

Willow Run Airport

Master Plan

Public Information Meeting



DETROIT METRO • WILLOW RUN
WAYNE COUNTY AIRPORT AUTHORITY

Welcome!

Please sign in and pick up handouts

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What is a Master Plan?

- **20 year infrastructure development plan**
- **Assess and determine facility needs**
- **Provides development options to address needs**
- **Provides a timeline and financial schedule for implementation**
- **Conducted in combination with Airport Layout Plan (ALP) update**
 - *Graphical depiction of existing and future airport development*
 - *Facilities must be shown on the ALP to be eligible for FAA funding*



Overview of the Master Plan

Status

Components

Ongoing

→ Public Involvement

- Community Advisory Committee (CAC)
- Technical Advisory Committee (TAC)
- Public information meetings



Completed

→ Data Collection / Inventory

- Airport facilities, services, and infrastructure

Pending FAA Approval

→ Forecasts of Aviation Demand

- 5-, 10-, and 20-year forecasts of aeronautical activity



Ongoing

→ Facility Needs

- Assess capacity of Airport to support forecasted demand

To be completed

→ Alternatives Analysis

- Options to meet facility needs

→ Environmental Overview / Land Use Analysis

- Identify environmental / surrounding land use conditions

→ Financial Analysis / Capital Improvement Plan

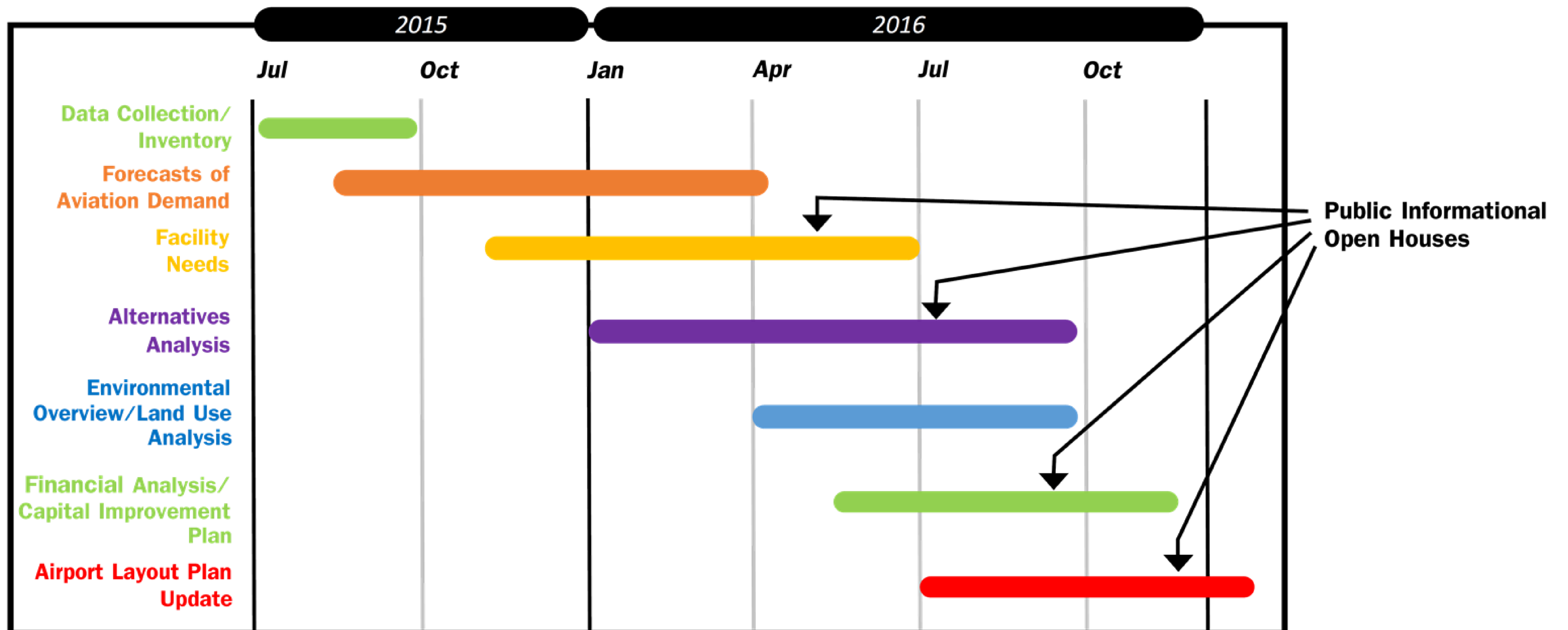
- Develop schedule and funding means

→ Airport Layout Plan Update

- Update drawing sheet set



Project Schedule



Public Outreach

✈️ **Community Advisory Committee (CAC)**

- *Comprised of neighborhood representatives, businesses, community groups, and other interested parties who facilitate communication between community and master plan project team*

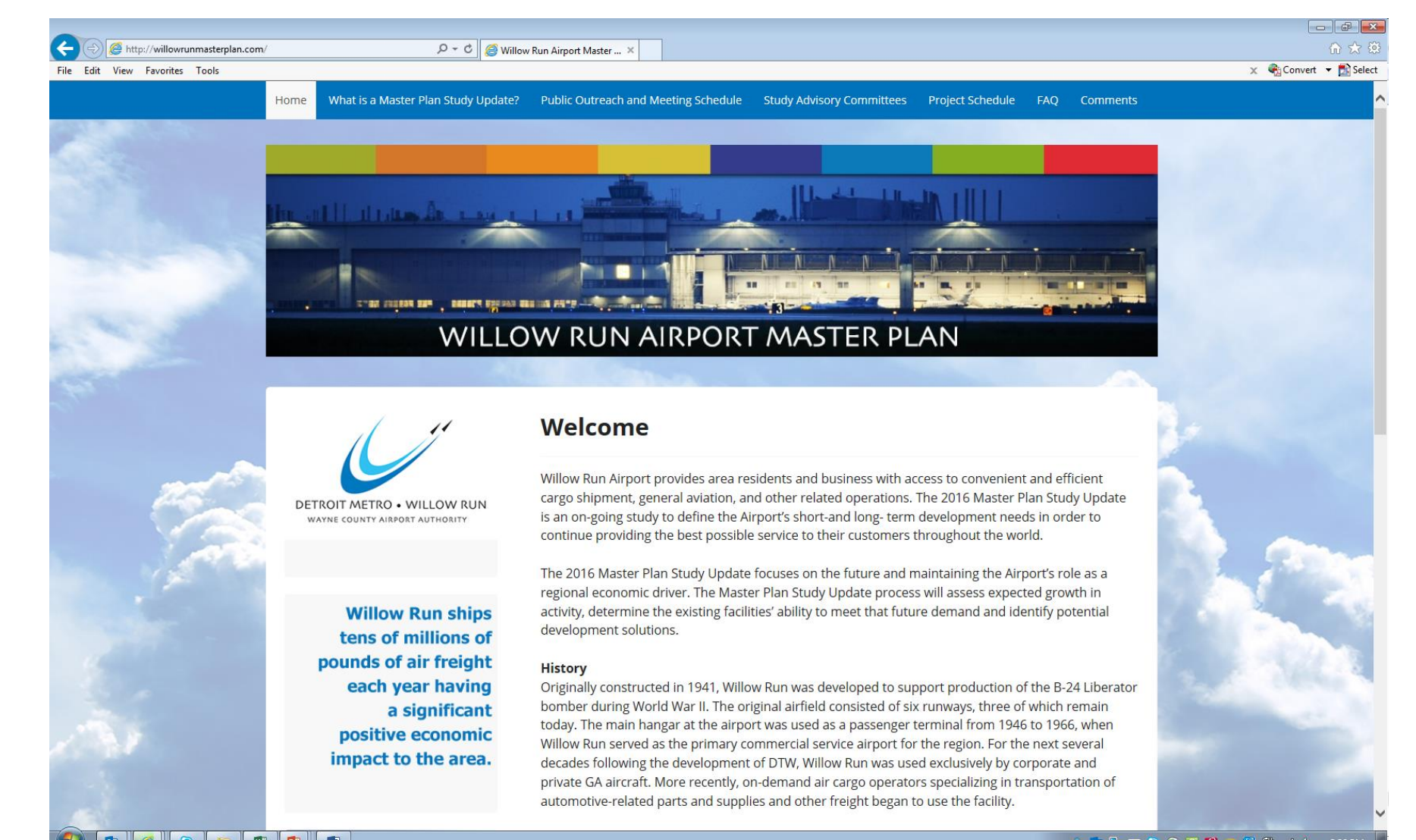
✈️ **Technical Advisory Committee (TAC)**

