Appendix A – Environmental Overview

RICKENBACKER
INTERNATIONAL AIRPORT

Master Plan

A.0 Appendix A – Environmental Overview

A.1 Introduction and Background

This environmental review addresses existing natural and man-made environmental conditions at LCK and is intended to help identify relevant environmental issues that should be considered during preparation of the proposed Study.

All resource impact categories contained in FAA Orders 1050.1F Environmental Impacts: Policies and Procedures Desk Reference (FAA, 2015) and 5050.4B, National Environmental Policy Act (NEPA) Implementing Instructions for Airport Actions (FAA, 2006) will be addressed in the following sections.

A.2 Air Quality

Environmental regulations associated with air quality are governed by the Clean Air Act (CAA) and NEPA. The United States (US) Environmental Protection Agency (EPA) has established National Ambient Air Quality Standards (NAAQS) based on health risks for six pollutants: carbon monoxide (CO), nitrogen dioxide (NO2), sulfur dioxide (SO2), lead (Pb), ozone (O3), and two sizes of particulate matter (PM) – 10 micrometers or less in diameter (PM10) and 2.5 micrometers in diameter (PM2.5).

An area with ambient air concentrations exceeding the NAAQS for a criteria pollutant is said to be a nonattainment area for the pollutant's NAAQS. An area where ambient concentrations are below the NAAQS is considered an attainment area. USEPA requires that areas designated as nonattainment demonstrate how they will attain the NAAQS by an established deadline.

Where air pollutant concentrations in a state meet the NAAQS, these areas are designated as being in "attainment." Areas that do not meet these national standards are designated as "nonattainment" areas. Major sources of air pollutant emissions are subject to new source review requirements that are more restrictive in areas that are designated nonattainment. A major source is defined as a facility that has the potential to emit over 100 tons of air pollutants per year in a nonattainment area or greater than 250 tons per year in an attainment area. Area sources that emit less than major source thresholds are not subject to nonattainment new source review requirements (OEPA, 2016).

In Ohio, the Ohio Environmental Protection Agency (Ohio EPA) has delegated authority for enforcing components of the Clean Air Act. Ohio, like other states, is required to enact an enforceable plan, called a State Implementation Plan (SIP), which outlines emission reduction strategies to achieve and maintain the air quality standards. The SIP serves as the framework for Ohio EPA to enforce the new source review requirements, as well as permitting requirements for stationary sources of air pollutant emissions.

According to the OEPA – Division of Air Pollution Control, the study area is reaching full attainment associated with the primary air NAAQS standards with the exception of the 8-hour

Ozone standard. This information, shown in **Table A-1 Ohio National Air Quality Standards (NAAQS) – Attainment Status**, was dated July 20, 2012. At the time of the preparation of this Master Plan document real time data was not available. However, it can be anticipated that this standard may still be unattainable due to the current and future urban development.

On October 1, 2015, EPA strengthened the NAAQS for ground-level ozone. Based upon the revised 2015 ozone standard, Franklin County had a nonattainment status in 2018 and 2019.

Table A-1 Ohio National Air Quality Standards (NAAQS) – Attainment Status*

Pollutant	Primary Standards		Secondary Standards	Ohio Attainment Status
	Level	Averaging Time		
Carbon monoxide	9 ppm	Eight-hour	None	Full Attainment
	35 ppm	One-hour	None	Full Attainment
Lead	0.15 µg/m^3	Rolling three-month Average	Same	Full Attainment
Nitrogen dioxide	53 ppb	Annual mean	Same	Full Attainment
	100 ppb	one-hour	None	Full Attainment
Particulate Matter (PM_{10})	150 µg/m^3	24-hour	Same	Full Attainment
Particulate Matter ($PM_{2.5}$)	12.0 µg/m^3 (2012 standard)	Annual mean	None	Nonattainment – Cuyahoga & Lorain Co.
	None	Annual mean	15.0 µg/m^3 (1997 standard)	Full Attainment
	35 µg/m^3 (2006 standard)	24-hour	Same	Full Attainment
Ozone	0.070 ppm (2015 standard)	Eight-hour	Same	Nonattainment – Lorain, Cuyahoga, Lake, Geauga, Medina, Summit, Portage, Delaware, Franklin, Licking, Fairfield, Butler, Warren, Hamilton, Clermont Co.
	0.075 ppm (2008 std)	Eight-hour	Same	Full Attainment
	0.08 ppm (1997 std)	Eight-hour	Same	Full Attainment
Sulfur dioxide	75 ppb	One-hour	None	Nonattainment – portions of Lake, Cuyahoga, Brooke, Washington, and Morgan Co.
	None	Three-hour	0.5 ppm	Full Attainment

Source: *Table taken from OEPA – Division Air Pollution Control NAAQS internet site, 2019.

A.2.1 Emission Sources

Emission sources at LCK that contribute to air quality include aircraft, ground support equipment, auxiliary power units, emergency generators, trash incinerators, roadways throughout the study area, parking facilities, and other miscellaneous stationary sources.

Assuming future development will increase regulated emission sources, a detailed inventory of mobile and stationary equipment contributing to air quality, including construction equipment, is recommended to use as a baseline to potential air quality impacts from future development activities.

A.3 Biological Resources (Fish, Wildlife and Plants)

Identification and descriptions of biotic communities were determined from review of aerial photographs, land use data from the United States Geological Survey (USGS), wetland inventories prepared by the U.S. Fish and Wildlife Service (FWS), and consultant prepared wetland delineation reports. General land cover types and habitat types are depicted on **Figure A-1 Land Cover and Land Use Map**.

The following federal and state regulations affect potential biotic resources located within the study area.

A.3.1 Federal Endangered Species Act

The federal Endangered Species Act (ESA) protects federally-listed plant and animal species. Impacts to listed species (endangered or threatened) resulting from the implementation of a project would require the responsible lead agency or individual to formally consult with the United States Fish and Wildlife Service (USFWS) to determine the extent of the impact to a particular species. If the USFWS determines that impacts to a protected species would likely occur, alternatives and measures to avoid or reduce impacts must be identified. USFWS also regulates activities conducted in federal critical habitat, which are areas that support primary habitat for listed species.

A.3.2 Migratory Bird Treaty Act of 1918

The Migratory Bird Treaty Act (MBTA) of 1918 protects all migratory birds, including their eggs, nests, and feathers. The MBTA was originally drafted to put an end to the commercial trade in bird feathers, popular in the late 19th century. The MBTA is enforced by the USFWS and potential impacts to species protected under the MBTA are evaluated by the USFWS in consultation with other federal agencies.

A.3.3 Ohio DNR – ORC 1518 & 1531: Endangered Species

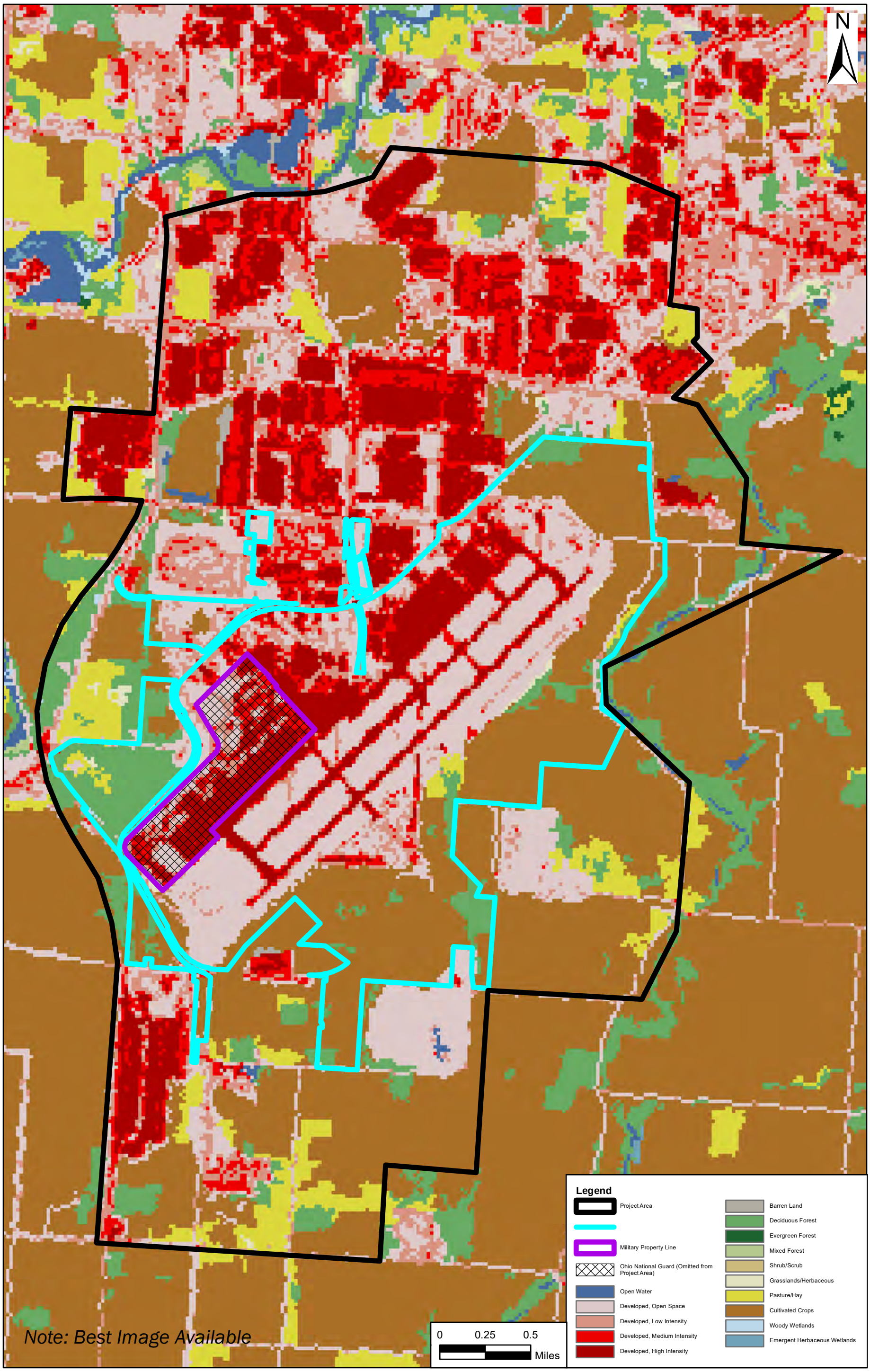
These Ohio statutes protect both endangered plants and animals as defined by the State of Ohio as well as those species listed on the federal ESA list. Listed species may not match those listed by the federal government.

Table A-2 Federally & State Listed Species Occurring in Franklin & Pickaway Counties below shows both federally and state listed species occurring in Franklin and Pickaway counties. The table summarizes threatened and endangered species associated with the types of habitat that may be present within the study area.

Table A-2 Federally & State Listed Species Occurring in Franklin & Pickaway Counties

Species	Federal/State Listed	Status	Counties	Habitat
Mammals				
Indiana bat (*Myotis sodalist)*	Federal/State	Endangered	Franklin & Pickaway	Hibernacula = Caves and mines; Maternity and foraging habitat = small stream corridors with well-developed riparian woods; upland forests
Northern long-eared bat (*Myotis septentrionalis*)	Federal	Threatened	Franklin & Pickaway	Hibernates in caves and mines – swarming in surrounding wooded areas in autumn. During late spring and summer roosts and forages in upland forests
Fish				
Scioto madtom (*Noturus trautmani*)	Federal/State	Endangered	Franklin & Pickaway	Stream riffles of moderate flow over sandy gravel bottom
Mussels				
Clubshell (*Pleurobema clava*)	Federal/State	Endangered	Franklin & Pickaway	Found in coarse sand and gravel areas of runs and riffles within streams and small rivers
Northern riffleshell (*Epioblasma torulosa rangiana*)	Federal/State	Endangered	Franklin & Pickaway	Large streams and small rivers in firm sand of riffle areas
Rabbitsfoot (*Quadrula cylindrical cylindrical*)	Federal/State	Threatened	Franklin & Pickaway	Fish Creek, Ohio River, Muskingum River, Walhonding River, Big Darby Creek, Little Darby Creek
Rayed bean (*Villosa fabalis*)	Federal/State	Endangered	Franklin & Pickaway	Smaller, headwater creeks, but they are sometimes found in large rivers, and Lake Erie
Snuffbox (*Epioblasma triquetra*)	Federal/State	Endangered	Franklin & Pickaway	Small to medium-sized creeks in areas with a swift current and some larger rivers, and Lake Erie
Plants				
Running Buffalo Clover (Trifolium stoloniferum)	Federal/State	Endangered	Franklin & Pickaway	Disturbed bottomland meadows; disturbed sites that have shade during part of each day

Source: *Table taken from excerpts from U.S. Fish and Wildlife Service Endangered Species list for Ohio internet site, 2019.



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A.3.4 Typical Land Use

The dominant habitat types consist of developed areas within the fenced airport facility, including buildings, parking lots, airside aprons and runways, and mowed grass. Outside the fence there are areas to the south, southeast, and southwest is agricultural crop production. Additional land uses within the project area include roads, a landfill, previously developed and abandoned lands, and newly developed industrial and commercial properties. The majority of the commercial and industrial development is concentrated in the northern portion of the project area. Low density residential development is located in the southern portion of the project area. Undeveloped parcels consist of old fields, scrub-shrub and immature woodlands. A small portion of the project area consists of deciduous oak-maple upland forest, oak-maple wetland forest, emergent wetland, and scrub-shrub wetland.

Several wetlands, streams and ditches are located throughout the project area, all of which contribute to habitat diversity. These will be discussed in the subsequent Water Resources sections in this report. In addition, several high-quality habitat areas throughout the project area, depicted in **Figure A-6 Surface Water Resources Map**, have been set aside for preservation or avoided during development activities. These areas, which include wetlands, stream buffers, and woodlands, contribute to the wildlife and habitat diversity of the area.

A.3.5 Wildlife Hazard Assessment

The FAA requires airport sponsors to maintain a safe operating environment which may include conducting a Wildlife Hazard Assessment (WHA) and preparing a Wildlife Hazard Management Plan (WHMP) when there has been a wildlife strike. The WHMP identifies the specific actions the airport will take to mitigate the risk of wildlife strikes on or near the airport (FAA, 2016).

LCK is operating under an FAA-approved Wildlife Hazard Management Plan. CRAA personnel from Operations and Airfield Maintenance are trained and provide the "front line" wildlife mitigation and strike reporting. Additionally, the CRAA has a "Master Service Agreement" with the USDA to provide additional assistance if needed. The USDA completed a Wildlife Hazard Assessment for LCK, and the final report was delivered in July 2018.

A.4 Climate Change and Greenhouse Gases

Greenhouse gases (GHG) are gases that trap heat in the earth's atmosphere. GHGs such as water vapor, carbon dioxide (CO2), methane (CH4), nitrous oxide (NOx) and ozone (O3) are both natural occurring and man-made. Research has shown that there is a direct link between fuel combustion and GHG emissions (USEPA, 2017). Therefore, at an airport, vehicles and machinery requiring fuel are the primary sources of GHG generation. Aircraft jet engines, as well as other combustion engines, produce CO2, water vapor, NOx, CO, sulfur oxides, volatile organic compounds (VOCs) and particulates. As such, any increase in air traffic (cargo or passenger), intermodal ground shipping (truck or rail), and vehicular ground traffic within the project area could affect GHG emissions.

The Intergovernmental Panel on Climate Change (IPCC) estimates that aviation accounts for 4.1% of global transportation Green House Gas (GHG) emissions. Scientific research is ongoing to better understand climate change, including any incremental atmospheric impacts that may be caused by aviation. Currently there are many uncertainties in predicting the timing, magnitude, and location of aviation's climate impacts.

A.4.1 ACRP Report 147

The Airport Cooperative Research Program (ACRP) Report 147: Climate Change Adaptation Planning: Risk Assessment for Airports provided a tool based on climate data compiled by the IPCC. The tool illustrates projected changes in climate vectors and associated confidence in those projections for airports in 2030 and 2060. **Table A-3 Climate Projections for LCK** illustrates changes in climate at LCK identified by the ACRP Report 147 Tool for climate vectors where the ACRP Report 147 tool indicated a high confidence in the projections.

Table A-3 Climate Projections for LCK

Climate Vector	Baseline 2013	Projected 2030	Projected 2060
Hot Days Annual number of days with a high temperature above 90°F	8.9	20.1	36.8
Very Hot Days Annual number of days with a high temperature above 100°F	0.1	2.9	8.2
Freezing Days Annual number of days with a high temperature at or below 32°F	24.6	19.7	12.5
Frost Days Annual number of days with a low temperature at or below 32°F	96.4	86.6	71.9
Hot Nights Annual number of days with a low temperature above 68°F	32.7	48	70.9
Humid Days Annual number of days with average dew point temperature above 65°F	44.1	54.3	69.6
Cooling Days Annual number of days with average temperature at or above 68°F	127.4	140.7	160.6
Heating Days Annual number of days with average temperature at or below 62°F	196.8	186.9	172.2
Cooling degree days Annual sum of daily temp-65	527.7	696	948.5
Heating degree days Annual sum of 65-daily temp	2893.6	2679.4	2358

Source: ACRP Report 147: Climate Change Adaptation Planning: Risk Assessment for Airports Tool; Dewberry; Gresham Smith; GCR Inc.; Richard Marchi, 2015

The ACRP Report 147 Tool also identifies potential impacts to airport infrastructure and operations. **Table A-4 Potential Climate Change Impacts and Adaptation Options for Consideration at LCK** illustrates potential climate change impacts that were identified by the ACRP Report Tool as high risk based on the infrastructure and operations at LCK, the magnitude of change in climate indicated in **Table A-3 Climate Projections for LCK**, and the confidence in the climate change projections. The table also presents potential adaptation options for consideration. While many of these impacts may not be worth considering at the

master-planning level, including a review of potential climate changes and consideration of potential impacts, they should be included in the NEPA process and during design development for individual projects.

Table A-4 Potential Climate Change Impacts and Adaptation Options for Consideration at LCK

Climate Vectors	Impact	Potential Adaptation Options
Increase in number of humid days and increase in number of days with heavy rain.	Building Moisture Damage; Mold	• Schedule More Frequent Inspections • Improve Building Envelope (Fenestration, Roofing Materials, Cladding Material, Vapor Barriers / Retarders, etc.)
Increase in number of hot days, hot nights and humid days.	Increased HVAC Demand and Duration	• Design for Incremental Change (e.g. Modular Systems) • Perform Energy Modeling • Improve Building Envelope • Replace Equipment According to Climate Zone
Increase in number of hot days.	Roofing Material and Exterior Seals (Roof and Walls) Degradation	• Upgrade Roof with High Heat and Reflective Products
Increase in number of humid days and cooling days.	Failure of Building Envelope (Roofing Materials, External Seals) and / Or Mold Vulnerability	• Schedule More Frequent Inspections • Improve Building Envelope (Fenestration, Roofing Materials, Cladding Material, Vapor Barriers / Retarders, etc.)
Increase in number of hot days.	Loss of Pavement Integrity (e.g. Melt), Decreased Utility of Pavement	• Use Hard Stands • Replace Pavement
Increase in number of hot days.	Decreased Reliability of External Utility	• Add a Secondary Feed from an Additional Utility • Add or Increase Capacity for Onsite Generation • Arrange an Uninterruptable Power Rate • Use Demand-Limiting Measures
Increase in number of hot days.	Insufficient Utility Capacity Due to Increased Demand	• Generate Power Onsite • Increase Size of Electrical Service • Use Demand-Limiting Measures
Increase in number of days with storms and heavy rain, and increase in number of hot days	Outbreak of Contagious Diseases	• Develop Biological, Chemical and Personal Protective Strategies

Source: ACRP Report 147: Climate Change Adaptation Planning: Risk Assessment for Airports Tool; Dewberry; Gresham Smith; GCR Inc., Richard Marchi, 2015

A.5 Coastal Resources

Federal activities involving or affecting coastal resources are governed by the Coastal Barrier Resource Act (CBRA), the Coastal Zone Management Act (CZMA), and Executive Order (E.O.) 13089 – Coral Reef Protection. The project area is not located within a coastal zone.

A.6 Department of Transportation Act: Section 4(f) Resources

Section 4(f) of the Department of Transportation (DOT) Act (49 U.S.C. Section 3.3(c)) prohibits projects that require the use of any publicly owned land from a historic site, public park, recreation area, or waterfowl and wildlife refuge of national, state, regional, or local importance unless there is no feasible and practical alternative to the use of the land, and the project includes all possible planning to minimize harm resulting from the use.

When Section 4(f) lands are physically taken for use in conjunction with a proposed project, the requirements of Section 4(f) are generally applicable. Section 4(f) requirements are also applicable when the property is indirectly affected (constructive use). When there is a possibility of indirectly affecting a property, the FAA must determine if the impacts would substantially impair the 4(f) resource. If there would not be substantial impairment, the action would not constitute a constructive use and would not invoke an action.

There are canal locks associated with the historic Ohio canal system near the Village of Lockbourne. These locks were located between Canal Road and the railroad tracks west of the project area. The locks are listed in the Ohio Historical Society and the Lockbourne Heritage Society. If any potential development is planned that would affect rail road expansion or Canal Road, an assessment of the potential impacts to this Section 4(f) property should be conducted.

A.7 Farmlands and Soils

Federal actions that have the potential to convert farmland to non-agricultural uses are regulated by the Farmland Policy Protection Act (FPPA) (FAA Order 1050.1F). In general, "prime farmland" is land that has the best combination of physical and chemical characteristics for producing food, feed, forage, fiber, and oilseed crops, and is also available for use as pastureland, rangeland, forest land, or other land (7 CFR 657.5(a)). National soils data are used to determine potential areas that may be protected.

The USDA Natural Resources Conservation Service (NRCS) Web Soil Survey (USDA, 2017) was reviewed for soil types in the project area. **Figure A-2 Soils Map** depicts soils mapped within the project area. **Table A-5 Mapped Soils within Project Area** lists mapped soils and their percent coverage within the project area.

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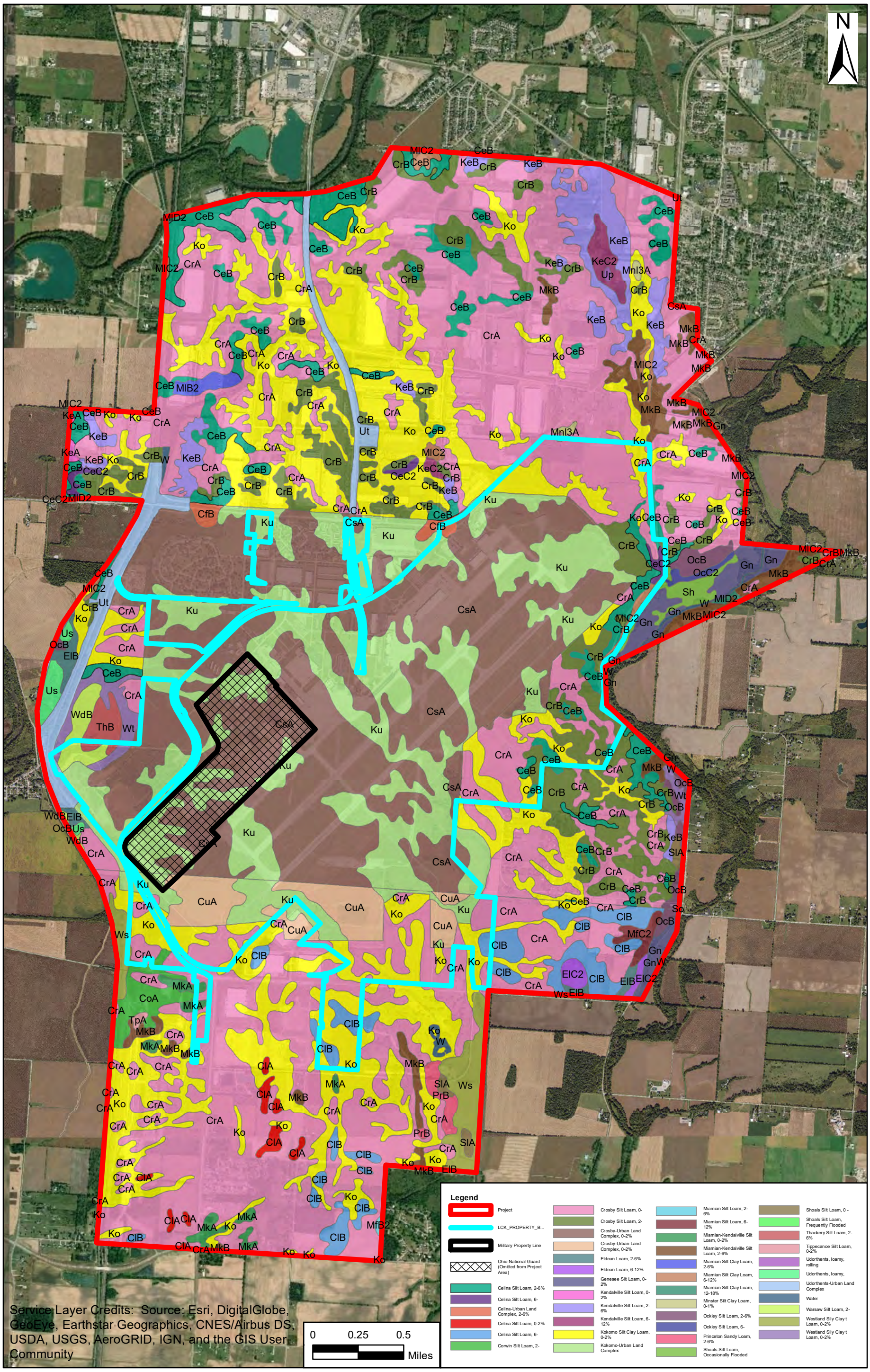

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Table A-5 Mapped Soils within Project Area

Map Unit Symbol	Map Unit Name	Percent of Study Area
CeB	Celina silt loam, 2 to 6% slopes	4.12%
CeC2	Celina silt loam, 6 to 12% slopes, eroded	0.17%
CfB	Celina-Urban land complex, 2 to 6% slopes	0.21%
ClA	Celina silt loam, 0 to 2% slopes	0.25%
ClB	Celina silt loam, 2 to 6% slopes	1.65%
CoA	Corwin silt loam, 0 to 2% slopes	0.51%
CrA	Crosby silt loam, Southern Ohio Till Plain, 0 to 2% slopes	30.40%
CrB	Crosby silt loam, Southern Ohio Till Plain, 2 to 6% slopes	5.29%
CsA	Crosby-Urban land complex, 0 to 2% slopes	16.89%
CuA	Crosby-Urban land complex, 0 to 2% slopes	1.55%
ElB	Eldean loam, 2 to 6% slopes	0.29%
ElC2	Eldean loam, 6 to 12% slopes, eroded	0.17%
Gn	Genesee silt loam, 0 to 2% slopes, occasionally flooded	0.82%
KeA	Kendallville silt loam, 0 to 2% slopes	0.04%
KeB	Kendallville silt loam, 2 to 6% slopes	1.95%
KeC2	Kendallville silt loam, 6 to 12% slopes, eroded	0.30%
Ko	Kokomo silty clay loam, 0 to 2% slopes	16.40%
Ku	Kokomo-Urban land complex	11.10%
MfB2	Miamian silt loam, 2 to 6% slopes, eroded	0.02%
MfC2	Miamian silt loam, 6 to 12% slopes, eroded	0.16%
MkA	Miamian-Kendallville silt loams, 0 to 2% slopes	0.34%
MkB	Miamian-Kendallville silt loams, 2 to 6% slopes	1.48%
MlB2	Miamian silty clay loam, 2 to 6% slopes, eroded	0.17%
MlC2	Miamian silty clay loam, 6 to 12% slopes, eroded	0.31%
MlD2	Miamian silty clay loam, 12 to 18% slopes, eroded	0.05%
Mnl3A	Minster silty clay loam, till substratum, 0 to 1% slopes	0.06%

Table A-5 Mapped Soils within Project Area (Cont.)

Map Unit Symbol	Map Unit Name	Percent of Study Area
OcB	Ockley silt loam, Southern Ohio Till Plain, 2 to 6% slopes	0.46%
OcC2	Ockley silt loam, 6 to 12% slopes, eroded	0.08%
PrB	Princeton sandy loam, 2 to 6% slopes	0.18%
Sh	Shoals silt loam, occasionally flooded	0.36%
SlA	Sleeth silt loam, 0 to 2% slopes	0.12%
ThB	Thackery silt loam, 2 to 6% slopes	0.27%
TpA	Tippecanoe silt loam, 0 to 2% slopes	0.03%
Up	Udorthents, loamy, rolling	0.01%
Us	Udorthents, loamy, steep	0.21%
Ut	Udorthents-Urban land complex, gently rolling	1.54%
W	Water	0.20%
WdB	Warsaw silt loam, 2 to 6% slopes	0.37%
Ws	Westland silty clay loam, Southern Ohio Till Plain, 0 to 2% slopes	0.97%
Wt	Westland silty clay loam, Southern Ohio Till Plain, 0 to 2% slopes	0.50%

Source: Natural Resources Conservation Service, Web Soil Survey, National Cooperative Soil Survey, 12/2016.

There are multiple soil types identified within the project area. However, four soil series cover the majority of the area: Crosby silt loam (CrA), Crosby-Urban land complex (CuA), Kokomo silty clay loam (Ko), and Kokomo-Urban land complex (Ku). The Crosby series consists of very deep, somewhat poorly drained soils that are moderately deep to dense till. These soils are formed in as much as 22 inches loess or other silt material located on till plains. These soils have traditionally been used to grow corn, soybeans, small grain, and hay.

The Kokomo soil series consists of very deep, very poorly drained soils that formed in loamy materials overlying glacial till. These soils are found primarily in depressions on till plains. The seasonal high-water table in these soils ranges from one foot above the surface to 0.5 foot below the surface during the winter and spring in normal years. When drained, these soils are commonly used to grow corn, soybeans, oats, wheat, and hay.

The development of areas within the project area may result in the conversion of farmland to non-agricultural uses. However, the majority of the project area is developed with commercial/industrial buildings, airport facilities, roads, infrastructure, and residential development. Much of the area was previously developed as a US Air Force Base. During a NEPA analysis, which would likely be required for any airport related development, the actual amount of agricultural land designated as prime farmland would need to be determined through coordination with the USDA. Evaluation of specific alternatives would involve completion of Form AD-1006 by the lead federal agency (FAA) and the USDA. The form identifies several rating components that determine the relative value of prime farmlands to

be converted by a proposed alternative. Potential mitigation measures could include adjusting the size or location of the proposed action to reduce the amount of farmland taken or indirect impacts to agriculture uses off-site, working with affected property owners to appropriately address construction or operations-related impacts, or insuring that lands temporarily taken out of agriculture are restored to a condition appropriate for agriculture use.

A.8 Hazardous Materials, Hazardous Waste, Solid Waste, and Pollution Prevention

Federal, state, and local laws including the Resource Conservation Recovery Act (RCRA) and the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), as amended, regulate hazardous materials use, storage, transport, and disposal. These laws may extend to past and future landowners of properties containing these materials. Disturbing areas that contain hazardous materials or contaminates can impact soil, surface water, groundwater, air quality and the organisms using these resources.

The project area consists of the Rickenbacker International Airport, including developed aviation support facilities and airport controlled undeveloped land, as well as commercial and light industrial facilities operating within the Rickenbacker Inland Port. The airport and many of the commercial and industrial facilities do operate under RCRA and therefore do use, store, transport, and dispose of regulated hazardous materials.

A.8.1 Historical Environmental Sites Associated with Military Usage

The majority of the project area was historically a military air base. The Rickenbacker Air National Guard Base (RANGB) was originally named the Northeastern Training Center of the Army Air Corps, but was later renamed Lockbourne Air Force Base. The base was constructed in 1942 and consisted of 1,574 acres with two runways (north-south and east-west) and a taxiway system connecting the runways.[1] The current runway configuration was constructed in 1951 and the base grew to approximately 4,000 acres. The base was renamed Rickenbacker Air Force Base in 1974.

In 1980 the base closed and the property was transferred to the Ohio Air National Guard (OHANG). From 1982 to 1985 the government began the process of divesting portions of the property, including the transfer of 1,642 acres to the Rickenbacker Port Authority (RPA), currently known as the CRAA. The facility was realigned in 1994, with two parcels remaining in government control: 170 acres for use by the OHANG and 148 acres for use by the Ohio Army Guard/U.S. Reserves.[2] The airfield was transferred to the RPA in 1999.

As a result of the extensive military usage of the majority of the project area, several historical environmental contamination sites have been identified spanning the operational history of

[1] Air Force Civil Engineer Center. Second Five-Year Review Report for BRAC Portion of Rickenbacker Air National Guard Base. Page 3-1. February 2014.
[2] Amec Foster Wheeler Environment & Infrastructure, Inc. Draft – Perfluorinated Compounds Preliminary Assessment: BRAC Portion of Rickenbacker Air National Guard Base. Page 2-1. December 2015.

the facility. Contaminants associated with past usage include various types of petroleum based hydrocarbons (i.e., jet fuel, gasoline, diesel, used oil, degreasing solvents); lead, Perfluorinated Compounds (PFCs) associated with aqueous film forming foam (AFFF) used for fire-fighting; and munitions ordnance.

Since the transfer of properties within the project area from the government to the CRAA (formerly RPA) began in the early 1980's, many of these sites have been investigated, sampled, remediated, and closed by State and/or Federal regulatory agencies. Some sites are currently in various stages of clean-up, remediation, or on-going investigation. Approximately 50 of the sites are under control of the Air Force Base Conversion Agency (AFBCA) and are part of the agency's Installation Restoration Program (IRP). Approximately 22 sites are under the control of the US Army Corps of Engineers and fifteen sites are under Navy control. These environmental sites were identified by the military and CRAA (formerly RPA) during on-site investigations, property assessments, state public records reviews, Administrative Record reviews, and interviews of individuals knowledgeable of past uses within the project area. **Figure A-3 Historical Environmental Sites Map**, **Figure A-3A Historical Environmental Sites Map**, and **Figure A-3B Historical Environmental Sites Map** show the locations of historical environmental sites across the project area.

It should be noted that almost all of these sites have been closed by regulatory agencies or are pending closure. The majority of the sites summarized in **Table A-6 Active Environmental Sites within Project Area** would likely pose a low risk to current and proposed activities within the project area. Many of the sites would be of de minimis nature, which is lacking significance or importance. However, some sites, particularly those identified as having PFC contamination, free petroleum product in groundwater, and the munitions areas, may potentially pose a moderate level of risk to construction activities and long-term occupants.

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Table A-6 Active Environmental Sites within Project Area

Responsible Agency	Site Identifier	Primary Contaminants of Concern	Status
Air Force	SD25	Petroleum	Site requires further action
Air Force	SD27	Petroleum	Site requires further action
Air Force	SS021	Petroleum	Site requires further action
Air Force	SS042	Petroleum	Site requires further action
Air Force	SS001	RCRA	Site requires further action
Air Force	SS046	Petroleum	Site requires further action
Air Force	Area 2	Perfluorinated Compounds (PFC)	Under investigation
Air Force	Area 3	Perfluorinated Compounds (PFC)	Under investigation
Air Force	Area 4	Perfluorinated Compounds (PFC)	Under investigation
Air Force	Area 5	Perfluorinated Compounds (PFC)	Under investigation
Air Force	Area 6	Perfluorinated Compounds (PFC)	Under investigation
Air Force	Area 7	Perfluorinated Compounds (PFC)	Under investigation
Air Force	Area 8	Perfluorinated Compounds (PFC)	Under investigation
USACOE	AOC 3	Petroleum	Under Investigation
USACOE	AOC 9	Petroleum	Under Investigation
USACOE	AOC 11	Petroleum	Under Investigation
USACOE	AOC 17	Solvents	Under Investigation
USACOE	AOC 18	Solvents	Under Investigation
USACOE	AOC 19	Solvents	Under Investigation
USACOE	AOC 103	Solvents	Under Investigation
USACOE	Landfill	Various	Complete
USACOE	West Skeet Range	Lead	To be investigated
USACOE	20mm Discovery	Possible munitions	To be investigated
USACOE	Air Show Drop Zone	Possible munitions	To be investigated
USACOE	MRA/MRS #3 Recommended Expansion Area	Possible munitions	To be investigated
USACOE	MRA/MRS #3 Firing In Butt/EOD Area	Possible munitions	To be investigated
USACOE	MRA/MRS #2 South Skeet Range	Possible munitions	To be investigated
USACOE	MRA/MRS #1 Combined Range Areas	Possible munitions	To be investigated
USACOE	Hand Grenade Range	Possible munitions	To be investigated
USACOE	Air Force EOD Area	Possible munitions	To be investigated
USACOE	Prime Beef Training Range	Possible munitions	To be investigated
USACOE	200-YD Rifle Range	Possible munitions	To be investigated

Sources:
Quarterly BCT Teleconference Presentation: BRAC Portion of Rickenbacker ANGB; FPM; AECOM, 11/2017
USACOE Sites Sources: Final Decision Document for Lockbourne Formerly Used Defense Sites AOCs 17/18/19/103, Ohio EPA, 10/2017.
AOC 3 Site Map, URS, 2/2011.
AOC 8/9 Site Map, URS, 12/2010,
AOC 11 Site Map, 12/10.
Revised INPR for Lockbourne AFB Figure, Locations of MRAs and MRSs, Shaw Environmental Inc., 2007.

A.8.2 Solid Waste

Nearly every aspect of airport operations including maintenance, construction, commercial/industrial operational activities, and flight operations (airside and landside) generate non-hazardous solid waste. Typical waste streams include paper products, food wastes, cardboard, aluminum cans, scrap metal, fiberglass, and plastic. Waste produced by LCK facilities and commercial and industrial tenants is disposed in municipal solid waste landfills. Recyclable material is collected separately from the previously mentioned waste and removed to a recycling facility. Some types of operations within the project area generate wastes such as used oil, batteries, bulbs/lamps, etc. Wastes from these activities are considered non-hazardous when handled in a manner consistent with state and federal guidelines.

The Stormwater Pollution Prevention Plan (SWPPP) for the airport and associated facilities, which is discussed in the subsequent Water Resources section, identifies all external waste storage facilities and receptacles. Waste storage facilities outside of the airport were not identified, but are expected to use standard commercial/industrial waste storage containers and municipal sanitation services.

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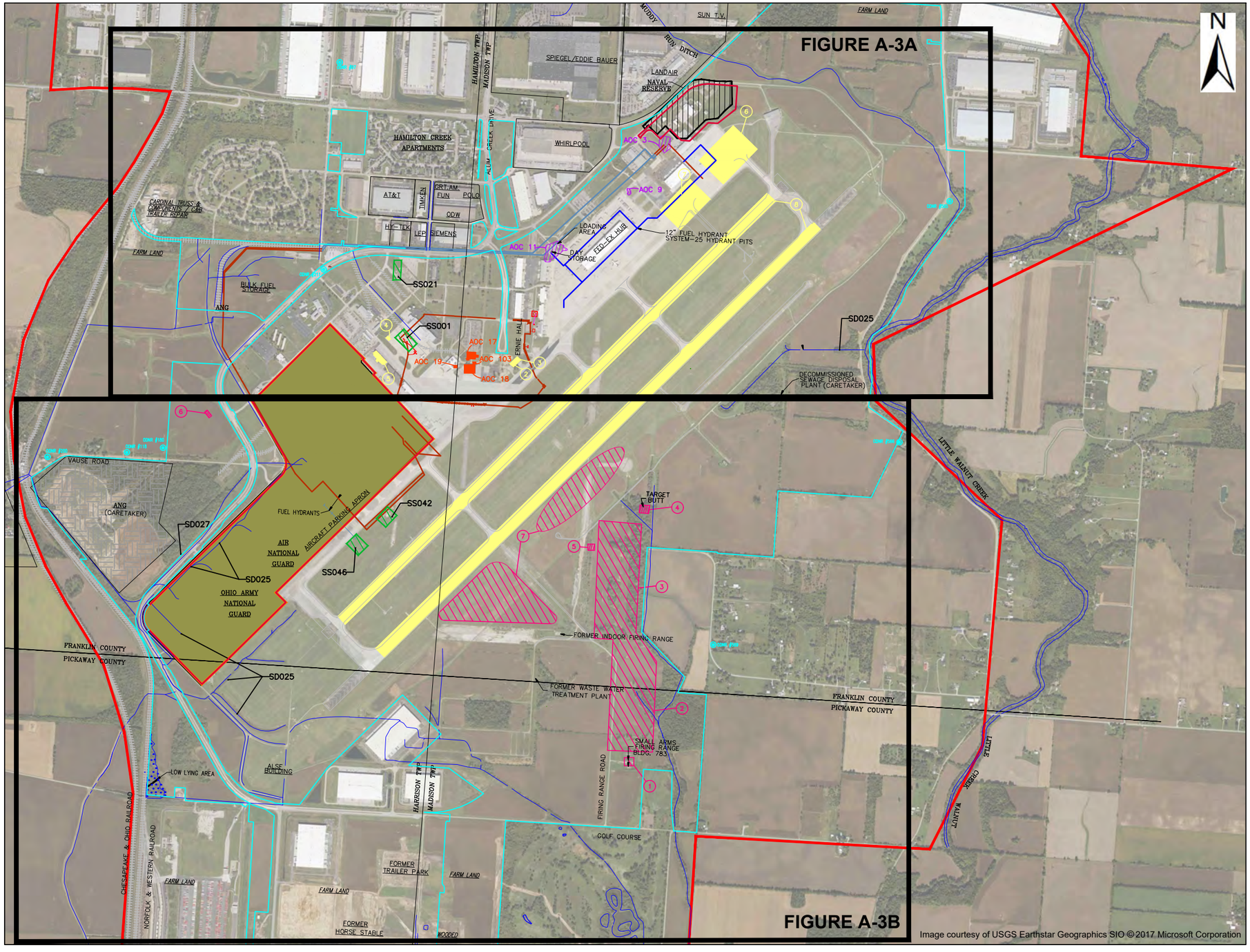


LEGEND

- WATERWAYS
- RAILWAYS
- ADJACENT PROPERTIES
- CITY/VILLAGE/TOWN BOUNDARY
- COUNTY BOUNDARY
- BUILDING
- OHIO NATIONAL GUARD (OMITTED FROM PROJECT AREA)
- AFFF Area with a Potential for PFC Presence
- AFBCA IRP SITES
- USACE AOC'S FUEL INVESTIGATIONS
- ORDNANCE ACTIVITIES
- RPA AOC'S SUBMITTED TO USACE
- FORMER LANDFILL
- ACTIVE FUEL LINES
- FUEL PIPE CLOSED IN PLACE
- INACTIVE PIPE
- ODNR #556 — ODNR WELLS
- PROJECT AREA
- AIRPORT PROPERTY LINE
- MILITARY PROPERTY LINE

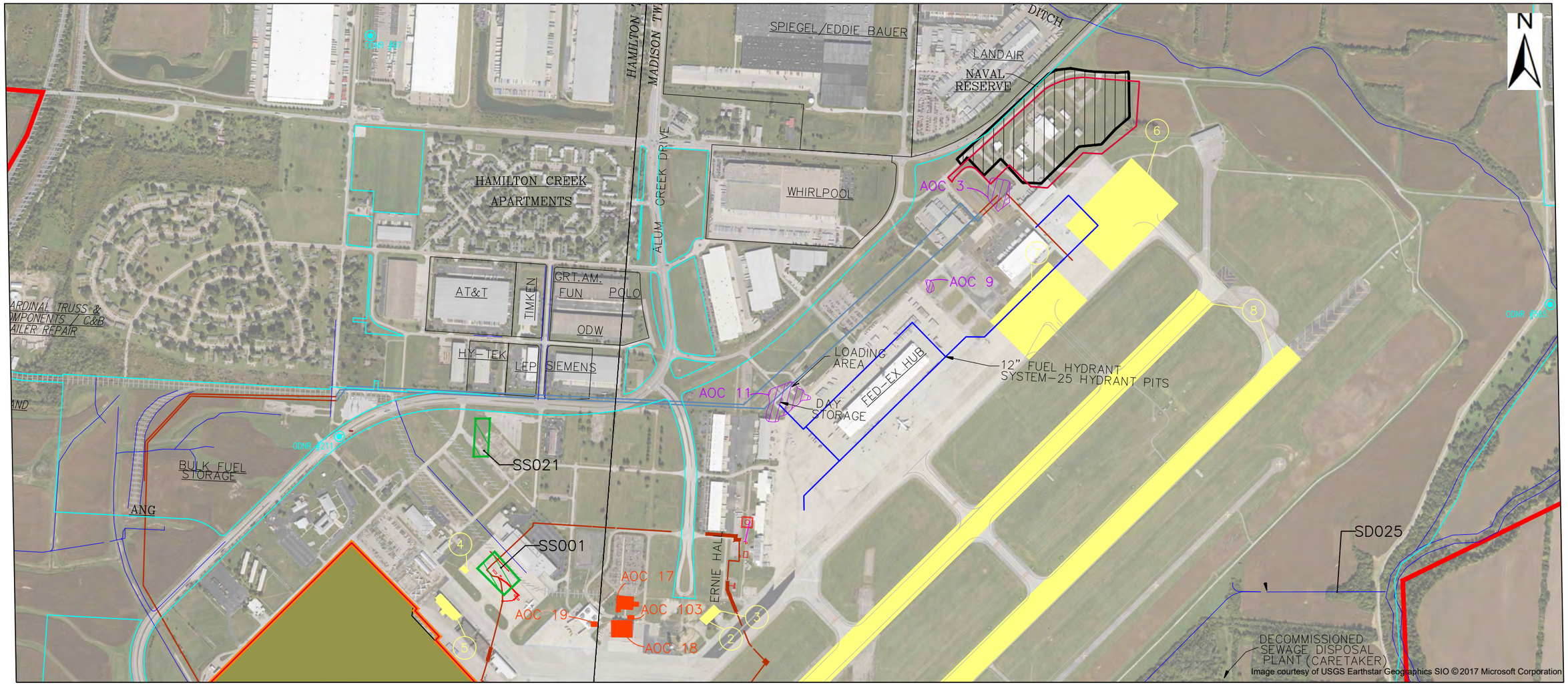
ORDNANCE

1. RIFLE RANGE
2. GRENADE RANGE
3. PRIME BASE ENGINEER EMERGENCY FORCE TRAINING AREA
4. FIRING-IN-BUTT/EOD DISPOSAL AREA/ RECOMMENDED EXPANSION AREA
5. SOUTH SKEET RANGE
6. WEST SKEET RANGE
7. AIR SHOW DROP ZONES

NOTE: SITES DEPICTED ON FIGURE ARE LISTED IN TABLE A-6

2000′ 0 2000′ 4000′

GRAPHIC SCALE



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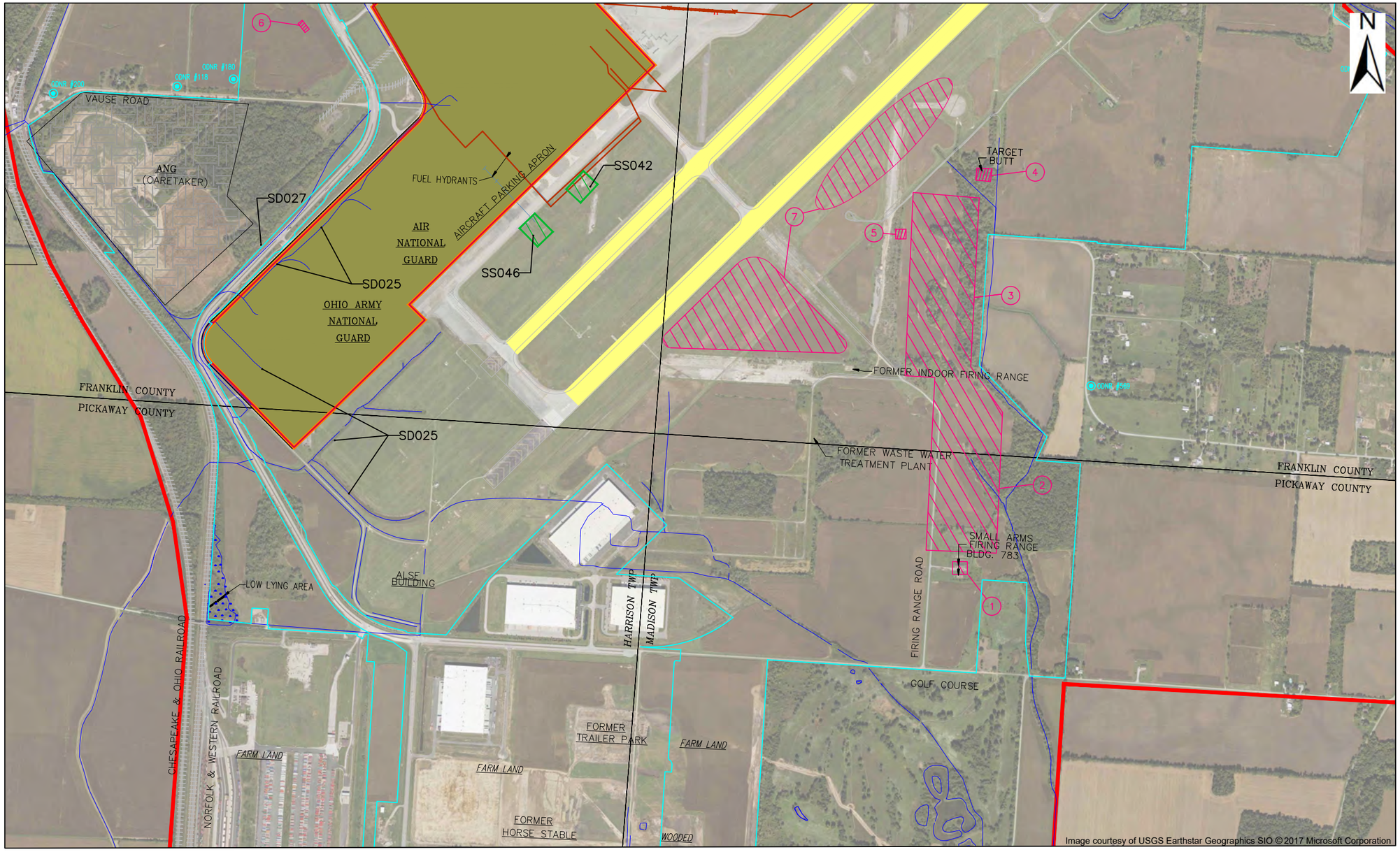
NOTE: SITES DEPICTED ON FIGURE ARE LISTED IN TABLE A-6

1100′ 0 1100′ 2200′

GRAPHIC SCALE

Figure A-3A Historical Environmental Sites Map



LEGEND

- WATERWAYS
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- PROJECT AREA
- AIRPORT PROPERTY LINE
- MILITARY PROPERTY LINE

ORDNANCE

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6. WEST SKEET RANGE
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NOTE: SITES DEPICTED ON FIGURE ARE LISTED IN TABLE A-6

1100′ 0 1100′ 2200′

GRAPHIC SCALE

Figure A-3B Historical Environmental Sites Map

[Replace this page with the figure]

A.9 Historical, Architectural, Archaeological, and Cultural Resources

The National Historic Preservation Act (NHPA) of 1966, as amended, the Archaeological and Historic Preservation Act (AHPA) of 1974, the Archaeological Resources Protection Act (ARPA), and the Native American Graves Protection and Repatriation Act (NAGPRA) of 1990 address historic and cultural resources.

Section 106 of the NHPA requires federal agencies to consider the effects of their undertakings on any district, site, building, structure, or object that is included or eligible for inclusion in the National Register of Historic Places (NRHP). Significant cultural resources are those resources that are listed in or are eligible for listing in the NRHP per the criteria listed in 36 CFR 60.4 (ACHP, 2008).

The Ohio Historic Preservation Office (OHPO) maintains a web-based database of historic, architectural, archeological, and cultural resources. No historical, architectural, archeological, or cultural resources were identified within or adjacent to the project area.

A.10 Compatible Land Use

Land use compatibility surrounding an airport is typically associated with noise impacts from the airport. Impacts to current land use surrounding the airport need to be addressed if it is determined that planned development would affect the noise boundaries.

Compatible land use evaluations also consider the compatibility of land uses in the vicinity of an airport to ensure those uses do not adversely affect safe aircraft operations. In addition, if an action would result in other impacts exceeding FAA thresholds of significance pertaining to land use including disruption of communities, relocation of businesses or residences, and induced socioeconomic impacts, the effects of land use should be discussed.

Based on a windshield review of the land use, areas outside the landside portions of the airport within the project area consist of agricultural crop production to the south, southeast, and southwest; commercial and industrial developments to the north; and low density residential development to the south.

A.11 Natural Resources and Energy Supply

Prior to development of properties, any proposed changes in stationary facilities or the movement of aircraft and ground vehicles that would have a measurable effect on local supplies of energy or natural resources must be identified. Only natural resources used for fuel need to be examined, unless the action involves a need for unusual materials or those in short supply (FAA Order 1050.1F).

Fuel was identified as the primary natural resource utilized within the project area. Electricity and natural gas are also used. Fuel used for aircraft operations include Jet Fuel (A), Aviation Gasoline, unleaded gasoline, and diesel fuel.

Changes in aircraft operations, particularly increased operations have the potential to modify fuel consumption at the airport. If major changes in aircraft schedules and/or operations are anticipated, a review of fuel availability should be conducted. Electricity and natural gas consumption may also change based on the number and size of new facilities. Although changes in consumption based on projected operations are likely to vary, consideration should be taken to determine if development activities have the potential to utilize excessive or unusual natural resources.

A.12 Noise

A cumulative noise energy exposure of individuals from noise resulting from aviation activities must be established for an airport. The FAA measures noise by the yearly day/night average sound level. According to 14 CFR Part 150, residential land uses and schools are not considered compatible with a 65 day-night equivalent level (DNL). Religious facilities, hospitals, or nursing homes located within a 65 DNL contour are generally compatible if an interior noise level reduction of 25 decibel (dB) is incorporated into the design and construction of the structure. The last FAR Part 150 Study was conducted in 2006. Noise contours were also created as part of the Air Cargo Terminal 5 Environmental Assessment.

A.13 Socioeconomic Impacts and Environmental Justice

Socioeconomic impacts known to result from airport improvements are often associated with relocation activities or other community disruptions, including alterations to surface transportation patterns, division or disruption of existing communities, interference with orderly planned development, or substantial change in employment related to the project. Socioeconomic impacts are generally evaluated based on areas of acquisition and/or areas of significant project impact, such as areas with noise levels in excess of 65 DNL.

Executive Order (EO) 12898, Federal Action to Address Environmental Justice in Minority Populations and Low-Income Populations, the accompanying Presidential Memorandum, and DOT Order 5610.2, Environmental Justice, require the FAA to provide for meaningful public involvement by minority and low-income populations as well as analysis that identifies and addresses potential impacts on these populations that may be disproportionately high and adverse. As a result, this Study has established a robust public involvement program in support of the requirements referenced above. Potential impacts identified during the planning process will be addressed during subsequent elements of the Study.

Pursuant to EO 13045, Protection of Children from Environmental Health Risks and Safety Risks, federal agencies are directed to identify and assess the environmental health and safety risks that may disproportionately affect children. These risks include those that are attributable to products or substances to which a child is likely to come in contact with or ingest, such as air, food, drinking water, recreational waters, soil, or products to which they may be exposed. The former military use of the facility limits potential reuse of many of the sites as indicated in Section A.8.1 Historical Environmental Sites Associated with Military Usage.

A.14 Visual Resources and Light Emissions

There are no special or protected visual resources within or adjacent to the project area. The topography within the project area is relatively flat and no landmarks would likely be visually affected by development.

The airport uses a variety of lighting systems to illuminate the airfield, ramps, concourses, terminals, and parking lots. These lighting systems are designed to FAA standards to ensure the safety of approaching aircraft while limiting negative impacts to the surrounding off-airport areas. Commercial and industrial developments in the project area use low energy lighting to illuminate building exteriors and parking lots.

The impact of airport light emissions on potentially developed property will be considered during development planning.

A.15 Water Resources

A.15.1 General Water Quality

The project area is located in the Walnut Creek sub-watershed located within the Scioto River watershed. Tributaries in this watershed drain coarse glacial material and receive groundwater that sustains base flows even during drier times of the year. Habitat quality is generally good and capable of sustaining healthy biological communities and good water quality.

Current land use trends have increased the potential for nonpoint source pollution of the stream system. Increased frequency in the number of construction sites and large lot development contribute to this issue. Use attainment values, as assessed by the Ohio Environmental Protection Agency – Division of Surface Water (OEPA-DSW), state that approximately 78% of the watershed is in full attainment, 11% is in partial attainment, and approximately 11% is in non-attainment (MORPC, 2012).

A.15.2 National Pollutant Discharge Elimination System Permit & Associated Water Quality Plans

The airport takes an active approach to maintaining and improving the water quality of the watershed. As required by state and federal law, the airport is covered by an individual National Pollutant Discharge Elimination System (NPDES) permit. This permit is required by the Clean Water Act (CWA) that prohibits a facility from discharging pollutants from a point source into a regulated water of the United States without an NPDES permit. The LCK NPDES permit, number 4IN00085*FD, contains effluent limitations, monitoring requirements, and reporting requirements. Effluent limitations are intended to limit the discharge of pollutants associated with airport industrial activities including fueling, maintenance, washing, waste management, chemical and material storage, and deicing. Increases in airport industrial activities could increase the risk of discharges of pollutants in airport stormwater and potential exceedances of effluent limitations. The current LCK NPDES permit includes effluent

limits for pH (between 6.5 and 9.0 Standard units) and oil and grease (20 mg/L maximum and 15 mg/L monthly).

The LCK NPDES permit includes projected effluent limitations for parameters associated with deicing chemicals in stormwater. Aircraft deicing discharges have caused exceedances of these projected effluent limitations in the past when significant winter events coincided with significant flight operations. Future increases in airport flights would likely increase the amount of aircraft deicer applied increasing the frequency and concentration of deicer in stormwater discharges, potentially increasing the frequency and magnitude of exceedance of the projected effluent limitations. Currently, exceedance of these projected effluent limitations triggers additional monitoring requirements for the airport. Should the frequency and magnitude of projected effluent limit exceedances increase, Ohio EPA could require the airport to implement measures to control stormwater discharges of deicer.

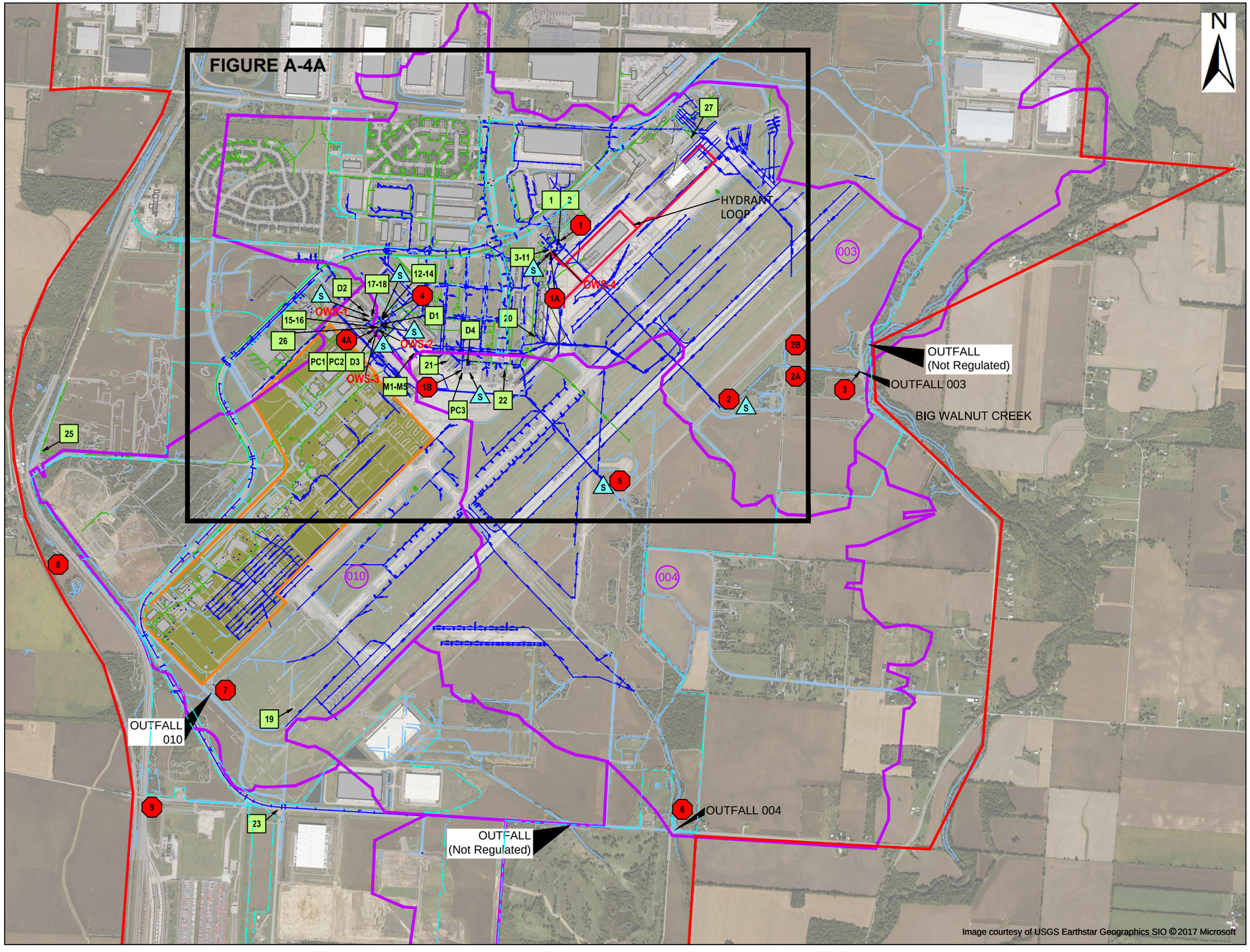
In conjunction with the NPDES permit the airport also prepares a Spill Prevention Control and Countermeasures Plan (SPCC) and an operational Stormwater Pollution Prevention Plan (SWPPP). These water quality controls are briefly described below.

A.15.3 Spill Prevention, Control, and Countermeasure Plan

The purpose of the Spill Prevention, Control, and Countermeasure (SPCC) Plan is to help facilities prevent a discharge of oil, including fuel and hydraulic fluid, into navigable waters or adjoining shorelines. The rule is part of the USEPA's oil spill prevention program (Title 40, CFR, Part 112), and includes requirements to provide secondary containment for oil storage and transfer activities. The SPCC Plan addresses the containers, oil-filled equipment, and transfer activities maintained by the CRAA at LCK. **Figure A-4 Spill Prevention, Control, and Countermeasure Plan** and **Figure A-4A Spill Prevention, Control, and Countermeasure Plan** show the location on airport property of each container or piece of equipment covered by the airport SPCC Plan. Should additional oil storage be added at the airport, new containers and transfer operations would be required to comply with the SPCC rule.

A.15.4 Stormwater Pollution Prevention Plan

The Stormwater Pollution Prevention Plan (SWPPP) is a requirement of the National Pollutant Discharge Elimination System (NPDES) that regulates water quality associated with certain industrial activities. The SWPPP is intended to facilitate consistent and effective management of stormwater runoff quality at the airport. It presents a description of the facility and a discussion of potential pollutant sources resulting from industrial activities. This SWPPP also identifies existing storm water management controls and Best Management Practices (BMPs) and identifies additional/supplemental BMPs that reduce or eliminate pollutants entering the storm water drainage system. **Figure A-5 Storm Water Pollution Prevention Plan** and **Figure A-5A Storm Water Pollution Prevention Plan** show the location on airport property of each material included in the SWPPP.



