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**Attachment A**  
**Master Plan & ALP**  
**Scope of Services**

Middleton Municipal Airport – Morey Field  
Middleton, Wisconsin

In an effort to establish a solid plan for development of the Airport in the future, the City of Middleton, owners and operators of the Middleton Municipal Airport (Airport), along with the Wisconsin Department of Transportation Bureau of Aeronautics (BOA) and Federal Aviation Administration Chicago Airports District Office (FAA-ADO) have elected to undertake a Master Plan for the Airport. This study will address key areas of interest which have a bearing on the management and development of the Airport in the future. This Scope of Services covers the planning services and tasks associated with development of a Master Plan. This scoping document provides the following important aspects of the project:

- Background information describing the context in which the master planning effort will be accomplished;
- Areas of emphasis for this master planning effort; and
- Project scope elements, describing the actual work activities, responsibilities, and level of effort

**Background Information**

The last Master Planning efforts for Morey Airport date back to the early 1990s. A Master Plan document was completed by Ralph Burke Associates for the Morey Airplane Company in 1990. A supplemental Environmental Overview Master Plan was completed by Ricondo Associates in 1992, and a Flood Plain Impact Study was completed by Mead & Hunt in 1995. An Airport Layout Plan (ALP) was developed in 2002 by URS along with an Environmental Assessment for the reconfiguration of the airfield.

The Airport's reconfiguration project was completed in 2004. Since that time, substantial growth has occurred both on the airfield and within the surrounding area. An updated ALP was developed by Mead & Hunt to reflect the as-built conditions of the airfield following the Airport's reconfiguration. This most recent ALP has been used for airspace determinations of subsequent projects (additional hangars, localizer array, new SRE building, etc.) and has been updated numerous times to reflect the current conditions of the airfield but has never been formally signed. The ALP identifies some future improvements for hangar development on the northeast side along with modifications to the crosswind Runway 1-19, but these are not supported by any approved planning or forecasts.

The FAA recently updated their standards and requirements for an ALP within document ARP SOP 2.0, 'Standard Procedure for FAA Review and Approval of Airport Layout Plans'. In 2014, the FAA also updated airport design standards within Advisory Circular 150/5300-13A which

included significant modifications to airfield geometries, greater guidance on approach and threshold siting surfaces, and several other elements directly connected to the information to be depicted on an Airport Layout Plan. The current ALP is not consistent with either of these FAA documents or the standards and requirements thereof.

A preliminary scoping meeting was held on July 7th, 2017 with representatives from the Airport Commission, BOA and Mead & Hunt, Inc. to discuss the Master Plan scope. We understand that both the City, the BOA and the FAA desire that a comprehensive planning effort be completed to comply with current FAA guidance, Advisory Circular 150/5070-6B Change 2 for Master Plans. This effort needs to be completed prior to undertaking future projects, to ensure that future airport development occurs in a consistent and compliant manner with other future projects both on and off airport. We further understand that a new Airport Layout Plan (ALP) is also desired to reflect the recommendations and conclusions of the Master Plan, and that the new ALP should be current to FAA's SOP 2.0 standards.

To complete this effort, the following scope is proposed.

#### **Master Plan Areas of Emphasis**

From the scoping meeting and previous coordination, we understand that a priority for the City of Middleton is to evaluate the adequacy of both the primary Runway 10-28 and the crosswind Runway 1-19 to meet the runway requirements (length, orientation, wind coverage, approach capability, surface, etc...) of existing and future users. The future orientation of Runway 1-19 is also an important factor in determining how the northeast portion of the airport can be expanded.

Another item of emphasis includes identifying areas for future airport development such as additional hangars and apron space. Future hangar developments will need to find a balance between maximizing the use of limited space while providing efficient methods for snow removal and winter operations. Providing flexibility for a potentially wider mix of based aircraft should also be considered.

Other areas of focus include assessing the need for land acquisition to accommodate future development needs, evaluation of obstructions that may play a factor in future runway length and/or approach development and evaluating the long-term compatibility of areas for non-aeronautical uses on airport property such as crop farming and a solar array). The master plan and ALP will serve to quantify and address these issues in a comprehensive and proactive way.

#### **Project Scope Elements**

The following sections describe the project scope elements for this master planning effort. They are organized as follow:

1. Study Design
2. Project Management
3. Stakeholder Coordination, and Project Outreach

4. Data Collection / Inventory
5. Airports Geographic Information System (AGIS)
6. Projections of Aviation Operations
7. Facility Requirements
8. Alternatives Analysis
9. Land Use Plan & Noise Analysis
10. Financial Plan
11. Airport Layout Plan
12. Documentation
13. Additional Meetings as Requested or Required

## **1. Study Design**

The study design includes development of a comprehensive scope of services, definition of effort necessary to accomplish the work scope, and preparation of realistic work effort and cost budgets for completing the work. It also serves to organize the project planning team, which includes Mead & Hunt, the City of Middleton, the Airport Commission, and BOA so that the necessary study efforts are effectively executed, and the participant roles and responsibilities are clearly defined.

