrier</b>	<b>Market Share</b>	<b>Non-Stop Service</b>
1	New York	1,124	7.1%	Delta	52.5%	American	17.8%	●
2	Florida South	966	6.1%	Delta	56.1%	Spirit	24.4%	●
3	Orlando	960	6.1%	Delta	53.0%	Spirit	28.1%	●
4	Washington D.C.	773	4.9%	Delta	56.8%	Southwest	19.5%	●
5	Los Angeles	746	4.7%	Delta	51.7%	Spirit	17.2%	●
6	Las Vegas	738	4.7%	Delta	43.2%	Spirit	39.8%	●
7	Atlanta	663	4.2%	Delta	50.6%	Spirit	24.8%	●
8	Dallas	560	3.5%	American	41.8%	Delta	25.9%	●
9	Tampa	538	3.4%	Delta	56.9%	Spirit	32.9%	●
10	Denver	520	3.3%	Delta	35.4%	Spirit	22.1%	●
11	Chicago	491	3.1%	Delta	46.0%	American	20.2%	●
12	Fort Myers	487	3.1%	Delta	55.0%	Spirit	33.9%	●
13	Phoenix	486	3.1%	Delta	39.1%	American	28.6%	●
14	San Francisco	486	3.1%	Delta	63.8%	Southwest	11.7%	●
15	Boston	461	2.9%	Delta	59.0%	JetBlue	26.5%	●
16	Houston	333	2.1%	Delta	31.2%	Spirit	27.3%	●
17	Seattle	298	1.9%	Delta	65.1%	Alaska	23.8%	●
18	Philadelphia	271	1.7%	Delta	41.0%	American	34.3%	●
19	Minneapolis	255	1.6%	Delta	69.0%	Spirit	18.8%	●
20	Nashville	253	1.6%	Delta	66.0%	Southwest	31.2%	●
Other O&D Markets		4,416	27.9%					
Domestic O&D Passengers		15,825						
O&D % of Domestic Passengers		50%						

Note: Figures may not add due to rounding

Source: Wayne County Airport Authority records; U.S. Department of Transportation, Origin & Destination Survey of Airline Passenger Traffic, Domestic via Diio MI Database

See accompanying independent auditor's report.

**DETROIT METROPOLITAN WAYNE COUNTY AIRPORT**

Continuing Disclosure Table #18

Top 20 International O&D Markets

Calendar year ended December 31, 2016

(Unaudited)

<b>Rank</b>	<b>Market</b>	<b>Total O&amp;D Passengers</b>	<b>Non- Stop Service</b>
1	Cancún	105,504	●
2	Mexico City	35,367	●
3	Shanghai	33,745	●
4	Frankfurt	32,058	●
5	Punta Cana	31,311	●
6	London (Heathrow)	29,118	●
7	Tokyo	25,135	●
8	Montego Bay	24,529	●
9	Monterrey	21,622	●
10	Seoul	20,759	●
11	Rome	18,738	●
12	Paris	18,433	●
13	São Paulo	17,027	●
14	Amsterdam	15,806	●
15	Los Cabos	15,714	●
16	Beijing	15,101	●
17	Montréal	14,931	●
18	Munich	13,695	●
19	Nassau	13,134	●
20	Vancouver	12,991	●

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Source: US DOT Origin & Destination Survey of Airline Passenger Traffic,  
and the Diio Mi Database

See accompanying independent auditor's report.

**APPENDIX C**

**SUMMARY OF CERTAIN PROVISIONS OF THE MASTER BOND ORDINANCE, THE SERIES 2018  
PROJECT ORDINANCE AND THE SERIES 2018 REFUNDING ORDINANCE**

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## **SUMMARY OF CERTAIN PROVISIONS OF THE MASTER BOND ORDINANCE, THE SERIES 2018 PROJECT ORDINANCE AND THE SERIES 2018 REFUNDING ORDINANCE**

The following is a summary of certain provisions of the Master Bond Ordinance, the Series 2018 Project Ordinance and the Series 2018 Refunding Ordinance. This summary does not purport to be comprehensive or definitive and is qualified in its entirety by reference to and subject to the provisions of the complete Master Bond Ordinance, the Series 2018 Project Ordinance and the Series 2018 Refunding Ordinance. Capitalized terms used herein have the meanings established in the Master Bond Ordinance, the Series 2018 Project Ordinance and the Series 2018 Refunding Ordinance, as more particularly described herein; see “Selected Definitions” from the “Master Bond Ordinance,” “Selected Definitions” from the “Series 2018 Project Ordinance” and “Selected Definitions” from the “Series 2018 Refunding Ordinance” sections below. This summary should be read in conjunction with the description of the Series 2018 Bonds and the Master Bond Ordinance in the Official Statement, particularly the sections entitled “DESCRIPTION OF THE SERIES 2018 BONDS” and “SECURITY FOR THE SERIES 2018 BONDS.”

### **MASTER BOND ORDINANCE**

The Wayne County Airport Authority, State of Michigan (the “Authority”) has adopted the Master Bond Ordinance to provide for the acquisition and construction of capital improvements (the “Capital Improvement Program”) at the Detroit Metropolitan Wayne County Airport (the “Airport”).

The Master Bond Ordinance contemplates and authorizes the issuance of several Series of Bonds or Junior Lien Bonds through adoption of a Series Ordinance, authorizing the issuance and sale of each such Series of Bonds or Junior Lien Bonds in accordance with the provisions of the Master Bond Ordinance and amending and supplementing the Master Bond Ordinance. In addition, the Master Bond Ordinance contains certain requirements which must be met prior to the issuance of such additional Series of Bonds. See “SECURITY FOR THE SERIES 2018 BONDS — Additional Senior Lien Bonds” and “— Junior Lien Bonds.”

#### **Selected Definitions**

The following are definitions of certain of the terms used in the Master Bond Ordinance. The words and terms used in the Master Bond Ordinance shall have the following meanings, unless some other meaning is plainly intended and shall be either singular or plural, as the context may require.

“*Accountant*” means an independent certified public accountant or a firm of independent certified public accountants having a favorable reputation for skill in performing similar duties to the duties imposed on the Accountant under the Master Bond Ordinance selected by the Authority Board from recommendations made by the Audit Committee as provided in Act 90.

“*Act 90*” means Act 90, Public Acts of Michigan, 2002.

“*Act 94*” means Act 94, Public Acts of Michigan, 1933, as amended.

“*Act 34*” means Act 34, Public Acts of Michigan, 2001, as amended.

“*Act 327*” or “*Aeronautics Code*” means Act 327, Public Acts of Michigan, 1945, as amended.

“*Additional Bonds*” means airport revenue bonds of equal standing with the Bonds, issued under and in accordance with the Master Bond Ordinance for the purposes set forth in Section 208 of the Master Bond Ordinance.

“*Airport*” means the entire Detroit Metropolitan Wayne County Airport, including all of its properties, real, personal or mixed, all buildings and all other improvements, additions or extensions thereto located thereon or appurtenant thereto, now existing or hereafter acquired.

“*Airport Consultant*” means any professionally qualified person, firm or corporation recognized in the air transportation industry and of favorable reputation for skill and experience in performing the duties of providing consulting services to airport operators at airports comparable in size and function to the Airport.

*“Airport Development Fund”* means the fund created pursuant to Section 501G of the Master Bond Ordinance.

*“Airport Discretionary Fund”* means the fund created by Section 501F of the Master Bond Ordinance.

*“Authority”* means the Wayne County Airport Authority created by Act 90.

*“Authority Board”* means the governing body of the Authority.

*“Authorized Officer”* means the Chief Executive Officer, the Chief Financial Officer, or officer designated by the Authority Board for the Authority or the designee of any of them.

*“Bonds”* means any bond or Series of bonds, established and created by the Authority under Section 202A of the Master Bond Ordinance and issued pursuant to a Series Ordinance, and Reimbursement Obligations of equal standing with the Bonds established and created by a Series Ordinance.

*“Bond Counsel”* means any nationally recognized bond counsel acceptable to the Trustee and the Authority.

*“Bond Fund”* means the fund created pursuant to Section 501B of the Master Bond Ordinance.

*“Bond Payment Date”* means any of the dates specified in a Series Ordinance for payment of interest, or interest and principal on the Bonds or Junior Lien Bonds.

*“Bond Reserve Account”* means the account in the Bond Fund created pursuant to Section 501B of the Master Bond Ordinance.

*“Bondholder”* or any similar term means any person or party who shall be the registered owner of any Bond or Junior Lien Bond.

*“Capital Improvement Program”* means the ongoing program of capital improvements at the Airports, as approved by the County prior to August 9, 2002, or since that date by the Authority as the successor to the County, as the same may be modified from time to time by the Authority.

*“Chief Executive Officer”* means the Chief Executive Officer of the Authority.

*“Chief Financial Officer”* means the Chief Financial Officer of the Authority.

*“Code”* means the Internal Revenue Code of 1986, as amended, and the regulations, rulings and court decisions thereunder, as the context may require.

*“Completion Date”* means the date on which the acquisition, construction and installation of the portion of the Capital Improvement Program to be financed with the proceeds of a particular Series of Bonds or Junior Lien Bonds is complete, as evidenced by the filing of a Completion Certificate with the Trustee.

*“Construction Fund”* means the fund created pursuant to Section 401 of the Master Bond Ordinance.

*“Consulting Architect or Engineer”* means an independent architect or engineer or firm of professional architects or engineers, registered pursuant to the laws of the State of Michigan, from time to time selected by the Authority in accordance with its procurement policy and Act 90 to design or supervise the design and oversee the construction and installation of the Capital Improvement Program or components of the Capital Improvement Program.

*“County”* means the Charter County of Wayne, State of Michigan.

*“Credit Entity”* means with respect to a Series of Bonds or Junior Lien Bonds or a maturity of such Series a commercial bank, a bond insurance company, any other financial institution or combination of such financial institutions or governmental entity which issues a Credit Facility for such Series of Bonds or Junior Lien Bonds or



maturities but only while such Credit Facility is outstanding or Reimbursement Obligations or Junior Lien Reimbursement Obligations or other amounts are outstanding under any written agreement with a Credit Entity pursuant to which a Credit Facility is issued.

“*Credit Facility*” means one or more credit facilities with respect to a Series of Bonds or Junior Lien Bonds or maturity of such Series consisting of an irrevocable and unconditional letter of credit, line of credit, bond purchase agreement, municipal bond insurance policy, surety bond or other credit enhancement facility issued by a Credit Entity as described in Section 213 of the Master Bond Ordinance to provide moneys for the purpose of paying the principal (whether upon tender or upon maturity or redemption) of and the interest on such Series of Bonds or Junior Lien Bonds but only while such Credit Facility is outstanding.

“*Debt Service*” means the amount scheduled to become due and payable annually on all Outstanding Bonds and Junior Lien Bonds as (i) interest, exclusive of interest capitalized on such Outstanding Bonds and Junior Lien Bonds and paid from the proceeds of a Series of Bonds or Junior Lien Bonds or investment earnings on such capitalized interest, plus (ii) principal, plus (iii) Mandatory Redemption Requirements. For purposes of calculating Debt Service:

- (i) All principal payments shall be made as and when the same shall become due or upon mandatory redemption;
- (ii) Outstanding Variable Rate Bonds shall be deemed to bear interest during any period after the date of calculation at a fixed annual rate equal to the weighted average of the actual rates on such Variable Rate Bonds for each day during the 365 consecutive days (or any lesser period such Variable Rate Bonds have been Outstanding) ending on the last day of the month next preceding the date of computation, or at the effective fixed annual rate thereon as a result of a Swap Agreement with respect thereto; provided, that such effective fixed annual rate for Variable Rate Bonds subject to a Swap Agreement must be utilized as long as such Swap Agreement is contracted to remain in full force and effect, and provided, further, that for purposes of establishing compliance with the requirements of Section 208 of the Master Bond Ordinance, Outstanding Variable Rate Bonds shall be deemed to bear interest as provided for Variable Rate Bonds proposed to be issued in clause (iii) below;
- (iii) Variable Rate Bonds proposed to be issued shall be deemed to bear interest at a fixed annual rate equal to the average of the interest rates published in The Bond Buyer Revenue Bond Index during the twelve (12) months preceding the date of issuance of such Variable Rate Bonds, or at the effective fixed annual rate thereon as a result of a Swap Agreement with respect to such Variable Rate Bonds; and provided, that such effective fixed annual rate must be utilized only so long as such Swap Agreement is contracted to remain in full force and effect;
- (iv) Any computation of Debt Service shall recognize and give effect to the alternative, rather than the cumulative, nature of obligations on Bonds or Junior Lien Bonds, including any related Reimbursement Obligations or Junior Lien Reimbursement Obligations to a provider of credit enhancement or a liquidity facility securing payment of such Bonds or Junior Lien Bonds. A termination payment which becomes payable pursuant to the terms of a Swap Agreement entered into after 1996 shall constitute interest as provided in Act 34.

“*Default*” means a default or event of default as such terms are defined in Section 701 of the Master Bond Ordinance.

“*Government Obligations*” means any of the following which at the time of investment are legal investments under Michigan law for the moneys proposed to be invested therein: investments described in Section 506(i) or (ii) of the Master Bond Ordinance.

“*Insurance Consultant*” means an independent person or a firm of persons having skill and experience in dealing with the insurance requirements of enterprises similar to the Airport and in performing the duties to be imposed upon it by the Master Bond Ordinance.

*“Issuance Costs”* means items of expense payable or reimbursable directly or indirectly by or to the Authority and related to the authorization, sale and issuance of Bonds or Junior Lien Bonds and authorization of the Master Bond Ordinance, which items of expense shall include, but not be limited to, application fees and expenses, publication costs, printing costs, costs of reproducing documents, filing and recording fees, Bond Counsel, financial and other consultants’ fees, initial Trustee’s fees, underwriters’ fees and discount, costs of credit ratings, costs of Credit Facilities and charges for execution, transportation and safekeeping of the Bonds or Junior Lien Bonds and related documents, and other costs, charges and fees in connection with the foregoing.

*“Junior Lien Bond Fund”* means the fund created pursuant to Section 501C of the Master Bond Ordinance.

*“Junior Lien Bonds”* means any bonds or Series of bonds issued by the Authority under Section 202B of the Master Bond Ordinance, issued pursuant to a Series Ordinance and payable from Net Revenues deposited in the Junior Lien Bond Fund after satisfaction of requirements for funding the Bond Fund, and Junior Lien Reimbursement Obligations established and created by a Series Ordinance.

*“Junior Lien Reimbursement Obligations”* means any obligations to repay a Credit Entity for payments of Debt Service made with respect to a Series of Bonds or Junior Lien Bonds, as provided in any written agreement between the Authority and a Credit Entity pursuant to which a Credit Facility is issued, which Junior Lien Reimbursement Obligations may be evidenced by Refunding Bonds or Junior Lien Bonds or contractual undertakings with the Credit Entity.

*“Mandatory Redemption Requirement”* means as to each Series of Bonds or Junior Lien Bonds for any year, the principal amount of Bonds or Junior Lien Bonds of such series subject to mandatory sinking fund redemption in such year, as provided in the Series Ordinance or Sale Resolution for each Series of Bonds or Junior Lien Bonds.

*“Master Bond Ordinance”* means the Master Bond Ordinance as from time to time restated, amended or supplemented by supplemental ordinances in accordance with the terms and provisions hereof, and shall include the Series Ordinance and Sale Resolution (if any) or Order (if any) of the Chief Executive Officer, for each Series of Bonds or Junior Lien Bonds.