CRAA-OWNED OIL STORAGE CONTAINER SUMMARY				
Identifier	Location	Contents	Type	Capacity (GALS)
1	Day Storage	Diesel	AST	12,500
2	Day Storage	AvGas	AST	20,000
3*	Day Storage	Jet Fuel	UST	500
4*	Day Storage	Jet A	UST	50,000
5*	Day Storage	Jet A	UST	50,000
6*	Day Storage	Jet A	UST	50,000
7*	Day Storage	Jet A	UST	50,000
8*	Day Storage	Jet A	UST	50,000
9*	Day Storage	Jet A	UST	50,000
10*	Day Storage	Jet A	UST	50,000
11*	Day Storage	Jet A	UST	50,000
12	Vehicle Maintenance Building	Gasoline	AST	5,000
13	Vehicle Maintenance Building	Diesel	AST	5,000
14	Vehicle Maintenance Building	Diesel	AST	5,000
15	Vehicle Maintenance Building	Bulk Oil	AST	275
16	Vehicle Maintenance Building	Used Oil	AST	275
17	SRE Building	Hydraulic Oil	AST	275
18	SRE - Emergency Generator	Diesel	AST	150
19	ALSF - Emergency Generator	Diesel	AST	2,000
20	Lighting Vault - Emergency Generator	Diesel	AST	300
21	Charter Terminal - Emergency Generator	Diesel	AST	550
22	Landside ATCT – Emergency Generator	Diesel	AST	300
23	Intermodal – Emergency Generator	Diesel	AST	120
25	Rail Campus West – Emergency Generator	Diesel	AST	425
26	Vehicle Maintenance Building	Hydraulic Oil	AST	250
27	RCS Logistics	Diesel	AST	185
D1	Vehicle Maintenance Building	Various Oils	Drums	55 (quantity varies)
D2	SRE Building	Various Oils	Drums	55 (quantity varies)
D3	Landscaping Building	Various Oils	Drums	55 (quantity varies)
D4	FBO Storage Area	Various Oils	Drums	55 (quantity varies)
PC1	Landscape Building	Tack Coat	Portable Container	500
PC2	Landscape Building	Crack Seal	Portable Container	300
PC3	Rickenbacker FBO	Diesel	Portable Container	200
M1	Rickenbacker Aviation	Jet A	Mobile Refueler	7,000
M2	Rickenbacker Aviation	Jet A	Mobile Refueler	5,000
M3	Rickenbacker Aviation	Avgas	Mobile Refueler	750
M4	Rickenbacker Aviation	Diesel/Gasoline (split)	Mobile Refueler	2,000 (1,000 each)
M5	Rickenbacker Aviation	Jet A	Mobile Refueler	5,000
*Exempt				

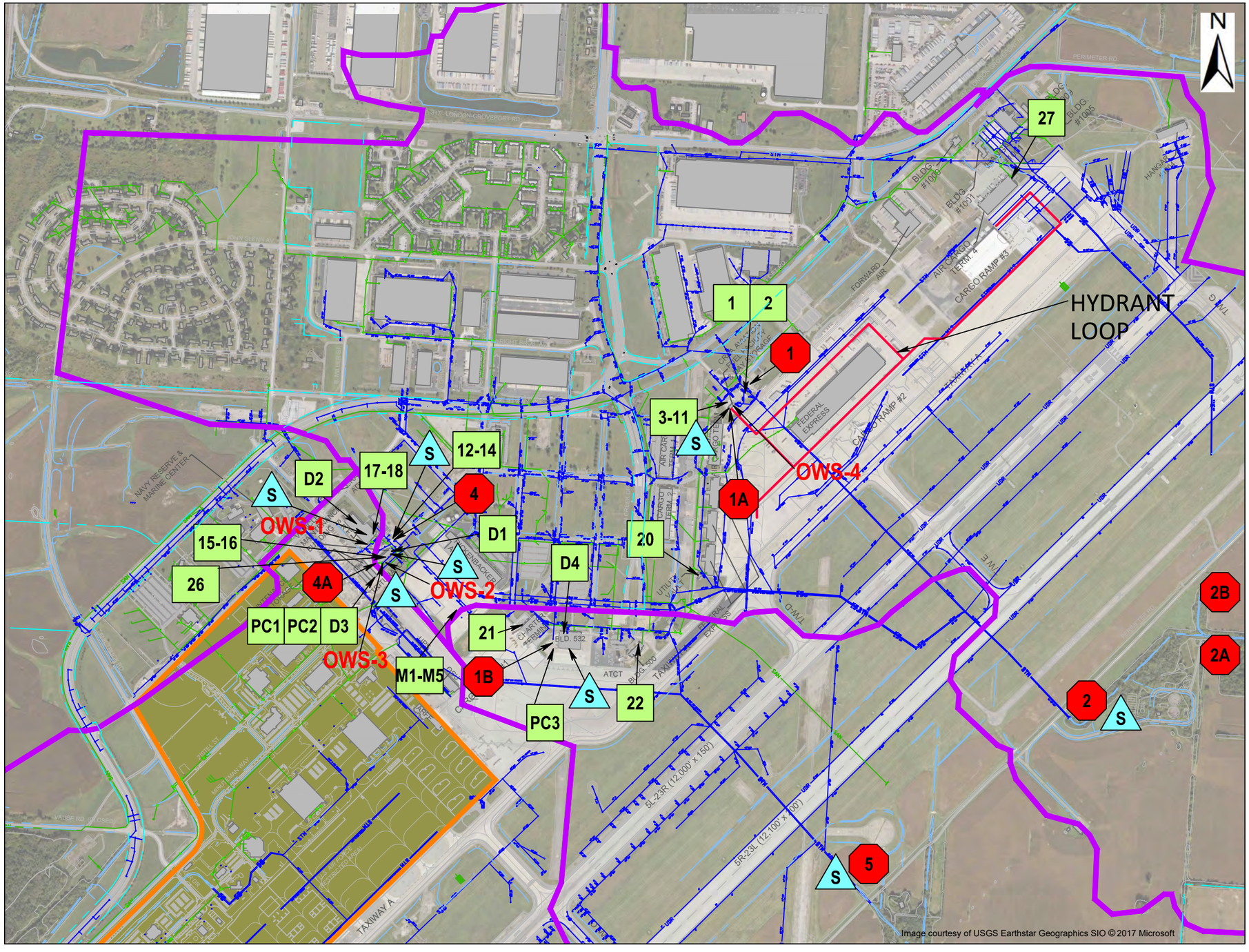
LEGEND

- AIRPORT PROPERTY LINE
- MILITARY PROPERTY LINE
- DRAINAGE FEATURES
- STORM DRAIN FEATURES
- SANITARY SEWER FEATURES
- DRAINAGE AREA BOUNDARY
- HYDRANT SYSTEM
- PROJECT AREA
- 1 — CRAA–OPERATED FUEL STORAGE
- D1 — CRAA DRUM
- PC1 — CRAA PORTABLE CONTAINER
- M1 — CRAA–OPERATED MOBILE REFUELER
- CR1 — CRAA CURRENT REGULATOR
- S — SPILL RESPONSE MATERIALS
- 1 — SPILL RESPONSE LOCATION
- 003 — DRAINAGE SYSTEM NUMBER
- OWS-# — OIL/WATER SEPARATOR
- OHIO NATIONAL GUARD (OMITTED FROM PROJECT AREA)

Spill Response Location Summary			
Location	Description	Drainage Area	Flow Direction/ Response Hierarchy
All Initial Response Locations Shall Be At The Point Of Origin			
If Applicable, Secondary Response Location Shall Be At the Nearest Catch Basin, Drain, Or Ditch			
1	Day Storage Fueling Area	003	1, 1A, 2, 2A, 3
1A	At Day Storage UST Containment Area	003	1, 1A, 2, 2A, 3
1B	Mobile Refueler Parking	003	1B, 2, 2A, 3
2	Pipe Discharge West Of Wastewater Treatment Plant	003	1, 1A, 2, 2A, 3
2A	Oil Interceptor North of Wastewater Treatment Plant	003	1, 1A, 2, 2A, 3
2B	Pipe Discharge North Of Wastewater Treatment Plant	003	2B, 2A, 3
3	Outfall 003	003	1, 1A, 2, 2A, 3
4	At Vehicle Maintenance Loading Area	003	4
4A	Vehicle Maintenance Fueling Area	003	4A
5	Box Culvert Into Open Ditch	004	5, 6
6	Interceptor at Outfall 004	004	5, 6
7	Outfall 010	010	7, 8
8	Leaving Property	N/A	7, 8
9	Leaving Property	N/A	9

2000’ 0 2000’ 4000’

GRAPHIC SCALE



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M1	Rickenbacker Aviation	Jet A	Mobile Refueler	7,000
M2	Rickenbacker Aviation	Jet A	Mobile Refueler	5,000
M3	Rickenbacker Aviation	Avgas	Mobile Refueler	750
M4	Rickenbacker Aviation	Diesel/Gasoline (split)	Mobile Refueler	2,000 (1,000 each)
M5	Rickenbacker Aviation	Jet A	Mobile Refueler	5,000
		*Exempt		

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6	Interceptor at Outfall 004	004	5, 6
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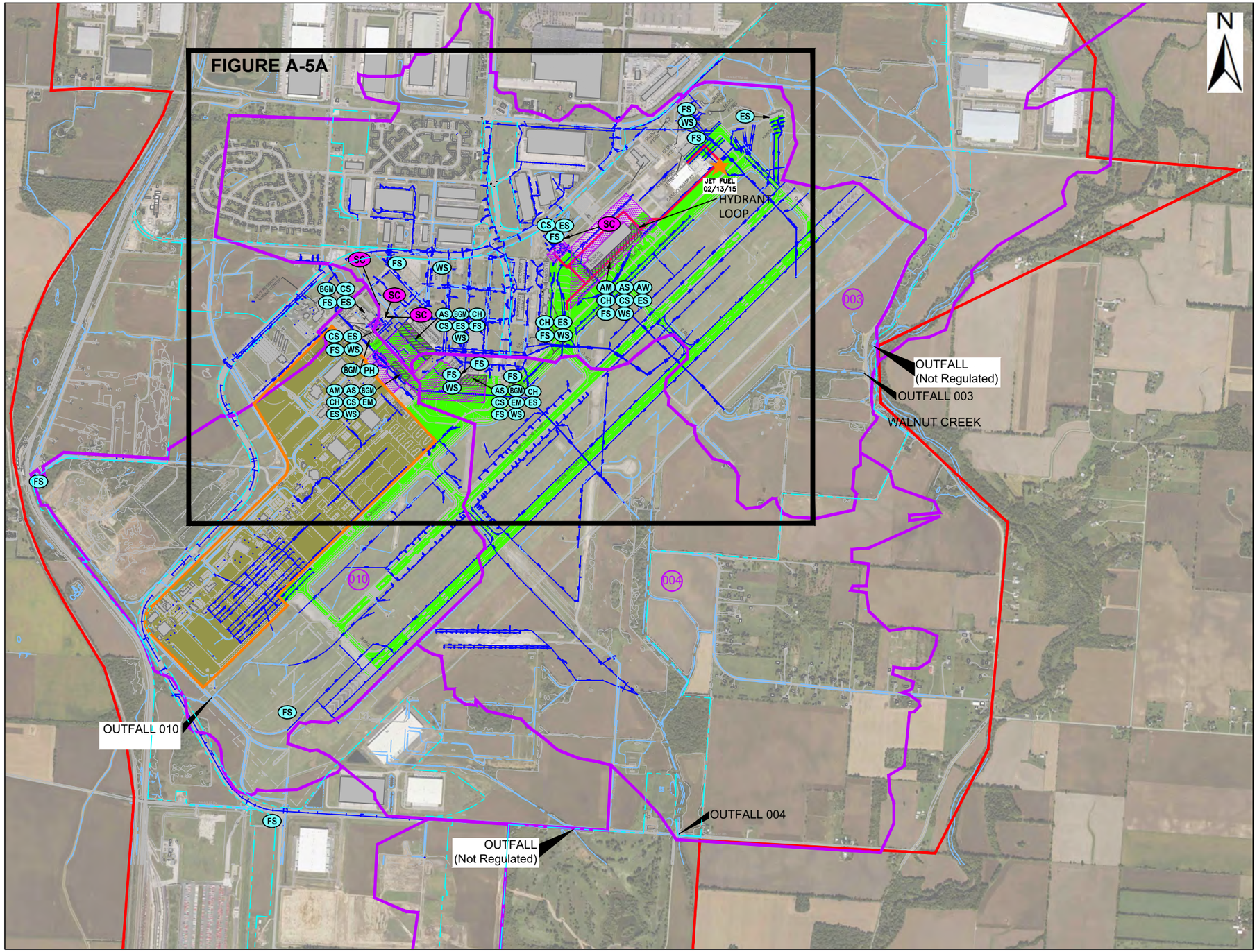
9	Leaving Property	N/A	9

1000' 0 1000' 2000'

GRAPHIC SCALE



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- STORM DRAIN FEATURES
- DRAINAGE AREA
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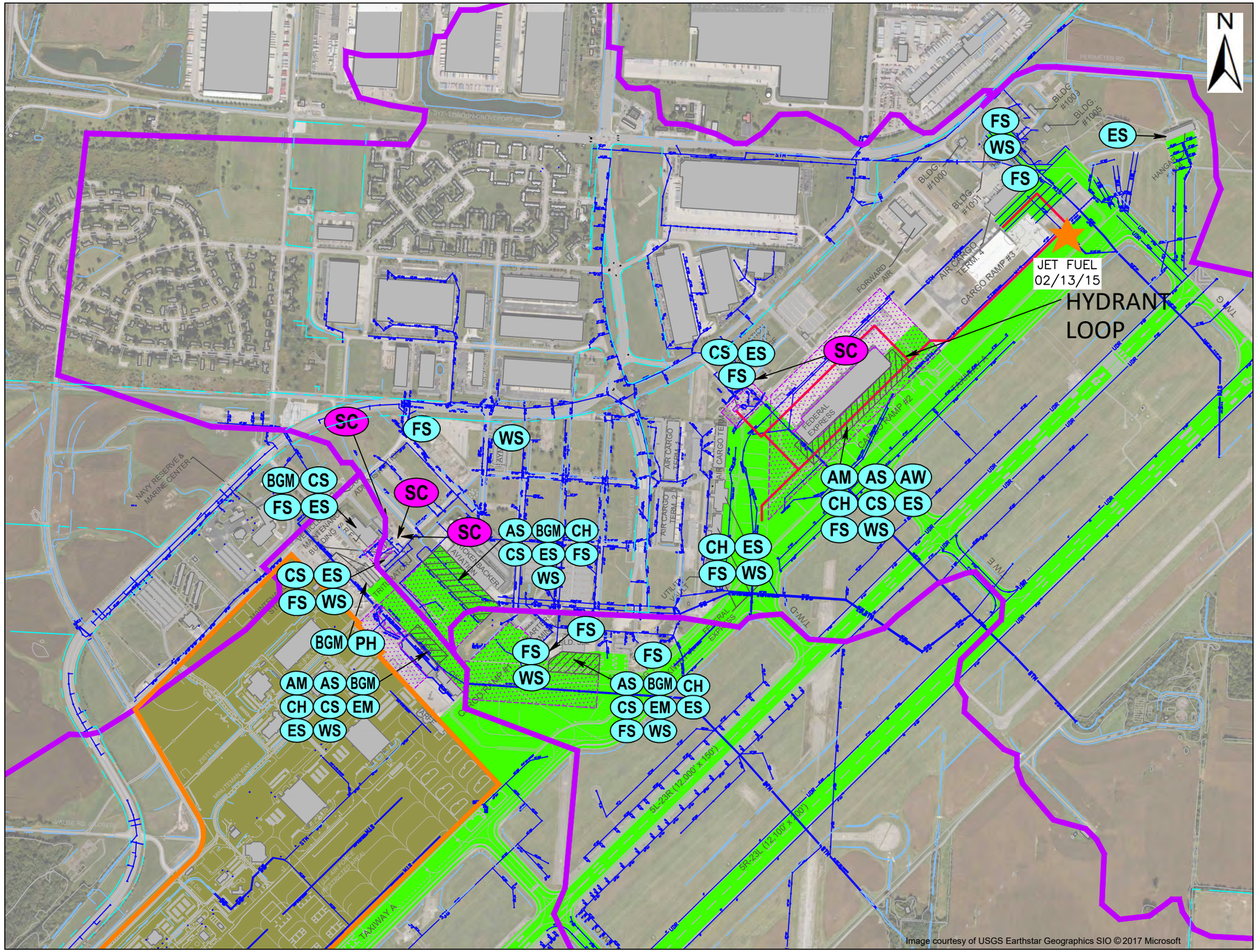
- 003 — DRAINAGE SYSTEM NUMBER
- AM — AIRCRAFT MAINTENANCE
- AS — AIRCRAFT LAVATORY SERVICE
- AW — AIRCRAFT WASHING
- BGM — BUILDING AND GROUNDS MAINTENANCE
- CH — CARGO HANDLING
- CS — CHEMICAL STORAGE
- EM — EQUIPMENT MAINTENANCE
- ES — EQUIPMENT STORAGE
- FS — FUEL STORAGE
- PH — PESTICIDE/HERBICIDE STORAGE AND USAGE
- WS — WASTE STORAGE
- SC — STRUCTURAL CONTROL
- SIGNIFICANT SPILL
- AIRCRAFT DEICING/ANTI–ICING (AD)
- PAVEMENT DEICING (PD)
- FUELING AREA (AIRCRAFT, EQUIPMENT, AND VEHICLE FUELING)
- OHIO NATIONAL GUARD (OMITTED FROM PROJECT AREA)

NOTE:
RUBBER REMOVAL (RR) IS CONDUCTED ON PAVED RUNWAYS.

2000’ 0 2000’ 4000’
GRAPHIC SCALE



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- EM — EQUIPMENT MAINTENANCE
- ES — EQUIPMENT STORAGE
- FS — FUEL STORAGE
- PH — PESTICIDE/HERBICIDE STORAGE AND USAGE
- WS — WASTE STORAGE
- SC — STRUCTURAL CONTROL
- ★ — SIGNIFICANT SPILL
- AIRCRAFT DEICING/ANTI–ICING (AD)
- PAVEMENT DEICING (PD)
- FUELING AREA (AIRCRAFT, EQUIPMENT, AND VEHICLE FUELING)
- OHIO NATIONAL GUARD (OMITTED FROM PROJECT AREA)

NOTE:
RUBBER REMOVAL (RR) IS CONDUCTED ON PAVED RUNWAYS.

1000’ 0 1000’ 2000’
GRAPHIC SCALE

A.16 Wetlands and Surface Waters

The USACOE defines wetlands as "those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions". Wetlands and surface waters (including streams, ditches and ponds) within the project area have been field delineated by third-party consultants within a five-year period prior to the preparation of this Study.

A total of 76 wetlands, totaling approximately 27 acres and five (5) streams, totaling approximately 47,750 linear feet were identified within the project area in the *Unpermitted Areas with Potential Jurisdictional Waters Rickenbacker Airport and Associated properties Franklin and Pickaway County, Ohio* (Trans Systems, 2013). **Figure A-6 Surface Water Resources Map** shows the location of field delineated wetlands and streams as noted in the 2013 report. Since wetlands change over time, **Figure A-6 Surface Water Resources Map** does not necessarily represent all wetlands at the site at this time, or at the time when development may occur, and future wetland delineation may be needed to identify the exact extent of wetland areas at the time of development.

Any plans for development would need to consider impacts to wetland and streams. Impacts would require State and Federal permitting prior to development.

A.17 Floodplains

According to the FAA, measures should be taken to reduce the risk of flood loss, minimize the impact of floods on human safety, health and welfare, and restore and preserve natural and beneficial values served by floodplains. Agencies are required to make a finding that there is no practicable alternative before taking action that would encroach or impact a 100-year floodplain.

According to the Federal Emergency Management Agency (FEMA), Flood Insurance Rate Map (FIRM), portions of the project area are located within the 100-year and 500-year floodplains. Walnut Creek flows through the eastern portion of the project area. 100-year and 500-year floodplains are shown along Walnut Creek. **Figure A-6 Surface Water Resources Map** shows the extent of floodplains located within the project area.

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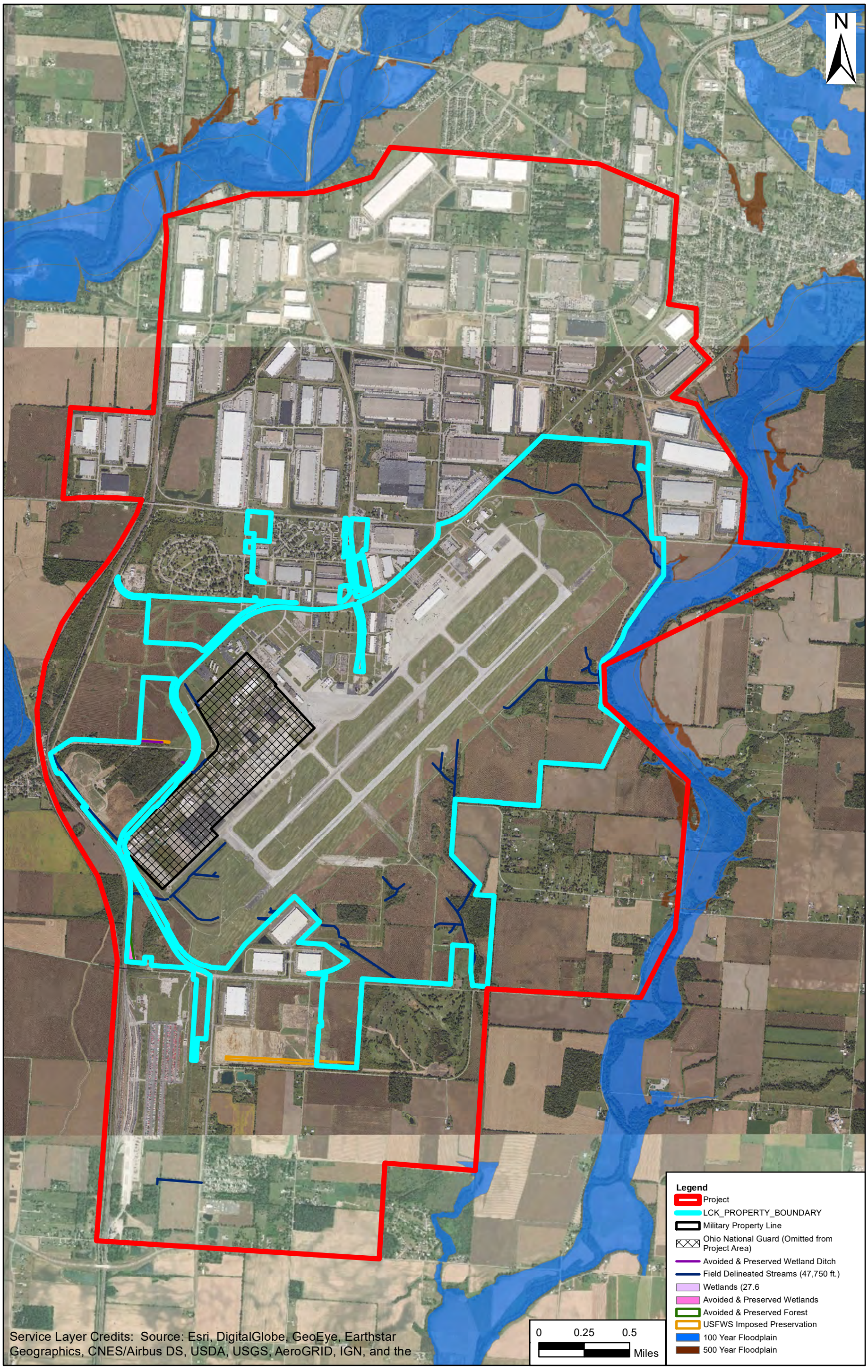


Document Path: \\global.gsp\data\nf\co_nf\4232900\ES\Work\March2019_Updates\PackagedFiles\FigureA-6_SurfaceWater.mxd

A.18 Groundwater

The shallow geology within the project area consists of an upper till layer overlying a lower gray till layer. Based on past subsurface investigations, the shallow geology beneath the project area consists of silty clay, sandy clay, and clayey silt with traces of sand and/or gravel. The lower gray till has been described as a hard silty clay or clayey silt and was encountered between 12 and 15 feet below the ground surface.

According to past subsurface studies and information obtained from the ODNR – Division of Groundwater, groundwater within the upper till layer is known as the upper water-bearing zone. The water table is encountered typically within 4 to 10 feet below the ground surface. Groundwater in the upper water-bearing zone generally flows east-southeast at an estimated groundwater velocity of 0.01 foot per day (four feet per year).

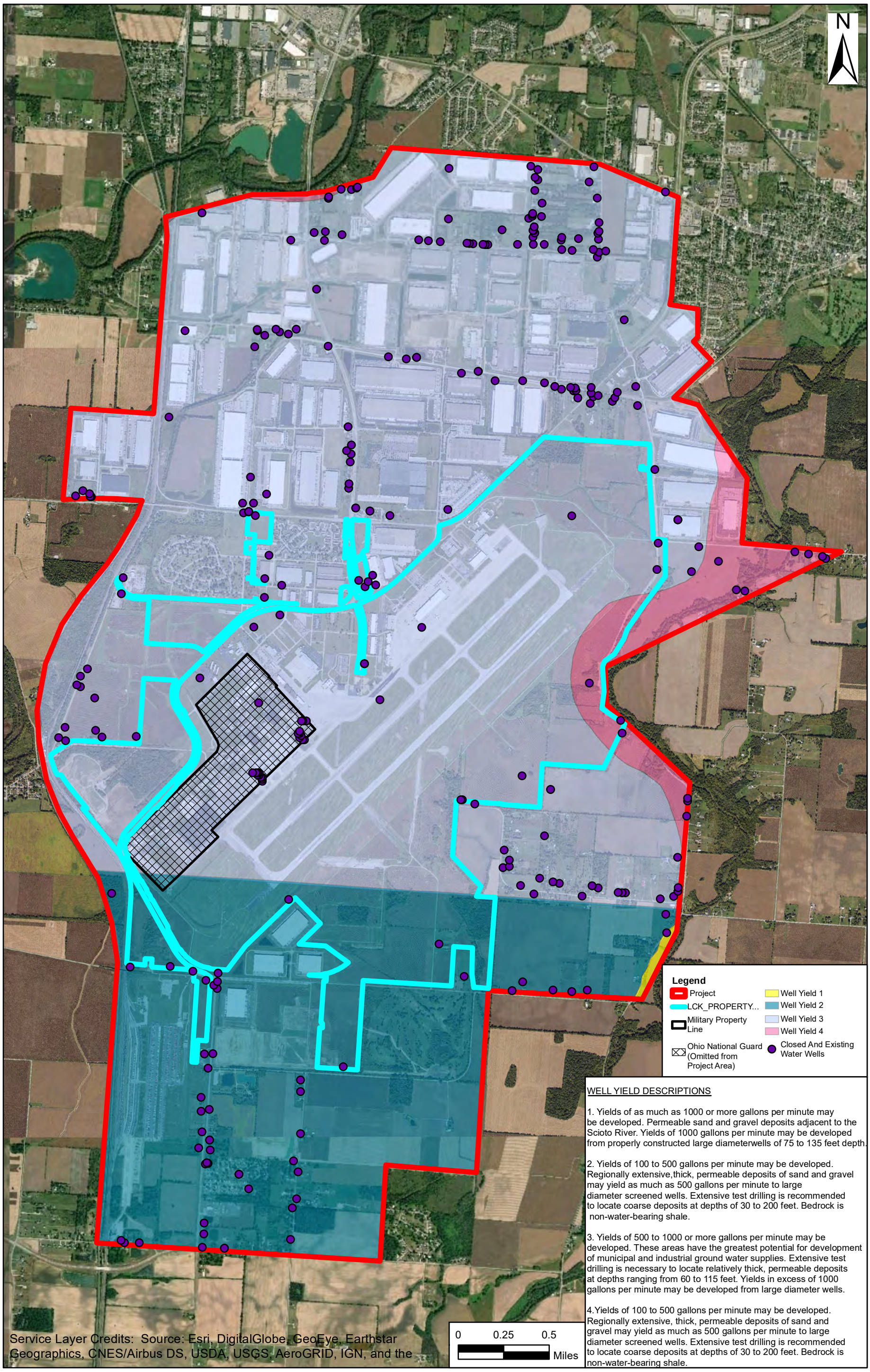
Groundwater in the upper water-bearing zone is too shallow to be used for a public water system well (per Ohio Administrative Code 3745-05) or private system well (per Ohio Administrative Code 3701-28-10) and is documented to have low well yield. The deeper sand and gravel aquifer could provide greater yield (Schmidt, 1993).

The Village of Lockbourne receives water from the City of Columbus through the Franklin County Department of Sanitary Engineering. The City of Columbus uses surface water from the Griggs and O'Shaughnessy Reservoirs for its water supply, along with groundwater from the Parsons Avenue well field. Several wells were identified within the project area, most of which are test wells drilled during environmental investigations. The majority of the test wells were closed after groundwater sampling events. No wells within the project area draw water for potable supply from the upper-bearing zone.

Figure A-7 Groundwater Resources Map shows the groundwater zone descriptions, well locations, and typical well yield within the project area. Well locations illustrated in **Figure A-7 Groundwater Resources Map** were obtained from the Ohio Department of Natural Resources (ODNR) database, and it appears to include both existing and closed wells by which documentation of closure may not have been filed with ODNR.

A.19 Wild and Scenic Rivers

The Wild and Scenic Rivers Act, as amended, describes those river segments designated as eligible to be included in the Wild and Scenic Rivers System. The Wild and Scenic Rivers in Ohio were determined from the National Wild and Scenic Rivers System website (2016). Descriptions of listed segments were used along with river maps to determine if the segments were located inside the project area. None of the designated Wild or Scenic Rivers in Ohio are located within the project area.


N
Legend
Project
LCK_PROPERTY...
Military Property Line
Ohio National Guard (Omitted from Project Area)
Well Yield 1
Well Yield 2
Well Yield 3
Well Yield 4
Closed And Existing Water Wells
WELL YIELD DESCRIPTIONS
1. Yields of as much as 1000 or more gallons per minute may be developed. Permeable sand and gravel deposits adjacent to the Scioto River. Yields of 1000 gallons per minute may be developed from properly constructed large diameterwells of 75 to 135 feet depth.
2. Yields of 100 to 500 gallons per minute may be developed. Regionally extensive,thick, permeable deposits of sand and gravel may yield as much as 500 gallons per minute to large diameter screened wells. Extensive test drilling is recommended to locate coarse deposits at depths of 30 to 200 feet. Bedrock is non-water-bearing shale.
3. Yields of 500 to 1000 or more gallons per minute may be developed. These areas have the greatest potential for development of municipal and industrial ground water supplies. Extensive test drilling is necessary to locate relatively thick, permeable deposits at depths ranging from 60 to 115 feet. Yields in excess of 1000 gallons per minute may be developed from large diameter wells.
4.Yields of 100 to 500 gallons per minute may be developed. Regionally extensive, thick, permeable deposits of sand and gravel may yield as much as 500 gallons per minute to large diameter screened wells. Extensive test drilling is recommended to locate coarse deposits at depths of 30 to 200 feet. Bedrock is non-water-bearing shale.
0
0.25
0.5
Miles
Service Layer Credits: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the
Document Path: \\global.gsp\data\nf\co_nf\4232900\ES\Work\March2019_Updates\PackagedFiles\FigureA-7_Groundwater.mxd

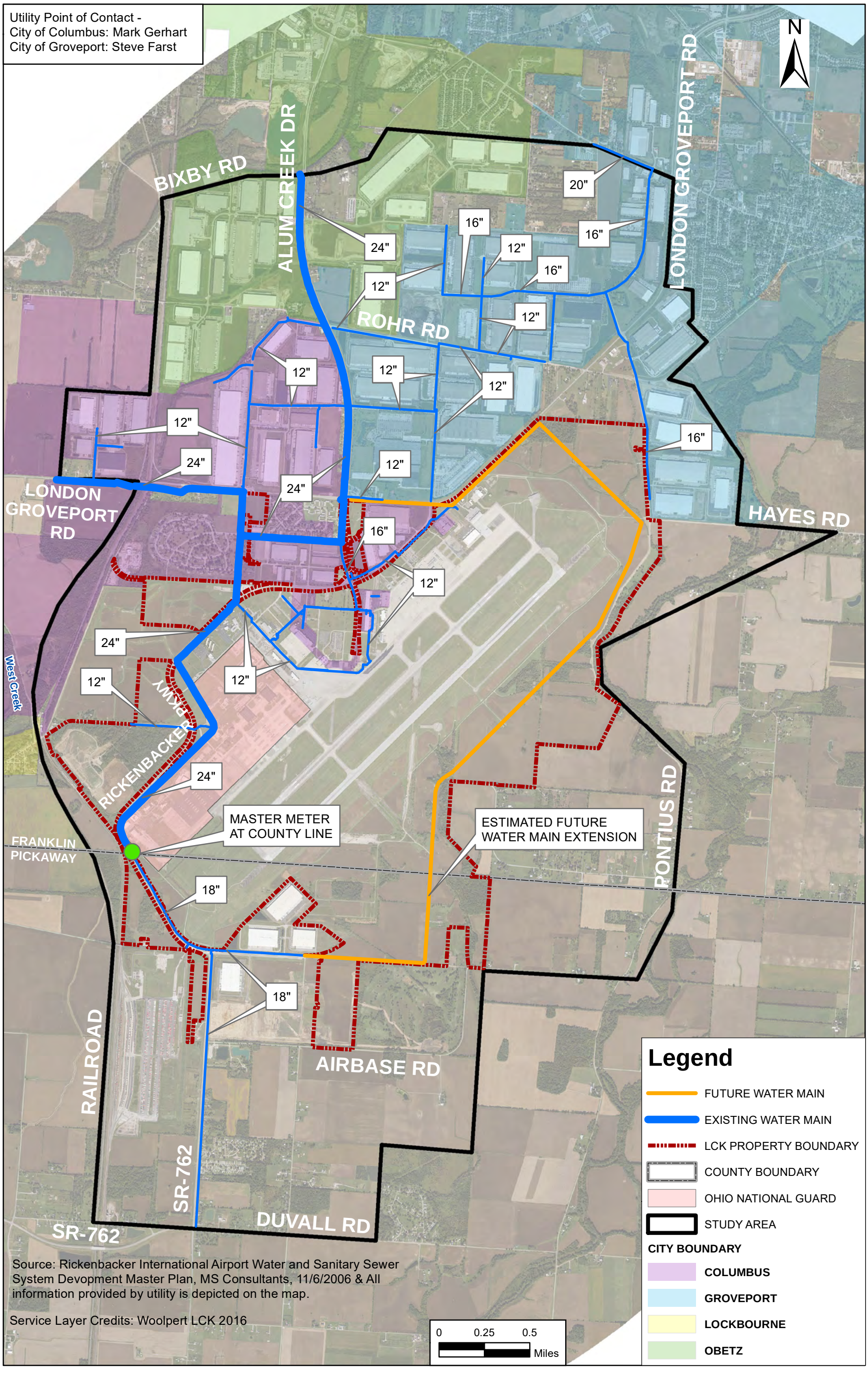
Appendix B – Utilities Figures

RICKENBACKER
INTERNATIONAL AIRPORT

Master Plan

B.0 Appendix B – Utilities Figures

The following figures describe the existing utility facilities located in the Study area. Refer to Section 1.2.16 Utilities (p. 1-56) for details.


Utility Point of Contact -
City of Columbus: Mark Gerhart
City of Groveport: Steve Farst
N
BIXBY RD
ALUM CREEK DR
LONDON GROVEPORT RD
ROHR RD
LONDON GROVEPORT RD
HAYES RD
West Creek
RICKENBACKER PKWY
PONTIUS RD
FRANKLIN PICKAWAY
RAILROAD
AIRBASE RD
SR-762
DUVALL RD
SR-762
20"
16"
16"
24"
12"
16"
12"
12"
12"
12"
12"
16"
24"
24"
12"
12"
24"
12"
24"
16"
12"
18"
18"
MASTER METER AT COUNTY LINE
ESTIMATED FUTURE WATER MAIN EXTENSION
Source: Rickenbacker International Airport Water and Sanitary Sewer System Devopment Master Plan, MS Consultants, 11/6/2006 & All information provided by utility is depicted on the map.
Service Layer Credits: Woolpert LCK 2016
0 0.25 0.5
Miles
Legend
FUTURE WATER MAIN
EXISTING WATER MAIN
LCK PROPERTY BOUNDARY
COUNTY BOUNDARY
OHIO NATIONAL GUARD
STUDY AREA
CITY BOUNDARY
COLUMBUS
GROVEPORT
LOCKBOURNE
OBETZ

Utility Point of Contact -
City of Columbus: Mark Gerhart
City of Groveport: Steve Farst

BIXBY RD
ALUM CREEK DR
LONDON GROVEPORT RD
ROHR RD
LONDON GROVEPORT RD
HAYES RD
PONTIUS RD
FRANKLIN PICKAWAY
AIRBASE RD
RAILROAD
SR-762
DUVALL RD
SR-762
West Creek
RICKENBACKER
N

43"x68"
60"
42" RCP
66" RCP
42" RCP
48" RCP
78" RCP
2X 66" RCP
OUTFALL 007
OUTFALL 003
3X 72" RCP
2X 4'x6'
BOX CULVERTS
66" RCP
54" RCP
OUTFALL 010
OUTFALL 005
OUTFALL 004
WALNUT CREEK

007
003
010
004
005
006

Note: All information provided by the utility is depicted on the map.

RCP: Reinforced Concrete Pipe

Service Layer Credits: Woolpert LCK 2016

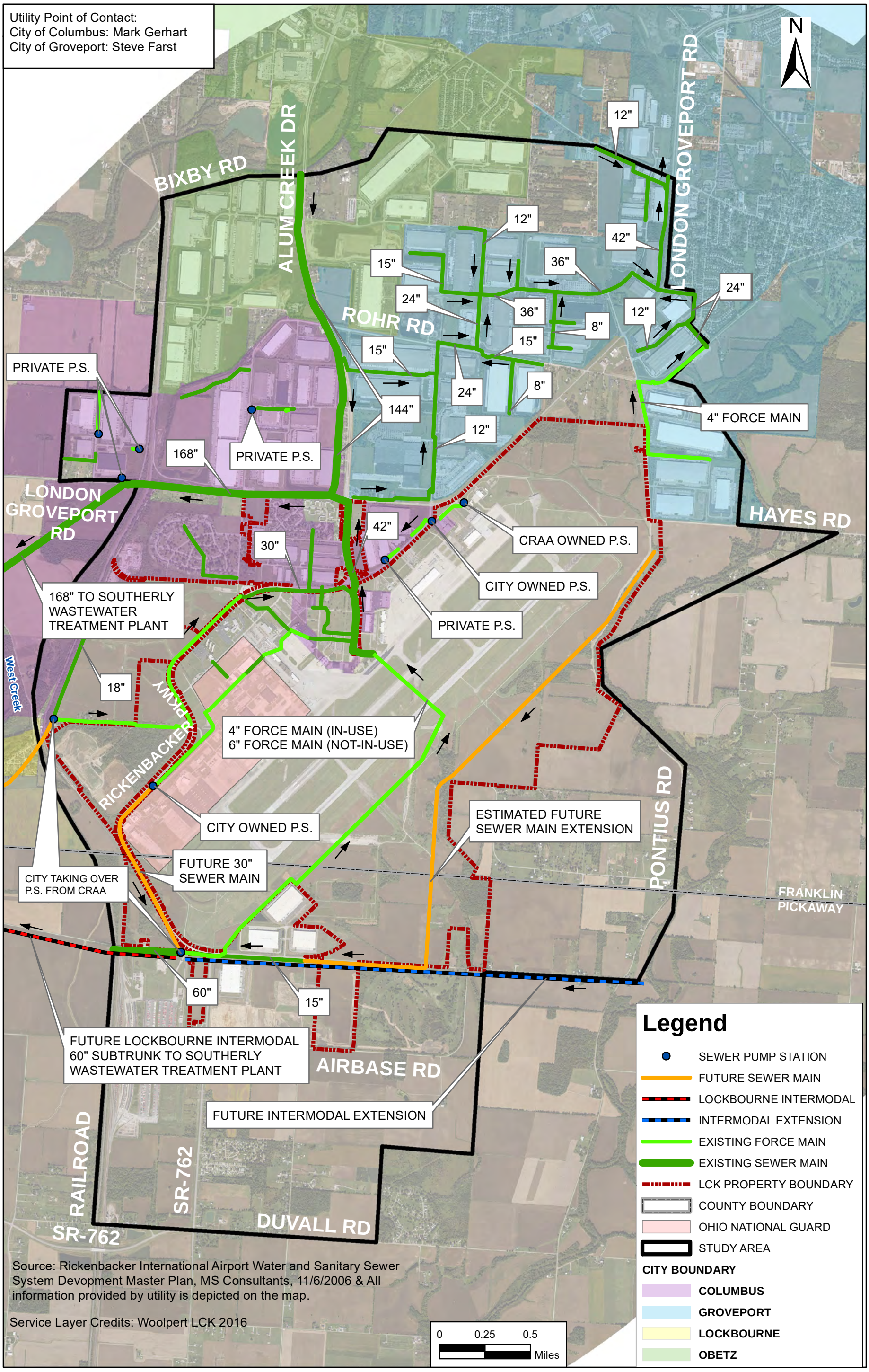
0 0.25 0.5 Miles

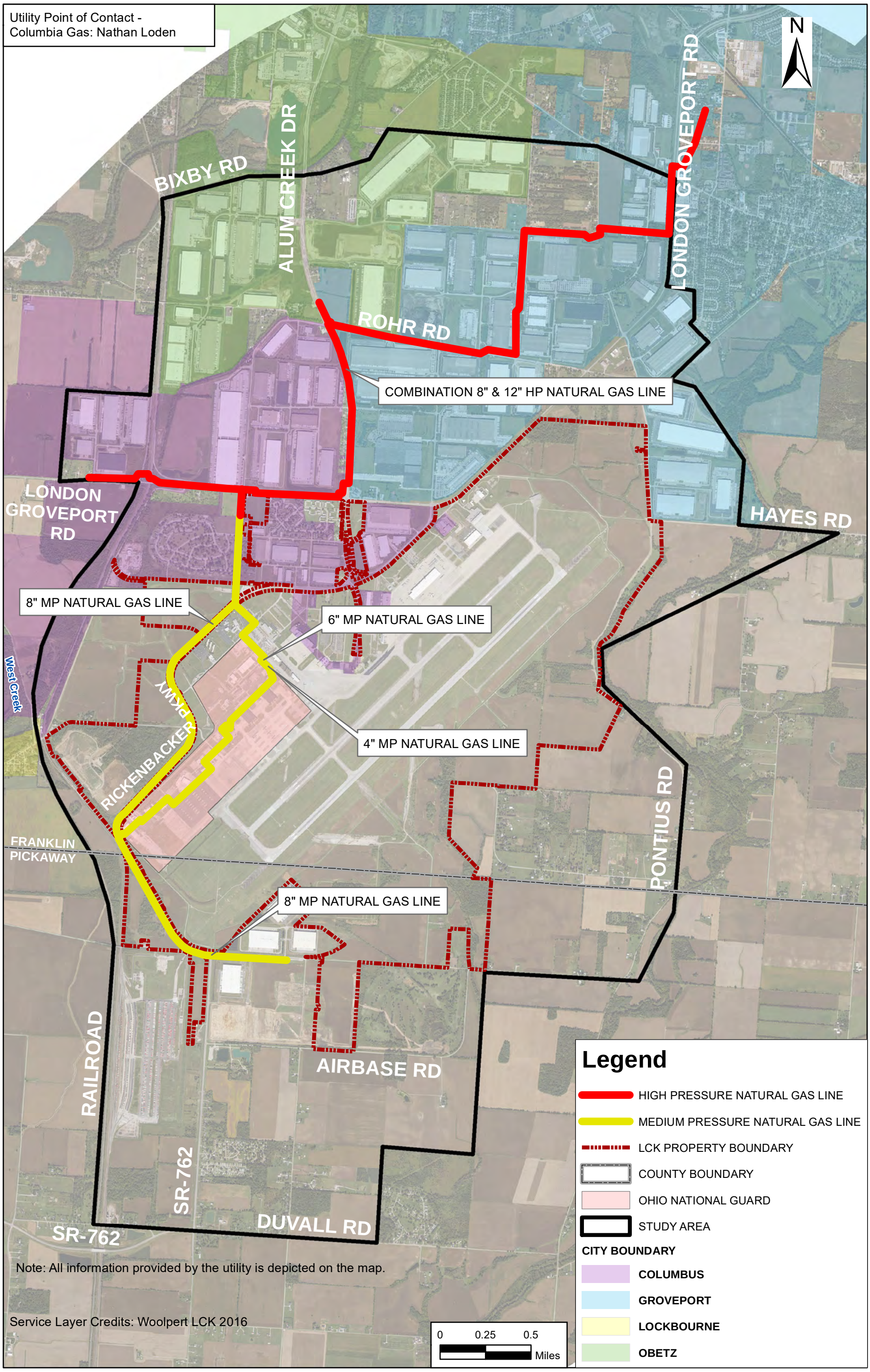
Legend

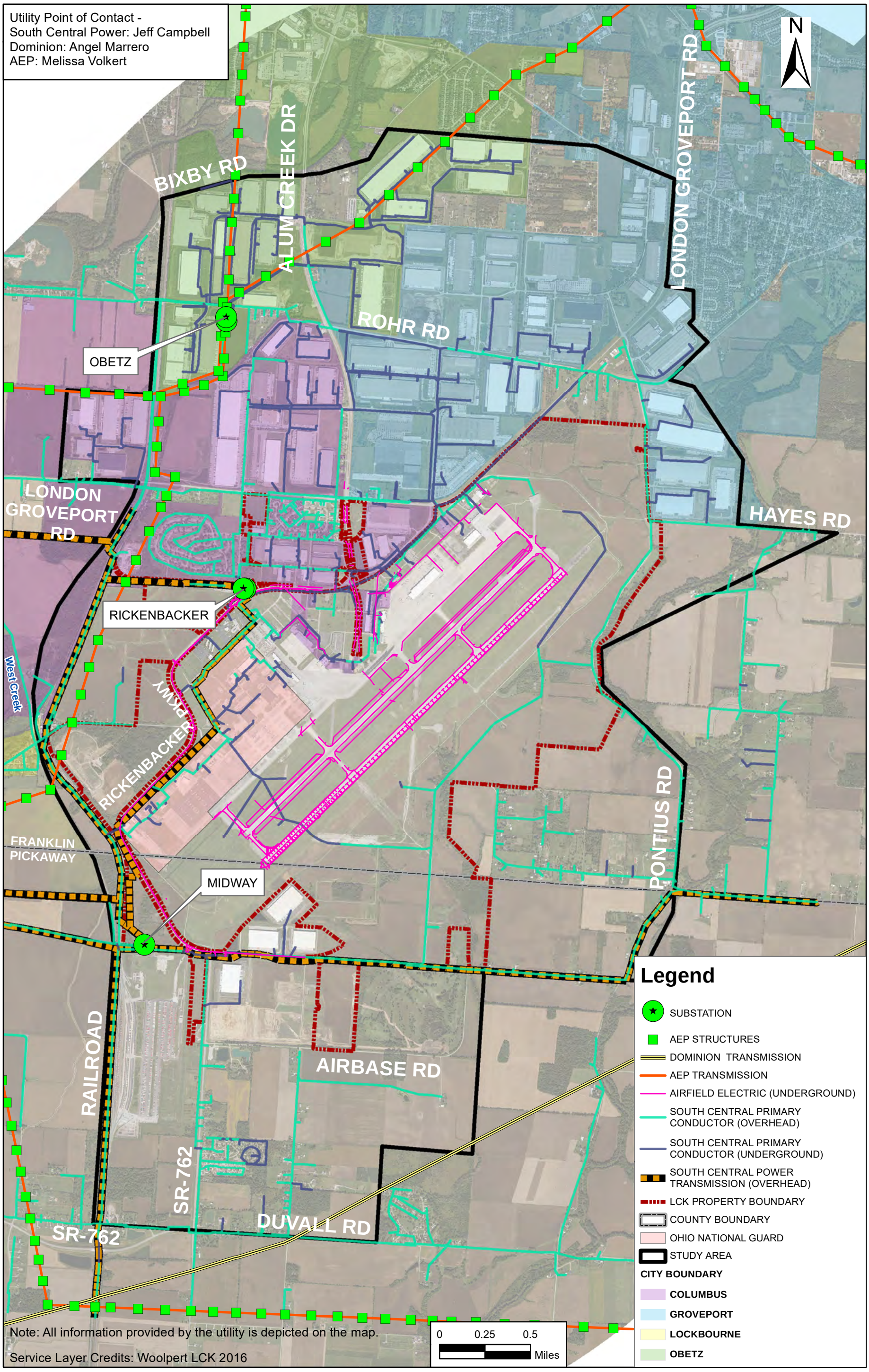
- DRAINAGE AREA/BOUNDARY
- STORM SEWER
- STORM DITCH/SWALE
- WALNUT CREEK
- LCK PROPERTY BOUNDARY
- COUNTY BOUNDARY
- OHIO NATIONAL GUARD
- STUDY AREA
- DRAINAGE AREA LABEL

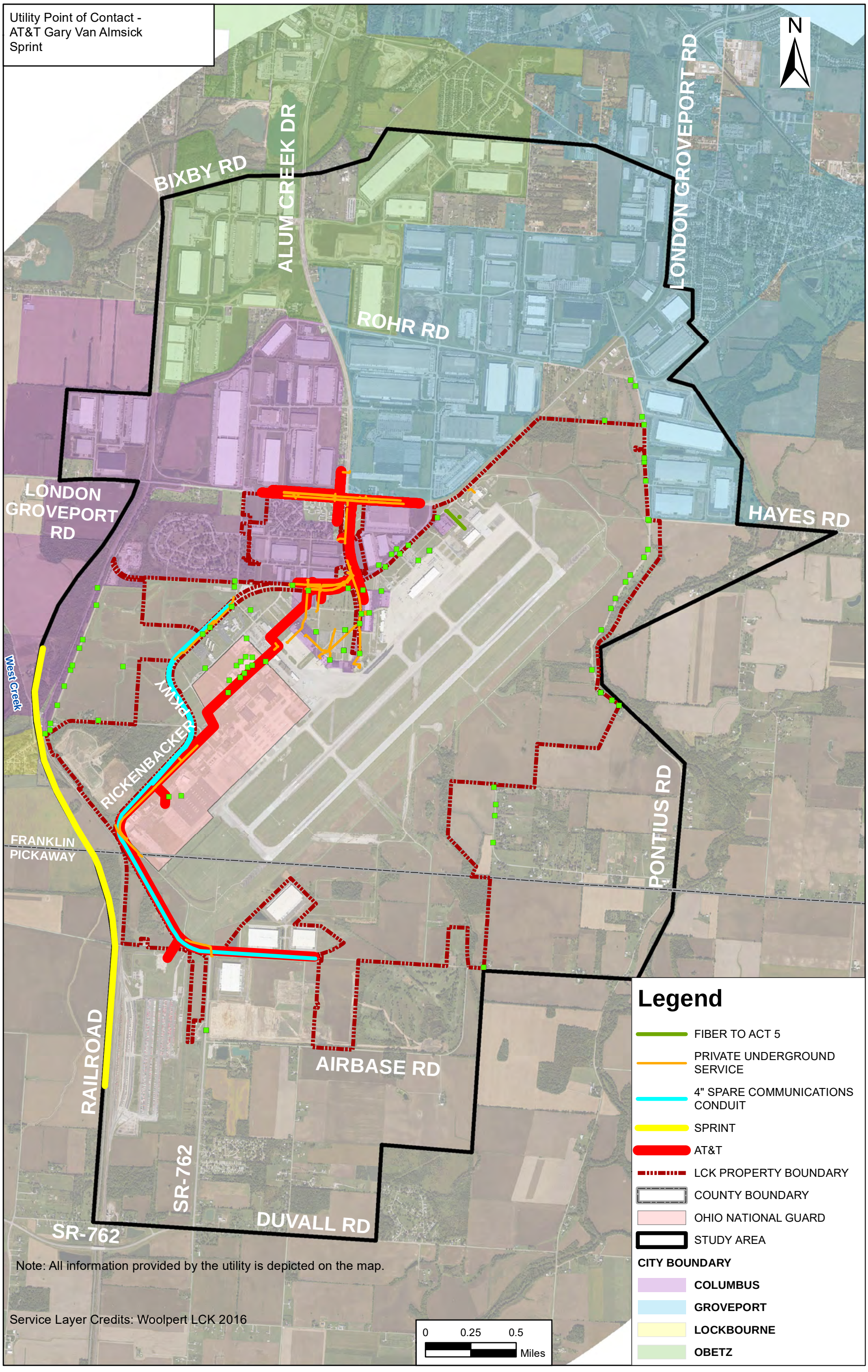
CITY BOUNDARY

- **COLUMBUS**
- **GROVEPORT**
- **LOCKBOURNE**
- **OBETZ**


Utility Point of Contact:
City of Columbus: Mark Gerhart
City of Groveport: Steve Farst
N
BIXBY RD
ALUM CREEK DR
LONDON GROVEPORT RD
ROHR RD
LONDON GROVEPORT RD
HAYES RD
PONTIUS RD
RICKENBACKER PKWY
West Creek
AIRBASE RD
RAILROAD
SR-762
SR-762
DUVALL RD
FRANKLIN PICKAWAY
12"
42"
15"
36"
24"
36"
8"
12"
24"
15"
15"
24"
8"
144"
12"
4" FORCE MAIN
168"
PRIVATE P.S.
PRIVATE P.S.
30"
42"
CRAA OWNED P.S.
CITY OWNED P.S.
PRIVATE P.S.
168" TO SOUTHERLY WASTEWATER TREATMENT PLANT
18"
4" FORCE MAIN (IN-USE)
6" FORCE MAIN (NOT-IN-USE)
CITY OWNED P.S.
ESTIMATED FUTURE SEWER MAIN EXTENSION
CITY TAKING OVER P.S. FROM CRAA
FUTURE 30" SEWER MAIN
60"
15"
FUTURE LOCKBOURNE INTERMODAL 60" SUBTRUNK TO SOUTHERLY WASTEWATER TREATMENT PLANT
FUTURE INTERMODAL EXTENSION
Legend
SEWER PUMP STATION
FUTURE SEWER MAIN
LOCKBOURNE INTERMODAL
INTERMODAL EXTENSION
EXISTING FORCE MAIN
EXISTING SEWER MAIN
LCK PROPERTY BOUNDARY
COUNTY BOUNDARY
OHIO NATIONAL GUARD
STUDY AREA
CITY BOUNDARY
COLUMBUS
GROVEPORT
LOCKBOURNE
OBETZ
0 0.25 0.5
Miles
Source: Rickenbacker International Airport Water and Sanitary Sewer System Devopment Master Plan, MS Consultants, 11/6/2006 & All information provided by utility is depicted on the map.
Service Layer Credits: Woolpert LCK 2016


Utility Point of Contact -
Columbia Gas: Nathan Loden
N
BIXBY RD
ALUM CREEK DR
LONDON GROVEPORT RD
ROHR RD
COMBINATION 8" & 12" HP NATURAL GAS LINE
LONDON GROVEPORT RD
HAYES RD
8" MP NATURAL GAS LINE
6" MP NATURAL GAS LINE
West Creek
PKWY
RICKENBACKER
4" MP NATURAL GAS LINE
PONTIUS RD
FRANKLIN
PICKAWAY
8" MP NATURAL GAS LINE
RAILROAD
AIRBASE RD
SR-762
DUVALL RD
SR-762
Note: All information provided by the utility is depicted on the map.
Service Layer Credits: Woolpert LCK 2016
0 0.25 0.5
Miles
Legend
HIGH PRESSURE NATURAL GAS LINE
MEDIUM PRESSURE NATURAL GAS LINE
LCK PROPERTY BOUNDARY
COUNTY BOUNDARY
OHIO NATIONAL GUARD
STUDY AREA
CITY BOUNDARY
COLUMBUS
GROVEPORT
LOCKBOURNE
OBETZ


Utility Point of Contact -
South Central Power: Jeff Campbell
Dominion: Angel Marrero
AEP: Melissa Volkert
N
BIXBY RD
ALUM CREEK DR
LONDON GROVEPORT RD
ROHR RD
OBETZ
LONDON GROVEPORT RD
HAYES RD
RICKENBACKER
West Creek
RICKENBACKER PKWY
FRANKLIN PICKAWAY
MIDWAY
PONTIUS RD
RAILROAD
AIRBASE RD
SR-762
SR-762
DUVALL RD
Legend
SUBSTATION
AEP STRUCTURES
DOMINION TRANSMISSION
AEP TRANSMISSION
AIRFIELD ELECTRIC (UNDERGROUND)
SOUTH CENTRAL PRIMARY CONDUCTOR (OVERHEAD)
SOUTH CENTRAL PRIMARY CONDUCTOR (UNDERGROUND)
SOUTH CENTRAL POWER TRANSMISSION (OVERHEAD)
LCK PROPERTY BOUNDARY
COUNTY BOUNDARY
OHIO NATIONAL GUARD
STUDY AREA
CITY BOUNDARY
COLUMBUS
GROVEPORT
LOCKBOURNE
OBETZ
Note: All information provided by the utility is depicted on the map.
Service Layer Credits: Woolpert LCK 2016
0 0.25 0.5
Miles


Utility Point of Contact -
AT&T Gary Van Almsick
Sprint
N
BIXBY RD
ALUM CREEK DR
ROHR RD
LONDON GROVEPORT RD
LONDON GROVEPORT RD
HAYES RD
West Creek
RICKENBACKER PKWY
FRANKLIN
PICKAWAY
PONTIUS RD
RAILROAD
AIRBASE RD
SR-762
DUVALL RD
SR-762
Legend
FIBER TO ACT 5
PRIVATE UNDERGROUND SERVICE
4" SPARE COMMUNICATIONS CONDUIT
SPRINT
AT&T
LCK PROPERTY BOUNDARY
COUNTY BOUNDARY
OHIO NATIONAL GUARD
STUDY AREA
CITY BOUNDARY
COLUMBUS
GROVEPORT
LOCKBOURNE
OBETZ
Note: All information provided by the utility is depicted on the map.
Service Layer Credits: Woolpert LCK 2016
0
0.25
0.5
Miles

Utility Point of Contact -
Marathon: Blake Ross

BIXBY RD
ALUM CREEK DR
ROHR RD
LONDON GROVEPORT RD
N
CRAA AVIATION FUEL FACILITY
(1) 20,000 GALLON ABOVE GROUND AVGAS TANK
(8) 50,000 GALLON UNDERGROUND JET A TANKS
(1) 12,000 GALLON ABOVE GROUND DIESEL TANK
LONDON GROVEPORT RD
ABANDONED 6" ASHLAND FUEL LINE
HAYES RD
FUTURE, (3) 356,000 GALLON ABOVE GROUND JET-A TANK FARM
West Creek
RICKENBACKER PKWY
PONTIUS RD
FRANKLIN
PICKAWAY
APPROX. 1.3 MILES
SR-762
RAILROAD
SR-762
DUVALL RD
MARATHON PETROLEUM

Legend

- FUEL HYDRANT
- JET-A FUEL LOOP
- MARATHON PETROLEUM
- ABANDONED ASHLAND FUEL
- LCK PROPERTY BOUNDARY
- COUNTY BOUNDARY
- OHIO NATIONAL GUARD
- STUDY AREA

CITY BOUNDARY

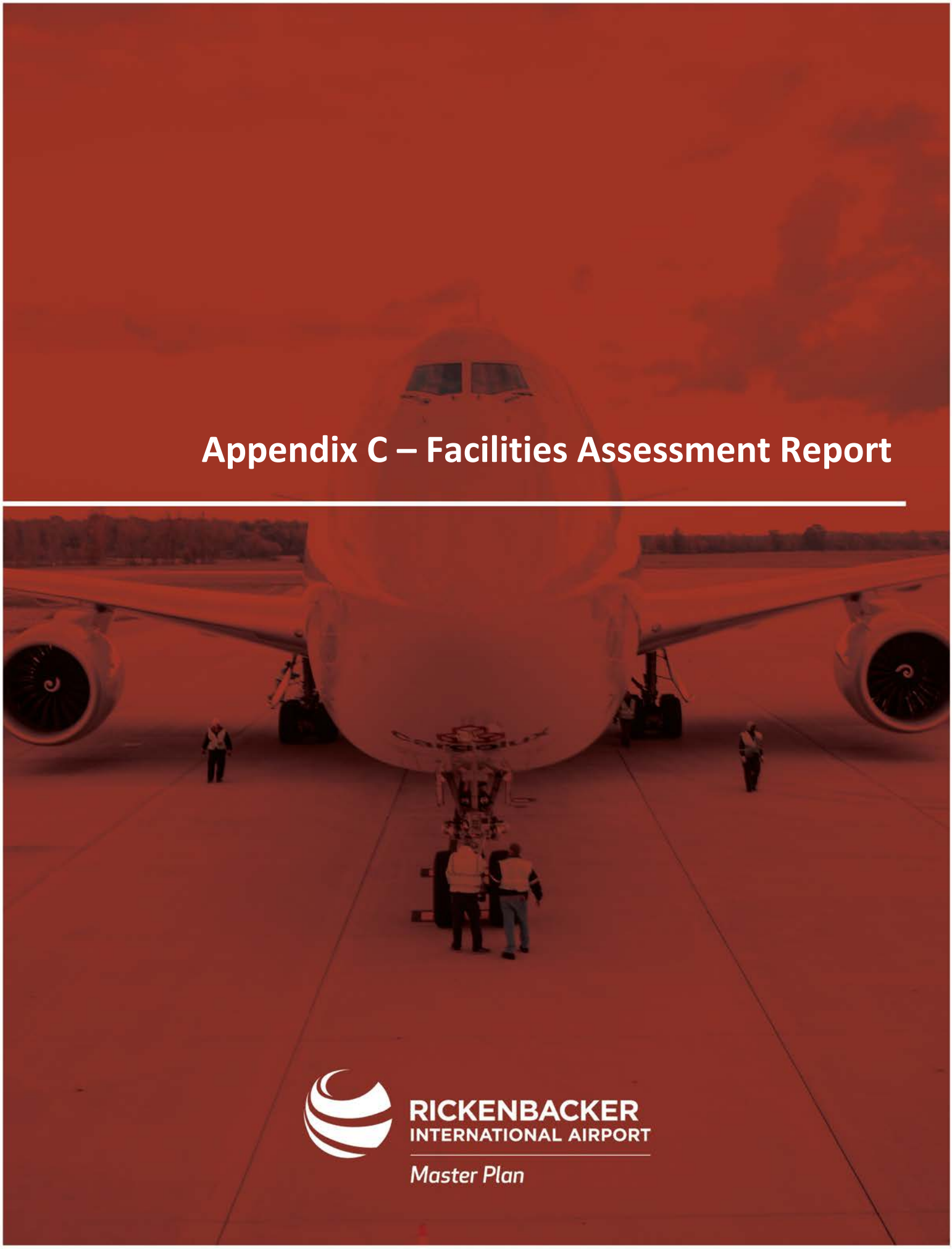
- **COLUMBUS**
- **GROVEPORT**
- **LOCKBOURNE**
- **OBETZ**

Note: All information provided by the utility is depicted on the map.

Service Layer Credits: Woolpert LCK 2016

0 0.25 0.5 Miles

Appendix C – Facilities Assessment Report



RICKENBACKER
INTERNATIONAL AIRPORT

Master Plan

Columbus Regional Airport Authority (CRAA)
4600 International Gateway
Columbus Ohio, 43219

Rickenbacker International Airport (LCK)

Appendix C Facility Condition Assessment Report

January, 2019

MBI Project No.: 155964

Michael Baker International
100 Airside Drive | Moon Township, PA 15108
Office: 412.269.6300 | Fax: 412.375.3993

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Appendix C – Facilities Assessment Report

A. EXECUTIVE SUMMARY

1. BACKGROUND

The Columbus Regional Airport Authority (CRAA) requested that Michael Baker International (MBI) perform a facilities condition assessment report for the CRAA owned properties at Rickenbacker International Airport (LCK). This effort is in support of a Master Planning effort for the entire airport being conducted by MBI. See Part F of this Appendix for Existing Airport Facilities Location Plan. The airport is a joint-use facility dedicated to providing commercial cargo and passenger service, and supporting military aviation activities. The airport has two parallel 12,000-foot runways and all-weather navigation and weather monitoring equipment, including ILS Category I/II approaches and no nighttime restrictions.

The airport was constructed in 1942 as Lockbourne Army Airfield and continues to support various military missions today. LCK is home for the 121st Air Refueling Wing (ARW) which supports the US military with worldwide aerial refueling, airlift and support forces. The 121st ARW is comprised of two squadrons, the 145th Air Refueling Squadron (ARS) and the 166th ARS, and is one of three "super wings" of the Ohio Air National Guard. The Army Reserve National Guard's 1-137th Assault Helicopter Battalion operates Army Aviation Support Facility No.2 at Rickenbacker in support of the UH-60 "Black Hawk" helicopter mission. Also, Naval Reserve and Marine Corps Reserve units are located in a consolidated Navy and Marine Corps Reserve Center at Rickenbacker.

Drawings were provided for many of the buildings and are referenced in Part C of this report. Previous building assessments and inspection reports, particularly for the roofs, were also provided and referenced in Part D of this report. Important aspects of those reports are reflected in the assessments below.

Michael Baker performed site visits on October 31, 2016, November 1, 2016 and on November 9, 2016. Members of the Michael Baker team who visited the site were: Ralph Deffenbaugh, P.E., LEED AP (Engineering) and Duncan Penney, AIA, LEED AP (Architecture). They were escorted by Ben Grutsch on October 31, Tony Kyer, David Wall, and Mark Kelby on November 1, Phil Gwiner and Connie Tursic on November 9 and Dan Apthorp and Mark Kelby on November 9. Numerous photographs were taken to assist in the assessments presented but not all are included as the focus of these assessments is on the general condition of the buildings to develop long-term master plan strategies and not detailed condition assessments of individual building systems.

2. PURPOSE

The purpose of this report is to assess the current building condition against its current function and use. Also, where recommended with the Master Plan Study (Study), develop possibilities for how the CRAA could adapt, use or re-purpose specific facilities in support of future airport functions. The Study will develop recommendations for future airport support facilities development. The focus of this assessment is to identify the general state of disrepair and/or

major deficiencies of existing adjacent site conditions, structure enclosure/assembly and typical building systems including structural, mechanical, plumbing, electrical, telecommunications, and fire protection.

Based on analysis of the information obtained through on-site information gathering, this report has captured the relevant field data and evaluated the adequacy of the existing systems and components to function in support of the Study's proposed recommendations. The assessment captures building envelope, accessibility accommodations and energy-efficiency items as appropriate. The team recommended strategic actions to use/re-use the existing facilities. Many buildings are fully functional, well maintained, and will remain in service without improvements. Several buildings are abandoned or severely deteriorated and are recommended to be demolished. There are a few buildings surveyed that may have some value to CRAA in the planning efforts because of their structure, current function, location, and/or size. These will require further evaluation as part of the study to determine if they should be renovated, repurposed into a new function or use, or demolished. These include the following buildings:

a. 440 CRAA Administration
b. 594 Hangar (Vacant)
c. 595 Hangar UPS Sorting
d. 596 Hangar (CRAA Storage)
e. 1000 Former Navy Reserve Training Center - Administration
f. 1002 Former Navy Reserve Training Center - Flight Simulator
g. 1004 Alert Hangar (CRAA Storage)

Various reuse options have been presented in this report. The CRAA Real Estate Department should conduct a more thorough review of the commercial viability and highest and best use of the hangars to determine a more specific disposition. Until that time, the facilities remain available for use AS IS, with limited utility.

3. SUMMARY

The following is a summary of the assessed facilities and recommendations. Refer to Part F of this Appendix for Existing Airport Facilities Location Plan. See Table Footnote for Condition.

PARA #	BLDG #	CURRENT USE	SQ.FT.	BUILT	CONDITION	RECOMMEND-ATION	IMPROVEMENTS REQUIRED
2	439	STORAGE SHED (Vacant)	240	Unknown	POOR	Demolish	
1	440	CRAA ADMINISTRATION	5,490	1970	FAIR	**Evaluate**	Renovate to Admin/office for lease, or demolish.
2	441	MAINTENANCE SHOP (Old)	9,610	1959	POOR	Demolish	
3	504	SANITARY LIFT STATION (Abandoned)	720	1983	NOT FUNCTIONAL	Demolish	
4	532	CRAA FBO	42,450	1942	GOOD	Maintain	Minor repairs

PARA #	BLDG #	CURRENT USE	SQ.FT.	BUILT	CONDITION	RECOMMEND-ATION	IMPROVEMENTS REQUIRED
5	556	MAINTENANCE STORAGE	8,220	1958	POOR	Demolish	
6	557	MAINTENANCE STORAGE	8,260	1958	POOR	Demolish	
7	558	MAINTENANCE GARAGE	7,560	2001	GOOD	Maintain	Investigate improvements noted.
8	558A	FUELING CANOPY	900	2001	GOOD	Maintain	
9	558B	STORAGE	1,100	2001	GOOD	Maintain	Minor repairs
10	559	TRITURATOR	420	2001	GOOD	Maintain	
11	594	HANGAR (Vacant)	28,880	1954	POOR	**Evaluate**	Renovate for tenant lease or storage.
12	595	HANGAR (UPS Sorting)	28,270	1953	FAIR	**Evaluate**	Maintain, provide upgrades as lease storage.
13	596	HANGAR (CRAA Storage)	28,270	1953	FAIR	**Evaluate**	Renovate for tenant lease storage.
14	597	HANGAR (Vacant)	26,310	1954	POOR	Maintain	Building updates and repairs are needed.
16	600	WASTE WATER PLANT (Abandoned)	1,120	1942	NOT FUNCTIONAL	Demolish	
16	606	COMMUNICATIONS (Abandoned)	484	1951	NOT FUNCTIONAL	Demolish	
16	607	POWERSTATION (Abandoned)	4,500	1951	NOT FUNCTIONAL	Demolish	
16	670	EQUIPMENT SHELTER BUILDING (Former TACAN Station - Abandoned)	360	1959	NOT FUNCTIONAL	Demolish	
16	680	ORDNANCE DISPOSAL (Abandoned)	2,750	1953	NOT FUNCTIONAL	Demolish	
15	1000	FORMER NAVY RESERVE CENTER ADMIN BLDG (Training)	8,190	1957	POOR	**Evaluate**	Full and extensive renovation or demolition.
17	1001	HANGAR (AIRNET II)	30,115	1956[1]	GOOD	Maintain	
18	1002	FORMER NAVY RESERVE CENTER FLIGHT SIMULATOR	4,970	1957	POOR	**Evaluate**	Full and extensive renovation or demolition.
19	1004	HANGAR (Storage)	21,270	1956	POOR	**Evaluate**	Substantial renovation or demolition.
20	1005	STORAGE (Vacant)	4,331	1990	GOOD	Maintain	Minor repairs
21	1009	STORAGE (Vacant)	4,180	1962	POOR	Demolish	
22	1076	FUEL PUMP STATION	2,030	1952	FAIR	Maintain	
23	1076A	FUEL CANOPY	3,960	2009	GOOD	Maintain	
24	1076B	FUEL STORAGE	216	Circa 2014/ 2015	FAIR	Maintain	Minor repairs
25	1093	AIRFIELD LIGHTING VAULT	1,760	1952	FAIR	Maintain	Minor repairs

PARA #	BLDG #	CURRENT USE	SQ.FT.	BUILT	CONDITION	RECOMMEND-ATION	IMPROVEMENTS REQUIRED
26	2241	CHARTER TERMINAL	42,600	2001	GOOD	Maintain	
27	2865	FORWARD AIR	50,000	1994	FAIR	Maintain	Minor repairs
28	7250	MULTI-TENANT BUILDING (CRAA FBO/Admin Offices)	148,170	2004	GOOD	Maintain	
29	ACT1	AIR CARGO TERMINAL - I	67,200	1999	GOOD	Maintain	Minor repairs
30	ACT2	AIR CARGO TERMINAL - II	57,600	2000	GOOD	Maintain	Minor repairs
31	ACT3	AIR CARGO TERMINAL - III	40,000	2001	GOOD	Maintain	Minor repair
32	ACT4	AIR CARGO TERMINAL - IV	48,000	2007	GOOD	Maintain	Minor repairs
33	FR	FIRING RANGE	5,835	Unknown	FAIR	Demolish	Demo for GLP Development
34	NAVAID SHELTER	5L MALSR	NA	2004	FAIR	Maintain	Minor repairs
34	NAVAID SHELTER	5R ALSF-2	NA	1992	FAIR	Maintain	Replace door and seal
34	NAVAID SHELTER	23L LOCALIZER	NA	2016	GOOD	Maintain	
34	NAVAID SHELTER	5R GLIDESLOPE	NA	2001	FAIR	Maintain	Replace exterior panel boards
34	NAVAID SHELTER	23L GLIDESLOPE	NA	2016	GOOD	Maintain	
34	NAVAID SHELTER	5R LOCALIZER	NA	2001	FAIR	Maintain	Replace exterior panel boards
34	NAVAID SHELTER	23L MALSR	NA	1999	FAIR	Maintain	Replace door and seal
34	NAVAID SHELTER	5L LOCALIZER	NA	2004	FAIR	Maintain	Replace door seal
34	NAVAID SHELTER	5L GLIDESLOPE	NA	2004	FAIR	Maintain	
34	NAVAID SHELTER	NE APPROACH PICKL	NA	Unknown	FAIR	Maintain	Replace door seal
34	NAVAID SHELTER	SW APPROACH COBBS	NA	Unknown	GOOD	Maintain	
35	SRE	SNOW REMOVAL EQUIPMENT	40,540	1999	GOOD	Maintain	Minor repairs SRE STORAGE – Built 1999 SRE SUPPORT – Built 2000 SRE MAINTENANCE – Built 2001
36	ATCT	AIRPORT TRAFFIC CONTROL TOWER	5,760	2016	GOOD	Maintain	

Condition Description:

Good	Fully functional and maintained.
Fair	Fully functional but requires maintenance
Poor	Partially functional systems along with non-functional systems.
Not Functional	Facility is abandoned and systems are not functional.

Notes: 1 – Building 1001 refurbished in 2008.

B. FACILITY CONDITION ASSESSMENT FINDINGS

1. BUILDING 440 - CRAA ADMINISTRATION

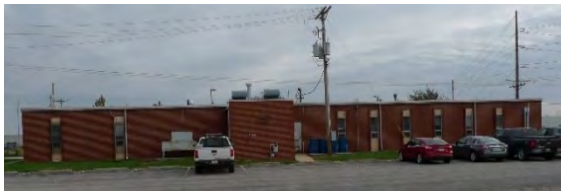
Current Use: Currently the building serves as CRAA's administration office building, but was reported that the building is to be vacated in 2017.

Condition: FAIR – Building was built in 1970. The building is functional, but dated. No Certificate of Occupancy was found.

Life Safety: A code analysis was not performed as part of the master plan scope. No inspection reports available.

Spaces: Offices, conference room, restrooms.

Finishes: Drywall, acoustic panel ceilings, vinyl composite tile (VTC) flooring.



ADA: Entry ramp does not meet ADA requirements for cross slope. The restrooms are not handicap accessible, and the door hardware is non-compliant with ADA requirements.

Envelope: Brick masonry is in need of repointing and replacement of broken bricks. Joint sealants are deteriorated. Single pane aluminum windows, some with storm windows, have deteriorated gaskets and seals. Several exterior steel doors are damaged and corroded. The electrical room door is beyond repair.

Roof: The roof inspection completed in 2015 found that the "roof felt soft and spongy throughout much of the roof. Many of the insulation joints could be seen telegraphing through the membrane. The roof cut indicated that the woodfiber insulation under the EPDM was saturated with moisture and that the BUR roof plies were very brittle to the touch. Most of the flashing on the gravel stop joint covers was observed split with some splitting along the backside of the gravel stop metal. Rooftop equipment was found containing rust and should be painted. The ballasted roof area displays membrane shrinkage around the perimeter edge."

HVAC: The boiler appears to have been updated when the site-wide high temperature hot water (HTHW) system was removed and a boiler room added to provide hot water (HW) system to heat the building. Air handling unit (AHU)-1 is not original and was likely installed at the same

time AHU-2 was installed in the boiler room addition. The other chiller unit is functional but there are no product tags to indicate installation date. As noted in the 2012 detailed building assessment report, replacement of the HVAC systems would be expected if the building is to remain in service beyond a few years.

Electrical: Original 208V/120V 3-phase 4-wire with 150 Amp panel for HVAC and 225 Amp panel for lighting and power.

Plumbing: Existing gas service was functioning. Water heater has been updated.

Fire Protection: No fire sprinkler system.

Energy Efficiency: No exterior wall insulation.

Recommendation: The building structure is sound. If a purposeful use or re-use for the building can be defined, occupancy of the building would require a complete and full building renovation, including all building systems, roof, walls and doors. Insulation should be provided for energy efficiency but is a challenge in masonry bearing wall construction. The mechanical, plumbing, and electrical systems would be replaced and the restrooms and entries would have to be renovated to meet ADA requirements. At this time, it has not been identified that additional, remote administrative offices are needed by the Owner. And a specific re-use/re-purposing of the building has not been determined. Additional evaluation is needed. If CRAA no longer has a need for this administration space, it is likely the abandoned building might deteriorate further and therefore it is recommended that the building be demolished.

2. BUILDING 441 - MAINTENANCE SHOP (Old) and 439 STORAGE SHED

BUILDING 441 MAINTENANCE SHOP

Current Use: The current building is used for storage, and is to be vacated in 2017.

Condition: POOR - 1959 construction**.** The building is not functional in its current condition and is without a Certificate of Occupancy. Pavement around shop is in poor condition.

Life Safety: A code analysis was not performed as part of the master plan scope. No inspection reports available.

Spaces: Warehouse, offices, restrooms.

Finishes: Drywall offices, acoustic panel ceilings in offices, peeling paint throughout (possibly lead based), and damaged vinyl composite tile.

ADA: Non-compliant restrooms and non-compliant door hardware.

Envelope: The brick masonry is in need of repointing and replacement of broken bricks. Joint sealants are deteriorated. Single pane window glass with badly rusted steel frames. Many of the original window panes are missing. Original interior screens are missing. Man door seals and hardware are in poor condition.

Roof: A detailed roof inspection was not part of the master plan scope. The information in this section originated from the CRAA-provided survey. According to the 2015 CRAA Roof Survey, a new roof was installed in 2007. Furthermore, the survey indicates that repairs were warranted. According to CRAA Terminal and Facilities Maintenance personnel, these have not been completed and this building has been removed from the inspection program.

HVAC: Non-functioning boiler. Hot water system added to replace original site-wide HTHW system. Original hot water heating/ventilating (HV) units had been replaced, but are not functional. Boiler room was not accessible, but based on the existing condition of similar boilers in other buildings that were converted from HTHW to HW, it is expected that the boiler system would require total replacement.

Electrical: Original 208V/120V 3-phase 4-wire with 400 Amp panel and 200 Amp panel for heating, ventilating, and equipment.

Plumbing: Currently systems are not functional and would require complete replacement.

Fire Protection: No fire protection sprinkler system.

Energy Efficiency: No exterior wall insulation. Possibly has original roof insulation unless replaced during re-roofing.

Recommendation: To re-use the existing building for any function would require complete removal and replacement of all systems, finishes, windows, doors, plumbing fixtures, etc. Existing column bays at 16-foot centers, and are generally too narrow for a maintenance building. Given condition and extensive renovations needed, it is recommended that the building be demolished.

BUILDING 439 - STORAGE SHED

A storage shed, in close proximity to Building 441, is a small wood frame structure with corrugated metal panels, damaged windows and non-functional utilities. This building is severely deteriorated and is recommended to be demolished.

3. BUILDING 504 - SANITARY LIFT STATION

Current Use: Not in service - abandoned.

Condition: NOT FUNCTIONAL - Constructed 1983.

Life Safety: A code analysis was not performed as part of the master plan scope. No inspection reports available.

Spaces: Electrical panels, emergency generator, stair access to flow meter and pump pit.

Finishes: Scrim insulation exposed framing, exposed concrete.

ADA: NA

Envelope: Pre-engineered metal building (PEMB) with metal siding and roof.

Roof: A detailed roof inspection was not part of the master plan scope. No inspection reports available.

