





SANTA MARIA
PUBLIC AIRPORT
AIRPORT MASTER PLAN

AIRPORT MASTER PLAN

For

Santa Maria Public Airport
Santa Maria, California

Prepared for

The Santa Maria Public Airport District

By

Coffman Associates, Inc.

In Association with:

Tartaglia Engineering

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SANTA MARIA
PUBLIC AIRPORT



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SANTA MARIA
PUBLIC AIRPORT



INTRODUCTION AND SUMMARY



SANTA MARIA PUBLIC AIRPORT

INTRODUCTION AND SUMMARY

The Federal Aviation Administration (FAA) recommends that airports update their long term planning documents every seven to 10 years, or as necessary to address local changes at the airport. The last master plan for Santa Maria Public Airport/Captain G Allan Hancock Field (SMX or Airport) was completed in 2004. The Santa Maria Public Airport District (SMPAD), the sponsor of SMX, has received a grant from the FAA to update the Airport Master Plan. The FAA grant covers approximately 90 percent of the fixed-fee project cost, with SMPAD providing the balance in matching funds.

In June 2014, following federal guidelines for consultant selection based on qualifications, the SMPAD selected the team of Tartaglia Engineering and Coffman Associates to perform various engineering and planning projects for the Airport for a period of five years. This Airport Master Plan contract was executed by the Board of Directors of the SMPAD at a regular board meeting held on December 10, 2015.

The Airport Master Plan is being undertaken to evaluate SMX's capabilities and role, to forecast future aviation demand, and to plan for the timely development of new or improved facilities that may be required to meet that demand. The ultimate goal of the Master Plan is to provide systematic guidelines for the Airport's overall maintenance, development, and operation. The study is designed to provide guidance for future development and provide updated justification for projects for which the airport may request funding participation through federal and state airport improvement programs. Coffman Associates is an airport consulting firm that specializes in master planning and environmental studies.

The Airport Master Plan was prepared in accordance with FAA requirements, including Advisory Circular (AC) 150/5300-13A, *Airport Design* (as amended), and AC 150/5070-6B, *Airport Master Plans* (as amended). The Master Plan is intended to be a proactive document which identifies and then plans for future facility needs well in advance of the actual need. This is done to ensure that the SMPAD can coordinate project approvals, design, financing, and construction in a timely manner, prior to experiencing the detrimental effects of deteriorating or inadequate facilities.

An important outcome of the Master Plan process is a recommended development plan which reserves sufficient areas for future facility needs. Such planning will protect development areas and ensure they will be readily available when required to meet future needs. The intended outcome of this study is a detailed on-airport land use concept which outlines specific uses for all areas of airport property, including strategies for revenue enhancement.

SMX is a primary commercial service airport, as defined by the FAA, which serves the aviation needs of the local community and the region. The Airport is included in the FAA's *National Plan of Integrated Airport Systems* (NPIAS). As such, the Airport is eligible for federal development grants. The SMPAD owns and operates the Airport, which is located on approximately 2,598 acres three miles to the south of the central business district. The Airport provides support to commercial, aerial firefighting, military, and private aircraft.

The airfield layout consists of dual runways, Runway 12-30, measuring 8,004 feet in length and 150 feet in width and Runway 2-20, measuring 5,199 feet in length and 75 feet in width. As of 2015, there are estimated to be 235 based aircraft and 38,389 annual operations along with 44,340 commercial passenger enplanements. The Airport provides unique economic development opportunities for the community, including both aviation and non-aviation uses.

MASTER PLAN GOALS AND OBJECTIVES

The primary objective of the SMX Airport Master Plan is to develop and maintain a financially feasible, long term development program, which will satisfy aviation demand of the region; be compatible with community development, other transportation modes, and the environment; and enhance employment and revenue for the local area. The most recent planning effort for the Airport was the *Santa Maria Public Airport Master Plan Update*, completed in September 2004. The Airport's Airport Layout Plan (ALP) has been updated or modified periodically, with the most current version approved by the SMX General Manager on March 6, 2015.

This Master Plan is intended to provide guidance through an updated capital improvement and financial program to demonstrate the future investments required by the SMPAD. The new planning study also provides justification for new priorities. The plan will be closely coordinated with other planning studies in the area and with aviation plans developed by the FAA. Specific objectives of the study include, but are not limited to, the following:

- To research and evaluate socioeconomic factors likely to affect the air transportation demand in the region;
- To determine the projected facility needs of airport users through the year 2036, by which to support airport development alternatives;
- To recommend improvements that will enhance the Airport's safety capabilities to the maximum extent possible.
- To recommend improvements that will enhance airport capacity to the maximum extent.
- To produce current and accurate airport base maps and Airport Layout Plans.
- To establish a schedule of development priorities and a program for the improvements proposed in the Airport Master Plan.
- To prioritize the airport capital improvement program and develop a detailed financial plan.
- To develop a robust and productive public involvement throughout the planning process.

MASTER PLAN ISSUES

The SMX Airport Master Plan specifically addresses the following issues:

- Assist the SMPAD, through the Planning Advisory Committee (PAC), in validating its vision for the Airport;

- Based on the realistic evaluation of the facility in terms of configuration, condition, amenities, location, competition, and forecasted aviation demand, establish goals and priorities for the Airport to meet that vision;

- Identify airfield alternatives based on goals and opportunities as well as FAA applicable design standards. The analysis will include an evaluation of the airfield geometry to address potential runway incursion hot spots and non-standard conditions;

- Provide a landside development plan that identifies areas for accommodating the forecasted growth of aviation and aviation-related businesses and, if appropriate, areas for non-aviation revenue-producing opportunities. Consideration will be given to the potential for new or expanded aviation facilities, including, but not limited to, terminal facilities, aircraft storage hangar capacity and ramp capacity, and airport support facilities, including aircraft rescue and firefighting (ARFF) equipment storage; and

- Identify elements of an ongoing maintenance plan.

BASELINE ASSUMPTIONS

A study such as this typically requires several baseline assumptions that will be used throughout this analysis. The baseline assumptions for this study are as follows:

- SMX will continue to operate as a primary commercial service airport through the 20-year planning period;

- SMX will continue to accommodate general aviation tenants, and itinerant and/or local aircraft operations by commercial, air taxi, general aviation, aerial firefighting, and military operators;

- The commercial passenger and general aviation industries will grow through the planning period as projected by the FAA. Specifics of projected growth in the national commercial airline and general aviation industries are contained in Chapter Two – Aviation Demand Forecasts;

- The socioeconomic characteristics of the region will generally grow as forecast (see Chapter Two); and,

- A federal grant program will be in place through the planning period to assist in funding future capital development needs.

MASTER PLAN ELEMENTS AND PROCESS

The SMX Airport Master Plan will be prepared in a systematic fashion following FAA guidelines and industry-accepted principles and practices, as presented on **Exhibit IA**. The Master Plan has five chapters that are intended to assist in the evaluation of future facility needs and provide the supporting rationale for their implementation.

AIRPORT MASTER PLAN ELEMENTS

Chapter One – Inventory summarizes the inventory efforts. The inventory efforts are focused on collecting and assembling relevant data pertaining to the Airport and the area it serves. Information is collected on existing airport facilities and operations. Local economic and demographic data is collected to define the local growth trends. Planning studies which may have relevance to the Airport Master Plan are also collected.

The inventory process also includes capturing and utilizing very detailed survey data sets. Geographical Information System (GIS) services included in the process involves the collection of data to comply with Table 2-1 of Advisory Circular 150/5300-18B, column Instrument Procedure Development. The dataset is a high precision, digital model of the safety critical features of the Airport as defined in 18B, Table 4-1. The process includes collection of high-resolution aerial photography, high precision surveys of safety critical airport data (runway ends, NAVAIDS, airport elevation, airspace, obstructions and others), and compilation of collected data into a uniform GIS dataset. A GIS dataset that meets the Airport's needs and is acceptable to the FAA is the deliverable.

Chapter Two – Forecasts examines the potential aviation demand at the Airport. The analysis utilizes local socioeconomic information, as well as national air transportation trends to quantify the levels of aviation activity which can reasonably be expected to occur at SMX through the year 2036. The results

PAC #1

INVENTORY

- Airport Facilities
- Airspace and Air Traffic Activity
- Area Socioeconomic Data
- Local Planning and Land Use
- Airport Access and Parking, Utilities, and Aerial Photography

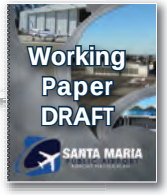
FORECASTS

- Enplaned Passengers
- Based Aircraft and Fleet Mix
- Annual Operations

FACILITY REQUIREMENTS

- Design Categories
- Runway Length and Strength
- Support Facilities
- Taxiways
- Hangar Facilities
- Terminal Building
- Aprons
- Navigational Aids

PAC #2



AIRPORT ALTERNATIVES

- Evaluate Development Scenarios
  - Airside
  - Landside

PAC #3



Public Information Workshop

RECOMMENDED DEVELOPMENT PLAN

- Detailed Master Plan Facility and Land Use Plans

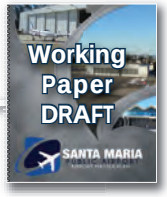
FINANCIAL PLAN / CAPITAL IMPROVEMENTS

- Airport Development Schedule
- Cost Estimates
- Funding Sources

AIRPORT LAYOUT PLANS

- Airport Layout Plan
- Landside Drawing
- Airspace/Approach Drawings
- On-Airport Land Use Plan
- Property Map

PAC #4



Public Information Workshop







of this effort are used to determine the types and sizes of facilities which will be required to meet the projected aviation demand at the Airport through the planning period. The forecasts were approved by the FAA on January 31, 2017. The FAA approval letter is included within **Appendix C**.

Chapter Three – Facility Requirements comprises the demand capacity and facility requirements analyses. The intent of this analysis is to compare the existing facility capacities to forecast aviation demand and determine where deficiencies in capacities (as well as excess capacities) may exist. Where deficiencies are identified, the size and type of new facilities to accommodate the demand are identified. The airfield analysis focuses on improvements needed to safely serve the type of aircraft expected to operate at the Airport in the future, as well as navigational aids to increase the safety and efficiency of operations. This element also examines the commercial passenger terminal, general aviation terminal services, hangar, apron, and support needs.

Chapter Four – Development Alternatives considers a variety of solutions to accommodate the projected facility needs. This element proposes various facility and site plan configurations which can meet the projected facility needs. An analysis is completed to identify the strengths and weaknesses of each proposed development alternative, with the intention of determining a single direction for development.

Chapter Five – Recommended Concept /Financial Plan provides both a graphic and narrative description of the recommended plan for the use, development, and operation of the Airport. The financial plan provides a proposed capital needs program which defines the schedules, costs, and funding sources for the recommended development projects.

Airport Layout Plans – The official ALP drawings that are produced as a result of the recommended Master Plan Concept and used by the FAA in determining grant eligibility will be included as an appendix to the Airport Master Plan at the completion of the project. The ALP is subject to the approval of the FAA and consists of technical drawings depicting related airspace, land use, and property data. These drawings are used by the FAA in determining grant eligibility and funding. The ALP drawing set is included in **Appendix D**.

ENVIRONMENTAL REVIEW/DOCUMENTATION

The objective of the Environmental Review/Documentation part of the Airport Master Plan process is to provide SMPAD with proper guidance regarding, and to facilitate compliance with, the *National Environmental Policy Act* (NEPA) and *California Environmental Quality Act* (CEQA). These Acts have specific requirements for the type, scope, and timing of the environmental documentation for any future development of the Airport considered feasible in the Airport Master Plan.

- **Environmental Inventory** - The first task is an environmental inventory during which baseline environmental information is collected that is then used to identify any issues or constraints that may require consideration during the alternatives development tasks of the Airport Master Plan. This environmental inventory is conducted concurrent with the other inventory tasks described in Part I and is appended to the Airport Master Plan document. The environmental inventory is included as Part One of **Appendix B**.

- **NEPA Environmental Overview** - Once a recommended Airport Master Plan alternative is determined, an Environmental Overview is developed which takes into consideration feasible airport improvements. This preliminary environmental evaluation follows FAA guidelines in implementing NEPA and is appended to the Airport Master Plan document. The environmental overview is included as Part Two of **Appendix B**.

- **CEQA Process** - An Initial Study is also conducted as the basis for the SMPAD's determination regarding whether the Airport Master Plan requires a Negative Declaration (ND), a Mitigated Negative Declaration (MND), or an Environmental Impact Report (EIR) under CEQA. This state-mandated document and an ND, MND, or EIR must be prepared and circulated for public and interested agency review and comment, according to the CEQA and the CEQA Guidelines and accepted or certified by the SMPAD before the SMPAD can take formal action to approve the Airport Master Plan. If it is determined that an EIR rather than a ND or MND is the appropriate environmental documentation under CEQA, then an analysis of feasible alternatives is also included for evaluation within the EIR.

- **Future Environmental Documentation** - Additional environmental review under both NEPA and CEQA, including public disclosure requirements, may be required by federal and state law prior to the approval of individual development projects that may occur subsequent to SMPAD's adoption and approval of the Airport Master Plan and/or FAA approval of the ALP.

COORDINATION

The SMX Airport Master Plan is of interest to many within the local community and region. This includes local citizens, local businesses, community organizations, SMPAD officials, Airport users, Airport tenants, and aviation organizations. As a component of the regional, state, and national aviation systems, SMX is of importance to both state and federal agencies responsible for overseeing the air transportation system.

To assist in the development of the Airport Master Plan, the SMPAD identified a group of government representatives, Airport users and tenants, and local community leaders to act in an advisory role in the development of the Master Plan. Members of this Planning Advisory Committee (PAC) met four times at designated points during the study to review study materials and provide comments to help ensure that a realistic, viable plan was developed. Draft working paper materials were prepared at various milestones in the planning process. The working paper process allows for timely input and review during each step within the Master Plan to ensure that all issues are fully addressed as the recommended program develops.

Two "open-house" workshops for the general public were held to present preliminary findings and to solicit public comment. All draft reports and meeting materials are made available to the public on the Airport Master Plan specific website: www.santamaria.airportstudy.com.

SUMMARY

Planned development at SMX is focused on accommodating modest growth in activity and meeting FAA airfield design standards. The capital improvement program (CIP) identifies both airside (runways, taxiways, navigational aids, etc.) and landside (aprons, access roads, etc.) facility needs.

To properly plan for future demand that may occur, aviation demand forecasts were prepared. Because of the cyclical nature of the economy, it is virtually impossible to predict with certainty year-to-year fluctuations in activity when looking 5, 10, and 20 years into the future. Recognizing this reality, the Master Plan is keyed toward potential demand "horizon" levels rather than future dates in time. These "planning horizons" were established as levels of activity that will call for consideration of the implementation of the next step in the Airport Master Plan program. By developing the Airport to meet the aviation demand levels instead of specific points in time, the Airport will serve as a safe and efficient aviation facility which will meet the operational demands of its users while being developed in a cost-efficient manner. This program allows the SMPAD to change specific development in response to unanticipated needs or demand.

The forecast approach utilized historical and forecasted commercial service, general aviation, and economic trends resulting in modest growth projections for SMX through the planning period of the Master Plan. The forecast planning horizons are summarized in **Table IA**. These forecasts were reviewed and approved by the FAA on January 31, 2017. A copy of the approval letter is included in **Appendix C**.

TABLE IA
Planning Horizon Activity Levels
Santa Maria Public Airport

	BASE YEAR	PLANNING HORIZONS		
	2015	Short Term	Intermediate Term	Long Term
Enplaned Passengers	44,340	49,400	53,000	64,500
Commercial Operations				
Air Carrier Airline	324	410	568	1,064
Air Taxi/Commuter Airline	1,429	3,770	3,752	3,056
Air Cargo	1,972	2,470	2,660	2,830
Air Carrier Charter	41	50	50	50
Other Air Taxi	5,838	6,800	7,700	8,600
Total Commercial Operations	9,604	13,500	14,730	15,600
General Aviation Operations				
Itinerant	17,718	19,100	20,500	22,200
Local	9,896	10,100	10,300	10,800
Total General Aviation Operations	27,614	29,200	30,800	33,000
Military Operations				
Itinerant	445	450	450	450
Local	726	700	700	700
Total Military Operations	1,171	1,150	1,150	1,150
Total Airport Operations	**38,389**	**43,850**	**46,680**	**49,750**
Based Aircraft	**235**	**269**	**294**	**346**

MASTER PLAN CONCEPT

The Master Plan concept includes improvements to the airfield and landside area to satisfy FAA design and safety standards and to meet current and forecast needs. Airfield design standards are based upon the characteristics of the Airport's critical design aircraft, which is the McDonnell Douglas DC-10 and Lockheed C-130 aerial firefighting aircraft for Runway 12-30. Runway 2-20, as the secondary or cross-wind runway, serves smaller aircraft including small to mid-size business jet aircraft such as the Cessna Citation family of business jets.

The following summarizes the Recommended Master Plan Concept. A more detailed discussion of the Recommended Master Plan Concept can be found in Chapter Five of the Master Plan.

Airfield Improvements – Key airfield improvements are detailed on **Exhibit IB** and include:

- **Runway 12-30** | At 8,004 feet long and 150 feet wide, the primary runway adequately accommodates the existing commercial, aerial firefighting, and general aviation fleet mix of aircraft currently and anticipated to use the Airport in the future. No additional runway length or width is planned as part of the Master Plan. Consideration was given to implementing lower instrument approach procedure visibility minimums to Runway 30; however, due to rising terrain to the south, notably the Solomon Hills, it is likely that lower visibility minimums are not achievable.

- **Runway 2-20** | At 5,199 feet long and 75 feet wide, the secondary or crosswind runway is capable of safely accommodating the existing and future fleet mix of aircraft, which includes primarily piston-driven aircraft and small turbine and business jet aircraft. Runway 2-20 is not equipped with pavement edge lighting nor does it have published instrument approach procedures. It was determined through the Master Plan process that the cost to install a pavement edge lighting system is not justified due to the limited use (approximately five percent of annual operations) of Runway 2-20. The Runway 20 threshold is planned to be displaced by 950 feet to shift the runway protection zone (RPZ) to the southwest which would allow for the extension of Airpark Drive, a public road, to improve traffic flow through the area and make currently undeveloped Airport property along Skyway Drive more attractive for potential development.

- **Taxiway Improvements** | The airfield taxiway system for Runway 12-30 currently meets taxiway design group (TDG) 3 and 4 width standards of 50 feet, which is sufficient for the current fleet mix of commercial and general aviation aircraft utilizing the Airport. However, with the DC-10 aerial firefighting aircraft as the current and ultimate critical design aircraft, the taxiway system needs to be improved to meet TDG 5 standards with 75-foot wide taxiways, taxiway shoulders, and expanded fillets. Several additional taxiway improvements are planned to correct taxiway geometry issues, which will enhance operational safety, and to accommodate the future expansion of landside facilities.

- **Perimeter Service Road** | A paved service road at SMX allows for the movement of vehicles and equipment on the airfield. However, in certain areas where the service road continues onto

aprons, the roadway edge is not properly marked. Distinct vehicle roadway markings are necessary to delineate roadways located on or that cross paved areas used by aircraft so that collisions are avoided. Standard vehicle roadway markings on aircraft maneuvering areas consist of roadway edge lines to delineate each edge of the roadway, a dashed line to separate lanes within the edges of the roadway, and a roadway stop line, where appropriate, such as at taxi route crossings.

Landside Facilities – The Master Plan's landside facility recommendations have been devised to efficiently accommodate potential aviation demand and provide revenue enhancement possibilities. Landside facility development will only occur as demand dictates; in this manner, the facilities will only be constructed if required by verifiable demand.

The Master Plan proposes the expansion of the terminal building, construction of new aircraft storage hangar capacity, and preserves undeveloped land for future landside facility needs. Landside improvements are detailed on **Exhibit IC** and include the following:

- **Passenger Terminal** | The existing terminal building has an approximately gross area of 39,000 square feet (sf) made up of functional areas serving airline ticketing and operations, security screening, post-security passenger holdrooms, baggage handling and claim, and rental car counters, concessions, restaurant, pre-security public circulation areas, and HVAC/mechanical spaces. Terminal space needs were determined based upon anticipated growth in passenger enplanements, which also considers the potential for expanded and/or new airline service. Recommended terminal facility expansions are based upon this potential growth in demand; however, if this demand does not materialize, the existing terminal facility could continue to adequately serve the Airport for many years.

- **Terminal Parking** | There are 753 vehicle parking spaces available at the terminal building, which is sufficient to meet long term demand of air travelers, terminal restaurant patrons, rental car ready/return, and terminal employees. The terminal parking lot is also utilized by non-airport users as a makeshift park-and-ride facility. This added usage causes the lot to reach its capacity during peak travel seasons. A new surface vehicle parking lot is planned between Airpark Drive and Skyway Drive immediately north of the Radisson hotel parking lot. This location provides an additional 200 spaces with reasonable walking distances (between 850 and 1,200 feet) to the main terminal entrance. If additional parking capacity is needed over the course of the planning period, the recommended concept includes a parking garage option.

- **International Customs Facility** | The Master Plan plans to relocate the Airport's Aircraft Rescue and Firefighting (ARFF) activities to a new facility on the tower apron. This would make the existing ARFF building available for the establishment of an international customs facility to conduct Federal Inspection Services (FIS). Having FIS services would open SMX up to international passenger and cargo activities and make the Airport more competitive in its regional market.

NORTH

0 1000 2000

SCALE IN FEET

Martinez Geospatial: 8/06/2016

LEGEND

- Airport Property LIne
- Runway Safety Area (RSA)
- Runway Object Free Area (ROFA)
- Runway Obstacle Free Zone (ROFZ)
- Precision Obstacle Free Zone (POFZ)
- High Energy Area
- Runway Protection Zone (RPZ)
- Taxiway Object Free Area (TOFA)
- Taxiway Safety Area (TSA)
- Building Restriction Line (BRL)
- Ultimate Building
- Ultimate Airfield Pavement
- Ultimate Airfield Shoulder
- Ultimate Parking/Roadway
- Ultimate Pavement/Building to be Removed
- Glide Slope Critical Area
- Aviation-Use Reserve
- Business Park
- Non-Movement Area
- Non-Aviation Development Reserve
- Vehicle Roadway Markings

Skyway Dr
950' Displaced Threshold
Airpark Dr
Industrial Pkwy
ASOS Relocation
Runway 12-30 8,004' x 150'
Runway 2-20 5,199 x 75'
Terminal Dr
Auto Park Dr
135
Lakeview Rd

Exhibit IB
RECOMMENDED DEVELOPMENT CONCEPT

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NORTH
0 600 1200
SCALE IN FEET
Martinez Geospatial: 8/06/2016

Runway 12-30 8,004' x 150'
Runway 2-20 5,199' x 75'
Industrial Pkwy
Terminal Dr
SR 135
SANTA MARIA

24,000 sf Hangars
ATCT Relocation
78,500 sy
306,000 sf Aircraft Manufacturing/ MRO facility
50,400 sy
54,000 sf Hangar
24,000 sf Hangars
72,000 sf Hangar
10 Unit T-Hangars
USFS Apron 94,000 sy
USFS Retardant Loading Pits
Service Road Extension

4-Unit T-Hangar Expansion
3,600 sf Box Hangars
72,000 sf Hangar
5,625 sf Hangars
27,000 sf Hangar
Relocated ARFF
0 300
SCALE IN FEET

135

LEGEND
- Airport Property LIne
- Runway Safety Area (RSA)
- Runway Object Free Area (ROFA)
- Runway Obstacle Free Zone (ROFZ)
- Runway Protection Zone (RPZ)
- Taxiway Object Free Area (TOFA)
- Taxiway Safety Area (TSA)
- Building Restriction Line (BRL)
- Ultimate Building
- Ultimate Airfield Pavement
- Ultimate Airfield Shoulder
- Ultimate Parking/Roadway
- Ultimate Pavement/Building to be Removed
- Aviation-Use Reserve
- Business Park
- Non-Movement Area
- Non-Aviation Development Reserve
- Vehicle Roadway Markings

Exhibit IC
RECOMMENDED LANDSIDE DEVELOPMENT CONCEPT

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- **Airport Traffic Control Tower (ATCT)** | The ATCT structure, located at the north end of the terminal apron, needs repairs and more modern amenities. If it is determined that updating the existing ATCT is not practical or feasible, a potential site for a new ATCT has been identified. The most desirable location would be on the south side of Runway 12-30 near mid-field.

- **United States Forest Service (USFS) Tanker Base** | The USFS conducts aerial firefighting activities from a temporary base. The temporary base consists of three fire retardant loading pits on the south side of the airfield and one temporary loading pit adjacent to the terminal apron. The Master Plan includes the development of a dedicated apron for USFS aircraft equipped with up to five loading pits. The recommended site includes a 94,000 sy apron at the south end of Runway 12-30. This location would provide for easy in/out flow to Taxiway B allowing for quick turnaround times.

- **Tower Apron** | The tower apron has some of the oldest hangars on the Airport leased by specialty aviation service operators (SASOs). The Master Plan proposes the demolition of several of the existing hangars to make way for new hangars to be built. Hangars proposed include expanded T-hangar facilities, box hangars, and larger conventional hangars for a large-scale SASO or FBO operation. The Airport's ARFF facility is also planned to be relocated to the tower apron.

- **Corporate Hangar Area** | Privately owned corporate hangars, 23 units in total, have been constructed on the north side of the airfield. This site is not well suited for high-activity GA operators such as FBOs or SASOs due to its relative isolation on the airfield, so the Master Plan includes continued expansion of private corporate hangars.

- **South Airfield** | The south side of the airfield is home to several GA SASOs and the Airport's FBO, Central Coast Jet Center. The in-field area between the runways and the existing south GA facilities consists of approximately 200 acres of undeveloped land. The Master Plan includes development related to all levels of GA activity from high-activity FBO/SASO operator facilities to low-activity T-hangar development. Recommendations include the preservation of the Runway 12-30 flightline for the development of a large apron to serve a large-scale aircraft manufacturing facility or an aircraft maintenance/repair/overhaul (MRO) facility.

- **Non-Aviation Development** | Areas of the Airport where accessibility to the airfield is limited or infeasible have been reserved for non-aviation revenue support purposes such as commercial or industrial development. In addition, the planned Santa Maria Airport Business Park is not impacted by any of the planned development of this Master Plan. The business park encompasses approximately 740 acres of SMPAD property on the south and southeast side of the airfield and combines light industrial, research, manufacturing, and commercial land uses around an 18-hole golf course. Retail opportunities, government facilities, and limited commercial and office development are also included in the business park plans.

DEVELOPMENT FUNDING

The full implementation of the Airport Master Plan is likely to take two decades or more at a cost of $193.9 million in 2017 dollars. The breakdown of funding over the three planning horizons is presented in **Table IB**. Approximately 74 percent of the total is eligible for grant funding from the FAA. The source for FAA funding is the Aviation Trust Fund, which is funded through user fees and taxes on airline tickets, aviation fuel, and aircraft parts. A more detailed discussion of the Capital Improvement Program can be found in Chapter Five of the Master Plan.

With the Airport Master Plan Update completed, the most important challenge is implementation. The cost of developing and maintaining aviation facilities is an investment which yields impressive benefits for the SMPAD. This plan and associated development program provides the tools the SMPAD will require to meet the challenges of the future. By providing a safe and efficient facility, SMX will continue to be a valuable asset to the SMPAD.

TABLE IB
Development Funding Summary
Santa Maria Public Airport

PLANNING HORIZON	Total Cost	Federal Share	SMPAD/Local Share
Short Term Program	$14,177,000	$12,852,840	$1,324,160
Intermediate Term Program	$83,500,000	$55,755,026	$27,744,974
Long Term Program	$96,250,000	$75,745,176	$20,504,824
Total Program Costs	**$193,927,000**	**$144,353,043**	**$49,573,957**

SANTA MARIA
PUBLIC AIRPORT



CHAPTER ONE
INVENTORY



SANTA MARIA PUBLIC AIRPORT

CHAPTER ONE
INVENTORY

The initial step in the preparation of the Airport Master Plan for Santa Maria Public Airport/Captain G Allan Hancock Field (SMX or the Airport) is the collection and inventory of information pertaining directly to or influencing the Airport and the area it serves. The information summarized in this chapter will be used in subsequent analyses in this Airport Master Plan and includes:

- Physical inventories and descriptions of the facilities and services currently provided at the Airport, including local and regional airspace, air traffic control, and aircraft operating procedures. Development that has occurred at the Airport since completion of the previous master plan will also be provided;

- Background information pertaining to the local and regional area, including descriptions of the climate, current surface transportation systems, and the Airport's current role in local, regional, state, and national aviation systems;

- Population and other significant socioeconomic data which can provide an indication of future trends that could influence demand for aviation activity at the Airport; and

- A review of existing local and regional plans and studies to determine their potential influence on the development and implementation of the Master Plan.

The information outlined in this chapter provides a foundation for all subsequent chapters. The inventory data was obtained through on-site inspections of the Airport, interviews with Airport staff and tenants, and a review of documents, including but not limited to documents prepared by the Federal Aviation Administration (FAA), County of Santa Barbara (County), local community organizations, and local and regional planning agencies. The following documents were primary sources of inventory information:

- Santa Barbara County Association of Governments (SBCAG), *2040 Regional Transportation Plan and Sustainable Communities Strategy*, adopted August 15, 2013.
- City of Santa Maria, *General Plan*, Adopted August 1991, as amended September 6, 2011.
- Santa Maria Public Airport, *Airport Certification Manual*, most recently updated in August 2015.
- Santa Maria Public Airport, Airport Layout Plan (ALP), updated March 6, 2015.
- Various FAA reports pertaining to aviation activity.

AIRPORT HISTORY

In 1928, Hancock Field, Santa Maria's first airport, was opened on the east side of town. Captain Hancock was president of Santa Maria Airlines and founded the College of Aeronautics at the field. The airport was closed around 1959 and today is the site of Allan Hancock College.

In the early 1940s, during World War II, the U.S. Army Corps of Engineers constructed what was then known as Santa Maria Army Air Base to provide training facilities for crews of B-25 aircraft. A few years later, the B-25 groups left and the facility became a training field for P-38 pilots and ground crews.

In 1946, following the war's end, the County of Santa Barbara acquired the property by means of an interim permit issued by the War Assets Administration. The County retained control of the facility until 1949, at which time the City of Santa Maria obtained an undivided one-half interest. This dual ownership/management proved cumbersome to administer, and in March of 1964 transfer of the airport to the newly formed Santa Maria Public Airport District (SMPAD) was accomplished.

The SMPAD encompasses an area of 400 square miles extending from the Santa Maria/Cuyama River at the north to a point three miles south of the community of Los Alamos at the south. Then in an east/west direction, the SMPAD commences at Point Sal at the Pacific Ocean and extends eastward a distance of 30 miles, or 10 miles east of the dam at Twitchell Reservoir. The SMPAD boundary is depicted on **Exhibit 1A**. A five-member Board of Directors who serve four-year terms and are elected at-large governs the SMPAD. The directors entrust the responsibility for the efficient execution of airport policies to their designated representative, the General Manager.

Since formation of the SMPAD, numerous projects have been accomplished which directly and indirectly benefit each person in the District. Examples of these projects include design and construction of Skyway Drive from Betteravia Road to the Orcutt Expressway, design and construction of the industrial park east of Skyway Drive, and construction of the new airport terminal building, crash/fire/rescue station, air traffic control tower, new owner built hangars area, and other facilities adjacent to the primary runway.

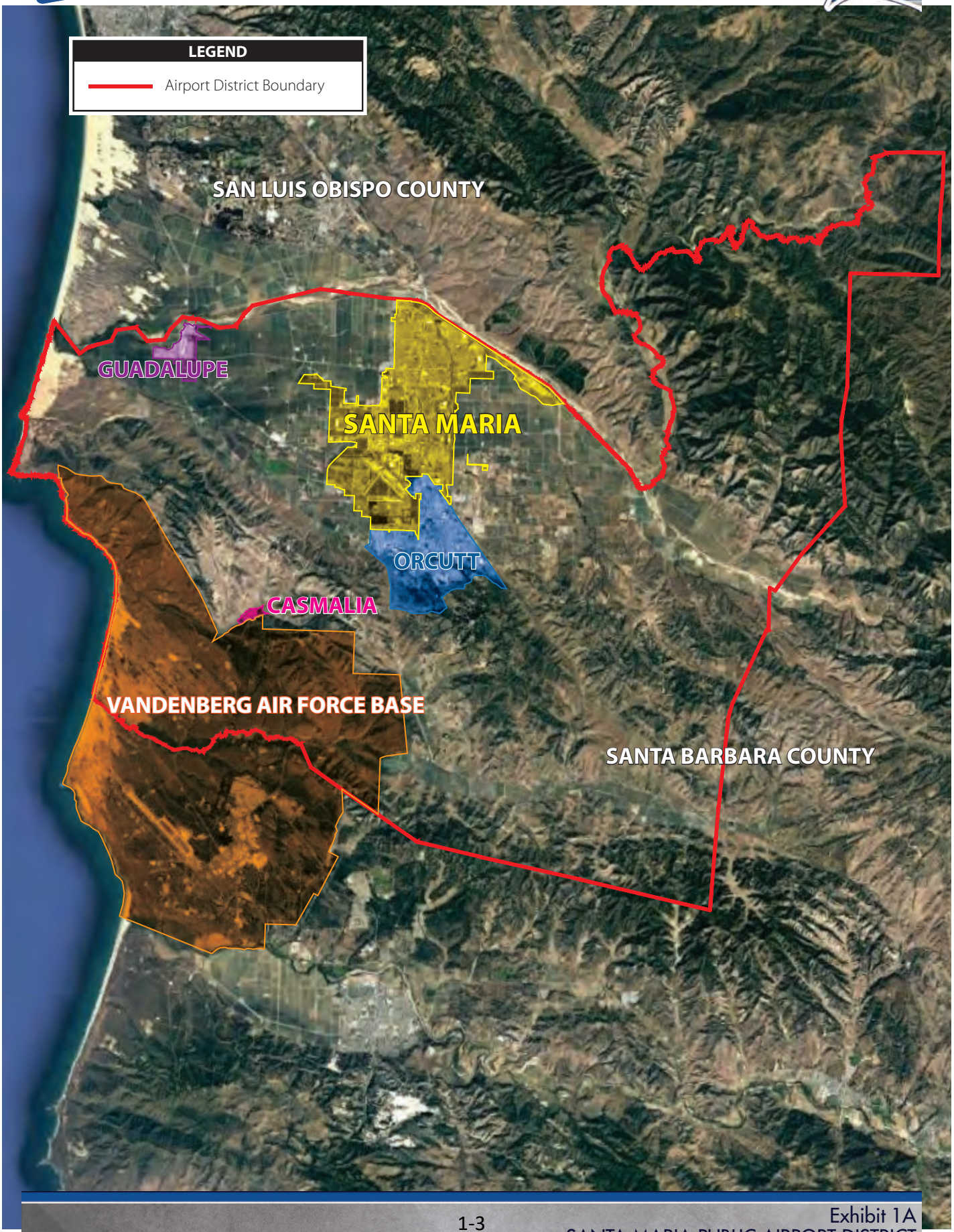


Exhibit 1A
SANTA MARIA PUBLIC AIRPORT DISTRICT

RECENT CAPITAL IMPROVEMENTS

To assist in funding capital improvements, the FAA has provided funding assistance to the SMPAD through the Airport Improvement Program (AIP) as well as its predecessors, the Airport Development Aid Program (ADAP) and Federal-Aid Airport Program (FAAP). The AIP is funded through the Aviation Trust Fund, which was established in 1970 to provide funding for aviation capital investment programs (aviation development, facilities and equipment, and research and development). The Trust Fund also finances a portion of the operation of the FAA. It is funded by user fees, taxes on airline tickets, aviation fuel, and various aircraft parts.

Table 1A summarizes FAA AIP grants the Airport has received for Fiscal Year (FY) 2005 through FY 2015. The FAA has provided $17.6 million for Airport improvements at Santa Maria Public Airport over the past 10 years. Notable projects in this time period include the expansion of the terminal building baggage claim area and passenger hold room, which was completed in two phases between 2005 and 2006, and the extension of Runway 12-30 to its current length of 8,004 feet with grants in 2010 and 2011.

TABLE 1A
Recent FAA Grant History
Santa Maria Public Airport

Year	Grant #	Description	Grant Amount
2005	26	Expand Terminal Building	$1,000,000
2006	27	Conduct Environmental Study, Expand Terminal Building	$1,150,000
2007	28	Extend Runway 12/30, Rehabilitate Aircraft Rescue & Firefighting Building, Security Enhancements	$1,719,333
2007	29	Safety Management System (SMS) Program	$100,000
2010	30	Extend Runway 12/30, Extend Taxiway	$4,139,358
2011	31	Extend Runway 12/30	$7,460,986
2012	32	Acquire Aircraft Rescue & Firefighting Vehicle, Modify Access Road	$1,450,309
2014	33	Rehabilitate Apron	$161,374
2015	34	Update Airport Master Plan Study	$442,085
TOTAL AIRPORT IMPROVEMENT GRANTS SINCE 2005			**$17,623,445**

Source: FAA AIP Grant History Look Up: http://www.faa.gov/airports/aip/grant_histories/lookup/

REGIONAL SETTING

The Santa Maria Valley's urbanized area is located along California's Central Coast, which attracts tourism to the region's famed wine country. Agriculture is a significant industry with approximately one in every five local jobs tied to the agriculture industry. Strawberries, broccoli, cauliflower, lettuce, and celery are the major crops in the valley. In 2011, Canada-based Windset farms opened a state-of-the-art, multimillion-dollar greenhouse and processing operation to grow tomatoes. The valley is situated in the northwest corner of Santa Barbara County, and is bound by the Santa Maria River to the north, the Casmalia Hills to the west, the San Rafael Mountains to the east, and the Solomon Hills to the south. This area includes the cities of Santa Maria and Guadalupe, as well as the unincorporated communities of Orcutt, Garey, and Sisquoc.

LOCATION

The Airport is located within the jurisdictional boundaries of the City of Santa Maria, which is located near the Santa Barbara County's northern border with San Luis Obispo County, as depicted on **Exhibit 1B**. Land immediately to the southwest and west is within unincorporated portions of the County. The Airport is situated approximately three miles to the south of the City of Santa Maria's central business district (CBD) on approximately 2,598 acres. The Airport elevation is 261 feet mean sea level (MSL).

CLIMATE

Weather conditions are important to the planning and development of an airport. Temperature is an important factor in determining runway length requirements, while wind direction and speed are used to determine optimum runway orientation. The need for navigational aids and lighting is determined by the percentage of time that visibility is impaired due to cloud coverage or other conditions. **Figure 1A** summarizes climatic data for the Airport. The data is averaged for the period from 1981 to 2010 and is sourced from the on-airport automated surface observing system (ASOS), which reported 126,233 observations during the 29-year period.

FIGURE 1A
Climate Summary
Santa Maria Public Airport

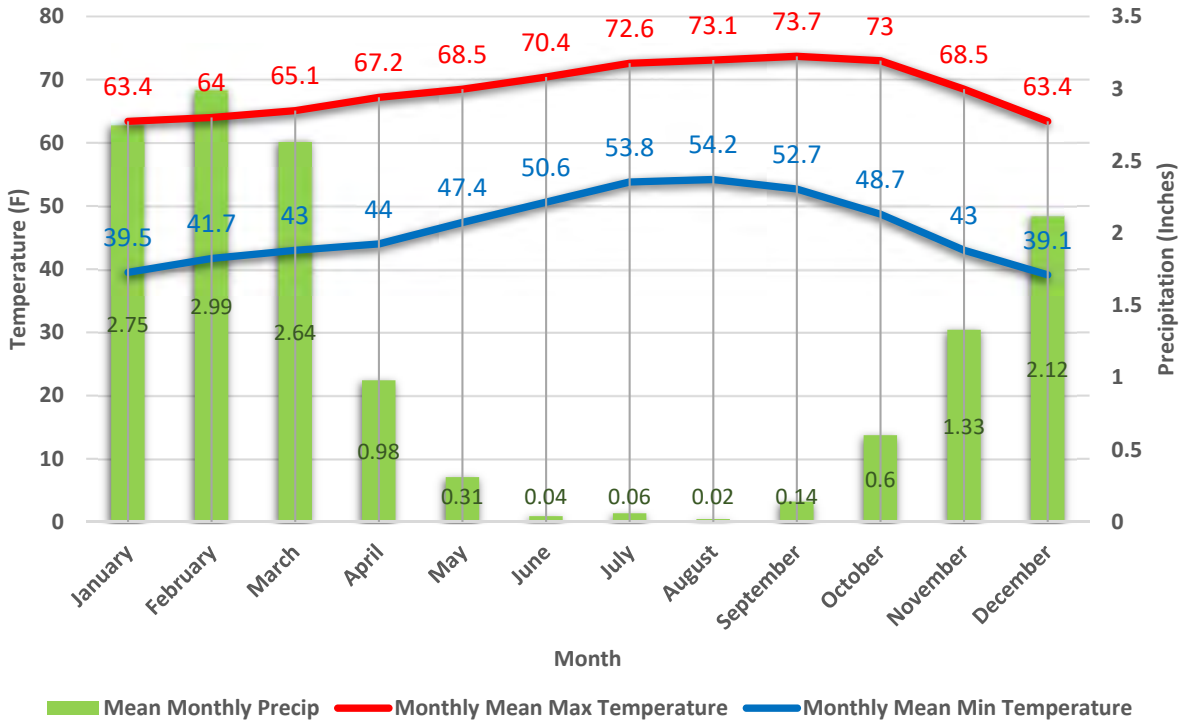




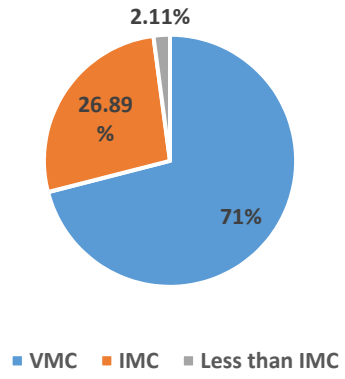


Exhibit 1B
AIRPORT LOCATION AND VICINITY MAP

The climate of Santa Maria is regulated by its proximity to the Pacific Ocean, resulting in a Mediterranean climate. The Airport's average high temperature ranges from around 64° Fahrenheit (F) during the winter months to 73° F during the summer months. Average annual precipitation is around 14 inches, with most rainfall occurring during California's wet season between November and April, while little precipitation falls during the summer months. There is an average of 28 days with measurable precipitation annually.

Figure 1B summarizes the average aviation weather conditions at SMX. Visual meteorological conditions (VMC)[1] occur at the Airport 71 percent of the year. When under VMC conditions, pilots are able to operate using visual flight rules (VFR) and are responsible for maintaining proper separation from objects and other aircraft. Instrument meteorological conditions (IMC) account for all weather conditions less than VMC conditions that still allow for aircraft to safely operate under instrument flight rules (IFR). Under IFR, pilots rely on instruments in the aircraft to accomplish navigation. IMC conditions[2] occur approximately 27 percent of the year at SMX. When weather conditions are lower than the available instrument approach procedures, the airport is essentially closed to traffic. Less than IMC conditions[3] are present approximately two percent of the year.

FIGURE 1B
Average Aviation Weather Conditions



The average wind speed at the Airport on an annual basis is 5.8 miles per hour (mph). April and May average the highest annual wind speeds at 7.3 and 7.5 mph, respectively. Winds are typically out of the northwest from the Pacific Ocean.

TRANSPORTATION NETWORK

Regional access to the City of Santa Maria is provided by the U.S. 101 Freeway. This highway provides the City with good access to neighboring population centers extending south to the City of Santa Barbara and beyond to the Los Angeles Area and north through San Luis Obispo County. State Route 135 is a four- and six-lane facility, which is the primary north-south route through the Santa Maria/Orcutt urban area. Skyway Drive provides the primary access to SMX.

Projects proposed in the SBCAG *2040 Regional Transportation Plan and Sustainable Communities Strategy* have been completed in recent years, which increased roadway capacity impacting SMX including:

- CT-MA-101 – Union Valley Parkway Interchange: Construction of interchange on Highway 101 at Union Valley Parkway. The purpose of this project was to provide freeway access for a new east/west arterial.

[1] VMC conditions – ≥3.0 statute miles visibility and ≥1,000-foot cloud ceilings.
[2] IMC conditions – <3.0 miles visibility but ≥½-mile visibility and <1000 feet but ≥200-foot cloud ceilings.
[3] Less than IMC – <½-mile visibility and/or <200-foot ceilings.

- SM-200-UVP-Hummel to California Ext+ I/S at State Route 135: Construction of two-lane road with Class II bike lane on Union Valley Parkway, Hummel Drive to Blosser Road and Bradley Road. The purpose of this project was to alleviate excessive traffic on residential collector streets.

The Santa Maria Valley Railroad (SMVRR) is the only local railroad service. It's eight-mile line runs from the Union Pacific Railroad Line in Guadalupe to the west to Broadway Street to the east. The tracks bisect the City of Santa Maria along Jones Street with one spur track to SMX along Railroad Avenue.

The City of Santa Maria is generally well-served by a system of sidewalks for everyday and recreational uses. The City of Santa Maria has established a Bikeway Master Plan designed to provide reasonable access from existing and proposed residential areas to commercial centers, social centers, and public recreation lands.

Public Transportation

Public transportation available at SMX connects passengers to city-wide and regional transportation networks.

Breeze Bus is a weekday commuter service between Santa Maria, Vandenberg AFB, Lompoc, Los Alamos, Buellton, and Solvang. SMX is on the Breeze Bus' Route 100, which has stops in Santa Maria, Vandenberg AFB, and Lompoc. The Breeze Bus has nine daily departure times from the Airport terminal beginning at 5:05 a.m. with the last departure time at 5:50 p.m.



Terminal Bus Stop

The Airport is on Route 4 of the Santa Maria Area Transit (SMAT) system with the stop located outside of the terminal building. Route 4 connects to the City's downtown Transit Center where travelers can transfer to the city-wide bus route network. Pick-ups at SMX occur every 30 minutes beginning at 6:59 a.m. during the week with the last stop at 6:29 p.m. Stops on the weekend occur at SMX every 45 minutes beginning at 9:59 a.m. and ending at 5:29 p.m.

Clean Air Express serves residents of northern Santa Barbara County commuting to Goleta and Santa Barbara. The pickup location in Santa Maria is the James Hagerman Softball Complex, which is located immediately northeast of the Airport on Skyway Drive. The Santa Maria to Goleta route departs at 5:15 a.m., 6:00 a.m., and 6:30 a.m. Arrivals from Goleta return to Santa Maria at 4:55 p.m., 6:07 p.m., and 6:30 p.m. The Santa Maria to Santa Barbara route departs at 5:40 a.m. and 6:35 a.m., and returns back to Santa Maria at 6:15 p.m. and 6:45 p.m.

The Central Coast Shuttle offers service from SMX to Los Angeles International Airport with stops in Buellton, Santa Barbara, Carpinteria, Ventura, and Camarillo. Central Coast Shuttle offers seven daily departures from SMX beginning at 3:30 a.m. with the last departure at 5:30 p.m. Central Coast Shuttle has its offices in the terminal building adjacent to the passenger ticketing lobby at SMX.

Greyhound Bus service is available at the Santa Maria Transit Center, located at 400 E. Boone Street. Taxi and limousine services are also available at the Airport provided by several companies as well as Uber.

THE AIRPORT'S SYSTEM ROLE

Airport planning takes place at the local, regional, state, and national levels. Each level has a different emphasis and purpose. On the national level, the Airport is included in the *National Plan of Integrated Airport Systems* (NPIAS). On the state level, the Airport is included in the *California Aviation System Plan*. The local planning document is the Airport Master Plan which was last updated in 2004 and the Airport Layout Plan (ALP) which was recently updated in March 2015.

FEDERAL AIRPORT PLANNING

The role of the federal government in the development of airports cannot be overstated. Many of the nation's existing airports were either initially constructed by the federal government or their development and maintenance was partially funded through various federal grant-in-aid programs to local communities. In large measure, the system of airports existing today is due, in part, to the existence of federal policy that promotes the development of civil aviation. As part of a continuing effort to develop a national airport system to meet the needs of civil aviation and promote air commerce, the United States Congress has continually maintained a national plan for the development and maintenance of airports.

The current national airport system plan is the NPIAS 2015-2019. A primary purpose of the NPIAS is to identify the airports that are important to national transportation which includes all commercial service airports, all reliever airports, and selected general aviation airports. The NPIAS identifies 3,345 public-use airports (3,331 existing and 14 proposed) which are eligible to receive development grants under the FAA Airport Improvement Program (AIP).

The Santa Maria Public Airport is classified as a nonhub primary commercial service airport in the NPIAS. The term "hub" is used by the FAA to identify very busy commercial service airports as measured by passenger enplanements (boardings). Primary commercial service airports are grouped into four categories. Large hubs are those airports that each account for at least one percent of total U.S. passenger enplanements; medium hubs for between 0.25 percent and one percent; small hubs for between 0.05 percent and 0.25 percent; and nonhubs for less than 0.05 percent of all enplanements, but more than 10,000 annual enplanements. There are 251 nonhub primary commercial service airports that together

account for three percent of all enplanements. These airports are heavily used by general aviation aircraft, with an average of 88 based aircraft. **Table 1B** presents the types of airports included in the NPIAS.

TABLE 1B
NPIAS Distribution of Activity

Number of Airports	Airport Type	% of Enplanements	% of Based Aircraft	% NPIAS Costs
29	Large Hub Primary Commercial	70.7	0.7	25.1
33	Medium Hub Primary Commercial	17.0	1.8	10.8
76	Small Hub Primary Commercial	8.9	4.6	10.4
251	Nonhub Primary Commercial	3.2	10.9	15.4
389	**Total Primary Airports**	**99.8**	**18.0**	**61.7**
84	General Aviation – National	0.0	11.0	5.2
459	General Aviation – Regional	0.0	23.2	11.3
1,268	General Aviation – Local	0.0	22.5	14.7
880	General Aviation – Basic	0.0	3.8	6.5
251	General Aviation – Not Classified	0.0	1.0	0.0
14	Planned New/Replacement Airports	0.0	0.0	0.6
3,345	**Existing NPIAS Airports**	**99.8**	**79.5**	**100.0**
16,029	**Non-NPIAS Airports**	**0.1**	**20.5**	**N/A**

Source: 2015-2019 National Plan of Integrated Airport Systems (NPIAS)

14 CFR Part 139 Certification

An airport must have an Airport Operating Certificate (AOC) if it is serving air carrier aircraft with more than nine seats or serving unscheduled air carrier aircraft with more than 30 passenger seats. 14 CFR Part 139 (Part 139) describes the requirements for obtaining and maintaining an AOC. This includes meeting various Federal Aviation Regulations (FARs).

Airports are classified in the following categories based on the type of air carrier operations served:

- **Class I Airport** – an airport certificated to serve scheduled operations of large air carrier aircraft (31 passenger seats or more) that can also serve unscheduled passenger operations of large air carrier aircraft and/or scheduled operations of small air carrier aircraft. SMX is a Class I airport.

- **Class II Airport** – an airport certificated to serve scheduled operations of small air carrier aircraft (10 to 30 passenger seats) and unscheduled passenger operations of large air carrier aircraft. A Class II airport cannot serve scheduled large air carrier aircraft.
- **Class III Airport** – an airport certificated to serve scheduled operations of small air carrier aircraft. A Class III airport cannot serve scheduled or unscheduled large air carrier aircraft.

- **Class IV Airport** – an airport certificated to serve unscheduled passenger operations of large air carrier aircraft. A Class IV airport cannot serve scheduled large or small air carrier aircraft.

The regulation (which implemented provisions of the *Airport and Airway Development Act of 1970*, as amended Nov. 27, 1971) set standards for: the marking and lighting of areas used for operations; fire-fighting and rescue equipment and services; the handling and storing of hazardous materials; the identification of obstructions; and safety inspection and reporting procedures. It also required airport operators to have an FAA-approved Airport Certification Manual (ACM). A Class I airport must comply with all sections of Part 139.

The ACM is a required document that defines the procedures to be followed in the routine operation of the airport and for response to emergency situations. The ACM is a working document that is updated annually. It reflects the current condition and operation of the airport and establishes the responsibility, authority, and procedures as required. There are required sections for the ACM covering administrative detail and procedural detail. Each section independently addresses: who (primary/secondary), what, how, and when as it relates to each element.

The administrative sections of the ACM cover such elements as the organizational chart, operational responsibilities, maps, descriptions, weather sensors, access, and cargo. The procedural elements cover such items as paved and unpaved areas, safety areas, lighting and marking, communications and navigational aids, airport rescue and firefighting (ARFF), handling of hazardous material, utility protection, public protection, self-inspection program, ground vehicle control, obstruction removal, wildlife management, and construction supervision. SMX has a current, approved ACM, which was most recently revised on August 11, 2015.

STATE AIRPORT PLANNING

The California Department of Transportation – Division of Aeronautics (Caltrans) actively participates in aviation planning and capital improvement projects in the state. The Division maintains and updates the *California Aviation System Plan* (CASP) which is composed of five elements: 1) Capital Improvement Plan (CIP); 2) Policy Element; 3) General Aviation System Needs Assessment (GASNA); 4) System Requirements, and; 5) Finance. Each of the elements is updated periodically.

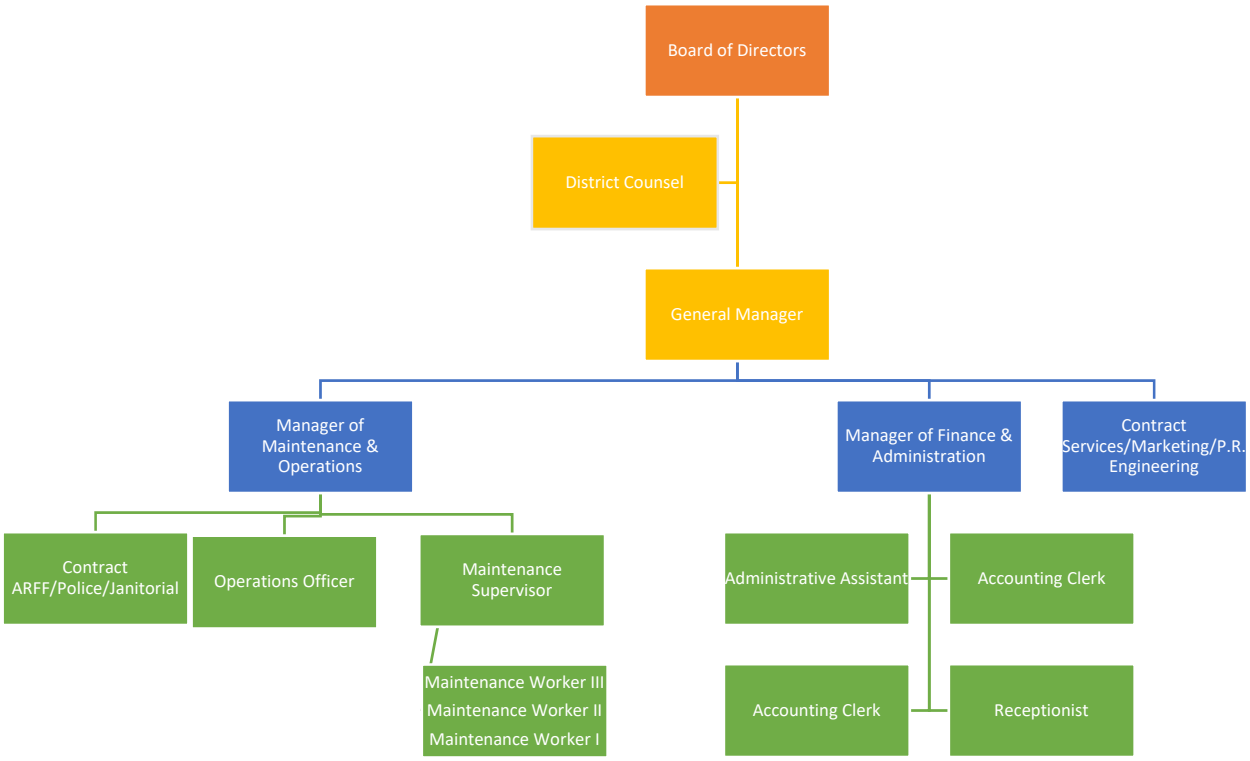
The CASP establishes minimum standards for several airport elements based upon the airport classification. For a non-hub commercial service airport, the CASP recommends a minimum runway length of 7,000 feet. Other minimum requirements are good pavement strength and condition, installed visual approach slope aids, fuel availability, weather observation systems, and a precision instrument approach. SMX meets the minimum standards as set forth in the CASP.

