



Planning and Zoning

47 S. Main Street • Room 208 • Tooele, UT 84074

Phone: (385) 843-3160 • Fax: (435) 843-3252

Tooeleco.org/tooele-county-government/county-departments/community-development/

TCLUO 2020-03

Tooele Valley Airport Overlay (AOZ) Update and Recommendation

Public Body: Tooele County Planning Commission Meeting Date: October 21, 2020

Request: Recommendation of approval for the proposed AOZ.

Planners: Jeff Miller and Trish DuClos

Planning Commission Recommendation: Not yet received

Planning Staff Recommendation: 1st Hearing

PROJECT DESCRIPTION

Planning Staff (in association with the Tooele Valley Airport) will be requesting a recommendation of approval (at a future meeting) for (Chapter 32) of the Tooele County Land Use Ordinance regarding the Tooele Valley Airport (AOZ).

Our office has been working closely with the Tooele Valley Airport on a proposed overlay zone for properties geographically distanced from the airport within certain areas or zones (A-D & H). Each area will have unique zoning restrictions, in order to provide for the health, safety and welfare of the public and to protect the airport as an economic and safety asset within the community.

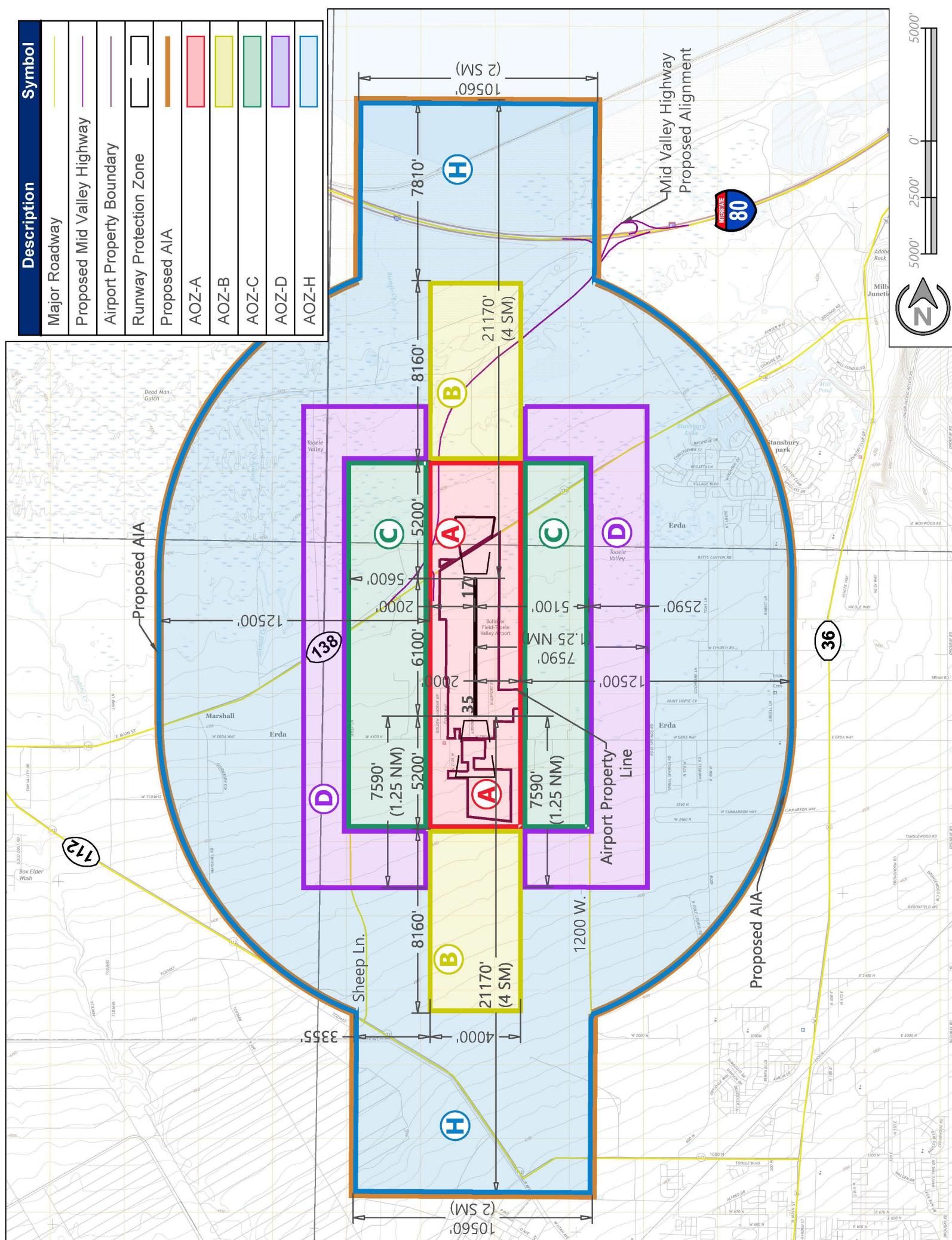
Representatives from the Tooele Valley Airport, Salt Lake City Corporation & RS&H will be providing a detailed presentation regarding the proposed AOZ.

We anticipate having a 1st hearing of proposed ordinance updates to Chapter 32 & other necessary chapters of the Tooele County Land Use Ordinance regarding the AOZ on November 4, 2020, with a request for a recommendation of approval on November 18, 2020 for the AOZ, ordinance updates, and a general plan amendment.

PLANNING STAFF ANALYSIS & RECOMMENDATION

Planning Staff is not requesting a recommendation of approval regarding any ordinance updates in association with the proposed AOS at this time. A recommendation of approval will be requested at a future meeting. The purpose of the planning commission meeting on October 21, 2020 will be to provide a general introduction to the proposed AOZ & to hold an initial public hearing on the matter.

FIGURE 1-3
COMPREHENSIVE TVY AOZ MAP



Source: RS&H Analysis, 2020

TOOELE VALLEY AIRPORT OVERLAY ZONE STUDY

APRIL 2020

VERSION 2.1

Prepared by RS&H for the Salt Lake
City Department of Airports



RS&H



TABLE OF CONTENTS

TVY Airport Overlay Zone Study	1
1.1 Inventory.....	1
1.1.1 Data Collection.....	1
1.1.2 2001 TVY Land Use Study Review, Validation, and Update	2
1.1.3 Tooele County Land Use Ordinance Summary	5
1.2 Implementation Strategy	11
1.2.1 Tooele County Zoning Amendment Process	11
1.2.2 Additional Governing Bodies	14
1.1.1 Coordination Information for Local Land Use Authorities	15
1.1.2 Tooele County General Plan Review.....	20
1.3 Land Use Requirements.....	22
1.3.1 Defining the Airport Influence Area	22
1.3.2 Recommended Airport Influence Area Boundary.....	27
1.4 Airport Overlay Zone	28
1.4.1 Airport Overlay Zoning Code Review	28
1.4.2 Recommended Airport Overlay Zone Guidelines	29
1.4.3 Recommended Land Use Guidelines Within AOZ	38

LIST OF TABLES

Table 1-1 Summary of Proposed AOZ Land Use Requirements and/or Restrictions.....	38
Table 1-2 Recommended Overlay Zoning Guidelines.....	39

LIST OF FIGURES

Figure 1-1 Standard Airport Traffic Pattern	5
Figure 1-2 Percent Sentence Intelligibility for Indoor Speech.....	26
Figure 1-3 Comprehensive TVY AOZ Map	30

TVY AIRPORT OVERLAY ZONE STUDY

1.1 INVENTORY

Salt Lake City (SLC) and the surrounding metropolitan area is currently experiencing a period of rapid population growth. As businesses and housing expand west of SLC into Tooele County to meet some of this demand, it is important that the Salt Lake City Department of Airports (SLCDA) work to minimize development of incompatible land uses near SLC-owned airports, in part by assisting neighboring jurisdictions impacted by those airports to develop and implement land use controls.

Tooele Valley Airport (TVY or Airport) is owned by Salt Lake City Corporation and is operated by SLCDA. TVY is located within Tooele County and the unincorporated community of Erda. Other populated areas within the immediate vicinity of TVY that have the potential to be impacted by flight operations include the cities of Tooele and Grantsville.

The purpose of this study is to understand where the highest potential for aircraft overflights to/from TVY are anticipated to occur and recommend an Airport Influence Area (AIA) boundary to protect both the community and the Airport. The AIA boundary can then be used to analyze which land uses within the area are impacted by aircraft overflights and recommend an Airport Overlay Zone (AOZ) District, which can then be adopted by the affected jurisdictions. Once an AOZ is developed, it will serve to protect current and future property owners from possible impacts related to aviation overflights. The AOZ will also protect the Airport from potential community encroachment which could threaten the Airport's ability to grow and better serve the needs of the community.

1.1.1 Data Collection

The first step in developing a justified and defensible TVY AOZ for Tooele County is the collection and analysis of available data resources. This information was gathered from a variety of resources including applicable state, county, and city reports, codes, and Geographic Information Systems (GIS) databases. Airport specific data was provided by SLCDA. Information gathered includes:

- » Airport-related data for TVY:
 - ◆ Physical infrastructure
 - ◆ Airport Geographic Information Systems (AGIS) data
 - ◆ Code of Federal Regulations (CFR) Part 77 surfaces
 - ◆ Terminal Instrument Procedures (TERPS) surfaces
 - ◆ Local zoning
 - ◆ Local existing and proposed land uses
 - ◆ Current aerial imagery
- » Airport-related data for TVY:
 - ◆ Aircraft flight tracks
 - ◆ 2001 TVY Land Use Study files for AIA/AOZ map
 - ◆ Wildlife boundary requirements (per draft Advisory Circular (AC) 150/5200-33C, *Hazardous Wildlife Attractants On or Near Airports*, January 18, 2019)
 - ◆ Known local development plans
- » Reports, studies, and land use codes:

- ◆ Tooele County Land Use Ordinance
- ◆ Salt Lake City Municipal Code 21A.34.040 AFPP Airport Flight Path Protection Overlay District
- ◆ Salt Lake County Code of Ordinances 19.70 AOZ Airport Overlay Zone
- ◆ West Jordan Municipal Code 13-6A Airport Overlay Zone
- ◆ FAA Airport Compliance Manual – Order 5190.6B Part IV, Land Use
- ◆ FAA Land Use Compatibility and Airports, A Guide for Effective Land Use Planning

1.1.2 2001 TVY Land Use Study Review, Validation, and Update

The intent of this section is to review, validate, update, and complement the documented conditions within the *2001 TVY Land Use Study* (**Appendix A**). The 2001 study began the process of developing a TVY AOZ and many of the findings within that study remain valid. However, since the 2001 study was performed certain conditions have changed in relation to protected regulatory airspace surfaces, critical airport facilities, federal guidance on wildlife protection near airports, and FAA obstruction notification processes. Additionally, the Tooele County Land Use Ordinance has been revised many times since 2001 and those revisions should be reflected in the preparation of the AOZ currently being proposed. Only those conditions from the 2001 study that are proposed to be addressed in this updated AOZ will be discussed. A “review and comment” version of the study will be provided in **Appendix A** with new content and noted changes to be summarized within this section of the report.

New and updated content are as follows:

- » Land Use Compatibility Issues – Safety (Pages 2-3) address CFR Part 77 Surfaces and AC 150/5300-13, *Airport Design*, but do not include FAA Order 8260.3D, *United States Standard for Terminal Instrument Procedures (TERPS)*, which are designed to protect instrument flight procedures to and from an airport.
- » Land Use Compatibility Issues – Safety (Pages 2-3) also lacks information related to AC 150/5300-18B, *General Guidance and Specifications for Submission of Aeronautical Surveys to NGS: Field Data Collection and Geographic Information System (GIS) Standards*, which is another new FAA resource with potential impacts to protecting critical airport facilities, infrastructure, and safe operations.
- » Since the 2001 study, new wildlife boundary guidance has been established by FAA under AC 150/5200-33C, *Hazardous Wildlife Attractants On or Near Airports*, January 18, 2019). Certain land uses that have the potential to attract hazardous wildlife on or near public-use airports should be considered when developing an AOZ. The AC also discusses airport development projects (including airport construction, expansion, and renovation) affecting aircraft movement near hazardous wildlife attractants.
- » Finally, the 2001 study does not address how the Airport is operated. No actual flight tracks, traffic pattern standards, or existing instrument approach procedures are reviewed for impacts to surrounding land uses. At the time of the 2001 study, the Instrument Landing System (ILS) did not exist, therefore, new navigational impacts must be reviewed to confirm adequate protection is accommodated in the AOZ.

- » **Appendix B** provides example letters resulting from the FAA Obstruction Evaluation (Form 7460-1¹) process.