HVAC: Two (2) 15 kW electric heaters.

Electrical: 600 Amp service with 200 kW generator.

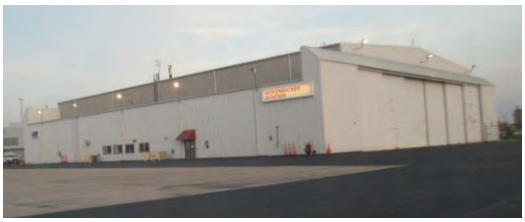
Plumbing: 1,000-gallon underground diesel fuel storage tank directly to west of lift station. One-inch water feed for pump seals.

Fire Protection: None.

Energy Efficiency: Scrim blanket insulation in PEMB.

Recommendation: Demolish the building and systems, since no longer functional nor needed. Given building size, condition and specific design, it is not easily adapted for re-use or re-purposing. Remove underground storage tank, underground fuel piping and fuel.

4. BUILDING 532 - CRAA FBO



Current Use: Fixed Base Operations (FBO) hangar and office will be vacated by CRAA and is available for lease.

Condition: **GOOD** - Constructed in 1942, and renovated in 1995.

Life Safety: A code analysis was not performed as part of the master plan scope. No inspection reports available.

Spaces: Hangar, offices, conference room, restrooms.

Finishes: Drywall, acoustic panel ceilings at offices.

ADA: Men's restroom in the north portion of the building does not meet handicap requirements due to clearance requirements and missing grab bars in one of the handicap stalls. Men's restroom in southwest portion of building does not appear to have a urinal mounted at the required lower height for handicap access.

Envelope: Metal siding with blanket insulation and translucent panel window system. Original uninsulated hangar doors to the west were not operable, but have a small sectional overhead door which is operable. Doors at east were replaced in July 1999, and are fully functional and insulated. Door clearance is 27'-6". The main entrance vestibule shows signs of a water leak at the window sill and at the ceiling. The window sill located in the second floor lunch/meeting room also shows evidence of a water leak.

Roof: The roof inspection completed in 2015 indicated a total of three (3) roof sectors exist on this building: The south low roof, upper main roof and the north low roof. The low north roof was installed in 1990, and is a mechanically-attached .045 inch thick ethylene propylene diene monomer (EPDM) system. This roof appears to have been installed over metal panels decking over the old roof. The general appearance of the roof looks to be in poor condition as the membrane was observed torn in several areas as well as having several punctures and cuts. The roof is at the end of a typical service life, which is generally 18-20 years for this type of system. The upper main roof area was installed in 2008 and contains mechanically attached in-seam batten .060-inch thick EPDM roof system. The general appearance of the roof looks to be in good and favorable condition. The low south roof was replaced in 1995 with fully adhered EPDM. According to CRAA Terminal and Facilities personnel, one section of the lower roof has been completed under operating costs after damage from a high wind storm in 2018. The other lower section has not been completed and the project was postponed until 2019.

HVAC: North wing prop shop is served by AHU-1, sized at 1,500 cubic feet per minute (cfm) with 6,000 BTU per hour (MBH) duct furnace and 60 MBH cooling condenser. The remaining ground-level north shops have AHU-2 sized at 3,200 cfm with 96 MBH duct furnace and 120 MBH cooling condenser. South offices and shop have AHU-3 sized at 3,200 cfm with 96 MBH duct furnace and 90 MBH cooling condenser. South stores has 60 MBH furnace. Second floor north has AHU-4 sized at 3200 cfm with 96 MBH duct furnace and 120 MBH cooling condenser. The second floor south doesn't have a furnace and only has two 480V electrical heaters. Radiant heat in hangar was installed in 2014. The heat provided in the hangar bay is not adequate to maintain proper temperature per discussions with the FBO Manager.

Electrical: 800 Amp, 480V 3-phase service with step down transformers. Lighting is metal halide fixtures in hangar and fluorescent fixtures elsewhere in building.

Plumbing: Two (2) 40-gallon electric water heaters for each wing.

Fire Protection: Fully sprinklered with 6-inch main. Per 2012 Code Analysis, the current system would be code compliant, presuming no change to original occupancy.

Energy Efficiency: Wings are insulated, roof has insulation, and clerestory translucent panels above low roof and west hangar door are uninsulated.

Recommendation: Maintain building as a functioning FBO. Recommend making general repairs noted including: additional heating will be needed in the second floor south, if occupied; additional infrared heat may be required in hangar; ADA upgrades to men's restrooms would be needed for code compliance; general repairs for water infiltration at main entrance vestibule; repair wall infiltration at second floor lunch/meeting room window.

5. BUILDING 556 - MAINTENANCE STORAGE and BOILER BUILDING

Current Use: Maintenance storage with a boiler building added after site-wide HTHW system removed.

Condition: POOR - 1958 Pre-engineered metal building (PEMB) construction. Original exterior siding with dents and deterioration. Overhead doors are not functional.

Life Safety: A code analysis was not performed as part of the master plan scope. No inspection reports available.

Spaces: Open storage.

Finishes: Exposed foil faced fiberglass wall and roof insulation, damaged in several locations.

ADA: NA

Envelope: Corrugated metal roof and wall siding (damaged at many locations). Overhead doors do not appear to be functional. Man doors are corroded.

Roof: A detailed roof inspection was not part of the master plan scope. No inspection reports available.

HVAC: Hot water heaters are not functioning. Adjacent boiler building is not functional and the boiler system is beyond repair. Wall exhaust fans were not functional at the time of inspection.

Electrical: 100 Amp service from Building 557. Lighting has been upgraded to metal halide.

Plumbing: None, except local air compressor.

Fire Protection: No sprinkler system.

Energy Efficiency: Doors are not functioning. Roof and walls have scrim blanket insulation with areas damaged or missing.

Recommendation: This building is severely deteriorated. Renovation costs would most likely exceed new construction of a similar facility. It is recommended that building be kept as a short-term covered and unheated general storage building, or that the building be demolished.

6. BUILDING 557 - MAINTENANCE STORAGE

Current Use: Maintenance storage.

Condition: **POOR -** 1958 Pre-engineered metal building construction (PEMB). Very worn siding, and roof. Overhead doors are not functional. Salt storage is covering several steel columns and against exterior siding. This will cause corrosion and loss of column support. Sand storage area has peeling paint on structure from moisture in sand.

Life Safety: A code analysis was not performed as part of the master plan scope. No inspection reports available.

Spaces: Open storage and bin walls for sand and salt.

Finishes: Exposed wall and roof insulation.

ADA: NA

Envelope: Corrugated metal siding, damaged at many locations.

Roof: A detailed roof inspection was not part of the master plan scope. No inspection reports available.

HVAC: Hot water heaters are not functioning. Adjacent Boiler building is not functional. Boiler is beyond repair.

Electrical: 200 Amp electrical service for building and serving adjacent Building 556 and boiler building. Lighting has been upgraded to fluorescents.

Plumbing: None.

Fire Protection: No sprinkler system.

Energy Efficiency: Doors are not functional, heat was not functioning. Scrim covered blanket insulation on walls and roof with some areas that are damaged and missing.

Recommendation: Given the current state of this building and systems being severely deteriorated, it is recommended that the building be kept as a short-term covered and unheated general storage building, or that the building be demolished.

7. BUILDING 558 - MAINTENANCE GARAGE

Current Use: Vehicle maintenance.

Condition: **GOOD** - Fully functional, constructed in 2001. Pre-engineered metal building (PEMB) construction.

Life Safety: A code analysis was not performed as part of the master plan scope. No inspection reports available.

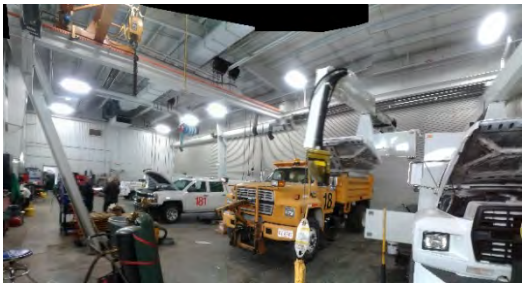
Spaces: 3 maintenance bays, 1 with 7.5-ton bridge crane, 1 wash bay, offices, unisex restroom, storage, fluids pump room.

Finishes: Painted concrete masonry walls, acoustic panel ceilings in office.

ADA: Restroom is non-compliant for ADA requirements.

Envelope: Concrete masonry, insulated metal siding and roof.

Roof: The roof inspection completed in 2015 indicated that this "building is a pre-engineered standing seam metal roof installed over steel framing. The panels are factory formed and field seamed in place. Movable clips are attached to the structural bar joists and seamed into the panels allowing panel movement. The undersides of the panels are insulated with fiberglass batt insulation. The typical service life for a standing seam metal roof is approximately 30 plus years. This pre-engineered standing seam metal roof appears to be in good condition. Panel seams appear to be in good repair. No significant dents or damage to the panels were noted."



HVAC: A packaged terminal air conditioner (PTAC) serves the office, with a 10,000 cfm direct fired heating/ventilating unit in the garage.

Electrical: 800 Amp 208V/120V 3-phase 4 Wire (W) service. Fluorescent lights are typical throughout, except 400 W metal halides in maintenance bays.

Plumbing: The building has: a natural gas feed, dry sprinkler system, fluid distribution system including hydraulic oil, 2 motor oils, and antifreeze with air driven pumps and 2 sets of hose reels, air compressor and dryer system, electric water heater and a 1,031 gallon oil water separator.

Fire Protection: Fire sprinkler system provided.

Energy Efficiency: Insulated pre-engineered manufactured building with uninsulated concrete masonry exterior veneer up to 8 feet high.

Recommendation: The building is functional, designed for its current function, and is well maintained. It is recommended to maintain the building in its current function. Also, based on discussions with the Supervisor of Airfield Maintenance, the master planning should confirm crane capacity adequacy for building function and investigate need for additional larger service bay to handle current equipment.

8. BUILDING 558A - FUELING CANOPY

Current Use: Fueling canopy.

Condition: **GOOD** - 2001 construction, fully functional with minor dents at canopy from vehicle impacts.

Life Safety: A code analysis was not performed as part of the master plan scope. No inspection reports available.

Spaces: Open.

Finishes: Metal panel fascia and soffit.

ADA: NA

Envelope: NA

Roof: A detailed roof inspection was not part of the master plan scope. No inspection reports available.

HVAC: NA

Electrical: Service is from Building 558.

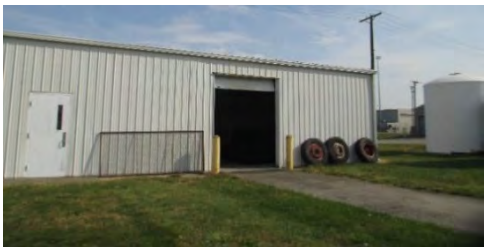
Plumbing: Diesel, bio diesel, and gasoline via underground piping to adjacent aboveground 3 tank (5,000 gallons each) fuel farm.

Fire Protection: None.

Energy Efficiency: NA

Recommendation: Maintain. No work is required. Confirmation that leak detection system is functioning for underground piping.

9. BUILDING 558B - STORAGE



Current Use: Maintenance storage.

Condition: **GOOD** - Fully Functional, 2001 construction.

Life Safety: A code analysis was not performed as part of the master plan scope. No inspection reports available.

Spaces: Storage.

Finishes: Exposed scrim covered fiberglass blanket insulation for walls and roof. Overhead door jambs are rusted through and should be repaired. Interior steel slightly rusted with signs of water leakage on inside wall girts and scrim covering at gutter lines.

ADA: NA

Envelope: Pre-engineered metal building, metal wall and roof.

Roof: A detailed roof inspection was not part of the master plan scope. No inspection reports available.

HVAC: None.

Electrical: Service unknown, lights likely fed from adjacent Snow Removal Equipment (SRE) building.

Plumbing: None.

Fire Protection: No sprinkler system.

Energy Efficiency: Exposed scrim covered fiberglass blanket insulation for walls and roof.

Recommendation: Building functions well in its intended storage purpose, recommend maintaining as such. Minor repair to close up envelope and repair the rusted door jambs.

10. BUILDING 559 - TRITURATOR

Current Use: Triturator.

Condition: **GOOD** - Fully functional, 2001 construction.

Life Safety: A code analysis was not performed as part of the master plan scope. No inspection reports available.

Spaces: Waste dump station.

Finishes: Unpainted concrete masonry interior, exposed wood trusses and plywood roof decking. Powered overhead coiling doors.

ADA: NA

Envelope: Pre-engineered manufactured metal building, with metal wall and roof.

Roof: A detailed roof inspection was not part of the master plan scope. No inspection reports available.

HVAC: Two Electric 15 kW heaters and wall exhaust fan.

Electrical: 225 Amp, 208V/120V 3-phase 4-wire service.

Plumbing: Sanitary lift pump in pit. Inside water meter and hose reel.

Fire Protection: None.

Energy Efficiency: No exterior insulation.

Recommendation: Building was designed and serves its intended purpose. Recommend maintaining building in its current function. Suggest building an insulated enclosure for water meter and hose reel, with a small heater, instead of having two (2) 15 kW heaters. Would be more energy efficient and reduce electric consumption and cost.

11. BUILDING 594 - HANGAR

Current Use: Vacant. Previously served as aircraft hangar, with tail through the door requirements for larger aircraft. Has Certificate of Occupancy.

Condition: **POOR** - 1954 construction with one larger single bay. Hangar doors are not functional. Door clearance is 30'-4". Locker restrooms require complete upgrade. Elevated office requires full renovation and new access stairs.

Life Safety: A code analysis was not performed as part of the master plan scope. No inspection reports available.

Spaces: Storage, elevated offices, restroom.

Finishes: Exposed metal siding and roof.

ADA: Non-compliant.

Envelope: Steel frame with metal siding and single pane windows. Insulation appears to be fiberglass.

Roof: The roof inspection completed in 2015 indicated that the "building contains several roof areas all having the same roof panels. All of the roof areas contain corrugated roof panels installed over steel framing. Warranty records indicate that Centimark Roofing installed an acrylic coating on these roofs in 2005. A 10-year coating warranty was provided by Centimark which expired 8/16/2015. The metal lap panels appear to be in fair condition throughout the various areas even though it is covered with a newer coating. Some blisters were observed in the coating."

HVAC: A hot water system feeds six (6) heating/ ventilating units, but the hot water system is fed from neighboring Building 595 and is not functional. Therefore, there is no heat in building. Observations noted small Reznor unit heaters and wall AC units in office areas.

Electrical: Original transformer has exposed busses in fenced area. This system does not meet current building codes, is unsafe and should be replaced with new transformer. 600 Amp, 480V/277V 3-phase 4-wire service. Original lights should be replaced.

Plumbing: A large air compressor is located in the southwest corner behind the locker area with newer electrical service. An old 50-gallon electric water heater is located in the locker area.

Fire Protection: Wet sprinkler system, which should be drained for the winter season due to no heat present in the building to prevent freezing. Per 2012 Code Analysis, current sprinkler system is most likely code compliant, if building is reused as a hangar.

Energy Efficiency: No exterior wall insulation.

Recommendation: If facility is to be maintained as a functioning aircraft storage hangar, it would require new hangar doors and upgrades to systems such as heating, electrical, new plumbing (restrooms) and possibly renovation to the existing sprinkler system. With the tail door removed, size of aircraft that could be accommodated would be limited to smaller aircraft. Or, a building addition/extension might be investigated if larger aircraft might use the facility.

The building's structural frame and floor slab are the main asset for this building. The renovation costs might far outweigh possible lease income for this awkward hangar layout. Therefore, if hangar space was deemed necessary, we would recommend demolition of the current facility and construction of an entirely new facility sized and constructed to meet the Owner's needs.

Given the size, location, and general configuration of the space, it seems practical that a renovation for re-use of the building would be considered, similar to the neighboring Hangar 595 being leased by UPS. Some basic upgrades would be required to provide better use of the building. Change in occupancy may require additional building changes, depending on the new proposed use. Electrical system replacement and other required renovations noted above should be considered.

12. BUILDING 595 - HANGAR

Current Use: United Parcel Service (UPS) sort and storage facility.

Condition: **FAIR -** but functional. 1953 construction. This building is functional as currently occupied. Hangar doors are not functioning, but have a door height clearance of 24'-3". Smaller overhead doors have been installed in the hangar doors for truck access.

Life Safety: A code analysis was not performed as part of the master plan scope. The information in this section originated from the CRAA-provided code analysis. From a 2012 Building Code Analysis, the building would be considered "code compliant" based on the grandfather clause and continued use as a hangar. However, the current space is used for tenant storage and sorting for UPS, which is a different use and changes the occupancy group from low hazard storage group (S1) to moderate hazard storage group (S2). Life safety code upgrades would be required to maintain this current occupancy. The building does not have a fire separation between the connected Building 596.

Spaces: Offices, storage.

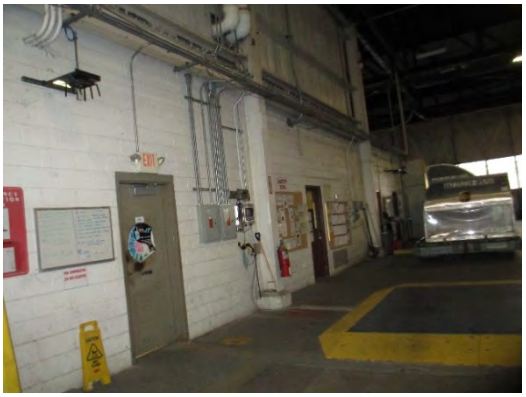
Finishes: Exposed steel, with original finishes.

ADA: Did not gain access to UPS offices.

Envelope: Uninsulated metal wall system.

Roof: Per the roof inspection that was completed in 2015, it is "estimated this roof system was installed around 1988 based upon the aging of the observed flashing/asphalt materials. The general appearance of the roof looks to be in fair condition. The typical service life of this roof system is 20 plus years. The roof installation on the building consists of a coal tar pitch graveled surface built-up roof system over two layers of 1.5- 1.75" fiberglass. The field of the roof was in good condition. A few blisters were detected in the field of the roof. Gravel was generally found to be well adhered, but wind scour was observed at the west corners. The structure provides minimum slope to gutters and internal drains on the center roof area. Some ponding water was observed during the inspection."

HVAC: Infrared ceiling heaters are in the hangar: ten (10) are at northeast door area; five (5) are in middle; and six (6) are at southwest door area. A roof-top unit (RTU) mechanical serves the office area.



Electrical: The original electrical service exists in the building. Main transformer is located in small mezzanine. Electrical systems life expectancy has been reached and replacement will be required at some point in the future. Existing lights are fluorescent.

Plumbing: There is water service in offices. A 4,000 MBH boiler plant in this building is not operational and was sized to serve Buildings 594 and 595. Existing piping is still installed. Pipe insulation appears to be fiberglass.

Fire Protection: No fire sprinkler system noted.

Energy Efficiency: No exterior wall insulation.

Recommendation: Maintain current building function as tenant lease space for general storage. Further investigations for possible code-required upgrades may be needed to maintain current building function as a tenant lease storage facility. The upgrade costs would be less than a full renovation required to revert to an aircraft hangar, which would require substantial renovation costs including new hangar doors and fire protection systems.

13. BUILDING 596 - HANGAR

Current Use: CRAA storage facility and animal transport transfer space.

Condition: **FAIR -** 1953 construction. Hangar door height clearance is 24'-3"

Life Safety: A code analysis was not performed as part of the master plan scope. The information in this section originated from the CRAA-provided code analysis. Per a 2012 Building Code Analysis, the building may be considered "code compliant" based on grandfather clause and continued use as a hangar. The building does not have a fire separation between the connected Building 595.

Spaces: Offices**,** storage.

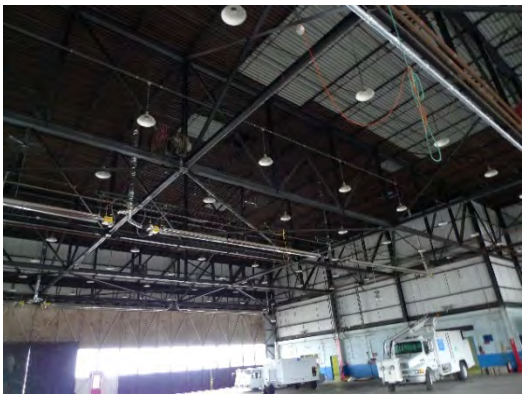
Finishes: Exposed steel, and original finishes.

ADA: Non-compliant.

Envelope: Metal wall siding. Hangar doors are not functioning. Difficult to store equipment because hangar doors are not motorized and need to be opened with a tug.

Roof: Per the roof inspection that was completed in 2015, it is "estimated this roof system was installed around 1988 based upon the aging of the observed flashing/asphalt materials. The general appearance of the roof looks to be in fair condition. The typical service life of this roof system is 20 plus years. The roof installation on the building consists of a coal tar pitch graveled surface built-up roof system over two layers of 1.5-1.75" fiberglass. The field of the roof was in good condition. A few blisters were detected in the field of the roof. Gravel was generally found to be well adhered, but wind scour was observed at the west corners."

HVAC: Infrared ceiling heaters in the hangar bay were reported to have been installed around 2006, with small Reznor heaters in support spaces. Originally, the building had a boiler system that served both Buildings 596 and 597. The boiler system is not functional. The existing piping is still installed. Insulation appears to be fiberglass.



Electrical: The original electric service and lights exist in the building. The main transformer is located in small mezzanine. Electrical systems life expectancy has been reached and replacement will be required at some point in the future as component failures occur.

Plumbing: Trench drain outside hangar door has a minor grade change that prevents aircraft pallet unloader from entering building without scraping the unloader**.**

Fire Protection: Fire sprinklers provided.

Energy Efficiency: No exterior wall insulation.

Recommendation: Given the size, location, and general configuration of the space, it seems practical that a renovation for re-use of the building would be considered, similar to the neighboring Hangar 595 being leased by UPS. Some basic upgrades would be required to provide better use of the facility – mostly functioning hangar doors (if used as an aircraft storage hangar as originally built), or overhead doors if changing to leased tenant storage space. Change in occupancy may require additional building changes, depending on the new use proposed. Electrical system replacement and other required renovations noted above should be considered.

14. BUILDING 597 - HANGAR

Current Use: The building is vacant. Originally it was a C-130 maintenance hangar, but provisions for aircraft tail through the doors has been removed.

Condition: POOR - Overall condition for envelope is good, but the building systems are in poor condition. The building was constructed in 1954. New hangar doors have been installed, with hangar door height clearance of 29'-11". An overhead crane is located in the back (western side) in the non-hazardous room.

Life Safety: A code analysis was not performed as part of the master plan scope. The information in this section originated from the CRAA-provided code analysis. Per a

2012 Building Code Analysis, the current sprinkler system is code compliant, based on continued use as a hangar.

Spaces: Elevated offices, lockers and restroom**,** storage.

Finishes: Exposed steel, and original finishes.

ADA: Non-compliant.

Envelope: Metal wall siding. Exposed vinyl faced fiberglass batt insulation at ceiling. Aluminum faced bubble wrap insulation at walls. Newer double pane windows have been installed, but need perimeter sealant replaced. Significant corrosion was observed at the exterior man doors.

Roof: Per the roof inspection that was completed in 2015, the roof was installed in approximately 1985. It is a low-profile lap metal panel. The metal lap panels appear to be in fair condition throughout the various areas. Many laps appear to have been repaired. Minor surface rust is evident along the ends of most panels. The report noted deteriorated fastener washers on all the siding and recommended replacement.

HVAC: Heating/ventilating units are in hangar space, and the bays have a fuel cell wing exhaust system. Hot water system from Building 596 fed from a pipe-bridge is no longer functional, but the existing piping is still installed. Insulation appears to be fiberglass.

Electrical: Existing 800 Amp service. Metal halide lamps in hangar. Although a building assessment report from 2012 noted that the building has power, the FBO Manager from CRAA reported that there was an underground conduit fire that damaged the electrical service. Possibly a lightning strike caused a surge and failure. Power has been shut off.

Plumbing: The building has a wash-water heater but currently it is not functional. The water is turned off. The two-inch service water main is broken.

Fire Protection: The building has a wet sprinkler system with two (2) 800-gallon bladder tanks. Fire water pressure supplied from fire pump house at Air National Guard (ANG) facility which has been shut off. The system will need to tie into a future 10-inch waterline in apron.

Energy Efficiency: Batt insulation provided in roof. Minimum wall insulation provided utilizing 3/8-inch thick

bubble wrap covered with aluminum skin (R -1 value for the insulation).

Recommendation: Given location and access to the aircraft apron, and new hangar doors, recommendation would be to maintain the structure as a lease space for aircraft storage. Hangar door size is limited to aircraft that can utilize space with a maximum length of 83 ft. Repairs noted above would be required including: repair to the electrical service; extend the water line connection to fire system; upgrade restrooms; and increase thermal insulation.

15. BUILDING 1000 – FORMER NAVY RESERVE CENTER ADMIN BLDG

Current Use: The building is vacant, no utility connections, and no Certificate of Occupancy.

Condition: **POOR** - Constructed in 1957. The structure is fully gutted and has some broken windows. Badly rusted exterior man doors.

Life Safety: A code analysis was not performed as part of the master plan scope. No inspection reports available.

Spaces: Interior consists of office, lockers, conference, assembly spaces.

Finishes: Exposed structure, interior brick walls, and interior concrete masonry walls.

ADA: Non-compliant.

Envelope: Un-insulated brick walls, steel joist roof, upgraded double pane windows. Several are broken. Glass block infill of six existing windows on east elevation. New mechanically attached 45 mil thermoplastic polyolefin (TPO) roof was installed in 2009.

Roof: A detailed roof inspection was not part of the master plan scope. According to the 2017 roof inspection report, a new roof was installed in 2009.

HVAC: None, all removed.

Electrical: None all removed, no power feed to building.

Plumbing: None, all removed.

Fire Protection: None.

Energy Efficiency: No exterior wall insulation.

Recommendation: This building would require a full and complete renovation, including exterior walls and envelope. Space layout is restricted with existing load bearing wall locations which would limit renovation options. Building structure is sound, if a purpose for re-use of the space could be determined, a renovation may be warranted (versus constructing new equal space). Otherwise, if no foreseeable use, the building will further deteriorate, and therefore should be considered for demolition.

16. 600 SERIES FACILITIES

Current Use: All buildings are abandoned. Building 600 Wastewater Plant was built in 1942; Building 606 Communications and Building 607 Power were built in 1951; and 670 equipment shelter building (former TACAN location) in 1959. Building 680 Ordnance Disposal was built in 1953.

Wastewater Plant

Comms and Power

TACAN

Ordnance Disposal

Condition: These buildings are non-functional, have been abandoned and are unusable. The review team only entered Building 680. Buildings 600, 606, and 607 were heavily overgrown with vegetation.

Recommendation: Complete demolition is needed.

17. BUILDING 1001 - HANGAR AIRNET II

Current Use: AIRNET II maintenance hangar.

Condition: **GOOD** - Fully functional building originally constructed in 1956. Refurbished in 2008, including a 161 ft. wide by 25 ft. tall insulated hangar door with 38 ft. wide by 14 ft. tall tail door. Existing 17-inch thick concrete slab on grade. Renovations added a 40 ft. deep by 35 ft. wide aircraft nose extension to permit large aircraft servicing.

Life Safety: A code analysis was not performed as part of the master plan scope. No inspection reports available.

Spaces: Hangar bay, offices, restrooms**,** and storage.

Finishes: Drywall, acoustic panel ceilings in tenant spaces. Painted exposed structure in hangar.

ADA: No handicap accessible urinal in men's restroom. Grab bars in handicap stalls do not meet the Ohio Building Code handicap requirements.

Envelope: Metal wall panels and standing seam metal roof were replaced in 2008. Translucent fiberglass panels are installed in the wall assembly.

Roof: A detailed roof inspection was not part of the master plan scope. No inspection reports available. Standing seam metal roof was replaced in 2008.

HVAC: Natural gas/electric HVAC units (2,400 cfm and 300 cfm) provide heating and air conditioning in the office and maintenance/shop areas. The hangar portion of the facility has gas fired radiant heaters and (2) gas fired make up air units 15,600 cfm each. Summer ventilation in the hangar is provided by (4) 7,000 cfm roof top exhaust fans and (2) 10,000 cfm wall mounted exhaust fans.

Electrical: 800 Amp, 480V/277V 3-phase 4-wire main distribution board provided, with 150 kVA transformer to feed 208V/120V 3-phase service panels. Hangar lighting provided by 320W metal halide high-bay light fixtures. Hangar door track deicing system.

Plumbing: Hangar door trench drains to fuel/water separator. Hot water provided from 3 instantaneous electric hot water heaters.

Fire Protection: Hangar 1001 provides a Factory Mutual Global (FM) approved integrated compressed air foam (ICAF) sprinkler system in the hangar and a wet sprinkler system in the office areas. The 2016 *Annual Inspection of Fire Sprinkler System* report questions the backflow configuration. This project to revise the system configuration is budgeted to be completed in 2019. It will require the addition of a fire pump.

Energy Efficiency: 6-inch R19 fiberglass batt insulation provided in walls and at roof.

Recommendation: Maintain building as hangar. No work is required, except to resolve the fire sprinkler backflow configuration per 2016 inspection report.

18. BUILDING 1002 - NAVY RESERVE CENTER FLIGHT SIMULATOR

Current Use: The building is vacant, no utilities, fully gutted, and no Certificate of Occupancy.

Condition: POOR - Constructed 1957**.**

Life Safety: A code analysis was not performed as part of the master plan scope. No inspection reports available.

Spaces: Offices, large simulator room, restrooms, conference room.

Finishes: Cement plaster fascia should be tested for asbestos before demolition, given the age of the construction.

ADA: Non-compliant.

Envelope: Un-insulated brick walls, steel joist roof. Single pane windows. A new mechanically attached 45 mil TPO roof was installed in 2009. Repair of cracked brick wall will be needed, if the building is to be used.

Roof: A detailed roof inspection was not part of the master plan scope. According to the 2017 roof inspection report, a new roof was installed in 2009.

HVAC: Access to the mechanical room was not needed due to all equipment needing replacement.

Electrical: None - all removed. No power feed to building.

Plumbing: None - all removed and gutted.

Fire Protection: None.

Energy Efficiency: No exterior wall insulation.

Recommendation: This building would require a full and complete renovation, including exterior walls and envelope. Space layout is restricted with existing load bearing wall locations which would limit renovation options. Building structure is sound. If a purpose for re-use of the space could be determined, a renovation may be warranted (versus constructing new equal space). Otherwise, if no foreseeable use, the building will further deteriorate, and therefore should be considered for demolition.

19. BUILDING 1004 – HANGAR (STORAGE)

Current Use: Most of the building is vacant, except one bay used as CRAA storage facility.

Condition: POOR - Constructed 1956. Office requires complete renovation. Building served the Air National Guard as a "rapid response" hangar, with direct access to the runway. There is no useable paved access to the apron, which would be required if used as a commercial hangar.

Life Safety: A code analysis was not performed as part of the master plan scope. No inspection reports available.

Spaces: Hangars and offices.

Finishes: Exposed steel with some surface rusting. Original finishes in poor condition, with interior paint peeling, damaged carpet, acoustic panel systems, and damaged ceramic floor tile. It appears that the ceilings in the work bays have tectum acoustic panels. Office requires complete gutting.

ADA: Non-compliant.

Envelope: Metal wall and roof with scrim blanket roof insulation. Steel frame single pane windows in the office are in poor condition and should be replaced. Storefront entrance assembly is in poor condition and should be replaced. Perimeter man doors are either not operational or in poor condition. Hangar doors are not functioning and have welded steel extensions for covering aircraft nose projections. Steel siding is in poor condition with surface rusting and partial loss of finish. Part of the roof added over original roof is missing due to wind damage and requires repair.

Roof: A detailed roof inspection was not part of the master plan scope. No inspection reports available.

HVAC: Infrared radiant heaters in hangar bay ceilings are functional. No boiler or HVAC units remain.

Electrical: Original service provided and still functional. Newer metal halide lights in hangar bays.

Plumbing: There is no water service to the building. It was reported the water service to the building has a leak. No sewer service, the building has a septic system.

Fire Protection: No fire sprinklers provided.

Energy Efficiency: No exterior wall insulation.

Recommendation: This building would require complete renovation including envelope refurbishment. Additionally, site work would be required to provide proper taxiway access to the apron. Given its remote location to other hangar facilities at the airport, it may not be in the best location for additional, commercial lease space (for either freight or aircraft). If a specific purpose for hangar-type space could be determined, it may be economically viable to renovate the structure. The cost for a renovation may be better, as compared to constructing new equal space. Otherwise, if no foreseeable use or purpose, the building will further deteriorate, and therefore should be considered for demolition.

20. BUILDING 1005 – STORAGE (VACANT)

Current Use: None.

Condition: **GOOD** - Constructed 1990. Fully functional except that gas is not connected. Door stoops are undermined, possible rodent damage. Pre-engineered metal wall and roof building. The building does not have a vehicle driveway, parking or sidewalks.

Life Safety: A code analysis was not performed as part of the master plan scope. No inspection reports available.

Spaces: Storage.

Finishes: Metal liner panels and exposed scrim covered insulation, concrete floor, motorized overhead sectional door.

ADA: Non-compliant.

Envelope: Metal wall and roof. Trees are growing right next to foundation which should be removed to prevent damage to foundation. Need new seal at man door threshold.

Roof: A detailed roof inspection was not part of the master plan scope. No inspection reports available.

HVAC: Two gas fire indirect heaters in room. Gas meter is missing and lines capped. Operable ridge vent and wall louvers for ventilation.

Electrical: Existing service is a 100 Amp, 12 circuit 240V/120V panelboard. Building has fluorescent lighting. Exterior at grade transformer appears to have shifted, possible undermine from rodents.

Plumbing: None.

Fire Protection: No fire sprinklers provided. Fire alarm system is a Monaco M-2 radio fire control panel with wire to antenna, but does not appear to be connected.

Energy Efficiency: Scrim covered blanket fiberglass insulation.

Recommendation: Recommend maintaining building as functioning. Possible repairs include: repair door threshold seals; repair fire alarm wire to antenna (if needed); repair undermining of concrete stoops and transformer pad.

21. BUILDING 1009 – STORAGE (VACANT)

Current Use: The building is vacant, originally used for ground power equipment shelter. Building was remodeled with office, restrooms and mezzanine.

Condition: POOR - Constructed in 1962. Office, restroom, plumbing, electrical and mechanical systems require

complete restoration. The restroom is severely damaged and would require complete gutting and renovation.

Life Safety: A code analysis was not performed as part of the master plan scope. No inspection reports available.

Spaces: Storage area and small offices at ground level and small wood mezzanine.

Finishes: All finishes are in poor condition and would require complete replacement to restore to functional condition.

ADA: Non-compliant.

Envelope: Metal wall and roof in very poor condition. Several exterior metal panels are dented and have peeling paint, indicating multiple layers of paint. There are several gaps in the metal panel enclosure. The overhead door seal at the south end needs to be replaced.

Roof: A detailed roof inspection was not part of the master plan scope. No inspection reports available.

HVAC: Wall air conditioning units, large wall fans, with some ceiling hot water heaters. None are functioning. The building has a non-functioning boiler, with most of the piping removed.

Electrical: Original 100 Amp, 110/220 panel in boiler room. Currently there is no overhead power connected to the building. Original lights were replaced with 8 ft. fluorescent fixtures.

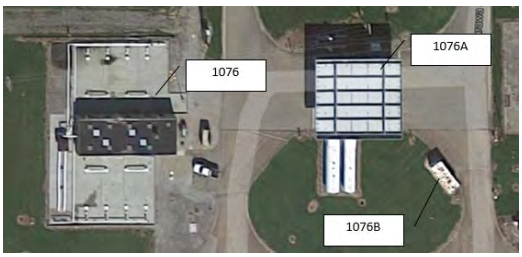
Plumbing: Not functional.

Fire Protection: No fire sprinklers provided.

Energy Efficiency: Blanket insulation in most of the perimeter walls and all of ceiling.

Recommendation: This building is severely deteriorated and is recommended to be demolished.

22. BUILDING 1076 - FUEL PUMP STATION



Current Use: Fuel Pump Station.

Condition: **FAIR** - Constructed in 1952.

Life Safety: A code analysis was not performed as part of the master plan scope. No inspection reports available.

Spaces: Small control room with HVAC and large pump room.

Finishes: Painted concrete masonry wall and painted roof framing and roof decking. Control room walls have cracks at the top of the wall, possibly due to vibration resulting from the pump stopping force. New variable frequency drive controllers eliminated the stopping force.

ADA: The hardware for the exterior man doors should be replaced with lever handle to meet accessibility requirements. The entrance door is located at grade, and appears accessible, while the rear man door is not accessible due to a concrete stoop.

Envelope: Painted stucco over concrete masonry. The existing coating is not in good condition and will require refinishing. Existing double hung windows are steel frame single pane glass. Existing exterior wall appears to be non-insulated concrete masonry. New EPDM roof was installed in 2005. Some cracks in exterior masonry and should be repointed. There is a plywood panel covering a hole in the exterior wall at the location of a removed air conditioner for the control room. This panel should be removed and the hole infilled with concrete masonry.

Roof: A detailed roof inspection was not part of the master plan scope. No inspection reports available.

HVAC: AC unit for control room. Electric wall heaters in pump room. No separate ventilation system other than operable windows.

Electrical: Emergency generator to power building. 900 Amp, 480V/277V main panel board.

Plumbing: None.

Fire Protection: No fire sprinklers provided.

Energy Efficiency: Not insulated at walls.

Recommendation: Maintain current function with ongoing maintenance. Minor concrete masonry repointing and complete patching and recoating of exterior masonry. Infill plywood covered opening at exterior with concrete masonry.

23. BUILDING 1076A - FUEL CANOPY

Current Use: Fuel Canopy 60 ft. by 66 ft.

Condition: **GOOD** - Constructed in 2009.

Life Safety: A code analysis was not performed as part of the master plan scope. No inspection reports available.

Spaces: Open fueling area.

Finishes: Metal panels.

ADA: NA

Envelope: NA

Roof: A detailed roof inspection was not part of the master plan scope. No inspection reports available.

HVAC: NA

Electrical: Recessed lighting. One light is damaged.

Plumbing: Roof drains in columns.

Fire Protection: NA **Energy Efficiency:** NA

Recommendation: Maintain current function. No work required except to fix lighting fixture.

24. BUILDING 1076B - FUEL STORAGE

Current Use: Fuel storage.

Condition: **FAIR** – Constructed in Circa 2014/2015. Functional, but exterior paint has failed at numerous locations, with extensive rust.

Life Safety: A code analysis was not performed as part of the master plan scope. No inspection reports available.

Spaces: 2 storage spaces with liquid containment chamber.

Finishes: Painted steel, rusting.

ADA: Non-compliant due to height of door thresholds.

Envelope: Steel container. Door seals need to be repaired.

Roof: A detailed roof inspection was not part of the master plan scope. No inspection reports available.

HVAC: Exhaust fans.

Electrical: Existing power for lights.

Plumbing: None.

Fire Protection: Sprinkler system (possible chemical system).

Energy Efficiency: NA

Recommendation: Maintain current function. Clean and repaint exterior.

25. BUILDING 1093 - AIRFIELD LIGHTING VAULT

Current Use: Airfield lighting system, office, and emergency generator. An old NAVAIDS shelter, used for storage, is adjacent to building.

Condition: **FAIR** - Constructed in 1952. Exterior walls have peeling paint that should be repainted.

Life Safety: A code analysis was not performed as part of the master plan scope. No inspection reports available.

Spaces: Electrical room for airfield lights with open office at end. Separate emergency generator room is present for airfield lights.

Finishes: Exposed concrete masonry and ceiling planks, painted concrete masonry in the generator room.

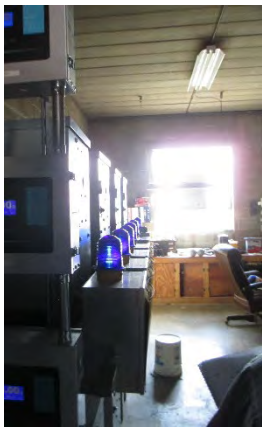
ADA: No restroom. Man door at the regulator room does not meet the accessibility requirements due to the height of the threshold.

Envelope: Exterior concrete masonry and precast concrete plank roof.

Roof: The roof inspection that was completed in 2015, indicated two (2) roof areas exist at the building: the larger area contains a precast concrete plank and the smaller area was found containing plywood decking. The 2015 inspection estimated this roof system was installed

around 1992 based upon the aging of the observed flashing/asphalt materials. The general appearance of the roof looks to be a fair condition. The roof installation consists of a graveled surface built-up roof system over two layers of 1-inch perlite. The felts were observed being different between the two areas. The smaller roof area contained more plies. The field of the roof was in good condition. No blistering or ridges were detected in the field of the roof. Gravel was found to be well adhered but wind scour was observed at nearly every corner.

The structure provides minimum slope to gutters. No ponding water was observed during the 2015 roof inspection, but staining in the pea gravel was observed. There are no roof penetrations. The perimeter edge consisted of gravel stop and gutters. The 2015 inspection revealed that repairs are required to keep the roofing and drainage systems in a watertight condition.



HVAC: Two electric heaters are in the generator room, with a split-system air conditioning unit in the electrical room. There are exhaust fans on wall. Electrical room heaters were not observed.

Electrical: 400 Amp, 208V/120V 3-phase 4-wire service for building. 4,160 volt 3-phase service for airfield lights.

Plumbing: None. Recommended an eye wash station in the generator room.

Fire Protection: No fire sprinklers installed in building. None required.

Energy Efficiency: No exterior wall insulation.

Recommendation: Maintain current building function. Possibly look to adding an eyewash in the generator room. Paint exterior concrete masonry, fascia and maintain roof.

26. BUILDING 2241 - CHARTER TERMINAL

Current Use: Passenger terminal with two jetway bridges.

Condition: **GOOD** - Building was constructed in 2001.

Life Safety: A code analysis was not performed as part of the master plan scope. No inspection reports available.

Spaces: Ticketing, security check, inspections, passenger waiting area, customs administration area, bag claim, restrooms, concessions.

Finishes: Typical commercial interiors with gypsum board walls, acoustic panel ceilings.

ADA: Building is compliant.

Envelope: Corrugated wall panels with 3-inch fiberglass batt insulation, metal wall panel systems, scored concrete masonry block with 2-inch rigid insulation on the inside. Aluminum glass storefront systems.

Roof: The roof is a .060-inch thick white EPDM roof system over 4-inch roof insulation. Per the roof inspection completed in 2015, the "general appearance of the roof looks to be in good and favorable condition."

HVAC: Eight roof-top gas-fired HVAC units, ranging from 6,000 to 15,000 cfm service the majority of building. Cabinet and other electric heaters were constructed for isolated and service spaces.

Electrical: 2000 Amp 480V/277V 3-phase 4-wire system with 400 kW diesel generator for 4 HVAC units and emergency systems. Metal halide lighting typical in public spaces, and fluorescents used in other spaces.

Plumbing: Full building system is functional with a 120-gallon electric water heater.

Fire Protection: Full wet sprinkler system in the building, with a dry system provided at baggage claim areas. Clean agent system for computer and network rooms.

Energy Efficiency: Fully insulated envelope.

Recommendation: Maintain current building function. No work required with continual general maintenance.

27. BUILDING 2865 - FORWARD AIR

Current Use: Freight warehouse and administration space.

Condition: FAIR - Building was constructed in 1994 and used as a warehouse space. The concrete floor slab has some cracking and spalling and will need to be repaired. Propane-powered fork lift exhaust has darkened the interior walls and finishes. The overhead door bollard and wall panel are damaged at south. Exterior asphalt paving has cracking and will need repair/replacement. Concrete pavement at loading docks is generally good except at trailer leg locations that have severe wear and will require repair.

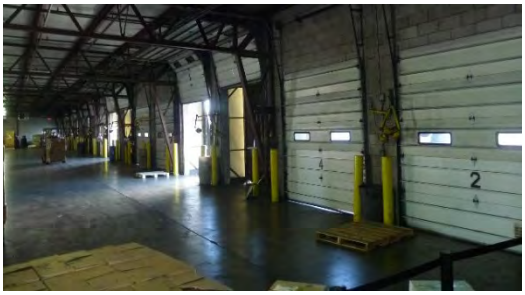
Life Safety: A code analysis was not performed as part of the master plan scope. No inspection reports available.

Spaces: Office, restrooms, mostly warehouse and truck loading space. Large overhead door access to south to airfield. Three recessed dock levels at receiving docks 1, 3, and 5. All others have manual edge of dock levelers.

Finishes: Offices, drywall with acoustic panel ceilings.

ADA: Non-compliant.

Envelope: Insulated metal panels with interior metal liners at walls at warehouse. Split faced concrete masonry with interior wall insulation at office space. Concrete masonry at truck loading bay. Sealants in exterior concrete masonry vertical control joints show signs of failure and should be replaced.



Roof: Per the 2015 Roof Inspection Report, the roof, installed in 2001, is a standing seam metal roof. Repairs mentioned in report were reported to have been completed in 2016, per CRAA Real Estate.

HVAC: Two split system AC units with gas fired furnaces in office area. Two gas fired heaters in warehouse. One gas forced heater in loading area. Two wall exhaust fans, one at warehouse and one at loading dock end, two intake louvers at warehouse end.

Electrical: 480V/277V 3-phase 4-wire system and 208V/120V 3-phase system. Metal halide lights in warehouse.

Plumbing: Fully functional.

Fire Protection: Full fire sprinkler system provided.

Energy Efficiency: Walls and Roof are insulated.

Recommendation: Maintain current building function. Building has very minor repairs needed that are currently being addressed.

28. BUILDING 7250 - MULTI-TENANT BUILDING (CRAA FBO/ADMIN BUILDING)

Current Use: Currently the building is vacant. Formerly served as the AirNet hangar, flight operations, maintenance shop, freight, and administration spaces. It was reported that the building will become a multi-tenant space with CRAA using administration and FBO space.

Condition: **GOOD** - Constructed in 2004.

Life Safety: A code analysis was not performed as part of the master plan scope. No inspection reports available.

Spaces: The building is a 350 ft. by 143 ft. two-part hangar bay (27 ft. clearance) with 5-ton bridge crane, and FBO space. Maintenance garage with 5-ton bridge crane, high bay parts storage with mezzanine, large two-story office area with lower level 2-bay loading dock with sort area and conveyor system. Locker/shower room, avionics shop, sheet metal shop, engine shop, engine wash room with degreasers, and a paint booth room. Adjacent fire pump house with two 275,000-gallon water storage tanks.

Finishes: Painted concrete masonry and painted steel framing and deck in shops and hangars, drywall, acoustic panel ceilings, vinyl composition tile (VCT) or carpet in office areas.

ADA: ADA-compliant restrooms, showers, elevators. Interior stairs do not provide a barrier under the stair to prevent access per the requirements of 307.4 of the ADA standards.

Envelope: Pre-engineered manufactured building, with standing seam metal roof on 6-inch batt insulation. Exterior is metal wall panels with 4-inch batt insulation and interior metal liner panels in shops and drywall in office spaces. Pump house roof is 60 mil fully adhered EPDM.

Roof: A detailed roof inspection was not part of the master plan scope. No inspection reports available.

HVAC: Nine roof top units, ranging from 1,600 cfm to 15,000 cfm, with gas heat and condensing units for cooling serving variable air volume (VAV) terminals throughout building. Two 1,500 MBH boilers for radiant floor heat in hangar, hangar door and apron, and maintenance garage. The building has exhaust fans for degreasers, shops and restrooms, a 6,500 cfm paint booth exhaust system and a 10 kW electric heating unit in fire pump room.

Electrical: Primary is a 2,000 Amp 480V/277V 3-phase 4-wire system, with a 600 Amp subpanel for hangar doors, elevators and fire alarm system. The building has 3 generators: a 50 kW generator serves the fire pump; a 250 kW generator serves the emergency systems; and a 100-kW generator serves as the uninterruptable power source (UPS) at the call center.

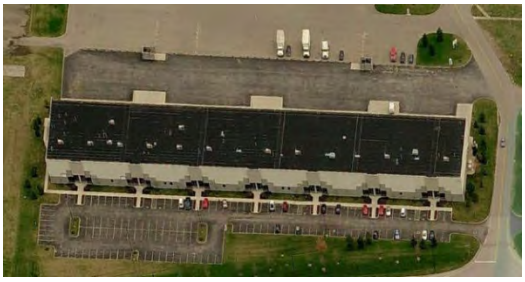
Plumbing: The hangar floor drains to an oil-water separator. The building has a gas-fired water heater for restrooms and showers, and two (2) electric water heaters for the office restrooms. Two (2) air compressors with dryers and receiver tanks serve shops, hangar, and maintenance garage.

Fire Protection: Wet fire sprinkler system throughout, with three (3) 3,000 gallons per minute (gpm) diesel driven fire pumps in adjacent pump house with 500-gallon fuel tanks. Foam fire suppression system for hangar with 12 roof mounted foam generators served by two (2) 700-gallon foam tanks in mechanical rooms. An FM 200 clean agent system exists for the computer/network room fire protection.

Energy Efficiency: Walls, hangar door and roof insulated, double panel insulated windows.

Recommendation: Maintain current building function. The building has other minor repairs needed that are currently being addressed.

29. BUILDING ACT1 - AIR CARGO TERMINAL - I



Current Use: Multi-tenant spaces. Open floor space has been divided and subdivided at locations to serve various tenants. Some areas are vacant.

Condition: **GOOD** - Constructed in 1999. Precast wall system at front and sides, steel column and girt with metal panels at back dockside wall. Exposed steel joist with metal deck roof.

Life Safety: A code analysis was not performed as part of the master plan scope. No inspection reports available.

Spaces: Open floor space with 22 ft. clear height. Spaces are accessed by five (5) at-grade 16 ft. wide by 14 ft. tall overhead doors with operators; two (2) at-grade 18 ft. by 14 ft. overhead doors with operators; and twenty-one (21) 10 ft. by x 10 ft. manual overhead loading dock doors.

Finishes: Exposed precast or scrim covered batt insulations, with exposed steel deck and primed structural steel. The tenant fit-out areas are drywall walls, acoustic panel ceilings, carpet or VCT flooring. Partition cracking above door in space north end of exterior offices. The slab on grade has a few cracks between columns I and K.

ADA: Tenant fit-out restrooms are ADA-compliant.

Envelope: Precast walls at 3 sides, metal wall panels at dock side. Sealant observed at column 9-10 expansion joint is open and should be repaired.

Roof: Mechanically fastened TPO membrane roof. The 2016 *Annual Roof Inspection* report noted roof decking needs to be re-attached to roof joists at southwest corner.

HVAC: Natural gas fired unit heaters. Typically two (2) per two column bay. Tenant fit-out spaces utilize roof-top units or furnace units within spaces, and at grade condensing units.

Electrical: A 200 Amp 208V/120V 3-phase panel is at every 4-column bay area, and/or at least one per tenant, each with separate meter. A 400 Amp panel in space H is present to serve the battery charging systems for tenant. Lighting systems are fluorescents throughout.

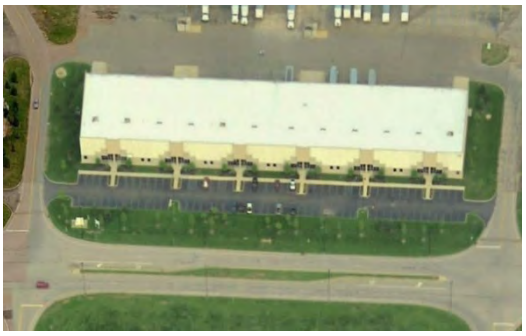
Plumbing: Tenant fit-out has hot water heaters and sanitary sewer tie-ins for restrooms, and breakrooms.

Fire Protection: Fully sprinklered building with fire hose connections. System designed for 1995 National Fire Protection Association (NFPA) 231C for rack storage of Class 3, non-encapsulated commodities. Two backflow preventers were reported to have been repaired in 2015.

Energy Efficiency: Blanket wall insulation and 1.5-inch rigid roof insulation.

Recommendation: Maintain current building function. No work needed, except the resealing of an expansion joint at exterior and follow-up on roof inspection report deck reattachment.

30. BUILDING ACT2 - AIR CARGO TERMINAL - II



Current Use: Multi-tenant spaces. Typical standard tenant space is two-column bay.

Condition: **GOOD** - Building was constructed in 2000. Precast wall system at front and sides, steel column and girt with metal panels at back dockside wall/steel joist with metal deck roof and mechanically fastened roofing system over rigid insulation.

Life Safety: A code analysis was not performed as part of the master plan scope. No inspection reports available.

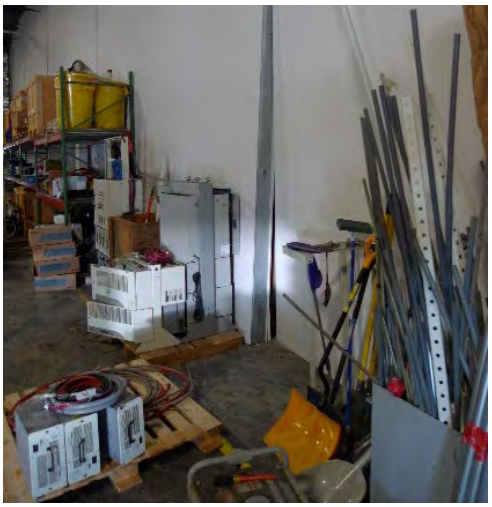
Spaces: Spaces have a 22 ft. clear minimum height inside, accessed by six (6) at-grade 16 ft. wide by 14 ft. tall manual overhead doors, and eighteen (18) 10 ft. x 10 ft. manual overhead loading dock doors.

Finishes: Exposed precast or scrim covered batt insulation, exposed steel deck and primed structural steel. In tenant space, drywall, acoustic panel ceilings, carpet or VCT flooring. The demising wall between spaces I and J has been pushed into space J from pallet movement in space I. (See photo).

ADA: Tenant fit-out restrooms are ADA-compliant.

Envelope: Precast walls at 3 sides, metal wall panels at dock side. The sealant at column 7-8 expansion joint is open and should be repaired.

Roof: Mechanically fastened TPO membrane roof. The 2016 *Annual Roof Inspection* report indicates roof should be replaced in 2018, but the roof appears to be performing well so that replacement may continue to be deferred based on annual inspection findings.



HVAC: Natural gas fired unit heaters, typically two unit heaters per two column bay. Tenant fit-out spaces utilize roof top units or furnace units within the space with at grade condensing units.

Electrical: The building has a 200 Amp 208V/120V 3-phase panel at every 4 column bay area, and/or at least one panel per tenant space, each with a separate meter. Lighting systems are fluorescents throughout.

Plumbing: Tenant fit-out hot water heaters and restroom breakrooms.

Fire Protection: Fully sprinklered with fire hose connections. System was designed for 1995 NFPA 231C for rack storage of Class 3, non-encapsulated commodities.

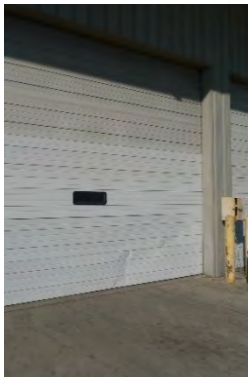
Energy Efficiency: Blanket wall insulation over precast panels with rigid 1.5-inch roof insulation.

Recommendation: Maintain current building function. Repair the pushed out wall between spaces I and J.

31. BUILDING ACT3 - AIR CARGO TERMINAL - III

Current Use: Multi-tenant spaces, typically two (2) column bay standard tenant spaces in areas A through J. Tenant spaces were combined in areas A thru C, D and E, F and G and combined in H thru J.

Condition: **GOOD** - Building was constructed in 2001. Precast wall system two sides, PEMB with standing seam roof and metal wall panels. The building has 4 damaged loading dock truck seals from use. The roof gutter at space J is clogged and causing overflow and damage to wall, and in the site landscaping. Additional wall damage was observed in space E. Four (4) airside overhead doors have damage. Some bollards are bent.



Life Safety: A code analysis was not performed as part of the master plan scope. No inspection reports available.

Spaces: The building provides 22 ft. clear minimum height, accessed by ten (10) at-grade 18 ft. wide by 14 ft. tall overhead doors with operators on airside, and thirteen (13) 10 ft. by 10 ft. manual overhead loading dock doors. There is a thickened slab on grade to take heavier airside pallet loads.

Finishes: Exposed precast or scrim covered batt insulations. At tenant fit-out, drywall, acoustic panel ceilings, carpet or VCT flooring.

ADA: Tenant fit-out restrooms are ADA-compliant, but the grab bars do not meet the current Ohio Building Code accessibility requirements.

Envelope: PEMB building with standing seam metal roof and metal wall panels. The building has precast concrete walls on two sides.

Roof: A detailed roof inspection was not part of the master plan scope. No inspection reports available.

HVAC: The building is served by gas-fired unit heaters, typically two units per two column bay. Tenant fit-out spaces utilize furnace units in interior closets and at-grade condensing units.

Electrical: 200 Amp 208V/120V 3-phase panel every 4 column bays of warehouse space, or at least one panel per tenant. Each with separate meter. Lighting systems are fluorescents in offices and metal halide in warehouse.

Plumbing: Tenant fit-out hot water heaters and restroom breakroom systems.

Fire Protection: Fully sprinklered. The system is designed for 1995 NFPA 231C for rack storage of Class 3, non-encapsulated commodities.

Energy Efficiency: Blanket wall insulation over precast panels with blanket insulation at roof.

Recommendation: Maintain current building function. Repairs needed to space "J" gutter as noted. Repair damaged door seals at truck docks, and damaged airside overhead doors.

32. BUILDING ACT4 - AIR CARGO TERMINAL - IV

Current Use: One tenant warehouse space.

Condition: **GOOD** - Building was constructed in 2007.

Life Safety: A code analysis was not performed as part of the master plan scope. No inspection reports available.

Spaces: The space is generally a 22 ft. clear height inside, accessed by fourteen (14) 9 ft. wide by 10 ft. tall landside dock doors with hydraulic levelers, and twelve (12) 18 ft. wide by 14 ft. tall drive-in doors on airside. Interior tenant office space with restrooms. There is a fire pump room located at end of building.

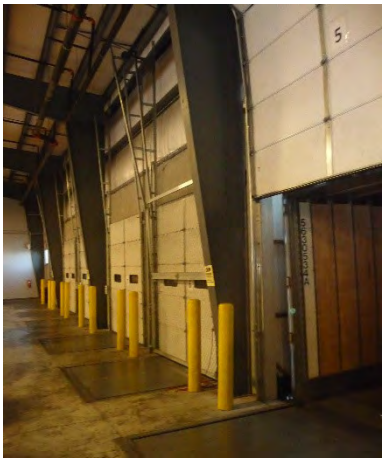
Finishes: Exposed precast or scrim covered batt insulations. At tenant fit-out space, drywall, acoustic panel ceilings, carpet or VCT flooring.

ADA: Tenant fit-out restrooms appear to be handicap accessible.

Envelope: PEMB with standing seam metal roof and metal wall panels. The building has precast concrete walls on 2 sides. The precast walls have minor cracks and slight water movement, with efflorescent deposits at the crack surface.

Roof: A detailed roof inspection was not part of the master plan scope. No inspection reports available.

HVAC: The building is served by gas fired unit heaters, two (2) per two column bay warehouse space. Tenant fit-out spaces utilize furnace units above ceiling and at-grade condensing units.



Electrical: Building is served by a 225 Amp, 80 circuit panel, and a 225 Amp 40 circuit panel. All panels are 208V/120V 3-phase. Lighting systems throughout are fluorescents in offices and metal halide in warehouse. Lightning protection has been provided around the roof perimeter. Exterior light at airside was observed to be damaged from water infiltration and should be replaced.

Plumbing: Tenant fit-out hot water heaters, restrooms and breakroom.

Fire Protection: Building is fully sprinklered. The fire pump room has a 1,000 gpm 85 HP diesel-fired pump.

Energy Efficiency: Blanket wall insulation over precast panels with blanket insulation at roof.

Recommendation: Maintain current building function. Replace exterior light having water damage.

33. BUILDING FR - FIRING RANGE

Current Use: Firing range shelter is a 28 ft. by 120 ft. structure with a 33 ft. by 75 ft. maintenance/break room building.

Condition: **FAIR** – Unknown when constructed. The embankment behind targets has been reformed several times and contains lead bullets. This will require special removal of earth containing lead to remediate.

Life Safety: A code analysis was not performed as part of the master plan scope. No inspection reports available.

Spaces: The firing range shelter is a pole barn structure with asphalt shingle roof and vinyl siding. 0.5-inch steel plates are installed above firing line to prevent stray bullets from leaving the range. The shelter has power and lights. No insulation or heat is provided, but portable heaters can be installed to heat bench area. The enclosed building has a weapons storage and repair area with air compressor, degreaser, locker room, restroom, large break room, and rear access to mechanical room.

Finishes: Drywall and acoustic panel ceilings. VCT flooring.

ADA: Non-compliant restroom and doors with door knobs that do not have lever handles.

Envelope: Pre-engineered building, with vertical metal siding and standing seam metal roof.

Roof: A detailed roof inspection was not part of the master plan scope. No inspection reports available.

HVAC: Propane fired furnace with wall AC units.

Electrical: The building does have a fire alarm system and is served by 240V/120V power.

Plumbing: Well water and propane water heater. Water system is noted as non-potable.

Fire Protection: None.

Energy Efficiency: NA

Recommendation: Maintain current building function, if desired. However, it was reported that the building will be demolished to make room for Global Logistics Park warehouse development.

34. BUILDING NAVAIDS

5L MALSR

Current: 5L MALSR shelter is still functional.

Condition: **FAIR** – Constructed in 2004**.** Shelter is old fiberglass shell. The door is delaminated and should be replaced. Door seal is damaged and should also be replaced. The result from this door condition is that water appears to be leaking into the unit. Some mold is evident.

Recommendation: Must remain in service as NAVAID.

5R ALSF-2

Current: 5RALSF shelter is still functional.

Condition: **FAIR** – Constructed in 1992. The shelter is PEMB structure. The shelter contains a back-up power generator with exterior fuel tank, radiator, and test resistor. Exterior components have surface rusting. Thru-wall AC units are provided for the equipment rooms. The flashing is problematic and minor water leaks are evident.

Recommendation: Must remain in service as NAVAID.

23L LOC

Current: The old 23L LOC shelter was replaced with a new shelter in December 2016.

Condition: **GOOD** – Constructed in 2016.

Recommendation: Must remain in service as NAVAID.

5R GS

Current: 5RGS shelter is still functional.

Condition: **FAIR** – Constructed in 2001. The shelter is a steel container shelter. The electrical exterior panel boards are corroded and will require replacement. Water leakage is evident around wall AC unit as gap can be seen through flashing.

Recommendation: Must remain in service as NAVAID.

23L GS

Current: The old 23L GS shelter was replaced with a new shelter in December 2016.

Condition: **GOOD** – Constructed in 2016.

Recommendation: Must remain in service as NAVAID.

5R LOC

Current: 5R LOC shelter is still functional.

Condition: **FAIR** – Constructed in 2001. The shelter is aged and has surface rust. The through-wall AC unit is not properly flashed and water leaks into shelter. Electrical panels at exterior are severely rusted and should be replaced.

Recommendation: Must remain in service as NAVAID.

23L MALSR

Current: 23L MALSR shelter is still functional.

Condition: **FAIR** – Constructed in 1999. The shelter is an old fiberglass shell. The door seal is damaged, and should be replaced. The door is partially delaminated and should be replaced.

Recommendation: Must remain in service as NAVAID.

5L LOC

Current: 5L LOC shelter is still functional.

Condition: **FAIR** – Constructed in 2004**.** The shelter is fiberglass and has roof top lightning protection. The door seal at the bottom is torn and should be replaced. The concrete stoop is undermined by rodents and should be maintained.

Recommendation: Must remain in service as NAVAID.

5L GS

Current: 5L GS shelter is still functional.

Condition: **FAIR** – Constructed in 2004. The shelter is fiberglass and appears to have a crack at its top.

Recommendation: Must remain in service as NAVAID.

NE Approach PICKL

Current: NE Approach shelter is still functional.

Condition: **FAIR** – Unknown when constructed. The shelter is fiberglass with roof top lightning protection, and is in fair condition. The door seal is damaged, and should be replaced.

Recommendation: Must remain in service as NAVAID.

SW Approach COBBS

Current: The SW Approach shelter is still functional.

Condition: **GOOD** – Unknown when constructed. The shelter is constructed of fiberglass and has roof top lightning protection.

Recommendation: Must remain in service as NAVAID.

35. SRE - SNOW REMOVAL EQUIPMENT BUILDING

Current Use: Vehicle storage and staff support space.

Condition: **GOOD** - The storage building was constructed in 1999, the support space added in 2000, and the maintenance space was added in 2001.

Life Safety: A code analysis was not performed as part of the master plan scope. No inspection reports available.

Spaces: The building houses large snow removal equipment, with drive through bays, adjacent offices, break room, restrooms and storage rooms.

Finishes: Drywall, acoustic panel ceilings, and VCT flooring in support space. Exposed connection, pre-engineered metal building, with scrim insulation and exposed concrete masonry base in the storage bay.

ADA: ADA-compliant restrooms.

Envelope: PEMB with scrim faced blanket insulation in walls and roof.

Roof: A detailed roof inspection was not part of the master plan scope. No inspection reports available.

HVAC: Two (2) gas fired heating/ventilating (HV) units for the storage bays with infrared heaters along perimeter. Per the building occupants at the time of the site observations, the HV unit heaters are not functioning. Therefore, the building does not have adequate ventilation in winter. Two (2) 75 MBH gas fired unit heaters are in storage rooms.

Electrical: The building is served by a 1,200 Amp, 208V/120V 3-phase 4-wire main distribution panel in the storage bay, and a 225 Amp panel serving staff support spaces. Fluorescent lights throughout.

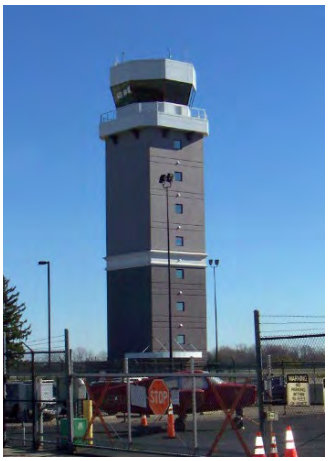
Plumbing: There is a gas-fired 40-gallon water heater.

Fire Protection: There is a 6-inch fire riser serving the dry-pipe sprinkler system.

Energy Efficiency: Insulated walls and roof.

Recommendation: Maintain current building function. Repair HV units in storage bay to provide needed ventilation and heat.

36. ATCT - AIRPORT TRAFFIC CONTROL TOWER



Current Use: Air traffic control.

Condition: **GOOD** - Tower was constructed in 2016.

Life Safety: A code analysis was not performed as part of the master plan scope. No inspection reports available.

Spaces: Offices, telecomm, observation deck.

Finishes: Drywall, acoustic panel ceilings, and VCT flooring. Cast in place concrete tower.

ADA: ADA compliant restrooms.

Envelope: Precast concrete panels.

Roof: A detailed roof inspection was not part of the master plan scope. No inspection reports available.

HVAC: Electric coil fan units (heat/cooling pumps).

Electrical: This building is served by 600A Service, a 225 KVA Transformer, and a 250 KW Diesel Generator.

Plumbing: One 10-gallon water heater. There are two restrooms, and two sinks in break-room areas with insta-hot units.

Fire Protection: Fully sprinklered system.

Energy Efficiency: LED lighting fixtures throughout.

Recommendation: Maintain current building function. No work required with continual general maintenance.

C. SUPPORTING DRAWINGS PROVIDED

1. 440 CRAA ADMINISTRATION
   a. Base Engineering Administration Building Drawings 1969 -10 sheets

2. 441 MAINTENANCE SHOP (OLD) and 439 STORAGE SHED
   a. I.E. Maintenance Shop Building Drawings 1959 – 8 Sheets
   b. Bldg 441 Floor Plan from 2004 Master Plan

3. 504 SANITARY LIFT STATION
   a. Sewage Lift Station and Force Main 1983 -15 Sheets

4. 532 CRAA FBO
   a. No Original Drawings
   b. Maintenance Roof Replacement Drawings 1970 – 2 Sheets
   c. Southern Air Transport Building 532 1995 – 38 Sheets
   d. Subsequent remodeling changes are not documented.

5. 556 MAINTENANCE STORAGE
   a. Special Storage Bldg No 3 1958 – 5 Sheets
   b. Alter Bldg 556 AGE & Submotor Pool 1975 – 3 Sheets (not Constructed)
   c. Floor Plan Bldg 556 Wash Racks Interior Offices 1985 – 1 Sheet (does not appear to have been constructed)

6. 557 MAINTENANCE STORAGE
   a. Alter Bldg 557 for 907th Aerial Spray Branch. 1984 - 1 sheet (not constructed)

7. 558 MAINTENANCE GARAGE
   a. Snow Removal Equipment Maintenance Facility 2001 – 24 Sheets

8. 558A FUELING STATION CANOPY
   a. None

9. 558B STORAGE BUILDING
   a. None

10. 559 TRITURATOR
    a. Sanitary Receiving Station 2001 – 13 Sheets

11. 594 HANGAR
    a. Bldg 594 Floor Plan from Previous Masterplan – 1 Sheet (Building Structure is identical to 597)

12. 595 UPS SORTING
    a. Bldg 595 Floor Plan from Previous Masterplan - 1 Sheet

13. 596 HANGAR
    a. Bldg 596 Floor Plan from Previous Masterplan-1 Sheet
    b. Hangar 596 and 597 Improvements 2000 – 48 Sheets Mandoor Modifications

14. 597 HANGAR VACANT
    a. Bldg 597 Floor Plan from Previous Masterplan -1 Sheet
    b. Maintenance Dock Fuel Cell for Medium Aircraft 1965 – 9 Sheets
    c. Fuel Cell Panic Hardware 1966 -1 Sheet
    d. Hangar Door cover 1971 – 1 sheet (Has been removed)
    e. Covert Bldg 597 to Fuel Cell Maintenance Dock 1986 -22 Sheets
    f. Bldg 597 Vapor Sensors 1987 – 2 Sheets
    g. Hangar 596 and 597 Improvements 2000 – 48 Sheets New Hangar Door

15. 600 SERIES FACILITIES
    a. 600 WASTE WATER PLANT
        (1) Sewage Treatment Plant 1942 – 15 Sheets
    b. 606 RECEIVER BUILDING
        (1) Emergency Power Bldg 1951 – 8 Sheets
    c. 607 POWER STATION
        (1) Emergency Power Bldg 1951 – 8 Sheets
        (2) Utility Plan Bldg 606 607 1980 – 1 Sheet
    d. 670 TACAN STATION
        (1) None
    e. 680 ORDINANCE DISPOSAL
        (1) Compass Swing Base and Firing In Butt 1953 - 7 Sheets

16. 1000 NAR TRAINING CENTER
    a. Rehab Building 1000 First and Second Floor Demolition Plan Naval 1994 – 1 Sheet
    b. Rehab Building 1000 Elevations Naval 1994 – 1 Sheet

17. 1001 AIRNET II
    a. Rickenbacker Hangar 1001 Site Plan – 1 Sheet
    b. Hangar 1001 Renovations 2009 – 60 Sheets

18. 1002 Naval Reserve Flight Simulator Bldg.
    a. Flight Simulator Plans and Elevations 1957/1974 – 1 Sheet (Converted to Squad Ops in 1974)
    b. Flight Simulator Site Plan 1957– 1 Sheet

19. 1004 ALERT HANGAR CRAA
    a. Hangar Alert Floor Plans and Roof Plan 1951 – 1 Sheet
    b. Hangar Alert Elevations 1951 – 1 Sheet

20. 1005 STORAGE (VACANT)
    a. Hangar 1005 Storage Building First Floor Warehouse Layout - 1 Sheet
    b. Building 1005 Proposed Site Plan – 1 Sheet

c. Operational Storage Facility Plans and Details 1990 – 1 Sheet
d. Operational Storage Elevations 1990 – 1 Sheet

21. 1009 STORAGE
    a. ADC Ground Power Equipment Shelter Elec, Plumbing and Misc. Erection Details Sheet 3 of 3 1961 - 1 Sheet

22. 1076 FUEL PUMP STATION
    a. Day Storage Pumping and Hydrant Distribution 1991 – 3 Sheets
    b. Upgrade of Filter/Separators at Pumping Building 1076 1991 – 6 Sheets
    c. Fuel System Modifications 2001 – 21 Sheets

23. 1076A FUEL CANOPY
    a. None

24. 1076B FUEL STORAGE
    a. None

25. 1093 AIRFIELD LIGHTING VAULT
    a. Airfield Lighting Vault Modifications 1990 – 6 Sheets

26. 2241 CHARTER TERMINAL
    a. International Passenger Terminal 2003 - 131 Sheets
    b. Operation Office 2003 – 3 Sheets

27. 2865 FORWARD AIR
    a. Site Plan 1994 – 1 Sheet

28. 7250 MULTI-TENANT BUILDING (Including CRAA FBO/Admin Offices)
    a. Proposed Aviation Facility for AirNet -2005 – 120 Sheets

29. ACT1 AIR CARGO TERMINAL – I
    a. ACT 1 Tenant Fit Out Comprehensive Plan
    b. Office Warehouse Building #1 1998 – 23 Sheets

30. ACT2 AIR CARGO TERMINAL – II
    a. ACT 2 Tenant Fit Out Comprehensive Plan
    b. Office Warehouse Building #2 1999 – 20 Sheets

31. ACT3 AIR CARGO TERMINAL – III
    a. ACT 3 Tenant Fit Out Comprehensive Plan
    b. Office Warehouse Building #3 2000 – 19 Sheets

32. ACT4 AIR CARGO TERMINAL – IV
    a. ACT 4 Tenant Fit Out Comprehensive Plan
    b. Air Cargo Terminal No 4 2009 with Shop Drawings – 30 Sheets

33. FR FIRING RANGE
    a. None

34. NAVAIDS MISC. NAVAID SHELTERS
    a. None

35. SRE SNOW REMOVAL EQUIPMENT
    a. Snow Removal Equipment Building 1999 – 15 Sheets
    b. Snow Removal Equipment Building Staff Support Building 2000 – 15 Sheets

36. ATCT AIRPORT TRAFFIC CONTROL TOWER
    a. None

D. PREVIOUS ASSESSMENT REPORTS PROVIDED

1. CRAA 2015 Roof Summary and Budget Spreadsheet

2. 440 CRAA ADMINISTRATION
    a. LCK Building 440 Administration Building – Facility Assessment Report Jan 31, 2012 by American Structurepoint, Inc.
    b. Roof Assessment Comments by Marc Sethna, received via email on February 7, 2017

3. 441 MAINTENANCE SHOP (OLD) and 439 STORAGE SHED
    a. LCK Building 441 Old Maintenance Shop – Facility Assessment Report Jan 31, 2012 by American Structurepoint, Inc.