AIRPORT ADMINISTRATION

The Airport is owned and operated by the Santa Maria Public Airport District (SMPAD). Residents within the SMPAD elect a five-member Board of Directors who preside over the Airport. Each member of the

Board of Directors serves four-year terms. Day-to-day operations are entrusted to the Airport staff, who are overseen by the General Manager. The Airport's organizational chart is depicted in **Figure 1C**.

FIGURE 1C
SANTA MARIA PUBLIC AIRPORT DISTRICT ORGANIZATIONAL CHART

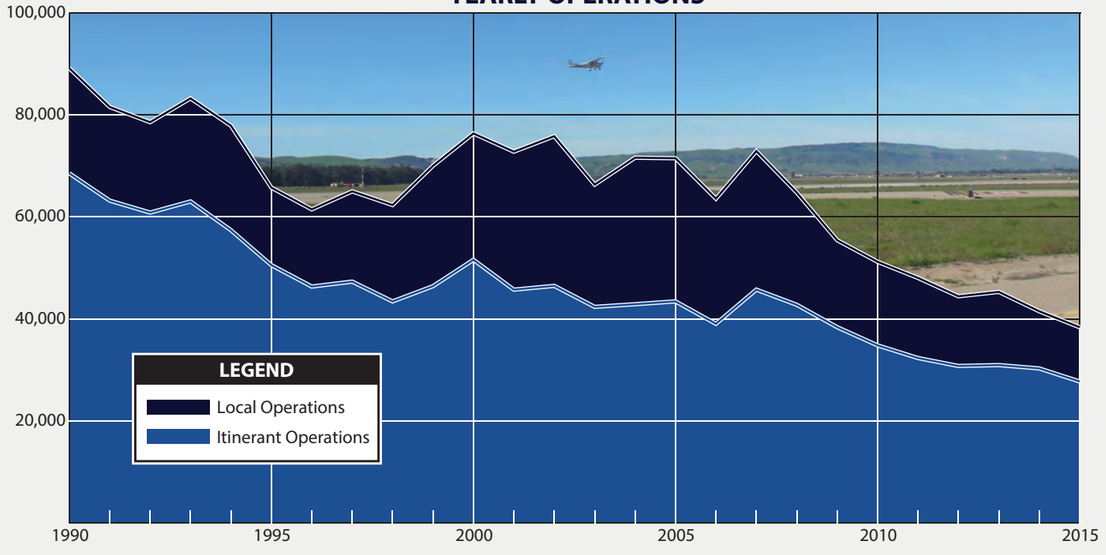


Source: Santa Maria Public Airport District, Airport Certification Manual

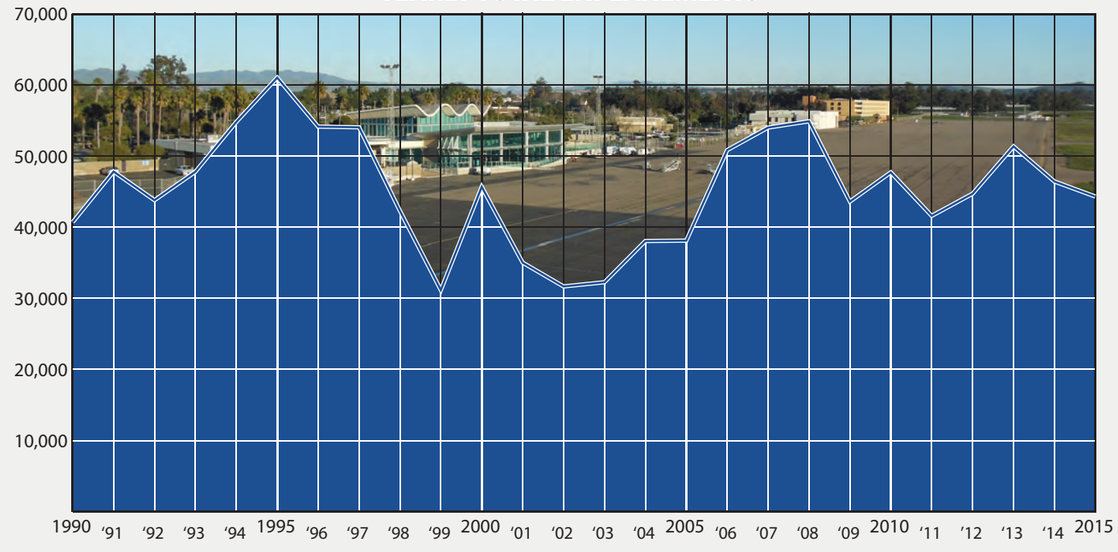
AVIATION ACTIVITY

Records of airport operational activity are essential for determining required facilities (types and sizes), as well as eligibility for federal funding. Airport staff and the FAA record key operational statistics, including aircraft operations, enplaned passengers, and cargo shipments. Analysis of historical activity levels aid in projecting future trends which will enhance the Airport's ability to plan for facility demands in a timely manner. The following sections detail specific operational activities. **Exhibit 1C** provides a summary of operational statistics, including the breakdown of itinerant and local operations and enplanements.

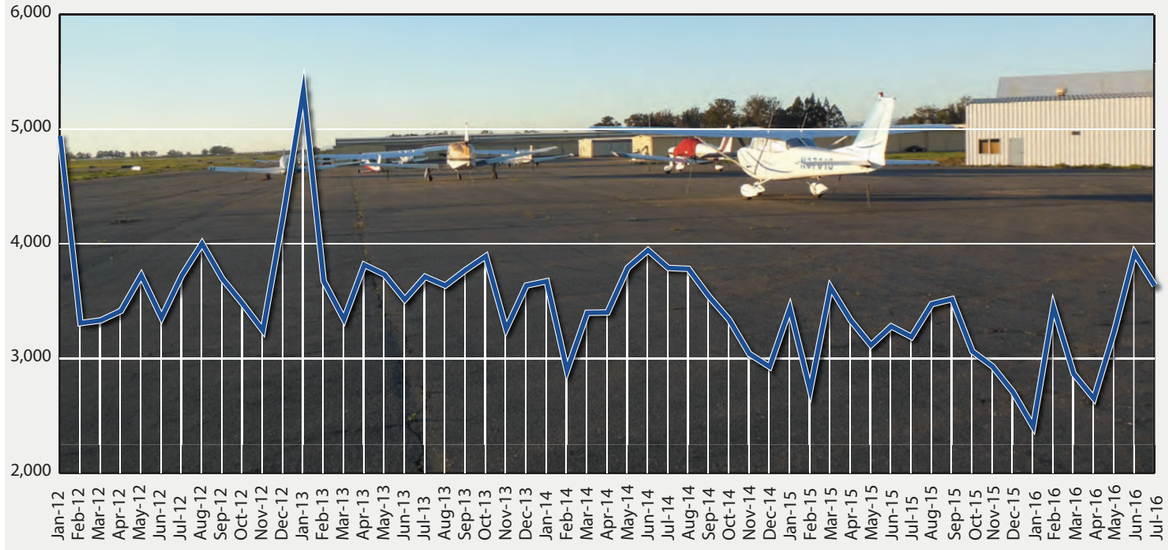
YEARLY OPERATIONS



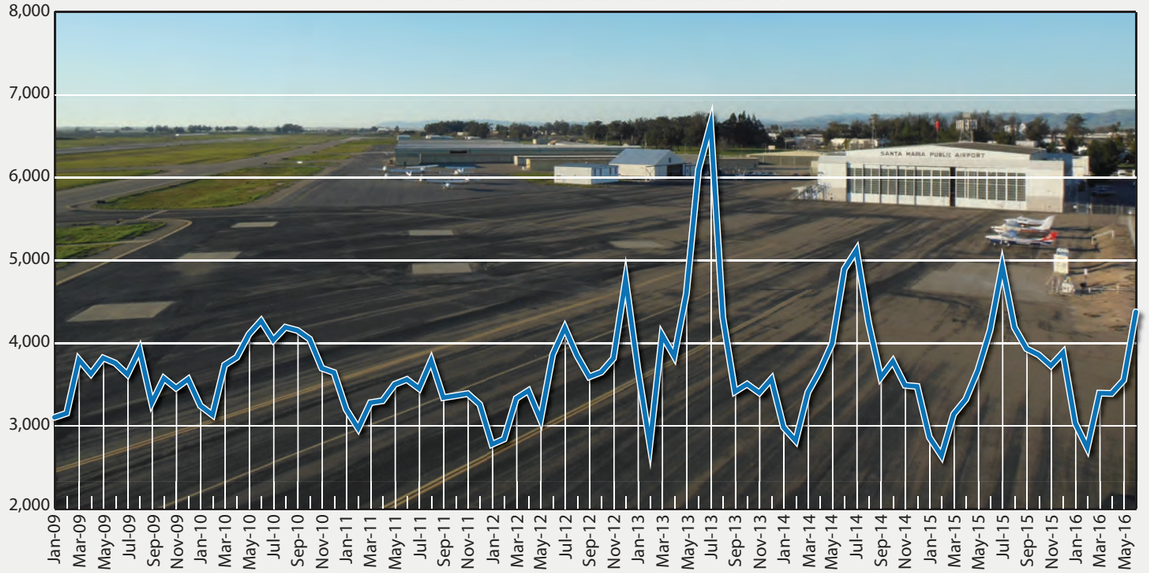
YEARLY TOTAL ENPLANEMENTS



MONTHLY TOTAL OPERATIONS



MONTHLY AIRLINE ENPLANEMENTS



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AIRCRAFT OPERATIONS

Aircraft operational statistics at the Airport are recorded by the airport traffic control tower (ATCT) that is operated under the FAA Contract Tower Program by Serco, a private air traffic control contractor, daily from 6:00 a.m. to 8:00 p.m. Among other duties, the ATCT counts aircraft operations, which are defined as either a takeoff or a landing. Aircraft operations are segregated into four general categories: air carrier, air taxi, military, and general aviation. Air carrier operations are performed by commercial airline aircraft with greater than 60 seats. Air taxi operations are generally associated with commuter aircraft, but also include for-hire general aviation aircraft. Military operations are those conducted by airplanes and helicopters with a military identification. General aviation includes all other aviation activity from small ultralights to large business jets.

Operations are further sub-categorized as either itinerant or local. Itinerant operations are those made by aircraft which arrive from or depart to destinations outside the local operating area. Local operations are associated primarily with touch-and-go or pilot training activity. **Table 1C** presents a summary of operations since 1990.

TABLE 1C
Historical Operations
Santa Maria Public Airport

	Itinerant Operations					Local			
Year	Air Carrier	Air Taxi	General Aviation	Military	Total	Civil	Military	Total	Total Operations
1990	64	21,011	46,609	877	68,561	20,483	112	20,595	89,156
1991	104	19,264	42,949	894	63,211	18,113	237	18,350	81,561
1992	77	17,381	42,324	1,080	60,862	17,648	58	17,706	78,568
1993	118	19,330	42,724	871	63,043	20,083	111	20,194	83,237
1994	92	18,395	38,431	496	57,414	20,301	168	20,469	77,883
1995	121	17,230	32,871	346	50,568	14,879	302	15,181	65,749
1996	134	14,537	31,241	456	46,368	14,783	339	15,122	61,490
1997	68	12,922	33,888	456	47,334	17,336	349	17,685	65,019
1998	32	10,096	32,925	404	43,457	18,127	751	18,878	62,335
1999	41	10,694	35,235	472	46,442	22,785	801	23,586	70,028
2000	59	11,980	39,112	460	51,611	24,183	571	24,754	76,365
2001	46	10,331	34,974	408	45,759	26,389	648	27,037	72,796
2002	43	9,001	36,895	565	46,504	28,386	932	29,318	75,822
2003	53	11,993	29,944	397	42,387	23,264	684	23,948	66,335
2004	56	12,844	29,548	463	42,911	27,865	840	28,705	71,616
2005	50	13,179	29,798	433	43,460	27,034	1,014	28,048	71,508
2006	256	11,955	26,410	444	39,065	23,827	688	24,515	63,580
2007	373	11,623	33,429	341	45,766	26,487	664	27,151	72,917
2008	375	12,377	29,767	275	42,794	21,688	298	21,986	64,780
2009	350	11,069	26,766	225	38,410	16,842	194	17,036	55,446
2010	351	11,577	22,611	308	34,847	16,230	140	16,370	51,217
2011	378	11,711	20,006	268	32,363	15,332	364	15,696	48,059
2012	377	12,243	17,915	274	30,809	13,336	312	13,648	44,457
2013	534	12,310	17,885	253	30,982	13,698	638	14,336	45,318
2014	375	12,297	17,301	350	30,323	10,552	644	11,196	41,519
2015	365	9,239	17,718	445	27,767	9,896	726	10,622	38,389

Source: Federal Aviation Administration (FAA) – Operational Network (OPSNET)

Itinerant operations have historically averaged 69.2 percent of overall operations at SMX. This is an indicator that the Airport attracts most of its aviation activity from outside its service area. This is attributable to a combination of regular air carrier service and air taxi activity. Local operations, on average, account for 30.8 percent of annual operations. **Exhibit 1C** charts the 25-year trend of both itinerant and local operations. As can be seen, operations at SMX have been trending downwards with itinerant operations dropping from a peak of 68,561 in 1990 to 27,767 in 2015, which is a compound annual growth rate (CAGR) of -3.6 percent. Local operations reached their peak of 29,318 in 2002 and have since declined to 10,622 in 2015. Over the 25-year period, local operations have had a CAGR of -2.6 percent. Itinerant and local operations combined had a peak year of 89,156 in 1990 and have steadily declined at a CAGR of -3.3 percent to a total of 38,389 in 2015.

Examining total operations on a monthly basis from 2012 through July 2016 shows no significant seasonal trends occurring at SMX. The month of January for both 2012 and 2013 is shown to have experienced operational spikes, which were the result of abnormally high local civilian operations. Excluding those two months, SMX has averaged approximately 3,500 operations monthly over this time period.

PASSENGER ACTIVITY

Passenger traffic is collected and analyzed by recording the number of passengers who arrive (deplane) or depart (enplane) commercial service aircraft. Enplanement levels are the primary consideration by the FAA to determining certain available funding levels. Passenger enplanement figures are the planning yardstick utilized to determine terminal building space capacities, automobile parking requirements, automobile access capacities, etc. Also, the FAA provides annual entitlement funds based upon the level of enplanements reached at the Airport. Passenger levels on each flight are recorded by the airlines and reported to the Airport and the FAA on a monthly basis. Other enplanements, including those occurring through the general aviation facilities at SMX, are also reported to the FAA. **Exhibit 1C** presents historical enplanement levels at the Airport since 1990.

Since 2000, enplanements have decreased with the Airport averaging approximately 42,500 a year from 2000-2015. Enplanements were on the rise after 2002 until the economic recession hit in 2008. Since that time, enplanements have shown only a slight fluctuation as the national economy has struggled to gain momentum. SMX is currently served by Allegiant Air and Mokulele Airlines. Allegiant Air offers one daily departure on Wednesday, Friday, and Sunday to Las Vegas. Mokulele Airlines offers 25 weekly departures to Los Angeles. United Express, which offered two daily departures to San Francisco, discontinued serving SMX effective October 5, 2016.

CARGO ACTIVITY

Air cargo is an encompassing term used to describe the combined activities of air mail and air freight operations. The air cargo industry includes a diverse range of businesses providing a variety of different services supporting the movement of air freight. This includes air cargo transported by dedicated cargo airlines, passenger airlines, freight forwarders and custom brokers, and air freight truckers.

Cargo operators at SMX include Ameriflight, Inc., which operates a variety of aircraft including the Beechcraft 99, Embraer 120, and Beechcraft 1900, but primarily utilizes the Fairchild Swearingen Metroliner for hauls to/from its operating bases in Burbank, CA and Ontario, CA, and the Piper 31 Navajo for hauls to/from El Monte, CA. West Air, which provides feeder service for FedEx Express, is another air cargo operator at SMX, which utilizes the Cessna Caravan for hauls to/from Ontario, CA.

Historical data reflecting annual air cargo enplaned and deplaned at the Airport is presented in **Table 1D**. As can be seen, West Air handles the majority of air cargo with approximately 76.2 percent of all enplaned cargo from 2011 through June 2016 and 65.0 percent of all deplaned cargo over the same time period. Enplaned cargo reached its peak in 2014 with over 1.7 million pounds enplaned, while 2011 was the peak for deplaned cargo with over 2.3 million pounds deplaned.

TABLE 1D
Enplaned/Deplaned Cargo (lbs)
Santa Maria Public Airport

	Ameriflight		West Air		Total	
Year	Enplaned	Deplaned	Enplaned	Deplaned	Enplaned	Deplaned
2011	247,445	542,495	985,187	1,772,820	1,232,632	2,315,315
2012	383,310	570,623	1,022,945	967,450	1,406,255	1,538,073
2013	328,451	597,302	997,821	1,015,386	1,326,272	1,612,688
2014	394,737	624,124	1,341,774	1,160,130	1,736,511	1,784,254
2015	357,412	714,639	1,024,890	1,075,863	1,382,302	1,790,502
2016*	160,926	307,915	563,047	515,473	723,973	823,388

* Through June
Source: SMPAD Records

BASED AIRCRAFT

Identifying the current number of based aircraft is important to the master plan analysis as this number helps determine existing demand for a number of different facilities, including aircraft storage hangar space, parking aprons, pilot and passenger services, and various other aircraft support facilities.

Historic data for based aircraft was retrieved from several sources, including the FAA's *Terminal Area Forecast* (TAF) and from the Airport's current based aircraft records. The based aircraft data shows growth from 185 in 1990 to 235 in 2015, resulting in a CAGR of 1.0 percent. The largest fluctuation in based aircraft over this time period occurred in 2006 with an increase of 43 aircraft. SMX reached its based aircraft peak in 2012 with 256 aircraft; however, the figured dropped by 21 aircraft the following year to its current level of 235 aircraft. The reduction in 2013 is most likely attributable to the FAA's effort to create a more accurate aircraft registration database by requiring aircraft owners to re-register their aircraft. These requirements took place over a three-year period ending in 2013 and, as a result, previously registered aircraft that may have been sold, scrapped/destroyed, or registered to multiple addresses were dropped from the database.

The current fleet mix of based aircraft according to the Airport's current FAA Form 5010 *Airport Master Record*, consists of 195 single-engine piston aircraft, 13 multi-engine aircraft, four jets, 21 helicopters, and two categorized as "other," including one glider and one ultralight aircraft.

AREA LAND USE/ZONING

Land uses and zoning in the vicinity of an airport can have an impact on airport operations and growth potential. The following section identifies baseline information relating to both existing and future land uses in the vicinity of the Airport. By understanding the land use issues surrounding the Airport, more appropriate recommendations can be made for the future use of the Airport and for the area surrounding the Airport. **Exhibit 1D** presents the existing zoning for the City of Santa Maria.

Land use around SMX is varied with agricultural uses to the northwest, west, and southwest. The residential neighborhood of Tanglewood in unincorporated Santa Barbara County is approximately ¾-mile west of the Runway 2 end. Light industrial and commercial uses within the City of Santa Maria predominate to the immediate northeast and east of the Airport. The community of Orcutt in unincorporated Santa Barbara County is located immediately adjacent to the southwest boundary of the Airport. The predominate land use in Orcutt is single-family residential.

ON-AIRPORT ZONING

Zoning designations within the Airport property boundary are depicted on **Exhibit 1E**. The vast majority of the Airport's 2,598 acres is zoned for Airport Services (I, II, and III). The purpose of this zoning designation is to facilitate the airport and airport-related commercial and industrial uses not adversely affected by airport operations, to provide for specific areas for aircraft operation and navigational aids, and to minimize the hazard to safe landing and take-off of aircraft. Airport Approach Zones have also been designated along the approach paths to each runway end. These zones are intended to act as a buffer for conflicting residential land uses. Intended land uses for the approach zones include agricultural/open space land uses.

SANTA MARIA AIRPORT BUSINESS PARK

The *Santa Maria Airport Business Park Specific Plan*, adopted by Ordinance No. 2007-27 on January 15, 2008, is a proposed 20- to 30-year development project for approximately 740 acres of SMPAD land. The Santa Maria Airport Business Park will combine light industrial, research, manufacturing, and commercial land uses around an 18-hole golf course. Additional uses will include retail opportunities, government facilities, and limited commercial and office development. Nearly 70 percent of the planning area will be reserved in passive and active open space to provide for conservation and/or recreational opportunities. The proposed business park plan is depicted on **Exhibit 1F**.

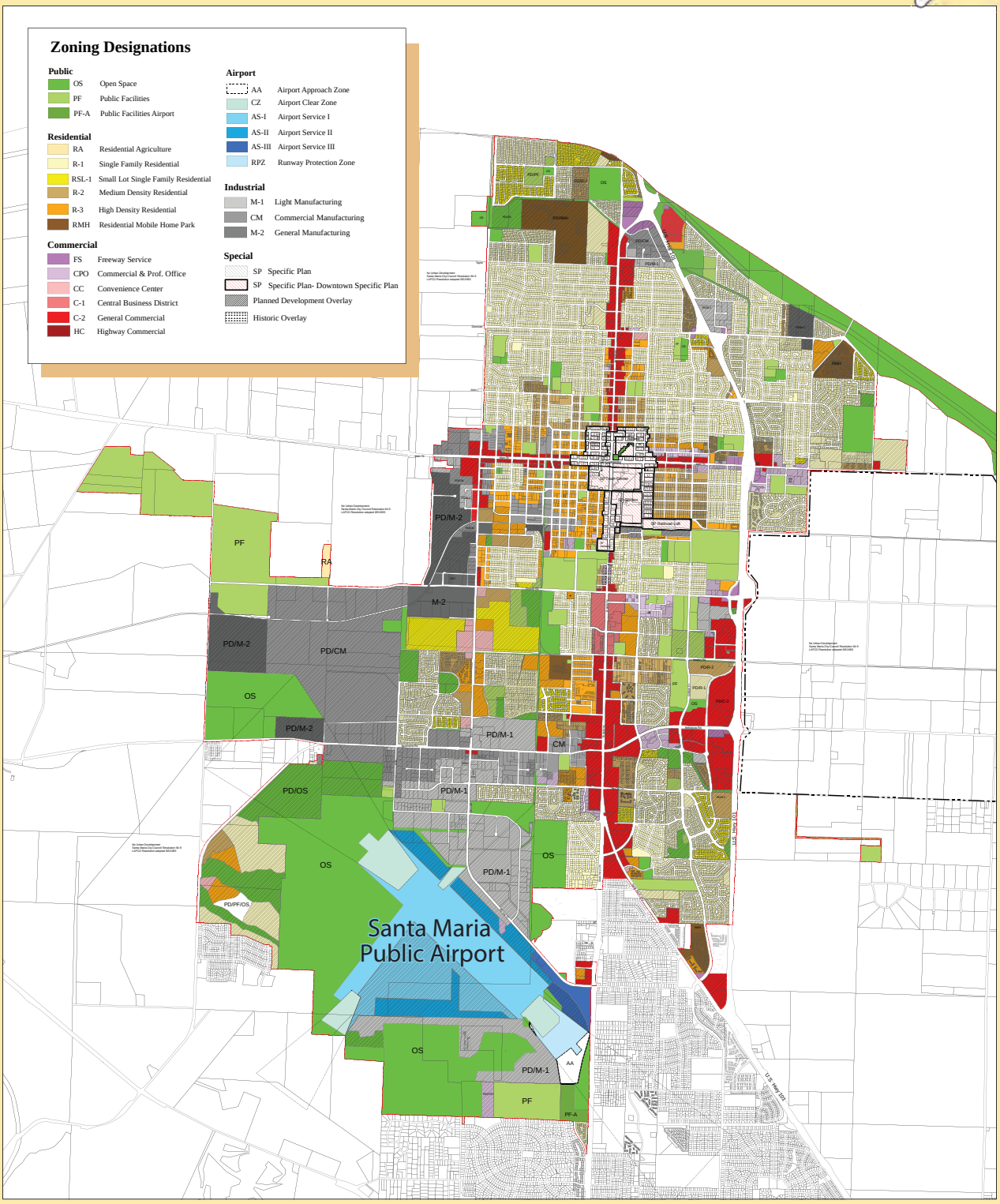


Exhibit 1D
CITY OF SANTA MARIA ZONING MAP

AVIGATION EASEMENTS

An avigation easement is a property right acquired from a landowner, which protects the use of airspace above a specified height, and imposes limitations on use of the land subject to the easement. These types of easements are typically used to limit land uses that attract birds or interfere with pilot visibility and instrumentation. SMX has acquired numerous avigation easements in the community surrounding the Airport as depicted on **Exhibit 1G**.

AIRFIELD FACILITIES

Airfield facilities include runways, taxiways, airport lighting, and navigational aids. A depiction of airfield facilities along with the airfield facility data is provided on **Exhibit 1H**.



Runway 12

RUNWAYS

The Airport is currently served by two runways: Runway 12-30, which serves as the primary runway and Runway 2-20, which serves as a crosswind runway.

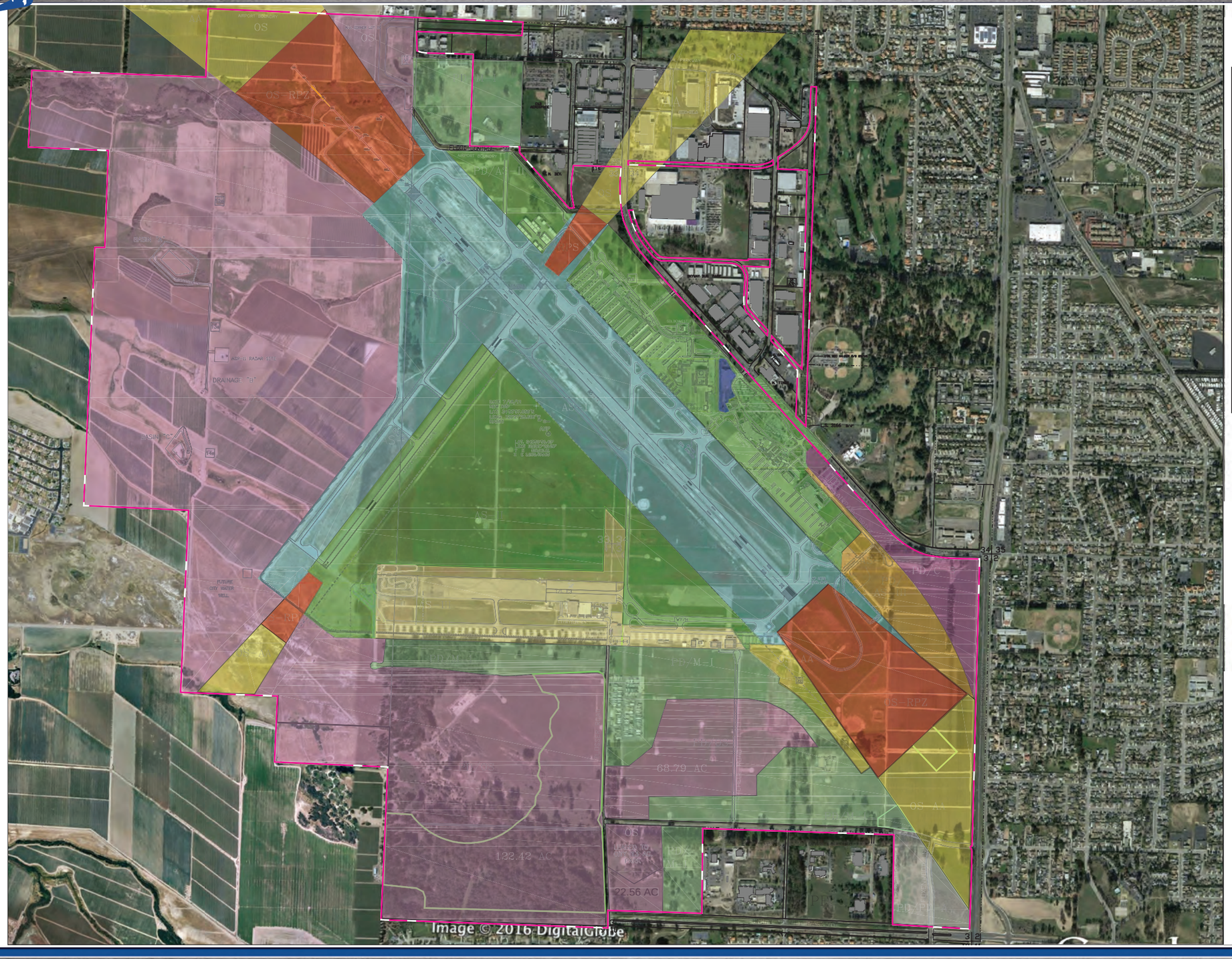
Runway 12-30

Runway 12-30 is 8,004 feet long by 150 feet wide and oriented in a northwest-southeast manner. The runway is constructed of asphalt. The surface of the runway is in good condition and is grooved to aid in drainage and wheel traction. The runway slopes up from the Runway 12 end to the Runway 30 end with a gradient of 0.6 percent.



Runway 30

Runway 12-30 has a pavement strength of 75,000 pounds single wheel loading (SWL); 181,000 pounds dual wheel (DWL); and 400,000 pounds dual tandem wheel (DTWL). SWL refers to the design of certain aircraft landing gear that has a single wheel on each main landing gear strut, DWL has two wheels on each main landing gear strut, and DTWL has four wheels on each main landing gear strut. This pavement strength



LEGEND

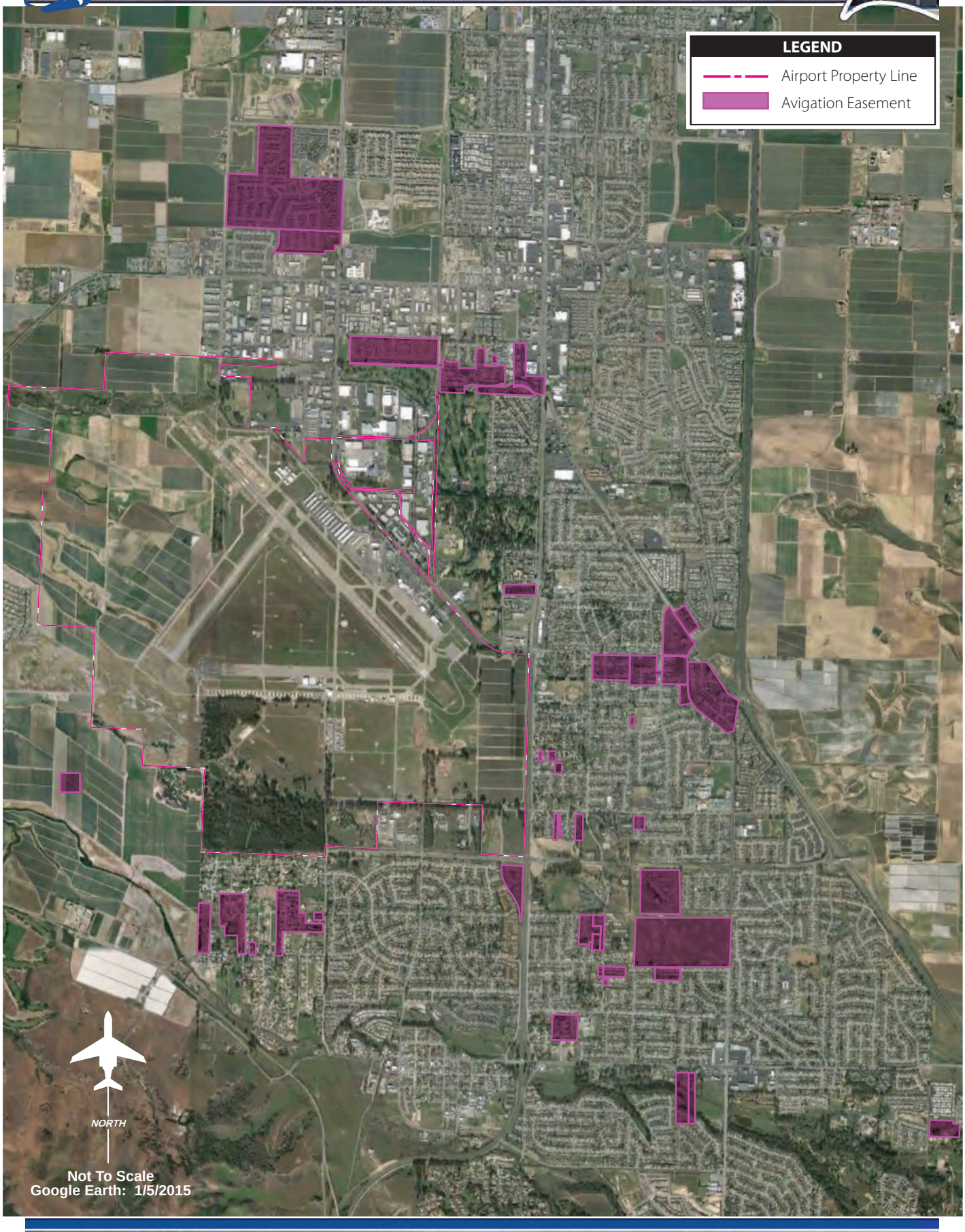
		Airport Property Line
	AA	Airport Approach Zone
	AS-I	Airport Services I - Aircraft Operating Area
	AS-II	Airport Services II
	AS-III	Airport Services III
	CP-3	Mixed Use Commercial
	CZ	Airport Clear Zone
	M-I	Light Manufacturing
	M-II	General Manufacturing
	PD	Planned Developments
	PF	Public Facility - Institutional
	OS	Open Space
	OS	SMVRR R-O-W
	RPZ	Runway Protection Zone
	CPO	Commercial Office & Professional Office

NORTH

SCALE IN FEET
0 100 500 1500
100

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APN 111-230-93
SANTA MARIA AIRPORT BUSINESS PARK
SPECIFIC PLAN LAND USE DESIGNATIONS
AC
AC - Airport Commercial
AS
AS - Airport Services
LI
LI - Light Industry
CF
CF - Community Facilities
CPO
CPO - Commercial Professional Office
ROADS
COS-AA
AA - Airport Approach
COS-CTS
COS - Conservation Open Space
ROS-GC
GC - Golf Course
ROS-DB
DB - Detention Basin
ROS - P
P - Park
N
not to scale


LEGEND
Airport Property Line
Avigation Easement
NORTH
Not To Scale
Google Earth: 1/5/2015

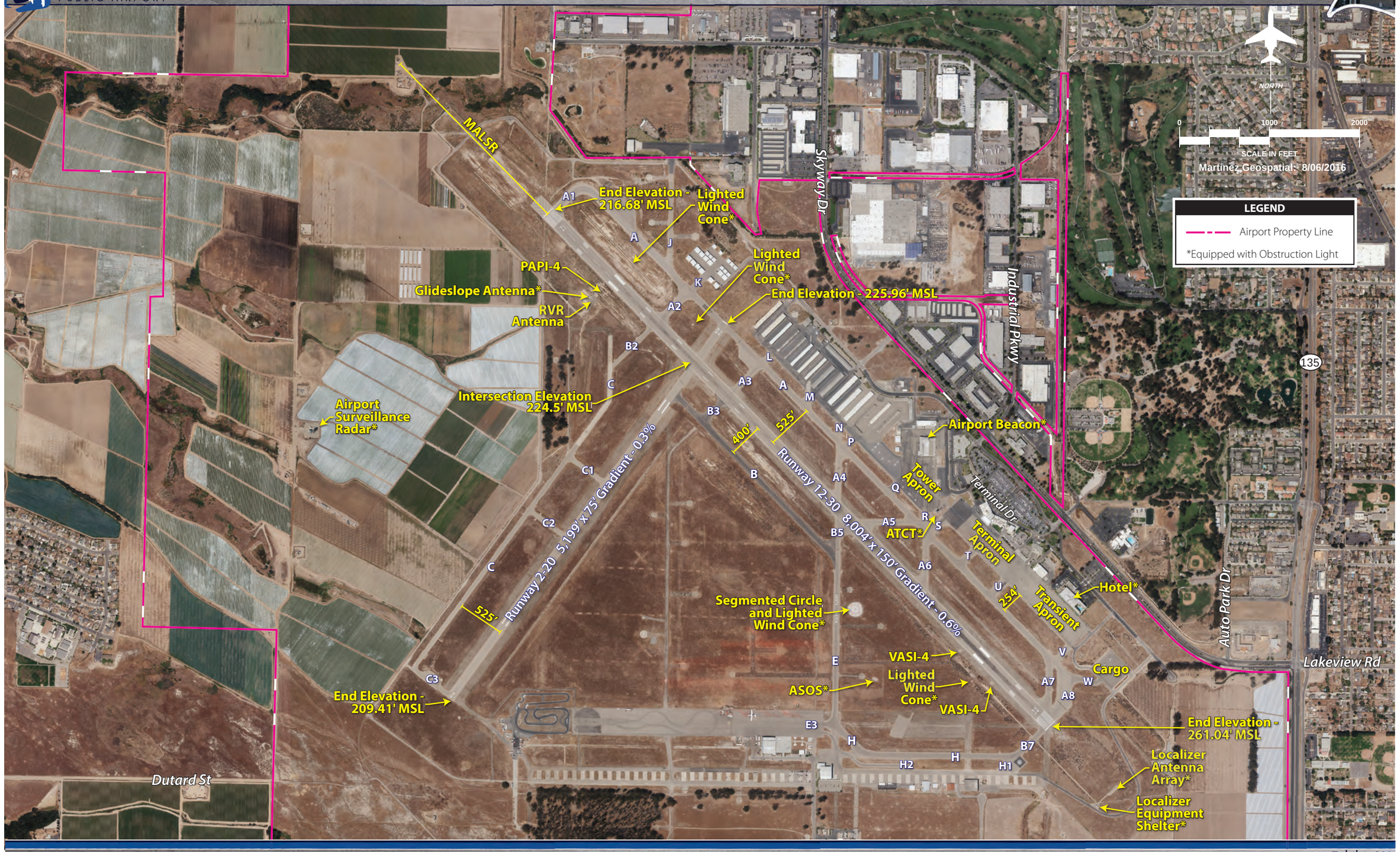


Exhibit 1H
AIRSIDE FACILITIES

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will accommodate most aircraft in the commercial and general aviation fleet today. The primary runway has 75-foot wide paved shoulder strips along each edge that is not maintained.



Runway 2

Runway 2-20

Runway 2-20 is the crosswind runway, intersecting with Runway 12-30, at a point approximately 2,350 feet from the Runway 12 end. Runway 2-20 is 5,199 feet long[4] and 75 feet wide, constructed of asphalt, and in good condition. This runway has a load bearing strength of 70,000 pounds SWL, 90,000 pounds DWL, and 150,000 pounds DTWL. Runway 2-20 slopes up from the Runway 2 end to the Runway 20 end with a gradient of 0.3 percent. The crosswind runway is intended for use by smaller aircraft and use by large air carrier aircraft is not recommended. Runway 2-20 has 100-foot wide paved shoulder strips on each side that is not maintained.



Runway 20

TAXIWAYS

The taxiway system at SMX, illustrated and detailed on **Exhibit 1H**, consists of parallel, connecting, access, and entrance/exit taxiways. All taxiway pavement is constructed of asphalt and varies in width from 50 to 60 feet. For reference, runway to taxiway separation distances are measured from centerline to centerline. Taxiway pavement strength details are depicted on **Exhibit 1J**.



Taxiway A

HOLD/RUN-UP APRONS

Hold/run-up aprons are designated areas on the airfield typically located at the end of taxiways near the runway end thresholds. Pilots often utilize these aprons, with authorization from the ATCT, for final pre-flight checks, for holding short of the runway prior to ATCT departure authorization, and to allow aircraft to bypass each other when necessary.

[4] The published length of Runway 2-20 is 5,189 feet; however, the airfield survey prepared for the Master Plan found the length to be 5,199 feet.

There are four hold/run-up aprons on the airfield. The Runway 30 run-up apron, located at Taxiway A8, is pavement strength rated for 110,000 pounds DWL and is prohibited from use by large air carrier aircraft. The hold/run-up apron for Runway 12 has a pavement strength rating of 181,000 pounds DWL/400,000 pounds DTWL, and the Runway 2 and Runway 20 hold/run-up aprons have pavement strengths accommodating 70,000 pounds DWL.

PAVEMENT MARKINGS

Pavement markings aid in the movement of aircraft along airport surfaces and identify closed or hazardous areas on an airport. The precision runway markings on Runway 12-30 identify the runway centerline, runway edge, threshold, designation, touchdown point, aiming points, and aircraft holding positions. Crosswind Runway 2-20 is marked with basic markings that include the runway centerline and end designations.



Enhanced Hold Position Marking

Taxiway centerline markings are provided to assist pilots in maintaining proper clearance from pavement edges and objects near the taxiway/taxilane edges. Taxiway markings also include aircraft holding positions.

All taxiways providing access to either runway have enhanced taxiway centerline markings. The enhanced markings are wider dashed black and yellow markings on both sides of the taxiway centerline marking. These markings are intended to alert pilots that the taxiway is approaching a runway intersection.

The edge limits of the taxiways are marked with two solid yellow lines. Where taxiway pavement and hold/run-up apron pavement are not physically separated, dashed yellow lines indicate the taxiway edge.

Hold lines are marked on those taxiways leading to the runway. The hold lines are comprised of two solid yellow lines followed by two dashed yellow lines. The hold lines on taxiways leading to an intersection with a runway are preceded by runway designation markings consisting of white lettering on a red background. Hold line separation distances from the runway centerlines are as follows:

Runway 12-30:

- Taxiway A1 – 267’
- Taxiway A2 – 303’
- Taxiway B2 – 263’
- Runway 2-20 – 259’
- Taxiway A3 – 303’
- Taxiway B3 – 261’
- Taxiway A4 – 306’
- Taxiway A5 – 302’
- Taxiway A6 – 301’
- Taxiway A7 – 261’
- Taxiway A8 – 260’
- Taxiway B7 – 261’

TAXIWAY DATA TABLE			
TAXIWAY NAME	PAVEMENT SURFACE	PAVEMENT WIDTH (FT)	LIGHTING
EXISTING	EXISTING	EXISTING	EXISTING
A	ASPHALT	50-60	MITL
A1	ASPHALT	75	MITL
A2	ASPHALT	70	MITL
A3	ASPHALT	50	MITL
A4	ASPHALT	50	MITL
A5	ASPHALT	50	MITL
A6	ASPHALT	50	MITL
A7	ASPHALT	50	MITL
A8	ASPHALT	50	MITL
B	ASPHALT	50	NONE
B2	ASPHALT	50	NONE
B3	ASPHALT	50	NONE
-	-	-	-
B5	ASPHALT	50	MITL
-	-	-	-
B7	ASPHALT	50	MITL
C	ASPHALT	50	NONE
C1	ASPHALT	50	NONE
C2	ASPHALT	50	NONE
C3	ASPHALT	50	NONE
-	-	-	-
-	-	-	-
-	-	-	-
-	-	-	-
E	ASPHALT	50	MITL
-	-	-	-
E3	ASPHALT	50	NONE
-	-	-	-
H	ASPHALT	50	MITL
H1	ASPHALT	145	MITL
H2	ASPHALT	65	MITL
J	ASPHALT	50	NONE
K	ASPHALT	50	MITL
L	ASPHALT	50	NONE
M	ASPHALT	90	MITL
N	ASPHALT	45	MITL
P	ASPHALT	55	MITL
Q	ASPHALT	50	MITL
R	ASPHALT	50	MITL
S	ASPHALT	75	MITL
T	ASPHALT	65	MITL
U	ASPHALT	75	MITL
V	ASPHALT	50	MITL
W	ASPHALT	50	MITL

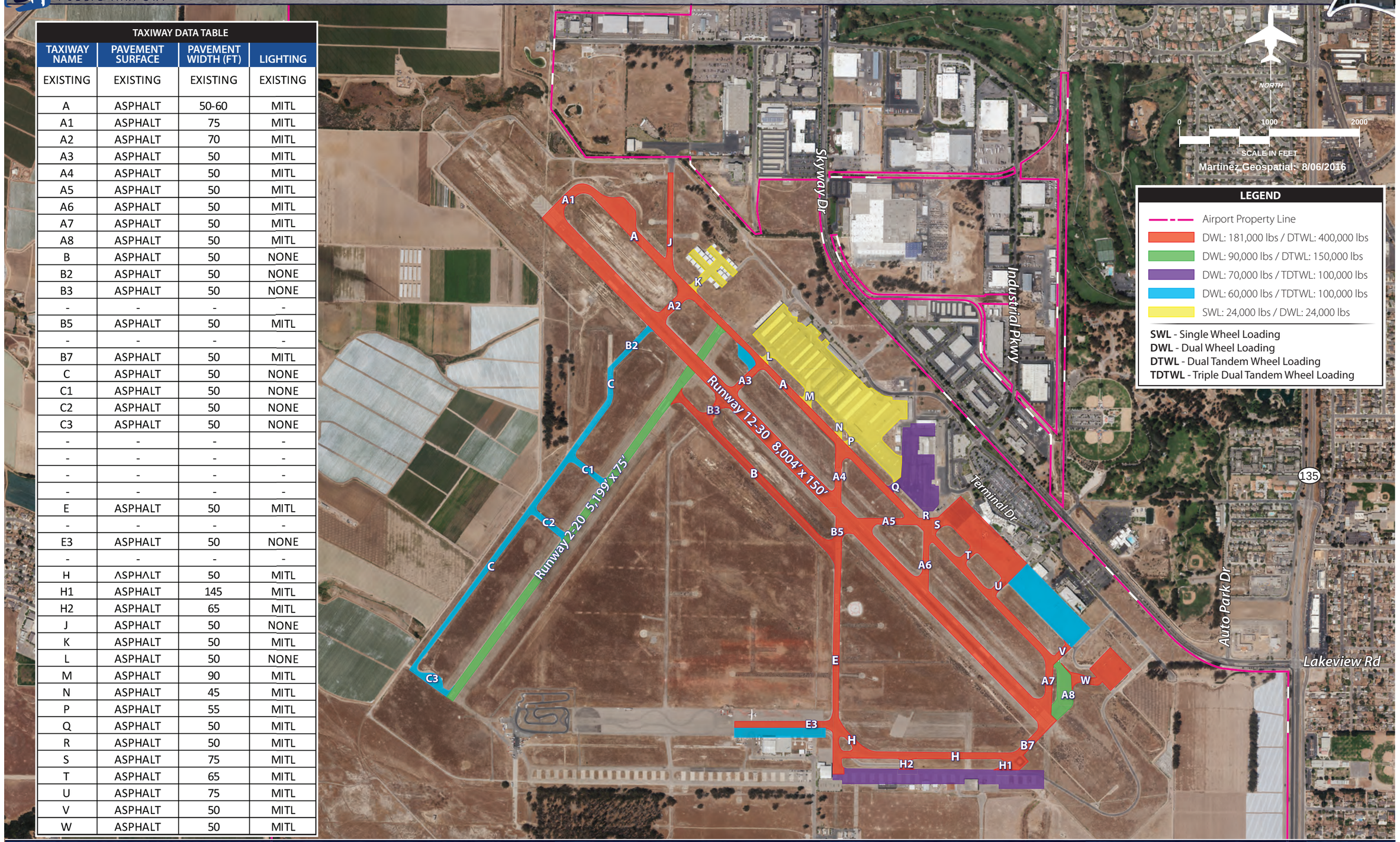


Exhibit 1J
AIR OPERATIONS AREA PAVEMENT STRENGTH AND TAXIWAY DATA

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Runway 2-20:

- Taxiways C1, C2, C3 – 200'
- Taxiway A (south) – 263'
- Taxiway A (north) – 207'

AIRFIELD LIGHTING AND SIGNAGE

Airfield lighting systems extend an airport's usefulness into periods of darkness and/or poor visibility. A variety of lighting systems are installed at the Airport for this purpose. These lighting systems, categorized by function, are summarized as follows. Only Runway 12-30 is available for nighttime operations; however, when the ATCT is closed (8:00 p.m. to 6:00 a.m.), the Runway 12-30 edge lights, taxiway edge lights, and approach lighting system (ALS) are turned off and can be activated by the common traffic advisory frequency (CTAF).

Identification Lighting: The location of the Airport at night is universally identified by a rotating beacon. The rotating beacon projects two beams of light, one white and one green, 180 degrees apart. The rotating beacon at the Airport is located on top of a hangar, currently occupied by Art-Craft Paint, located approximately 800 feet north of the ATCT.



Rotating Beacon (with shielding)

Runway and Taxiway Lighting/Signage: Runway and taxiway edge lighting utilizes light fixtures placed near the edge of the pavement to define the lateral limits of the pavement. This lighting is essential for safe operations during night and/or times of low visibility in order to maintain safe and efficient access to and from the runways and aircraft parking areas.

Primary Runway 12-30 is equipped with white high intensity runway lights (HIRL). Crosswind Runway 2-20 is not equipped with pavement edge lighting.

As detailed on the taxiway data table on **Exhibit 1J**, most taxiways are equipped with medium intensity taxiway edge lighting (MITL). The taxiway edge lighting is blue in color and mounted on frangible bases.

The Airport also has a runway/taxiway signage system. The presence of runway/taxiway signage is an essential component of a surface movement guidance control system necessary for the safe and efficient operation of the Airport. The signage system installed at the Airport includes runway and taxiway designations, holding positions, instrument landing system (ILS) critical areas, routing/directional, runway end and exits, and runway distance remaining signs (southwest side of primary runway).



Directional Signage



PAPI-4

The terminal apron is served by lighting from light stands. Apron edge taxilanes have no edge lighting.

Visual Approach Lighting: Runway 12 is equipped with a four-light precision approach slope indicator (PAPI) system with a standard 3.0-degree glide slope. The PAPI system consists of red and green lights which can be interpreted by the pilot to give an indication of being above, below, or on the designated descent path to the runway threshold. A PAPI system has a range of five miles during the day and up to 20 miles at night. Runway 30 is equipped with a four-light visual approach slope indicator (VASI) system with a 3.5-degree glide slope. The VASI system is similar to a PAPI but with a different configuration. The FAA now considers VASI systems to be obsolete.

Runway End Identification Lighting: Runway end identification lights (REILs) provide rapid and positive identification of the approach ends of a runway. The REIL consists of two synchronized flashing lights, located laterally on each side of the runway end, facing the approaching aircraft. Neither runway at SMX is currently equipped with REIL systems.

Approach Lighting Systems: Approach lighting systems (ALS) are used in the approaches to runways as adjuncts to electronic navigational aids for the final portion of instrument flight rule (IFR) approaches and visual guides for nighttime approaches under visual flight rule (VFR) conditions. The approach lighting system provides the pilot with visual cues concerning aircraft alignment, roll, height, and position relative to the threshold. The ILS approach to Runway 12 is enhanced with the medium intensity approach lighting system with runway end alignment lights (MALSR). The MALSR array extends 2,400 feet beyond the Runway 12 end.

After-Hours Lighting: When the ATCT is closed (8:00 p.m. to 6:00 a.m.), airfield lights, including the Runway 12-30 HIRL, MALSR, and taxiway lights, can be activated by pilots utilizing their radio transmitter through a series of clicks.

Obstruction Lighting: Objects that penetrate the FAR Part 77 imaginary surfaces associated with an airport are considered obstructions. At SMX, buildings and structures that could be obstructions are

clearly identified with red obstruction lights as required by the FAA. **Exhibit 1H** shows the location of the obstruction lights at the Airport.



Glide Slope Antenna

INSTRUMENT LANDING SYSTEM (ILS) EQUIPMENT

Airports with ILS approaches are equipped with both a glide slope antenna and localizer antenna array. The glide slope antenna provides vertical guidance to landing aircraft and can be located on either side of the runway; however, it is best to locate the glide slope antenna on the side of the runway with the least possibility of signal reflections from buildings, power lines, vehicles, aircraft, etc. The localizer antenna array is used to establish and maintain an approaching aircraft's position relative to the runway centerline until visual contact confirms the runway alignment and location. Typically, the localizer antenna array is sited on the extended runway centerline between 1,000 feet and 2,000 feet from the end of the runway.

Runway 12 at SMX is equipped with an ILS. The glide slope antenna is located on the west side of Runway 12, approximately 1,000 feet from the runway threshold, where potential signal obstructions are limited. The localizer antenna array is located approximately 1,000 feet beyond the far end of the runway.



Localizer Antenna Array

WEATHER AND COMMUNICATION AIDS

The Airport is equipped with four lighted wind cones. The wind cones provide information to pilots regarding wind conditions, such as direction and intensity. The primary lighted wind cone is located within the segmented circle, southwest of the primary runway. Supplemental lighted wind cones are located near each end of Runway 12-30 and near the Runway 20 end.



Segmented Circle and Lighted Wind Cone

The Airport is served by an ATCT. The ATCT is FAA owned and operated. It is located west of the Airport terminal building overlooking the runway system. The tower operates from 6:00 a.m. to 8:00 p.m. daily. ATCT ground control can be reached on 121.9 MHz, and the tower is available via frequency 118.3 MHz.

The Airport is equipped with an Automated Terminal Information Service (ATIS). ATIS broadcasts are updated hourly and provide arriving and departing pilots the current surface weather conditions, communication frequencies, and other important Airport-specific information. The ATIS frequency at SMX is 121.15 MHz.

The Airport has access to the common advisory traffic frequency (CTAF). This radio frequency (118.3 MHz) is used by pilots in the vicinity of the Airport to communicate with each other about approaches to or departures from the Airport when the tower is closed. In addition, a UNICOM frequency is also available (122.95 MHz) where a pilot can obtain information pertaining to the Airport.

Pilots can contact the Santa Barbara Terminal Radar Approach Control (TRACON), if needed, usually when the tower is closed at the Airport. The Santa Barbara TRACON operates from 6:00 a.m. to 11:00 p.m. When the SMX ATCT and Santa Barbara TRACON are closed, pilots can contact the Los Angeles Air Route Traffic Control Center (ARTCC) for approach and departure services. The primary responsibility of the SMX ATCT, Santa Barbara TRACON, and the Los Angles ARTCC is sequencing and separation of over-flights, arrivals, and departures, in order to provide safe, orderly, and expeditious flow of aircraft.



ASOS Equipment

The Airport is equipped with an ASOS. An ASOS will automatically record weather conditions, such as temperature, dew point, wind speed, altimeter setting, visibility, sky condition, and precipitation. The ASOS updates observations each minute, 24 hours a day, and this information is available by phone or it is also available via the ATIS frequency. **Table 1E** summarizes the various weather and navigational aid frequencies and phone numbers available at SMX.

TABLE 1E
Airport Communications and Weather Aids
Santa Maria Public Airport

Communication Type	Frequency
UNICOM: Universal Communication	122.95 MHz
ATIS: Automated Terminal Information Service	121.15 MHZ
ATCT: Airport Traffic Control Tower	118.3 MHz
CTAF: Common Traffic Advisory Frequency	118.3 MHz
SMX Ground Control	121.9 MHz
Santa Barbara Approach/Departure	124.15 MHz
Emergency	121.5 MHz
ASOS: Automated Surface Observing System	121.15 MHZ (805-928-0384)
ARTCC-Los Angeles (when Santa Barbara approach control is closed)	119.05 MHz

ARTCC: Air Route Traffic Control Center
Source: FAA Chart Supplement - Southwest U.S. (Effective May 26, 2016); Airport records.

LANDSIDE FACILITIES

Landside facilities are those that support the aircraft and pilot/passenger handling functions, as well as other non-aviation facilities typically providing a revenue stream to the airport. These facilities include the passenger terminal complex, cargo facilities, general aviation facilities, and support facilities, such as fuel storage, automobile parking, roadway access, and aircraft rescue and firefighting. The primary landside facilities at the Airport are identified on **Exhibit 1K**.

