



**RFP NO. 320830-FY25-15
AIRPORT AIR TRAFFIC CONTROL TOWER DESIGN ENGINEERING SERVICES
LEESBURG EXECUTIVE AIRPORT
ADDENDUM NO. 2**

November 15, 2024

ITEM NO. 1: QUESTION(S) AND RESPONSE(S)

Interested offerors shall be mindful of the following response(s) to question(s) asked:

1. Is it acceptable to visit the Airport during the solicitation window?

RESPONSE: Yes. Offerors are advised not to ask Town airport personnel questions.

2. Is the Airport considered "historical" (i.e., National Register Historic Site or eligible for listing as a National Register Historic Site)?

RESPONSE: No.

3. Background section, RFP page 4 mentions that a "preferred location has been identified." Can the Town provide information on that location to assist development of the Project Approach?

RESPONSE: Refer to Item No. 2 below. A DRAFT siting study has been supplied showing Site #2 as the recommended tower site. Please note that this report is waiting on FAA to supply the Safety Risk Management Panel. Once received and added to the study, the revised siting report will be forwarded to FAA for their review and approval.

4. Background section, RFP page 4 states, "Work will involve utilization of the completed siting study and environmental approval to complete the Tower design, permitting, bidding and support during construction." Since the NEPA action will occur simultaneously with the ATCT design, are there environmental resource maps you can share for the preferred ATCT location?

RESPONSE: The Environmental Assessment must be completed before we can receive the grant funds for the Tower design and can be shared with the selected engineer as we move through the development and review process. No Environmental resource maps are available, however, you will note that the recommended site is located at the end of the terminal building and is fully within already disturbed land which is anticipated to reduce the Environmental Assessment effort.

5. Statement of Needs, RFP page 5 states, "Design to relocate existing facilities within the proposed tower location." Please detail specifically what facilities would need to be relocated and what functions would need to be replaced elsewhere.

RESPONSE: A survey has not yet been completed to identify what underground facilities may be present. Above ground facilities include a generator, security gate and fence, and other equipment which can be viewed easily from the parking lot.

6. Section C.2., RFP page 10 states, "Description of five (5) projects completed within the past ten (10) years." Does completion refer to design or design and construction?

RESPONSE: Completion of design is sufficient, completion of design and construction is preferred.

7. Should consultants plan to include construction administration and/or Resident Project Representative services within the scope of work?

RESPONSE: Construction administration was identified in the RFP as one of the potential services to be performed by the selected firm. For all of the Town's previous projects, the Town has contracted with the design engineer to supply construction administration services. The Town has utilized a separate consultant to supply the construction engineering and inspection services for previous projects and plans to do the same for the Tower project.

8. Can "completed" projects include projects for which design is complete but is still under construction or preparing to bid?

RESPONSE: Refer to the Response to Question #6 above.

9. Section 2 asks for references under qualifications and experience, and again in the bulleted list describing project examples. Are you looking for two references lists and a total of 10 references, or can the references/projects align for a total of 5?

RESPONSE: They are the same requirement, mentioned/listed twice. Offerors are to submit a minimum of five (5) similar projects/references.

10. Can more than 5 project descriptions be included?

RESPONSE: Yes.

11. Are there any sustainability goals or preferences desired with the ATCT design?

RESPONSE: Not at this time. The Town has recently identified a desire to include sustainability goals for their Capital Projects. Therefore, there will likely be some goals identified for this project during design, however, the available funding and ability to obtain grant funding will likely drive the ability to include sustainability goals.

12. Are online confirmation copies for the DPOR Registrations acceptable?

RESPONSE: Yes.

13. Do wind tunnel consultants need to provide a DPOR Registration?

RESPONSE: Yes.

14. Are online copies of professional licenses for key individuals acceptable to submit? Do they all need to be licensed in Virginia?

RESPONSE: Copies of online professional license registrations is acceptable. In accordance with Virginia state law, individuals performing engineering services must be licensed in the State of Virginia.

ITEM NO. 2: DRAFT SITING STUDY DATED SEPTEMBER 2024

The RFP is revised to incorporate the attached draft Siting Study dated September 2024 for reference.

Offerors must take due notice and be governed accordingly. This addendum must be acknowledged as indicated in the Request for Proposal or your proposal may not be considered.

***For the Town of Leesburg,
David A. Christianson, CPPB, VCA
Deputy Procurement Officer
Email: BidQuestions@leesburgva.gov
Bid Board: <http://www.leesburgva.gov/bidboard>***

END OF ADDENDUM NO. 2

Waiting to add Risk Management Report from FAA to then submit to FAA for final review and approval.

Leesburg Executive Airport (JYO)

Airport Traffic Control Tower

Siting Study

September 2024



(to be) Submitted to FAA by the Town of Leesburg Virginia



Developed by:

CTBX / A Pond Brand

In association with





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EXECUTIVE SUMMARY

The Recommended Site

Site 2 is the recommended location. It is situated on the eastern side of the airfield, north of the airport terminal and FAA building. The proposed tower is expected to have eight sides with four (4) roof support columns and a floor area of 440 square feet (excluding the stairwell). This structure can accommodate up to 4 controller positions along with a supervisor. The eye height of the cab will be 72 feet Above Ground Level (AGL) and will utilize slatwall type consoles for mounting displays and monitors. Site 2 was selected as the preferred site following the Virtual Immersive Siting Tower Assessment (VISTA) Siting Assessment Panel held on August 28, 2024. It stands out as the optimal location in terms of positioning, height, ease of construction, airfield visibility, and overall situational awareness. Site 2 fulfills all FAA VISTA siting criteria and is considered safe based on virtual reality viewing and the FAA Safety Management System. The proposed tower at this location will offer unobstructed views of all controlled airport surface areas and maximum visibility of airborne traffic. Sites 1 and 3 have been identified as acceptable backup locations, ranked as the second and third choices, respectively.

Impacts

The impacts resulting from the proposed construction of this Air Traffic Control Tower (ATCT) at Site 2 are as follows:

- No hazards were identified as a result of the FAA VISTA Siting/Safety Assessment Panel on August 28, 2024.
- There are no identified adverse effects in relation to Terminal Instrument Procedures (TERPS), impact on NAVAIDs, line of sight, Part 77, future airport development, or local weather phenomena that could compromise acceptable visibility.



Site Comparison Chart

Item Description	Site 1			Site 2 Recommended			Site 3		
	Electrical Vault			Terminal Area			West Side		
Latitude	39°04' 47.08" N			39° 04' 42.39" N			39° 04' 34.60" N		
Longitude	77° 33' 23.17" W			77° 33' 20.48" W			77° 33' 33.93" W		
Eye-Level (AGL)	75'			72'			98'		
Eye-Level (AMSL)	449'			454'			454'		
Cab Floor Level (AGL)	70'			67'			93'		
Cab Floor Level (AMSL)	444'			449'			449'		
Top of Tower (AGL)	105'			102'			128'		
Top of Tower (AMSL)	479'			484'			484'		
Surveyed Ground Level (AMSL)	374'			382'			356'		
Maximum Distance (farthest point on all runways and taxiways) & Elevation	3795' elev 387'			3300' elev 386'			3340' elev 377'		
2-Point Lateral Discrimination (Deg)	Exceeds Minimum			Exceeds Minimum			Exceeds Minimum		
Object Discrimination (Pass/Fail) Front View (Dodge Caravan)	PASS			PASS			PASS		
Object Discrimination (Pass/Fail) Front View (C-172)	PASS			PASS			PASS		
Line of Sight Angle of Incidence	0.80°			0.83°			0.81°		
ATCT Orientation Primary Direction	west			West			East		
Airport Quadrant	North			North			West		
Cab Size (floor area)	440 sf			440 sf			440 sf		
Columns/Mullions	Columns			Columns			Columns		
Console Type (traditional, slat wall)	Slat wall			Slat wall			Slat wall		
Land Area (available)	1 acre			1 acre			2 acres		
ATCT Site Accessibility (Yes or No)	Yes			Yes			No		
Tech Ops Preliminary Review Issues	None Identified			None Identified			None Identified		
TERPS Impacts	No Impacts			No Impacts			No Impacts		
14 CFR Part 77 Impacts	Penetrate 7:1 by 77'			Penetrate 7:1 by 72'			Penetrate 7:1 by 43"		
Environmental Issues	None			None			None		
ATCT Potential Impacts on Future & Existing Nav aids	No Impact			No Impact			No Impact		
Comparative Cost Estimate*	\$ 11,991,600.00			\$ 11,226,125.00			\$ 18,128,000.00		
Safety Assessment None Identified Initial Risk Ranking	L	M	H	L	M	H	L	M	H
Safety Assessment None Identified Predicted Residual Risk Ranking	L	M	H	L	M	H	L	M	H

* For comparative planning purposes. Actual costs to be based on actual design and current trends.