- *Comprised of technical aviation experts including cargo carriers, tenants, general aviation users, and federal/state aviation agencies*

✈️ **Public Information Meetings (PIM)**

✈️ **Project website**

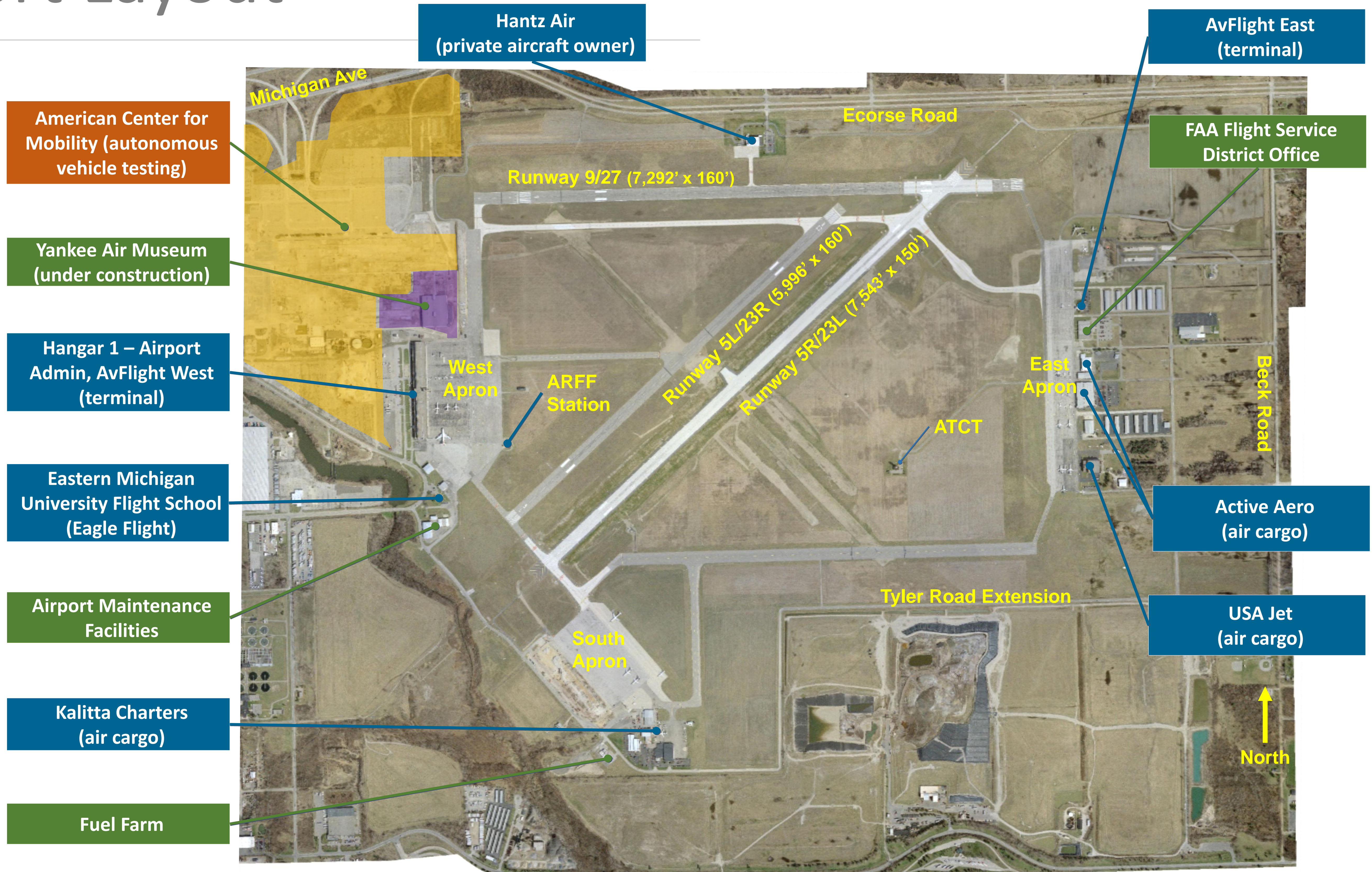
- www.willowrunmasterplan.com



Airport Layout

Key

- Airfield
- Landside
- Other



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Evolving Roles of the Willow Run Airport

→ Willow Run Airport continues to evolve to serve the needs of Southeast Michigan