*“Net Proceeds”* means the gross proceeds derived by the Authority from insurance or as an award arising from condemnation of all or part of either of the Airports, less payment of attorneys fees and other expenses properly incurred in the collection thereof.

*“Net Revenues”* means Revenues less Operation and Maintenance Expenses.

*“Operating Reserve Amount”* means the amount required in Section 501D of the Master Bond Ordinance to be on deposit in the Operation and Maintenance Reserve Fund.

*“Operating Year”* means the fiscal year of the Authority.

*“Operation and Maintenance Expenses”* means the reasonable expenses of administration, operation and maintenance of the Airport.

*“Operation and Maintenance Fund”* means the fund created pursuant to Section 501A of the Master Bond Ordinance.

*“Operation and Maintenance Reserve Fund”* means the fund created pursuant to Section 501D of the Master Bond Ordinance.

*“Other Available Moneys”* means, for any Operating Year, the amount of money determined by the Chief Financial Officer in concurrence with the Chief Executive Officer to be transferred by the Authority for such Operating Year from PFCs or other sources other than Revenues to the Bond Fund or the Junior Lien Bond Fund.

*“Outstanding”* means, as of any date, all Bonds or Junior Lien Bonds which have been authenticated and delivered by the Trustee (including Bonds or Junior Lien Bonds tendered which may be owned by the Authority, from time to time prior to the remarketing thereof), except:

- (i) Bonds or Junior Lien Bonds (or portions of Bonds or Junior Lien Bonds) for the payment or redemption of which there shall be held in trust by the Trustee under the Master Bond Ordinance (whether at or prior to maturity or redemption) (a) moneys equal to the principal amount or Redemption Price thereof, as the case may be, with interest to the date of maturity or redemption or (b) Sufficient Government Obligations in such principal amounts, having such maturities and bearing such interest, as together with the moneys described in clause (a), if any, shall be sufficient without reinvestment to pay when due the principal amount or Redemption Price, as the case may be, with interest due to the date of maturity or redemption; provided, that if such Bonds or Junior Lien Bonds are to be redeemed, notice of such redemption shall have been given as provided in Article III of the Master Bond Ordinance or provisions satisfactory to the Trustee shall have been made for giving of such notice, (ii) Bonds or Junior Lien Bonds in lieu of or substitution for which other Bonds or Junior Lien Bonds shall have been delivered pursuant to the Master Bond Ordinance, (iii) Bonds or Junior Lien Bonds deemed to have been paid or defeased as provided under the Master Bond Ordinance and (iv) Bonds or Junior Lien Bonds subject to a mandatory tender which have not been tendered prior to the related tender date which are deemed to have been redeemed.

“*Passenger Facility Charge*” or “*PFC*” means the passenger facility charge as authorized under 49 U.S.C. § 40117, or any predecessor or successor law, and as approved by the Federal Aviation Administration (or successor agency) from time to time, or such other similar charge imposed by the Authority on passengers enplaned at the Airport.

“*Person*” means any natural person, firm, partnership, entity or public body.

“*Plans and Specifications*” means the drawings, plans, blueprints and technical specifications approved by the Authority and relating to the design, installation and construction of various components of the Capital Improvement Program, as amended from time to time.

“*Program Costs*” shall be deemed to include the costs of design, acquisition, construction, installation, and financing of the Capital Improvement Program, including, but not limited to obligations of the Authority incurred for: (a) machinery, furnishings and equipment and for labor and to contractors, builders and materialmen in connection with the planning, design, acquisition, construction and installation of capital projects which comprise part of the Capital Improvement Program or any portion thereof; (b) the cost of contract bonds and of insurance of all kinds that may be required or necessary during the course of construction of capital projects which comprise part of the Capital Improvement Program or any portion thereof which is not paid by the contractor or contractors or otherwise provided for; (c) architectural and engineering expenses for test borings, surveys, estimates, Plans and Specifications and preliminary investigations therefor, and for supervising construction, as well as for the performance of all other duties required for the proper construction of capital projects which comprise part of the Capital Improvement Program or any portion thereof; (d) Issuance Costs; (e) all other costs which the Authority shall be required to pay, under the terms of any contract or contracts approved by the County or the Authority as the successor of the County, for the planning, design, acquisition, construction and installation of capital projects which comprise part of the Capital Improvement Program or any portion thereof including any legal costs and master planning, environmental and economic impact studies undertaken in connection therewith; (f) any sums required to reimburse the County, the Authority or any air carrier (pursuant to an agreement with the Authority) for advances made by it for any of the above items, or for any other costs incurred and for work done by any of them which are properly chargeable to the Capital Improvement Program; and (g) any other costs properly chargeable to the Construction Fund under Act 94.

“*Rating Agency*” means any nationally recognized rating service then rating the Bonds or Junior Lien Bonds.

“*Rebate Fund*” means the fund created pursuant to Section 503 of the Master Bond Ordinance.

“*Redemption Price*” means the principal of any Bond or Junior Lien Bonds which has been called for redemption, together with any premium thereon.

*“Refunding Bonds”* means any Bonds or Junior Lien Bonds issued pursuant to Section 209 of the Master Bond Ordinance.

*“Reimbursement Obligations”* means any obligations to repay a Credit Entity for payments of Debt Service made with respect to a Series of Bonds as provided in any written agreement between the Authority (as successor to the County or otherwise) and a Credit Entity pursuant to which a Credit Facility is issued, which Reimbursement Obligations may be evidenced by the Bonds of such Series, Refunding Bonds or contractual undertakings with the Credit Entity.

*“Renewal and Replacement Fund”* means the fund created pursuant to Section 501E of the Master Bond Ordinance.

*“Replacement Requirement”* means the amount required in Section 501E of the Master Bond Ordinance to be on deposit in the Renewal and Replacement Fund.

*“Reserve Requirement”* means an amount equal to the maximum annual Debt Service requirements for each Series of Outstanding Bonds which amount is required to be on deposit or, if permitted by law, otherwise provided for (including, but not limited to, through provision of a letter of credit, surety bond or insurance policy in the same amount) in the Bond Reserve Account; provided, however, that such requirement may be satisfied by a deposit at the time of issuance of a Series of Bonds or by an accumulation on a scheduled basis of Bond proceeds, investment earnings or other deposits which will result in an amount equal to the Reserve Requirement for such Series of Bonds being on deposit no later than the date of the last scheduled application of all capitalized interest for such Series; provided, further, that with respect to a Series of Bonds which are proposed to be issued as Variable Rate Bonds, the Reserve Requirement shall be calculated utilizing the assumptions set forth under subparagraph (iii) of the definition of Debt Service; and provided that in no event shall the Reserve Requirement exceed the maximum permitted by the Code. Any Reserve Requirement with respect to one or more Series of Junior Lien Bonds shall be established by the related Series Ordinance.

*“Revenue Fund”* means the fund created pursuant to Section 501 of the Master Bond Ordinance.

*“Revenues”* means the general revenues derived from the operation of the Airport, which shall include all moneys deposited in the Revenue Fund, from whatever source, and all income derived from the charges, fees, rentals and rates charged for services, facilities and commodities furnished by the Airport, whether such income shall be derived from its function as an Airport or not, and including, but not by way of limitation, concessions, rentals, auto parking fees, service charges derived from the operation of the terminal complex buildings and facilities, airplane landing fees, non-airline gasoline fees and miscellaneous charges and rentals from other facilities and services and investment earnings or general revenues derived from the operation of the Airport accumulated by the Authority prior to deposit in the Revenue Fund; provided, however, that the term “Revenues” shall not be construed to include (i) rentals or other amounts to be paid in the future by any Person pursuant to a lease or other agreement with the County or the Authority, which rentals or other amounts are pledged for the payment of bonds issued to provide funds to construct Special Facilities, (ii) the proceeds of federal grants or Passenger Facility Charges, or the proceeds of any other grant, charge or tax intended as a replacement therefor or other capital contributions from any source, (iii) the Net Proceeds of insurance or condemnation proceeds resulting from the damage or destruction or taking of any portion of the Airport or (iv) Special Purpose Revenues.

*“Sale Resolution”* or *“Sale Order”* means a resolution or resolutions of the Authority adopted by the Authority Board in accordance with Article II of the Master Bond Ordinance or an Order of the Chief Executive Officer of the Authority authorizing the sale of a Series of Bonds or Junior Lien Bonds in accordance with the terms and provisions of the Master Bond Ordinance and a Series Ordinance.

*“Series”* means a Series of Bonds or Junior Lien Bonds issued and sold pursuant to a Series Ordinance and the Master Bond Ordinance.

*“Series Ordinance”* means an ordinance or ordinances, including, if necessary, a Sale Resolution or Order, of the County prior to the Approval Date or the Authority as successor to the County authorizing the issuance and sale of a Series of Bonds or Junior Lien Bonds in accordance with the provisions hereof, adopted by the County (prior to the Approval Date) or the Authority as successor to the County or executed by the County Executive or the

County (prior to the Approval Date) or the Authority's Chief Executive Officer in accordance with Article X of the Master Bond Ordinance.

*"Special Facilities"* means a building or buildings or facilities constructed at the Airport for the use of any Person including both terminal and non-terminal improvements for the use of such Person, either exclusively or in common with others, or for public use as agreed upon by the Authority and such Person, for which rentals or other amounts are to be paid by such Person pursuant to a lease or other agreement assumed by or with the Authority, which rentals or other amounts are pledged for the payment of bonds issued by the County or the Authority to construct such facilities.

*"Special Purpose Revenues"* means specific categories of revenues, income, receipts or money of a type not previously included in Revenues, relating to or arising from a definable service, facility or program of the Authority or at either of the Airports, which (1)(i) are designated as Special Purpose Revenues by the Authority before the first receipt by the Authority of such category or portion of revenues, income, receipts or money or (ii) are statutorily designated for restricted purposes under state law; and (2) are restricted as to use by the Authority.

*"Sufficient Government Obligations"* means (a) direct obligations of the United States of America or (b) obligations the principal of and interest on which are fully guaranteed by the United States of America, and which (i) are not redeemable at the option of the issuer and (ii) without reinvestment of the interest, come due at such times and in such amounts as to be fully sufficient to pay the principal or Redemption Price and interest, respectively, as each becomes due on the Bonds or Junior Lien Bonds.

*"Swap Agreement"* means any interest rate exchange or swap, hedge or other similar agreement or agreements entered into in connection with the issuance of obligations or other evidences of indebtedness or in connection with the Authority's then Outstanding Bonds or Junior Lien Bonds within the limitations provided by Act 34 or its predecessor statute.

*"Swap Provider"* means any party with whom the Authority (as successor to the County or otherwise) has or shall enter into a Swap Agreement.

*"Trustee"* means an independent bank or trust company qualified and appointed pursuant to Article IX of the Master Bond Ordinance to act as Trustee under the Master Bond Ordinance and any company into which the Trustee may be merged or converted or with which it may be consolidated, or any company resulting from any merger, conversion or consolidation to which the Trustee shall be a party, or any company to which the Trustee may sell or transfer all or substantially all of its corporate trust business, provided such company shall be a trust company or bank which is qualified to be a successor Trustee under Section 907 of the Master Bond Ordinance, or any other bank or trust company at any time substituted in its place pursuant to the Master Bond Ordinance.

*"Variable Rate Bonds"* means any Bonds or Junior Lien Bonds the interest rate on which is not fixed to maturity as of the date of the calculation being performed.

## **Defeasance**

The statutory lien upon the Net Revenues established by the Master Bond Ordinance shall continue until payment in full of the principal or Redemption Price and interest on the Bonds and Junior Lien Bonds or until sufficient cash or Sufficient Government Obligations shall have been deposited in trust for payment in full of all Bonds and Junior Lien Bonds to be defeased and sufficient funds shall have also been provided for paying all other obligations payable under the Master Bond Ordinance by the Authority with respect to the Bonds and Junior Lien Bonds to be defeased. If any of the Bonds or Junior Lien Bonds are to be called for redemption prior to maturity, irrevocable instructions to call the Bonds or Junior Lien Bonds for redemption shall be given to the Trustee after such deposit has been made.

Upon deposit of sufficient cash or Sufficient Government Obligations, as provided above, the statutory lien shall be terminated with respect to the Bonds or Junior Lien Bonds to be paid or defeased, the holders of such Bonds or Junior Lien Bonds shall have no further rights under the Master Bond Ordinance except for payment from the deposited funds and the replacement or transfer of registration of Bonds or Junior Lien Bonds, and such Bonds or Junior Lien Bonds shall no longer be considered to be Outstanding. The Authority shall not defease Variable Rate

Bonds without having first obtained a confirmation of the rating on such Variable Rate Bonds from each nationally-recognized rating agency then rating the Variable Rate Bonds indicating that the rating on such Variable Rate Bonds will not be reduced or withdrawn due to the defeasance.

### **Proceeds; Construction Fund; Surplus Bond Proceeds**

The proceeds of the sale of each Series of Bonds or Junior Lien Bonds shall be immediately deposited with the Trustee in the Funds and Accounts as specified in the Series Ordinance for such Series, provided, that (i) an amount equal to the accrued interest and premiums, if any, received on the delivery of such Series of Bonds or Junior Lien Bonds and an amount equal to any capitalized interest on such Series of Bonds or Junior Lien Bonds to be paid from Bond or Junior Lien Bond proceeds shall be deposited in the Bond Fund or Junior Lien Bond Fund, as appropriate and (ii) any Bond or Junior Lien Bond proceeds required to satisfy a Reserve Requirement shall be deposited in the Bond Reserve Account in the Bond Fund or the Junior Lien Bond Reserve Account in the Junior Lien Bond Fund, as appropriate and (iii) Bond or Junior Lien Bond proceeds to be used to pay Program Costs shall be deposited in a separate account established for such Series in the Construction Fund.

The Issuance Costs for a Series of Bonds or Junior Lien Bonds shall be paid or reimbursed by the Trustee out of the Construction Fund upon presentation of a requisition certificate by the Authority. The Trustee shall make disbursements from the Construction Fund to pay or reimburse other Program Costs in accordance with requisition certificates submitted by the Authority from time to time, executed by an Authorized Officer supported by an itemization of the Program Costs being financed with the proceeds of the particular Series of Bonds or Junior Lien Bonds for which payment or reimbursement is requisitioned thereby in sufficient detail to evidence the purpose for which such costs were incurred.

The Authority shall proceed with reasonable dispatch to acquire, construct, install and complete capital projects or to cause the same to occur substantially in accordance with the Plans and Specifications. Completion of construction and installation of capital improvements shall be signified by the prompt filing with the Trustee of a completion certificate ("Completion Certificate") executed by an Authorized Officer.

All proceeds of a Series of Bonds or Junior Lien Bonds and investment earnings thereon deposited in the related account in the Construction Fund in excess of the amount actually used for construction or required for completion of construction (other than sums for construction for which payment is not yet due) of the capital improvements in anticipation of which such Series of Bonds or Junior Lien Bonds was issued and capitalized interest remaining on deposit in the related subaccount in the Capitalized Interest Account ("Surplus Bond Proceeds") shall, if permitted by law, and subject to the Master Bond Ordinance, be used to satisfy any rebate obligations with respect to such Series of Bonds or Junior Lien Bonds or for such other capital projects (and capitalized interest related thereto) in the Capital Improvement Program or, upon receipt of a Completion Certificate, be immediately transferred by the Trustee to the general account in the Bond Fund or Junior Lien Bond Fund as appropriate, designated the "Surplus Bond Proceeds Account" to be applied as follows. Surplus Bond Proceeds may be applied, in certain instances, to (i) make principal payments next coming due on the Bonds or Junior Lien Bonds and (ii) redeem Bonds or Junior Lien Bonds. In no event shall Surplus Bond Proceeds so transferred to the Bond Fund or Junior Lien Bond Fund or the investment income thereon be used to pay interest on the Bonds or Junior Lien Bonds unless in the opinion of Bond Counsel such use would not impair the tax exempt status of the Bonds or Junior Lien Bonds.

