MEETING SUMMARY

RE: Air Traffic Control Tower Technical Advisory Committee Meeting #4

Date of Meeting: November 12, 2020

Project Manager: Kaci Nowicki

Time of Meeting: 8:00 a.m. – 10:00 a.m. (Central)

SEH No.: 150733 16.00

Location of Meeting: Virtual Meeting (link included at end of agenda and on meeting invite)

The following summarizes the Air Traffic Control Tower (ATCT) TAC meeting that was held online on November 12, 2020. The meeting utilized voice, video, screen share (presentation) and mentimeter (written feedback/polling) to gain feedback from TAC Members as well general discussions. The summary references slide numbers from the meeting presentation are available for download on the project website.

Attendees:

- Tom Werner – Duluth Airport Authority
- Mark Papko – Duluth Airport Authority
- Jana Kayser – Duluth Airport Authority
- Joelle Bodin – Duluth Airport Authority
- Natalie Peterson – Duluth Airport Authority
- Kaci Nowicki – SEH
- Bill King – Cirrus
- Chad Hill – FAA DLH ATCT
- Chad Ronchetti – City of Duluth
- Don Monaco – Monaco Air
- Elizabeth Hendrickson – Fly Duluth
- Eric Monson – Lake Superior Helicopter
- Jerilee Buggert – FAA DLH ATCT
- Matt Stewart – SEH
- Mike Magni – Monaco Air
- Scott Sannes – SEH
- Shawn McMahon – SEH
- Trevor Willis – Lake Superior College
- Mark Wasserbauer – 148th Fighter Wing

Meeting Summary

I. Remote Tower Concept (See slides 6-11)
   A. SEH provided a summary of a meeting held between DAA, SEH and FAA Office of NextGen. The meeting is summarized on slides 6-11.

II. Traditional Tower Siting Requirements (See slides 12-22)
   A. Siting requirements and considerations outlined in FAA Job Order (JO) 6480.4B, Airport Traffic Control Siting Process, were presented to the group. Alternatives were sited to meet the minimum requirements as outlined in this JO. It was also discussed that the FAA would conduct their own analysis and have a final say in the location and height of the tower. As with the existing tower, the future ATCT will be owned by DAA and operated by FAA.

   B. The airport can be separated into four quadrants based on the layout of the runway. Siting analysis was conducted for various alternatives. The following alternatives were presented to the group:
      1. Northeast quadrant – 148th Air National Guard Base
         a. Alternatives were not evaluated in this area due to existing 148th Air National Guard Base development, the distance from the Runway 9 end, environmental features and protected airspace surfaces.
      2. Southeast Quadrant – Commercial Service Terminal
a. Alternatives were not evaluated for this location due to the existing and future development of the commercial service terminal and the elevation challenges in the undeveloped areas of this quadrant.

b. Feedback from the DLH ATCT staff indicated that alternatives in this quadrant would make it difficult to see the approach end of Runway 9, regardless of the height of the ultimate tower.

3. Southwest quadrant (See slides 23-37)
   a. Several alternatives were evaluated in this quadrant, see Figure 1A through Figure 1L attached. Several of the alternatives at the heights proposed have building height restrictions along the midfield and tower ramps – these approximate height restrictions are noted in each figure. Note that although there are height restrictions in some areas, they may not be lower than the most probable building/hangar heights and therefore may not restrict development.

4. Northwest quadrant – North Business Development Area (NBDA) (See slides 38-42)
   a. Two alternatives were presented to the group for a ATCT site around the (NDBA). Figure 2A is located east of the ARFF station and Alternative 2B is located north of the ARFF station.
   b. Feedback from the DLH ATCT staff indicated a south facing control tower would be very challenging due to the sun glare. FAA JO 6480.4B indicates a south facing primary view is least preferred, especially in climates such as DLH where snow often accumulates.

C. A memo describing the alternatives presented with the associated figures are available on the project website.

III. Stakeholder Feedback on Alternatives

   A. Several questions were asked to the group using MentiMeter, results are attached at the end of this summary for reference.

   B. Chad R, City of Duluth, indicated that giving a one to two acre site to the control tower in the southwest quadrant is not ideal from an economic development perspective; however, he understands the challenges of a tower located in the NBDA with a southern orientation.

   C. Don M., Monaco Air, stated that an ATCT site should avoid areas that have been improved and are ready for development. An example of this is the apron area that is ready for ranch hangar development south of the fuel farm. This should not be repurposed for a tower as it has already been improved for the purposes of hangar development.

   D. Jerilee B., DLH ATCT, indicated that controllers like their existing location, however, the tower needs to be taller. She also indicated that while there may be challenges with construction phasing, new towers have been built adjacent to existing towers at other airports.

   E. Mike M, Monaco Air (FBO), expressed concern with potential construction phasing challenges with a new ATCT adjacent to or in the location of the existing ATCT. A temporary lack of ATCT services during construction would have a negative impact on military and international traffic.

   F. It was discussed that so far, the expectation is that FAA Tech Ops would be collocated within the new ATCT. However, it may be possible they could locate elsewhere on the airport.