■ *Bomber Production for World War II (1940s)*

- Almost 8,700 B-24 Liberators built
- Bomber plant employed 42,000 people



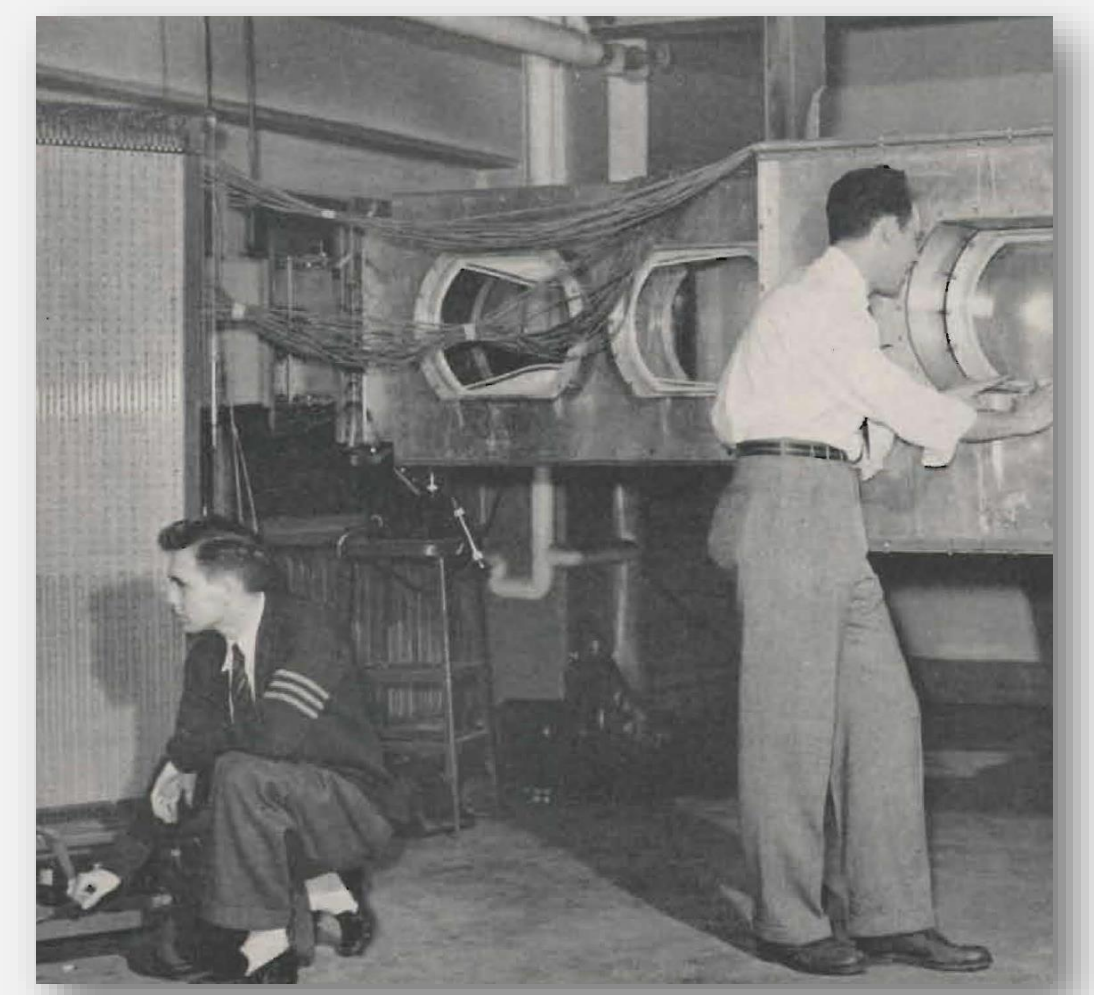
■ *Commercial Airline Service Airport (1947-1958)*

- Detroit's commercial airline service airport until 1958



■ *Aeronautical Research Center (1947-1970s)*

- Michigan Aeronautical Research Center (MARC), run by University of Michigan
- Rocket motor and propellant research for antiballistic missile defense systems



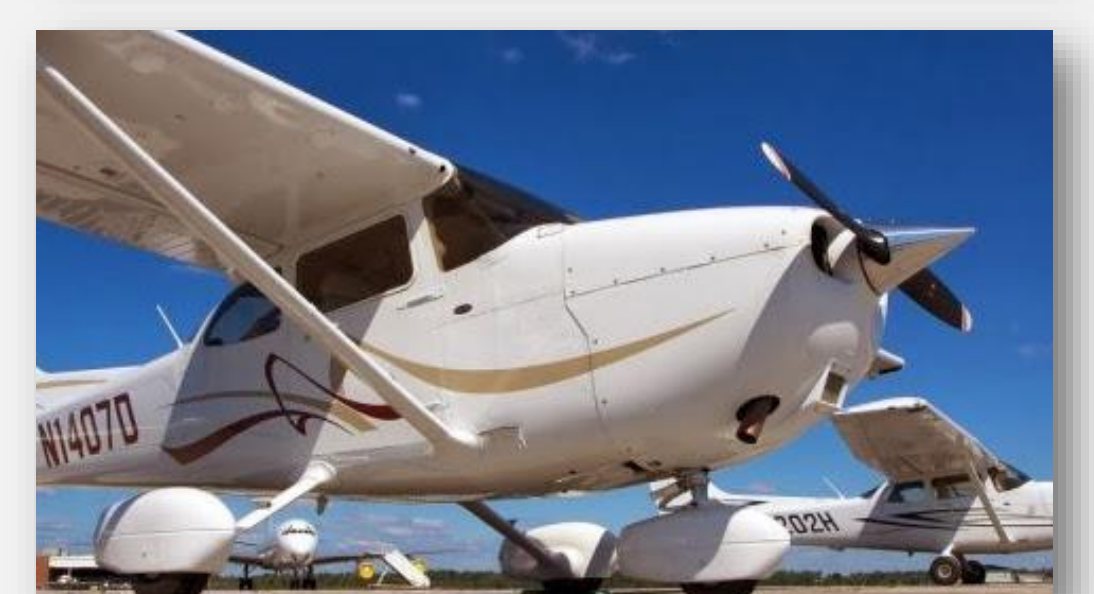
■ *Air Cargo Facility (1980s-1990s)*

- Became successful air cargo airport



■ *Today (2000s)*

- On-Demand Air Cargo
- Eastern Michigan University flight training
- Reliever to Detroit Metropolitan Wayne County Airport



Airport Roles

	Willow Run (YIP)	Detroit Metro (DTW)
Role	Reliever Airport	Commercial Airport
Users	 On-demand air cargo  General aviation flight training  Corporate and recreational general aviation  Aircraft maintenance	 Large hub passenger operations  Integrated logistics carriers  High-end corporate general aviation  Aircraft maintenance
Actions	Preserve land areas for: (1) Maintenance, Repair, and Overhaul (MRO) operators (2) Commercial development (3) Alternative aviation-related markets not yet realized	Seek opportunities to maximize revenue generation and allow DTW to serve as a catalyst for local and regional economic growth & development

Economic Impact of Willow Run Airport

- Generates both aeronautical and non-aeronautical related jobs
- Economic impact throughout Michigan
- Businesses are attracted to air cargo capabilities of Airport
- Continued capital improvements at Airport is vital to area economy
- Supports the \$10.2 billion economic impact of Detroit-Wayne County Metropolitan Airport

Activity	Direct Spending	Economic Impact	Income Impact	Jobs Impact
Cargo Transportation	\$22.3 million	\$44.4 million	\$14.4 million	306
Visitors	\$1.1 million	\$2.1 million	\$0.6 million	21
General Aviation	\$9.4 million	\$18.7 million	\$6.1 million	129
Education	\$1.4 million	\$3.1 million	\$1.1 million	37
Airport Enhancement (2014)*	\$25.0 million	\$54.9 million	\$18.2 million	457
TOTAL ANNUAL IMPACTS	\$59.4 million	\$123.1 million	\$40.5 million	950

Notes:

Due to rounding, stated numbers may not add to stated totals

* Airport Enhancement dollar amounts represent infrastructure investment made in 2014 and will vary by year

Source: *The Economic Impact of Willow Run Airport 2014*, The University of Michigan – Dearborn College of Business (2014)