APPROVAL AUTHORITIES

Director of Air Traffic Services, Eastern Service Area

Director of Technical Services, Eastern Service Area

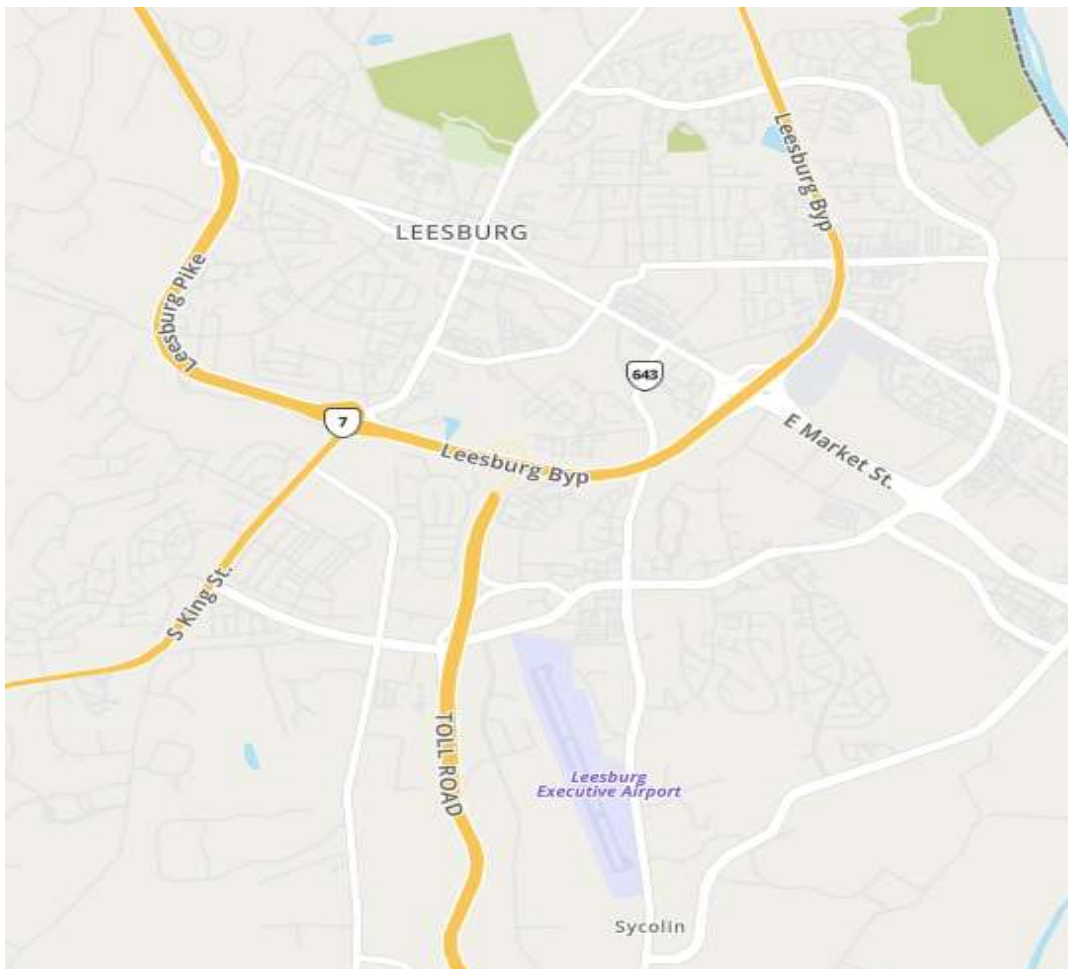
Director of Air Traffic Control Facilities, Eastern Service Area



1. BACKGROUND INFORMATION

1.1 GENERAL

The Leesburg Executive Airport (JYO) is a publicly owned airport located in the Town of Leesburg within Loudoun County, Virginia. It serves as a general aviation reliever airport for Washington Dulles International Airport (IAD), which is located approximately 10 miles northwest of JYO. Covering an area of approximately 300 acres, the airport features a single asphalt paved runway, with a proposed extension in the Master Plan that would increase its length to 6,000 feet. Since its establishment in 1963, JYO has significantly contributed to the local economy of Loudoun County. The airport is positioned roughly 3 miles to the south of the central business district of Leesburg.



Vicinity Map of Leesburg, Virginia (Map Quest - North ↑)

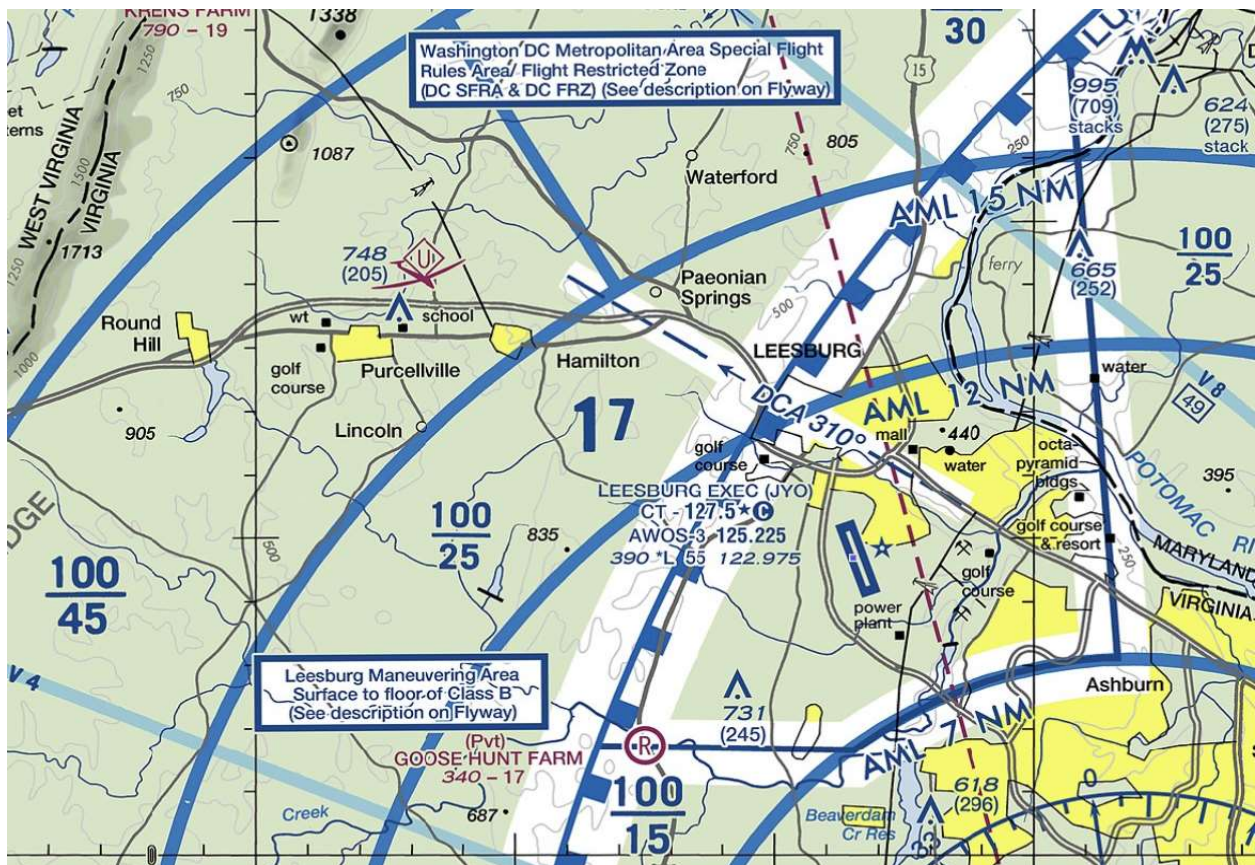
SITING REPORT
AIRPORT TRAFFIC CONTROL TOWER (ATCT)
LEESBURG EXECUTIVE AIRPORT (JYO)
LEESBURG, VIRGINIA



IAD is positioned around 10 nautical miles (nm) southeast of JYO. Manassas Regional Airport / Harry P. Davis Field (HEF) is located roughly 22 nm to the south of JYO. In addition, there are 4 other general aviation airports within a 50-nm radius of JYO.