4. 532 CRAA FBO
    a. Code Analysis Various Existing Hangars – March 21, 2012 by MA Architects
    b. Roof Assessment Comments by Marc Sethna, received via email on February 7, 2017

5. 558 MAINTENANCE GARAGE
    a. Roof Assessment Comments by Marc Sethna, received via email on February 7, 2017

6. 594 HANGAR
    a. LCK Building 594 Administration Building – Facility Assessment Report Jan 31, 2012 by American Structurepoint, Inc.
    b. Code Analysis Various Existing Hangars – March 21, 2012, by MA Architects
    c. Roof Assessment Comments by Marc Sethna, received via email on February 7, 2017

7. 595 UPS SORTING
    a. Roof Assessment Comments by Marc Sethna, received via email on February 7, 2017

8. 596 HANGAR
    a. LCK Building 596 Administration Building – Facility Assessment Report Jan 31 2012 by American Structurepoint, Inc.
    b. Code Analysis Various Existing Hangars – March 21, 2012, by MA Architects

c. Roof Assessment Comments by Marc Sethna, received via email on February 7, 2017

9. 597 2096 RESERVE RD. HANGAR VACANT
   a. LCK Building 597 Administration Building – Facility Assessment Report Jan 31 2012 by American Structurepoint, Inc.
   b. Code Analysis Various Existing Hangars – March 21, 2012, by MA Architects
   c. Roof Assessment Comments by Marc Sethna, received via email on February 7, 2017

10. 1000 3005 GEORGE PAGE JR. RD. VACANT NRC ADMIN BUILDING
    a. Real Property Accountable Record Building 1000 Department of Navy 23 Mar 1987

11. 1001 AIRNET II HANGAR
    a. 2015 *Annual Roof Inspection Report*, by Roof Management, LLC.
    b. 2016 *Annual Inspection of Fire Sprinkler System*, by Capital Fire Protection Co.
    c. Real Property Accountable Record Building 1001 Department of Navy 23 Mar 1987

12. 1002 NRC FLIGHT SIMULATOR BLDG
    a. Real Property Accountable Record Building 1002 Department of Navy 23 Mar 1987

13. 1009 VACANT STORAGE
    a. Real Property Accountable Record Building 1009 Department of Navy 23 Mar 1987

14. 1093 AIRFIELD LIGHTING VAULT
    a. Roof Assessment Comments by Marc Sethna, received via email on February 7, 2017

15. 2241 LCK CHARTER TERMINAL
    a. LCK Building 2241 Passenger Terminal – Facility Assessment Report Jan 31 2012 by American Structurepoint, Inc.
    b. Roof Assessment Comments by Marc Sethna, received via email on February 7, 2017

16. 2865 FORWARD AIR
    a. 2015 *Annual Roof Inspection Report*, by Roof Management, LLC.

17. 7250 MULTI-TENANT BUILDING (Including CRAA FBO/Admin Offices)
    a. 2016 *Annual Roof Inspection Report*, by Roof Management, LLC.
    b. 2016 *Annual Inspection of Fire Sprinkler System*, by Capital Fire Protection Co.

18. ACT1 AIR CARGO TERMINAL – I
    a. 2016 *Annual Roof Inspection Report*, by Roof Management, LLC.
    b. 2015 Annual Inspection of Fire Sprinkler System, by Capital Fire Protection Co.

19. ACT2 AIR CARGO TERMINAL – II
    a. 2016 *Annual Roof Inspection Report*, by Roof Management, LLC.
    b. 2015 *Annual Inspection of Fire Sprinkler System*, by Capital Fire Protection Co.

20. ACT3 AIR CARGO TERMINAL – III
    a. 2016 *Annual Roof Inspection Report*, by Roof Management, LLC.
    b. 2015 *Annual Inspection of Fire Sprinkler System*, by Capital Fire Protection Co.

21. ACT4 AIR CARGO TERMINAL – IV
    a. 2016 *Annual Roof Inspection Report*, by Roof Management, LLC.
    b. 2016 *Annual Inspection of Fire Sprinkler System*, by Capital Fire Protection Co.

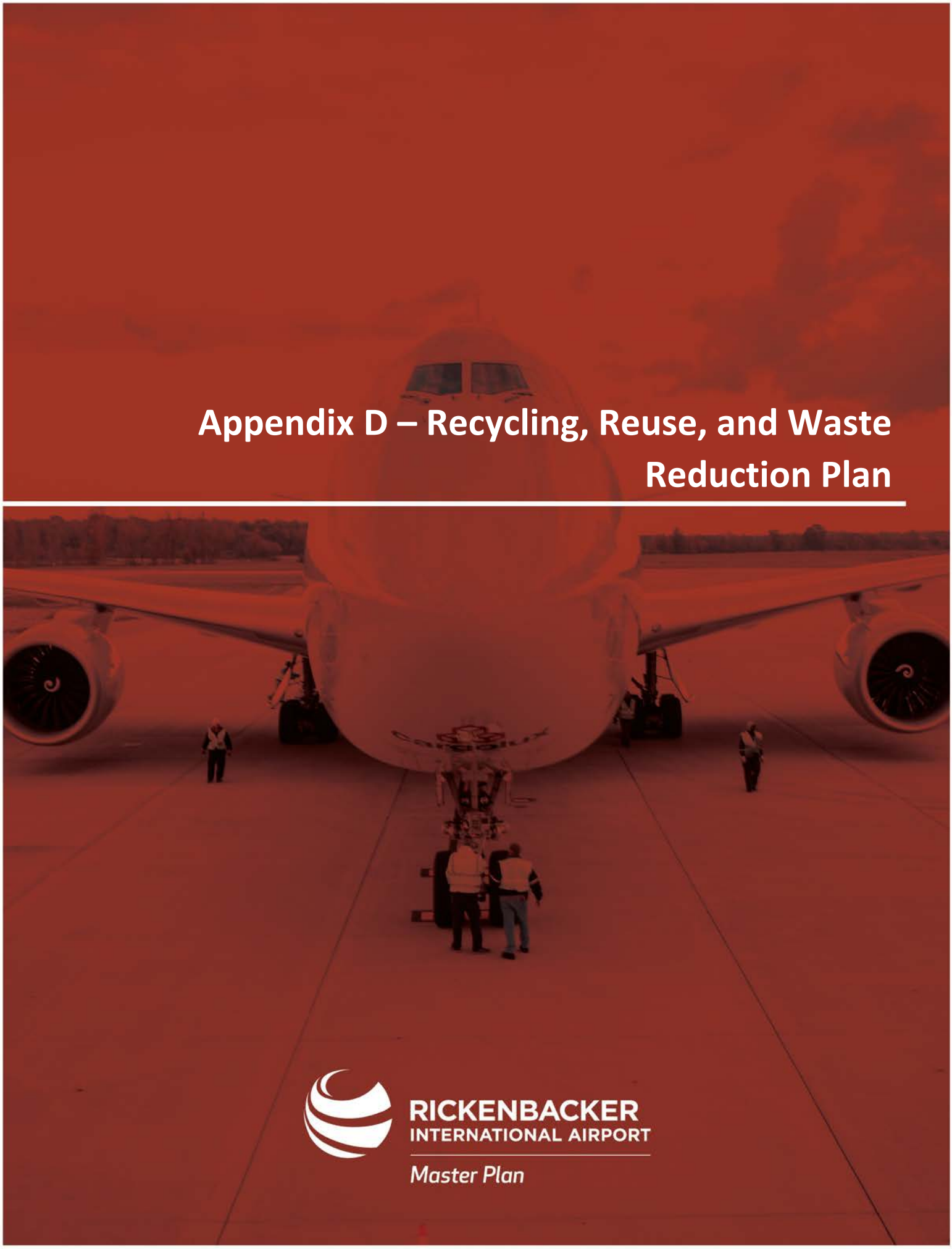
E. ACRONYMS

AC	Air Conditioner
ADA	Americans with Disabilities Act
ADMIN	Administration
ALSF-2	High Intensity Approach Lighting System with Sequenced Flashing Lights
Amp	Ampere
CFM	Cubic Feet per Minute
CRAA	Columbus Regional Airport Authority
EPDM	Ethylene Propylene Diene Terpolymer
FBO	Fixed Base Operator
FM	Factory Mutual Global
HTHW	High-Temperature-Hot-Water
HV	Heating/Ventilating
HVAC	Heating, Ventilation, and Air Conditioning
HW	Hot Water
ICAF	Integrated Compressed Air Foam
kVA	Kilo-Volt-Ampere
kW	Kilowatts
MALSR	Medium Intensity Approach Lighting System with Runway Alignment Indicator Lights
Mil	Millimeter
NA	Non-Applicable
NAR	Naval Air Reserve
NFPA	National Fire Protection Association

NRC	Naval Reserve Center
PEMB	Pre-engineered Metal Building
PTAC	Packaged Terminal Air Conditioner
SRE	Snow Removal Equipment
TACAN	Tactical Air Navigation System
TPO	Thermoplastic Polyolefin
UPS	United Parcel Service
UPS	Uninterruptable Power Source
VCT	Vinyl Composition Tile

F. EXISTING AIRPORT FACILITIES LOCATION PLAN

Appendix D – Recycling, Reuse, and Waste Reduction Plan



RICKENBACKER
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Master Plan

D.0 Recycling, Reuse, and Waste Reduction Plan

Per Section 132(b) and 133 of the Federal Aviation Administration (FAA) Modernization and Reform Act of 2012[1], the Rickenbacker International Airport (LCK) Master Plan Update (Study) includes this Recycling, Reuse, and Waste Reduction Plan (3R Plan) as an appendix. The 3R Plan is limited to solid waste and other materials that can be disposed of in a state permitted solid waste facility or landfill such as municipal solid waste (MSW), construction and demolition debris, compostable waste, and deplaned waste. The plan will not address hazardous waste, universal waste, industrial waste, or deplaned waste from international flights. Deplaned waste from international flights must be processed separately per United States Department of Agriculture regulations on international waste.[2] The 3R Plan is consistent with *FAA Guidance on Airport Recycling, Reuse, and Waste Reduction Plans*[3] and consists of the following elements:

- Facilities Description and Background
- Waste Audit
- Review of Recycling Feasibility
- Operation and Maintenance (O&M) Requirements
- Review of Waste Management Contracts
- Economic Benefit of Recycling
- Recommendations to Current Initiatives

D.1 Facility Description and Background

D.1.1 Airport Background

LCK is a cargo-dedicated airport with passenger capabilities located in central Ohio, approximately 10 miles south of Columbus, Ohio. LCK is owned and operated by the Columbus Regional Airport Authority (CRAA) and encompasses approximately 4,342 acres of property located within two counties. Much of LCK is within Franklin County with a smaller portion of the southern end of the property within Pickaway County. The general location of and the area around LCK is depicted in **Chapter 1, Inventory of Existing Conditions** (**Figure 1-2 Location/ Vicinity Map**, p. 1-7).

LCK is classified as an air carrier airport and a Part 139 Class I airport, which is an airport serving all types of scheduled operations for air carrier aircraft designed for at least 31 passenger seats. LCK's existing facilities include two runways:

[1] FAA Modernization and Reform Act of 2012. https://www.gpo.gov/fdsys/pkg/CRPT-112hrpt381/pdf/CRPT-112hrpt381.pdf
[2] United States Department of Agriculture, Animal and Plant Health Inspection Service, 2018 https://www.aphis.usda.gov/import_export/vrs/downloads/InternationalCommercialPassengerCargo.pdf
[3] FAA Guidance on Airport Recycling, Reuse, and Waste Reduction Plans, 2014. https://www.faa.gov/airports/environmental/media/airport-recycling-reuse-waste-reduction-plans-guidance.pdf

- Runway 5R-23L, at 12,102 feet long and 200 feet wide, and
- Runway 5L-23R, at 11,902 feet long and 150 feet wide.

Most of the aircraft operations at LCK consist of cargo-dedicated air service with limited air carrier operations and minimal passenger airline services being provided by Allegiant. **Table D-1 Aircraft Operations in 2016 by Operator Categories** depicts the annual aircraft operations at LCK in 2016 by respective operator categories.

LCK houses and supports one FedEx large sortation hub, three air cargo terminals, an airport operations area, and a UPS global hub. There are four international import and export cargo carriers, Cargolux, Cathay Pacific, Etihad, and Emirates, which provide scheduled service between global origins and destinations, and LCK. Numerous charter operators support ad hoc and unscheduled cargo volume lift at LCK.

Table D-1 Aircraft Operations in 2016 by Operator Categories

Itinerant				Local Operations			Grand Total
Air Taxi/ Air Carrier	General Aviation	Military	Itinerant Total	General Aviation	Military	Local Operations Total	
14,273	2,602	1,470	18,345	2,824	5,138	7,962	26,307

Source: Air Traffic Activity System (ATADS), created 2017
** = Local flights as in operations performed by aircraft that remain in the local traffic pattern*

LCK had 196,115 Allegiant passengers come through the terminal in 2016. This number of passengers in the terminal has been increasing since Allegiant started service at LCK in 2013.[4] For additional facility or passenger information please refer to **Chapter 1, Inventory of Existing Conditions**, and **Chapter 2, Forecasts of Aviation Demand**, of the Study.

D.1.2 Existing Recycling Program/Efforts

Currently, there is a recycling initiative in effect at LCK that is part of CRAA's program of waste diversion for CRAA, public, and tenant facilities. The key performance indicator for recyclable diversion is set by, evaluated, and adjusted on an annual basis by CRAA to improve performance. In January 2003, CRAA started providing multiple recycling dumpsters for use by both LCK staff and tenants of CRAA controlled facilities. Construction and demolition materials, including asphalt, concrete, and steel, are also recycled in larger roll-off containers.

Table D-2 Current Recyclables Management Summary details the existing recycling procedures for recyclables at LCK facilities. These facilities are divided into three categories:

- Direct Control
  - Facilities that generate waste that is directly collected and managed by CRAA.
- Influence but No Direct Control

[4] CRAA records and Michael Baker International, Inc., 2017

  - Facilities that consist of tenants who operate in the vicinity of CRAA controlled facilities and store waste in CRAA controlled containers allowing CRAA to influence how stored waste is processed or hauled, but not how the waste is generated from operations.
- Neither Control nor Influence
  - Facilities that consist of mostly privately-owned industrial use facilities and any privately-owned operation that are not owned or influenced by CRAA. Although CRAA is the leaseholder on properties, most industrial use tenants have their own waste management and collection services established and do not use the waste collection facilities offered by CRAA.

This 3R Plan details those efforts and offers suggestions for improving CRAA and LCK's green impact on the area.

Table D-2 Current Recyclables Management Summary

Area(s) of Airport	Material Type	Collection Capacity	Level of Airport Control
Air Cargo Terminals 1,2,3*	Commingled	Multiple 6 cubic yard front loader	Neither control nor influence
Airfield Maintenance	Commingled	6 cubic yard front loader	Direct control
	Steel	Roll off dumpster (size depends on project)	Direct control
FBO/Administration Building 7250	Commingled	6 cubic yard front loader	Direct control
Tenant Facilities**	Unknown	Unknown	Neither control nor influence

Commingled – single stream mixed recyclables
**Tenants within Air Cargo Buildings generate waste, CRAA collects the recyclables and bills the tenants based on amount.*
***Tenant facilities are not serviced by CRAA custodians and therefore not recorded or factored in reaching the key performance goal.*

D.1.3 Current Waste Management Program

The current waste management program at LCK consists of waste collection that is consolidated at centralized locations for pick up. The six cubic yard front loading dumpster locations for waste include two at the Snow Removal Equipment Storage (SRE) building, one at the FBO/Administration building, one at the control tower area, and two at the passenger terminal. Refer to **Figure D-1 Municipal Solid Waste Facilities Location Map** for the four eight cubic yard front loader dumpsters which include two at Air Cargo Terminal 1 and two at Air Cargo Terminal 2. In addition to the waste dumpsters, there are multiple six cubic yard recycling dumpsters for CRAA-owned facility use located around LCK. The locations of the recycling dumpsters include three at the LCK FBO/administration building, one at the snow removal equipment building and fifteen, nine, and nine dumpsters at Air Cargo Terminal 1, 2, and 3, respectively. Republic Services handles the waste management hauling at LCK. Republic Services collects

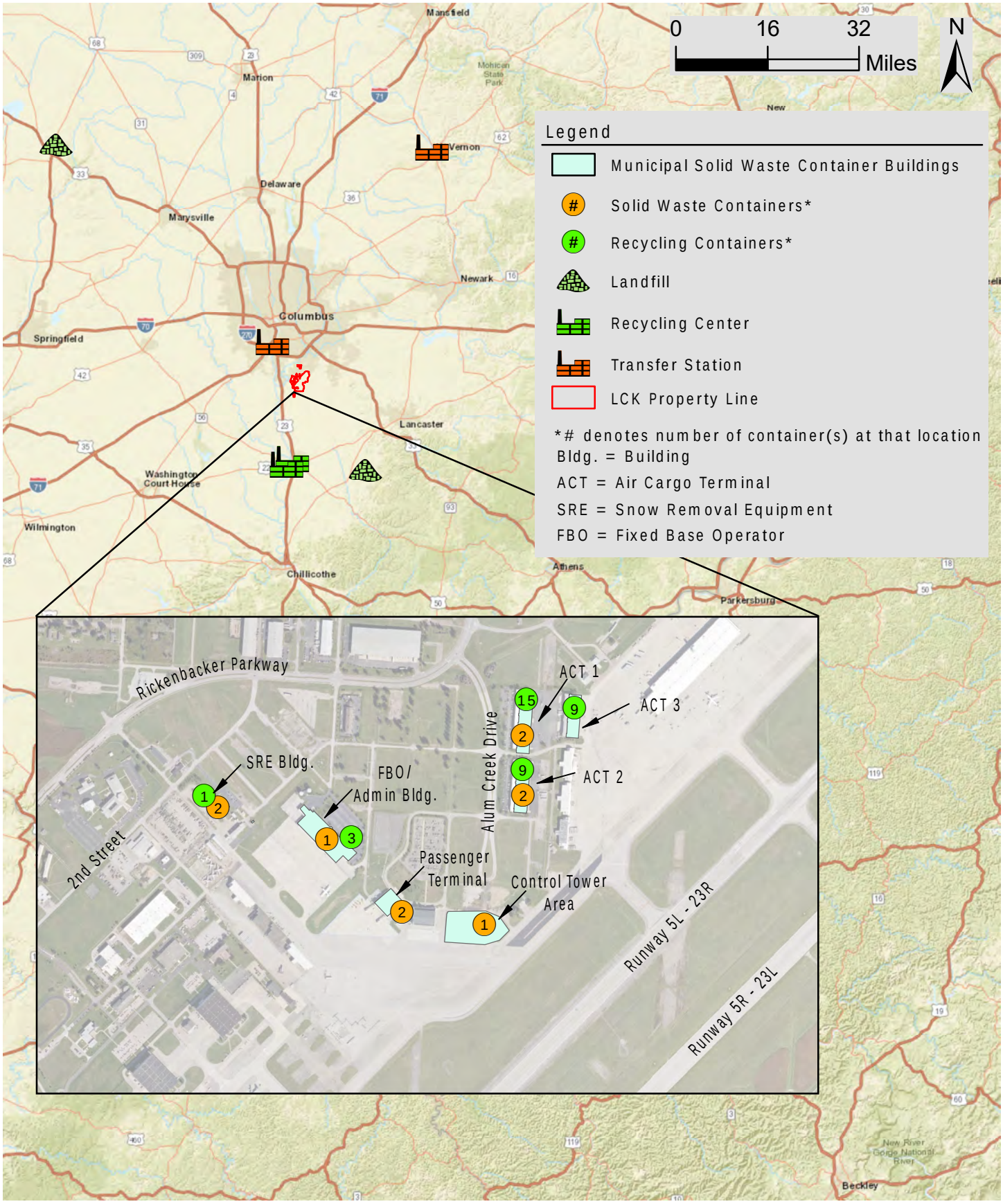


Figure D-1 Municipal Solid Waste Facilities Location Map

the six cubic yard recycling dumpsters weekly totaling four collections a month, unless requested otherwise by CRAA. The contents of the dumpsters are taken to a local transfer station, landfill, or recycling center (depending on the composition of the waste) for processing and/or disposal. Republic Services handles all recyclable transport from LCK to the recycling facility. The Solid Waste Authority of Central Ohio (SWACO) manages and transports municipal solid waste generated at the Airport to the designated landfill or transfer station.

Local Ordinances Below are the local ordinances that pertain to waste management at LCK.

- City of Columbus Code Section 4113.79(I)[5] – Requires 25 percent of demolition debris to be recycled.

Permit Requirements The existing non-hazardous waste management operations at LCK do not currently require any permits. However, if CRAA wishes to add on-site features to treat and store non-hazardous waste they would need to coordinate with the Ohio Environmental Protection Agency for potential permitting requirements.[6] Additional on-site features for the treatment and storage of non-hazardous waste would also need approval and permitting from the Federal Aviation Administration.[7] CRAA will need to consult their Wildlife Hazard Management Plan since there is an increased chance to attract wildlife hazards with the additional on-airport storage and treatment of waste.

D.1.4 Drivers for Implementing/Maintaining a Recycling Program

CRAA has made a conscious effort to reduce consumption and waste production across their system of airports. LCK was acquired through a merger and came under the CRAA umbrella in 2003. The merger applied CRAA's waste diversion and recycling initiatives to LCK, including the use of recycling dumpsters. Additional community and regional initiatives exist that align with, but do not directly affect, LCK and CRAA's current efforts.

Airport Improvement Program funding is available for all airports that have or plan to prepare or update a master plan. Updating the master plan includes addressing issues related to solid waste recycling at LCK. LCK's current Study funds the development of this 3R Plan to comply with the revised Sections 132(b) and 133 of FAA Advisory Circular 150/5070-6B, *Airport Master Plans*.

D.1.5 Airport Recycling Infrastructure Inventory

Currently, LCK has recycling dumpsters located at SRE building, Air Cargo Terminals 1, 2, and 3; and at the FBO/administration building. **Figure D-1 Municipal Solid Waste Facilities**

[5] City of Columbus Code of Ordinances 4113.79 (I), https://library.municode.com/oh/columbus/codes/code_of_ordinances?nodeId=TIT41BUCO_CH4113PEFE_4113.79DEPE

[6] Ohio Environmental Protection Agency, *Guide to Environmental Permitting in Ohio*, http://epa.ohio.gov/portals/41/sb/publications/permitguide.pdf

[7] FAA Advisory Circular No. 150/5320-15A, 9/8/2008. Chapter 5 and 6. https://www.faa.gov/documentlibrary/media/advisory_circular/150-5320-15a/150_5320_15a.doc

Location Map shows the locations of the recycling collection areas on LCK property, as well as, waste and recycling processing/transfer facilities that are located off-airport. **Section D.1.2, Existing Recycling Program/Efforts** describes the recycling plan that was put in place in 2003.

D.1.6 Recycling, Reuse, and Waste Reduction Program Performance

Key performance goals are dictated by CRAA and are reported on an annual basis. Annually, CRAA reports a key performance indicator to encourage waste reduction and recycling diversion. Depending on the airport's performance in the prior year, the key performance indicator will be adjusted in the following year. Outside of the CRAA, multiple initiatives are underway in the surrounding community on a local and state level to help reduce waste production and increase recycling efforts. Below is a list of local and state initiatives that CRAA or LCK are currently involved in, or aligned with to reflect their commitment to green waste management.

- Ohio EPA Solid Waste Management Plan 2009
  - State of Ohio adopted plan on goals for Recycling, Reduction, and Reuse of MSW for the future.
  - LCK contributes to the Solid Waste Management Plan Goal of reducing waste generation and increasing recycling to 25 percent of MSW created by the residential/commercial sector.
- GreenSpot
  - City of Columbus initiative to highlight and encourage business and communities' commitment to adopt green practices.
  - CRAA listed as a 2017 business member.
- Solid Waste Authority of Central Ohio
  - Waste management agency for the Franklin County waste management district.
  - CRAA contributes to SWACO's goal of a 5 percent increase in the diversion of recyclables by 2018.[8]
- The Columbus Green Community Plan
  - City of Columbus' commitment to be a more sustainable and green-conscious community.
  - CRAA contributes to multiple objectives including diverting recyclables by an additional 10 percent over the next five years.[9]

Below is a list of organizations and groups that are stakeholders in the current and future improved recycling efforts at LCK.

[8] SWACO Vision, Mission and Goals 2016-2018. (accessed Dec. 18, 2017) http://www.swaco.org/DocumentCenter/Home/View/50

[9] The Columbus Green Community Plan Green Memo III, City of Columbus, 2015 https://www.columbus.gov/WorkArea/DownloadAsset.aspx?id=2147486721

Stakeholders

- CRAA
- Pickaway and Franklin Counties
- Waste Haulers/Material Recovery Facilities
- Ohio Environmental Protection Agency

The involvement and input of the above listed entities varies but all have a cumulative effect on the recycling efforts that take place at LCK. A current reporting challenge is the lack of formal recording of the amount and tons of recyclables diverted from LCK. Improved measures to track LCK's progress in recyclable diversion from landfills should be addressed and updated by the stakeholders when CRAA sets the key performance indicator on an annual basis based on quarterly performance reports.

D.2 Development Constraints

Conducting a waste audit identifies baseline waste generation and management and its connection to the financial impact. LCK's waste audit evaluated waste and recycling container costs, recycling container rental fees and service schedules, airport monthly waste management bill statements, and the most current Ohio Environmental Protection Agency (EPA) Solid Waste Management Annual District Report. Waste container locations, sizes, material types, service schedules, quantities, and rental fees are described in **Table D-3 Airport MSW Container Information.** The information in **Table D-3 Airport MSW Container Information** was provided by CRAA based on an inventory of waste and recycling containers under the Airport's direct control.

Table D-3 Airport MSW Container Information illustrates that the rental fee for recycling containers is considerably less expensive than waste containers. Increasing the recyclable diversion rate at LCK, through the addition of recycling containers, CRAA could save money with a reduced number of waste containers and their associated higher rental fees. Increasing the number and utilization of the recyclables containers could cause an increase in the servicing schedule for recyclable containers effecting the rental fee pricing listed in **Table D-3 Airport MSW Container Information,** however the initial price will be offset by the increased recyclable waste diversion.

The waste generated within each of the containers listed in **Table D-3 Airport MSW Container Information** ranged from commingled recyclables (i.e. aluminum, glass, plastic, paper) to municipal solid waste depending on the location and type of container. Waste containers at LCK collect mostly passenger garbage, food waste, and discarded operations materials. Recyclable containers collect material from operations in the cargo hangar and discarded office supplies and food containers from the workers.

Table D-3 Airport MSW Container Information

Location	Size	Material Type	Service Schedule	Quantity	Monthly Rental Fee (per container)
FBO/Administration Building 7250	6 cubic yard front loader	Commingled Recyclables	Once a week	3	$18.63
		Waste		1	$129.25
SRE Building	6 cubic yard front loader	Commingled Recyclables	Once a month	1	$62.50
		Waste	Two times a week	2	$206.75
Control Tower Area	6 cubic yard front loader	Waste	Once a week	1	$129.25
Passenger Terminal	8 cubic yard front loader	Waste	Three times a week	3	$192.00
ACT 1	6 cubic yard front loader	Commingled Recyclables	Once a week	15	$18.63
	8 cubic yard dumpster	Waste	Three times a week	2	$143.88
ACT 2	6 cubic yard front loader	Commingled Recyclables	Once a week	9	$18.63
	8 cubic yard dumpster	Waste	Three times a week	2	$143.88
ACT 3	6 cubic yard front loader	Commingled Recyclables	Once a week	9	$18.63

Source – CRAA, BUI-2014-0002 Appendix B: Equipment Identification, Location, and Compensation, 2017
ACT = Air Cargo Terminal
FBO = Fixed Base Operator

Republic Services and SWACO collect the recyclables and waste at the schedule outlined in **Table D-3 Airport MSW Container Information** and hauls the contents to the offsite facilities. The locations of these facilities are shown in **Figure D-1 Municipal Solid Waste Facilities Location Map**. The facilities that receive waste and recyclables from LCK report on the amounts they intake and export to the Ohio Environmental Protection Agency (Ohio EPA). The Ohio EPA then publishes the data in the annual district review form for each solid waste management district. The Annual District Review includes residential, as well as, commercial waste, so the numbers do not solely reflect LCK's individual waste production and recyclables diversion, but it does give a good indicator at how LCK is supporting the solid waste management (SWM) districts' goals for improved recycling efforts and waste reduction. **Table D-4 LCK Average Annual Waste and Recyclable Collection** displays the recyclable diversion and waste LCK contributes to SWM districts served by Republic Services.

The information in **Table D-4 LCK Average Annual Waste and Recyclable Collection** came from the review of Republic Services monthly pulls for LCK. To approximate the number of tons diverted on an annual basis, the tons of recyclables were calculated using the size of the container and frequency of services. While no formal records are currently kept by Republic Services or CRAA staff on recyclable tonnage, Republic Services estimated that on an annual basis LCK diverts 1.17 tons of recyclables per each six cubic yard commingled recycling

dumpster. Recyclables are commingled and all contribute to reaching the six percent diversion rate goal set by CRAA.

Table D-4 LCK Average Annual Waste and Recyclable Collection

Facility	Container Details Number (Size)		Annual Waste Produced (Tons)	Annual Recyclables Diverted (Tons)
	Waste	Recyclable		
FBO/Administration Building 7250	1 (6 cubic yard)	3 (6 cubic yard)	39.72	3.51
SRE Building	2 (6 cubic yard)	1 (6 cubic yard)	17.64	1.17
Control Tower Area	1 (6 cubic yard)	0 (N/A)	39.72	
Passenger Terminal	2 (6 cubic yard)	0 (N/A)	70.56	
ACT 1	2 (8 cubic yard)	15 (6 cubic yard)	106.08	17.55
ACT 2	2 (8 cubic yard)	9 (6 cubic yard)	17.64	10.53
ACT 3	0 (N/A)	9 (6 cubic yard)		10.53
	Annual Total (Ton)		291.36	43.29
	Diversion Rate for LCK		14.9 %	

Source: Republic Services, 2018

D.3 Recycling Feasibility Review

D.3.1 Current Operations

LCK currently has a recycling initiative that was adopted as part of its 2003 inclusion under the CRAA umbrella. The recycling initiative consists of utilizing comingled recyclable containers located throughout LCK to collect recyclable waste. These are discussed in greater detail in **Sections D.1.2, Existing Recycling Program/Efforts** and **D.1.3, Current Waste Management Program**. LCK is aiming to meet the annual CRAA dictated key performance indicator for recycling diversion rates and is identifying its current areas of improvement within this 3R Plan. LCK has contracts with SWACO and Republic Services. Republic Services handles the commingled recycled goods hauling that occurs at the Airport. Republic Services handling and management of airport recyclables is detailed in **Section D.4, Recycling Program Operation and Maintenance Requirements**.

LCK's established recycling areas provide excellent opportunities to increase recyclable diversion rates. To increase utilization of recyclables, LCK could increase education and understanding of the importance of recycling and what can or cannot go in the bins. Providing training to operations and other staff can help to increase the comfort level and aptitude to recycle. The potential for LCK to increase their recycling diversion rates and willingness to do so is high.

CRAA hires the janitorial staff that cleans and handles waste within CRAA controlled buildings and structures. The janitorial staff work at LCK and have requirements within their job

descriptions that are discussed in **Section D.5, Waste Management Contracts Review**. The job description for each staff member states that they should demonstrate a commitment to CRAA's sponsored initiatives, which includes the recyclable diversion rate.

D.3.2 Agency Guidelines

Besides the Resource Conservation and Recovery Act, the U.S. Government relies on state and local governments to administer waste management and recycling. Some of the state and local legislation that affects recycling implementation are outlined in the following paragraphs.

The State of Ohio's EPA-updated 2009 Waste Management Plan establishes the state's goals and initiatives for waste management in the coming years. The State commits to providing adequate recycling opportunities to commercial generators, in addition to reducing the solid wastes generated by residents and commercial businesses by 25 percent. The plan resonates with the initiatives and goals of the CRAA, in addition to providing an environment favorable to the recycling and waste reduction efforts of LCK.

The solid waste management district, SWACO, strategic goals include increasing the recovery rate of materials from the community's waste stream by six percent by December 31, 2018 compared to 2015 baseline amounts. This measure is intended to extend the life of the landfill to exceed its projected 30 years capacity. These strategic goals support the airport's efforts to increase recycling efforts.

Currently, there are no guidelines or policies that discourage the growth and expansion of the current recycling plan at LCK.

D.3.3 Logistical Concerns

New recycling areas and containers can be added to expand recycling capabilities to additional areas and ACTs around LCK. Based on the dimensions of available recycling containers, LCK has many options for new container placement. ACTs produce the majority of MSW and traffic for LCK. Additional container placement at ACTs have the potential to capture a greater percentage of recyclable wastes. The accessibility of the containers will be key to show how effective they will be at diverting recyclable waste from landfills. Their placement must also be easily accessed by retrieval services. This is essential for effective collection and transportation of recyclable materials.

D.4 Recycling Program Operation and Maintenance Requirements

Currently, CRAA handles waste by providing waste/recycling containers in areas where MSW can be sorted to its respective container, waste or recyclables. These container locations correspond with CRAA direct control buildings as shown in **Figure D-1 Municipal Solid Waste Facilities Location Map**. Tenant facilities that do not fall into the direct control facilities handle their own waste and are not tracked by CRAA. The municipal solid waste and recyclables

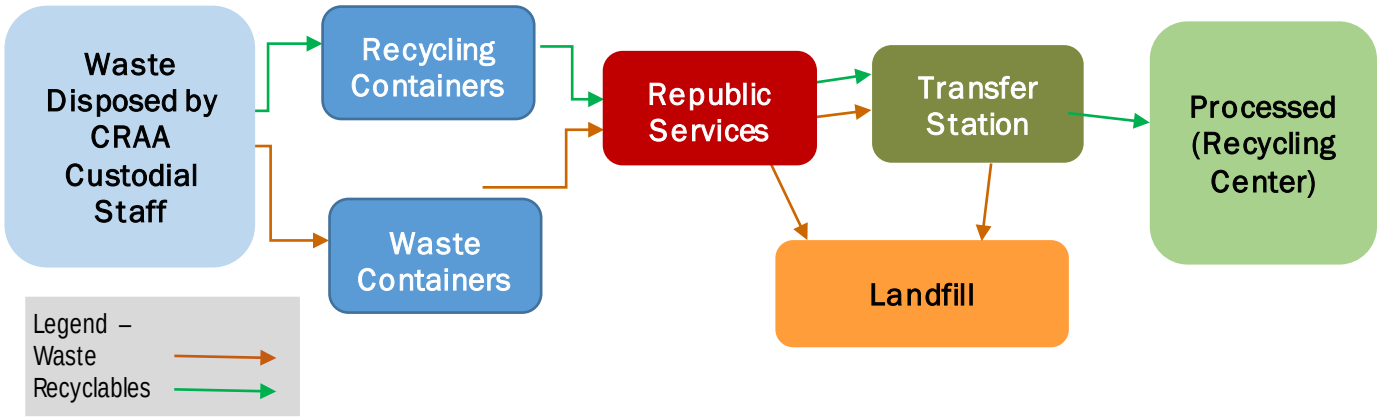
collected in CRAA-provided containers are collected by Republic Services and SWACO then transported to the destinations below (depending on the type of waste):

Republic Services and SWACO MSW Hauler Destinations:

- Cherokee Run Landfill (SWACO) Bellefontaine, OH
- Pine Grove Landfill (SWACO) Amanda, OH
- Mount Vernon Transfer Station (Republic); Mount Vernon, OH
- Reynolds Transfer Station (Republic) Columbus, OH
- Rumpke Waste and Recycling (Republic) Columbus, OH
- Franklin County Sanitary Landfill (SWACO) Grove City, OH

After collection by Republic Services or SWACO, waste goes either directly to one of the landfills (waste) or to a transfer station(waste/recyclables). Materials sent to the transfer station primarily consist of recyclables that will be forwarded to a materials recycling facility for processing. The remaining materials (waste) sent to the transfer station are forwarded to a landfill for disposal.

All landfills, transfer stations, and material recovery facilities report their annual numbers to the Ohio EPA. The tons of waste and recyclables are tracked by solid waste management districts and the results are published by the Ohio EPA in the Annual District Review.



The Annual District Review reports the net tonnage and the breakdown of recyclables and waste processed and disposed of at the facilities within each district. The Annual District Review is currently being revised and remodeled for online submission and tracking.

CRAA is responsible for the waste management and hauling contracts which provide the program operations and maintenance of waste recycling, reuse, and reduction efforts. In addition to the numbers reported by Republic Services to the Ohio EPA, CRAA tracks its own recycling performance based on all waste streams internally. These efforts are part of CRAA's commitment to improving its recyclable diversion rates within the Columbus area.

D.5 Waste Management Contracts Review

CRAA custodial employees clean and provide waste collection at the airports and facilities under its umbrella. The custodians follow CRAA initiatives, which can increase in the future to include increased recyclables diversion rates and reduced waste production.

LCK uses CRAA custodial employees to service passenger terminal and CRAA-controlled facilities (excluding tenant facilities). Collected waste and recyclables are placed in appropriate containers and their contents are hauled by SWACO or Republic to the surrounding landfills or transfer stations, depending on the contents of the container.

Currently, the contracts that CRAA has with both the waste and recyclable haulers allow for an increase in the recyclable diversion rates. Tenant involvement is currently absent in CRAA's efforts to increase recyclable diversion rate to meet the annual key performance indicator. Although involving and tracking tenant recycling and waste reduction efforts at the airport would take increased coordination and resources, it would be a viable option to help boost the recyclable diversion rate. Funding for current and future recycling efforts comes from the CRAA. LCK is included under CRAA's umbrella funding for waste and recycling collection bin rental fees and hauling.

D.6 Economic Benefit of Recycling

The cost of renting a commingled recycling container is almost a tenth the price of a waste container of equivalent size and frequency of service. The waste versus recycling container costs are broken down in **Table D-3 Airport MSW Container Information.** Increasing the use of recyclable products at LCK and swapping out higher-priced waste containers with lower-priced recycling containers can help reduce costs.

Current initiatives by CRAA to meet the recycling diversion rate goal can be supported by placing recycling collection containers at additional CRAA direct controlled buildings at LCK. The current support of contracted custodial staff and the third-party waste hauler helps ensure the successful growth of recycling efforts at LCK. With the increase of recyclable diversion, the cost savings of increasing recycling bins in lieu of waste containers would reduce monthly rental fees by 14% or $110.62 per container. This reduction would allow for funding of future improvements at LCK.

D.7 Recommendations to Current Initiatives

According to the Republic and SWACO district reports, LCK currently diverts **14.9** percent of recyclables from landfills. These rates are detailed in **Table D-4 LCK Average Annual Waste and Recyclable Collection**. Based on the information in this report, the following recommendations have been made to increase recycling diversion rates and reduce waste production at LCK.

D.7.1 Recommendations

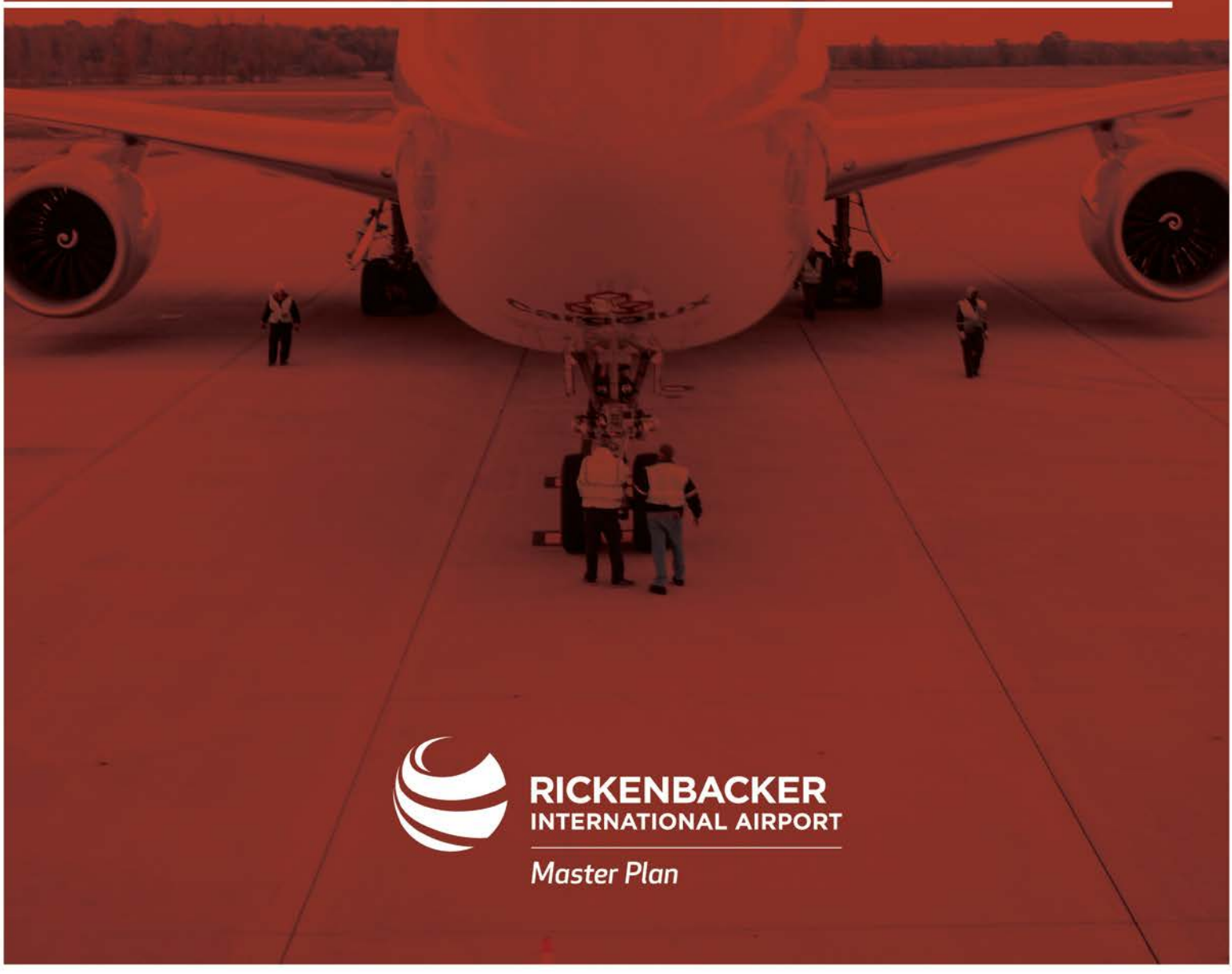
- Add new recycling containers to CRAA-controlled facilities (i.e. the Passenger Terminal).
- Provide accessible recycling containers for passengers within the terminal to promote public passenger participation.
- Improve staff and passenger education on current initiatives and the progress of recycling efforts at LCK and other CRAA airports.
- Conduct waste characterizations on an annual basis to formally document recyclables diverted from landfills by LCK.
- Periodically review and revise the waste management contracts to optimize recycling diversion rates at LCK.
- Promote and create incentives for recycling initiatives in future contracts and projects based at LCK.

CRAA will be the responsible party for implementing, tracking, and documenting recycling initiatives and goals. Republic Services waste handling at LCK is not the only waste stream that is being analyzed by CRAA in its calculation of recyclables diverted. Therefore, CRAA will be leading the effort to internally track its recycling program. CRAA is committed through dedicated staff to internally track and analyze its recycling program for strengths and weaknesses and ways to improve current and future initiatives.

LCK's current number of recycling containers and its room to expand recycling efforts to additional areas has positioned the airport to comply with and support CRAA recycling initiatives and goals. Passenger operations are a minor component of the overall operations at LCK. However, efforts can be made to encourage passenger recycling at the terminal. Basic education in the form of signs and placards can encourage passengers to engage in recycling when using the terminal. Passenger and staff education, even at minimal levels, can be influential in boosting recycling diversion efforts.

As CRAA's recycling program progresses, the recycling diversion rate goal has been increasing to match the growing need and desire for sustainable operations within airports. CRAA will continue to evolve and adapt their recycling initiatives and goals based on current industry and community climate to ensure responsible production and handling of waste.

Appendix E – Acronyms and Abbreviations



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E.0 Appendix E – Acronyms and Abbreviations

List of Commonly Used Aviation-Related Acronyms and Abbreviations

A

AAC	Aircraft Approach Category
AAF	Aircraft Anti-icing Fluids
AAGR	Average Annual Growth Rate
AC	Advisory Circular
ABN	Airport Rotating Beacon
ACT	Air Cargo Terminal
ACN	Aircraft Classification Number
ACRP	Airport Cooperative Research Program
ADA	Americans with Disabilities Act
ADAP	Airport Development Aid Program
ADF	Automatic Direction Finder
ADF	Aircraft Deicing Fluids
ADG	Airplane Design Group
ADO	Airports District Office
ADT	Average Daily Traffic
ADPH	Average Day Peak Hour
ADPM	Average Day Peak Month
AEDT	Aviation Environmental Design Tool
AEO	Airport Environs Overlay
AEP	American Electric Power
AFD	Airport/Facility Directory
AFFF	Aqueous Film Forming Foam
AFSS	Automated Flight Service Station
AGL	Above Ground Level
AIP	Airport Improvement Program
AIT	Advanced Imaging Technology
ANB	Airport Noise Boundary
ANOMS	Airport Noise Monitoring and Management System
ALP	Airport Layout Plan
ALS	Approach Light System
ALSF-2	Approach Lighting System with Sequenced Flashers II
AMSL	Above Mean Sea Level
AOA	Airport Operations Area
AOC	Area of Concern
APH	Average Peak Hour
APL	Aircraft Parking Line Limit
APM	Average Peak Month
ARC	Airport Reference Code
ARFF	Aircraft Rescue and Fire Fighting
ARP	Airport Reference Point

ARPT	Airport
ARTCC	Air Route Traffic Control Center
ARTS	Automated Radar Terminal System
ASDA	Accelerate-Stop Distance Available
ASF	Alternate Site Framework
ASL	Above Sea Level
ASM	Available Seat Miles
ASOS	Automated Surface Observation System
ASR	Airport Surveillance Radar
AST	Above Ground Storage Tank
ASTM	American Society for Testing and Materials
ASV	Annual Service Volume
ATC	Air Traffic Control
ATCT	Airport Traffic Control Tower
ATIS	Automatic Terminal Information Service
ATM	Available Tonnage Mile
ATO	Airline Ticket Office
AUS	Austin-Bergstrom International Airport
AVGAS	Aviation Gasoline
AVS	Alternate Viewing Station
AWOS	Automated Weather Observing System

B

BLDG	Building
BLS	Bottle Liquid Scanner
BNSF	Burlington Northern Santa Fe
BRL	Building Restriction Line
BTS	Bureau of Transportation Statistics
BUSTR	Bureau of Underground Storage Tank Regulations
BVS	Baggage Viewing Station

C

CAD	Computer Aided Design
CAK	Akron-Canton Regional Airport
CAT I-III	Category I, II, III ILS Approach
CBP	Customs and Border Protection
CBIS	Checked Baggage Inspection Screening
CE	Categorical Exclusion
CEIA	Costruzioni Elettroniche Industriali Automatismi (Most common WTMD)
CFC	Customer Facility Charge
CFS	Container Freight Station
CIP	Capital Improvement Program
CLE	Cleveland-Hopkins International Airport
CMG	Cockpit to Main Gear Distance

CMH	John Glenn Columbus International Airport
COFC	Container on Flat Car
CRAA	Columbus Regional Airport Authority
CRJ	Canadair Regional Jet
CSX	CSX Corporation
CT	Computer Tomography Scanner
CT-80FX	Explosive Detection System
CTAF	Common Traffic Advisory Frequency
CVG	Cincinnati/Northern Kentucky International Airport
CWA	Clean Water Act
CY	Calendar Year

D

DA	Decision Altitude
dB	Decibels
DC	Distribution Center
DHS	Department of Homeland Security
DH	Decision Height
DME	Distance Measuring Equipment
DNL	Day-Night Average Sound Level
DOT	Department of Transportation
DTW	Detroit Metropolitan Wayne County Airport

E

EA	Environmental Assessment
ECCF	Expedited Carrier Consignment Facility
EDA	Economic Development Authority
EIS	Environmental Impact Statement
EPA	Environmental Protection Agency
ERG	Effective Runway Gradient
ERJ	Embraer Regional Jet
ETD	Explosive Trace Detection

F

FAA	Federal Aviation Administration
FAAP	Federal-Aid Airport Program
FAF	Forward Air Freight
FAR	Federal Aviation Regulation
FAR	Floor Area Ratio
FATO	Final Approach and Takeoff Area
FBO	Fixed Base Operator
FDRS	Field Data Recording System
FEMA	Federal Emergency Management Agency

FEIS	Final Environmental Impact Statement
FIS	Federal Inspection Station
FOD	Foreign Object Debris
FONSI	Finding of No Significant Impact
FLL	Fort Lauderdale/Hollywood International Airport
FSS	Flight Service Station
FTZ	Foreign Trade Zone (a.k.a. Federal Trade Zone or Free Trade Zone)

G

GA	General Aviation
GADO	General Aviation District Office
GAMA	General Aviation Manufacturers Association
GAO	General Accounting Office
GBAS	Ground Based Augmentation System
GFF	Global Freight Forwarders
GIS	Geographic Information System
GPS	Global Positioning System
GRV	Glycol Recovery Vehicle
GS	Glide Slope
GSE	Ground Support Equipment

H

HIRL	High Intensity Runway Lights
HITL	High Intensity Taxiway Lights
HIWAS	Hazardous In-flight Weather Advisory Service
HVOR	High-Level Very High Frequency Omnidirectional Range

I

IAF	Initial Approach Fix
IAP	Instrument Approach Procedure
IAWR	International Association of Refrigerated Warehouses
ICAO	International Civil Aviation Organization
IFR	Instrument Flight Rules
ILS	Instrument Landing System
IM	Inner Marker
IMC	Instrument Meteorological Conditions
IND	Indianapolis International Airport
INM	Integrated Noise Model
ISD	Integrated Surface Data
IWA	Phoenix-Mesa Gateway Airport

J

JAX	Jacksonville International Airport
JFK	John F Kennedy International Airport

L

LAAS	Local Area Augmentation System
LAHSO	Land and Hold Short Operations
LCK	Rickenbacker International Airport
LDA	Landing Distance Available
LED	Light Emitting Diode
LIMC	Low Instrument Meteorological Conditions
LLWAS	Low-Level Wind Shear Alert System
LOA	Letter of Agreement
LOS	Level of Service
LOC	Localizer
LPV	Localizer Performance with Vertical Guidance

M

MAG	Minimum Annual Guarantee
MALS	Medium Intensity Approach Lighting System
MALSF	Medium Intensity Approach Lighting System with Sequenced Flashers
MALSR	Medium Intensity Approach Lighting System with Runway Alignment Indicator Lights
MAP	Military Airport Program
MVMC	Marginal Visual Meteorological Conditions
MB	Marker Beacon
MEP	Mechanical, Electrical and Plumbing
MDA	Minimum Descent Altitude
MGW	Maximum Gross Weight
MGW	Main Gear Width
MIRL	Medium Intensity Runway Lights
MITL	Medium Intensity Taxiway Lights
MLW	Maximum Landing Weight
MM	Middle Marker
MPU	Master Plan Update
MOA	Military Operations Area
MRO	Maintenance, Repair, and Overhaul
MORPC	Mid-Ohio Regional Planning Commission
MOS	Modification of Standards
MSA	Metropolitan Statistical Area
MSL	Mean Sea Level
MSSA	Metropolitan Statistical Service Area
MSY	Louis Armstrong New Orleans International Airport

MTOW	Maximum Takeoff Weight
MYR	Myrtle Beach International Airport

N

NAAQS	National Ambient Air Quality Standards
NAD83	North American Datum of 1983
NAVD88	North American Vertical Datum of 1988
NAS	National Airspace System
NAVAID	Navigational Aid
NCDC	National Climatic Data Center
NCP	Noise Compatibility Program
NDB	Non-Directional Beacon
NEPA	National Environmental Policy Act
NextGen	Next Generation Air Transportation System
NOAA	National Oceanic and Atmospheric Administration
NOTAM	Notice to Airmen
NPDES	National Pollutant Discharge Elimination System
NPI	Non-precision Instrument
NPIAS	National Plan of Integrated Airport Systems
NPL	National Priority List
NRCS	Natural Resources Conservation Service
NS	Norfolk Southern Corporation
NVOCC	Non-Vessel Operating Common Carrier

O

O&D	Origin and Destination
OAG	Official Airline Guide
OCS	Obstacle Clearance Surface
ODALS	Omni-directional Approach Lighting System
ODNR	Ohio Department of Natural Resources
ODSA	Ohio Development Services Agency
OEPA	Ohio Environmental Protection Agency
OFA	Object Free Area
ODOT	Ohio Department of Transportation
OFZ	Object Free Zone
OHANG	Ohio Air National Guard
OM	Outer Marker
ORD	Chicago O'Hare International Airport
OSU	The Ohio State University
OU	Ohio University

P

PA	Precision Approach

PAH	Polycyclic Aromatic Hydrocarbons
PAPI	Precision Approach Path Indicator
PAX	Passengers
PCI	Pavement Condition Index
PCN	Pavement Classification Number
PCPI	Per Capita Personal Income
PFC	Passenger Facility Charge
PGD	Punta Gorda Airport
PGP	Planning Grant Program
PIE	St. Pete-Clearwater International Airport
PIR	Precision Instrument Runway
PIT	Pittsburgh International Airport
PMP	Pavement Management Program
PMMP	Pavement Maintenance Management Program
POFZ	Precision Obstacle Free Zone
POTW	Publicly Owned Treatment Works
PPO	Persons Per Operation
PTIO	Permit to Install/Operate
PVC	Poor Visibility and Ceiling

R

RAIL	Runway Alignment Indicator Lights
RANGB	Rickenbacker Air National Guard Base
RDC	Runway Design Code
RCO	Remote Communications Outlet
REIL	Runway End Identifier Lights
RGLP	Rickenbacker Global Logistics Park
RJ	Regional Jet
RNAV	Area Navigation
ROFA	Runway Object Free Area
ROFZ	Runway Obstacle Free Zone
RON	Remain Overnight
RPA	Rickenbacker Port Authority
RPI	Runway Point of Intercept
RPM	Revenue Passenger Mile
RPZ	Runway Protection Zone
RSA	Runway Safety Area
RTM	Revenue per Tonnage Mile
RVR	Runway Visual Range
RVZ	Runway Visibility Zone
RWY	Runway

S

SAC	Stakeholder Advisory Committee

SAV	Savannah/Hilton Head International Airport
SCP	South Central Power
SEL	Sound Exposure Level
SF	Square Feet
SFB	Orlando Sanford International Airport
SHPO	State Historic Preservation Office
SICP	Snow and Ice Control Plan
SID	Standard Instrument Departure
SIDA	Security Identification Display Area
SIP	State Implementation Plan
SM	Statute Mile
SPF	Black Hills Airport-Clyde Ice Field
SPCC	Spill Prevention Control and Countermeasure
SRE	Snow Removal Equipment
SSALF	Simplified Short Approach Lighting System with sequenced Flashers
SSALS	Simplified Short Approach Lighting System
SSALSR	Simplified Short Approach Lighting System with Runway Alignment Indicator Lights
SSCP	Security Screening Check Point
STAR	Standard Terminal Arrival
STIP	State Transportation Improvement Plan
SWPPP	Stormwater Pollution Prevention Plan

T

TAC	Technical Advisory Committee
TACAN	Tactical Air Navigation
TAF	Terminal Area Forecasts
TAP	Terminal Area Plan
TAS	Total Airport Services
TCH	Threshold Crossing Height
TDC	Travel Document Checker
TDG	Taxiway Design Group
TDZ	Touchdown Zone
TDZE	Touchdown Zone Elevation
TDZL	Touchdown Zone Lights
TERPS	Terminal Instrument Procedures
TESM	Taxiway Edge Safety Margin
TFMSC	Traffic Flow Management System Counts
TODA	Takeoff Distance Available
TOFA	Taxiway Object Free Area
TOFC	Trailer on Flat Car
TOL	Toledo Express Airport
TORA	Takeoff Run Available
TRACON	Terminal Radar Approach Control Facility
TRSA	Terminal Radar Service Area

TSA	Taxiway Safety Area
TSA	Transportation Security Administration
TSS	Threshold Siting Surface
TVOR	Terminal Very High Frequency Omnidirectional Range
TW	Taxiway
TWY	Taxiway
TZR	Bolton Field Airport

U

UP	Union Pacific
UPS	United Parcel Service
US	United States
USACE	United States Army Corps of Engineers
USAF	United States Air Force
USCBP	United States Customs and Border Protection
USDOT	United States Department of Transportation
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey
USPS	United States Postal Service
UST	Underground Storage Tank

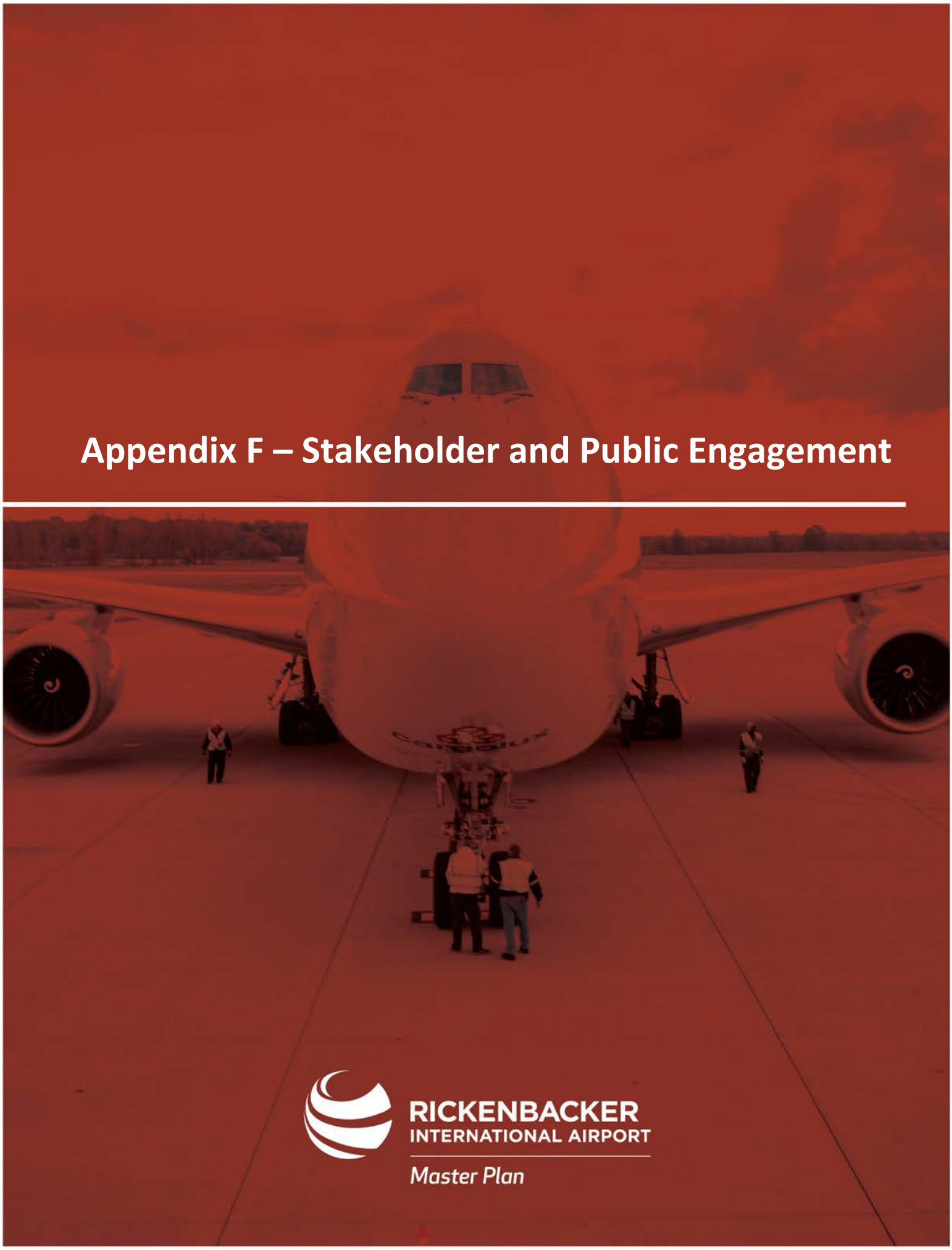
V

VASI	Visual Approach Slope Indicator
VDP	Visual Descent Point
VFR	Visual Flight Rules
VGSI	Visual Glide Slope Indicator
VHF	Very High Frequency
VLJ	Very Light Jet
VMC	Visual Meteorological Conditions
VNAV	Vertical Navigation
VOR	Very High Frequency Omnidirectional Range
VORTAC	Very High Frequency Omnidirectional Range Tactical Air Navigation
VPS	Eglin Air Force Base/Destin-Fort Walton Beach Airport
VREF	Reference Landing Speed
VSO	Stall Speed
VSR	Vehicle Service Road

W

WAAS	Wide Area Augmentation System
WQC	Water Quality Certification
WTMD	Walk Through Metal Detector
WWTP	Wastewater Treatment Plant

Appendix F – Stakeholder and Public Engagement



RICKENBACKER
INTERNATIONAL AIRPORT

Master Plan

F.0 Appendix F – Stakeholder and Public Engagement

F.1 Introduction and Background

The stakeholder and public engagement program provided the community an opportunity to be informed, consulted and involved, and to better understand the goals and outcomes of the Rickenbacker International Airport master plan update (Study). In return, the engagement program provided Columbus Regional Airport Authority (CRAA) valuable insight and feedback on Rickenbacker's long-range strategic direction. This engagement program ran concurrently with the Mid-Ohio Regional Planning Commission's (MORPC) public involvement efforts for their Rickenbacker Area Infrastructure and Economic Development Assessment.

An overall summary, overview of education methods and review of targeted engagement methods are shown in the following sections.

F.2 Stakeholder and Public Engagement Summary

Due to the scope of the Study and the benefits and potential impacts to not only the local community but the region, stakeholder and public engagement was an important component to the success of the project. The project team, tasked with coordinating community engagement, included members from CRAA, Michael Baker International, and the public relations firm, MurphyEpson.

The objectives of this program outlined a clear education strategy and process that informed key stakeholders and the public, developed a dialogue with the community to ensure multiple interests were considered, and provided opportunities for input. To achieve this, a series of proactive steps were utilized to ensure that stakeholders and the public were engaged and informed in a methodical, consistent way that was also responsive to their concerns.

The first step called for two kick-off meetings, held in October 2016, where CRAA and MORPC provided an overview of each respective project to that organization's Stakeholders. During the CRAA meeting a visioning exercise was held to uncover Rickenbacker's strengths, weaknesses, opportunities and threats, then to identify a vision and desired outcomes for the master planning process. MORPC's meeting offered similar input and discussed how both Rickenbacker initiatives would coordinate their respective public engagement efforts. Meeting summaries are included at the end of this appendix.

Following these meetings, an engagement and education plan was drafted which included the creation of a set of communication tools. The engagement plan included key branding and messaging, established a toolkit of engagement tools, confirmed stakeholders and outlined the engagement process. A stakeholder database, project website and fact sheet were also developed.

Early in the project a Stakeholder Advisory Committee (SAC) was formed to provide advisory input on the airport master plan process and how it relates to aviation, community, political,

planning and legal issues. SAC members reviewed study documents, contributed technical input, shared feedback from the organizations they represent, and engaged their constituents during opportunities for public input.

SAC members included community and business leaders from a diverse representation of interests and opinions relative to airport development and long-range planning. Six SAC meetings were held; each focused on a different aspect of the master planning process. SAC members were also tasked with reviewing several draft working papers that correlated to components of the master plan process. Content reviewed included an inventory of existing conditions, aviation forecasts, facility requirements, alternatives analyses, airport layout plan, and financial plan. SAC meetings were also held prior to public meetings for members to review and comment on the technical content to be shared at each public meeting.

Three rounds of public meetings for the Rickenbacker International Airport Master Plan were conducted in partnership with MORPC's Rickenbacker Area Infrastructure and Economic Development Assessment project. The focus of the first public meeting (February 22, 2017) was to let people know about the study – including the schedule and process, to solicit input on residents' vision and aspirations for Rickenbacker, and to ask for feedback on community values that would be used to develop criteria for developing alternatives and investment priorities as the study progressed. The second public meeting (September 21, 2017) shared technical findings and solicited public input on preliminary master plan proposals. The third and final meeting (March 15, 2018) shared draft recommendations and solicited public feedback on investment priorities for the Rickenbacker International Airport. Over the course of the project, a total of 195 participants attended the three rounds of public meetings.

As part of the Study, members of the project team conducted a series of interviews. During these interviews, the project team received valuable input regarding economic goals for the region as it related to Rickenbacker, anticipated freight growth and related funding needs. The outcome from the interviews provided the Study more understanding of how tenants and community leadership perceive Rickenbacker and the opportunities it presents, and what it takes for community and business leadership to embrace a long-range vision.

The project team also conducted an Agency and Elected Official Briefing (January 8, 2018) to preview the findings and draft recommendations of the Rickenbacker International Airport Master Plan and Rickenbacker Area Studies. The purpose of this meeting was to better inform governmental and agency representatives of the joint CRAA and MORPC planning efforts, discuss how these projects relate to each other, and collect insights into their expectations and possibly technical resources.

F.3 Education Methods

The following section outlines the education methods and communication tools that were utilized to engage the public and gather input.

F.3.1 Branding, Templates and Messaging

To establish an identity for the project, the project team created a "brand" and over-arching message for the airport master plan to define the project in a way that was unique and distinct from the MORPC planning effort, but also worked within CRAA's existing brand framework.

- *Logo, Tagline and Templates*

  The logo and/or font treatment acts as the project's identity. CRAA selected the following font treatment which was combined with the existing Rickenbacker International Airport's logo for the airport master plan effort. This new logo was designed to be consistent with CRAA's brand guidelines. Templates utilizing the project logo were created for Word, PowerPoint presentation slides/exhibits, a fact sheet, e-newsletter and working paper/report covers.

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  Prior to the launch of the airport master plan process, Rickenbacker International Airport had adopted a new tagline: Your new global gateway. This tagline was also used for this engagement effort and captured the idea that Rickenbacker is poised to be a global player in the movement of international air cargo.

- *Message Framework*

  A message framework was created to provide consistent language to explain the project. Edited versions of this message were utilized throughout the course of the project, as it fit within the context of the communication tool.

  Message:

  The Columbus Regional Airport Authority (CRAA) is conducting the Rickenbacker International Airport (LCK) Master Plan to outline a long-range strategic direction consistent with the Columbus Region's goal to be a global logistics leader. The goal of this master plan is to provide several options for future airport development that address current and future demand; identify the role of the airport in the local, regional and national aviation system; and provide potential utilization or re-use options for existing infrastructure and airport facilities.

  A concurrent Rickenbacker Area Infrastructure and Economic Development Assessment is being conducted by the Mid-Ohio Regional Planning Commission. This collaborative effort will consider airport activity and compatible development adjacent to the Rickenbacker International Airport.

These efforts will engage the community and partner organizations to ensure it reflects the great thinking of local and national experts and the Columbus Region.

F.3.2 Communication Tools

Once the brand and messaging were finalized, the following communication materials were utilized to facilitate stakeholder and public understanding and provide feedback.

- ***Project Website***

  A stand-alone website, http://rickenbackermasterplan.com was created for the project with the goal to educate the public and provide opportunities to provide feedback. The "easy-to-navigate" online portal allowed stakeholders, the public and other interested parties to access and share information about the Rickenbacker International Airport Master Plan process. It also served as a resource for people interested in following the progress, reviewing working papers, signing up to be added to the project stakeholder database, and providing comments.

  The website was organized into five sections:
  - *ABOUT – An overview of the master plan update*
  - *RESOURCES – Links to master plan working papers*
  - *SCHEDULE – Listing of project studies and engagement efforts*
  - *MEETINGS – A listing of public meeting dates, information and exhibits and summaries*
  - *CONTACT US – Opportunity for public to provide feedback*

- ***Handouts***

  A handout and comment form were created for each of the three public meetings. The handout provided an overview for meeting participants and included milestone accomplishments, project overview and goal and the schedule. The comment form provided an opportunity for the public to provide comments about the meeting exhibits and master plan process and ask questions.

- ***Presentations***

  PowerPoint presentations were developed and customized for SAC meetings, providing stakeholders a review of past information and new updates.

- ***eBlasts***

  Digital eBlasts (electronic newsletters) were sent to stakeholders and the public prior to each public meeting. Rickenbacker's Constant Contact e-newsletter software was used to facilitate the transmission of information to these audiences in a visually compelling manner. eBlasts were used to notify stakeholders and the public when new working papers or other information had been posted on the website. These were

distributed to the CRAA's and MORPC's existing eBlast lists. Obetz, who hosted the public meetings at their government center, also shared the eBlast with fellow villages, cities, towns and townships in the area.

- *Postcards*

  Mailed postcards also promoted the public meetings. They were delivered by hand to businesses and churches near Rickenbacker. PDF versions were also shared with SAC members with the request that these be forwarded to their constituents.

- *Social Media*

  Social media graphics were another communication tool used to promote public meetings. Meeting alerts were posted on the CRAA, MORPC and Engage Public Affairs Facebook pages.