→ Example of Economic Impact Spending

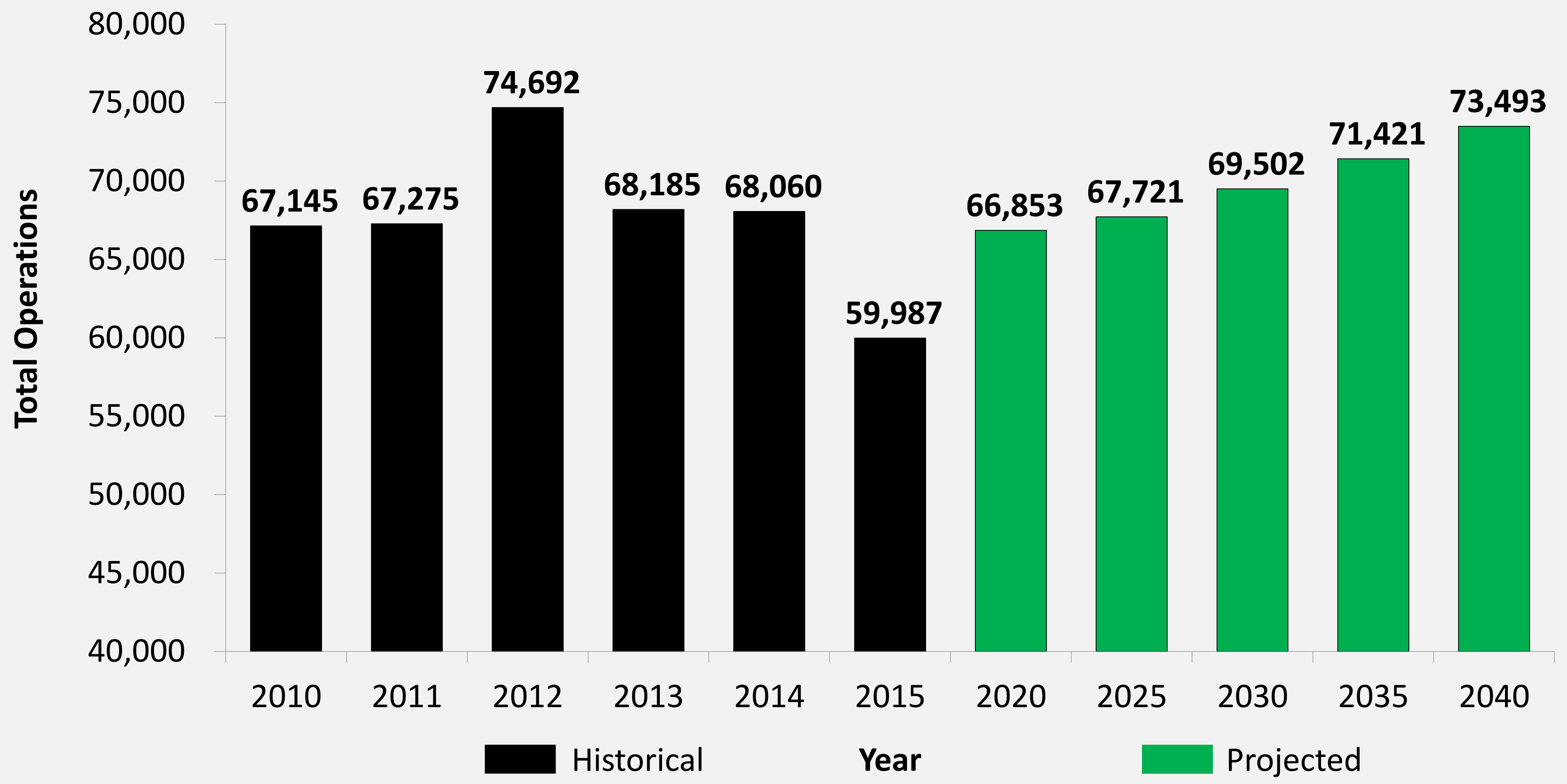


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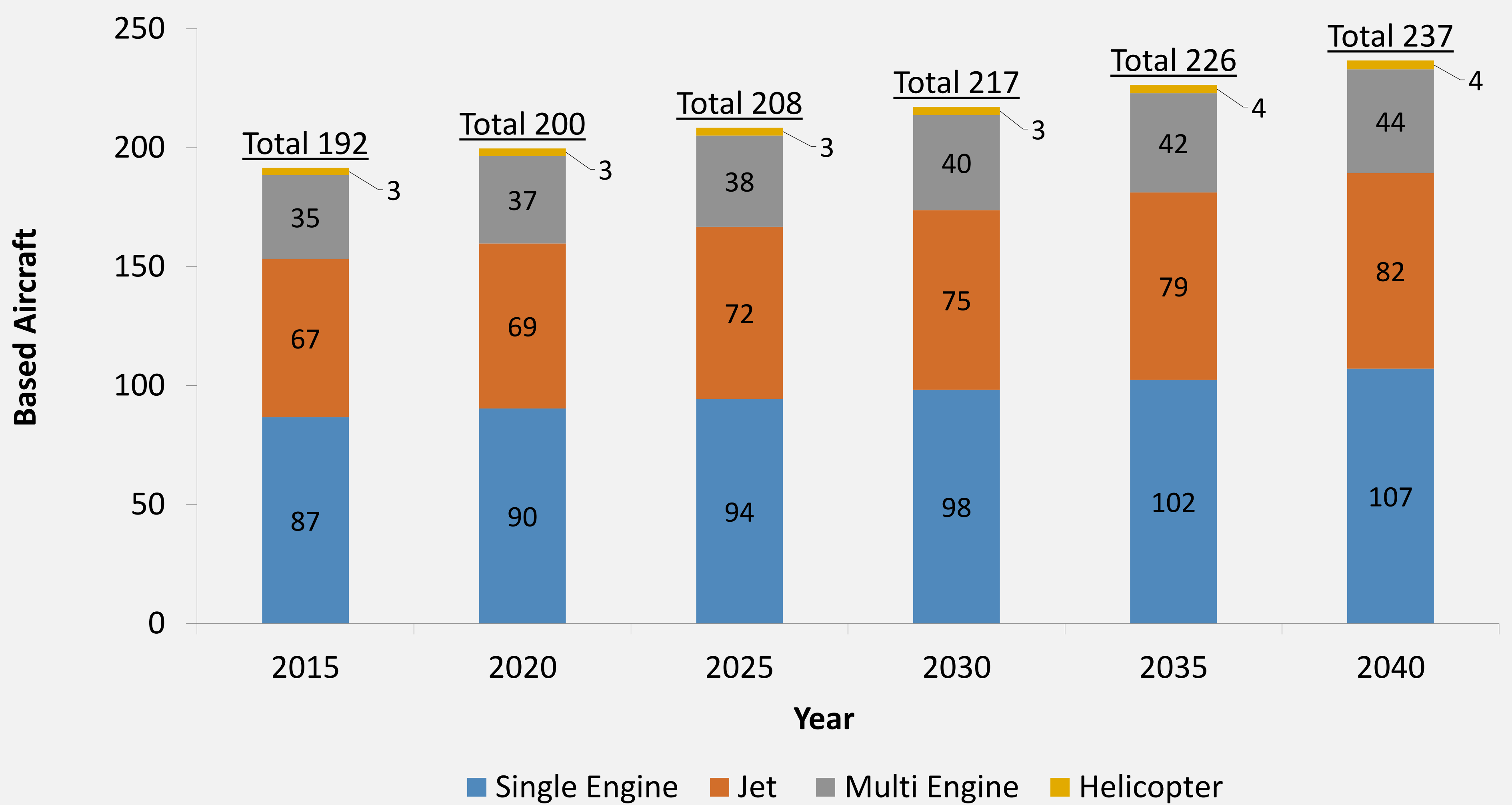
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Forecasts of Aviation Demand (pending FAA approval)