Nearby airports with instrument procedures include:

- KIAD - Washington Dulles International Airport (9 nm SE)
- 9VA5 - Bluegrass Heliport (16 nm W)
- KGAI - Montgomery County Airpark (19 nm E)
- W50 - Davis Airport (21 nm NE)
- KHEF - Manassas Regional Airport/Harry P. Davis Field (22 nm S)



Aeronautical Sectional Chart – Leesburg / Washington D.C. Area (North ↑)

As depicted in the aeronautical chart above, JYO is shown as being a tower-controlled airport. Until recently, it was a working prototype for a Remote Digital Tower and now currently utilizes a mobile tower. A diverse range of aircraft operate from JYO, including single-engine and multi-engine piston, turboprop, and jet aircraft. The Potomac Consolidated terminal radar approach control (TRACON) provides approach and departure control services, while en-route traffic is managed by the Washington Air Route Traffic Control Center. In 2023, the total annual operations were 82,798, with



47% itinerant traffic and the other 53% local. General aviation accounted for over 98% of JYO operations, with military and air taxi operations making up the remaining 2%. According to current airport records, JYO is home to an average of 274 based aircraft, distributed as follows:

BASED AIRCRAFT AT OUN

Single Engine Piston	228	Jet	8
Multi Engine Piston	33	Helicopter	5

The airport includes fixed based operators (FBOs) which provide maintenance, fueling, and training services. Leesburg Executive Airport is acknowledged as a notable general aviation center in Virginia, and a reliever airport for the busier commercial airports in the area because of its range of services, amenities, and operational capacity.

As illustrated in the current airport layout plan (ALP) (Appendix E), there is one paved runway at the airport. Plane hangars and tie-downs remain in high demand with a closed waiting list, therefore expansion of General Aviation facilities is anticipated to continue at JYO. The master plan includes the completion of hangar development in the northeast section and southeast section, in addition to future development of the west side of the airfield.

JYO Runway Data Table

<u>Runway</u>	<u>Existing</u>	<u>Ultimate</u>
17-35	5500' X 100'	6000' X 100'

1.2 INSTRUMENT APPROACHES & LANDING AIDS

The airport is currently equipped with the following approach and landing aids:

- Instrument Landing System (ILS/DME) on Runway 17
- Localizer (LOC) – Runway 17
- Precision Approach Path Indicators (PAPI) –4 for Runways 17 & 35
- Omnidirectional approach lighting system (ODALS)– 3 for Runway 17
- Runway End Identifier Lights (REIL) –on Runway 17 & 35

The airport lighting vault is situated in the northern quadrant of the airfield close to proposed site 1 and is anticipated to remain in that location for the foreseeable future. JYO utilizes an automated weather observing system (AWOS) III-P/T located approximately 19 nautical miles east at Montgomery County Airpark (GAI). According to

SITING REPORT
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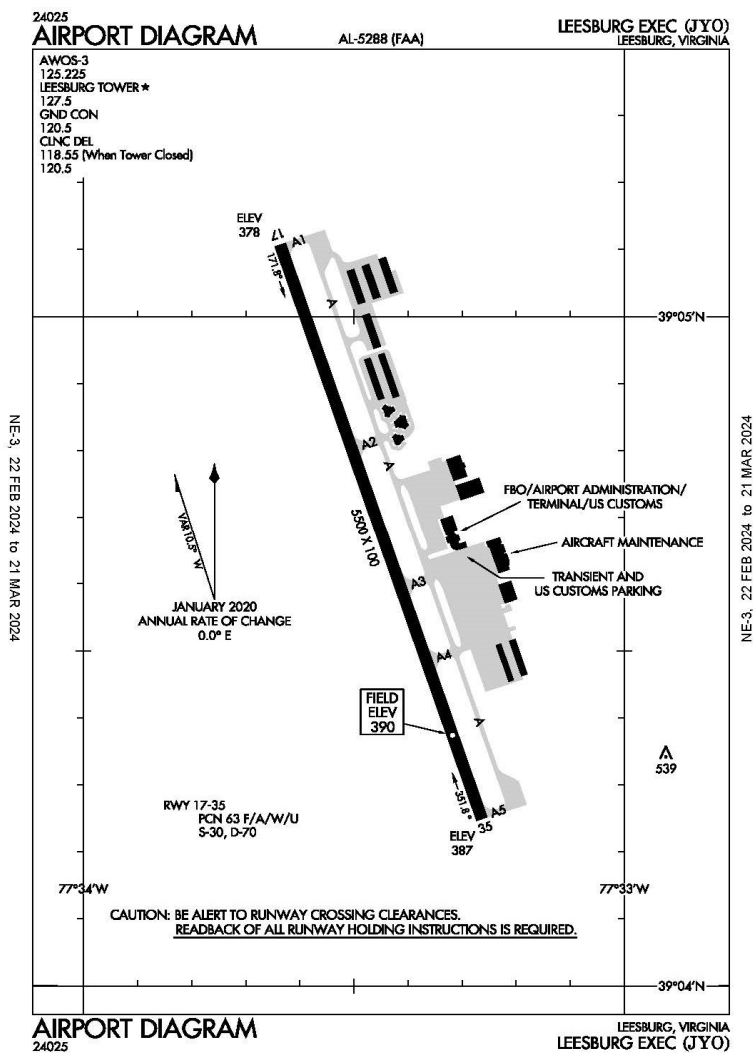


the Federal Aviation Administration's (FAA's) instrument flight procedures (IFP) Information Gateway for JYO, there are currently no plans for new or revised instrument approach procedures at JYO.

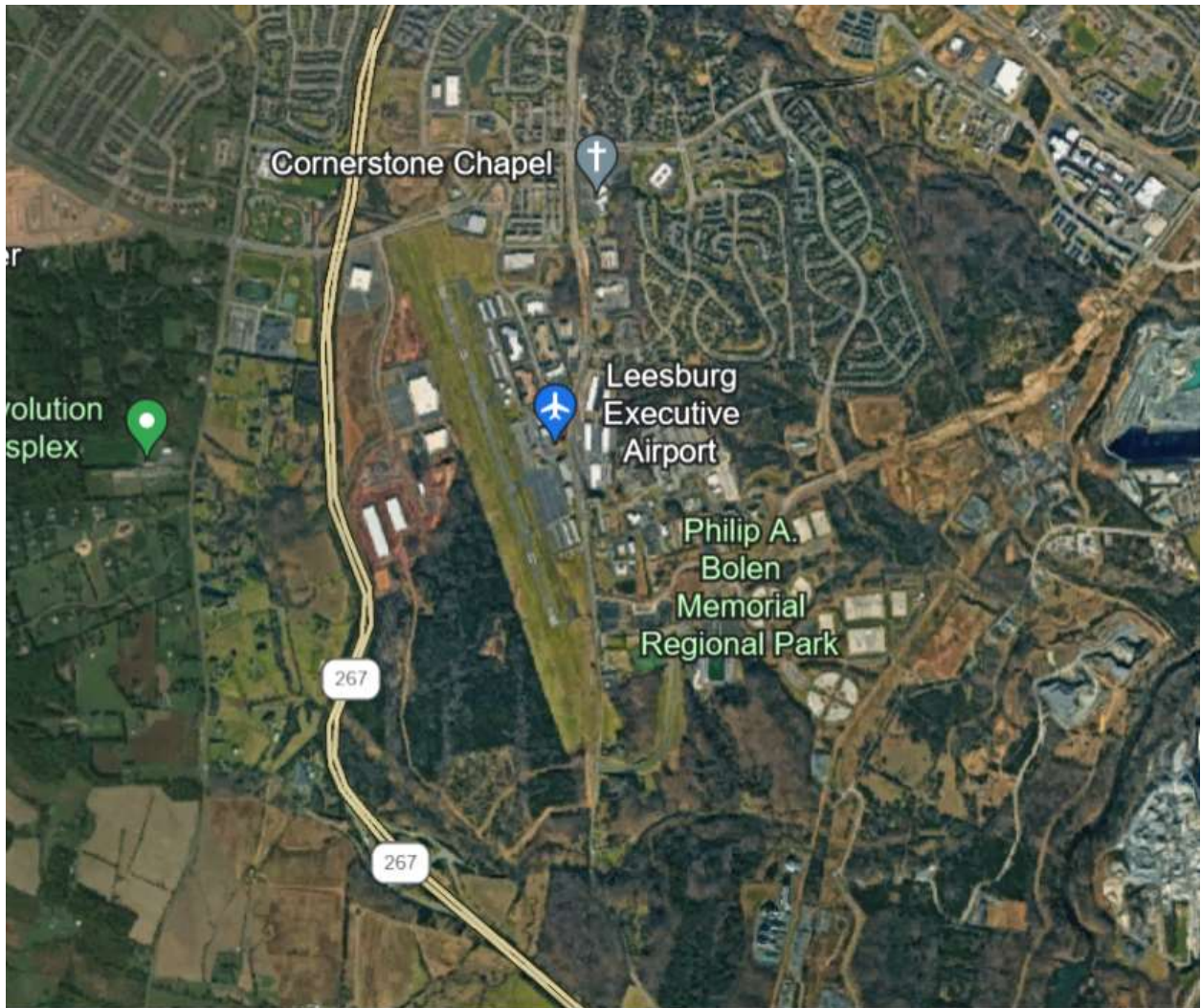
JYO has two (2) published instrument approaches:

- ILS or LOC – Runway 17
- RNAV (GPS) – Runway 17

Runway 35 is a non-precision visual approach runway.