### **Investments**

Except as otherwise provided in the Master Bond Ordinance, or as further limited by agreement with a Credit Entity, moneys in the Funds and Accounts established in the Master Bond Ordinance and moneys derived from the proceeds of sale of the Bonds or Junior Lien Bonds may be invested at the oral direction of the Chief Financial Officer, confirmed in writing, to the extent consistent with Act 94 as then in effect, by the Trustee or by the Chief Financial Officer, as the case may be, in investments permitted by Act 20, Michigan Public Acts of 1943, as amended.

Investment of moneys in the Bond Fund or Junior Lien Bond Fund being accumulated for payment of the next maturing principal or interest payment of the Bonds or Junior Lien Bonds shall be limited to (i) direct obligations of the United States of America or obligations the principal of and interest on which are unconditionally

guaranteed by the United States of America; and (ii) bonds, debentures, notes or other evidence of indebtedness issued or guaranteed by any of the following federal agencies and provided such obligations are backed by the full faith and credit of the United States of America (stripped securities are only permitted if they have been stripped by the agency itself); U.S. Export-Import Bank (Eximbank) direct obligations or fully guaranteed certificates of beneficial ownership; Farmers Housing Administration (FmHA) certificates of beneficial ownership; Federal Financing Bank; Federal Housing Administration Debentures (FHA); General Services Administration Participation Certificates; Government National Mortgage Association (GNMA or "Ginnie Mae") GNMA-guaranteed mortgage-backed bonds; GNMA-guaranteed pass-through obligations; U.S. Maritime Administration Guaranteed Title XI financing; U.S. Department of Housing and Urban Development (HUD) Project Notes, Local Authority Bonds, New Communities Debentures – U. S. government guaranteed debentures, U.S. Public Housing Notes and Bond – U.S. government guaranteed public housing notes and bonds; bearing maturity dates not later than one (1) business day prior to the date of the next maturing principal or interest payment on the Bonds or Junior Lien Bonds and any securities representing investment of the same shall be kept on deposit with the Trustee. Investment of moneys in the Bond Reserve Account or the Junior Lien Bond Reserve Account shall be limited to obligations bearing maturity dates or subject to redemption at the option of the owner thereof, not later than five years from the date of the investment or such lesser period of time until final maturity of the related Bonds or Junior Lien Bonds.

The Authority shall cause investments credited to the Bond Reserve Account and the Junior Lien Bond Reserve Account to be valued at least semiannually by the Accountant on the first day of each Operating Year and semiannually thereafter, at the then market value thereof, and, in the event such investments are valued at less than ninety percent (90%) of the related Reserve Requirement, budget such additional deposits at the beginning of the next quarter in an amount necessary to restore the Bond Reserve Account or the Junior Lien Reserve Account, as the case may be, to the full amount of the related Reserve Requirement within 18 months.

## **Covenants and Representations of the Authority**

### *Management*

The operation, maintenance and management of the Airport shall continue to be under the supervision and control of the Authority. The Chief Executive Officer shall establish and enforce reasonable rules and regulations governing the operation and use of the Airport, operate the Airport in an efficient and economical manner, maintain the properties constituting the Airport in good repair and in sound operating condition for so long as the same are necessary to the operation of the Airport on a Revenue-producing basis. Powers conferred on the Authority shall, unless otherwise specifically provided, be exercised or performed by the Chief Executive Officer.

### *Operating Year*

The Airport shall continue to be operated on the basis of an Operating Year which currently begins on October 1 of each year.

### *No Free Service or Use*

No free service or use of the Airport, or service or use of the Airport at less than cost, shall be furnished by the Airport to any person, firm or corporation, public or private, or to any public agency or instrumentality.

## **Insurance**

### *Generally*

While any Bonds or Junior Lien Bonds remain Outstanding under the Master Bond Ordinance the Authority shall maintain or cause to be maintained insurance (which may include self-insurance) on all physical properties belonging to the Airport and/or operations of the Airport, or the kinds and in the amounts normally carried by agencies engaged in the operation of airports and reasonably available to the Authority. The Authority shall retain an Insurance Consultant for the Airport for the purpose of determining compliance with this requirement.

The Authority shall, and the Trustee may, demand, collect and sue for the insurance money that may become due and payable under any policies payable to it. Any appraisal or adjustment of any loss of damages and

any settlement or payment of indemnity therefor that may be agreed upon between the Authority and any insurer shall be evidenced to the Trustee by a certificate signed by the Authorized Officer.

The Authority shall require the Insurance Consultant to report to it annually on December 1 on the adequacy of the Authority's insurance coverage under the Master Bond Ordinance. A signed copy of any reports of any Insurance Consultant required hereby shall be filed with the Chief Financial Officer and copies thereof shall be sent to the Trustee.

#### *Notice of Taking; Cooperation of Parties*

If any public authority or entity attempts to take or damage all or any part of the Airport through eminent domain proceedings, the Authority shall take prompt and appropriate measures to protect and enforce its rights and interests and those of the Trustee in connection with such proceedings. Upon receiving notice of the institution of eminent domain proceedings by any public instrumentality, body, agency or officer, the Authority shall deliver written notice thereof to the Trustee.

#### *Insurance and Eminent Domain Proceeds*

All Net Proceeds of all hazard insurance and all Net Proceeds resulting from eminent domain proceedings (excluding proceeds of insurance or condemnation awards which relate to Special Facilities and which are required under the terms of the related Series Ordinance to be otherwise directed) shall be paid to the Trustee and shall be deposited and applied at the election of the Authority as follows:

(1) deposited in the Construction Fund which shall be reactivated as necessary and used to promptly replace, repair, rebuild or restore the Airport to substantially the same condition as that which existed prior to such damage, destruction or taking, with such alterations and additions as the Authority may determine and as will not impair or otherwise adversely affect the revenue-producing capability of the Airport, provided that prior to the commencement of such replacement, repair, rebuilding or restoration, the Authority shall deliver to the Trustee a report of an Airport Consultant setting forth (A) an estimate of the total cost of the replacement, repair, rebuilding or restoration, (B) the estimated date upon which such replacement, repair, rebuilding or restoration will be substantially complete, and (C) a statement to the effect that Net Proceeds, together with other funds made available or to be made available or caused to be made available by the Authority, are projected to be sufficient to pay the costs of the replacement, repair, rebuilding or restoration of the Airport; or

(2) deposited in the Bond Fund or the Junior Lien Bond Fund, as the case may be and applied to the redemption of first the Bonds and then the Junior Lien Bonds, provided that Bonds or Junior Lien Bonds may be redeemed only if (A) the Airport has been restored to substantially the same condition as prior to such damage, destruction or taking or (B) the Authority has determined that the portion of the Airport damaged, destroyed or taken is not necessary to the operation of the Airport and that the failure of the Authority to repair and restore the same will not impair or otherwise adversely affect the revenue-producing capability of the Airport; or (C) the Airport Consultant has been unable to make the statement required by subparagraph (1)(C) of this paragraph.

If the Authority does not apply Net Proceeds or cause them to be applied, to replace, repair, rebuild, or restore the Airport, the Authority shall first redeem or purchase the Bonds and after redemption or purchase of all of the Bonds the Authority shall redeem or purchase the Junior Lien Bonds, in each case in accordance with Article III of the Master Bond Ordinance and the relevant Series Ordinance and transfer from the Construction Fund to the Bond Fund and the Junior Lien Bond Fund amounts sufficient to pay the Redemption Price or purchase price of the Bonds and the Junior Lien Bonds to be redeemed or purchased.

If the Authority elects to apply Net Proceeds, or cause them to be applied, to replace, repair, rebuild, or restore the Airport, the Authority shall retain such Net Proceeds in the Construction Fund and shall make disbursements therefrom, to the extent practicable, in accordance with the procedures and requirements set forth in Section 402 of the Master Bond Ordinance for requisitions from the Construction Fund.



## **Payment of Charges and Covenant Against Encumbrances**

Except as permitted in the Master Bond Ordinance, the Authority shall not create or suffer to be created any lien or charge upon the Airport or any part thereof, or on the Net Revenues. The Authority shall pay or cause to be discharged, or shall make adequate provision to satisfy and discharge, within sixty (60) days after the same become due and payable, all lawful costs, expenses, liabilities and charges relating to the maintenance, repair, replacement or improvement of the properties constituting the Airport and the operation of the Airport if unpaid. The Authority shall not be required to pay or cause to be discharged, or make provision for the payment, satisfaction and discharge of, any lien, charge, cost, liability, claim or demand so long as the validity thereof is contested in good faith and by appropriate legal proceedings and so long as such contest will not cause an imminent sale or foreclosure of the Airport or any significant part thereof.

## **Sale of Airport**

The Master Bond Ordinance generally prohibits the Authority from selling, transferring, assigning or otherwise disposing of all or any part of the properties constituting the Airport, with the following exceptions:

- (i) the right to sell or dispose of any real property or any machinery, fixtures, apparatus or other personal property which is part of the Airport if the Authority determines that such property is not or is no longer needed or useful and that such sale will not impair the operating efficiency of the Airport or reduce the Authority's ability to satisfy the rate covenant as projected by the Airport Consultant;
- (ii) the right, without notice to the Trustee, to demolish or remove
  - (a) all or any part of the passenger terminal facilities, including concourses, existing at the Airport on November 1, 1997, which are to be replaced through the construction of passenger terminal facilities, including concourses, as part of the Capital Improvement Program; or
  - (b) any other structures now or hereafter existing as part of the Airport, without obligation to make any replacement thereof or substitution therefor, provided that the Airport Director determines that the fair market value of the structures demolished or removed does not exceed \$3,000,000.
- (iii) notwithstanding the provisions of (ii) (a) above, the right to demolish or remove any structure if the Airport Director determines that such structure has become inadequate, unsuitable or unnecessary, if:
  - (a) prior to such removal or demolition the Authority gives written notice thereof to the Trustee, and
  - (b) (1) structures having a utility value at the Airport at least equal to that of the property demolished or removed are constructed, acquired, or substituted, or (2) there shall be filed with the Trustee prior to such demolition or removal a certificate signed by the Authorized Officer and approved by the Airport Consultant stating that Net Revenues for the Operating Year next succeeding that in which such demolition or removal occurs are projected to be sufficient to enable the Authority to meet the rate covenant, and in such case no substitution or replacement shall be required.

Proceeds resulting from any abandonment, sale or disposition of properties constituting the Airport shall be deposited, in the Authority's sole discretion, in the Construction Fund if the amount then on deposit therein is insufficient to pay Program Costs, or otherwise to the Renewal and Replacement Fund unless some other disposition is required by law or by contract.

## **Other Authority Covenants**

So long as any Bond or Junior Lien Bond is Outstanding, the Authority covenants to comply or cause compliance with all applicable laws, orders, rules or regulations of any municipal or other governmental authority

relating to the construction, use and operation of the Airport, and further covenants that it shall not create a lien upon the Airport.

### **Events of Default**

Each of the following events is an “Event of Default” under the Master Bond Ordinance:

(a) the Authority shall default in the payment of the principal or Redemption Price of any Bond or Bonds or Junior Lien Bonds when and as the same shall become due, whether at maturity or upon redemption or otherwise;

(b) payment of any installment of interest on any Bond or Bonds or Junior Lien Bonds shall not be made, when and as the same shall become due;

(c) the Authority shall fail or refuse to comply with the provisions of the Master Bond Ordinance or shall default in the performance or observance of any other of the covenants, agreements or conditions contained in the Master Bond Ordinance, any supplemental ordinance, any resolution, or in the Bonds or Junior Lien Bonds and such failure, refusal or default shall continue for a period of 45 days after written notice specifying such default and requesting that it be corrected, to the Authority by the Trustee or to the Authority and the Trustee by the Holders of not less than twenty percent (20%) in principal amount of the outstanding Bonds and Junior Lien Bonds, provided that if prior to the expiration of such 45-day period the Authority institutes action reasonably designed to cure such default, no such “Event of Default” shall be deemed to have occurred upon the expiration of such 45-day period for so long as the Authority pursues such curative action with reasonable diligence;

(d) any proceeding shall be instituted by or against the Authority seeking to adjudicate it a bankrupt or insolvent, or seeking liquidation, winding up, reorganization, arrangement, adjustment, protection, relief, or composition of it or its debts under any law relating to bankruptcy, insolvency or reorganization or relief of debtors, or seeking the entry of an order for relief of debtors, or seeking the entry of an order for relief or the appointment of a receiver, trustee, or other similar official for it or for any substantial part of its property and, in the case of any such proceeding instituted against it (but not instituted by it), either such proceeding shall remain undismissed or unstayed for a period of thirty (30) days or any of the actions sought in such proceeding (including, without limitation, the entry of an order for relief against it or the appointment of a receiver, trustee or other similar official for it or for any substantial part of its property) shall occur; or the Authority shall take any action to authorize any of the actions set forth above in this subsection (d).

No default in the payment of the principal of, interest on or Redemption Price of any Junior Lien Bond shall be considered a default for any Bond.

### **Remedies**

Upon the happening and continuance of any Event of Default specified in the Master Bond Ordinance, the Trustee may, or upon the request of the holders of not less than twenty percent (20%) in principal amount of the Outstanding Bonds and Junior Lien Bonds shall proceed, in its own name, to protect and enforce its rights and the rights of the Bondholders, by suit, action, or other proceedings, and to protect and enforce the statutory lien on the Net Revenues and enforce and compel the performance of all duties of the officials of the Authority. The Trustee shall on behalf of the Bondholders be entitled as a matter of right, upon application to a court of competent jurisdiction, to have appointed a receiver of the Authority for the business and property of the Airport, or any part thereof, including all Revenues, issues, income, receipts and profits derived, received or had by the Authority thereof or therefrom, with such power as the Authority may have to operate and maintain such business and property, collect, receive and apply all Revenues, income, receipts and profits arising therefrom, and prescribe fees and other charges in the same way and manner as the Authority might do. The Trustee is entitled to indemnification against fees, costs, expenses and liabilities for its enforcing any of the remedies permitted by the Master Bond Ordinance on the terms provided by the Master Bond Ordinance in connection with its exercise of any of the foregoing remedies.

## **Limitation on Rights of Bondholders**

No individual Bondholders may initiate legal proceedings to enforce rights under the Master Bond Ordinance unless such holder shall have given to the Trustee written notice of the Event of Default or breach of duty on account of which such proceeding is to be taken, and unless the holders of not less than twenty percent (20%) in principal amount of the Bonds or Junior Lien Bonds then Outstanding have made written request of the Trustee after the right to exercise such right of action has occurred, and have afforded the Trustee a reasonable opportunity either to exercise the powers granted to it under the Master Bond Ordinance or to institute such proceedings in its name and unless, also, there has been offered to the Trustee reasonable security and indemnity against fees, costs, expenses and liabilities, and the Trustee has refused or neglected to comply with such request within a reasonable time. No provision in the Master Bond Ordinance on defaults and remedies shall affect or impair the right of any Bondholder to enforce the payment of the principal of and interest on his or her Bonds or Junior Lien Bonds, or the obligation of the Authority to pay the same.