✈ Aircraft Operations (total takeoffs and landings)

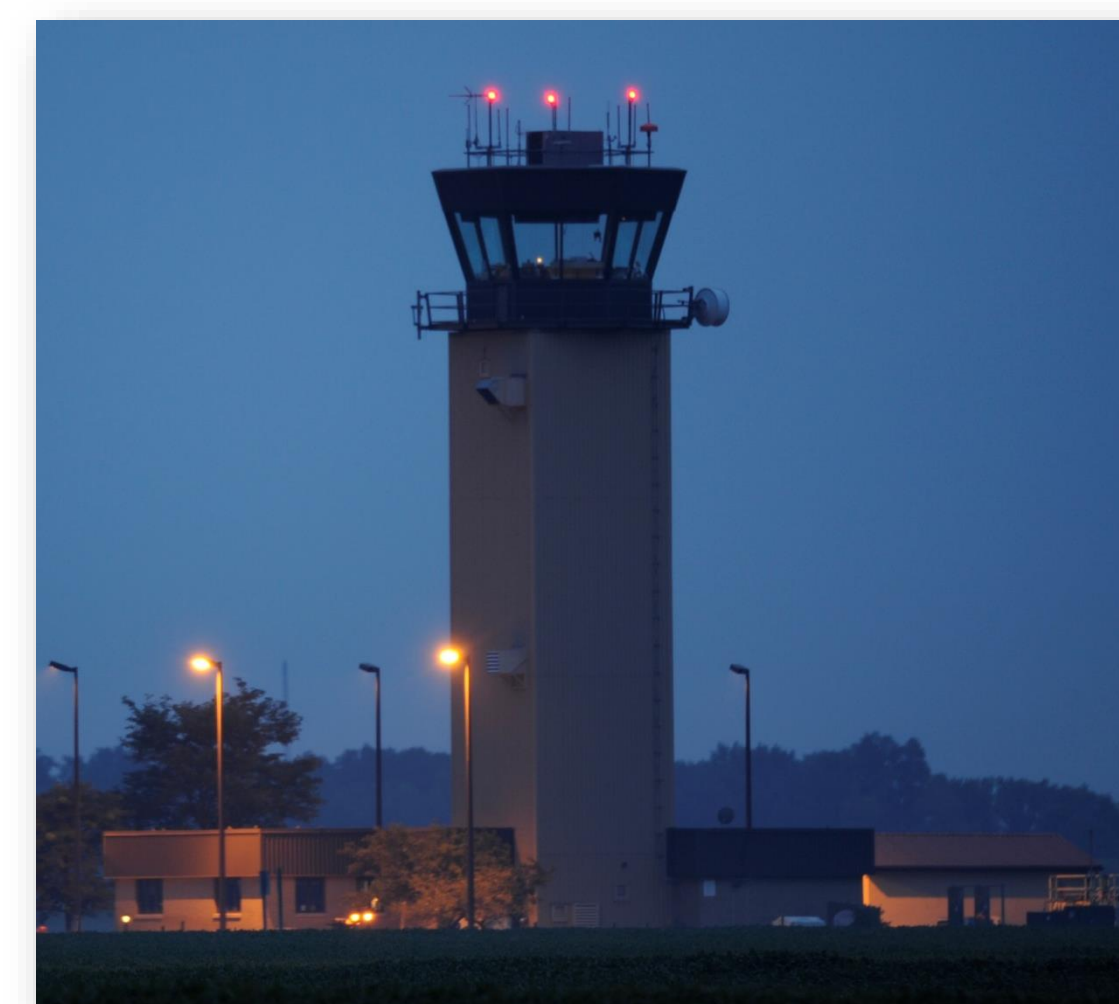


✈ Based Aircraft



Forecasting Methodology

- Forecast levels correlated with the short, medium, and long range planning periods (5, 10, 20 + years)
- Three forecast methods were utilized:
 - *Trend Analysis*
 - *Market Share Analysis*
 - *Regression Analysis*
- Planning horizon – 20 years
- Comparison of method results to understand the range of projected activity
- All three methods resulted in similar projections



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Destinations & Aircraft Range



Maximum range available with full payload from current runway length

Current runway length (7,543 feet)

Hot day runway length need

Full payload

Red dots identify top 18 destinations over 1,000 nm that were flown non-stop from YIP in 2014

Current Fleet Mix



→ Current fleet mix is anticipated to continue to operate through the planning period

→ Potential replacement/supplemental cargo aircraft:

- 737-800, 757-200, 767-300

Destinations & Range

→ Maximum Allowable Takeoff Payload at YIP

Aircraft Type	Engines	Max Allowable Takeoff Weight (LB)	Percent of Max Takeoff Weight Allowed	Haul Length Available with Full Payload (NM)
Current Runway Length = 7,543 feet				
DC-9-30	JT8D-7	103,000	95%	600
MD-83	JT8D-219	150,000	94%	1,200
737-800	CFM56-7B24	157,000	90%	800
727-200	JT8D-17	180,000	91%	1,000
757-200	PW2037	234,000	92%	1,300
767-300	CF6-80C2B7F	367,000	89%	1,700

Notes: Runway Length Required on Hot Day, YIP Elevation = 716 ft. MSL

Source: Manufacturer Airport Planning Manuals

→ Top 18 Destinations over 1,000 Nautical Miles

Rank	Airport	State/Country	Longest Runway at Airport (ft)	Nautical Miles/Flight	YIP Arrivals	YIP Departures	Total Ops
1	LRD - Laredo	TX	8,743	1,175	261	133	394
2	ELP - El Paso	TX	12,020	1,254	111	105	216
3	SAT - San Antonio	TX	8,505	1,049	27	21	48
4	MMIO - Saltillo	Mexico	9,506	1,306	6	38	44
5	DRT - Del Rio	TX	6,300	1,141	25	14	39
6	BRO - Brownsville	TX	7,399	1,195	33	5	38
7	SDL - Scottsdale	AZ	8,249	1,436	14	10	24
8	VNY - Van Nuys	CA	8,001	1,702	10	13	23
9	LAS - Las Vegas	NV	14,512	1,506	11	11	22
10	MMLO - Leon/Guanajuato	Mexico	11,480	1,577	4	14	18
11	MMHO - Hermosillo	Mexico	7,546	1,544	5	12	17
12	MRY - Monterey	CA	7,175	1,791	11	6	17
13	BZN - Bozeman	MT	8,994	1,204	8	8	16
14	07FA - Key Largo	FL	4,451	1,027	7	7	14
15	BFI - Seattle	WA	10,000	1,660	11	3	14
16	MMQT - Queretaro	Mexico	11,482	1,549	5	9	14
17	MMTO - Toluca	Mexico	13,780	1,412	2	12	14
18	OAK - Oakland	CA	10,520	1,782	8	6	14
				All Others	198	157	355
			Total (Greater than 1,000 NM haul length)		757	584	1,341