FAA Existing Airport Diagram of JYO – March 2024



Aerial Photo – JYO (North ↑)

1.3 TRAFFIC PATTERNS

JYO does not publish any non-standard traffic patterns. Per JYO, air traffic manager (ATM) left traffic is standard, however the tower will issue right traffic as needed. These patterns keep all traffic on the north and west sides of the airport. The pattern altitude is 800 feet above ground level (AGL) due to class B airspace directly above. Overall runway usage was documented by JYO operations staff as being 40% Runway 17 and 60% Runway 35.

1.4 FAA CONTRACT TOWER

The FAA Federal Contract Tower (FCT) Program involves FAA supplying funding for contract controllers, while the airport usually supplies the facility, Airport Traffic Control equipment, and maintenance support. JYO currently has a distinctive tower arrangement. From 2014 to 2018, it operated one of the few remote towers in the United States. Since 2018, they have been using a mobile tower located on the ramp outside their terminal building. Hours of operation are from 0800-1800 7 days a week; these hours will remain after construction of the new tower. The proposed tower at JYO will be a traditional FCT tower owned by the Town of Leesburg and manned by FCT controllers.



Existing Mobile ATCT at JYO



1.5 REPORT OUTLINE

The proposed Air Traffic Control Tower (ATCT) is intended to replace the current Visual Flight Rules (VFR) Mobile Airport Traffic Control Facility at JYO. In December 2023, Talbert and Bright, the professional airport planning engineering, and services consultant for JYO, issued a Notice-to-Proceed to CTBX / A Pond Brand to prepare this siting report following the current Virtual Immersive Siting Tower Assessment (VISTA) Siting Process. A kick-off meeting took place on December 19, 2023, involving the airport director, airport operations personnel, representatives from the Town of Leesburg, and Talbert & Bright. During the meeting, preliminary sites, funding details, and the expected timeline were discussed.

The proposed replacement ATCT facility will be constructed, owned, and maintained by the Town of Leesburg. The new facility will continue to be operated by FAA Contract Controllers.

The objective of this report is to outline the optimal location and height for the new ATCT based on the fulfillment of each siting criterion. Emphasis was placed on ensuring the safety of air traffic operations from the proposed sites. Additionally, the report will consider factors such as construction costs, utility availability, airport infrastructure development, and security. The selection of the site and height for the ATCT was guided by the principles and standards outlined in the latest VISTA Siting Process Memorandum dated 2024. This assessment was carried out following the VISTA Siting Process detailed in Chapter 9 of the Memorandum. The findings provided valuable information used to identify a recommended site in anticipation of selecting an FAA-sanctioned location and tower height.

As outlined in chapter 9 of the VISTA Siting Process Memorandum the Siting Report is accompanied by a 3D/VR interactive model of the airport and the proposed ATCT sites provided to the FAA. This report contains the airport data used to create the model, along with the conclusions and suggestions offered by the FAA VISTA Team after the validation session and a formal siting/assessment panel.

The primary data sources for this analysis consist of the most recent ALP from December 8, 2023. The ALP and Airport Master Plan are currently undergoing updates by Talbert and Bright to be include. The current Recommended Airport Layout Drawing (ALD) and the 2023 ALP can be found in Appendix E. These plans were supplemented with site photographs, field surveys, on-site inspections, utilities inventory, preliminary tower design details, Google Earth imagery, and the FAA Visibility Tool. The proposed eye height, critical lines-of-sight, and site feasibility were assessed utilizing these resources.



2. SITING CRITERIA

2.1 THE VISTA SITING PROCESS

The minimum eye height of the facility is first determined by the Line of Sight (LOS) calculated over a distance from the proposed ATCT location to the furthest point of the aircraft movement area (“key point”) applying the FAA’s Air Traffic Control Visibility Analysis Tool (ATCVAT). The LOS is then validated relative to airfield configuration, airport buildings, and other considerations in the VISTA 3D/VR model as experienced in virtual reality by an Air Traffic Control Specialist (ATCS) familiar with operations at JYO. Considerations include but are not necessarily limited to the following.

1. Maximum visibility of airborne traffic patterns and airfield movement surfaces must be available to all ATCS’s positions. A clear, unobstructed, and direct view of all active runways, taxiways and landing areas should be available.
2. The site plot must provide sufficient area to accommodate the ATCT building, emergency generator, exterior transformers, personnel and facility parking, any planned future improvements, etc. as prescribed by facility requirements.
3. Federal Aviation Regulations (FAR) Part 77, Obstructions Affecting Navigable Airspace, including all amendments, must be complied with unless deviations are necessary to meet the other mandatory siting requirements given above.
4. The ATCT must not be sited where it will interfere with the performance of existing or planned electronic facilities (ILS, VOR, etc.).
5. Depth perception of all surface areas to be controlled must exist. This is the ability to differentiate the number and type of grouped aircraft and/or ground vehicles, and to observe their movement and position relative to the airport surface areas. Perception is enhanced where the controller’s line-of-sight is perpendicular or oblique, not parallel, to the line established by aircraft and/or ground vehicle movement, and where the line-of-sight intersects the airport surfaces at a vertical angle of not less than 48 minutes or 0.80 degrees.
6. Consideration shall be given to the impact or severity of direct and indirect sun glare and thermal distortion in determining ATCT orientation. The order of preference of the primary operational view is north, east, west and finally south.



-
7. Visibility should not be impaired by direct or indirect external light sources. Such sources may be ramp lights, parking area lights, sports or industrial facilities and reflective surfaces.
 8. Visibility should be available for all ground operations of aircraft and to airport ground vehicles on ramps, apron, and tie down areas, and aircraft operational intersection areas.
 9. Consideration must be given to local weather phenomena to preclude restriction visibility due to fog, ground haze or condensation on cab windows.
 10. Exterior noise should be at a minimum and sites should be evaluated through a comparison of expected noise levels at each location.
 11. Access to the site should avoid crossing areas of aircraft operations.
 12. Consideration should be given to planned airport expansion as shown on the airport master plan. Particular attention should be given to future construction of buildings, hangars, new or extended runways and taxiways, and other physical obstructions to preclude the relocation of the control tower.
 13. The ATCT should be sited in an area which is relatively free of jet exhaust fumes and impairments to visibility such as industrial smoke, dust, and fumes.
 14. Airport design standards or future development should not be adversely affected.
 15. Radar facilities can be impacted by a tall tower or one that is too closely sited. Radar can also affect the electronic equipment in the ATCT, if in proximity.
 16. Security Set-Back Criteria where the FAA mandates a 20-foot clear zone inside the perimeter fence, followed by a 20-foot buffer zone just outside.

2.2 VISIBILITY PERFORMANCE ANALYSIS

A minimum vertical LOS and the angular intersection of 48-minutes (0.80 degrees) is used to determine controller eye height. This calculation is made from all aircraft movement areas on the airport to the proposed ATCT. The gradient of the surfaces of taxiways and runways along the LOS are also considered in this height calculation. Object Discrimination Analysis and LOS Angle of Incidence, Human Factors performance metrics are utilized to assess the impact of the proposed ATCT height on the ATCS distance and perception. The furthestmost distant key points represent a “worst case” angle of incidence for the purpose of ATCT siting and viewing perspective.



The FAA ATC Visibility Analysis Tool (ATCVAT) was used to assess the human factors performance metrics. Two-point lateral discrimination analysis is also checked to ensure that two objects at distant key locations can be observed by the ATCS with sufficient lateral separation. ATCVAT results for the three (3) preferred sites that were considered for validation are presented in Appendix H.

2.3 OTHER SITING CONSIDERATIONS

Analyze Airport Planning Standards - Identify building restriction lines, object free zones, runway visibility zone, aircraft parking aprons, buildings, aircraft movement areas, proximity of utilities and access, airfield lighting vault extensions, rotating beacon, and off-airport development.