The deliverables for this element will be draft and final scope of services, project schedule, an agreed-upon project planning budget and an agreement for the proposed planning work. The scope of services, the schedule and the budget will all be detailed by study element. In addition to elements, the budget will be identified using rates by role, labor hours by task, person-trips, and reimbursable costs. An overview of the enclosed scope will be presented to the Airport commission and a follow-up meeting is proposed with the representatives from the previous July 7<sup>th</sup> meeting to incorporate any comments. The documents will then be submitted to the City and Wisconsin BOA for final review and approval.

These approved documents will form the basis of the agreement to provide professional services for this project.

## **2. Project Management**

Project management includes administrative tasks, project coordination, and communication efforts needed to complete this project. The approach combines routine and timely coordination with the Airport Commission, the City of Middleton, WisBOA, members of the project team, and others who become involved through the course of the study. The project management and coordination element includes the following tasks:

### **2.1 Project Management**

This effort includes communication among the project team for purposes of tracking the progress of the various study elements. Managing the various technical work tasks among the project team is necessary for a successful project. Project management duties will include:

- Developing and documenting the project plan
- Organizing the project team
- Launching the project activities
- Executing project activities
- Monitoring and controlling the project to achieve results
- Managing/mitigating risks and solving challenges
- Overseeing quality control efforts
- Invoicing and monitoring project budget
- Closing out the project

## 2.2 Coordination with Airport Sponsor and WisBOA

Regular monthly status briefings will take place throughout the duration of the study process. The overall project timeframe is anticipated to take 18 months from the date of contract acceptance by the City of Middleton and WisBOA. This may increase or decrease depending on the duration of FAA reviews and the extent of their comments, and additional coordination efforts would be scoped separately. These briefings will take place via a telephone call or an email between the City, Mead & Hunt and the Wisconsin BOA. These briefings will include the status of current work, upcoming meetings and work effort and discussion of any challenges in the study effort which may affect the schedule, process or budget. Mead & Hunt will continue regular attendance of the Airport Commission meetings and this will serve as a supplementary method to keep the City, Airport and Commission updated on the progress of work.

WisBOA Primary Point of Contact:

Josh Holbrook

City of Middleton (Airport) Primary Point of Contact:

Mark Opitz

Mead & Hunt Point of Contact:

Greg Stern

## 2.3 Coordination with FAA

The primary purpose of this task is to keep the FAA informed of project progress, and to help establish a consensus when FAA input or approval is necessary. The method and frequency of such coordination efforts will be established at project kickoff. This scope assumes that the WisBOA will be the primary line of communication with the FAA during the project, with the Consultant supplementing at key reviews or deliverable periods. Some critical items that will likely require a teleconference and additional coordination with the FAA include:

- Draft Inventory and Projections of Aircraft Operations (FAA approval required if varies from current TAF by FAA designated thresholds)
- Establishing the existing and future design aircraft and reference codes for the ALP.
- Runway Length Justification
- Proposed changes to Runway Protection Zones (RPZ)

This scope assumes three (3) conference calls with the WisBOA and FAA to coincide with:

- a). Projections of Operations and Critical Aircraft
- b). Runway Length Justification

c). RPZ Impacts resulting from proposed improvements (scope does not include an RPZ alternatives analysis)

Additional coordination or follow up submittals are not included and would be scoped separately.

### **3. Stakeholder Coordination, and Outreach**

Stakeholder coordination and outreach involves the work elements necessary to keep stakeholders informed of Plan progress and allow meaningful public input on master plan and ALP deliverables prior to finalization. The purpose of stakeholder coordination and outreach is to increase interaction and communication between the City of Middleton and its stakeholders, facilitate discussion of ALP elements, and garner community support and acceptance of the ALP and Master Plan report.

This project element will focus on positive communication with the public; educating the public regarding airport needs, benefits, opportunities, and project rationale; and it will provide a forum for public comments and concerns to be heard and addressed in a proactive manner. The public information and outreach process will include (1) informational workshop or presentation and (1) presentation to the City Council. Additional meetings needed during the Master Plan process will be paid as actual cost expenses.

#### **3.1 Master Plan Advisory Committee**

Mead & Hunt believes that coordinating with the City of Middleton and working with a Master Plan Advisory Committee (MPAC) will help assess the airport issues and be a vital part of the overall project. Mead & Hunt will work with the City to identify members for and establish a Master Plan Advisory Committee. This group will act as a sounding board for proposed development alternatives, as well as be a conduit for information among various interest groups throughout the community. Interaction with the City, Airport Commission, and the Master Plan Advisory Committee will be essential for the review and assessment of project information.

Draft chapters will be e-mailed to the City of Middleton's Primary Point of Contact for distribution to the various members of the Master Plan Advisory Committee. Since the resulting documents of the overall study effort will be the property of the City, it is important for the official Point of Contact to act as the final sounding board for information contained in any of the draft chapters submitted as part of the study. The City staff member identified as the Point of Contact is responsible for the final review and approval of all changes recommended by the Master Plan Advisory Committee as they pertain to the documents developed by the Consultant team. This process will streamline the overall project flow and provide for a more refined approach to the review of the various documents which will be developed (chapters, brochures, educational materials, etc.). If questions regarding comments need to be addressed, this can be accomplished by either telephone calls or email for review and clarification.