## **Application of Revenues and Other Moneys After Default**

During the continuance of an Event of Default, the Trustee, except as otherwise provided in the provisions of the Master Bond Ordinance relating to remedies, shall apply moneys, securities, funds and Revenues and the investment income thereon in the Funds and Accounts as follows and in the following order:

(i) to the payment of the reasonable fees, charges, costs, expenses and liabilities of the Trustee and the Airport Consultant or any Consulting Architect or Engineer selected by the Authority pursuant to the Master Bond Ordinance;

(ii) to the payment of the amounts required for reasonable and necessary Operation and Maintenance Expenses; and for the reasonable renewals, repairs and replacements of the Airport necessary to prevent loss of Revenues, as certified to the Trustee by the Airport Consultant. For this purpose the books of records and accounts of the Authority relating to the Airport shall at all times be subject to the inspection of the Airport Consultant during the continuance of such Event of Default;

(iii) to the payment of the interest and principal or Redemption Price then due on the Bonds or Junior Lien Bonds, as follows:

FIRST: To the payment to the persons entitled thereto of all installments of interest on Bonds then due in order of the maturity of such installments, and, if the amount available shall not be sufficient to pay in full any installment, then to the payment thereof ratably, according to the amounts due on such installment, to the persons entitled thereto, without any discrimination or preference;

SECOND: To the payment to the persons entitled thereto of the unpaid principal or Redemption Price of any Bonds which shall have become due, whether at maturity or by call for redemption, in the order of their due dates and, if the amounts available shall not be sufficient to pay in full all the Bonds due on any date, then to the payment thereof ratably, according to the amounts of principal or Redemption Price due on such date, to the persons entitled thereto, without any discrimination or preference;

THIRD: To the payment to the persons entitled thereto of all installments of interest on Junior Lien Bonds, including payments in the nature of interest payable to a Swap Provider under a Swap Agreement, then due in order of the maturity of such installments, and, if the amount available shall not be sufficient to pay in full any installment, then to the payment thereof ratably, according to the amounts due on such installment, to the persons entitled thereto, without any discrimination or preference;

FOURTH: To the payment to the persons entitled thereto of the unpaid principal or Redemption Price of any Junior Lien Bonds which shall have become due, whether at maturity or by call for redemption, in the order of their due dates and, if the amounts available shall not be sufficient to pay in full all the Junior Lien Bonds due on any date, then to the payment thereof

ratably, according to the amounts of principal or Redemption Price due on such date, to the persons entitled thereto, without any discrimination or preference; and

FIFTH: To the payment to any Swap Provider of any termination payment due and payable under a Swap Agreement, and if the amounts available shall not be sufficient to pay in full all termination payments due under the Swap Agreements then to the payment thereof ratably according to the amounts of termination payments due on such date to the persons entitled thereto without any discrimination or preference.

If and whenever all overdue installments of interest on all Bonds and Junior Lien Bonds, together with the reasonable fees, charges, costs, expenses and liabilities of the Trustee, and all other sums payable by the Authority to the Trustee under the Master Bond Ordinance, including the principal and Redemption Price of and accrued unpaid interest on the Bonds and Junior Lien Bonds which shall then be payable, shall either be paid by or for the account of the Authority, or provision satisfactory to the Trustee shall be made for such payment, and all defaults under the Master Bond Ordinance or the Bonds or Junior Lien Bonds shall be made good or secured to the satisfaction of the Trustee or provision deemed by the Trustee to be adequate shall be made therefor, the Trustee shall pay over to the Authority all moneys, securities, funds and Revenues then remaining unexpended in the hands of the Trustee (except moneys, securities, funds or Revenues deposited or pledged, or required by the terms of the Master Bond Ordinance to be deposited or pledged, with the Trustee), and thereupon the Authority and the Trustee shall be restored, respectively to their former positions and rights under the Master Bond Ordinance, and all Revenues shall thereafter be applied as provided in the provisions of the Master Bond Ordinance governing the establishment and use of Funds and Accounts. No such payment over to the Authority by the Trustee or resumption of the application of Revenues as so provided shall extend to or affect any subsequent default under the Master Bond Ordinance or impair any right consequent thereon.

#### **No Waiver of Default**

No delay or omission of the Trustee or of any Holder of the Bonds and Junior Lien Bonds to exercise any right or power accruing upon any default shall impair any such right or power or shall be construed to be a waiver of any such default or any acquiescence therein; and every power and remedy given by the Master Bond Ordinance to the Trustee and the Holders of the Bonds and Junior Lien Bonds, respectively, may be exercised from time to time and as often as may be deemed expedient.

#### **Notice of Event of Default**

The Trustee shall promptly give to the holders of Bonds and Junior Lien Bonds notice (i) of each Event of Default of which it has actual notice under Section 902(h) of the Master Bond Ordinance, unless such Event of Default shall have been remedied or cured before the giving of such notice; provided that, except in the case of an Event of Default specified in clause (a), (b) or (d) of the definition thereof, the Trustee shall be protected in withholding such notice if and so long as the board of directors, the executive committee of the board of directors, or a trust committee of directors or responsible officers of the Trustee in good faith determines that the withholding of such notice is in the best interests of the holders of Bonds and Junior Lien Bonds, and (ii) of any failure of the Authority to comply with its covenant under the Master Bond Ordinance to charge sufficient rates and charges of which the Trustee has actual notice as set forth in Section 902(h) of the Master Bond Ordinance. Each such notice required shall be given by the Trustee by mailing written notice thereof to all owners of Bonds and Junior Lien Bonds, at the registered addresses of such Holders shown upon the registration books of the Authority held by the Trustee.

#### **Tax-Exempt Status; Non-Arbitrage Covenant**

The Authority covenants not to take or to permit to be taken by its agents or assigns any action which, or fail to take any reasonable action the omission of which, would (i) impair the exemption of interest on the Bonds or Junior Lien Bonds from federal income taxation, or (ii) affect the validity of the Bonds or Junior Lien Bonds.

The Authority shall use the proceeds of all Series of Bonds and Junior Lien Bonds in a manner that will comply with the requirements of Section 103 of the Code. The Authority shall not make any use, and the Trustee is directed to make no use, of the proceeds of the Bonds and Junior Lien Bonds which could cause the Bonds or Junior

Lien Bonds to be “arbitrage bonds” within the meaning of Section 148 of the Code and applicable regulations thereunder. The Authority shall further comply with the requirements and regulations of such section throughout the term of the Bonds and the Junior Lien Bonds, including the rebate requirements of the Master Bond Ordinance.

### **Supplemental Ordinances**

The Authority may, without the consent of the Bondholders, but with the consent of the Trustee and where required by a Credit Entity, the Credit Entity, adopt at any time or from time to time Series Ordinances or Supplemental Ordinances for any one or more of following purposes, and any Supplemental Ordinance shall become effective in accordance with its terms upon the filing with the Trustee of a copy thereof certified by the Authorized Officer:

- (1) To provide for the issuance of a Series of Bonds or Junior Lien Bonds and to prescribe the terms and conditions pursuant to which such Bonds or Junior Lien Bonds may be issued, paid or redeemed;
- (2) To add additional covenants and agreements of the Authority for the purpose of further securing the payment of the Bonds or Junior Lien Bonds, provided such additional covenants and agreements are not contrary to or inconsistent with the covenants and agreements of the Authority contained in the Master Bond Ordinance;
- (3) To prescribe further limitations and restrictions upon the issuance of Bonds or Junior Lien Bonds and the incurring of indebtedness by the Authority which are not contrary to or inconsistent with the limitations and restrictions thereon theretofore in effect;
- (4) To surrender any right, power or privilege reserved to or conferred upon the Authority by terms of the Master Bond Ordinance;
- (5) To confirm as further assurance any security created under and subject to any lien or claim created or to be created by the provisions of the Master Bond Ordinance;
- (6) To modify the provisions of the Master Bond Ordinance or any previously adopted Series Ordinance to permit compliance with changes in federal tax law which is required to maintain the tax exempt status of the Bonds or Junior Lien Bonds;
- (7) With the consent of the Trustee in reliance upon an opinion of Bond Counsel, to cure any ambiguity or defect or inconsistent provision in the Master Bond Ordinance or to insert such provisions clarifying matters or questions arising under the Master Bond Ordinance as are necessary or desirable in the event any such modifications are not contrary to or inconsistent with the Master Bond Ordinance as theretofore in effect; or
- (8) To comply with the Trust Indenture Act of 1939.

Notice of the adoption and delivery of any Supplemental Ordinance or resolution and a copy thereof shall be filed by the Trustee with the Rating Agency at the time of such adoption and delivery.

### **Supplemental Ordinances Requiring Consent of Bondholders**

Exclusive of Supplemental Ordinances covered by Section 1002 of the Master Bond Ordinance, the Holders of at least fifty percent (50%) of the principal amount of outstanding Bonds and Junior Lien Bonds affected by the proposed Supplemental Ordinance and when required by the provider of a Credit Facility, the related Credit Entity, shall have the right to consent to and approve the adoption by the Authority of other Supplemental Ordinances; provided, however, that nothing in the Master Bond Ordinance shall permit (i) an extension of the maturity of the principal of or the interest on any Bond or Junior Lien Bond issued under the Master Bond Ordinance, (ii) a reduction in the principal amount of any Bond or Junior Lien Bond, (iii) modification of the privilege or priority of any Bond or Bonds over any other Bonds, except upon the written consent of the Holders of 100% of the principal amount of Bonds Outstanding or (iv) modification of the privilege or priority of any Junior Lien Bond or Junior Lien Bonds over any other Junior Lien Bonds. For the purposes of consents pursuant to Section

1003 of the Master Bond Ordinance a Credit Entity shall be deemed to be the Holder of Bonds or Junior Lien Bonds pledged by the Authority to the Credit Entity or owned by the Credit Entity or Bonds or Junior Lien Bonds secured by a Credit Facility except to the extent the Credit Entity has not honored a draw on its Credit Facility which draw complies with the requirements of the Credit Facility.

The Trustee shall give written notice of the proposed adoption of a Supplemental Ordinance by mail to the registered addresses of Holders of the Outstanding Bonds and Junior Lien Bonds and to the Credit Entity. Such notice shall briefly set forth the nature of the proposed Supplemental Ordinance and shall state that copies thereof are on file at the designated trust office of the Trustee for inspection by holders of Bonds and Junior Lien Bonds. If, within sixty (60) days or such longer period as shall be prescribed by the Trustee following the mailing of such notice, the Holders of not less than the required percent of the principal amount of the Bonds and Junior Lien Bonds Outstanding by instruments filed with the Trustee shall have consented to the adoption thereof and any other prerequisites such as the approval of any Credit Entity having such right, such Supplemental Ordinance may be adopted and the Master Bond Ordinance shall be deemed to be modified and amended in accordance therewith.

Anything in the Master Bond Ordinance to the contrary notwithstanding, a Supplemental Ordinance under Article X of the Master Bond Ordinance which affects the rights, duties and obligations of the Trustee shall not become effective unless and until the Trustee shall have consented in writing in the case of the Trustee, to the adoption of such Supplemental Ordinance and unless the Authority has first obtained the approval of the Michigan Department of Treasury if such approval is required.

If a Series of Bonds or Junior Lien Bonds will be unaffected by the terms of the Supplemental Ordinance, such Bonds or Junior Lien Bonds shall not be deemed to be Outstanding for purposes of any required consent.

A Series shall be deemed to be affected by a modification or amendment of the Master Bond Ordinance if the same adversely affects or diminishes the rights of the Holders of Bonds or Junior Lien Bonds of such Series. The Trustee may in its discretion determine whether or not in accordance with the foregoing provisions Bonds or Junior Lien Bonds of any particular Series or maturity would be affected by any modification or amendment of the Master Bond Ordinance and any such determination shall be binding and conclusive on the Authority and all Holders of Bonds or Junior Lien Bonds. The Trustee may receive an opinion of Bond Counsel as conclusive evidence as to whether Bonds or Junior Lien Bonds of any particular Series or maturity would be so affected by any such modification or amendment of the Master Bond Ordinance.

Notwithstanding anything in Section 1003 of the Master Bond Ordinance to the contrary, so long as any Bonds or Junior Lien Bonds are Outstanding as Variable Rate Bonds, the payment of principal of and interest upon which Variable Rate Bonds is secured by a Credit Facility, the Holders of such Variable Rate Bonds so secured shall not have any right to consent to any Supplemental Ordinance with respect to which the consent of Holders of such Variable Rate Bonds would otherwise have to be obtained, the automatic and irrevocable consent of such Holders of such Variable Rate Bonds to be conclusively presumed by virtue of such Holder's acceptance thereof; and the Trustee shall not be required to seek such Holders' consent as set forth in Section 1003 of the Master Bond Ordinance, provided that all such Holders shall be entitled to receive notice of the proposed Supplemental Ordinance from the Trustee or from the remarketing agent with respect to such Variable Rate Bonds and shall have the opportunity to tender such Variable Rate Bonds for repurchase prior to the effectiveness of any such Supplemental Ordinance. So long any Bonds or Junior Lien Bonds are Outstanding as Variable Rate Bonds, the payment of principal of and interest upon which Variable Rate Bonds is secured by a Credit Facility, the Credit Entity which issued such Credit Facility shall be deemed the Holder of such Variable Rate Bonds so secured and shall have the right to consent to any Supplemental Ordinance with respect to which the consent of Holders of such Variable Rate Bonds would otherwise have to be obtained; provided, however, that the right of such Credit Entity to provide such consent shall be suspended if such Credit Entity shall have wrongfully dishonored a payment obligation under such Credit Facility or if the Credit Facility is for any reason unavailable to the Trustee for the benefit of the Holders of such Variable Rate Bonds other than by expiration in accordance with its terms.

### **SERIES 2018 PROJECT ORDINANCE**

The Authority has adopted the Series 2018 Project Ordinance which together with the Series 2018 Sale Order authorizes the issuance and sale of the Series 2018A Bonds and the Series 2018B Bonds, and which amends and supplements the Master Bond Ordinance.

## **Selected Definitions**

*“Authorized Denominations”* means the denominations of \$5,000 or any integral multiple thereof.

*“Debt Service Payments”* means the payments required to be made by the Authority to amortize the Series 2018 Bonds, as provided for in the Series 2018 Project Ordinance, including the payments of principal of, premium, if any, and interest on the Series 2018 Bonds when due (whether at stated maturity or upon redemption prior to stated maturity).

*“Fixed Rate”* means the fixed rate or fixed rates at which the Series 2018 Bonds bear interest through the Stated Maturity Date, as established in the Series 2018 Project Ordinance.

*“Interest Payment Date”* means, except as otherwise provided in the Sale Order for a Series of the Series 2018 Bonds, June 1, 2017 and each June 1 and December 1 thereafter to and including the Stated Maturity Date.

*“Record Date”* means the 15th day of the month preceding an Interest Payment Date.

*“Registered Owner” or “Bondholder” or “owner”* means the person or entity in whose name any Series 2018 Bond is registered.

*“Sale Order”* means, with respect to a Series of the Series 2018 Bonds, the written order of an Authorized Officer of the Authority approving the sale of such Series of the Series 2018 Bonds and making certain determinations regarding the final terms thereof within the parameters of the Series 2018 Project Ordinances and the Master Bond Ordinance.

*“Series 2018 Bonds”* means the Airport Revenue Bonds (Detroit Metropolitan Wayne County Airport), Series 2018, in one or more Series, authorized by Article II of the Series 2018 Project Ordinance.

*“Stated Maturity Date”* means, with respect to any Series of the Series 2018 Bonds, the Stated Maturity Date set forth in the Series 2018 Sale Order.