   G. Based on the discussion, alternatives not preferred for further analysis include: 1B, 1C, 1G, 1H, 2A and 2B. Additional feedback is included in the MentiMeter results attached.

   H. Alternatives most preferred for further evaluation include: 1D, 1E, 1L and 1J. See attached MentiMeter results.

   I. Three additional locations were suggested by TAC members that could be evaluated for an ATCT site. These alternatives are included in the alternatives memo on the project website listed under ATCT TAC Meeting #4.

IV. Next steps

   A. ATCT/Taxiway TAC Meeting, Dec. 2 10 am – Building area layouts and alternatives

SEH believes that this document accurately reflects the business transacted during the meeting. If any attendee believes that there are any inconsistencies, omissions or errors in the minutes, they should notify the writer at
once. Unless objections are raised within seven (7) days, we will consider this account accurate and acceptable to all.

If there are errors contained in this document, or if relevant information has been omitted, please contact Kaci Nowicki at knowicki@sehinc.com.

c: file, attendees
s:\ae\dulu\15073331\gen\16-meet\tac - air traffic control tower\meeting #4 november 12 2020\to website\atct tac meeting #4 summary nov 12 2020 .docx
Do you support the following recommendations for the ATCT replacement?

- Strongly disagree
  - Recommend DLH not pursue a remote tower
  - Recommend DLH not pursue a hybrid tower
  - Recommend DLH pursue a brick and mortar tower

- Strongly agree
Are there any areas we considered that you feel shouldn't be carried forward?

- South of fuel farm
- I'd lean heavily on Monaco and DAA. They have the best sense of where development pressure will be.
- 1c and 1h should not be considered
- 1G or anything to the North
- 1a, 1b, 1d, and north side
- Sites to the south of the potential connector ramp between Monaco and SRE would add significant constraints to future hangar development in this area.
- Anything on the north side
Are there any areas that weren't considered that you would like evaluated?
Which three (3) control tower alternatives would you like to be evaluated further?

Alternative 1A
Alternative 1B
Alternative 1C
Alternative 1D
Alternative 1E
Alternative 1F
Alternative 1G
Alternative 1H
Alternative 1I
Alternative 1J
Alternative 1K
Alternatives 2A and 2B (north side)
Zoom Online Meeting Basics

Please mute your microphone to limit feedback noise when not talking.

You can chat with the participants in the meeting by clicking Chat.
Zoom Online Meeting Basics

How to raise your hand
Introductions

Tom Werner C.M.
Executive Director
Duluth Airport Authority
twerner@duluthairport.com

Kaci Nowicki
Project Manager/Sr. Aviation Planner
SEH
knowicki@sehinc.com
Meeting Agenda

• Share feedback from the FAA on a remote tower at DLH
• Preliminary ATCT siting analysis

Meeting Goals:
• Gather stakeholder feedback on:
  • Remote tower conversations with the NextGen Office
  • Preliminary ATCT siting analysis
Remote Tower and Hybrid Concept Update

• DAA staff and SEH met with FAA Office of NextGen
• Briefed FAA staff on DLH’s situation and goals
• FAA provided update on the remote tower program and additional information relevant to DLH.
FAA Remote Tower Update

• Multiple lines of business within FAA are involved
• Focus and efforts are on creating a path for certification. It will be a Type Certificate for an entire system.
• Currently little support for developing a path to certify only elements of a remote tower system.

• Certification of only parts of the system may be feasible in the future, but there is no current path.
FAA Remote Tower Update – Pilot Program

- 6 Sites to be included in remote tower pilot program
  - 1 and 2 in progress
  - Site 3 will be validation of concept
  - Sites 4-6 will increase in complexity in various environments
- Targeted sites are in remote tower program
- Additional considerations:
  - Only looking at Class D airspace
  - 100,000 annual operations may be the busiest they can take
  - Crossing runways are more challenging than parallel
  - This is a higher risk program – airports can go through the process and ultimately not get a certified tower at the end.
FAA Remote Tower Update

• While currently focused on Contract Tower Program, the program *could* expand to FAA towers in the future, but it will take time.

• While Europe has successfully deployed ‘center’ type facilities, the business case is easier to make in Europe than the US.

• *If* FAA considers certifying stand-alone components of a remote tower in the future, the Remote Tower Program would not be leading that effort. It is feasible other parts of the FAA *may* embrace it at some point in the future.
Military Use of Remote Towers
Feedback from 148th
Preliminary Siting Study
Air Traffic Control Siting Criteria

- Limit potential impacts on instrument approaches and their protected surfaces

- Limit impacts on potential communication, navigation and surveillance equipment

- Unobstructed view of all movement area
  - Visibility of all airport surface areas for ground operations of ramps, aprons and tie-down areas and test areas must be considered. Priority must be given to visibility of taxi lanes in non-movement areas.
Air Traffic Control Siting Criteria

• Control Tower Orientation
  • Must be orientated where the primary view faces north or alternately east, west and finally south
  • In areas where snow accumulates or the ATCT site is surrounded by sand or a large body of water, a southern orientation should be avoided.
  • Airport surfaces

• Economic considerations
  • Height, utilities, site access, etc.
  • Limit impacts to potential development and redevelopment sites

