

DRAFT TECHNICAL MEMORANDUM NO. 2

WAYNE COUNTY AIRPORT AUTHORITY SYSTEM PLAN
Airport Master Plan Update
Detroit Metropolitan Wayne County Airport

Prepared for
Wayne County Airport Authority
Detroit, Michigan

June 2016



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1.0 INTRODUCTION

This Airport System Plan for the Wayne County Airport Authority (the Authority) is being prepared to (1) facilitate strategies that best leverage the County’s two airport assets – Detroit Metropolitan Wayne County (Detroit Metro) and Willow Run airports; (2) maximize the use and efficiency of existing and planned airports facilities; and (3) optimize previous and all future capital investments.

The System Plan is being prepared in parallel with airport master plan updates for both Detroit Metro and Willow Run airports. The objectives of the master plan updates are to:

1. Identify long-range air transportation demand;
2. Determine opportunities and constraints with respect to accommodating future demand; and
3. Develop strategies to maximize the efficiency and effectiveness of existing and planned facilities.

The objective of the System Plan is to define the roles for each airport in meeting the region’s long-range air transportation demand. The master plan updates will facilitate the implementation of those roles once approved and adopted by the Authority and the Federal Aviation Administration (FAA).

The System Plan is developed with consideration of the guidance provided in: FAA Advisory Circular (AC) 150/5070-7, *The Airport System Planning Process*; ACRP Synthesis 14, *Airport System Planning Practices*; and the *Michigan Airport System Plan (MASP 2008)*. Input provided by the Authority, FAA, and airport stakeholders is also factored herein.

This Technical Memorandum is organized as follows:

- Airport System Setting
- Aviation-related Market Summary
- System Planning Considerations
- Airport Roles
- Next Steps

2.0 AIRPORT SYSTEM SETTING

In August 2002, the Public Airport Authority Act, MCL 259.108-259.125 (“Act 90”) established the Wayne County Airport Authority, which assumed operational jurisdiction of Detroit Metro and Willow Run airports (the Wayne County Airport System). The Authority is responsible for the management and oversight of both airports, including the power to plan, promote, maintain, improve, and operate both facilities. Both airports are significant economic assets for the region and each has the ability and capacity to facilitate economic development within the region.

The region served by the Wayne County Airport System includes a primary and secondary area. The primary area is defined as the 10-county Detroit-Warren-Ann Arbor Combined Statistical Area (the Detroit Primary Area or Detroit CSA) which includes the Detroit-Warren-Dearborn Metropolitan Statistical Area (MSA), the Ann Arbor MSA, the Flint MSA, the Monroe MSA, and the Adrian Micropolitan Statistical Area. The primary area includes the counties of Genesee, Lapeer, Lenawee, Livingston, Macomb, Monroe, Oakland, St. Clair, Washtenaw, and Wayne with a combined population of 5.3 million in 2014, as shown in Table 1 and on Figure 1.

Table 1
DETROIT PRIMARY AREA POPULATION IN 2014

County	Population	Percent of total
Wayne	1,764,804	33.2%
Oakland	1,237,868	23.3
Macomb	860,112	16.2
Genesee	412,895	7.8
Washtenaw	356,874	6.7
Livingston	185,596	3.5
St. Clair	160,078	3.0
Monroe	149,824	2.8
Lenawee	99,047	1.9
Lapeer	88,153	1.7
	<u>5,315,251</u>	<u>100.0%</u>

Source: U.S. Department of Commerce, Bureau of the Census, www.census.gov, accessed December 2015.

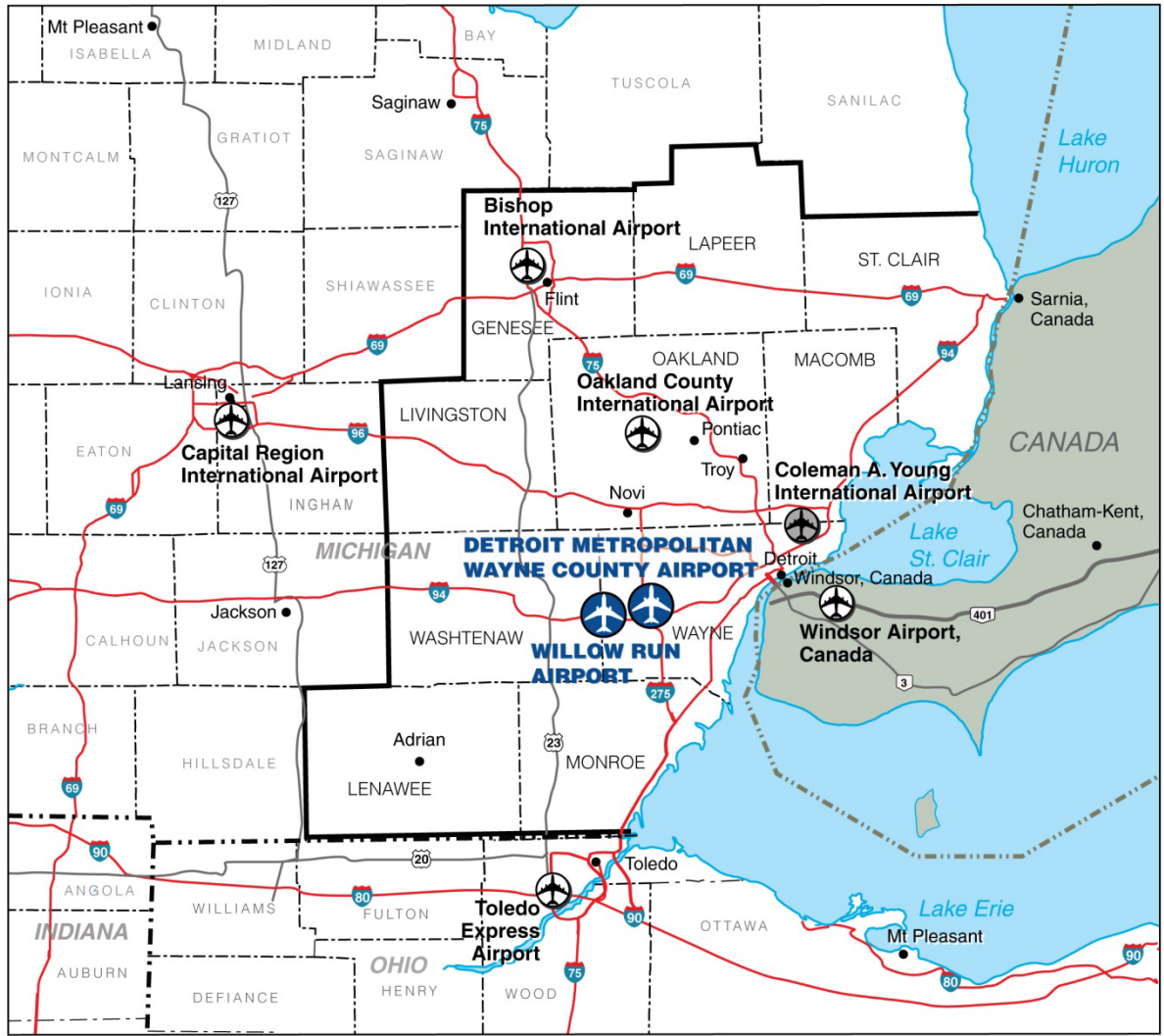
Economic growth and activity within the primary area stimulate a significant portion of aviation demand for the Airport System. The Detroit metropolitan area is synonymous with the manufacturing of automobiles and the underlying supply chain that drives vehicle assembly. The automobile manufacturing process has made Detroit an international destination, attracting and nurturing a skilled industrial workforce while creating a region with a competitive transportation network.