## **Application of Series 2018 Bond Proceeds**

The net proceeds of each Series of the Series 2018 Bonds shall be applied as follows, as finally determined in the Series 2018 Sale Order:

(a) An amount equal to the accrued interest, if any, on such Series 2018 Bonds to the date of delivery thereof shall be deposited in the Airport Debt Service Account of the Bond.

(b) An amount equal to the amount of interest estimated to be capitalized on such Series 2018 Bonds, after giving effect to the estimated schedule on which various components of the related Series 2018 Projects will become available for use at the Airport and net of anticipated investment earnings on the amount of proceeds deposited in the Series 2018 Capitalized Interest Account for such Series established in the Capitalized Interest Account, shall be deposited in such subaccount.

(c) An amount sufficient to pay the Issuance Costs of the Series 2018 Bonds (to the extent permitted by law) shall be deposited with the Trustee in the 2018 Bond Costs of Issuance Account and used to pay Issuance Costs of the Series 2018 Bonds.

(d) An amount or other provision necessary to satisfy the Series 2018 Reserve Requirement for such Series shall be deposited in or credited to the 2018 Bond Reserve Subaccount for such Series.

(e) The balance of the proceeds of such Series 2018 Bonds shall be deposited into one or more separate accounts within the Series 2018 Airport Capital Improvement Program Construction Account (the “Series 2018 Construction Account”) which is established under the Series 2018 Project Ordinance in the Airport Capital Improvement Program Construction that was created pursuant to Section 401 of the Master Bond Ordinance.

If more than one series of Series 2018 Bonds is issued, the costs of the Series 2018 Projects may be allocated among the series as provided in the related Series 2018 Sale Order.

### **Series 2018 Accounts**

The Trustee shall maintain the accounts established under Sections 301 and 302 of the Series 2018 Project Ordinance as follows:

(a) Moneys in the 2018 Debt Service Account of the Bond Fund shall be deposited in accordance with Section 501B of the Master Bond Ordinance and shall be used for the payment when due of principal of, premium, if any, and interest on the related series of the Series 2018 Bonds.

(b) There shall be deposited in the 2017 Bond Reserve Accounts amounts necessary to satisfy the Reserve Requirement in accordance with the terms of the Series 2018 Sale Order.

### **Tax Covenant**

The Authority covenants and represents that, to the extent permitted by law, it shall take all actions, or refrain from taking actions, within its control necessary to maintain the exclusion of the interest on the Series 2018 Bonds from gross income for general federal income tax purposes under the Internal Revenue Code of 1986, as amended (the "Code"), including but not limited to actions relating to the rebate of arbitrage earnings, if applicable, and the expenditure and investment of Series 2018 Bond proceeds and moneys deemed to be Series 2018 Bond proceeds.

## **SERIES 2018 REFUNDING ORDINANCE**

The Authority has adopted the Series 2018 Refunding Ordinance which together with the Series 2018 Sale Order authorizes the issuance and sale of the Series 2018C Refunding Bonds and the Series 2018C Refunding Bonds, and which amends and supplements the Master Bond Ordinance.

### **Selected Definitions**

*"Authorized Denominations"* means the denominations of \$5,000 or any integral multiple thereof.

*"Debt Service Payments"* means the payments required to be made by the Authority to amortize the Series 2018 Bonds, as provided for in the Series 2018 Refunding Ordinance, including the payments of principal of, premium, if any, and interest on the Series 2018 Bonds when due (whether at stated maturity or upon redemption prior to stated maturity).

*"Fixed Rate"* means the fixed rate or fixed rates at which the Series 2018 Bonds bear interest through the Stated Maturity Date, as established in the Series 2018 Refunding Ordinance.

*"Interest Payment Date"* means, except as otherwise provided in the Series 2018 Sale Order for a Series of the Series 2018 Bonds, June 1, 2017 and each June 1 and December 1 thereafter to and including the Stated Maturity Date.

*"Record Date"* means the 15th day of the month preceding an Interest Payment Date.

*"Registered Owner" or "Bondholder" or "owner"* means the person or entity in whose name any Series 2018 Bond is registered.

*"Sale Order"* means, with respect to a Series of the Series 2018 Bonds, the written order of an Authorized Officer of the Authority approving the sale of such Series of the Series 2018 Bonds and making certain determinations regarding the final terms thereof within the parameters of the Series 2018 Refunding Ordinances and the Master Bond Ordinance.

*"Series 2018 Bonds"* means the Airport Revenue Refunding Bonds (Detroit Metropolitan Wayne County Airport), Series 2018, in one or more Series, authorized by Article II of the Series 2018 Refunding Ordinance.



“*Stated Maturity Date*” means, with respect to any Series of the Series 2018 Bonds, the Stated Maturity Date set forth in the Series 2018 Sale Order.

### **Application of Series 2018 Bond Proceeds**

The net proceeds of each Series of the Series 2018 Bonds shall be applied as follows, as finally determined in the Series 2018 Sale Order:

(a) An amount equal to the accrued interest, if any, on such Series 2018 Bonds to the date of delivery thereof shall be deposited in the Airport Debt Service Account of the Bond.

(b) An amount or other provision necessary to satisfy the Series 2018 Reserve Requirement for such Series shall be deposited in or credited to the 2018 Bond Reserve Subaccount for such Series.

(c) If necessary, certain of the proceeds of each of the Series 2018C Refunding Bonds and the Series 2018D Refunding Bonds, together with other available funds of the Authority, if any, in the amounts determined in the Sale Order relating to such Series, shall be deposited in one or more escrow funds consisting of cash and/or investments in direct obligations of or obligations the principal of and interest on which are unconditionally guaranteed by the United States of America or other obligations the principal of and interest on which are fully secured by the foregoing, in amounts sufficient to pay the principal, interest and redemption premiums, if any, on the Series 2008A Refunded Bonds which are to be refunded by the Series 2018C Refunding Bonds and the Series 2018D Refunding Bonds.

If more than one series of Series 2018 Bonds is issued, the costs of refunding the Series 2008A Refunded Bonds may be allocated among the series as provided in the related Series 2018 Sale Order.

### **Series 2018 Accounts**

The Trustee shall maintain the accounts established under Sections 301 and 302 of the Series 2018 Refunding Ordinance as follows:

(a) Moneys in the 2018 Debt Service Account of the Bond Fund shall be deposited in accordance with Section 501B of the Master Bond Ordinance and shall be used for the payment when due of principal of, premium, if any, and interest on the related series of the Series 2018 Bonds.

(b) There shall be deposited in the 2018 Bond Reserve Accounts amounts necessary to satisfy the Reserve Requirement in accordance with the terms of the Series 2018 Sale Order.

### **Tax Covenant**

The Authority covenants and represents that, to the extent permitted by law, it shall take all actions, or refrain from taking actions, within its control necessary to maintain the exclusion of the interest on the Series 2018 Bonds from gross income for general federal income tax purposes under the Internal Revenue Code of 1986, as amended (the “Code”), including but not limited to actions relating to the rebate of arbitrage earnings, if applicable, and the expenditure and investment of Series 2018 Bond proceeds and moneys deemed to be Series 2018 Bond proceeds.

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**APPENDIX D**  
**SUMMARY OF THE AIRLINE AGREEMENTS**

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## SUMMARY OF THE AIRLINE AGREEMENTS

### Signatory Airlines

Each of the following airlines (the “Signatory Airlines”) currently is a party to an Airport Use and Lease Agreement with the Authority (each an “Airline Agreement,” and collectively, the “Airline Agreements”), which are substantially similar agreements relating to the use of the Airport, the lease of terminal facilities and the establishment and payment of terminal rentals, Activity Fees and other airline fees and charges: Air France, American Airlines, Delta Air Lines (“Delta”), Federal Express (“FedEx”), JetBlue Airways, KLM Royal Dutch Airlines (“KLM”), Lufthansa German Airlines, Southwest Airlines, Spirit Airlines, United Airlines and United Parcel Service (“UPS”). KLM is not currently operating at the Airport.

### Airline Agreements

*Term.* The Airline Agreements have a scheduled expiration date of September 30, 2032. The Airline Agreements may be terminated, suspended or abated under certain conditions.

*Leases.* Delta, Air France, Aeromexico and the Delta Connection Carriers all operate at the South Terminal. All of the other Signatory Airlines (except FedEx and UPS) and all other passenger airlines serving the Airport, including all charter carriers, operate at the North Terminal. The Airline Agreements provide to the passenger Signatory Airlines leases on a preferential use basis of domestic gate holdrooms, ticket counters and other airline operational space in the South Terminal and the North Terminal.

Delta preferentially leases all of the airline space in the South Terminal, with the exception that the airline space in the international portion of the South Terminal, as well as space in the domestic bag claim area, is available to all of the airlines using the terminal on a shared use basis. In addition to using the shared use premises in the terminal, Air France, Aeromexico and the Delta Connection Carriers also operate on some of Delta’s preferential use space. The Authority has the right to require Delta to make a portion of its preferentially leased premises available to other air carriers, subject to certain rules and priorities.

Each of the Signatory Airlines operating in the North Terminal leases one or more gate holdrooms and related ticket counters and other airline operational space on a preferential use basis. The North Terminal also has five common use gates under the control of the Authority, with related common use ticket counter space. The common use gates in the North Terminal include the international gates in the facility. The domestic and international bag claim areas in the terminal are available on a shared use basis. The Authority has the right to require each Signatory Airline leasing space in the North Terminal to make a portion of its preferentially leased premises available to other air carriers, subject to certain rules and priorities. In addition, the Authority has the right, under certain circumstances when a Signatory Airline operating in the North Terminal does not meet a specified utilization requirement for its preferential use gates, to recapture one or more gates from such Signatory Airline.

*Terminal Rentals.* Under the terminal rental rate-making methodology contained in the Airline Agreements, there are two terminal cost centers—the South Terminal Cost Center (includes the McNamara Terminal) and the North Terminal Cost Center. To establish the terminal rental rates to be paid by the Signatory Airlines for each Operating Year, the Authority allocates between the two terminal cost centers all annual terminal-related operation and maintenance expenses (“O&M Expenses”) and all annual Debt Service on Bonds issued post-1997 to finance the South Terminal and the North Terminal (excluding apron and airfield costs), net of Debt Service to be paid by passenger facility charges (“PFCs”). The O&M Expenses for each terminal cost center include all direct terminal costs and relate to all space (airline, public, concession, etc.) in the facilities.

The annual rental rate for each terminal is calculated on the basis of dividing the costs allocated to the applicable terminal cost center, net of international facility use fees collected at that terminal and revenue collected for the use of the common use gates and ticket counters and other airline and other space controlled by the Authority, by the total square footage of space in the respective terminal leased to the Signatory Airlines operating in that terminal.

The Authority collects shared use fees per deplaned passenger for the use of the shared use premises in the South Terminal. The Authority collects shared use fees per enplaned passenger for the use of the shared use premises in the North Terminal.

*International Facility Use Fees.* Under the Airline Agreements, the Authority currently charges the Signatory Airlines a \$6.00 international facility use fee per deplaned international passenger at both the South Terminal and the North Terminal.

*Activity Fees.* Under the Airline Agreements, the Signatory Airlines also are obligated to pay activity fees which are calculated on an Airport residual basis (the “Activity Fees”). Essentially, the Activity Fee calculation for each Operating Year is based on all airport revenue bond Debt Service (net of Debt Service paid by PFCs and federal grant funds) and all O&M Expenses for such Operating Year, minus all non-airline revenue for such Operating Year, all airline rental payments for such Operating Year, all international facility use fees for such Operating Year and all payments for use of the Authority-controlled airline space, if any, in each terminal for such Operating Year.

More specifically, each Operating Year each Signatory Airline must pay through Activity Fees its pro rata share for such Operating Year (based on landed weight of aircraft) of the Revenue Requirement, which is the difference between (i) the sum of: (a) direct and indirect operation, maintenance and administration expenses of the Airport for such Operating Year, (b) 125% of the amount of principal and interest due on outstanding airport revenue bonds for such Operating Year, net of PFCs and federal grant funds used in such Operating Year to pay revenue bond Debt Service, (c) required deposits into the Bond Reserve Account, the Operation and Maintenance Reserve Fund and the Renewal and Replacement Fund for such Operating Year, (d) \$350,000 for deposit into the Authority Discretionary Fund to be used at the Authority’s discretion for airport system purposes, and (e) \$5 million (subject to escalation each year, commencing in Operating Year 2002, based on the Producer Price Index), to be deposited in the Authority’s Airport Development Fund to be used by the Authority in its discretion for any lawful Airport-system related capital expenditures, and (ii) all Airport revenues for such Operating Year (including Activity Fees paid by non-Signatory Airlines, all terminal rentals, shared use fees and common use fees (including rentals and shared use fees paid by the Signatory Airlines), all international facilities use fees payable with respect to the use of the federal inspection service (“FIS”) facilities at the Airport, all concession and parking revenue and all other nonairline revenues); provided that for each Operating Year, item (b) above shall be reduced by amounts on deposit in the Revenue Fund on the last day of the Operating Year preceding such Operating Year.

*Payment of Fees and Charges.* The Airline Agreements include procedures for charging and payment of airline fees and charges that require the Authority to provide the Signatory Airlines with a projection of rentals and the Activity Fee rate for each Operating Year at least sixty (60) days prior to the beginning of the Operating Year. The Authority also has agreed to revise the projection mid-year, based on actual data available for the Operating Year. Within sixty (60) days after the end of each Operating Year, the Authority is to provide the Signatory Airlines with a preliminary report of rentals and Activity Fees actually chargeable for the prior year. Eighty percent (80%) of any additional amounts owed by the Signatory Airlines to the Authority or any refunds the Authority may owe the Signatory Airlines as a result of an overpayment is to be paid within ninety (90) days after the end of such Operating Year. The Authority has agreed to provide the Signatory Airlines with its annual audit for each Operating Year within 180 days after the end of the year, and the balance of any amounts owed by the Signatory Airlines, or to be refunded by the Authority, is due within thirty (30) days thereafter.

*2012 Amendment to End of Year True-Up of Fees and Charges.* In order to enable the Authority to issue airport revenue bonds for airfield-related capital projects without the bonds being subject to the federal alternative minimum tax, in 2012 all of the Signatory Airlines agreed to an amendment of the Airline Agreements that revised the end of year true-up provision so that the amount to be refunded to the Signatory Airlines is calculated by taking into account the total amount of overpayment of Activity Fees by all Signatory Airlines and the total amount of Activity Fee overpayments by all non-Signatory Airlines. All airlines, Signatory and non-Signatory, participate in end of year refunds, not just the Signatory Airlines.

The total amount to be refunded to the Signatory Airlines and the total amount to be refunded to the non-Signatory Airlines, in respect of Activity Fee overpayments, is based on a pro-rata allocation between the Signatory Airlines and the non-Signatory Airlines, which reflects the same ratio as the ratio of total Activity Fees paid by the Signatory Airlines and total Activity Fees paid by the non-Signatory Airlines, respectively. The refund to the non-

Signatory Airlines may be accomplished directly, or through a reduction in the non-Signatory Airlines' Activity Fees for the following Operating Year. The same provision applies in the event of underpayments, and the Authority will charge the shortfall to non-Signatory Airlines as well as Signatory Airlines.