#### **3.2 Public Information Meeting**

As part of the effort to engage and inform the public, one formal opportunity for public involvement is planned. This meeting will take place during the project, at a time mutually agreed

upon between the Consultant, the WisBOA and the City of Middleton. The format for this meeting will be an open house where interested persons can view various graphics and ask questions in a very casual environment.

Mead & Hunt is responsible for preparing necessary graphics and handouts and will have two staff members available for the public information meeting. The City is responsible for advertising and placing appropriate notices to inform the public about the meeting and workshop, as well as for securing an appropriate location in which to conduct the meeting.

### **3.3 City Council or Airport Commission Meeting**

Mead & Hunt will provide (1) presentation to public officials, providing briefings on the Master Plan's progress and results. The content and format will be decided upon by the City, WisBOA and Mead & Hunt. The presentation materials and hand-outs will generally be those developed for the public information meeting.

## **4. Data Collection / Inventory**

The initial step in the inventory process will be to review previous planning, environmental, and other issue-specific studies undertaken for the City of Middleton to determine their continued validity. Federal and State aviation plans, as well as plans from airport tenants will be investigated as appropriate.

### **4.1 Plan & Report Collection and Review**

Mead & Hunt will identify and review existing airport planning documents to assist in developing a comprehensive base of information to be used in the planning process. These may include documents such as, but not limited to the following:

- previous master plans and studies
- previous NEPA documents (such as the EA completed for the airport re-development)

Mead & Hunt shall coordinate with and obtain existing CADD and GIS database information from the City of Middleton / County of Dane. Deliverables for this sub-task will include a summary list of data sources which will be included in the master plan report. Mead & Hunt shall use the collected data resource information for the various work tasks.

An inventory of existing land use, City and County master plans, zoning, and related regulations will be prepared.

### **4.2 Existing Facilities Review**

Mead & Hunt will conduct an on-site visual (“windshield”) inspection and review secondary sources to prepare a description and inventory of existing airfield and landside facilities. The site inspections and as-built facility plans will serve as the basis for the majority of the inventory information. Items to be inventoried include:

- Runways and taxiways (including pavement condition taken from previous studies)
- NAVAIDS and airfield lighting
- Apron and ramp areas
- Hangars
- Ground access, circulation, and auto parking
- Fuel facilities
- Existing and proposed uses of Airport property
- Electrical Vault
- Wind data (new data to be acquired from NOAA)
- Runway Protection Zones and Obstructions
- Airfield Drainage

#### **4.3 Environmental Overview**

The intent of this task is to collect readily available data to get an overview of sensitive environmental resources in and around the airport. Work effort includes research and review of existing environmental reports, maps, and databases showing environmental or physical attributes that may represent constraints. Data will be compiled into composite drawing(s) illustrating the constraints. This task will rely mostly on data available from existing sources, or from the Environmental Assessment completed for the Airport's 2003 redevelopment.

This scope also includes initial agency coordination with the WDNR, USCOE, USDA, Capital Area Regional Planning Commission (CARPC), and USF&WS to determine the potential for resource issues that can be considered in the planning effort. Effort will include coordination with the City/ County, resource agencies, and review of City/County Code to identify environmental constraints, including but not limited to riparian zones, wetlands, encroachments into designated habitat, migration corridors, and water and wastewater treatment. The information obtained from this task will be incorporated into the development of improvement alternatives.

Specific areas to be investigated and documented are as described below:

##### **Wetlands**

This scope will include review of existing wetland maps for the Airport property for use in the analysis of potential impacts associated with the improvements analyzed within the master plan. No field delineation will be completed as part of this work scope. The Master Plan will rely on previous delineations, National Wetland Inventory Maps and WDNR's Surface Water Data viewer.

Existing wetland delineations will also be collected for areas outside of airport property, if applicable and where available. This scope assumes that the City will assist in acquiring this information through coordination with the respective branches of government.

This scope also includes time for coordination with the U.S. Department of Agriculture – APHIS – WS to determine if there are any potential conflicts with planned Wetland Reserves or other similar programs which might include converting surrounding airport lands back to a wetland condition. The goal of this coordination is to identify any plans that might conflict with airport development needs or help favor the selection of one alternative over another.

### **Historic and Archeological**

A specific historic and archaeological study/survey will not be conducted. Preliminary coordination with historic and archaeological resource agencies will be completed to identify existing resources which have been cataloged. Assessment of the local area and/or airport environs will be included in this document as noted below.

- Highlight location where historical and archeological surveys have been conducted on airport property (and vicinity if survey was conducted by the Airport or City)
- Highlight area of potential impact if noted as such on the survey
- Preliminary historical review to determine possible eligibility for the national register of historic places.

### **Capital Area Regional Planning Commission (CARPC)**

This scope includes time for coordination with the Capital Area Regional Planning Commission to determine if there are any planned improvements within the airport environ which might conflict or otherwise impose constraints on existing or future airport development, including the Urban Service District Areas.

### **Fish, Wildlife, and Plants.**

- Literature/other review for endangered species and habitats on/near airport.
- Literature/other review for fish, wildlife, plants, habitats, and migration routes on/near airport
- Current wildlife controls – fences, mitigation, permits

### **Hazardous Materials**

USEPA and WDNR on-line data sources will be queried for known contaminated areas or hazardous waste sites on or in the vicinity of the airport. No on-site investigations are included in this scope.