TERPS Analysis – Evaluate ATCTs at each respective site for possible impacts on existing and planned approaches, circling minimums, and missed approach segments.

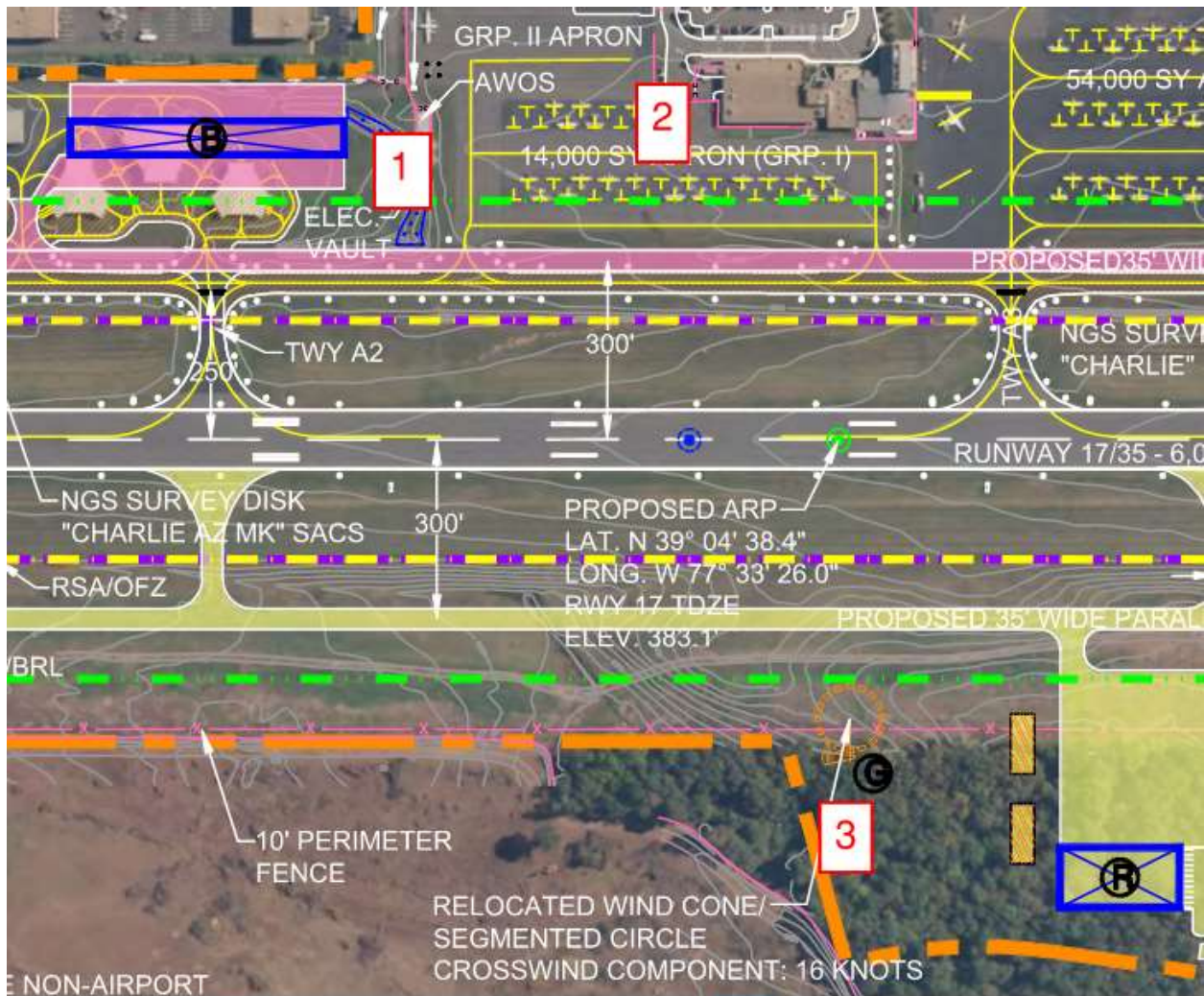
FAR Part 77 Surfaces - Evaluate ATCTs at each respective site for possible impacts to the existing and planned runway criteria.

Technical Operations Preliminary Report (TOPR) – The TOPR generated by the FAA using the NASWATCH IOEAAA tool as well as performing quantitative calculations to identify potential impacts to aviation facilities such as Instrument Landing Systems (ILS).

Location of Utilities & Access - Identify the availability of utilities (sewer, water, gas, three-phase electric, telephone, cable, and airport lighting controls). Determine ground access.

2.4 CONSTRUCTION COST

Rough Order of Magnitude (ROM) Cost Opinion - A ROM cost opinion for the construction of the ATCT building, minimum equipment list, access road, parking lot, fencing, and utility extensions for each of the preferred sites. The ROMs are made purely for site comparative purposes and should not be used for construction budgets. ROM costs are presented on the site comparison chart found in this report and Appendix B. It should be noted that these are not FAA costs, as the responsibility for construction rests with The Town of Leesburg as the owner and operator of the facility. FAA reimbursable agreement costs are not shown in the ROM costs since these vary from facility to facility and will be provided by the FAA when closer to construction.



3. INITIAL SITES CONSIDERED

3.1 CANDIDATE SITES

Following a comprehensive assessment of the entire airport, three potential sites have been pinpointed, as detailed in Appendix C. The siting criteria outlined in paragraph 2.1 were consistently considered during the evaluation of these prospective locations. The identified candidate sites are referred to as Sites 1, 2, and 3, as illustrated in Appendix C.

Site 1 – Hangar Row Lane: Site 1 is just off the airport's Hangar Row Lane in a grassy area on the east side of the airfield around 100 feet northeast of the airfield's electrical vault. Situated between aircraft hangars and the airfield's electrical vault, there is just under an acre of land available at this site for the construction of a tower.

Site 2 – Terminal Area: Situated adjacent to the north end of the current terminal building, this site stands out as the most centrally located among the three observed sites and is also the closest to the existing remote tower facility location.

Site 3 – West Side: This is the sole site identified on the west side of the airport and the entire west side area is presently undeveloped.

4. PREFERRED SITES

4.1 Site 1 Hangar Row Lane



4.1.1 Site 1 Description

Located in a grassy area about 100 feet north of the current airfield electrical vault, this site is situated next to the aircraft parking apron and a community of T hangars to the north. The site benefits from adequate access and utilities, with an access gate positioned to the east and most established utilities nearby. It is positioned 515 feet east of the centerline of Runway 17-35.

The existing terrain is home to a retention basin with a surveyed elevation of 374 feet mean sea level (MSL). To accommodate Site 1, stormwater will need to be redirected to an underground facility. This approach will avoid impact on proposed hangars in the area, however, impact to the existing facilities may trigger the Town's requirement to treat the storm as a hotspot location due to the drainage received from the Hangars and aprons. The ATCT cab at this site was evaluated at an eye level of 449 feet MSL (75



Feet AGL). The overall height to the tops of the antennas is estimated for airspace determinations at 479 feet MSL (105 feet AGL). The ATCS stationed here will primarily have views facing west across the airfield. From this site and elevation, there will be unobstructed lines of sight (LOS) to all runways, taxiways, and aircraft aprons.

4.1.2 Site Reference Data

Site 1 is located at 39° 04' 47.08" N; Long. 77° 33' 23.17" W; Eye 75' AGL.

4.1.3 Siting Criteria Evaluation

4.1.3.1 TERPS

Site 1 was evaluated with respect to all existing and known future instrument approach procedures. The controlling procedure for Site 1 has at least 81 feet of clearance over the site. The Not-To-Exceed height for Site 1 location is 560 MSL.

4.1.3.2 FAR Part 77

The ATCT at Site 1 is 515 feet from the centerline of Runway 17-35 and will penetrate the existing 7:1 surface of this runway by 77 feet. Mark and Light with a red L-810 obstruction light in accordance with FAA Advisory Circular 70/7460-1M, Obstruction Marking and Lighting is necessary for this location.

4.1.3.3 Impacts to Communications, Navigation, and Surveillance Equipment

An FAA Tech Operations Preliminary Report was conducted by the FAA and no issues were identified.