It is recommended that the reader of this study thoroughly review **Appendix A** prior to proceeding in order to better understand the history of the AOZ development process and what changes have been addressed in the AOZ recommendations within this study.

Protection of FAA TERPS Surfaces

FAA Order 8260.3D *United States Standard for Terminal Instrument Procedures* (TERPS) defines the criteria for designing and evaluating instrument flight procedures. Evaluation criteria is broken out into different surfaces. Surface dimensions and slopes are determined by numerous factors such as, airport instrumentation, design aircraft, and topography. Additionally, the alignment of each surface can vary based on the runway configuration or other external factors. The design and evaluation for each surface is specifically tailored to meet the needs for each runway end, unlike FAR Part 77 imaginary surfaces, which are more broadly defined around the entire airport to protect navigable airspace from obstructions.

TERPS evaluation is broken out into general categories based on the aircraft phase in flight. These categories are: approach, departure, enroute and missed approach. The focus of this report will be on the approach, departure, and missed approach criteria as these are the most vulnerable to impacts by development on the ground. Each of these categories, along with their applicable surfaces, are defined in **Appendix E** in this report.

It is critical that FAR Part 77 be complemented with other evaluation criteria to provide a complete understanding of the airspace system and proper protection for aircraft during all phases of flight. When FAA evaluates the impact of a proposed structure through the FAA Obstruction Evaluation process, TERPS and other flight procedure design criteria are applied. TERPS surfaces may be lower to the ground and extend beyond the limits of FAR Part 77 imagery surfaces. Since TERPS surface dimensions and heights protect airspace specific to TVY and could be more restrictive than FAR Part 77 imaginary surfaces, the criteria in FAA Order 8260.3B will be considered when determining an AOZ.

Protection of Airport Safety Critical Areas

Another resource that needs to be considered when establishing an AOZ is FAA AC 150/5300-18B, *General Guidance and Specifications for Submissions of Aeronautical Surveys to NGS: Field Data Collection and Geographic Information Systems Standards*. These guidelines describe the requirements for data collection conducted at airports in support of the FAA Airport Surveying – Geographic Information System (GIS) Program. The standards document provides information for the operation and safety of the National Airspace System (NAS). The International Civil Aviation Organization (ICAO) classifies these standards as critical and ICAO Annex 15 defines data as critical when “there is a high probability when using corrupted critical data that the continued safe flight and landing of an aircraft would be severely at risk with the potential for catastrophe.” The 2001 study did not include analysis of airport safety critical areas because it was not published by FAA until 2007.

¹ FAA Obstruction Evaluation process can be performed online at <https://oeaaa.faa.gov/oeaaa/external/portal.jsp>

Wildlife Attractants on Airport

FAA AC 150/5200-33C, *Hazardous Wildlife Attractants on or near Airports* (published February 21, 2020) establishes minimum separation guidance between airports and wildlife attractants. FAA defines wildlife attractants as "Any human-made structure, land-use practice, or human made or natural geographic feature that can attract or sustain hazardous wildlife within the landing or departure airspace or the airport's Airport Operations Area (AOA). These attractants can include architectural features, landscaping, waste disposal sites, wastewater treatment facilities, agricultural or aquaculture activities, surface mining, or wetlands."

The FAA requires airport operators to maintain an appropriate environment for the safe and efficient operation of aircraft, which entails mitigating wildlife strike hazards by constructing fencing, modifying the landscape in order to deter wildlife, or by hazing or removing wildlife hazards to aircraft from congregating on airports². For airports the size of TVY, FAA recommends a separation distance of 10,000 feet from wildlife attractants. FAA also recommends five-statute miles between an airport's AOA and the hazardous wildlife attractant³. As wildlife negatively impact the safe operation of aircraft, recommendations provided in AC 150/5200-33C will be considered in developing an AOZ.

Airport Flight Tracks and Traffic Pattern Operations

Airport flight tracks and traffic patterns are an important consideration in development of an AOZ because they include airspace near the airport where aircraft operations occur relatively low to the ground. This creates a high potential for conflicts to occur between flight operations and land uses underlying the tracks.

Tooele Valley Airport has a single runway that is oriented north to south. Generally, users planning to leave the Airport climb and head north, south or west. The mountainous terrain directly to the east makes flights in that general direction difficult, and sometimes impossible. Although TVY has an Instrument Landing System (ILS) on the north end of the runway for use during inclement weather operations, many of the operations at the Airport occur under Visual Flight Rules (VFR) which only require a pilot to meet a required distance from clouds using "see and avoid" practices. Specific VFR visibility and clearance requirements are described under 14 CFR 91.155 *Basic VFR Weather Minimums*. Flight plans are not required for VFR flights and therefore trackable data is not readily available to analyze historic patterns. VFR flight paths tend to cover a much broader area and go beyond the limits for FAR Part 77 and FAA Order 8260.3D criteria. Headings for arrivals and departures vary based on aircraft performance characteristics, topography, and pilot preference.

Operations during inclement weather, performed under Instrument Flight Rules (IFR), require a flight plan to be filed with FAA. Therefore, actual flight paths for IFR operations are predictable. Because TVY serves a role in regional flight training operations, many of the IFR operations occurring at TVY are assumed to be training flights which actually occur during good weather conditions. Since IFR flight paths into and from TVY are fairly well understood, they can easily be considered in the AOZ analysis. VFR flight paths are far less predictable than IFR flight paths and will be scrutinized during analysis of an AOZ. VFR flight tracks in

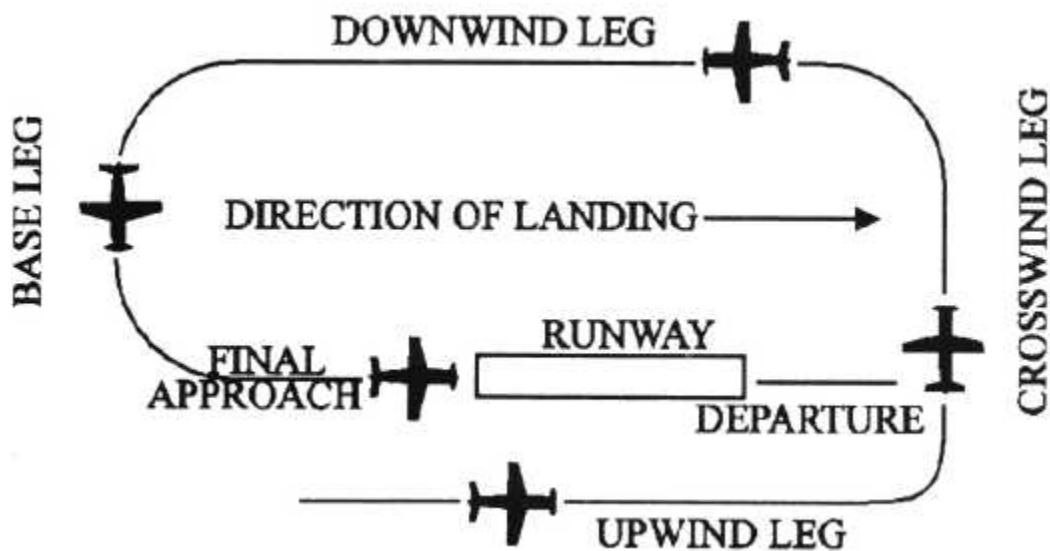
² FAA Advisory Circular 150/5200-33C, *Hazardous Wildlife Attracts on or near Airport*; Chapter 1.1.1

³ FAA Advisory Circular 150/5200-33C, *Hazardous Wildlife Attracts on or near Airport*; Chapter 1.4

this study will be assumed using standard traffic pattern guidance and input from airport users. These assumptions will be incorporated into the development of final recommended AOZ boundaries to the degree reasonable and possible.

Pilots wishing to stay local have the option to stay in the Airport's traffic pattern. The traffic pattern at TVY is often used repetitively by pilots performing touch and go landings/takeoffs for training or to meet FAA certificate currency requirements. Standards for operating in a traffic pattern instruct pilots to make left hand turns. The prevailing winds at the time will determine if the Airport will operate in north or south flow traffic. Flow direction determines if the traffic pattern is on the east or west side of the Airport. The size of the traffic pattern can vary based on the number and size of aircraft operating in the pattern. Generally, the aircraft will reach an altitude of 1,000 feet about the established airport elevation. **Figure 1-1** shows the standard left-hand configuration for an airport traffic pattern. VFR traffic patterns will be examined and considered when developing the AOZ.

FIGURE 1-1
STANDARD AIRPORT TRAFFIC PATTERN



Source: Aeronautical Information Manual – AIM 2020

1.1.3 Tooele County Land Use Ordinance Summary

The Tooele County Land Use Ordinance (Tooele County Code) is, at its essence, a legally enforceable land use control tool which is sanctioned by the State of Utah under the Utah Land Use, Development, and Management Act (LUDMA). There are two versions of the act. The Municipal version (MLUDMA) governs municipalities and is found under Title 10, Chapter 9A of the Utah Code. The County version (CLUDMA) governs all counties including Tooele County and it is found under Title 17, Chapter 27A⁴ of the code. As required under CLUDMA, Tooele County has an established General Plan which outlines County planning

⁴ Retrieved from <https://propertyrights.utah.gov/the-land-use-development-and-management-act-ludma>, 26, April 2019

goals and assists decision-makers in interpreting the local community vision when evaluating future development and growth needs. The *Tooele County General Plan* was last updated in June 2016.

TVY Airport is located on land governed by the Tooele County Code⁵, which was adopted on May 3, 1994 and has been regulating land uses for the County ever since. As of May 2019, the Tooele County Code has been amended on a regular basis for a total of 94 revisions⁶. The Code contains 31 chapters, with Chapter 14 pertaining to Zoning Districts. The following is a brief summary of the Tooele County Code and specific areas where TVY is addressed, or may be addressed, in the future.

Chapter 1 of the Code covers *General Provision* items such as the purpose, requirements, enforcement, penalties, amendments, permits, etc. This chapter establishes the framework for administering the land use code.

Chapter 2 of the Code simply provides context and *Definitions* for interpreting the language found within the Code. Any airport specific terminology that would not be easily recognized by the general public, such as "Part 77" or "Airport Influence Area" will need to be added to this chapter when an amendment is made to incorporate an Airport Overlay Zone District.

Chapter 3 of the Code includes the *General Plan, Zoning, and Amendments*. This covers the Tooele County General Plan, responsibilities of the Planning Commission, the public process and procedures to apply and amend the plan and zoning map, the plan's effects on public uses, and the Board of County Commissioners role and process for hearings. This is the process which will be followed to implement amendments for the TVY AOZ.

Chapter 4 of the Code provides *Supplementary and Qualifying Regulations*. Chapter 4 Section 4-11 covers exceptions to height limitations, Section 4-13 covers maximum height of accessory buildings, and Section 4-15 covers maximum height of fences, walls, and hedges. Each section references buildings and structures within the zoning district in which they are located. It is recommended that during development of the TVY AOZ district legal counsel review these sections for possible amendment to specifically reference the TVY AOZ district in order to ensure protection against airspace obstructions.

Chapter 5 explains *Nonconforming Buildings and Uses*. The purpose of this chapter is to permit but limit the expansion of land uses which do not conform to Code regulations but existed prior to implementation of the Code. This chapter is not impacted by the implementation of a TVY AOZ code amendment since the Code has been enforced since 1994.

Chapter 6, *Off-Street Parking Requirements*, establishes off-street parking requirements, access, and maintenance, among other items related to site development with parking needs. This chapter is not impacted by a TVY AOZ amendment since any anticipated update will not change off-street parking requirements.

⁵ Tooele County Land Use Ordinance is available online at <http://www.co.tooele.ut.us/Building/landuseord.html>

⁶ Tooele County Land Use Ordinance Table of Changes http://www.co.tooele.ut.us/PDF/Land_Use/table.pdf

Chapter 7 of the Code covers *Conditional Uses*. As described within the chapter, a conditional use is one which requires review by the Tooele County Zoning Administrator and permit approval by the Tooele County Planning Commission. Permission can be granted, granted with conditions, or denied. If deemed necessary by the commission, a public hearing will be held. Decisions can be appealed to the district court. As described in Section 7-3, the relationship of this chapter to a TVY AOZ district would be found within the tables of permitted and conditional uses found at the end of each chapter within the Code. Reference to the TVY AOZ is recommended to be included to ensure all land uses within the overlay district are compatible.

Chapter 8 of the Code covers *Nuisances*. The purpose of this chapter is to define uses considered as a nuisance and the enforcement provisions to prevent them. Nothing within this chapter would need to be amended for the TVY AOZ district since the definition of a nuisance will not change.