The secondary area served by the Airport System, which includes many of the counties surrounding the primary area, is defined by the location of and driving distance to other airports, as well as by the availability, price, and quality of service at those other airports. Six airports are within 100 miles of the Wayne County Airport System. They provide limited scheduled passenger service but also accommodate air cargo and general aviation users. *

- Windsor International Airport, a Canadian airport located three miles east of Detroit with an average of 10 daily departures by scheduled airlines
- Pontiac’s Oakland County International Airport, a non-hub airport located approximately 29 miles north of Detroit with an average of one daily scheduled departure
- Toledo Express Airport, a non-hub airport located approximately 59 road miles southwest of Detroit with an average of 4 daily scheduled departures
- Flint’s Bishop International Airport, a small-hub airport located 68 road miles northwest of Detroit with an average of 15 daily scheduled departures
- Lansing’s Capital Region International Airport, a non-hub airport located 91 road miles northwest of Detroit with an average of 10 daily scheduled departures
- Coleman A. Young International airport, which is owned and operated by the City of Detroit

*Information as of July 2016. Coleman A. Young International Airport does not currently accommodate passenger or air cargo activity.

Figure 1
AIRPORT SERVICE REGION
 Airport System Plan
 Wayne County Airport Authority



- Primary Area
- Wayne County Airport System Airports
- Other commercial service airport
- Non commercial service airport
- International boundary
- State boundary
- County boundary



Road miles from Detroit to:	
Cleveland	170
Fort Wayne	162
Lansing	91
Flint	68
Toledo	59
Pontiac	29
Windsor	3

Although the location and service provided at these airports is considered in this System Plan, none of these airports is subject to the management and oversight of the Authority, and therefore not subject to recommendations or findings of this study.

The two airports owned and operated by the Authority are described below.

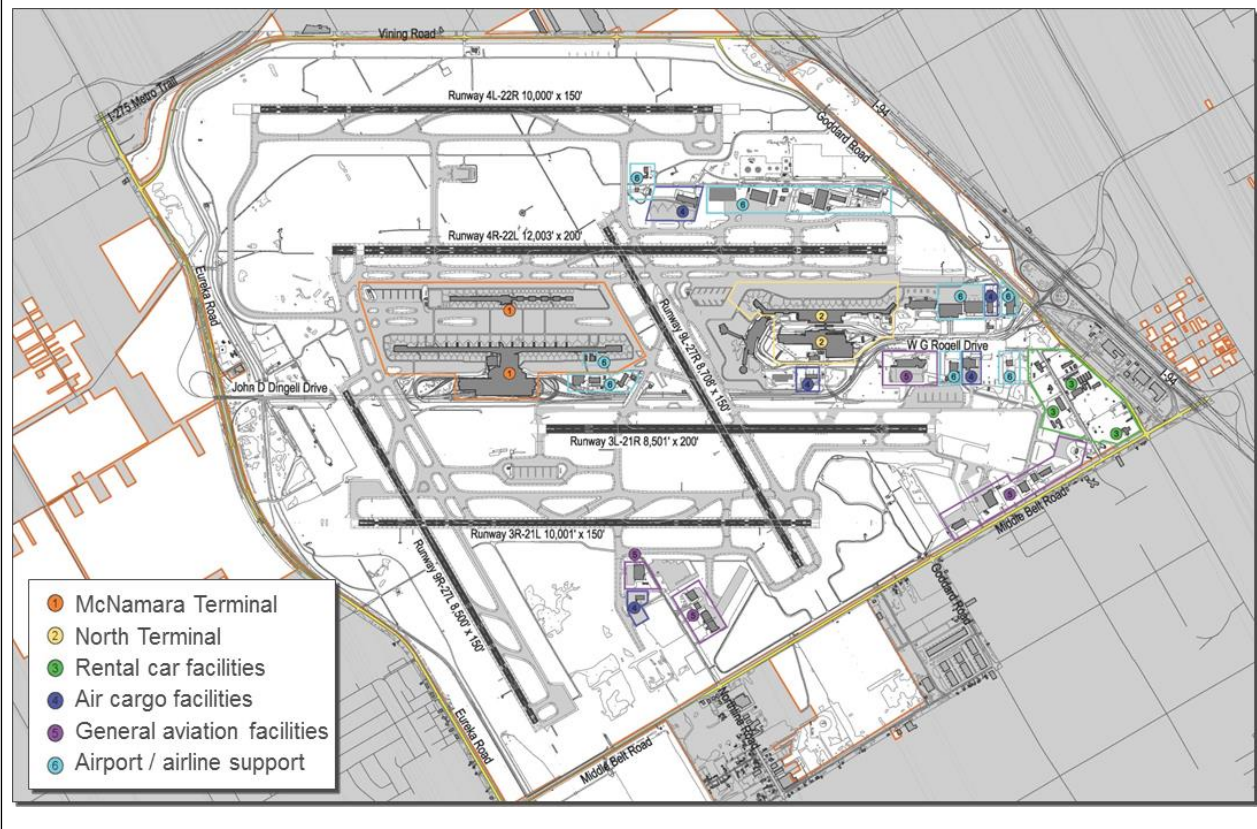
2.1 Detroit Metropolitan Wayne County Airport