AIRCRAFT APRONS/RAMPS

Aircraft aprons/ramps are pavement areas that are sufficiently removed from aircraft taxiways and movement areas that facilitate the safe and efficient transition of passengers from the airside element (runway and taxiways) to the landside element. Aprons provide access to hangars and provide for short term and long term aircraft parking. There are three general aviation aprons, one commercial service apron, and one cargo apron at the Airport.



Tower Apron

The usable portion of an apron consists of those pavement areas where aircraft can park. This typically does not include taxilanes or access pavement immediately fronting a hangar.

Terminal Apron

The terminal apron is located immediately to the southwest of the terminal building and encompasses approximately 18,333 square yards (sy) of asphalt pavement. The terminal apron has a depth of approximately 300 feet to serve commercial service aircraft as well as ground support equipment. The terminal apron is located along the primary runway flight line with multiple access points (Taxiways S, T, and U) to full-length parallel Taxiway A. The pavement strength for this apron is rated at 181,000 pounds DWL and 400,000 pounds DTWL. The terminal apron is marked with three angular aircraft parking lines and a boundary for the security identification display area (SIDA).

General Aviation Aprons

There are three general aviation aprons that are best described by their location on the Airport. The tower apron, located to the north/northwest of the ATCT, has an area of approximately 42,650 sy. The apron has 16 fixed-wing aircraft tiedowns for based aircraft and six helicopter parking spaces. This apron also provides access to and serves the activities of several specialty aviation services operators (SASOs),

including Art-Craft Paint, Calaska Helicopters, All Counties Courier, and Coastal Valley Aviation. A self-service fuel facility with a capacity of 12,000 gallons of AvGas owned by the SMPAD and leased by Central Coast Jet Center is also located on this apron.

The transient general aviation apron is located immediately southeast of the terminal apron and has an area of approximately 31,650 sy. The transient apron has nine rows of aircraft tiedown positions with the capacity for approximately 40 aircraft. The airfield is accessible from the transient apron via Taxiways U and V.

The third general aviation apron is located on the south side of the airfield serving Central Coast Jet Center's main FBO facility. This apron has an area of approximately 32,400 sy. Half of this apron is utilized for transient general aviation aircraft parking and the other half is utilized for three aerial firefighting aircraft liquid fire retardant loading positions (pits) operated by the United States Forest Service (USFS). Airfield access from this apron is via Taxiways E and H.



Self Service Fuel Facility



USFS Fire Retardant Loading Pit

Cargo Apron

The cargo apron at SMX has an area of approximately 11,750 sy and is located at the southeast end of the airfield near the Runway 30 threshold. This pavement is strength-rated for 181,000 pounds DWL and 400,000 pounds DTWL. This apron provides six aircraft parking positions for the loading/offloading of parcels to ground vehicles. Ground vehicle access is restricted by a security gate off of Airpark Drive.



Cargo Apron

NORTH

0 1000 2000

SCALE IN FEET

Martinez Geospatial; 8/06/2016

LEGEND

Airport Property Line

Note: Identified tenants as of 2017. Contact the District office for a more current tenant roster.

Zodiac Aerospace (Through-the-Fence Operator)

Through-the-Fence Access Point

Skyway Dr

Industrial Pkwy

Privately-Owned Corporate Hangars (23 Units)

Airpark Dr

Museum of Flight

SMPAD-Owned T-Hangar/Corporate Hangar Complex (147 T-hangar Units/ 35 Corporate Hangar Units)

SMPAD Maintenance Yard

Runway 12-30 8,004' x 150'

Runway 2-20 5,199' x 75'

Art-Craft Paint

Airport Office Complex

Coastal Valley Aviation

Airport Administration Offices

Lav Dump

Tower Apron

Commercial Terminal

Terminal Apron

ARFF Station

Cessna Pilots Association

Radisson Hotel

General Aviation Building (Central Coast Jet Center)

Transient Apron

Auto Park Dr

Lakeview Rd

Cargo Apron

Santa Maria Karting Leasehold

Central Coast Jet Center Fuel Farm

Central Coast Jet Center

Rotorcraft Leasing

Arctica Air Service

CalStar

United State Forest Service

English Air Hangar

Central Coast Jet Center Hangar

Rocky Mountain Air Service Hangar

Central City Surplus

Dutard St

135

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TERMINAL BUILDING

The Airport has a passenger terminal building that was originally constructed and dedicated on December 5, 1971, located at 3249 Terminal Drive. The terminal restaurant space was added soon after in 1972. Since then, numerous additions and reconfigurations have taken place in order to address changes in aviation demand and passenger preference for terminal facilities. Most recently, in 2006, the baggage claim area was expanded by 3,876 square feet (sf) and in 2009, an addition was constructed to add 9,140 square feet (sf) of secure passenger holdroom space, which includes four gates and a concessions area. Today, the facility encompasses 36,729 sf with 34,627 sf on the ground level and 2,102 sf on the second level. Primary passenger functions and services take place on the ground level (including loading and unloading of aircraft), with office space on the second level. **Exhibit 1L** presents the functional makeup of the Airport passenger terminal building.

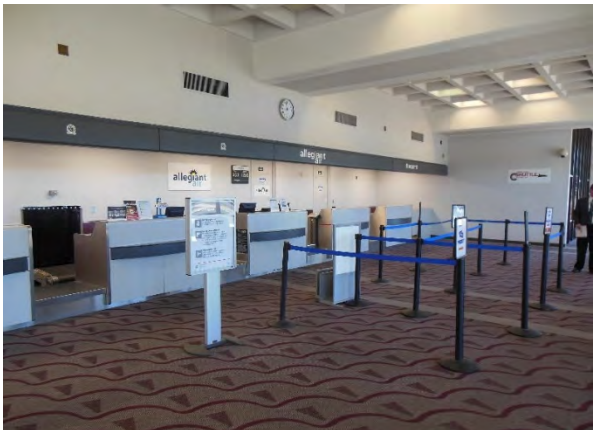


Terminal Building (Curb Side)

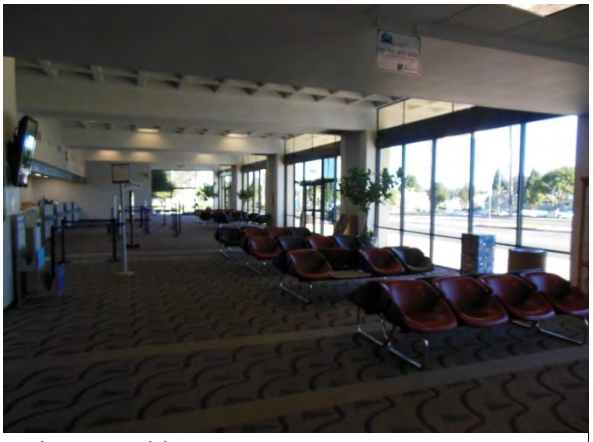


Terminal Building and Terminal Apron

The terminal building is staffed and open to the public from 4:30 a.m. to 12:00 a.m. daily. All primary passenger departure functions are located on the west end of the ground floor. Upon entering the facility, passengers can utilize the airline ticket counters to purchase tickets, obtain boarding passes, and check luggage. Passengers can then proceed east to the security checkpoint, which is located in the central portion of the terminal building. A flight information monitor in the ticketing lobby of the terminal building displays arrival and departure flight information to all travelers.



Airline Ticketing Lobby

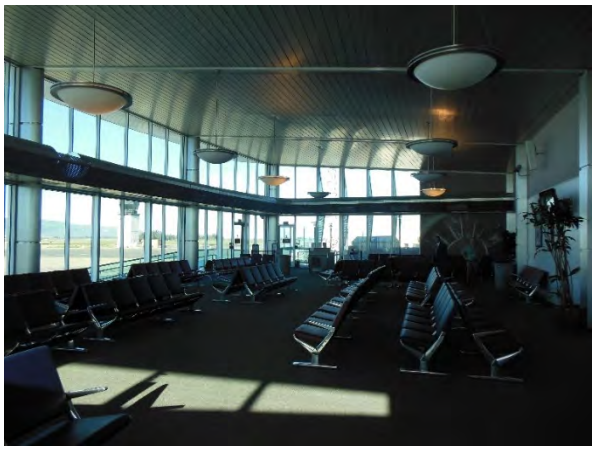


Ticketing Lobby Seating

Once passengers are through the security checkpoint, they can then access the secure hold rooms. Within the secure area is a concessions area with vending machines and restrooms.



Security Checkpoint



Secure Hold Room and Gate Area

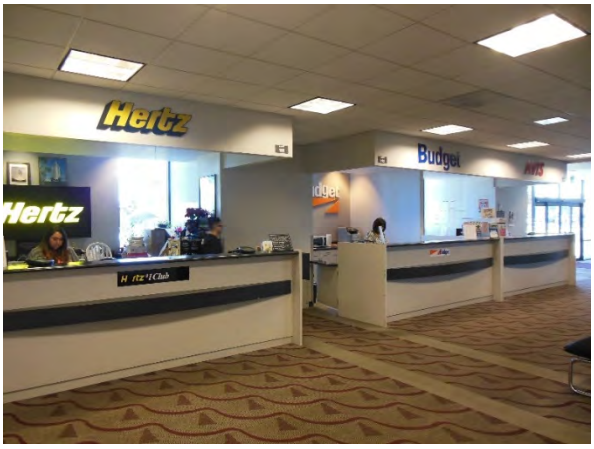


Public Waiting Area



Baggage Claim

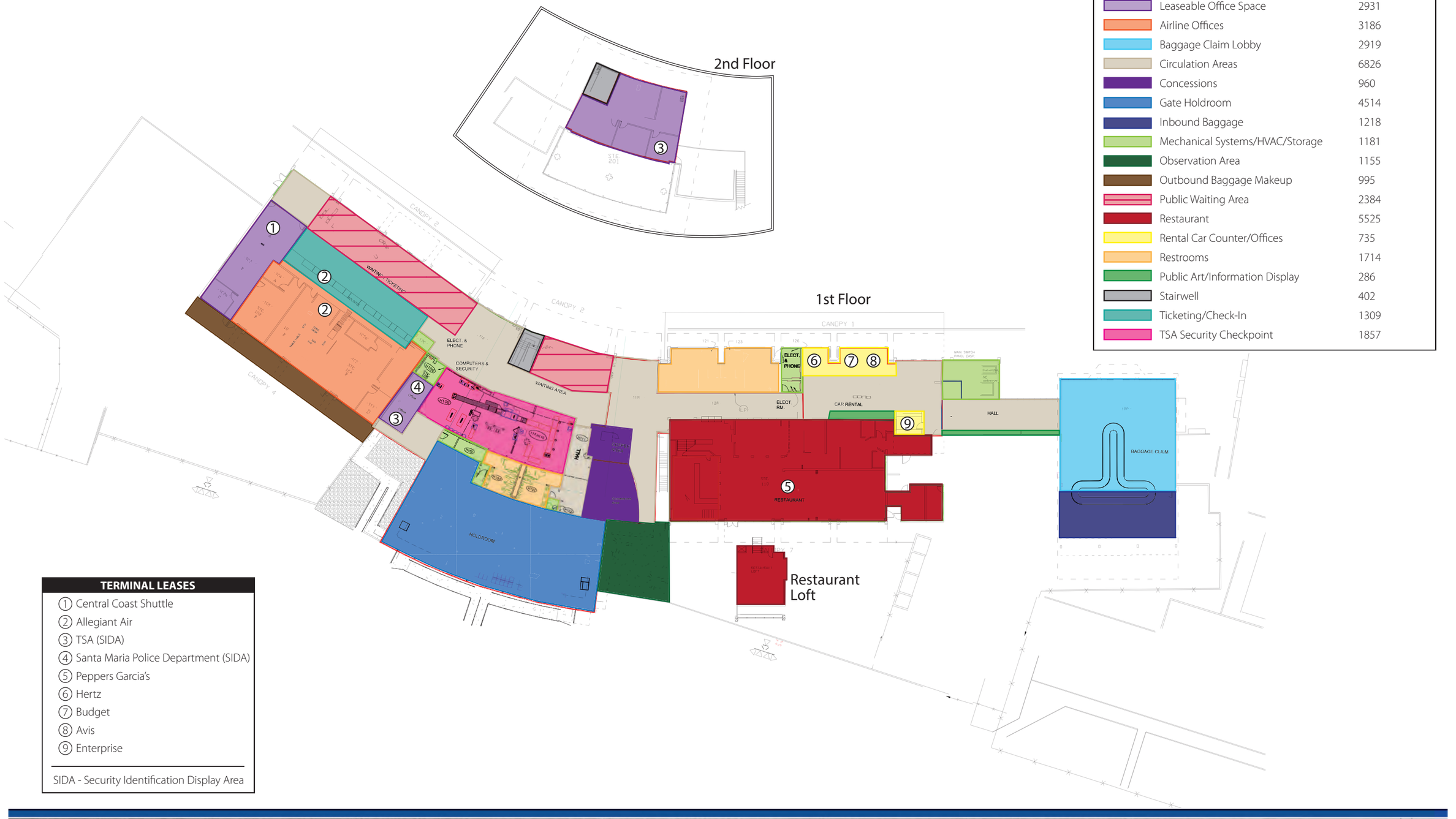
Arriving passengers pass through a hallway leading to the public waiting area, which has seating for 26 individuals. Passengers can then head east to the rental car counters and the baggage claim area, located at the east end of the building. Rental car companies currently serving the Airport include: Avis, Budget, Enterprise, and Hertz.



Rental Car Counter

Located at the center of the terminal facility, between the public waiting area and the ticketing lobby, is a set of stairs which allows access to the second level of the terminal building. The second floor consists of office space currently leased to the Transportation Security Administration (TSA).

LEGEND	TOTAL AREA (SQ. FT.)
Leaseable Office Space	2931
Airline Offices	3186
Baggage Claim Lobby	2919
Circulation Areas	6826
Concessions	960
Gate Holdroom	4514
Inbound Baggage	1218
Mechanical Systems/HVAC/Storage	1181
Observation Area	1155
Outbound Baggage Makeup	995
Public Waiting Area	2384
Restaurant	5525
Rental Car Counter/Offices	735
Restrooms	1714
Public Art/Information Display	286
Stairwell	402
Ticketing/Check-In	1309
TSA Security Checkpoint	1857



TERMINAL LEASES

1. Central Coast Shuttle
2. Allegiant Air
3. TSA (SIDA)
4. Santa Maria Police Department (SIDA)
5. Peppers Garcia's
6. Hertz
7. Budget
8. Avis
9. Enterprise

SIDA - Security Identification Display Area

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The terminal building is accessible via Terminal Drive, which has two lanes and provides one-way traffic flow immediately in front of the terminal building. There are two access points to Terminal Drive: one at the intersection of Skyway Drive and Industrial Parkway/Terminal Drive, which is located to the north/northwest of the terminal building, and one at the intersection of Skyway Drive and Airpark Drive, east of the terminal building. The terminal parking lot, which is located between Airpark Drive and Terminal Drive, is free to the public and has multiple access/egress points.

Passenger Convenience

With the passage of the *FAA Modernization and Reform Act of 2012* (Section 131 of Public Law 112-95), Congress has mandated that airport master plan studies include analysis of passenger convenience related to the terminal complex. Passenger convenience will be perceived differently by every passenger at every phase of travel. It is a function of a passenger's trip purpose, demographic characteristics, place of residence, and travel habits. Guidance on the implementation of the Act is included in Change 2 of Advisory Circular (AC) 150/5060-6B, *Airport Master Plans*.

According to the AC, "Planners should consider the services provided to travelers at various points within the terminal building, the degree of congestion, and waiting and processing times. Shorter wait times, intuitive signage, shorter walking distances, airport amenities and ambiance, and reliable flight information will all contribute to passengers feeling as if they have had a successful travel experience. Providing resources to make passenger wait time more productive or more entertaining will improve passenger perception of their journeys. Examples include dedicated work areas, power connections, Wi-Fi, full-service concessions, exhibits, and entertainment."

Access to airport facilities is defined by the convenience of the airport layout for passengers, especially those with mobility and sensory impairments, the elderly, families with small children, and non-English speaking passengers. Passengers should be able to access the airport, the landside area, terminal building, and connections between each in a seamless flow. The evaluation of the terminal building complex will include analysis of the passenger convenience experience.



Art Display

The terminal at SMX offers many of these passenger conveniences. Free Wi-Fi is available throughout the terminal building. Within the concessions area of the secure hold room, a table-top desk with power sources is available. In addition, power sources are available in the seating area of the secure hold room and TVs are provided to entertain waiting passengers. Local art displays are located throughout the terminal building in public hallways. Concessions are available both in the

secure hold area, as well as at the restaurant in the public terminal space. Generally, the layout of the building appropriately separates arriving and departing passengers. Lastly, there is a passenger convenience center located within the baggage claim area for passengers to contact nearby hotels and for other lodging destinations.



Terminal Curb

TERMINAL CURB

The terminal curb is an important feature of any terminal building. This is the location where passengers are typically dropped off and where they are picked up. The terminal curb at SMX extends for approximately 475 feet and is segmented into two functional areas. The departure drop-off curb is approximately 185 feet long and the arrival pick-up curb is approximately 290 feet long. Signage indicates this area is for passenger loading only and that parking is not allowed.

AUTOMOBILE PARKING

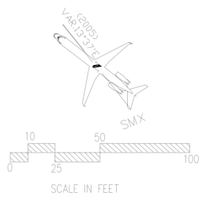
Exhibit 1M presents a detailed drawing of the terminal surface parking lot at SMX. The terminal parking lot includes spaces for the public, restaurant patrons, rental car vehicles, and handicapped spaces. The lot area closest to the terminal building has a total of 87 spaces reserved for rental cars, 24 spaces for restaurant patrons, and 16 spaces for public parking. The remainder of the parking lot between Airpark Drive and Terminal Drive is dedicated to public parking and includes 557 spaces. Additional parking is available on the south side of the terminal building, which includes 16 handicapped parking spaces and 51 public parking spaces. There is an additional handicapped vehicle loading zone on Terminal Drive immediately outside of the baggage claim area. In all, terminal parking includes 624 public spaces, 87 rental car spaces, 24 restaurant spaces, and 18 handicapped spaces, for a grand total of 753 parking spaces. Public parking within the terminal lots is free.

FIXED BASE OPERATOR (FBO) AND SPECIALTY AVIATION SERVICE OPERATORS (SASO)

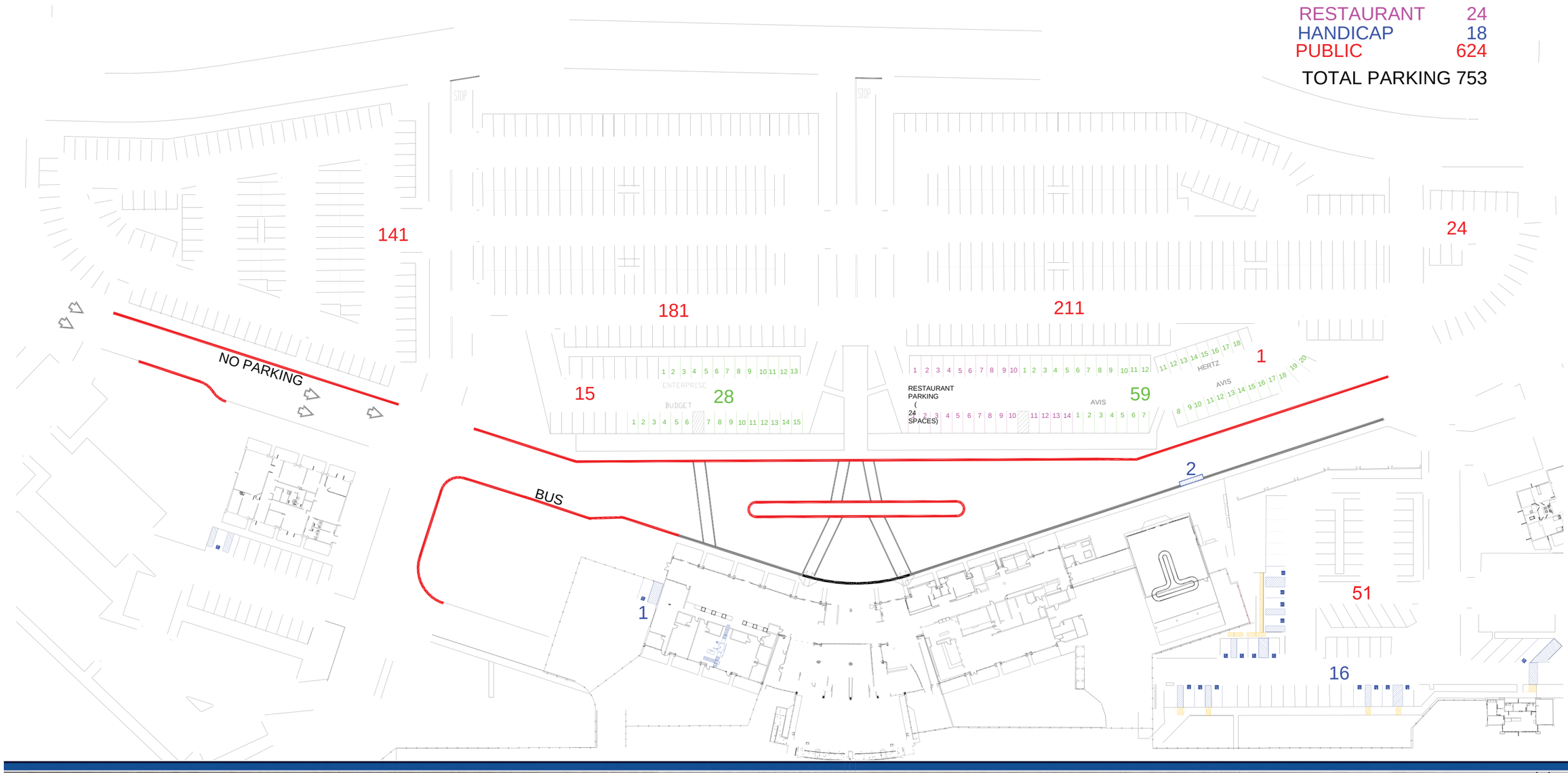
Arctica Air Service is a SASO providing contract and on-demand charter of helicopters to a variety of customers, including those in the oil and gas and maritime industries. They are located in a privately owned facility at 3820 South Blosser Road with corporate hangar storage area of approximately 13,750 sf. Their total leasehold includes 2.409 acres consisting of the hangar



Arctica Air Service Hangar



RENTAL CAR 87
RESTAURANT 24
HANDICAP 18
PUBLIC 624
TOTAL PARKING 753



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facility, a lounge area, executive and administrative office space, and secured parking, as well as six helicopter parking spaces.

Art-Craft Paint is a SASO providing aircraft painting and interior refurbishment services. They are located in two hangar facilities leased from the SMPAD located at 3203 Lightning Street #103 and 3125 Liberator Street. Those facilities provide 24,455 sf and 3,360 sf of hangar space.



Art-Craft Paint Hangar

CalStar is a nonprofit regional air ambulance service. They are located in two separate facilities along Mitchell Road, totaling 2,200 sf of privately owned facilities.

Central Coast Jet Center is the Airport's only full-service FBO providing fuel (AvGas and Jet A), line services, pilot services, aircraft storage, transient aircraft parking, and catering services. Central Coast Jet Center advertises itself as the closest FBO to Hawaii in the continental U.S. Central Coast Jet Center occupies four facilities throughout the Airport, including their main FBO service center/hangar on the south side of the airfield. The main facility is owned by Central Coast Jet Center and provides approximately 26,139 sf of hangar/office space.


Central Coast Jet Center Hangar

The FBO leases three facilities from the SMPAD, including one hangar along Mitchell Road with an area of 2,120 sf and a 1,169 sf general aviation building located along Corsair Circle. Central Coast Jet Center also leases the self-service 100LL fuel facility located north of the ATCT on the terminal apron. Central Coast Jet Center is currently the only fuel provider at SMX and holds contracts to fuel all airline flights as well as military operations at SMX.


Cessna Pilots Association

Central City Surplus restores military vehicles and weaponry from World War II, Vietnam, and Middle East conflicts. In addition, they service and maintain ground support equipment for commercial aviation companies. They are located in a 7,520 sf conventional hangar at 3944 Mitchell Road.



Coastal Valley Aviation Hangars

Cessna Pilots Association is an aviation club dedicated to providing owners of Cessna piston single and twin-engine aircraft with technical information, support services, and social events. They are based in a 16,025 sf facility leased from the SMPAD at 3409 Corsair Circle, which includes 11,724 sf of hangar space.

Civil Air Patrol (CAP) is a non-profit, volunteer organization that performs emergency search and rescue services, disaster relief operations, and aerospace education for youth and the general public. The CAP is located in a 736 sf facility leased from the SMPAD at 3203 Lightning Street #211.

Coastal Valley Aviation is a SASO providing aircraft maintenance/modification, aircraft parking (ramp or tiedown), and pilot lounge services. They are located in two hangar facilities leased from the SMPAD located at 3117 and 3119 Liberator Street. The two hangar facilities have areas of 10,168 sf and 7,800 sf.

English Air Services is a charter helicopter operator specializing in agricultural spraying and aerial photography located in a 6,000 sf hangar leased from the SMPAD at 3950 Mitchell Road.

Rocky Mountain Air Aviation specializes in aircraft maintenance located in a 21,579 sf facility at 3940 Mitchell Road, which includes 15,500 sf of hangar space.

Rotorcraft Leasing is a SASO providing helicopter air taxi services primarily transporting workers to offshore oil and gas platforms and drilling rigs. They lease one facility from the SMPAD located at 3125 Liberator Street and privately owned facilities at 1211 Citation Court. Their facilities include office space, storage, and hangar space totaling approximately 9,000 sf.

Santa Maria Museum of Flight is an aviation history museum based in two privately owned hangar facilities at 3015 Airpark Drive, totaling 11,050 sf.

U.S. Forest Service (USFS) operates a temporary aerial firefighting tanker base at SMX. USFS facilities at SMX include three fire retardant loading pits located on the Central Coast Jet Center apron and a 2,877 sf hangar located at 3960 Mitchell Road, which is sub-leased from the Central Coast Jet Center.

Zodiac Aerospace is a through-the-fence (TTF) operator that specializes in aircraft interior modifications, equipment, and systems for commercial, regional, and business aircraft. They are one of the largest employers in the Santa Maria Valley with approximately 1,200 employees. Taxiway J provides TTF access to the Zodiac Aerospace facilities immediately north of the Airport.

AIRPORT BUILDINGS/FACILITIES

While designated a commercial service airport, SMX is a vital link to general aviation in the region. There are general aviation facilities located on each of the apron areas at the Airport except the terminal apron. **Exhibit 1K** identifies Airport buildings, hangars, and other facilities.

The availability of leasable aircraft hangar space is important if the Airport is to satisfy future demand for such space. The Airport offers a wide variety of general aviation hangar types. The ownership and management (leasing) of the hangars varies as well.

Aviation interests can vary greatly; therefore, it is important for an airport to offer a variety of aircraft storage options. Typically, an airport will offer some mix of T-hangars, box hangars (or corporate hangars), and conventional hangars. T-hangars are T-shaped structures intended to accommodate a single smaller aircraft. Box or corporate hangars are clear-span hangars, typically no larger than 60 feet by 60 feet (3,600 square feet). These hangars are primarily utilized by private individuals for storage of their aircraft; however, some aviation businesses may operate from a corporate hangar. Conventional hangars are the clear-span hangars which typically house aviation businesses, such as an FBO or maintenance operation. Conventional hangars are also utilized for bulk aircraft storage, whether itinerant or long term. Conventional hangars are typically larger than 3,600 square feet.



T-Hangars

In addition to the various hangar facilities occupied by the FBO and SASOs, the Airport has 147 individual T-hangar units among 13 separate buildings, all located northwest of the terminal apron. In the same area, there are also 35 individual corporate hangar facilities owned by the SMPAD and an additional 23 privately built corporate hangars. Conventional hangar space is available in various facilities around the Airport and occupied by the FBO and SASOs. In total, there is approximately 483,808 sf of hangar space at SMX, including 198,879 sf of T-hangar storage, 132,261 sf of corporate hangar storage, and 152,668 sf of conventional hangar storage.

NON-AVIATION LEASES

The Airport has several non-aviation tenants leasing land and facilities at the Airport. These tenants include:

- Santa Maria Karting – leases 2.0 acres of land, including a track west of the Central Coast Jet Center apron.
- Farming leases – SMPAD leases approximately 707 acres of Airport property to multiple entities for farming use.
- Radisson hotel – leases 4.7 acres of land, including the hotel building and parking lot.
- Grazing leases – SMPAD leases approximately 305 acres of Airport property to multiple entities for grazing use.
- Mobile home park – consists of 10.2 acres and 78 residential units.
- Bee hives – the SMPAD leases land for three bee hives.
- Airport Office Complex – a 3.0-acre parcel, including a building located on 3201 Airpark Drive, which consists of office space that is currently leased to multiple entities.
- Sunset Ridge Golf Center (closed) – a 21.174-acre parcel located north of the Airport at 1424 Fairway Drive that was previously leased by the SMPAD for use as a driving range. This land is the subject of potential development by Scannell Properties, which has plans to purchase this parcel from the SMPAD to construct a 181,975 sf facility to lease to FedEx Ground. The proposed FedEx facility would serve as a regional warehouse, distribution, and logistics center. The SMPAD is currently in the final stages of transferring this property.

SUPPORT FACILITIES

Several support facilities serve as critical links in providing the necessary efficiency to aircraft ground operations, such as aircraft rescue and firefighting (ARFF), airport maintenance, and fuel storage.

Aircraft Rescue and Firefighting Facilities (ARFF)

Part 139 airports are required to provide ARFF services during air carrier operations. Each certificated airport maintains equipment and personnel based on an ARFF index established according to the length of aircraft and scheduled daily flight frequency. There are five indices, A through E, with A applicable to the smallest aircraft and E the largest (based on wingspan). According to the Airport's ACM, SMX falls within ARFF index B but maintains equipment to satisfy ARFF index C.

The SMX ARFF facility is centrally located on the terminal apron southeast of the terminal building. The ARFF building is located at 3339 Terminal Drive and was constructed in 2014. The ARFF facility houses the following equipment:

- Rescue 61 – 2013 Oshkosh Striker 3000 with:
  - 3,000 gallons of water
  - 420 gallons of aqueous firefighting foam
  - 500 pounds of Dry Chemical
  - 460 pounds of Halatron
  - 30 pounds of Metal X-30 Type D

- Rescue 62 – 1998 Oshkosh T-1500 with:
  - 1,500 gallons of water
  - 210 gallons of aqueous firefighting foam
  - 500 pounds of Dry Chemical
  - 30 pounds of Metal X-30 Type D

The SMX ARFF station is in a continuous ready state 24 hours a day, 365 days a year, and personnel and equipment are capable of responding to any incident, aircraft or non-aircraft related, at any time. The ARFF crew is maintained by the Santa Maria Fire Department under contract. Each ARFF vehicle is equipped with two-way voice radios to communicate with each other, the Fire Dispatch Center, the ATCT, and the CTAF when the ATCT is not in operation.

The ARFF crew consists of three shifts: A, B, and C, with at least one firefighter on duty all times per shift. All firefighters are EMS rated and receive annual training.



ARFF Station

The Airport has an Airport Emergency Plan (AEP) in place to comply with CFR 14 Part 139.325 as administered by the FAA. The AEP presents the overall sequence and scope of the planned emergency response.

Airport Maintenance Facilities

The Airport has a small airport maintenance facility comprised of a couple buildings and a vehicle and equipment storage lot, which are located at 3109 Liberator Street. Equipment, such as mowers and runway sweepers, are located at this facility.

Fuel Storage

Central Coast Jet Center has its own fuel storage and delivery capability consisting of 40,000 gallons of Jet A storage capacity and 12,000 gallons of 100LL (AvGas) storage capacity. They also have a fleet of fuel distribution trucks with capacities of 17,000 gallons of Jet A and 4,000 gallons of AvGas. In addition, Central Coast Jet Center leases the 12,000 AvGas self-service fuel station located on the tower apron from the SMPAD.

The SMPAD owns two fuel storage tanks (20,000 gallons for Jet A; 12,000 gallons for AvGas) adjacent to the maintenance facility; however, these tanks are not currently in use.

In total, including the trucks and unused fuel storage tanks, the Airport currently has the capacity for 77,000 gallons of Jet A and 40,000 gallons of AvGas.



Central Coast Jet Center Fuel Trucks



Perimeter Service Road

Vehicle Airfield Access and Perimeter Fencing

Ground vehicles authorized by the Airport to operate on movement and safety areas are limited to those vehicles necessary for airport operations. These include airport maintenance vehicles, police patrols, fire and rescue vehicles, and service vehicles, and others authorized by the Airport.

Fencing, automated gates, and signs control apron access to the Airport. Access through perimeter gates is controlled by numeric keypad and access control card. Authorized persons are issued access cards at the Airport Administration Office. "No Trespassing – Restricted Area" signs are posted about every 300 feet on the perimeter fence.

The entire perimeter of the Airport is fenced with at least six-foot, chain-link fencing with three strands of barbed wire at the top. Inadvertent



Perimeter Security Fencing

entry into, or onto, the restricted area by individuals or vehicles is mitigated by the automated gate control system and personnel surveillance. Gates are kept closed and locked at all times to prevent unauthorized entry. The Airport fencing was approved by the FAA and complies with TSA Security requirements in TSR part 1542.

UTILITIES

The availability and capacity of the utilities serving the Airport are factors in determining the development potential of the airport property, as well as the land immediately adjacent to the facility. Of primary concern in the inventory investigation is the availability of water, gas, sewer, and power sources.

Electricity is provided to the Airport by Pacific Gas and Electric (PG&E). The City of Santa Maria provides water service to the Airport. The Airport has three wells that are leased to farm operators. Sanitary sewer service is provided by the City of Santa Maria on the north side of the Airport and Laguna County Sanitation provides sanitary sewer services to the south side of the Airport. Natural gas is provided to the Airport by Southern California Gas Company (SoCalGas) and telecommunications services are available from Comcast, Verizon, and Frontier Communications.

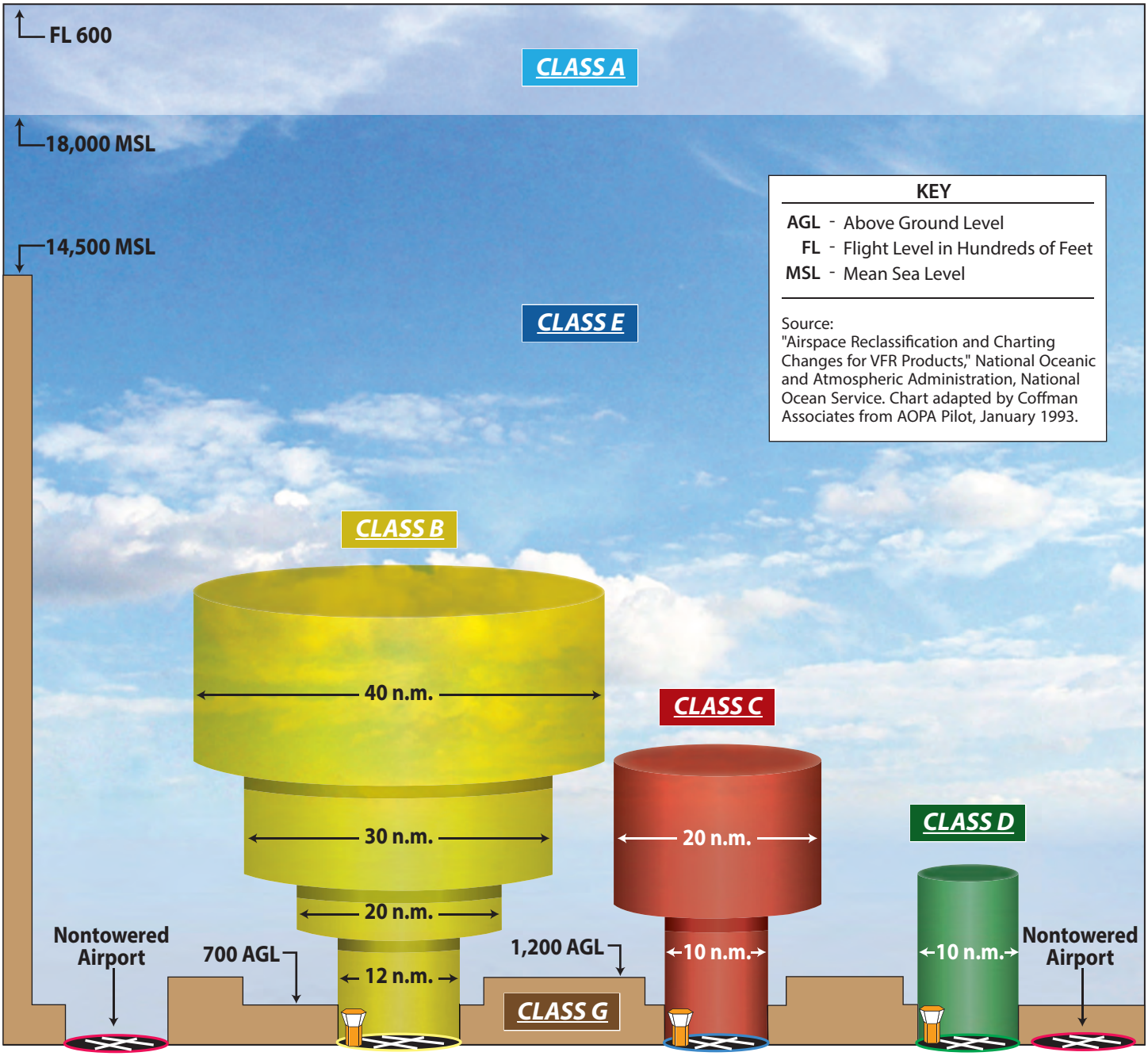
AREA AIRSPACE AND AIR TRAFFIC CONTROL

The *Federal Aviation Administration* (FAA) *Act of 1958* established the FAA as the responsible agency for the control and use of navigable airspace within the United States. The FAA has established the National Airspace System (NAS) to protect persons and property on the ground and to establish a safe and efficient airspace environment for civil, commercial, and military aviation. The NAS covers the common network of U.S. airspace, including: air navigation facilities; airports and landing areas; aeronautical charts; associated rules, regulations, and procedures; technical information; and personnel and material. The system also includes components shared jointly with the military.

AIRSPACE STRUCTURE

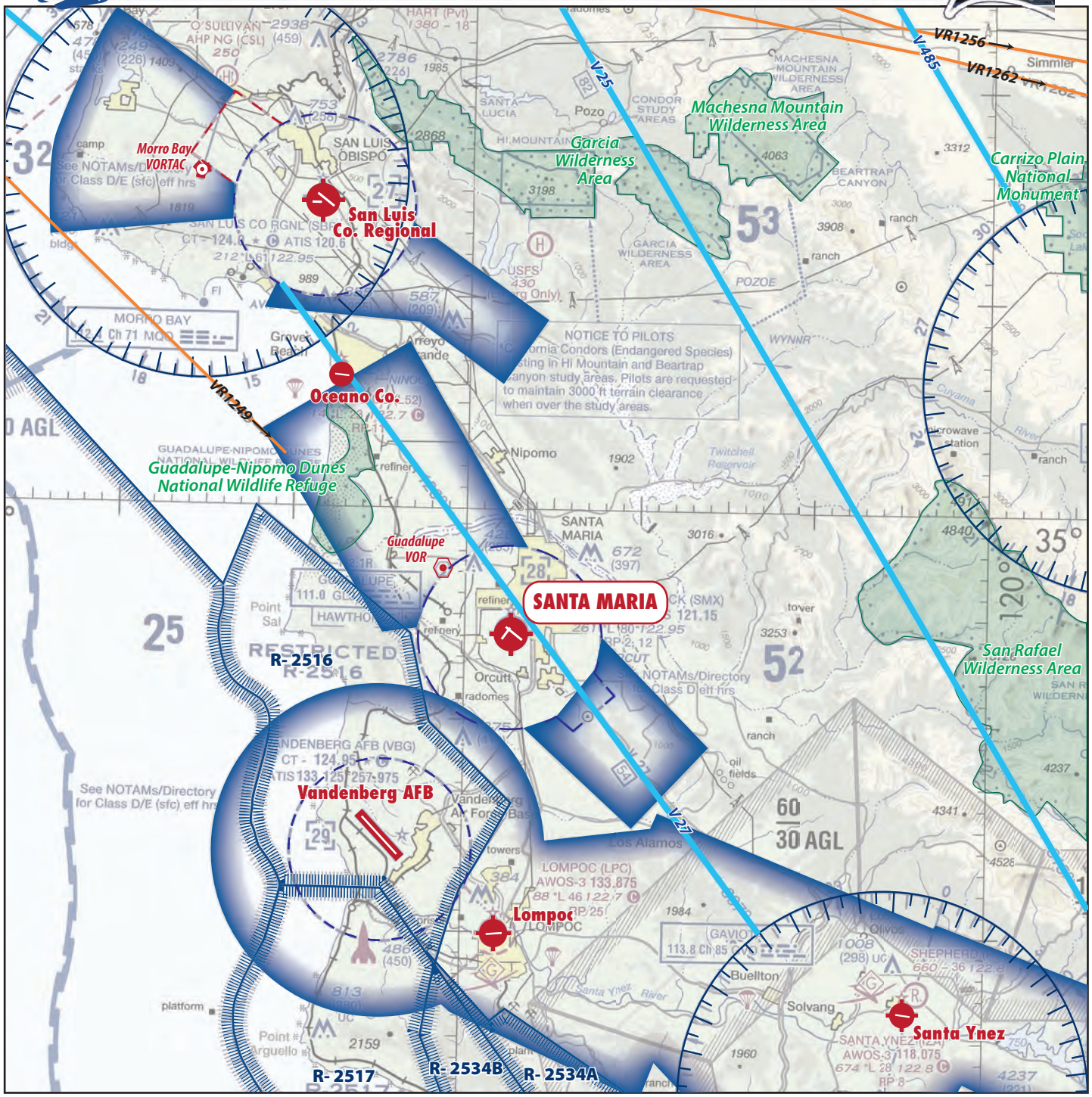
Airspace within the United States is broadly classified as either controlled or uncontrolled. The difference between controlled and uncontrolled airspace relates primarily to requirements for pilot qualifications, ground-to-air communications, navigation and air traffic services, and weather conditions. Six classes of airspace have been designated in the United States, as shown on **Exhibit 1N**. Airspace designated as Class A, B, C, D, or E is considered controlled airspace. Aircraft operating within controlled airspace are subject to varying requirements for positive air traffic control. Airspace in the vicinity of SMX is also depicted on **Exhibit 1P**.

Class A Airspace: Class A airspace includes all airspace from 18,000 feet MSL to flight level (FL) 600 (60,000 feet MSL). This airspace is designated in Federal Aviation Regulation (F.A.R.) Part 71.193, for



DEFINITION OF AIRSPACE CLASSIFICATIONS

CLASS A	Generally airspace above 18,000 feet MSL up to and including FL 600.
CLASS B	Generally multi-layered airspace from the surface up to 10,000 feet MSL surrounding the nation's busiest airports.
CLASS C	Generally airspace from the surface to 4,000 feet AGL surrounding towered airports with service by radar approach control.
CLASS D	Generally airspace from the surface to 2,500 feet AGL surrounding towered airports.
CLASS E	Generally controlled airspace that is not Class A, Class B, Class C, or Class D.
CLASS G	Generally uncontrolled airspace that is not Class A, Class B, Class C, Class D, or Class E.



LEGEND

- Airport with hard-surfaced runways 1,500' to 8,069' in length
- Airports with hard-surfaced runways greater than 8,069' or some multiple runways less than 8,069'
- VORTAC
- VOR
- Prohibited, Restricted and Warning Area
- Class E Airspace with floor 700 ft. above surface
- Victor Airways
- Military Training Routes
- Compass Rose
- Wilderness Areas

NORTH
NOT TO SCALE

positive control of aircraft. The Positive Control Area (PCA) allows flights governed only under IFR operations. The aircraft must have special radio and navigation equipment, and the pilot must obtain clearance from an air traffic control (ATC) facility to enter Class A airspace. In addition, the pilot must possess an instrument rating.

Class B Airspace: Class B airspace has been designated around some of the country's busiest commercial service airports, such as San Francisco International Airport. Class B airspace is designed to regulate the flow of uncontrolled traffic, above, around, and below the arrival and departure airspace required for high-performance, passenger-carrying aircraft at busy commercial service airports. This airspace is the most restrictive controlled airspace encountered by pilots operating under visual flight rules (VFR). The nearest Class B airspace airport is Los Angeles International Airport, approximately 117 nautical miles (nm) southeast of SMX.

In order to fly within Class B airspace, an aircraft must be equipped with special radio and navigation equipment and must obtain clearance from air traffic control. Moreover, a pilot must have at least a private pilot's certificate or be a student pilot who has met the requirements of F.A.R. Part 61.95, which requires special ground and flight training for Class B airspace. Helicopters do not need special navigation equipment or a transponder if they operate at or below 1,000 feet and have made prior arrangements in the form of a Letter of Agreement with the FAA controlling agency. Aircraft are also required to have and utilize a Mode C transponder within a 30-nautical-mile (nm) range of the center of Class B airspace. A Mode C transponder allows the ATCT to track the altitude of the aircraft.

Class C Airspace: The FAA has established Class C airspace at 120 airports around the country as a means of regulating air traffic in these areas. Class C airspace is designed to regulate the flow of uncontrolled traffic above, around, and below the arrival and departure airspace required for high-performance, passenger-carrying aircraft at some commercial service airports. In order to fly inside Class C airspace, the aircraft must have a two-way radio, an encoding transponder, and have established communication with ATC. Aircraft may fly below the floor of Class C airspace or above the Class C airspace ceiling without establishing communication with ATC. Santa Barbara Airport is the nearest Class C airspace airport at approximately 42 nm southeast of SMX.

Class D Airspace: Class D airspace is controlled airspace surrounding airports with an ATCT. The Class D airspace typically constitutes a cylinder with a horizontal radius of four or five nm from the airport, extending from the surface up to a designated vertical limit, typically set at approximately 2,500 feet above the airport elevation. If an airport has an instrument approach or departure, Class D airspace sometimes extends along the approach or departure path.

Exhibit 1P depicts the Class D airspace that surrounds SMX. The Class D airspace has a radius of four nm and extends from the surface to 2,800 feet MSL. The Class D airspace extends to the southwest an additional 1.4 nm along the extended primary runway centerline. SMX Class D airspace is in effect during periods that the ATCT is operational (6:00 a.m. to 8:00 p.m.). When the ATCT is not operational, airspace reverts to Class E with a surface beginning at 700 feet above ground level.

Class E Airspace: Class E airspace consists of controlled airspace designed to contain IFR operations near an airport, and while aircraft are transitioning between the airport and enroute environments. Unless otherwise specified, Class E airspace terminates at the base of the overlying airspace. Only aircraft operating under IFR are required to be in contact with air traffic control when operating in Class E airspace. While aircraft conducting visual flights in Class E airspace are not required to be in radio communications with air traffic control facilities, visual flight can only be conducted if minimum visibility and cloud ceilings exist.

As was previously mentioned, SMX reverts to Class E airspace when the ATCT is not operational. Corridors of Class E airspace extend out beyond the Class D airspace to the northwest and southeast along Victor Airway V27.

Class G Airspace: Airspace not designated as Class A, B, C, D, or E is considered uncontrolled, or Class G, airspace. Air traffic control does not have the authority or responsibility to exercise control over air traffic within this airspace. Class G airspace lies between the surface and the overlaying Class E airspace (700 to 1,200 feet above ground level [AGL]). The airspace at SMX reverts to Class G from the surface to 700 feet above ground level when the ATCT is closed.

SPECIAL USE AIRSPACE

Special use airspace is defined as airspace where activities must be confined because of their nature or where limitations are imposed on aircraft not taking part in those activities.

Military Training Routes: Military training routes (MTRs) are designated airspace that has been generally established for use by high performance military aircraft to train below 10,000 feet AGL and in excess of 250 knots. There are VR (visual) and IR (instrument) designated MTRs. MTRs with no segment above 1,500 feet AGL will be designated with the VR or IR, followed by a four-digit number (e.g., VR1249). MTRs with one or more segments above 1,500 feet AGL are identified by the route designation followed by a three-digit number (e.g., VR540). The arrows on the route show the direction of travel. There are several MTRs in the vicinity of the Airport, including VR1249, which extend to the northwest from the Guadalupe VOR.

Victor Airways: For aircraft arriving or departing the regional area using very high frequency omni-directional range (VOR) facilities, a system of Federal Airways, referred to as Victor Airways, has been established. Victor Airways are corridors of airspace eight miles wide that extend upward from 1,200 feet AGL to 18,000 feet MSL and extend between VOR navigational facilities. There are several Victor Airways in the vicinity of the Airport, including V-27 and V-25.

Restricted Airspace: No person may operate an aircraft within a restricted area between the designated altitudes and during the time of designation without advanced permission of the using and controlling agency. The closest Restricted Area is R-2516, R-2517, R-2534A, and R-2534B, which is the airspace

associated with Vandenberg Air Force Base (AFB) and its space launch complex. This restricted airspace begins at the surface and extends to space.

Wilderness Areas/Wildlife Refuges: The Guadalupe-Nipomo Dunes National Wildlife Refuge and several wilderness areas are located near SMX. Within these areas, aircraft are requested to maintain a minimum altitude of 2,000 feet above the surface. FAA AC 91-36C defines the "surface" as the highest terrain within 2,000 feet laterally of the route of flight or the uppermost rim of a canyon or valley.

AIRSPACE CONTROL

The FAA has established 22 Air Route Traffic Control Centers (ARTCCs) throughout the continental United States to control aircraft operating under IFR within controlled airspace and while enroute. An ARTCC assigns specific routes and altitudes along Federal Airways to maintain separation and orderly traffic flow. The Los Angeles Center controls enroute airspace in the SMX region.

The Santa Barbara TRACON is an air traffic control facility that provides safety alerts, aircraft separation, and sequencing of aircraft arriving, departing, and transitioning the airspace and airports in the region. The Santa Barbara TRACON is responsible for airspace from the surface to 8,000 feet MSL and has a boundary beginning just south of Paso Robles, the Channel Islands to the south, and west of the City of Ventura. This airspace is split into two sectors known as the North Side (Pismo and Orcutt) and the South Side (Elcap and Harbor). The North Side is responsible for providing Terminal Approach Control to Santa Maria, San Luis, and Vandenberg AFB.

The SMX ATCT, approach, and departure control operates between the hours of 6:00 a.m. and 9:00 p.m. The Santa Barbara TRACON operates from 6:00 a.m. to 11:00 p.m. When the SMX ATCT and Santa Barbara TRACON are closed, pilots can contact the Los Angeles Air Route Traffic Control Center (ARTCC) for approach and departure services. Flight plans can be opened or closed utilizing the Hawthorne Flight Service Station (FSS).

Airport Traffic Control Tower (ATCT)

The SMX ATCT operates daily from 6:00 a.m. to 8:00 p.m. year-round. The tower operates under the FAA Contract Tower Program by Serco, a private air traffic control contractor, and is located west of the terminal building. Tower employees utilize the employee parking lot on the northeast side of the ATCT accessible from Lightning Street. The ATCT cab height is 50 feet above ground level with a maximum height of 65 feet above ground level.

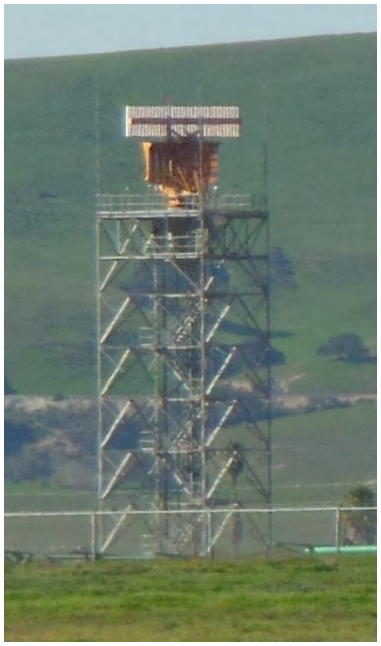


Airport Traffic Control Tower

Interviews with the Tower Manager indicated the tower facility is in need of repair and updates as the ceiling leaks and modern amenities, such as a conference room and break room, are not available. Staff also reported a blind spot from the tower cab for aircraft taxiing on Taxiway J to the north due to the construction of corporate hangar facilities in that area.

The primary responsibilities for tower controllers is to sequence and separate local arriving and departing traffic and to provide ground control direction to aircraft taxiing on the ground.

The Airport is equipped with an Airport Surveillance Radar (ASR-11), which is owned and maintained by the FAA. This short-range system allows the ATCT controllers to detect and separate aircraft within the terminal area for a range of approximately 60 nm. The ASR-11 also provides rainfall intensity data to controllers. The ASR-11 at SMX is located west of the airfield surrounded by land used for agricultural purposes.



Airport Surveillance Radar

NAVIGATIONAL AIDS

Navigational aids are electronic devices that transmit radio frequencies which pilots of properly equipped aircraft can translate into point-to-point guidance and position information. The types of electronic navigational aids available for aircraft flying to or from SMX include a very high frequency omni-directional range (VOR) facility, LORAN-C, and the global positioning system (GPS). All navigational aids at the Airport are owned and maintained by the FAA.

The VOR, in general, provides azimuth readings to pilots of properly equipped aircraft transmitting a radio signal at every degree to provide 360 individual navigational courses. Frequently, distance measuring equipment (DME) is combined with a VOR facility (VOR-DME) to provide distance, as well as direction information, to the pilot. Military tactical air navigation aids (TACANs) and civil VORs are commonly combined to form a VORTAC. The VORTAC provides distance and direction information to both civil and military pilots. The Guadalupe VOR is located approximately 4.4 nm northwest of the Airport.

GPS is an additional navigational aid for pilots. GPS was initially developed by the United States Department of Defense for military navigation around the world. GPS differs from an NDB or VOR, in that pilots are not required to navigate using a specific facility. GPS uses satellites placed in orbit around the earth

to transmit electronic radio signals, which pilots of properly equipped aircraft use to determine altitude, speed, and other navigational information. With GPS, pilots can directly navigate to any airport in the country and are not required to navigate using a specific navigation facility.

FLIGHT PROCEDURES

Flight procedures are a set of predetermined maneuvers established by the FAA, using electronic or visual navigational aids that assist pilots in locating and landing or departing from an airport. For SMX, there are instrument approach procedures and departure procedures as shown on **Exhibit 1Q**.

Instrument Approach Procedures

The capability of an instrument approach procedure is defined by the visibility and cloud ceiling minimums associated with the approach. Visibility minimums define the horizontal distance the pilot must be able to see in order to complete the approach. Cloud ceilings define the lowest level a cloud layer (defined in feet above the ground) can be situated for the pilot to complete the approach. If the observed visibility or cloud ceilings are below the minimums prescribed for the approach, the pilot cannot complete the instrument approach.

There are currently five published instrument approach procedures into SMX: ILS or LOC (12); RNAV (GPS) (12, 30); LOC/DME Back Course (circling only); and VOR (12). SMX also has one published instrument departure procedure (Buelt Two) for departures on Runways 2, 12, and 30.

Visual Flight Procedures

Most flights at SMX are conducted under VFR. Under VFR flight, the pilot is responsible for collision avoidance. Typically, the pilot will make radio calls announcing the position of the aircraft relative to the airport and the intentions of the pilot.

In most situations, under VFR and basic radar services, the pilot is responsible for navigation and choosing the arrival and departure flight paths to and from an airport. The results of individual pilot navigation for sequencing and collision avoidance are that aircraft do not fly a precise flight path to and from an airport. Therefore, aircraft can be found flying over a wide area around an airport for sequencing and safety reasons.