Chapter 9 of the Code covers *Planned Unit Developments* (PUDs). A PUD is a distinct category of conditional use intended to encourage and promote efficient use of land, continuity of utility services, and encourage innovation in planning and building of all types of development. Any development approved within this Code context should be subject to conditions imposed by a TVY AOZ district. Language referencing a TVY AOZ district is recommended to be included within the PUD chapter of the Code.

Chapter 10 of the Code describes regulations for *Mobile and Manufactured Homes*. It ensures mobile and manufactured homes are included in the spectrum of housing options and treated like any other type of residential construction, as is practical. It is possible that amendments to this chapter would be required for implementation of the TVY AOZ district. This is because this Code works to disallow the prohibition of mobile and manufactured homes within the housing stock of Tooele County zoned land so long as certain criteria are met. Any sound attenuation requirements which may be implemented under an AOZ may result in prohibition of mobile and/or manufactured homes due to construction standards.

Chapter 11 of the Code covers *Recreational Uses and Recreational Coach Parks* location and use. It is recommended that appropriate language be added to this chapter to limit or prohibit this use within certain areas of the TVY AOZ to be defined later in this study.

Chapter 12 of the Code establishes rules for *Site Plan Review* with the purpose of promoting safe and efficient use of land, orderly and harmonious appearance throughout the county, and the advancement of the value of property. It is important that site plan review regulated within this chapter consider TVY AOZ regulations and that it is referenced in this chapter of the Code.

Chapter 13 discusses regulation of *Construction Subject to Geologic, Flood, or other Natural Hazard*. This primarily focuses on Planning Commission or Department of Engineering requirements and prevention of damage related to those hazards. This chapter has no direct relation to the implementation of the TVY AOZ district because it only intends to ensure development does not take place in areas where geological/hydrological hazards can be expected to occur, such as flood-prone areas.

Chapter 14 establishes and sets rules for *Zoning Districts* within Tooele County. This is one of the primary impacted chapters regarding implementing a new TVY AOZ district. Like the Drinking Water Source Protection Overlay District and the Construction Debris Overlay District, creation of Airport Overlay Zoning district adds new requirements and limitations on the development of underlying land. It also defines how the AOZ will be laid out, including rules for locating boundaries.

Chapter 15 of the Code covers *Multiple Use, Agriculture, and Rural Residential District* regulations. Purpose, restrictions, and applicability for each zone are defined along with definitions for understanding the codes and symbology used within the chapter's tables. The chapter tables define a specific use within a usage category and whether it is prohibited, allowed, or conditionally allowed. It is important that reference to a TVY AOZ district be made and incorporated into reviews required of these land uses.

Chapter 16 of the Code describes regulations regarding *Residential and Multiple Residential Districts*. The layout of this chapter is like Chapter 15 in that it defines purpose, restrictions, and applicability for each zone as well as definitions for understanding the codes and symbology used within the chapter's tables. The chapter tables define a specific use within a usage category and whether it is prohibited, allowed, or conditionally allowed. It is important that reference to a TVY AOZ district be made and incorporated into reviews required of these land uses.

Chapter 17 of the Code describes *Commercial, Industrial, and Hazardous Industries Zoning Districts*. The content and makeup are like the previous two chapters, except they relate to the three land use categories listed in the title. Also like the previous two chapters, it is important that reference to a TVY AOZ district be made and incorporated into reviews required of these land uses.

Chapter 17A of the Code defines *Commercial Tourism, Recreation and Racing Sports, and Technology Industries Zoning District*. Like the previous chapters describing land use categories and uses, this chapter does so for the three land use categories listed in the title. Also like the previous chapters, it is important that reference to a TVY AOZ district be made and incorporated into reviews required of these land uses.

Chapter 18 of the Code describes regulations related to *Hazardous Waste Industries*. The creation of a TVY AOZ district does not impact the language within this chapter since the AOZ would not contain any specific restriction on these industries.

Chapter 19 of the Code regulates *Large Wind Energy Systems*. Because regulation of structure height is so critical to the TVY AOZ district implementation, any new amendments should include reference to the TVY AOZ within Chapter 19 in order to protect the safety and integrity of the Airport's operation and infrastructure.

Chapter 20 of the Code describes *Residential Facilities for Elderly and Disabled Persons* regulations in order to establish an administrative process for the approval of permits to operate residential facilities for elderly and disabled persons. Reference to a TVY AOZ is important in this section because FAA land use compatibility guidance seeks to protect these types of uses from potential noise and emissions caused by aircraft operations and the TVY AOZ district will seek the same end.

Chapter 21 of the Code defines a *Wildland/Urban Interface Overlay Zone (WUI)*. The purpose of this overlay zone is to provide minimum criteria for the protection of life and property from a wildfire. This chapter defines development restrictions, alternative building materials or methods, special building construction regulations, and dimensional restrictions for all land uses underlying this overlay zone. The TVY AOZ will function in a similar way to the WUI. Because the WUI is an overlay zone, the TVY AOZ will have no impacts on this chapter, other than it may affect the same lands underlying the WUI.

Chapter 22 establishes a *Railroad Travel Influence District*. The purpose of this regulation is to encourage and require land uses and density of uses adjacent to specific, historic railroad sidings, railroad spurs, and railroad tracks which will facilitate free and unimpeded railroad traffic flow and allow reasonable and harmonious uses on those adjacent lands as well as insuring attractive and orderly views from adjacent developments. The TVY AOZ would serve a very similar purpose of protecting airport users and adjacent property owners from impacts on either side.

Chapter 23 defines a *Highway Access District* including the purpose, application, and standards. This is another overlay district within the Code which regulates access to land contiguous to highways in order to facilitate minimal impediments to traffic flow, mitigate potential and actual conditions that contribute to vehicular accidents, and allow reasonable and harmonious uses on such lands as well as to insure unobstructed views of access points. Like the Airport Overlay Zone to be proposed within this study, the Highway Access District sets limitations on landowners use of property for the sake of public health, safety, and welfare. The implementation of a TVY AOZ does not impact the language within this portion of the Code because it is itself an overlay district which adds a layer of regulatory requirements.

Chapter 24 defines *Sign Regulations* in the County for the purpose of safety and preservation of aesthetics. The TVY AOZ and signage regulations are both overlay districts and will not conflict with one another since each one builds on the other. Therefore, no additional language will be required within the signage regulations for implementation of the TVY AOZ because it is itself an overlay district which adds a layer of regulatory requirements.

Chapter 25 content covers the *Drinking Water Source Protection Overlay Zone* for the purpose of minimizing negative effects on limited ground water resources used by public water systems. Again, this overlay zone and the TVY AOZ will not conflict with one another since the AOZ is just another layer of regulation.

Chapter 26 identifies rules for *Construction Debris and Municipal Solid Waste Zones*. This regulation provides policies, standards, requirements, and procedures to regulate and control the location and expansion of non-hazardous waste facilities to promote public health, safety, and welfare. Implementation of the TVY AOZ does not conflict with this regulation and no additional language regarding the TVY AOZ is required within this Code chapter because, like the AOZ, it is itself an overlay district which adds a layer of regulatory requirements.

Chapter 27 describes regulations for the *Mining, Quarry, Sand, and Gravel Excavation Zone*. This zone assures that operations of such sites are not encroached upon by surrounding non-compatible land uses. This Code section is not impacted by adoption of a TVY AOZ because it is itself an overlay district which adds a layer of regulatory requirements.

Chapter 28 describes regulations for *Siting of Wireless Telecommunications Facilities*. Rules within this ordinance eliminate ability of wireless towers to site where airport operations or communications can be interfered with, so airport safety is already included within this chapter. Additional reference to a TVY AOZ within 28-5 (4) *Facility Types and Standards* and 28-10 (2) *Interference with Other Communications* is recommended to ensure continuity and consistency within all appropriate Code regulations.

Chapter 29 describes the *Pine Canyon Environmental Overlay Zone* regulations as they relate to monitoring development and environmental remediation requirements in the Pine Canyon Area. This regulation and a TVY AOZ do not create conflicts within the Code because it is itself an overlay district which adds a layer of regulatory requirements.

Chapter 30 is reserved and would provide a logical place to integrate a new TVY AOZ within the Code, tentatively titled *Tooele Valley Airport Overlay Zone District*.

Chapter 31 describes *Planned Community Zones* and provides the County with a regulatory tool to allow large properties to be developed in accordance with a specific plan of design. This tool is similar to the Planned Unit Development regulation described in Chapter 9 but designed to create specific types of zones including 1.) Neighborhood, 2.) Village, 3.) Town Center, 4.) Business research, Technology, or Educational Campus, or 5.) Open Space. A TVY AOZ district would not need to be specifically referenced within this section of the Code because it does not impact the creation of Planned Community Zones.

In summary, integration of a TVY AOZ into the existing Code will necessitate consideration toward other sections of the document. At a minimum, ordinance language will likely require updates within the followings Code sections:

- » Chapter 2 – *Definitions*
- » Chapter 4 – *Supplementary and Qualifying Regulations*
- » Chapter 7 – *Conditional Uses*
- » Chapter 10 – *Mobile and Manufactured Homes*
- » Chapter 12 – *Site Plan Review*
- » Chapter 14 – *Zoning Districts*
- » Chapter 19 – *Large Wind Energy Systems*
- » Chapter 28 – *Siting of Wireless Communication Facilities*

These recommendations are not intended to be exhaustive. Instead they are preliminary observations to recognize potential impacts that a TVY AOZ might have to the existing Tooele County Land Use Code. It is recommended that Tooele County Planning and Zoning Department, as well as Tooele County legal counsel, review and identify all impacts to the Code. Additional verbiage updates, additions, and/or deletions may be sought after review by Tooele County legal counsel.

1.2 IMPLEMENTATION STRATEGY

An implementation strategy is critical to move the TVY AOZ from a plan to adoption by land use authorities as a legally enforceable land use ordinance. It is equally important to develop a strategy for communicating the protection and benefits provided by an AOZ to the local governments and the communities they represent. Local land use authorities have the ultimate say over whether to enact an amendment to local ordinances and official zoning maps by incorporating a new AOZ. For these reasons, an implementation strategy must be established early to ensure community benefits of the recommended AOZ, and zoning language, is properly communicated to the community representatives whose support is necessary to incorporate it into the local codes.

By its very nature, the TVY AOZ will be certain to cover a large area of land which crosses over multiple jurisdictions. The primary land use authority impacted by any proposed AOZ will be Tooele County. Additional surrounding jurisdictions include Tooele City and Grantsville, as well as the unincorporated Erda community. The following sections will describe process requirements related to proposing and adopting land use regulation and zoning map amendments.

1.2.1 Tooele County Zoning Amendment Process

The process to integrate a new TVY AOZ into Tooele County land use regulations requires updates to two distinct elements of the regulations:

1. Narrative description of the regulation
2. Official zoning map update

Chapter 3 – *General Plan, Land Use Ordinance, Zoning Maps and Amendments*, describes the role of the Tooele County Planning Commission as well as the process required to amend both elements of the regulations. Sections 3-6 through 3-14 of the chapter describe the full process for proposing and implementing amendments to the Code. The following is a summary of steps involved in performing those actions.

Context for Code and Zoning Map Amendments

Chapter 3, Section 3-6 – Land Use Ordinance establishes that all land use ordinances shall “further the intent of the Tooele County General Plan.” This is important because all submittals for review within this process MUST identify and cite specific areas of the Tooele County General Plan (General Plan) in which they work to progress the community vision. Any new ordinance brought forward to authorities for review is certain to fail if it does not promote the vision found within the General Plan.

The Board of County Commissioners of Tooele County (Board of County Commissioners) has final authority on reviewing and approving all proposed land use ordinance and zoning map amendments. All amendments to the Code and zoning map must be proposed or first submitted to the Tooele County Planning Commissions for recommendation by the Board of County Commissioners. All amendments by the Board of County Commissioners must be in accordance with procedures set out in Utah Code 17-27a-502 and 17-27a-205(1)(b).

Initiation of Land Use Ordinance Text and Zoning Map Amendments

A proposal for an amendment to the land use ordinance may be initiated by:

1. The Planning Commission;
2. A county official through a request to the Planning Commission; or
3. An individual, through an official application to the Planning Commission.

Each applicant bears the burden of proof to show that the amendment requested furthers the goals and policies of the General Plan.