*Certain Authority Covenants.* The Airline Agreements obligate the Authority (i) to comply with the revenue retention requirements of the Airport and Airway Improvement Act of 1982, (ii) to use competitive bidding procedures for the award of all maintenance and operation and construction contracts for the Airport, (iii) to ensure that all senior appointed Airport officials shall have professional qualifications commensurate with their responsibilities, and (iv) to operate Willow Run Airport only as a reliever Airport for the Airport with no scheduled air carrier or public charter passenger service. The recent amendment to the Airline Agreements described above also added a new contractual covenant by the Authority to charge non-Signatory Airlines a reasonable surcharge on the Signatory Airline Activity Fee rate, subject to applicable law and to the Authority Board's "Signatory Airline Policy," which sets forth certain circumstances under which an airline is entitled to pay the basic Signatory Airline Activity Fee rate, without incurring a surcharge, even if the airline does not satisfy the minimum criteria for becoming a Signatory Airline.

*Weighted Majority Approval.* The Airline Agreements provide that a Weighted Majority of the Signatory Airlines can approve additional capital projects for which airport revenue bonds may be issued to pay the costs. A Weighted Majority is defined as either Signatory Airlines which, in the aggregate, landed eighty-five percent (85%) or more of the landed weight of all Signatory Airlines for the preceding 12-month period for which records are available or all but one of the Signatory Airlines regardless of landed weight.

*Passenger Facility Charges.* The Authority is obligated under the Airline Agreements to use PFCs to pay Debt Service on airport revenue bonds issued to pay the costs of certain PFC-eligible projects at the Airport. These projects include the construction of both the South Terminal and the North Terminal. The Airline Agreements also set forth a required priority for the application of PFCs to pay Debt Service in the event there is insufficient PFC revenue available in any Operating Year to pay all PFC-eligible debt service.

*Operation and Maintenance of South Terminal.* Delta serves as the Authority's agent for the performance of certain operation and maintenance functions for the South Terminal. In this capacity, Delta has agreed to operate and maintain all of its leased space in the South Terminal, all common use and public use space in the terminal and all building-wide services (e.g., heating, lighting, and electrical) and to maintain and repair the interior and exterior floors, walls, ceilings and the roof. The Authority maintains responsibility for overseeing the gate allocation and utilization of the shared use space, including the FIS facilities in accordance with an agreed upon protocol, the selection of concessionaires and for police and building security functions in the South Terminal.

*Operation and Maintenance of North Terminal.* Pursuant to an agreement with a consortium of the Signatory Airlines operating in the North Terminal known as the Detroit Airlines North Terminal Consortium Airport ("DANTEC"), DANTEC is responsible for performing certain operation and maintenance activities in the North Terminal, including certain janitorial services for the terminal, operation and maintenance of certain systems (baggage handling system, common use passenger processing system, multi-user flight information display system, building management system, paging system) and operation and maintenance of certain airline equipment (passenger boarding bridges, preconditioned air units, ground power units, moving walkways, elevators, escalators, automatic doors, triturator, GSE fuel load rack, potable water cabinets, hydrant fueling carts/trucks). In addition, DANTEC also performs certain ramp services and common use gate scheduling and gate control. The Authority is responsible for performing all other operation and maintenance activities with respect to the North Terminal.

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**APPENDIX E**  
**BOOK ENTRY SYSTEM**

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## BOOK-ENTRY SYSTEM

The description which follows of the procedures and record keeping with respect to beneficial ownership interests in the Series 2018 Bonds; payment of interest and other payments on the Series 2018 Bonds to Participants, as defined below, or Beneficial Owners; confirmation and transfer of beneficial ownership interests in the Series 2018 Bonds; and other bond-related transactions by and between DTC, Participants and Beneficial Owners, is based solely on information furnished by DTC for use in this Official Statement, and the Authority does not take any responsibility for the accuracy or completeness.

The Series 2018 Bonds initially will be issued solely in book-entry form to be held in the book-entry only system maintained by The Depository Trust Company (“DTC”), New York, New York. So long as such book-entry system is used, only DTC will receive or have the right to receive physical delivery of Series 2018 Bonds and Beneficial Owners will not be or be considered to be, and will not have any rights as, owners or Owners of the Series 2018 Bonds under the Series 2018 Project Ordinance or the Series 2018 Refunding Ordinance, as applicable.

The information in this Appendix E concerning DTC and DTC’s book-entry system has been obtained from sources that the Authority believes to be reliable, but the Authority takes no responsibility for the accuracy thereof.

DTC will act as securities depository for the Series 2018 Bonds. The Series 2018 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 each maturity of the Series 2018 Bonds, in the aggregate principal amount of such maturity, 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](http://www.dtcc.com).

Purchases of Series 2018 Bonds under the DTC system must be made by or through Direct Participants, which will receive a credit for the Series 2018 Bonds on DTC’s records. The ownership interest of each actual purchaser of each 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 2018 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 Series 2018 Bonds, except in the event that use of the book-entry system for the Series 2018 Bonds is discontinued.

To facilitate subsequent transfers, all Series 2018 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 Series 2018 Bonds with DTC and their registration in the name of

Cede & Co. or such other DTC nominee do not affect any change in beneficial ownership. DTC has no knowledge of the actual Beneficial Owners of the Series 2018 Bonds; DTC's records reflect only the identity of the Direct Participants to whose accounts such Series 2018 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 Series 2018 Bonds may wish to take certain steps to augment the transmission to them of notices of significant events with respect to the Series 2018 Bonds, such as redemptions, tenders, defaults, and proposed amendments to the Bond documents. For example, Beneficial Owners of Series 2018 Bonds may wish to ascertain that the nominee holding the Series 2018 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 2018 Bonds within an issue 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 2018 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 Authority 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 Series 2018 Bonds are credited on the record date (identified in a listing attached to the Omnibus Proxy).

Principal, interest and redemption proceeds on the Series 2018 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 Authority or the Trustee 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 Trustee or the Authority, subject to any statutory or regulatory requirements as may be in effect from time to time. Payment of principal, interest or redemption proceeds to Cede & Co. (or such other nominee as may be requested by an authorized representative of DTC) is the responsibility of the Authority or the Trustee, 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.

DTC may discontinue providing its services as depository with respect to the Series 2018 Bonds at any time by giving reasonable notice to the Authority and the Trustee. Under such circumstances, in the event that a successor depository is not obtained, Bond certificates are required to be printed and delivered.

The Authority 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 Authority believes to be reliable, but the Authority takes no responsibility for the accuracy thereof.

**SO LONG AS CEDE & CO., AS NOMINEE OF DTC, IS THE REGISTERED OWNER OF THE SERIES 2018 BONDS, REFERENCES IN THIS OFFICIAL STATEMENT TO THE REGISTERED OWNERS OF THE SERIES 2018 BONDS WILL MEAN CEDE & CO. AND WILL NOT MEAN THE BENEFICIAL OWNERS.**

**APPENDIX F**  
**FORM OF CONTINUING DISCLOSURE UNDERTAKING**

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FORM OF CONTINUING DISCLOSURE UNDERTAKING

\$231,930,000

WAYNE COUNTY AIRPORT AUTHORITY

Airport Revenue Bonds

(Detroit Metropolitan Wayne County Airport), Series 2018A-D

This Continuing Disclosure Undertaking (the “Undertaking”) is executed and delivered by the Wayne County Airport Authority (the “Authority”) in connection with the issuance of its Airport Revenue Bonds (Detroit Metropolitan Wayne County Airport), Series 2018A-D in the aggregate principal amount of \$231,930,000 (the “Bonds”). The Authority covenants and agrees as follows:

SECTION 1. Purpose of the Undertaking. This Undertaking is being executed and delivered by the Authority for the benefit of the Bondholders and the Beneficial Owners (hereinafter defined) and in order to assist the Participating Underwriters (hereinafter defined) in complying with subsection (b)(5) of the Rule (hereinafter defined).

SECTION 2. Definitions. In addition to the definitions set forth in the Ordinance, which apply to any capitalized term used in this Undertaking unless otherwise defined herein, the following capitalized terms shall have the following meanings.

“Airport” shall mean the Detroit Metropolitan Wayne County Airport.

“Annual Report” shall mean any Annual Report provided by the Authority pursuant to, and as described in, Sections 3 and 4 of this Undertaking.

“Beneficial Owner” shall mean any person which has or shares the power, directly or indirectly, to make investment decisions concerning ownership of any Bonds (including any person holding Bonds through nominees, depositories or other intermediaries).

“EMMA” shall mean the MSRB’s Electronic Municipal Market Access System, or such other system, Internet Web site, or repository hereafter prescribed by the MSRB for the submission of electronic filings pursuant to the Rule.

“GAAP” shall mean generally accepted accounting principles, as such principles are prescribed, in part, by the Financial Accounting Standards Board and modified by the Governmental Accounting Standards Board and in effect from time to time.

“Listed Events” shall mean any of the events listed in Section 5(a) of this Undertaking.

“MSRB” shall mean the Municipal Securities Rulemaking Board. As of the date of this Undertaking, the address and telephone numbers of the MSRB are as follows:

CDINet  
1900 Duke Street, Suite 600  
Alexandria, Virginia 22314  
Tel: (703) 797-6600  
Fax: (703) 683-1930

“1934 Act” shall mean the Securities Exchange Act of 1934, as amended.

“Obligated Person” shall mean the Authority and each airline or other entity at any time using the Airport (i) that is obligated under an Airport Use and Lease Agreement or Amended and Restated Airport Agreement, lease or other agreement having a term of more than one (1) year to pay a portion of the debt service on the Bonds, and (ii) that has provided at least twenty percent (20%) of the Revenues of the Airport for each of the two (2) fiscal years of the Airport immediately preceding the due date of any Annual Report.

“Official Statement” shall mean the final Official Statement for the Bonds dated October 30, 2018.

“Ordinance” means, with respect to the Bonds, collectively, the Series 2018 Project Ordinance, the Series 2018 Refunding Ordinance and the Master Bond Ordinance as such terms are defined in the Official Statement.

“Participating Underwriters” shall mean any of the original underwriters of the Bonds required to comply with the Rule in connection with the primary offering of the Bonds.

“Rule” shall mean Rule 15c2-12 promulgated by the SEC pursuant to the 1934 Act, as the same may be amended from time to time, together with all interpretive guidances or other official interpretations or explanations thereof that are promulgated by the SEC.

“SEC” shall mean the Securities and Exchange Commission.

“SEC Reports” means reports and other information required to be filed pursuant to Sections 13(a), 14 or 15(d) of the 1934 Act.

“Securities Counsel” shall mean legal counsel expert in federal securities law, and may include, but is not limited to Bond Counsel or Disclosure Counsel with respect to the Bonds.

“State” shall mean the State of Michigan.

### SECTION 3. Provision of Annual Reports.

(a) Each year, the Authority shall use its best efforts to provide within six (6) months, but in any event, not later than nine (9) months after the first day of the Authority’s fiscal year, commencing with the Authority’s Annual Report for its fiscal year ended September 30, 2018, to the MSRB through EMMA an Annual Report for the preceding fiscal year which is consistent with the requirements of Section 4 of this Undertaking. The Authority’s current fiscal year commenced on October 1, 2018, and will end September 30, 2019. In each case, the Annual Report may be submitted as a single document or as separate documents comprising a package, and may include by specific reference other information as provided in Section 4 of this Undertaking; provided, however, that if the audited financial statements of the Authority are not available by the deadline for filing the Annual Report, they shall be provided when and if available, and unaudited financial statements in a format similar to the audited financial statements then most recently prepared for the Authority shall be included in the Annual Report.

(b) If the Authority is unable to provide to the MSRB, through EMMA, in an electronic format as prescribed by the MSRB, an Annual Report by the date required in subsection (a), the Authority shall send a notice, in a timely manner, to the MSRB, through EMMA, in substantially the form attached as Exhibit A.

(c) If the Authority’s fiscal year changes, the Authority shall send written notice of such change to the MSRB through EMMA, in an electronic format as prescribed by the MSRB, in substantially the form attached as Exhibit B.

(d) Whenever any Annual Report or portion thereof is filed as described above, it shall be attached to a cover sheet in substantially the form attached as Exhibit C, or such other form as may be prescribed by the SEC from time to time.

SECTION 4. Content of Annual Reports. The Authority’s Annual Report shall contain or include by reference the following:

(a) The audited financial statements of the Authority for its fiscal year immediately preceding the due date of the Annual Report.

(b) An update of the financial information and operating data relating to the Authority of substantially the same nature as that contained in the Authority’s Comprehensive Annual Report for the year ended September 30, 2017 (the “CAFR”), included in the Official Statement as Appendix B, under the section in the CAFR entitled “Continuing Disclosure” and otherwise in the Official Statement as follows: (i) in the table under the heading “SERIES 2017 REPORT OF THE AIRPORT CONSULTANT AND SERIES 2018 LETTER,” and (ii) in



the following table in APPENDIX A – SERIES 2017 REPORT OF THE AIRPORT CONSULTANT AND SERIES 2018 LETTER - SERIES 2017 REPORT: Table 2-8 – Top 20 Domestic O&D Markets. If any information described in this paragraph (b) is published or provided by a third party and is no longer publicly available, the Authority shall include a statement to that effect as part of its Annual Report for the year in which such lack of availability arises.

The Authority's financial statements shall be audited and prepared in accordance with GAAP; provided, however, that the Authority may from time to time, in accordance with GAAP and subject to applicable federal or State legal requirements, modify the basis upon which its financial statements are prepared. Notice of any such modification shall be provided to the MSRB, through EMMA, in an electronic format as prescribed by the MSRB.

Any or all of the items listed above may be included by specific reference to other documents that previously have been provided to the MSRB, through EMMA. The Authority shall clearly identify each such other document so included by reference.

#### SECTION 5. Reporting of Significant Events.

(a) The Authority covenants to provide or cause to be provided to the MSRB through EMMA, in an electronic format as prescribed by the MSRB, in a timely manner not in excess of ten (10) business days after the occurrence of the event, notice of the occurrence of any of the following events listed in (b)(5)(i)(C) of the Rule with respect to the 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 Bonds, or other material events affecting the tax status of the Bonds;
- (7) modifications to rights of holders of the Bonds, if material;
- (8) bond calls, if material, and tender offers;
- (9) defeasances;
- (10) release, substitution, or sale of property securing repayment of the Bonds, if material;
- (11) rating changes;
- (12) bankruptcy, insolvency, receivership or similar event of the Authority, which is considered to occur when any of the following occur: the appointment of a receiver, fiscal agent or similar officer for an Authority in a proceeding under the U.S. 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 Authority, 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 Authority;
- (13) the consummation of a merger, consolidation, or acquisition involving the Authority or the sale of all or substantially all of the assets of the Authority, 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; or
- (14) appointment of a successor or additional trustee or the change of name of a trustee, if material.

(b) The Authority covenants that its determination of materiality will be made in conformance with federal securities laws.

(c) If the Authority determines that the occurrence of a Listed Event would be material under applicable federal securities laws, the Authority shall promptly cause a notice of such occurrence to be filed with the MSRB, through EMMA, in an electronic format as prescribed by the MSRB, together with a cover sheet in substantially the form attached as Exhibit C. In connection with providing a notice of the occurrence of a Listed Event described in subsection (a)(9), the Authority shall include in the notice explicit disclosure as to whether the Bonds have been escrowed to maturity or escrowed to call, as well as appropriate disclosure of the timing of maturity or call.

(d) The Authority acknowledges that the “rating changes” referred to above in Section (5)(a)(11) of this Undertaking may include, without limitation, any change in any rating on the Bonds or other indebtedness for which the Authority is liable.

(e) The Authority acknowledges that it is not required to provide a notice of a Listed Event with respect to credit enhancement when the credit enhancement is added after the primary offering of the Bonds, the Authority does not apply for or participate in obtaining such credit enhancement, and such credit enhancement is not described in the Official Statement.