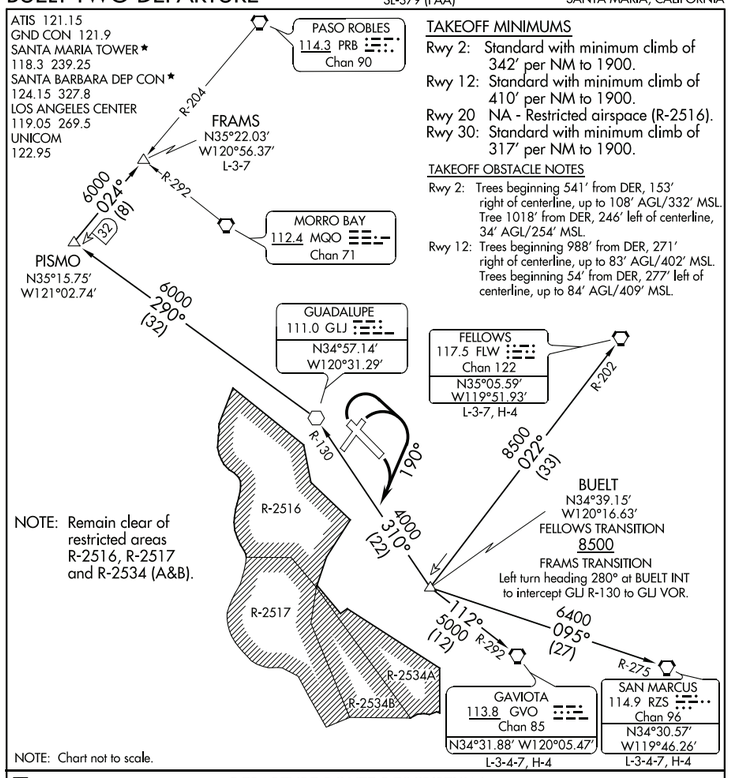
While aircraft can be expected to operate over most areas of an airport, the density of aircraft operations is higher near an airport. This is the result of aircraft following the established traffic patterns for an airport. The traffic pattern is the traffic flow that is prescribed for aircraft landing or taking off from an airport. The components of a typical traffic pattern are upwind leg, crosswind leg, downwind leg, base leg, and final approach.

SW-3, 23 JUN 2016 to 21 JUL 2016

(BUELT2.BUELT) 16091

BUELT TWO DEPARTURE

SANTA MARIA PUBLIC/CAPTAIN G ALLAN HANCOCK FIELD (SMX)
SL-379 (FAA) SANTA MARIA, CALIFORNIA



TAKEOFF MINIMUMS

Rwy 2: Standard with minimum climb of 342′ per NM to 1900.
Rwy 12: Standard with minimum climb of 410′ per NM to 1900.
Rwy 20 NA - Restricted airspace (R-2516).
Rwy 30: Standard with minimum climb of 317′ per NM to 1900.

TAKEOFF OBSTACLE NOTES

Rwy 2: Trees beginning 541′ from DER, 153′ right of centerline, up to 108′ AGL/332′ MSL. Tree 1018′ from DER, 246′ left of centerline, 34′ AGL/254′ MSL.
Rwy 12: Trees beginning 988′ from DER, 271′ right of centerline, up to 83′ AGL/402′ MSL. Trees beginning 54′ from DER, 277′ left of centerline, up to 84′ AGL/409′ MSL.

DEPARTURE ROUTE DESCRIPTION

TAKEOFF RUNWAY 2, 12, 30: Climbing right turn heading 190° to intercept GLJ R-130 to BUELT INT.

FELLOWS TRANSITION (BUELT2.FLW): From over BUELT INT via FLW R-202 to FLW VORTAC.

FRAMS TRANSITION (BUELT2.FRAMS): Left turn heading 280° at BUELT INT to intercept GLJ R-130 to GLJ VOR, then via GLJ R-290 to PISMO INT, then via PRB R-204 to FRAMS INT.

GAVIOTA TRANSITION (BUELT2.GVO): From over BUELT INT via GVO R-292 to GVO VORTAC.

SAN MARCUS TRANSITION (BUELT2.RZS): From over BUELT INT via RZS R-275 to RZS VORTAC.

BUELT TWO DEPARTURE (BUELT2.BUELT) 31MAY12
SANTA MARIA, CALIFORNIA
SANTA MARIA PUBLIC/CAPTAIN G ALLAN HANCOCK FIELD (SMX)

SW-3, 23 JUN 2016 to 21 JUL 2016

SANTA MARIA, CALIFORNIA AL-379 (FAA) 15120

ILS or LOC RWY 12

SANTA MARIA PUBLIC/CAPTAIN G ALLAN HANCOCK FIELD (SMX)

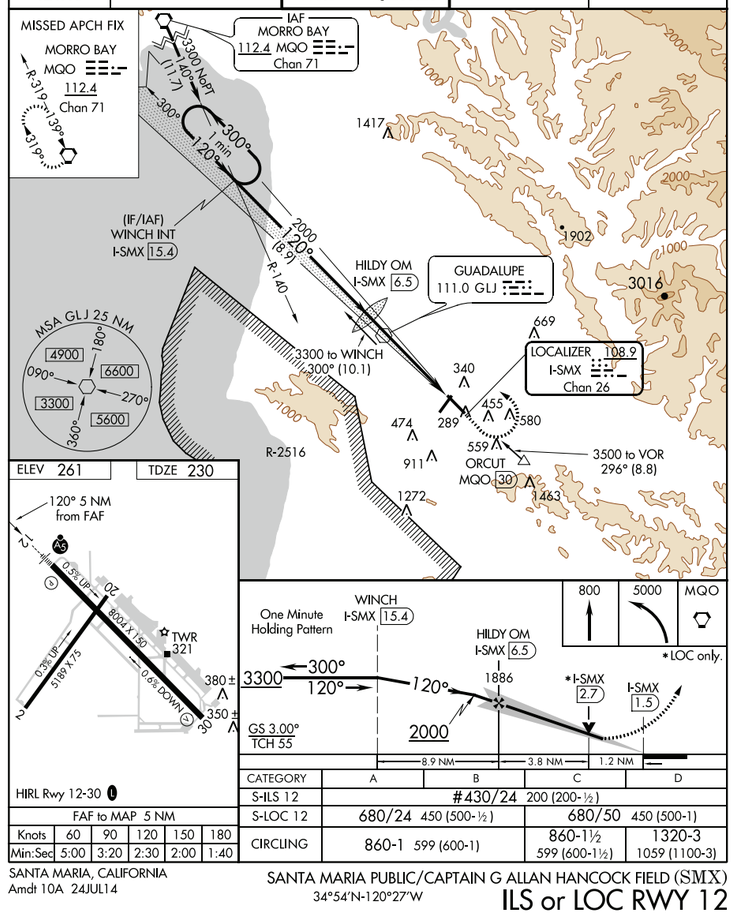
LOC/DME I-SMX	APP CRS	Rwy Idg	TDZE	Apt Elev
108.9 Chan 26	120°	8004	230	261

Night Landing: Rwy 2 NA. VDP NA with Vandenberg altimeter setting. When local altimeter setting not received, use Vandenberg altimeter setting and increase all DA 43 feet, and all MDA 60 feet, increase S-LOC 12 Cat C/D visibility to RVR 5500 and Circling Cat C visibility to 1¾. For inop MALSR, increase S-LOC 12 Cat C/D visibility to 1⅜ mile. #RVR 1800 authorized with the use of FD or AP or HUD to DA.

MALSR

MISSED APPROACH: Climb to 800, then climbing left turn to 5000 direct MQO VORTAC and hold.

ATIS	SANTA BARBARA APP CON★	SANTA MARIA TOWER★	GND CON	UNICOM
121.15	124.15 327.8	118.3 (CTAF) 239.25	121.9	122.95



CATEGORY	A	B	C	D
S-ILS 12	#430/24 200 (200-½)			
S-LOC 12	680/24 450 (500-½)		680/50 450 (500-1)	
CIRCLING	860-1 599 (600-1)		860-1½ 599 (600-1½)	1320-3 1059 (1100-3)

SANTA MARIA, CALIFORNIA
Amdt 10A 24JUL14
SANTA MARIA PUBLIC/CAPTAIN G ALLAN HANCOCK FIELD (SMX)
34°54′N-120°27′W
ILS or LOC RWY 12

SW-3, 23 JUN 2016 to 21 JUL 2016

SANTA MARIA, CALIFORNIA AL-379 (FAA) 15120

LOC/DME BC-A

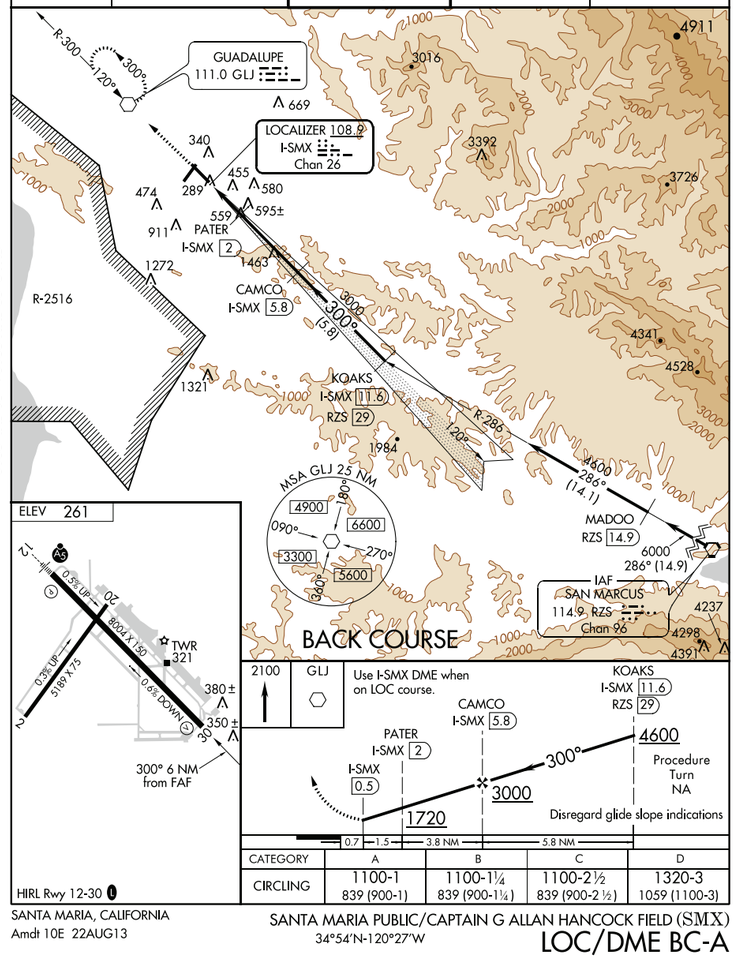
SANTA MARIA PUBLIC/CAPTAIN G ALLAN HANCOCK FIELD (SMX)

LOC/DME I-SMX	APP CRS	Rwy Idg	TDZE	Apt Elev
108.9 Chan 26	300°	N/A	N/A	261

Circling to Rwy 2 NA at night. Helicopter visibility reduction below 1 SM NA.

MISSED APPROACH: Climb to 2100 direct GLJ VOR and hold.

ATIS	SANTA BARBARA APP CON★	SANTA MARIA TOWER★	GND CON	UNICOM
121.15	124.15 327.8	118.3 (CTAF) 239.25	121.9	122.95



CATEGORY	A	B	C	D
CIRCLING	1100-1 839 (900-1)	1100-1¼ 839 (900-1¼)	1100-2½ 839 (900-2½)	1320-3 1059 (1100-3)

SANTA MARIA, CALIFORNIA
Amdt 10E 22AUG13
SANTA MARIA PUBLIC/CAPTAIN G ALLAN HANCOCK FIELD (SMX)
34°54′N-120°27′W
LOC/DME BC-A

SANTA MARIA, CALIFORNIA AL-379 (FAA) 16035

RNAV (GPS) RWY 12

SANTA MARIA PUBLIC/CAPTAIN G ALLAN HANCOCK FIELD (SMX)

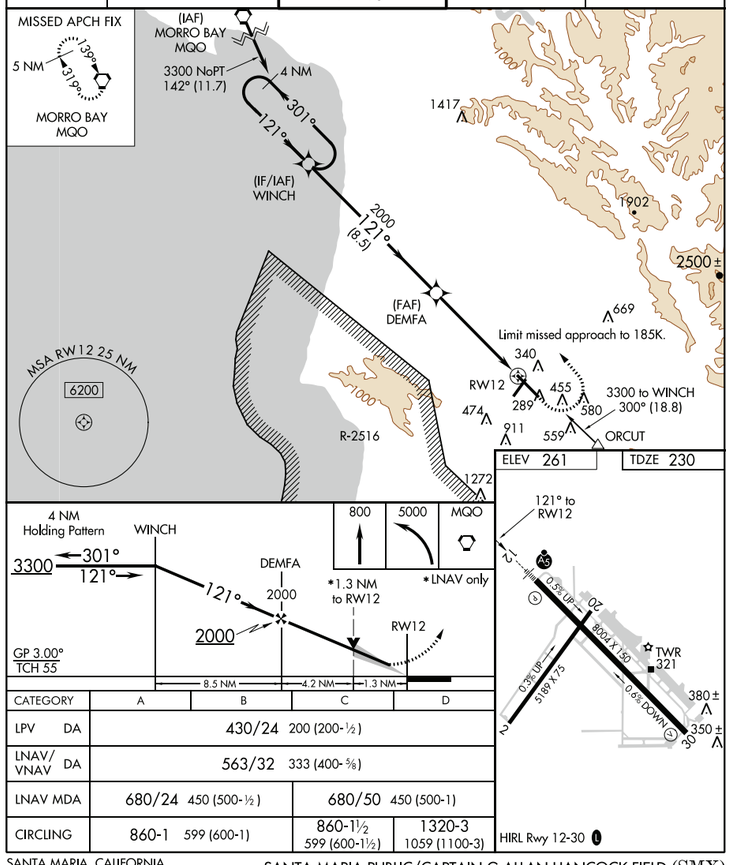
WAAS	APP CRS	Rwy Idg	8004
CH 77927	121°	TDZE	230
W12A		Apt Elev	261

Night Landing Rwy 2 NA. Baro-VNAV NA when using Vandenberg altimeter setting. For uncompensated Baro-VNAV systems, LNAV/VNAV NA below -1.5°C (5°F) or above 42°C (107°F). DME/DME RNP-0.3 NA. VDP NA with Vandenberg altimeter setting. When local altimeter setting not received use Vandenberg altimeter setting and increase all DA 43 feet and all MDAs 60 feet. Increase LNAV/VNAV all Cats visibility to RVR 4000, and increase Circling Cat C visibility to 1¾ mile. For inop MALSR, increase LNAV Cat C/D visibility to 1⅜ mile.

MALSR

MISSED APPROACH: Climb to 800 then climbing left turn to 5000 direct MQO VORTAC and hold.

ATIS	SANTA BARBARA APP CON★	SANTA MARIA TOWER★	GND CON	UNICOM
121.15	124.15 327.8	118.3 (CTAF) L 239.25	121.9	122.95



CATEGORY	A	B	C	D
LPV DA	430/24 200 (200-½)			
LNAV/VNAV DA	563/32 333 (400-⅝)			
LNAV MDA	680/24 450 (500-½)		680/50 450 (500-1)	
CIRCLING	860-1 599 (600-1)		860-1½ 599 (600-1½)	1320-3 1059 (1100-3)

SANTA MARIA, CALIFORNIA
Amdt 1A 24JUL14

SANTA MARIA PUBLIC/CAPTAIN G ALLAN HANCOCK FIELD (SMX)
34°54'N-120°27'W

RNAV (GPS) RWY 12

SW-3, 23 JUN 2016 to 21 JUL 2016

SANTA MARIA, CALIFORNIA AL-379 (FAA) 15120

RNAV (GPS) RWY 30

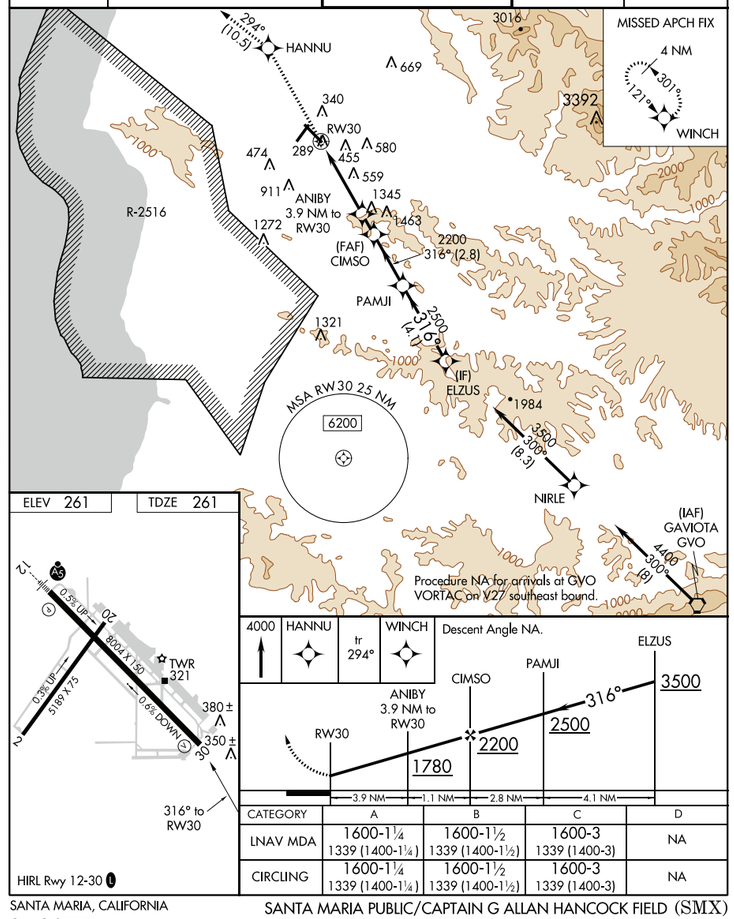
SANTA MARIA PUBLIC/CAPTAIN G ALLAN HANCOCK FIELD (SMX)

APP CRS	Rwy Idg	8004
316°	TDZE	261
	Apt Elev	261

DME/DME RNP-0.3 NA. When local altimeter setting not received, use Vandenburg altimeter setting and increase all MDA 60 feet. Helicopter visibility reduction below ¾ SM not authorized. Night landing: Rwy 2 NA.

MISSED APPROACH: Climb to 4000 direct HANNU and on track 294° to WINCH and hold.

ATIS	SANTA BARBARA APP CON★	SANTA MARIA TOWER★	GND CON	UNICOM
121.15	124.15 327.8	118.3 (CTAF) L 239.25	121.9	122.95



CATEGORY	A	B	C	D
LNAV MDA	1600-1¼ 1339 (1400-1¼)	1600-1½ 1339 (1400-1½)	1600-3 1339 (1400-3)	NA
CIRCLING	1600-1¼ 1339 (1400-1¼)	1600-1½ 1339 (1400-1½)	1600-3 1339 (1400-3)	NA

SANTA MARIA, CALIFORNIA
Orig-C 05FEB15

SANTA MARIA PUBLIC/CAPTAIN G ALLAN HANCOCK FIELD (SMX)
34°54'N-120°27'W

RNAV (GPS) RWY 30

SW-3, 23 JUN 2016 to 21 JUL 2016

SANTA MARIA, CALIFORNIA AL-379 (FAA) 15120

VOR RWY 12

SANTA MARIA PUBLIC/CAPTAIN G ALLAN HANCOCK FIELD (SMX)

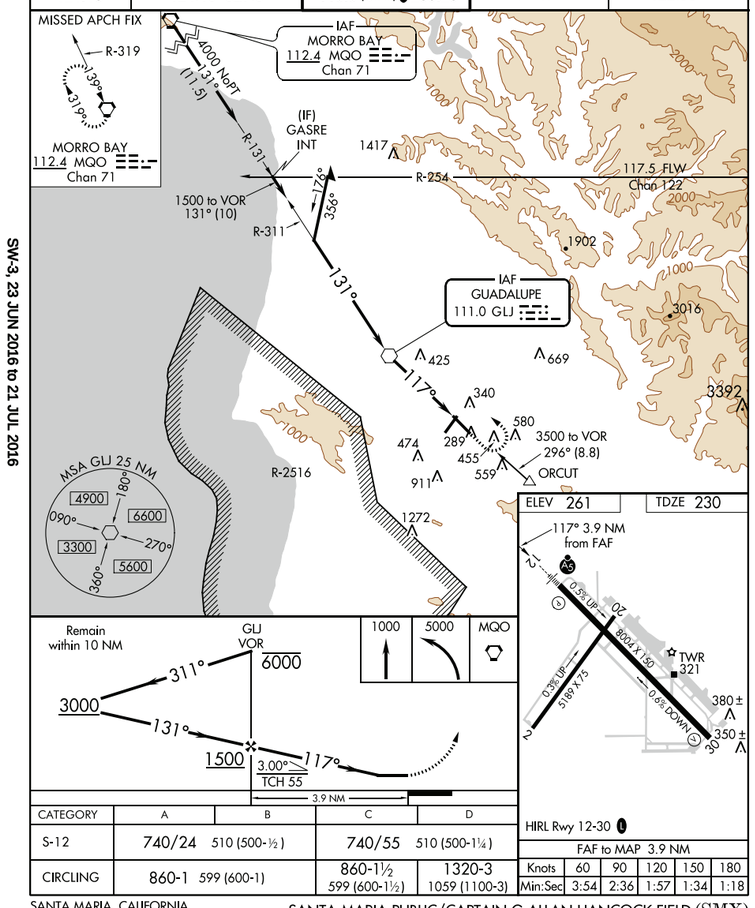
VOR GLJ	APP CRS	Rwy Idg	8004
111.0	117°	TDZE	230
		Apt Elev	261

When local altimeter setting not received, use Vandenberg altimeter setting and increase all MDA 60 feet. Increase S-12 Cat C/D visibility and Circling Cat C visibility ¼ mile. For inop MALSR when using Vandenberg altimeter setting, increase S-12 Cat C/D visibility to 1⅝ miles. Night Landing Rwy 2 NA.

MALSR

MISSED APPROACH: Climb to 1000 then climbing left turn to 5000 direct MQO VORTAC and hold.

ATIS	SANTA BARBARA APP CON★	SANTA MARIA TOWER★	GND CON	UNICOM
121.15	124.15 327.8	118.3 (CTAF) L 239.25	121.9	122.95



CATEGORY	A	B	C	D
S-12	740/24 510 (500-½)		740/55 510 (500-1¼)	
CIRCLING	860-1 599 (600-1)		860-1½ 599 (600-1½)	1320-3 1059 (1100-3)

FAF to MAP 3.9 NM						
Knots	60	90	120	150	180
Min:Sec	3:54	2:36	1:57	1:34	1:18

SANTA MARIA, CALIFORNIA
Amdt 15A 24JUL14

SANTA MARIA PUBLIC/CAPTAIN G ALLAN HANCOCK FIELD (SMX)
34°54'N-120°27'W

VOR RWY 12

SW-3, 23 JUN 2016 to 21 JUL 2016

a. Upwind Leg - A flight path parallel to the landing runway in the direction of landing.

b. Crosswind Leg - A flight path at right angles to the landing runway off its upwind end.

c. Downwind Leg - A flight path parallel to the landing runway in the direction opposite to landing. The downwind leg normally extends between the crosswind leg and the base leg.

d. Base Leg - A flight path at right angles to the landing runway off its approach end. The base leg normally extends from the downwind leg to the intersection of the extended runway centerline.

e. Final Approach - A flight path in the direction of landing along the extended runway centerline. The final approach normally extends from the base leg to the runway.

Essentially, the traffic pattern defines which side of the runway aircraft will operate. At SMX, Runways 12 and 2 have an established right-hand traffic pattern. For these runways, aircraft make right turns throughout pattern operation. Therefore, aircraft operating to the Runway 12 end remain southwest of the Airport when operating in the traffic pattern. When operating in the traffic pattern for 30 and 20, aircraft make standard left-hand turns. This also allows aircraft to remain south/southwest of the Airport.

While the traffic pattern defines the direction of turns that an aircraft will follow on landing or departure, it does not define how far from the runway an aircraft will operate. The distance laterally from the runway centerline an aircraft operates or the distance from the end of the runway is at the discretion of the pilot, based on the operating characteristics of the aircraft, number of aircraft in the traffic pattern, and meteorological conditions. The actual ground location of each leg of the traffic pattern varies from aircraft operation to aircraft operation for the reasons of safety, navigation, and sequencing described above. The distance that the downwind leg is located laterally from the runway will vary based mostly on the speed of the aircraft. Slower aircraft can operate closer to the runway as their turn radius is smaller.

The published traffic pattern altitude at the Airport is 1,000 feet above the ground (1,261 feet MSL) when on the downwind leg for piston-driven aircraft and 1,500 feet above the ground (1,761 feet MSL) for jet aircraft. The traffic pattern altitude is established so that aircraft have a predictable descent profile on base leg to final for landing. The tower controllers may instruct pilots to follow a different traffic pattern altitude as necessary.

REGIONAL AIRPORTS

A review of public-use airports within the vicinity of SMX has been made to identify and distinguish the type of air service provided in the area surrounding the Airport. It is important to consider the capabilities and limitations of these airports when planning for future changes or improvements at SMX. **Exhibit**

1R provides information on public-use airports within 50 nm of SMX. Information pertaining to each airport was obtained from FAA Form 5010-1, *Airport Master Record*.

SOCIOECONOMIC PROFILE

This section of the Airport Master Plan will establish baseline socioeconomic information. When planning for the future of the Airport, it is important to have an understanding of the local economy and the historic trends in various economic indicators. The most common economic indicators used in aviation forecasting are population, employment, and income. Where possible, it is preferred to utilize local data sources because they typically will incorporate any special local circumstances. Where detailed, recent and consistent local data cannot be found, the FAA approves of the use of demographic data produced by national firms such as Woods & Poole Economics.

Two primary local resources have been consulted for both historical and forecast socioeconomic data: the California Department of Finance and the Santa Barbara County Association of Governments (SBCAG). The California Department of Finance primarily provides population and housing data which is updated annually. SBCAG is the regional planning agency comprised of Santa Barbara County and all eight incorporated cities within the county. SBCAG distributes local, state, and federal transportation funds, acts as a forum for addressing regional and multi-jurisdictional issues, and is responsible for developing and implementing an airport land use plan for each general purpose airport in the County. SBCAG produces the regional growth forecasts, the most recent of which were approved in 2012.

Socioeconomic data is summarized in charts presented on **Exhibit 1S**.

POPULATION

Historic population trends for the City of Santa Maria, Santa Barbara County, the State of California, and the United States is detailed in **Table 1F**. In 1970, the City of Santa Maria accounted for approximately 12.4 percent of the total county population. By 2015, the city's share of county population had grown to 23.6 percent. Between 2000 and 2010, 90 percent of the county's population growth occurred in the City of Santa Maria.

According to projections, the city's share will continue to grow, reaching 26.8 percent by 2036. These population trends indicate the potential for strong economic growth, which typically results in increased aviation activities.

The Airport is located within an area of the County referred to as "North County," which includes the areas west and north of Gaviota and includes Santa Maria, Lompoc, Guadalupe, and unincorporated areas including Solvang-Santa Ynez and Cuyama. **Table 1G** summarizes the population growth projected by SBCAG for the North County, which accounts for the vast majority of the county growth over this time

LOMPOC AIRPORT (LPC)

Airport NPIAS Classification ..... GA
FAA Asset Study Classification ..... Local
Location from SMX..... 14.1 nm S
Elevation ..... 88.1 ft
Weather Reporting ..... AWOS
ATCT ..... None
Annual Operations 29,930
Based Aircraft 51
Enplaned Passengers ..... NA



PRIMARY RUNWAY	7-25
Length	4,600
Width	100
Strength Rating	17,000 lbs. SWL
Lighting	MIRL
Marking	NPI
Approach Aids	REILs, VASI-4
Instrument Approch Procedures	VOR/DME-Circling/GPS(25)

Services Provided: Aircraft hangars and tiedowns, Jet-A and 100LL fuel, major airframe and powerplant maintenance, and oxygen.

OCEANO COUNTY AIRPORT (L52)

Airport NPIAS Classification ..... GA
FAA Asset Study Classification ..... Local
Location from SMX..... 14.5 nm NNW
Elevation ..... 14 ft
Weather Reporting..... None
ATCT ..... None
Annual Operations..... 9,855
Based Aircraft..... 23
Enplaned Passengers..... NA



PRIMARY RUNWAY	11-29
Length	2,325
Width	50
Strength Rating	12,500 lbs. SWL
Lighting	MIRL
Marking	Basic
Approach Aids	None
Instrument Approch Procedures	None

Services Provided: Aircraft tiedowns and 100LL fuel.

SAN LUIS COUNTY REGIONAL AIRPORT (SBP)

Airport NPIAS Classification ..... Primary Non-Hub
FAA Asset Study Classification ..... NA
Location from SMX..... 22.2 nm NNW
Elevation ..... 212.3 ft
Weather Reporting ..... ASOS
ATCT ..... Yes
Annual Operations 67,890
Based Aircraft 305
Enplaned Passengers 127,336



PRIMARY RUNWAY	11-29
Length	6,101
Width	101
Strength Rating	75,000 lbs. SWL/ 100,000 lbs. DWL
Lighting	HIRL
Marking	PI, NPI
Approach Aids	MALSR, REILs, VASI-4
Instrument Approch Procedures	ILS(11)/GPS

Services Provided: Aircraft tiedowns, Jet-A and 100LL fuel, major airframe and powerplant maintenance, and oxygen.

SANTA YNEZ AIRPORT (IZA)

Airport NPIAS Classification ..... GA
FAA Asset Study Classification . Regional
Location from SMX..... 25.8 nm SE
Elevation ..... 674.3 ft
Weather Reporting ..... AWOS
ATCT ..... None
Annual Operations 30,295
Based Aircraft 112
Enplaned Passengers ..... NA



PRIMARY RUNWAY	8-26
Length	2,803
Width	75
Strength Rating	12,500 lbs. SWL
Lighting	MIRL
Marking	NPI,Basic
Approach Aids	VASI-2
Instrument Approch Procedures	VOR/GPS(8)

Services Provided: Aircraft tiedowns, and Jet-A and 100LL fuel.

NEW CUYAMA AIRPORT (L88)

Airport NPIAS Classification ..... NA
FAA Asset Study Classification ..... NA
Location from SMX ..... 38.1 nm E
Elevation ..... 2203 ft
Weather Reporting ..... None
ATCT ..... None
Annual Operations 504
Based Aircraft ..... None
Enplaned Passengers ..... NA



PRIMARY RUNWAY	10-28
Length	3,940
Width	60
Strength Rating	NA
Lighting	None
Marking	Basic
Approach Aids	None
Instrument Approch Procedures	None

Services Provided: Aircraft tiedowns.

SANTA BARBARA MUNICIPAL AIRPORT (SBA)

Airport NPIAS Classification .... Primary Small Hub
FAA Asset Study Classification ..... NA
Location from SMX ..... 41.6 nm SE
Elevation ..... 13.4 ft
Weather Reporting ..... ASOS
ATCT ..... Yes
Annual Operations 104,755
Based Aircraft 188
Enplaned Passengers 370,600



PRIMARY RUNWAY	7-25
Length	6,052
Width	150
Strength Rating	110,000 lbs. SWL, 160,000 lbs. DWL
Lighting	HIRL
Marking	PI
Approach Aids	MALSR, REILs, RVR, PAPI-4
Instrument Approch Procedures	ILS/DME(7)/GPS(25)

Services Provided: Aircraft tiedowns, Jet -A and 100LL fuel, major airframe and powerplant maintenance, and oxygen.

PASO ROBLES MUNICIPAL AIRPORT (PRB)

Airport NPIAS Classification ..... GA
FAA Asset Study Classification . Regional
Location from SMX..... 47.1 nm N
Elevation ..... 838.7 ft
Weather Reporting ..... ASOS
ATCT ..... None
Annual Operations 34,310
Based Aircraft 160
Enplaned Passengers ..... NA



PRIMARY RUNWAY	1-19
Length	6,008
Width	150
Strength Rating	60,000 lbs. SWL/ 106,000 lbs. DWL
Lighting	HIRL
Marking	NPI
Approach Aids	PAPI-4, REILs
Instrument Approch Procedures	VOR/DME/GPS(19)

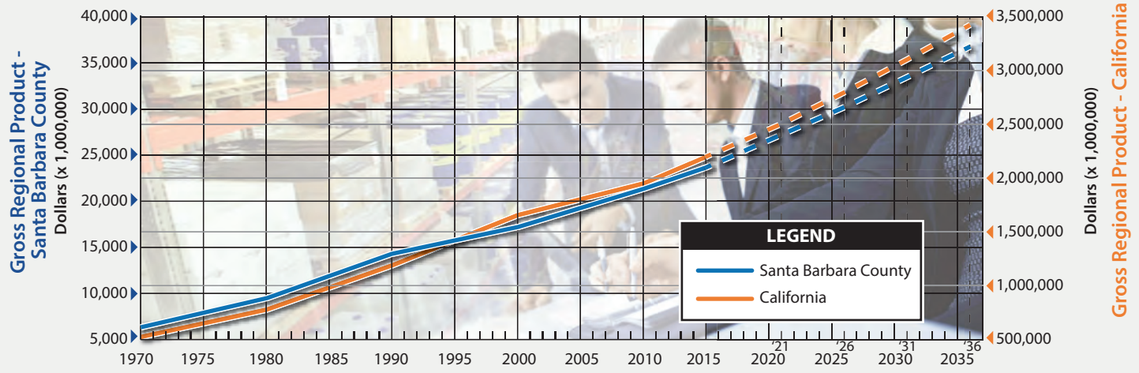
Services Provided: Aircraft tiedowns, Jet A and 100LL fuel, minor airframe and powerplant maintenance, and low bottled oxygen.

KEY

ASOS - Automated Surface Observation System
ATCT - Airport Traffic Control Tower
AWOS - Automated Weather Observation System
DME - Distance Measuring Equipment
DWL - Dual Wheel Loading
GA - General Aviation
GPS - Global Positioning System
HIRL - High Intensity Runway Lighting
ILS - Instrument Landing System
MALSR - Medium Intensity Approach Lighting System with Runway Alignment Indicator Lights
MIRL - Medium Intensity Runway Lighting
NA - Not Applicable
nm - Nautical Miles
NPI - Non-Precision Instrument
NPIAS - National Plan of Intigrated Airport Systems
PAPI - Precision Approach Path Indicator
PI - Precision Instrument
REIL - Runway End Identifier Lights
SWL - Single Wheel Loading
VASI - Visual Approach Slope Indicator
VOR - Very High Frequency Omni-directional Range

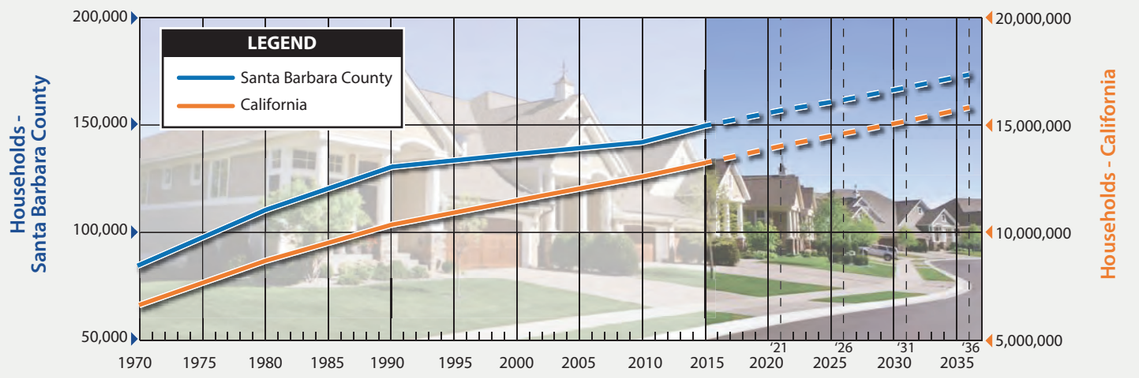
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GROSS REGIONAL PRODUCT



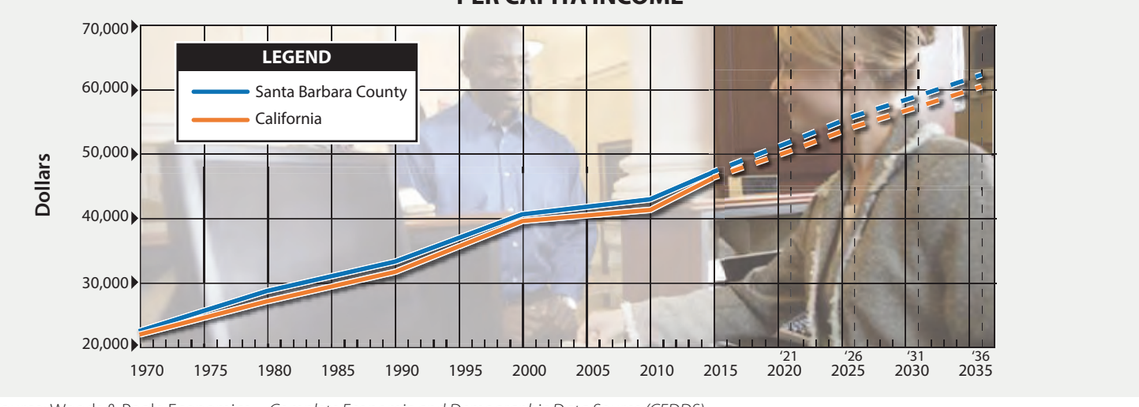
Source: Woods & Poole Economics - *Complete Economic and Demographic Data Source (CEDDS)*

TOTAL HOUSEHOLDS



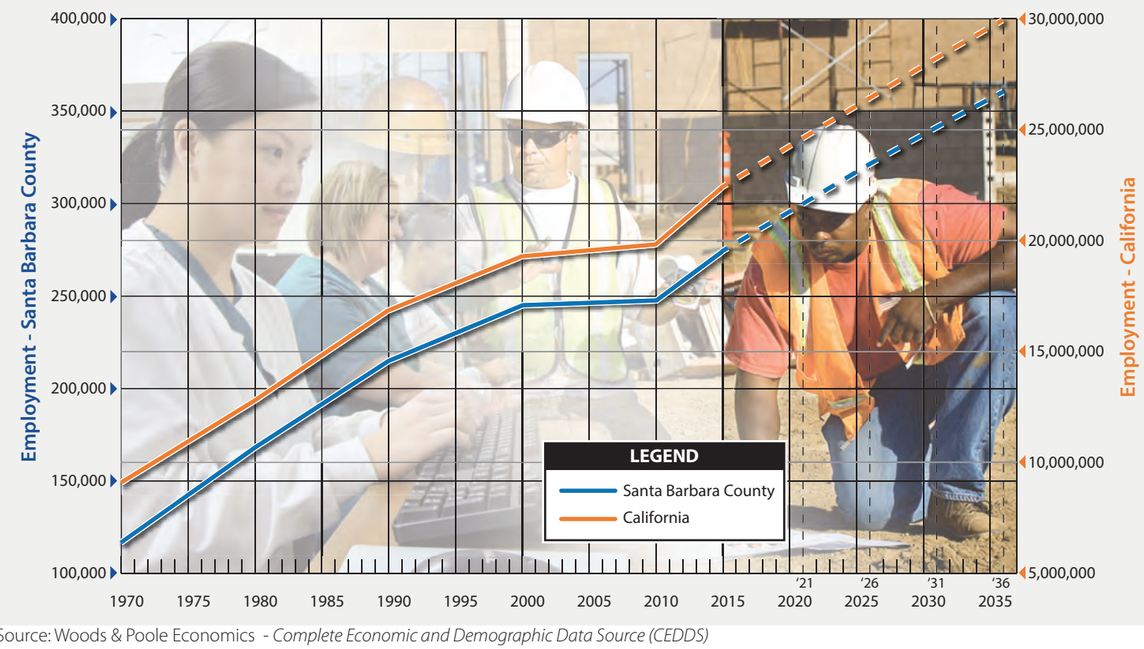
Source: 1970 - 2000: Woods & Poole Economics - *Complete Economic and Demographic Data Source (CEDDS)*. 2010 - 2036: California Department of Finance

PER CAPITA INCOME



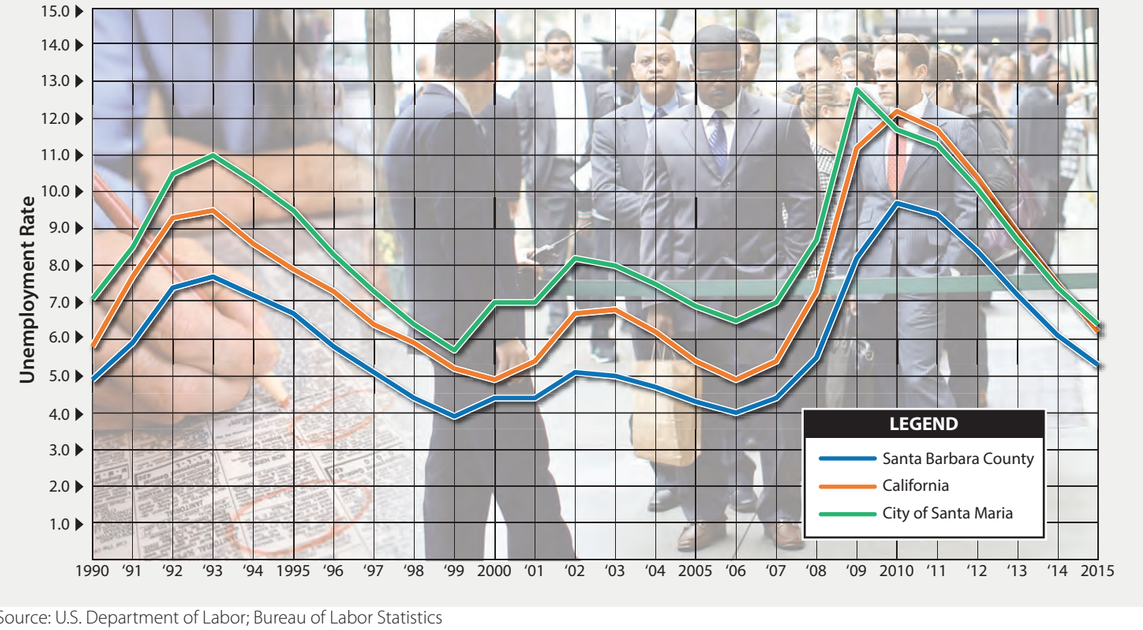
Source: Woods & Poole Economics - *Complete Economic and Demographic Data Source (CEDDS)*

TOTAL EMPLOYMENT



Source: Woods & Poole Economics - *Complete Economic and Demographic Data Source (CEDDS)*

UNEMPLOYMENT RATES



Source: U.S. Department of Labor; Bureau of Labor Statistics

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period. Figures from SBCAG's *Regional Growth Forecast 2010-2040* were interpolated to the forecast years of this master plan.

TABLE 1F
Population Trends
City, County, State, U.S.

Year	City of Santa Maria	Santa Barbara County	California	United States
1970	32,749	264,324	19,971,069	204,053,325
1980	39,685	298,694	23,667,902	226,548,632
1990	61,552	369,608	29,758,213	248,709,873
2000	77,423	399,347	33,873,086	281,421,906
2010	99,553	423,895	37,253,956	308,745,538
2015	105,093	444,769	39,144,818	321,449,752
CAGR 1970-2015	2.6%	1.2%	1.5%	1.0%
2021	110,417	459,260	40,964,230	334,503,000
2026	118,658	475,898	42,710,356	347,335,000
2031	127,513	491,238	44,413,107	359,402,000
2036	136,339	509,216	46,040,978	370,338,000
CAGR 2015-2036	1.2%	0.6%	0.8%	0.7%

Sources:
Historic Population: U.S. Census Bureau
Population projections (City of Santa Maria): *SBCAG Regional Growth Forecast 2010-2040*
Population projections (Santa Barbara County & California): California Department of Finance
Population projections (United States): Woods & Poole Economics – *Complete Economic and Demographic Data Source (CEDDS)*
CAGR – Compound Annual Growth Rate

TABLE 1G
Population Projections
North Santa Barbara County

Year	City of Santa Maria	City of Lompoc	City of Guadalupe	Solvang-Santa Ynez Uninc.	Cuyama Uninc.	Santa Maria Uninc.	Guadalupe Uninc.	Lompoc Uninc.	North County Total
2010	99,553	42,092	12,633	7,080	1,241	32,737	265	15,652	211,689
2021	110,417	42,409	12,797	7,610	1,256	33,148	274	15,836	223,747
2026	118,658	43,986	13,579	8,178	1,333	35,208	290	16,789	238,021
2031	127,513	45,622	14,409	8,788	1,415	37,396	306	17,800	253,250
2036	136,339	47,124	15,173	9,378	1,489	39,360	333	18,711	267,906
CAGR	1.2%	0.4%	0.7%	1.1%	0.7%	0.7%	0.9%	0.7%	0.9%

Source: U.S. Census Bureau and *SBCAG Regional Growth Forecast 2010-2040 (interpolated).*
Uninc. – Unincorporated
CAGR – Compound Annual Growth Rate (2010 – 2036)

LOCAL ECONOMY

The Santa Maria Valley continues to maintain a consistent manufacturing base as well as a significant amount of agriculture, which is the primary industry. Santa Maria has a trained, capable and ready workforce. Total non-farm employment and the creation of both farm and non-farm jobs in the Santa

Maria Valley dominates the entire Northern Santa Barbara County labor market. Vandenberg Air Force Base, the largest employer in the region, plays an important role in the city's economic engine, employing over 6,623 people.

The major employers within the City of Santa Maria are detailed in **Table 1H**.

TABLE 1H
Top 10 Employers
City of Santa Maria

#	Employer	Employees (#)
1	Santa Maria Bonita School District	1,724
2	Marian Medical Center	1,450
3	C&D Zodiac Aerospace	1,200
4	Allan Hancock College	890
5	Santa Maria Joint High School District	725
6	City of Santa Maria	647
7	Chumash Casino	605
8	Orcutt Union School District	586
9	Betteravia Farms	533
10	VTC	340
Vandenberg Air Force Base[1]		6,623

[1] Nearby military facility.
Source: Santa Maria Chamber of Commerce, 2016

The historical employment trend shows similar growth rates for both the county and the State of California; 1.3 percent and 1.4 percent CAGR respectively from 2000 to 2015. Forecasts show the county having a slightly slower population growth rate than the state at 0.8 percent and 1.0 percent CAGR respectively from 2015 to 2036.

The City of Santa Maria had an employment level of 41,350 in 2015. Regional forecasts project employment in the city to grow at a CAGR of 1.8 percent through 2036, reaching 60,537 in employment. This indicates the local area will be growing at a much faster rate than that of the rest of the county and the state.

Gross regional product (GRP) is a measure of the market value of the goods and services produced within an area in a given period of time. According to the data, the county had a CAGR of 2.9 percent from 1970 through 2015, while the state grew at a 3.2 percent CAGR. Projections indicate the state and county will grow at the same rate, 2.1 percent CAGR, through 2036.

Historical unemployment rate comparisons between the City of Santa Maria, Santa Barbara County, and the state show the City of Santa Maria has historically averaged higher unemployment rates than the county and state. Rates for each have followed closely to national trends, including increased rates in the early 1990s, then several years of decline until 2001. The impact of the 9/11 attacks and an economic recession then resulted in a brief rise in the unemployment rate. This was followed by several years of improved economic performance and declining unemployment rates up until the beginning of the Great Recession in 2008. From 2007 to 2011, the unemployment rate in the city jumped from 7.0 percent to 11.3 percent. The local unemployment rate began recovering in 2012, and has since fallen to 6.4 percent in 2015. Recent trends indicate the city unemployment rate has now fallen below the state's.

INCOME

Per capita personal income (PCPI) levels for Santa Barbara County have averaged slightly higher than state income levels. In 1970, county PCPI was 1.7 percent higher than the state level, and in 2015, the gap had dropped slightly and grown to 1.3 percent above the state level. Forecasts show PCPI levels in

the county will continue to remain higher than state levels with the gap growing to 2.2 percent higher by 2036.

HOUSEHOLDS

Growth trends for the number of households typically follows closely to population trends. Data of the total number of households within the county and the state from 1970 through 2015 indicates a slightly slower growth rate for households within the county compared to the state. Forecasts indicate this trend will continue through 2036 with a 0.7 percent CAGR projected for the county and 0.8 percent CAGR projected for the state. Household levels within the City of Santa Maria are projected to grow at an even faster pace with a 1.6 percent CAGR in households through 2036.

SUMMARY

The information contained in this chapter is intended to establish a baseline of understanding about the current capabilities of the Airport and the environment in which it operates. The chapter began with a discussion of the history, regional setting, administration, and operational characteristics of the Airport. The Airport is a commercial service facility providing passengers a direct aviation link to Las Vegas. The Airport also serves the general aviation community, providing the full range of services for operators of small piston powered aircraft and operators of the largest business jets.

The Airport Master Plan is intended to provide airport management a long term (20-year) visioning document to aid decision making, particularly as related to capital improvements, in the coming years. Development of the Airport Master Plan follows an FAA prescribed process. While the FAA will not provide approval of the overall Airport Master Plan, they will review and approve two specific elements: the aviation demand forecasts and the airport layout plan (ALP).

In the next chapter, the baseline information presented here will be utilized in the development of aviation demand forecasts.

SANTA MARIA
PUBLIC AIRPORT



CHAPTER TWO
AVIATION DEMAND FORECASTS



SANTA MARIA PUBLIC AIRPORT

CHAPTER TWO
AVIATION DEMAND FORECASTS

The definition of demand that may reasonably be expected to occur during the useful life of an airport's key components (e.g., runways, taxiways, terminal buildings, etc.) is an important factor in facility planning. In airport master planning, this involves projecting potential aviation activity for at least a 20-year timeframe. Aviation demand forecasting for Santa Maria Public Airport/Captain G Allan Hancock Field (SMX or Airport) will focus on demand indicators, including commercial airline passenger enplanements and operations, general aviation based aircraft, based aircraft fleet mix, and operations, as well as military operations and overall operational peaking periods.

The Federal Aviation Administration (FAA) has oversight responsibility to review and approve aviation forecasts developed in conjunction with airport planning studies. In addition, aviation activity forecasts may be an important input to future benefit-cost analyses associated with airport development, and FAA reviews these analyses when federal funding requests are submitted.

The FAA will review individual airport forecasts with the objective of comparing them to its *Terminal Area Forecasts* (TAF) and the *National Plan of Integrated Airport Systems* (NPIAS). Even though the TAF is updated annually, it is developed by FAA personnel in Washington D.C. and it is very common to have a disparity between the TAF and more localized master planning forecast efforts. Historically, the disparity was primarily due to the TAF forecasters' lack of knowledge about local conditions or recent trends. In recent years, however, the FAA has improved its forecast model to be a demand-driven forecast for aviation services based upon local and national economic conditions, as well as conditions within the aviation industry.

As stated in FAA Order 5090.3C, *Field Formulation of the National Plan of Integrated Airport Systems* (NPIAS), forecasts should be:

- Realistic;
- Based on the latest available data;
- Reflective of current conditions at the airport (as a baseline);
- Supported by information in the study; and
- Able to provide adequate justification for airport planning and development.

The forecast process for an airport master plan consists of a series of basic steps that vary in complexity depending upon the issues to be addressed and the level of effort required. The steps include a review of previous forecasts, determination of data needs, identification of data sources, collection of data, selection of forecast methods, preparation of the forecasts, and evaluation and documentation of the results. FAA Advisory Circular (AC) 150/5070-6B (Change 2), *Airport Master Plans*, outlines seven standard steps involved in the forecast process, including:

1) **Identify Aviation Activity Measures**: The level and type of aviation activities likely to impact facility needs. For general aviation, this typically includes based aircraft and operations.

2) **Review Previous Airport Forecasts**: May include the FAA *Terminal Area Forecast*, state or regional system plans, and previous master plans.

3) **Gather Data**: Determine what data are required to prepare the forecasts, identify data sources, and collect historical and forecast data.

4) **Select Forecast Methods**: There are several appropriate methodologies and techniques available, including regression analysis, trend analysis, market share or ratio analysis, exponential smoothing, econometric modeling, comparison with other airports, survey techniques, cohort analysis, choice and distribution models, range projections, and professional judgment.

5) **Apply Forecast Methods and Evaluate Results**: Prepare the actual forecasts and evaluate for reasonableness.

6) **Summarize and Document Results**: Provide supporting text and tables as necessary.

7) **Compare Forecast Results with FAA's TAF**: Follow guidance in FAA Order 5090.3C, *Field Formulation of the National Plan of Integrated Airport Systems*. In part, the Order indicates that forecasts should not vary significantly (more than 10 percent) from the TAF. When there is a greater than 10 percent variance, supporting documentation should be supplied to the FAA. (FAA Central Region has provided additional guidance indicating forecasts are consistent with the TAF when they differ by less than 10 percent in the first five years, and less than 15 percent in the 10-year period.)

Aviation activity can be affected by many influences on the local, regional, and national levels, making it virtually impossible to predict year-to-year fluctuations of activity over 20 years with any certainty. Therefore, it is important to remember that forecasts are to serve only as guidelines, and planning must remain flexible enough to respond to a range of unforeseen developments.

The following forecast analysis for Santa Maria Public Airport was produced following these basic guidelines. Existing forecasts are examined and compared against current and historic activity. The historical aviation activity is then examined along with other factors and trends that can affect demand. The intent is to provide an updated set of aviation demand projections for SMX that will permit airport management to make planning adjustments as necessary to maintain a viable, efficient, and cost-effective facility.

SERVICE AREA

The initial step in determining the aviation demand for an airport is to define its generalized service area for various segments of aviation. The service area is determined primarily by evaluating the location of competing airports, their capabilities, their services, and their relative attraction and convenience. In determining the aviation demand for an airport, it is necessary to identify the role of the airport, as well as the specific areas of aviation demand the airport is intended to serve. For the Airport, the primary roles are to accommodate commercial passenger airline service, as well as general aviation demand in the region.

The service area for an airport is a geographic region from which an airport can be expected to attract the largest share of its activity. The definition of the service area can then be used to identify other factors, such as socioeconomic and demographic trends, which influence aviation demand at an airport. Aviation demand will be impacted by the proximity of competing airports, the surface transportation network, and the strength of commercial airline and/or general aviation services provided by an airport and competing airports.

As in any business enterprise, the more attractive the facility is in terms of service and capabilities, the more competitive it will be in the market. If an airport's attractiveness increases in relation to nearby airports, so will the size of its service area. If facilities and services are adequate and/or competitive, some level of aviation activity might be attracted to an airport from more distant locales.

The size of an airport's service area will vary depending on numerous factors but is primarily limited by the proximity of other airports providing similar services. This is especially true for commercial services as competition for passengers often shapes an airline's decision to operate in a specific community. As such, an examination of other nearby and regional commercial service airport competitors can provide an understanding of the service area limits at SMX. Currently, there are 23 primary commercial service airports in the state of California. **Table 2A** presents passenger enplanement rankings, including SMX.

TABLE 2A
Passenger Service in California

Rank	City	Airport	CY 2015 Enplanements	% of state Enplanements	Drive Distance from SMX (miles)
1	Los Angeles	Los Angeles International	36,351,226	36.88%	155
2	San Francisco	San Francisco International	24,190,549	24.54%	256
3	San Diego	San Diego International	9,985,739	10.13%	278
4	Oakland	Metropolitan Oakland International	5,506,672	5.59%	256
5	Santa Ana	John Wayne Airport-Orange County	4,945,175	5.02%	194
6	San Jose	Norman Y Mineta San Jose International	4,814,721	4.88%	225
7	Sacramento	Sacramento International	4,714,723	4.78%	337
8	Ontario	Ontario International	2,089,781	2.12%	205
9	Burbank	Bob Hope	1,973,869	2.00%	156
10	Long Beach	Long Beach/Daugherty Field/	1,220,906	1.24%	176
11	Palm Springs	Palm Springs International	947,713	0.96%	290
12	Fresno	Fresno Yosemite International	694,994	0.71%	180
13	Santa Barbara	Santa Barbara Municipal	316,508	0.32%	65
14	Monterey	Monterey Regional	180,591	0.18%	177
15	San Luis Obispo	San Luis County Regional	144,313	0.15%	34
16	Santa Rosa	Charles M Schulz - Sonoma County	129,081	0.13%	328
17	Bakersfield	Meadows Field	120,962	0.12%	132
18	Stockton	Stockton Metropolitan	80,160	0.08%	278
19	Arcata/Eureka	Arcata	55,168	0.06%	555
20	**Santa Maria**	**Santa Maria Public**	**44,340**	**0.04%**	**--**
21	Redding	Redding Municipal	30,852	0.03%	459
22	Mammoth Lakes	Mammoth Yosemite	23,504	0.02%	365
23	Carlsbad	McClellan-Palomar	12,336	0.01%	249

Source: US DOT - Bureau of Transportation Statistics

COMPETING COMMERCIAL SERVICE AIRPORTS

The most common criteria in a passenger's selection of an airport are the proximity (convenience) and airfare (ticket price); however, several other factors can influence the passenger's decision. Business travelers often prefer expedient travel and may pay higher airfares for that convenience. The business traveler also desires reliable service with the most options possible such as diverse destinations, frequency of flights, favorable departure or arrival times, etc. Leisure travelers typically make airfare the most important factor for choosing an airline, or a more distant airport. Discount airlines have proven nationwide that leisure passengers, and even some business travelers, will choose airports outside their local area due to low fares.