The following list outlines the process SLCDA would follow to initiate land use ordinances and zoning map amendments:

1. Engage with Tooele County Community Development Staff to discuss requirements for implementing changes to the land use ordinance.
2. File an "Application to Amend the Land Use Ordinance of Tooele County" (See **Appendix C**) with the Tooele County Department of Engineering for staff and public review. A fee of \$500 is assessed upon filing. Applications should be supplemented with any additional information required by the Planning Commission.
3. Planning Commission will fulfill all public notification requirements including scheduling of a public hearing to consider adoption or modification of all land use ordinances. During the public hearing, Planning Commission will prepare and recommend action to the County Board of Commissioners.

Concurrently, the following list outlines the process SLCDA would follow to initiate zoning map amendments:

1. Reach out to Tooele County Community Development Staff to discuss requirements for implementing changes to the land use ordinance.
2. File an "Application to Amend the Zoning Map of Tooele County" (See **Appendix D**) with the Planning Commission Secretary or Tooele County Department of Engineering for staff and public review. A fee of \$500 is assessed upon filing. Applications should be supplemented with any additional information required by the Planning Commission. The application lists requirements which must be addressed, and parcel maps obtained from the Tooele County Recorder's Office MUST be included with this application. All applications MUST address the following (strike through lines understood to be labeled as "Not Applicable (N/A)" are not relevant⁷ to the TVY AOZ):
 - a. General existing site characteristics including ownership, topography, soils, drainage, vegetation ~~and other physical characteristics of the area proposed to be changed;~~
 - ~~b. A legal description of the area to be zoned;~~
 - c. Types of land uses permitted, conditional, or prohibited in the current zoning district and the proposed zoning district;
 - d. Existing transportation patterns including public and private roads and internal and external circulation patterns, rights-of-way, easements and parking;

⁷ Verify all strikethrough elements are not applicable with Tooele County planning staff.

- e. Existing and proposed land uses, open spaces, impervious surfaces including streets, parking areas, structures and buildings with a general description of size area, intensities/densities, and height, and proposed storm-water drainage facilities;
- f. Existing and proposed utilities and infrastructure;
- g. The relationship of the proposed zone change with the Tooele County General Plan and specifically how the proposed zone change would conflict, conform, complement or otherwise affect the General Plan as well as any special studies that are designed to further detail the Tooele County General Plan in a specific area;
- h. An area map showing adjacent property owners and existing land uses within 500 feet of the area proposed to be rezoned;
 - i. The location, description and acreage of land uses;
 - j. The approximate location and number of residential units along with approximate square footage, density and height;
 - k. The approximate location and square footage of non-residential buildings;
 - l. ~~A calculation of the approximate amount of open space both before and after build-out construction, indicating areas of expected open space and new landscaping, and including maintenance plans for these areas;~~
 - m. If the site has unusual or unique natural features, a demonstration of how proposed development preserves and utilizes natural topography and geologic features, scenic vistas, trees and other vegetation, and prevents the disruption of natural draining patterns, ~~and if appropriate, geotechnical studies submitted to indicate soil types, depth of bedrock and slope stability;~~
 - n. A description of the availability of ~~culinary and irrigation water~~, community facilities such as schools, fire protection services and other types of facilities ~~that would serve the re-zoned area~~ and how these facilities are affected by this proposal;
 - o. ~~The approximate location and size of storm water detention and retention areas and calculations on the impact to those systems as a result of the change in density and use of land;~~
 - p. ~~An indication of the construction schedule of any project proposed;~~
 - q. ~~For multi-phased projects, a phasing plan that describes the anticipated timing and geographical extent of each phase;~~
 - r. ~~A detailed traffic study showing the vehicle trips per day on average at build-out and a determination how the project would significantly alter existing traffic patterns or volume;~~
 - s. ~~For applications involving a PUD, a table of proposed dimensional standards for the proposed land uses or phases including lot sizes and frontages, building heights and intensities, and setbacks and a description of any requested exceptions to the requirements of the underlying zone; and~~
 - t. Any other study or information required by the Planning Commission or zoning administrator.
- 3. Planning Division of the Engineering Department reviews proposal and submits report to applicant and Planning Commission. Impacts of proposed change on development of the land within the community and county is analyzed for conformity with General Plan among many other criteria.

4. Planning Commission will fulfill all public notification requirements including scheduling of a public hearing to consider adoption or modification of all zoning map amendments. During the public hearing, Planning Commission will prepare and recommend action to the County Board of Commissioners. Planning Commission may approve or deny applications as proposed. Planning Commission may also modify proposals to exclude those properties in the rezoning of which do not, in the opinion of the Planning Commission, meet the criteria and intent of the general plan. Such recommendation shall specifically address the impact such a change will have on the resources and infrastructure within the County.

It is important to understand that, according to Code Chapter 3 Section 3-11, "a final determination regarding an application to amend the zoning map shall preclude the filing of another application to amend the zoning map to reclassify the same parcel of property, or any portion thereof to the same zone classification within one year of the date of the final decision unless the Planning Commission finds that there has been a substantial change in the circumstances or sufficient new evidence to merit consideration of a second application within the one-year time period."

Finally, after review of the decision of the Planning Commission, the Board of County Commissioners may affirm, reverse, alter, or remand for further review and consideration, any action taken by the Planning Commission. An appeal process exists as recourse for applicants dissatisfied with outcomes. Any person can appeal Board of County Commissioners decisions to the district court regarding amendment to land use ordinances or zoning maps by filing an appeal in writing within 30 days following the date upon which the decision is made.

1.2.2 Additional Governing Bodies

Although Tooele County is the primary authority with land use controls in the immediate vicinity of the Airport, identifying the role, authority, and process of land use controls in place at Erda, Grantsville, and Tooele City is important for enacting a TVY AOZ. Dependent upon the final determined boundary of the AOZ, a process may be required with those political entities to create proper zoning controls within all representative municipalities.

Erda

Erda, Utah is an unincorporated census-designated place and does not have any unique land use controls in place. Therefore, planning and zoning authority in Erda is controlled by Tooele County land use regulations and any Code and zoning map amendment would govern land use within Erda. There may come a time that Erda incorporates to form its own township government with planning and zoning controls. Any such governing bodies should be included in the process of proposing and adopting a TVY AOZ ordinance identical to what would be adopted by Tooele County and adjacent communities.

Grantsville

Grantsville is an incorporated, self-governing entity with a planning and zoning department. Land uses are regulated through ordinances under the "Land Use Development and Management Code". Grantsville land use controls currently make no reference to TVY operations and there are no existing regulations related to the Airport. It is highly recommended that, upon Tooele County adoption of a final TVY AOZ, Grantsville adopt an identical amendment within its ordinance and zoning map. In order to ensure

successful protection of landowner property and airport operations, all rules in place regarding land use controls related to TVY must be consistent across all impacted jurisdictions.

Chapter 3 of the Grantsville Land Use Development and Management Code addresses decision making bodies and officials. Like Tooele County, Grantsville land use policies are guided by a General Plan. All proposed amendments are reviewed by a Planning Commission and a public hearing is held on the proposed land use ordinance and/or zoning map amendment. The Planning Commission can then recommend (or not) the proposed amendments for approval by the City Council. City Council has ultimate approval, denial, or modification authority. Procedures for amendments to the Grantsville Land Use Development and Management Code can be found in Chapter 3 – *Decision Making Bodies, and Officials*⁸.

Tooele City

Tooele City is an incorporated, self-governing entity with a Department of Community Development. The Tooele City Planning Division is responsible for applying City ordinances related to land use. Tooele City Code Title 7 – *Uniform Zoning of Tooele City* addresses regulations related to land use. City Code 7-13 – *Special Purpose Overlay Zoning Districts* regulates the City's ability to establish overlay zoning districts for specific purposes that apply on top of the base zoning districts. According to the Code, "These overlay zoning districts may be established in other chapters of this Title based on their intended purpose." Since the City does not currently have a mechanism in place to protect TVY operations and landowners within the vicinity of the Airport, it is important to note that the Tooele City Code has the language in place to allow for adoption of a future TVY AOZ. As stated before, for the protection of landowners and the Airport alike, it is critical that any regulation adopted by Tooele City be consistent with regulations adopted by Tooele County.

The procedures required to amend the Tooele City Zoning Ordinance and Zoning Districts Map are outlined in City Code 7-1A⁹. At a high level, the governing hierarchy and City Code amendment procedures for Tooele City are very similar to Tooele County. Planning Division staff are responsible for reviewing and processing any applications for zone changes. The Tooele City Planning Commission then makes recommendations to City Council on applications. Public hearings are held for all proposed zoning amendments to gather input from the community. The City Council then has the ultimate decision-making authority on approval, denial, or modification of applications.

1.1.1 Coordination Information for Local Land Use Authorities

The following sections contain information pertinent to coordinating activities related to implementing the TVY AOZ, including contact lists for elected and appointed positions within Tooele County, Tooele City, and Grantsville.

⁸ Grantsville Land Use Development and Management Code – Chapter 3 can be found online at <https://grantsville.municipalcodeonline.com/book?type=landordinances#name=Chapter%203%20Decision%20Making%20Bodies,%20And%20Officials>, Retrieved June 25, 2019

⁹ Tooele City Code 7-1A – Amendments to the Tooele City General Plan, Zoning Ordinance, and Zoning District Maps can be found online at <https://tooelecity.org/city-departments/attorneys-office/city-code/title-7-uniform-zoning-of-tooele-city/title-7-chapter-1a-amendments-to-the-tooele-city-general-plan-zoning-ordinance-and-zoning-districts-map/>, Retrieved June 25, 2019

Tooele County1.1.1.1 Tooele County Community Development – Planning and ZoningMailing Address and Location:

Community Development
47 South Main Street, Room #208
Tooele, UT 84074

Phone: (435) 843-3160

Fax: (435) 843-3252

Office Hours: Monday through Friday - 8:00am to 5:00pm

County Staff:

Rachelle Custer (Director of Community Development)

Jeffrey Miller (Planner)

Email: jcmiller@tooeleco.org

1.1.1.2 Tooele County Planning CommissionMeetings:

The Tooele County Planning Commission holds regular meetings on the 1st and 3rd Wednesday of each month at 7:00pm in the Auditorium, on the first floor of the Tooele County Building at 47 South Main Street, Tooele, Utah.

Tooele County Planning Commission Board Members

- » Blair Hope - Term Expires 12/31/2021
- » John H. Wright - Term Expires 12/31/2023
- » Brad Bartholomew - Term Expires 12/31/2021
- » Lynn Butterfield - Term Expires 12/31/2022
- » Wade Jacobs - Term Expires 12/31/2022
- » Larry Brown - Term Expires 12/31/2020
- » Jessica Blundell - Term Expires 12/31/2019
- » Curt Jensen (Alternate) - Term Expires 12/31/2020
- » Paul Kunz (Alternate) - Term Expires 12/31/2021
- » Michael Pressley (Alternate) - Term Expires 12/31/2020

Phone: (435) 843-3100 (Tooele County Main)

Email: tooelecountyboard@tooeleco.org

1.1.1.3 Tooele County Board of Commissioners

County Commissioners:

Commissioner Kendall Thomas

Mobile: (435) 830-6016

Email: kthomas@tooeleco.org

Commissioner Tom Tripp

Phone: (435) 843-3150

Email: ttripp@tooeleco.org

Commissioner Shawn Milne

Phone: (435) 243-7313

Email: smilne.tooelecounty@gmail.com

Address and Location:

Tooele County Commission

47 South Main, 3rd Floor

Tooele, UT 84074

Phone: (435) 843-3150

Fax: (435) 843-3400

Office Hours:

Monday through Friday (except holidays) - 8:00am to 5:00pm

Tooele City

1.1.1.4 Tooele City Community Development – Planning and Zoning

Address:

90 North Main Street

Tooele, UT 84074

Phone: (435) 843-2132

Fax: (435) 843-2139

City Staff:

Jim Bolser (Director of Community Development)

Email: jimb@tooelecity.org

Andrew Aagard (City Planner, Zoning Administrator)

Phone: (435) 843-2132

Email: andrewa@tooelecity.org

Roger Baker (City Attorney)
Email: rogerb@tooelecity.org

Paul Hanson (City Engineer)
Email: paulh@tooelecity.org

1.1.1.5 Tooele City Planning Commission

Meetings:

The Tooele City Planning Commission generally meets on the second and fourth Wednesday of each month at 7:00pm. Meetings are held at Tooele City Hall, 90 North Main Street, in the City Council Chambers. (Contact City Planning and Zoning Administrator at (435) 843-2167 to get items on the agenda.)

Tooele City Planning Commission Members

- » Tony Graf (Chair)
- » Chris Sloan (Vice-Chair)
- » Matt Robinson
- » Melanie Hammer
- » Shauna Bevan
- » Phil Montano
- » Tyson Hamilton
- » Bucky Whitehouse (Alternate)
- » Ray Smart (Alternate)

1.1.1.6 Tooele City Council

Meetings:

The City Council generally meets on the first and third Wednesday of each month at 7:00pm. Meetings are held at Tooele City Hall, 90 North Main Street, in the City Council Chambers.