Detroit Metro is classified in the FAA's National Plan of Integrated Airport Systems (NPIAS) as a Commercial Service Primary Airport, serving both domestic and international origin-destination (O&D) passengers and connecting passengers transferring from one flight to another. The Airport has serves an important role in the global, national, State, and local air transportation systems and is the 17th busiest airport in the United States, in terms of 2014 total passengers (enplaned plus deplaned). The importance of the Airport is reflected in its large origin-destination (O&D) passenger base, its role as the primary connecting hub in Delta's system, and its role as mid-Continental international gateway for Delta Air Lines.

- **Origin-Destination Airport** – The Airport's large O&D passenger base is related to the strength of the Airport service region's economy and supports the continued service development by Delta and other airlines at the Airport. In 2015, an estimated 8.9 million O&D passengers boarded flights at the Airport (i.e., these O&D passengers did not connect with another flight at the Airport).
- **Connecting Hub** –The Airport serves as an important connecting hub in the route system of Delta Air Lines. The Airport is the third busiest airport in Delta's system in 2015, with 7.5% of total scheduled departing seats. Delta accounted for approximately 95% of all passengers connecting at the Airport in 2015.
- **International Gateway** –The Airport's role as a developing international gateway is related to the economy of the Detroit Primary Area and the location of global companies, particularly those related to the automotive industry. The Airport is the third busiest international gateway in Delta's system in 2015, with 10.7% of international scheduled departing seats. Delta is the principal U.S. airline in the Sky Team Alliance which currently has 20 full members with service to 177 countries in Africa, the Americas, Asia, Europe, and the Pacific. Delta accounted for approximately 84.3% of all international enplaned passengers at the Airport in 2015.

The airport occupies an approximate 6,100 acre site within the City of Romulus in Wayne County adjacent to I-94 and I-275. The airport is approximately 18 miles from Downtown Detroit. Figure 2 present the overall airport site, which includes the following primary components:

Figure 2
DETROIT METRO AIRPORT SITE
 Airport System Plan
 Wayne County Airport Authority



- **Airfield** – The airfield occupies about 55% of the total Airport land area, and includes six runways (four north-south parallel runways and two east-west cross-wind runways), and associated taxiways, aprons, hold pads, and other safety-related protection zones. All six runways include the length, width, and pavement strength to accommodate the vast majority of aircraft operating in the world today. In addition, the airport includes navigational aids and other facilities that allow the airfield to operate in virtually all weather conditions.
- **Passenger Terminal** – Includes two distinct terminal complexes – Edward H. McNamara and North terminals -- that accommodate passenger processing facilities (ticketing, security screening functions, baggage claim, immigration functions, etc.) and all associated aircraft parking and passenger embarking and disembarking facilities (located on the concourses of each terminal). The McNamara Terminal primarily accommodates Delta, its regional affiliates, and its alliance partners and includes 122 gates; the North Terminal accommodates all other airlines serving the airport and includes 26 gates. An Authority owned Westin Hotel is integrated into the McNamara Terminal.
- **Ground Transportation and Parking** – Includes access and circulation roadways, public and employee parking garages and surface lots, rental car facilities. There are over 18,000 public parking spaces at the airport. Structured parking facilities include the Big Blue and McNamara

Parking decks, which are located near the passenger terminals to allow for pedestrian access. Both parking facilities have Ground Transportation Centers that provide access to car rental, hotel shuttles, on and offsite parking, and taxis. In addition, there are almost 14,000 additional off-airport parking spaces provided by third-party operators.