Another factor is the level of service offered from an airport. Level of service factors that can affect the secondary service area include frequency of service, number of airlines, size and/or type of aircraft, and nonstop destinations available. The biggest factor, however, tends to be airfare. Competition on routes and low-fare airlines are major factors that can draw vacation travelers to drive as much as three hours to a larger airport.

The surface transportation network provides options for local travelers to use other commercial service airports in the region. Regional competing airports include San Luis County Regional (SBP), Santa Barbara Airport (SBA), Meadows Field (BFL) in Bakersfield, and Los Angeles area airports including Los Angeles International (LAX) and Bob Hope Airport (BUR) in Burbank. Each of these airports are within a three-hour drive time or less from Santa Maria. Airline service factors for these airports will contribute greatly to whether a passenger will elect to use one of these regional airports instead of SMX. The following is a brief discussion of the primary competing commercial service airports. A summary of these competing airports and current service at SMX is provided in **Table 2B**.

TABLE 2B
Competing Commercial Service Airport Summary

Airport	CY 2015 Enplanements	Airlines	Daily Domestic Departures	Domestic Non-Stop Destinations	Drive Time from SMX (hrs)
Los Angeles International	36,351,226	59	692	85	2 ½
Bob Hope	1,973,869	7	N/A	12	2 ½
Santa Barbara Municipal	316,508	3	22	7	1
San Luis County Regional	144,313	2	10	3	½
Meadows Field	120,962	2	8	3	2
Santa Maria Public	**44,340**	**2**	**5[a]**	**2**	**--**

[a] Daily departures range from 3-5.
N/A – Not available
Sources: US DOT - Bureau of Transportation Statistics (enplanements); Airport websites (airlines/departures)

San Luis County Regional (SBP) is a non-hub primary commercial service airport which had 144,313 passenger enplanements in 2015, ranking it 15th in the state. The airport has service from two carriers (United Express and American) offering ten daily non-stop departures serving three non-stop destinations (Los Angeles, San Francisco, and Phoenix). SBP broke ground on a new terminal construction project in October 2015 with an anticipated completion date of Summer 2017. Drive time to SBP from downtown Santa Maria is approximately 30 minutes.

Santa Barbara Airport (SBA) is a non-hub primary commercial service airport offering 22 daily departures serving seven destinations (Dallas, Denver, Los Angeles, Phoenix, Portland, San Francisco, and Seattle). Airlines currently serving SBA include Alaska Airlines, American, and United. In 2015, SBA had 316,508 enplanements, which ranked it 13th in the state. SBA constructed a new 60,000 square foot Leadership in Energy and Environmental Design (LEED) certified terminal building in 2011. Drive time to SBA from downtown Santa Maria is approximately one hour.

Meadows Field (BFL) is a non-hub primary commercial service airport in Bakersfield. BFL is currently served by two airlines (United and American) serving three non-stop destinations (Denver, San Francisco, and Phoenix) with eight daily departures. In 2015, BFL had 120,962 passenger enplanements, ranking it 17th in the state. BFL's current terminal facility opened in 2006. Drive time to BFL from downtown Santa Maria is approximately two hours.

Los Angeles International Airport (LAX) is the fifth busiest airport in the world and second busiest in the U.S. LAX is a large hub primary commercial service airport offering 692 daily flights to 85 domestic cities and 928 weekly non-stop flights to 67 cities in 34 countries on 59 passenger air carriers. LAX had 36,351,226 passenger enplanements in 2015, which ranks 1st in the state. Drive time to LAX from downtown Santa Maria is approximately two and half hours without traffic delays.

Bob Hope Airport (BUR) is a small hub primary commercial service airport in Burbank. BUR had 1,973,869 passenger enplanements in 2015, ranking it 9th in the state. BUR is served by seven airlines (Alaska, American, Delta, JetBlue, SeaPort, Southwest, and United) serving 12 non-stop destinations. Drive time to BUR from downtown Santa Maria is approximately two and a half hours without traffic.

Santa Maria Public Airport is currently served by Allegiant Air, which offers one daily departure on Wednesday, Friday, and Sunday to Las Vegas. Mokulele Airlines, which began serving SMX on October 6, 2016, offers 25 weekly departures to Los Angeles International Airport (LAX). United Express, which offered two daily departures to San Francisco, announced it would discontinue serving SMX effective October 5, 2016.

SERVICE AREA SUMMARY

SMX's proximity to Los Angeles area airports that offer the nation's largest airlines, including low-cost carriers at LAX and BUR, leads to a certain level of passenger "leakage" from the local market. SBA, SBP, and BFL also currently offer better service than SMX, which attracts passengers in the region. However, the two most significant factors for choosing an airport, convenience and airfare, place SMX in a strong position to continue to attract passengers, especially those within the primary service area of north Santa Barbara County.

Allegiant Air currently utilizes the MD-80 series aircraft in the SMX market with up to 166-passenger seats and Mokulele Airlines utilizes the Cessna Caravan with nine passenger seats. Most regional markets are currently served by regional jet (RJ) aircraft with 50- to 70- passenger seats. United Express had been operating the CRJ-200, which is a 50-seat RJ. Regional airlines are currently transitioning their RJ fleet to 70- and/or 90-seat aircraft, which will likely impact future service at SMX. Despite the loss of United Express, the City of Santa Maria is the fastest growing city in the county, and as the local population and business development continue to expand, so should the local demand for regularly scheduled airline service at SMX. Furthermore, SMX's proximity to Vandenberg Air Force Base, which has approximately 6,900 local employees, is another attractant for airlines.

Due to the close proximity of several competing airports that provide a wider range of carrier options and non-stop destinations, many people within the local area choose to drive to another airport for commercial flights. In a very real sense, the surface roadway network provides the greatest competition for airline passengers in north Santa Barbara County. It also offers an inexpensive transportation mode for leisure travelers. According to an airline service study prepared for SMX by Mead & Hunt in 2016, within the catchment area for SMX, which is generally defined as north Santa Barbara County and a small portion of southern San Luis Obispo County, 79 percent of daily passengers utilize alternative airports to SMX. In a highly competitive regional market such as this, it is unlikely that SMX will attract a significant

number of airline passengers from outside north Santa Barbara County. Therefore, the planning analysis will consider north Santa Barbara County as the primary service area for SMX. Secondary service areas will extend beyond but will not offer reliable or consistent passenger demand.

Top 25 Origin and Destination Markets

The U.S. Department of Transportation (DOT) maintains a rolling quarterly survey of 10 percent of all airline tickets sold for each commercial service airport. This Origin & Destination (O&D) Survey provides information on passengers' starting and ending cities and shows the volume of traffic between city pairs. The figures do not include "through" connecting/transfer passengers.

Information obtained from the O&D Survey provides final destinations for those traveling from SMX. Destination data is typically useful in examining the strength of the local market to and from other markets. **Table 2C** shows the top 10 markets for 2005, 2010, and 2015.

TABLE 2C
Top 10 Destination Markets
Santa Maria Public Airport

Rank	Market	2015 Market Share	Market	2010 Market Share	Market	2005 Market Share
1	Las Vegas	73.46%	Las Vegas	46.3%	Denver	8.9%
2	Washington, D.C.	2.13%	Denver	6.5%	Las Vegas	7.4%
3	Denver	2.01%	Washington, D.C.	3.5%	Orlando	7.2%
4	Newark	0.92%	Colorado Springs	3.1%	Washington, D.C.	6.1%
5	Dallas	0.86%	Chicago	2.9%	Chicago	4.7%
6	Houston	0.86%	Los Angeles	2.3%	Phoenix	3.7%
7	Chicago	0.80%	Orlando	1.9%	Los Angeles	3.7%
8	Seattle	0.80%	Seattle	1.4%	Honolulu	3.4%
9	Los Angeles	0.77%	Phoenix	1.3%	Sacramento	3.2%
10	Colorado Springs	0.77%	San Antonio	1.3%	Seattle	3.0%

Source: USDOT - Bureau of Transportation Statistics, Origin-Destination Survey of Airline Passenger Traffic

The results of the destination market analysis show that Las Vegas is by a wide margin, the top destination for travelers from SMX in 2015, with 73.46 percent of total enplanements. Washington, D.C. was second in 2015, with 2.13 percent of the market, which is likely attributable to travel of military, government, and contractor personnel to/from Vandenberg Air Force Base. 2010 data identified Las Vegas as the top destination market with 46.3 percent of enplanements. In 2005, Denver was the top market with 8.9 percent of enplanements, with Las Vegas second with 7.4 percent.

SOCIOECONOMIC TRENDS

The socioeconomic conditions provide an important baseline for preparing aviation demand forecasts. Local socioeconomic variables, such as population, employment, and income, are indicators for understanding the dynamics of the community and can relate to local trends in aviation activity. Analysis of

the demographics of the airport service area will give a more comprehensive understanding of the socioeconomic situations affecting the region which supports SMX. The following is a summary of historical demographic trends as well as forecasts of those socioeconomic characteristics.

Table 2D summarizes historical and forecast population, employment, and income estimates for the City of Santa Maria (income data for the City was not available), Santa Barbara County, and the State of California. Over the next 21 years, the City of Santa Maria is projected to grow at double the rate of the rest of the county and add 31,246 residents by 2036. The City of Santa Maria has been the fastest growing city in the county and this trend is anticipated to continue. Employment is forecasted to grow at an even faster pace in the City, growing by 1.8 percent yearly through 2036. These growth rates both exceed levels projected for the county and the state. Income data was not available for the City of Santa Maria; however, county per capita personal income (PCPI) levels remain above state levels and are forecast to grow at a faster pace than the state through 2036.

TABLE 2D
Socioeconomic History and Forecasts
Santa Maria, Santa Barbara County, and California

	HISTORY				FORECAST			
	2000	2010	2015	CAGR 2000-2015	2021	2026	2036	CAGR 2015-2036
City of Santa Maria								
Population	77,423	99,553	105,093	2.1%	110,417	118,658	136,339	1.2%
Employment	N/A	34,333	41,350	--	50,419	53,630	60,537	1.8%
Income (PCPI)	N/A	N/A	N/A	--	N/A	N/A	N/A	--
Santa Barbara County								
Population	399,347	423,895	444,769	0.7%	459,260	475,898	509,216	0.6%
Employment	244,898	247,443	274,267	0.8%	300,021	321,008	360,428	1.3%
Income (PCPI)	$40,524	$42,597	$47,154	1.0%	$51,555	$55,280	$62,039	1.4%
State of California								
Population	33,873,086	37,253,956	39,144,818	1.0%	40,964,230	42,710,356	46,040,978	0.8%
Employment	19,280,927	19,803,747	22,417,830	1.0%	24,595,708	26,401,768	29,920,846	1.4%
Income (PCPI)	$40,167	$41,721	$46,555	1.0%	$50,799	$54,384	$60,731	1.3%

CAGR: Compound annual growth rate
PCPI: Per capita personal income ($2009)

N/A – Not Available
Sources: Historic Population - U.S. Census Bureau;
Forecast Population: SBCAG Regional Growth Forecast 2010-2040 (City of Santa Maria); California Department of Finance (Santa Barbara County & State of California)
Historic and Forecast Employment and PCPI - Woods & Poole Economics 2016 (Santa Barbara County & State of California); SBCAG Regional Growth Forecast 2010-2040 (City of Santa Maria)

FORECASTING APPROACH

The development of aviation forecasts proceeds through both analytical and judgmental processes. A series of mathematical relationships is tested to establish statistical logic and rationale for projected growth. However, the judgment of the forecast analyst, based upon professional experience, knowledge

of the aviation industry, and assessment of the local situation, is important in the final determination of the preferred forecast. The most reliable approach to estimating aviation demand is through the utilization of more than one analytical technique. Methodologies frequently considered include trend line/time-series projections, correlation/regression analysis, and market share analysis.

Trend line/time-series projections are probably the simplest and most familiar of the forecasting techniques. By fitting growth curves to historical data, then extending them into the future, a basic trend line projection is produced. A basic assumption of this technique is that outside factors will continue to affect aviation demand in much the same manner as in the past. As broad as this assumption may be, the trend line projection does serve as a reliable benchmark for comparing other projections.

Correlation analysis provides a measure of direct relationship between two separate sets of historic data. Should there be a reasonable correlation between the data sets, further evaluation using regression analysis may be employed.

Regression analysis measures statistical relationships between dependent and independent variables, yielding a "correlation coefficient." The correlation coefficient (Pearson's "r") measures association between the changes in the dependent variable and the independent variable(s). If the "r^2" value (coefficient determination) is greater than 0.95, it indicates good predictive reliability. A value less than 0.95 may be used, but with the understanding that the predictive reliability is lower.

Market share analysis involves a historical review of the airport activity as a percentage, or share, of a larger regional, state, or national aviation market. A historical market share trend is determined, providing an expected market share for the future. These shares are then multiplied by the forecasts of the larger geographical area to produce a market share projection. This method has the same limitations as trend line projections, but can provide a useful check on the validity of other forecasting techniques.

It is important to note that one should not assume a high level of confidence in forecasts that extend beyond five years. Facility and financial planning usually require at least a 10-year purview since it often takes more than five years to complete a major facility development program. However, it is important to use forecasts which do not overestimate revenue-generating capabilities or understate demand for facilities needed to meet public (user) needs.

NATIONAL AVIATION TRENDS

Each year, the FAA updates and publishes a national aviation forecast. Included in this publication are forecasts for the large air carriers, regional/commuter air carriers, general aviation, and FAA workload measures. The forecasts are prepared to meet budget and planning needs of the FAA and to provide information that can be used by state and local authorities, the aviation industry, and the general public. The current edition when this chapter was prepared was FAA *Aerospace Forecasts – Fiscal Years 2016-2036*, published in March 2016. The FAA primarily uses the economic performance of the United States as an indicator of future aviation industry growth. Similar economic analyses are applied to the outlook

for aviation growth in international markets. The following discussion is summarized from the FAA Aerospace Forecasts.

Since its deregulation in 1978, the U.S. commercial air carrier industry has been characterized by boom-to-bust cycles. The volatility that was associated with these cycles was thought by many to be a structural feature of an industry that was capital intensive but cash poor. However, the great recession of 2007-09 marked a fundamental change in the operations and finances of U.S. airlines. Air carriers fine-tuned their business models to minimize losses by lowering operating costs, eliminating unprofitable routes, and grounding older, less fuel-efficient aircraft. To increase operating revenues, carriers initiated new services that customers were willing to purchase and started charging separately for services that were historically bundled in the price of a ticket. The industry experienced an unprecedented period of consolidation with four major mergers in five years. These changes, along with capacity discipline exhibited by carriers, have resulted in a fifth consecutive year of profitability for the industry in 2015. Looking ahead, there is optimism that the industry has been transformed from that of a boom-to-bust cycle to one of sustainable profits.

ECONOMIC ENVIRONMENT

According to the FAA forecast report, as the economy recovers from the most serious economic downturn and slow recovery since the Great Depression, aviation will continue to grow over the long run. Fundamentally, demand for aviation is driven by economic activity. As economic growth picks up, so will growth in aviation activity. The FAA forecast calls for passenger growth over the next 20 years to average 2.1 percent annually. The steep decline in the price of oil in 2015 was a catalyst for a short-lived uptick in passenger growth; however, growth is anticipated to be somewhat muted, primarily due to the uncertainty that surrounds the U.S. and global economies.

Employee wages in 2015 continued to stagnate, household income growth was weak, the housing market's recovery was patchy across the country, and government spending at the federal and local levels remained stagnant and are projected to remain so for the next few years. Despite these dire statistics, the unemployment rate fell, consumer spending was up, and many urban housing markets have been revived strongly. U.S. economic performance in 2015 is estimated to have grown in real GDP to 16.3 trillion (inflation adjusted to 2009 dollars) and is forecast to grow at an average annual growth rate of 2.3 percent through 2036. Oil prices should remain below $50 per barrel through 2016, but are projected to grow at an annual average growth rate of 4.8 percent, reaching over $150 per barrel by 2036. Although the U.S. economy has managed to avoid a recession, a prolonged period of faster economic growth (e.g., > 3.0 percent) may not be forthcoming.

U.S. TRAVEL DEMAND

Mainline and regional carriers offer domestic and international passenger service between the U.S. and foreign destinations, although regional carrier international service is confined to the border markets in

Canada, Mexico, and the Caribbean. Twenty-nine all-cargo carriers were providing domestic and/or international air cargo service at the end of 2015.

According to FAA, three distinct trends are shaping today's commercial air carrier industry: (1) continuing industry consolidation and restructuring; (2) continued capacity discipline in response to external shocks; and (3) the proliferation of ancillary revenues.

The restructuring and consolidation of the U.S. airline industry that began in the aftermath of the terror attacks of September 11, 2001 continued in 2015. American and US Airways combined their networks and reservations systems to form the world's largest airline with the last US Airways flight occurring in October 2015. Consequently, there are now only four dominant airlines in the U.S. – American, Delta, Southwest, and United – controlling approximately 76 percent of the domestic market. It is highly unlikely the U.S. Government will approve any further mergers among these four due to anti-trust regulations. In 2005, there were twelve major mainline airlines.

The mergers and increasing market presence of low cost carriers like Frontier, JetBlue, and Southwest have had clear implications on the fares, size of the aircraft being used, and the load factors.

One of the most striking outcomes of industry restructuring has been the unprecedented period of capacity discipline (achieving higher passenger loads through scheduled flight and fleet mix consolidation primarily), especially in domestic markets. Between 1978 and 2000, available seat miles (ASMs) in domestic markets increased at an average annual rate of four percent per year, recording only two years of decline. Even though domestic ASMs shrank by 6.9 percent in FY 2002, following the events of September 11, 2001, growth resumed and by FY 2007, domestic ASMs were 3.6 percent above the FY 2000 level. However, U.S. domestic ASMs are still down 1.2 percent when compared to 2007 as the industry responded first to the sharp rise in oil prices (up 155 percent between 2004 and 2008) and then the global recession that followed (2009 to the present). 2015 is the first year showing strong growth in ASMs (4.6 percent) since 2004.

The reduction in domestic capacity since 2007 has not been shared equally between the mainline carriers and their regional counterparts. To better match demand to capacity, the mainline carriers contracted out "thin" routes to their regional counterparts because they could provide lift at a lower cost, or simply removed the capacity altogether. In 2015, the mainline carrier group provided 0.9 percent less capacity than it did in 2007 (but carried 2.1 percent more passengers). Capacity flown by the regional group has shrunk by 3.0 percent over the same period (with passengers carried decreasing by 2.1 percent).

The regional market has continued to shrink as the regionals compete for even fewer contracts with the remaining dominant carriers; this has meant slow growth in enplanements and yields. The regionals have less leverage with the mainline carriers than they have had in the past and are facing large pilot shortages and tighter regulations regarding pilot training. Their capital costs have increased in the short-term as they continue to replace their 50-seat regional jets with more fuel efficient 70-seat jets. This move to the larger aircraft will prove beneficial in the future, however, since their unit costs are lower.

Another continuing trend is that of ancillary revenues. Carriers generate ancillary revenues by selling products and services beyond that of an airplane ticket to customers. This includes the un-bundling of services previously included in the ticket price, such as checked bags and on-board meals, and by adding new services, such as boarding priority. As a result of very low oil prices and ancillary revenue sources, U.S. passenger carriers posted net profits for the sixth consecutive year in 2015.

AVIATION FORECASTS

For a non-hub, primary commercial service airport such as SMX, forecasts of commercial airline passenger enplanements and operations, general aviation based aircraft and operations, and peak activity levels are the most basic indicators of future demand. Future facility requirements, such as airline terminal complex component spaces and general aviation hangars and apron areas, are derived from these projections.

FAA TERMINAL AREA FORECAST

On an annual basis, the FAA publishes the *Terminal Area Forecast* (TAF) for each airport included in the National Plan of Integrated Airport Systems (NPIAS). The TAF is a generalized forecast of airport activity used by FAA for internal planning purposes. It is available to airports and consultants to use as a baseline projection and important point of comparison while developing local forecasts. **Table 2E** presents the 2016 *Terminal Area Forecast* for SMX.

As presented in the table, the TAF projects enplanements to grow at a CAGR of 1.5 percent through 2036, reaching approximately 59,000 annual passenger enplanements. Total itinerant operations are projected to grow by only 3,848 at a CAGR of 0.6 percent, while local operations are projected to decrease by 321 operations. Itinerant general aviation operations, which account for the greatest number of operations at SMX, are forecasted to grow by 748 operations at a CAGR of 0.2 percent over the next 20 years. Based aircraft are projected to grow at a strong 1.8 percent CAGR reaching 346 by 2036. As noted previously, the FAA will compare the new forecasts developed for this Master Plan to the TAF.

In 2015, there were a total of 38,389 aircraft operations as counted by the airport traffic control tower (ATCT), which is slightly lower than that presented in the TAF. Enplanements reported by the Santa Maria Public Airport District (SMPAD) in 2015 totaled 44,340, which is 1,104 more than what is reported in the TAF. The TAF also shows a total of 239 based aircraft for 2015; however, Airport records show that there are actually 235 based aircraft currently.

TABLE 2E
2016 FAA Terminal Area Forecast
Santa Maria Public Airport

	2015	2021	2026	2036	CAGR 2015-2036
ENPLANEMENTS					
Air Carrier	24,802	27,112	29,194	33,839	1.5%
Commuter	18,434	20,137	21,683	25,133	1.5%
Total	***43,236***	***47,249***	***50,877***	***58,972***	***1.5%***
ANNUAL OPERATIONS					
Itinerant					
Air Carrier	376	400	420	460	1.0%
Air Taxi	10,285	11,071	11,764	13,301	1.2%
General Aviation	17,721	17,924	18,104	18,469	0.2%
Military	447	447	447	447	0.0%
Total Itinerant	28,829	29,842	30,735	32,677	0.6%
Local					
General Aviation	9,460	9,124	9,129	9,139	-0.2%
Military	706	706	706	706	0.0%
Total Local	10,166	9,830	9,835	9,845	-0.2%
Total Operations	***38,995***	***39,672***	***40,570***	***42,522***	***0.4%***
Based Aircraft	***239***	***269***	***294***	***346***	***1.8%***

Source: FAA Terminal Area Forecast (TAF); January 2016

AIRLINE SERVICE FORECASTS

As previously mentioned, SMX is a primary commercial service airport categorized as a non-hub airport by the FAA. Non-hub primary commercial service airports account for less than 0.05 percent of domestic enplanements and have more than 10,000 enplanements. As of August 2016, SMX had scheduled passenger service provided by two carriers, United Express (operated by SkyWest) and Allegiant Air. United Express, which offered non-stop service to San Francisco, discontinued service at SMX effective October 5, 2016. Mokulele Airlines began service from SMX to Los Angeles on October 6, 2016 with four daily departures four days a week and three departures three days a week utilizing the nine seat Cessna Caravan. Allegiant Air, which serves Las Vegas, utilizes the MD-80 series aircraft for its once a day departure each Wednesday, Friday, and Sunday.

To evaluate commercial service potential at SMX and the facilities necessary to properly accommodate present and future airline activity, two basic elements must be forecast: annual enplaned passengers and annual airline operations. Annual enplaned passengers serve as the most basic indicator of demand for commercial passenger service activity. The combination of enplanements and deplanements generally equals the total passengers using an airport. The annual number of enplanements is the figure utilized by the FAA to determine various entitlement funding levels for commercial service airports.

The term “enplanement” refers to a passenger boarding an airline flight. Enplaning passengers are then described in terms of either “originating” or “connecting/transferring.” Originating passengers depart a

specific airport for a destination or hub airport to connect/transfer to another flight. Connecting/transferring passengers are those who have departed from another location and are using the airport as an intermediate stop. These passengers may disembark their originating flight to wait in the terminal for their next flight or could simply remain on the aircraft at an intermediary stop as a "through" passenger. SMX and airports similar to it have almost exclusively originating passengers, while larger hubs like those in San Francisco or Los Angeles have a more significant percentage of passengers who are connecting/transferring.

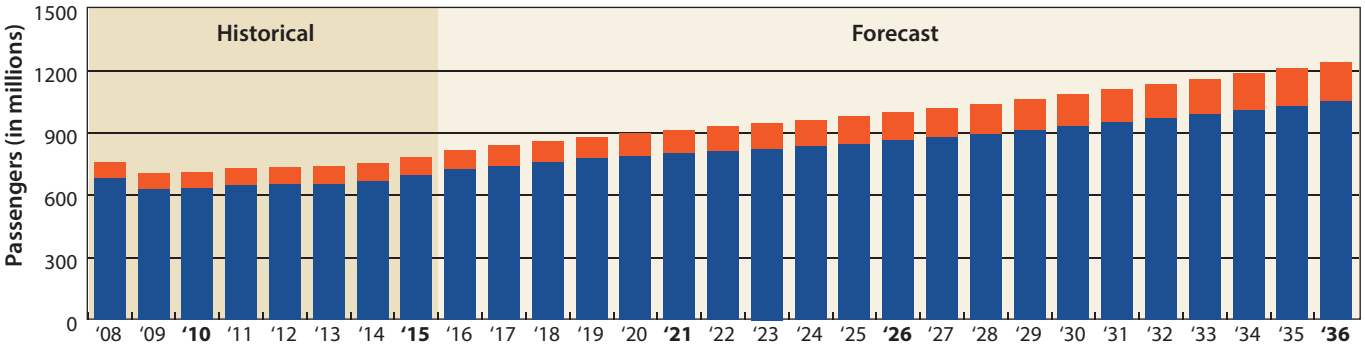
As indicated earlier, an important resource utilized in aviation demand forecasting is the annual FAA aviation forecasts. The most recent available version is the FAA *Aerospace Forecasts – Fiscal Years 2016-2036*, published in March 2016. The FAA forecasts a variety of aviation demand indicators on an annual basis. In the most current edition, fiscal year 2014 is presented as the baseline, with 2015 showing as an estimate and years 2016 through 2036 as projections. Many forecasting elements utilized in this analysis will consider the history and projections presented by the FAA in its annual forecast.

FAA COMMERCIAL AIR CARRIER FORECASTS

U.S. commercial air carriers' total number of domestic departures continued the downward trend that started in 2008, while ASMs, revenue passenger miles (RPMs), and enplanements all showed a rebound; these trends underlie the expanding size of aircraft and higher load factors. In 2015, the domestic load factor reached a historic high of 84.5 for commercial air carriers. In such an uncertain but slowly improving economic environment, industry capacity growth was somewhat restrained (up 3.9 percent in 2015), after only a 2.3 percent increase in 2014. U.S. mainline carrier capacity is projected to grow 3.8 percent in 2016, while capacity for regional carriers is forecast to remain static through 2016. Passenger demand growth is in line with capacity growth in 2016, with system RPMs forecast to grow 3.8 percent. Supported by a growing U.S. and world economy, year over year RPM growth is forecast to be 2.7 percent on average over the period from 2015-2036. Over the same time period, system capacity growth averages 2.1 percent per year. System passengers are projected to increase an average of 2.0 percent a year, with mainline carriers growing at 2.0 percent a year, slightly higher than their regional counterparts (up 1.8 percent). By 2036, U.S. commercial air carriers are projected to fly 1.81 trillion ASMs and transport 1.24 billion enplaned passengers – a total of 1.53 trillion passenger miles.

Planes will remain crowded, with load factors projected to grow moderately during the early years of the forecast period, then tapering off during the mid-to-latter years to 84.7 percent in 2036 (up 1.3 points compared to the beginning of the forecast period in 2015). The FAA forecasts indicate that enplanements are forecast to grow (up 4.2 percent) in 2016, following a 3.8 percent increase in 2015. Over the forecast period, domestic enplanements are projected to grow at an average annual rate of 2.0 percent, with mainline and regional carriers growing at the same rate. **Exhibit 2A** presents the annual historical and forecast enplanement totals for both large air carriers and commuter airlines in the U.S. as forecast by the FAA.

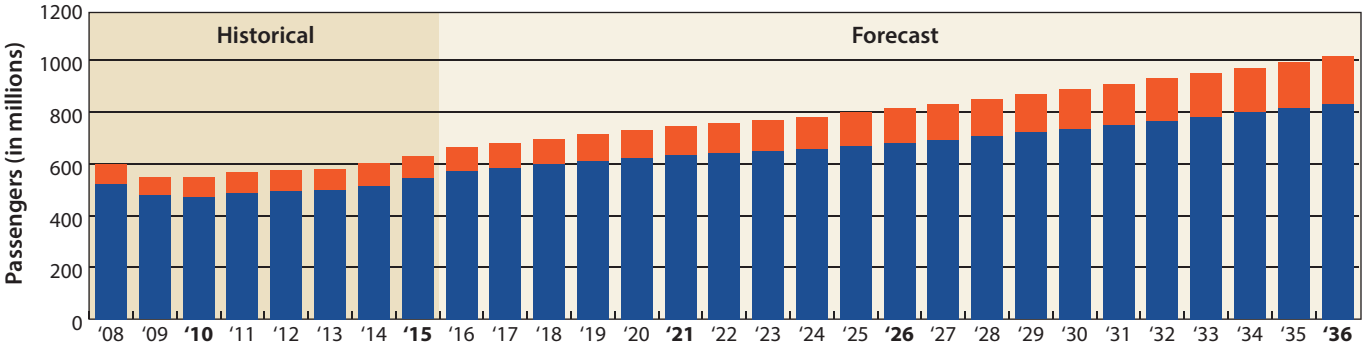
U.S. AIR CARRIER PASSENGER ENPLANEMENTS



SOURCE	2015	2021	2026	2036	AAGR 2015-2036
Domestic Revenue Enplanements	696	803	863	1,052	2.0%
International Revenue Enplanements	89	113	135	188	3.6%
TOTAL	786	916	998	1,240	2.2%

Note: All figures measured in millions

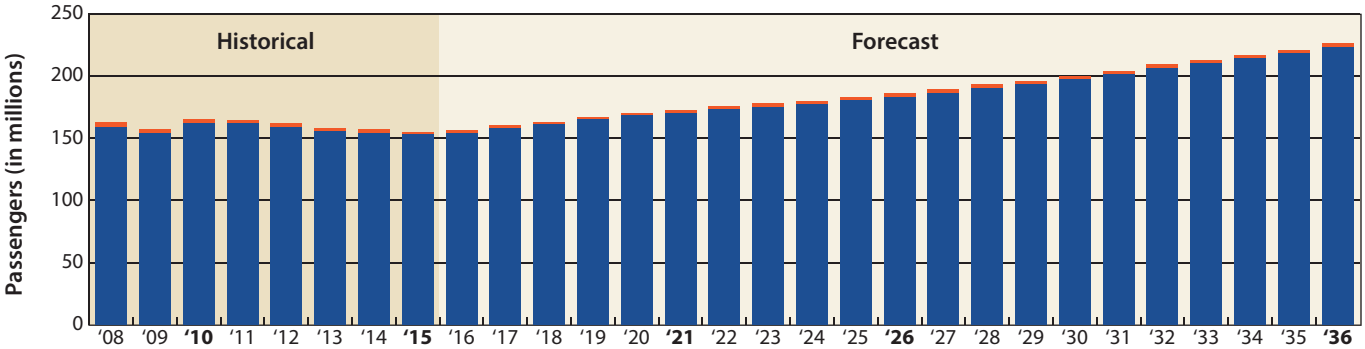
U.S. MAINLINE AIR CARRIER PASSENGER ENPLANEMENTS



SOURCE	2015	2021	2026	2036	AAGR 2015-2036
Domestic Revenue Enplanements	543	633	680	829	2.0%
International Revenue Enplanements	87	111	132	185	3.6%
TOTAL	631	743	812	1,014	2.3%

Note: All figures measured in millions

U.S. REGIONAL AIR CARRIER PASSENGER ENPLANEMENTS



SOURCE	2015	2021	2026	2036	AAGR 2015-2036
Domestic Revenue Enplanements	153	170	183	223	1.8%
International Revenue Enplanements	2	2	3	3	1.8%
TOTAL	155	173	185	226	1.8%

Note: All figures measured in millions

Source: FAA Aerospace Forecast - Fiscal Years 2016-2036

FAA COMMERCIAL AIRCRAFT FLEET FORECAST

The commercial passenger carrier fleet is undergoing transformation. The mainline carriers are retiring older, less fuel-efficient aircraft (e.g., 737-300/400/500, 757/767, and MD-80) and replacing them with more technologically advanced A319/320 and 737-700/800/900 aircraft. The regional carriers are growing their fleet of 70-90 seat regional jet aircraft and reducing their fleet of 50-seat jet aircraft. Between 2015 and 2036, the number of jets in the U.S. mainline carrier fleet is forecast to grow from 3,946 to 5,339, an average of 66 aircraft a year. The regional carrier fleet is forecast to decline from 2,144 aircraft in 2015 to 1,961 in 2036 as the fleet shrinks by 21 percent (448 aircraft) between 2015 and 2022. **Exhibit 2B** presents the FAA commercial aircraft fleet forecast through 2036.

HISTORICAL AIRLINE PASSENGER ACTIVITY

Table 2F provides a history of passenger enplanements at SMX since 1990. Over the past 25 years, SMX has experienced passenger activity ranging from a period high of 61,066 in 1995 to a low of 31,172 in 1999. From 2003 through 2008, SMX enplanements grew each year, reaching 54,925 in 2008. Enplanements dropped by over 11,000 in 2009, and have since remained fairly steady, averaging 45,700 yearly through 2015. The CAGR over that 25-year period is 0.3 percent, but the table presents an uneven, fluctuating growth and decline pattern.

Since 1990, year-over-year enplanements have declined 11 times and increased 14 times. The average yearly enplanement level for the 10-year period 1990 to 2000 was 47,598. For the five-year period of 2000 to 2005, the average annual enplanement level was 36,819. For the five-year period of 2005 to 2010, the average annual enplanement level was 48,223. For the most recent five-year period of 2010 to 2015, SMX averaged 46,048 annual enplanements.

TABLE 2F
Historic Passenger Enplanements
Santa Maria Public Airport

Year	Total Enplanements
1990	40,729
1991	47,852
1992	43,822
1993	47,828
1994	54,832
1995	61,066
1996	54,175
1997	54,081
1998	42,320
1999	31,172
2000	45,703
2001	35,038
2002	31,685
2003	32,278
2004	38,082
2005	38,128
2006	50,872
2007	54,042
2008	54,925
2009	43,631
2010	47,741
2011	41,620
2012	44,737
2013	51,395
2014	46,454
2015	44,340
CAGR	0.3%

N/A – Not Available
Source: FAA Passenger Boarding (Enplanement) Data; SMPAD Records; *Santa Maria Public Airport Master Plan Update Environmental Assessment*, 2010.

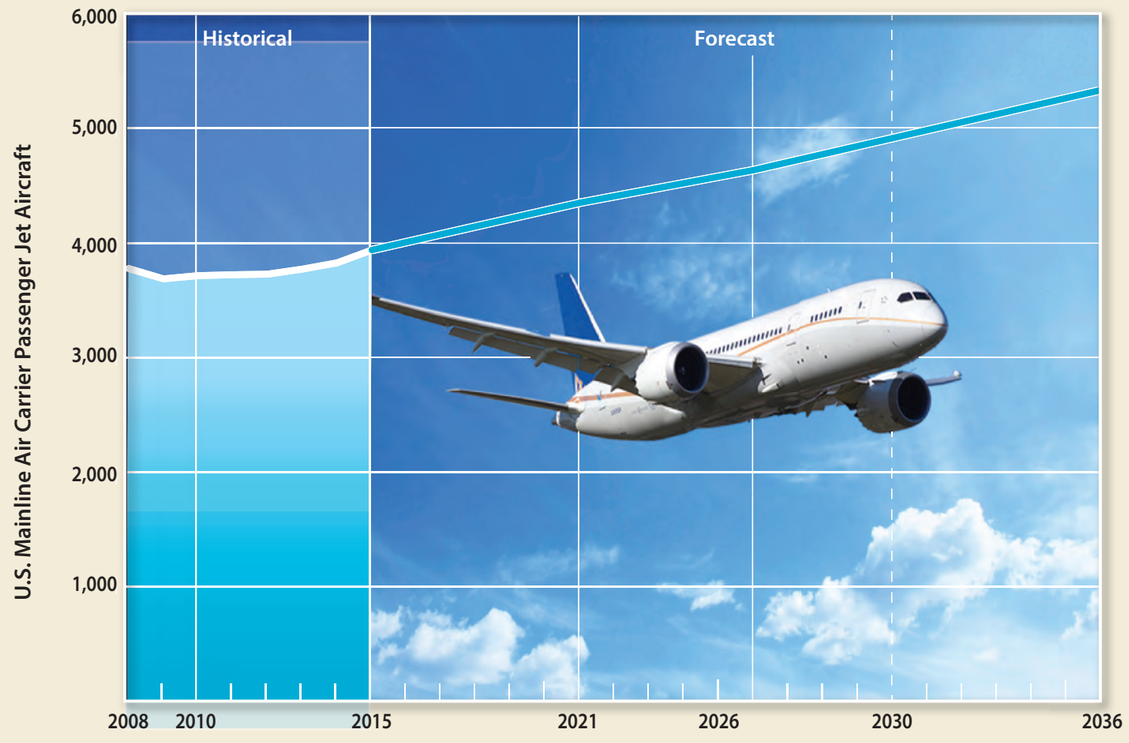
U.S. MAINLINE AIR CARRIER PASSENGER JET AIRCRAFT

	2015	2021	2026	2036	AAGR 2015-2036
Large Narrow Body					
2 Engine	3,322	3,603	3,828	4,314	1.3%
3-4 Engines	2	2	0	0	0.0%
Large Wide Body					
2 Engine	492	586	636	840	2.6%
3-4 Wide Body Engines	31	0	0	0	N/A
Total Large Jets	**3,847**	**4,191**	**4,464**	**5,154**	**1.4%**
Total Regional Jets	**99**	**169**	**181**	**185**	**3.0%**
Total Mainline Passenger Jets	**3,946**	**4,360**	**4,645**	**5,339**	**1.5%**

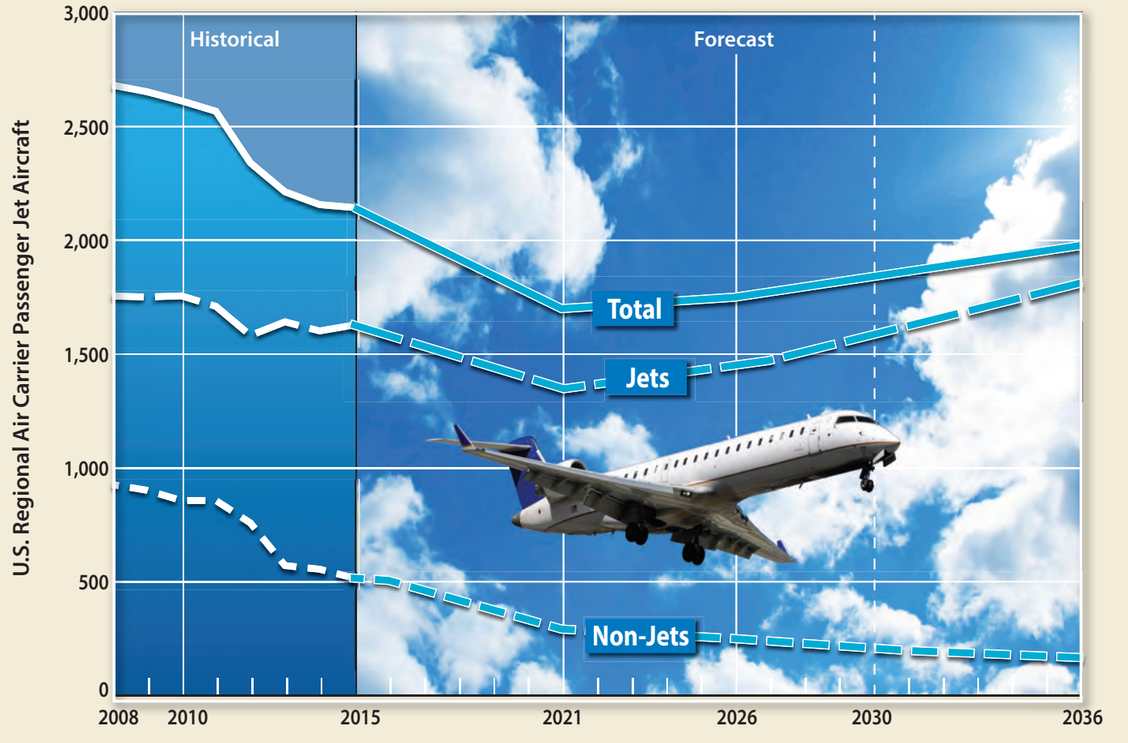
U.S. REGIONAL AIR CARRIER PASSENGER JET AIRCRAFT

	2015	2021	2026	2036	AAGR 2015-2036
Less than 30 Seats					
Turboprop	427	234	181	74	-7.2%
31-40 Seats					
Turboprop	32	25	19	8	-6.4%
Over 40 Seats					
Turboprop	57	69	78	93	2.4%
Jet	1,628	1,384	1,460	1,786	0.4%
Non-Jet Total	**516**	**328**	**278**	**175**	**-5.0%**
Jet Total	**1,628**	**1,384**	**1,460**	**1,786**	**0.4%**
Total Regional Passenger Aircraft	**2,144**	**1,712**	**1,738**	**1,961**	**-0.4%**

Total Mainline Passenger Jets



Total Regional Passenger Aircraft



Source: FAA Aerospace Forecast - Fiscal Years 2016-2036

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Enplanements by Operator

As previously noted, United Express discontinued service at SMX effective October 5, 2016. Between 2006 and 2016 (data through June 2016), scheduled airline enplanements were evenly split, with Allegiant handling 49.0 percent of enplanements and United Express handling 51.0 percent. Mokulele Airlines began serving SMX on October 6, 2016; however, no data is available on their enplanements at this time.

ENPLANEMENT FORECASTS

As discussed in this chapter's introduction, the first step involved in updating an airport's forecasts includes reviewing previous forecasts in comparison to actual activity to determine what changes, if any, may be necessary. After that comes the consideration of any new factors that could impact the forecasts, such as changes in the socioeconomic climate or the effects of changes in air carrier services.

Previous Enplanement Forecasts

There are two existing forecasts of enplanement activity at SMX to consider:

- Santa Maria Public Airport, *Airport Master Plan Update, 2004*
- FAA *Terminal Area Forecast*

Forecasts presented in the previous master plan used a base of 70,300 enplanements in 2001, which is significantly higher than the actual enplanement count of 35,038. The resultant enplanement projection through 2021 forecast enplanements increasing to 91,851 at a CAGR of 1.3 percent. While outdated, the previous master plan forecast can be utilized by applying its growth rate to recent data to prepare an updated forecast.

The FAA TAF forecast is published annually and is intended to be utilized as a starting point for considering the reasonableness of master plan forecasts. **Table 2G** presents the previous master plan and TAF enplanement forecasts for SMX. Actual historical enplanements for SMX are also presented for comparative purposes.

TABLE 2G
Previous Enplanement Forecasts
Santa Maria Public Airport

Year	Actual Enplanements	2004 Master Plan	2016 FAA TAF
2001	35,038	70,300	39,782
2005	38,128	75,860	37,564
2010	47,741	81,438	46,638
2015	44,340	85,860	43,236
Forecast			
2021		91,851	47,249
2026			50,877
2036			58,972
Forecasted CAGR		1.3%	1.5%

CAGR: Compound annual growth rate

Time-Series and Regression Enplanement Forecasts

A variety of time-series extrapolation and regression analyses using multiple variables, including aviation and socioeconomic factors, were tested in relation to historic SMX enplanement levels. For regression analysis, it is optimal to have an "r^2" value near or above 0.90, which generally represents a very strong correlation and greater statistical reliability. Several variables were tested to determine if they might produce more reliable statistical trends. The variables tested were: 1) Santa Barbara County Population; 2) Santa Barbara County Employment; 3) Santa Barbara County Gross Regional Product; 4) Santa Barbara County Per Capita Personal Income (PCPI); 5) U.S. Domestic Available Seat Miles; and 6) U.S. Commercial Enplanements. The results of the regression analysis did not provide values above the 0.90 threshold. The highest "r^2" value for a single variable was 0.062 for the U.S. Commercial Enplanements, and the highest value for a multi-variable regression was 0.251 for U.S. Domestic Available Seat Miles and U.S. Commercial Enplanements. The time-series and regression analyses resulted in such low correlations they cannot be used reliably for forecasting purposes. The lack of a correlation for all variables is not surprising as enplanements have remained relatively constant as all other factors have experienced some level of growth.

Travel Propensity Factor

There are a variety of local factors that affect the potential for passengers within an area to travel. A key statistic to consider is the relationship between an airport's enplanement levels to the population it serves. The ratio of enplanements to population is termed the Travel Propensity Factor (TPF).

The TPF is predominantly impacted by the proximity of an airport to other regional airports with higher levels of service or "hub" airports. Regional airports with higher TPF ratios tend to be located farther from hub airports in relatively isolated areas. These airports generally have a service area that extends into adjacent, well-populated regions or have some type of air service advantage that attracts more of

those passengers that might otherwise choose to drive to a more distant hub airport. Generally, the higher the TPF, the more likely air travelers are to utilize the local airport for commercial service.

For comparison purposes, 14 markets with similar characteristics to Santa Maria were analyzed. This analysis is presented in **Table 2H**. Each of these markets is served by a regional airport with scheduled commercial service and is in close proximity to a major military installation. Competing markets in the region (Santa Barbara and San Luis Obispo) are also included. Most are within a manageable driving distance to a larger hub airport. In 2010, average TPF of the airports serving the 14 selected markets was 1.6832. By 2015, the average TPF had decreased slightly to 1.5215, with only five airports increasing their TPF. This analysis highlights the difficulty regional airports across the country have had in recent years growing their enplanement levels.

TABLE 2H
Travel Propensity Factor and Comparable Markets

Comparable Markets	2010 Population	2010 Enp.	2010 TPF	2015 Population	2015 Enp.	2015 TPF	Miles to a Larger Hub Airport
Chattanooga, TN	167,674	292,830	1.7464	176,588	393,670	2.2293	104 – Knoxville
College Station, TX	93,857	72,188	0.7691	107,889	89,844	0.8327	80 – Houston
Columbus, GA	189,885	63,726	0.3356	200,579	51,781	0.2582	108 – Atlanta
Fayetteville, NC	200,564	258,986	1.2913	201,963	220,339	1.0910	78 – Raleigh/Durham
Florence, SC	37,056	82,961	2.2388	38,228	52,611	1.3762	93 – Columbia
Idaho Falls, ID	56,813	144,365	2.5411	59,184	147,923	2.4994	197 – Bozeman
Killeen, TX	127,921	243,861	1.9063	140,806	176,895	1.2563	76 – Austin
Lawton, OK	96,867	68,054	0.7026	96,655	51,859	0.5365	82 – Oklahoma City
Manhattan, KS	52,281	44,603	0.8531	56,308	66,258	1.1767	146 – Kansas City
Rapid City, SD	67,956	284,126	4.1810	73,569	264,170	3.5908	319 – Billings
San Angelo, TX	93,200	56,021	0.6011	100,450	63,842	0.6356	210 – San Antonio
San Luis Obispo, CA	45,119	129,220	2.8640	47,339	144,313	3.0485	143 – Fresno
Santa Barbara, CA	88,410	382,894	4.3309	91,842	316,508	3.4462	106 – Burbank
Santa Maria, CA	**99,553**	**47,741**	**0.4631**	**105,093**	**44,340**	**0.4219**	**160 – Burbank**
Wichita Falls, TX	104,553	44,296	0.4237	104,710	44,262	0.4227	120 – Dallas/Ft. Worth

Sources: Enplanements – FAA Passenger Boarding (Enplanement) Data; Population – U.S. Census Bureau, American Fact Finder.

A more detailed TPF history for SMX is presented in **Table 2J**. As can be seen in the table, the TPF for SMX has generally trended with the condition of the national economy. Following the 2001 recession and the events of 9-11, the TPF declined from 0.5903 in 2000 to 0.3891 in 2002. The ratio rebounded and grew to 0.5725 in 2008, but then declined sharply the following year after the nation entered a recession. Since 2009, the TPF has grown and contracted by small amounts on a yearly basis, with 2015 resulting in a TPF of 0.4219.

Table 2J presents two enplanement projections based upon the TPF. The first projection maintains the current TPF throughout the forecast period, which results in 57,523 enplanements by 2036. This projection assumes SMX will be able to reestablish a second airline and maintain that level service throughout the planning period without any further expansions. The second projection increases the TPF to recapture a level experienced as recently as 2008, which would likely require expanded air service and capturing some travelers that may be utilizing other regional airports. This projection results in 78,058 enplanements by 2036.

TABLE 2J
Travel Propensity Projections
Santa Maria Public Airport

Year	SMX Enplanements	City of Santa Maria Population	Travel Propensity Factor
1990	40,729	61,552	0.6617
2000	45,703	77,423	0.5903
2001	35,038	78,903	0.4441
2002	31,685	81,434	0.3891
2003	32,278	83,828	0.3851
2004	38,082	87,732	0.4341
2005	38,128	91,313	0.4176
2006	50,872	93,385	0.5448
2007	54,042	94,408	0.5724
2008	54,925	95,934	0.5725
2009	43,631	98,163	0.4445
2010	47,741	99,553	0.4796
2011	41,620	99,532	0.4182
2012	44,737	100,377	0.4457
2013	51,395	100,981	0.5090
2014	46,454	101,986	0.4555
2015	44,340	105,093	0.4219
Constant Travel Propensity Factor (CAGR = 1.2%)			
2021	46,586	110,417	0.4219
2026	50,063	118,658	0.4219
2036	57,523	136,339	0.4219
Increasing Travel Propensity Factor (CAGR = 2.7%)			
2021	52,130	110,417	0.4721
2026	61,978	118,658	0.5223
2036	78,058	136,339	0.5725

CAGR: Compound Annual Growth Rate (2015-2036)

Market Share of U.S. Domestic Enplanements

The next forecasting method employed considers SMX's market share of U.S. domestic enplanements. National forecasts of U.S. domestic enplanements are compiled each year by the FAA and take into account the state of the economy, fuel prices, and prior year developments. The most recent publication is FAA *Aerospace Forecasts – Fiscal Years 2016-2036*. Included are forecasts of both total domestic passenger enplanements as well as forecasts of regional carrier passenger enplanements. Enplanement forecasts based on SMX's historic market share of total and regional carrier enplanements have been developed as follows.

U.S. Air Carrier Enplanement Market Share

Two enplanement projections have been developed and are presented in **Table 2K**. The first projection maintains SMX's current market share of U.S. domestic enplanements at 0.0063 percent. This results in

66,276 enplanements by 2036. A second projection increases SMX's market share to recapture market share levels experienced as recently as 2013. This projection results in 83,406 enplanements by 2036.

TABLE 2K
Market Share Projections of U.S. Domestic Enplanements
Santa Maria Public Airport

Year	SMX Enplanements	US Domestic Enplanements (Millions)	SMX Market Share
2000	45,703	599,851,000	0.0076%
2001	35,038	560,337,000	0.0063%
2002	31,685	554,020,000	0.0057%
2003	32,278	587,729,000	0.0055%
2004	38,082	634,638,000	0.0060%
2005	38,128	660,914,000	0.0058%
2006	50,872	660,928,000	0.0077%
2007	54,042	681,877,000	0.0079%
2008	54,925	654,340,000	0.0084%
2009	43,631	620,812,000	0.0070%
2010	47,741	632,640,000	0.0075%
2011	41,620	641,575,000	0.0065%
2012	44,737	645,141,000	0.0069%
2013	51,395	648,249,000	0.0079%
2014	46,454	665,488,000	0.0070%
2015	44,340	699,349,000	0.0063%
Constant Market Share of U.S. Domestic Enplanements (CAGR = 1.9%)			
2021	50,589	803,000,000	0.0063%
2026	54,369	863,000,000	0.0063%
2036	66,276	1,052,000,000	0.0063%
Increasing Market Share of U.S. Domestic Enplanements (CAGR = 3.1%)			
2021	55,162	803,000,000	0.0069%
2026	63,853	863,000,000	0.0074%
2036	83,406	1,052,000,000	0.0079%

CAGR: Compound Annual Growth Rate (2015-2036)

U.S. Regional Carrier Enplanement Market Share

Two enplanement projections have been developed as a market share of U.S. domestic regional airline enplanement forecasts and are presented in **Table 2L**. The FAA forecasts enplanements by regional carriers to grow at 1.9 percent annually through 2036. The FAA's regional carrier forecast is a subset of total air carrier enplanements. The first projection maintains SMX's current market share constant at 0.0290 percent, resulting in 64,510 enplanements by 2036. The second projection considers an increase in market share to the historic average of 0.0327 percent by 2036, yielding 72,840 enplanements.

TABLE 2L
Market Share Projections of U.S. Regional Carrier Enplanements
Santa Maria Public Airport

Year	SMX Enplanements	US Regional Carrier Enplanements (Millions)	SMX Market Share
2000	45,703	79,700,000	0.0573%
2001	35,038	88,800,000	0.0395%
2002	31,685	98,900,000	0.0320%
2003	32,278	110,100,000	0.0293%
2004	38,082	122,700,000	0.0310%
2005	38,128	136,600,000	0.0279%
2006	50,872	152,200,000	0.0334%
2007	54,042	156,200,000	0.0346%
2008	54,925	159,100,000	0.0345%
2009	43,631	154,000,000	0.0283%
2010	47,741	161,700,000	0.0295%
2011	41,620	161,700,000	0.0257%
2012	44,737	159,000,000	0.0281%
2013	51,395	155,500,000	0.0331%
2014	46,454	154,100,000	0.0301%
2015	44,340	153,000,000	0.0290%
Constant Market Share of U.S. Regional Carrier Enplanements (CAGR = 1.9%)			
2021	49,354	170,300,000	0.0290%
2026	52,976	182,800,000	0.0290%
2036	64,510	222,600,000	0.0290%
Increasing Market Share of U.S. Regional Carrier Enplanements (CAGR = 2.4%)			
2021	51,478	170,300,000	0.0302%
2026	57,536	182,800,000	0.0315%
2036	72,840	222,600,000	0.0327%

CAGR: Compound Annual Growth Rate (2015-2036)

Airline Flight Schedule Enplanements

As has been discussed, SMX has been served by two airlines for most of its recent history. United discontinued service at SMX in October 2016. Mokulele Airlines has since started serving SMX with 25 weekly departures to Los Angeles International Airport (LAX) utilizing the 9-seat Cessna Caravan. Allegiant Air conducts three weekly departures serving Las Vegas with the MD-80 series (specifically the MD-88) aircraft with a seating capacity of 166 passengers. This analysis will project three different scenarios based upon current and potential future airline fleet mix and boarding load factor (BLF) situations at SMX. BLF is the percentage of enplaning seats occupied. **Table 2M** presents three enplanement scenarios based on these assumptions.