### **Solid Waste**

An airport solid waste recycling plan will be developed in accordance with FAA Modernization and Reform Act of 2012 (FMRA) and the September 30, 2014 FAA Memorandum titled *Guidance on Airport Recycling, Reuse and Waste Reduction Plans*.

This effort will be conducted in coordination with the City of Middleton (Sponsor) and/or representatives from the City's contractors and tenants, including the FBO, as needed.



As specified by the FAA this effort will address the recycling, reuse, and reduction of municipal solid waste (MSW) including construction and demolition debris, compostables, and other material which can be disposed of in a non-hazardous waste landfill and excluding other types of solid waste such as hazardous waste, universal waste or industrial waste. As specified by the FAA, the scope of this task includes “all areas under direct control of the sponsor, and when applicable, areas over which the sponsor has influence.”

This plan will be developed through the following subtasks, which are aligned with the FMRA requirements and FAA guidance:

*Facility Description and Background* - The Consultant will gather, assess and describe background information about the Airport, the Airport’s current solid waste recycling, reuse, and waste reduction efforts and program performance. A facilities walk-through and interviews/discussions with City and FBO staff will be conducted to gather data for this task. City and FBO staff may be asked to provide additional data and information collected under the existing program (copies of invoices and contracts, etc.).

*Waste Audit* - The Consultant will examine records and conduct a facility walk through to identify and document the source, composition, and baseline quantity of MSW waste streams generated at the Airport. A physical waste sort will not be conducted under this task.

*Review of Recycling Feasibility* - The Consultant will research, assess and describe factors affecting the Airport’s ability to recycle and identify and describe constraints.

*Operation and Maintenance (O&M) Requirements* - The Consultant will review and describe waste handling and parties responsible for each area and waste stream.

*Review of Waste Management Contracts* - The Consultant will review and describe current contracting and funding for waste management at the Airport.

*Potential for Cost Savings or Revenue Generation* - Consultant will develop and present recycling program recommendations based on review of the preceding work and compare the cost of landfilling waste with recycling, compost or reuse.

*Plan to Minimize Solid Waste Generation* - The Consultant will develop and document the final recycling, reuse and waste reduction program recommendation(s), based on information obtained in the previous tasks. This task will:

- document the Airport’s program to recycle paper, plastic bottles and aluminum cans and plastic cups,
- present the Airport’s plan to reduce the amount of waste being disposed of in landfills,
- discuss how the Airport will track the recommendations improve performance,
- describe conditions that will trigger re-evaluation, and

- describe recommendations education and outreach to employees, tenants, and the travelling public on recycling.

Deliverables for this subtask will include a draft version of the recycling, reuse and waste reduction plan (review of which will coincide with review of the draft master plan report) and a final version of the plan (review of which will coincide with review of the final master plan report). Comments collected on the draft plan will be reviewed and edits will be incorporated into the final plan. The plan will serve as an appendix to the master plan report.

#### **4.4 User Documentation**

An essential element of a planning effort is determining user needs. This task includes obtaining the following existing information (as well as identified future needs by users):

##### *Coordination with Airport on Operations:*

Contacting the Airport or City of Middleton to obtain historic information on operations and other information they have regarding types of aircraft, etc. This would include some estimate on touch-and-go training operations, charter operations, jet operations, etc.

##### *Fuel sales*

Obtaining from Airport or City of Middleton documentation on fuel sales as another measure of the number and/or type of aircraft flying in and out of Middleton.

##### *Based Aircraft / Hangar Waiting List:*

Obtain from the Airport or City of Middleton the number and type of aircraft based at the airport. Also obtain occupancy rate of existing hangars and any waiting lists that may exist for new hangar construction.

##### *FAA TAF & TFMSC Database*

Obtain historic IFR flight plans filed to or from C29 through the FAA's Traffic Flow Management System Counts (TFMSC) database. This database can also be used to determine the origination and destination points for IFR flights only. Obtain Terminal Area Forecast (TAF) data from the FAA database.

##### *User Survey*

This task includes developing a web-based survey tool for airport users. This scope assumes that the Airport will be able to provide email contact information for users or will directly distribute the website link for the web-based survey directly to the users.

#### **4.5 Existing Facilities Summary**

The data collection and inventory effort will summarize the historical and existing facilities and conditions at the Airport as well as information and direction necessary to develop the Airport Master Plan Update. Deliverables from this Data Collection and Inventory task will include a brief summary including text and graphics pertaining to the existing facilities at the Airport along with

existing land use, zoning, environmental features, City/County Master Plans, previous planning studies, usage, etc. This summary will serve as the draft copy of the inventory chapter of the Master Plan Update.

## 5. Airports Geographic Information Systems (AGIS)

Consultant will perform field survey temporary control as only one National Geodetic Survey (NGS) control point exists), remote sensing and photogrammetry, and Airports-GIS services to create data to the FAA Airports GIS minimum standards and submitted via the FAA AGIS website. All data will be collected in the Wisconsin State Plane (Southern Zone) coordinate system. Horizontal datum will be NAD83 and vertical datum will be NAVD88. All tasks will be completed in accordance with FAA Advisory Circular (AC) 150/5300-16, 17, and 18 (current editions).