Source: FAA Traffic Flow Management System Counts (TFMSC)

→ Runway Length for 1,250 Nautical Mile Flight at Maximum Weight

Aircraft Type	Engines	Takeoff Weight (LB)	Runway Length Required (FT)
Stage Length 1,250 NM			
DC9-30	JT8D-7	108,000	9,600
B737-800	CFM56-7B24	162,500	8,300
B727-200	JT8D-17	185,000	8,300
MD83	JT8D-219	151,000	8,000
B757-200	PW2037	233,000	7,600
B767-300	CF6-80C2B7F	355,000	7,000




Notes: Runway Length Required on Hot Day, YIP Elev = 716

Source: Manufacturer Airport Planning Manuals

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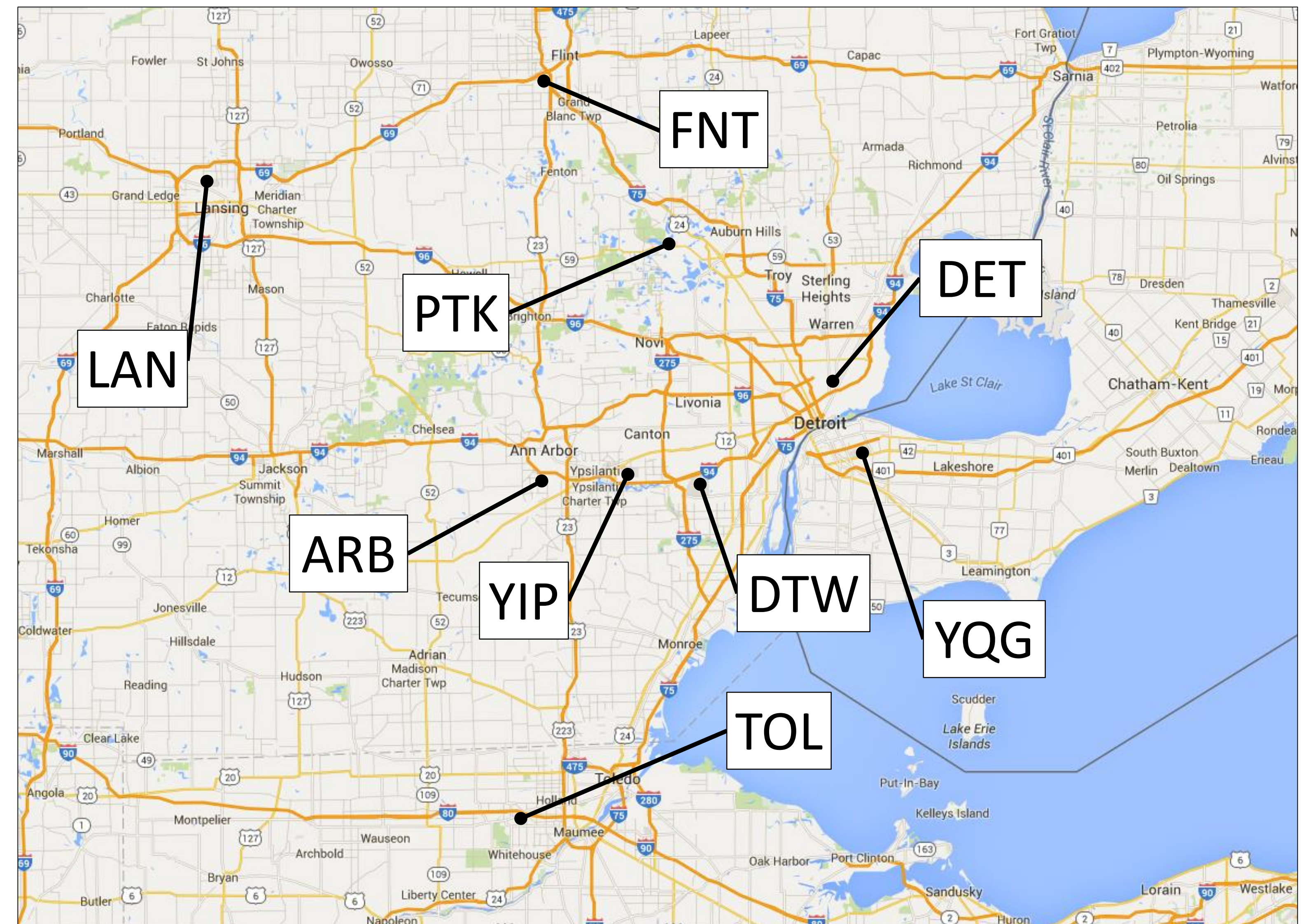
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Opportunities / Challenges

	Opportunities	Challenges
Airfield Considerations 	<ul style="list-style-type: none"> • Taxiway improvements • Reduce operating costs through right-sized facilities • Optimize runway configuration for economic growth 	<ul style="list-style-type: none"> • Existing runway length • Design of taxiway system • Poor condition of pavements and utilities • Approach minimums and airspace constraints • Additional financial investment required
Landside/ Commercial Development Considerations 	<ul style="list-style-type: none"> • Available land • Regional demand for aviation • Location and access to highway infrastructure • Regional focus on logistics and development 	<ul style="list-style-type: none"> • Design of taxiway system limits airside access • Infrastructure age • Brownfield site • Additional financial investment required
Other Considerations 	<ul style="list-style-type: none"> • Demand for pilots • DTW reliever airport • American Center for Mobility vehicle testing facility proposed adjacent to airport 	<ul style="list-style-type: none"> • Available funding sources • Competition from DTW for WCAA resources • Declining aviation trends (particularly in recreational piston aircraft)