TABLE 2M
Potential Flight Schedule Enplanement Projections
Santa Maria Public Airport

Aircraft Type	Seats	BLF %	Occupied Seats	Departure Frequency	Enplanements
Scenario I - 2021					
MD-88	166	86%	142.8	3x Weekly	22,271
Cessna Caravan	9	80%	7.2	25x Weekly	9,360
				Total	31,631
Scenario II - 2026					
Cessna Caravan	9	80%	7.2	25x Weekly	9,360
CRJ200	50	61%	30.5	14x Weekly	22,204
MD-88	166	86%	142.8	3x Weekly	22,271
				Total	53,835
Scenario III – 2036					
Cessna Caravan	9	80%	7.2	25x Weekly	9,360
CRJ700	66	61%	42.9	28x Weekly	58,619
A320	177	86%	152.0	6x Weekly	47,493
				Total	115,471

BLF – Boarding Load Factor
Source: Coffman Associates analysis

Scenario I (2021): In this scenario, the current Allegiant Air flight schedule and BLF along with the new service provided by Mokulele Airlines with an assumption of an 80 percent BLF is utilized to show what the enplanement levels could result with the loss of United Express and the addition of Mokulele. This forecast results in 31,631 annual enplanements.

Scenario II (2026): The next scenario assumes the addition of a third airline offering feeder service to regional hub destinations such as San Francisco, Salt Lake City, Denver, or Phoenix. This scenario assumes the third airline would conduct two daily departures utilizing the CRJ200, or similar RJ, which has a seating capacity of 50 passengers. This scenario also assumes a similar BLF as experienced by United Express in recent history and assumes Allegiant Air and Mokulele Airlines would continue serving SMX as it does currently. This scenario results in 53,835 enplanements.

Scenario III (2036): The third scenario considers the potential for additional service either by an existing airline serving SMX or a third airline utilizing a larger RJ aircraft, such as the CRJ700, which has a seating capacity of 66. This scenario considers the potential for expanded feeder service to multiple regional hub destinations, such as those mentioned in Scenario II, with four daily departures by the CRJ700. Allegiant Air, in this scenario, is assumed to add another three departures each week to another of its hub destinations such as Phoenix. It is also assumed that Allegiant will have transitioned from the MD-88 to the Airbus A320 aircraft, which has a seating capacity of up to 177 passengers with its BLF remaining at 86 percent. Mokulele Airlines is assumed to operate as it does currently. This scenario results in 115,471 enplanements.

Selected Airline Enplanement Forecast

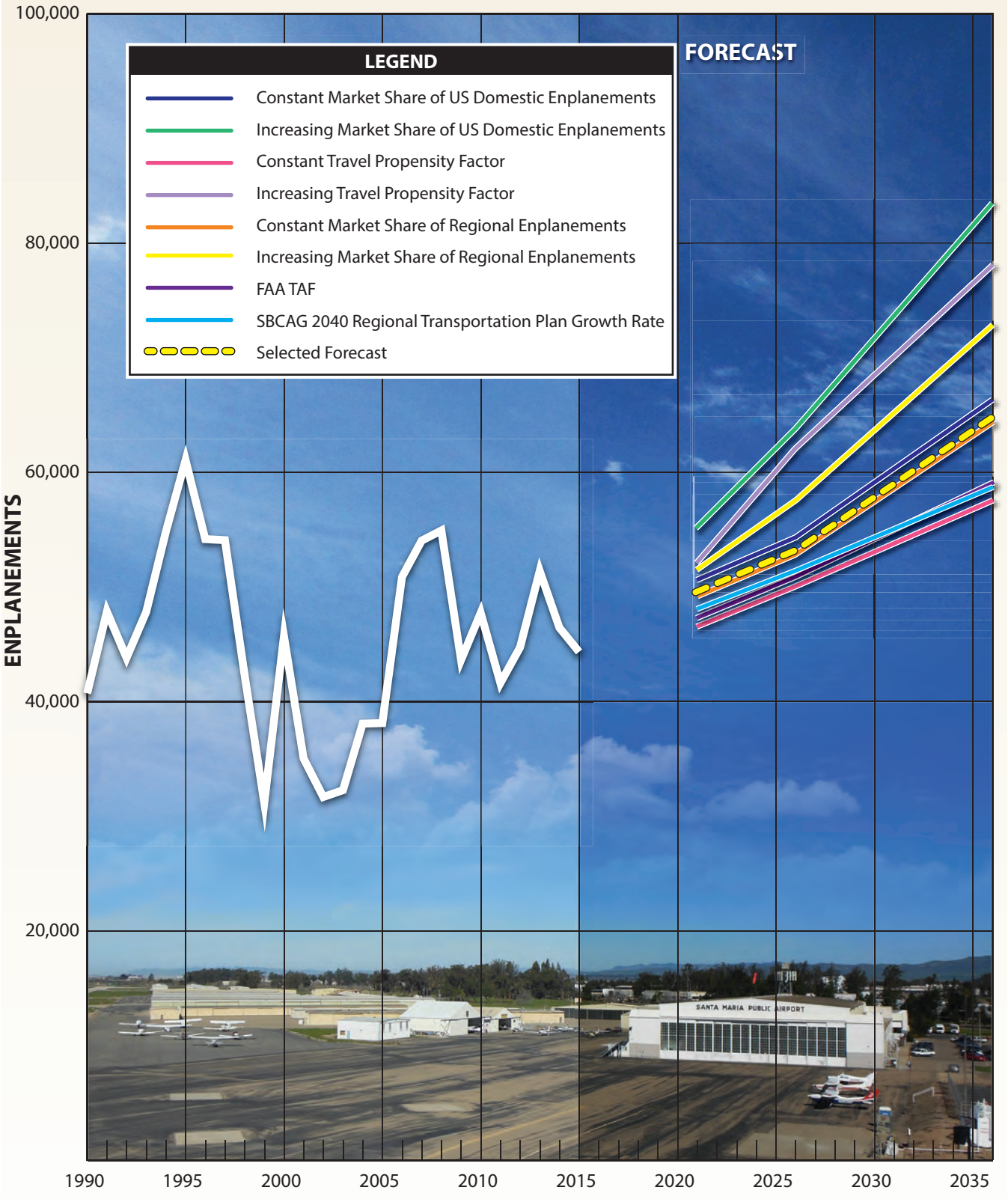
Table 2N includes the FAA TAF and the previous master plan growth rate projection for comparison to the new projections. The various enplanement projections presented above resulted in a broad forecast range. On the high end, the potential flight schedule Scenario III forecast resulted in 115,471 enplanements by 2036. On the low end, the constant TPF projection resulted in 57,523 enplanements by 2036.

Being served by a single airline, SMX will likely experience a decline in enplanements in the near term. However, with Mokulele Airlines starting up at SMX and with the potential for additional airline service, enplanement levels should rebound and grow into the future. The City of Santa Maria is the fastest growing community in the county and is anchored by a strong local economy and Vandenberg Air Force Base. For these reasons, it is reasonable to be optimistic about future enplanement growth. Some of these projections, while feasible, may overstate the potential for growth, such as the increasing TPF, increasing market share projections, and the long range potential flight schedule Scenario III, especially since recent trends for each of those indicators show reductions in market share. It is important to remember that historic trends show the cyclical nature of the airline industry so a return to growth should be anticipated. Therefore, the selected forecast aligns closely with the constant market share of regional carrier enplanements, which results in enplanements growing to 64,500 at a CAGR of 1.8 percent by 2036. The selected forecast is presented in **Table 2N** as well as on **Exhibit 2C**.

TABLE 2N
Enplanement Projection Summary
Santa Maria Public Airport

2015 Enplanements – 44,340	2021	2026	2036	CAGR 2015-2036
Travel Propensity Factor (TPF) Projections				
Constant TPF	46,586	50,063	57,523	1.2%
Increasing TPF	52,130	61,978	78,058	2.7%
Market Share of U.S. Air Carrier Enplanements				
Constant	50,589	54,369	66,276	1.9%
Increasing	55,162	63,853	83,406	3.1%
Market Share of U.S. Regional Carrier Enplanements				
Constant	49,354	52,976	64,510	1.8%
Increasing	51,478	57,536	72,840	2.4%
Potential Flight Schedule Enplanement Projection				
Scenarios I, II, & III	31,631	53,835	115,471	4.7%
Comparable Projections				
FAA TAF - 2016	47,249	50,877	58,972	1.4%
2004 Master Plan Growth Rate	48,043	51,365	58,713	1.3%
Selected Forecast	**49,400**	**53,000**	**64,500**	**1.8%**

CAGR: Compound Annual Growth Rate (2015-2036)
Source: Coffman Associates analysis


LEGEND
Constant Market Share of US Domestic Enplanements
Increasing Market Share of US Domestic Enplanements
Constant Travel Propensity Factor
Increasing Travel Propensity Factor
Constant Market Share of Regional Enplanements
Increasing Market Share of Regional Enplanements
FAA TAF
SBCAG 2040 Regional Transportation Plan Growth Rate
Selected Forecast
FORECAST
ENPLANEMENTS
100,000
80,000
60,000
40,000
20,000
1990
1995
2000
2005
2010
2015
2020
2025
2030
2035
SANTA MARIA PUBLIC AIRPORT

AIRLINE FLEET MIX AND OPERATIONS FORECAST

The airline fleet aircraft mix defines a number of key parameters in airport planning, including critical aircraft (for pavement design and ramp geometry), terminal complex layout, and maximum stage length capabilities (affecting runway length evaluations). In 2015, Allegiant Air operated the MD-88 aircraft with a seating capacity of 166 passengers, and United operated the CRJ200 with a seating capacity of 50 passengers and the Embraer 120 with a seating capacity of 30 passengers.

Changes in equipment, airframes, and engines have always had a significant impact on airlines and airport planning. There are many ongoing programs by the manufacturers to improve performance characteristics. These programs continue to focus on improvements in fuel efficiency. RJs also became a larger factor as the airlines looked for ways to reduce costs. Many airlines replaced larger commercial jets, as well as commuter turboprops, on smaller emerging routes with RJs.

Commuter airlines are transitioning to advanced turboprop aircraft and RJs to fit their market needs. Many of these aircraft have greater seating capacity, lower operating costs, and are considerably more comfortable for the flying public. The RJs made their initial impact in the 44- to 50-seat range. RJ aircraft eventually became available with as few as 37 seats and as many as 100 seats. This bridged a long-existing gap in seating capacity, making RJs the aircraft of choice at non-hub and small-hub airports.

As the price of fuel rose, however, the 50-seat and smaller RJs have been found to be less cost-effective than their counterparts over 60 seats. In fact, the higher seat capacity turboprops, such as the Q400 and even ATR-72, have been more cost-effective than the 50-seat jet carrying the same number of passengers. As a result, the 50-seat RJs are no longer in production, and can eventually be expected to be eliminated from the fleet. This will occur over time, however, as some regional carriers will maintain them for some services, as well as in codesharing with major airlines that have restrictive scope clauses with pilots' unions that prohibit codesharing on aircraft above a certain seating capacity.

In addition, turboprops that have been the workhorses for the small commuter markets are also no longer in production. In fact, the only commuter turboprops still in production are the ATR 42 in the 40- to 60-seat range, as well as the Q-400 and ATR-72, each with more than 60 seats. Unless there is a new aircraft manufactured in the range of 10 to 39 seats, smaller markets that cannot support the larger turboprops could lose service from anything over nine-seat aircraft.

Table 2P presents the historical airline operational fleet mix by seat capacity for 2007, 2010, and 2015 along with the forecast fleet mix. In 2007, 90.9 percent of the airport's airline flights were by the Embraer 120 turboprop with a seating capacity of 30. The remaining 9.1 percent of flights were by the 166 seat MD-88. In 2010, the fleet mix had not shifted much, with 89.7 percent of operations by the 30 seater and 10.3 percent by the 166 seater. By 2015, the fleet had transitioned away from the 30-seat aircraft and introduced the 50-seat RJ, which accounted for 53.6 percent of airline flights. The 166-seat category had also increased to 18.5 percent of airline flights, and only 27.9 percent of flights were conducted by the 30-seat category.

The average seats per departure increased from 40.8 in 2007 to 65.8 in 2015. In the short term, with the introduction of Mokulele Airlines and the 9-seat caravan, seats per departure will likely drop. Over time, the average number of seats per departure can be expected to increase as more capacity (i.e., larger aircraft) continues to be introduced into the system. The BLF at SMX was 69.2 percent in 2007 and gradually rose to 76.9 percent in 2015. Growth in BLF in recent years has occurred at airports across the country as airlines have worked to improve efficiency and reduce costs. In the future, BLFs can be expected to continue to grow to around 80 percent, which is the FAA's projected BLF target for the regional carrier industry in the long term.

TABLE 2P
Airline Fleet Mix and Operations Forecast
Santa Maria Public Airport

Fleet Mix	Historical			Forecast		
Seating Capacity/Example Aircraft	2007	2010	2015	2021	2026	2036
100-180/MD88, A320	9.1%	10.3%	18.5%	9.8%	9.2%	14.8%
75-99/ERJ 190	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
60-74/CRJ-700, Q-400	0.0%	0.0%	0.0%	0.0%	4.0%	11.1%
40-59/CRJ 200	0.0%	0.0%	53.6%	28.0%	26.7%	11.1%
9-39/EMB 120, Caravan	90.9%	89.7%	27.9%	62.2%	60.2%	63.1%
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Avg. Seats per Departure	40.8	42.3	65.8	35.9	36.6	57.9
Boarding Load Factor	69.2%	73.8%	76.9%	77.9%	79.0%	80.0%
Enplaned per Departure	28.3	31.3	50.6	23.6	24.5	31.3
Annual Enplanements	54,042	47,741	44,340	49,400	53,000	64,500
Annual Departures	1,912	1,527	877	2,090	2,160	2,060
Annual Operations	3,824	3,054	1,753	4,180	4,320	4,120
Air Carrier Ops (>60 seats)	347	314	324	410	568	1,064
Commuter/AT Ops (<60 seats)	3,477	2,740	1,429	3,770	3,752	3,056

With an increase in both seating capacity and BLF, the number of passengers on each aircraft flight has also grown over the past 15 years. The average enplanements per departure were 28.3 in 2007. By 2010, the ratio had grown to 31.3, and by 2015, the ratio had jumped to 50.6 enplanements per departure. Along with the 18.0 percent reduction in enplanements over that period, there has been a 54.2 percent reduction in the number of scheduled airline flights.

As the airlines retire older aircraft that are no longer in production, they are likely to utilize aircraft with more seats primarily because these are the aircraft in production. With the introduction of Mokulele Airlines and the 9-seat Caravan, the majority of airline operations are forecast to remain heavily focused in the 9-39 seat range through 2021. It is anticipated that the airlines will begin the transition to the 60-74 seat aircraft by 2026 and continue through 2036. Those aircraft with 60 or more seats are considered air carrier aircraft by the ATCT. As a result, the number of operations by commuter aircraft (less than 60 seats) will decrease, while air carrier aircraft operations will increase.

AIR CARGO FORECASTS

Air freight includes the combined activities of the scheduled passenger airlines carrying freight on scheduled flights and the dedicated all-cargo carriers. Air mail may also be carried by both the scheduled passenger airlines and all-cargo carriers. Freight and mail together make up air cargo activity at an airport. This section describes the national aviation trends in the air cargo airline industry, historical activity at SMX, and future projections of air cargo activity.

NATIONAL AIR CARGO TRENDS

Air cargo activity has historically had a high correlation to gross domestic product (GDP). Other factors that affect air cargo growth are real yields, fuel price volatility, and globalization. Ongoing trends that are and will continue to impact the air cargo market include security regulations by the FAA and TSA, maturation of the domestic express market, a shift from air to other modes (especially truck), use of all-cargo carriers (e.g. FedEx) by the U.S. Postal Service to transport mail, and the increased use of mail substitutes (e-mail and cloud-based services).

Before 2001, air cargo was the fastest growing sector of the aviation industry. From 1994 through 2000, total tons and revenue ton-miles (RTMs) grew at annual average rates of 8.0 and 8.6 percent, respectively. An economic slowdown in the U.S., combined with the collapse in the high-tech industry and a slowing of imports, resulted in declines of 5.0 percent in tons and 3.9 percent in RTMs in 2002. Domestic RTMs grew modestly through 2007 and then realized a steep decline that coincided with the 2008-2009 national recession. In 2006, RTMs had reached 15.4 billion tons; by 2009, 11.9 billion RTMs were realized. U.S. carriers flew 35.9 billion RTMs in 2015, up 2.2 percent from 2014 with domestic cargo RTMs increasing 3.3 percent to 13.1 billion. Domestic RTMs are forecast to grow 1.9 percent in 2016. Domestic RTMs are forecast to grow at an average annual rate of 0.4 percent, reaching 14.4 billion by 2036. Domestic RTMs flown by all-cargo carriers comprised 89.2 percent of total RTMs in 2015, with passenger carriers flying the remainder. The all-cargo share is forecast to grow to 90.8 percent by 2036.

The FAA notes there are several structural changes that are occurring within the air cargo industry. Among them are the following:

- **Security regulations** – On August 3, 2007, *Recommendations of the 9/11 Commission Act of 2007* was signed into law. Section 1602 of this Act states that air cargo placed on passenger aircraft will receive the same level of screening as passenger-checked baggage. Legislation called for the establishment of a system by 2010 that required 100 percent inspection of cargo transported by passenger aircraft.

- **Market maturation** – The express market in the United States has matured after dramatic growth over the last two decades. This represents the majority of domestic air cargo activity.

- **Modal shift** – Improved service and economics from the use of alternative modes of cargo transported by the integrated cargo carriers (e.g., FedEx and UPS) has matured.

- **Increases in air fuel surcharges** – Fuel costs are a significant factor for all aviation.

- **Increased USPS use of all-cargo carriers** – This initially resulted from the U.S. Postal Service's (USPS) need to improve control over delivery. The trend has continued due to security regulations.

- **Increased use of mail substitutes** – Substitutes such as e-mail affect mail volume. The residual fear of mail because of terrorism has also been a factor.

The FAA forecast for RTMs was based on several specific assumptions exclusive to the air cargo industry. First, security restrictions will remain in place. Second, most of the shift from air to ground transportation has occurred. Finally, long-term cargo activity is tied to economic growth.

Exhibit 2D depicts the FAA forecasts for air cargo and the forecast for cargo activity at SMX.

The number of large cargo jet aircraft is forecast to increase from 781 aircraft in 2015 to 1,114 in 2036 driven by the growth in freight RTMs. The narrow-body cargo jet fleet is projected to increase by two aircraft a year as 757s and 737s are converted from passenger use to cargo service. The wide body cargo fleet is forecast to increase by 14 aircraft a year as new 747-800, 767-300, and 777-200 aircraft are added to the fleet, replacing older MD-11 and 767-200 freighters.

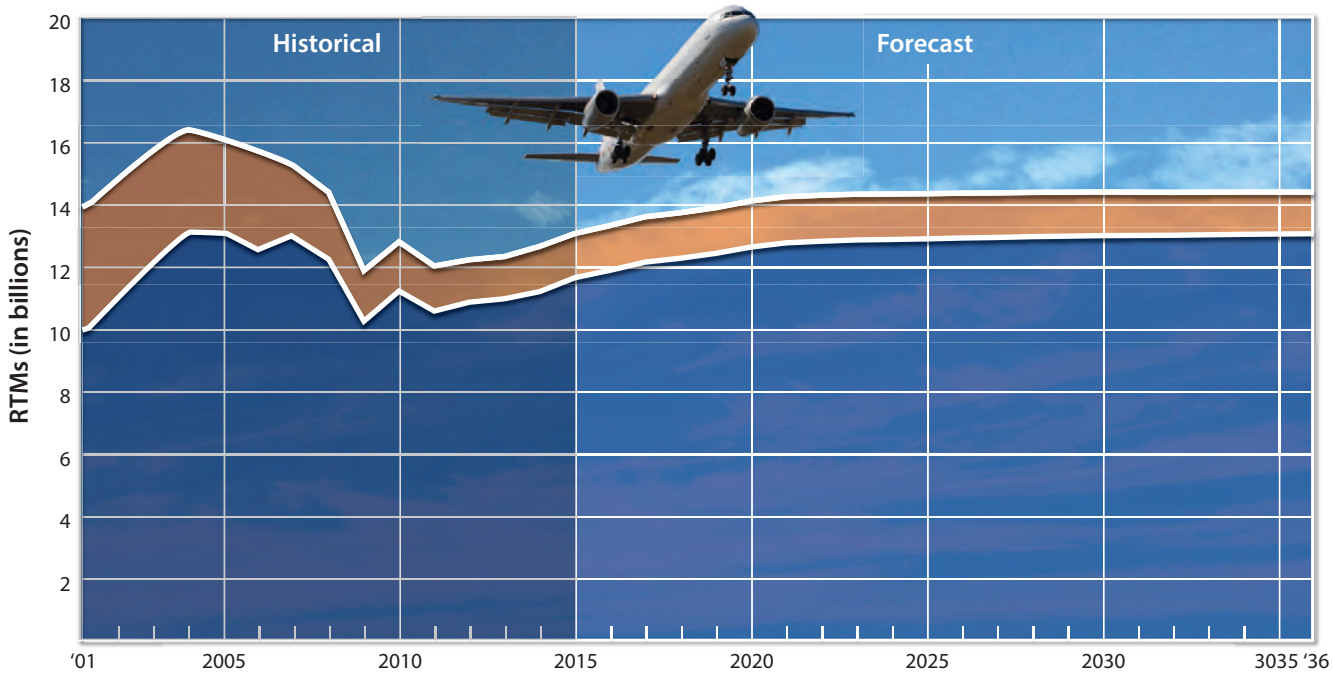
AIR CARGO FORECAST

Air cargo at SMX is handled by primary carriers West Air and Ameriflight. West Air utilizes the Cessna 208 Caravan single-engine turboprop aircraft. The Caravan has a maximum payload capacity of 3,665 pounds. Ameriflight primarily utilizes the Fairchild Swearingen Metroliner twin-engine turboprop aircraft, which has a maximum payload of 5,000 pounds.

Table 2Q summarizes air cargo activity at the Airport since 2011. SMX's market share of U.S. RTMs has fluctuated from a high of 0.0295 percent in 2011, before dropping down to 0.0238 percent in 2013, followed by a return to growth in 2014 and another decline in 2015 at 0.0242 percent. The forecast for air cargo at SMX projects overall growth in the market share returning to its recent peak market share of 0.0295 percent by 2036. This growth is considered reasonable considering the anticipated overall growth of the local population and economy.

Air cargo operations data was gathered from the AirportIQ Data Center, which is a database of operations with filed flight plans. According to this data, the cargo operators at SMX have conducted between 1,972 and 2,456 annual operations from 2011 to 2015, hauling on average approximately 1,500 pounds of cargo per operation. Applying this average over the forecast period results in operational growth of 858 annual operations by 2036, or a CAGR of 1.7 percent. These projected levels are not anticipated to result in significant changes to the current air cargo fleet.

DOMESTIC AIR CARGO REVENUE TON MILES (RTMs)
U.S. COMMERCIAL CARRIER



REVENUE TON MILES[1]	2015	2021	2026	2036	AAGR 2015-2036
All-Cargo Carriers	11,671.8	12,788.6	12,943.9	13,081.5	0.1%
Passenger Carriers	1,416.8	1,480.3	1,438.2	1,333.3	-0.3%
TOTAL	**13,089**	**14,269**	**14,382**	**14,415**	**0.5%**

[1]In millions of tons
Source: FAA Aerospace Forecasts 2015-2036

SANTA MARIA PUBLIC AIRPORT AIR CARGO TOTAL POUNDS

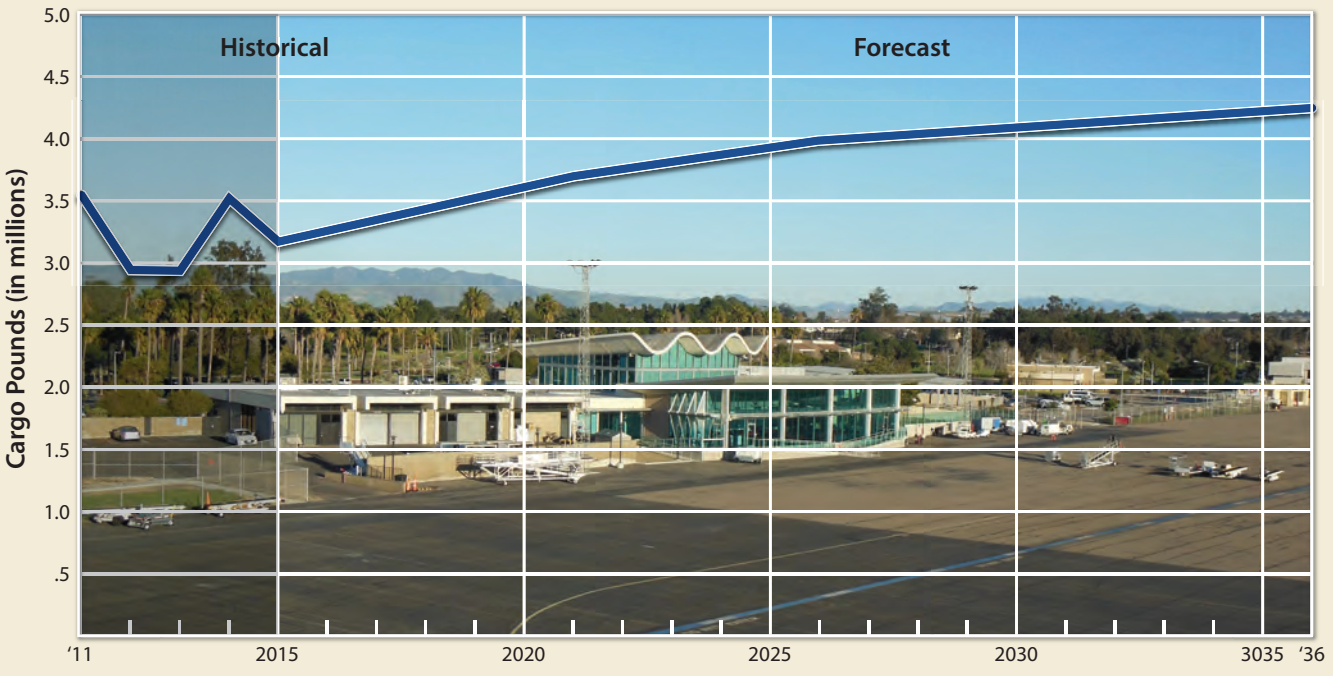


TABLE 2Q
Cargo Activity
Santa Maria Public Airport

Year	SMX Air Cargo Total (lbs.)[1]	U.S. Revenue Ton-Miles[2]	SMX Market Share	Air Cargo Operations[3]
2011	3,547,947	12,046,875,433	0.0295%	2,170
2012	2,944,328	12,246,427,009	0.0240%	2,090
2013	2,938,960	12,349,665,454	0.0238%	2,460
2014	3,520,765	12,676,373,435	0.0278%	2,456
2015	3,172,804	13,088,697,725	0.0242%	1,972
FORECAST				
2021	3,706,740	14,268,993,204	0.0260%	2,470
2026	3,985,905	14,382,080,906	0.0277%	2,660
2036	4,245,339	14,414,835,021	0.0295%	2,830

Historical data sources: [1]Airport records; [2]*FAA Aerospace Forecasts Fiscal Years 2016-2036;* [3]AirportIQ Data Center Forecasts – Coffman Associates analysis.

GENERAL AVIATION FORECASTS

General aviation encompasses all portions of civil aviation except commercial service and military operations. To determine the types and sizes of facilities that should be planned to accommodate general aviation activity at SMX, certain elements of this activity must be forecast. These indicators of general aviation demand include based aircraft, aircraft fleet mix, and annual operations.

NATIONAL GENERAL AVIATION TRENDS

The FAA forecasts the fleet mix and hours flown for single engine piston aircraft, multi-engine piston aircraft, turboprops, business jets, piston and turbine helicopters, light sport, experimental, and others (gliders and balloons). The FAA forecasts "active aircraft," not total aircraft. An active aircraft is one that is flown at least one hour during the year. From 2010 through 2013, the FAA undertook an effort to have all aircraft owners re-register their aircraft. This effort resulted in a 10.5 percent decrease in the number of active general aviation aircraft, mostly in the piston category.

The long term outlook for general aviation is favorable, led by gains in turbine aircraft activity. The active general aviation fleet is forecast to increase 0.2 percent a year between 2015 and 2036, equating to an absolute increase in the fleet of about 7,000 units. While steady growth in both GDP and corporate profits results in continued growth of the turbine and rotorcraft fleets, the largest segment of the fleet – fixed-wing piston aircraft - continues to shrink over the FAA's forecast.

In 2015, the general aviation industry experienced its first decline in aircraft deliveries since 2010. While the single engine piston aircraft deliveries by U.S. manufacturers continued to grow and business jet deliveries recorded a very modest increase compared to the previous year, turboprop deliveries declined by 10 percent, and the much smaller category of multi-engine piston deliveries declined 40 percent.

In 2015, the FAA estimated there were 138,135 piston-powered aircraft in the national fleet. The total number of piston-powered aircraft in the fleet is forecast to decline by 0.7 percent from 2015-2036, resulting in 118,855 by 2036. This includes -0.7 percent annually for single engine pistons and -0.5 percent for multi-engine pistons.

Total turbine aircraft are forecast to grow at an annual growth rate of 2.1 percent through 2036. The FAA estimates there were 29,040 turbine-powered aircraft in the national fleet in 2015, and there will be 44,655 by 2036. This includes annual growth rates of 1.3 percent for turboprops, 2.5 percent for business jets, and 2.3 percent for turbine helicopters.

While comprising a much smaller portion of the general aviation fleet, experimental aircraft, typically identified as home-built aircraft, are projected to grow annually by 0.9 percent through 2036. The FAA estimates there were 26,435 experimental aircraft in 2016, and these are projected to grow to 31,640 by 2036. Sport aircraft are forecast to grow 4.5 percent annually through the long term, growing from 2,410 in 2015 to 6,100 by 2036. **Exhibit 2E** presents the historical and forecast U.S. active general aviation aircraft.

The FAA also forecasts total operations based upon Activity at control towers across the U.S. Operations are categorized as air carrier, air taxi/commuter, general aviation, and military.

General aviation operations, both local and itinerant, declined significantly as a result of the 2008-2009 recession and subsequent slow recovery. Through 2036, total general aviation operations are forecast to grow 0.3 percent annually. Air taxi/commuter operations are forecast to decline by 3.4 percent through 2025, and then increase slightly through the remainder of the forecast period. Overall, air taxi/commuter operations are forecast to decline by 1.1 percent annually from 2015 through 2036.

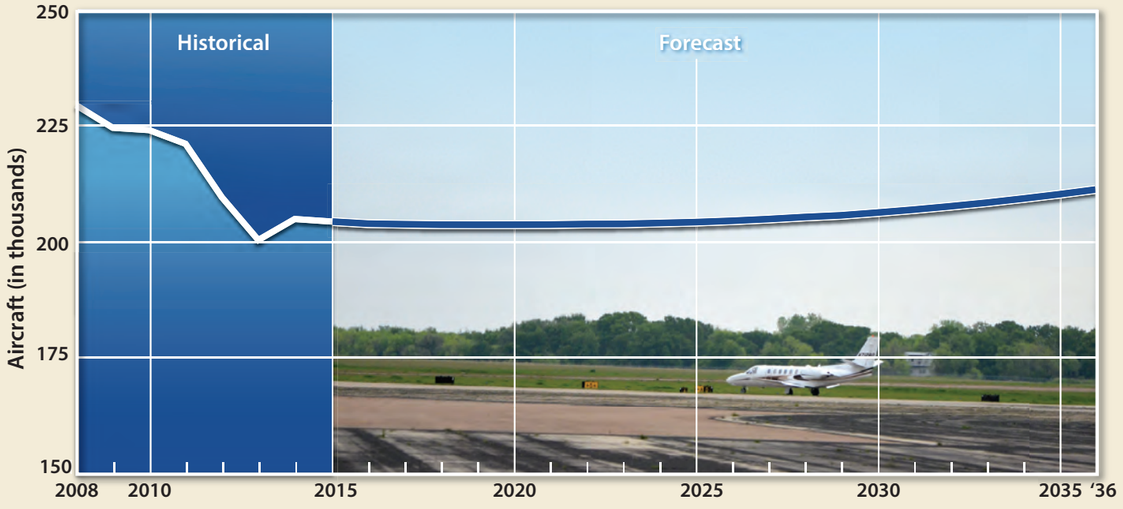
General Aviation Aircraft Shipments and Revenue

As previously discussed, the 2008-2009 economic recession has had a negative impact on general aviation aircraft production, and the industry has been slow to recover. Aircraft manufacturing declined for three straight years from 2008 through 2010. According to the General Aviation Manufacturers Association (GAMA), there is optimism that aircraft manufacturing will stabilize and return to growth, which has been evidenced since 2011. **Table 2R** presents historical data related to general aviation aircraft shipments.

Worldwide shipments of general aviation airplanes decreased in 2015, with a total of 2,331 units delivered around the globe compared to 2,454 units in 2014. Worldwide general aviation billings were also lower than the previous year. In 2015, $24 billion in new general aviation aircraft were shipped, but yearend results were mixed across the market segments. Results were impacted by economic uncertainty in key markets, including Brazil, Europe, and China; however, the U.S. experienced stronger delivery numbers, which is cause for cautious optimism.

U.S. ACTIVE GENERAL AVIATION AIRCRAFT

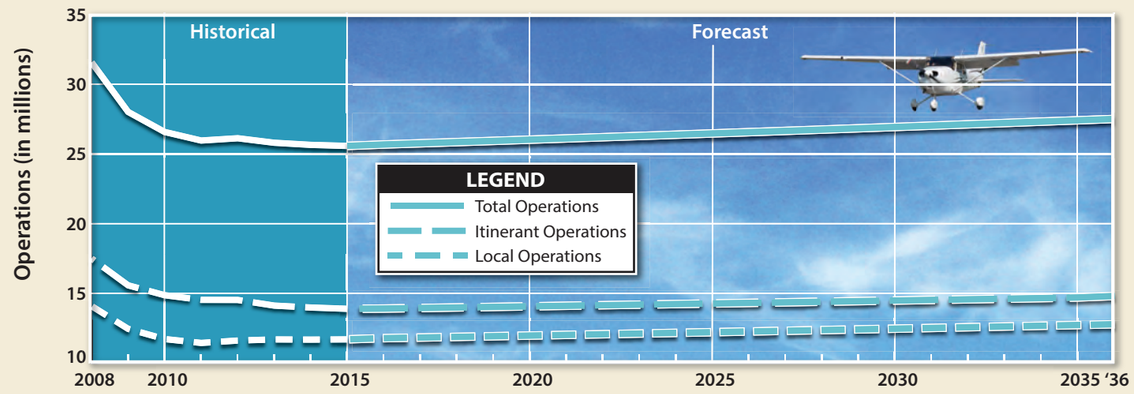
	2015	2020	2025	2035	AAGR 2015-2036
Fixed Wing					
Piston					
Single Engine	125,050	120,485	115,960	107,780	-0.7%
Multi-Engine	13,085	12,810	12,545	11,765	-0.5%
Turbine					
Turboprop	9,570	9,190	9,600	12,280	1.3%
Turbojet	12,475	13,680	15,340	20,175	2.5%
Rotorcraft					
Piston	3,245	3,690	4,090	4,915	2.1%
Turbine	6,995	8,020	8,990	11,020	2.3%
Experimental					
	26,435	27,485	28,500	31,365	0.9%
Sport Aircraft					
	2,410	3,310	4,230	5,940	4.5%
Other					
	4,615	4,525	4,490	4,445	-0.2%
Total Pistons	**141,380**	**136,985**	**132,595**	**124,460**	**-0.6%**
Total Turbines	**29,040**	**30,890**	**33,930**	**43,475**	**2.1%**
Total Fleet	**203,880**	**203,195**	**203,745**	**209,685**	**0.2%**



Notes: An active aircraft is one that has a current registration and was flown at least one hour during the calendar year.

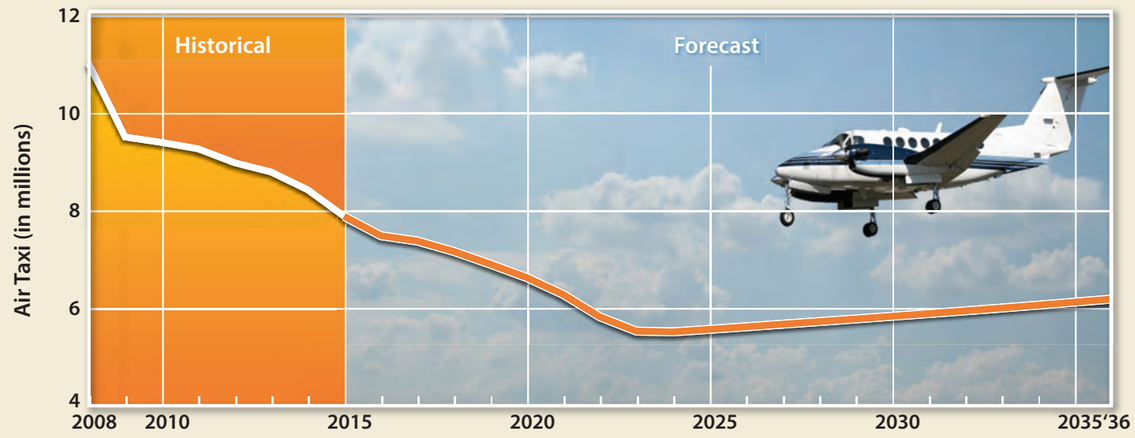
U.S. GENERAL AVIATION OPERATIONS

	2015	2020	2025	2035	AAGR 2015-2036
Itinerant					
	13,886,867	14,062,324	14,267,238	14,697,64	0.3%
Local					
	11,691,349	11,963,428	12,205,656	12,718,674	0.4%
Total GA Operations	**25,578,216**	**26,025,752**	**26,472,894**	**27,416,314**	**0.3%**



U.S. GENERAL AVIATION AIR TAXI

	2015	2020	2025	2035	AAGR 2015-2036
Air Taxi/Commuter Operations					
Itinerant	7,895,017	6,640,509	5,579,158	6,137,321	-1.1%



Source: FAA Aerospace Forecast - Fiscal Years 2016-2036

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TABLE 2R
Annual General Aviation Airplane Shipments
Manufactured Worldwide and Factory Net Billings

Year	Total	SEP	MEP	TP	J	Net Billings ($millions)
1994	1,132	544	77	233	278	3,749
1995	1,251	605	61	285	300	4,294
1996	1,437	731	70	320	316	4,936
1997	1,840	1043	80	279	438	7,170
1998	2,457	1508	98	336	515	8,604
1999	2,808	1689	112	340	667	11,560
2000	3,147	1,877	103	415	752	13,496
2001	2,998	1,645	147	422	784	13,868
2002	2,677	1,591	130	280	676	11,778
2003	2,686	1,825	71	272	518	9,998
2004	2,962	1,999	52	319	592	12,093
2005	3,590	2,326	139	375	750	15,156
2006	4,054	2,513	242	412	887	18,815
2007	4,277	2,417	258	465	1,137	21,837
2008	3,974	1,943	176	538	1,317	24,846
2009	2,283	893	70	446	874	19,474
2010	2,024	781	108	368	767	19,715
2011	2,120	761	137	526	696	19,042
2012	2,164	817	91	584	672	18,895
2013	2,353	908	122	645	678	23,450
2014	2,454	986	143	603	722	24,499
2015	2,331	946	110	557	718	24,120

SEP - Single Engine Piston; MEP - Multi-Engine Piston; TP - Turboprop; J - Turbofan/Turbojet

Source: General Aviation Manufacturers Association *2015 General Aviation Statistical Databook & 2016 Industry Outlook*

Business Jets: General aviation manufacturers delivered 718 business jets in 2015, as compared to 722 units in 2014. The industry's continued investment in new products helped maintain the delivery rate for business jets.

Turboprops: In 2015, 557 turboprop airplanes were delivered to customers around the world, a decline from the 603 delivered in 2014. Overall, the turboprop market is still significantly stronger over the past five years compared to years prior to 2011.

Pistons: Piston deliveries declined from 1,129 units during 2014 to 1,056 in 2015. Two-thirds of piston shipments were to North American customers, a significant increase from the 2014 North American market share of 55.1 percent.

BASED AIRCRAFT

The number of based aircraft is the most basic indicator of general aviation demand. By first developing a forecast of based aircraft for the Airport, other general aviation activity and demand can be projected.

The process of developing forecasts of based aircraft begins with an analysis of aircraft ownership in the primary general aviation service area through a review of historical aircraft registrations.

Area Aircraft Ownership (Registered Aircraft)

The primary service area for general aviation demand typically extends about 30 miles from an airport. As was discussed in Chapter One, there are several other public-use airports within that 30-mile radius from SMX, including the Oceano County Airport and San Luis Regional Airport to the northwest in San Luis Obispo County, and Lompoc and Santa Ynez Airport to the south within Santa Barbara County. Convenience, meaning close proximity to an airport, is typically the most important factor aircraft owners/operators consider when choosing where to base their aircraft. For this reason, the primary service area for based aircraft is the immediate area of the City of Santa Maria and northern Santa Barbara County and extending into the southern portion of San Luis Obispo County. As such, an analysis of the aircraft registrations in both counties was made.

Table 2S presents the history of registered aircraft in Santa Barbara County and San Luis Obispo County from 1993 through 2015. These figures are derived from the FAA aircraft registration database that categorizes registered aircraft by county based on the zip code of the registered aircraft. Although this information generally provides a correlation to based aircraft, it is not uncommon for some aircraft to be registered in a county, but based at an airport outside the county or vice versa.

In 2015, there were 1,178 aircraft registered in both counties combined. Registered aircraft are fairly evenly split between the two counties, with Santa Barbara County at 52.5 percent and San Luis Obispo County at 47.5 percent in 2015. Registered aircraft in the counties grew steadily from 1,193 in 1993 to 1,403 in 2007. Since 2007, registrations have declined every year, dropping to 1,178 in 2015. The most significant single year declines came in 2011 and 2012, dropping 99 and 54 registered aircraft each year respectively. These declines are likely due to the FAA's effort to create a more accurate aircraft registration database by requiring aircraft owners to re-register their aircraft. On July 20,

TABLE 2S
Registered Aircraft in Santa Barbara County and San Luis Obispo County

Year	Santa Barbara County	San Luis Obispo County	Total
1993	647	546	1,193
1994	657	537	1,194
1995	632	517	1,149
1996	645	512	1,157
1997	650	515	1,165
1998	674	518	1,192
1999	666	547	1,213
2000	695	568	1,263
2001	732	589	1,321
2002	728	582	1,310
2003	743	597	1,340
2004	756	615	1,371
2005	748	625	1,373
2006	737	628	1,365
2007	761	642	1,403
2008	763	648	1,411
2009	744	643	1,387
2010	746	635	1,381
2011	735	628	1,363
2012	681	583	1,264
2013	652	558	1,210
2014	636	548	1,184
2015	619	559	1,178
CAGR 1993-2015	**-0.2%**	**0.1%**	**-0.1%**

CAGR: Compound annual growth rate
Source: *FAA Aircraft Registry Database; FAA Census of U.S. Civil Aircraft*

2010, the FAA issued a rule that terminated the registration of all aircraft registered before October 1, 2010 over a three-year period and required re-registration to retain U.S. civil aircraft status. As a result, previously registered aircraft that may have been sold, scrapped/destroyed, or registered to multiple addresses were dropped from the database. With the number of registered aircraft identified, several projections of future registered aircraft are considered.

Several regression and time-series analyses were first considered. Because of the declining trend in several variables, including registered aircraft and U.S. active aircraft, regression and time-series analyses did not result in reliable forecasts. As a result, these analytical methods were not considered further.

Exhibit 2F presents four projections of registered aircraft for Santa Barbara and San Luis Obispo counties. Two projections consider the relationship between population and registered aircraft. In 2015, there was 1.63 registered aircraft per 1,000 people in Santa Barbara and San Luis Obispo counties. By keeping this ratio as a constant, a forecast emerges that results in a 0.6 percent CAGR and 1,337 registered aircraft by 2036. A second projection considers the potential for the ratio to increase to a historic average of 1.93 registered aircraft per 1,000 people, which results in 1,580 registered aircraft and a CAGR of 1.4 percent.

The next projections consider the relationship of registered aircraft to the number of national active aircraft. In 2015, registered aircraft in Santa Barbara and San Luis Obispo counties represented 0.578 percent of the national fleet. By maintaining this as a constant ratio, registered aircraft are forecast to grow at a CAGR of 0.2 percent, reaching 1,178 registered aircraft by 2036. A second market share analysis considers increasing the market share to the historic average of 0.610 percent, which results in 1,286 registered aircraft by 2036 and a CAGR of 0.4 percent.

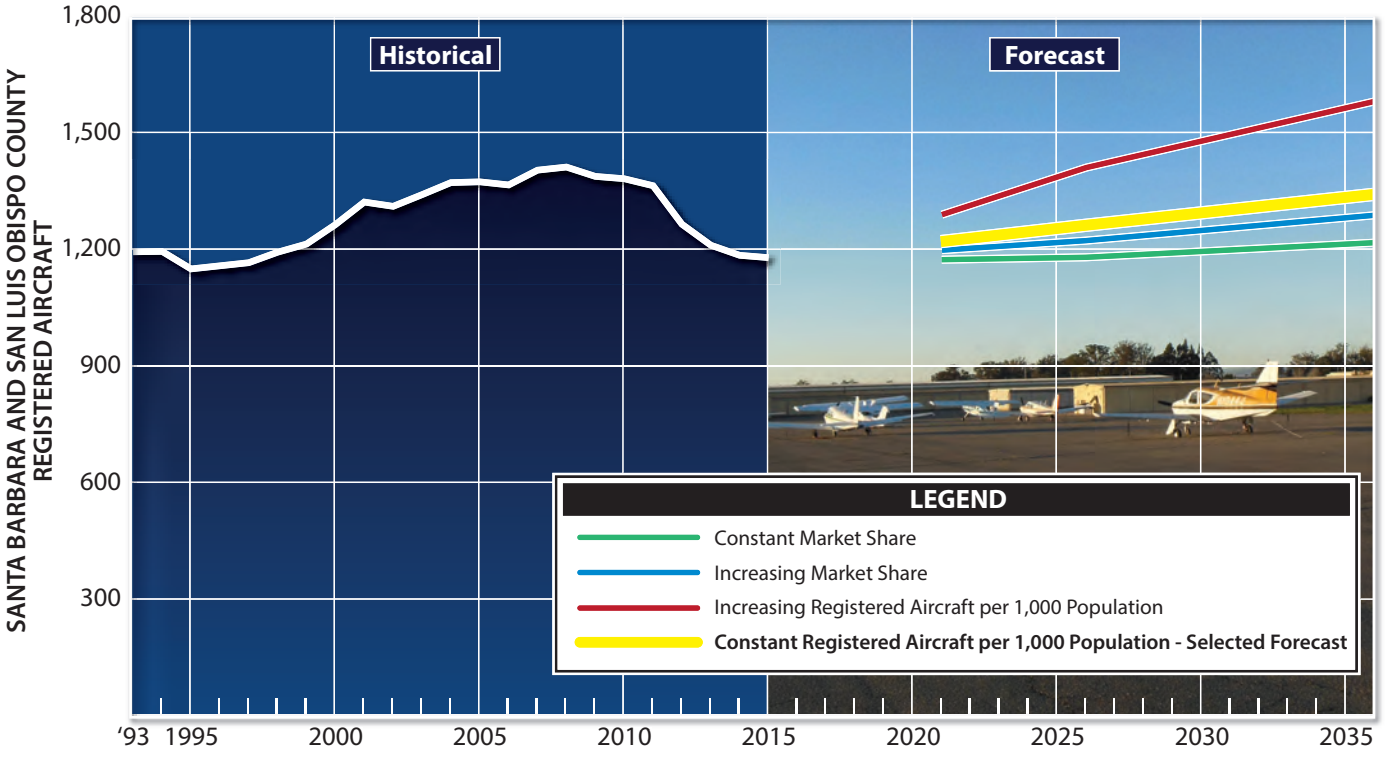
While each of these projections are considered reasonable, the constant ratio of registered aircraft per 1,000 population will be carried forward as the selected forecast. This forecast was selected since it accounts for the projected growth in population for the regional area. Considering historic trends, the increasing ratio of registered aircraft per 1,000 population is likely overly optimistic, while the market share projections do not account for the localized growth that is projected to occur in the Santa Maria area.

The registered aircraft projection is one data point to be used in the development of a based aircraft forecast. The following section will present several potential based aircraft forecasts, as well as the selected based aircraft forecast, to be utilized in this study.

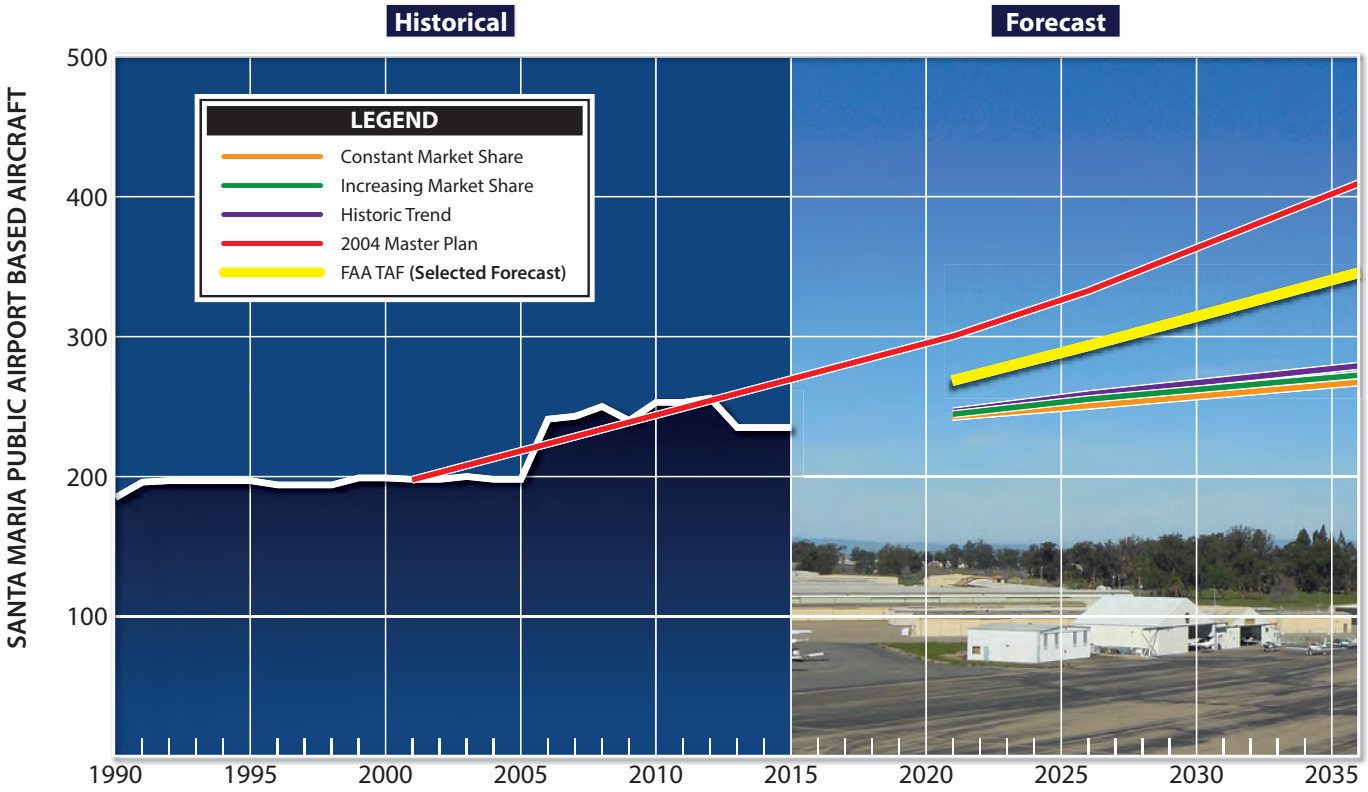
Based Aircraft Forecast

Determining the number of based aircraft at an airport can be a challenging task. Aircraft storage can be somewhat transient in nature, meaning aircraft owners can and do move their aircraft. Some aircraft owners may store their aircraft at an airport for only part of the year. For many years, the FAA did not require based aircraft records; therefore, historical records are often incomplete or non-existent. For this study, a based aircraft history was established by using available FAA Form 5010 *Airport Master*

REGISTERED AIRCRAFT FORECASTS



BASED AIRCRAFT FORECASTS



Record data in combination with the FAA TAF. According to SMPAD staff, the current based aircraft count stands at 235.

The FAA TAF is an initial forecast source for based aircraft at airports. The 2016 TAF estimated that there were 239 based aircraft in 2015, which is forecast to grow to 346 by 2036 for a CAGR of 1.8 percent. The 2016 TAF slightly overestimates the current number of based aircraft by four aircraft. Another previously prepared forecast for based aircraft at SMX is the previous Master Plan, which has a base year of 2001, which reports based aircraft growing to 300 by 2021 at a CAGR of 2.7 percent. Extrapolating that forecast results in 410 based aircraft by 2036.

Several new forecasts of based aircraft for SMX have been developed. As with forecasts of registered aircraft, the goal is to develop a planning envelope of reasonable forecasts, then select a 20-year planning forecast for use in this study. The new forecasts are summarized in **Table 2T**.

Several market share forecasts for based aircraft have been prepared utilizing the previously developed forecast of combined registered aircraft in Santa Barbara County and San Luis Obispo County. In 2015, SMX, with 235 based aircraft, accounted for 19.9 percent of the registered aircraft in both counties. By maintaining this percentage as a constant, a long-term forecast of based aircraft emerges which results in 267 based aircraft by 2036. A second projection considers an increasing SMX's market share to its historic high of 20.3 percent, resulting in 271 based aircraft by 2036.

Another forecast was prepared, which considers the historic growth rate of based aircraft. Since 1993, based aircraft at SMX have grown from 197 to 235 at a CAGR of 0.8 percent. Maintaining that historic growth trend through the forecast years results in 278 based aircraft by 2036.

After examining each projection, the FAA TAF projection will be carried forward as the selected forecast. While there have not been large fluctuations in based aircraft in the past 20 years, there is potential for continued growth at SMX. The regional area is projected to grow considerably in population and economic vitality. Additionally, the Airport has available land for the development of new aircraft storage hangars, which is a significant component of based aircraft growth. Should the region grow as projected and should new storage hangars be made available over time, it is reasonable that based aircraft could grow as projected by the FAA TAF over the next 20 years. **Exhibit 2F** illustrates the based aircraft forecasts.

TABLE 2T
Based Aircraft Forecast
Santa Maria Public Airport

Year	Santa Barbara County/San Luis Obispo County Registered Aircraft	SMX Based Aircraft	Market Share
1993	1,193	197	16.5%
1994	1,194	197	16.5%
1995	1,149	197	17.1%
1996	1,157	194	16.8%
1997	1,165	194	16.7%
1998	1,192	194	16.3%
1999	1,213	199	16.4%
2000	1,263	199	15.8%
2001	1,321	198	15.0%
2002	1,310	198	15.1%
2003	1,340	200	14.9%
2004	1,371	198	14.4%
2005	1,373	198	14.4%
2006	1,365	241	17.7%
2007	1,403	243	17.3%
2008	1,411	250	17.7%
2009	1,387	240	17.3%
2010	1,381	253	18.3%
2011	1,363	253	18.6%
2012	1,264	256	20.3%
2013	1,210	235	19.4%
2014	1,184	235	19.8%
2015	1,178	235	19.9%
CAGR (1993-2015)	-0.1%	0.8%	
Constant Share Projection			
2021	1,217	243	19.9%
2026	1,259	251	19.9%
2036	1,337	267	19.9%
CAGR (2015-2036)	0.6%	0.6%	
Increasing Share Projection			
2021	1,217	244	20.1%
2026	1,259	254	20.2%
2036	1,337	271	20.3%
CAGR (2015-2036)	0.6%	0.7%	
Historic Growth Trend Projection			
2021	1,217	247	20.3%
2026	1,259	257	20.4%
2036	1,337	278	20.8%
CAGR (2015-2036)	0.6%	0.8%	
2016 TAF – Selected Forecast			
2021	1,217	**269**	22.1%
2026	1,259	**294**	23.4%
2036	1,337	**346**	25.9%
CAGR (2015-2036)	0.6%	**1.9%**	
2013 SBCAG *2040 Regional Transportation Plan*[1]			
2021	1,217	300	24.7%
2026	1,259	333	26.5%
2036	1,337	410	30.7%
CAGR (2015-2036)	0.6%	2.7%	

[1]Forecast extrapolated to 2026 and 2036 by Coffman Associates.
CAGR: Compound Annual Growth Rate

BASED AIRCRAFT FLEET MIX

The fleet mix of based aircraft is oftentimes more important to airport planning and design than the total number of aircraft. For example, the presence of one or a few large business jets can impact design standards for the runway and taxiway system more than a large number of smaller single engine piston-powered aircraft.