- *Video*

  An educational video was created near the end of the airport master plan to tell Rickenbacker's story, its vision and strengths, and the master plan recommendations.

F.4 Stakeholder Advisory Committee (SAC)

A Stakeholder Advisory Committee (SAC) was formed in 2016 which represented a diverse breadth of community interests relative to airport development and long-range planning. The committee's role was to provide advisory input related to aviation, community, political, planning and legal issues. SAC members were tasked to review study documents, contribute technical input, share feedback from the organizations they represent, and engage their constituents during opportunities for widespread public input. SAC members were also asked to engage key leaders and agency representatives from the local community to help guide and direct the study throughout the process.

F.4.1 SAC Members

The table below lists those invited to participate on the SAC.

Name	Organization
Adam Asbury	FedEx
Ann Aubry	City of Columbus – Dept. of Public Utilities
Ben Bitler	Madison Township
Rod Borden	CRAA
Stacey Boumis	Village of Obetz
Mike Bradley	COTA
Lt Col Daryl Brezina	Ohio Air National Guard
Susan Brobst	Madison Township
Adrian Burns	Columbus Chamber
Franklin Christman	Village of Ashville
Katy Delaney	FAA Detroit Airports District Office

Name	Organization
Dave Delaney	MAST (L Brands)
David Dennis	ODOT Office of Aviation
Casey Denny	CRAA
Kristen Easterday	CRAA
Mary Ann Elliott	Harrison Township
Amy Elsea	Pickaway County Chamber of Commerce
Brad Foster	Franklin County Engineer's Office
Mark Gialluca	Duke Realty
Charlie Goodwin	CRAA
Jeff Green	City of Groveport
Shannetta Griffin	CRAA
Lucas Haire	City of Canal Winchester
Eric Hensley	CRAA
Kevin Hill	CRAA
Mark Kelby	CRAA
David Kelly	State of Ohio/Adjutant General's Department
Lisa LaMantia	COTA
Tim Layne	LCK ATCT
Dina Lopez	MORPC
Kenny McDonald	Columbus 2020
Rory McGuiness	City of Columbus – Dept. of Dev.
Scott Messer	City of Columbus – Building and Zoning Services
William Murdock	MORPC
Joe Ortega	ODOT Office of Aviation
Barry Payne	CMH ATCT
CDR Chris Peppel	Navy/Marine Reserve Center
Mike Pompura	UPS
Major Thomas K. Race	Ohio Army National Guard
Hannah Reed	City of Columbus – Dept. of Dev.
Tory Richardson	CRAA
Elaine Roberts	CRAA CEO
Brian Sarkis	CRAA
Jim Schimmer	Franklin County
Bryan Schreiber	CRAA
Ryan Scribner	Pickaway Progress Partnership and JEDD
Ike Stage	City of Grove City
Rick Szabrak	Fairfield County
Bryant Thomas	Norfolk Southern
Lt Col Kenneth Voris	Ohio Air National Guard
David Wall	CRAA
Thea Walsh	MORPC
Christie Ward	Village of Lockbourne
Kevin Wheeler	City of Columbus – Dept. of Dev.
David Whitaker	CRAA
Ed White	Madison Township

F.4.2 SAC Meetings

Six SAC meetings were held over the course of the project and the table below lists these meeting dates. Meeting summaries can be found at the end of this appendix.

SAC Meeting / Date	Location
Meeting 1 – December 5, 2016	John Glenn Columbus International Airport, 4600 International Gateway, Columbus, OH 43219
Meeting 2 – February 21, 2017	John Glenn Columbus International Airport, 4600 International Gateway, Columbus, OH 43219
Meeting 3 – May 18, 2017	John Glenn Columbus International Airport, 4600 International Gateway, Columbus, OH 43219
Meeting 4 – July 27, 2017	Obetz Government Center 4175 Alum Creek Drive, Obetz, Ohio 43207
Meeting 5 – September 15, 2017	Obetz Government Center 4175 Alum Creek Drive, Obetz, Ohio 43207
Meeting 6 – March 15, 2018	Rickenbacker International Airport 7250 Star Check Drive Columbus, OH 43217

F.5 Public Meetings

Three rounds of public meetings were held for the Rickenbacker International Airport master plan update. The focus of these meetings was to inform the public and interested stakeholders about the ongoing status of the project and to solicit public comment throughout the project's implementation. A brief summary of each meeting is shown in the sections below. Meeting handouts and summaries can be found at the end of this appendix.

F.5.1 Public Meeting #1

The first public meeting was held on February 22, 2017 at Air Cargo Terminal 5 at the Rickenbacker International Airport. The purpose of this meeting was to inform stakeholders about the study, solicit input on residents' vision and aspirations for Rickenbacker, and seek feedback on community values that would be used to develop criteria for developing alternatives and investment priorities. Two sessions were held from 2 to 4 p.m. and 6 to 8 p.m. A total of forty-seven people attended the two sessions, including members of the business community, public officials and area residents. The meetings were held in an open house format; exhibits were displayed at individual stations around the perimeter of the room. Study team members and representatives from CRAA and MORPC were available to answer questions and listen to comments. No formal presentation was given.

F.5.2 Public Meeting #2

The second series of public meetings for the Rickenbacker Master Plan were held on September 21, 2017 from 2 to 4 p.m. and 6 to 8 p.m. at the Obetz Government Center. The purpose of this meeting was to share technical findings to date with stakeholders and solicit public input on preliminary proposals. Meetings were held in an open house format and exhibits were displayed around the perimeter of the room. Study team members and

representatives from CRAA and MORPC were available to answer questions and listen to comments. No formal presentation was given. More than 30 exhibits for both the Rickenbacker Airport Master Plan and MORPC's 2018 Rickenbacker Area Comprehensive Study were on display for public view. These exhibits shared a host of information collected for each of the respective studies, ranging from air cargo forecasts, identified gaps in the local bike and pedestrian network, and data regarding congested roadways. Meeting attendees were provided two meeting handouts: a project overview/open house instructions and a comment sheet. Sixty-six people attended this series of public meetings.

F.5.3 Public Meeting #3

The third and final public meeting for the Rickenbacker International Airport Master Plan Update was held March 15, 2018 from 3 to 7 p.m. at the Obetz Government Center. The purpose of this meeting was to share draft recommendations with stakeholders and solicit public input on investment priorities. The meeting was held in an open house format and exhibits were displayed around the perimeter of the room. Study team members and representatives from CRAA and MORPC were available to answer questions and listen to comments. No formal presentation was given. Approximately 30 exhibits for both the Rickenbacker Airport Master Plan and MORPC's 2018 Rickenbacker Area Comprehensive Study were on display for public view. These exhibits shared a host of findings and recommendations for each of the respective studies, ranging from air cargo facilities to mobility hubs. Meeting attendees were provided three meeting handouts: project overview and instructions (CRAA), Rickenbacker Area Study overview (MORPC) and a comment sheet. Eighty-two people attended the final public meeting.

F.6 Agency and Elected Official Briefing

The project team conducted an Agency and Elected Official Briefing on January 8, 2018 from 10 to 11 a.m. at the Madison Township Community Center in Groveport, OH to preview the findings and draft recommendations of the Rickenbacker International Airport Master Plan and Rickenbacker Area Studies. The purpose of this meeting was to better inform governmental and agency representatives of the joint CRAA and MORPC planning efforts, discuss how these projects relate to each other, and collect insights into their expectations and possibly technical resources. 45 attendees participated the briefing.

The outcome of this meeting provided CRAA and MORPC with a better understanding of how community leadership perceives Rickenbacker and the opportunities it presents, and what it will take for community leadership to embrace a long-range vision. This input also helped drive the development of the message strategy and the implementation plan.

F.7 Coordination Meetings and Other Briefings

In addition to stakeholder and public meetings, a variety of additional coordination meetings and briefings with CRAA, MORPC, and local and regional entities occurred over the course of the project. This included weekly coordination web conference calls with CRAA/MORPC staff to coordinate project events and to discuss the progress of assignments and the overall Study.

At the request of CRAA, project team members participated in and supported multiple project status briefings to CRAA executive staff, board members (November 27, 2018), and FAA Detroit Airports District Office personnel (May and July 2018).

F.8 Agency Coordination

As part of the master planning process, key components of the Airport Master Plan Update must be coordinated with representatives of the Federal Aviation Administration (FAA) and the Ohio Department of Transportation (ODOT) Office of Aviation Office for approval. This includes submittal of the Aviation Forecasts and the Airport Layout Plan drawing set.

F.8.1 Aviation Forecast Review and Approval

The Aviation Forecasts associated with this study were prepared in accordance with Advisory Circular AC 150/5070-6B, Airport Master Plans and submitted to the FAA's Detroit Airports District Office (ADO) in accordance with the FAA's Memorandum pertaining to FAA Review and Approval of Aviation Forecasts, dated December 23, 2004. The Aviation Forecasts were submitted to the FAA Detroit Airports District Office on March 29, 2017, and approved by the FAA on August 18, 2017. Correspondence pertaining to the review and approval of the Master Plan Update forecast is included in this appendix.

F.8.2 Airport Layout Plan Review and Conditional Approval

The Airport Layout Plan drawing set approval process consists of multiple submittals to the airport sponsor and the FAA. Upon completion of the final draft of the technical report and Airport Layout Plan drawing set, the Draft ALP and supporting documentation was submitted to the FAA's Detroit ADO for initial review and comment. Upon addressing the ADO's initial round of comments, the Draft Airport Layout Plan drawing set was resubmitted to the ADO for distribution to various FAA offices for airspace review. Following this process, the drawing set was revised based on the airspace determination and review comments received. The Final Airport Layout Plan drawing set and accompanying Airport Master Plan Update Report was submitted to the FAA for distribution and Conditional Approval. Correspondence pertaining to the review and approval of the Airport Layout Plan drawing set is included at the end of this appendix.

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U.S. Department
of Transportation
Federal Aviation Administration

Detroit Airports District Office
Metro Airport Center
11677 South Wayne Road, Ste. 107
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August 18, 2017

Ms. Elaine Roberts, A.A.E.
President & C.E.O.
Columbus Regional Airport Authority
4600 International Gateway
Columbus, OH 43219

Dear Ms. Roberts:

Rickenbacker International Airport
Columbus, OH
FAA Review of Master Plan Update – Aviation Activity Forecasts

The Federal Aviation Administration (FAA), Detroit Airports District Office (DET ADO) has reviewed the aviation forecast for the Rickenbacker International Airport (LCK) master plan study, dated March 29, 2017. The FAA approves these forecasts for airport planning purposes, including the development of the Airport Layout Plan (ALP). The FAA approval is based on our review and reference to Table 2-27, *Forecast Summary (2016-2036)*, TAF issued January 2017, and the Draft TAF issued July 2017. Based on the FAA review we offer the following:

- The difference between the FAA Terminal Area Forecasts (TAF) and LCK's forecast for total enplanements is within the 10 percent and 15 percent allowance for the 5 and 10 year planning horizons (based on the draft July 2017 TAF).
- The difference between the FAA TAF and LCK's total operations is below the 10 percent and within the 15 percent allowance for the 5 and 10 year planning horizons.
- The based aircraft forecast was not approved. The airport sponsor forecast shows an increase of 3 based aircraft to 33 based aircraft over the 20 year planning horizon.
- The forecast is based on current data and appropriate methodologies.

The critical aircraft was not identified in the *Forecasts for Aviation Demand*. Once the airport has completed this task, please provide to the FAA so we can review and approve the critical aircraft.

The approval of the forecast does not automatically constitute a commitment on the part of the United States to participate in any development recommended in the master plan or shown on

the ALP. All future development will need to be justified by current activity levels at the time of proposed implementation. Further, the approved forecasts may be subject to additional analysis or the FAA may request a sensitivity analysis if this data is to be used for environmental or Part 150 noise planning purposes.

If you have any questions about this forecast approval, please contact me at (734) 229-2958.

Sincerely,

Katherine S. Delaney

Katherine S. Delaney
Community Planner
Detroit Airports District Office

Enclosure: TAF summary report for LCK (1/2017)
TAF summary report for LCK (7/2017) Draft
Forecast Comparison Table (DET ADO 8/2017)

Cc: David Wall, CRAA

Rickenbacker Master Plan Forecasts Compared to Final January 2017 and Draft July 2017 FAA Terminal Area Forecasts

	TAF January 2017		Master Plan Forecast March 2017		Draft TAF July 2017		Difference between Master Plan Forecasts & TAF January 2017		Difference between Master Plan Forecasts & Draft July 2017 TAF	
	Enplanements	Operations	Enplanements	Operations	Enplanements	Operations	Enplanments	Operations	Enplanements	Operations
Current Year (2016)	98,977	49,590	103,289	26,307	100,402	36,468	5%	27%	-3%	28%
+5 Years (2021)	103,942	52,001	152,486	32,201	143,927	39,423	32%	39%	-6%	19%
+10 Years (2026)	109,003	54,672	160,821	40,070	157,453	41,320	33%	25%	3%	4%
+15 Years (2031)	114,282	57,613	169,611	48,304	171,840	43,308	33%	17%	2%	11%
+20 Years (2036)	119,854	59,710	178,881	60,473	186,475	45,388	33%	2%	5%	25%

Sources:
LCK Master Plan Document
FAA TAF January 2017
FAA Draft TAF July 2017

FINAL PUBLISHED JAN 2017

APO TAF Quick Data Summary - Facility

For National Forecast 2016 -- 2016 Scenario

Region State: AGL-OH **LOCID: LCK Non-FAA Facility**

City: COLUMBUS **Airport: RICKENBACKER INTL** **2015 Based Aircraft: 9**

	-- ENPLANEMENTS --			-- AIRPORT OPERATIONS --									-- TRACON --
				-- Itinerant Operations --					-- Local Operations --				
Fiscal Year	Air Carrier	Commuter	Total	Air Carrier	AT & Comm	GA	Military	Total	Civil	Military	Total	Total OPS	Total OPS
Historical													
2012	4,516	108	4,624	4,297	12,996	3,850	1,925	23,068	4,274	12,082	16,356	39,424	-
2013	14,287	0	14,287	4,395	12,812	3,691	1,900	22,798	4,550	12,088	16,638	39,436	-
2014	42,028	0	42,028	4,324	14,061	2,244	11,246	31,875	5,160	12,088	17,248	49,123	-
2015	78,429	0	78,429	4,324	14,061	2,244	11,246	31,875	5,160	12,088	17,248	49,123	-
Forecast													
2016 *	98,977	0	98,977	4,413	14,354	2,270	11,246	32,283	5,219	12,088	17,307	49,590	-
2017 *	99,970	0	99,970	4,504	14,654	2,291	11,246	32,695	5,266	12,088	17,354	50,049	-
2018 *	100,963	0	100,963	4,597	14,961	2,317	11,246	33,121	5,325	12,088	17,413	50,534	-
2019 *	101,956	0	101,956	4,691	15,274	2,338	11,246	33,549	5,372	12,088	17,460	51,009	-
2020 *	102,949	0	102,949	4,788	15,592	2,364	11,246	33,990	5,431	12,088	17,519	51,509	-
2021 *	103,942	0	103,942	4,887	15,917	2,385	11,246	34,435	5,478	12,088	17,566	52,001	-
2022 *	104,935	0	104,935	4,988	16,250	2,411	11,246	34,895	5,537	12,088	17,625	52,520	-
2023 *	105,928	0	105,928	5,091	16,589	2,432	11,246	35,358	5,584	12,088	17,672	53,030	-
2024 *	106,953	0	106,953	5,197	16,936	2,458	11,246	35,837	5,643	12,088	17,731	53,568	-
2025 *	107,978	0	107,978	5,305	17,289	2,484	11,246	36,324	5,702	12,088	17,790	54,114	-
2026 *	109,003	0	109,003	5,416	17,651	2,510	11,246	36,823	5,761	12,088	17,849	54,672	-
2027 *	110,028	0	110,028	5,529	18,020	2,536	11,246	37,331	5,820	12,088	17,908	55,239	-
2028 *	111,053	0	111,053	5,645	18,397	2,562	11,246	37,850	5,879	12,088	17,967	55,817	-
2029 *	112,078	0	112,078	5,763	18,781	2,588	11,246	38,378	5,938	12,088	18,026	56,404	-
2030 *	113,180	0	113,180	5,883	19,174	2,614	11,246	38,917	5,997	12,088	18,085	57,002	-
2031 *	114,282	0	114,282	6,006	19,577	2,640	11,246	39,469	6,056	12,088	18,144	57,613	-
2032 *	115,384	0	115,384	6,006	19,897	2,666	11,246	39,815	6,115	12,088	18,203	58,018	-
2033 *	116,486	0	116,486	6,006	20,222	2,692	11,246	40,166	6,174	12,088	18,262	58,428	-
2034 *	117,588	0	117,588	6,006	20,553	2,723	11,246	40,528	6,245	12,088	18,333	58,861	-

2035	*	118,721	0	118,721	6,006	20,890	2,749	11,246	40,891	6,304	12,088	18,392	59,283	-
2036	*	119,854	0	119,854	6,006	21,232	2,775	11,246	41,259	6,363	12,088	18,451	59,710	-
2037	*	120,987	0	120,987	6,006	21,579	2,806	11,246	41,637	6,434	12,088	18,522	60,159	-
2038	*	122,120	0	122,120	6,006	21,932	2,832	11,246	42,016	6,493	12,088	18,581	60,597	-
2039	*	123,288	0	123,288	6,006	22,293	2,863	11,246	42,408	6,564	12,088	18,652	61,060	-
2040	*	124,456	0	124,456	6,006	22,658	2,889	11,246	42,799	6,623	12,088	18,711	61,510	-
2041	*	125,635	0	125,635	6,006	23,029	2,915	11,246	43,196	6,683	12,088	18,771	61,967	-
2042	*	126,825	0	126,825	6,006	23,406	2,941	11,246	43,599	6,743	12,088	18,831	62,430	-
2043	*	128,027	0	128,027	6,006	23,789	2,968	11,246	44,009	6,804	12,088	18,892	62,901	-
2044	*	129,240	0	129,240	6,006	24,178	2,995	11,246	44,425	6,865	12,088	18,953	63,378	-
2045	*	130,464	0	130,464	6,006	24,574	3,022	11,246	44,848	6,927	12,088	19,015	63,863	-
GR1		1.71	0.00	1.71	1.10	1.87	0.99	0.00	1.14	0.98	0.00	0.32	0.87	0.00
GR2		0.95	0.00	0.95	1.06	1.87	0.99	0.00	1.14	0.98	0.00	0.32	0.87	0.00

GR1: Growth Rate from 2015 to 2045 GR2: Growth Rate from 2016 to 2045

Report created 4/6/2017 07:52

DRAFT - OUT FOR REVIEW JULY 2017

APO TAF Quick Data Summary Report - Facility

For National Forecast 2017 -- 2017 Scenario

Region State: AGL-OH
City: COLUMBUS

LOCID: LCK Non-FAA Facility
Airport: RICKENBACKER INTL

2016 Based Aircraft: 9

		--ENPLANEMENTS--			--AIRPORT OPERATIONS--									--TRACON--
					Itinerant Operations					Local Operations				
Fiscal Year		Air Carrier	Commuter	Total	Air Carrier	AT &Commuter	GA	Military	Total	Civil	Military	Total	Total OPS	Total OPS
2013		14,287	0	14,287	4,395	12,812	3,691	1,900	22,798	4,550	12,088	16,638	39,436	-
2014		42,028	0	42,028	4,324	14,061	2,244	1,687	22,316	5,160	9,559	14,719	37,035	-
2015		78,429	0	78,429	4,324	14,061	2,244	1,687	22,316	5,160	9,559	14,719	37,035	-
2016		100,402	0	100,402	4,939	13,402	2,753	1,571	22,665	4,901	8,902	13,803	36,468	-
2017	*	131,523	0	131,523	6,190	13,575	2,778	1,571	24,114	4,945	8,902	13,847	37,961	-
2018	*	134,955	0	134,955	6,333	13,713	2,810	1,571	24,427	5,000	8,902	13,902	38,329	-
2019	*	138,274	0	138,274	6,484	13,853	2,835	1,571	24,743	5,044	8,902	13,946	38,689	-
2020	*	141,220	0	141,220	6,632	13,994	2,867	1,571	25,064	5,099	8,902	14,001	39,065	-
2021	*	143,927	0	143,927	6,778	14,137	2,892	1,571	25,378	5,143	8,902	14,045	39,423	-
2022	*	146,655	0	146,655	6,925	14,281	2,924	1,571	25,701	5,198	8,902	14,100	39,801	-
2023	*	149,363	0	149,363	7,073	14,427	2,949	1,571	26,020	5,242	8,902	14,144	40,164	-
2024	*	152,072	0	152,072	7,222	14,574	2,981	1,571	26,348	5,297	8,902	14,199	40,547	-
2025	*	154,739	0	154,739	7,371	14,723	3,013	1,571	26,678	5,352	8,902	14,254	40,932	-
2026	*	157,453	0	157,453	7,522	14,873	3,045	1,571	27,011	5,407	8,902	14,309	41,320	-
2027	*	160,302	0	160,302	7,675	15,025	3,077	1,571	27,348	5,462	8,902	14,364	41,712	-
2028	*	163,138	0	163,138	7,829	15,178	3,109	1,571	27,687	5,517	8,902	14,419	42,106	-
2029	*	166,057	0	166,057	7,985	15,333	3,141	1,571	28,030	5,572	8,902	14,474	42,504	-
2030	*	168,931	0	168,931	8,142	15,490	3,173	1,571	28,376	5,627	8,902	14,529	42,905	-
2031	*	171,840	0	171,840	8,300	15,648	3,205	1,571	28,724	5,682	8,902	14,584	43,308	-
2032	*	174,734	0	174,734	8,459	15,808	3,237	1,571	29,075	5,737	8,902	14,639	43,714	-
2033	*	177,576	0	177,576	8,619	15,969	3,269	1,571	29,428	5,792	8,902	14,694	44,122	-
2034	*	180,476	0	180,476	8,781	16,132	3,307	1,571	29,791	5,859	8,902	14,761	44,552	-
2035	*	183,456	0	183,456	8,945	16,297	3,339	1,571	30,152	5,914	8,902	14,816	44,968	-
2036	*	186,475	0	186,475	9,111	16,464	3,371	1,571	30,517	5,969	8,902	14,871	45,388	-
2037	*	189,419	0	189,419	9,277	16,632	3,409	1,571	30,889	6,036	8,902	14,938	45,827	-
2038	*	192,429	0	192,429	9,445	16,802	3,441	1,571	31,259	6,091	8,902	14,993	46,252	-
2039	*	195,453	0	195,453	9,614	16,974	3,479	1,571	31,638	6,158	8,902	15,060	46,698	-
2040	*	198,464	0	198,464	9,784	17,148	3,511	1,571	32,014	6,213	8,902	15,115	47,129	-
2041	*	201,490	0	201,490	9,956	17,323	3,543	1,571	32,393	6,269	8,902	15,171	47,564	-
2042	*	204,507	0	204,507	10,129	17,500	3,575	1,571	32,775	6,325	8,902	15,227	48,002	-
2043	*	207,602	0	207,602	10,304	17,679	3,608	1,571	33,162	6,382	8,902	15,284	48,446	-
2044	*	210,708	0	210,708	10,481	17,860	3,641	1,571	33,553	6,439	8,902	15,341	48,894	-
2045	*	213,933	0	213,933	10,660	18,043	3,674	1,571	33,948	6,497	8,902	15,399	49,347	-
GR1		2.64	0.00	2.64	2.69	1.03	1.00	0.00	1.40	0.98	0.00	0.38	1.05	0.00
GR2		1.75	0.00	1.75	1.96	1.02	1.00	0.00	1.23	0.98	0.00	0.38	0.94	0.00

GR1: Growth Rate from 2016 to 2045 GR2: Growth Rate from 2017 to 2045
Report created 7/18/2017 3:21:19 pm

U.S. Department
of Transportation
**Federal Aviation
Administration**

Detroit Airports District Office
Metro Airport Center
11677 South Wayne Road, Ste. 107
Romulus, MI 48174

December 20, 2017

Mr. David Wall, A.A.E.
Senior Manager
Airport Planning & Noise Compatibility
Columbus Regional Airport Authority
4600 International Gateway
Columbus, OH 43219

Dear Mr. Wall:

Rickenbacker International Airport
Columbus, OH
FAA Review of Master Plan Update – Approval of Critical Aircraft

The Federal Aviation Administration (FAA), Detroit Airports District Office (DET ADO) approved the aviation activity forecasts on August 18, 2017. Our approval did not include the critical aircraft. We requested the airport provide the FAA documentation so we could make a determination of the critical aircraft.

The ADO reviewed the draft Facility Requirements (June 19, 2017) and a letter from CRAA (November 3, 2017). This information identified the B747-8 as the existing and future critical aircraft at LCK. Table 3-4 identified a list of aircraft having over 500 annual operations for calendar year 2016. Based on this information and the letter from the airport sponsor, the B747-8 is approved as the existing and future critical aircraft.

The critical aircraft determination is used for a variety of planning activities, including but not limited to airfield design (Runway length & width, taxiway width, separation standards, etc.) and AIP eligibility determinations for projects.

The approval of the critical aircraft does not automatically constitute a commitment on the part of the United States to participate in any development recommended in the master plan or shown on the ALP. All future development will need to be justified by current activity levels at the time of proposed implementation. Further, the approved forecasts and critical aircraft may be subject to additional analysis or the FAA may request a sensitivity analysis if this data is to be used for environmental or Part 150 noise planning purposes.

If you have any questions about this forecast approval, please contact me at (734) 229-2958.

Sincerely,

Katherine S Delaney

Katherine S. Delaney
Community Planner
Detroit Airports District Office

U.S. Department
of Transportation
**Federal Aviation
Administration**

Detroit Airports District Office
Metro Airport Center
11677 S. Wayne Road, Ste. 107
Romulus, MI 48174

December 1, 2020

Mr. Joseph Nardone
President & C.E.O.
Columbus Regional Airport Authority
4600 International Gateway
Columbus, OH 43219

Dear Mr. Nardone:

Rickenbacker International Airport
Columbus, OH
Airport Layout Plan (ALP) Airspace Review and Approval
2020-AGL-5214-NRA

The Master Plan (MP) documents for the Rickenbacker International Airport (LCK) are acceptable from a contractual standpoint with respect to Federal Aviation Administration (FAA) planning policies, applicable Advisory Circulars, and Standard Operating Procedures. The contents of the MP reflect the views of the Columbus Regional Airport Authority (CRAA), who is responsible for the accuracy of the document. The MP does not necessarily reflect the views or policies of the FAA, and the determination of acceptability does not imply the FAA agrees with the MP conclusions and recommendations.

The FAA Reauthorization Act of 2018, Section 163(d), has limited the FAA's review and approval authority for ALPs. This Act limits the FAA's authority to those portions of the ALP that:

a. Materially impact the safe and efficient operation of aircraft at, to, or from the airport;
b. Adversely affect the safety of people or property on the ground adjacent to the airport as a result of aircraft operations; or
c. Adversely affect the value of prior Federal investments to a significant extent.

FAA's approval of this ALP is limited to existing facilities only (or those specific areas that FAA retains approval authority). The FAA has not made a determination on whether or not it retains review and approval authority for any proposed facilities depicted on the ALP associated with this letter (unless otherwise noted). Under Title 49 U.S.C. § 47107(a)(16) (as revised per section 163(d) of Pub.L 115-254), FAA will separately determine whether it retains approval authority for each individual proposed facility depicted on an ALP before construction starts.

Although section 163(d) has limited the FAA's review and approval authority of proposed projects depicted on an ALP, airport sponsors must continue to maintain an up-to-date ALP in accordance with Federal law, 49 U.S.C. § 47107(a)(16).

Enclosed is one (1) conditionally approved copy of the subject ALP, dated April 2019. This letter cancels or supersedes all prior ALP approvals. The ALP approval is based upon recognition of and adherence to the following:

The approval is **not** considered a commitment of Federal funding for the proposed development. The FAA has concurred with the proposed development for planning purposes only based on current safety, utility, and efficiency standards. Actual development should comply with approved standards applicable at the time of construction. The FAA approved forecast dated August 17, 2017 and critical aircraft approval dated December 20, 2017 recognize the following:

1. The existing and future Critical Aircraft is the Boeing 747-8F
2. The airfield designation based on Airplane Design Group (ADG) of Category D-VI.

This forecast was prepared and approved prior to the COVID-19 public health emergency; therefore, the conclusions drawn from the forecast data do not reflect the potential impact of COVID-19 on airport operations at LCK. Please be advised that any future projects will require a separate determination of eligibility and justification, in response to COVID-19 impacts, before the FAA will concur with the project.

The FAA determined Runway 5L/23R as additional on October 29, 2020. This classification means the proposed runway rehabilitation or reconstruction is not currently AIP eligible. The sponsor should continue to document relevant information that could potentially affect the FAA's classification of the runway at some point in the future.

It is FAA policy that the Runway Protection Zone (RPZ) should be acquired in fee simple. It appears LCK owns the entire RPZ for runway ends 5L, 23R, 5R, & 23L. The FAA recommends the Airport Sponsor have an avigation easement for those portions of the RPZ where fee simple ownership is not currently identified. The Airport Sponsor should review the land use in the area and ensure that it has adequate controls in place. The Airport Sponsor should ensure there is no congregation of people within the RPZ. Submission of an RPZ alternatives analysis to the ADO is required. This will include coordination with the Regional and APP-400 Offices in accordance with the memo dated September 27, 2012 "*Interim Guidance on Land Uses Within a Runway Protection Zone"* when the following is proposed:

1. An airfield project (e.g., runway extension, runway shift)
2. A change in the critical design aircraft that increases the RPZ dimensions
3. A new or revised instrument approach procedure that increases the RPZ dimensions
4. A local development proposal in the RPZ (either new or reconfigured)

An Exhibit "A" has been included and will require a separate review and concurrence.

If any of the design critical aircraft or aircraft groups change, this ALP must be reevaluated.

Sheet 2 lists of the currently approved Modification to FAA Design Standards (MOS). It is noted that MOS # 9 is for airport construction standards and applies to the recently completed Taxiway A (and associated taxiways) reconstruction projects. This construction standard cannot be used on the airfield for any other pavements unless specifically requested and approved by the FAA. MOS #10 is for the maximum/ minimum transverse grades for taxiways and specifically applies to B 747-8 operations on Taxiways A and B only. A new MOS for additional taxiways is required if this is to be applied to other pavements at LCK.

FAA's approval does not infer or imply that the land in the airport vicinity is considered compatible with airport operations. Federal requirements stipulate:

1. All development programs should be reasonably consistent with the plans of local and state planning agencies for the development in the airport vicinity.
2. That fair consideration has been given to the interest of communities in or near the airport.
3. That development programs provide for the protection and enhancement of the environment.

The FAA offers no objection to the proposed ultimate airspace utilization as depicted on the ALP based on considerations of safe and efficient use of airspace. The ALP has the status of "Plan on File" for the purpose of 14 CFR Part 77, Obstruction Evaluation, and 14 CFR Part 152, Airport Aid Program. A review of the airside landing area development was conducted according to the following 14 CFR's Parts: -77, -152, -and –157, Notice of Construction, Alteration, Activation, and Deactivation of Airports (reference Aeronautical Study Number 2020-AGL-5214-NRA). It should be noted that FAA cannot prevent erection of any structure near an airport. Airport environs can only be protected through state and local zoning ordinances, building regulations, and like requirements.

All development depicted on this ALP must comply with the National Environmental Policy Act (NEPA) of 1969. FAA environmental approval is required for all airport development actions depicted on this ALP. This would apply to development projects, even if there was no FAA funding involved in the project. Additional requirements concerning FAA NEPA approval can be found in FAA Order 5050.4B *"National Environmental Policy Act (NEPA) Implementing Instructions for Airport Actions."*

To avoid conflicts with future development, the FAA recommends utilizing the ALP when preparing leases. We further recommend providing copies to the local and state planning zoning boards and county and city officials, and encouraging adoption of compatible land use criteria in and around the airport. Copies should be distributed to Fixed Base Operators (FBOs) and airport users.

The Airport and Airway Improvement Act (49 USC 47107(a)(16)(D)) requires the sponsor to eliminate any adverse effects on Federal facilities, or bear all costs to relocate those facilities, that are a result of an airport change. However, if AIP eligible construction/development items adversely affect FAA facilities, the cost of relocating the facilities may be eligible under AIP.

This approval does <u>not</u> include a detailed evaluation of actual construction. Prior to constructing any development on the airport, notice (FAA Form 7460-1) consistent with 14 CFR Part 77 must be filed

with this office. This approval does not include approval for temporary construction equipment, which may be used during actual construction (e.g., cranes, equipment staging areas, site access routes, etc.). A separate construction safety/phasing plan for any project should be reviewed by the FAA no less than 60 days prior to beginning any project.

If development is planned without aviation trust fund investments that will change the status or geometrics of runways, taxiways, aprons, or other operating airport surfaces, notice (FAA Form 7480-1) must be filed with this office consistent with 14 CFR Part 157.

We trust this letter provides a clear explanation of the conditions and terms of our approval. If you desire further clarification, please contact this office at (734) 229-2900.

Sincerely,

John L. Mayfield, Jr.
Manager
Detroit Airports District Office

Cc: AGL-620

Rickenbacker International Airport Master Plan Update Kick-Off and Visioning Meeting

10/6/2016, 2:00 p.m. to 5:30 p.m.,
John Glenn Columbus International Airport, EOC Conference Room
4600 International Gateway, Columbus, OH 43219

Meeting Summary

Meeting Purpose

- Provide an overview of the master planning study process and strategy.
- Solicit feedback from Columbus Regional Airport Authority (CRAA) to assist/inform the master planning effort.

Opening Remarks

David Wall (CRAA) convened the meeting and thanked everyone for attending. Project sponsor David Whitaker (CRAA) also provided opening comments reiterating that everyone in attendance "brings something different to this planning process", and that this is a great opportunity to move everyone forward in one united direction.

Project Overview

Phil Jufko (Michael Baker International) provided an overview of the master planning process including:

- Major objectives
- Airports master planning issues
- Areas of focus
- Public involvement process
- Stakeholder advisory committee (SAC)
- Project schedule

Phil also provided an update on the work currently underway on early deliverables; reviewed the Mid-Ohio Regional Planning Commission's (MORPC) concurrent comprehensive study at Rickenbacker International Airport and overlap between the two studies; and discussed what the project team would like to accomplish and obtain from key leader interviews. David Wall provided a brief history of the airport facility and Phil presented an overview of the existing Rickenbacker airport facility.

Visioning

Marie Keister (Engage Public Affairs) facilitated a visioning exercise and discussion with CRAA participants. The purpose of the exercise was to uncover Rickenbacker's strengths, weaknesses, opportunities and threats, then to identify a vision and desired outcomes for the master planning process. A list of themes which emerged from each of the four categories is shown below.

Strengths – What are Rickenbacker's strengths?

- Room for growth (land/facilities/infrastructure)
- Positive momentum
- Multi-modal hub
- Skilled workforce
- Diversity of shipments

- Ease of use
- Physical location
- Valuable regional asset

Weaknesses – What weaknesses can we improve upon?
- Aging infrastructure
- Access to workforce
- Financial self-sufficiency
- Multi-jurisdictional cohesiveness
- Lack of national awareness
- Federal freight restrictions

Opportunities – What are other opportunities we haven't talked about yet?
- Military collaboration
- Un-tapped infrastructure resources
- Innovative regional funding
- E-commerce
- Nearby workforce
- Public-private partnerships
- Improved marketing and promotion
- Engaging diverse relationships
- Room for growth/physical location

Threats – What threats are out there that could affect Rickenbacker?
- Economic recession
- New transportation technologies
- Environmental issues
- Jurisdictional competition
- Movement of commercial hubs
- Decrease in exports
- Skilled workforce
- Nearby roadway congestion

With strengths, weaknesses, opportunities and threats in mind, Marie asked participants to answer either one of two questions; "What do you want Rickenbacker to look like in 20 years?" or "What do you want the outcome of the master plan to be?" The purpose of this exercise was to help establish a vision and set goals for the study. Once these desired outcomes were established CRAA participants were asked to select their top four priority areas. A ranking of these goals are shown below.

Rank	Votes	Vision/Goal
#1	9	Achieve self-sustainable operations
#2	6	Expand growth of exports
#3 (tie)	5	Identify new transportation needs
#3 (tie)	5	Establish a regional structured governing body
#4	5	Recognized as a global gateway
#5 (tie)	3	Collaborate with military base operations
#5 (tie)	3	Implement all aspects of master plan
#5 (tie)	3	Become an air hub for Amazon
#6 (tie)	2	Fund repair/replacement of runways

Rank	Votes	Vision/Goal
#6 (tie)	2	Address environmental issues
#6 (tie)	2	Increase industrial and logistics districts square footage to 100 million square feet
#6 (tie)	2	Coordinate compatible land uses
#7 (tie)	1	Become a national leader in freight operations
#7 (tie)	1	Large increase in aviation activity

Other goals mentioned included:

- Creating facilities and attractive places for people and workforce
- Increasing regional jobs
- Improving access to workforce
- Utilizing new innovative technologies
- Improving "just in time" services

Marie explained to CRAA participants that these prioritized goals would be shared and further refined with the SAC, MORPC and eventually the public. Phil mentioned that the visioning process helps to provide context for the study and also helps answer questions from the public.

Next Steps/Action Items

To close the meeting Phil reviewed the next steps for the project and thanked CRAA participants for attending.

Meeting Participants

There were 22 participants at the meeting.

Rod Borden	Columbus Regional Airport Authority
Casey Denny	Columbus Regional Airport Authority
Kristen Easterday	Columbus Regional Airport Authority
Charlie Goodwin	Columbus Regional Airport Authority
Eric Hensley	Columbus Regional Airport Authority
Mark Kelby	Columbus Regional Airport Authority
Kathleen Ransier	Columbus Regional Airport Authority
Tory Richardson	Columbus Regional Airport Authority
Elaine Roberts	Columbus Regional Airport Authority
Brian Sarkis	Columbus Regional Airport Authority
Bryan Schreiber	Columbus Regional Airport Authority
Connie Tursic	Columbus Regional Airport Authority
David Wall	Columbus Regional Airport Authority
David Whitaker	Columbus Regional Airport Authority
Lori Duguid	Michael Baker International, Inc.
Phil Jufko	Michael Baker International, Inc.
Paul Strack	Michael Baker International, Inc.
Nick Hoffman	Engage Public Affairs
Marie Keister	Engage Public Affairs

John Lengel	GS&P
Monica Newhouse	Newhouse & Associates, LLC
Steve Schellenberg	IMS Worldwide, Inc.

The following were invited but not able to attend the meeting:

Randy Bush	Columbus Regional Airport Authority

Rickenbacker International Airport Master Plan Update
MORPC Kick-Off Meeting

October 12, 2016, 11:00 a.m. to 1:00 p.m.
Mid-Ohio Regional Planning Commission (MORPC), Conference Room
111 Liberty Street, Suite 100, Columbus, OH 43215

Meeting Summary

Meeting Purpose
- Provide an overview of the master planning study process and strategy.
- Solicit feedback from MORPC to assist/inform the master planning effort.
- Coordinate activities between the two studies.

Opening Remarks
Dina Lopez (MORPC) welcomed everyone in attendance.

Overview of CRAA Visioning Process
Following introductions, Marie Keister (Engage) presented an overview of the CRAA visioning process for the Rickenbacker International Airport Master Plan. MORPC stated that the CRAA vision was in line with MORPC/CRAA discussion to date. MORPC was also interested in governance for implementation of placemaking and transportation amenities.

Project Overview
Phil Jufko (Baker) provided an overview of the master planning process including:
- Major objectives
- Airport master planning issues
- Areas of focus
- Public involvement process
- Stakeholder advisory committee (SAC)

Phil also provided an update on the work currently underway on early deliverables; reviewed the overlap between the CRAA and MORPC studies; and discussed what the project team would like to accomplish and obtain from key leader interviews.

Project Schedules
Phil provided an overview of the proposed LCK Master Plan schedule. He discussed the components during the master planning process where the Rickenbacker International Airport Master Plan team would like to obtain input from the MORPC study. He also discussed opportunities for conducting joint CRAA and MORPC SAC meetings.

Meetings

Phil and Dave Wall (CRAA) discussed the benefits of hosting dual CRAA and MORPC SAC Committee Meetings (CRAA SAC - 47 members; MORPC SAC ~20 members). Blended SAC meetings will likely be two meetings in one (two hours in duration). Other meeting items discussed included:

- The first combined meeting of the Rickenbacker International Airport Master Plan and MORPC Study Stakeholder Advisory Committees is scheduled for December 5, 2016 from 3:30 p.m.to 5:30 p.m. in the Emergency Operations Center (EOC) Conference Room at John Glenn Columbus International Airport. Both CRAA and MORPC will send invitations to their respective committees. The draft agenda will be sent to MORPC by November 21st.
- For future meetings, CRAA will set the dates and send them to MORPC for review and coordination. MORPC will assist with outreach activities. MORPC will adjust their schedule to align with CRAA's SAC dates. MORPC is good with Baker organizing and Engage Public Affairs facilitating.
- MORPC inquired if the joint SAC/MORPC meetings and public meetings could be coordinated by Baker/Engage? CRAA clarified that because the Master Plan is receiving Federal grant funds, the consultants are limited to the activities included in their current scope of services. The CRAA portion of the SAC will have to meet FAA expectations.
- During the meeting, attendees discussed the process of setting meeting agendas and who leads joint meetings. It was determined that both teams would like to review the draft agenda two to three weeks in advance, if possible. Leadership of the joint meetings would be discussed prior to the meetings based upon the agenda.
- MORPC plans on kicking off their study at the Southeast Area Meeting scheduled toward the end of November. MORPC will also convene four working group meetings prior to the joint SAC and MORPC Committee Meeting on December 5th.
- CRAA informed MORPC that they have a standing weekly progress meeting on Tuesdays at 8 a.m. with Baker, the Master Plan consultant. MORPC inquired if they could periodically participate in that meeting. All were supportive of the request.

Deliverables

MORPC Study

Essentially an off-airport study focusing upon:

- Transportation amenities/infrastructure
- Support improved workforce access (sidewalks and transit connectivity)
- Intersection improvements to handle traffic
    - For example, the Amazon facility is already causing congestion and is not up to full operational status. When up to speed, workforce will include 2,000 per shift.
- Placemaking – housing/supportive land uses for workforce
- Overlay airport noise contours over community (MORPC interested in communicating this clearly)
- Ensuring land use for both studies is consistent
- MORPC collaboration with entities that can help MORPC implement their elements of their plan.

LCK Master Plan

- Primarily airport focused, but not entirely
- FAA must approve aviation forecasts so CRAA doesn't 'over plan' the airport
- Challenge is to identify short-term facility needs, then long-term
- Inland port expansion

- Airside/landside cargo facilities
- Sustainable solutions
- Rickenbacker Global Logistics Park – series of properties/campuses on and off airport
- Reducing short-term bottlenecks
- Six (6) major milestones shown in the project schedule provided at the meeting – Deliverables will be submitted in advance of SAC meetings 2-6

Next Steps/Action Items

To close the meeting Phil reviewed the next steps for the project and thanked all participants for attending. Action items include:

- Dina Lopez (MORPC) to send their study information to Dave Wall (CRAA) who will forward information to Phil Jufko (Baker) and Marie Keister (Engage) – Working Groups, SAC list, scope and study area boundaries, etc. This will be the standard protocol for transmitting information.
- Phil Jufko (Baker) is drafting the SAC invitation letter indicating this is a joint meeting with MORPC. The letter will be followed by an Outlook calendar invite. Dave Wall (CRAA) will share the letter with MORPC as they may use similar invitation language on their own letterhead.
- Dave Wall (CRAA) will send Dina L. (MORPC) the entire Master Plan meeting schedule for planning purposes.
- CRAA will share aerial photo files with MORPC once available.
- Are airports allowed to utilize Transportation Improvement District (TID) for bonding purposes? (Thea Walsh to investigate)

Meeting Participants

There were 11 participants at the meeting.

Dina López	Mid-Ohio Regional Planning Commission (MORPC Study Project Manager)
Nick Gill	Mid-Ohio Regional Planning Commission
Thea Walsh	Mid-Ohio Regional Planning Commission
Dave Wall	Columbus Regional Airport Authority
Mark Kelby	Columbus Regional Airport Authority
Kristen Easterday	Columbus Regional Airport Authority
Phil Jufko	Michael Baker International (LCK Master Plan Project Manager)
Lori Duguid	Michael Baker International
Paul Strack	Michael Baker International
Steve Schellenberg	IMS Worldwide
Marie Keister	Engage Public Affairs

Rickenbacker International Airport Master Plan Update
Stakeholder Advisory Committee (SAC) / MORPC Meeting #1

12/5/2016, 3:30 p.m. to 5:30 p.m.,
John Glenn Columbus International Airport, EOC Conference Room
4600 International Gateway, Columbus, OH 43219

Meeting Summary

Meeting Purpose

- Discuss the role of the Stakeholder Advisory Committee (SAC).
- Provide an overview of the Rickenbacker International Airport master planning study process and strategy.
- Provide an overview of the Mid-Ohio Regional Planning Commission's (MORPC) 2018 Rickenbacker Area Comprehensive Study.
- Review the outcome of the Columbus Regional Airport Authority (CRAA) visioning process.
- Solicit feedback from the SAC to assist/inform the master planning effort.

Opening Remarks

David Wall (CRAA) convened the meeting and thanked everyone for attending. Phil Jufko (Michael Baker International) began the presentation by discussing what the SAC is and its role within the master planning process:

- A diverse representation of community interests and opinions relative to airport development and long-range planning.
- A forum to freely present issues, ideas, and solicit input regarding future aviation facilities.
- ROLE: Provide advisory input related to aviation, community, political, planning and legal issues.

Project Overview

Following introductions, David Wall reviewed the history of the airport and Phil Jufko provided an overview of the current airport facility. Phil also discussed the master planning process for the Rickenbacker International Airport which included:

- Major objectives
- Areas of focus
- Master planning process
- Public involvement program

Phil then introduced the MORPC team (William Murdock, Thea Walsh and Dina Lopez); and they provided an overview of their concurrent study to the Rickenbacker International Airport master planning process. The 2018 Rickenbacker Area Comprehensive Study will examine existing factors and potential projected growth while focusing on:

- Infrastructure
- Housing
- Energy
- Economic Development
- Placemaking
- Continuance of Coordination

The MORPC team also discussed the study area, their own stakeholder advisory committee and working groups, implementation plan and study timeline. Following MORPC's study overview, Phil gave an overview of the project schedule and provided an update on the work completed and currently underway for the Rickenbacker International Airport master plan.

CRAA Visioning Process

Marie Keister (Engage Public Affairs) provided an overview of a visioning exercise previously held with CRAA participants. The purpose of the exercise was to uncover Rickenbacker's strengths, weaknesses, opportunities and threats, then to identify CRAA's priority goals for the master planning process. A ranking of these priorities is shown below.

Rank	Votes	Vision/Goal
#1	9	Fill in with text – Achieve self-sustainable operations
#2	6	Expand growth of exports
#3 (tie)	5	Identify new transportation needs
#3 (tie)	5	Establish a regional structured governing body to generate consensus and collaboration
#4	5	Recognized as a global gateway
#5 (tie)	3	Collaborate with military base operations
#5 (tie)	3	Implement all aspects of master plan
#5 (tie)	3	Become an air hub for Amazon
#6 (tie)	2	Fund repair/replacement of runways
#6 (tie)	2	Address environmental issues
#6 (tie)	2	Increase industrial and logistics square footage to 100 million square feet
#6 (tie)	2	Coordinate compatible land uses
#7 (tie)	1	Become a national leader in freight operations
#7 (tie)	1	Large increase in aviation activity

Marie then facilitated a discussion with SAC participants asking them for feedback on the proposed priorities and if there were any missing goals. A list of themes which emerged from the discussion is listed below.

- Make transit convenient - future buildings and development should be built close to nearby streets so transit can better serve the area.
- Preserve the history of the airport/base.
- Opportunity for strategic partnerships with businesses and local governments.
- Elevate the brand of Rickenbacker for national/global awareness.
- Public/Private partnerships and collaboration with military operations.
- Collaboration with Smart Columbus initiative and truck platooning.
- Strategic investments for broadband, sewer/water, technology, and infrastructure upgrades.
- Benchmarking similar domestic or international facilities.
- Collaboration between local governments and military for benefit of both.

Marie explained to SAC participants that these additional goals would be considered as part of the Rickenbacker International Airport master plan and the Rickenbacker Area Comprehensive Study.

Next Steps/Action Items

To close the meeting Phil reviewed the next steps for the project and thanked SAC participants for attending. David Wall concluded the meeting by offering that SAC members should feel free to contact him if anything was unclear.

Meeting Participants

There were 41 participants at the meeting.

Rod Borden	Columbus Regional Airport Authority
Stacey Boumis	Village of Obetz
Mike Bradley	Central Ohio Transit Authority
Lt Col Daryl Brezina	Ohio Air National Guard
Dave Delaney	MAST (L Brands)
David Dennis	ODOT Office of Aviation
Casey Denny	Columbus Regional Airport Authority
Lori Duguid	Michael Baker International, Inc.
Kristen Easterday	Columbus Regional Airport Authority
Amy Elsea	Pickaway County Chamber of Commerce
Mark Gialluca	Duke Realty
Charlie Goodwin	Columbus Regional Airport Authority
Lucas Haire	City of Canal Winchester
Phil Jufko	Michael Baker International, Inc.
Marie Keister	Engage Public Affairs
Mark Kelby	Columbus Regional Airport Authority
David Kelly	State of Ohio/Adjutant Generals Department
Lisa LaMantia	Central Ohio Transit Authority
Tim Layne	LCK ATCT
Dina Lopez	Mid-Ohio Regional Planning Commission
Kenny McDonald	Columbus 2020
William Murdock	Mid-Ohio Regional Planning Commission
Joe Ortega	Ohio Department of Transportation
Barry Payne	CMH ATCT
CDR Chris Peppel	Navy/Marine Reserve Center
Mike Pompura	UPS
CPT Thomas K. Race	Ohio Army National Guard
Tory Richardson	Columbus Regional Airport Authority
Elaine Roberts	Columbus Regional Airport Authority
Brian Sarkis	Columbus Regional Airport Authority
Jim Schimmer	Franklin County
Ike Stage	City of Grove City
Paul Strack	Michael Baker International, Inc.
Bryant Thomas	Norfolk Southern
Lt Col Kenneth Voris	Ohio Air National Guard
David Wall	Columbus Regional Airport Authority
Thea Walsh	Mid-Ohio Regional Planning Commission
Christie Ward	Village of Lockbourne
Kevin Wheeler	City of Columbus
David Whitaker	Columbus Regional Airport Authority
Jeff Zimmerman	Columbus Chamber

The following were unable to attend the meeting:

Ann Aubry	City of Columbus
Susan Brobst	Madison Township (Franklin Co.)
Franklin Christman	Village of Ashville

Katy Delaney	FAA Detroit Airports District Office
Mary Ann Elliott	Harrison Township
Jeff Green	City of Groveport
Eric Hensley	Columbus Regional Airport Authority
Dan Heronemus	Forward Air
Robin Holderman	Columbus Regional Airport Authority
Marlin Horner	FedEx
Bryan Schreiber	Columbus Regional Airport Authority
Ryan Scribner	Pickaway Progress Partnership
Connie Swoyer	Madison Township (Pickaway Co.)
Rick Szabrak	Fairfield County

Rickenbacker International Airport Master Plan Update
Stakeholder Advisory Committee (SAC) / MORPC Meeting #2

2/21/17, 3 p.m. to 5 p.m.
John Glenn Columbus International Airport, EOC Conference Room
4600 International Gateway, Columbus, OH 43219

Meeting Summary

Meeting Purpose

- Project updates
- Master plan process
- Preliminary inventory of existing conditions and forecasts of future demand
- Project schedule
- Public meeting preparation
- Next steps
- Discussion

Opening Remarks

David Wall (CRAA) convened the meeting and thanked everyone for attending. Phil Jufko (Michael Baker International) began by reviewing the agenda and then inviting Mid-Ohio Regional Planning Commission (MORPC) to provide an update of the 2018 Rickenbacker Area Comprehensive Study.

MORPC's 2018 Rickenbacker Area Comprehensive Study Update

William Murdock announced that MORPC has briefed the Congressional delegation on the results that are being shared today.

Thea Walsh and Dina Lopez provided updates regarding:

- Working groups – four of which have met at least twice.
- Existing conditions
    - Transportation: for average daily traffic, transit facilities, sidewalks, and safety. No surprises – US 23 has highest area of traffic and crashes. I-270 and Alum Creek also have high volume of traffic and crashes.
    - Workforce: one-third of jobs are filled by local residents; home locations of Rickenbacker-area workers are primarily in the southern half of the central Ohio region.
    - Economic development: looked at and mapped incentives and agreements and how development has been influenced by these incentives.
    - Housing: found that Rickenbacker area is mostly made up of single family housing today. The median annual income is about $61,000, which is higher than county and state median annual incomes.
- Franklin County Energy Study – first kick off meeting on November 30, 2016
    - Informs the energy chapter of the Rickenbacker Area Study.
    - Examines and measures existing energy supply and consumption.
    - Drives regional energy priorities and investments.
    - End goal: identify energy sources and outcomes in the area.
- Land use analysis
    - Mostly residential and agricultural.

    - Projections: 2040 employment and household projections.
- Next steps
    - For transportation: ask stakeholders to help identify and prioritize transportation projects.
    - For economic development: benchmark inland ports, conduct a SWOT analysis (strengths, weaknesses, opportunities, threats). Seek input from businesses – perhaps from surveys, workforce origin data – to identify business needs/concerns.
    - For housing: gather data and draft chapter.
    - For water and broadband: gather data and draft chapter.
    - For energy: an existing study will be completed fall, 2017, so this chapter will be finalized first.
- There were no questions or comments

Rickenbacker Master Plan Update

Phil provided an update on the process of collecting data on existing conditions in these areas:

- Existing airport facilities – some are old and may need replaced; others are in good shape.
    - Terminal area
    - Cargo facilities – Air Cargo Terminal 5 opened in 2016
    - Pavement conditions
- Utilities – growth in cargo facilities will affect how the area is served by transportation facilities and public utilities.
- Environmental issues.

Phil then discussed aviation demand forecasts and the importance of making realistic assessments of market conditions and market performance. The forecasts will give the Federal Aviation Administration (FAA) a new perspective on what is going to happen at Rickenbacker International Airport (LCK). Takeaways so far:

Rickenbacker International Airport:

- Is the only Ohio airport with Boeing 747-8F operations – these are wide-bodied aircraft that affect airfield development: need for long runways (like at Rickenbacker), support facilities needed, separation of runways and taxiways required, etc. This drives dimensions for everything.
- Experienced more 747 operations than all other airports in Ohio combined.
- Landed more air cargo than any Ohio airport.
- Handled more Allegiant passengers than any other airport in Ohio (excludes N. Kentucky – Cincinnati Airport).

Historically, local and itinerant activity has been affected by national events, such as hurricanes, the Great Recession, etc. Average pounds per cargo operation is generally on an upward trend.

Population growth in the seven-county area is expected to have a 1.05% growth rate between 2016-2036. Highlights of airline forecasts:

- Allegiant has added service over the last four years and this is expected to continue, but likely not at same growth rate due to increased competition and the limited space available at Rickenbacker, which is a two-gate facility. Two scenarios will be considered as the team considers how the terminal might operate in the future to meet Allegiant growth objectives, and what facility needs will be required as a result.
    - Q: Would you be interested in attracting other carriers? David Whitaker: yes, but Allegiant operates in a market with few competitors. Charters are also welcomed.

- David Whitaker noted that Allegiant doesn't fly belly cargo like some other commercial carriers do.

Steve Schellenberg from IMS Worldwide discussed the global cargo forecast and the opportunities for Rickenbacker.

- Cargo aviation growth predictions for the globe are around 4.1% growth between now and 2019-2020.
- However, recent growth at Rickenbacker is at 8% to 9% - far exceeding the growth predictions of the global activity. Rickenbacker has a significant number of the top 25 global freight forwarders based here.
- Forward Air operates its national hub here. Very little of the freight processed by Forward Air in Columbus terminates here, but moves on via truck to traditional gateway markets such as New York or Chicago. There are opportunities here.
- The catchment zone has a significant value proposition over its competitors. CRAA is visiting these markets: Detroit, Cleveland, Indianapolis, Cincinnati, Louisville, and Pittsburgh to educate them on how Rickenbacker can serve their freight forwarding needs to get goods to market quicker and less expensively than going through Chicago or other airports.
- Becoming an Express Consignment Carrier Facility is a new opportunity to drive high volumes of imported e-commerce packages to the cargo carriers who operate at LCK. Presently, these only exist at New York and Los Angeles. An ECCF is needed in the middle of the country. If there is success in gaining one of these, cargo volumes would increase well beyond our current forecast. And, exports will need to increase significantly to offset imports.
- Cross border e-commerce growth is predicted to grow dramatically. The infrastructure requirements are not just to land the plane, but to move that freight to the last mile – delivering to the customer's home. Most of this will move on the ground infrastructure network. Amazon, DHL, and Metro Logistics have selected Cincinnati as their base of operations, but there are others that present opportunities to Rickenbacker: Alibaba, WorldNet, WCA, and others.
- Questions/comments:
    - Where are we with e-commerce? David Whitaker: e-commerce requires same day customs clearance. We are having positive conversations with Customs now.
    - How does this affect livestock? Does the forecast consider this? Steve – it's important because it is an important niche and adds to your Columbus value proposition. But we haven't factored it all in yet because I don't know the scale of potential growth yet.
    - How does this cargo growth equate to more trucks on the ground, and jobs? MORPC: this would be very helpful for us to understand. (Steve – we can translate the pounds of cargo to number of trucks. Also, once forecasts are done, it is possible to forecast economic outcomes and jobs under various scenarios – this might be something Columbus 2020 does at some point.)

Phil reviewed forecasts for general aviation fleet mix, instrument operations, peak operations, and passengers. He noted that Allegiant operates a little differently than most commercial airlines, which was considered during the forecasting process. David Whittaker noted that Allegiant is a leisure travel carrier unlike a business travel carrier that has peak hours in early morning and late at night.

We will present these forecasts to FAA for their approval. FAA's forecasts are already not accurately depicting what is happening here today. When we present these forecasts, FAA will need to adjust their forecasts based on what we're presenting. We've had access to more recent data that we will be able to share with them.

Regarding the military forecasts, Phil acknowledged that mission drives the number of operations. The military is not going to reveal their mission plans, but we consider past history and experience.

Military representatives stated that they may have a better idea of some things by May regarding some things they're looking at. They will share information as it becomes available.

The Master Plan Team thinks CRAA can capture a bit more of the general aviation market. You may be able to base more aircraft here, for example.

Questions/comments:

- Rory McGuiness – regarding the ECCF, where are we in that process of being certified? David Whitaker: it's happening inside of an existing facility with some customs security around it. If we hit the volumes to be in a building exclusive for that use, we have options. We're not yet looking at where we might locate something outside of where we are testing now, but we could act quickly if we have good experience with our current test with Customs.

We will be sending you an email to save future dates on your calendars, and a reminder that we would like you to send any comments back within a couple of weeks to Dave/Phil.

Marie Keister invited all to attend the public open house meetings on Feb. 22, and to spread the word to others.

Next Steps/Action Items

To close the meeting Phil reviewed the next steps for the project and thanked SAC participants for attending.

Meeting Participants

There were 31 participants at the meeting.

Rod Borden	Columbus Regional Airport Authority
Mike Bradley	Central Ohio Transit Authority
Lt Col Daryl Brezina	Ohio Air National Guard
Adrian Burns	Columbus Region Logistics Council
Franklin Christman	Village of Ashville
Kristen Easterday	Columbus Regional Airport Authority
Charlie Goodwin	Columbus Regional Airport Authority
Jeff Green	City of Groveport
Eric Hensley	Columbus Regional Airport Authority
Mark Kelby	Columbus Regional Airport Authority
David Kelly	State of Ohio/Adjutant Generals Department
Lisa LaMantia	Central Ohio Transit Authority
Tim Layne	LCK ATCT
Dina Lopez	Mid-Ohio Regional Planning Commission
Kenny McDonald	Columbus 2020
Rory McGuiness	City of Columbus
William Murdock	Mid-Ohio Regional Planning Commission
Joe Ortega	Ohio Department of Transportation
Major Thomas K. Race	Ohio Army National Guard
Hannah Reed	City of Columbus
Tory Richardson	Columbus Regional Airport Authority

Elaine Roberts	Columbus Regional Airport Authority
Brian Sarkis	Columbus Regional Airport Authority
Jim Schimmer	Franklin County
Lt Col Kenneth Voris	Ohio Air National Guard
David Wall	Columbus Regional Airport Authority
Thea Walsh	Mid-Ohio Regional Planning Commission
Christie Ward	Village of Lockbourne
Kevin Wheeler	City of Columbus
David Whitaker	Columbus Regional Airport Authority
Jeff Zimmerman	Columbus Chamber

The following were unable to attend the meeting:

Ann Aubry	City of Columbus
Stacey Boumis	Village of Obetz
Susan Brobst	Madison Township (Franklin Co.)
Katy Delaney	FAA Detroit Airports District Office
Dave Delaney	MAST (L Brands)
David Dennis	ODOT Aviation
Casey Denny	Columbus Regional Airport Authority
Mary Ann Elliott	Harrison Township
Amy Elsea	Pickaway County Chamber of Commerce
Mark Gialluca	Duke Realty
Lucas Haire	City of Canal Winchester
Dan Heronemus	Forward Air
Robin Holderman	Columbus Regional Airport Authority
Marlin Horner	FedEx
Barry Payne	CMH ATCT
CDR Chris Peppel	Navy/Marine Reserve Center
Mike Pompura	UPS
Bryan Schreiber	Columbus Regional Airport Authority
Ryan Scribner	Pickaway Progress Partnership
Ike Stage	City of Grove City
Connie Swoyer	Madison Township (Pickaway Co.)
Rick Szabrak	Fairfield County
Bryant Thomas	Norfolk Southern

Project Team Participants

The following team members were present at the meeting:

Phil Jufko	Michael Baker International, Inc.
Marie Keister	Engage Public Affairs
Paul Strack	Michael Baker International, Inc.
Lori Duguid	Michael Baker International, Inc.
Mike Kotlow	Michael Baker International, Inc.
Steve Schellenberg	IMS Worldwide Inc.
Devon Seal	Gresham, Smith & Partners, Inc.

Rickenbacker International Airport Master Plan Update
Stakeholder Advisory Committee (SAC) / MORPC Meeting #3

5/18/17, 3 p.m. to 5 p.m.
John Glenn Columbus International Airport, EOC Conference Room
4600 International Gateway, Columbus, OH 43219

Meeting Summary

Meeting Purpose
- Public meeting summary
- Project updates
- Master plan process
- Facility requirements
- Project schedule
- Next steps/action items
- Discussion

Opening Remarks
David Wall (CRAA) convened the meeting, thanked everyone for attending and reviewed the agenda. Phil Jufko (Michael Baker International) asked everyone to introduce themselves, then invited Marie Keister (Engage Public Affairs, LLC) to summarize the recent public meetings.

Summary of Recent Public Meetings
Marie Keister provided an overview of comments received at the public meetings held on February 22nd. Later, Phil noted we also heard concerns about inadequate curbfront during peak periods, which creates bottlenecks, and questions regarding whether we intended to purchase property.

- Questions/comments:
  - Dave Whitaker asked how we would respond to the ideas and/or questions that were raised, noting that there is an effort to preserve the history of Rickenbacker and there is already a picnic area, although probably not as prominent as it could be. Marie and Dave Wall said the meeting summary was posted online, but we could address these comments and questions in a question/answer section of the website, and also note/respond to these comments at the next round of public meetings.

MORPC's 2018 Rickenbacker Area Comprehensive Study Update
Thea Walsh and Dina Lopez (MORPC) provided updates regarding:
- Housing Working Group – Met on 5/9/2017
  - How do we determine affordability? Housing and Transportation Affordability Index. Attempting to create own index.
- Transportation Working Group – Met on 5/15/17
  - Volume forecast - 2040
  - Upcoming projects
  - Prioritization of projects
  - Identify congestion due to land use forecast in 2040
  - Provided proposed needs criteria (being reviewed and finalized)

- Project Administration
  - Monthly one-page updates will be coming

- Next Steps
  - Economic Development and Energy/Broadband/Utilities Working Groups to meet before next SAC meeting in July
  - GREAT rider survey (working with Groveport) – to be conducted in November, peak workforce
  - Beginning place making effort
  - Communications strategy
  - Area Study Funders meetings
  - Scheduling future meetings through May 2018

Thea Walsh updated the SAC regarding a FASTLANE application for widening Alum Creek. This application is still under consideration. Should it be successful, it could provide a great jump start to address infrastructure needs.

There were no questions or comments.

Forecasts of Aviation Demand and Facility Requirements

Phil provided an overview of the Forecasts of Aviation Demand and their impact on facility requirements. During the first portion of his presentation Phil discussed facility needs related to the following areas:

- Airfield Capacity and Configuration
- Design Aircraft Identification
- Runway Length Analysis
- Runway Strength Analysis
- Airfield Design Standards Analysis
- Airfield Lighting, Markings and Signage, and Navigational Aids
- Passenger Terminal Area
- Parking and Terminal Access
- Air Cargo Facilities

Questions/comments:

- Dave Wall requested that Phil further discuss rental car activity at the passenger terminal. Phil stated that Enterprise is operating at LCK, but they do not occupy space in the terminal. Enterprise is also talking about adding more cars at the airport.

Cargo Demand and Requirements

Steve Schellenberg (IMS Worldwide, Inc.) provided an overview of cargo facility requirements. The first 13,000 twenty-foot equivalent unit (TEU) ship has arrived at an East Coast port. This size ship is unprecedented, is a disrupter and will affect Rickenbacker. Another disrupter is Amazon, which is affecting long haul trucking. Trucks are now running shorter distances to distribution centers. Amazon is expected to be 20 percent of retail by the end of this year. Retailers are trying to right size. At least 3,600 retailers will close in 2017. (See Tomkins International announcement) Amazon Prime now has 80 million US customers – a fourth of the population. This is a huge opportunity for Rickenbacker.

Questions/comments:

- David Whitaker noted Rickenbacker is seeing an increase in cargo charters.
- Dave Wall asked about the forecast in dramatic increase in ground operations for UPS and Fed Ex. Will those come through Rickenbacker facilities? Bryan Schreiber said Victoria's Secret will load up FedEx Express trailers with express packages that may get driven to Indianapolis or Memphis on trucks. They avoid putting packages on air unless they absolutely have to. The Columbus central location makes this possible. Steve noted that these package carriers are creating hubs between their air cargo and ground locations to facilitate truck delivery because it's more cost effective.
- Dina asked Steve to define facility requirements beyond the actual buildings projected to be required in the cargo forecast. According to the Airports Council International, Air Cargo Guide 2013, for general purposes, estimating apron/aircraft parking requirements assumes six square feet of apron/parking for every one square foot of cargo handling facility. For each 100,000 SF facilities required in the forecast, an additional 600,000 SF of parking and apron space should be anticipated for development. When combined with the requirements for actual facilities, ramp/apron space, equipment (ground support equipment) and the Columbus floor/area ratio that dictates how much of the pad can be covered by the actual facility footprint, it is possible to determine the overall size of the property required to support the fully developed forecast and facility requirements. For this forecast, using the aggressive recommended cargo volumes combined with the necessary economic development activities in support of the growth, the total requirement for space for the duration of the forecast is over 141 acres of land to be dedicated to new air cargo operations and aircraft activities at Rickenbacker.

General Aviation Forecast and Facility Impacts

During the final portion of his presentation, Phil discussed facility needs related to the following areas:

- General Aviation Facilities
- Support Facilities
- Utilities
- Airspace and Obstruction to Air Navigation
- Land Area Requirements

Questions/comments:

- David Whitaker inquired since we are looking at fuel storage above ground, will we continue to deliver fuel via the underground hydrant system? Phil stated that we are planning to move to an above ground system in the future and confirmed that aircraft will continue to be fueled via the hydrant system.
- Brian Sarkis asked Steve Schellenberg if he expects any impacts regarding the recent Amazon Cincinnati announcement. Steve stated that he thinks the reason Amazon did what they did in Cincinnati may be related to their relationship with DHL. They may be relying on DHL planes or services that they don't have to move goods affordably until they can get their distribution to scale. He doesn't see any risk to our forecasts because our work here is in a different silo. It would have been nice to have Amazon Prime airplanes here but it is unlikely because of the short trucking distance between here and Cincinnati. (David Whitaker agreed and said there are conversations where the international services at LCK may be able to be used with Amazon)
- Phil commented on meeting with the military during this visit. The discussion was related to accounting for planned military improvements as part of the overall master plan.

Next Steps/Action Items

Phil reviewed the next steps for the project and asked for feedback on the draft facility requirements by June 2. He thanked SAC participants for attending. He adjourned at 5 p.m.

Meeting Participants

There were 28 participants at the meeting.

Ann Aubrey	City of Columbus Department of Public Utilities
Rod Borden	Columbus Regional Airport Authority
Mike Bradley	Central Ohio Transit Authority
Lt Col Daryl Brezina	Ohio Air National Guard
Adrian Burns	Columbus Region Logistics Council
Franklin Christman	Village of Ashville
Kristen Easterday	Columbus Regional Airport Authority
Charlie Goodwin	Columbus Regional Airport Authority
Eric Hensley	Columbus Regional Airport Authority
Mark Kelby	Columbus Regional Airport Authority
Lisa LaMantia	Central Ohio Transit Authority
Tim Layne	LCK ATCT
Dina Lopez	Mid-Ohio Regional Planning Commission
Rory McGuiness	City of Columbus
William Murdock	Mid-Ohio Regional Planning Commission
Joe Ortega	Ohio Department of Transportation
Brian Sarkis	Columbus Regional Airport Authority
Jim Schimmer	Franklin County
Bryan Schreiber	Columbus Regional Airport Authority
David Wall	Columbus Regional Airport Authority
Thea Walsh	Mid-Ohio Regional Planning Commission
Christie Ward	Village of Lockbourne
David Whitaker	Columbus Regional Airport Authority

The following were unable to attend the meeting:

Stacey Boumis	Village of Obetz
Susan Brobst	Madison Township (Franklin Co.)
Katy Delaney	FAA Detroit Airports District Office
Dave Delaney	MAST (L Brands)
David Dennis	ODOT Aviation
Casey Denny	Columbus Regional Airport Authority
Mary Ann Elliott	Harrison Township
Amy Elsea	Pickaway County Chamber of Commerce
Mark Gialluca	Duke Realty
Jeff Green	City of Groveport
Lucas Haire	City of Canal Winchester
Dan Heronemus	Forward Air
Marlin Horner	FedEx
Dave Kelly	State of Ohio/Adjutant Generals Department
Kenny McDonald	Columbus 2020
Barry Payne	CMH ATCT
CDR Chris Peppel	Navy/Marine Reserve Center

Mike Pompura	UPS
Cpt Thomas Race	Ohio Army National Guard
Hannah Reed	City of Columbus
Tory Richardson	CRAA
Elaine Roberts	CRAA
Ryan Scribner	Pickaway Progress Partnership
Ike Stage	City of Grove City
Connie Swoyer	Madison Township (Pickaway Co.)
Rick Szabrak	Fairfield County
Bryant Thomas	Norfolk Southern
Lt. Col. Kenneth Voris	Ohio Air National Guard
Kevin Wheeler	City of Columbus
Jeff Zimmerman	Columbus Chamber

Project Team Participants

The following team members were present at the meeting:

Phil Jufko	Michael Baker International, Inc.
Marie Keister	Engage Public Affairs
Lori Duguid	Michael Baker International, Inc.
Mike Kotlow	Michael Baker International, Inc.
Steve Schellenberg	IMS Worldwide Inc.