- **Air Cargo** – Air cargo facilities are located in three general areas of Airport property. The largest air cargo tenants, FedEx and UPS, are located in the northwest and southern portion of the airport, respectively. Several passenger airline and smaller cargo facilities are also located in the northern area of the airport.
- **General Aviation and Aircraft Maintenance** – General aviation and corporate aviation facilities are located on the northern and southern portions of the airport. Two fixed base operators (FBO) provide aircraft ground handling, fueling, hangar, maintenance, and passenger servicing. Several aircraft maintenance, repair, and overhaul (MRO) service providers are located in various areas of the airport, serving a range of large aircraft types.
- **Aviation Support Facilities** – Includes airline maintenance facilities; a fuel farm located in the northwestern section of the airfield; FAA air traffic control facilities; two aircraft rescue and firefighting facilities (ARFF); utilities; and airfield maintenance and support facilities located throughout the site.
- **Commercial Development** – Properties leased to private entities for office, warehouse, and other revenue-generating development.
- **Vacant/Reserve** – Over 2,000 acres (33% of the total airport site) is currently vacant/undeveloped. Large areas of Airport property located south of the Airport were acquired by the Authority for noise mitigation purposes. Although much of this land is currently undeveloped, the areas are available for future aviation and non-aviation related development.

Existing airport land use is summarized on Table 2.

The airport's cost per enplanement (CPE) is competitive among peer airports and sustaining that position is a key goal of the Authority. Continuously implementing process improvements and efficiencies, economic development, debt management, and long-term financial planning are important to maintaining this position. As a residual airport*, revenues and expenses must balance. The FY 2015 budget for airline, non-airline, and non-operating revenues is \$305.8 million (against \$305.8 million in operating and non-operating expenses). Strong revenue growth is achieved from various non-airline sources (parking, car rental, concessions, etc.).

2.2 Willow Run Airport

Willow Run is classified in the NPIAS as a "reliever" airport to Detroit Metro. It accommodates general aviation activity, as well as on demand air cargo operators that cannot efficiently be handled at Detroit Metro. According to 2014 data published by the FAA's Air Carrier Activity Information System (ACAIS), Willow Run is the nation's 5th busiest general aviation airport in terms of landed air cargo tonnage.

*A residual airport refers to a rate and fee setting methodology that sets charges to the airlines based on the net revenue an airport needs to cover expenses including debt service. At the end of the fiscal year airlines are charged for any operating shortfalls or receive a refund if there is a surplus.

Table 2
DETROIT METRO AIRPORT – EXISTING AIRPORT LAND USE
 Airport System Plan
 Wayne County Airport Authority

Land use	Area (acres)	% of total
Airfield	3,404	55%
Passenger Terminal	139	2
Ground Transportation and Parking	376	6
Air Cargo	38	1
General Aviation	86	1
Aviation Support	131	2
Vacant/Reserved	2,032	33
Commercial Development	<u>17</u>	<u>>1</u>
Total	6,224	100%

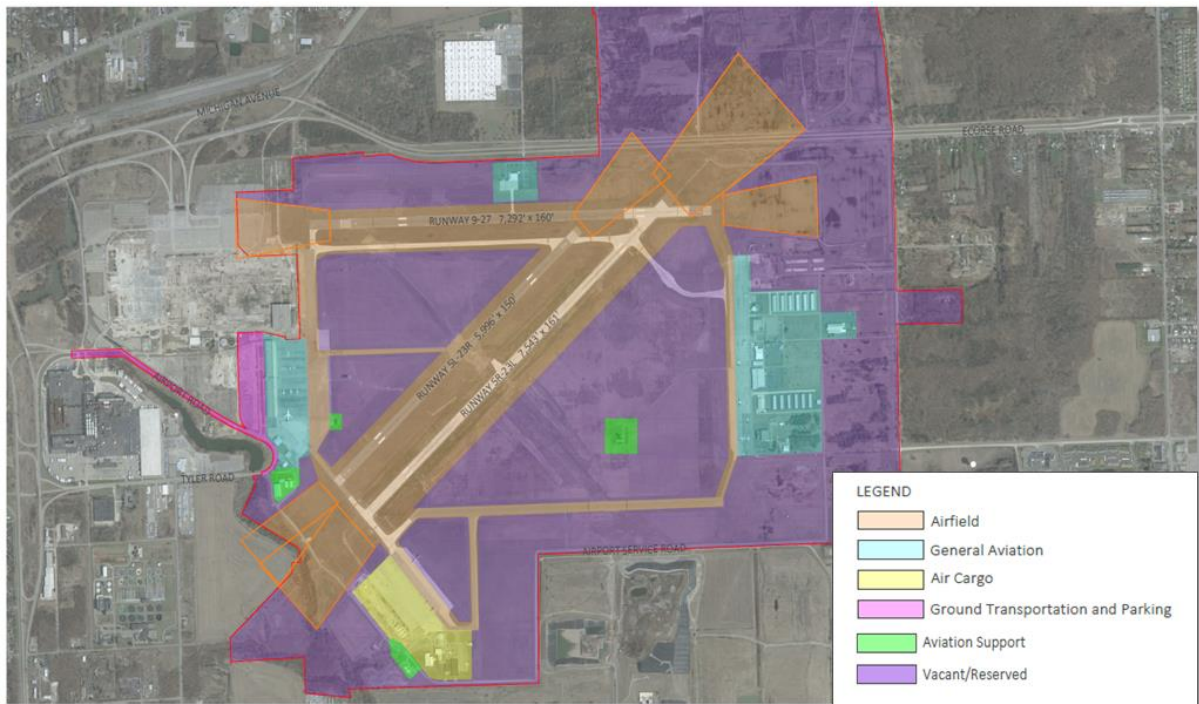
Source: LeighFisher, January 2016.

The airport was originally constructed in 1941 during World War II to support aircraft production. The original airfield consisted of six runways, four 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 Detroit Metro, 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 regions on-demand / just-in-time cargo operators, including USA Jet, Kalitta Charters, IFL Group and Ameristar. Willow Run is conducive to their business model as it is conveniently located near the automobile manufacturers and many of their suppliers, does not have operational congestion or other activity constraints, and has historically provided marginally adequate and relatively inexpensive facilities.