The based aircraft fleet mix forecast for SMX is presented in **Table 2U**. The source for the fleet mix data is a combination of the FAA Form 5010, *Airport Master Record* and SMPAD records. The majority of based aircraft (81.3 percent) are small single-engine piston aircraft. Forecasts of based aircraft fleet mix have been developed based upon the FAA's projections of the national fleet mix over the same time period and considering the potential for growth in business aviation activity at SMX. The result is an increase in more sophisticated aircraft within the turboprop, jet, and helicopter categories.

Ultimately, the jet category is the leading growth category, anticipated to grow by 6.4 percent over its current share, increasing by 25 aircraft over the next 20 years. The turboprop category is projected to grow by 16 aircraft and the helicopter category is projected to grow by nine aircraft. The single-engine piston category, while decreasing its share, is still projected to account for the vast majority of based aircraft, growing by 65 aircraft by 2036. Multi-engine piston aircraft is projected to decrease by eight aircraft by 2036, and the other category, which includes gliders and ultralights, is projected to grow by four aircraft.

TABLE 2U
Based Aircraft Fleet Mix
Santa Maria Public Airport

	EXISTING		FORECAST					
Aircraft Type	**2015**	**%**	**2021**	**%**	**2026**	**%**	**2036**	**%**
Single Engine	191	81.3%	219	81.4%	230	78.2%	256	74.0%
Multi-Engine	13	5.5%	11	4.1%	9	3.1%	5	1.4%
Turboprop	2	0.9%	4	1.5%	10	3.4%	18	5.2%
Jet	6	2.6%	10	3.7%	15	5.1%	31	9.0%
Helicopter	21	8.9%	23	8.6%	26	8.8%	30	8.7%
Other	2	0.9%	2	0.7%	4	1.4%	6	1.7%
Totals	**235**	**100.0%**	**269**	**100.0%**	**294**	**100.0%**	**346**	**100.0%**

Source: FAA Form 5010, *Airport Master Record*; SMPAD Records; Coffman Associates Analysis

GENERAL AVIATION OPERATIONS

General aviation (GA) operations are classified by the airport traffic control tower (ATCT) as either local or itinerant. A local operation is a take-off or landing performed by an aircraft that operates within sight of an airport, or which executes simulated approaches or touch-and-go operations at an airport. Itinerant operations are those performed by aircraft with a specific origin or destination away from an airport.

Generally, local operations are characterized by training operations. Typically, itinerant operations increase with business and commercial use, since business aircraft are operated on a higher frequency.

Itinerant Operations

Table 2V summarizes GA itinerant operations at SMX from 2000 through 2015. GA itinerant operations have been on a gradual decline since 2000. Since 2012, SMX has averaged 17,700 annual itinerant GA operations, while from 2000 to 2011, SMX averaged almost 30,000 annually. Much of this decline can be attributed to declining GA activity nationwide. National GA itinerant operations have been declining since at least 2000, but have taken a steeper decline since the beginning of the recession and have yet to recover; however, the FAA forecasts a reversal in 2016. Through 2036, the FAA forecasts an annual growth rate of 0.3 percent for itinerant GA operations.

Three forecasts were examined for future itinerant GA operations. The first forecast considers maintaining SMX's market share constant at 0.1276 percent of national itinerant GA operations as forecast by the FAA, which yields 18,800 operations by 2036. This is a CAGR of 0.3 percent. Another market share forecast considers the potential for SMX to reach its 15-year average market share of 0.1513 percent by 2036, which results in 22,200 GA itinerant operations. This projection represents a CAGR of 1.1 percent.

The third projection considers the relationship between based aircraft and itinerant GA operations. In 2015, there were 75 itinerant GA operations per based aircraft. When maintaining this ratio, the forecast results in 26,100 itinerant GA operations by 2036, growing at a CAGR of 1.9 percent.

The 2016 FAA TAF also presents an itinerant GA operations forecast, which is included in the table. The TAF forecasts itinerant GA operations to grow even slower than the national rate over the next 20 years, with an overall CAGR of 0.2 percent, which takes SMX to 18,469 by 2036.

Itinerant GA operations at SMX have held fairly steady over the past four years as national itinerant GA operations have continued to decline. As a result, its market share has grown slightly. As recently as 2010, SMX had a market share of 0.1521 percent, which is very near the historic average of 0.1257 percent. It is reasonable to consider SMX's market share reaching that level once again. Therefore, the historic average market share projection was chosen as the selected forecast for the master plan. **Exhibit 2G** presents the itinerant GA operations forecasts.

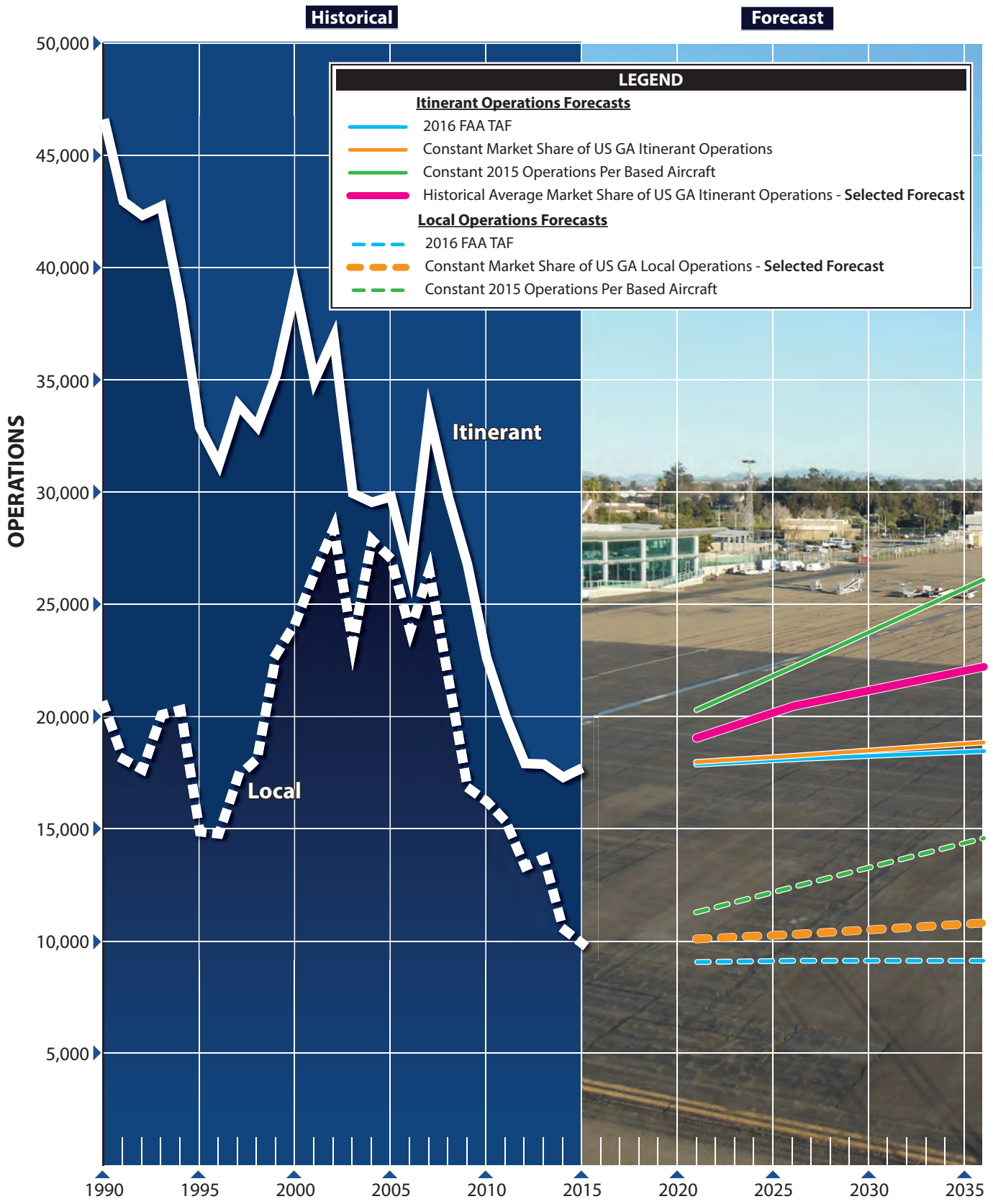

Historical
Forecast
LEGEND
Itinerant Operations Forecasts
2016 FAA TAF
Constant Market Share of US GA Itinerant Operations
Constant 2015 Operations Per Based Aircraft
Historical Average Market Share of US GA Itinerant Operations - Selected Forecast
Local Operations Forecasts
2016 FAA TAF
Constant Market Share of US GA Local Operations - Selected Forecast
Constant 2015 Operations Per Based Aircraft
OPERATIONS
50,000
45,000
40,000
35,000
30,000
25,000
20,000
15,000
10,000
5,000
Itinerant
Local
1990
1995
2000
2005
2010
2015
2020
2025
2030
2035

TABLE 2V
General Aviation Itinerant Operations Forecast
Santa Maria Public Airport

Year	SMX GA Itinerant Ops[1]	US GA Itinerant Ops[2] (millions)	Market Share Itinerant Ops	SMX Based Aircraft[3]	Itinerant Ops Per Based Aircraft
2000	39,112	22.84	0.1712%	199	197
2001	34,974	21.43	0.1632%	198	177
2002	36,895	21.45	0.1720%	198	186
2003	29,944	20.23	0.1480%	200	150
2004	29,548	20.01	0.1477%	198	149
2005	29,798	19.32	0.1543%	198	150
2006	26,410	18.74	0.1409%	241	110
2007	33,429	18.58	0.1799%	243	138
2008	29,767	17.49	0.1702%	250	119
2009	26,766	15.57	0.1719%	240	112
2010	22,611	14.86	0.1521%	253	89
2011	20,006	14.53	0.1377%	253	79
2012	17,915	14.52	0.1234%	256	70
2013	17,885	14.12	0.1267%	235	76
2014	17,301	13.98	0.1238%	235	74
2015	17,718	13.89	0.1276%	235	75
CAGR (2000-2015)	-5.1%	-3.3%		1.1%	
Constant 2015 Market Share of U.S. GA Itinerant Ops					
2021	17,900	14.06	0.1276%	269	67
2026	18,200	14.27	0.1276%	294	62
2036	18,800	14.70	0.1276%	346	54
CAGR (2015-2036)	0.3%	0.3%		1.9%	
Historic Average Market Share of U.S. GA Itinerant Ops – Selected Forecast					
2021	**19,100**	14.06	0.1355%	269	71
2026	**20,500**	14.27	0.1434%	294	70
2036	**22,200**	14.70	0.1513%	346	64
CAGR (2015-2036)	**1.1%**	0.3%		1.9%	
Constant 2015 Operations Per Based Aircraft					
2021	20,300	14.06	0.1444%	269	75
2026	22,200	14.27	0.1556%	294	75
2036	26,100	14.70	0.1776%	346	75
CAGR (2015-2036)	1.9%	0.3%		1.9%	
2016 FAA TAF					
2021	17,924	14.06	0.1275%	269	67
2026	18,104	14.27	0.1269%	294	62
2036	18,469	14.70	0.1257%	346	53
CAGR (2015-2036)	0.2%	0.3%		1.9%	

[1] Historical data from ATCT records as reported to FAA.
[2] FAA Forecasts Fiscal Years 2016-2036
[3] FAA Form 5010, *Airport Master Record*; FAA TAF; SMPAD Records
CAGR - Compound Annual Growth Rate
Source: Coffman Associates analysis

Local Operations

A similar methodology was utilized to forecast local GA operations. **Table 2W** depicts the history of local operations at SMX and examines its historic market share of GA local operations at towered airports in the United States. Similar to GA itinerant operations, local GA operations have been on the decline both at SMX and nationwide, most significantly since 2008 through 2015. SMX experienced its lowest number of local GA operations level in 2015 with 9,896. The FAA's national projections estimate a modest 0.4 percent annual growth rate through 2036.

TABLE 2W
General Aviation Local Operations Forecast
Santa Maria Public Airport

Year	SMX GA Local Ops[1]	US GA Local Ops[2] (millions)	Market Share Local Ops	SMX Based Aircraft[3]	Local Ops Per Based Aircraft
2000	24,183	17.03	0.1420%	199	122
2001	26,389	16.19	0.1630%	198	133
2002	28,386	16.17	0.1755%	198	143
2003	23,264	15.29	0.1522%	200	116
2004	27,865	14.96	0.1863%	198	141
2005	27,034	14.85	0.1820%	198	137
2006	23,827	14.38	0.1657%	241	99
2007	26,487	14.56	0.1819%	243	109
2008	21,688	14.08	0.1540%	250	87
2009	16,842	12.45	0.1353%	240	70
2010	16,230	11.18	0.1452%	253	64
2011	15,332	11.44	0.1341%	253	61
2012	13,336	11.61	0.1149%	256	52
2013	13,698	11.69	0.1172%	235	58
2014	10,552	11.68	0.0904%	235	45
2015	9,896	11.69	0.0846%	235	42
CAGR (2000-2015)	-5.8%	-2.5%		1.1%	
Constant 2015 Market Share of US GA Local Ops – Selected Forecast					
2021	**10,100**	11.96	0.0846%	269	38
2026	**10,300**	12.21	0.0846%	294	35
2036	**10,800**	12.72	0.0846%	346	31
CAGR (2015-2036)	**0.4%**	0.4%		1.9%	
Constant 2015 Operations Per Based Aircraft					
2021	11,300	11.96	0.0945%	269	42
2026	12,400	12.21	0.1016%	294	42
2036	14,600	12.72	0.1148%	346	42
CAGR (2015-2036)	1.9%	0.4%		1.9%	
2016 FAA TAF					
2021	9,124	11.96	0.0763%	269	34
2026	9,129	12.21	0.0748%	294	31
2036	9,139	12.72	0.0719%	346	26
CAGR (2015-2036)	-0.4%	0.4%		1.9%	

[1] Historical data from ATCT records as reported to FAA.
[2] FAA Forecasts Fiscal Years 2016-2036
[3] Airport records and FAA TAF
CAGR - Compound Annual Growth Rate
Source: Coffman Associates analysis

The first projection of local GA operations considers SMX's market share of national local GA operations as counted by the FAA. This forecast maintains SMX's 2015 market share at 0.0.846 percent, resulting in 10,800 local GA operations by 2036 with a CAGR of 0.4 percent. The second forecast applies a constant number of local GA operations per based aircraft. This forecast results in 14,600 local GA operations by 2036 and a CAGR of 1.9 percent. The 2016 FAA TAF is also presented in the table, which forecasts local GA operations to decline to 9,124 by 2021, then essentially remain static, reaching 9,139 operations by 2036, which results in a CAGR of -0.4 percent.

Due to the declining trend of local GA activity at SMX and lower projected growth for this market segment by the FAA, it was considered more reasonable to select the constant market share projection for SMX. While it is not expected to return to historic high levels, it is reasonable to project SMX to at least maintain its current market share.

OTHER AIR TAXI

Other air taxi operations as reported by the ATCT include the air charter operators associated with various for-hire general aviation operations. Some operations by aircraft operated under fractional ownership programs are also counted as other air taxi operations. Since the airline operations and cargo operations have been forecast, this section reviews the growth potential for the air carrier charters and other air taxi operations.

Air carrier charter operations are those conducted commercially by aircraft having a seating capacity of 60 or more and/or a maximum payload capacity of 18,000 pounds. Air taxi operations can include small commercial service aircraft operations as well as general aviation type aircraft for the "on-demand" commercial transport of persons and property in accordance with 14 Code of Federal Regulations (CFR) Part 135 and Subchapter K of 14 CFR Part 91. A summary of air carrier charter and other air taxi operations since 2003 is provided in **Table 2Y**.

Based upon ATCT records, there were 41 air carrier charter operations in 2015, and 5,838 other air taxi operations. The air carrier charter operations category has been fairly consistent over the years, averaging approximately 50 annual air carrier operations. Based on this historic trend, it is not anticipated that this category will grow significantly in the future; therefore, for the purposes of this study, air carrier charter operations are forecast at 50 through 2036.

Historic other air taxi operations have also not fluctuated significantly over the years, averaging approximately 6,800 since 2003. More recently, from 2011 to 2014, other air taxi operations have averaged approximately 7,700 each year. Other air taxi operations experienced a drop off in 2015, down approximately 25 percent from 2014. The forecast for other air taxi operations assumes a return to the historic average level in the 5-year timeframe and continued growth through 2036, reaching 8,600 annual operations. This forecast results in a CAGR of 1.8 percent.

TABLE 2Y
Air Carrier Charter/Other Air Taxi
Santa Maria Public Airport

Year	Air Carrier Charter Operations	Other Air Taxi Operations
2003	53	7,043
2004	56	6,342
2005	50	6,905
2006	N/A	6,237
2007	26	5,606
2008	N/A	6,789
2009	34	6,401
2010	37	6,469
2011	58	7,213
2012	17	7,927
2013	138	7,798
2014	47	7,769
2015	41	5,838
Forecasts		
2021	50	6,800
2026	50	7,700
2036	50	8,600
CAGR	0.9%	1.9%

Sources: FAA *Airline Service Quality Performance System* data; ATCT counts; Coffman Associates analysis.

MILITARY OPERATIONS FORECAST

Military operators routinely utilize SMX for various training operations and activities. **Table 2Z** presents a summary of military operations, both local and itinerant, for the past 15 years. Tower records indicate that a wide variety of military aircraft have utilized SMX in recent years, including the Beechcraft King Air 200 and 350, the Lockheed C-130, Boeing DC-10, and several helicopters such as the Eurocopter EC-135/145, and Sikorsky SH-60. Military operations have increased in recent years, growing from 419 in 2009 to 1,171 in 2015. Developing a reliable forecast of military activity is inherently difficult, primarily because the military mission can change rapidly. The FAA TAF projects military operations to remain near the 2015 levels through 2036. Therefore, the master plan will carry forward a similar forecast of 450 itinerant military and 700 local military operations through 2036.

TABLE 2Z
Military Operations Forecasts
Santa Maria Public Airport

Year	Military (Itinerant)	Military (Local)	Total Military
2000	460	571	1,031
2001	408	648	1,056
2002	565	932	1,497
2003	397	684	1,081
2004	463	840	1,303
2005	433	1,014	1,447
2006	444	688	1,132
2007	341	664	1,005
2008	275	298	573
2009	225	194	419
2010	308	140	448
2011	268	364	632
2012	274	312	586
2013	253	638	891
2014	350	644	994
2015	445	726	1,171
Selected Forecast			
2021	450	700	1,150
2026	450	700	1,150
2036	450	700	1,150

Sources: Historical data from ATCT records as reported to FAA.
Forecast – Coffman Associates analysis.

PEAKING CHARACTERISTICS

Many airport facility needs are related to the levels of activity during peak periods. The peak periods that will be used in developing facility requirements for this study are as follows:

- **Peak Month** – The calendar month when peak aircraft operations occur.
- **Design Day** – The average day in the peak month. This indicator is derived by dividing the peak month operations by the number of days in a month.
- **Busy Day** – The busy day of a typical week in the peak month. This peaking factor is used primarily to determine transient ramp parking requirements.
- **Design Hour** – The peak hour within the design day or busy day.

It is important to note that only the peak month is an absolute peak within a given year. All other peak periods will be exceeded at various times during the year. However, they do represent reasonable planning standards that can be applied without overbuilding or being too restrictive.

SCHEDULED AIRLINE PEAKING CHARACTERISTICS

Table 2AA outlines the peak baseline and forecast peaking characteristics for scheduled airline activity at SMX. In general, airport capacity and facility needs related to specific activity types will typically consider the levels of activity during a peak or design period. Determination of peaking characteristics related to commercial activity is important for the planning and design of the passenger terminal building, as well as associated facilities and services. The analysis is commonly utilized as a basis for determining the appropriate size of the terminal building and the functional areas therein. Terminal building elements include hold rooms, security checkpoints, concessions, restrooms, baggage claim area, etc. The airline peaking characteristics also relate to aircraft gates and apron space.

TABLE 2AA
Scheduled Airline Peaking Characteristics
Santa Maria Public Airport

	2015	2021	2026	2036
Enplanements				
Annual	44,340	49,400	53,000	64,500
Peak Month	4,934	5,286	5,671	6,902
Design Day	159	171	183	223
Design Hour	143	143	173	192
Total Passengers				
Design Hour	286	286	347	385
Operations				
Annual	1,753	4,180	4,320	4,120
Peak Month	155	377	390	372
Design Day	5	12	13	12
Design Hour	2	2	4	4
Departures				
Design Day	3	6	7	6
Design Hour	1	1	2	2

Source: Coffman Associates analysis.

The peak month projections for airline activity was based upon the average peak month from 2004 through 2015 for operations and from 2009 through 2015 for enplanements. The peak month for enplanements in 2015 was July with 11.1 percent of the year's enplanements. Looking at the full seven-year history of monthly enplanement data, the peak month averaged 10.7 percent of annual enplanements. For operations, July was the peak month in 2015, with 8.8 percent of annual operations. From 2004 through 2015, the peak month averaged 9.0 percent of annual operations. The design day is based upon the average day of the peak month, as activity during the peak month tends to be distributed relatively evenly through any given week.

The design hour enplanement estimate is based on the airline schedule, which was previously discussed. In 2015, Allegiant Air operated the MD-88 aircraft with a seating capacity of 166 passengers, and United Express operated the CRJ200 with a seating capacity of 50 passengers and the Embraer 120 with a seating capacity of 30 passengers. The MD-88, with its high seating capacity combined with a BLF of 86 percent, results in the design hour enplanement level of 143. It is anticipated that the MD-88 will continue to represent the design hour enplanement level through 2021. By 2026, the design hour includes

departures by both an MD-88 and an RJ, which combines for 173 enplanements. Design hour enplanements by 2036 include the departure of an Airbus A320 at 86 percent BLF and a CRJ700 at 61 percent BLF, which results in 192 enplanements.

ITINERANT GENERAL AVIATION/AIR CARGO/MILITARY/OTHER AIR TAXI PEAKING

The peak month for itinerant GA, air cargo, military, and other air taxi operations at SMX averaged 9.3 percent of yearly operations since 2010. The design day was derived by dividing the peak month by the number of days in the month. Busy day and hourly operations were obtained from the FAA Operations Network (OPSNET). The busy day is derived based on the average of the peak day for each week of the peak month. For 2015, the busy day was 45.6 percent higher than the design day. The average busy day from 2010-2015 was 68.9 percent higher; therefore, the average was applied to the forecast years.

In order to calculate the design hour, the peak hour within the peak day of each week in the peak month was identified. This process was conducted for each year from 2010 through 2015. Peak hours from each year were then calculated as a percentage of the corresponding peak day and averaged in an effort to exclude extreme outliers. Over this time period, the peak hour was found to represent 19.1 percent of design day operations.

Itinerant GA/firefighting/air cargo/military/other air taxi peaking characteristics are summarized in **Table 2BB**.

TABLE 2BB
Itinerant GA/Air Cargo/Military/Other Air Taxi Peaking Characteristics
Santa Maria Public Airport

	2015	2021	2026	2036
Annual	26,014	28,870	31,360	34,130
Peak Month	2,536	2,682	2,913	3,170
Design Day	82	87	94	102
Busy Day	125	132	144	156
Design Hour	17	18	19	21

Source: Coffman Associates analysis.

TOTAL OPERATIONS PEAKING

The peaking characteristics of total aircraft operations, which include local GA and military operations, are utilized in examining the operational capacity of the airfield. Similar methodologies were utilized to establish the various total operations peaking characteristics as were utilized for the itinerant GA/air cargo/military/other air taxi peaking characteristics. The peak month for total operations in 2015 represented 9.4 percent of the year's operations, while the average over the past five years is 10.2 percent. Busy day operations in 2015 were 45.6 percent above the design day, while the average over the past five years is 10.2 percent. Design hour operations average 19.1 percent of design day operations. Total operations peaking characteristics are summarized in **Table 2CC**.

TABLE 2CC
Total Operations Peaking Characteristics
Santa Maria Public Airport

	2015	2021	2026	2036
Annual	38,389	43,850	46,680	49,750
Peak Month	3,619	4,472	4,761	5,074
Design Day	117	144	154	164
Busy Day	170	244	259	276
Design Hour	22	28	29	31

Source: Coffman Associates analysis.

ANNUAL INSTRUMENT APPROACHES

An instrument approach, as defined by the FAA, is "an approach to an airport with the intent to land an aircraft in accordance with an Instrument Flight Rule (IFR) flight plan, when visibility is less than three miles and/or when the ceiling is at or below the minimum initial approach altitude." To qualify as an instrument approach, aircraft must land at an airport after following one of the published instrument approach procedures. Forecasts of annual instrument approaches (AIAs) provide guidance in determining an airport's requirements for navigational aid facilities. Practice or training approaches do not count as AIAs nor do instrument approaches that occur in visual conditions.

It is highly unusual for pilots to perform local operations when IFR conditions are in effect. AIAs may be expected to increase as transient operations and operations by more sophisticated aircraft (e.g., turboprops and business jets) increase through the planning period. For this reason, AIA projections consider a constant estimate of two percent of annual itinerant operations. The projections are presented in **Table 2DD**.

TABLE 2DD
Annual Instrument Approaches (AIAs)
Santa Maria Public Airport

Year	AIAs	Itinerant Operations	Ratio
2015	560	27,767	2.00%
2021	660	33,100	2.00%
2026	710	35,730	2.00%
2036	770	38,300	2.00%

Source: Coffman Associates analysis

FORECAST COMPARISON TO THE TERMINAL AREA FORECAST

The FAA will review the forecasts presented in this Master Plan for consistency with the *Terminal Area Forecast*. The local FAA Airport District Office (ADO) or Regional Airports Division (RO) are responsible for forecast approvals. When reviewing a sponsor's forecast, the FAA must ensure that the forecast is based on reasonable planning assumptions, uses current data, and is developed using appropriate forecast methods. Forecasts of enplanements, operations, and based aircraft are considered consistent with the TAF if they differ by less than 10 percent in the five-year period and 15 percent in the 10-year forecast

period. If the forecast is not consistent with the TAF, differences must be resolved if the forecast is to be used for FAA decision-making. **Table 2EE** presents the direct comparison of the master planning forecasts with the TAF published in January 2016.

TABLE 2EE
Master Plan Forecast Comparison to the FAA's Santa Maria Public Airport Terminal Area Forecast[1]

	BASE YEAR	FORECAST			
	2015	2021	2026	2036	CAGR 2015-2036
Passenger Enplanements					
Master Plan Forecast	44,340	49,400	53,000	64,500	1.80%
FAA TAF - 2016	43,236	47,249	50,877	58,972	1.49%
% Difference	2.55%	4.55%	4.17%	9.37%	
Commercial Operations					
Master Plan Forecast	9,604	13,500	14,730	15,600	2.34%
FAA TAF – 2016	10,661	11,471	12,184	13,761	1.22%
% Difference	-9.91%	17.69%	20.90%	13.36%	
Total Operations					
Master Plan Forecast	38,389	43,850	46,680	49,750	1.24%
FAA TAF - 2016	38,995	39,672	40,570	42,522	0.41%
% Difference	-1.55%	10.53%	15.06%	17.00%	
Based Aircraft					
Master Plan Forecast	235	269	294	346	1.86%
FAA TAF - 2016	239	269	294	346	1.78%
% Difference	-1.67%	0.00%	0.00%	0.00%	

[1] The SMX-specific FAA TAF was prepared in January 2016.
KEY: CAGR – Compound annual growth rate
Source: Coffman Associates analysis

The reason the FAA allows this differential is because the TAF forecasts are not meant to replace forecasts developed locally (i.e., in this master plan). While the TAF can provide a point of reference for comparison, their purpose is much broader in defining FAA national workload measures.

The master plan enplanement forecast shows a faster growth rate than the TAF and is ultimately 9.37 percent higher by 2036. Commercial operations are shown to be below the TAF in 2015, but largely due to the introduction of Mokulele Airlines, which conducts more daily departures than United Express when they operated at SMX; commercial operations are projected to grow higher than projected by the TAF. The master plan forecast also considers the potential for an additional airline to serve SMX in the future, which would also increase commercial operation figures. By 2036, the master plan forecast of commercial operations is 13.36 percent higher than the TAF. The master plan total operations forecast also shows a faster growth rate and is ultimately 17.00 percent higher than the TAF by 2036. The master plan selected the TAF as its based aircraft forecast, so there is no difference between the two. The only difference is the baseline 2015 count reported by the SMPAD is four aircraft less than the TAF.

Exhibit 2H presents a summary of the master plan forecasts. Moderate growth is forecast for all activity demand indicators.

AIRCRAFT/AIRPORT/RUNWAY CLASSIFICATION

The FAA has established several aircraft classification systems that group aircraft types based on their performance (approach speed in landing configuration) and design characteristics (wingspan and landing gear configuration). These classification systems are used to determine the appropriate airport design standards for specific airport elements, such as runways, taxiways, taxilanes, and aprons.

AIRCRAFT CLASSIFICATION

The selection of appropriate FAA design standards for the development and location of airport facilities is based primarily upon the characteristics of the aircraft which are currently using or are expected to use an airport. The critical design aircraft is used to define the design parameters for an airport. The design aircraft may be a single aircraft type or, more commonly, is a composite aircraft representing a collection of aircraft with similar characteristics. The critical design aircraft is defined by three parameters: Aircraft Approach Category (AAC), Airplane Design Group (ADG), and Taxiway Design Group (TDG). FAA AC 150/5300-13A, *Airport Design*, describes the following airplane classification systems, the parameters of which are presented on **Exhibit 2J**.

Aircraft Approach Category (AAC): A grouping of aircraft based on a reference landing speed (V_{REF}), if specified, or if V_{REF} is not specified, 1.3 times stall speed (V_{SO}) at the maximum certificated landing weight. V_{REF}, V_{SO}, and the maximum certificated landing weight are those values as established for the aircraft by the certification authority of the country of registry.

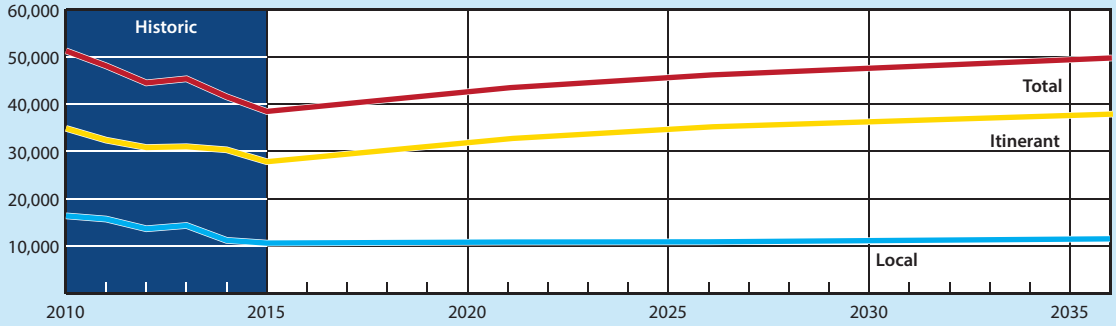
The AAC generally refers to the approach speed of an aircraft in landing configuration. The higher the approach speed, the more restrictive the applicable design standards. The AAC, depicted by a letter A through E, is the aircraft approach category and relates to aircraft approach speed (operational characteristic). The AAC generally applies to runways and runway-related facilities, such as runway width, runway safety area (RSA), runway object free area (ROFA), runway protection zone (RPZ), and separation standards.

Airplane Design Group (ADG): The ADG, depicted by a Roman numeral I through VI, is a classification of aircraft which relates to aircraft wingspan or tail height (physical characteristic). When the aircraft wingspan and tail height fall in different groups, the higher group is used. The ADG influences design standards for taxiway safety area (TSA), taxiway object free (TOFA), taxilane object free area, apron wingtip clearance, and various separation distances.

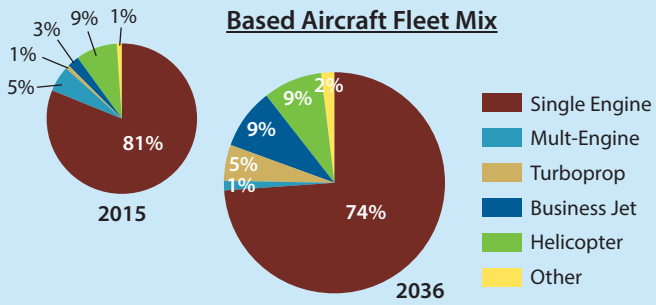
Taxiway Design Group (TDG): A classification of airplanes based on outer-to-outer Main Gear Width (MGW) and Cockpit to Main Gear (CMG) distance. The TDG relates to the undercarriage dimensions of the design aircraft. The taxiway design elements determined by the application of the TDG include the

	2015	2021	2026	2036
ENPLANEMENTS				
Airline Enplanements	**44,340**	**49,400**	**53,000**	**64,500**
OPERATIONS				
Itinerant				
Air Carrier Airline	324	410	568	1,064
Air Taxi/Commuter Airline	1,429	3,770	3,752	3,056
Air Cargo	1,972	2,470	2,660	2,830
Air Carrier Charter	41	50	50	50
Other Air Taxi	5,838	6,800	7,700	8,600
Total Commercial	9,604	13,500	14,730	15,600
General Aviation	17,718	19,100	20,500	22,200
Military	445	450	450	450
Itinerant Subtotal	*27,767*	*33,050*	*35,680*	*38,250*
Local				
General Aviation	9,896	10,100	10,300	10,800
Military	726	700	700	700
Local Subtotal	*10,622*	*10,800*	*11,000*	*11,500*
Total Operations	**38,389**	**43,850**	**46,680**	**49,750**
BASED AIRCRAFT				
Single Engine Piston	191	219	230	256
Multi-Engine Piston	13	11	9	5
Turboprop	2	4	10	18
Business Jet	6	10	15	31
Helicopter	21	23	26	30
Other	2	2	4	6
Total Based Aircraft	**235**	**269**	**294**	**346**
ANNUAL INSTRUMENT APPROACHES				
Total Annual Instrument Approaches	**560**	**660**	**710**	**770**

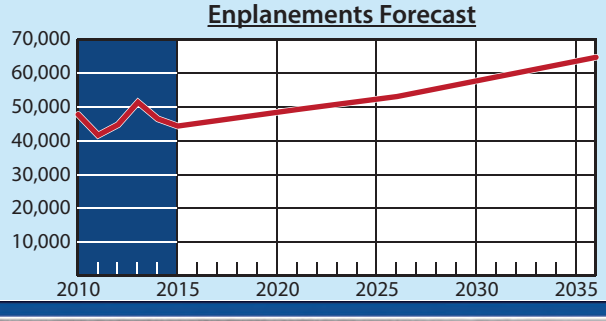
Operations Forecast



Based Aircraft Fleet Mix



Enplanements Forecast



AIRCRAFT APPROACH CATEGORY (AAC)

Category	Approach Speed
A	less than 91 knots
B	91 knots or more but less than 121 knots
C	121 knots or more but less than 141 knots
D	141 knots or more but less than 166 knots
E	166 knots or more

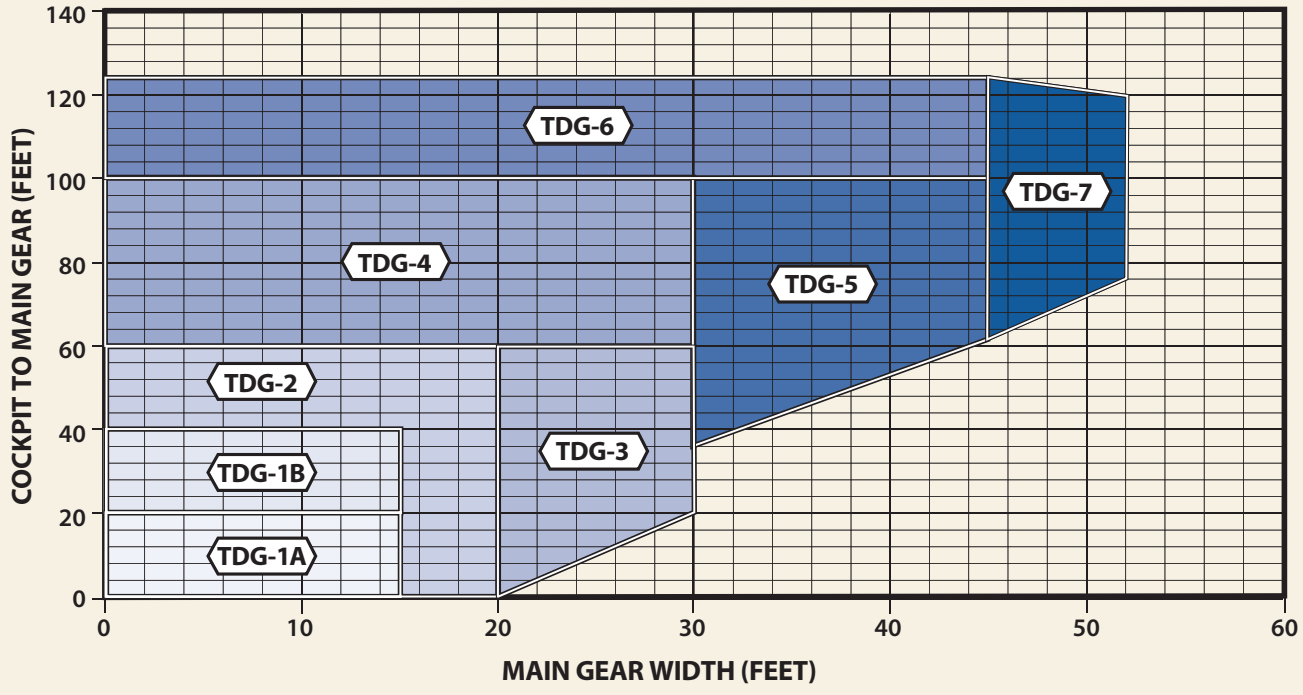
AIRPLANE DESIGN GROUP (ADG)

Group #	Tail Height (ft)	Wingspan (ft)
I	<20	<49
II	20-<30	49-<79
III	30-<45	70-<118
IV	45-<60	118-<171
V	60-<66	171-<214
VI	66-<80	214-<262

VISIBILITY MINIMUMS

RVR (ft)	Flight Visibility Category (statute miles)
VIS	3-mile or greater visibility minimums
5,000	Lower than 3 miles but not lower than 1-mile
4,000	Lower than 1-mile but not lower than ¾-mile (APV ≥ ¾ but < 1-mile)
2,400	Lower than ¾-mile but not lower than ½-mile (CAT-I PA)
1,600	Lower than ½-mile but not lower than ¼-mile (CAT-II PA)
1,200	Lower than ¼-mile (CAT-III PA)

TAXIWAY DESIGN GROUP (TDG)



KEY

APV: Approach Procedure with Vertical Guidance
PA: Precision Approach
RVR: Runway Visual Range
TDG: Taxiway Design Group

Source: FAA AC 150/5300-13A, Change 1, Airport Design

taxiway width, taxiway edge safety margin, taxiway shoulder width, taxiway fillet dimensions, and, in some cases, the separation distance between parallel taxiways/taxilanes. Other taxiway elements, such as the taxiway safety area (TSA), taxiway/taxilane object free area (TOFA), taxiway/taxilane separation to parallel taxiway/taxilanes or fixed or movable objects, and taxiway/taxilane wingtip clearances are determined solely based on the wingspan (ADG) of the design aircraft utilizing those surfaces. It is appropriate for taxiways to be planned and built to different TDG standards based on expected use.

Exhibit 2K presents the aircraft classification of the most common jet aircraft in operation today.

AIRPORT AND RUNWAY CLASSIFICATION

These classifications, along with the aircraft classifications defined previously, are used to determine the appropriate FAA design standards to which the airfield facilities are to be designed and built.

***Airport Reference Code (ARC)*:** An airport designation that signifies the airport's highest Runway Design Code (RDC), minus the third (visibility) component of the RDC. The ARC is used for planning and design only and does not limit the aircraft that may be able to operate safely on the airport. The current ALP for the Airport, which will be updated as part of this planning effort, identifies an ARC of C-IV for Runway 12-30 with the Boeing 757-200 as the critical design aircraft. Runway 2-20 is identified on the current ALP as an ARC B-II runway with the Embraer 120 as its critical design aircraft.

Runway Design Code (RDC): A code signifying the design standards to which the runway is to be built. The RDC is based upon planned development and has no operational component. The AAC, ADG, and runway visual range (RVR) are combined to form the RDC of a particular runway. The RDC provides the information needed to determine certain design standards that apply. The first component, depicted by a letter, is the AAC and relates to aircraft approach speed (operational characteristics). The second component, depicted by a Roman numeral, is the ADG and relates to either the aircraft wingspan or tail height (physical characteristics), whichever is most restrictive. The third component relates to the visibility minimums expressed by RVR values in feet of 1,200 (⅛-mile); 1,600 (¼-mile); 2,400 (½-mile); 4,000 (¾-mile); and 5,000 (1-mile). The RVR values approximate standard visibility minimums for instrument approaches to the runways. The third component should read "VIS" for runways designed for visual approach use only.

Approach Reference Code (APRC): A code signifying the current operational capabilities of a runway and associated parallel taxiway with regard to landing operations. Like the RDC, the APRC is composed of the same three components: the AAC, ADG, and RVR. The APRC describes the current operational capabilities of a runway under particular meteorological conditions where no special operating procedures are necessary, as opposed to the RDC which is based upon planned development with no operational component. The APRC for a runway is established based upon the minimum runway-to-taxiway centerline separation.

Departure Reference Code (DPRC): A code signifying the current operational capabilities of a runway and associated parallel taxiway with regard to take-off operations. The DPRC represents those aircraft

A-I



- Beech Baron 55
- **Beech Bonanza**
- Cessna 150
- Cessna 172
- Cessna Citation Mustang
- Eclipse 500/550
- Piper Archer
- Piper Seneca

B-I



- Beech Baron 58
- Beech King Air 100
- Cessna 402
- **Cessna 421**
- Piper Navajo
- Piper Cheyenne
- Swearingen Metroliner
- Cessna Citation I (525)

B-II



- Super King Air 200
- Cessna 441
- DHC Twin Otter
- Super King Air 350
- Beech 1900
- Citation Excel (560), Sovereign (680)
- Falcon 50, 900, 2000
- **Citation Bravo (550)**
- Embraer 120

A-III, B-III



- DHC Dash 7
- **DHC Dash 8**
- DC-3
- Convair 580
- Fairchild F-27
- ATR 72
- ATP

C-I, D-I



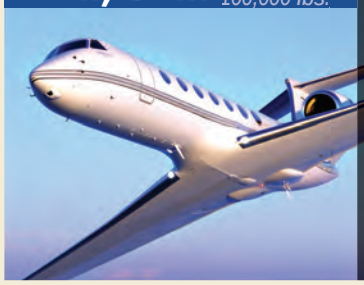
- Beech 400
- **Lear** 31, **35**, 45, 60
- Israeli Westwind

C-II, D-II



- Cessna Citation X (750)
- Gulfstream 100, 200,300
- Challenger 300/600
- **ERJ-135, 140, 145**
- CRJ-200/700
- Embraer Regional Jet
- Lockheed JetStar
- Hawker 800

C-III, D-III *less than 100,000 lbs.*



- ERJ-170
- CRJ 705, 900
- Falcon 7X
- **Gulfstream 500**, 550, 650
- Global Express, Global 5000
- Q-400

C-III, D-III *over 100,000 lbs.*



- ERJ-90
- Boeing Business Jet
- B-727
- **B-737**-300, **700**, 800
- MD-80, DC-9
- A319, A320

C-IV, D-IV



- **B-757**
- B-767
- C-130 Hercules
- DC-8-70
- MD-11

D-V



- **B-747-400**
- B-777
- B-787
- A-330, A-340

Note: Aircraft pictured is identified in bold type.

that can take off from a runway while any aircraft is present on adjacent taxiways, under particular meteorological conditions with no special operating conditions. The DPRC is similar to the APRC, but is composed of two components: ACC and ADG. A runway may have more than one DPRC depending on the parallel taxiway separation distance.

CRITICAL DESIGN AIRCRAFT

The selection of appropriate FAA design standards for the development and location of airport facilities is based primarily upon the characteristics of the aircraft which are currently using or are expected to use an airport. The critical design aircraft is used to define the design parameters for an airport. The design aircraft may be a single aircraft or a composite aircraft representing a collection of aircraft classified by the three parameters: AAC, ADG, and TDG. In the case of an airport with multiple runways, a design aircraft is selected for each runway.

The first consideration is the safe operation of aircraft likely to use an airport. Any operation of an aircraft that exceeds design criteria of an airport may result in either an unsafe operation or a lesser safety margin; however, it is not the usual practice to base the airport design on an aircraft that uses the airport infrequently.

The critical design aircraft is defined as the most demanding aircraft type, or grouping of aircraft with similar characteristics, that make regular use of the airport. Regular use is 500 annual operations, excluding touch-and-go operations. Planning for future aircraft use is of particular importance since the design standards are used to plan separation distances between facilities. These future standards must be considered now to ensure that short term development does not preclude the reasonable long range potential needs of the airport. Therefore, if the critical design aircraft is anticipated to change within the next five years, that aircraft (or family of aircraft) should be used as the current critical design aircraft.

AIRPORT CRITICAL DESIGN AIRCRAFT

The FAA maintains the Traffic Flow Management System Count (TFMSC) database which documents aircraft operations at most NPIAS airports. Information is added to the TFMSC database when pilots file flight plans and/or when flights are detected by the National Airspace System, usually via radar. The database includes documentation of commercial traffic (air carrier and air taxi), general aviation, and military aircraft. Due to factors such as incomplete flight plans and limited radar coverage, TFMSC data does not account for all aircraft activity at an airport by a given aircraft type. Most VFR and some non-enroute IFR traffic is excluded. Therefore, it is likely that there are more operations at an airport than are captured by this methodology. TFMSC data is available for activity at SMX and was utilized in this analysis.

Current Critical Design Aircraft

SMX experiences frequent activity by commercial, firefighting, and business aircraft. The largest commercial airline aircraft currently in use is the MD-80 series, utilized by Allegiant Air. The USFS operates a variety of fixed wing aircraft and helicopters at SMX including the BAe-146 Airtanker, Lockheed P-2 Neptune Airtanker, Grumman S-2T Airtanker, Lockheed C-130, DC-9/10, and Sky Crane helicopters. SMX has experienced significant growth in USFS operations during the 2016 fire season including large air tankers such as the C-130 and DC-10, both of which are within AAC C and ADG IV. Per records maintained by SMX staff, as of the beginning of October 2016, combined operations by these two aircraft for the year totaled 746.

Exhibit 2L presents the TFMSC operational mix at the Airport for turbine operations from 2006 through 2015. The Cessna Caravan, which is utilized primarily for air cargo operations, conducted the single most turbine operations in 2015 with over 1,400. SMX has six based jets including two Cessna Citation Vs (ARC B-II) and a Lear 35 (ARC C-I). Over the period, according to TFMSC data, the Airport has averaged 6,582 turbine operations by aircraft in AAC B, 896 in AAC C, and 60 in AAC D. AAC D is well below the 500 annual operations threshold to be considered the critical design AAC; **therefore, the Master Plan will consider AAC C as the current critical design AAC.**

From 2006 through 2015, the Airport has averaged 6,018 operations by turbine aircraft in ADG II, 447 in ADG III, and only 56 in ADG IV. However, in 2016, ADG IV operations reached 746 principally by the C-130 and DC-10 aerial firefighting aircraft operated by the USFS. **Therefore, the Master Plan will consider ADG IV as the current critical design ADG. The current critical design aircraft for the Airport is best described as ARC C-IV.**

Future Critical Design Aircraft

The master plan forecast anticipates some fleet mix changes for the scheduled airline operators over time. Allegiant Air is anticipated to transition from the MD-80 series to the Airbus A320, both of which are ARC C-III aircraft. The 50-seat RJs are being phased out and will eventually be replaced by the 70-90 seat CRJ-700 (ADG II) and ERJ-170/190 series (ADG III). Business jet operations and charter activity has historically been the driver for AAC D aircraft such as the Gulfstream family of aircraft. The AAC D Gulfstreams (G200/G400) totaled 40 operations in 2015.

It is anticipated that the Airbus A320 will ultimately replace the MD-80 series as the critical design aircraft for airline activity. As a result, operations within the ARC C-III category are anticipated to continue to grow over the forecast period and will maintain a level at or above 500 annual operations. While large business jets are anticipated to use the Airport on a more frequent basis over time, there is no indication at this time that the Gulfstream G200/G400 family of aircraft will reach the 500 annual operations threshold. USFS activity at SMX is projected to continue to grow over time as consideration is being given to establishing a permanent tanker base on the airfield. The USFS base is anticipated to accommodate the entirety of the aerial firefighting fleet including the DC-10 and C-130. **Therefore, the future critical design aircraft is the DC-10 (ARC C-IV).**

RUNWAY DESIGN CODE

Each runway is assigned an RDC. The RDC relates to specific FAA design standards that should be met in relation to each runway. The RDC takes into consideration the AAC, ADG, and the RVR. In most cases, the critical design aircraft will also be the RDC for the primary runway.

Runway 12-30 RDC

Runway 12-30 is the primary runway and is designed to accommodate the critical design aircraft. This runway is 8,004 feet long and 150 feet wide and is equipped with a CAT-I instrument approach providing for visibility minimums as low as ½-mile. **Therefore, the current and ultimate RDC for Runway 12-30 is C-IV-2400**.

Runway 2-20 RDC

Crosswind runways, such as Runway 2-20, are intended to provide a crosswind alternative for smaller aircraft that operate to the Airport, which primarily includes aircraft up to small to mid-sized business jet aircraft such as the Cessna Citation family of aircraft, that are classified as ARC B-II. Therefore, Runway 2-20 should sufficiently meet the design standards of those smaller aircraft. Runway 2-20 is not equipped with edge lighting or instrument approach procedures. **Therefore, the current RDC for Runway 2-20 is B-II-VIS**. Ultimately, consideration will be given to planning Runway 2-20 to be equipped with a GPS-based instrument approach procedure to give it more utility during poor visibility conditions. **As a result, the master plan will consider an ultimate RDC of B-II-5000 for Runway 2-20**.

SUMMARY

This chapter has outlined the various activity levels by demand indicators that might reasonably be anticipated over the planning period. SMX provides an important and convenient air passenger link to the national airspace system for the City of Santa Maria as well as north Santa Barbara County. Nonetheless, competing airports in the region, as well as the direct links via the highways to larger hub airports in the Los Angeles area, leads to a significant level of passenger leakage. However, the rapidly growing local economy and its proximity to Vandenberg Air Force Base are significant factors that are anticipated to attract expanded airline service and increased passenger levels over time. Passenger enplanements are forecast to grow from 44,340 in 2015 to 64,500 by 2036.

General aviation operations are forecast to increase modestly over the planning period, growing from 27,614 in 2015 to 33,000 by 2036. Based aircraft are forecast to increase from 235 in 2015 to 346 in 2036. The fleet mix is anticipated to see increases in turbine aircraft, primarily business jets, over the planning period. Total annual operations are forecast to grow from 38,389 in 2015 to 49,750 in 2036.