Rickenbacker International Airport Master Plan Update
Stakeholder Advisory Committee (SAC) / MORPC Meeting #4

July 27, 2017 - 2 p.m. to 4 p.m.
Obetz Government Center
4175 Alum Creek Drive, Obetz, Ohio 43207

Meeting Summary

Meeting Purpose

- Project Updates
- Alternatives Analysis
- Project schedule
- Next steps/action items
- Discussion

Opening Remarks

David Wall (CRAA) convened the meeting and thanked everyone for attending. Phil Jufko (Michael Baker International) reviewed the agenda and laid out the purpose of the day's meeting.

MORPC's 2018 Rickenbacker Area Comprehensive Study Update

Dina Lopez (MORPC) provided updates regarding:

- Transportation Update
  - Draft of existing conditions
  - Seeking input from stakeholders on project evaluation criteria
  - GREAT survey to occur in November
- Economic Development Update
  - Interviews with economic development stakeholders and other experts being scheduled
  - Continuing to monitor opportunities to fund improvements to expand Alum Creek Drive
- Housing Update
  - Developer interviews underway
  - Developer survey drafted and under review
  - Market rent analysis mapping of results
- Water Infrastructure Update
  - Data gathering on water and sewer capacity of mains, age/condition, and break locations
  - Follow-up with stakeholders regarding water agreements
- Energy/Broadband Update
  - Draft of Franklin County Energy Baseline Study due in early August
  - Public comment period from 8/14 to 9/13 on draft study
- Next Steps
  - Conducting a study on area population and employment trends
  - Approaching land developers to better understand housing development constraints
  - Conducting a GREAT riders survey in November.
  - Next set of working group meetings to be held in Groveport.

Thea Walsh (MORPC) also mentioned that they would be hosting the Ohio Conference on Freight during August 2-4.

A one-page summary handout of MORPC activities was provided. There were no questions or comments for MORPC.

Airport Master Plan – Alternatives Analysis

Phil provided an overview of the facility requirements and procedures, and discussed facility needs related to the following areas:

- airfield design
- runway configuration requirements
- airfield analysis
- taxiway concepts
- terminal issues
- peak activity
- ticketing
- security checkpoint
- security screening
- public waiting
- terminal concepts
- secure passenger holding
- proposed terminal floor plans
- landside issues
- curbfront
- potential curbfront solutions
- parking/access
- air cargo
- proposed cargo facility concepts
- general aviation
- aviation hangar concepts
- multi-tenant facility
- utilities
- land area

Questions/comments:

- During the ***Taxiway Concepts*** discussion, it was asked whether the FAA has updated or changed standards. Phil replied that as currently designed, Rickenbacker's taxiways need to be addressed to meet the latest standards. The full length parallel taxiway, "A", does not meet the latest standards.
- Following a review of six ***Terminal Concepts***, SAC members were invited to provide their thoughts on these potential plans for the first and second floors of the passenger terminal.
    - Ike Stage (Grove City) mentioned that the restroom size has not been enlarged and noted the lackluster conditions of the restrooms during peak periods. Phil mentioned that the team would be looking into this but the restrooms were sufficiently sized based on standards and other similar sized airports. Phil mentioned that the lighting is dim and brighter lights may improve conditions. Dave Whitaker (CRAA) mentioned they would take note of the cleanliness of the restrooms. Ike also liked the addition of a retail store on the second level.
    - Christie Ward (Lockbourne) didn't realize there were restrooms on the first level and mentioned that the baggage claim area is a wasted space. Phil stated that the baggage claim area is a shared space with U.S. Customs. As a result, sizing requirements identified in the master plan for both the baggage claim area and the adjacent customs and security operations were considered when determining the space needs for the area.
    - Mike Bradley (COTA) asked if this plan was for the next 5 years, and had heard that the passenger forecast is increasing (in regard to terminal space for passengers). Phil replied that the plan is for 20 years and concurred that the forecast shows an increase in passengers but the sizing of the terminal is based upon accommodating a maximum of two aircraft simultaneously during the peak hour conditions.

- William Murdock (MORPC) asked about queuing and whether LCK uses a TSA pre-check? Phil stated that there is not a separate TSA Precheck line; however, Precheck passengers are afforded the level of screening associated with this status.
- Dina Lopez (MORPC) asked what measure would trigger improvements for new/updated concessions? Phil replied that LCK has the recommended space requirements for concession areas but it's more about what space is available. David Whitaker mentioned this study will take recommendations as a part of concession area growth.
- Phil brought up a point that the study will recommend, based on input, whether there should be more room for seating versus concessions. If there is adequate seating space (not everyone wants to sit down, etc.), an increase in seating will most likely not be recommended. Shannetta Griffin (CRAA) asked if there were requirements for circulation areas and between rows of seats. Phil replied that yes 10 feet is recommended, but it depends on the space and size of the airport. Marie Keister (Engage) asked how far do you have to design these concepts, and would the public be able to comment on these? Phil mentioned that yes they would obtain feedback on these concepts and refine the concept for a recommendation. Dave Wall (CRAA) asked if there were standards for circulation and Phil replied the 10 feet is tied to these industry standards. Some airports have 8-foot circulation areas while others might have 20 feet. Phil mentioned that unless we expand the terminal structure, we will be working with 10-foot circulation corridors. The outcome of the study will help find a balance. In addition, CRAA administration, TSA and CRAA public safety spaces could be relocated to free up space.
- Dave Wall asked if the type of passengers using LCK (i.e. recreational vs. business traveler) check luggage more often or carry on. Phil said most people check their baggage.
- Jim Schimmer (Franklin County) mentioned the need for more intimate areas for business travelers and asked if passengers at LCK were mostly business or recreational travelers? Phil replied that most were recreational travelers and Dave Whitaker added this number is about 95 percent of travelers. Jim also mentioned he liked terminal concept 6 the best. Jim suggested removing seating on each of the four corners of this area.
- Christie Ward also preferred concept 6 but mentioned the need for a children's area (to walk around, etc.). William also mentioned the need for a children's area.
- Ike was confused that the concepts had different seating capacity. Phil mentioned that there wasn't a set number but the concepts show that the seating capacity could vary depending on the spaces used. Phil also stated that all of the concepts exceed the recommended seating for the size of the terminal. It was also discussed the peak capacity might be different in 20 years.
- Dina asked if the concessions areas would be primarily food based? Phil said not necessarily.
- Mike Bradley mentioned he liked how concept 6 is more open compared to other concepts; while Franklin Christman (Ashville) said this concept has a better future use.
- Presently, the LCK terminal experiences peak conditions (two aircraft at terminal) 3-4 times per week. This could increase to 5-7 times per week. The presence of CRAA public safety personnel on the curbfront helps, but doesn't entirely solve the curbfront congestion.

- During the terminal curbfront discussion, Mike Bradley asked if there were any thoughts about delivering passengers to LCK by transit. Phil suggested that a proposed addition of a vehicle lane could accommodate a COTA bus drop off zone. Mike wasn't sure if transit is warranted yet

for a service to LCK, but thought it was important to consider a space for this service in the future.

During the discussion, Steve Schellenberg (IMS Worldwide, Inc.) provided an overview of cargo facility requirements. Steve highlighted there has been a lot of success and total cargo is up worldwide by 66 percent. LCK has experienced 247% growth in exports year over year. He also mentioned that the freight community understands the importance of LCK, as they can't get their product through other gateways fast enough, compared with the advantages of LCK. Four ***air cargo concepts*** were shown and discussed. One guiding principle is the cargo facilities and functions need to be aggregated as close together as possible. Development of the south side of the airport for air cargo should be delayed as long as possible due to significant costs and due to significant tug travel time to existing facilities.

Questions/comments:

- Casey Denny (CRAA) asked how long existing facilities will provide current capacity before updates/additional facilities are needed? Steve stated that the current facility will support growth until 2023 based on the application of the ratios from ACRP. However, cargo flow and industry sectors could impact and drive demand sooner.
- Mike Bradley asked how/where the aircraft currently fuel? Steve said there are hydrant fuel lines underground and multiple pits where planes can refuel next to the cargo buildings. Mike also asked how much infrastructure is needed, and what's the next step in replacing this infrastructure? Steve replied that this will be compiled in the analysis and is based on forecasts, the location/size of the cargo facilities recommended, best scenarios, costs and impacts. Steve said that LCK will run out of capacity by 2025 without any new cargo buildings. These facilities would need to be expanded in 2021-22 to prevent any gaps by 2025. Everything in the recommended schedule of the study is based on when the capacity/function of the buildings expire. After the full buildout of ACT 5, 7 – 100,000 sf buildings are needed to accommodate the forecasted demand during the planning period.
- Steve also mentioned that each of the new proposed buildings will give LCK an extra 100,000 square feet of cargo capacity. Based on trends, we will exceed an already aggressive growth pattern and will need to build more cargo facilities at LCK. The current forecast is based on dry/bulk cargo projections and does not anticipate new requirements for cold, food or other specialized cargo. The forecast was created using 100,000 SF buildings so that the economic impact could be applied from ACT 5, however, as larger facilities may be easier to construct, they should still be in increments of 100,000 SF. Also, the reason for this size is so that CRAA can use the architectural renderings for each building to save construction costs. Changes are only required in topography or foundation/slab if the same model for construction is kept from building to building. There was also post-meeting discussion on the options for the eastern perimeter of the airport given the possibility of relocating general aviation facilities and utilizing this space to accommodate larger cargo facilities.
- Jim Schimmer asked if there is any new technologies that we should consider in the future, vertical takeoff, drones, etc. Steve stated no, but increased automation and material handling in the future could impact the throughput of cargo in the facilities and thus impact the schedule for new facility requirements.

Phil then reviewed two general aviation concepts and noted these were based on market demand. Itinerant military aircraft could become a user of the FBO. The general aviation area north of the FBO is a much better location than the south side of the airfield, however placement of an MRO at this site is limited and may be best located on the south side of the airfield. Ike Stage asked if Bolton Field was maxed out, in regard to space. Phil replied that that facility isn't maxed out.

Next Steps/Action Items

Phil reviewed the next steps and thanked SAC participants for attending. He adjourned the meeting just after 4 p.m., though many participants stayed for discussions.

Next SAC meeting (#5) is September 15. Public workshop #2 is September 21.

Meeting Participants

There were 24 participants at the meeting.

Stacey Boumis	Village of Obetz
Mike Bradley	Central Ohio Transit Authority
Susan Brobst	Madison Township (Franklin County)
Adrian Burns	Columbus Region Logistics Council
Franklin Christman	Village of Ashville
Casey Denny	Columbus Regional Airport Authority
Charlie Goodwin	Columbus Regional Airport Authority
Shannetta Griffin	Columbus Regional Airport Authority
Eric Hensley	Columbus Regional Airport Authority
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Mary Ann Elliott	Harrison Township
Amy Elsea	Pickaway County Chamber of Commerce
Mark Gialluca	Duke Realty
Jeff Green	City of Groveport
Lucas Haire	City of Canal Winchester
Dave Kelly	State of Ohio/Adjutant Generals Department

Tim Layne	LCK ATCT
Kenny McDonald	Columbus 2020
Joe Ortega	Ohio Department of Transportation
Barry Payne	CMH ATCT
CDR Chris Peppel	Navy/Marine Reserve Center
Mike Pompura	UPS
Cpt Thomas Race	Ohio Army National Guard
Hannah Reed	City of Columbus
Elaine Roberts	CRAA
Ryan Scribner	Pickaway Progress Partnership
Rick Szabrak	Fairfield County
Bryant Thomas	Norfolk Southern
Kevin Wheeler	City of Columbus
Jeff Zimmerman	Columbus Chamber

Project Team Participants

The following team members were present at the meeting:

Lori Duguid	Michael Baker International, Inc.
Nick Hoffman	Engage Public Affairs
Phil Jufko	Michael Baker International, Inc.
Marie Keister	Engage Public Affairs
Mike Kotlow	Michael Baker International, Inc.
Steve Schellenberg	IMS Worldwide, Inc.
Paul Strack	Michael Baker International, Inc.

Rickenbacker International Airport Master Plan Update
Stakeholder Advisory Committee (SAC) / MORPC Meeting #5

September 15, 2017 - 2 p.m. to 4 p.m.
Obetz Government Center
4175 Alum Creek Drive, Obetz, Ohio 43207

Meeting Summary

Meeting Purpose

- Project updates
- Discuss refined Alternatives Analysis
- Reminder: upcoming public meeting
- Next steps/action items
- Discussion

Opening Remarks

Phil Jufko (Michael Baker International) convened the meeting and thanked everyone for attending. He first reported that he and Steve Schellenberg appreciated those who asked how they fared during Hurricanes Harvey and Irma. Fortunately, they and their families are okay and had little damage.

Phil reviewed the agenda and purpose of the meeting. He also informed the committee of the upcoming dates for the next public information meeting (September 21st) and SAC meeting #6 (November 21st).

MORPC's 2018 Rickenbacker Area Comprehensive Study Update

Thea Walsh and Maria Schaper (MORPC) provided updates regarding:

GREAT Survey

- MORPC remains on schedule to conduct an onboard COTA rider survey in early November to determine where Rickenbacker-area riders are going and what the safety conditions are as they depart the bus and walk to their destinations

Bike/Pedestrian Network Analysis

- Workforce mobility concerns are an emerging theme as MORPC reviews collected data and feedback from interviews.
- MORPC wants to identify a priority bike/pedestrian network in the area.
- MORPC is examining the existing roadway network to identify gaps and level of traffic stress on each roadway and determine whether traffic speed or other factors affect the walking/biking experience.

Housing Development Survey

- MORPC will survey real estate developers to determine if there are barriers and incentives to developing in this area, and to ask what factors are considered when they decide where to develop.
- The survey is now being circulated among the Housing Committee; a list of developers is also being developed.

- Phil advised that compatible land uses to the airport should be considered to avoid building residential development in an area where there might be airport noise impacts.

Economic Development Interviews

- MORPC is interviewing economic development directors and private developers now.
- Common themes that are emerging include access to transportation and workforce training.
- The goal is to complete the interviews in late October so MORPC can summarize and share results in November.

INFRA Funding Opportunity

- This is a new USDOT grant opportunity that MORPC and regional partners are pursuing.
- ODOT is asking that only three applications be submitted from Ohio and invited MORPC to apply for funding for Rickenbacker-area improvements.
- MORPC is proceeding with the grant application, which is due November 2. MORPC's goal is to have it completed by the end of October.
- Following today's SAC meeting MORPC is convening stakeholders to identify specific projects to be included in the grant request.
- It is difficult to predict when USDOT will award the grants.

Airport Master Plan – Alternatives Analysis (Continuation of Discussion Started at Last SAC Meeting)

Phil said today's meeting would review a further refinement of possible alternatives to address facility needs and requirements. These were first discussed with the SAC in July. Phil noted the refinements presented today are also included in the draft Alternatives Analysis Chapter that the SAC has been asked to review by Friday, September 29th.

Phil provided an overview of the airport alternatives evaluation process and expectations.

- Covered alternative evaluation criteria.
- Covered airfield design criteria.
- Informed the attendees that FAA concurs with the forecasts and critical aircraft provided.
- Several areas of the airfield need to be addressed to meet current FAA geometry standards.
- Taxiways standards were also reviewed for FAA compliance. The recommendation is to move forward on Taxiway Alternative 1.

Phil stated the south side of the airport was reviewed as a long-term development area. The area is identified to accommodate maintenance, repair and overhaul facilities (MRO) for larger aircraft, large corporate hangars and additional cargo handling facilities. South side development is intended to preserve developable area to meet future aviation needs.

Steve Schellenberg (IMS Worldwide, Inc.) provided an update on cargo forecasts and proposed **Cargo facilities**.

- 700,000 SF of facilities needed.
- 48,880 US Carriers tonnage forecasted by 2017.
- 63,490 US Carriers tonnage forecasted by 2018.
- LCK will exceed its tonnage forecast for 2017.
- Based on annualized activity, the cargo total for 2017 would be close to the forecast total for 2018.
- The master plan is working to provide triggers for when to mirror ACT 5.
- The Columbus market advantage is based on reduced time to market.
- Cargo Concept 1B is not the preferred alternative.

- Cargo Concept 1C (not included in the packets) was a variation on Cargo Concept 1A presented to receive feedback from the SAC.
- 50,000 SF for storage of equipment is depicted but will be reduced to approximately 35,000 SF due to user input.
- Cargo Concept 2 requires demolition and some additional lead time than other alternatives.
- Steve believes the 60% threshold will be met next summer for dock space.

Phil summarized the refined **Passenger Terminal Alternatives** and noted the following:

- CRAA has moved forward some of the baggage and TSA screening recommendations.
- The terminal alternatives include improved passenger queuing, seating areas and concessions.
- Terminal Concepts 3 and 6 are the preferred alternatives by the team.
- Restrooms meet the forecasted facility requirements and no additional restroom facilities are recommended. CRAA is addressing the other items raised at the last TAC meeting.
- The report gives a good comparison table of passenger needs.
- The study also looks at the terminal investment w/ the carrier or without the current carrier.

Dave noted there is only one carrier at Rickenbacker, so there isn't necessarily a one size fits all answer to address passenger needs. He also noted that CRAA needs to consider phased, incremental approaches and be cautious in how they move forward since passenger airline needs can change very quickly.

Phil covered the general aviation and support facility needs and noted the following:

- Both general aviation concepts still have room for future growth.
- Airplane Design Groups (ADG) I and II are accommodated and consideration of ADG III aircraft could be accommodated with some alterations.
- The study is basing the fuel storage needs on historical use (5 days of storage). This is due to the strong local supply chain of fuel available in the area.
- Phil presented the airport maintenance facility development options.

Phil stated that the planning team has studied the existing utilities serving the area and noted that the south side of the airport is under served.

Questions/Answers

- Q1 – During the presentation of the Runway Configuration Analysis**,** Casey Denny asked if there was distinction between removal of pavement and abandoning the pavement? Phil replied that if there is confusing geometry for pilots, we would remove it. There are some sections that would be removed. Leaving it in place reduces cost. Dave Wall asked Phil to explain the difference between removing pavement verses abandon in FAA terms.

- Q2 - Dave asked Phil to explain the hydrant fuel system. Phil explained that it is a network of underground piping to the aircraft parking positions. The fuel is currently stored in underground tanks located in area 12. The study recommends the below ground tanks be replaced with above ground tanks.

- Q3 - Marie asked the group if the plan is going in the right direction? The attendees nodded yes.

- Q4 - Key in the land use figure needs to be corrected on areas 21 and 22.

- Q5 - Is the airport property line correct as depicted. Phil responded that the property boundary is in the process of being updated as part of the Exhibit A component of the Study. Future exhibits will reflect the changes.

- Q6 – Are the areas depicted on the airport master plan consistent with the MORPC study goals? MORPC stated that they are comparing the airport master plan forecast with the study area needs and feel they agree.

- Q7 - Does MORPC place a bubble around the airport and defer to the airport master plan? The CRAA staff are part of the MORPC study team and participate in the MORPC meetings, so they feel they are consistent with the airport master plan.

- Q8 - Current access to our surrounding communities is based on utilities investments and the airport is not on the current utilities loop, so will this be addressed? Both studies are taking this into consideration and will make investment recommendations in the implementation phases of the studies.

- Q9 - What is the big change to the need for additional cargo space before 2020? The cargo mix has rapidly changed at LCK and the need for additional dock space has increased. Comparison of cargo holding time at LCK is far less than other markets and is the LCK advantage. Three times the exports are being handled at LCK and packages can come 3 weeks in advance of exporting.

- Q10 - Dave stated that LCK has one passenger air carrier. The terminal will be phased and alterations will be cautiously considered due to the nature of the airline industry.

- Q11 - Christie Ward (Village of Lockbourne) asked if there is anything in the plan to include a service counter in the terminal? The rental car services will be handled by kiosks as noted in the alternative.

- Q12 - Marie asked attendees to distribute post cards for the public meeting next week. There were no additional questions.

- Q13 - Marie asked MORPC if they are taking steps in the area-wide Master Plan to ensure that any new residential housing is located far enough away from the airport to minimize future complaints about airport noise. Maria Schaper responded that MORPC's economic forecasts consider these development constraints. Dave Wall added that he is responsible for ensuring noise compatibility at Columbus Regional Airport Authority and serves on the Housing Committee to ensure this issue is kept in mind. Stacy Boumis from Obetz said any new housing would only go where there are sewer/water utilities, which should keep new housing development away from the airport at Rickenbacker.

- Q14 - Brian Sarkis (CRAA) asked why the forecast increased so much since July and why a new cargo facility is needed in 2019 instead of 2023 as discussed then? Steve responded that Rickenbacker has already eclipsed this year's forecast, so Steve had to adjust the data accordingly. The reason Columbus is being so successful is because cargo throughput here is in hours, not days, as in other areas around the country. Also, as exports are taking off, the potential growth continues to expand and it is difficult to know what the impact will be. By 2021 Amazon is going to be 50% of e-commerce in the US and the supply chain is getting more and

more compressed. Rickenbacker needs to have a plan in place to monitor the numbers closely and to be able to respond with new capacity quickly. Brian Schreiber (CRAA) added that, unlike imports that move through Columbus within hours, exports have to sit under a roof and occupy space, which means we need to plan for that.

- Q15 - Marie asked CRAA how they prepare for the more urgent need to build a new cargo handling facility. Do you build a speculative building? CRAA indicated they were looking into these issues and talking with potential development partners so they can respond quickly when needed.

Next Steps/Action Items

Phil reviewed the next steps and thanked SAC participants for attending. He adjourned at 4 p.m.

The public information meeting #2 is September 21st. The next SAC meeting (#6) is scheduled for Tuesday, November 21st.

Meeting Participants

There were 18 participants at the meeting.

Stacey Boumis	Village of Obetz
Franklin Christman	Village of Ashville
Casey Denny	Columbus Regional Airport Authority
Mark Gialluca	Duke Realty
Charlie Goodwin	Columbus Regional Airport Authority
Shannetta Griffin	Columbus Regional Airport Authority
Mark Kelby	Columbus Regional Airport Authority
Lisa LaMantia	Central Ohio Transit Authority
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Brian Sarkis	Columbus Regional Airport Authority
Bryan Schreiber	Columbus Regional Airport Authority
David Wall	Columbus Regional Airport Authority
Thea Walsh	Mid-Ohio Regional Planning Commission
Christie Ward	Village of Lockbourne

The following 3 participants attended the meeting on behalf of another SAC member:

Maria Schaper	Mid-Ohio Regional Planning Commission (on behalf of Dina Lopez)
Jenny Snapp	Franklin County (on behalf of Jim Schimmer)
Phil Ashear	Franklin County (on behalf of Jim Schimmer)

The following were unable to attend the meeting:

Ann Aubrey	City of Columbus Department of Public Utilities
Ben Bitler	Madison Township (Pickaway Co.)
Rod Borden	Columbus Regional Airport Authority
Mike Bradley	Central Ohio Transit Authority
Lt Col Daryl Brezina	Ohio Air National Guard

Susan Brobst	Madison Township (Franklin County)
Adrian Burns	Columbus Chamber
Katy Delaney	FAA Detroit Airports District Office
Dave Delaney	MAST (L Brands)
David Dennis	ODOT Aviation
Kristen Easterday	Columbus Regional Airport Authority
Mary Ann Elliott	Harrison Township
Amy Elsea	Pickaway County Chamber of Commerce
Jeff Green	City of Groveport
Lucas Haire	City of Canal Winchester
Eric Hensley	Columbus Regional Airport Authority
Kevin Hill	Forward Air
David Kelly	State of Ohio/Adjutant Generals Department
Dina Lopez	Mid-Ohio Regional Planning Commission
Kenny McDonald	Columbus 2020
Rory McGuiness	City of Columbus – Dept. of Development
Scott Messer	City of Columbus – Building and Zoning Services
Joe Ortega	Ohio Department of Transportation
Barry Payne	CMH ATCT
CDR Chris Peppel	Navy/Marine Reserve Center
Mike Pompura	UPS
Elaine Roberts	CRAA
Rob Sage	FedEx
Jim Schimmer	Franklin County
Ryan Scribner	Pickaway Progress Partnership
Ike Stage	City of Grove City
Rick Szabrak	Fairfield County
Bryant Thomas	Norfolk Southern
Lt. Col. Kenneth Voris	Ohio Air National Guard
Kevin Wheeler	City of Columbus
David Whitaker	Columbus Regional Airport Authority

Project Team Participants

The following team members were present at the meeting:

Lori Duguid	Michael Baker International, Inc.
Phil Jufko	Michael Baker International, Inc.
Marie Keister	Engage Public Affairs
Steve Schellenberg	IMS Worldwide, Inc.
Paul Strack	Michael Baker International, Inc.

Rickenbacker International Airport Master Plan Update
Stakeholder Advisory Committee (SAC) / MORPC Meeting #6

March 15, 2018, 9:30 to 11:30 a.m.
Rickenbacker International Airport – Rickenbacker Aviation
7250 Star Check Drive Columbus, OH 43217

Meeting Summary

Meeting Purpose

- Project updates
- Alternatives refinement
- Implementation plan
- Schedule/next steps
- Discussion

Opening Remarks

Dave Wall (Columbus Regional Airport Authority) and Phil Jufko (Michael Baker International) convened the meeting and thanked everyone for attending. Introductions were made around the room. Phil reviewed the agenda and purpose of the meeting.

MORPC's 2018 Rickenbacker Area Comprehensive Study Update

William Murdock and Dina Lopez (MORPC) provided updates and findings regarding:

Housing and Transportation Index: Analysis is still in progress; next step is to compare the housing/transportation burden in this area with regional and state data per request of the advisory group.

Placemaking Corridors Update: Locations within the area need a better sense of place – which includes lighting and sidewalks, etc. MORPC is defining corridors that would make most sense to focus on for placemaking. They have identified places people may want to walk or bike to. Alum Creek Dr. has emerged as a priority corridor and MORPC will show examples of placemaking at the public meeting and ask the public what they would like to see.

Economic Development Interviews: Through their outreach land developers, economic development professionals, and local leaders told MORPC they are very excited about the potential for growth around Rickenbacker and participating in that. MORPC identified needs of better/ongoing workforce access, workforce training, need for mixed use development, better lighting and concerns about congestion as development in the area increases.

GREAT On-board Survey Results: The Groveport Rickenbacker Employee Access Transit (GREAT) provides COTA riders last mile connections (a shuttle) to employers in the area. MORPC surveyed riders on one day. They determined many people travel from the south side of the region, which aligns with other research. Riders express concerns about their safety walking from shuttle to/from job, importance of timeliness and availability of service. Many have two jobs. MORPC also observed people riding the shuttle with suitcases and personal belongings because they live in homeless shelters and have to carry everything with them. Link to full results at: http://www.morpc.org/wordpress/wp-content/uploads/2018/03/GREAT-Survey-Results.pdf.

Mobility Hub Concept: In discussions with Groveport, Obetz and others, MORPC identified interest for a mobility hub. The gas station that people use to connect with GREAT was not meant for how it's being used. So MORPC identified the need to create a hub for bus, shuttles, bike racks, pedestrian access and other amenities. This will be one of the strongest recommendations in their report. MORPC will identify possible criteria but not a location yet.

Transportation Project Priorities: MORPC identified transportation project priorities to facilitate freight movement, workforce and housing choices. These priorities can be found at the following URL: http://www.morpc.org/program-service/rickenbacker-area-study/ under the Transportation sub-head and following the links "November 7, 2017 Meeting Materials Part 1" and "Part 2".

Airport Master Plan – Alternatives Refinement

Phil summarized needs/recommendations for the following:

- **Airfield Design:** Needs were recapped.
- **Overview:** Runway improvements, terminal improvements, maintenance, repair and overhaul facility, and new facilities are recommended.
- **Airfield Recommendations:** Improvements on both runways, primarily on the inboard runway: additional width and shoulders, increased blast pads, and pavement reconstruction.
- **Land Use Recommendations:** Military base is not part of the detailed planning but we consider it, when addressing surface access and airfield accessibility issues. A key area of attention: areas where we can develop to support more cargo growth, airport maintenance, aircraft maintenance, area for public viewing (per public comment), preserving areas closest to runway to maintain access and room for warehousing to support future development needs. Some areas are very well suited for development because utilities are already in place. But there are minimal utilities on the south side of the airport.

Questions/comments:

- **How are runways built?** (Runways are constructed of asphalt and aprons are mostly constructed of concrete.)

Steve Schellenberg (IMS Worldwide, Inc.) gave an update on cargo forecasts and recommended cargo facilities. He explained that he addressed a group of around 100 stakeholders earlier this week at a Columbus Region Logistics Council event, summarizing these findings and the vision. It was very well-received by these cargo movers and experts. Steve reviewed the following topics:

- Summarized rapid growth since 2013 and how all of this contributes to the cargo moving through Rickenbacker.
- We continue to predict aggressive air cargo growth, which will drive the need for more facilities as early as 2024. This is a great problem to have: but we need the buildings in place to ensure a quick speed to market and do a careful dance to make the right investments at the right time to serve the rapidly changing market.
- 1.8 billion pounds to be delivered within the forecast, which means 700,000 sq. ft. of building space is needed to accommodate the new freight inside the fence. This doesn't include the needs outside the fence. This will affect MORPC's work: getting employees, trucks, delivery vans in and out of Rickenbacker area.

- Individual ecommerce supply chains will increase by 18 to 25 percent per year over next 3 years, accordingly to DHL. That equates to 65 billion boxes being delivered to consumers in 2018. This is cross border individual packages – not Amazon. We need to be prepared for the increase in freight: speed to market in ecommerce is more critical than ever. Our guiding principle is to keep freight support (facilities) close to the runway to ensure speed to market.
- Disclaimer: this is a 20-year plan so it will take some time to play out.
- We recommend a runway system with precision instrument capability with a full length parallel taxiway that allows aircraft to land in low visibility weather conditions. This enables airplanes to turn around quickly. Having redundancy in runways provides air customers more confidence in using our airport.
- We also recommend development south of the airfield to accommodate future growth (as demand warrants). This development would include a new Maintenance, Repair and Overhaul Facility (MRO) to serve larger aircraft. There are some environmental challenges in this area, as there are wetlands. We have noted those in the report. Also, utilities are not in place yet, although there are plans for future improvements here. This is why this recommendation is placed in the latter 10 years of the 20-year plan. This also allows room for non-aviation development (i.e. a large manufacturer).
- Phasing plan:
    - ACT 5 Area Development – 150,000 SF total
    - ACT 2 Area Development – 200,000 SF total (longer lead time – have to remove some legacy buildings)
    - Air Cargo Development (Northeast) – 400,000 SF total
    - Air Cargo Development (South) – 600,000 SF total (at least 10 years out but preserving space)
- We propose removing three legacy buildings to accommodate a new 200,000 sq. ft. building in the ACT 2 Area location. This keeps freight as close to the north side of the airport as possible to maintain freight efficiencies. This plan keeps aircraft proximity to convenient fueling.

Questions/comments:

- **Have you accounted for FAA NextGen improvements?** (Phil: we are following that but FAA doesn't have many specifics yet for LCK. Dave: we are working with the FAA on the NextGen process, particularly on John Glenn International, and making sure FAA understands the importance of Rickenbacker and the types of operations that use the facility. We have not seen any specific ground-based requirements so far but think we are generally in alignment.)
- **Is the projection of 2024 based on a steady flow of cargo?** (Charlie Goodwin: We are seeing some peaking patterns and already seeing the ACT 5 building stressed today, so we may need expansion before 2024. Steve: you may be able to ease that with some different sequencing and diversions, but yes, you will need to have well-thought out choreography to address the needs. The challenge is that you have some imports that have a longer dwell time – sitting on your floor longer. If you get more exports you may be challenged more quickly than predicted here.)
- **Is there a general rule of thumb of how many people would work in a warehouse facility based on amount of cargo being moved?** (Steve: There are some guidelines but it depends on the mix of cargo and how things are changing so quickly. The more ecommerce you have coming through here the more sophisticated cargo handling you may need, so this may mean

more technology. Right now there is manual-intensive work to prepare cargo for being on an aircraft. Brian Schreiber: The current workforce is 50-60 in a 100,000 sq. ft. building.)

- **Do these numbers also include new technologies and robots in moving packages in and out?** (Steve: There are two ways to answer: 1) If I'm a retailer I want to do the work in my house, not at the cargo building. I want to get that cargo on a truck and to my building outside the fence. 2) If you have a lot of retailers you may need to sort, and then you'll need automation – like a FedEx operation.)
- **Do you suspect this will be a public sector development scenario or is there an opportunity for private sector?** (Steve: ACT 5, built in 2016, was a public private partnership, and expansion is likely to be the same in that building. CRAA will decide this. Dave: CRAA would look for partnerships; unlikely we would fund 100%. All opportunities are on the table for discussion at this point. Casey: If the private sector can do it, that would be our first preference. We tend to support the infrastructure to and from the buildings.)
- **Is there any difference in wages in these facilities vs other warehouses around Rickenbacker? Is it more highly skilled?** (Steve: We may be able to find a benchmark today but don't know where it will be in five years. There will be a lot of competition for labor as this grows. The Columbus Chamber, to their credit, has been named to lead a workforce development initiative. If there is a shortage of labor the rates will go up.)
- **On the MRO facility, that could happen quickly if an aircraft carrier wants one right away. Eric Hensley (CRAA) suggests we consider locating it closer to existing utilities and infrastructure. Also, we'll need another fuel farm if that south area continues to development.**

Phil summarized the refined **Passenger Terminal Recommendations**.

- Expected peak activity: two Airbus 320 aircraft simultaneously on ground at same time. Thus, identified some current facility weaknesses. As we identified improvements during the planning process CRAA has already started implementing them. Some additional improvements related to queuing, public waiting areas, and security checkpoints are recommended.
- Parking is now adequate due to recent improvements. We also recommend an additional lane to the terminal curb front and designated space for rental car parking.

Questions/comments:

- **Does this allow for the case when you have a flight delay and end up having a plane unloading while another is loading, there is a lot of cross traffic. You could have two trying to deplane at same time as two inbound trying to deplane.** (Phil: we considered two planes and have allotted for flow, baggage, passenger seating, and concessions. Sometimes we've seen three plane loads of people waiting in the terminal because of weather delays, but that is worst case scenario.)

Phil then discussed **General Aviation and Support Facilities.**

- Master plan accommodates private, general aviation traffic, and support facilities including fuel, maintenance storage and other maintenance facilities

Questions/comments:

- Casey: as we are doing these sites, obviously we won't do things exactly as drawn, right? You've proved that the fuel site works in this configuration but it could go elsewhere. This plan

allows us to plan and preserve land – but we can change plans later based on specific needs. Is that correct? (Phil: Yes. The plan could be followed closely or could change quite a bit during design/engineering. A Master Plan doesn't drill down into too much design level detail but to identify issues/opportunities so there are no surprises later on.)

Phil then reviewed the following topics: roadways, UAS/drones, noise contours and the implementation plan. Commentary on each are listed below.

- **Roadway:** Rickenbacker Parkway Extension layout now minimizes residential impacts, supports aeronautical and non-aeronautical development and preserves the runway protection zone near the end of Runway 23L.
- **UAS/Drones:** Here is information to respond to Jim Schimmer's question at the last SAC meeting regarding planning for drones. Today we're not allowed to operate drones/UAS at LCK without special permission from FAA. However, we have plenty of apron area at airport that could meet that need in the future. As we see rules change we are confident we have existing pavement that would be suitable for UAS activity. We are seeing other airports building hangars for larger UAS vehicles, which can be very large. (Jim: I brought this up because I always worry about a future BRAC process. Preserving the ability to serve that market in the future is the desire. Also, I think UAS vehicles will be more involved in logistics in the future, so I just want to be sure we can accommodate it. (Phil: The plan accommodates for this but won't go into detail since there are so many unknowns right now. Dave: We will ensure we don't preclude options in the future. We need to stay as efficient and nimble as possible to be able to adapt however we need to. Goal is to preserve the land and infrastructure options for the future.)
- **Noise Contours:** The 65 DNL noise contour remains over compatible land uses now and in 2036.
- **Implementation Plan:** Breaking plan into short-term, mid-term and long-term development phases.

Next Steps/Action Items

Phil reviewed the next steps and thanked SAC participants for attending. He adjourned at 11:45 a.m. Charlie then offered a tour of the building.

Meeting Participants

There were 23 participants at the meeting.

Rod Borden	Columbus Regional Airport Authority
Mike Bradley	Central Ohio Transit Authority
Adrian Burns	Columbus Chamber
Franklin Christman	Village of Ashville
Casey Denny	Columbus Regional Airport Authority
Kristen Easterday	Columbus Regional Airport Authority
Brad Foster	Franklin County Engineer's Office
Charlie Goodwin	Columbus Regional Airport Authority
Jeff Green	City of Groveport
Shannetta Griffin	Columbus Regional Airport Authority
Eric Hensley	Columbus Regional Airport Authority
Mark Kelby	Columbus Regional Airport Authority
Lisa LaMantia	Central Ohio Transit Authority
Tim Layne	LCK ATCT

Dina Lopez	Mid-Ohio Regional Planning Commission
Rory McGuiness	City of Columbus – Dept. of Development
William Murdock	Mid-Ohio Regional Planning Commission
Tory Richardson	Columbus Regional Airport Authority
Brian Sarkis	Columbus Regional Airport Authority
Jim Schimmer	Franklin County
Bryan Schreiber	Columbus Regional Airport Authority
David Wall	Columbus Regional Airport Authority
Christie Ward	Village of Lockbourne

An additional five (5) participants also attended the meeting:

Paul Ryan	Columbus Regional Airport Authority
Ernest Lee	Resident
Nadine Lee	Resident
Jody Clark	Aeroterm
Jennifer Carter	Aeroterm

The following were unable to attend the meeting:

Adam Asbury	FedEx
Ann Aubrey	City of Columbus Department of Public Utilities
Ben Bitler	Madison Township (Pickaway Co.)
Stacey Boumis	Village of Obetz
Lt Col Daryl Brezina	Ohio Air National Guard
Susan Brobst	Madison Township (Franklin County)
Katy Delaney	FAA Detroit Airports District Office
Dave Delaney	MAST (L Brands)
David Dennis	ODOT Aviation
Mary Ann Elliott	Harrison Township
Amy Elsea	Pickaway County Chamber of Commerce
Mark Gialluca	Duke Realty
Lucas Haire	City of Canal Winchester
Kevin Hill	Forward Air
David Kelly	State of Ohio/Adjutant Generals Department
Kenny McDonald	Columbus 2020
Scott Messer	City of Columbus – Building and Zoning Services
Joe Ortega	Ohio Department of Transportation
Barry Payne	CMH ATCT
CDR Chris Peppel	Navy/Marine Reserve Center
Mike Pompura	UPS
Cpt Thomas Race	Ohio Army National Guard
Hannah Reed	City of Columbus
Ryan Scribner	Pickaway Progress Partnership
Ike Stage	City of Grove City
Rick Szabrak	Fairfield County
Bryant Thomas	Norfolk Southern
Lt. Col. Kenneth Voris	Ohio Air National Guard
Thea Walsh	Mid-Ohio Regional Planning Commission
Kevin Wheeler	City of Columbus

David Whitaker	Columbus Regional Airport Authority

Project Team Participants

The following team members were present at the meeting:

Phil Jufko	Michael Baker International, Inc.
Mike Kotlow	Michael Baker International, Inc.
Paul Strack	Michael Baker International, Inc.
Marie Keister	Engage Public Affairs
Steve Schellenberg	IMS Worldwide, Inc.

The following were unable to attend the meeting:

Lori Duguid	Michael Baker International, Inc.
Nick Hoffman	Engage Public Affairs
Monica Newhouse	Newhouse & Assoc.

Rickenbacker International Airport Master Plan Update
Public Information Meeting #1

February 22, 2017, 2 p.m. to 4 p.m. and 6 p.m. to 8 p.m.
Rickenbacker International Airport, Air Cargo Terminal 5
2893 George Page Jr. Rd. (N. Access Rd.) Columbus, OH 43217

Meeting Summary

Meeting Purpose

- Let stakeholders know about the study (overview, schedule, and preliminary data findings).
- Solicit input on residents' vision and aspirations for Rickenbacker.
- Ask for feedback on community values that will be used to develop criteria for developing alternatives and investment priorities as the study progresses, to the extent possible.

Number of Participants

There were a total of 47 participants at the public meetings (34 from 2 p.m. to 4 p.m.; and 13 from 6 p.m. to 8 p.m.)

Project Overview

The Columbus Regional Airport Authority (CRAA) began the Rickenbacker International Airport (LCK) Master Plan process in September, 2016 to outline a long range strategic direction consistent with the Columbus Region's goal to be a global logistics leader.

This collaborative effort is running concurrently with the Mid-Ohio Regional Planning Commission's (MORPC) 2018 Rickenbacker Area Comprehensive Study. The results will be a strategy for assisting Central Ohio stakeholders to position and develop the Rickenbacker area as a successful international logistics hub.

Both processes are engaging the community and partner organizations to ensure they reflect the great thinking of local and national experts and the Columbus Region.

Meeting Overview

The first public meetings for the Rickenbacker Master Plan were held on February 22, 2017 from 2 p.m. to 4 p.m. and 6 p.m. to 8 p.m. at Air Cargo Terminal 5, Rickenbacker International Airport. The meetings were held in an open house format and exhibits were displayed at individual stations around the perimeter of the room. Study team members and representatives from CRAA and MORPC were available to answer questions and listen to comments. No formal presentation was given.

Exhibits included:

- Master Plan Process
- Project Study Area
- Existing Airport Facilities
- Existing Land Use
- Environmental Features
- Existing Land Use
- Environmental Features

- Historical Activity
- Aviation Forecasts – Passengers
- Aviation Forecasts – Cargo
- MORPC 2018 Rickenbacker Area Comprehensive Study (multiple)
- Issues and Opportunities Discussion

Members of the business community, public officials and the general public attended one of the two sessions offered. After attendees finished reviewing exhibits and speaking with project representatives, comment forms were given to solicit opinions in regards to the Rickenbacker International Airport Master Plan. Comments were accepted through March 10, 2017.

Issues, Opportunities Discussion

Marie Keister (Engage Public Affairs) facilitated an issues and opportunities exercise with public meeting participants. The purpose of the exercise was to uncover stakeholders' needs, perceived opportunities and goals for the Rickenbacker International Airport Master Plan, and to help identify and inform priority goals during the master plan process. Comments were captured on post-it notes and displayed on flip chart pages. A summary of these insights are shown below.

Needs			
Mobility	**Community**	**Preservation**	**Sustainability**
More drivers	More services	Proactive planning, but not too drastic	Connected vehicle infrastructure
Complete streets	More housing	Not rigid or cookie cutter	Electric charging stations for vehicles
More walkability	More affordable housing	Respect the history	Plans for autonomous vehicles
	More neighborhoods		Solar panels on buildings
	More restaurants		

Opportunities		
E-commerce cargo	**Passengers**	**Military**
Collaborate with shippers and forwarders	Allegiant growth	More investment makes it harder to BRAC
More exports via catchment zone	More jobs	More infrastructure investment
Alibaba e-commerce	Small business opportunities	Overall vibrancy
Fast pass for boxes (speedy customs process)	Export through Rickenbacker instead of Chicago	
Customs and border patrol	Observation area with picnic tables	

Goals
Be visionary

Comment Forms

After the open-house style public meeting, comment sheets were handed out to request input. Two comment forms were collected and a summary of comments are highlighted below:

- Request for an observation area; could been seen and/or utilized as a public education initiative
- Recognition of progressive plan, and shared their hope and support for its' fruition

Project Team Participants

The following team members were present at the meeting:

David Wall	Columbus Regional Airport Authority
Mark Kelby	Columbus Regional Airport Authority
Marie Keister	Engage Public Affairs
Phil Jufko	Michael Baker International, Inc.
Paul Strack	Michael Baker International, Inc.
Lori Duguid	Michael Baker International, Inc.
Mike Kotlow	Michael Baker International, Inc.
Dina Lopez	Mid-Ohio Regional Planning Commission
Nick Hoffman	MurphyEpson
Steve Schellenberg	IMS Worldwide, Inc.

Rickenbacker International Airport Master Plan Update
Public Information Meeting #2

September 21, 2017, 2 p.m. to 4 p.m. and 6 p.m. to 8 p.m.
Obetz Government Center
4175 Alum Creek Drive, Obetz, OH 43207

Meeting Summary

Meeting Purpose

- Share technical findings to date with stakeholders.
- Solicit public input on preliminary proposals.
- Begin to focus on investment priorities.

Number of Participants

Sixty-six people attended the public meetings; 50 from 2 to 4 p.m., and 16 from 6 to 8 p.m. Some participants arrived prior to the 6 p.m. start time of the second meeting.

Project Overview

The Columbus Regional Airport Authority (CRAA) began the Rickenbacker International Airport (LCK) Master Plan process in September 2016 to outline a long range strategic direction consistent with the Columbus Region's goal to be a global logistics leader.

This collaborative effort is running concurrently with the Mid-Ohio Regional Planning Commission's (MORPC) 2018 Rickenbacker Area Comprehensive Study. The results will be a strategy for assisting Central Ohio stakeholders to position and develop the Rickenbacker area as a successful international logistics hub.

Both processes are engaging the community and partner organizations to ensure they reflect the great thinking of local and national experts and the Columbus Region.

Meeting Overview

The second series of public meetings for the Rickenbacker Master Plan were held on September 21, 2017 from 2 to 4 p.m. and 6 to 8 p.m. at the Obetz Government Center. Meetings were held in an open house format and exhibits were displayed around the perimeter of the room. Study team members and representatives from CRAA and MORPC were available to answer questions and listen to comments. No formal presentation was given.

More than 30 exhibits for both the Rickenbacker Airport Master Plan and MORPC's 2018 Rickenbacker Area Comprehensive Study were on display for public view. These exhibits shared a host of information collected for each of the respective studies, ranging from freight forecasting to congested roadways.

Rickenbacker Airport Master Plan exhibits included:

- Development Constraints
- Airfield Pavement Analysis
- Parallel Taxiway Alternatives
- Cargo Concept 1A
- Cargo Concept 1B
- Cargo Concept 2

- Cargo Concept 3
- Terminal Concepts – Floor 1
- Terminal Concepts – Floor 2
- Terminal Access and Parking
- General Aviation Development Area Concepts
- Support Facilities

MORPC's 2018 Rickenbacker Area Comprehensive Study exhibits included:

- Study Area Overview
- Existing Land Use
- Household Growth
- Employment
- Roadway and Freight Facilities
- Pavement Conditions and Bridges
- Average Daily Traffic
- Forecast Traffic Volumes and Growth
- Traffic Congestion
- Transit, Bike and Pedestrian
- Crash Density
- Economic Development
- Economic Development Incentive Districts
- Households
- Population and Income
- School Districts and Points of Interest
- Energy
- Worker Flows
- Wetlands and Flood Plains
- Water Protection
- Water and Sewer Service
- Broadband

Meeting attendees were given two meeting handouts which consisted of a project overview and instructions and a comment sheet.

After attendees reviewed exhibits and spoke with project representatives, they were encouraged to complete a comment form (accepted through October 6, 2017).

Exhibit Comments

At each of the exhibit stations, meeting participants were invited to write down comments and suggestions on post-it notes. Thirty-one comments were collected from 11 exhibit boards. A listing of these insights is shown, per exhibit board, below.

Project Study Area | Rickenbacker International Airport
▪ Thru-trucks are utilizing Canal Road, west of LCK, when they should not be.
▪ Canal Road needs "no thru truck" signs.
▪ Trucks coming from US 23 are utilizing Canal Road, when they aren't supposed to.
▪ Trucks are repeatedly hitting a low-head bridge at Canal and Vause Roads.
▪ Trucks are having to turn around on both east and west sides of Lockbourne.
▪ Trucks need to be routed away from downtown Lockbourne

▪ Trucks should take 762 or Duvall Road.
▪ Trucks need to be rerouted away from downtown Lockbourne
▪ GPS coordination is needed.

Environmental Features | Rickenbacker International Airport
▪ Trucks are cutting through small roads (Ashville Pike); need GPS fixed route.

Terminal Access and Parking | Rickenbacker International Airport
▪ Lockbourne Road – Existing and new road names should be renamed for the historical events and figures surrounding the airport.

Existing Land Use | MORPC
▪ More bridges accessing areas south of the Scioto River are needed. There are only four in Franklin County.
▪ More retail is needed between Canal Winchester and Grove City.

Employment | MORPC
▪ “No thru trucks” signage is needed along Walnut Creek Pike.

Transit, Bike and Pedestrian | MORPC
▪ We love the nearby Metro Park.
▪ Concerned about heavy roadway traffic east of Pontius Road.
▪ Would like to see limits on truck traffic along residential roads; a residential buffer needed.
▪ Need bike connection to Groveport from Canal Winchester.
▪ Sidewalks and/or multi-use path is needed along Lockbourne road, north and south of I-270, to get to Hamilton Schools.
▪ Need to create trails and bike trails thru Lockbourne along Big Walnut Creek.

Pavement and Bridge Conditions | MORPC
▪ A resident of Air Base Road is worried that nearby vacant land will be completely used by warehouses; prefers a buffer zone.
▪ Would like to see updated water, sewer and high-speed internet lines.

Average Daily Traffic | MORPC
▪ Trucks are driving along Shepherd Road and Ashville Pike, roads that are not constructed for trucks.
▪ Suggest opening Vause Road to local traffic.

Traffic Congestion | MORPC
▪ Need a traffic study with a possible roundabout at Williams and Groveport.
▪ Trucks are always turning around on Groveport Road in downtown Obetz at railroad bridge with 13’3” clearance. The trucks are taking down powerlines.

Crash Density | MORPC
▪ When showing crash data, need to also check police department logs for unreported crashes. The crash data shown here is lower than reality because reports aren't submitted.
▪ Need to stagger work shifts to reduce crashes.
▪ Need better signage or a raised railroad bridge at intersection of Canal / Commerce Street; Railroad bridge is only 12'12".

Water and Sewer Service | MORPC
▪ Need to check Obetz and Groveport water service areas.
▪ Need to show Obetz sewer service area.

Comment Forms

Four comment forms were collected during the two meetings and a summary of comments are highlighted below:

- Request for a guest speaker for high school students at Groveport Madison High School. Respondent teaches a supply chain class and would like an expert to come visit in the future.
- Respondent thought meeting was well planned and enjoyed the open-house meeting format.
- Respondent thought displays were interesting and discussion with presenters was helpful.
- Respondent was very interested in air cargo and walked away feeling fulfilled with responses.

Project Team Participants

The following team members were present at the meeting:

David Wall	Columbus Regional Airport Authority
Mark Kelby	Columbus Regional Airport Authority
Marie Keister	Engage Public Affairs
Nick Hoffman	Engage Public Affairs / MurphyEpson
Steve Schellenberg	IMS Worldwide, Inc.
Phil Jufko	Michael Baker International, Inc.
Paul Strack	Michael Baker International, Inc.
Lori Duguid	Michael Baker International, Inc.
Mike Kotlow	Michael Baker International, Inc.
Dina Lopez	Mid-Ohio Regional Planning Commission
Maria Schaper	Mid-Ohio Regional Planning Commission
Terri Flora	Mid-Ohio Regional Planning Commission
Jon-Paul d'Aversa	Mid-Ohio Regional Planning Commission
Nick Gill	Mid-Ohio Regional Planning Commission
Nathaniel Kaelin	Mid-Ohio Regional Planning Commission
Thea Walsh	Mid-Ohio Regional Planning Commission
Amelia Costanzo	Mid-Ohio Regional Planning Commission
Jennifer Noll	Mid-Ohio Regional Planning Commission
Aaron Schill	Mid-Ohio Regional Planning Commission
Nathan Shay	Mid-Ohio Regional Planning Commission

Rickenbacker International Airport Master Plan Update
Public Information Meeting #3

March 15, 2018, 3 p.m. to 7 p.m.
Obetz Government Center
4175 Alum Creek Drive, Obetz, OH 43207

Meeting Summary

Meeting Purpose

- Share draft recommendations with stakeholders.
- Solicit public input on investment priorities.

Number of Participants

Eighty-two members of the people signed in and attended the meeting. In addition to the project team and MORPC staff, seven additional Columbus Regional Airport Authority (CRAA) staff members also signed in.

Project Overview

The Columbus Regional Airport Authority (CRAA) began the Rickenbacker International Airport (LCK) Master Plan process in September 2016 to outline a long range strategic direction consistent with the Columbus Region's goal to be a global logistics leader.

This collaborative effort is running concurrently with the Mid-Ohio Regional Planning Commission's (MORPC) 2018 Rickenbacker Area Comprehensive Study. The results will be a strategy for assisting Central Ohio stakeholders to position and develop the Rickenbacker area as a successful international logistics hub.

Both processes are engaging the community and partner organizations to ensure they reflect the great thinking of local and national experts and the Columbus Region.

Meeting Overview

The third and final public meeting for the Rickenbacker International Airport Master Plan Update was held on March 15, 2018 from 3 to 7 p.m. at the Obetz Government Center. The meeting was held in an open house format and exhibits were displayed around the perimeter of the room. Study team members and representatives from CRAA and MORPC were available to answer questions and listen to comments. No formal presentation was given.

Approximately 30 exhibits for both the Rickenbacker Airport Master Plan and MORPC's 2018 Rickenbacker Area Comprehensive Study were on display for public view. These exhibits shared a host of information collected for each of the respective studies, ranging from air cargo facilities to mobility hubs. Exhibits can be found online at: http://rickenbackermasterplan.com/meetings/ and http://www.morpc.org/program-service/rickenbacker-area-study/.

Rickenbacker Airport Master Plan exhibits included:

- Master Planning Process
- Project Study Area
- Existing Airport Facilities
- Forecast Summary

- Historical Activity
- Aviation Forecast
- Preferred Alternative – Overview
- Air Cargo Facility (ACT 4 Area)
- Air Cargo Facility (ACT 2 Area)
- Air Cargo Facility (Northeast Area)
- South Airfield Development
- Preferred Terminal Development
- Terminal Area Development
- General Aviation and Airport Maintenance Recommendations
- Aircraft Fuel Storage
- Rickenbacker Parkway Extension
- 2016 Noise Contours
- 2036 Noise Contours
- Development Stages and approximate cost ranges

MORPC's 2018 Rickenbacker Area Comprehensive Study exhibits included:

- Introduction to the Rickenbacker Area
- Rickenbacker Area Study Themes
- Business Attraction & Retention: Economic Development Findings
- Workforce Mobility & Safety: Survey of GREAT Riders
- Workforce Mobility & Safety: Mobility Hub
- Freight Routing & Access: Characteristics
- Freight Routing & Access: Identified Road Improvements
- Workforce Mobility & Safety: Pedestrian & Bicycle Accommodations
- Technology Innovation: Energy
- Quality of Life: Household Costs
- Quality of Life: Nearby Amenities
- Next Steps for the Rickenbacker Area Study

Meeting attendees were provided three meeting handouts which consisted of a project overview and instructions (CRAA), Rickenbacker Area Study overview (MORPC) and a comment sheet.

After attendees reviewed exhibits and spoke with project representatives, they were encouraged to complete a comment form (accepted through March 30, 2018).

Comment Forms

Eight comment forms were collected during the meetings and a summary of comments are highlighted below:

- Oregon Rd., Elder Rd. and Lithopolis Rd. should be considered for bicycle and pedestrian facilities.
- Current roadway improvements do not include shoulder improvements and are not friendly to bike/ped traffic.
- What considerations are being made for increased noise from additional flights for existing area residents?
- Meeting information was very detailed; There are lots of potential work opportunities.
- Consider integrating renewable energy technologies (like solar panels) both to power onsite development and surrounding communities.
- Concerned with major widening of SR 665. Grove City would like to provide input on character of any improvements to this corridor.

- Plans look great!
- Reconsider having bike lanes and consider safety first (too many accidents and distracted drivers).
- Need a left turn lane at Groveport Rd. and Bixby Rd.
- Need expanded COTA service in area with quicker commute times.
- Concerned about safety, especially preventing plane crashes from happening because of additional planes in the air.

Project Team Participants

The following team members were present at the meeting:

David Wall	Columbus Regional Airport Authority
Mark Kelby	Columbus Regional Airport Authority
Marie Keister	Engage Public Affairs
Nick Hoffman	Engage Public Affairs/MurphyEpson
Steve Schellenberg	IMS Worldwide, Inc.
Phil Jufko	Michael Baker International, Inc.
Paul Strack	Michael Baker International, Inc.
Lori Duguid	Michael Baker International, Inc.
Mike Kotlow	Michael Baker International, Inc.
Dina Lopez	Mid-Ohio Regional Planning Commission
Maria Schaper	Mid-Ohio Regional Planning Commission
Thea Walsh	Mid-Ohio Regional Planning Commission
Jon-Paul d'Aversa	Mid-Ohio Regional Planning Commission
Eileen Leuby	Mid-Ohio Regional Planning Commission
Jennifer Noll	Mid-Ohio Regional Planning Commission
Rachael Beeman	Mid-Ohio Regional Planning Commission
Bryan Townley	Mid-Ohio Regional Planning Commission

Appendix G – Cost Estimates

RICKENBACKER
INTERNATIONAL AIRPORT

Master Plan

G.0 Appendix G – Cost Estimates

Appendix G, Cost Estimates, contains cost estimates associated with the recommended proposed projects in this Study. Cost estimates contained in this appendix and **Chapter 6, Financial Plan**, are intended to be order of magnitude presented in 2018 dollars and include estimated engineering fees and contingencies. Costs shown are escalated at a 3.0% inflation rate based upon the proposed phasing of the projects.

Rickenbacker International Airport
Columbus, Ohio

Michael Baker INTERNATIONAL

October 2018

Summary of Costs

Number	Source	Title	Category	2018 Cost	Implementation Year	Estimated Years of Construction	Actual Cost (3% Inflation)
Short-Term Planning Period (2018-2021)							
1	2	Twy Rehab & MOS Phase 1A & Phase 1B Impr. 2018 (CRAA #17020)***	A	$ 4,811,622	2018	1	$ 4,811,622
2	2	Twy Rehab & MOS Improvements Ph. 1C 2018 (CRAA #17053)***	A	$ 280,153	2018	1	$ 280,153
3	1	Landside Pavement Projects - 2019 (Reserve Road and Parking Rehabilitation)	R	$ 1,245,157	2019	1	$ 1,360,617
4	2	Twy Rehab & MOS Phase 1A & Phase 1B Impr. 2019 (CRAA #17020)***	A	$ 1,546,700	2019	1	$ 1,546,700
5	2	Twy Rehab & MOS Improvements Phase 1C 2019 (CRAA #17053)	A	$ 4,782,344	2019	1	$ 4,782,344
6	2	Rickenbacker Parkway East Phase 3A 2019 (CRAA #09020)	R	$ 350,000	2019	1	$ 350,000
7	1	Cargo Ramps 1 and 2 Rehabilitation (Partial Reconstruction, Mill and Overlay, and Concrete Restoration)	A	$ 5,098,466	2020	1	$ 5,738,368
8	3	Runway 5L PAPI Replacement	N	$ 82,431	2020	1	$ 87,451
9	3	Runway 23R PAPI Replacement	N	$ 82,431	2020	1	$ 87,451
10	3	Runway 5R PAPI Replacement	N	$ 82,431	2020	1	$ 87,451
11	1	Cargo Ramp 1 Rehabilitation (Partial Reconstruction and Mill and Overlay)	A	$ 656,731	2020	1	$ 739,157
12	2	Twy Rehab & MOS Improvements Ph. 1C 2020 (CRAA #17053)***	A	$ 183,492	2020	1	$ 183,492
13	2	Rickenbacker Parkway East Phase 3A 2020 (CRAA #09020)	R	$ 4,150,000	2020	1	$ 4,150,000
14	2	Airfield/Landside Pavement Projects - 2020** (Miscellaneous Rehabilitation)	M	$ 3,100,711	2020	1	$ 3,100,711
15	3	Construct New Cargo Equipment Storage Building	C	$ 5,313,697	2020	1	$ 5,637,301
16	3	FBO Apron Fillet Improvements	A	$ 1,005,442	2020	1	$ 1,066,673
17	3	Construct New Terminal Traffic Lane and Curb Front	R	$ 467,500	2020	1	$ 495,971
18	3	Pavement Enabling Rehabilitation - Runway 5L-23R	A	$ 11,101,760	2021	1	$ 12,131,193
19	2	Airfield/Landside Pavement Projects - 2021** (Miscellaneous Rehabilitation)	M	$ 2,268,084	2021	1	$ 2,268,084
20	3	Construct New Maintenance Storage Facility	L	$ 4,818,801	2021	1	$ 5,265,634
21	2	Rickenbacker Parkway East Phase 3A 2021 (CRAA #09020)	R	$ 1,000,000	2021	1	$ 1,000,000
22	3	LCK Terminal Improvements - First Floor	T	$ 308,006	2021	1	$ 336,566
23	7	Runway 5R Localizer Replacement	N	$ 1,574,437	2021	1	$ 1,720,430
24	7	Runway 5R Glide Slope Replacement	N	$ 1,079,849	2021	1	$ 1,179,981
25	7	Runway 5R Inner Marker Replacement	N	$ 214,321	2021	1	$ 234,195
26	7	Runway 5R Outer Marker Replacement	N	$ 248,942	2021	1	$ 272,026
27	7	Runway 5R NDB Replacement	N	$ 304,996	2021	1	$ 333,277
28	7	Runway 23L Outer Marker Replacement	N	$ 248,942	2021	1	$ 272,026
29	7	Runway 23L NDB Replacement	N	$ 304,996	2021	1	$ 333,277
Mid-Term Planning Period (2022-2026)							
30	4	Airfield/Landside Pavement Projects - 2022** (Miscellaneous Rehabilitation)	M	$ 2,000,000	2022	1	$ 2,251,018
31	3	LCK Terminal Improvements - Second Floor	T	$ 431,109	2022	1	$ 485,217
32	7	Runway 23R REIL Replacement	N	$ 41,216	2022	1	$ 46,389
33		Rickenbacker Parkway East Phase 3B 2022	R	$ 1,340,000	2022	2	$ 1,508,182
34	4	Airfield/Landside Pavement Projects - 2023	M	$ 2,000,000	2023	1	$ 2,318,548
35	2	LCK Phase 2A MOS Improvements and Update Pavement Management Program (CRAA #15026)	A	$ 22,200,099	2023	1	$ 22,200,099
36	5	Relocate Airfield Electrical Vault	A	$ 1,500,000	2023	1	$ 1,738,911
37	3	Reconstruct Ramp 2	A	$ 64,868,484	2023	2	$ 75,200,352
38	7	AWOS-IIIPT Replacement	N	$ 288,509	2023	1	$ 334,461
39	7	NAVAID Control Cable Loop Replacement	N	$ 2,496,513	2023	1	$ 2,894,143
40		Rickenbacker Parkway East Phase 3B 2023	R	$ 7,705,000	2023	1	$ 8,932,207
41	4	Airfield/Landside Pavement Projects - 2024	M	$ 2,000,000	2024	1	$ 2,388,105
42	3	Construct Airside Operations Area for Expanded ACT 5	A	$ 6,325,918	2024	1	$ 7,553,477
43	3	Construct Deicing Pad On Ramp #3	A	$ 8,068,941	2024	1	$ 9,634,738
44	3	Expand ACT 5 Building and Associated Landside Infrastructure	C	$ 32,160,194	2024	2	$ 38,400,953
45	3	Expand Maintenance Garage Building 558	L	$ 2,447,606	2024	1	$ 2,922,569
46	2	LCK Phase 2B MOS Improvements (CRAA #15026)	A	$ 24,199,858	2024	2	$ 24,199,858
47	7	Runway 5L MALSR Replacement	N	$ 1,228,226	2024	1	$ 1,466,566
48	7	Runway 5L Localizer Replacement	N	$ 1,574,437	2024	1	$ 1,879,960
49	7	Runway 5L Glide Slope Replacement	N	$ 1,079,849	2024	1	$ 1,289,397
50	7	Runway 5L DME Replacement	N	$ 346,211	2024	1	$ 413,394
51		Rickenbacker Parkway East Phase 3B 2024	R	$ 7,705,000	2024	1	$ 9,200,173
52	4	Airfield/Landside Pavement Projects - 2025	M	$ 2,000,000	2025	1	$ 2,459,748
53	3	Construct Airport Perimeter Road	A	$ 23,325,765	2025	2	$ 28,687,749
54	6	Construct New Fuel Farm	L	$ 10,868,788	2025	1	$ 13,367,239
55	3	Rehabilitate Runway 5L-23R, Widen to 200' Wide, Construct 40' Wide Shoulders, and Extend Blast Pads at Each End (MOS Improvements, Phase 3)	A	$ 47,408,153	2025	2	$ 58,306,048
56	4	Airfield/Landside Pavement Projects - 2026	M	$ 2,000,000	2026	1	$ 2,533,540
57	3	Construct Airport Viewing Area	L	$ 462,960	2026	1	$ 586,464
58	3	General Aviation Facility Expansion - Phase 1	G	$ 3,319,009	2026	1	$ 4,204,421
59	3	Remove Buildings 1090, 1091, 1092 and Replace with New ACT	C	$ 52,957,061	2026	2	$ 67,084,421
60	3	Construct New Parallel Taxiway A	A	$ 42,725,915	2026	2	$ 54,123,911
Long-Term Planning Period (2027-2036)							
61	4	Airfield/Landside Pavement Projects - 2027	M	$ 2,000,000	2027	1	$ 2,609,546
62	4	Airfield/Landside Pavement Projects - 2028	M	$ 2,000,000	2028	1	$ 2,687,833
63	4	Airfield/Landside Pavement Projects - 2029	M	$ 2,000,000	2029	1	$ 2,768,468
64	4	Airfield/Landside Pavement Projects - 2030	M	$ 2,000,000	2030	1	$ 2,851,522
65	3	Rickenbacker Parkway East Phase 4	R	$ 33,623,308	2030	2	$ 47,938,798
66	4	Airfield/Landside Pavement Projects - 2031	M	$ 2,000,000	2031	1	$ 2,937,067
67	3	Construct New SRE Building	L	$ 5,250,279	2031	1	$ 7,710,211
68	3	Construct Northeast ACT Facilities Phase 1	C	$ 66,142,029	2031	2	$ 97,131,800
69	3	Demolish Building 1004 and Associated Pavement	A	$ 1,624,437	2031	1	$ 2,385,540

Number	Source	Title	Category	2018 Cost	Implementation Year	Estimated Years of Construction	Actual Cost (3% Inflation)
70	7	Runway 5R DME Replacement	N	$ 346,211	2031	1	$ 508,423
71	4	Airfield/Landside Pavement Projects - 2032	M	$ 2,000,000	2032	1	$ 3,025,179
72	3	General Aviation Facility Expansion - Phase 2	G	$ 1,719,494	2032	1	$ 2,600,890
73	7	Runway 5R PC-RVR Replacement	N	$ 511,074	2032	1	$ 773,045
74	4	Airfield/Landside Pavement Projects - 2033	M	$ 2,000,000	2033	1	$ 3,115,935
75	7	Runway 23L PAPI Replacement	N	$ 82,431	2033	1	$ 128,425
76	4	Airfield/Landside Pavement Projects - 2034	M	$ 2,000,000	2034	1	$ 3,209,413
77	3	Construct Northeast ACT Facilities Phase 2	C	$ 65,854,097	2034	2	$ 105,676,494
78	3	South Airfield Developments: Remove Old Outboard Parallel Runway (a.k.a. Former Assault Strip/LZ) and Other Pavements	A	$ 1,943,067	2034	1	$ 3,118,052
79	4	Airfield/Landside Pavement Projects - 2035	M	$ 2,000,000	2035	1	$ 3,305,695
80	3	South Airfield Developments: Parallel Taxiway (11,860' x 75')	A	$ 42,861,920	2035	2	$ 70,844,222
81	4	Airfield/Landside Pavement Projects - 2036	M	$ 2,000,000	2036	1	$ 3,404,866
82	3	South Airfield Developments - Phase 1: New ACT and Access Road	C	$ 67,658,247	2036	2	$ 115,183,636
83	3	South Airfield Developments - Phase 2: New ACT	C	$ 66,060,894	2036	2	$ 112,464,250
84	3	South Airfield Developments - Phase 3: New ACT	C	$ 59,500,438	2036	2	$ 101,295,513
85	3	South Airfield Developments - Phase 4: New MRO	L	$ 76,864,911	2036	2	$ 130,857,365
86	3	General Aviation Facility Expansion - Phase 3	G	$ 5,494,038	2036	1	$ 9,353,232
87	7	Runway 23L Localizer Replacement	N	$ 1,079,849	2036	1	$ 1,838,371
88	7	Runway 23L Glide Slope Replacement	N	$ 1,079,849	2036	1	$ 1,838,371

Short-Term Planning Period (2017-2021):	$ 59,852,150
Mid-Term Planning Period (2022-2026):	$ 448,612,256
Long-Term Planning Period (2027-2036):	$ 841,562,162
Overall Total:	$ 1,350,026,569

* It is assumed that all pavement management program recommendations for all taxiway and runway pavements are included as part of the Modification of Standards (MoS) implementation projects.
** Prioritization and specification of recommended projects to be determined by future PMP.
***Phase 1B funded through an FAA grant in FY2017 and being constructed in FY2018. Phase 1C funded through an FAA grant in FY2018, assumed construction in FY2019.