The airport 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. Figure 3 present the overall airport site, which consists of the following primary components:

- **Airfield** – The airfield occupies almost half (about 40%) of the total land area, and 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.

Figure 3
WILLOW RUN AIRPORT SITE
 Airport System Plan
 Wayne County Airport Authority



- General Aviation** – As a designated general aviation reliever airport to Detroit Metro, Willow Run plays an important role in supporting general aviation activity in the Detroit metropolitan area. 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 (in Hangar 1 on the west side of the airfield and in a standalone terminal on the east side of the airfield) and Active Aero (within the Active Aero/USA Jet facility on the east side of the airfield). 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 the 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.

- **Vacant/Reserve** – Approximately 1,500 acres (or 63%) of the airport property is currently vacant/undeveloped. Pending master plan update findings, these land areas will be reserved for future aviation and non-aviation uses.

Existing airport land uses are summarized on Table 3.

Land use	Area (acres)	% of total
Airfield	640	27%
Air cargo	50	2%
General aviation	157	6%
Ground transportation and parking	28	1%
Aviation support	19	<1%
Vacant/reserved	<u>1,486</u>	<u>63%</u>
Total	2,380	100%

Source: Mead & Hunt, January 2016.

General aviation activity and air cargo to and from Southeast Michigan has been declining in the past 10 years, creating a financial challenge for Willow Run Airport. The FY 2015 budget forecasts revenues to be \$2.8 million compared to operating expenses of \$3.8 million. The Authority has been reducing operating expenses to compensate for revenue losses, but still uses surplus operating revenues from Detroit Metro to subsidize Willow Run. However, the Authority will not increase the subsidy to Willow Run unless it can be concluded that increased investments would result in reducing the operating deficit.

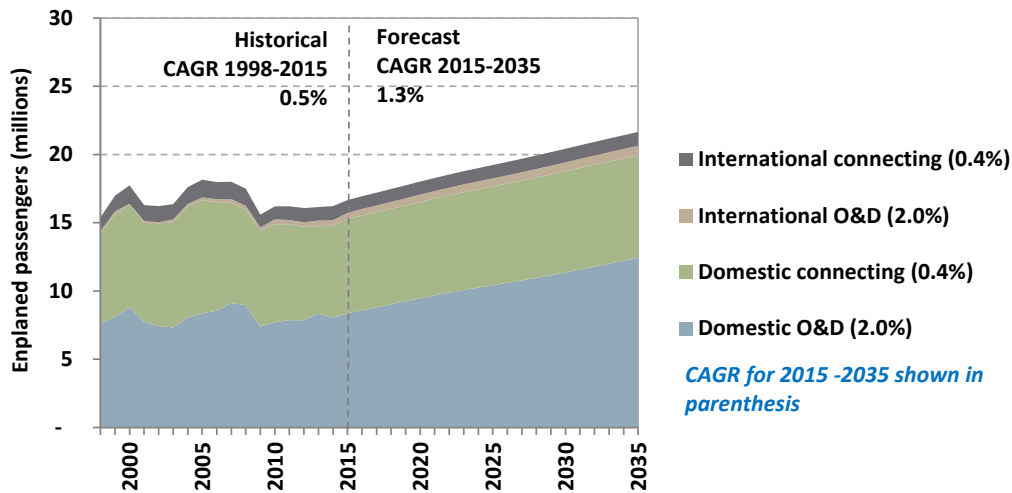
3.0 AVIATION-RELATED MARKETS

Four specific types of aviation-related activity are predominant in the Detroit region. This includes commercial passenger activity; cargo activity; MRO services; and general aviation.

3.1 Commercial Passengers

Commercial passenger activity consists of domestic and international origin-destination passengers (i.e., passengers beginning or ending their air journeys in Detroit) and connecting passengers transferring from one flight to another. Willow Run does not accommodate any commercial passenger activity. Detroit Metro accommodates the overwhelming majority of commercial passenger activity in the Detroit primary area. As shown on Figure 4, the number of total enplaned passengers at the Detroit Metro is forecast to increase from 16.7 million passengers in 2015 to 21.7 million in 2035, increasing an average of 1.3% per year. The number of domestic passengers at the Airport is forecast to increase an average of 1.3% per year between 2015 and 2035, compared with an average increase of 1.0% in international passenger traffic.

Figure 4
DETROIT METRO HISTORICAL AND FORECAST ENPLANED PASSENGERS
 Airport System Plan
 Wayne County Airport Authority



CAGR = Compound annual growth rate

Source: Historical—Wayne County Airport Authority records.
 Forecast—LeighFisher, March 2016.