**Task 5.1 – Aerial Photography & Mapping:** The Consultant shall obtain new aerial photography of the airport and its immediately surrounding environs. This shall include digital ortho-rectified geo-referenced electronic images. The aerial imagery will be quality-controlled for acceptability and compliance with FAA 150/5300-17C requirements. Aerial image coverage will include the horizontal limits required by applicable advisory circulars. Deliverables for this task will include the following:

- Aerial Imagery Acquisition
- Geo-Reference and Create Digital Ortho Imagery
- FAR Part 77 and Threshold Siting Surface Obstruction Analysis
  - Identify obstructions to existing and potential future FAR Part 77 surfaces and threshold siting surfaces for all runway ends.
- Collect ALP mapping data
  - Tree tops, buildings, roofs, fences, gates, utility poles and towers on Airport and in approach areas.
  - Airfield spatial data available from photogrammetry and not otherwise included in the field survey. These items are expected to include airfield lights, signs, markings, runway and taxiway intersections/elements, and aprons.
  - Environmental spatial data available from photogrammetry including flora species sites, forest stand areas, and shorelines.
  - Surface transportation spatial data available from photogrammetry including bridges, driveways, parking lots, roads, railroads, sidewalks, and tunnels.
  - Above-ground utilities available from photogrammetry.

Consultant will survey control points for use as imagery ground control. Imagery control will be set, surveyed, and documented in compliance with FAA AC 150/5300-17C. This survey data and documentation will be submitted to the FAA Airports GIS website with the aerial imagery acquisition report.

Consultant will submit required data and information to NGS and FAA per 150/5300-17C.

**Task 5.2 – Airports GIS Statement of Work and Plans:** Consultant will develop and submit the required Airports GIS statement of work (SOW) and plans. The draft SOW will be submitted to FAA for review and approval prior to uploading to the FAA's Airports GIS. The project team must

also submit, via the FAA Airports GIS website, and have approved by the FAA/NGS, the following required implementation plan(s) prior to commencing fieldwork:

- Imagery/Remote Sensing Plan
- Survey and Quality Control Plan

Field survey will rely on the one existing NGS control point and temporary survey control, therefore a geodetic control plan is not necessary for this project. Consultant will submit a final report for each plan as required in respective advisory circulars.

**Task 5.3 – Field Surveys:** Consultant will conduct necessary ground surveys to support the AGIS data collection effort. The survey information will be geo-referenced to the aerial imagery and mapping data, to be used for conducting the airspace analysis, and other AGIS tasks.

Ground survey will validate runway positions and elevations for both Runway 10/28 and Runway 1/19 against existing FAA/NGS data. Profile for Runway 10/28 and Runway 1/19 will be collected at 50-foot stations. Airport Reference Point and Elevation will be validated and determined for the ultimate airport configuration. Ground survey will also validate electronic and visual airport NAVAIDS listed in Attachment A-1 in this Scope of Services. Consultant will coordinate with the Airport, City or FAA Technical Operations for access to NAVAID facilities. Survey activities will be completed and documented in compliance with FAA AC 150/5300-18B, and will be reported in the FAA Airports GIS deliverables.

**Task 5.4 – Planimetric Data Remote Sensing:** Attachment A-1 lists the planimetric features anticipated to be mapped, attributed, and submitted as part of this effort. Base map data in Airports GIS format will be provided for all feature groups captured through aerial acquisition.

**Task 5.5 – FAA Airports-GIS Airport Airspace Analysis:** An obstruction survey will be completed to the horizontal limits of applicable Obstruction Identification Surfaces (OIS). Obstruction data attributes will be collected for all safety-critical features. The Airport Airspace Analysis will be completed for Runway 10/28 to specifications associated with runways with vertical guidance, and for Runway 1/19 to specifications associated with runways without vertical guidance. Formatting of reported obstacles will meet AC 150/5300-18B specifications.

**Task 5.6 – Planimetric GIS Data Formatting and Attribution:** The Airports GIS data submission requires that many features and attributes be gathered and populated. Attachment A-1 lists the planimetric features anticipated to be mapped, attributed, and submitted as part of this effort. These features include only those required for an ALP as defined by FAA AC 150/5300-18B, Table 2-1. The purpose and intent of this Airports GIS data collection effort is to support base map data for the updated traditional paper ALP, and to upload the collected and attributed GIS data via the FAA AGIS website. The intent is not to generate an electronic ALP (eALP). Consultant will coordinate meetings with subconsultants needed to collect Airports GIS data, attributes, and mapping.

**Task 5.7 – GIS Data Submittal:** The Consultant Team will work in concert to oversee, manage, and submit the Airports GIS required submittals and data through the FAA Airports GIS website. All data collected and associated required deliverables will be submitted in the format(s) specified as outlined in the appropriate advisory circular. All data submissions to the FAA will be through the Airports-GIS website at <https://airports-gis.faa.gov/>.

**Task 5.8 – AGIS Close-Out and Final Reporting:** Consultant will generate the final report to be submitted with the Airports GIS data in accordance with AC 150/5300-18B and ensure receipt and acceptance of the obstruction survey and digital mapping data.

**Correspondence:** AGIS data collection and survey will occur throughout the early months of the planning process. The Consultant will coordinate with the City of Middleton or Airport to arrange site visits and field access for surveyors and complete the AGIS airport manager interview log.