Sources:

1- 2015/2016 Airport Pavement Management Program Final Report (PMP) prepared by RDM International, Inc.
2- Capital Improvement Program (CIP) 2018 & FY2019-FY2028 provided by CRAA on 9/20/18. Inflation was added to all projects provided with "Total to Date" of $0.
3- Master Plan by Michael Baker International, Inc.
4- Recommended annual spending amount based on the averages from the 2015/2016 PMP by RDM International, Inc.
5- Airfield Lighting and Electrical Vault Improvement Study by RS&H in August 2010. Increased to reflect inflation.
6- This estimate was developed partially based on C&S Companies' estimate from 2014. See project breakout for more information.
7- Estimated replacement schedule for existing NAVAIDs at LCK based on existing conditions and original install date (provided by CRAA)

Rickenbacker International Airport
Columbus, Ohio

Michael Baker INTERNATIONAL

Unit Costs List

October 2018

ITEM	DESCRIPTION	UNIT	UNIT PRICE
MC-001	MOBILIZATION	LS	6%
MC-003	SAFETY AND SECURITY	LS	3%
MC-006	FIRE SUPPRESSION SYSTEM	LS	$ 100,000.00
MC-010	NEW FUEL PIT	EA	$ 80,000.00
MC-010	NEW 12" FUEL LINE, WITH VALVES AND DRAINS	LF	$ 1,000.00
P-101	PAVEMENT REMOVAL	SY	$ 10.00
P-101	PAVEMENT REMOVAL - SHOULDER	SY	$ 10.00
P-101	PAVEMENT REMOVAL - ROAD	SY	$ 10.00
P-101	BITUMINOUS PAVEMENT MILLING, 4" DEPTH	SY	$ 2.00
P-152	UNCLASSIFIED EXCAVATION	CY	$ 18.00
P-152	TOPSOIL STRIPPING	CY	$ 4.50
P-152	SITE GRADING	SY	$ 5.00
P-152	UNDERCUTTING - EXCAVATION OF UNSUITABLE MATERIALS	CY	$ 20.00
P-156	FILTER SOCK	LF	$ 6.00
P-209	CRUSHED AGGREGATE BASE COURSE - 10" DEPTH	SY	$ 14.00
P-209	CRUSHED AGGREGATE BASE COURSE - 12" DEPTH	SY	$ 17.00
P-209	CRUSHED AGGREGATE BASE COURSE - 16" DEPTH	SY	$ 23.00
P-209	CRUSHED AGGREGATE BASE COURSE - 20" DEPTH	SY	$ 28.00
ODOT304	CRUSHED AGGREGATE BASE COURSE - 20" DEPTH	SY	$ 17.00
P-401	BITUMINOUS SURFACE COURSE - 4" DEPTH	TON	$ 105.00
P-401	BITUMINOUS SURFACE COURSE - 3" DEPTH	TON	$ 105.00
P-401	BITUMINOUS SURFACE COURSE, ROADWAY - 3" DEPTH	TON	$ 70.00
P-401	BITUMINOUS SURFACE COURSE, ROADWAY - 4" DEPTH	TON	$ 70.00
P-403	BITUMINOUS BASE COURSE - 3" DEPTH	TON	$ 70.00
P-403	BITUMINOUS BASE COURSE - 5" DEPTH	TON	$ 70.00
P-403	BITUMINOUS BASE COURSE - 10" DEPTH	TON	$ 70.00
P-403	BITUMINOUS BASE COURSE - 12" DEPTH	TON	$ 70.00
P-403	BITUMINOUS BASE COURSE - 16" DEPTH	TON	$ 70.00
P-501	PORTLAND CEMENT CONCRETE PAVEMENT - 12" DEPTH	SY	$ 70.00
P-501	PORTLAND CEMENT CONCRETE PAVEMENT - 20" DEPTH	SY	$ 100.00
P-501	NEW SIDEWALK	SY	$ 60.00
P-602	BITUMINOUS PRIME COAT	GAL	$ 3.00
P-603	BITUMINOUS TACK COAT	GAL	$ 3.00
P-620	TEMPORARY PAVEMENT MARKING, HALF APPLICATION, WITHOUT GLASS BEADS	SF	$ 1.00
P-620	PERMANENT PAVEMENT MARKING, WITH GLASS BEADS	SF	$ 2.00
D-701	WATER LINE IMPROVEMENTS	LS	$ 50,000.00
D-701	DEICING STORAGE/TREATMENT	LS	$ 1,500,000.00
D-701	CURB AND GUTTER	LF	$ 12.00
D-701	NEW 18" DRAINAGE CONDUIT	LF	$ 60.00
D-701	NEW 36" REINFORCED CONCRETE PIPE, CLASS IV	LF	$ 400.00
D-701	NEW DUAL 48" PIPES FOR GLYCOL SYSTEM	LF	$ 1,000.00
D-705	PIPE UNDERDRAIN FOR AIRPORTS, 6" PERFORATED	LF	$ 26.00
D-751	NEW AIRFIELD DRAINAGE STRUCTURE, AIRCRAFT RATED	EA	$ 19,000.00
D-751	NEW MANHOLE, AIRCRAFT RATED	EA	$ 21,000.00
D-752	NEW UNDERDRAIN CLEANOUT	EA	$ 1,400.00
F-162	REMOVE EXISTING AIRFIELD PERIMETER FENCE	LF	$ 20.00
F-162	REMOVE EXISTING FENCE	LF	$ 10.00
F-162	NEW AIRPORT PERIMETER FENCE - 10' HIGH	LF	$ 60.00
T-901	SEEDING	AC	$ 2,000.00
T-905	TOPSOIL	CY	$ 4.00
T-908	MULCHING	AC	$ 1,500.00
L-100	LIGHT/CAN/CIRCUIT/SIGN REMOVAL	EA	$ 400.00
L-125	RUNWAY EDGE LIGHT ADJUSTMENT	EA	$ 400.00
L-125	RELOCATE RUNWAY LIGHTING	LS	$ 1,144,000.00
L-125	NEW LIGHT WITH CAN AND CIRCUIT	EA	$ 5,000.00

Rickenbacker International Airport
Columbus, Ohio

Michael Baker INTERNATIONAL

Project #: 8
October 2018

Project Description:
Runway 5L PAPI Replacement

LINE NO.	ITEM	DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	TOTAL
1	MC-001	MOBILIZATION	LS	1	$ 3,000.00	$ 3,000.00
2	MC-003	SAFETY AND SECURITY	LS	1	$ 1,500.00	$ 1,500.00
3	L-880	NEW 4-BOX L-880A(L) PAPI, FURNISHED AND INSTALLED	LS	1	$ 40,000.00	$ 40,000.00
4		FAA FLIGHT CHECK	ALLOW	1	$ 10,000.00	$ 10,000.00

SUBTOTAL	$	54,500
25% Contingency	$	13,625
8% Engineering Design	$	5,450
8% Construction Phase Professional Services	$	5,450
5% Utility Relocations	$	3,406
TOTAL	$	82,431

Assumptions:
1- Replacement equipment to be installed at same location on new foundations.
2- Replacement power and control to the site not included.

Rickenbacker International Airport
Columbus, Ohio

Michael Baker INTERNATIONAL

Project #: 9
October 2018

Project Description:
Runway 23R PAPI Replacement

LINE NO.	ITEM	DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	TOTAL
1	MC-001	MOBILIZATION	LS	1	$ 3,000.00	$ 3,000.00
2	MC-003	SAFETY AND SECURITY	LS	1	$ 1,500.00	$ 1,500.00
3	L-880	NEW 4-BOX L-880A(L) PAPI, FURNISHED AND INSTALLED	LS	1	$ 40,000.00	$ 40,000.00
4		FAA FLIGHT CHECK	ALLOW	1	$ 10,000.00	$ 10,000.00

SUBTOTAL	$	54,500
25% Contingency	$	13,625
8% Engineering Design	$	5,450
8% Construction Phase Professional Services	$	5,450
5% Utility Relocations	$	3,406
TOTAL	$	82,431

Assumptions:
1- Replacement equipment to be installed at same location on new foundations.
2- Replacement power and control to the site not included.

Rickenbacker International Airport
Columbus, Ohio

Michael Baker INTERNATIONAL

Project #: 10
October 2018

Project Description:
Runway 5R PAPI Replacement

LINE NO.	ITEM	DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	TOTAL
1	MC-001	MOBILIZATION	LS	1	$ 3,000.00	$ 3,000.00
2	MC-003	SAFETY AND SECURITY	LS	1	$ 1,500.00	$ 1,500.00
3	L-880	NEW 4-BOX L-880A(L) PAPI, FURNISHED AND INSTALLED	LS	1	$ 40,000.00	$ 40,000.00
4		FAA FLIGHT CHECK	ALLOW	1	$ 10,000.00	$ 10,000.00

SUBTOTAL	$	54,500
25% Contingency	$	13,625
8% Engineering Design	$	5,450
8% Construction Phase Professional Services	$	5,450
5% Utility Relocations	$	3,406
TOTAL	$	82,431

Assumptions:
1- Replacement equipment to be installed at same location on new foundations.
2- Replacement power and control to the site not included.

Rickenbacker International Airport
Columbus, Ohio

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Project #: 15

October 2018

Project Description:

Construct New Cargo Equipment Storage Building

LINE NO.	ITEM	DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	TOTAL
1	MC-001	MOBILIZATION	LS	1	$ 191,566.80	$ 191,566.80
2	MC-003	SAFETY AND SECURITY	LS	1	$ 95,783.40	$ 95,783.40
3	B-013	BUILDING 1005 REMOVAL	CF	97,400	$ 0.40	$ 38,960.00
4	B-014	BUILDING 1005 FOUNDATION REMOVAL	SY	700	$ 12.00	$ 8,400.00
5	B-015	NEW CARGO EQUIPMENT STORAGE BUILDING	SF	35,000	$ 86.00	$ 3,010,000.00
6	P-152	UNCLASSIFIED EXCAVATION	CY	700	$ 18.00	$ 12,600.00
7	P-152	TOPSOIL STRIPPING	CY	200	$ 4.50	$ 900.00
8	P-152	UNDERCUTTING - EXCAVATION OF UNSUITABLE MATERIALS	CY	70	$ 20.00	$ 1,400.00
9	P-156	FILTER SOCK	LF	1,200	$ 6.00	$ 7,200.00
10	ODOT304	CRUSHED AGGREGATE BASE COURSE - 20" DEPTH	SY	700	$ 17.00	$ 11,900.00
11	P-401	BITUMINOUS SURFACE COURSE, ROADWAY - 4" DEPTH	TON	200	$ 70.00	$ 14,000.00
12	P-403	BITUMINOUS BASE COURSE - 10" DEPTH	TON	200	$ 70.00	$ 14,000.00
13	P-602	BITUMINOUS PRIME COAT	GAL	200	$ 3.00	$ 600.00
14	P-603	BITUMINOUS TACK COAT	GAL	100	$ 3.00	$ 300.00
15	P-620	TEMPORARY PAVEMENT MARKING, HALF APPLICATION, WITHOUT GLASS BEADS	SF	300	$ 1.00	$ 300.00
16	P-620	PERMANENT PAVEMENT MARKING, WITH GLASS BEADS	SF	300	$ 2.00	$ 600.00
17	D-701	NEW 36" REINFORCED CONCRETE PIPE, CLASS IV	LF	50	$ 400.00	$ 20,000.00
18	D-705	PIPE UNDERDRAIN FOR AIRPORTS, 6" PERFORATED	LF	200	$ 26.00	$ 5,200.00
19	D-751	NEW AIRFIELD DRAINAGE STRUCTURE	EA	1	$ 19,000.00	$ 19,000.00
20	D-751	NEW MANHOLE	EA	1	$ 21,000.00	$ 21,000.00
21	D-752	NEW UNDERDRAIN CLEANOUT	EA	2	$ 1,400.00	$ 2,800.00
22	T-901	SEEDING	AC	1	$ 2,000.00	$ 2,000.00
23	T-905	TOPSOIL	CY	30	$ 4.00	$ 120.00
24	T-908	MULCHING	AC	1	$ 1,500.00	$ 1,500.00

Assumptions:

1- Building demolition unit is in cubic feet (CF) to account for multiple floors, HVAC, plumbing risers, walls, etc.
2- Full depth excavation for pavement sections and 1 foot depth excavation for grading, 20 feet wide on east/west sides of lot.
3 - Topsoil Stripping: at new parking lot area and 20 feet wide on east/west sides of lot, 4 inch depth.
4 - Undercutting: Assumed 10% unsuitable materials, based on Unclassified Excavation quantity.
5 - Filter sock along perimeter of site.
6 - Pipe underdrains are along both sides of the new parking lot.
7 - Drainage Structures and Manholes: one each to account for new drainage. Aircraft rated.
8 - 36" Reinforced Concrete Pipe: based on 25% length of underdrains.
9 - Underdrain Cleanouts: one each side of parking lot.
10 - Seeding, Mulching, and Topsoil are equal to Topsoil Stripping area. Topsoil is 4 inch depth.
11- Floor of building is concrete and is included in building cost (item number 5)

SUBTOTAL	$	3,480,130
25% Contingency	$	870,033
8% Engineering Design	$	348,013
8% Construction Phase Professional Services	$	348,013
Environmental Investigation/Mitigation	$	50,000
5% Utility Relocations	$	217,508
TOTAL	$	5,313,697

Rickenbacker International Airport
Columbus, Ohio

Michael Baker INTERNATIONAL

Project #: 16

October 2018

Project Description:

FBO Apron Fillet Improvements

LINE NO.	ITEM	DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	TOTAL
1	MC-001	MOBILIZATION	LS	1	$ 37,410.00	$ 37,410.00
2	MC-003	SAFETY AND SECURITY	LS	1	$ 18,705.00	$ 18,705.00
3	P-152	UNCLASSIFIED EXCAVATION	CY	5,600	$ 18.00	$ 100,800.00
4	P-152	TOPSOIL STRIPPING	CY	1,400	$ 4.50	$ 6,300.00
5	P-152	UNDERCUTTING - EXCAVATION OF UNSUITABLE MATERIALS	CY	1,120	$ 20.00	$ 22,400.00
6	P-156	FILTER SOCK	LF	2,900	$ 6.00	$ 17,400.00
7	P-209	CRUSHED AGGREGATE BASE COURSE - 12" DEPTH	SY	4,700	$ 17.00	$ 79,900.00
8	P-501	PORTLAND CEMENT CONCRETE PAVEMENT - 12" DEPTH	SY	4,700	$ 70.00	$ 329,000.00
9	P-620	TEMPORARY PAVEMENT MARKING, HALF APPLICATION, WITHOUT GLASS BEADS	SF	2,700	$ 1.00	$ 2,700.00
10	P-620	PERMANENT PAVEMENT MARKING, WITH GLASS BEADS	SF	2,700	$ 2.00	$ 5,400.00
11	D-705	PIPE UNDERDRAIN FOR AIRPORTS, 6" PERFORATED	LF	1,200	$ 26.00	$ 31,200.00
12	D-752	NEW UNDERDRAIN CLEANOUT	EA	3	$ 1,400.00	$ 4,200.00
13	T-901	SEEDING	AC	2	$ 2,000.00	$ 4,000.00
14	T-905	TOPSOIL	CY	800	$ 4.00	$ 3,200.00
15	T-908	MULCHING	AC	2	$ 1,500.00	$ 3,000.00
16	L-125	RUNWAY EDGE LIGHT ADJUSTMENT	EA	35	$ 400.00	$ 14,000.00

SUBTOTAL	$	679,615
25% Contingency	$	169,904
8% Engineering Design	$	67,962
8% Construction Phase Professional Services	$	67,962
Environmental Investigation/Mitigation	$	20,000
TOTAL	$	1,005,442

Assumptions:

1- Full depth excavation for pavement sections and 1 foot depth excavation for grading at affected infields.

2- Topsoil Stripping: 4 inch depth, same as excavated areas.

3- Undercutting: Assumed 10% unsuitable materials, based on Unclassified Excavation quantity.

4- Filter sock is along the general perimeter.

5- Pipe underdrains are along the edge of the new pavement.

6- Underdrain Cleanouts: 1 at each area.

7- Seeding, Mulching, and Topsoil are equal to grading areas at infields. Topsoil is 4 inch depth.

Rickenbacker International Airport
Columbus, Ohio

Michael Baker INTERNATIONAL

Project #: 17

October 2018

Project Description:

Construct New Terminal Traffic Lane and Curb Front

LINE NO.	ITEM	DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	TOTAL
1	MC-001	MOBILIZATION	LS	1	$ 15,740.40	$ 15,740.40
2	MC-003	SAFETY AND SECURITY	LS	1	$ 7,870.20	$ 7,870.20
3	P-152	UNCLASSIFIED EXCAVATION	CY	1,300	$ 18.00	$ 23,400.00
4	P-152	TOPSOIL STRIPPING	CY	200	$ 4.50	$ 900.00
5	P-152	UNDERCUTTING - EXCAVATION OF UNSUITABLE MATERIALS	CY	130	$ 20.00	$ 2,600.00
6	P-156	FILTER SOCK	LF	600	$ 6.00	$ 3,600.00
7	ODOT304	CRUSHED AGGREGATE BASE COURSE - 20" DEPTH	SY	700	$ 17.00	$ 11,900.00
8	P-401	BITUMINOUS SURFACE COURSE, ROADWAY - 3" DEPTH	TON	200	$ 70.00	$ 14,000.00
9	P-403	BITUMINOUS BASE COURSE - 3" DEPTH	TON	200	$ 70.00	$ 14,000.00
10	P-501	NEW SIDEWALK	SY	600	$ 60.00	$ 36,000.00
11	P-602	BITUMINOUS PRIME COAT	GAL	210	$ 3.00	$ 630.00
12	P-603	BITUMINOUS TACK COAT	GAL	70	$ 3.00	$ 210.00
13	P-620	TEMPORARY PAVEMENT MARKING, HALF APPLICATION, WITHOUT GLASS BEADS	SF	1,200	$ 1.00	$ 1,200.00
14	P-620	PERMANENT PAVEMENT MARKING, WITH GLASS BEADS	SF	1,200	$ 2.00	$ 2,400.00
15	D-701	CURB AND GUTTER	LF	600	$ 12.00	$ 7,200.00
16	D-701	NEW 36" REINFORCED CONCRETE PIPE, CLASS IV	LF	200	$ 400.00	$ 80,000.00
17	D-751	NEW DRAINAGE STRUCTURE	EA	1	$ 19,000.00	$ 19,000.00
18	D-751	NEW MANHOLE	EA	1	$ 21,000.00	$ 21,000.00
19	T-900	LANDSCAPING	LS	1	$ 20,000.00	$ 20,000.00
20	T-901	SEEDING	AC	1	$ 2,000.00	$ 2,000.00
21	T-905	TOPSOIL	CY	200	$ 4.00	$ 800.00
22	T-908	MULCHING	AC	1	$ 1,500.00	$ 1,500.00

SUBTOTAL	$	285,951
25% Contingency	$	71,488
8% Engineering Design	$	28,595
8% Construction Phase Professional Services	$	28,595
Environmental Investigation/Mitigation	$	35,000
5% Utility Relocations	$	17,872
TOTAL	$	467,500

Assumptions:

1- Unclassified Excavation: 1 foot depth for sidewalk and 20 feet wide at outer perimeter of future lane.
2- Topsoil Stripping: 4 inch depth, 20 feet wide area at outer perimeter of future lane.
3- Undercutting: Assumed 10% unsuitable materials, based on Unclassified Excavation quantity.
4- Filter sock is along the general perimeter.
5- Curb and Gutter at edges of pavement.
6- 36" Reinforced Concrete Pipe: based on 25% curb and gutter length.
7- Seeding, Mulching, and Topsoil are equal to Topsoil Stripping area. Topsoil is 4 inch depth.

Rickenbacker International Airport
Columbus, Ohio

Michael Baker INTERNATIONAL

Project #: 18

October 2018

Project Description:

Pavement Enabling Rehabilitation - Runway 5L-23R

LINE NO.	ITEM	DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	TOTAL
1	MC-001	MOBILIZATION	LS	1	$ 398,154.78	$ 398,154.78
2	MC-003	SAFETY AND SECURITY	LS	1	$ 199,077.39	$ 199,077.39
3	P-101	PAVEMENT REMOVAL	SY	40,600	$ 10.00	$ 406,000.00
4	P-101	BITUMINOUS PAVEMENT MILLING, 4" DEPTH	SY	108,200	$ 2.00	$ 216,400.00
5	P-152	UNCLASSIFIED EXCAVATION	CY	13,600	$ 18.00	$ 244,800.00
6	P-152	UNDERCUTTING - EXCAVATION OF UNSUITABLE MATERIALS	CY	1,360	$ 20.00	$ 27,200.00
7	P-156	FILTER SOCK	LF	10,000	$ 6.00	$ 60,000.00
8	P-209	CRUSHED AGGREGATE BASE COURSE - 12" DEPTH	SY	40,600	$ 17.00	$ 690,200.00
9	P-401	BITUMINOUS SURFACE COURSE - 4" DEPTH	TON	24,100	$ 105.00	$ 2,530,500.00
10	P-403	BITUMINOUS BASE COURSE - 16" DEPTH	TON	36,100	$ 70.00	$ 2,527,000.00
11	P-602	BITUMINOUS PRIME COAT	GAL	32,453	$ 3.00	$ 97,359.00
12	P-603	BITUMINOUS TACK COAT	GAL	10,818	$ 3.00	$ 32,454.00
13	P-620	TEMPORARY PAVEMENT MARKING, HALF APPLICATION, WITHOUT GLASS BEADS	SF	70,000	$ 1.00	$ 70,000.00
14	P-620	PERMANENT PAVEMENT MARKING, WITH GLASS BEADS	SF	70,000	$ 2.00	$ 140,000.00

SUBTOTAL	$	7,639,145
25% Contingency	$	1,909,786
8% Engineering Design	$	763,915
8% Construction Phase Professional Services	$	763,915
Environmental Investigation/Mitigation	$	25,000
TOTAL	$	11,101,760

Assumptions:

1- Based on the PCI values from the PMP, partial reconstruction and rehabilitation of Runway 5L-23R is necessary for safe operation until the full rehabilitation occurs in 2026 (see project 65).

2- Mill and overly 25% and full depth reconstruction 15% of existing Runway 5L-23R. These are based on the PCI values in the PMP.

3- Unclassified Excavation at the P-209 depth of the reconstructed area.

4- Undercutting: Assumed 10% unsuitable materials, based on Unclassified Excavation quantity.

5- Filter Sock at perimeter of site.

6- In discussions with CRAA and PCI values from the latest PMP, it was discussed that Runway 5L-23R was in need of a partial reconstruction and rehabilitation project to enable safe conditions until the full rehabilitation occurs as part of Project #93

Rickenbacker International Airport
Columbus, Ohio

Michael Baker INTERNATIONAL

Project #: 20

October 2018

Project Description:

Construct New Maintenance Storage Facility

LINE NO.	ITEM	DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	TOTAL
1	MC-001	MOBILIZATION	LS	1	$ 168,496.80	$ 168,496.80
2	MC-003	SAFETY AND SECURITY	LS	1	$ 84,248.40	$ 84,248.40
3	B-021	BUILDING 556 REMOVAL	CF	164,400	$ 0.40	$ 65,760.00
4	B-022	BUILDING 556 FOUNDATION REMOVAL	SY	1,000	$ 12.00	$ 12,000.00
5	B-023	BUILDING 557 REMOVAL	CF	165,300	$ 0.40	$ 66,120.00
6	B-024	BUILDING 557 FOUNDATION REMOVAL	SY	1,000	$ 12.00	$ 12,000.00
7	B-025	NEW MAINTENANCE STORAGE FACILITY	SF	24,400	$ 87.00	$ 2,122,800.00
8	P-101	PAVEMENT REMOVAL	SY	4,800	$ 10.00	$ 48,000.00
9	P-152	UNCLASSIFIED EXCAVATION	CY	3,200	$ 18.00	$ 57,600.00
10	P-152	UNDERCUTTING - EXCAVATION OF UNSUITABLE MATERIALS	CY	320	$ 20.00	$ 6,400.00
11	P-209	CRUSHED AGGREGATE BASE COURSE - 12" DEPTH	SY	4,800	$ 17.00	$ 81,600.00
12	P-501	PORTLAND CEMENT CONCRETE PAVEMENT - 12" DEPTH	SY	4,800	$ 70.00	$ 336,000.00

SUBTOTAL	$	3,061,025
25% Contingency	$	765,256
8% Engineering Design	$	306,103
8% Construction Phase Professional Services	$	306,103
Environmental Investigation/Mitigation	$	189,000
5% Utility Relocations	$	191,314
TOTAL	$	4,818,801

Assumptions:

1- Building demolition unit is in cubic feet (CF) to account for multiple floors, HVAC, plumbing risers, walls, etc.

2- Full depth excavation for pavement sections.

3- Undercutting: Assumed 10% unsuitable materials, based on Unclassified Excavation quantity.

Rickenbacker International Airport
Columbus, Ohio

Michael Baker INTERNATIONAL

Project #: 22

October 2018

Project Description:

LCK Terminal Improvements - First Floor

	ITEM	DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	TOTAL
	1	TICKETING STANCHIONS	EA	45	$ 75.00	$ 3,375.00
	2	RELOCATE TICKET COUNTERS & SCALES	ALLOW	1	$ 2,500.00	$ 2,500.00
	3	ELECTRIC / COMMUNICATIONS RELOCATIONS FOR COUNTERS	ALLOW	1	$ 5,000.00	$ 5,000.00
	4	ELECTRIC / COMMUNICATIONS RELOCATIONS FOR TSA EQUIPMENT	ALLOW	1	$ 10,000.00	$ 10,000.00
		SUBTOTAL TICKETING				**$ 20,875.00**
	5	SSCP QUEUING STANCHIONS	EA	60	$ 75.00	$ 4,500.00
	6	SSCP DOUBLE LANING	ALLOW	1	$ -	$ -
	7	RENTAL CAR KIOSKS	EA	2	$ 2,500.00	$ 5,000.00
	8	ELECTRIC / COMMUNICATIONS FOR KIOSKS	ALLOW	2	$ 1,000.00	$ 2,000.00
		SUBTOTAL SSCP AREA				**$ 11,500.00**
	9	SNACK BAR SELECTIVE DEMOLITION	ALLOW	1	$ 1,250.00	$ 1,250.00
	10	SNACK BAR FLOORING (TILE)	SF	630	$ 12.00	$ 7,560.00
	11	SNACK BAR MILLWORK	LF	40	$ 400.00	$ 16,000.00
	12	SNACK BAR EQUIPMENT	ALLOW	1	$ -	$ -
	13	SNACK BAR ELECTRIC / COMMUNICATIONS	ALLOW	1	$ 12,000.00	$ 12,000.00
	14	SNACK BAR PLUMBING	ALLOW	1	$ 8,000.00	$ 8,000.00
	15	SNACK BAR SEATING	EA	20	$ 400.00	$ 8,000.00
	16	SNACK BAR TABLES	EA	4	$ 500.00	$ 2,000.00
	17	SNACK BAR WORK CARRELLS	EA	4	$ 500.00	$ 2,000.00
	18	SNACK BAR FINISHES & MISCELLANEOUS	SF	630	$ 15.00	$ 9,450.00
		SUBTOTAL SNACK BAR				**$ 66,260.00**
	19	WAITING SELECTIVE DEMOLITION	ALLOW	1	$ 1,500.00	$ 1,500.00
	20	WAITING FLOORING (CARPET)	SF	820	$ 4.00	$ 3,280.00
	21	WAITING ROOM PARTITION	LF	30	$ 20.00	$ 600.00
	22	WAITING ELECTRIC / COMMUNICATIONS	ALLOW	1	$ 5,000.00	$ 5,000.00
	23	WAITING BEAM SEATING	EA	60	$ 500.00	$ 30,000.00
	24	WAITING FINISHES & MISCELLANEOUS	SF	820	$ 10.00	$ 8,200.00
		SUBTOTAL WAITING				**$ 48,580.00**

SUBTOTAL WORK AREAS	$	147,215
General Conditions	$	14,722
Bonds/Insurance/Permits	$	4,858
Contractor Overhead and Profit	$	8,340
SUBTOTAL CONSTRUCTION COSTS	$	175,134
Design and Construction Admin. Fees	$	26,270
Resident Project Representative Services - 3 Months	$	45,000
25% Contingency	$	61,601
TOTAL	$	308,006

Rickenbacker International Airport
Columbus, Ohio

Michael Baker INTERNATIONAL

Project #: 23
October 2018

Project Description:
Runway 5R Localizer Replacement

LINE NO.	ITEM	DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	TOTAL
1	MC-001	MOBILIZATION	LS	1	$ 57,300.00	$ 57,300.00
2	MC-003	SAFETY AND SECURITY	LS	1	$ 28,650.00	$ 28,650.00
3		THALES MARK 20A LOCALIZER, FURNISHED AND INSTALLED	LS	1	$ 945,000.00	$ 945,000.00
4		FAA FLIGHT CHECK	ALLOW	1	$ 10,000.00	$ 10,000.00

SUBTOTAL	$	1,040,950
25% Contingency	$	260,238
8% Engineering Design	$	104,095
8% Construction Phase Professional Services	$	104,095
5% Utility Relocations	$	65,059
TOTAL	$	1,574,437

Assumptions:
1- Replacement equipment to be installed at same location on new foundations.
2- Replacement power and control to the site not included.

Rickenbacker International Airport
Columbus, Ohio

Michael Baker INTERNATIONAL

Project #: 24

October 2018

Project Description:

Runway 5R Glide Slope Replacement

LINE NO.	ITEM	DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	TOTAL
1	MC-001	MOBILIZATION	LS	1	$ 39,300.00	$ 39,300.00
2	MC-003	SAFETY AND SECURITY	LS	1	$ 19,650.00	$ 19,650.00
3		THALES MARK 20A GLIDE SLOPE, FURNISHED AND INSTALLED	LS	1	$ 645,000.00	$ 645,000.00
4		FAA FLIGHT CHECK	ALLOW	1	$ 10,000.00	$ 10,000.00

SUBTOTAL	$	713,950
25% Contingency	$	178,488
8% Engineering Design	$	71,395
8% Construction Phase Professional Services	$	71,395
5% Utility Relocations	$	44,622
TOTAL	$	1,079,849

Assumptions:

1- Replacement equipment to be installed at same location on new foundations.

2- Replacement power and control to the site not included.

Rickenbacker International Airport
Columbus, Ohio

Michael Baker INTERNATIONAL

Project #: 25
October 2018

Project Description:
Runway 5R Inner Marker Replacement

LINE NO.	ITEM	DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	TOTAL
1	MC-001	MOBILIZATION	LS	1	$ 7,800.00	$ 7,800.00
2	MC-003	SAFETY AND SECURITY	LS	1	$ 3,900.00	$ 3,900.00
3		NEW INNER MARKER	LS	1	$ 120,000.00	$ 120,000.00
4		FAA FLIGHT CHECK	ALLOW	1	$ 10,000.00	$ 10,000.00

SUBTOTAL	$	141,700
25% Contingency	$	35,425
8% Engineering Design	$	14,170
8% Construction Phase Professional Services	$	14,170
5% Utility Relocations	$	8,856
TOTAL	$	214,321

Assumptions:
1- Replacement equipment to be installed at same location on new foundations.
2- Replacement power and control to the site not included.

Rickenbacker International Airport
Columbus, Ohio

Michael Baker INTERNATIONAL

Project #: 26

October 2018

Project Description:

Runway 5R Outer Marker Replacement

LINE NO.	ITEM	DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	TOTAL
1	MC-001	MOBILIZATION	LS	1	$ 9,060.00	$ 9,060.00
2	MC-003	SAFETY AND SECURITY	LS	1	$ 4,530.00	$ 4,530.00
3		NEW OUTER MARKER, FURNISHED AND INSTALLED	LS	1	$ 141,000.00	$ 141,000.00
4		FAA FLIGHT CHECK	ALLOW	1	$ 10,000.00	$ 10,000.00

SUBTOTAL	$	164,590
25% Contingency	$	41,148
8% Engineering Design	$	16,459
8% Construction Phase Professional Services	$	16,459
5% Utility Relocations	$	10,287
TOTAL	$	248,942

Assumptions:

1- Replacement equipment to be installed at same location on new foundations.

2- Replacement power and control to the site not included.

Rickenbacker International Airport
Columbus, Ohio

Michael Baker INTERNATIONAL

Project #: 27
October 2018

Project Description:
Runway 5R NDB Replacement

LINE NO.	ITEM	DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	TOTAL
1	MC-001	MOBILIZATION	LS	1	$ 11,100.00	$ 11,100.00
2	MC-003	SAFETY AND SECURITY	LS	1	$ 5,550.00	$ 5,550.00
3		NEW LOM (NDB), FURNISHED AND INSTALLED	LS	1	$ 175,000.00	$ 175,000.00
4		FAA FLIGHT CHECK	ALLOW	1	$ 10,000.00	$ 10,000.00

SUBTOTAL	$	201,650
25% Contingency	$	50,413
8% Engineering Design	$	20,165
8% Construction Phase Professional Services	$	20,165
5% Utility Relocations	$	12,603
TOTAL	$	304,996

Assumptions:
1- Replacement equipment to be installed at same location on new foundations.
2- Replacement power and control to the site not included.

Rickenbacker International Airport
Columbus, Ohio

Michael Baker INTERNATIONAL

Project #: 28

October 2018

Project Description:

Runway 23L Outer Marker Replacement

LINE NO.	ITEM	DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	TOTAL
1	MC-001	MOBILIZATION	LS	1	$ 9,060.00	$ 9,060.00
2	MC-003	SAFETY AND SECURITY	LS	1	$ 4,530.00	$ 4,530.00
3		NEW OUTER MARKER, FURNISHED AND INSTALLED	LS	1	$ 141,000.00	$ 141,000.00
4		FAA FLIGHT CHECK	ALLOW	1	$ 10,000.00	$ 10,000.00

SUBTOTAL	$	164,590
25% Contingency	$	41,148
8% Engineering Design	$	16,459
8% Construction Phase Professional Services	$	16,459
5% Utility Relocations	$	10,287
TOTAL	$	248,942

Assumptions:

1- Replacement equipment to be installed at same location on new foundations.

2- Replacement power and control to the site not included.

Rickenbacker International Airport
Columbus, Ohio

Michael Baker INTERNATIONAL

Project #: 29
October 2018

Project Description:
Runway 23L NDB Replacement

LINE NO.	ITEM	DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	TOTAL
1	MC-001	MOBILIZATION	LS	1	$ 11,100.00	$ 11,100.00
2	MC-003	SAFETY AND SECURITY	LS	1	$ 5,550.00	$ 5,550.00
3		NEW LOM (NDB), FURNISHED AND INSTALLED	LS	1	$ 175,000.00	$ 175,000.00
4		FAA FLIGHT CHECK	ALLOW	1	$ 10,000.00	$ 10,000.00

SUBTOTAL	$	201,650
25% Contingency	$	50,413
8% Engineering Design	$	20,165
8% Construction Phase Professional Services	$	20,165
5% Utility Relocations	$	12,603
TOTAL	$	304,996

Assumptions:
1- Replacement equipment to be installed at same location on new foundations.
2- Replacement power and control to the site not included.

Rickenbacker International Airport
Columbus, Ohio

Michael Baker INTERNATIONAL

Project #: 31

October 2018

Project Description:

LCK Terminal Improvements - Second Floor

LINE NO.	ITEM	DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	TOTAL
1	1	EXISTING SNACK BAR SELECTIVE DEMOLITION	ALLOW	1	$ 2,500.00	$ 2,500.00
2	2	LOUNGE FLOORING	SF	500	$ 4.00	$ 2,000.00
3	3	LOUNGE SEATING	EA	40	$ 400.00	$ 16,000.00
4	4	LOUNGE TABLES	EA	6	$ 500.00	$ 3,000.00
5	5	LOUNGE WORK CARRELLS	EA	16	$ 500.00	$ 8,000.00
6	6	LOUNGE FINISHES & MISCELLANEOUS	SF	500	$ 10.00	$ 5,000.00
7		**SUBTOTAL LOUNGE AREA**				**$ 36,500.00**
8						
9	7	SNACK BAR SELECTIVE DEMOLITION	ALLOW	1	$ 1,500.00	$ 1,500.00
10	8	SNACK BAR FLOORING (TILE)	SF	1,150	$ 12.00	$ 13,800.00
11	9	SNACK BAR MILLWORK	LF	36	$ 400.00	$ 14,400.00
12	10	SNACK BAR EQUIPMENT	ALLOW	1	$ -	$ -
13	11	SNACK BAR ELECTRIC / COMMUNICATIONS	ALLOW	1	$ 12,000.00	$ 12,000.00
14	12	SNACK BAR PLUMBING	ALLOW	1	$ 8,000.00	$ 8,000.00
15	13	SNACK BAR SEATING	EA	27	$ 300.00	$ 8,100.00
16	14	SNACK BAR TABLES	EA	9	$ 350.00	$ 3,150.00
17	15	SNACK BAR FINISHES & MISCELLANEOUS	SF	1,150	$ 5.00	$ 5,750.00
18		**SUBTOTAL SNACK BAR AREA**				**$ 66,700.00**
19						
20	16	WAITING SELECTIVE DEMOLITION	ALLOW	1	$ 3,000.00	$ 3,000.00
21	17	GATE COUNTERS RELOCATION	EA	2	$ 2,500.00	$ 5,000.00
22	18	GATE COUNTERS ELECTRIC / COMMUNICATIONS	EA	2	$ 4,000.00	$ 8,000.00
23	19	WAITING FLOORING (CARPET)	SF	3,000	$ 4.00	$ 12,000.00
24	20	WAITING ELECTRIC / COMMUNICATIONS	ALLOW	1	$ 10,000.00	$ 10,000.00
25	21	WAITING BEAM SEATING	EA	126	$ 500.00	$ 63,000.00
26	22	WAITING FINISHES & MISCELLANEOUS	SF	3,000	$ 5.00	$ 15,000.00
27		**SUBTOTAL WAITING AREA**				**$ 116,000.00**

SUBTOTAL WORK AREAS	$	219,200
General Conditions	$	21,920
Bonds/Insurance/Permits	$	7,234
Contractor Overhead and Profit	$	12,418
SUBTOTAL CONSTRUCTION COSTS	$	260,771
Design and Construction Admin. Fees	$	39,116
Resident Project Representative Services - 3 Months	$	45,000
25% Contingency	$	86,222
TOTAL	$	431,109

Rickenbacker International Airport
Columbus, Ohio

Michael Baker INTERNATIONAL

Project #: 32
October 2018

Project Description:
Runway 23R REIL Replacement

LINE NO.	ITEM	DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	TOTAL
1	MC-001	MOBILIZATION	LS	1	$ 1,500.00	$ 1,500.00
2	MC-003	SAFETY AND SECURITY	LS	1	$ 750.00	$ 750.00
3	L-840	NEW L-840C(L) REIL, FURNISHED AND INSTALLED	LS	1	$ 15,000.00	$ 15,000.00
4		FAA FLIGHT CHECK	ALLOW	1	$ 10,000.00	$ 10,000.00

SUBTOTAL	$	27,250
25% Contingency	$	6,813
8% Engineering Design	$	2,725
8% Construction Phase Professional Services	$	2,725
5% Utility Relocations	$	1,703
TOTAL	$	41,216

Assumptions:
1- Replacement equipment to be installed at same location on new foundations.
2- Replacement power and control to the site not included.

Rickenbacker International Airport
Columbus, Ohio

Michael Baker INTERNATIONAL

Project #: 37
Project Description:
Reconstruct Ramp 2

October 2018

LINE NO.	ITEM	DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	TOTAL
1	MC-001	MOBILIZATION	LS	1	$ 2,093,280.00	$ 2,093,280.00
2	MC-003	SAFETY AND SECURITY	LS	1	$ 1,046,640.00	$ 1,046,640.00
3	MC-010	NEW FUEL PIT	EA	8	$ 80,000.00	$ 640,000.00
4	MC-010	NEW 12" FUEL LINE WITH DRAINS AND VALVES	LF	6,000	$ 1,000.00	$ 6,000,000.00
5	P-152	UNCLASSIFIED EXCAVATION	CY	102,400	$ 18.00	$ 1,843,200.00
6	P-152	UNDERCUTTING - EXCAVATION OF UNSUITABLE MATERIALS	CY	10,240	$ 20.00	$ 204,800.00
7	P-209	CRUSHED AGGREGATE BASE COURSE - 12" DEPTH	SY	71,600	$ 17.00	$ 1,217,200.00
8	P-209	CRUSHED AGGREGATE BASE COURSE - 20" DEPTH	SY	194,600	$ 28.00	$ 5,448,800.00
9	P-501	PORTLAND CEMENT CONCRETE PAVEMENT - 12" DEPTH	SY	71,600	$ 70.00	$ 5,012,000.00
10	P-501	PORTLAND CEMENT CONCRETE PAVEMENT - 20" DEPTH	SY	194,600	$ 100.00	$ 19,460,000.00
11	P-620	TEMPORARY PAVEMENT MARKING, HALF APPLICATION, WITHOUT GLASS BEADS	SF	10,800	$ 1.00	$ 10,800.00
12	P-620	PERMANENT PAVEMENT MARKING, WITH GLASS BEADS	SF	10,800	$ 2.00	$ 21,600.00
13	D-701	NEW 36" RCP, CLASS IV	LF	800	$ 400.00	$ 320,000.00
14	D-701	NEW AIRCRAFT-RATED TRENCH DRAIN	LF	1,500	$ 500.00	$ 750,000.00
15	D-705	PIPE UNDERDRAIN FOR AIRPORTS, 6" PERFORATED	LF	16,300	$ 26.00	$ 423,800.00
16	D-751	NEW AIRFIELD DRAINAGE STRUCTURE	EA	8	$ 19,000.00	$ 152,000.00
17	D-752	NEW UNDERDRAIN CLEANOUT	EA	17	$ 1,400.00	$ 23,800.00

Assumptions:

1- Pavement footprint to remain unchanged. Grading to be generally the same, no grading outside of pavement will be required.
2- Pavement directly NW and NE of ACT 2 shall not be for aircraft use.
3- Existing concrete assumed to be 16" thick. Excavation for airside pavement sections includes 16" beneath existing concrete. Excavation for landside pavement includes 8" beneath existing concrete to be removed.
4- Undercutting: Assumed 10% unsuitable materials, based on Unclassified Excavation quantity.
5- Pipe underdrains are along the perimeter of pavement and ACT 2, as well as two lines running under the ramp, full width.
6- Existing dual storm sewer running SE is adequately sized and in good condition.
7- Underdrain Cleanouts: every 1,000 feet.
8- Restoration of any disturbed areas outside of pavement is incidental.
9- Trench drains to be connected to existing storm sewers at 4 locations via drainage structures and 200' of 36" RCP.

SUBTOTAL	$	44,667,920
25% Contingency	$	11,166,980
8% Engineering Design	$	4,466,792
8% Construction Phase Professional Services	$	4,466,792
Environmental Investigation/Mitigation	$	100,000
TOTAL	$	64,868,484

Rickenbacker International Airport
Columbus, Ohio

Michael Baker INTERNATIONAL

Project #: 38
October 2018

Project Description:
AWOS-IIIPT Replacement

LINE NO.	ITEM	DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	TOTAL
1	MC-001	MOBILIZATION	LS	1	$ 10,500.00	$ 10,500.00
2	MC-003	SAFETY AND SECURITY	LS	1	$ 5,250.00	$ 5,250.00
3		NEW AWOS-IIIPT, FURNISHED AND INSTALLED	LS	1	$ 175,000.00	$ 175,000.00

SUBTOTAL	$	190,750
25% Contingency	$	47,688
8% Engineering Design	$	19,075
8% Construction Phase Professional Services	$	19,075
5% Utility Relocations	$	11,922
TOTAL	$	288,509

Assumptions:
1- Replacement equipment to be installed at same location on new foundations.
2- Replacement power and control to the site not included.

Rickenbacker International Airport
Columbus, Ohio

Michael Baker INTERNATIONAL

Project #: 39

October 2018

Project Description:

NAVAID Control Cable Loop Replacement

LINE NO.	ITEM	DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	TOTAL
1	MC-001	MOBILIZATION	LS	1	$ 90,858.00	$ 90,858.00
2	MC-003	SAFETY AND SECURITY	LS	1	$ 45,429.00	$ 45,429.00
3		NAVAID CONTROL CABLE LOOP	LS	1	$ 1,514,300.04	$ 1,514,300.04

SUBTOTAL	$	1,650,587
25% Contingency	$	412,647
8% Engineering Design	$	165,059
8% Construction Phase Professional Services	$	165,059
5% Utility Relocations	$	103,162
TOTAL	$	2,496,513

Assumptions:

1- Control cable loop cost of $1,275,000 inflated by 3.5% for 5 years since original estimate was generated (provided by CRAA)

Rickenbacker International Airport
Columbus, Ohio

Michael Baker INTERNATIONAL

Project #: 42

October 2018

Project Description:

Construct Airside Operations Area for Expanded ACT 5

LINE NO.	ITEM	DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	TOTAL
1	MC-001	MOBILIZATION	LS	1	$ 128,586.00	$ 128,586.00
2	MC-003	SAFETY AND SECURITY	LS	1	$ 64,293.00	$ 64,293.00
3	MC-010	NEW FUEL PIT	EA	4	$ 80,000.00	$ 320,000.00
4	MC-010	NEW 12" FUEL LINE WITH DRAINS AND VALVES	LF	1,500	$ 1,000.00	$ 1,500,000.00
5	P-152	UNCLASSIFIED EXCAVATION	CY	16,700	$ 18.00	$ 300,600.00
6	P-152	TOPSOIL STRIPPING	CY	1,400	$ 4.50	$ 6,300.00
7	P-152	UNDERCUTTING - EXCAVATION OF UNSUITABLE MATERIALS	CY	1,670	$ 20.00	$ 33,400.00
8	P-156	FILTER SOCK	LF	3,000	$ 6.00	$ 18,000.00
9	P-209	CRUSHED AGGREGATE BASE COURSE - 12" DEPTH	SY	20,400	$ 17.00	$ 346,800.00
10	P-501	PORTLAND CEMENT CONCRETE PAVEMENT - 20" DEPTH	SY	13,700	$ 100.00	$ 1,370,000.00
11	P-620	TEMPORARY PAVEMENT MARKING, HALF APPLICATION, WITHOUT GLASS BEADS	SF	6,000	$ 1.00	$ 6,000.00
12	P-620	PERMANENT PAVEMENT MARKING, WITH GLASS BEADS	SF	6,000	$ 2.00	$ 12,000.00
13	D-701	WATER LINE IMPROVEMENTS	LS	1	$ 50,000.00	$ 50,000.00

SUBTOTAL	$	4,155,979
25% Contingency	$	1,038,995
8% Engineering Design	$	415,598
8% Construction Phase Professional Services	$	415,598
Environmental Investigation/Mitigation	$	40,000
5% Utility Relocations	$	259,749
TOTAL	$	6,325,918

Assumptions:

1- Full depth excavation for pavement sections.

2- Topsoil Stripping: at existing infields being demolished, 4 inch depth.

3- Undercutting: Assumed 10% unsuitable materials, based on Unclassified Excavation quantity.

4- Filter sock perimeter of site.

Rickenbacker International Airport
Columbus, Ohio

Michael Baker INTERNATIONAL

Project #: 43

October 2018

Project Description:

Construct Deicing Pad On Ramp #3

LINE NO.	ITEM	DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	TOTAL
1	MC-001	MOBILIZATION	LS	1	$ 290,385.30	$ 290,385.30
2	MC-003	SAFETY AND SECURITY	LS	1	$ 145,192.65	$ 145,192.65
3	P-101	PAVEMENT REMOVAL	SY	13,400	$ 10.00	$ 134,000.00
4	P-152	UNCLASSIFIED EXCAVATION	CY	13,200	$ 18.00	$ 237,600.00
5	P-152	TOPSOIL STRIPPING	CY	150	$ 4.50	$ 675.00
6	P-152	UNDERCUTTING - EXCAVATION OF UNSUITABLE MATERIALS	CY	1,320	$ 20.00	$ 26,400.00
7	P-156	FILTER SOCK	LF	1,580	$ 6.00	$ 9,480.00
8	P-209	CRUSHED AGGREGATE BASE COURSE - 12" DEPTH	SY	14,800	$ 17.00	$ 251,600.00
9	P-501	PORTLAND CEMENT CONCRETE PAVEMENT - 20" DEPTH	SY	14,800	$ 100.00	$ 1,480,000.00
10	P-620	TEMPORARY PAVEMENT MARKING, HALF APPLICATION, WITHOUT GLASS BEADS	SF	5,000	$ 1.00	$ 5,000.00
11	P-620	PERMANENT PAVEMENT MARKING, WITH GLASS BEADS	SF	5,000	$ 2.00	$ 10,000.00
12	D-701	DEICING STORAGE/TREATMENT	LS	1	$ 1,500,000.00	$ 1,500,000.00
13	D-701	12"SANITARY	LF	1,500	$ 60.00	$ 90,000.00
14	D-701	NEW DUAL 48" PIPES FOR GLYCOL SYSTEM	LF	1,000	$ 1,000.00	$ 1,000,000.00
15	D-751	NEW AIRFIELD DRAINAGE STRUCTURE, AIRCRAFT RATED	EA	5	$ 19,000.00	$ 95,000.00

SUBTOTAL	$	5,275,333
25% Contingency	$	1,318,833
8% Engineering Design	$	527,533
8% Construction Phase Professional Services	$	527,533
Environmental Investigation/Mitigation	$	90,000
5% Utility Relocations	$	329,708
TOTAL	$	8,068,941

Assumptions:

1- Full depth excavation for pavement sections.

2- Topsoil Stripping: at turf area, 4 inch depth.

3- Undercutting: Assumed 10% unsuitable materials, based on Unclassified Excavation quantity.

4- Filter sock perimeter of new pavement area.

5- Deicing Facility: exact storage/treatment system to be determined at a later date. However, at this time it is assumed to consist of above ground storage with a gravity-fed 12" sanitary line ran to George Page Drive to connect to an existing sanitary line.

Rickenbacker International Airport
Columbus, Ohio

Michael Baker INTERNATIONAL

Project #: 44

October 2018

Project Description:

Expand ACT 5 Building and Associated Landside Infrastructure

LINE NO.	ITEM	DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	TOTAL
1	MC-001	MOBILIZATION	LS	1	$ 1,168,981.20	$ 1,168,981.20
2	MC-003	SAFETY AND SECURITY	LS	1	$ 584,490.60	$ 584,490.60
3	B-001	NEW ACT BUILDING	SF	150,000	$ 120.00	$ 18,000,000.00
4	P-101	PAVEMENT REMOVAL	SY	35,000	$ 10.00	$ 350,000.00
5	P-152	UNCLASSIFIED EXCAVATION	CY	13,700	$ 18.00	$ 246,600.00
6	P-152	TOPSOIL STRIPPING	CY	600	$ 4.50	$ 2,700.00
7	P-152	UNDERCUTTING - EXCAVATION OF UNSUITABLE MATERIALS	CY	1,370	$ 20.00	$ 27,400.00
8	P-156	FILTER SOCK	LF	400	$ 6.00	$ 2,400.00
9	ODOT304	CRUSHED AGGREGATE BASE COURSE - 20" DEPTH	SY	17,900	$ 17.00	$ 304,300.00
10	P-401	BITUMINOUS SURFACE COURSE, ROADWAY - 3" DEPTH	TON	3,000	$ 70.00	$ 210,000.00
11	P-403	BITUMINOUS BASE COURSE - 3" DEPTH	TON	3,000	$ 70.00	$ 210,000.00
12	P-602	BITUMINOUS PRIME COAT	GAL	5,400	$ 3.00	$ 16,200.00
13	P-603	BITUMINOUS TACK COAT	GAL	1,800	$ 3.00	$ 5,400.00
14	P-620	TEMPORARY PAVEMENT MARKING, HALF APPLICATION, WITHOUT GLASS BEADS	SF	4,100	$ 1.00	$ 4,100.00
15	P-620	PERMANENT PAVEMENT MARKING, WITH GLASS BEADS	SF	4,100	$ 2.00	$ 8,200.00
16	D-701	NEW 36" REINFORCED CONCRETE PIPE, CLASS IV	LF	100	$ 400.00	$ 40,000.00
17	D-705	PIPE UNDERDRAIN, 6" PERFORATED	LF	380	$ 26.00	$ 9,880.00
18	D-751	NEW DRAINAGE STRUCTURE	EA	1	$ 19,000.00	$ 19,000.00
19	D-751	NEW MANHOLE	EA	1	$ 21,000.00	$ 21,000.00
20	D-752	NEW UNDERDRAIN CLEANOUT	EA	1	$ 1,400.00	$ 1,400.00
21	T-901	SEEDING	AC	1	$ 2,000.00	$ 2,000.00
22	T-905	TOPSOIL	CY	235	$ 4.00	$ 940.00
23	T-908	MULCHING	AC	1	$ 1,500.00	$ 1,500.00

SUBTOTAL	$	21,236,492
25% Contingency	$	5,309,123
8% Engineering Design	$	2,123,649
8% Construction Phase Professional Services	$	2,123,649
Environmental Investigation/Mitigation	$	40,000
5% Utility Relocations	$	1,327,281
TOTAL	$	32,160,194

Assumptions:

1- New ACT Building unit cost includes concrete foundation slab.
2- Full depth excavation for pavement sections and 1 foot depth excavation for grading, 50 feet off south edge.
3- Topsoil Stripping: south side of new access drive 50 feet wide and at infield being demolished, 4 inch depth.
4- Undercutting: Assumed 10% unsuitable materials, based on Unclassified Excavation quantity.
5- Filter sock along south side of new access drive.
6- Pipe underdrains are along south side of new access drive.
7- Drainage Structures and Manholes: one each to account for new drainage. Aircraft rated.
8- 36" Reinforced Concrete Pipe: based on 25% length of underdrains.
9- Underdrain Cleanouts: every 1,000 feet.
10- Seeding, Mulching, and Topsoil are equal to Topsoil Stripping area. Topsoil is 4 inch depth.

Rickenbacker International Airport
Columbus, Ohio

Michael Baker INTERNATIONAL

Project #: 45
October 2018

Project Description:
Expand Maintenance Garage Building 558

LINE NO.	ITEM	DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	TOTAL
1	MC-001	MOBILIZATION	LS	1	$ 87,112.80	$ 87,112.80
2	MC-003	SAFETY AND SECURITY	LS	1	$ 43,556.40	$ 43,556.40
3	B-020	MAINTENANCE GARAGE EXPANSION	SF	8,700	$ 164.00	$ 1,426,800.00
4	P-101	PAVEMENT REMOVAL	SY	200	$ 10.00	$ 2,000.00
5	P-152	UNCLASSIFIED EXCAVATION	CY	100	$ 18.00	$ 1,800.00
6	P-152	UNDERCUTTING - EXCAVATION OF UNSUITABLE MATERIALS	CY	10	$ 20.00	$ 200.00
7	ODOT304	CRUSHED AGGREGATE BASE COURSE - 20" DEPTH	SY	200	$ 17.00	$ 3,400.00
8	P-401	BITUMINOUS SURFACE COURSE - 3" DEPTH	TON	100	$ 105.00	$ 10,500.00
9	P-403	BITUMINOUS BASE COURSE - 3" DEPTH	TON	100	$ 70.00	$ 7,000.00
10	P-602	BITUMINOUS PRIME COAT	GAL	40	$ 3.00	$ 120.00
11	P-603	BITUMINOUS TACK COAT	GAL	20	$ 3.00	$ 60.00

SUBTOTAL	$	1,582,549
25% Contingency	$	395,637
8% Engineering Design	$	158,255
8% Construction Phase Professional Services	$	158,255
Environmental Investigation/Mitigation	$	54,000
5% Utility Relocations	$	98,909
TOTAL	$	2,447,606

Assumptions:
1- Full depth excavation for pavement sections.
2- Undercutting: Assumed 10% unsuitable materials, based on Unclassified Excavation quantity.
3- Unit cost for garage expansion includes all costs associated with expanding maintenance garage, including cost of concrete slab.

Rickenbacker International Airport
Columbus, Ohio

Michael Baker INTERNATIONAL

Project #: 47
October 2018

Project Description:
Runway 5L MALSR Replacement

LINE NO.	ITEM	DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	TOTAL
1	MC-001	MOBILIZATION	LS	1	$ 44,700.00	$ 44,700.00
2	MC-003	SAFETY AND SECURITY	LS	1	$ 22,350.00	$ 22,350.00
3		NEW MALSR, FURNISHED AND INSTALLED	LS	1	$ 735,000.00	$ 735,000.00
4		FAA FLIGHT CHECK	ALLOW	1	$ 10,000.00	$ 10,000.00

SUBTOTAL	$	812,050
25% Contingency	$	203,013
8% Engineering Design	$	81,205
8% Construction Phase Professional Services	$	81,205
5% Utility Relocations	$	50,753
TOTAL	$	1,228,226

Assumptions:
1- Replacement equipment to be installed at same location on new foundations.
2- Replacement power and control to the site not included.

Rickenbacker International Airport
Columbus, Ohio

Michael Baker INTERNATIONAL

Project #: 48
October 2018

Project Description:
Runway 5L Localizer Replacement

LINE NO.	ITEM	DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	TOTAL
1	MC-001	MOBILIZATION	LS	1	$ 57,300.00	$ 57,300.00
2	MC-003	SAFETY AND SECURITY	LS	1	$ 28,650.00	$ 28,650.00
3		THALES MARK 20A LOCALIZER, FURNISHED AND INSTALLED	LS	1	$ 945,000.00	$ 945,000.00
4		FAA FLIGHT CHECK	ALLOW	1	$ 10,000.00	$ 10,000.00

SUBTOTAL	$	1,040,950
25% Contingency	$	260,238
8% Engineering Design	$	104,095
8% Construction Phase Professional Services	$	104,095
5% Utility Relocations	$	65,059
TOTAL	$	1,574,437

Assumptions:
1- Replacement equipment to be installed at same location on new foundations.
2- Replacement power and control to the site not included.

Rickenbacker International Airport
Columbus, Ohio

Michael Baker INTERNATIONAL

Project #: 49

October 2018

Project Description:

Runway 5L Glide Slope Replacement

LINE NO.	ITEM	DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	TOTAL
1	MC-001	MOBILIZATION	LS	1	$ 39,300.00	$ 39,300.00
2	MC-003	SAFETY AND SECURITY	LS	1	$ 19,650.00	$ 19,650.00
3		THALES MARK 20A GLIDE SLOPE, FURNISHED AND INSTALLED	LS	1	$ 645,000.00	$ 645,000.00
4		FAA FLIGHT CHECK	ALLOW	1	$ 10,000.00	$ 10,000.00

SUBTOTAL	$	713,950
25% Contingency	$	178,488
8% Engineering Design	$	71,395
8% Construction Phase Professional Services	$	71,395
5% Utility Relocations	$	44,622
TOTAL	$	1,079,849

Assumptions:

1- Replacement equipment to be installed at same location on new foundations.

2- Replacement power and control to the site not included.

Rickenbacker International Airport
Columbus, Ohio

Michael Baker INTERNATIONAL

Project #: 50
October 2018

Project Description:
Runway 5L DME Replacement

LINE NO.	ITEM	DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	TOTAL
1	MC-001	MOBILIZATION	LS	1	$ 12,600.00	$ 12,600.00
2	MC-003	SAFETY AND SECURITY	LS	1	$ 6,300.00	$ 6,300.00
3		NEW DISTANCE MEASURING EQUIPMENT (DME)	LS	1	$ 200,000.00	$ 200,000.00
4		FAA FLIGHT CHECK	ALLOW	1	$ 10,000.00	$ 10,000.00

SUBTOTAL	$	228,900
25% Contingency	$	57,225
8% Engineering Design	$	22,890
8% Construction Phase Professional Services	$	22,890
5% Utility Relocations	$	14,306
TOTAL	$	346,211

Assumptions:
1- Replacement equipment to be installed at same location on new foundations.
2- Replacement power and control to the site not included.

Rickenbacker International Airport
Columbus, Ohio

Michael Baker INTERNATIONAL

Project #: 53

October 2018

Project Description:

Construct Airport Perimeter Road

LINE NO.	ITEM	DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	TOTAL
1	MC-001	MOBILIZATION	LS	1	$ 845,352.00	$ 845,352.00
2	MC-003	SAFETY AND SECURITY	LS	1	$ 421,326.00	$ 421,326.00
3	P-101	PAVEMENT REMOVAL	SY	75,700	$ 10.00	$ 757,000.00
4	P-152	UNCLASSIFIED EXCAVATION	CY	96,900	$ 18.00	$ 1,744,200.00
5	P-152	TOPSOIL STRIPPING	CY	22,600	$ 4.50	$ 101,700.00
6	P-152	UNDERCUTTING - EXCAVATION OF UNSUITABLE MATERIALS	CY	9,690	$ 20.00	$ 193,800.00
7	P-156	FILTER SOCK	LF	56,800	$ 6.00	$ 340,800.00
8	ODOT304	CRUSHED AGGREGATE BASE COURSE - 20" DEPTH	SY	75,700	$ 17.00	$ 1,286,900.00
9	P-401	BITUMINOUS SURFACE COURSE, ROADWAY - 3" DEPTH	TON	12,700	$ 70.00	$ 889,000.00
10	P-403	BITUMINOUS BASE COURSE - 3" DEPTH	TON	12,700	$ 70.00	$ 889,000.00
11	P-602	BITUMINOUS PRIME COAT	GAL	22,800	$ 3.00	$ 68,400.00
12	P-603	BITUMINOUS TACK COAT	GAL	7,600	$ 3.00	$ 22,800.00
13	P-620	TEMPORARY PAVEMENT MARKING, HALF APPLICATION, WITHOUT GLASS BEADS	SF	56,800	$ 1.00	$ 56,800.00
14	P-620	PERMANENT PAVEMENT MARKING, WITH GLASS BEADS	SF	56,800	$ 2.00	$ 113,600.00
15	D-701	NEW 36" REINFORCED CONCRETE PIPE, CLASS IV	LF	14,200	$ 400.00	$ 5,680,000.00
16	D-705	PIPE UNDERDRAIN, 6" PERFORATED	LF	56,800	$ 26.00	$ 1,476,800.00
17	D-751	NEW DRAINAGE STRUCTURE	EA	6	$ 19,000.00	$ 107,920.00
18	D-751	NEW MANHOLE	EA	6	$ 21,000.00	$ 119,280.00
19	D-752	NEW UNDERDRAIN CLEANOUT	EA	57	$ 1,400.00	$ 79,800.00
20	T-901	SEEDING	AC	30	$ 2,000.00	$ 60,000.00
21	T-905	TOPSOIL	CY	14,100	$ 4.00	$ 56,400.00
22	T-908	MULCHING	AC	30	$ 1,500.00	$ 45,000.00

SUBTOTAL	$	15,355,878
25% Contingency	$	3,838,970
8% Engineering Design	$	1,535,588
8% Construction Phase Professional Services	$	1,535,588
Environmental Investigation/Mitigation	$	100,000
5% Utility Relocations	$	959,742
TOTAL	$	23,325,765

Assumptions:

1- New road is 24 feet wide and 5.3 miles long (approximately 28,300 linear feet).
2- Full depth excavation for pavement sections and 1 foot depth excavation for grading, 20 feet off both sides.
3- Topsoil Stripping: length of 24 foot road and 20 foot width each side, 4 inch depth.
4- Undercutting: Assumed 10% unsuitable materials, based on Unclassified Excavation quantity.
5- Filter sock is full length of the road on both sides.
6- Pipe underdrains are full length of the road on both sides.
7- Drainage Structures and Manholes: one every 10,000 feet. Aircraft rated.
8- 36" Reinforced Concrete Pipe: based on 25% length of underdrains.
9- Underdrain Cleanouts: every 1,000 feet.
10- Seeding, Mulching, and Topsoil are equal to Topsoil Stripping area. Topsoil is 4 inch depth.

Rickenbacker International Airport
Columbus, Ohio

Michael Baker INTERNATIONAL

Project #: 54
October 2018

Project Description:
Construct New Fuel Farm

	ITEM	DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	TOTAL
GENERAL CONDITIONS						
	MC-001	MOBILIZATION	LS	1	$ 393,738.60	$ 393,738.60
	MC-003	SAFETY AND SECURITY	LS	1	$ 196,869.30	$ 196,869.30
FOUNDATIONS						
	1	TANK MAT FOUNDATIONS (50'X50' X 36"T), 3 EA	CY	840	$ 375.00	$ 315,000.00
	2	CONCRETE CONTAINMENT WALLS (48"H X 8"T)	CY	90	$ 560.00	$ 50,400.00
	3	UNCLASSIFIED EXCAVATION	CY	1,400	$ 18.00	$ 25,200.00
	4	BACKFILL AND COMPACTION	CY	280	$ 6.00	$ 1,680.00
	5	HAULING SPOILS OFFSITE	CY	1,350	$ 9.00	$ 12,150.00
FUEL TANKS AND SYSTEMS						
	6	356,000 GAL. DOUBLE WALL, STEEL VERTICAL TANKS (INCL. INT & EXT COATING, ACCESS LADDERS & PORTS)	EA	3	$ 750,000.00	$ 2,250,000.00
	7	800 GPM END SUCTION HORIZONTAL BASE MTD. CENTRIFUGAL PUMPS	EA	3	$ 55,000.00	$ 165,000.00
	8	FLOW CONTROL VALVES	EA	3	$ 5,000.00	$ 15,000.00
	9	NON-SURGE VALVES	EA	3	$ 3,000.00	$ 9,000.00
	10	BLEED VALVES	EA	3	$ 2,500.00	$ 7,500.00
	11	FILTER SEPARATORS	EA	3	$ 50,000.00	$ 150,000.00
	12	LEAK DETECTION SYSTEM CONTROLLER, INCL FEEDER TO PROBES	EA	3	$ 15,000.00	$ 45,000.00
	13	LEAK DETECTION PROBES, DOUBLE WALL	EA	6	$ 500.00	$ 3,000.00
	14	LEAK DETECTION SYSTEM, AUTOMATIC TANK GAUGES	EA	3	$ 1,500.00	$ 4,500.00
	15	CONTROL ROOM BUILDING (PEMB)	SF	5,375	$ 110.00	$ 591,250.00
	16	PIPE CONNECTIONS & OFF-LOAD STAND	LS	1	$ 150,000.00	$ 150,000.00
	17	UNDERGROUND PIPING	ALLOW	1	$ 200,000.00	$ 200,000.00
	18	ABOVEGROUND PIPING	ALLOW	1	$ 150,000.00	$ 150,000.00
	19	DEMOLITION AND REMOVAL OF 8 UNDERGROUND TANKS AND BUILDING	LS	1	$ 688,600.00	$ 688,600.00
	20	NEW ELECTRICAL	LS	1	$ 573,800.00	$ 573,800.00
	21	DIESEL GEN SET (277/480V, 60 Hz, 3-PH, 2681 peak kVA)	LS	1	$ 378,700.00	$ 378,700.00
	22	FOAM FIRE PROTECTION SYSTEM	LS	1	$ 241,000.00	$ 241,000.00
SITE WORK						
	P-101	PAVEMENT REMOVAL	SY	2,500	$ 10.00	$ 25,000.00
	F-162	REMOVE EXISTING FENCE	LF	600	$ 20.00	$ 12,000.00
	F-162	NEW AIRPORT PERIMETER FENCE, 10' HIGH	LF	1,300	$ 60.00	$ 78,000.00
	P-152	UNCLASSIFIED EXCAVATION FOR PAVEMENTS	CY	3,400	$ 18.00	$ 61,200.00
	P-152	UNDERCUTTING - EXCAVATION OF UNSUITABLE MATERIALS	CY	340	$ 20.00	$ 6,800.00
	P-152	TOPSOIL STRIPPING	CY	1,200	$ 4.50	$ 5,400.00
	ODOT304	CRUSHED AGGREGATE BASE COURSE - 20" DEPTH	SY	5,500	$ 17.00	$ 93,500.00
	P-401	BITUMINOUS SURFACE COURSE, ROADWAY - 3" DEPTH	TON	900	$ 70.00	$ 63,000.00
	P-403	BITUMINOUS BASE COURSE - 3" DEPTH	TON	900	$ 70.00	$ 63,000.00
	P-602	BITUMINOUS PRIME COAT	GAL	1,580	$ 3.00	$ 4,740.00
	P-603	BITUMINOUS TACK COAT	GAL	530	$ 3.00	$ 1,590.00
	D-751	NEW 18" DRAINAGE CONDUIT	LF	500	$ 60.00	$ 30,000.00
	D-751	NEW DRAINAGE STRUCTURE	EA	4	$ 19,000.00	$ 76,000.00
	T-901	SEEDING	AC	3	$ 2,000.00	$ 6,000.00
	T-905	TOPSOIL	CY	1,200	$ 4.00	$ 4,800.00
	T-908	MULCHING	AC	3	$ 1,500.00	$ 4,500.00

Assumptions:
1- Each tank will sit on a 50x50x3 mat foundation/slab and will have a 48"H containment curb.
2- Control building is to be a slab on grade pre-engineered metal building with limited heating and electrical.
3- Piping & connection allowances have each been increased by $50,000 each from the 1/17/14 C&S estimate to account for inflation and change in location.
5- Items 19-22 were inflated from the C&S estimate at 3.5% over 4 years.
7- Undercutting: Assumed 10% unsuitable materials, based on Unclassified Excavation quantity.
8- Minimal grade change in the area will be required, entire unpaved area shall be stripped of the top 4" topsoil and respread, seeded, and mulched.

SUBTOTAL	$ 7,152,918
25% Contingency	$ 1,788,229
8% Engineering Design	$ 715,292
8% Construction Phase Professional Services	$ 715,292
Environmental Investigation/Mitigation	$ 50,000
5% Utility Relocations	$ 447,057
TOTAL	$ 10,868,788

Rickenbacker International Airport
Columbus, Ohio

Michael Baker INTERNATIONAL

Project #: 55

October 2018

Project Description:

Rehabilitate Runway 5L-23R, Widen to 200' Wide, Construct 40' Wide Shoulders, and Extend Blast Pads At Each End (MOS Improvements, Phase 3)

LINE NO.	ITEM	DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	TOTAL
1	MC-001	MOBILIZATION	LS	1	$ 1,798,791.00	$ 1,798,791.00
2	MC-003	SAFETY AND SECURITY	LS	1	$ 899,395.50	$ 899,395.50
3	P-101	PAVEMENT REMOVAL	SY	80,100	$ 10.00	$ 801,000.00
4	P-101	BITUMINOUS PAVEMENT MILLING, 4" DEPTH	SY	198,400	$ 2.00	$ 396,800.00
5	P-152	UNCLASSIFIED EXCAVATION	CY	223,200	$ 18.00	$ 4,017,600.00
6	P-152	TOPSOIL STRIPPING	CY	24,900	$ 4.50	$ 112,050.00
7	P-152	UNDERCUTTING - EXCAVATION OF UNSUITABLE MATERIALS	CY	22,320	$ 20.00	$ 446,400.00
8	P-156	FILTER SOCK	LF	25,900	$ 6.00	$ 155,400.00
9	P-209	CRUSHED AGGREGATE BASE COURSE - 16" DEPTH	SY	66,200	$ 23.00	$ 1,522,600.00
10	P-209	CRUSHED AGGREGATE BASE COURSE - 20" DEPTH	SY	130,700	$ 28.00	$ 3,659,600.00
11	P-401	BITUMINOUS SURFACE COURSE - 3" DEPTH	TON	21,900	$ 105.00	$ 2,299,500.00
12	P-401	BITUMINOUS SURFACE COURSE - 4" DEPTH	TON	58,800	$ 105.00	$ 6,174,000.00
13	P-403	BITUMINOUS BASE COURSE - 3" DEPTH	TON	21,900	$ 70.00	$ 1,533,000.00
14	P-403	BITUMINOUS BASE COURSE - 12" DEPTH	TON	44,100	$ 70.00	$ 3,087,000.00
15	P-602	BITUMINOUS PRIME COAT	GAL	59,200	$ 3.00	$ 177,600.00
16	P-603	BITUMINOUS TACK COAT	GAL	39,700	$ 3.00	$ 119,100.00
17	P-620	TEMPORARY PAVEMENT MARKING, HALF APPLICATION, WITHOUT GLASS BEADS	SF	150,000	$ 1.00	$ 150,000.00
18	P-620	PERMANENT PAVEMENT MARKING, WITH GLASS BEADS	SF	150,000	$ 2.00	$ 300,000.00
19	D-701	NEW 36" REINFORCED CONCRETE PIPE, CLASS IV	LF	6,500	$ 400.00	$ 2,600,000.00
20	D-705	PIPE UNDERDRAIN FOR AIRPORTS, 6" PERFORATED	LF	25,900	$ 26.00	$ 673,400.00
21	D-751	NEW AIRFIELD DRAINAGE STRUCTURE	EA	7	$ 19,000.00	$ 133,000.00
22	D-751	NEW MANHOLE	EA	7	$ 21,000.00	$ 147,000.00
23	D-752	NEW UNDERDRAIN CLEANOUT	EA	30	$ 1,400.00	$ 42,000.00
24	T-901	SEEDING	AC	44	$ 2,000.00	$ 88,000.00
25	T-905	TOPSOIL	CY	24,900	$ 4.00	$ 99,600.00
26	T-908	MULCHING	AC	44	$ 1,500.00	$ 66,000.00
27	L-100	LIGHT/CAN/CIRCUIT/SIGN REMOVAL	EA	148	$ 400.00	$ 59,200.00
28	L-125	NEW LIGHT WITH CAN AND CIRCUIT	EA	148	$ 5,000.00	$ 740,000.00
29	L-125	BLAST PAD MARKING AND LIGHTING	LS	1	$ 50,000.00	$ 50,000.00
30	L-126	NEW AIRFIELD GUIDANCE SIGN	EA	12	$ 15,000.00	$ 180,000.00
31	L-880	REMOVE EXISTING AND INSTALL NEW PAPI	EA	2	$ 75,000.00	$ 150,000.00

Assumptions:

1- Full depth excavation for pavement sections and 1 foot depth excavation for grading, 75 feet wide on both sides of Runway.
2- Topsoil Stripping: 4 inch depth, 75 feet width both sides of Runway.
3- Undercutting: Assumed 10% unsuitable materials, based on Unclassified Excavation quantity.
4- Filter sock is full length of the Runway on both sides.
5- Pipe underdrains are full length of the Runway on both sides.
6- Drainage Structures/Manholes: one at each infield and each blast pad area. Aircraft rated.
7- 36" Reinforced Concrete Pipe: based on 25% length of underdrains.
8- Underdrain Cleanouts: every 1,000 feet.
9- Seeding, Mulching, and Topsoil are equal to Topsoil Stripping area. Topsoil is 4 inch depth.
10- In discussions with CRAA and PCI values from the latest PMP, it was discussed that Runway 5L-23R was in need of a partial reconstruction and rehabilitation project to enable safe conditions until the full rehabilitation occurs. That work is shown as Project #65, whereas this project includes the widening of Runway 5L-23R to 200', construction of new shoulders, and extension of the blast pads.