4.1.3.4 Visual Performance

Line-of-Sight (LOS) Angle of Incidence was measured from a proposed eye height of 75 feet AGL (449 feet MSL) relative to the ground elevation of (374 feet MSL) at Site 1. The LOS to the furthest movement area of the airport from Site 1 is to the extension proposed to the approach end of Runway 35. The distance to this location is 3,795 feet. The ground elevation at that point will be 387 feet MSL. Runway end elevations in this study were verified by a current field survey completed in 2005 for the runway pavement rehabilitation project. A controller eye height of 75 feet AGL satisfies the FAA Angle of Incidence criteria and is high enough to result in acceptable recognition of movement on the airfield as well as provide functional spaces in the building/shaft below the cab. This height was entered into the FAA Visibility Tool and received a passing result (see Appendix H).

The FAA uses the average distance from the cab floor to the ATCS's eye as 5 feet. When 5 feet is subtracted from the eye height at Site 1, a cab floor height of 70 feet AGL (444 feet AGL) is the result.



Object Discrimination Analysis is the metric that determines how well an object the size of a Dodge Caravan or a Cessna 172 can be identified from the proposed site and height. Site 1 at the 75-foot AGL eye height produced passing results (see Appendix H).

2-Point Lateral Discrimination is the analysis that quantifies the impact of the tower height on the ability to laterally separate two critical points of the airport surface operations. A minimum of 8 minutes separation between objects is required such as an aircraft on a parallel taxiway with respect to one on the runway end ready for take-off. All instances of 2-point Lateral Discrimination from Site 1 exceed the minimum separation.

Panoramic Views from Computer Simulation

Digital still image files were captured during the VISTA Safety Assessment. These images showcase a sequential panoramic, 360-degree view from inside the control cab at Site 1, at an eye height of 449 feet MSL (75 feet AGL). It is important to highlight that the simulation includes both existing and future ALP buildings and pavements. The panoramic screenshots can be found in Appendix D.

4.1.3.5 Sunlight/Daylight

Sunlight/glare was evaluated at the VISTA Siting Panel by the JYO air traffic manager. Evaluation of sun glare off natural and manmade surfaces, thermal distortion, etc. was determined not to exist or be of concern.

4.1.3.6 Artificial Lighting

No impacts to night-time ground and airborne operations caused by airport lighting, background clutter, and municipal and industrial lighting were identified by the JYO ATM. The existing mobile ATCT is on the same side and vicinity of the airfield as Site 1 which will exhibit the same relative views day and night. No visibility issues associated with artificial lighting have been detected.

4.1.3.7 Security

The FAA Office of Infrastructure Protection issued updated security measures for FSL-1A facilities of which Contract Towers are included. The FAA AXF Guidance Memorandum dated March 7, 2019, provides specific implementation guidance for the minimum level of physical security at sponsor-owned and sponsor-leased contract towers. Site 1 will comply with that guidance including but not necessarily limited to fencing, lighting, main door, cab door, and gate access control with cab monitored camera and intercom, keypads or card swipe entry devices at doors, and warning signage.



4.1.3.8 Rotating Beacon and Weather Sensor

The airfield's rotating beacon is currently positioned at 51 feet AGL with an upward beam angle ranging between 2 and 3 degrees. Situated in the southeast quadrant of the airfield, the beacon is set to remain in its current location. If deemed necessary, a localized metal shield may be installed in the direction of Site 1 to mitigate any perceived negative impact of the beam, although no adverse effects were identified by the ATM during the assessment. The wind sensor, which is a non-standard installation atop the terminal building, has been approved, and no detrimental effects were noted by the ATM during the assessment. The other ground-based sensors located behind the airfield lighting vault will not be impacted.

4.1.3.9 Infrastructure

Talbert & Bright, the JYO General consultant, has provided a narrative regarding access and infrastructure. Their report depicting access and utility extensions to Site 1 is in Appendix L. A summary of the findings is identified below.

Access: Site 1 is just south of the airport's existing hangar area. Access to the site would be directly off Hangar Row Road the primary access point for the northern hangar facility.

Utilities: The tower location at Site 1 is situated within 350 linear feet of all major utilities. Extending the established connections east to Hangar Row Road will facilitate easy access. It is not expected that any existing utilities will need to be relocated for this construction.

Airfield Lighting Connection to Vault: Site 1 tower location is adjacent to the existing airfield electrical vault.

4.1.3.10 Safety Assessment

A safety Assessment was made during the Siting Assessment Panel conducted on August 27th and 28th, 2024 which determined Site 1 as viable and ranked second amongst our 3 preferred sites.

4.1.3.11 Operational Requirements

- a) ATCT Orientation: West with the cab rotated 10 degrees clockwise from a line drawn perpendicular to Runway 17-35. See Appendix D for graphic depiction.
- b) Weather: No unusual impacts.
- c) Look-down Angle: Clear views observed.
- d) Look-up Angle: Clear views observed.
- e) Look-Across Angle: Clear views observed.
- f) Access: Existing paved street Hangar Row Lane allows direct access.
- g) Non-Movement Areas: No issues identified



- h) Cab Size Evaluation: Sufficient for up to 4 controllers. Typically occupied by 2 currently.
- i) Rotating Beacon: Will remain in its current location in the southeast quadrant of the airfield.
- j) Hold Short Lines: All visible.
- k) Construction: The construction of Site 1 will not obstruct the required visibility from the existing mobile tower during construction. Runway approaches and traffic patterns were all visible.

4.1.3.12 Economic Considerations

Based on the cost comparison analysis, Site 1 is the **2nd** most expensive site for building and site development construction costs at almost **\$ 12,000,000**.

4.1.3.13 Environmental Considerations

JYO is a sponsored-owned facility, and a phase 1 environmental assessment is not required.

4.1.4 Summary of Site 1 – Hangar Row Lane

Site 1 has been reviewed from an ATCS eye height of 449 feet MSL (75 feet AGL) and ranks as the second tallest of the three sites being evaluated. This location is suitable as it offers unobstructed views of all existing and future runways, associated taxiways, and general aviation aprons. It provides a clear perspective of all established and anticipated future movement areas.

Site 1 is situated on the northeast side of the airfield, around 100 feet north of the airport's electrical vault. Positioned approximately 515 feet away from the centerline of Runway 17-35, it stands back about 252 feet from parallel Taxiway A. This location offers unobstructed views of the airfield, with the farthest point being 3,795 feet to the south at the proposed extension to the approach end of Runway 35, providing a primarily west viewing perspective of the airfield. Access to utilities is available from the existing infrastructure in the vicinity. The matter of Site 1 being located next to a storm water basin does add a degree of difficulty that would need to be mitigated if selected.

This location will not obstruct the necessary views of the airfield or traffic patterns for ATCS. The perspective of the airfield will mainly face west and south. The traffic patterns at JYO direct aircraft to the west, allowing the northeast site to have optimal views of incoming traffic. .

4.2 Site 2 – Terminal Area



4.2.1 Site 2 Description

Positioned at the northern end of the existing terminal at JYO, this site is located near the airfield's midpoint. It is roughly 280 feet east of Taxiway A, 543 feet from the centerline of Runway 17-35.

The current terrain is level, with a surveyed elevation of 382 feet MSL. The ATCT cab was raised to an eye height of 454 feet MSL (72 feet AGL), while the total height to the tops of the antennas, considered for airspace assessments, is estimated to be 484 feet MSL (102 feet AGL).

The distance to the furthest point on the airfield is 3,300 feet to the proposed extension to the approach end of Runway 35. The ATCS will have westerly views of Runway 17 – 35. Lines of sight to all runways, taxiways, and aircraft aprons will be unobstructed from this site.

4.2.2 Site Reference Data

Site 2 located at Lat. 39° 04' 40.37" N; Long. 77° 33' 19.53" W; Eye 72' AGL.



4.2.3 Siting Criteria

4.2.3.1 TERPS

Site 2 was evaluated with respect to all existing and known future instrument approach procedures. The controlling procedure for Site 2 has at least 76 feet of clearance over the site. The Not-To-Exceed height for Site 2 location is 560 MSL.

4.2.3.2 FAR Part 77

The ATCT at Site 2 is 543 feet from the centerline of Runway 17-35 and will penetrate the existing and ultimate 7:1 surface of this runway by 92 feet.

4.2.3.3 Impacts to Communications, Navigation, and Surveillance Equipment

An FAA Tech Operations Preliminary Report was conducted for Site 2 by the FAA and no issues were identified.

4.2.3.4 Visual Performance

The Line-of-Sight (LOS) **Angle of Incidence** was measured from the proposed eye height of 72 feet AGL (454 feet MSL) relative to the ground elevation (382 feet MSL) at Site 2. The LOS to the furthest movement area of the airport from Site 2 is to the proposed extension to the approach end of Runway 35. The distance to this location is 3,300 feet. The ground elevation at that point was surveyed at 387 feet MSL. An eye height of 72 feet AGL satisfies the FAA Angle of Incidence criteria which is high enough to see over any existing and future (on the ALP) obstacles as well as provide for functional spaces in the building below the cab. This height was entered into the FAA Visibility Tool which received a Passing result (see Appendix H).