City Council Members:

Melodi Gochis – Term Expires 2021
Phone: (435) 830-9611
Email: mgochis@tooelecity.org

Dave McCall – Term Expires 2019
Phone: (435) 496-0458
Email: dmccall@tooelecity.org

Brad Pratt – Term Expires 2019
Phone: (435) 840-8173
Email: bpratt@tooelecity.org

Steve Pruden – Term Expires 2019
Phone: (435) 843-5649
Email: spruden@tooelecity.org

Scott Wardle – Term Expires 2021
Phone: (435) 840-1805
Email: swardle@tooelecity.org

Address and Location:

90 North Main Street
Tooele, UT 84074

Phone: (435) 843-2100
Fax: (435) 843-2109

Grantsville

1.1.1.1.7 Grantsville Community Development – Planning and Zoning

Address and Location

Grantsville City Corporation
429 East Main St.
Grantsville, UT 84029

City Staff:

Kristy Clark
Phone: (435) 884-4604
Fax: (435) 884-0426
Email: kclark@grantsvilleut.gov

1.1.1.1.8 Grantsville Planning Commission

Meetings:

The Grantsville City Planning Commission holds its regular monthly meeting on the second Thursday of each month at the Grantsville City Offices located at 429 E Main St, Grantsville, UT 84029. Planning Commission meetings begin at 7:00pm and meeting dates are posted online through the Utah Public Notice Website at the following web address: <https://www.utah.gov/pmn/sitemap/publicbody/1841.html>

1.1.1.1.9 Tooele City Planning Commission Members

Information not available

1.1.1.1.10 Grantsville City Council

Meetings:

The Grantsville City Council holds regular meetings on the first and third Wednesdays of each month at the Grantsville City Offices, 429 East Main Street, Grantsville, UT 84029. Meetings begin at 7:00pm.

City Council Members:

Jewel Allen

Email: jallen@grantsvilleut.gov

Neil Critchlow

Email: ncritchlow@grantsvilleut.gov

Jeff Hutchins

Email: jhutchins@grantsvilleut.gov

Krista Sparks

Email: ksparks@grantsvilleut.gov

Scott Stice

Email: ssstice@grantsvilleut.gov

1.1.2 Tooele County General Plan Review

The Tooele County Code is guided by the Tooele County General Plan (General Plan). The General Plan sets out the community vision and assists decision makers as they evaluate future development and growth. The General Plan is not a binding, legal document. It is a guide for future land use which helps decision makers in development and revision of regulatory zoning ordinances. The plan is driven by five objectives as follows:

1. Strive for fiscal and environmental sustainability
2. Provide for economic development in Tooele County
3. Document accomplishments and incorporate new priorities
4. Meet the needs of changing demographics
5. Update and modernize the General Plan format

There are many areas of the General Plan which provide support for the implementation of a TVY AOZ. Because an AOZ protects both the Airport and landowners around the Airport by providing safe navigable routes for aircraft and noise nuisance protections, it is supporting objectives like "striving for environmental sustainability". At the same time, an AOZ provides regulatory land use guidance which encourages development that is compatible with aircraft operations, ultimately encouraging economic development in proximity to an asset that is needed by industry and commerce. The development of compatible commercial, manufacturing, and light industrial land uses around the Airport will increase the tax base for Tooele County, while at the same time creating local jobs for the residents of Tooele County, thereby improving the County's economic sustainability. The AOZ also addresses a third objective of "meeting the needs of changing demographics". Tooele County is one of the fastest growing counties by percent of population change in the U.S. It is prudent that the County update the AOZ with a sense of urgency prior to the encroachment of land uses incompatible with the Airport or, conversely, result in the Airport not being a good neighbor. These are several ways in which introducing an AOZ meets the underlying objectives of the General Plan.

Furthermore, the General Plan recognizes the importance of the Tooele Valley Airport by encouraging additional land provisions to "meet future expansion and safety zones" and that by recognizing that the Airport has "a significant impact on the development plans for properties in the vicinity..."¹⁰ The General Plan uses four land use principles to guide future growth. These include the following:

1. Land Use Principle #1 - Create density and intensity near cities, services, and gathering places, including schools and centers.
2. Land Use Principle #2 - Use flexible and creative planning to achieve better neighborhood growth and development.
3. Land Use Principle #3 - Develop Tooele County into a self-sufficient region that includes adequate employment and service opportunities.
4. Land Use Principle #4 - Preserve public lands, historic sites, cultural landscapes, and scenic resources as part of a comprehensive planning approach.

The implementation of an AOZ both directly, and indirectly, promotes many of these principles. As a public facility, TVY can easily be considered an economic center for the community and by protecting land surrounding the Airport for proper land uses and densities, airport operational compatibility can be preserved within the community. Locating aviation compatible uses near the Airport also provides opportunities for non-aviation compatible businesses to locate in, or near, the city center, as preferred under the General Plan. Airports have historically been economic assets and drivers for economic growth in communities across the region. TVY is no exception. In fact, TVY is already contributing to the business community by supporting those corporations who do business in — and prefer to fly directly to — Tooele County, as well as by hosting skydiving operations which attracts tourism dollars. With a goal of growing employment, creating service opportunities, and becoming "self-sufficient" (presumably in a financial sense), preserving safe aircraft operating conditions and providing adequate facilities to support business aviation should be a top priority for the local communities. Additionally, the General Plan identifies preferred future land use patterns which "implement a wide range of industrial and business park developments as part of strengthening the local economy and job market." Implementing an AOZ strongly supports business development goals and these uses often prefer proximity to airports. These types of land uses are often open to designing facilities in ways which are compatible with aircraft operations.

Road and transportation facilities are also identified as community assets worthy of preservation and maintenance.¹¹ The General Plan states that "future road, rail, transit, trail and other transportation facilities should be maintained and extended to meet the transportation needs of the community." Presumably, the Airport is considered as an "other transportation facility" within this statement, although it is recommended that future planning efforts should consider expressly identifying the Airport as such an asset.

¹⁰ Tooele County General Plan Update 2016, Pgs. 2-8 and 2-9.

¹¹ Tooele County General Plan Update 2016, Pg. 2-30.

The General Plan has extensive narrative regarding preservation of Tooele Valley "sense of place". This means maintaining the characteristics which make the area unique. In order to protect the Tooele Valley sense of place, the General Plan identifies multiple goals, recommended policies, and implementation measures to achieve that goal. The implementation of an AOZ for TVY supports many of these goals and policies. The most critical goals, policies, and implementation measures related to protecting the Airport and surrounding land uses are as follows:

- » **Goal:** To protect transportation corridors and minimize impacts on surrounding land uses.
 - ◆ **Policy:** Introduce minimum setbacks between new residential uses, railways, and road corridors.
 - ◆ **Policy:** Utilize transitional land uses, physical buffers such as walls, fences, and vegetation to separate residential land uses from industrial and similar incompatible uses.
- » **Goal:** To promote implementation of the land use concepts contained in the General Plan
 - ◆ **Policy:** Modify the existing County Code to ensure land use changes contained in the updated General Plan are codified.
 - **Implementation Measure:** Ensure that the Tooele Valley Municipal Airport Master Plan is reviewed when considering new development in the vicinity of the Airport.
 - **Implementation Measure:** Coordinate and cooperate with Tooele Valley Airport authorities to ensure adjacent landowners are apprised of future expansion/buffer needs and compensation is provided accordingly.

1.3 LAND USE REQUIREMENTS

The primary purpose of implementing an AOZ into a zoning ordinance is to promote and protect public health, safety, and welfare. With this goal in mind, criteria were developed to define the AOZ as described in the following sections.

1.3.1 Defining the Airport Influence Area

The extent of an AOZ can be best justified by first identifying the area in which aircraft operations are influenced by, or have an influence upon, the underlying land uses. This area is known as the Airport Influence Area (AIA). In the AIA, aircraft operating at TVY can be expected, on occasion, to be seen and/or heard by people on the ground. Three criteria have been used in this study to determine the AIA and therefore the AOZ outer boundary. These criteria include:

- » Safety of people and property in the air and on the ground
- » Regulatory requirements
- » Aircraft operational noise

Safety and Regulatory Requirements

Regulatory requirements related to aviation are predominantly driven by safety. To ensure safe airport operations, it is critical to protect airspace from obstructions and provide safe travel corridors for aircraft pilots and passengers. This is achieved at both the federal and local levels. At the local level, airspace is best protected by outright airport ownership of land below flight paths. Alternatively, protections for both Airport users and property owners can also be achieved through deeded aviation easements. Aviation

easements also help provide advanced notice to potential homebuyers within an area where aircraft operate.

By law, the United States Government "has exclusive sovereignty of airspace of the United States."¹² The FAA is tasked with administering the National Airspace System (NAS) for civil aviation within the United States, with the primary purpose of ensuring safety. With this mission in mind, FAA provides regulatory oversight to protect navigable airspace from obstructions, as defined within 14 CFR Part 77. These protective surfaces are, in part, defined by the FAA approved design aircraft as defined within the TVY 2016 Airport Layout Plan update. This aircraft is the Cessna 750 Citation X. The Citation X jet is a category C-II aircraft, which is determined by its approach speed (Category C) and the wingspan/tail height (Group II) as defined within FAA AC 150/5300-13A, *Airport Design*. All 14 CFR Part 77 surfaces evaluated in this study are tailored to the C-II design aircraft at TVY. These protected surfaces are defined in **Appendix E**.

An established AOZ ordinance serves an important role for local governments by providing a mechanism for development review necessary to meet federal regulatory requirements. Title 14 Code of Federal Regulations (CFR) Part 77 – *Safe, Efficient Use, and Preservation of the Navigable Airspace*¹³ requires filing of notice to FAA of certain proposed construction or alteration of existing structures. This is done through the 7460-1 process which is available online through the Obstruction Evaluation/Airport Airspace Analysis (OE/AAA) web portal¹⁴. Standard practice when implementing an AOZ into local codes is to include the 14 CFR Part 77 filing as part of the development review process. Codes typically refer petitioners and local zoning authorities to airport administrators who can file proper documentation with FAA on behalf of the landowner/developer.

FAA also regulates aircraft operating procedures for arrivals, departures, and missed approaches at TVY. These protected airspace surfaces are determined by FAA using Order 8260.3D, *United States Standard to Terminal Instrument Procedures* (TERPS). TVY has precision approaches serving Runway 17, a missed approach procedure for Runway 17 precision approaches, and departure procedures for both Runway 17 and Runway 35. Additionally, the 2016 FAA approved TVY Airport Layout Plan identifies a future non-precision approach for Runway 35. These protected TERPS surfaces have all been evaluated in development of the AIA and graphic depictions of the impacts around TVY are available in **Appendix E**.

FAA AC 150/5300-18B contains information regarding collection of airport survey data and GIS standards. These standards contain definitions for airport airspace survey surfaces related to runways with vertically guided approaches. These surfaces assist airports in identification of possible hazards to air navigation and critical approach/departure obstructions within the vicinity of an airport. These surfaces are intended to support planning and design activities of airports as well as ancillary tasks such as instrument flight procedure design. These airspace surfaces are shown in **Appendix E**.

¹² U.S. Code § 40103 - *Sovereignty and Use of Airspace* can be accessed online here:

<https://www.law.cornell.edu/uscode/text/49/40103>

¹³ 14 CFR Part 77 is available through the eCFR online database here: <https://www.ecfr.gov/cgi-bin/text-idx?SID=1542d861383ce5dbf5b1a2e86c986a1f&mc=true&node=pt14.2.77&rgn=div5>

¹⁴ OE/AAA portal can be accessed online here: <https://oeaaa.faa.gov/oeaaa/external/portal.jsp>

Established traffic patterns around TVY used primarily by smaller piston aircraft during visual meteorological conditions are based upon FAA guidance found in 14 CFR Part 77. These areas are shown in **Appendix E**.

Wildlife boundary requirements per FAA AC 150/5200-33C, *Hazardous Wildlife Attractants On or Near Airports (January 18, 2019)* have been reviewed and mapped. These boundaries provide good supplemental information for Airport leadership and the authorities making zoning decisions around the Airport. However, for the purposes of defining the AIA and the zones within the AOZ, this boundary does not provide sufficient justification or measure of protection to support boundary definitions. Wildlife boundaries are shown in **Appendix E**.