Other Significant Airports in Region

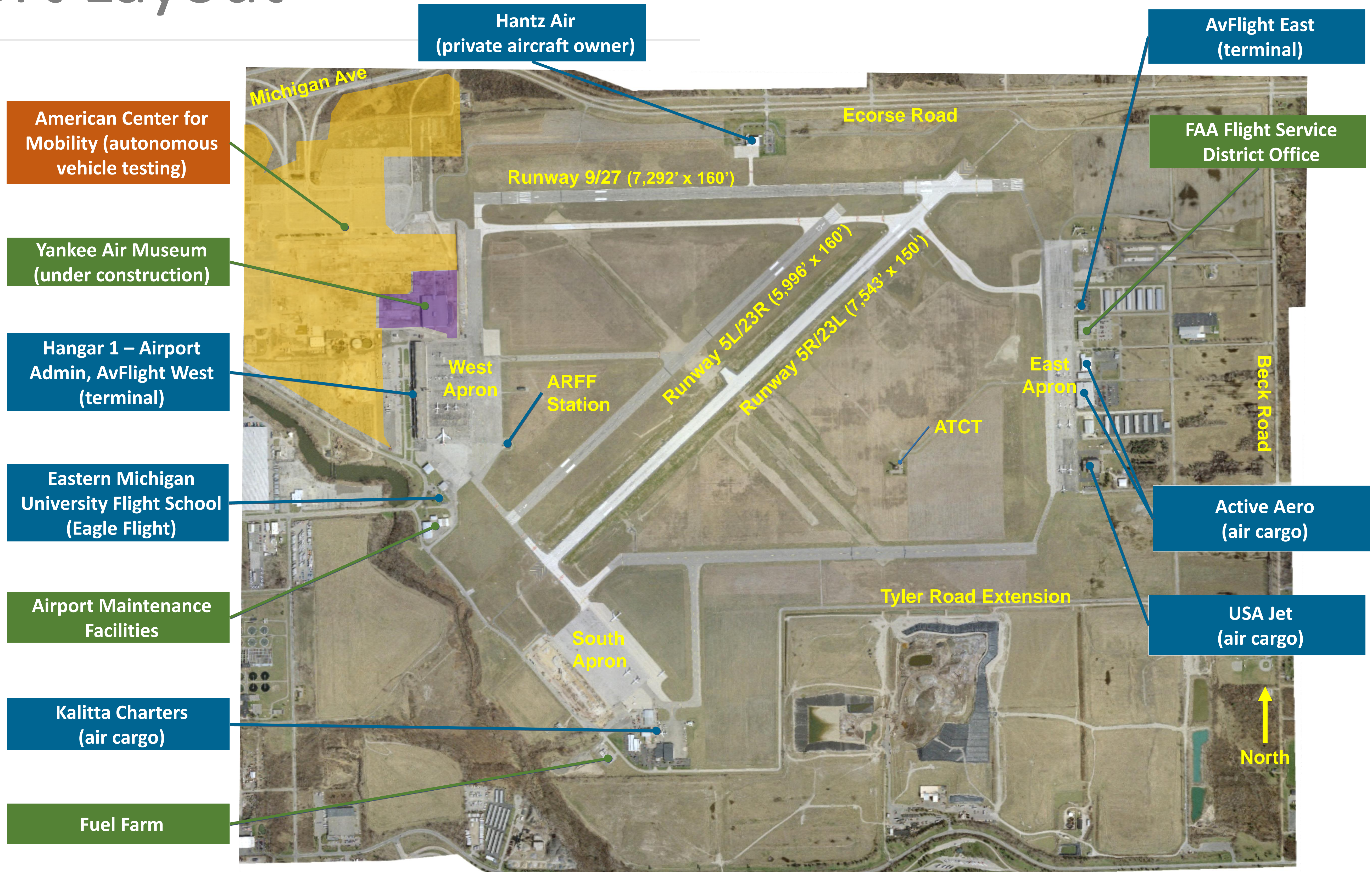
- ✈ **DTW – Romulus**
Detroit Metropolitan Wayne County Airport
- ✈ **ARB – Ann Arbor**
Ann Arbor Municipal Airport
- ✈ **DET – Detroit**
Coleman A. Young International Airport
- ✈ **PTK – Pontiac**
Oakland County International Airport
- ✈ **TOL – Toledo**
Toledo Express Airport
- ✈ **YQG – Windsor**
Windsor International Airport
- ✈ **LAN – Lansing**
Capital Region International Airport
- ✈ **FNT – Flint**
Bishop International Airport



Airport Layout

Key

- Airfield
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- Other



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Goals of the Airport

→ **Maintain safety**

- *Eliminate design standard hot spots and resolve modification of standards*

→ **Improve the financial sustainability of the Willow Run Airport**

- *Reduce operating costs through right-sized facilities and prioritized capital investment*

→ **Optimize the airfield to accommodate the needs of existing and future users**

- *Maximize airfield efficiencies and capacity*
- *Rehabilitate and improve failing infrastructure*
- *Accommodate needs of existing and future users with appropriate runway length*

→ **Support the Airport's role and economic impact within the region**

- *Accommodate and support the local and regional demand for air freight; manufacturing, maintenance, repair, and overhaul (MMRO); corporate aviation; and general aviation*
- *Support opportunities for job creation and local development*

→ **Minimize impacts to quality of life on surrounding community**

→ **Assure compliance with master planning requirements and regulations**

→ **Engage and collaborate with users and regional stakeholders**

Preliminary Facility Needs

Key

- Airfield
- Landside
- Other

Existing infrastructure in poor condition

- Runway
- Taxiways
- Aprons
- Buildings
- Roads
- Utilities

Crosswind runway recommended for light general aviation traffic

Possible plan for add'l runway length on either 5R/23L or 9/27

Improve or replace fire station

Improve maintenance facility

Parallel runway not needed for capacity, could be maintained for traffic separation