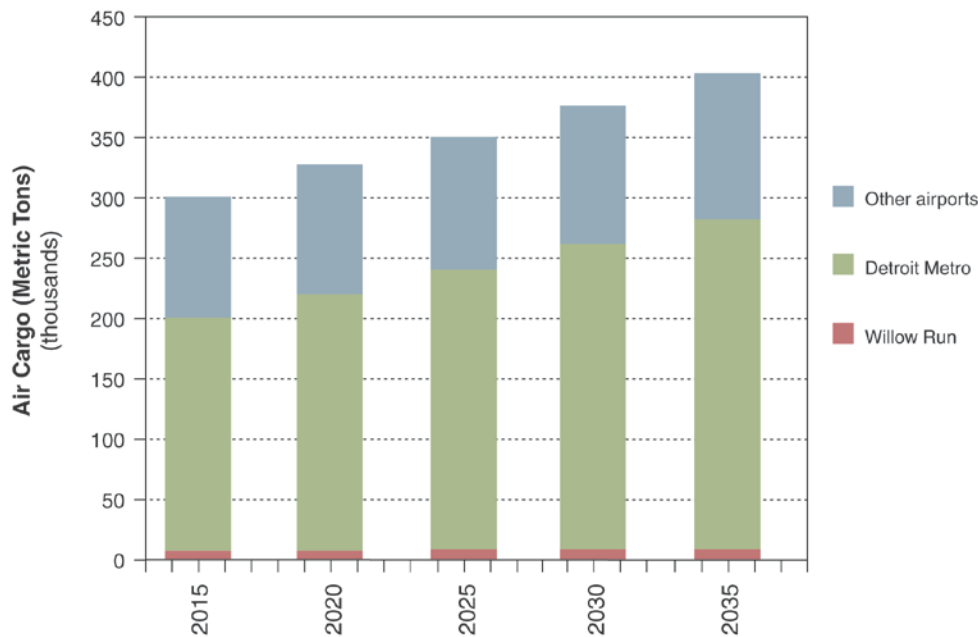
3.2 Air Cargo

Air cargo consists of freight accommodated on both passenger and dedicated cargo aircraft and can also involve warehousing and other logistics functions. Currently, air cargo activity is accommodated at both Detroit Metro and Willow Run airports. Detroit Metro primarily accommodates integrated air cargo carriers as well as belly cargo transported on commercial passenger aircraft. Willow Run primarily accommodates on-demand air cargo in support of the region’s automotive industry.

As shown in Figure 5, in 2015, approximately 301,247 metric tons of air cargo was accommodated in the secondary area served by the Airport System – including Windsor International, Oakland County International, Toledo Express, Bishop International, and Capital Region International airports. Of the total, approximately 64% was accommodated at Detroit Metro; approximately 2% was accommodated at Willow Run; the remaining 33% was accommodated at the other five airports in the secondary area.

Total air cargo in the Detroit Region is forecast to increase from an estimated 301,247 metric tons in 2015 to 405,336 metric tons in 2035—an average growth rate of 1.5% per year. Of the total air cargo forecast for 2035, approximately 67% will be accommodated at Detroit Metro; 2% will be accommodated at Willow Run; and the remaining 30% will be accommodated at the other five airports in the secondary area.

Figure 5
DETROIT REGION FORECAST AIR CARGO
 Airport System Plan
 Wayne County Airport Authority



Sources: Estimated 2015— Wayne County Airport Authority records, U.S. Census Bureau, Economic Indicators Division, Foreign Trade Statistics, www.census.gov/foreign-trade, U.S. Department of Transportation, T100 and T3 online databases, and Statistics Canada, Air Carrier Traffic at Canadian Airports, 2014, www.statcan.gc.ca, accessed February 2015.
 Forecast—LeighFisher, March 2016.

3.3 General Aviation

General aviation includes high-end corporate aviation, private/leisure activity, and flight training. This category also includes corporate flight departments and FBOs, which provide a range of services including scheduling, fueling, light maintenance, aircraft sales and service, and apron and hangar storage. General aviation activity is accommodated at both Detroit Metro and Willow Run airports; although Detroit Metro primarily accommodates high end corporate users, while Willow Run accommodates the full range of general aviation users, including flight training activity.

Total itinerant general aviation aircraft operations at Detroit Metro have been relatively constant since 1990, and are forecast to remain constant through 2035 at approximately 5,800 annual operations. Total itinerant general aviation aircraft operations have steadily declined at Willow Run since 1990 at a compound annual change of -1.2%. However, total itinerant general aviation aircraft operations at Willow Run are forecast to increase from 21,452 operations in 2015 to 26,386 operations in 2035 – at an average growth rate of 0.92% per year. The split between itinerant general aviation aircraft operations at the two system airports is projected to remain constant between 2015 and 2035 – with 80% accommodated at Willow Run, and the remaining 20% accommodated at Detroit Metro.

Local general aviation aircraft operations (primarily flight training activity) have steadily declined at Willow Run since 1990 at a compound annual change of -2.9%. However, total local general aviation aircraft

operations at Willow Run are forecast to increase from 26,206 operations in 2015 to 31,424 operations in 2035 – an average growth rate of 0.82% per year. Detroit Metro does not accommodate flight training activity; and no flight training activity is projected.

3.4 Aircraft MRO Services

Aircraft MRO services include both “line” maintenance that typically occurs overnight, and “heavy” maintenance that requires aircraft to be out of service for days or several weeks. MRO services could also include aircraft manufacturing, parts storage, and other related operations.

Detroit Metro accommodates MRO providers. Delta Air Lines is the primary tenant at the Airport and also has dedicated aircraft maintenance hangars. In addition, a new aircraft maintenance hangar for Spirit Airlines is expected to be completed in 2016. In total, Detroit Metro has approximately 408,000 square feet of aircraft maintenance hangar space and associated apron area.

Willow Run accommodates MRO providers that primarily serve aircraft types that conduct operations at the airport – ranging from small single-engine aircraft to larger narrow-body jets used by based on-demand air cargo operators. MRO providers at Willow Run are able to perform a wide range of services including full powerplant and airframe repair.

The existing and future market for MRO activities in the Detroit region is difficult to quantify. Although market growth is contingent on overall growth in the aviation industry, additional MRO activity and tenants at either Detroit Metro or Willow Run airports is also contingent on the business and operating decisions of MRO service providers. For instance, in 2014 the Authority entered into discussions/negotiations with Boeing to implement a B-777x production facility at Willow Run. However, Boeing selected another site for the facility based on weather conditions and limited runway length at Willow Run. Nevertheless, the Detroit metropolitan area includes many positive attributes for MRO activity, including a large and skilled local work force and culture, highway networks and connectivity to other manufacturing markets, rail access (Willow Run), and potential state participation for funding of new facilities.