Airports, because of their utility and access, are excellent drivers of local and regional economic growth. As such, protecting airport infrastructure and facilities from encroachment that reduces or eliminates their ability to function is vital to retaining the airport as a community economic asset. It is recommended that land immediately adjacent to the Airport has some form of land use control in place (fee simple airport ownership, aviation easement, or otherwise) to provide the buffer space necessary to sustain airport development and aviation compatible development near the airfield and other critical airport infrastructure. An AOZ provides one strong level of protection to ensure the airport can continue to operate safely. Zoning land surrounding the airport to be compatible with Airport operations as well as measures to accommodate future airport growth should be considered by Tooele County. Future county and municipal master planning efforts can provide opportunities to consider and update preferred future land uses in the vicinity of the Airport that are compatible with airport operations as well as solicit community feedback on potential updates to the future land use plan. Coordinating future TVY Airport Master Plan updates with future county and municipal plans also provides opportunities to plan in a more regionally comprehensive manner.

Noise

Noise created by aircraft operations at TVY can be perceived by people on the ground as a nuisance. The level of annoyance is subjective and typically dependent upon overall magnitude and frequency. Decades of research exists on the subject, including studies undertaken by the Environmental Protection Agency (EPA) and FAA.

At its most basic level, sound is measured in decibels (dB). Metrics for noise used by FAA include the Sound Exposure Level (SEL) and the day-night average sound level (DNL). FAA defines the SEL metric as "all the acoustic energy (a.k.a. sound pressure) of an individual noise event as if that event had occurred within a one-second time period" which "captures both the level (magnitude) and the duration of a sound event in a single numerical quantity." Alternatively, the DNL reflects "cumulative exposure to sound over a 24-hour period, expressed as the noise level for the average day of the year on the basis of annual aircraft operations."¹⁵

¹⁵ https://www.faa.gov/regulations_policies/policy_guidance/noise/basics, Retrieved on November 6, 2019.

As a government agency, the FAA has a vested interest in managing impacts of aircraft noise on the public and has concluded the following with regard to aircraft noise and noise monitoring¹⁶:

The FAA has determined that the cumulative noise energy exposure of individuals to noise resulting from aviation activities must be established in terms of the day-night average sound level (DNL) in decibels (dB). The 65 DNL is the Federal significance threshold for aircraft noise exposure and the FAA's primary metric for aviation noise analysis.

DNL has been widely accepted as the best available method to describe aircraft noise exposure and is the noise descriptor required by the FAA for use in aircraft noise exposure analyses and noise compatibility planning. The DNL has also been identified by the U.S. Environmental Protection Agency (USEPA) as the principal metric for airport noise analysis. Day-Night Average Sound Level (DNL) is a 24-hour equivalent sound level. DNL is expressed as an average noise level on the basis of annual aircraft operations for a calendar year. To calculate the DNL at a specific location, Sound Exposure Levels (SELs) (the total sound energy of a single sound event) for that particular location are determined for each aircraft operation (landing or takeoff). The SEL for each operation is then adjusted to reflect the duration of the operation and arrive at a "partial" DNL for the operation. The partial DNLs are then added logarithmically — with the appropriate penalty for those operations occurring during the nighttime hours — to determine total noise exposure levels for the average day of the year.

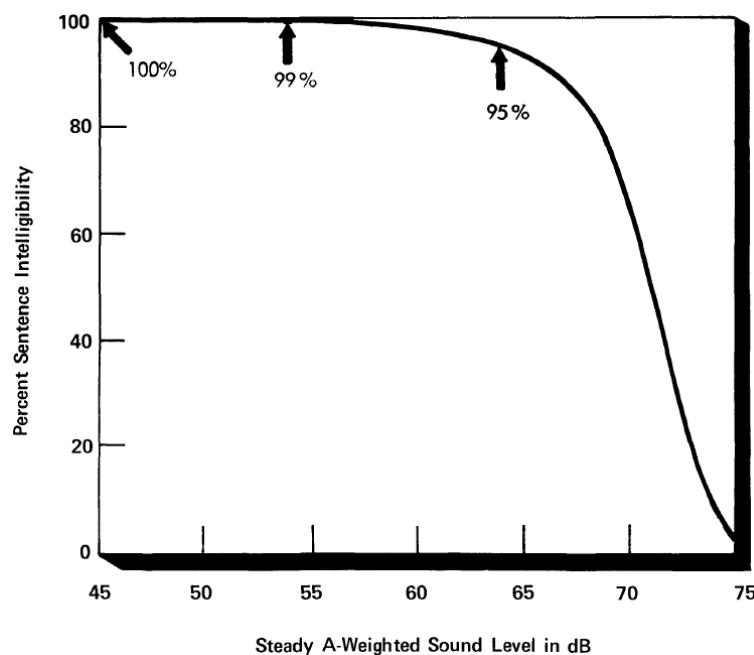
The 65 DNL contour, as defined in the most recent FAA Part 150 Noise Exposure Map update at TVY, does not extend beyond Airport property. However, this study recognizes that certain types of single, short duration noise events are often defined within local zoning ordinances as nuisances. For this reason, the study opted to review the estimated impacts of SEL events from the design aircraft (Cessna 750 Citation X) to determine how a single arriving aircraft might influence the area surrounding TVY.

The metric used to examine the potential for noise nuisance caused by aircraft operating near TVY was speech interference. Speech interference is the point at which normal conversation becomes difficult as ambient noise increases, requiring the speaker to raise their voice or the listener to move closer in order to understand the speaker. The typical indoor conversation takes place at a three-foot distance at 60dB. **Figure 1-2** shows the percent sentence intelligibility for indoor speech at measured decibel levels as determined by the US EPA. This shows that as ambient noise levels reach 64dB the percent sentence intelligibility is reduced to 95 percent.

¹⁶ FAA, *Aircraft Noise and Noise Monitoring*,

Information retrieved December 16, 2019 from https://www.faa.gov/airports/airport_development/omp/faq/noise_monitoring

FIGURE 1-2
PERCENT SENTENCE INTELLIGIBILITY FOR INDOOR SPEECH



Source: US EPA, *Protective Noise Levels: A Condensed Version of EPA Levels Document*, 1974

14 CFR §21.183 establishes aircraft noise requirements for issuance of FAA airworthiness certificates. As part of this, new aircraft undergo noise certification testing. The results are recorded in the flight manual. Noise certification tests for the Cessna 750 Citation X¹⁷ aircraft concluded the following noise levels during phase of flight according to FAA defined testing standards¹⁸:

- » Takeoff: 72.3dB
- » Sideline: 83.0dB
- » Approach: 90.2dB

In a 2018 comparative study of outdoor and indoor noise levels under various window conditions, Swiss scientists determined that, under closed window conditions, outdoor noise levels drop an average of 26 to 31dB in an indoor setting¹⁹. Looking at the C-II design aircraft approach noise levels of 90dB and calculating a minimum average decrease of SEL event noise of 26dB, the average perceived noise levels in homes within the 90dB event range would experience 64dB noise levels inside their homes under closed window conditions. Per the conclusions of the study, the 65dB indoor noise level is a reasonable marker for the beginning threshold of noise levels causing conversational speech interference. For comparison purposes, the average gas power riding lawnmower produces approximately 90dB outside²⁰ (varies by

¹⁷ FAA AC36-1H, *Noise Levels for US Certificated and Foreign Aircraft*

¹⁸ FAA noise certification testing standards found in 14 CFR Part 36, *Noise Standards: Aircraft Type and Airworthiness Certification*

¹⁹ International Journal of Environmental Research and Public Health, *Differences between Outdoor and Indoor Sound Levels for Open, Tilted, and Closed Windows*, January 2018, 15(1): 149

²⁰ Information retrieved January 2020 from University of Florida's Hearing Conservation Program resource at

<http://webfiles.ehs.ufl.edu/noiselvl.pdf>

make, model, and condition.) Applying the 2018 noise study logic, the indoor perceived noise level with closed windows would average 64-74dB. The key differences between the riding mower and a passing aircraft would be frequency and duration. The duration of the sound from the mower would be much greater since the aircraft would pass rather quickly when compared to the amount of time it would take to mow the typical lawn in Tooele County. Conversely, the lawn mower would most likely only run once per week while aircraft may pass overhead at greater frequency. A person's sensitivity to these types of sounds is strictly dependent upon the individual.

Using a sound level and distance damping calculation²¹ to estimate areas impacted by 75dB and 85dB SEL noise events, it was determined that 85 percent of the 75dB SEL event area is captured within the recommended AIA. The portions outside the AIA are located directly off the approach centerline of the runways, with 7.5 percent lying over the Great Salt Lake and the other 7.5 percent lying over industrial zoned areas and the Tooele Army Depot west of Tooele City.

1.3.2 Recommended Airport Influence Area Boundary

The preliminary AIA, shown in **Appendix F**, combines the 14 CFR Part 77 conical surface for category C-II aircraft and the approach/departure surfaces up to 500 feet above airport elevation to create a comprehensive boundary of land influenced by aircraft operations. The conical surface protects an area to meet federal safety and regulatory requirements as defined under 14 CFR Part 77. The arrival and departure procedures occur in federally regulated airspace specific to designated procedures at TVY, creating very distinct and unique boundaries at the point where these airspace surfaces meet 500 feet above airport elevation. The 500 feet above airport elevation mark was selected because 14 CFR Part 77 defines obstructions to air navigation as objects (including existing, future, and mobile objects) higher than 499 feet above ground level at the site of the object. In the recommended AIA, the approach and departure surface extents have been simplified into standard distances of 4 statute miles from runway end on extended runway centerline and 1 statute mile in each direction perpendicular to runway centerline. This simplification of the approach and departure areas of the AIA includes nearly entirely undeveloped areas of land (as of 2019) with the exception of the Tooele Army Depot and small industrial facilities northwest of Tooele City. Land within the departure surfaces north of TVY not included in the simplified boundary are undeveloped high-water mark areas for the Great Salt Lake which are unlikely to develop with any incompatible land uses as they are owned by the State of Utah. It's important to note that this definition may simplify administration of the AOZ but would require review and/or amendment at such a time that airfield facilities were expanded/altered, or flight procedures were implemented/changed by FAA.

The recommended AIA/AOZ boundary dimensions are 14,000 feet in any direction from the closest point of the Runway 17/35 centerline (14 CFR Part 77 Conical Surface) and a rectangular box measuring 4 statute miles out along the extended runway centerlines and 1 statute mile in each direction perpendicular to the runway centerline. The final recommended AIA and AOZ boundary is shown in **Appendix F**.

²¹ Sound level and distance damping calculator available at <http://www.sengpielaudio.com/calculator-distance.htm>

1.4 AIRPORT OVERLAY ZONE

The methodology used to determine the recommended Airport Influence Area was expanded upon from the methodology used in the *2001 Land Use Study* (see **Appendix A**). First, the recommended outer AOZ boundary has been updated to meet current conditions at TVY. Secondly, the interior AOZ limitations differ from the original *2001 Land Use Study* boundaries based on new information being available. The intent of the original 2001 study zone designators and land use protections remain valid and have been integrated into this updated AOZ, however, new information and considerations regarding airspace protection and land use have been used to expand upon and update the 2001 recommended AOZ.

1.4.1 Airport Overlay Zoning Code Review

Numerous reference materials were reviewed to provide a general understanding of common policies and practices currently being used to protect airports. Local codes reviewed include:

- » Salt Lake County Code – Chapter 19.70 – AOZ Airport Overlay Zone
- » Salt Lake City Code – 21A.34.040, AFPP Airport Flight Path Protection Overlay District
- » West Jordan City Code – 13-6A, Airport Overlay Zone

Common elements found within the analyzed Airport Overlay Zones include:

- » Purpose
- » Definitions
- » Reference to Airport Master Plans and Airport Layout Plans
- » Reference to 14 CFR Part 77 Imaginary Surfaces
- » Airport Influence Zone boundaries
- » Land use permissions and restrictions
- » Development building standards
- » Permitting
- » Nonconforming uses
- » Hazard marking and lighting
- » Conflicting regulations stipulation
- » Official Airport Overlay Zone map

Each AOZ reviewed uses 14 CFR Part 77 as the basis for defining land use limitations for the purposes of protecting navigable airspace. Each reviewed AOZ also recognizes certain land uses as incompatible with aircraft operations within areas around an airport. Finally, each AOZ includes noise attenuation requirements for construction within the zones most impacted by aviation noise. **Appendix G** is a proposed AOZ for Tooele County, incorporating relevant areas of the previously referenced codes, as well as tailored language specific to meet the unique circumstances of Tooele County and Tooele Valley Airport.