• FAA will have final say on placement and ultimate height of ATCT based on their analysis and operational requirements.
Restricted Development Areas – NE Quadrant
Restricted Development Areas – SE Quadrant
Restricted Development Areas – SW Quadrant
ATCT Development Areas – SW Quadrant
Restricted Development Areas – NW Quadrant
ATCT Development Areas – NW Quadrant
Siting Analysis Process

- LiDAR (topographic) data from 2011
  - Able to use exiting data to correct variances from exiting airfield
- Ground elevation, building elevation and vegetation
- GIS Viewshed analysis
Southwest Quadrant
Southwest Quadrant

• Benefits
  • Existing infrastructure
  • Primary view is north
  • Location – middle of airfield

• Challenges:
  • Visibility of proposed Runway 21 End
  • Existing buildings and control tower
  • Balancing tower sites with the need for aeronautical development and redevelopment.
ATCT Development Areas – SW Quadrant
Alternative 1A – Between Monaco and SRE

- Proposed Tower Cab –100’ AGL
Alternative 1A1 – Previous Master Plan Layout

- Proposed Tower Cab – 54’ AGL
Alternative 1B – Between Monaco and SRE

- Proposed Tower Cab – 85’ AGL
Alternative 1C – South of Monaco Ramp

- Proposed Tower Cab – Approximately 85’ AGL
Alternative 1D – Existing Tower Location

- Proposed Tower Cab – Approximately 85’ AGL
Alternative 1E – Existing T-Hangar and Ranch Hangar Location

- Proposed Tower Cab – Approximately 110’ AGL
Alternative 1F – North of Cargo Ramp

- Proposed Tower Cab – Approximately 120’ AGL
Alternative 1G – South Cargo Ramp

- Proposed Tower Cab – Approximately 180’ AGL
Alternative 1H – South of the Fuel Farm

• Proposed Tower Cab – Approximately 130’ AGL
Alternative 1I – Hydrosolutions Site

• Proposed Tower Cab – Approximately 110’ AGL
Alternative 1J – West of Hydrosolutions

- Proposed Tower Cab – Approximately 110’ AGL
Alternative 1K – On top of SRE Building

- Proposed Tower Cab – Approximately 130’ AGL
Northwest Quadrant
North Business Development Area
Northwest Quadrant

• Benefits:
  • Undeveloped land
  • Location – middle of airfield

• Challenges:
  • Infrastructure
  • Visibility of proposed Runway 21 end
    • MRO Facility – Approximately 100’ tall
  • Distance to Runway 9 end
  • Future MRO site development
  • Primary view is south
ATCT Development Areas – NW Quadrant
Alternative 2A – East of the ARFF Station

- Proposed Tower Cab – Approximately 100’ AGL
Alternative 2B – North of the ARFF Station

- Proposed Tower Cab – Approximately 100’ AGL
<table>
<thead>
<tr>
<th>Location</th>
<th>Approximate Cab Height (AGL)</th>
<th>Building area height restrictions</th>
<th>Meets minimum FAA Standards</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alternative 1A</td>
<td>South of the existing vault</td>
<td>100’</td>
<td>20’ to 30’</td>
</tr>
<tr>
<td>Alternative 1B</td>
<td>Aligned with the vault between Monaco and the SRE</td>
<td>85’</td>
<td>25’ to 30’</td>
</tr>
<tr>
<td>Alternative 1C</td>
<td>South of Monaco ramp along taxilane to the fuel farm</td>
<td>85’</td>
<td>20’ to 30’</td>
</tr>
<tr>
<td>Alternative 1D</td>
<td>Existing tower location</td>
<td>85’</td>
<td>30’</td>
</tr>
<tr>
<td>Alternative 1E</td>
<td>Existing ranch and t-hangar area location</td>
<td>110’</td>
<td>35’ to 40’</td>
</tr>
<tr>
<td>Alternative 1F</td>
<td>North of FedEx along tower ramp</td>
<td>120’</td>
<td>55’ to 70’</td>
</tr>
<tr>
<td>Alternative 1G</td>
<td>South of FedEx</td>
<td>180’</td>
<td>35’ to 40’</td>
</tr>
<tr>
<td>Alternative 1H</td>
<td>Immediately south of the fuel farm</td>
<td>130’</td>
<td>30’ to 55’</td>
</tr>
<tr>
<td>Alternative 1I</td>
<td>Hydrosolutions Site</td>
<td>110’</td>
<td>25’ to 55’</td>
</tr>
<tr>
<td>Alternative 1J</td>
<td>West of Hydrosolutions</td>
<td>110’</td>
<td>25’ to 55’</td>
</tr>
<tr>
<td>Alternative 1K</td>
<td>Located on top of the SRE building</td>
<td>130’</td>
<td>25’ to 30’</td>
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<td>100’</td>
<td>-</td>
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<td>100’</td>
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</table>
Are there any of these areas you feel shouldn’t be carried forward?
What’s next?

• Inclusion of ATCT location alternatives in building area alternatives.

• Taxiway/building area/ ATCT TAC meeting: Dec. 2, 2020

• Preferred selection of the site to be reserved