3.5 New and Emerging Markets

In addition to the above, there are new and emerging aviation-related markets to recognize. One example is the growing momentum for retail operators, such as Amazon.com, Target, Walmart, etc., to use unmanned aerial vehicles for product delivery. Willow Run could potentially serve as a base for retailers who serve Southeast Michigan using such a system.

4.0 SYSTEM PLANNING CONSIDERATIONS

The following summarizes a number of important considerations that impact the identification of an appropriate System Plan for the Authority.

- **Single Airport Sponsor.** The Authority has operational jurisdiction for the management and oversight of both Detroit Metro and Willow Run airports, which includes the power to plan, promote, maintain, improve, and operate both airports. The Authority has the unilateral ability to implement facility or policy changes that can influence the use, cost, and operation of both facilities.
- **Natural Balance.** The existing Airport System has achieved a natural balance with regard to accommodating passengers, cargo, and general aviation activity. This momentum can be difficult

to change; and the modification of an existing airport to accommodate new or additional services can be complicated by community, political, and technical factors.

- **Authority's Commitment to Regional Development and Growth.** The Authority is committed to fostering regional economic development. Both airports have sufficient capacity to grow commercial airline and cargo services, and ample space and infrastructure for on-site commercial development. The Authority's FY 2015-2019 CIP includes projects that promote growth including demolitions to clear land for potential development, construction of additional aprons for cargo activity, and site preparation to attract MRO operators.
- **Commercial Passenger Operations.** All commercial passenger activity is currently accommodated at Detroit Metro, which includes the facilities and infrastructure (passenger terminals, parking garages, etc.) to support such activity. Although Willow Run once accommodated passenger service and initiation of new service has been considered in the past, Willow Run will not reinstate commercial passenger service given facility limitations and the Authority's operating agreements with existing passenger airlines that prohibits commercial service at Willow Run.
- **Air Service Options.** There are other commercial service airports within 200 miles of the Detroit metropolitan area, including those in the cities of Columbus, Fort Wayne, Cleveland, Lansing, Flint, and Toledo. Although Detroit Metro currently has excellent domestic and international air service at competitive airfares, residents and visitors to the region could choose to use other commercial service airports if airfares, market options, and customer service at Detroit Metro does not remain competitive.
- **On-demand Air Cargo Operators.** On-demand and heavy lift air cargo operators operate with relatively low profit margins and require a high degree of operational flexibility. These operators are unlikely to relocate to Detroit Metro based on that airport's higher operating costs and the need to reconstruct warehousing and other support facilities. Moreover, if appropriate facilities and infrastructure are not provided at Willow Run, there is the possibility that existing air cargo tenants could relocate to Toledo Express Airport (Ohio), which currently includes the necessary infrastructure and already accommodates a range of air cargo operators.* Potential relocation is driven by anticipated changes in the air cargo fleet mix from older generation commercial service aircraft, to newer generation/NextGen equipped aircraft, such as the B-757. Such newer aircraft would operate from Willow Run with payload restrictions at current runway lengths. Loss of air cargo tenants from Willow Run would adversely impact the Authority's financial management of the airport, as well as the local automotive industry, which relies heavily on on-demand air cargo to support inventory and production logistics. In addition, there are several established cargo operators that do not operate at Willow Run today despite its superior geographic location. For example, DHL has a distribution warehouse that is located relatively close to Willow Run Airport, but still trucks cargo approximately 70 miles from that warehouse to Toledo Express Airport. DHL has indicated they handle approximately 200,000 pounds of cargo each week out of Toledo Express Airport.
- **Integrated Air Cargo Operators.** Currently, integrated air cargo operators at Detroit Metro are unable to perform aircraft-to-truck operations. Although Willow Run could allow for aircraft-to-truck operations, a number of important facility improvements and upgrades – such as enhanced

*In 2013, National Airlines – Willow Run's second largest tenant at the time – relocated out-of-state. The loss in this tenant resulted in a \$0.3 million decline in airport revenues (10% percent of total FY 2012 revenue).

instrumentation for all weather operations and a runway extension – would be required before integrated air cargo operators would consider relocating to Willow Run.

- **Economic Conditions.** An improving economy in the region bodes well for Willow Run Airport’s current cargo tenants. With the increase in manufacturing activity in North America, it is likely that the demand for just-in-time deliveries and other cargo operations is expected to increase as well. Because of the geographic location of Willow Run Airport, additional cargo activity will likely be tied to the automotive industry, but could also include other high value manufacturing activities such as electronics or pharmaceuticals.
- **Willow Run Airport Infrastructure.** Much of the original infrastructure and utilities at Willow Run are still in place. Most facilities, including a vast majority of airfield pavements, are reaching the end of their useful life and are in need of repair/overhaul. In addition, a number of key maintenance projects have been postponed or delayed for numerous years*. In addition, anecdotal evidence suggests that infrastructure improvements such as additional runway length and instrumentation may also affect demand at Willow Run Airport. According to several of the Airport’s existing cargo operators, airport infrastructure and their ability to serve certain markets with their fleet is a major consideration as they make investment and growth decisions.
- **Detroit Metro Airport Infrastructure.** The majority of infrastructure and utilities at Detroit Metro are in good condition and well maintained. The Authority has invested over \$2.1 billion in passenger terminal development since FY 2000. With the McNamara Terminal and the North Terminal, the airport has two of the most modern and efficient terminal facilities of any airport in the U.S., with capacity to accommodate future growth.

5.0 AIRPORT ROLES

The following summarizes the intended future roles for both Authority airports. The intended roles are primarily a function of (1) existing and future aviation-related demand in the region; (2) the existing natural balance of activity among the two airports; (3) minimization and/or avoidance of significant and/or costly capital improvements; and (4) input provided by stakeholders and airport users.