#### SECTION 6. Termination of Reporting Obligation.

(a) The Authority’s obligations under this Undertaking shall terminate upon the legal defeasance of the Ordinance or the prior redemption or payment in full of all of the Bonds. If the Authority’s obligation to pay the principal of and interest on the Bonds is assumed in full by some other entity, such entity shall be responsible for compliance with this Undertaking in the same manner as if it were the Authority, and the Authority shall have no further responsibility hereunder.

(b) This Undertaking, or any provision hereof, shall be null and void in the event that the Authority (i) receives an opinion of Securities Counsel, addressed to the Authority, to the effect that those portions of the Rule, which require such provisions of this Undertaking, do not or no longer apply to the Bonds, whether because such portions of the Rule are invalid, have been repealed, amended or modified, or are otherwise deemed to be inapplicable to the Bonds, as shall be specified in such opinion, and (ii) delivers notice to such effect to the MSRB, through EMMA, in an electronic format as prescribed by the MSRB.

#### SECTION 7. Amendment; Waiver.

(a) Notwithstanding any other provision of this Undertaking, this Undertaking may be amended, and any provision of this Undertaking may be waived, provided that the following conditions are satisfied:

(1) if the amendment or waiver relates to the provisions of Section 3(a), (b), (c), 4 or 5(a), it may only be made in connection with a change in circumstances that arises from a change in legal requirements, a change in law or a change in the identity, nature or status of the Authority or type of business conducted by the Authority;

(2) this Undertaking, as so amended or taking into account such waiver, would, in the opinion of Securities Counsel, have complied with the requirements of the Rule at the time of the original issuance of the Bonds, after taking into account any amendments or interpretations of the Rule, as well as any change in circumstances; and

(3) the amendment or waiver either (A) is approved by the Bondholders in the same manner as provided in the Ordinance for amendments to the Ordinance with the consent of the Bondholders, or (B) does not, in the opinion of nationally recognized bond counsel, materially impair the interests of the Bondholders.

(b) In the event of any amendment to, or waiver of a provision of, this Undertaking, the Authority shall describe such amendment or waiver in the next Annual Report and shall include an explanation of

the reason for such amendment or waiver. In particular, if the amendment results in a change to the annual financial information required to be included in the Annual Report pursuant to Section 4 of this Undertaking, the first Annual Report that contains the amended operating data or financial information shall explain, in narrative form, the reasons for the amendment and the impact of such change in the type of operating data or financial information being provided. Further, if the annual financial information required to be provided in the Annual Report can no longer be generated because the operations to which it related have been materially changed or discontinued, a statement to that effect shall be included in the first Annual Report that does not include such information.

(c) If the amendment results in a change to the accounting principles to be followed in preparing financial statements as set forth in Section 4 of this Undertaking, the Annual Report for the year in which the change is made shall include a comparison between the financial statements or information prepared on the basis of the new accounting principles and those prepared on the basis of the former accounting principles. The comparison shall include a qualitative discussion of such differences and the impact of the changes on the presentation of the financial information. To the extent reasonably feasible, the comparison shall also be quantitative. A notice of the change in accounting principles shall be sent by the Authority to the MSRB, through EMMA, in an electronic format as prescribed by the MSRB.

SECTION 8. Additional Information. Nothing in this Undertaking shall be deemed to prevent the Authority from disseminating any other information, using the means of dissemination set forth in this Undertaking or any other means of communication, or including any other information in any Annual Report or notice of occurrence of a Listed Event, in addition to that which is required by this Undertaking. If the Authority chooses to include any information in any Annual Report or notice of occurrence of a Listed Event in addition to that which is specifically required by this Undertaking, the Authority shall have no obligation under this Undertaking to update such information or include it in any future Annual Report or notice of occurrence of a Listed Event.

SECTION 9. Failure to Comply. In the event of a failure of the Authority to comply with any provision of this Undertaking, any Bondholder or Beneficial Owner may bring an action to obtain specific performance of the obligations of the Authority under this Undertaking, but no person or entity shall be entitled to recover monetary damages hereunder under any circumstances, and any failure to comply with the obligations under this Undertaking shall not constitute a default with respect to the Bonds or under the Ordinance.

SECTION 10. Beneficiaries. This Undertaking shall inure solely to the benefit of the Authority, the Participating Underwriters, the Bondholders and the Beneficial Owners, and shall create no rights in any other person or entity.

SECTION 11. Transmission of Information and Notices; Dissemination Agent. Unless otherwise required by law or this Undertaking, and, in the sole determination of the Authority, subject to technical and economic feasibility, the Authority shall employ such methods of information and notice transmission as shall be requested or recommended by the herein-designated recipients of such information and notices. Any filing with the MSRB under this Undertaking may be made by transmitting such filing to a dissemination agent.

SECTION 12. Other Obligated Persons. Currently, Delta Air Lines (“Delta”) is the only Obligated Person other than the Authority, and Delta is required by the 1934 Act to file annual financial information in the form of its SEC Reports with the SEC as described in the Official Statement. The Authority assumes no responsibility for the accuracy or completeness of the SEC Reports or other annual financial information disseminated by Delta or any future Obligated Person. The Authority shall report as part of its Annual Report any change in Obligated Persons and that an Obligated Person’s SEC Reports constitute its annual financial information under this Undertaking. Unless no longer required by the Rule, the Authority shall use its best efforts to cause each Obligated Person other than the Authority (to the extent that such party is not required to file SEC Reports) to disseminate annual financial information substantially equivalent to that contained in SEC Reports to the MSRB, through EMMA, in an electronic format as prescribed by the MSRB, not later than nine months after the last day of the Obligated Person’s fiscal year. The Authority has no obligation to file or disseminate any SEC Reports relating to another Obligated Person.

WAYNE COUNTY AIRPORT AUTHORITY

By: \_\_\_\_\_  
Name:  
Its:

Dated: November 14, 2018

EXHIBIT A TO CONTINUING DISCLOSURE UNDERTAKING

NOTICE TO THE MSRB  
OF FAILURE TO FILE ANNUAL REPORT

Name of Obligated Person: Wayne County Airport Authority

Name of Bond Issue: Airport Revenue Bonds (Detroit Metropolitan  
Wayne County Airport), Series 2018A-D

Date of Bonds: November 14, 2018

NOTICE IS HEREBY GIVEN that the Authority has not provided an Annual Report with respect to the above-named Bonds as required by Section 3 of its Undertaking with respect to the Bonds. The Authority anticipates that the Annual Report will be filed by \_\_\_\_\_.

WAYNE COUNTY AIRPORT AUTHORITY

By: \_\_\_\_\_

Its: \_\_\_\_\_

Dated: \_\_\_\_\_

EXHIBIT B TO CONTINUING DISCLOSURE UNDERTAKING

NOTICE TO THE MSRB  
OF CHANGE IN AUTHORITY'S FISCAL YEAR

Name of Obligated Person: Wayne County Airport Authority

Name of Bond Issue: Airport Revenue Bonds (Detroit Metropolitan  
Wayne County Airport), Series 2018A-D

Date of Bonds: November 14, 2018

NOTICE IS HEREBY GIVEN that the fiscal year of the \_\_\_\_\_ changed. Previously, the Authority's fiscal year ended on \_\_\_\_\_. It now ends on \_\_\_\_\_.

WAYNE COUNTY AIRPORT AUTHORITY

By: \_\_\_\_\_

Its: \_\_\_\_\_

Dated: \_\_\_\_\_

EXHIBIT C TO CONTINUING DISCLOSURE UNDERTAKING

MUNICIPAL SECONDARY MARKET DISCLOSURE  
INFORMATION COVER SHEET

This cover sheet should be sent with all submissions made to the Municipal Securities Rulemaking Board, pursuant to Securities and Exchange Commission Rule 15c2-12 or any analogous state statute.

\*\*\*

Authority's and/or Other Obligated Person's name: Wayne County Airport Authority

CUSIP Numbers (attach additional sheet if necessary):

Nine-Digit CUSIP Number(s) to which the information relates:

Information relates to all securities issued by the Authority having the following six-digit number(s):

\*\*\*

Number of pages of attached information: \_\_\_\_\_

Description of Material Events Notice/Financial Information (Check One):

- 1. \_\_\_\_\_ Principal and interest payment delinquencies
- 2. \_\_\_\_\_ Material non-payment related defaults
- 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 bonds, or other material events affecting the tax status of the bonds
- 7. \_\_\_\_\_ Material modifications to rights of securities holders
- 8. \_\_\_\_\_ Bond calls, if material, or tender offers
- 9. \_\_\_\_\_ Defeasances
- 10. \_\_\_\_\_ Material release, substitution, or sale of property securing repayment of the bonds
- 11. \_\_\_\_\_ Rating changes
- 12. \_\_\_\_\_ Bankruptcy, insolvency, receivership or similar event of the Authority
- 13. \_\_\_\_\_ The consummation of a merger, consolidation, or acquisition involving the Authority or the sale of all or substantially all of the assets of the Authority, 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. \_\_\_\_\_ Appointment of a successor or additional trustee or the material change of name of a trustee
- 15. \_\_\_\_\_ Failure to provide annual financial information as required
- 16. \_\_\_\_\_ Other material event notice (specify) \_\_\_\_\_
- 17.\* \_\_\_\_\_ Financial Information: Please check all appropriate boxes:  

CAFR	(a)	includes	does not include	Annual Financial Information	
	(b)	Audited?	Yes	No	
		Annual Financial Information:	Audited?	Yes	No
		Operating Data			

Fiscal Period Covered: \_\_\_\_\_

\*Financial information **should not** be filed with the MSRB.

I hereby represent that I am authorized by the Authority or its agent to distribute this information publicly:

Signature: \_\_\_\_\_  
Name: \_\_\_\_\_ Title: \_\_\_\_\_  
Employer: \_\_\_\_\_  
Address: \_\_\_\_\_  
City, State, Zip Code: \_\_\_\_\_  
Voice Telephone Number: (\_\_\_\_\_) \_\_\_\_\_



**APPENDIX G**  
**FORMS OF BOND COUNSEL OPINIONS**

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Miller, Canfield, Paddock and Stone, P.L.C.  
150 West Jefferson, Suite 2500  
Detroit, Michigan 48226  
TEL (313) 963-6420  
FAX (313) 496-7500  
www.millercanfield.com

MICHIGAN: Ann Arbor  
Detroit • Grand Rapids  
Kalamazoo • Lansing • Troy  
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FORM OF APPROVING OPINION

(SERIES 2018A; NON-AMT)

November 14, 2018

Wayne County Airport Authority  
State of Michigan

We have acted as bond counsel to the Wayne County Airport Authority, State of Michigan (the "Authority"), in connection with the issuance by the Authority of bonds in the aggregate principal sum of \$147,390,000, designated Airport Revenue Bonds (Detroit Metropolitan Wayne County Airport), Series 2018A (the "Bonds"), for the purpose of paying a portion of the cost of acquiring and constructing certain capital improvements (defined in the ordinances authoring the Bonds as the "2018 Projects") and paying costs of issuance of the Bonds. In such capacity, we have examined such law and the transcript of proceedings relating to the issuance of the Bonds and such other proceedings, certifications and documents as we have deemed necessary to render this opinion.

The Bonds are in fully-registered form in the denomination of \$5,000 each or multiples thereof, numbered in order of registration, bearing original issue date of November 14, 2018, payable as to principal and interest as provided in the Bonds, subject to redemption prior to maturity in the manner, at the times and at the prices specified in the Bonds.

The Bonds are issued under the provisions of Act 327, Public Acts of Michigan, 1945, as amended and Act 94, Public Acts of Michigan, 1933, as amended ("Act 94"). The Authority has reserved the right to issue additional bonds of equal standing with the Bonds pursuant to the conditions stated in the ordinances authorizing the Bonds (collectively, the "Ordinance").

As to questions of fact material to our opinion, we have relied on the representations of the Authority contained in the Ordinance, and in the certified proceedings and other certifications of public officials and others furnished to us.

Based upon the foregoing, we are of the opinion that, under existing law:

1. The Ordinance has been duly and lawfully adopted by the Authority and is in full force and effect. The Ordinance by its terms constitutes a contract between the Authority and the holders of the Bonds and is valid and binding upon the Authority and enforceable against the Authority in accordance with its terms.
2. The Authority has sufficient power and authority to operate the Detroit Metropolitan Wayne County Airport (the "Airport") and to issue the Bonds for the above purposes secured by the pledge of Airport revenues as hereinafter described.
3. The Bonds have been duly authorized, executed, and delivered by the Authority and authenticated by the Trustee (as defined in the Ordinance) in accordance with the Ordinance. All conditions precedent to the sale and delivery of the Bonds have been fulfilled.
4. The Bonds are valid and binding obligations of the Authority according to their tenor, payable solely and only from and secured by a statutory lien on the revenues of the Airport, after payment of the expenses of

**MILLER, CANFIELD, PADDOCK AND STONE, P.L.C.**

Wayne County Airport Authority

November 14, 2018

administration, operation and maintenance thereof (the “Net Revenues”), and are entitled to the benefits of the Ordinance and Act 94. The statutory lien on the Net Revenues is of equal standing and on a parity as to the Net Revenues with all outstanding Bonds (as defined in the Ordinance) (the “Outstanding Bonds”) and any Additional Bonds (as defined in the Ordinance).

5. The Authority is obligated to charge and collect rates, charges and landing fees from every user of the Airport sufficient, together with all other available funds, to provide adequate revenues for the payment of the expenses of administration, operation and maintenance of the Airport and such other expenditures and funds for the Bonds, the Outstanding Bonds, the Junior Lien Bonds (as defined in the Ordinance) and the Airport as are required by the Ordinance and Act 94; provided, however, that to the extent that rates are fixed by contract, such rates may be revised only in accordance with the terms of such contract.

6. The interest on the Bonds (i) is excludable from gross income for federal income tax purposes and (ii) is not an item of tax preference for purposes of the federal alternative minimum tax. It should be noted, however, that with respect to corporations (as defined for federal income tax purposes) such interest is taken into account in determining adjusted current earnings for the purpose of computing the alternative minimum tax imposed on such corporations for taxable years beginning prior to January 1, 2018. The opinion set forth in clause (i) of this paragraph is subject to the condition that the Authority comply with all requirements of applicable federal income tax law that must be satisfied subsequent to the issuance of the Bonds in order that interest thereon be (or continue to be) excludable from gross income for federal income tax purposes. Failure to comply with all such requirements could cause the interest on the Bonds to be included in gross income retroactive to the date of issuance of the Bonds. The Authority has covenanted to comply with all such requirements.

7. The Bonds and the interest thereon are exempt from all taxation by the State of Michigan or by any taxing authority within the State of Michigan except inheritance and estate taxes, taxes on gains realized from the sale, payment or other disposition thereof.

Except as stated in paragraphs 6 and 7 above, we express no opinion regarding other federal or state tax consequences arising with respect to the Bonds and the interest thereon.

The rights or remedies of bondholders may be affected by bankruptcy, insolvency, fraudulent conveyance or other similar laws affecting creditors’ rights generally, now existing or hereafter enacted, and by the application of general principles of equity, including those relating to equitable subordination.

This opinion is given as of the date hereof and we assume no obligation to update or supplement this opinion to reflect any facts or circumstances that may hereafter come to our attention or any changes in law that may hereafter occur.

Very truly yours,

MILLER, CANFIELD, PADDOCK AND STONE, P.L.C.