Improve approach minimums

Parallel taxiway to increase capacity and safety

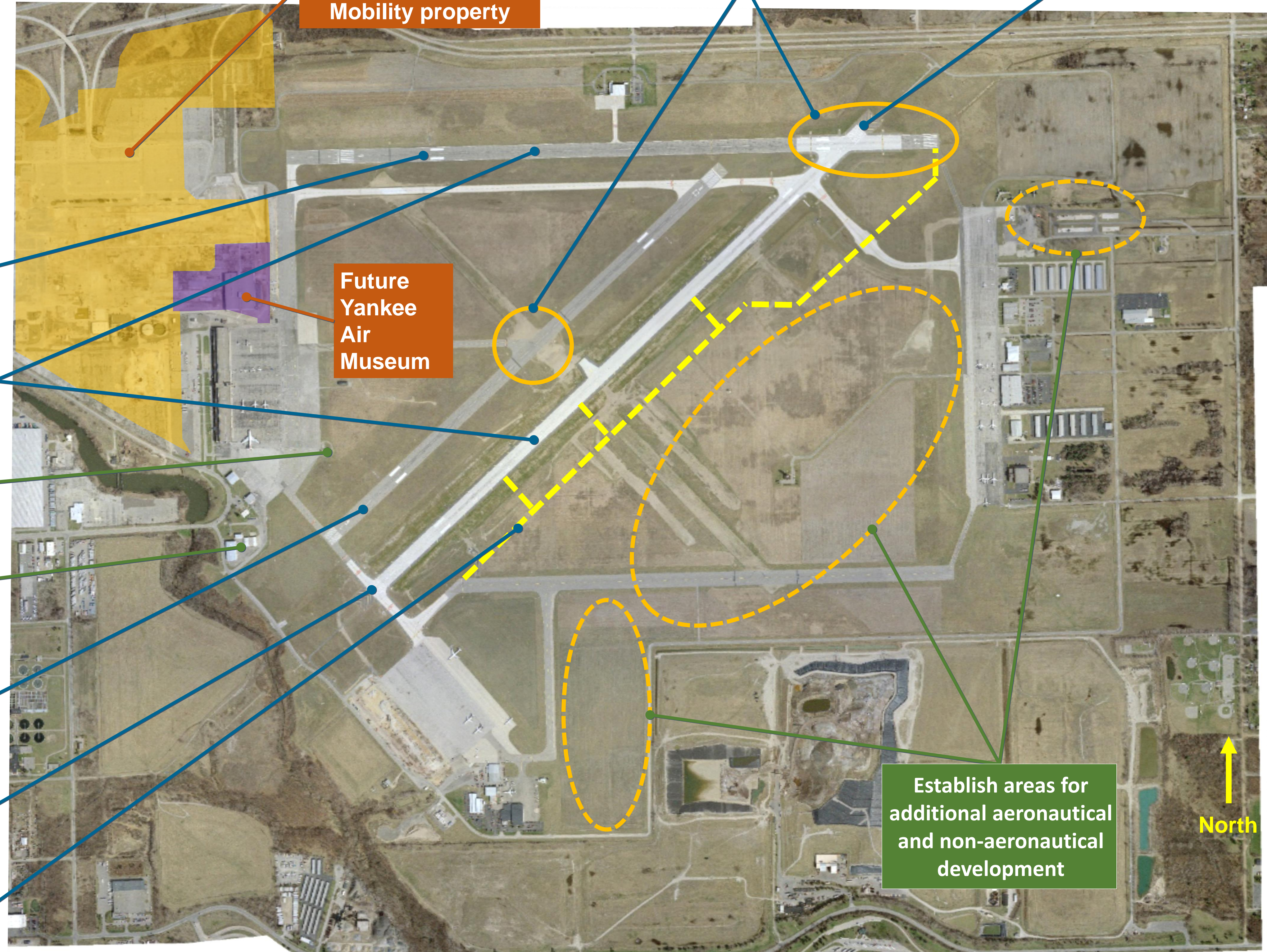
Development of the American Center for Mobility property

Future Yankee Air Museum

Correct airfield hot spots

Improve approach minimums

Establish areas for additional aeronautical and non-aeronautical development



Preliminary Facility Needs

→ Airfield

- *Possible plan for additional runway length on either Runway 5R/23L or Runway 9/27*
- *Crosswind runway recommended for light general aviation traffic*
- *Parallel taxiway to Runway 5R/23L to increase capacity and safety*
- *Improve approach minimums*
- *Correct airfield hot spots*

→ Landside

- *Improve maintenance facility*
- *Improve or replace fire station*
- *Establish areas for additional aeronautical and non-aeronautical development*

→ Other Considerations

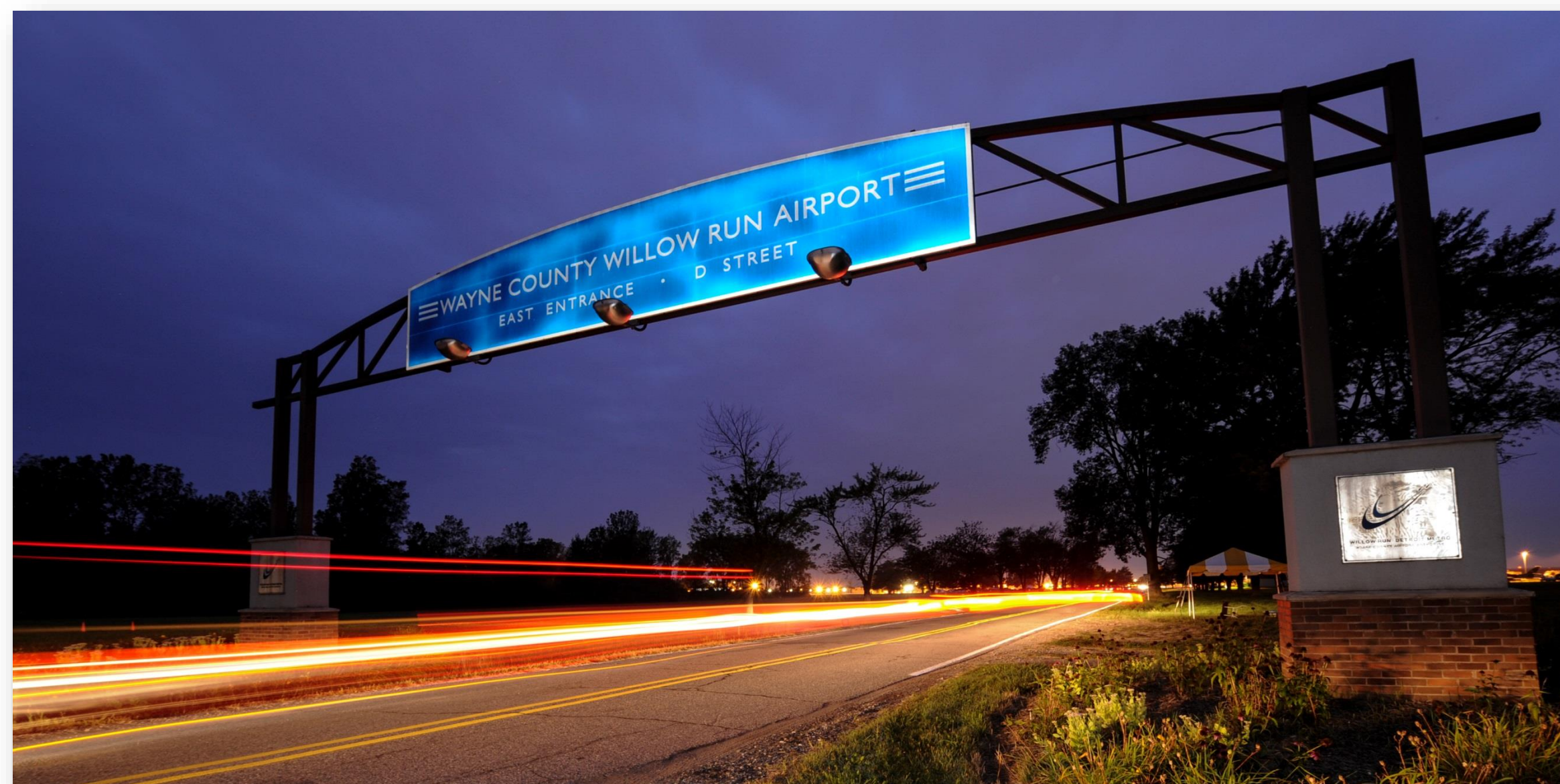
- *Future Yankee Air Museum*
- *Development of the American Center for Mobility*

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Next Project Steps

- **Finalize facility needs based on public comments**
- **Develop and analyze alternatives**
- **Present alternatives for public review at next public outreach meeting**
 - *Meeting tentatively planned for July 2016*
 - *Date, time, and location details will be posted on project website at: www.willowrunmasterplan.com as date draws near*
 - *Please leave your e-mail address at the sign-in table to be notified of meeting details when they become available*



Comments?

Please share with us your thoughts,
comments, ideas, or other suggestions
about the Willow Run Airport