5.1 Detroit Metropolitan Wayne County Airport

Detroit Metro will continue to serve as the primary commercial service airport for the Detroit metropolitan area and the Southeastern Michigan region. In this role, the airport will primarily serve the following aviation users:

- Commercial service airlines that accommodate passenger demand in the Detroit region, as well as Delta hub operations for domestic and international service
- Integrated air cargo carriers and other air cargo operators that require connectivity with passenger aircraft operations and the regional ground transportation network
- MRO service providers that service air carrier type aircraft which require the runways and other infrastructure already provided, and MROs that service existing airport users
- High-end corporate general aviation activity

*For example, Hangar 1 has been deteriorating and in need of repairs and upgrades for over a decade; appropriate rehabilitation may cost more than construction of a new facility.

In addition, the County will utilize the airport's existing facilities and vacant/reserved land uses to seek opportunities to maximize revenue generation for the Airport System, as well as allow Detroit Metro to serve as a catalyst for local and regional economic growth and development.

The recommended role for Detroit Metro is based on the following:

- The airport has sufficient airfield capacity to accommodate the operational banks and peak activity associated with existing and future hubbing activity for Delta Air Lines, the airport's primary tenant and operator.
- Integrated air cargo carriers would not relocate to another facility since they require connectivity with commercial passenger aircraft.
- Recreational general aviation and general aviation flight training is not compatible with commercial passenger aircraft operations, especially given the operational banks and peak activity associated with existing and future hubbing activity.
- The airport has sufficient vacant and developed land available to accommodate additional MRO operators and facilities. In addition, the airport has sufficient apron area and vacant land to accommodate additional corporate general aviation tenants.

5.2 Willow Run Airport

Willow Run Airport will serve as the primary reliever airport for the Wayne County Airport System. In this role, the airport will primarily serve the following aviation users:

- On-demand and heavy-lift air cargo operators that support the Detroit region's automotive manufacturing industry
- Aircraft production and MRO service providers that service air carrier and general aviation aircraft
- Corporate and recreational general aviation
- General aviation flight training

In addition, and in order to achieve a more financially viable Airport System, the airport will preserve appropriate and sufficient land areas for potential (1) new aircraft production and/or MRO operators; (2) commercial development that may be aviation or non-aviation related; and (3) alternative aviation-related markets that are either in early stages of their life-cycle or not yet realized.

The recommended role for Willow Run is based on the following:

- Willow Run's existing air cargo tenants primarily provide logistical support to the region's automotive manufacturing industry. On-demand and heavy lift air cargo operators operate with relatively low profit margins and require a high degree of operational flexibility. These operators are unlikely to relocate to Detroit Metro based on that airport's higher operating costs and the need to reconstruct warehousing and other support facilities. Willow Run is conducive to their business model as it is conveniently located near the automobile manufacturers and many of their suppliers; does not have operational congestion or other activity constraints; and has historically provided adequate and inexpensive facilities relative to other airports in the region. In addition, Willow Run is uniquely situated within an international trade corridor with direct access to an interstate highway (Interstate 94) and an international railroad (the Canadian Pacific Railway), as well as located in close proximity to Great Lakes shipping. The airport is ideally situated to

accommodate the market associated with air cargo operators serving the automotive manufacturing industry.

- The airport has sufficient land available to accommodate additional MRO operators and facilities. In addition, the airport has sufficient apron area and vacant land to accommodate additional general aviation tenants.
- Willow Run is uniquely positioned to support flight training activity because of the low-volume of activity, multi-runway airfield that can support simultaneous VFR and IFR operations, and the presence of an FAA ATCT. On-demand air cargo operations occur sporadically throughout the day, and the shorter parallel Runway 5L-23R can be dedicated to general aviation flight training activity without causing air traffic interruptions. In addition, the Airport offers convenient location (within six miles) and facilities for Eastern Michigan University's Aviation Flight Technology and Aviation Management program, which conducts flight training activity at the Airport.

Many factors can affect the demand for cargo activity at a particular airport. Reliever airports, such as Willow Run, are often influenced by the activity and policies of nearby airports, national and regional trends in manufacturing, airport catchment area, air cargo service options, and the cost and convenience of airport facilities. Anecdotal evidence suggests that infrastructure improvements such as additional runway length and instrumentation may also affect demand at Willow Run. According to several of the Airport's cargo operators, airport infrastructure and their ability to serve certain markets with their fleet is a major consideration as they make investment and growth decisions. In addition, there are several established cargo operators that do not operate at Willow Run today despite its superior geographic location. The master plan being developed for Willow Run will review the configuration of the airfield to determine is optimum efficiency and meet the runway length requirements for its users.

Given the just-in-time manufacturing processes used by automobile manufactures, the on-demand air cargo operations at the Airport play a critical role in the economy of Southeast Michigan.

6.0 NEXT STEPS

The following next steps and action items are necessary to implement the airport roles described in the previous section.

1. Authority staff will coordinate the findings and conclusions contained in this technical memorandum among airport stakeholders, FAA, and members of the Project Steering Committees associated with both ongoing Master Plan Updates for Detroit Metro and Willow Run airports.
2. Authority staff will seek Wayne County Airport Authority Board approval and adoption of the proposed airport roles.
3. Appropriate policies regarding tenants, leaseholds, and use of operating revenues and expenses will be identified to facilitate implementation of the roles moving forward.
4. Master Plan Updates for Detroit Metro and Willow Run airports, to be completed during CY 2016, will include appropriate recommendations on facilities needed to accommodate demand associated with the intended role and users of each airport, and will consider the Board-adopted policies described above.