**Deliverables:** The Consultant will provide the City and WisBOA with one (1) digital media device (DVD or hard drive) that includes the raster and vector data collected for AGIS. This information will also be stored on the FAA AGIS website, and the Authority will be able to download and distribute this information as needed. Data collected as part of AGIS will feed into other Plan elements and is described in the applicable deliverables sections.

Element 5 will provide the City with high-quality base mapping data for future planning and design work. Entry into the AGIS system. Information collected will feed into approach procedure development, asset management, and future FAA NextGen initiatives. The AGIS data will provide a foundation upon which future as-built and mapping projects can be built.

Information collected in Element 5 will be used to prepare the ALP, Airspace Plan and will inform the Master Plan document.

## 6. Projections of Aviation Demand

Development of projections of aviation demand is a key element in the planning process and is important data to be used in determining current and future Airport's needs, in assessing the environmental affects of proposed actions, and determining the economic implications of future growth and development.

Projections of short-, intermediate-, and long-term demand levels (i.e., 5-, 10-, and 20-years) will be developed. As part of this element, appropriate regional, state, and national aviation trends will be investigated. Historical aviation activity will also be analyzed for the Airport by demand component. Through interviews, user survey data, as well as Airport records and the FAA's Terminal Area Forecast (TAF), data will be obtained on activity levels, fleet mix, and based aircraft.

The following components of aviation demand will be projected for 5-, 10-, and 20-years:

- Aircraft operations
  - General aviation (local/itinerant)
  - Charter
  - Jet Operations
- Based aircraft and hangar lease areas
- Design critical aircraft and runway reference codes
- Aircraft fleet mix (based and operational)
- Air cargo volume

Projections of aviation demand will be developed using standard forecasting methodologies, such as share of the market, regression analysis, time series analysis, and trend line analysis. Results of this element will be used to determine future needs for airside, landside, and support facility components at the Airport. Methodologies used in this task will be reviewed with the Sponsor and the WisDOT BOA and FAA Airports District Office before the element is finalized. Close coordination will be maintained to ensure acceptance of the projection approach.

Deliverables associated with this task will include a report which summarizes, with appropriate graphs, charts, maps, and drawings, the methods and results of the projections of aviation demand and a comparison with the FAA Terminal Area Forecasts. Once reviewed by the City, Advisory Committee, BOA and FAA, these findings will be used as part of a chapter in the final master plan report. The forecast chapter will be delivered for review to the FAA separately in advance of the other chapters of the master plan.

## **7. Facility Requirements**

Required facilities will be identified through the inventory of existing facilities and the capacity analyses when compared to projections of aviation demand. Anticipated timing of required improvements will also be identified. FAA Advisory Circulars (AC) referenced as part of this task will include but not be limited to: AC 150/5300-13, *Airport Design*; FAR Part 77, *Objects Navigable Airspace*; and 150/5070-6B *Airport Master Plans*.

Utilizing current FAA planning criteria and the existing Wisconsin State Airport System Plan, Mead & Hunt will review the facility needs based on projected future activity and the Airport's role in the local, regional and national aviation and economic system.

A primary focus of the Facility Requirements section will be the runway needs of existing and future users. Historical data gathered from the Airport and the FAA's database sources will be analyzed to assess the types of aircraft and their associated stage lengths. Additionally, the steps outlined within Advisory Circular 5325-4B, 'Runway Length Requirements for Airport Design' will be followed and outlined to determine the resulting runway length recommended for the types and amount of traffic at the Middleton Municipal Airport (C29).

Additional Facilities to be analyzed include:

- Runway Safety Critical Areas: RSA, OFA, OFZ, etc.
- Runway Protection Zones (RPZs)
- Taxiways
- Aircraft apron areas
- FBO, corporate, and general aviation facilities
- Aircraft storage and hangar areas
- Support facilities such as maintenance, equipment storage and utilities
- Fuel farms
- Airport access and circulation
- Navigational Aids

- Approach Procedures and minimums
- Security
- Magnetic Declination and any potential changes to Runway designations
- Analysis of any potential future needs for de-icing operations

Future requirements will provide the basis for evaluating alternative development actions that might be adopted to satisfy the need for improved facilities. The facility requirements analysis for the Airport will focus on a number of specific issues that are most important to the Airport's future growth and development. The alternatives analysis will identify, review, and evaluate options for accommodating these activities in their existing location over the planning period. The objective of the facility requirements analysis will be to ensure that each of the Airport's functional aviation areas has long-term flexibility and growth potential that will enable it to respond to changing demand scenarios. Facility requirements will generally be tied to the 5-, 10-, and 20-year demand projections developed as part of this study.

Deliverables for this task will include summaries of the facility requirements for review by the City of Middleton, WisBOA, Master Plan Advisory Committee and the FAA. This summary will be included and used in formulating the corresponding chapter of the master plan.

## **8. Alternatives Analysis**

Mead & Hunt will develop and document feasible alternatives for the development of the Airport's facilities, based on the results of the previous tasks. Each of the alternatives will be graphically illustrated, as appropriate, and presented to the City, BOA and Master Plan Advisory Committee for review and consideration. These alternatives will take into consideration the long-term development of the airport, while also planning for the near-term implementation of projects.