The FAA uses the average distance from the cab floor to the ATCS's eye as 5 feet. When the 5 feet is subtracted from the eye height at site 2 a cab floor of 67 feet AGL (449 feet MSL) is the result.

Object Discrimination is the metric that determines how well an object the size of a Dodge Caravan or a Cessna 172 can be identified from the proposed site and height. Site 2 at 454 feet MSL eye height produced passing results (See Appendix H).

2-Point Lateral Discrimination is the analysis that quantifies the impact of tower height on the ability to laterally separate two critical points of the airport surface operations. A minimum of 8 minutes separation between objects is required such as an aircraft on a



parallel taxiway with respect to one on the runway end ready for take-off. All instances of 2-Point Lateral Discrimination from Site 2 exceed the minimum separation.

Panoramic Views from Computer Simulation

Digital still image files were captured during the VISTA Safety Assessment. These images showcase a sequential panoramic, 360-degree view from inside the control cab at Site 2, at an eye height of 454 feet MSL (72 feet AGL). It is important to highlight that the simulation includes both existing and future ALP buildings and pavements. The panoramic screenshots can be found in Appendix D.

4.2.3.5 Sunlight/Daylight

Sunlight/glare was evaluated at the VISTA Siting Panel by the JYO air traffic manager. Evaluation of sun glare off natural and manmade surfaces, thermal distortion, etc. was determined not to exist or be of concern.

4.2.3.6 Artificial Lighting

No impact to night-time ground and airborne operations caused by airport lighting, background clutter, and municipal and industrial lighting has been identified by the JYO ATM for the mobile tower's current location. Site 2 is adjacent to and in the same general footprint as the current mobile ATC facility at the airport.

4.2.3.7 Security

The FAA Office of Infrastructure Protection issued updated security measures for FSL-1A facilities which includes Contract Towers. The FAA AXF Guidance Memorandum dated March 7, 2019, provides specific implementation guidance for the minimum level of physical security at Sponsor-owned and Sponsor-leased Contract Towers. Site 2 will comply with that guidance including but not necessarily limited to fencing, lighting, main door, cab door, and gate access control with cab monitored camera and intercom, keypads or card swipe entry devices at doors, and warning signage.

4.2.3.8 Rotating Beacon and Weather Sensor

The airfield's rotating beacon is currently positioned at 51 feet AGL with an upward beam angle ranging between 2 and 3 degrees. Situated in the southeast quadrant of the airfield, the beacon is set to remain in its current location. If deemed necessary, a localized metal shield may be installed in the direction of Site 2 to mitigate any perceived negative impact of the beam, although no adverse effects were identified by the ATM during the assessment. The wind sensor, which is a non-standard installation atop the terminal building, has been approved, and no detrimental effects were noted by



the ATM during the assessment. The other ground-based sensors located behind the airfield lighting vault will not be impacted.

4.2.3.9 Infrastructure

Talbert & Bright, the JYO General consultant, has provided a narrative regarding access and infrastructure. Their report depicting access and utility extensions to Site 2 are in Appendix L. A summary of the findings is identified below.

Access: Located just north of the airport terminal building, access to this site is directly off the terminal parking lot. Sycolin Road will provide direct access to Site 2.

Utilities: The relocation of utilities is not anticipated for Site 2, as all major utilities are situated within 250 feet. Extending these utilities will adequately meet JYO needs.

Airfield Lighting Connection to Vault: Site 2 is approximately 430 feet away from JYO existing electrical vault.

4.2.3.10 Safety Assessment

A safety assessment was made during the Siting Assessment Panel conducted on August 27th and 28th, 2024 which determined Site 2 as viable and ranked first making it the recommended site.

4.2.3.11 Operational Requirements

- a) ATCT Orientation: West with the cab rotated 15 degrees clockwise from a line drawn perpendicular to Runway 17-35. See Appendix D for a graphic depiction.
- b) Weather: No unusual impacts.
- c) Look-down Angle: Clear views observed.
- d) Look-up Angle: Clear views observed.
- e) Look-Across Angle: Clear views observed.
- f) Access: Existing paved roads allow direct access.
- g) Non-Movement Areas: No issues identified.
- h) Cab Size Evaluation: Sufficient for up to 4 controllers. Typically occupied by 2 currently.
- i) Rotating Beacon: Will remain in its current location in the southeast quadrant of the airfield.
- j) Hold Short Lines: All visible.
- k) Construction: The construction of Site 2 will not obstruct the required visibility from the existing mobile tower during construction. Runway approaches and traffic patterns were all visible.



4.2.3.12 Economic Considerations

Site 2 is the least expensive site for building and site development construction costs at **\$11,226,125.00**.

4.2.3.13 Environmental Considerations

JYO is a sponsored-owned facility, and a phase 1 environmental assessment is not required.

4.2.4 Summary for Site 2 – Terminal Area

Site 2, located next to the terminal at JYO, was assessed at an ATCS eye height of 72 feet AGL (454 feet MSL). The current ATC facility, a mobile tower, is near Site 2 and offers comparable perspectives of the airfield. This site is deemed appropriate as it provides unobstructed views of all current and future runways, associated taxiways, the general aviation terminal area apron, and potential hangar developments on the west side of the airport.

Site 2 is positioned midfield, roughly 285 feet northeast of the airport's mobile ATC facility. It is set back approximately 543 feet from the centerline of Runway 17-35 and about 280 feet from the centerline of Taxiway A. This site offers unobstructed views of the airfield, with the farthest point being 3,300 feet from the approach end of Runway 17. The predominant views from this location will be towards the west and south. Access for vehicles is currently next to the site and extension of utilities is minimal, as Site 2 is near the terminal building where utilities are already provided.

This location will not obstruct the necessary views of the airfield or traffic patterns for ATCS. The perspective of the airfield will mainly face west. The traffic patterns at JYO direct aircraft to the west, allowing the northeast site to have optimal views of incoming traffic.

4.3 Site 3 - West Side



4.3.1 Description

Site 3 is situated on the western side of the airport, which is currently undeveloped but has been identified for future development as outlined in the airport's ALP. This tower location offers unobstructed views of the airfield, with the farthest point at 3,340 feet to the northeast corner of Taxiway A. Controllers stationed at this tower will primarily have views facing east and north. The terrain in the area is wooded, with a surveyed elevation of 356 MSL. The ATCT cab was positioned at an eye level of 454 feet MSL (98 feet AGL), with the overall height estimated to the top of the antennas at 484 feet MSL (128 feet AGL) for airspace considerations. Currently access to this location and utilities (water, sewer, storm, electric, and communications) are not present and would need to be included in the Tower construction activities if the tower is constructed prior to the development of the parcel for additional airport use as identified in the ALP.

This site results in the tallest of the 3 proposed towers. Lines of sight to all runways, taxiways, and future hangar development will be unobstructed from this site and height.

4.3.2 Site Reference Data

Site 3 is located at Lat. 39° 04' 34.60" N; Long. 77° 33' 33.93" W; Eye 98' AGL.

4.3.3 Siting Criteria

4.3.3.1 TERPS



Site 3 was evaluated with respect to all existing and known future instrument approach procedures. The controlling procedure for Site 3 has at least 76 feet of clearance over the site. The Not-To-Exceed height for the Site 2 location is 560 MSL.

4.3.3.2 FAR Part 77

The ATCT at Site 3 is 715 feet from the centerline of Runway 17-35 and will penetrate this runway's existing and ultimate 7:1 surface by 73 feet.

4.3.3.3 Impacts to Communications, Navigation, and Surveillance Equipment

An FAA Tech Operations Preliminary Report was conducted for Site 3 by the FAA and no issues were identified.

4.3.3.4 Visual Performance

The Line-of-Sight (LOS) **Angle of Incidence** The proposed eye height at Site 3 was measured at 98 feet AGL (454 feet MSL) above the ground elevation of 356 feet. The line of sight from Site 3 to the farthest movement area of the airport is 3,340 feet from the northeast corner of Taxiway A, with a ground elevation of 377 feet MSL at that location. A controller eye height of 98 feet AGL meets the FAA Angle of Incidence criteria, ensuring visibility over current and future obstacles and allowing for functional spaces in the building beneath the cab. This height was input into the FAA Visibility Tool and received a passing result.

The FAA uses the average distance from the cab floor to the ATCS's eye as 5 feet. When 5 feet is subtracted from the eye height at Site 3, a cab floor height of 93 feet AGL (449 feet MSL) is the result.