Miller, Canfield, Paddock and Stone, P.L.C.  
150 West Jefferson, Suite 2500  
Detroit, Michigan 48226  
TEL (313) 963-6420  
FAX (313) 496-7500  
www.millercanfield.com

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FORM OF APPROVING OPINION

(SERIES 2018B; AMT)

November 14, 2018

Wayne County Airport Authority  
State of Michigan

We have acted as bond counsel to the Wayne County Airport Authority, State of Michigan (the “Authority”), in connection with the issuance by the Authority of bonds in the aggregate principal sum of \$6,005,000, designated Airport Revenue Bonds (Detroit Metropolitan Wayne County Airport), Series 2018B (the “Bonds”), for the purpose of paying a portion of the cost of acquiring and constructing certain capital improvements (defined in the ordinances authoring the Bonds as the “2018 Projects”) and paying costs of issuance of the Bonds. In such capacity, we have examined such law and the transcript of proceedings relating to the issuance of the Bonds and such other proceedings, certifications and documents as we have deemed necessary to render this opinion.

The Bonds are in fully-registered form in the denomination of \$5,000 each or multiples thereof, numbered in order of registration, bearing original issue date of November 14, 2018, payable as to principal and interest as provided in the Bonds, subject to redemption prior to maturity in the manner, at the times and at the prices specified in the Bonds.

The Bonds are issued under the provisions of Act 327, Public Acts of Michigan, 1945, as amended and Act 94, Public Acts of Michigan, 1933, as amended (“Act 94”). The Authority has reserved the right to issue additional bonds of equal standing with the Bonds pursuant to the conditions stated in the ordinances authorizing the Bonds (collectively, the “Ordinance”).

As to questions of fact material to our opinion, we have relied on the representations of the Authority contained in the Ordinance, and in the certified proceedings and other certifications of public officials and others furnished to us.

Based upon the foregoing, we are of the opinion that, under existing law:

1. The Ordinance has been duly and lawfully adopted by the Authority and is in full force and effect. The Ordinance by its terms constitutes a contract between the Authority and the holders of the Bonds and is valid and binding upon the Authority and enforceable against the Authority in accordance with its terms.
2. The Authority has sufficient power and authority to operate the Detroit Metropolitan Wayne County Airport (the “Airport”) and to issue the Bonds for the above purposes secured by the pledge of Airport revenues as hereinafter described.
3. The Bonds have been duly authorized, executed, and delivered by the Authority and authenticated by the Trustee (as defined in the Ordinance) in accordance with the Ordinance. All conditions precedent to the sale and delivery of the Bonds have been fulfilled.
4. The Bonds are valid and binding obligations of the Authority according to their tenor, payable solely and only from and secured by a statutory lien on the revenues of the Airport, after payment of the expenses of administration, operation and maintenance thereof (the “Net Revenues”), and are entitled to the benefits of the

**MILLER, CANFIELD, PADDOCK AND STONE, P.L.C.**

Wayne County Airport Authority

November 14, 2018

Ordinance and Act 94. The statutory lien on the Net Revenues is of equal standing and on a parity as to the Net Revenues with all outstanding Bonds (as defined in the Ordinance) (the “Outstanding Bonds”) and any Additional Bonds (as defined in the Ordinance).

5. The Authority is obligated to charge and collect rates, charges and landing fees from every user of the Airport sufficient, together with all other available funds, to provide adequate revenues for the payment of the expenses of administration, operation and maintenance of the Airport and such other expenditures and funds for the Bonds, the Outstanding Bonds, the Junior Lien Bonds (as defined in the Ordinance) and the Airport as are required by the Ordinance and Act 94; provided, however, that to the extent that rates are fixed by contract, such rates may be revised only in accordance with the terms of such contract.

6. The interest on the Bonds (i) is excludable from gross income for federal income tax purposes (except for any period when the Bonds are held by a “substantial user” of the Airport or a person deemed “related” thereto (as such terms are used in Section 147(a) of the Internal Revenue Code of 1986, as amended)) and (ii) is an item of tax preference for purposes of the federal alternative minimum tax. Further, with respect to corporations (as defined for federal income tax purposes) such interest is taken into account in determining adjusted current earnings for the purpose of computing the alternative minimum tax imposed on such corporations for taxable years beginning prior to January 1, 2018. The opinion set forth in clause (i) of this paragraph is subject to the condition that the Authority comply with all requirements of applicable federal income tax law that must be satisfied subsequent to the issuance of the Bonds in order that interest thereon be (or continue to be) excludable from gross income for federal income tax purposes. Failure to comply with all such requirements could cause the interest on the Bonds to be included in gross income retroactive to the date of issuance of the Bonds. The Authority has covenanted to comply with all such requirements.

7. The Bonds and the interest thereon are exempt from all taxation by the State of Michigan or by any taxing authority within the State of Michigan except inheritance and estate taxes, taxes on gains realized from the sale, payment or other disposition thereof.

Except as stated in paragraphs 6 and 7 above, we express no opinion regarding other federal or state tax consequences arising with respect to the Bonds and the interest thereon.

The rights or remedies of bondholders may be affected by bankruptcy, insolvency, fraudulent conveyance or other similar laws affecting creditors’ rights generally, now existing or hereafter enacted, and by the application of general principles of equity, including those relating to equitable subordination.

This opinion is given as of the date hereof and we assume no obligation to update or supplement this opinion to reflect any facts or circumstances that may hereafter come to our attention or any changes in law that may hereafter occur.

Very truly yours,

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Miller, Canfield, Paddock and Stone, P.L.C.  
150 West Jefferson, Suite 2500  
Detroit, Michigan 48226  
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FORM OF APPROVING OPINION  
(SERIES 2018C REFUNDING; NON-AMT)

November 14, 2018

Wayne County Airport Authority  
State of Michigan

We have acted as bond counsel to the Wayne County Airport Authority, State of Michigan (the “Authority”), in connection with the issuance by the Authority of bonds in the aggregate principal sum of \$35,515,000, designated Airport Revenue Refunding Bonds (Detroit Metropolitan Wayne County Airport), Series 2018C (the “Bonds”), for the purpose of refunding a portion of the Authority’s previously issued Airport Revenue Bonds and paying costs of issuance of the Bonds. In such capacity, we have examined such law and the transcript of proceedings relating to the issuance of the Bonds and such other proceedings, certifications and documents as we have deemed necessary to render this opinion.

The Bonds are in fully-registered form in the denomination of \$5,000 each or multiples thereof, numbered in order of registration, bearing original issue date of November 14, 2018, payable as to principal and interest as provided in the Bonds, subject to redemption prior to maturity in the manner, at the times and at the prices specified in the Bonds.

The Bonds are issued under the provisions of Act 327, Public Acts of Michigan, 1945, as amended and Act 94, Public Acts of Michigan, 1933, as amended (“Act 94”). The Authority has reserved the right to issue additional bonds of equal standing with the Bonds pursuant to the conditions stated in the ordinances authorizing the Bonds (collectively, the “Ordinance”).

As to questions of fact material to our opinion, we have relied on the representations of the Authority contained in the Ordinance, and in the certified proceedings and other certifications of public officials and others furnished to us.

Based upon the foregoing, we are of the opinion that, under existing law:

1. The Ordinance has been duly and lawfully adopted by the Authority and is in full force and effect. The Ordinance by its terms constitutes a contract between the Authority and the holders of the Bonds and is valid and binding upon the Authority and enforceable against the Authority in accordance with its terms.
2. The Authority has sufficient power and authority to operate the Detroit Metropolitan Wayne County Airport (the “Airport”) and to issue the Bonds for the above purposes secured by the pledge of Airport revenues as hereinafter described.
3. The Bonds have been duly authorized, executed, and delivered by the Authority and authenticated by the Trustee (as defined in the Ordinance) in accordance with the Ordinance. All conditions precedent to the sale and delivery of the Bonds have been fulfilled.
4. The Bonds are valid and binding obligations of the Authority according to their tenor, payable solely and only from and secured by a statutory lien on the revenues of the Airport, after payment of the expenses of

**MILLER, CANFIELD, PADDOCK AND STONE, P.L.C.**

Wayne County Airport Authority

November 14, 2018

administration, operation and maintenance thereof (the “Net Revenues”), and are entitled to the benefits of the Ordinance and Act 94. The statutory lien on the Net Revenues is of equal standing and on a parity as to the Net Revenues with all outstanding Bonds (as defined in the Ordinance) (the “Outstanding Bonds”) and any Additional Bonds (as defined in the Ordinance).

5. The Authority is obligated to charge and collect rates, charges and landing fees from every user of the Airport sufficient, together with all other available funds, to provide adequate revenues for the payment of the expenses of administration, operation and maintenance of the Airport and such other expenditures and funds for the Bonds, the Outstanding Bonds, the Junior Lien Bonds (as defined in the Ordinance) and the Airport as are required by the Ordinance and Act 94; provided, however, that to the extent that rates are fixed by contract, such rates may be revised only in accordance with the terms of such contract.

6. The interest on the Bonds (i) is excludable from gross income for federal income tax purposes and (ii) is not an item of tax preference for purposes of the federal alternative minimum tax. It should be noted, however, that with respect to corporations (as defined for federal income tax purposes) such interest is taken into account in determining adjusted current earnings for the purpose of computing the alternative minimum tax imposed on such corporations for taxable years beginning prior to January 1, 2018. The opinion set forth in clause (i) of this paragraph is subject to the condition that the Authority comply with all requirements of applicable federal income tax law that must be satisfied subsequent to the issuance of the Bonds in order that interest thereon be (or continue to be) excludable from gross income for federal income tax purposes. Failure to comply with all such requirements could cause the interest on the Bonds to be included in gross income retroactive to the date of issuance of the Bonds. The Authority has covenanted to comply with all such requirements.

7. The Bonds and the interest thereon are exempt from all taxation by the State of Michigan or by any taxing authority within the State of Michigan except inheritance and estate taxes, taxes on gains realized from the sale, payment or other disposition thereof.

Except as stated in paragraphs 6 and 7 above, we express no opinion regarding other federal or state tax consequences arising with respect to the Bonds and the interest thereon.

The rights or remedies of bondholders may be affected by bankruptcy, insolvency, fraudulent conveyance or other similar laws affecting creditors’ rights generally, now existing or hereafter enacted, and by the application of general principles of equity, including those relating to equitable subordination.

This opinion is given as of the date hereof and we assume no obligation to update or supplement this opinion to reflect any facts or circumstances that may hereafter come to our attention or any changes in law that may hereafter occur.

Very truly yours,

MILLER, CANFIELD, PADDOCK AND STONE, P.L.C.





Miller, Canfield, Paddock and Stone, P.L.C.  
150 West Jefferson, Suite 2500  
Detroit, Michigan 48226  
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Warsaw • Wrocław

FORM OF APPROVING OPINION  
(SERIES 2018D REFUNDING; AMT)

November 14, 2018

Wayne County Airport Authority  
State of Michigan

We have acted as bond counsel to the Wayne County Airport Authority, State of Michigan (the “Authority”), in connection with the issuance by the Authority of bonds in the aggregate principal sum of \$43,020,000, designated Airport Revenue Refunding Bonds (Detroit Metropolitan Wayne County Airport), Series 2018D (the “Bonds”), for the purpose of refunding a portion of the Authority’s previously issued Airport Revenue Bonds and paying costs of issuance of the Bonds. In such capacity, we have examined such law and the transcript of proceedings relating to the issuance of the Bonds and such other proceedings, certifications and documents as we have deemed necessary to render this opinion.

The Bonds are in fully-registered form in the denomination of \$5,000 each or multiples thereof, numbered in order of registration, bearing original issue date of November 14, 2018, payable as to principal and interest as provided in the Bonds, subject to redemption prior to maturity in the manner, at the times and at the prices specified in the Bonds.

The Bonds are issued under the provisions of Act 327, Public Acts of Michigan, 1945, as amended and Act 94, Public Acts of Michigan, 1933, as amended (“Act 94”). The Authority has reserved the right to issue additional bonds of equal standing with the Bonds pursuant to the conditions stated in the ordinances authorizing the Bonds (collectively, the “Ordinance”).

As to questions of fact material to our opinion, we have relied on the representations of the Authority contained in the Ordinance, and in the certified proceedings and other certifications of public officials and others furnished to us.

Based upon the foregoing, we are of the opinion that, under existing law:

1. The Ordinance has been duly and lawfully adopted by the Authority and is in full force and effect. The Ordinance by its terms constitutes a contract between the Authority and the holders of the Bonds and is valid and binding upon the Authority and enforceable against the Authority in accordance with its terms.
2. The Authority has sufficient power and authority to operate the Detroit Metropolitan Wayne County Airport (the “Airport”) and to issue the Bonds for the above purposes secured by the pledge of Airport revenues as hereinafter described.
3. The Bonds have been duly authorized, executed, and delivered by the Authority and authenticated by the Trustee (as defined in the Ordinance) in accordance with the Ordinance. All conditions precedent to the sale and delivery of the Bonds have been fulfilled.
4. The Bonds are valid and binding obligations of the Authority according to their tenor, payable solely and only from and secured by a statutory lien on the revenues of the Airport, after payment of the expenses of administration, operation and maintenance thereof (the “Net Revenues”), and are entitled to the benefits of the

**MILLER, CANFIELD, PADDOCK AND STONE, P.L.C.**

Wayne County Airport Authority

November 14, 2018

Ordinance and Act 94. The statutory lien on the Net Revenues is of equal standing and on a parity as to the Net Revenues with all outstanding Bonds (as defined in the Ordinance) (the “Outstanding Bonds”) and any Additional Bonds (as defined in the Ordinance).

5. The Authority is obligated to charge and collect rates, charges and landing fees from every user of the Airport sufficient, together with all other available funds, to provide adequate revenues for the payment of the expenses of administration, operation and maintenance of the Airport and such other expenditures and funds for the Bonds, the Outstanding Bonds, the Junior Lien Bonds (as defined in the Ordinance) and the Airport as are required by the Ordinance and Act 94; provided, however, that to the extent that rates are fixed by contract, such rates may be revised only in accordance with the terms of such contract.

6. The interest on the Bonds (i) is excludable from gross income for federal income tax purposes (except for any period when the Bonds are held by a “substantial user” of the Airport or a person deemed “related” thereto (as such terms are used in Section 147(a) of the Internal Revenue Code of 1986, as amended)) and (ii) is an item of tax preference for purposes of the federal alternative minimum tax. Further, with respect to corporations (as defined for federal income tax purposes) such interest is taken into account in determining adjusted current earnings for the purpose of computing the alternative minimum tax imposed on such corporations for taxable years beginning prior to January 1, 2018. The opinion set forth in clause (i) of this paragraph is subject to the condition that the Authority comply with all requirements of applicable federal income tax law that must be satisfied subsequent to the issuance of the Bonds in order that interest thereon be (or continue to be) excludable from gross income for federal income tax purposes. Failure to comply with all such requirements could cause the interest on the Bonds to be included in gross income retroactive to the date of issuance of the Bonds. The Authority has covenanted to comply with all such requirements.

7. The Bonds and the interest thereon are exempt from all taxation by the State of Michigan or by any taxing authority within the State of Michigan except inheritance and estate taxes, taxes on gains realized from the sale, payment or other disposition thereof.

Except as stated in paragraphs 6 and 7 above, we express no opinion regarding other federal or state tax consequences arising with respect to the Bonds and the interest thereon.

The rights or remedies of bondholders may be affected by bankruptcy, insolvency, fraudulent conveyance or other similar laws affecting creditors’ rights generally, now existing or hereafter enacted, and by the application of general principles of equity, including those relating to equitable subordination.

This opinion is given as of the date hereof and we assume no obligation to update or supplement this opinion to reflect any facts or circumstances that may hereafter come to our attention or any changes in law that may hereafter occur.

Very truly yours,

MILLER, CANFIELD, PADDOCK AND STONE, P.L.C.





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