At this time, this scope assumes the following for alternatives development:

- Three (3) alternatives for providing additional length to Runway 10-28
- Three (3) alternatives depicting an extension, reorientation and paving of the cross-wind Runway 1-19
- Four (4) alternatives for development of hangars and additional apron within an area northeast of the runway-runway intersection and associated roadway (landside) access.

Should additional alternatives be requested for the facilities identified above, or should alternatives need to be analyzed for other facility requirements, these would be scoped separately and included into the project via contract amendment.

Once reasonable development alternatives have been identified; their merits and deficiencies will be compared. Factors to be considered in the evaluation include:

- Operational Factors - Each alternative will be evaluated to determine its ability to accommodate future demand for aircraft and vehicles. This evaluation process will identify deficiencies in such areas as runway length, airfield circulation, and convenience.
- Environmental Factors – potential key environmental impacts of each development project will be identified. Categories from FAA Order 1050.1F and 5050.B that are anticipated to be impacted will be identified. This scope does not include detailed analysis of impacts, but identification of those resources that would likely be affected using data collected in Task 4.
- Implementation Feasibility - There are often certain factors, both tangible and intangible, that affect an airport's ability to implement certain development projects. These will be factored in on a qualitative basis.
- ~~Cost – An order of magnitude comparison. No detailed estimates will be conducted as part of this task.~~

A planning session will be held in person with the City, the Master Plan Advisory Committee, the Airport and WisBOA to present, review, and evaluate the alternatives. The alternatives will be evaluated according to their performance against operational, environmental, and implementation feasibility criteria. A preferred development alternative for each of the functional components will then be selected. Locational options and development needs for support facilities will be reviewed and investigated as part of this phase of the alternatives analysis. Some facilities may have a single, logical development option associated with them. For those facilities, an analysis of alternatives may not be necessary.

The alternatives analysis will result in identification of a recommended course of action for the City of Middleton (Airport) to follow over the ensuing 20-year planning period. The logic and justification for following the recommended plan will be detailed.

Deliverables for this task will include graphics and text as appropriate to summarize and document the merits of each alternative developed. This information will be presented in a working paper format which will ultimately be included in the master plan report document.

## **9. Land Use Plan & Noise Analysis**

### **9.1 Land Use Plan**

The City of Middleton's current land use plan will be reviewed to identify any potential conflicts with the recommended actions proposed from the airport master plan. Any suggested modifications to the City's existing land use plan will be documented and coordinated with the City of Middleton Planning staff. This scope will include recommendations for changes to land use plans to provide for compatible land uses, but does not include the implementation of any recommendations.



## 9.2 Noise Analysis

Noise contours will be developed using the latest version of the FAA's Aviation Environmental Design Tool (AEDT), based on the day-night noise level methodology. Noise exposure contours of 60, 65 and 70 DNL will be prepared for the existing condition and for the future 10-year build-out condition of the airport.

### *Develop AEDT Inputs*

The activity, fleet mix, day/night split, approach/departure slopes, and runway usage information required for input into the FAA's AEDT will be developed in coordination with the Airport management. This scope assumes the following information will be obtained through feedback and assistance from the Airport and City:

- Aircraft fleet mix – The FAA's TFMSC IFR flight record data, along with coordination with Airport management will be used to develop a representative aircraft type specific, operational fleet mix for use in the INM analysis
- The day/night split in regard to operations will be established through discussions with Airport Management.
- Arrival and departure flight tracks will be established in coordination with the Airport. Radar flight track will not be performed as part of this analysis.
- Approach and departure profiles/slopes will be coordinated with the Airport. AEDT standard profiles will be modified as necessary for any unique operating conditions at the airport.
- Ground Run-up operations will be established through discussions with the Airport management.
- Wind rose analysis and discussions with the Airport Management will serve as the basis to determine runway use percentages for the operational aircraft fleet mix.

### *Noise Analysis and Documentation*

Using the AEDT input information above, data runs for the existing activity and future 10-year built-out conditions will be performed. AEDT will be used to generate the 60-70 dB DNL contours (in 5 dB increments). This analysis will identify those properties within the modeled noise contours overlaid on an aerial photo, CAD basemap and/or USGS map.

Documentation of the noise analysis will be prepared. The documentation will provide the methodology, input data, results, and coordination that were conducted for the analysis. This will include narrative, tables, graphs, and a Noise Exposure Maps (NEM) and other graphics.

It is assumed that detailed and or extensive coordination with FAA will not occur, nor will mitigation model runs be included as part of this noise analysis.

## 10. Financial Plan

Development recommended for the airport will be classified into three general phases. The phases represent the short (5-year), intermediate (10-year), and long-term development (20-year)

planning periods. Particular focus will be given to detailing the short-term development projects (2018-2023) and these developments will be shown on a year to year basis. Cost estimates will be developed for the recommended facilities outlined in the master plan.

The financial feasibility of the development program will be analyzed, and a realistic financial plan will be developed. The feasibility analysis will assess the financial implications of undertaking the proposed development plans.

Financial data for the Airport, including historical revenues and expenses, will be obtained from the Airport Manager and/or City of Middleton. Existing financial obligations will also be identified by the Airport Manager and/or City of Middleton. From the data supplied by the airport, projections of future revenues and expenses will be developed. Potential funding sources for the development program, including Federal (AIP), State, and local will be analyzed. Results of the economic analysis and the development cost schedule will be integrated into the financial plan.