Object discrimination is the metric that determines how well an object the size of a Dodge Caravan or a Cessna 172 can be identified from the proposed site and height. Site 3 at the 454-foot MSL eye height produced passing results.

2-Point Lateral Discrimination is the analysis that quantifies the impact of tower height on the ability to laterally separate two critical points of the airport surface operations. A minimum of 8 minutes separation between objects is required such as an aircraft on a parallel taxiway with respect to one on the runway end ready for take-off. All instances of 2-Point Lateral Discrimination from Site 3 exceed the minimum separation.

Panoramic Views from Computer Simulation



Digital still image files were captured during the VISTA Safety Assessment. These images showcase a sequential panoramic, 360-degree view from inside the control cab at Site 3, at an eye height of 454 feet MSL (98 feet AGL). It is important to highlight that the simulation includes both existing and future ALP buildings and pavements. The panoramic screenshots can be found in Appendix D.

4.3.3.5 Sunlight/Daylight

Sunlight/glare was evaluated at the VISTA Siting Panel by the JYO air traffic manager. Evaluation of sun glare off natural and manmade surfaces, thermal distortion, etc. was determined not to exist or be of concern.

4.3.3.6 Artificial Lighting

No sources of impacts were identified by the JYO ATM to night-time ground and airborne operations caused by airport lighting, background clutter, and municipal and industrial. The existing ATCT is on the opposite side of Runway 17-35 relative to Site 3. Any possible visibility issues that could result from artificial ramp lighting in the existing terminal area will be shielded.

4.3.3.7 Security

The FAA Office of Infrastructure Protection issued updated security measures for FSL-1A facilities of which Contract Towers are included. The FAA AXF Guidance Memorandum dated March 7, 2019, provides specific implementation guidance for the minimum level of physical security at Sponsor-owned and Sponsor-leased Contract Towers. Site 3 will comply with that guidance including but not necessarily limited to fencing, lighting, main door, cab door, and gate access control with cab monitored camera and intercom, keypads or card swipe entry devices at doors, and warning signage.

4.3.3.8 Rotating Beacon and Weather Sensor

The airfield's rotating beacon is currently positioned at 51 feet AGL with an upward beam angle ranging between 2 and 3 degrees. Situated in the southeast quadrant of the airfield, the beacon is set to remain in its current location. If deemed necessary, a localized metal shield may be installed in the direction of Site 3 to mitigate any perceived negative impact of the beam, although no adverse effects were identified by the ATM during the assessment. The wind sensor, which is a non-standard installation atop the terminal building, has been approved, and no detrimental effects were noted by the ATM during the assessment. The other ground-based sensors located behind the airfield lighting vault will not be impacted.



4.3.3.9 Infrastructure

Talbert & Bright, the JYO General consultant, has provided a narrative regarding access and infrastructure. Their report depicting access and utility extensions to Site 3 are in Appendix L.

Access: Site 3 is located on the airport's west side which is currently undeveloped. 900 feet of access road will need to be constructed to connect to Compass Creek Parkway on the west side.

Utilities: All utilities will be brought to Site 3 from its nearest connection on Compass Creek Parkway.

Airfield Lighting Connection to Vault: On the opposite side of the airfield the airfield electrical vault is approximately 1400 feet away across all runways and taxiways.

4.3.3.10 Safety Assessment

A safety Assessment was made during the Siting Assessment Panel conducted on August 27th and 28th, 2024 which determined Site 3 as viable and ranked 3rd among the 3 sites evaluated.

4.3.3.11 Operational Requirements

- a) **ATCT Orientation:** The cab was rotated 0 degrees and sits perpendicular to Runway 17-35 through the center of the cab. See appendix D for a graphic depiction.
- b) **Weather:** No unusual impacts.
- c) **Look-down Angle:** Clear views observed.
- d) **Look-up Angle:** Clear views observed.
- e) **Look-Across Angle:** Clear views observed
- f) **Access:** None existing. 900 ft of access road must be constructed to reach Site 3.
- g) **Non-Movement Areas:** No issues identified.
- h) **Cab Size Evaluation:** Sufficient for up to 4 controllers. Typically occupied by 2 currently.
- i) **Rotating Beacon:** Will remain in its current location in the southeast quadrant of the airfield.
- j) **Hold Short Lines:** All Visible.
- k) **Construction:** The construction of Site 2 will not obstruct the required visibility from the existing mobile tower during construction. Runway approaches and traffic patterns were all visible.

4.3.3.12 Economic Considerations

Site 3 is the most expensive site for building and site development construction costs at **\$18,128,000.00**.



4.3.3.13 Environmental Considerations

JYO is a sponsored-owned facility, and a phase 1 environmental assessment is not required.

4.3.3 Summary for Site 3 – West Side

Site 3 was assessed with an ATCS eye height of 454 feet MSL (98 feet AGL). It stands as the tallest among the three sites and is uniquely positioned on the west side. The farthest point on the airfield from Site 3 is the northeast corner of Taxiway A, located 3,340 feet away. This site is deemed suitable as it offers unobstructed views of all current and future runways and taxiways. While this site is remote to the airfield lighting vault and the AWOS, control of those facilities can be maintained via a ultra high frequency (UHF) modem rather than physical control cables in conduits.

Site 3 is situated around 750 feet west of the centerline of Runway 17-35, adjacent to the airport property line. Currently undeveloped, this site faces additional challenges and costs to provide access and supply necessary utilities. The airport's development plans include establishing infrastructure to address these issues; however the tower installation is needed in the next five years and the development plans are planned for much later.

5. SITING ASSESMENT

The preferred sites have been evaluated, in this report, in accordance with FAA Order 6480.4C, Chapter 9, Alternate Siting Process and the VISTA Process for Contract Towers. They have undergone a Safety Assessment in accordance with the FAA Safety Management System (SMS) which is an objective identification of potential safety hazards and methods of removal or mitigation. Potential Hazards and Mitigation have been discussed and evaluated at the Safety Assessment Panel held at the JYO on August 27th-28th, 2024.



6. FINAL SITE RECOMMENDATION AND APPROVAL

ATCT Site Recommendation JYO Airport Traffic Control Tower Leesburg Executive Airport

This Agreement is made by and between ATO Terminal Program Operations, and the Terminal Area Office, collectively known as the "Parties." The purpose of this agreement is to address the siting requirements for the new JYO ATCT.

Section 1. The parties agree that the siting requirements must be as follows:

Article 1: The location of the ATCT (NAD 1983 datum), hereinafter referred to as **Site 2**

Latitude: N **39° 04' 42.39"**

Longitude: W **77° 33' 20.48"**

Article 2: The ATCS eye height used in the computer simulation and panoramic photographs for this agreement is 454 feet MSL or 72 feet AGL, based on a 382 feet MSL site elevation.

Article 3: The total ATCT height including antennae, and all other obstructions will be approximately 484 feet MSL or 102 feet AGL, assuming 35 feet from cab floor height level to the top of the structure and 382 feet MSL site elevation.

Article 4: The parties are in general concurrence with the assumptions documented in the final site selection report.

Section 2. The Airport Sponsor agrees to notify the assigned Technical Operations Engineering Services (Terminal) project engineer of any proposed, planned, or envisioned projects that would be constructed on airport property that could impact the LOS from the recommended ATCT sites.

Section 3. This agreement does not constitute a waiver of any right guaranteed by law, rule, regulation, or contract on behalf of any party. The Approval Authorities (signatures at the beginning of this report) unanimously agree with the choice of **Site 2** for the new ATCT at the Leesburg Executive Airport.

7. CAB SIZE ORIENTATION

The cab size will be an octagon of approximately 500 ft² to the windowsills and 440 ft² after the stairwell is subtracted. Cab orientation is shown for each site in Appendix E.



SUPPLEMENTAL INFORMATION

Appendix A – Airport Concurrence Letter

Appendix B – Cost Estimate

Appendix C – All Sites Evaluated (Potentials & Preferred)

Appendix D – Panoramic Views (3D Model Screenshots)

Appendix E – Drawings (Airport Layout Plan, Cab Layout, Orientation)

Appendix F – Obstruction Evals (TOPR/TERPS)/Airspace Analyses (OE/AAA)/NAVAIDs

Appendix G – Environmental Documentation

Appendix H – Air Traffic Control Visibility Analysis Tool (ATCVAT)

Appendix I – Servicing Security Element

Appendix J – Meeting Minutes

Appendix K – Safety Risk Management Document (TBD)

Appendix L – Access & Utilities Infrastructure