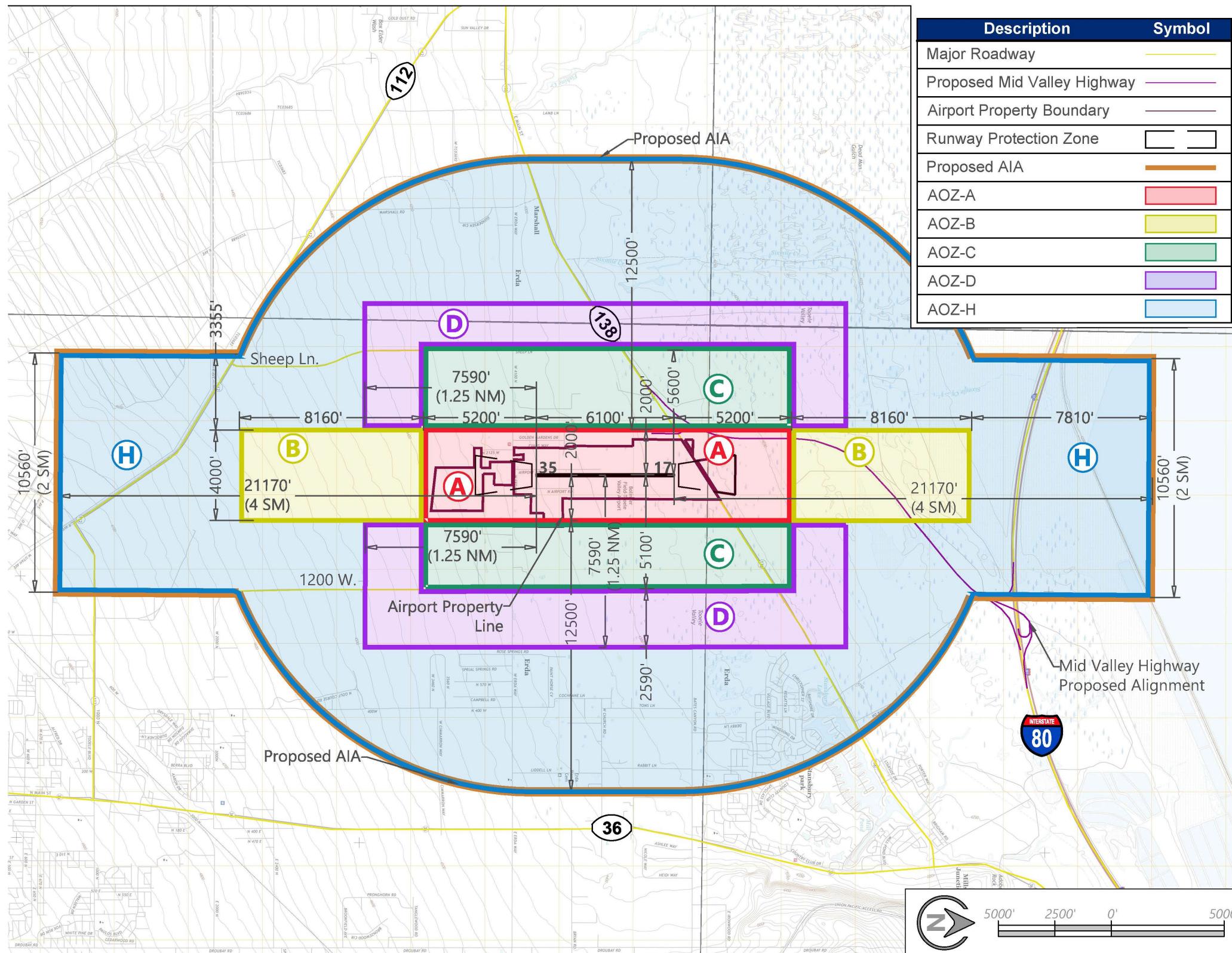
1.4.2 Recommended Airport Overlay Zone Guidelines

The interior AOZ boundaries include the following:

- » AOZ-A – Limited Development Zone
- » AOZ-B – Extended Approach Zone
- » AOZ-C – Traffic Pattern Zone
- » AOZ-D – Extended Traffic Pattern Zone
- » AOZ-H – Height Restriction Zone

The following sections describe the recommended zone purpose, boundary, associated land use restriction, and height restrictions. As elements of the overall AOZ, these zones would supplement any existing underlying zoning, including any additional requirements and/or restrictions. See **Figure 1-3** for the proposed Comprehensive AOZ Map.

FIGURE 1-3
COMPREHENSIVE TVY AOZ MAP



Source: RS&H Analysis, 2020

AOZ-A – Limited Development Zone

The Limited Development Zone (AOZ-A) is the most restrictive zone regarding land use and obstacle heights because it includes TVY facilities and the immediate area surrounding the Airport. It is especially important that this land be protected from obstacles intruding into navigable airspace because, in this zone, aircraft are lowest to the ground in the most vulnerable stages of flight (takeoff and landing). Likewise, people and facilities are closest to low flying aircraft and are therefore subject to more noise and the potential impacts suffered in the event of an aircraft crash. The AOZ-A attributes are based on 14 CFR Part 77 protected airspace, FAA Order 8260.3D TERPS flight procedures, FAA AC 150/5300-13A design standards, and TVY aircraft fleet noise impacts. The following sections describe the recommended boundary area, land use restrictions, and height restrictions for AOZ-A.

Boundary Description

The AOZ-A boundary is a rectangular shape defined by distances centered on Runway 17-35. AOZ-A is 4,000 feet wide (2,000 feet laterally on each side of the runway parallel to runway centerline) extending 5,200 feet beyond the end of Runway 17 departure end (to the south) and 5,200 feet beyond the Runway 35 departure end (to the north). The 4,000-foot width protects land within the immediate vicinity of the airport that is suited for aeronautical development because of its close proximity to the runway asset. Additionally, this lateral distance from the runway centerline encompasses an 85 SEL noise contour area as defined within the *2001 Land Use Study* (see **Appendix A**). The 5,200-foot extension from runway ends is derived from the need to protect the Runway Protection Zone (RPZ) areas and TERPS departure surfaces which rise away from the runway ends at a 40:1 slope (departures) and 34:1 slope (arrivals). The 5,200 feet incorporates the 100:1 airspace clearance height, as defined in 14 CFR Part 77, to protect for obstacles up to 500 feet high. The 5,200 feet is also twice the distance of the RPZ, from runway end, required to protect for the design aircraft category and existing/future instrument approach visibility minimums.

Land Use Requirements/Restrictions

- » Aviation easement required for all new development to establish object height limitations.
- » Aeronautical and aviation compatible/dependent land uses (i.e., industrial, commercial, technology industries) that rely on and/or make regular use of airport facilities (runway and taxiways) are strongly encouraged.
- » Land uses sensitive to noise and areas of public assembly are not permitted. These include:
 - ◆ Residential
 - ◆ Mobile home parks
 - ◆ Transient lodgings
 - ◆ Residential facilities for elderly and disabled persons
 - ◆ Educational institutions (excluding aviation education and those making use of airfield facilities such as university flight schools)
 - ◆ Religious institutions (excluding those that are not used for large public assemblies and are integrated into aviation related facilities at fixed-base operators, such as small meditation areas or quiet areas)

- ◆ Hospitals (excludes small medical facilities directly related to aerial patient transport which make use of airfield facilities)
- ◆ Outdoor parks or sports arenas
- ◆ Outdoor music venues and amphitheaters
- ◆ Nature exhibits and zoos
- ◆ Amusement parks, resorts, and camps
- ◆ Golf courses, riding stables, and water recreation

Height Restrictions

- » 14 CFR Part 77 Obstruction Evaluation/Airport Airspace Analysis (Form 7460-1) process will be completed prior to construction or alteration of structures on the property including mobile infrastructure. Conclusions of the FAA OE/AAA Form 7460-1 process and/or aviation easement process that demonstrate any proposed site development will limit the ability of TVY facilities to operate to their full existing capacity, or limit the ability of planned future facilities (as defined on the Airport Layout Plan) to operate at their full capacity are not permitted. Proposed development that is determined to limit Airport operations or capacity require amendment until impacts to TVY facilities are mitigated/eliminated. Examples of impacts to TVY facilities and operations that would require amendments to site plans include, but are not limited to, increased aircraft performance requirements, reduced usable runway length (landing or takeoff), and increases to flight procedure approach minimums.
- » Proposed development, as required within this Chapter, will only be permitted upon successful completion of the 14 CFR Part 77 OE/AAA process by filing Form 7460-1 with the FAA, conveyance of an aviation easement, and approval by Tooele County. Any site layout or design changes occurring after FAA OE/AAA approval which alter locations and/or increase structural heights requires resubmission of updated plans and Form 7460-1 to FAA under the 14 CFR Part 77 Obstruction Evaluation/Airport Airspace Analysis process and new approval from Tooele County.

AOZ-B – Extended Approach Zone

The Extended Approach Zone (AOZ-B) is designed to protect FAA TERPS airspace extending off the ends of Runway 17-35. The AOZ-B boundary also encompasses an 85 SEL noise contour area as defined within the *2001 Land Use Study* (see **Appendix A**).

Boundary Description

The AOZ-B boundary is 4,000 feet wide (2,000 feet laterally on each side of the runway perpendicular to runway centerline) and extends 8,160 feet in alignment with the Runway 17-35 centerline from the north and south extents of the AOZ-A boundary.

Land Use Requirements/Restrictions

- » Aviation easement required for all new development to establish object height limitations.
- » Aviation compatible/dependent land uses (i.e., industrial, commercial, technology industries, etc.) are encouraged but not required.

- » Residential uses are limited to density less than or equal to R-R-1 and require conditional approval by the Tooele County Planning Commission and/or the Board of County Commissioners.
- » Land uses sensitive to noise, non-aviation dependent uses, and areas of public assembly are subject to additional review and require conditional approval by the Tooele County Planning Commission and/or the Board of County Commissioners. Noise sensitive land uses require sound attenuation construction practices to reduce indoor dB exposure levels. Noise sensitive land uses include:
 - ◆ Residential
 - ◆ Mobile home parks
 - ◆ Transient lodgings
 - ◆ Residential facilities for elderly and disabled persons
 - ◆ Educational institutions
 - ◆ Religious institutions
 - ◆ Hospitals
 - ◆ Outdoor parks or sports arenas
 - ◆ Outdoor music venues and amphitheaters
 - ◆ Nature exhibits and zoos
 - ◆ Amusement parks, resorts, and camps
 - ◆ Golf courses, riding stables, and water recreation

Height Restrictions

- » 14 CFR Part 77 Obstruction Evaluation/Airport Airspace Analysis (Form 7460-1) process will be completed prior to construction or alteration of structures on the property including mobile infrastructure. Conclusions of the FAA OE/AAA Form 7460-1 process and/or aviation easement process that demonstrate any proposed site development will limit the ability of TVY facilities to operate to their full existing capacity, or limit the ability of planned future facilities (as defined on the Airport Layout Plan) to operate at their full capacity are not permitted. Proposed development that is determined to limit Airport operations or capacity require amendment until impacts to TVY facilities are mitigated/eliminated. Examples of impacts to TVY facilities and operations that would require amendments to site plans include, but are not limited to, increased aircraft performance requirements, reduced usable runway length (landing or takeoff), and increases to flight procedure approach minimums.
- » Proposed development, as required within this Chapter, will only be permitted upon successful completion of the 14 CFR Part 77 OE/AAA process by filing Form 7460-1 with the FAA, conveyance of an aviation easement, and approval by Tooele County. Any site layout or design changes occurring after FAA OE/AAA approval which alter locations and/or increase structural heights requires resubmission of updated plans and Form 7460-1 to FAA under the 14 CFR Part 77 Obstruction Evaluation/Airport Airspace Analysis process and new approval from Tooele County.

AOZ-C – Traffic Pattern Zone

The Traffic Pattern Zone (AOZ-C) is designed to protect pilots and underlying landowners during aircraft operations in the VFR traffic pattern. Simultaneously, AOZ-C protects aircraft from the potential establishment of obstacles that impact navigable airspace.

Boundary Description

Traffic Pattern Zone (AOZ-C) is defined based on the expected performance of Category A flight training aircraft when performing procedures for flying a standard traffic pattern during touch and go training operations.

AOZ-C is split into two areas, one east of the Airport and one west of the Airport. The boundaries closest to the runway for both portions begin at the extent of AOZ-A. The north and south extents of AOZ-C extend 5,200 feet from the ends of Runway 17-35, and align with the north and south extents for AOZ-A. The north and south boundaries for each area of AOZ-C provide protection to the area flown during the typical crosswind leg and base leg of a standard traffic pattern. The westernmost boundary of the west side AOZ-C is defined by Sheep Lane or 5,600 feet west of and parallel to the runway centerline of Runway 17-35. The easternmost boundary of the east side AOZ-C is defined by 1200 W or 5,100 feet east of and parallel to the runway centerline of Runway 17-35. Using these roadways as boundaries provides clear delineation for ease of administration and simplifies impacts related to the underlying zoning.