The output of this section will be a phased Capital Improvement Plan for the City of Middleton (Airport) and a breakdown of project cost responsibilities by funding source.

## **11. Airport Layout Plan**

The ALP set will be developed in accordance with guidelines set forth in FAA Advisory Circular 150/5300-13A – Change 1, *Airport Design*, and guidance in the *FAA ALP Review Checklist* (ARP SOP No. 2.00). Consultant will develop the ALP using planimetrics and data from the AGIS deliverables in AutoCAD. Line work from the AGIS Element will be used as the base map and existing facilities will be called out. Runway end coordinates and elevations will be updated to correspond with the AGIS survey. Data tables will be developed to reflect FAA design nomenclature. Preparation of the ALP will be based on the findings of the previous tasks and is anticipated to include preparation of the following individual drawings as noted:

- Title Sheet
- Data Sheet
- Existing Airport Layout Plan drawing
- Future Airport Layout Plan drawing
- Terminal / Building Area Drawing - West
- Terminal / Building Area Drawing - East
- Airport Airspace Drawing
- Inner Portion of Approach Surface Drawing - Runway 10 (Existing & Future)
- Inner Portion of Approach Surface Drawing - Runway 28 (Existing)
- Inner Portion of Approach Surface Drawing - Runway 1 (Existing & Future)
- Inner Portion of Approach Surface Drawing - Runway 19 (Existing & Future)
- Runway Departure Surface Drawings (assumes just Future of Runway 10/28)
- Land Use Drawing

- Airport Property Map – This sheet will be developed using information from the Airport’s current Land Inventory Map and from existing land records to be made available by the Wisconsin Bureau of Aeronautics. The sheet will not serve as an Exhibit A, and will be developed according to the checklist within FAA SOP 2.0

The Airport Layout Plan will consist of 22" x 34" sheets, containing sufficient data to obtain approval from the FAA. Mead & Hunt will submit a signed copy of the FAA ALP checklist with the ALP submittal to the FAA-ADO for airspace review. Deliverables associated with this task include draft and final ALP sets for City of Middleton and FAA-ADO review. Details on the ALP documentation (# of sets, electronic deliverables, etc.) are included in the Documentation section of this Scope of Services.

As specifically requested by the FAA in this scoping process, the ALP deliverable to the Chicago Airport District office will include 1 draft (unsigned) full size ALP with applicable narrative included with the SOP 2.0 checklist. A separate Narrative Report will not be developed as part of this scope, as it is assumed that the Master Plan will serve to document the planning and decision making to be reflected on the ALP submittal set.

## **12. Documentation**

Several types of materials will be produced to document the planning process as noted below. The report sections or chapters will be provided for WisBOA, FAA and local review, as will the draft and final documents.

### **12.1 Meeting Handouts**

Mead & Hunt will also develop graphics (boards or PowerPoint presentations) to convey the project information as necessary for the (1) City Council and (1) public information meeting, covered in Task 3.

### **12.2 Master Plan Report**

Mead & Hunt shall prepare 10 copies of a draft and final Master Plan Report which will summarize the planning process and document the findings of the elements outlined in this scope of services. This report will be written so that it can be easily understood by the general public. The format of the report will be determined through discussions with the City of Middleton but will be based on the individual sections or chapters developed in the individual technical elements of this project. The final product will include a locally adopted Master Plan report.

Anticipated sections/chapters of the master plan report include:

- Introduction
- Inventory of Facilities
- Forecasts of Aviation Demand
- Facility Requirements Analysis
- Alternative Analysis
- Preferred Alternative

- Implementation Plan
- Appendices

Electronic files of the Master Plan Update will also be provided on CD.

### **12.3 Executive Summary**

Mead & Hunt will prepare an Executive Summary of the Master Plan Update, summarizing the results of the analysis and outcome of the study. The brochure type summary is typically six to eight panels/pages, printed in full color. Twenty-five (25) copies of the Executive Summary will be printed.

### **12.4 ALP Set**

The Airport Layout Plan sets will be provided in a final draft form for FAA airspace review and local approval. It will then be published as a final document for distribution upon receipt of FAA airspace review. The documentation will include the following:

- Four (4) draft ALP sets (2 for WisBOA and 2 for Airport review)
- Six (6) final draft ALP sets (2 for Airport, 2 for WisBOA and 2 for FAA)
- Six (6) final ALP sets for FAA & Airport signature (2 for Airport, 2 for WisBOA, 2 for FAA)
- Two Disks (2) of CADD/pdf drawings of the final approved ALP

Mead & Hunt will develop a transmittal package with the required supporting documentation for FAA review. It will also include a copy of the ALP checklist as provided by the FAA-ADO prior to development of the line-drawing of the ALP set.

Preparation of these documents will be coordinated closely with the FAA-ADO, and Airport Management. Final documents will reflect appropriate responses to comments received on draft materials from all reviewing agencies. Deliverables will include an FAA-approved ALP.

### **13. Additional Meetings - Actual Cost**

Additional meetings requested by the City of Middleton or WisBOA will be billed at actual cost.