SUBTOTAL	$	32,678,037
25% Contingency	$	8,169,509
8% Engineering Design	$	3,267,804
8% Construction Phase Professional Services	$	3,267,804
Environmental Investigation/Mitigation	$	25,000
TOTAL	$	47,408,153

Rickenbacker International Airport
Columbus, Ohio

Michael Baker INTERNATIONAL

Project #: 57

October 2018

Project Description:

Construct Airport Viewing Area

LINE NO.	ITEM	DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	TOTAL
1	MC-001	MOBILIZATION	LS	1	$ 16,485.00	$ 16,485.00
2	MC-003	SAFETY AND SECURITY	LS	1	$ 8,242.50	$ 8,242.50
3	P-152	TOPSOIL STRIPPING	CY	1,700	$ 4.50	$ 7,650.00
4	P-152	SITE GRADING	SY	14,700	$ 5.00	$ 73,500.00
5	P-156	FILTER SOCK	LF	800	$ 6.00	$ 4,800.00
6	F-162	REMOVE EXISTING AIRFIELD PERIMETER FENCE	LF	1,100	$ 20.00	$ 22,000.00
7	F-162	NEW AIRPORT PERIMETER FENCE - 10' HIGH	LF	1,600	$ 60.00	$ 96,000.00
8	T-900	LANDSCAPING	LS	1	$ 50,000.00	$ 50,000.00
9	T-901	SEEDING	AC	4	$ 2,000.00	$ 8,000.00
10	T-905	TOPSOIL	CY	1,700	$ 4.00	$ 6,800.00
11	T-908	MULCHING	AC	4	$ 1,500.00	$ 6,000.00

SUBTOTAL	$	299,478
25% Contingency	$	74,869
8% Engineering Design	$	29,948
8% Construction Phase Professional Services	$	29,948
Environmental Investigation/Mitigation	$	10,000
5% Utility Relocations	$	18,717
TOTAL	$	462,960

Assumptions:

1- Topsoil Stripping: Park area, 4 inch depth.

2- Filter sock along perimeter of site.

3- Seeding, Mulching, and Topsoil are equal to Topsoil Stripping area. Topsoil is 4 inch depth.

4- No environmental investigation/mitigation anticipated, however this project will result a change to the ALP and NEPA will be considered

Rickenbacker International Airport
Columbus, Ohio

Michael Baker INTERNATIONAL

Project #: 58

October 2018

Project Description:

General Aviation Facility Expansion - Phase 1

LINE NO.	ITEM	DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	TOTAL
1	MC-001	MOBILIZATION	LS	1	$ 118,972.20	$ 118,972.20
2	MC-003	SAFETY AND SECURITY	LS	1	$ 59,486.10	$ 59,486.10
3	B-018	12-UNIT T-HANGAR	EA	1	$ 500,000.00	$ 500,000.00
4	P-101	PAVEMENT REMOVAL	SY	8,600	$ 10.00	$ 86,000.00
5	P-152	UNCLASSIFIED EXCAVATION	CY	7,900	$ 18.00	$ 142,200.00
6	P-152	TOPSOIL STRIPPING	CY	1,900	$ 4.50	$ 8,550.00
7	P-152	UNDERCUTTING - EXCAVATION OF UNSUITABLE MATERIALS	CY	790	$ 20.00	$ 15,800.00
8	P-156	FILTER SOCK	LF	3,100	$ 6.00	$ 18,600.00
9	P-209	CRUSHED AGGREGATE BASE COURSE - 10" DEPTH	SY	9,800	$ 14.00	$ 137,200.00
10	ODOT304	CRUSHED AGGREGATE BASE COURSE - 20" DEPTH	SY	1,600	$ 17.00	$ 27,200.00
11	P-401	BITUMINOUS SURFACE COURSE - 3" DEPTH	TON	1,900	$ 105.00	$ 199,500.00
12	P-403	BITUMINOUS BASE COURSE - 3" DEPTH	TON	300	$ 70.00	$ 21,000.00
13	P-403	BITUMINOUS BASE COURSE - 5" DEPTH	TON	2,800	$ 70.00	$ 196,000.00
14	P-602	BITUMINOUS PRIME COAT	GAL	3,420	$ 3.00	$ 10,260.00
15	P-603	BITUMINOUS TACK COAT	GAL	1,140	$ 3.00	$ 3,420.00
16	P-620	TEMPORARY PAVEMENT MARKING, HALF APPLICATION, WITHOUT GLASS BEADS	SF	700	$ 1.00	$ 700.00
17	P-620	PERMANENT PAVEMENT MARKING, WITH GLASS BEADS	SF	700	$ 2.00	$ 1,400.00
18	F-162	NEW AIRPORT PERIMETER FENCE, 10' HIGH	LF	2,274	$ 60.00	$ 136,440.00
19	D-701	NEW 36" REINFORCED CONCRETE PIPE, CLASS IV	LF	700	$ 400.00	$ 280,000.00
20	D-705	PIPE UNDERDRAIN FOR AIRPORTS, 6" PERFORATED	LF	2,500	$ 26.00	$ 65,000.00
21	D-751	NEW AIRFIELD DRAINAGE STRUCTURE	EA	3	$ 19,000.00	$ 57,000.00
22	D-751	NEW MANHOLE	EA	3	$ 21,000.00	$ 63,000.00
23	D-752	NEW UNDERDRAIN CLEANOUT	EA	3	$ 1,400.00	$ 4,200.00
24	T-901	SEEDING	AC	2	$ 2,000.00	$ 4,000.00
25	T-905	TOPSOIL	CY	600	$ 4.00	$ 2,400.00
26	T-908	MULCHING	AC	2	$ 1,500.00	$ 3,000.00

SUBTOTAL	$	2,161,328
25% Contingency	$	540,332
8% Engineering Design	$	216,133
8% Construction Phase Professional Services	$	216,133
Environmental Investigation/Mitigation	$	50,000
5% Utility Relocations	$	135,083
TOTAL	$	3,319,009

Assumptions:

1- 12-Unit T-Hangar cost includes concrete floor.
2- Full depth excavation for pavement sections and 1 foot depth for grading, 20 feet around perimeter.
3- Topsoil Stripping: 4 inch depth, 20 feet width around perimeter and at pavement areas.
4- Undercutting: Assumed 10% unsuitable materials, based on Unclassified Excavation quantity.
5- Filter sock is along the general perimeter.
6- Pipe underdrains are along the edge of the new pavement.
7- 36" Reinforced Concrete Pipe: based on 25% length of underdrains.
8- Underdrain Cleanouts: every 1,000 feet.
9- Seeding, Mulching, and Topsoil are equal to 20 feet wide grading area. Topsoil is 4 inch depth.

Rickenbacker International Airport
Columbus, Ohio

Michael Baker INTERNATIONAL

Project #: 59

October 2018

Project Description:

Remove Buildings 1090, 1091, 1092 and Replace with New ACT

LINE NO.	ITEM	DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	TOTAL
1	MC-001	MOBILIZATION	LS	1	$ 1,903,333.80	$ 1,903,333.80
2	MC-003	SAFETY AND SECURITY	LS	1	$ 951,666.90	$ 951,666.90
3	B-006	BUILDING 1090 REMOVAL	CF	787,900	$ 0.40	$ 315,160.00
4	B-007	BUILDING 1090 FOUNDATION REMOVAL	SY	3,700	$ 12.00	$ 44,400.00
5	B-008	BUILDING 1091 REMOVAL	CF	645,100	$ 0.40	$ 258,040.00
6	B-009	BUILDING 1091 FOUNDATION REMOVAL	SY	3,000	$ 12.00	$ 36,000.00
7	B-010	BUILDING 1092 REMOVAL	CF	645,100	$ 0.40	$ 258,040.00
8	B-011	BUILDING 1092 FOUNDATION REMOVAL	SY	3,000	$ 12.00	$ 36,000.00
9	B-001	NEW ACT BUILDING	SF	200,000	$ 120.00	$ 24,000,000.00
10	P-152	UNCLASSIFIED EXCAVATION	CY	48,200	$ 18.00	$ 867,600.00
11	P-152	TOPSOIL STRIPPING	CY	7,300	$ 4.50	$ 32,850.00
12	P-152	UNDERCUTTING - EXCAVATION OF UNSUITABLE MATERIALS	CY	4,820	$ 20.00	$ 96,400.00
13	P-156	FILTER SOCK	LF	4,100	$ 6.00	$ 24,600.00
14	P-209	CRUSHED AGGREGATE BASE COURSE - 12" DEPTH	SY	40,600	$ 17.00	$ 690,200.00
15	ODOT304	CRUSHED AGGREGATE BASE COURSE - 20" DEPTH	SY	29,300	$ 17.00	$ 498,100.00
16	P-401	BITUMINOUS SURFACE COURSE, ROADWAY - 3" DEPTH	TON	4,900	$ 70.00	$ 343,000.00
17	P-403	BITUMINOUS BASE COURSE - 3" DEPTH	TON	4,900	$ 70.00	$ 343,000.00
18	P-501	PORTLAND CEMENT CONCRETE PAVEMENT - 12" DEPTH	SY	22,400	$ 70.00	$ 1,568,000.00
19	P-501	PORTLAND CEMENT CONCRETE PAVEMENT - 20" DEPTH	SY	18,200	$ 100.00	$ 1,820,000.00
20	P-602	BITUMINOUS PRIME COAT	GAL	8,800	$ 3.00	$ 26,400.00
21	P-603	BITUMINOUS TACK COAT	GAL	3,000	$ 3.00	$ 9,000.00
22	P-620	TEMPORARY PAVEMENT MARKING, HALF APPLICATION, WITHOUT GLASS BEADS	SF	4,000	$ 1.00	$ 4,000.00
23	P-620	PERMANENT PAVEMENT MARKING, WITH GLASS BEADS	SF	4,000	$ 2.00	$ 8,000.00
24	D-701	NEW 36" REINFORCED CONCRETE PIPE, CLASS IV	LF	700	$ 400.00	$ 280,000.00
25	D-705	PIPE UNDERDRAIN FOR AIRPORTS, 6" PERFORATED	LF	2,600	$ 26.00	$ 67,600.00
26	D-751	NEW AIRFIELD DRAINAGE STRUCTURE	EA	2	$ 19,000.00	$ 38,000.00
27	D-751	NEW MANHOLE	EA	2	$ 21,000.00	$ 42,000.00
28	D-752	NEW UNDERDRAIN CLEANOUT	EA	5	$ 1,400.00	$ 6,440.00
29	T-901	SEEDING	AC	2	$ 2,000.00	$ 4,000.00
30	T-905	TOPSOIL	CY	600	$ 4.00	$ 2,400.00
31	T-908	MULCHING	AC	2	$ 1,500.00	$ 3,000.00

Assumptions:

1- New ACT Building unit cost includes foundation slab.
2- Full depth excavation for pavement sections and 1 foot depth excavation for grading, 20 feet wide at areas to remain as turf.
3- Undercutting: Assumed 10% unsuitable materials, based on Unclassified Excavation quantity.
4- Pipe underdrains are along edges of new pavement.
5- Seeding, Mulching, and Topsoil are equal to Topsoil Stripping area.
6- 36" Reinforced Concrete Pipe: based on 25% length of underdrains.
7- Drainage Structures/Manholes: Aircraft rated.

SUBTOTAL	$	34,577,231
25% Contingency	$	8,644,308
8% Engineering Design	$	3,457,723
8% Construction Phase Professional Services	$	3,457,723
Environmental Investigation/Mitigation	$	659,000
5% Utility Relocations	$	2,161,077
TOTAL	$	52,957,061

Rickenbacker International Airport
Columbus, Ohio

Michael Baker INTERNATIONAL

Project #: 60

October 2018

Project Description:

Construct New Parallel Taxiway A

LINE NO.	ITEM	DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	TOTAL
1	MC-001	MOBILIZATION	LS	1	$ 1,551,690.00	$ 1,551,690.00
2	MC-003	SAFETY AND SECURITY	LS	1	$ 775,845.00	$ 775,845.00
3	P-101	PAVEMENT REMOVAL	SY	69,500	$ 10.00	$ 695,000.00
4	P-152	UNCLASSIFIED EXCAVATION	CY	222,800	$ 18.00	$ 4,010,400.00
5	P-152	TOPSOIL STRIPPING	CY	78,200	$ 4.50	$ 351,900.00
6	P-152	UNDERCUTTING - EXCAVATION OF UNSUITABLE MATERIALS	CY	22,280	$ 20.00	$ 445,600.00
7	P-156	FILTER SOCK	LF	25,400	$ 6.00	$ 152,400.00
8	P-209	CRUSHED AGGREGATE BASE COURSE - 16" DEPTH	SY	111,100	$ 23.00	$ 2,555,300.00
9	P-209	CRUSHED AGGREGATE BASE COURSE - 20" DEPTH	SY	80,400	$ 28.00	$ 2,251,200.00
10	P-401	BITUMINOUS SURFACE COURSE - 3" DEPTH	TON	13,400	$ 105.00	$ 1,407,000.00
11	P-401	BITUMINOUS SURFACE COURSE - 4" DEPTH	TON	24,700	$ 105.00	$ 2,593,500.00
12	P-403	BITUMINOUS BASE COURSE - 3" DEPTH	TON	13,400	$ 70.00	$ 938,000.00
13	P-403	BITUMINOUS BASE COURSE - 12" DEPTH	TON	74,100	$ 70.00	$ 5,187,000.00
14	P-602	BITUMINOUS PRIME COAT	GAL	57,500	$ 3.00	$ 172,500.00
15	P-603	BITUMINOUS TACK COAT	GAL	19,300	$ 3.00	$ 57,900.00
16	P-620	TEMPORARY PAVEMENT MARKING, HALF APPLICATION, WITHOUT GLASS BEADS	SF	38,000	$ 1.00	$ 38,000.00
17	P-620	PERMANENT PAVEMENT MARKING, WITH GLASS BEADS	SF	38,000	$ 2.00	$ 76,000.00
18	D-701	NEW 36" REINFORCED CONCRETE PIPE, CLASS IV	LF	6,100	$ 400.00	$ 2,440,000.00
19	D-705	PIPE UNDERDRAIN FOR AIRPORTS, 6" PERFORATED	LF	24,100	$ 26.00	$ 626,600.00
20	D-751	NEW AIRFIELD DRAINAGE STRUCTURE	EA	7	$ 19,000.00	$ 133,000.00
21	D-751	NEW MANHOLE	EA	7	$ 21,000.00	$ 147,000.00
22	D-752	NEW UNDERDRAIN CLEANOUT	EA	25	$ 1,400.00	$ 35,000.00
23	T-901	SEEDING	AC	130	$ 2,000.00	$ 260,000.00
24	T-905	TOPSOIL	CY	65,800	$ 4.00	$ 263,200.00
25	T-908	MULCHING	AC	130	$ 1,500.00	$ 195,000.00
26	L-125	NEW LIGHT WITH CAN AND CIRCUIT	EA	130	$ 5,000.00	$ 650,000.00
27	L-126	NEW AIRFIELD GUIDANCE SIGN	EA	12	$ 15,000.00	$ 180,000.00

Assumptions:

1- Full depth excavation for pavement sections and 1 foot depth excavation for grading at infields on both sides of new Taxiway.
2- Topsoil Stripping: 4 inch depth at infields on both sides of new Taxiway and at new pavement areas.
3- Undercutting: Assumed 10% unsuitable materials, based on Unclassified Excavation quantity.
4- Filter sock is full length of the Taxiway on both sides.
5- Pipe underdrains are full length of the Taxiway on both sides.
6- Drainage Structures and Manholes: one at each infield. Aircraft rated.
7- 36" Reinforced Concrete Pipe: based on 25% length of underdrains.
8- Underdrain Cleanouts: every 1,000 feet.
9- Seeding, Mulching, and Topsoil are equal to 75 feet wide Topsoil Stripping area. Topsoil is 4 inch depth.

SUBTOTAL	$	28,189,035
25% Contingency	$	7,047,259
8% Engineering Design	$	2,818,904
8% Construction Phase Professional Services	$	2,818,904
Environmental Investigation/Mitigation	$	90,000
5% Utility Relocations	$	1,761,815
TOTAL	$	42,725,915

Rickenbacker International Airport
Columbus, Ohio
Project #: 65
Project Description:
Rickenbacker Parkway East Phase 4

Michael Baker INTERNATIONAL

October 2018

LINE NO.	ITEM	DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	TOTAL
1	MC-001	MOBILIZATION	LS	1	$ 993,672.00	$ 993,672.00
2	MC-003	SAFETY AND SECURITY	LS	1	$ 496,836.00	$ 496,836.00
3		CLEARING AND GRUBBING	AC	30	$ 2,000.00	$ 60,000.00
4	P-101	PAVEMENT REMOVAL - ROAD	SY	20,600	$ 10.00	$ 206,000.00
5	P-152	UNCLASSIFIED EXCAVATION	CY	91,600	$ 18.00	$ 1,648,800.00
6	P-152	TOPSOIL STRIPPING	CY	21,400	$ 4.50	$ 96,300.00
7	P-152	UNDERCUTTING - EXCAVATION OF UNSUITABLE MATERIALS	CY	9,160	$ 20.00	$ 183,200.00
8	P-156	FILTER SOCK	LF	33,400	$ 6.00	$ 200,400.00
9	P-156	INLET PROTECTION	EA	140	$ 200.00	$ 27,900.00
10	P-157	CEMENT	TON	1,900	$ 140.00	$ 266,000.00
11	P-157	CEMENT TREATED BASE	SY	76,800	$ 4.00	$ 307,200.00
12	ODOT304	CRUSHED AGGREGATE BASE COURSE - 20" DEPTH	SY	73,200	$ 17.00	$ 1,244,400.00
13	P-401	BITUMINOUS SURFACE COURSE, ROADWAY - 4" DEPTH	TON	16,300	$ 70.00	$ 1,141,000.00
14	P-403	BITUMINOUS BASE COURSE - 10" DEPTH	TON	40,700	$ 70.00	$ 2,849,000.00
15	P-602	BITUMINOUS PRIME COAT	GAL	22,000	$ 3.00	$ 66,000.00
16	P-603	BITUMINOUS TACK COAT	GAL	29,300	$ 3.00	$ 87,900.00
17	P-620	TEMPORARY PAVEMENT MARKING, HALF APPLICATION, WITHOUT GLASS BEADS	SF	66,700	$ 1.00	$ 66,700.00
18	P-620	PERMANENT PAVEMENT MARKING, WITH GLASS BEADS	SF	66,700	$ 2.00	$ 133,400.00
19	D-701	CURB AND GUTTER	LF	60,600	$ 12.00	$ 727,200.00
20	D-701	NEW 18" DRAINAGE CONDUIT	LF	7,600	$ 60.00	$ 456,000.00
21	D-701	NEW BOX CULVERT	LF	225	$ 2,000.00	$ 450,000.00
22	D-705	NEW UNDERDRAINS	LF	60,600	$ 26.00	$ 1,575,600.00
23	D-705	NEW UNDERDRAIN CLEANOUT	EA	122.00	$ 1,400.00	$ 170,800.00
24	D-751	NEW CATCH BASIN	EA	93	$ 19,000.00	$ 1,767,000.00
25	T-900	LANDSCAPING	LF	60,600	$ 10.00	$ 606,000.00
26	T-901	SEEDING	AC	20	$ 2,000.00	$ 40,000.00
27	T-905	TOPSOIL PLACEMENT	CY	10,300	$ 4.00	$ 41,200.00
28	T-908	MULCHING	AC	20	$ 1,500.00	$ 30,000.00
29		NEW TREE	EA	152	$ 300.00	$ 45,600.00
30		POWER SERVICE EXTENSION	LS	1	$ 50,000.00	$ 50,000.00
31		NEW STREET LIGHT CIRCUIT	LF	33,400	$ 3.00	$ 100,200.00
32		NEW LIGHT POLE, COMPLETE	EA	122	$ 5,000.00	$ 610,000.00
33		NEW 2" SCH 40 CONDUIT, DIRECT BURIED	LF	30,300	$ 8.00	$ 242,400.00
34		NEW ELECTRICAL PULL BOX	EA	100	$ 800.00	$ 80,000.00
35		MAINTENANCE OF TRAFFIC	LS	1	$ 400,000.00	$ 400,000.00
36		STREET SIGNING REVISIONS/UPGRADES	LS	1	$ 25,000.00	$ 25,000.00
37		WATERLINE EXTENSION	LF	14,000	$ 40.00	$ 560,000.00
					SUBTOTAL	$ 18,051,708

Assumptions:
1- 15,146 LF (2.8 miles), four lane road with grass median, similar to existing Rickenbacker Parkway W.
2- Full depth excavation for pavement sections and 1 foot depth excavation for grading, 20 feet off both sides of road.
3- Curb and Gutter are along the edges of the new pavement.
4- Pavement Section assumed to be 14" asphalt on 20" aggregate base.

25% Contingency	$ 4,512,927
8% Engineering Design	$ 1,805,171
8% Construction Phase Professional Services	$ 1,805,171
Right of Way Acquisition	$ 5,405,100
Environmental Investigation/Mitigation	$ 915,000
5% Utility Relocations	$ 1,128,232
TOTAL	$ 33,623,308

Rickenbacker International Airport
Columbus, Ohio

Project #: 67
Project Description:
Construct New SRE Building

October 2018

LINE NO.	ITEM	DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	TOTAL
1	MC-001	MOBILIZATION	LS	1	$ 184,200.00	$ 184,200.00
2	MC-003	SAFETY AND SECURITY	LS	1	$ 92,100.00	$ 92,100.00
3	B-026	NEW SRE STORAGE BUILDING	SF	24,400	$ 89.00	$ 2,171,600.00
4	P-101	PAVEMENT REMOVAL	SY	7,200	$ 10.00	$ 72,000.00
5	P-152	UNCLASSIFIED EXCAVATION	CY	5,500	$ 18.00	$ 99,000.00
6	P-152	UNDERCUTTING - EXCAVATION OF UNSUITABLE MATERIALS	CY	550	$ 20.00	$ 11,000.00
7	P-156	FILTER SOCK	LF	500	$ 6.00	$ 3,000.00
8	P-209	CRUSHED AGGREGATE BASE COURSE - 12" DEPTH	SY	8,200	$ 17.00	$ 139,400.00
9	P-501	PORTLAND CEMENT CONCRETE PAVEMENT - 12" DEPTH	SY	8,200	$ 70.00	$ 574,000.00

SUBTOTAL	$	3,346,300
25% Contingency	$	836,575
8% Engineering Design	$	334,630
8% Construction Phase Professional Services	$	334,630
Environmental Investigation/Mitigation	$	189,000
5% Utility Relocations	$	209,144
TOTAL	$	5,250,279

Assumptions:
1- Full depth excavation for pavement sections.
2- Undercutting: Assumed 10% unsuitable materials, based on Unclassified Excavation quantity.
3- Filter sock is along the general perimeter.
4- Cost of building includes new foundation and concrete slab.

Rickenbacker International Airport
Columbus, Ohio

Michael Baker INTERNATIONAL

Project #: 68

October 2018

Project Description:

Construct Northeast ACT Facilities Phase 1

LINE NO.	ITEM	DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	TOTAL
1	MC-001	MOBILIZATION	LS	1	$ 2,387,154.00	$ 2,387,154.00
2	MC-003	SAFETY AND SECURITY	LS	1	$ 1,193,577.00	$ 1,193,577.00
3	B-001	NEW ACT BUILDING	SF	200,000	$ 120.00	$ 24,000,000.00
4	P-152	UNCLASSIFIED EXCAVATION	CY	103,700	$ 18.00	$ 1,866,600.00
5	P-152	TOPSOIL STRIPPING	CY	16,700	$ 4.50	$ 75,150.00
6	P-152	UNDERCUTTING - EXCAVATION OF UNSUITABLE MATERIALS	CY	10,370	$ 20.00	$ 207,400.00
7	P-156	FILTER SOCK	LF	6,800	$ 6.00	$ 40,800.00
8	P-209	CRUSHED AGGREGATE BASE COURSE - 12" DEPTH	SY	13,300	$ 17.00	$ 226,100.00
9	P-209	CRUSHED AGGREGATE BASE COURSE - 20" DEPTH	SY	70,300	$ 28.00	$ 1,968,400.00
10	ODOT304	CRUSHED AGGREGATE BASE COURSE - 20" DEPTH	SY	26,500	$ 17.00	$ 450,500.00
11	P-401	BITUMINOUS SURFACE COURSE, ROADWAY - 3" DEPTH	TON	4,500	$ 70.00	$ 315,000.00
12	P-403	BITUMINOUS BASE COURSE - 3" DEPTH	TON	4,500	$ 70.00	$ 315,000.00
13	P-501	PORTLAND CEMENT CONCRETE PAVEMENT - 12" DEPTH	SY	13,300	$ 70.00	$ 931,000.00
14	P-501	PORTLAND CEMENT CONCRETE PAVEMENT - 20" DEPTH	SY	70,300	$ 100.00	$ 7,030,000.00
15	P-602	BITUMINOUS PRIME COAT	GAL	7,950	$ 3.00	$ 23,850.00
16	P-603	BITUMINOUS TACK COAT	GAL	2,700	$ 3.00	$ 8,100.00
17	P-620	TEMPORARY PAVEMENT MARKING, HALF APPLICATION, WITHOUT GLASS BEADS	SF	17,000	$ 1.00	$ 17,000.00
18	P-620	PERMANENT PAVEMENT MARKING, WITH GLASS BEADS	SF	17,000	$ 2.00	$ 34,000.00
19	F-162	REMOVE EXISTING AIRFIELD PERIMETER FENCE	LF	1,500	$ 20.00	$ 30,000.00
20	F-162	NEW AIRPORT PERIMETER FENCE - 10' HIGH	LF	1,100	$ 60.00	$ 66,000.00
21	D-701	NEW 36" RCP, CLASS IV	LF	1,800	$ 400.00	$ 720,000.00
22	D-701	NEW DUAL 48" PIPES FOR GLYCOL SYSTEM	LF	1,050	$ 1,000.00	$ 1,050,000.00
23	D-705	PIPE UNDERDRAIN FOR AIRPORTS, 6" PERFORATED	LF	7,200	$ 26.00	$ 187,200.00
24	D-751	NEW AIRFIELD DRAINAGE STRUCTURE	EA	4	$ 19,000.00	$ 76,000.00
25	D-751	NEW MANHOLE	EA	4	$ 21,000.00	$ 84,000.00
26	D-752	NEW UNDERDRAIN CLEANOUT	EA	8	$ 1,400.00	$ 11,200.00
27	T-901	SEEDING	AC	10	$ 2,000.00	$ 20,000.00
28	T-905	TOPSOIL	CY	4,400	$ 4.00	$ 17,600.00
29	T-908	MULCHING	AC	10	$ 1,500.00	$ 15,000.00

Assumptions:

1- Full depth excavation for pavement sections and 1 foot depth excavation for grading, 50 feet around perimeter.
2- Topsoil Stripping: 4 inch depth, 50 feet width around perimeter.
3- Undercutting: Assumed 10% unsuitable materials, based on Unclassified Excavation quantity.
4- Filter sock is along the general perimeter.
5- Pipe underdrains are along the edge of the new pavement.
6- Drainage Structures and Manholes: 1 for apron, 1 for parking lot, 2 for road. Aircraft rated.
7- 36" Reinforced Concrete Pipe: based on 25% length of underdrains.
8- Underdrain Cleanouts: every 1,000 feet.
9- Seeding, Mulching, and Topsoil are equal to Topsoil Stripping area. Topsoil is 4 inch depth.

SUBTOTAL	$	43,366,631
25% Contingency	$	10,841,658
8% Engineering Design	$	4,336,663
8% Construction Phase Professional Services	$	4,336,663
Environmental Investigation/Mitigation	$	550,000
5% Utility Relocations	$	2,710,414
TOTAL	$	66,142,029

Rickenbacker International Airport
Columbus, Ohio

Michael Baker INTERNATIONAL

Project #: 69

October 2018

Project Description:

Demolish Building 1004 and Associated Pavement

LINE NO.	ITEM	DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	TOTAL
1	MC-001	MOBILIZATION	LS	1	$ 57,300.00	$ 57,300.00
2	MC-003	SAFETY AND SECURITY	LS	1	$ 28,650.00	$ 28,650.00
3	P-101	PAVEMENT REMOVAL	SY	23,000	$ 10.00	$ 230,000.00
4	P-152	UNCLASSIFIED EXCAVATION	CY	15,500	$ 18.00	$ 279,000.00
5	P-152	TOPSOIL STRIPPING	CY	2,400	$ 4.50	$ 10,800.00
6	P-152	UNDERCUTTING - EXCAVATION OF UNSUITABLE MATERIALS	CY	1,550	$ 20.00	$ 31,000.00
7	P-156	FILTER SOCK	LF	4,500	$ 6.00	$ 27,000.00
8	B-002	BUILDING 1004 REMOVAL	CF	510,500	$ 0.40	$ 204,200.00
9	B-003	BUILDING 1004 FOUNDATION REMOVAL	SY	2,400	$ 12.00	$ 28,800.00
10	F-162	NEW AIRPORT PERIMETER FENCE - 10' HIGH	LF	300	$ 60.00	$ 18,000.00
11	T-901	SEEDING	AC	30	$ 2,000.00	$ 60,000.00
12	T-905	TOPSOIL	CY	5,300	$ 4.00	$ 21,200.00
13	T-908	MULCHING	AC	30	$ 1,500.00	$ 45,000.00

SUBTOTAL	$	1,040,950
25% Contingency	$	260,238
8% Engineering Design	$	104,095
8% Construction Phase Professional Services	$	104,095
Environmental Investigation/Mitigation	$	50,000
5% Utility Relocations	$	65,059
TOTAL	$	1,624,437

Assumptions:

1- Unclassified Excavation at pavement and foundation removal areas along with a 50 foot wide perimeter, 1 foot depth.

2- Topsoil Stripping: 50 feet outside all edges of site, 4 inch depth.

3- Undercutting: Assumed 10% unsuitable materials, based on Unclassified Excavation quantity.

4- Filter sock along perimeter of site.

5- Seeding, Mulching, and Topsoil are equal to Topsoil Stripping area. Topsoil is 4 inch depth.

Rickenbacker International Airport
Columbus, Ohio

Michael Baker INTERNATIONAL

Project #: 70
October 2018

Project Description:
Runway 5R DME Replacement

LINE NO.	ITEM	DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	TOTAL
1	MC-001	MOBILIZATION	LS	1	$ 12,600.00	$ 12,600.00
2	MC-003	SAFETY AND SECURITY	LS	1	$ 6,300.00	$ 6,300.00
3		NEW DISTANCE MEASURING EQUIPMENT (DME)	LS	1	$ 200,000.00	$ 200,000.00
4		FAA FLIGHT CHECK	ALLOW	1	$ 10,000.00	$ 10,000.00

SUBTOTAL	$	228,900
25% Contingency	$	57,225
8% Engineering Design	$	22,890
8% Construction Phase Professional Services	$	22,890
5% Utility Relocations	$	14,306
TOTAL	$	346,211

Assumptions:
1- Replacement equipment to be installed at same location on new foundations.
2- Replacement power and control to the site not included.

Rickenbacker International Airport
Columbus, Ohio

Michael Baker INTERNATIONAL

Project #: 72

October 2018

Project Description:

General Aviation Facility Expansion - Phase 2

LINE NO.	ITEM	DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	TOTAL
1	MC-001	MOBILIZATION	LS	1	$ 61,487.40	$ 61,487.40
2	MC-003	SAFETY AND SECURITY	LS	1	$ 30,743.70	$ 30,743.70
3	B-018	12-UNIT T-HANGAR	EA	1	$ 500,000.00	$ 500,000.00
4	P-152	UNCLASSIFIED EXCAVATION	CY	2,800	$ 18.00	$ 50,400.00
5	P-152	TOPSOIL STRIPPING	CY	700	$ 4.50	$ 3,150.00
6	P-152	UNDERCUTTING - EXCAVATION OF UNSUITABLE MATERIALS	CY	280	$ 20.00	$ 5,600.00
7	P-156	FILTER SOCK	LF	500	$ 6.00	$ 3,000.00
8	P-209	CRUSHED AGGREGATE BASE COURSE - 10" DEPTH	SY	5,200	$ 14.00	$ 72,800.00
9	P-401	BITUMINOUS SURFACE COURSE - 3" DEPTH	TON	900	$ 105.00	$ 94,500.00
10	P-403	BITUMINOUS BASE COURSE - 5" DEPTH	TON	1,500	$ 70.00	$ 105,000.00
11	P-602	BITUMINOUS PRIME COAT	GAL	1,560	$ 3.00	$ 4,680.00
12	P-603	BITUMINOUS TACK COAT	GAL	520	$ 3.00	$ 1,560.00
13	P-620	TEMPORARY PAVEMENT MARKING, HALF APPLICATION, WITHOUT GLASS BEADS	SF	200	$ 1.00	$ 200.00
14	P-620	PERMANENT PAVEMENT MARKING, WITH GLASS BEADS	SF	200	$ 2.00	$ 400.00
15	D-701	NEW 36" REINFORCED CONCRETE PIPE, CLASS IV	LF	200	$ 400.00	$ 80,000.00
16	D-705	PIPE UNDERDRAIN FOR AIRPORTS, 6" PERFORATED	LF	700	$ 26.00	$ 18,200.00
17	D-751	NEW AIRFIELD DRAINAGE STRUCTURE	EA	2	$ 19,000.00	$ 38,000.00
18	D-751	NEW MANHOLE	EA	2	$ 21,000.00	$ 42,000.00
19	D-752	NEW UNDERDRAIN CLEANOUT	EA	1	$ 1,400.00	$ 1,400.00
20	T-901	SEEDING	AC	1	$ 2,000.00	$ 2,000.00
21	T-905	TOPSOIL	CY	100	$ 4.00	$ 400.00
22	T-908	MULCHING	AC	1	$ 1,500.00	$ 1,500.00

SUBTOTAL	$	1,117,021
25% Contingency	$	279,255
8% Engineering Design	$	111,702
8% Construction Phase Professional Services	$	111,702
Environmental Investigation/Mitigation	$	30,000
5% Utility Relocations	$	69,814
TOTAL	$	1,719,494

Assumptions:

1- 12-Unit T-Hangar cost includes concrete floor.
2- Full depth excavation for pavement sections and 1 foot depth excavation for grading, 20 feet around perimeter.
3- Topsoil Stripping: 4 inch depth, 20 feet width around perimeter and at pavement areas.
4- Undercutting: Assumed 10% unsuitable materials, based on Unclassified Excavation quantity.
5- Filter sock is along the general perimeter.
6- Pipe underdrains are along the edge of the new pavement.
7- 36" Reinforced Concrete Pipe: based on 25% length of underdrains.
8- Underdrain Cleanouts: every 1,000 feet.
9- Seeding, Mulching, and Topsoil are equal to 20 feet wide grading area. Topsoil is 4 inch depth.

Rickenbacker International Airport
Columbus, Ohio

Michael Baker INTERNATIONAL

Project #: 73
October 2018

Project Description:
Runway 5R PC-RVR Replacement

LINE NO.	ITEM	DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	TOTAL
1	MC-001	MOBILIZATION	LS	1	$ 18,600.00	$ 18,600.00
2	MC-003	SAFETY AND SECURITY	LS	1	$ 9,300.00	$ 9,300.00
3		NEW RUNWAY VISUAL RANGE (RVR)	LS	1	$ 300,000.00	$ 300,000.00
4		FAA FLIGHT CHECK	ALLOW	1	$ 10,000.00	$ 10,000.00

SUBTOTAL	$	337,900
25% Contingency	$	84,475
8% Engineering Design	$	33,790
8% Construction Phase Professional Services	$	33,790
5% Utility Relocations	$	21,119
TOTAL	$	511,074

Assumptions:
1- Replacement equipment to be installed at same location on new foundations.
2- Replacement power and control to the site not included.

Rickenbacker International Airport
Columbus, Ohio

Michael Baker INTERNATIONAL

Project #: 75
October 2018

Project Description:
Runway 23L PAPI Replacement

LINE NO.	ITEM	DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	TOTAL
1	MC-001	MOBILIZATION	LS	1	$ 3,000.00	$ 3,000.00
2	MC-003	SAFETY AND SECURITY	LS	1	$ 1,500.00	$ 1,500.00
3	L-880	NEW 4-BOX L-880A(L) PAPI, FURNISHED AND INSTALLED	LS	1	$ 40,000.00	$ 40,000.00
4		FAA FLIGHT CHECK	ALLOW	1	$ 10,000.00	$ 10,000.00

SUBTOTAL	$	54,500
25% Contingency	$	13,625
8% Engineering Design	$	5,450
8% Construction Phase Professional Services	$	5,450
5% Utility Relocations	$	3,406
TOTAL	$	82,431

Assumptions:
1- Replacement equipment to be installed at same location on new foundations.
2- Replacement power and control to the site not included.

Rickenbacker International Airport
Columbus, Ohio

Michael Baker INTERNATIONAL

Project #: 77

October 2018

Project Description:

Construct Northeast ACT Facilities Phase 2

LINE NO.	ITEM	DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	TOTAL
1	MC-001	MOBILIZATION	LS	1	$ 2,376,675.00	$ 2,376,675.00
2	MC-003	SAFETY AND SECURITY	LS	1	$ 1,188,337.50	$ 1,188,337.50
3	B-001	NEW ACT BUILDING	SF	200,000	$ 120.00	$ 24,000,000.00
4	P-101	PAVEMENT REMOVAL - ROAD	SY	4,900	$ 10.00	$ 49,000.00
5	P-152	UNCLASSIFIED EXCAVATION	CY	101,700	$ 18.00	$ 1,830,600.00
6	P-152	TOPSOIL STRIPPING	CY	15,300	$ 4.50	$ 68,850.00
7	P-152	UNDERCUTTING - EXCAVATION OF UNSUITABLE MATERIALS	CY	10,170	$ 20.00	$ 203,400.00
8	P-156	FILTER SOCK	LF	4,500	$ 6.00	$ 27,000.00
9	P-209	CRUSHED AGGREGATE BASE COURSE - 12" DEPTH	SY	20,200	$ 17.00	$ 343,400.00
10	P-209	CRUSHED AGGREGATE BASE COURSE - 20" DEPTH	SY	68,700	$ 28.00	$ 1,923,600.00
11	ODOT304	CRUSHED AGGREGATE BASE COURSE - 20" DEPTH	SY	27,600	$ 17.00	$ 469,200.00
12	P-401	BITUMINOUS SURFACE COURSE, ROADWAY - 3" DEPTH	TON	4,600	$ 70.00	$ 322,000.00
13	P-403	BITUMINOUS BASE COURSE - 3" DEPTH	TON	4,600	$ 70.00	$ 322,000.00
14	P-501	PORTLAND CEMENT CONCRETE PAVEMENT - 12" DEPTH	SY	20,200	$ 70.00	$ 1,414,000.00
15	P-501	PORTLAND CEMENT CONCRETE PAVEMENT - 20" DEPTH	SY	68,700	$ 100.00	$ 6,870,000.00
16	P-602	BITUMINOUS PRIME COAT	GAL	8,300	$ 3.00	$ 24,900.00
17	P-603	BITUMINOUS TACK COAT	GAL	2,800	$ 3.00	$ 8,400.00
18	P-620	TEMPORARY PAVEMENT MARKING, HALF APPLICATION, WITHOUT GLASS BEADS	SF	12,000	$ 1.00	$ 12,000.00
19	P-620	PERMANENT PAVEMENT MARKING, WITH GLASS BEADS	SF	12,000	$ 2.00	$ 24,000.00
20	F-162	REMOVE EXISTING AIRFIELD PERIMETER FENCE	LF	700	$ 20.00	$ 14,000.00
21	F-162	NEW AIRPORT PERIMETER FENCE - 10' HIGH	LF	2,100	$ 60.00	$ 126,000.00
22	D-701	NEW 36" RCP, CLASS IV	LF	700	$ 400.00	$ 280,000.00
23	D-701	NEW DUAL 48" PIPES FOR GLYCOL SYSTEM	LF	1,100	$ 1,000.00	$ 1,100,000.00
24	D-705	PIPE UNDERDRAIN FOR AIRPORTS, 6" PERFORATED	LF	2,600	$ 26.00	$ 67,600.00
25	D-751	NEW AIRFIELD DRAINAGE STRUCTURE	EA	2	$ 19,000.00	$ 38,000.00
26	D-751	NEW MANHOLE	EA	2	$ 21,000.00	$ 42,000.00
27	D-752	NEW UNDERDRAIN CLEANOUT	EA	3	$ 1,400.00	$ 4,200.00
28	T-901	SEEDING	AC	5	$ 2,000.00	$ 10,000.00
29	T-905	TOPSOIL	CY	2,400	$ 4.00	$ 9,600.00
30	T-908	MULCHING	AC	5	$ 1,500.00	$ 7,500.00

Assumptions:
1- New ACT Building unit cost includes foundation slab.
2- Full depth excavation for pavement sections and 1 foot depth excavation for grading, 50 feet around perimeter.
3- Topsoil Stripping: 4 inch depth, 50 feet width around perimeter.
4- Undercutting: Assumed 10% unsuitable materials, based on Unclassified Excavation quantity.
5- Pipe underdrains are along the edge of the new pavement.
6- Drainage Structures and Manholes: 1 for apron, 1 for parking lot. Aircraft rated.
7- 36" Reinforced Concrete Pipe: based on 25% length of underdrains.
8- Underdrain Cleanouts: every 1,000 feet.
9- Seeding, Mulching, and Topsoil are equal to Topsoil Stripping area. Topsoil is 4 inch depth.

SUBTOTAL	$	43,176,263
25% Contingency	$	10,794,066
8% Engineering Design	$	4,317,626
8% Construction Phase Professional Services	$	4,317,626
Environmental Investigation/Mitigation	$	550,000
5% Utility Relocations	$	2,698,516
TOTAL	$	65,854,097

Rickenbacker International Airport
Columbus, Ohio

Michael Baker INTERNATIONAL

Project #: 78

October 2018

Project Description:

South Airfield Developments: Remove Old Outboard Parallel Runway (a.k.a. Former Assault Strip/LZ) and Other Pavements

LINE NO.	ITEM	DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	TOTAL
1	MC-001	MOBILIZATION	LS	1	$ 73,764.00	$ 73,764.00
2	MC-003	SAFETY AND SECURITY	LS	1	$ 36,882.00	$ 36,882.00
3	P-101	PAVEMENT REMOVAL	SY	67,700	$ 10.00	$ 677,000.00
4	P-152	UNCLASSIFIED EXCAVATION	CY	22,600	$ 18.00	$ 406,800.00
5	P-152	UNDERCUTTING - EXCAVATION OF UNSUITABLE MATERIALS	CY	2,260	$ 20.00	$ 45,200.00
6	T-901	SEEDING	AC	20	$ 2,000.00	$ 40,000.00
7	T-905	TOPSOIL	CY	7,600	$ 4.00	$ 30,400.00
8	T-908	MULCHING	AC	20	$ 1,500.00	$ 30,000.00

SUBTOTAL	$	1,340,046
25% Contingency	$	335,012
8% Engineering Design	$	134,005
8% Construction Phase Professional Services	$	134,005
TOTAL	$	1,943,067

Assumptions:

1- Unclassified Excavation: 1 foot depth over pavement removal area for grading.

2- Undercutting: Assumed 10% unsuitable materials, based on Unclassified Excavation quantity.

3- Seeding, Mulching, and Topsoil are equal to pavement removal areas. Topsoil is 4 inch depth.

4- Pavements being removed include: Old parallel runway a.k.a. former assault strip/LZ and other abandoned remnants of pavement which intersect the new parallel taxiway being constructed (project 86).

Rickenbacker International Airport
Columbus, Ohio

Michael Baker INTERNATIONAL

Project #: 80

October 2018

Project Description:

South Airfield Developments: Parallel Taxiway (11,860' x 75')

LINE NO.	ITEM	DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	TOTAL
1	MC-001	MOBILIZATION	LS	1	$ 1,545,357.60	$ 1,545,357.60
2	MC-003	SAFETY AND SECURITY	LS	1	$ 772,678.80	$ 772,678.80
3	P-152	UNCLASSIFIED EXCAVATION	CY	253,000	$ 18.00	$ 4,554,000.00
4	P-152	TOPSOIL STRIPPING	CY	55,600	$ 4.50	$ 250,200.00
5	P-152	UNDERCUTTING - EXCAVATION OF UNSUITABLE MATERIALS	CY	25,300	$ 20.00	$ 506,000.00
6	P-156	FILTER SOCK	LF	26,400	$ 6.00	$ 158,400.00
7	P-209	CRUSHED AGGREGATE BASE COURSE - 16" DEPTH	SY	121,800	$ 23.00	$ 2,801,400.00
8	P-209	CRUSHED AGGREGATE BASE COURSE - 20" DEPTH	SY	47,300	$ 28.00	$ 1,324,400.00
9	P-401	BITUMINOUS SURFACE COURSE - 3" DEPTH	TON	7,900	$ 105.00	$ 829,500.00
10	P-401	BITUMINOUS SURFACE COURSE - 4" DEPTH	TON	27,100	$ 105.00	$ 2,845,500.00
11	P-403	BITUMINOUS BASE COURSE - 3" DEPTH	TON	7,900	$ 70.00	$ 553,000.00
12	P-403	BITUMINOUS BASE COURSE - 12" DEPTH	TON	81,200	$ 70.00	$ 5,684,000.00
13	P-602	BITUMINOUS PRIME COAT	GAL	50,790	$ 3.00	$ 152,370.00
14	P-603	BITUMINOUS TACK COAT	GAL	16,930	$ 3.00	$ 50,790.00
15	P-620	TEMPORARY PAVEMENT MARKING, HALF APPLICATION, WITHOUT GLASS BEADS	SF	23,400	$ 1.00	$ 23,400.00
16	P-620	PERMANENT PAVEMENT MARKING, WITH GLASS BEADS	SF	23,400	$ 2.00	$ 46,800.00
17	D-701	NEW 36" RCP, CLASS IV	LF	6,900	$ 400.00	$ 2,760,000.00
18	D-705	PIPE UNDERDRAIN FOR AIRPORTS, 6" PERFORATED	LF	27,300	$ 26.00	$ 709,800.00
19	D-751	NEW AIRFIELD DRAINAGE STRUCTURE	EA	6	$ 19,000.00	$ 114,000.00
20	D-751	NEW MANHOLE	EA	6	$ 21,000.00	$ 126,000.00
21	D-752	NEW UNDERDRAIN CLEANOUT	EA	28	$ 1,400.00	$ 39,200.00
22	T-901	SEEDING	AC	100	$ 2,000.00	$ 200,000.00
23	T-905	TOPSOIL	CY	36,800	$ 4.00	$ 147,200.00
24	T-908	MULCHING	AC	100	$ 1,500.00	$ 150,000.00
25	L-125	NEW LIGHT WITH CAN AND CIRCUIT	EA	262	$ 5,000.00	$ 1,310,000.00
26	L-126	NEW AIRFIELD GUIDANCE SIGN	EA	28	$ 15,000.00	$ 420,000.00

Assumptions:

1- Full depth excavation for pavement sections and 1 foot depth excavation for grading, 150 feet each side of new Taxiway.
2- Topsoil Stripping: 4 inch depth, 150 feet width each side of new Taxiway and at new pavement areas.
3- Undercutting: Assumed 10% unsuitable materials, based on Unclassified Excavation quantity.
4- Filter sock is along the general perimeter.
5- Pipe underdrains are along the edge of the new pavement.
6- Drainage Structures and Manholes: 2 at each new infield. Aircraft rated.
7- 36" Reinforced Concrete Pipe: based on 25% length of underdrains.
8- Underdrain Cleanouts: every 1,000 feet.
9- Seeding, Mulching, and Topsoil are equal to 150 feet wide grading areas on each side of new Taxiway. Topsoil is 4 inch depth.

SUBTOTAL	$	28,073,996
25% Contingency	$	7,018,499
8% Engineering Design	$	2,807,400
8% Construction Phase Professional Services	$	2,807,400
Environmental Investigation/Mitigation	$	400,000
5% Utility Relocations	$	1,754,625
TOTAL	$	42,861,920

Rickenbacker International Airport
Columbus, Ohio

Michael Baker INTERNATIONAL

Project #: 82

October 2018

Project Description:

South Airfield Developments - Phase 1: New ACT and Access Road

LINE NO.	ITEM	DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	TOTAL
1	MC-001	MOBILIZATION	LS	1	$ 2,452,944.00	$ 2,452,944.00
2	MC-003	SAFETY AND SECURITY	LS	1	$ 1,226,472.00	$ 1,226,472.00
3	B-017	REMOVE BUILDING 600	LS	1	$ 20,000.00	$ 20,000.00
4	B-001	NEW ACT BUILDING	SF	200,000	$ 120.00	$ 24,000,000.00
5	P-152	UNCLASSIFIED EXCAVATION	CY	129,800	$ 18.00	$ 2,336,400.00
6	P-152	TOPSOIL STRIPPING	CY	27,800	$ 4.50	$ 125,100.00
7	P-152	UNDERCUTTING - EXCAVATION OF UNSUITABLE MATERIALS	CY	12,980	$ 20.00	$ 259,600.00
8	P-156	FILTER SOCK	LF	10,100	$ 6.00	$ 60,600.00
9	P-209	CRUSHED AGGREGATE BASE COURSE - 12" DEPTH	SY	100,900	$ 17.00	$ 1,715,300.00
10	ODOT304	CRUSHED AGGREGATE BASE COURSE - 20" DEPTH	SY	28,500	$ 17.00	$ 484,500.00
11	P-401	BITUMINOUS SURFACE COURSE, ROADWAY - 3" DEPTH	TON	4,800	$ 70.00	$ 336,000.00
12	P-403	BITUMINOUS BASE COURSE - 3" DEPTH	TON	4,800	$ 70.00	$ 336,000.00
13	P-501	PORTLAND CEMENT CONCRETE PAVEMENT - 12" DEPTH	SY	15,300	$ 70.00	$ 1,071,000.00
14	P-501	PORTLAND CEMENT CONCRETE PAVEMENT - 20" DEPTH	SY	85,600	$ 100.00	$ 8,560,000.00
15	P-602	BITUMINOUS PRIME COAT	GAL	8,600	$ 3.00	$ 25,800.00
16	P-603	BITUMINOUS TACK COAT	GAL	2,900	$ 3.00	$ 8,700.00
17	P-620	TEMPORARY PAVEMENT MARKING, HALF APPLICATION, WITHOUT GLASS BEADS	SF	4,000	$ 1.00	$ 4,000.00
18	P-620	PERMANENT PAVEMENT MARKING, WITH GLASS BEADS	SF	4,000	$ 2.00	$ 8,000.00
19	D-701	NEW 36" RCP, CLASS IV	LF	2,100	$ 400.00	$ 840,000.00
20	D-705	PIPE UNDERDRAIN FOR AIRPORTS, 6" PERFORATED	LF	8,400	$ 26.00	$ 218,400.00
21	D-751	NEW AIRFIELD DRAINAGE STRUCTURE	EA	4	$ 19,000.00	$ 76,000.00
22	D-751	NEW MANHOLE	EA	4	$ 21,000.00	$ 84,000.00
23	D-752	NEW UNDERDRAIN CLEANOUT	EA	9	$ 1,400.00	$ 12,600.00
24	T-901	SEEDING	AC	20	$ 2,000.00	$ 40,000.00
25	T-905	TOPSOIL	CY	7,600	$ 4.00	$ 30,400.00
26	T-908	MULCHING	AC	20	$ 1,500.00	$ 30,000.00
27	L-125	NEW LIGHT WITH CAN AND CIRCUIT	EA	28	$ 5,000.00	$ 140,000.00
28	L-126	NEW AIRFIELD GUIDANCE SIGN	EA	4	$ 15,000.00	$ 60,000.00

Assumptions:

1- Building 600 removal unit is Lump Sum due to small size of building.
2- New ACT Building unit cost includes foundation slab.
3- Full depth excavation for pavement sections and 1 foot depth excavation for grading, 50 feet around perimeter.
4- Topsoil Stripping: 4 inch depth, 50 feet width around perimeter and at new pavement areas.
5- Undercutting: Assumed 10% unsuitable materials, based on Unclassified Excavation quantity.
6- Filter sock is along the general perimeter.
7- Pipe underdrains are along the edge of the new pavement.
8- Drainage Structures and Manholes: at each infield/major area. Aircraft rated.
9- 36" Reinforced Concrete Pipe: based on 25% length of underdrains.
10- Underdrain Cleanouts: every 1,000 feet.

SUBTOTAL	$	44,561,816
25% Contingency	$	11,140,454
8% Engineering Design	$	4,456,182
8% Construction Phase Professional Services	$	4,456,182
Environmental Investigation/Mitigation	$	258,500
5% Utility Relocations	$	2,785,114
TOTAL	$	67,658,247

Rickenbacker International Airport
Columbus, Ohio

Michael Baker INTERNATIONAL

Project #: 83

October 2018

Project Description:

South Airfield Developments - Phase 2: New ACT

LINE NO.	ITEM	DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	TOTAL
1	MC-001	MOBILIZATION	LS	1	$ 2,394,810.00	$ 2,394,810.00
2	MC-003	SAFETY AND SECURITY	LS	1	$ 1,197,405.00	$ 1,197,405.00
3	B-001	NEW ACT BUILDING	SF	200,000	$ 120.00	$ 24,000,000.00
4	P-152	UNCLASSIFIED EXCAVATION	CY	116,200	$ 18.00	$ 2,091,600.00
5	P-152	TOPSOIL STRIPPING	CY	17,200	$ 4.50	$ 77,400.00
6	P-152	UNDERCUTTING - EXCAVATION OF UNSUITABLE MATERIALS	CY	11,620	$ 20.00	$ 232,400.00
7	P-156	FILTER SOCK	LF	5,600	$ 6.00	$ 33,600.00
8	P-209	CRUSHED AGGREGATE BASE COURSE - 12" DEPTH	SY	107,700	$ 17.00	$ 1,830,900.00
9	ODOT304	CRUSHED AGGREGATE BASE COURSE - 20" DEPTH	SY	21,200	$ 17.00	$ 360,400.00
10	P-401	BITUMINOUS SURFACE COURSE, ROADWAY - 3" DEPTH	TON	3,600	$ 70.00	$ 252,000.00
11	P-403	BITUMINOUS BASE COURSE - 3" DEPTH	TON	3,600	$ 70.00	$ 252,000.00
12	P-501	PORTLAND CEMENT CONCRETE PAVEMENT - 12" DEPTH	SY	15,000	$ 70.00	$ 1,050,000.00
13	P-501	PORTLAND CEMENT CONCRETE PAVEMENT - 20" DEPTH	SY	92,700	$ 100.00	$ 9,270,000.00
14	P-602	BITUMINOUS PRIME COAT	GAL	6,400	$ 3.00	$ 19,200.00
15	P-603	BITUMINOUS TACK COAT	GAL	2,200	$ 3.00	$ 6,600.00
16	P-620	TEMPORARY PAVEMENT MARKING, HALF APPLICATION, WITHOUT GLASS BEADS	SF	3,000	$ 1.00	$ 3,000.00
17	P-620	PERMANENT PAVEMENT MARKING, WITH GLASS BEADS	SF	3,000	$ 2.00	$ 6,000.00
18	D-701	NEW 36" RCP, CLASS IV	LF	200	$ 400.00	$ 80,000.00
19	D-705	PIPE UNDERDRAIN FOR AIRPORTS, 6" PERFORATED	LF	800	$ 26.00	$ 20,800.00
20	D-751	NEW AIRFIELD DRAINAGE STRUCTURE	EA	2	$ 19,000.00	$ 38,000.00
21	D-751	NEW MANHOLE	EA	2	$ 21,000.00	$ 42,000.00
22	D-752	NEW UNDERDRAIN CLEANOUT	EA	1	$ 1,400.00	$ 1,400.00
23	T-901	SEEDING	AC	10	$ 2,000.00	$ 20,000.00
24	T-905	TOPSOIL	CY	2,800	$ 4.00	$ 11,200.00
25	T-908	MULCHING	AC	10	$ 1,500.00	$ 15,000.00
26	L-125	NEW LIGHT WITH CAN AND CIRCUIT	EA	28	$ 5,000.00	$ 140,000.00
27	L-126	NEW AIRFIELD GUIDANCE SIGN	EA	4	$ 15,000.00	$ 60,000.00

Assumptions:

1- New ACT Building unit cost includes foundation slab.
2- Full depth excavation for pavement sections and 1 foot depth excavation for grading, 50 feet around perimeter.
3- Topsoil Stripping: 4 inch depth, 50 feet width around perimeter and at new pavement areas.
4- Undercutting: Assumed 10% unsuitable materials, based on Unclassified Excavation quantity.
5- Filter sock is along the general perimeter.
6- Pipe underdrains are along the edge of the new pavement.
7- Drainage Structures and Manholes: at each infield/major area. Aircraft rated.
8- 36" Reinforced Concrete Pipe: based on 25% length of underdrains.
9- Underdrain Cleanouts: every 1,000 feet.
10- Seeding, Mulching, and Topsoil are equal to grading area of infields.

SUBTOTAL	$	43,505,715
25% Contingency	$	10,876,429
8% Engineering Design	$	4,350,572
8% Construction Phase Professional Services	$	4,350,572
Environmental Investigation/Mitigation	$	258,500
5% Utility Relocations	$	2,719,107
TOTAL	$	66,060,894

Rickenbacker International Airport
Columbus, Ohio

Michael Baker INTERNATIONAL

Project #: 84

October 2018

Project Description:

South Airfield Developments - Phase 3: New ACT

LINE NO.	ITEM	DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	TOTAL
1	MC-001	MOBILIZATION	LS	1	$ 2,156,049.00	$ 2,156,049.00
2	MC-003	SAFETY AND SECURITY	LS	1	$ 1,078,024.50	$ 1,078,024.50
3	B-001	NEW ACT BUILDING	SF	200,000	$ 120.00	$ 24,000,000.00
4	P-152	UNCLASSIFIED EXCAVATION	CY	82,000	$ 18.00	$ 1,476,000.00
5	P-152	TOPSOIL STRIPPING	CY	58,700	$ 4.50	$ 264,150.00
6	P-152	UNDERCUTTING - EXCAVATION OF UNSUITABLE MATERIALS	CY	8,200	$ 20.00	$ 164,000.00
7	P-156	FILTER SOCK	LF	5,300	$ 6.00	$ 31,800.00
8	P-209	CRUSHED AGGREGATE BASE COURSE - 12" DEPTH	SY	74,600	$ 17.00	$ 1,268,200.00
9	ODOT304	CRUSHED AGGREGATE BASE COURSE - 20" DEPTH	SY	21,200	$ 17.00	$ 360,400.00
10	P-401	BITUMINOUS SURFACE COURSE, ROADWAY - 3" DEPTH	TON	3,600	$ 70.00	$ 252,000.00
11	P-403	BITUMINOUS BASE COURSE - 3" DEPTH	TON	3,600	$ 70.00	$ 252,000.00
12	P-501	PORTLAND CEMENT CONCRETE PAVEMENT - 12" DEPTH	SY	15,200	$ 70.00	$ 1,064,000.00
13	P-501	PORTLAND CEMENT CONCRETE PAVEMENT - 20" DEPTH	SY	59,400	$ 100.00	$ 5,940,000.00
14	P-602	BITUMINOUS PRIME COAT	GAL	6,400	$ 3.00	$ 19,200.00
15	P-603	BITUMINOUS TACK COAT	GAL	2,200	$ 3.00	$ 6,600.00
16	P-620	TEMPORARY PAVEMENT MARKING, HALF APPLICATION, WITHOUT GLASS BEADS	SF	3,000	$ 1.00	$ 3,000.00
17	P-620	PERMANENT PAVEMENT MARKING, WITH GLASS BEADS	SF	3,000	$ 2.00	$ 6,000.00
18	D-701	NEW 36" RCP, CLASS IV	LF	1,000	$ 400.00	$ 400,000.00
19	D-705	PIPE UNDERDRAIN FOR AIRPORTS, 6" PERFORATED	LF	3,900	$ 26.00	$ 101,400.00
20	D-751	NEW AIRFIELD DRAINAGE STRUCTURE	EA	2	$ 19,000.00	$ 38,000.00
21	D-751	NEW MANHOLE	EA	2	$ 21,000.00	$ 42,000.00
22	D-752	NEW UNDERDRAIN CLEANOUT	EA	4	$ 1,400.00	$ 5,600.00
23	T-901	SEEDING	AC	10	$ 2,000.00	$ 20,000.00
24	T-905	TOPSOIL	CY	1,200	$ 4.00	$ 4,800.00
25	T-908	MULCHING	AC	10	$ 1,500.00	$ 15,000.00
26	L-125	NEW LIGHT WITH CAN AND CIRCUIT	EA	28	$ 5,000.00	$ 140,000.00
27	L-126	NEW AIRFIELD GUIDANCE SIGN	EA	4	$ 15,000.00	$ 60,000.00

Assumptions:

1- New ACT Building unit cost includes foundation slab.
2- Full depth excavation for pavement sections and 1 foot depth excavation for grading, 50 feet around perimeter.
3- Topsoil Stripping: 4 inch depth, 50 feet width around perimeter and at new pavement areas.
4- Undercutting: Assumed 10% unsuitable materials, based on Unclassified Excavation quantity.
5- Filter sock is along the general perimeter.
6- Pipe underdrains are along the edge of the new pavement.
7- Drainage Structures and Manholes: at each infield/major area. Aircraft rated.
8- 36" Reinforced Concrete Pipe: based on 25% length of underdrains.
9- Underdrain Cleanouts: every 1,000 feet.
10- Seeding, Mulching, and Topsoil are equal to grading area of infields.

SUBTOTAL	$	39,168,224
25% Contingency	$	9,792,056
8% Engineering Design	$	3,916,822
8% Construction Phase Professional Services	$	3,916,822
Environmental Investigation/Mitigation	$	258,500
5% Utility Relocations	$	2,448,014
TOTAL	$	59,500,438

Rickenbacker International Airport
Columbus, Ohio

Michael Baker INTERNATIONAL

Project #: 85

October 2018

Project Description:

South Airfield Developments - Phase 4: New MRO

LINE NO.	ITEM	DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	TOTAL
1	MC-001	MOBILIZATION	LS	1	$ 2,788,011.00	$ 2,788,011.00
2	MC-003	SAFETY AND SECURITY	LS	1	$ 1,394,005.50	$ 1,394,005.50
3	MC-006	FIRE SUPPRESSION SYSTEM	LS	1	$ 100,000.00	$ 100,000.00
4	B-016	NEW MRO BUILDING	SF	220,000	$ 150.00	$ 33,000,000.00
5	P-152	UNCLASSIFIED EXCAVATION	CY	92,900	$ 18.00	$ 1,672,200.00
6	P-152	TOPSOIL STRIPPING	CY	58,700	$ 4.50	$ 264,150.00
7	P-152	UNDERCUTTING - EXCAVATION OF UNSUITABLE MATERIALS	CY	9,290	$ 20.00	$ 185,800.00
8	P-156	FILTER SOCK	LF	6,000	$ 6.00	$ 36,000.00
9	P-209	CRUSHED AGGREGATE BASE COURSE - 12" DEPTH	SY	81,900	$ 17.00	$ 1,392,300.00
10	ODOT304	CRUSHED AGGREGATE BASE COURSE - 20" DEPTH	SY	10,600	$ 17.00	$ 180,200.00
11	P-401	BITUMINOUS SURFACE COURSE, ROADWAY - 3" DEPTH	TON	1,800	$ 70.00	$ 126,000.00
12	P-403	BITUMINOUS BASE COURSE - 3" DEPTH	TON	1,800	$ 70.00	$ 126,000.00
13	P-501	PORTLAND CEMENT CONCRETE PAVEMENT - 20" DEPTH	SY	81,900	$ 100.00	$ 8,190,000.00
14	P-602	BITUMINOUS PRIME COAT	GAL	24,300	$ 3.00	$ 72,900.00
15	P-603	BITUMINOUS TACK COAT	GAL	8,100	$ 3.00	$ 24,300.00
16	P-620	TEMPORARY PAVEMENT MARKING, HALF APPLICATION, WITHOUT GLASS BEADS	SF	3,000	$ 1.00	$ 3,000.00
17	P-620	PERMANENT PAVEMENT MARKING, WITH GLASS BEADS	SF	3,000	$ 2.00	$ 6,000.00
18	D-701	NEW 36" RCP, CLASS IV	LF	1,500	$ 400.00	$ 600,000.00
19	D-705	PIPE UNDERDRAIN FOR AIRPORTS, 6" PERFORATED	LF	5,700	$ 26.00	$ 148,200.00
20	D-751	NEW AIRFIELD DRAINAGE STRUCTURE	EA	2	$ 19,000.00	$ 38,000.00
21	D-751	NEW MANHOLE	EA	2	$ 21,000.00	$ 42,000.00
22	D-752	NEW UNDERDRAIN CLEANOUT	EA	6	$ 1,400.00	$ 8,400.00
23	T-901	SEEDING	AC	10	$ 2,000.00	$ 20,000.00
24	T-905	TOPSOIL	CY	4,100	$ 4.00	$ 16,400.00
25	T-908	MULCHING	AC	10	$ 1,500.00	$ 15,000.00
26	L-125	NEW LIGHT WITH CAN AND CIRCUIT	EA	28	$ 5,000.00	$ 140,000.00
27	L-126	NEW AIRFIELD GUIDANCE SIGN	EA	4	$ 15,000.00	$ 60,000.00

Assumptions:

1- Full depth excavation for pavement sections and 1 foot depth excavation for grading, 50 feet around perimeter.
2- Topsoil Stripping: 4 inch depth, 50 feet width around perimeter and at new pavement areas.
3- Undercutting: Assumed 10% unsuitable materials, based on Unclassified Excavation quantity.
4- Filter sock is along the general perimeter.
5- Pipe underdrains are along the edge of the new pavement.
6- Drainage Structures and Manholes: at each infield/major area. Aircraft rated.
7- 36" Reinforced Concrete Pipe: based on 25% length of underdrains.
8- Underdrain Cleanouts: every 1,000 feet.
9- Seeding, Mulching, and Topsoil are equal to grading area of infields. Topsoil is 4 inch depth.
10- P-501 quantity included pavement for MRO building.

SUBTOTAL	$	50,648,867
25% Contingency	$	12,662,217
8% Engineering Design	$	5,064,887
8% Construction Phase Professional Services	$	5,064,887
Environmental Investigation/Mitigation	$	258,500
5% Utility Relocations	$	3,165,554
TOTAL	$	76,864,911

Rickenbacker International Airport
Columbus, Ohio

Michael Baker INTERNATIONAL

Project #: 86

October 2018

Project Description:

General Aviation Facility Expansion - Phase 3

LINE NO.	ITEM	DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	TOTAL
1	MC-001	MOBILIZATION	LS	1	$ 198,858.00	$ 198,858.00
2	MC-003	SAFETY AND SECURITY	LS	1	$ 99,429.00	$ 99,429.00
3	B-019	100'X100' BOX HANGAR	EA	3	$ 1,000,000.00	$ 3,000,000.00
4	P-152	UNCLASSIFIED EXCAVATION	CY	2,100	$ 18.00	$ 37,800.00
5	P-152	TOPSOIL STRIPPING	CY	500	$ 4.50	$ 2,250.00
6	P-152	UNDERCUTTING - EXCAVATION OF UNSUITABLE MATERIALS	CY	210	$ 20.00	$ 4,200.00
7	P-156	FILTER SOCK	LF	400	$ 6.00	$ 2,400.00
8	ODOT304	CRUSHED AGGREGATE BASE COURSE - 20" DEPTH	SY	2,000	$ 17.00	$ 34,000.00
9	P-401	BITUMINOUS SURFACE COURSE - 3" DEPTH	TON	400	$ 105.00	$ 42,000.00
10	P-403	BITUMINOUS BASE COURSE - 3" DEPTH	TON	400	$ 70.00	$ 28,000.00
11	P-602	BITUMINOUS PRIME COAT	GAL	600	$ 3.00	$ 1,800.00
12	P-603	BITUMINOUS TACK COAT	GAL	200	$ 3.00	$ 600.00
13	P-620	TEMPORARY PAVEMENT MARKING, HALF APPLICATION, WITHOUT GLASS BEADS	SF	450	$ 1.00	$ 450.00
14	P-620	PERMANENT PAVEMENT MARKING, WITH GLASS BEADS	SF	450	$ 2.00	$ 900.00
15	F-162	REMOVE EXISTING AIRFIELD PERIMETER FENCE	LF	500	$ 20.00	$ 10,000.00
16	F-162	NEW AIRPORT PERIMETER FENCE, 10' HIGH	LF	100	$ 60.00	$ 6,000.00
17	D-701	NEW 36" RCP, CLASS IV	LF	200	$ 400.00	$ 80,000.00
18	D-705	PIPE UNDERDRAIN FOR AIRPORTS, 6" PERFORATED	LF	700	$ 26.00	$ 18,200.00
19	D-751	NEW AIRFIELD DRAINAGE STRUCTURE	EA	1	$ 19,000.00	$ 19,000.00
20	D-751	NEW MANHOLE	EA	1	$ 21,000.00	$ 21,000.00
21	D-752	NEW UNDERDRAIN CLEANOUT	EA	1	$ 1,400.00	$ 1,400.00
22	T-901	SEEDING	AC	1	$ 2,000.00	$ 2,000.00
23	T-905	TOPSOIL	CY	200	$ 4.00	$ 800.00
24	T-908	MULCHING	AC	1	$ 1,500.00	$ 1,500.00

SUBTOTAL	$	3,612,587
25% Contingency	$	903,147
8% Engineering Design	$	361,259
8% Construction Phase Professional Services	$	361,259
Environmental Investigation/Mitigation	$	30,000
5% Utility Relocations	$	225,787
TOTAL	$	5,494,038

Assumptions:

1- Full depth excavation for pavement sections and 1 foot depth excavation for grading, 20 feet around perimeter.
2- Topsoil Stripping: 4 inch depth, 20 feet width around perimeter and at pavement areas.
3- Undercutting: Assumed 10% unsuitable materials, based on Unclassified Excavation quantity.
4- Filter sock is along the general perimeter.
5- Pipe underdrains are along the edge of the new pavement.
6- 36" Reinforced Concrete Pipe: based on 25% length of underdrains.
7- Underdrain Cleanouts: every 1,000 feet.
8- Seeding, Mulching, and Topsoil are equal to 20 feet wide grading area. Topsoil is 4 inch depth.

Rickenbacker International Airport
Columbus, Ohio

Michael Baker INTERNATIONAL

Project #: 87
October 2018

Project Description:
Runway 23L Localizer Replacement

LINE NO.	ITEM	DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	TOTAL
1	MC-001	MOBILIZATION	LS	1	$ 39,300.00	$ 39,300.00
2	MC-003	SAFETY AND SECURITY	LS	1	$ 19,650.00	$ 19,650.00
3		THALES MARK 20A LOCALIZER, FURNISHED AND INSTALLED	LS	1	$ 645,000.00	$ 645,000.00
4		FAA FLIGHT CHECK	ALLOW	1	$ 10,000.00	$ 10,000.00

SUBTOTAL	$	713,950
25% Contingency	$	178,488
8% Engineering Design	$	71,395
8% Construction Phase Professional Services	$	71,395
5% Utility Relocations	$	44,622
TOTAL	$	1,079,849

Assumptions:
1- Replacement equipment to be installed at same location on new foundations.
2- Replacement power and control to the site not included.

Rickenbacker International Airport
Columbus, Ohio

Project #: 88
Project Description:
Runway 23L Glide Slope Replacement

October 2018

LINE NO.	ITEM	DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	TOTAL
1	MC-001	MOBILIZATION	LS	1	$ 39,300.00	$ 39,300.00
2	MC-003	SAFETY AND SECURITY	LS	1	$ 19,650.00	$ 19,650.00
3		THALES MARK 20A GLIDE SLOPE, FURNISHED AND INSTALLED	LS	1	$ 645,000.00	$ 645,000.00
4		FAA FLIGHT CHECK	ALLOW	1	$ 10,000.00	$ 10,000.00

SUBTOTAL	$	713,950
25% Contingency	$	178,488
8% Engineering Design	$	71,395
8% Construction Phase Professional Services	$	71,395
5% Utility Relocations	$	44,622
TOTAL	$	1,079,849

Assumptions:
1- Replacement equipment to be installed at same location on new foundations.
2- Replacement power and control to the site not included.