Land Use Requirements/Restrictions

- » Aviation easement required for all new development to establish object height limitations.
- » Residential uses are not permitted.
- » Land uses sensitive to noise require sound attenuation construction practices. **Figure 1-3** shows the proposed AOZ with underlying zoning²². Noise sensitive land uses requiring sound attenuation construction practices include:
 - ◆ Transient lodgings
 - ◆ Educational institutions
 - ◆ Religious institutions
 - ◆ Hospitals

Height Restrictions

- » 14 CFR Part 77 Obstruction Evaluation/Airport Airspace Analysis (Form 7460-1) process will be completed prior to construction or alteration of structures on the property including mobile infrastructure. Conclusions of the FAA OE/AAA Form 7460-1 process and/or aviation easement process that demonstrate any proposed site development will limit the ability of TVY facilities to operate to their full existing capacity, or limit the ability of planned future facilities (as defined on the Airport Layout Plan) to operate at their full capacity are not permitted. Proposed development that is determined to limit Airport operations or capacity require amendment until impacts to TVY facilities are mitigated/eliminated. Examples of impacts to TVY facilities and operations that would require amendments to site plans include, but are not limited to, increased aircraft performance

²² Zoning current as of December 9, 2019.

requirements, reduced usable runway length (landing or takeoff), and increases to flight procedure approach minimums.

- » Proposed development, as required within this Chapter, will only be permitted upon successful completion of the 14 CFR Part 77 OE/AAA process by filing Form 7460-1 with the FAA, conveyance of an aviation easement, and approval by Tooele County. Any site layout or design changes occurring after FAA OE/AAA approval which alter locations and/or increase structural heights requires resubmission of updated plans and Form 7460-1 to FAA under the 14 CFR Part 77 Obstruction Evaluation/Airport Airspace Analysis process and new approval from Tooele County.

AOZ-D – Extended Traffic Pattern Zone

The Extended Traffic Pattern Zone (AOZ-D), like AOZ-C, is designed to protect pilots and underlying landowners during aircraft operations in the VFR traffic pattern. AOZ-D also protects aircraft from the potential establishment of obstacles that impact navigable airspace. The difference between AOZ-C and AOZ-D is that residential land uses are not permitted in AOZ-C and only conditionally permitted in AOZ-D. Exterior boundaries (farthest from Runway 17-35) for AOZ-D align with CFR 14 Part 77 regulations on traffic pattern protection criteria for Category A aircraft.

Boundary Description

Extended Traffic Pattern Zone (AOZ-D) is defined based on CFR Part 77 flight pattern criteria for Category A aircraft. AOZ-D surrounds all sides of the AOZ-C area where AOZ-C does not border AOZ-A. The north and south extents of AOZ-D are 7,590 feet (1.25 NM) from each associated end of Runway 17-35. The easternmost boundary of the east side AOZ-D is 7,590 feet (1.25 NM) from Runway 17-35 centerline.

Land Use Requirements/Restrictions

- » Aviation easement required for all new development to establish object height limitations.
- » Residential uses are limited to density less than or equal to R-1-10 and require conditional approval by the Tooele County Planning Commission and/or the Board of County Commissioners.
- » Land uses sensitive to noise require sound attenuation construction practices. **Figure 1-3** shows the proposed AOZ with underlying zoning²³. Noise sensitive land uses requiring sound attenuation construction practices include:
 - ◆ Residential
 - ◆ Mobile home parks
 - ◆ Transient lodgings
 - ◆ Residential facilities for elderly and disabled persons
 - ◆ Educational institutions
 - ◆ Religious institutions
 - ◆ Hospitals

²³ Zoning current as of December 9, 2019.

Height Restrictions

- » 14 CFR Part 77 Obstruction Evaluation/Airport Airspace Analysis (Form 7460-1) process will be completed prior to construction or alteration of structures on the property including mobile infrastructure. Conclusions of the FAA OE/AAA Form 7460-1 process and/or aviation easement process that demonstrate any proposed site development will limit the ability of TVY facilities to operate to their full existing capacity, or limit the ability of planned future facilities (as defined on the Airport Layout Plan) to operate at their full capacity are not permitted. Proposed development that is determined to limit Airport operations or capacity require amendment until impacts to TVY facilities are mitigated/eliminated. Examples of impacts to TVY facilities and operations that would require amendments to site plans include, but are not limited to, increased aircraft performance requirements, reduced usable runway length (landing or takeoff), and increases to flight procedure approach minimums.
- » Proposed development, as required within this Chapter, will only be permitted upon successful completion of the 14 CFR Part 77 OE/AAA process by filing Form 7460-1 with the FAA, conveyance of an aviation easement, and approval by Tooele County. Any site layout or design changes occurring after FAA OE/AAA approval which alter locations and/or increase structural heights requires resubmission of updated plans and Form 7460-1 to FAA under the 14 CFR Part 77 Obstruction Evaluation/Airport Airspace Analysis process and new approval from Tooele County.

AOZ-H – Height Restriction Zone

The Height Restriction Zone (AOZ-H) is the least restrictive zone within the AOZ. This zone provides a regulatory tool at the local level to ensure 14 CFR Part 77 regulatory requirements are followed and met by property owners when land is developed. AOZ-H also assists current and future landowners in recognizing the existence of an airport within the region and, therefore, the potential for aircraft overflights.

Boundary Description

The AOZ-H interior boundaries (for each runway end) are defined by a combination of the extents of AOZ-B and AOZ-C. The exterior boundaries of AOZ-H are located at a distance of 4 statute miles from the ends of Runway 17 and Runway 35 and measure 2 statute miles wide (1 statute mile laterally on each side of the runway perpendicular to runway centerline).

Land Use Requirements/Restrictions

- » No limitations beyond underlying zoning.

Height Restrictions

- » 14 CFR Part 77 Obstruction Evaluation/Airport Airspace Analysis (Form 7460-1) process will be completed prior to construction or alteration of structures on the property including mobile infrastructure. Conclusions of the FAA OE/AAA Form 7460-1 process and/or aviation easement process that demonstrate any proposed site development will limit the ability of TVY facilities to operate to their full existing capacity, or limit the ability of planned future facilities (as defined on

the Airport Layout Plan) to operate at their full capacity are not permitted. Proposed development that is determined to limit Airport operations or capacity require amendment until impacts to TVY facilities are mitigated/eliminated. Examples of impacts to TVY facilities and operations that would require amendments to site plans include, but are not limited to, increased aircraft performance requirements, reduced usable runway length (landing or takeoff), and increases to flight procedure approach minimums.

- » Proposed development, as required within this Chapter, will only be permitted upon successful completion of the 14 CFR Part 77 OE/AAA process by filing Form 7460-1 with the FAA, conveyance of an aviation easement, and approval by Tooele County. Any site layout or design changes occurring after FAA OE/AAA approval which alter locations and/or increase structural heights requires resubmission of updated plans and Form 7460-1 to FAA under the 14 CFR Part 77 Obstruction Evaluation/Airport Airspace Analysis process and new approval from Tooele County.

Table 1-1 shows a high-level summary of where requirements and restrictions exist within the AOZ internal zones. It is recommended that an intergovernmental agreement be drafted between the TVY Airport sponsor and Tooele County for review of development plans for aviation impacts within the AOZ. This review will include aviation easement requirements and TERPS surface impacts such as the 40:1 departure surface and the 34:1 arrival surface.

TABLE 1-1
SUMMARY OF PROPOSED AOZ LAND USE REQUIREMENTS AND/OR RESTRICTIONS

AOZ	Definition	Requirements		Land Use Restrictions		
		Part 77	Avigation Easement	Sensitive Uses	Residential	All other land uses
A	Limited Development	FAA 7460 Process	Required for Improvements and Sale	Not Permitted ¹	Not Permitted	Aviation Compatible Encouraged ³
B	Extended Approach	FAA 7460 Process	Required for Improvements and Sale	Conditional Use, Sound Attenuation Required	Conditional Use (Density>R-R-1), Sound Attenuation Required	Permitted ³
C	Traffic Pattern	FAA 7460 Process	Required for Improvements and Sale	Sound Attenuation Required ²	Not Permitted	Permitted ³
D	Extended Traffic Pattern	FAA 7460 Process	Required for Improvements and Sale	Sound Attenuation Required ²	Conditional Use (Density>R-1-10), Sound Attenuation Required	Permitted ³
H	Height Restriction	FAA 7460 Process	Required for Improvements and Sale	Permitted	Permitted	Permitted ³

Notes: 1) Educational facilities involving aviation education and those making use of airfield facilities are permitted. Medical facilities directly related to aviation that make use of airfield facilities are permitted. 2) Sound attenuation not required for outdoor recreation and public assembly facilities. 3) Permitted as defined within land use code.

Source: RS&H Analysis, 2020

1.4.3 Recommended Land Use Guidelines Within AOZ

Table 1-2 shows a list of recommended zoning limitations to be incorporated into the Tooele County Land Use Code. Land uses shown in red are prohibited. Those shown in yellow undergo additional review and approval by the Planning Commission and/or the County Commissioners. Those shown in green are permitted by right. Those shown in gray are other overlay zones found in the code and do not apply. As a reference of which zones currently fall within the proposed Airport Overlay Zone District, **Appendix F** shows the AOZ with underlying zones (current as of January 1, 2020).

TABLE 1-2
RECOMMENDED OVERLAY ZONING GUIDELINES

Tooele County Zoning District	Code	Zone A	Zone B	Zone C	Zone D	Zone H
		AOZ-A	AOZ-B	AOZ-C	AOZ-D	AOZ-H
Multiple Use	M-U-40	Red	Green	Green	Green	Green
Multiple Use	M-U-80	Red	Green	Green	Green	Green
Multiple Use	M-U-160	Red	Green	Green	Green	Green
Agricultural	A-5	Green	Green	Green	Green	Green
Agricultural	A-10	Green	Green	Green	Green	Green
Agricultural	A-20	Green	Green	Green	Green	Green
Agricultural	A-40	Green	Green	Green	Green	Green
Rural Residential	R-R-1	Red	Green	Red	Green	Green
Rural Residential	R-R-5	Red	Green	Red	Green	Green
Rural Residential	R-R-10	Red	Green	Red	Green	Green
Residential	R-1-21	Red	Yellow	Red	Green	Green
Residential	R-1-12	Red	Yellow	Red	Green	Green
Residential	R-1-10	Red	Yellow	Red	Green	Green
Residential	R-1-8	Red	Yellow	Red	Yellow	Green
Multiple Residential	R-M-7	Red	Yellow	Red	Yellow	Green
Multiple Residential	R-M-15	Red	Yellow	Red	Yellow	Green
Multiple Residential	R-M-30	Red	Yellow	Red	Yellow	Green
Neighborhood Commercial	C-N	Red	Yellow	Green	Green	Green
Commercial Shopping	C-S	Red	Yellow	Green	Green	Green
Highway Commercial	C-H	Red	Green	Green	Green	Green
General Development	C-G	Red	Green	Green	Green	Green
Manufacturing-Distribution	M-D	Green	Green	Green	Green	Green
Manufacturing General	M-G	Green	Green	Green	Green	Green
Travel Influence	T	Green	Green	Green	Green	Green
Hazardous Industrial	MG-H	Red	Yellow	Green	Green	Green
Railroad Travel Influence	R-T	Yellow	Yellow	Green	Green	Green
Highway Access	HA	Grey	Grey	Grey	Grey	Grey
Recreation and Racing Sports	RRS	Red	Yellow	Green	Green	Green
Technology Industries	T-I	Yellow	Green	Green	Green	Green
Commercial Tourism	C-T	Yellow	Yellow	Green	Green	Green
Mining, Quarry, Sand, and Gravel Extraction	MG-EX	Red	Yellow	Green	Green	Green
Drinking Water Source Protection Overlay	DWSPO	Grey	Grey	Grey	Grey	Grey
Construction Debris Overlay	CDO	Grey	Grey	Grey	Grey	Grey
Municipal Solid Waste	MSW	Red	Red	Yellow	Yellow	Yellow
Pine Canyon Environmental Overlay Zone		Grey	Grey	Grey	Grey	Grey
Large Wind Energy Systems		Red	Red	Red	Red	Red

Legend

Not Permitted



Permitted



Conditional Use



Overlay - Not Applicable



Source: Tooele County Land Use Code; RS&H Analysis, 2020