JET OPERATIONS BY AIRPORT REFERENCE CODE

ARC	Aircraft	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
A-I	Beechcraft Bonanza Turbine	4	8	10	0	0	0	0	0	2	0
A-I	Cessna 210 Turbine	6	2	28	28	14	0	0	0	0	22
A-I	Cessna Citation Mustang	0	0	2	22	32	68	50	46	18	36
A-I	Eclipse 400/500	0	18	62	20	6	12	12	8	18	24
A-I	Epic Dynasty	0	0	4	4	18	18	64	56	50	44
A-I	Piper Malibu/Meridian Turbine	0	0	60	74	70	54	8	18	16	28
Total		**10**	**28**	**166**	**148**	**140**	**152**	**134**	**128**	**104**	**154**
A-II	Cessna 425	64	76	118	112	156	30	70	98	70	46
A-II	DHC-6 Twin Otter	0	0	2	14	4	2	0	0	0	6
A-II	Pilatus PC-12	0	0	552	372	260	118	100	170	168	88
Total		**64**	**76**	**672**	**498**	**420**	**150**	**170**	**268**	**238**	**140**
B-I	Aero Commander 690 A/B	0	2	2	2	4	0	2	0	0	2
B-I	Beech Airliner	0	10	4	8	0	0	0	0	0	0
B-I	Beechjet 400	34	46	70	56	40	60	30	48	22	32
B-I	Canadair Silver Star	0	0	0	0	0	0	0	0	2	2
B-I	Cessna Citation I/SP	22	26	34	10	26	22	14	26	34	26
B-I	Cessna CJ1	180	234	106	168	290	324	266	312	276	284
B-I	Dassault Falcon/Mystère 10	14	22	14	12	0	0	0	4	0	6
B-I	Embraer Phenom 100	0	0	0	24	42	40	86	32	28	36
B-I	Fairchild Swearingen	34	20	8	12	6	10	0	0	10	2
B-I	King Air 100	210	80	14	2	4	6	8	6	12	8
B-I	L-39 Albatross	10	2	0	12	8	0	0	0	0	0
B-I	Mitsubishi MU-2	0	0	0	4	0	24	20	16	2	0
B-I	North American Rockwell Sabre 40/60	2	2	6	2	0	4	2	2	6	8
B-I	Piaggio P180 Avanti	24	10	18	10	6	10	2	2	0	2
B-I	Piper Cheyenne	8	22	52	34	8	2	2	0	4	12
B-I	Raytheon Premier I	48	26	22	8	4	6	12	14	6	6
B-I	Swearingen Merlin 2/4	110	568	560	540	564	610	620	642	648	634
B-I	Swearingen SJ-30	0	0	0	0	0	4	4	0	0	0
B-I	TBM-7/850	12	40	68	26	22	20	38	50	36	58
Total		**708**	**1110**	**978**	**930**	**1024**	**1142**	**1106**	**1154**	**1086**	**1118**
B-II	Aero Commander 680/900/1000	24	56	72	54	42	28	16	18	24	48
B-II	Beech 1900	24	34	262	12	14	10	6	14	12	44
B-II	Cessna 441 Conquest	26	16	44	56	74	18	44	16	8	6
B-II	Cessna Caravan	0	0	1244	1420	1412	1348	1338	1440	1470	1404
B-II	Cessna Citation Bravo/SP	116	94	106	68	132	122	20	38	28	24
B-II	Cessna Citation Excel/XLS	64	64	66	74	96	72	92	96	102	80
B-II	Cessna Citation III/VI/VII	12	64	122	94	84	122	94	34	24	26
B-II	Cessna Citation Sovereign	6	8	18	12	8	14	14	24	14	20
B-II	Cessna Citation V/Encore/Ultra	254	116	256	278	446	530	502	398	280	316
B-II	Cessna CJ2, CJ3, CJ4	60	92	68	90	70	74	104	150	210	226
B-II	Dassault Falcon 20/50	54	96	110	100	10	14	6	4	18	18
B-II	Dassault Falcon 2000	8	16	32	14	12	22	44	44	48	36
B-II	Dassault Falcon 900	32	12	6	14	2	22	4	10	22	12
B-II	Dornier 328	12	0	0	0	0	0	0	2	2	0
B-II	Embraer 120	4004	3968	3428	2740	2758	2682	2638	2474	2420	526
B-II	Embraer Bandeirante	0	0	0	2	2	0	0	0	0	0
B-II	Embraer Phenom 300	0	0	0	0	0	0	48	122	90	92
B-II	King Air 90/200/300/350	1244	1178	1288	1016	586	342	260	258	380	506
B-II	Saab 340	2	0	2	0	0	0	0	0	0	0
B-II	Shorts 330/360	8	8	270	2	8	8	6	0	0	0
Total		**5950**	**5822**	**7394**	**6046**	**5756**	**5428**	**5236**	**5142**	**5152**	**3384**
B-III	E-2 Hawkeye	24	12	6	16	0	4	20	44	16	10
Total		**24**	**12**	**6**	**16**	**0**	**4**	**20**	**44**	**16**	**10**
C-I	AV-8B Harrier	2	0	0	0	0	0	0	0	0	0
C-I	BAE HS 125-1/2/3/125/400/600	26	20	18	20	16	28	58	32	24	6
C-I	Bae Systems Hawk	0	0	0	0	2	2	0	0	0	2
C-I	IAI 1124/1125 Westwind	26	28	10	6	6	8	2	0	12	14
C-I	Learjet 20 Series	38	18	22	14	36	18	2	26	8	2
C-I	Learjet 30 Series	186	142	196	140	100	104	106	116	164	92
C-I	Learjet 40/45/60	42	56	30	26	44	48	64	46	66	60
C-I	Learjet 55	4	2	2	6	2	10	2	2	0	20
C-I	T-45 Goshawk	0	2	0	0	0	0	0	0	0	0
Total		**324**	**268**	**278**	**212**	**206**	**218**	**234**	**222**	**274**	**196**
C-II	Bombardier CRJ All Series	0	0	0	2	4	12	0	10	4	958
C-II	Cessna Citation X	22	6	8	16	8	2	20	20	14	10
C-II	Challenger 300/600	28	32	32	24	38	32	30	52	38	38
C-II	Embraer ERJ 135/140/145/Legacy	6	10	6	4	4	2	2	4	2	10
C-II	Fairchild A-10	0	2	2	2	0	4	0	0	0	0
C-II	Gulfstream 300	12	20	8	2	4	0	4	4	2	2
C-II	Hawker 800/1000/4000	2	0	2	2	0	0	2	0	2	0
C-II	IAI 1126 Galaxy	10	14	18	8	4	10	10	4	12	10
C-II	Lockheed L-1329 Jetstar	0	0	0	0	0	0	0	0	0	2
C-II	S-3 Viking	2	0	0	0	0	0	0	0	0	2
Total		**82**	**84**	**76**	**60**	**62**	**62**	**68**	**94**	**74**	**1032**
C-III	Airbus A319/320 Series	6	2	4	0	2	4	0	8	0	0
C-III	ATR 42/45/72	4	0	0	0	0	0	0	0	0	0
C-III	Bae 146	0	0	0	0	0	0	2	8	8	0

JET OPERATIONS BY AIRPORT REFERENCE CODE (continued)

ARC	Aircraft	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
C-III	Boeing 717/727/737 Series	20	6	6	14	8	0	4	0	6	8
C-III	Bombardier Global 5000	32	22	38	8	14	8	2	6	2	6
C-III	Dassault Falcon 7X	0	0	0	0	0	0	0	0	2	2
C-III	Embraer 170/190 Series	0	0	0	0	2	6	4	28	36	18
C-III	Gulfstream G550/650	8	6	6	6	12	4	6	16	12	20
C-III	Mcdonnel Douglas DC-9/MD-80 series	290	384	460	340	354	356	392	362	362	434
C-III	P-3 Orion	0	26	36	14	2	0	6	0	2	8
Total		**360**	**446**	**550**	**382**	**394**	**378**	**416**	**428**	**430**	**496**
C-IV	Boeing 757 200 Series	0	0	0	0	0	0	28	84	14	4
C-IV	Boeing 767 Series	0	0	2	0	0	0	0	0	4	0
C-IV	C-130 Hercules	10	2	4	18	12	30	72	94	76	72
C-IV	C-17 Globemaster	0	2	0	0	6	0	2	8	0	0
C-IV	KC-135 Stratotanker	0	0	2	0	2	0	4	0	2	0
Total		**10**	**4**	**8**	**18**	**20**	**30**	**106**	**186**	**96**	**76**
D-I	F/A-18 Hornet	12	10	6	8	6	4	6	2	12	0
D-I	F-15 Eagle	0	2	2	0	2	0	0	0	0	0
D-I	T-38 Talon	0	0	0	0	4	0	0	0	2	4
Total		**12**	**12**	**8**	**8**	**12**	**4**	**6**	**2**	**14**	**4**
D-II	Gulfstream 200/400	60	52	60	46	54	52	52	30	28	36
D-II	Gulfstream G-150	0	0	0	6	0	0	0	2	0	4
Total		**60**	**52**	**60**	**52**	**54**	**52**	**52**	**32**	**28**	**40**
D-III	Boeing 737-800/900	4	0	0	4	0	10	4	4	0	12
Total		**4**	**0**	**0**	**4**	**0**	**10**	**4**	**4**	**0**	**12**
D-V	Airbus A350/360	0	0	0	2	0	0	0	0	0	0
Total		**0**	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**0**
E-I	Dornier Alpha Jet	0	0	0	0	2	0	0	0	0	0
E-I	F-16 Falcon	2	0	0	2	0	6	0	0	0	0
Total		**2**	**0**	**0**	**2**	**2**	**6**	**0**	**0**	**0**	**0**
E-IV	B-52 Stratofortress	0	0	2	6	0	0	0	0	0	0
Total		**0**	**0**	**2**	**6**	**0**	**0**	**0**	**0**	**0**	**0**

AIRPORT REFERENCE CODE OPERATIONS SUMMARY

Jet Operations by Airport Reference Code

ARC	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
A-I	10	28	166	148	140	152	134	128	104	154
A-II	64	76	672	498	420	150	170	268	238	140
B-I	708	1110	978	930	1024	1142	1106	1154	1086	1118
B-II	5950	5822	7394	6046	5756	5428	5236	5142	5152	3384
B-III	24	12	6	16	0	4	20	44	16	10
C-I	324	268	278	212	206	218	234	222	274	196
C-II	82	84	76	60	62	62	68	94	74	1032
C-III	360	446	550	382	394	378	416	428	430	496
C-IV	10	4	8	18	20	30	106	186	96	76
D-I	12	12	8	8	12	4	6	2	14	4
D-II	60	52	60	52	54	52	52	32	28	40
D-III	4	0	0	4	0	10	4	4	0	12
D-V	0	0	0	2	0	0	0	0	0	0
E-I	2	0	0	2	2	6	0	0	0	0
E-IV	0	0	2	6	0	0	0	0	0	0
Total	7610	7914	10198	8384	8090	7636	7552	7704	7512	6662

Jet Operations By Approach Category

AAC	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
A	74	104	838	646	560	302	304	396	342	294
B	6682	6944	8378	6992	6780	6574	6362	6340	6254	4512
C	776	802	912	672	682	688	824	930	874	1800
D	76	64	68	66	66	66	62	38	42	56
E	2	0	2	8	2	6	0	0	0	0
Total	7610	7914	10198	8384	8090	7636	7552	7704	7512	6662

Jet Operations By Airplane Design Group

ADG	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
I	1056	1418	1430	1300	1384	1522	1480	1506	1478	1472
II	6156	6034	8202	6656	6292	5692	5526	5536	5492	4596
III	388	458	556	402	394	392	440	476	446	518
IV	10	4	10	24	20	30	106	186	96	76
V	0	0	0	2	0	0	0	0	0	0
Total	7610	7914	10198	8384	8090	7636	7552	7704	7512	6662

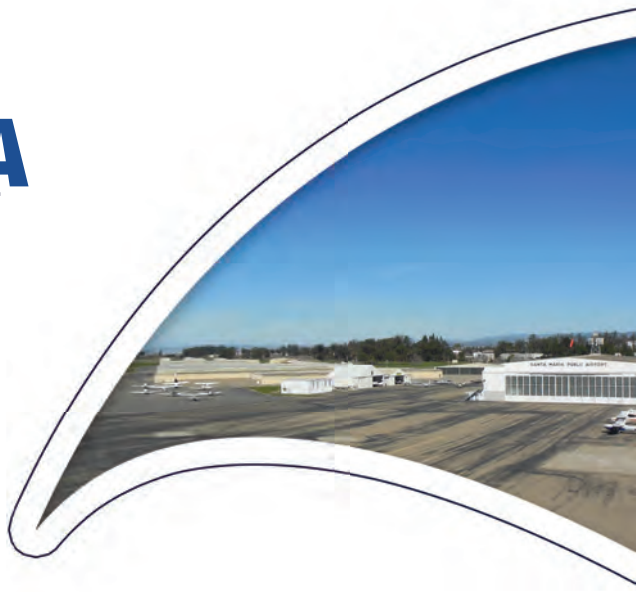
Source: Traffic Flow Management System Counts

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The current critical design aircraft for SMX is ARC C-IV, which is represented by the DC-10 aerial fire-fighting aircraft operated by the USFS. It is anticipated that DC-10 operations in support of USFS fire-fighting activities will continue to grow over time as consideration is being given to establishing a permanent tanker base at SMX. As a result, the existing and ultimate RDC for Runway 12-30 is C-IV-2400. The existing RDC for Runway 2-20 is B-II-VIS, and consideration will be given to establishing instrument approach capabilities to that runway, which would result in an ultimate RDC of B-II-5000.

The next step in the planning process is to assess the capabilities of the existing facilities to determine what upgrades may be necessary to meet future demands. The range of forecasts developed here will be taken forward in the next chapter as planning horizon activity levels that will serve as milestones or activity benchmarks in evaluating facility requirements.

SANTA MARIA
PUBLIC AIRPORT



CHAPTER THREE
FACILITY REQUIREMENTS



SANTA MARIA PUBLIC AIRPORT

CHAPTER THREE
FACILITY REQUIREMENTS

To properly plan for the future at Santa Maria Public Airport/Captain G Allan Hancock Field (Airport or SMX), it is necessary to translate forecast aviation demand into the specific types and quantities of facilities that can adequately serve projected demand levels. This chapter uses the results of the aviation demand forecasts, as well as established planning criteria, to determine the airfield (i.e., runways, taxiways, navigational aids, marking and lighting, and support facilities), and landside (i.e., terminal building, hangars, aircraft parking apron, fueling, vehicle parking and access) facility requirements.

The objective of this effort is to identify, in general terms, the adequacy of the existing airport facilities and outline what new facilities may be needed and when they may be needed to accommodate forecast demands. Having established these facility requirements, alternatives for providing the facilities will be evaluated to determine the most cost-effective and efficient means for implementation.

PLANNING HORIZONS

Cost-effective, safe, efficient, and orderly development of an airport should rely more upon actual demand than a time-based forecast figure. Thus, in order to develop a master plan that is demand-based rather than time-based, a series of planning horizon milestones have been established, as discussed in Chapter Two - Forecasts, that take into consideration the reasonable range of aviation demand projections.

It is important to consider that, over time, the actual activity at the airport may be higher or lower than what the annualized forecast portrays. By planning according to activity milestones, the resultant plan can accommodate unexpected shifts or changes in the area's aviation demand. It is important to plan for these milestones so that airport officials can respond to unanticipated changes in a timely fashion. As a result, these milestones provide flexibility, while potentially extending this plan's useful life if aviation trends slow over the period.

The most important reason for utilizing milestones is to allow the airport to develop facilities according to need generated by actual demand levels. The demand-based schedule provides flexibility in development, as the schedule can be slowed or expedited according to actual demand at any given time over the planning period. The resultant plan provides airport officials with a financially responsible and needs-based program. **Table 3A** presents the planning horizon milestones for each activity demand category.

TABLE 3A
Planning Horizon Activity Levels
Santa Maria Public Airport

	BASE YEAR	PLANNING HORIZONS		
	2015	Short Term	Intermediate Term	Long Term
Enplaned Passengers	44,340	49,400	53,000	64,500
Commercial Operations				
Air Carrier Airline	324	410	568	1,064
Air Taxi/Commuter Airline	1,429	3,770	3,752	3,056
Air Cargo	1,972	2,470	2,660	2,830
Air Carrier Charter	41	50	50	50
Other Air Taxi	5,838	6,800	7,700	8,600
Total Commercial Operations	9,604	13,500	14,730	15,600
General Aviation Operations				
Itinerant	17,718	19,100	20,500	22,200
Local	9,896	10,100	10,300	10,800
Total General Aviation Operations	27,614	29,200	30,800	33,000
Military Operations				
Itinerant	445	450	450	450
Local	726	700	700	700
Total Military Operations	1,171	1,150	1,150	1,150
Total Airport Operations	**38,389**	**43,850**	**46,680**	**49,750**
Based Aircraft	**235**	**269**	**294**	**346**

AIRFIELD CAPACITY

An airfield's capacity is expressed in terms of its annual service volume (ASV). ASV is a reasonable estimate of the maximum level of aircraft operations that can be accommodated in a year without incurring

significant delay factors. As aircraft operations near or surpass the ASV, delay factors increase exponentially. The Airport's ASV was examined utilizing the Federal Aviation Administration's (FAA) Advisory Circular (AC) 150/5060-5, *Airport Capacity and Delay*.

FACTORS AFFECTING ANNUAL SERVICE VOLUME

This analysis takes into account specific factors about the airfield in order to calculate SMX's ASV. These various factors are depicted in **Exhibit 3A**. The following describes the input factors as they relate to the Airport and include airfield layout, weather conditions, aircraft mix, and operations.

- **Runway Configuration –** The existing airfield configuration consists of dual runways supported by full-length parallel taxiways. Runway 12-30 is 8,004 feet long and 150 feet wide. Runway 2-20 is 5,199 feet long and 75 feet wide.

- **Runway Use –** Runway use in capacity conditions will be controlled by wind and/or airspace conditions. For SMX, the direction of takeoffs and landings are generally determined by the speed and direction of the wind. It is generally safest for aircraft to takeoff and land into the wind, avoiding a crosswind (wind that is blowing perpendicular to the travel of the aircraft) or tailwind components during these operations.

  Based upon available wind data, winds are predominantly out of the west/northwest, resulting in Runway 30 being used most often. According to SMX tower controllers, runway usage is as follows:

  - Runway 30 – 75 percent
  - Runway 12 – 20 percent
  - Runway 2 – 2.5 percent
  - Runway 20 – 2.5 percent

  The availability of instrument approaches is also considered. At SMX, only Runway 12-30 is equipped with instrument approach procedures. Runway 12 is primarily utilized in instrument weather conditions since it is equipped with a Category I instrument landing system (ILS), which provides visibility minimums down to ½-mile. Runway 30 is equipped with an RNAV (GPS) instrument approach, which provides visibility minimums down to 1 ¼-mile.

- **Exit Taxiways -** Exit taxiways have a significant impact on airfield capacity since the number and location of exits directly determine the occupancy time of an aircraft on the runway. The airfield capacity analysis gives credit to taxiway exits located within the prescribed range from a runway's threshold. This range is based upon the mix index of the aircraft that use the runways. Based upon mix, only exit taxiways between 2,000 feet and 4,000 feet from the landing threshold count in the exit rating at SMX. The exits must be at least 750 feet apart to count as separate exit taxiways. Utilizing these standards, two exit taxiways are provided for aircraft landing on Runway 30, and one exit taxiway is considered for aircraft landing on Runways 12, 2, and 20.

AIRFIELD LAYOUT

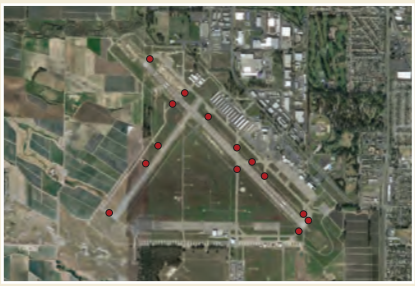
Runway Configuration



Runway Use



Number of Exits



WEATHER CONDITIONS

VMC
Visual Meteorological Conditions



IMC
Instrument Meteorological Conditions



PVC
Poor Visibility Conditions



AIRCRAFT MIX

Category A & B Aircraft



Category C Aircraft



Category D Aircraft



OPERATIONS

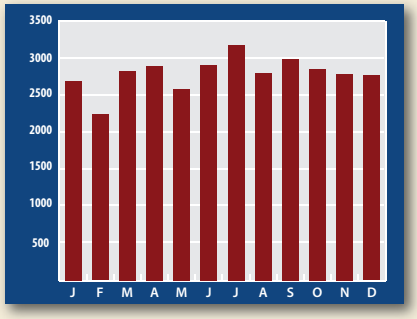
Arrivals



Departures



Total Annual Operations



Touch-and-Go Operations



- **Weather Conditions –** Weather conditions can have a significant impact on airfield capacity. Airport capacity is usually highest in clear weather, when flight visibility is at its best. Airfield capacity is diminished as weather conditions deteriorate and cloud ceilings and visibility are reduced. As weather conditions deteriorate, the spacing of aircraft must increase to provide allowable margins of safety and air traffic vectoring. The increased distance between aircraft reduces the number of aircraft which can operate at the Airport during any given period, thus reducing overall airfield capacity.

  According to meteorological data collected from the on-airport automated surface observation system (ASOS), the Airport operated under visual meteorological conditions (VMC) for approximately 71 percent of recorded observations. VMC exist whenever the cloud ceiling is greater than 1,000 feet above ground level (AGL) and visibility is greater than three statute miles. When prevailing weather conditions are less than VMC conditions, instrument meteorological conditions (IMC) are present. Instrument weather conditions occurred during approximately 29 percent of the recorded observations.

- **Aircraft Mix -** Aircraft mix for the capacity analysis is defined in terms of four fixed-wing aircraft classes. Classes A and B consist of small- and medium-sized propeller and some jet aircraft, all weighing 12,500 pounds or less. These aircraft are associated primarily with general aviation activity. A significant number of aircraft operations at SMX are those in Classes A and B. Class C consists of aircraft weighing between 12,500 pounds and 300,000 pounds. These aircraft include airline aircraft, most business jets and large turboprop aircraft, as well as larger charter and aerial firefighting aircraft that utilize the Airport. Class D aircraft consists of large aircraft weighing more than 300,000 pounds. The Airport experiences limited operations by Class D aircraft that primarily include DC-10s for aerial firefighting operations. In the future, aircraft in Class C will continue to constitute a substantial number of fixed-wing operations; however, Class D aircraft associated with aerial firefighting are projected to operate on a seasonal basis at SMX as part of the overall aircraft fleet mix at the Airport.

  It should be noted that for purposes of determining airfield capacity, helicopter activity is not included in the aircraft mix classification.

- **Percent Arrivals –** The percentage of arrivals as they relate to total operations of the Airport is important in determining airfield capacity. Under most circumstances, the lower the percentage of arrivals, the higher the hourly capacity. The aircraft arrival-departure percentage split is typically 50/50, which is the case at SMX.

- **Touch-And-Go Activity –** A touch-and-go operation involves an aircraft making a landing and then an immediate takeoff without coming to a full stop or exiting the runway. A high percentage of touch-and-go traffic normally results in a higher operational capacity because one landing and one takeoff occurs within a shorter time period than individual operations. Touch-and-go operations at SMX have historically averaged approximately 30 percent of total annual operations.

- **Peak Period Operations –** For the airfield capacity analysis, average daily operations and average peak hour operations during the peak month are utilized. Typical operations activity is important in the calculation of an airport's ASV as "peak demand" levels occur sporadically. The peak periods

used in the capacity analysis are representative of normal operational activity and can be exceeded at various times throughout the year. For SMX, the peak periods typically occur during the summer months.

AIRFIELD CAPACITY SUMMARY

Given the factors outlined above, the airfield's ASV will range between 200,000 and 230,000 annual operations. The ASV does not indicate a point of absolute gridlock for the airfield; however, it does represent the point at which operational delay for each aircraft operation will increase exponentially.

As previously detailed, during the past ten years, the Airport has averaged approximately 43,500 annual operations. This operational level for the Airport represents approximately 22 percent of the airfield's ASV, if the ASV is considered at the low end of the typical range of 200,000 annual operations. By the end of the long term planning period, total annual operations are expected to represent 25 percent of the airfield's ASV.

FAA Order 5090.3B, *Field Formulation of the National Plan of Integrated Airport Systems* (NPIAS), indicates that improvements for airfield capacity purposes should begin to be considered once operations reach 60 to 75 percent of the annual service volume. This is an approximate level to begin the detailed planning of capacity improvements. At the 80 percent level, the planned improvements should be made. While no significant capacity improvements will be necessary, options to improve airfield efficiency will still be considered in the Master Plan.

AIRFIELD REQUIREMENTS

The analyses of the operational capacity and the critical design aircraft are used to determine airfield needs. This includes runway configuration, dimensional standards, and pavement strength, as well as navigational aids, lighting, and marking.

RUNWAY CONFIGURATION

Key considerations in the runway configuration of an airport involve the orientation for wind coverage and the operational capacity of the runway system. FAA AC 150/5300-13A, *Airport Design*, recommends that a crosswind runway should be made available when the primary runway orientation provides less than 95 percent wind coverage for any aircraft forecast to use the airport on a regular basis.

The 95 percent wind coverage is computed on the basis of the crosswind component not exceeding 10.5 knots (12 mph) for ARC A-I and B-I; 13 knots (15 mph) for ARC A-II and B-II; 16 knots (18 mph) for ARC A-III, B-III, and C-I through D-II; and 20 knots (23 mph) for ARC C-III through D-IV.

The previous 10 years (2006 – 2015) of wind data[1] was obtained from the on-airport ASOS and has been analyzed to identify wind coverage provided by the existing runway orientations. At SMX, the orientation of Runway 12-30 provides 98.34 percent coverage for 10.5 knot component, and greater than 99 percent coverage for 13, 16, and 20 knot components. Runway 2-20 provides 87.79 percent coverage for 10.5 knot crosswind component; 91.58 percent coverage for 13 knots; 96.46 percent for 16 knots; and 98.77 percent for 20 knots or greater. The combination of both runways provides for greater than 99 percent coverage for 10.5 knots and greater. Thus, the two runways at SMX provide adequate wind coverage. Both the instrument flight rules (IFR) and visual flight rules (VFR) wind roses are presented on **Exhibit 3B**.

RUNWAY LENGTH

The aircraft performance capability is a key factor in determining the runway length needed for takeoff and landing. The performance capability and, subsequently, the runway length requirement of a given aircraft type can be affected by the elevation of the airport, the air temperature, the gradient of the runway, and the operating weight of the aircraft. Aircraft performance capabilities decline as each of these factors increase.

The airport elevation at SMX is 261 feet above mean sea level (MSL). The temperature used for airport design is the mean maximum daily temperature during the hottest month. According to the National Climatic Data Center, the mean maximum temperature is 73.7 degrees Fahrenheit (F) in Santa Maria during the month of September. The change in elevation (gradient) varies by 44.3 feet along Runway 12-30 (0.6 percent gradient) and by 16.6 feet along Runway 2-20 (0.03 percent gradient). This information is utilized in the following runway length analyses.

Runway Length – General Aviation

SMX serves a substantial level of general aviation (GA) activity. Historically, GA operations have accounted for approximately 78 percent of total Airport operations. While the majority of GA activity is conducted by small piston powered aircraft, SMX is also used extensively by itinerant business jet aircraft (Learjet 30/40/45/60, Cessna Citation Jet family of business jets, Gulfstream G400/G550), which have a greater impact upon runway length needs.

Exhibit 3C provides a detailed runway length analysis for 45 of the most common business jet and turboprop aircraft in the national fleet. This data was obtained from Ultranav software which computes operational parameters for specific aircraft based on flight manual data. The analysis includes the maximum takeoff weight (MTOW) allowable and the percent useful load for both current runway lengths. This analysis shows that the primary runway length of 8,004 feet is capable of accommodating each of these business jet aircraft during wet runway conditions with no limit to their MTOW.

[1] Total observations – 126,233 all-weather observations.

Exhibit 3C also presents the runway length required for landing under three operational categories: Title 14 Code of Federal Regulations (CFR) Part 25, CFR Part 135, and CFR Part 91k. CFR Part 25 operations are those conducted by individuals or companies which own their aircraft. CFR Part 135 applies to all for-hire charter operations, including most fractional ownership operations. CFR Part 91k includes operations in fractional ownership which utilize their owned aircraft under direction of pilots specifically assigned to said aircraft. The landing length analysis shows an average landing length of 4,500 feet for aircraft operating under CFR Part 91k during wet runway conditions and an average of 6,000 for aircraft operating under Part 135 during wet runway conditions.

The FAA will typically only support runway length planning to the 60 percent useful load factor unless it can be demonstrated that business jets are frequently operating fully loaded (90 percent). This analysis has shown that each business jet aircraft is capable of taking off on the primary runway at SMX at or above 90 percent useful load.

The crosswind runway length of 5,199 feet is also capable of accommodating most of these business jet aircraft, but many must operate with restrictions to their takeoff weight. The average percent useful load for business jets on the crosswind runway is 86 percent under wet runway conditions. All business jets examined are capable of landing on the crosswind runway when operating under Part 25 during dry runway conditions. As a result, the existing Runway 2-20 length of 5,199 feet is considered adequate for planning purposes.

Commercial Aircraft

Runway length needs for commercial aircraft must factor the conditions described above but also the load carried. The aircraft load is dependent upon the payload of passengers and/or cargo, plus the amount of fuel it has on board. For departures, the amount of fuel varies depending upon the length of non-stop flight or trip length. In some cases, airlines will ferry fuel due to availability/pricing; therefore, some aircraft will operate from an airport with more fuel (load) than necessary.

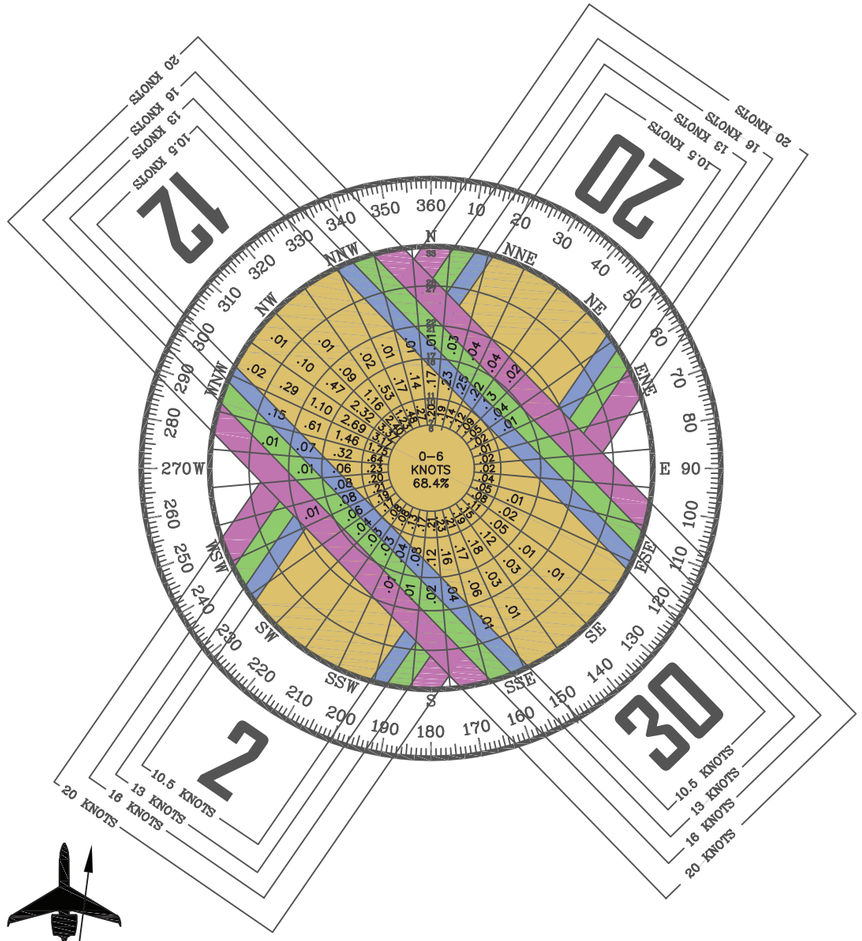
As of September 2016, scheduled airline flights from SMX were available to McCarran International Airport in Las Vegas (269 nautical miles [nm]) and San Francisco International Airport (188 nm). Any future destinations could include traditional hub airports such as Los Angeles International Airport (117 nm), Phoenix Sky Harbor International Airport (430 nm), Salt Lake City International Airport (535 nm), Seattle-Tacoma International Airport (757 nm), or Denver International Airport (810 nm).

All common commercial turboprop aircraft are able to operate at the existing airfield at maximum certified takeoff weight (MTOW). This includes the Embraer 120, Beechcraft 1900, ATR-72, Saab-340B, as well as the Q-400 which has seen increased usage by regional carriers.

Table 3B presents the runway length needs for various regional jet (RJ) aircraft utilizing the closest ambient temperature conditions available in each aircraft's airport planning manual. The CRJ200ER and ERJ

ALL WEATHER WIND COVERAGE

Runways	10.5 Knots	13 Knots	16 Knots	20 Knots
Runway 12–30	*98.34%*	*99.22%*	*99.82%*	*99.97%*
Runway 2–20	*87.79%*	*91.58%*	*96.46%*	*98.77%*
All Runways	*99.72%*	*99.96%*	*100%*	*100%*



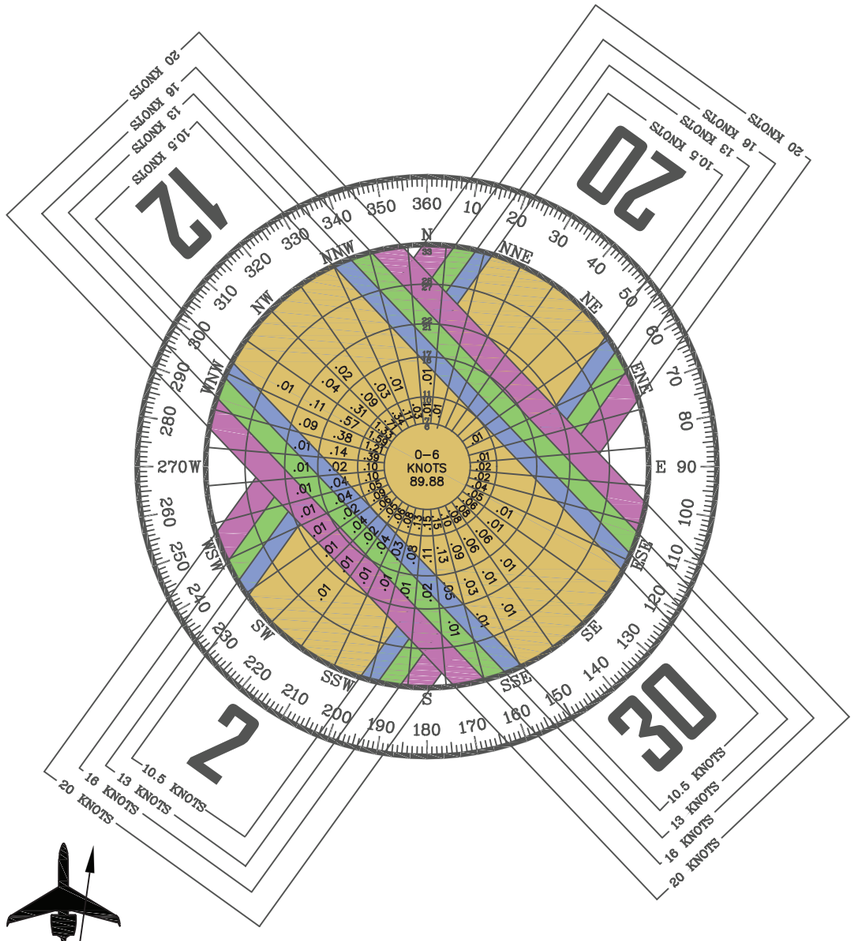
NORTH

Magnetic Declination
12° 43' East (Feb. 2016)
Annual Rate of Change
00° 5' West (Feb. 2016)

SOURCE:
NOAA National Climatic Center
Asheville, North Carolina
Santa Maria Public Airport/Capt. G Allan Hancock Field
Santa Maria, California
OBSERVATIONS:
126,233 All Weather Observations
2006–2015

IFR WIND COVERAGE

Runways	10.5 Knots	13 Knots	16 Knots	20 Knots
Runway 12–30	*99.53%*	*99.77%*	*99.92%*	*99.98%*
Runway 2–20	*97.80%*	*98.61%*	*99.57%*	*99.89%*
All Runways	*99.89%*	*99.98%*	*100%*	*100%*



NORTH

Magnetic Declination
12° 43' East (Feb. 2016)
Annual Rate of Change
00° 5' West (Feb. 2016)

SOURCE:
NOAA National Climatic Center
Asheville, North Carolina
Santa Maria Public Airport/Capt. G Allan Hancock Field
Santa Maria, California
OBSERVATIONS:
33,618 IFR Observations
2006–2015

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Aircraft Name	Maximum Take-off Weight Allowable for Condition				% Useful Load for				Landing Length Required for:					
	8,004' Runway		5,199' Runway		8,004' Runway		5,199' Runway		C.F.R. Part 25		C.F.R. Part 135		C.F.R. Part 91k	
	Dry	Wet	Dry	Wet	Dry	Wet	Dry	Wet	Dry	Wet	Dry	Wet	Dry	Wet
Beech Jet 400	NL	NL	16,100	15,406	100%	100%	100%	93%	3,276	3,767	5,460	6,278	4,095	4,709
Challenger 600	NL	NL	43,969	43,969	100%	100%	80%	80%	2,799	4,196	4,665	6,993	3,499	5,245
CRJ 200	NL	NL	47,430	46,235	100%	100%	82%	76%	2,922	4,869	4,870	8,115	3,653	6,086
Global 5000	NL	NL	85,448	85,056	100%	100%	83%	82%	2,683	3,086	4,473	5,144	3,354	3,858
Global Express	NL	NL	85,469	85,078	100%	100%	82%	81%	2,149	2,471	3,581	4,118	2,686	3,089
Global XRS	NL	NL	85,470	85,080	100%	100%	73%	72%	2,684	3,086	4,473	5,144	3,355	3,858
Citation Bravo	NL	NL	14,800	14,800	100%	100%	100%	100%	3,319	5,193	5,531	8,655	4,148	6,491
Citation Encore	NL	NL	16,630	16,630	100%	100%	100%	100%	2,851	3,278	4,751	5,463	3,563	4,097
Citation Mustang	NL	NL	8,645	8,645	100%	100%	100%	100%	2,446	3,419	4,077	5,698	3,058	4,274
Citation III	NL	NL	21,310	21,310	100%	100%	98%	98%	2,862	3,292	4,770	5,486	3,578	4,115
Citation X	NL	NL	34,650	31,907	100%	100%	92%	71%	3,582	4,119	5,970	6,865	4,478	5,149
Citation Excel	NL	NL	20,000	20,000	100%	100%	100%	100%	2,999	3,449	4,999	5,749	3,749	4,312
Citation Encore Plus	NL	NL	16,830	16,699	100%	100%	100%	98%	2,615	3,007	4,358	5,012	3,269	3,759
Citation I SP	NL	N/A	11,850	N/A	100%	N/A	100%	N/A	2,324	2,672	3,873	4,454	2,905	3,341
Citatin Sovereign	NL	NL	30,300	30,300	100%	100%	100%	100%	2,716	3,123	4,526	5,205	3,395	3,904
Citation CJ 1	NL	NL	10,600	10,600	100%	100%	100%	100%	2,834	3,843	4,724	6,405	3,543	4,804
Citation CJ 2	NL	NL	12,375	12,375	100%	100%	100%	100%	3,060	4,451	5,100	7,418	3,825	5,564
Citation CJ 3	NL	NL	13,870	13,870	100%	100%	100%	100%	2,855	3,284	4,759	5,473	3,569	4,105
Dassault Falcon 7X	NL	NL	65,494	64,648	100%	100%	87%	84%	2,936	3,376	4,893	5,627	3,670	4,220
Dassault Falcon 20	NL	NL	28,435	25,375	100%	100%	98%	70%	2,032	2,336	3,387	3,893	2,540	2,920
Dassault Falcon 900	NL	NL	46,700	46,530	100%	100%	100%	99%	2,838	3,263	4,729	5,439	3,547	4,079
Dassault Falcon 2000EX	NL	NL	39,749	38,429	100%	100%	87%	79%	3,509	4,036	5,848	6,726	4,386	5,045

KEY: **NL** = No Limitation **N/A** = Wet runway option not available

Aircraft Name	Maximum Take-off Weight Allowable for Condition				% Useful Load for				Landing Length Required for:					
	8,004' Runway		5,199' Runway		8,004' Runway		5,199' Runway		C.F.R. Part 25		C.F.R. Part 135		C.F.R. Part 91k	
	Dry	Wet	Dry	Wet	Dry	Wet	Dry	Wet	Dry	Wet	Dry	Wet	Dry	Wet
Gulfstream 100	NL	N/A	22,677	N/A	100%	100%	80%	N/A	2,384	4,581	3,973	7,635	2,980	5,726
Gulfstream 150	NL	NL	26,014	22,721	100%	100%	99%	69%	2,964	4,368	4,940	7,280	3,705	5,460
Gulfstream 350	NL	NL	70,549	67,454	100%	100%	99%	88%	3,276	3,768	5,460	6,280	4,095	4,710
Gulfstream 450	NL	NL	70,549	67,454	100%	100%	88%	78%	3,276	5,318	5,460	8,863	4,095	6,648
Gulfstream 550	NL	NL	81,303	80,985	100%	100%	77%	76%	2,787	4,764	4,645	7,940	3,484	5,955
Gulfstream 300	NL	NL	70,901	66,370	100%	100%	96%	80%	3,193	3,670	5,322	6,117	3,991	4,588
Gulfstream 200B	NL	NL	68,188	63,314	100%	100%	95%	80%	3,187	3,663	5,312	6,105	3,984	4,579
Gulfstream 400 SP	NL	NL	71,170	63,530	100%	100%	89%	65%	3,193	3,672	5,322	6,120	3,991	4,590
Westwind I	NL	NL	22,072	21,200	100%	100%	92%	83%	2,490	2,870	4,150	4,783	3,113	3,588
Westwind II	NL	NL	21,911	21,000	100%	100%	84%	76%	2,410	2,780	4,017	4,633	3,013	3,475
Learjet 31 A	NL	NL	17,000	17,000	100%	100%	100%	100%	2,942	4,119	4,903	6,865	3,678	5,149
Learjet 35 A	NL	N/A	17,080	N/A	100%	N/A	84%	N/A	1,904	2,665	3,173	4,442	2,380	3,332
Learjet 40	NL	NL	21,000	21,000	100%	100%	100%	100%	1,904	2,665	3,173	4,442	2,380	3,332
Learjet 55	NL	NL	19,292	N/A	100%	100%	74%	N/A	2,654	4,246	4,423	7,076	3,317	5,307
Learjet 60	NL	NL	21,627	20,710	100%	100%	79%	68%	3,508	4,631	5,847	7,719	4,385	5,789
Hawker 800	NL	NL	27,737	27,737	100%	100%	98%	98%	2,134	3,126	3,557	5,209	2,668	3,907
Hawker 900	NL	NL	28,000	21,065	100%	100%	100%	40%	2,134	3,126	3,557	5,209	2,668	3,907
Hawker 4000	NL	NL	39,346	38,243	100%	100%	99%	92%	2,462	2,831	4,103	4,719	3,077	3,539
Premier 1A	NL	NL	12,500	12,500	100%	100%	100%	100%	3,269	4,163	5,448	6,938	4,086	5,204
Sabreliner 65	NL	NL	21,709	19,809	100%	100%	78%	59%	2,589	3,475	4,315	5,792	3,236	4,344
King Air C90B	NL	N/A	10,100	N/A	100%	N/A	100%	N/A	1,300	N/A	2,167	N/A	1,625	N/A
King Air 200GT	NL	N/A	11,311	N/A	100%	N/A	68%	N/A	1,156	N/A	1,927	N/A	1,445	N/A
King Air 350	NL	NL	15,000	15,000	100%	100%	100%	100%	2,746	3,157	4,577	5,262	3,433	3,946

KEY: **NL** = No Limitation **N/A** = Wet runway option not available

190 planning charts were calculated at 73 and 77 degrees respectively, while the remaining aircraft planning charts allowed for planning to 86 degrees. Each of the regional jets is able to operate at 100 percent useful load during the hottest weather conditions typically experienced in Santa Maria.

TABLE 3B
Takeoff Length Requirements for Regional Jets
Santa Maria Public Airport

Aircraft Type	MTOW (lbs.)	Ambient Temperature (F)	Runway Length (ft.) at MTOW (lbs.)	Percent of Useful Load With Existing 8,004' Runway
Regional Jet Aircraft				
CRJ200ER	53,000	73°	6,490	100%
CRJ700ER	75,000	86°	5,750	100%
CRJ900ER	82,500	86°	6,800	100%
ERJ 135	44,092	86°	7,000	100%
ERJ 140	46,517	86°	6,900	100%
ERJ 145	45,415	86°	7,950	100%
ERJ 170	79,344	86°	5,100	100%
ERJ 190	110,892	77°	7,800	100%

MTOW: Maximum certified takeoff weight
Source: Aircraft Operating Manuals

Allegiant Air utilizes the MD-80 series aircraft for its operations to Las Vegas. Over time, it is anticipated that Allegiant will transition its fleet to more modern aircraft such as the Airbus A320. Large charter aircraft up to Boeing 757s and 767s also occasionally operate at SMX. The DC-10 is also operated at SMX for aerial firefighting purposes. As a result, consideration needs to be given to the runway length requirements of these larger aircraft. **Table 3C** summarizes the runway length needs for common medium-sized commercial jets which currently operate or are anticipated to operate on a more frequent basis at the Airport.

The runway length calculation charts factor for an ambient temperature of 86 to 88 degrees Fahrenheit, which is 12 to 14 degrees warmer than the average high temperatures in the summer months, so the runway length results are somewhat overestimated. Even at the higher temperature, the analysis shows that the current length of Runway 12-30 is adequate to meet the needs of the current critical design aircraft (MD-83), and most of the other commercial aircraft, including the A320, which is the future critical design aircraft, at 90 percent useful load. The DC-10 30/40 series are shown to need additional runway length when operating at 80 percent useful load. The DC-10 10/30/40 series, 737-200, 737-400, and 737-900ER show a need for additional runway length at 90 percent useful load. Under these ambient temperature conditions, most of these aircraft may be weight restricted when operating at 100 percent useful load; however, aircraft are not typically operated at 100 percent useful load.

Based upon the result that the existing runway is capable of accommodating most of these commercial service aircraft, including the MD-83 and the A320, at 90 percent useful load under these operating conditions, the existing runway length is adequate to meet the existing and future commercial carrier runway length requirements.

TABLE 3C
Runway Length Requirements for Select Commercial Aircraft (in feet)
Santa Maria Public Airport

Aircraft	Runway Length at 60% Useful Load	Runway Length at 70% Useful Load	Runway Length at 80% Useful Load	Runway Length at 90% Useful Load	Runway Length at 100% Useful Load
B737-200	5,000	5,900	6,100	8,100	9,500
B737-300	5,100	5,950	6,900	7,900	10,950
B737-400	5,250	5,950	7,000	8,050	10,550
B737-500	4,900	5,300	6,100	7,800	8,800
B737-600	4,500	5,100	5,750	6,800	7,500
B737-700	5,000	5,850	6,500	7,900	8,200
B737-800	5,200	6,000	6,500	7,100	8,300
B737-900ER	6,100	7,000	8,300	8,900	9,900
MD-83	4,500	5,900	6,500	7,500	8,900
A320-200	5,250	5,500	6,500	7,000	8,000
B757-300	4,100	4,900	5,400	6,000	6,400
B767-200ER	4,250	5,000	5,600	5,900	6,500
DC-10-10	5,900	6,600	7,900	9,500	13,500
DC-10-30	6,200	7,500	8,200	9,800	11,000
DC-10-40	6,600	7,700	8,400	9,800	11,000

Notes: Temp: 86° to 88° F, Gradient: 44.3 feet, Elevation: 261' MSL
Runway lengths rounded up to nearest 100' for values over 30 feet
Source: Aircraft Operating Manuals

Runway Width

Runway 12-30 is 150 feet wide. FAA design standard for ARC C/D-III runway width is 100 feet wide unless the critical aircraft has an MTOW greater than 150,000 pounds. For ADG III airplanes with MTOW greater than 150,000 pounds, the standard runway width is 150 feet; otherwise, the standard remains 100 feet wide for ADG III airplanes with MTOW less than 150,000 pounds. Several ADG III airplanes with MTOWs greater than 150,000 pounds currently operate at the Airport, including the MD-80 series aircraft, which is the current critical design aircraft, and the DC-10, which is utilized for seasonal firefighting purposes. As was discussed, the commercial fleet is anticipated to transition to larger, more modern aircraft including the Airbus A320. The A320 also has a MTOW greater than 150,000 pounds. Therefore, the existing Runway 12-30 width of 150 feet should be maintained through the planning period.

Runway 2-20 is 75 feet wide. The FAA design standard for ARC B-II runway width is 75 feet wide. At this width, the runway is capable of accommodating most small to mid-sized business jet aircraft. As such, the existing width of Runway 2-20 should be maintained in the future.

Pavement Strength

An important feature of airfield pavement is its ability to withstand repeated use by aircraft of significant weight. At SMX, the pavement for Runway 12-30 should be able to accommodate regular usage by commercial and firefighting aircraft serving the Airport, as well as the largest business jets in the national

fleet. Runway 2-20 should be able to accommodate frequent activity by all GA aircraft using the airport on a regular basis.

The current strength rating of Runway 12-30 is 75,000 pounds single wheel loading (SWL), 181,000 pounds dual wheel loading (DWL); and 400,000 pounds dual tandem wheel loading (DTWL). These strength ratings are more than adequate to support regular operations by the current and anticipated future fleet of scheduled commercial airlines and GA aircraft at the Airport including the Airbus A320, Boeing 737, DC-10 aerial firefighting aircraft, Gulfstream family of jets, and the Boeing Business Jet.

Runway 2-20 has a current strength rating of 70,000 pounds SWL; 90,000 pounds DWL; and 150,000 pounds DTWL. These strength ratings are more than adequate for the GA aircraft it is planned to serve and should be maintained through the planning period.

Taxiways

The design standards associated with taxiways are determined by the taxiway design group (TDG) or the airplane design group (ADG) of the critical design aircraft. As determined previously, the applicable existing and ultimate ADG for Runway 12-30 is ADG-III; while the applicable existing and ultimate ADG for Runway 2-20 is ADG-II. **Table 3D** presents the various taxiway design standards related to ADG-II/III.

TABLE 3D
Taxiway Dimensions and Standards
Santa Maria Public Airport

STANDARDS BASED ON WINGSPAN	ADG II	ADG III
Taxiway Protection		
Taxiway Safety Area (TSA) width	79'	118’
Taxiway Object Free Area (TOFA) width	131'	186’
Taxilane Object Free Area width	115’	162’
Taxiway Separation		
Taxiway Centerline to:		
Fixed or Movable Object	65.5'	93’
Parallel Taxiway/Taxilane	105’	152’
Taxilane Centerline to:		
Fixed or Movable Object	57.5'	81’
Parallel Taxilane	97’	140’
Wingtip Clearance		
Taxiway Wingtip Clearance	26'	34’
Taxilane Wingtip Clearance	18’	27’
STANDARDS BASED ON TDG	**TDG 3/4**	**TDG 5**
Taxiway Width Standard	50’	75’
Taxiway Edge Safety Margin	10’	15’
Taxiway Shoulder Width	20’	30’

ADG: Airplane Design Group
TDG: Taxiway Design Group
Source: FAA AC 150/5300-13A, *Airport Design*

The table also shows those taxiway design standards related to TDG. The TDG standards are based on the Main Gear Width (MGW) and the Cockpit to Main Gear (CMG) distance of the critical design aircraft expected to use those taxiways. Different taxiways/taxilane pavements can and should be designed to the most appropriate TDG design standards.

The existing critical TDG for SMX is 4, based primarily upon the MD-80. This means that the taxiways associated with the runways should be at least 50 feet wide. All taxiways on the airfield are at least 50 feet wide. The ultimate critical TDG for SMX is 3 based upon the forecasted transition of the airline fleet to more modern aircraft such as the Airbus A320. TDG 3 standards are the same as TDG 4, with the exception of taxiway fillet dimensions. All taxiways meet or exceed the existing and ultimate FAA design standard and therefore should be maintained through the planning period of this Master Plan.

SMX is currently used as a temporary aerial firefighting base by the U.S. Forest Service (USFS). The USFS operates a variety of aircraft including the DC-10 tanker, which falls within ARC C/D-IV and TDG 5. While this aircraft does not operate frequently enough to be considered the Airport's overall critical design aircraft, any future facility projects planned for aerial firefighting aircraft should consider TDG 5 standards to ensure they are capable of accommodating the DC-10.

Taxiway Design Considerations

FAA AC 150/5300-13A, Change 1, *Airport Design*, provides guidance on recommended taxiway and taxilane layouts to enhance safety by avoiding runway incursions. A runway incursion is defined as "any occurrence at an airport involving the incorrect presence of an aircraft, vehicle, or person on the protected area of a surface designated for the landing and takeoff of aircraft."

The taxiway system at SMX generally provides for the efficient movement of aircraft; however, AC 150/5300-13A, Change 1, *Airport Design*, provides recommendations for taxiway design. The following is a list of the taxiway design guidelines and the basic rationale behind each recommendation:

1. **Taxi Method**: Taxiways are designed for "cockpit over centerline" taxiing with pavement being sufficiently wide to allow a certain amount of wander. On turns, sufficient pavement should be provided to maintain the edge safety margin from the landing gear. When constructing new taxiways, upgrading existing intersections should be undertaken to eliminate "judgmental oversteering," which is where the pilot must intentionally steer the cockpit outside the marked centerline in order to assure the aircraft remains on the taxiway pavement.

2. **Steering Angle**: Taxiways should be designed such that the nose gear steering angle is no more than 50 degrees, the generally accepted value to prevent excessive tire scrubbing.

3. **Three-Node Concept**: To maintain pilot situational awareness, taxiway intersections should provide a pilot a maximum of three choices of travel. Ideally, these are right and left angle turns and a continuation straight ahead.

4. **Intersection Angles**: Turns should be designed to 90 degrees wherever possible. For acute angle intersections, standard angles of 30, 45, 60, 120, 135, and 150 degrees are preferred.

5. **Runway Incursions**: Taxiways should be designed to reduce the probability of runway incursions.
   - *Increase Pilot Situational Awareness*: A pilot who knows where he/she is on the airport is less likely to enter a runway improperly. Complexity leads to confusion. Keep taxiway systems simple using the "three node" concept.
   - *Avoid Wide Expanses of Pavement*: Wide pavements require placement of signs far from a pilot's eye. This is especially critical at runway entrance points. Where a wide expanse of pavement is necessary, avoid direct access to a runway.
   - *Limit Runway Crossings*: The taxiway layout can reduce the opportunity for human error. The benefits are twofold – through simple reduction in the number of occurrences, and through a reduction in air traffic controller workload.
   - *Avoid "High Energy" Intersections*: These are intersections in the middle third of runways. By limiting runway crossings to the first and last thirds of the runway, the portion of the runway where a pilot can least maneuver to avoid a collision is kept clear.
   - *Increase Visibility*: Right angle intersections, both between taxiways and runways, provide the best visibility. Acute angle runway exits provide for greater efficiency in runway usage, but should not be used as runway entrance or crossing points. A right angle turn at the end of a parallel taxiway is a clear indication of approaching a runway.
   - *Avoid "Dual Purpose" Pavements*: Runways used as taxiways and taxiways used as runways can lead to confusion. A runway should always be clearly identified as a runway and only a runway.
   - *Indirect Access*: Do not design taxiways to lead directly from an apron to a runway. Such configurations can lead to confusion when a pilot typically expects to encounter a parallel taxiway.
   - *Hot Spots*: Confusing intersections near runways are more likely to contribute to runway incursions. These intersections must be redesigned when the associated runway is subject to reconstruction or rehabilitation. Other hot spots should be corrected as soon as practicable.

6. **Runway/Taxiway Intersections**:
   - *Right Angle*: Right-angle intersections are the standard for all runway/taxiway intersections, except where there is a need for a high-speed exit. Right-angle taxiways provide the best visual perspective to a pilot approaching an intersection with the runway to observe aircraft in both the left and right directions. They also provide optimal orientation of the runway holding position signs so they are visible to pilots.
   - *Acute Angle*: Acute angles should not be larger than 45 degrees from the runway centerline. A 30-degree taxiway layout should be reserved for high-speed exits. The use of multiple intersecting taxiways with acute angles creates pilot confusion and improper positioning of taxiway signage.
   - *Large Expanses of Pavement*: Taxiways must never coincide with the intersection of two runways. Taxiway configurations with multiple taxiway and runway intersections in a single area create large expanses of pavement, making it difficult to provide proper signage, marking, and lighting.

7. **Taxiway/Runway/Apron Incursion Prevention**: Apron locations that allow direct access into a runway should be avoided. Increase pilot situational awareness by designing taxiways in such a manner that forces pilots to consciously make turns. Taxiways originating from aprons and forming a straight line across runways at mid-span should be avoided.
   - *Wide Throat Taxiways*: Wide throat taxiway entrances should be avoided. Such large expanses of pavement may cause pilot confusion and makes lighting and marking more difficult.
   - *Direct Access from Apron to a Runway*: Avoid taxiway connectors that cross over a parallel taxiway and directly onto a runway. Consider a staggered taxiway layout that forces pilots to make a conscious decision to turn.
   - *Apron to Parallel Taxiway End*: Avoid direct connection from an apron to a parallel taxiway at the end of a runway.

FAA AC 150/5300-13A, Change 1, *Airport Design*, states that "existing taxiway geometry should be improved whenever feasible, with emphasis on designated "hot spots." To the extent practicable, the removal of existing pavement may be necessary to correct confusing layouts. The FAA has identified the four "hot spots" at SMX, which are described as follows:

1. Taxiways A, A7, A8, V, and W converging and complex taxi routes in close proximity of the runway.
2. Taxiways A, A6, A5, R, and S, complex taxiway in close proximity of the runway.
3. Aircraft on Taxiway A sometimes fail to hold short of Runway 20.
4. Aircraft on Taxiway B2 and Taxiway A2 sometimes fail to hold short of Runway 12.

In addition to the "hot spots," several non-standard taxiway conditions currently exist including:

- Taxiways A4, A5, and A6 are acute-angled exit taxiways. The SMX ATCT has indicated these acute-angled exits are beneficial to airfield capacity and circulation; however, consideration will be given to the design of these acute-angled exits to determine whether they should remain acute-angled exits or reconstructed as right-angled exits.
- Taxiways A4/B5 cross Runway 12-30 in the high energy area.
- Taxiways L/A3 provides direct access to the runway from the T-hangar area and crosses Runway 12-30 in the high energy area.
- Taxiways K/A2 provides direct access to the runway from the corporate hangar area.
- Taxiway A7 is an acute-angled taxiway that does not provide high-speed exit capabilities.
- Taxiways A7/A8 form into a wide pavement area of approximately 280 feet at the Runway 30 threshold.
- A portion of Taxiway J is not visible to ATCT where it is obstructed by the corporate hangar area.

In addition, previous planning has identified various taxiway improvements including the expansion to Taxiway B to create a full-length parallel on the southwest side of Runway 12-30 as well as a future Taxiway D, which would serve as a full-length parallel on the east side of Runway 2-20. Analysis in the next chapter will consider these improvements which could be implemented on the airfield to minimize

runway incursion potential, improve efficiency, and conform to FAA standards for taxiway design. Any future taxiways planned will also take into consideration the taxiway design standards.

Taxilane Design Considerations

Taxilanes are distinguished from taxiways in that they do not provide access to or from the runway system directly. Taxilanes typically provide access to hangar areas. As a result, taxilanes can be designed to varying design standards depending on the type of aircraft utilizing the taxilane. For example, a taxilane leading to a T-hangar area only needs to be designed to accommodate those aircraft typically accessing a T-hangar.

The alternatives chapter will consider various designs for improving the safe movement of aircraft via taxilanes as hangar and apron facilities expand over time.

SAFETY AREA DESIGN STANDARDS

The FAA has established several safety surfaces to protect aircraft operational areas and keep them free from obstructions that could affect their safe operation. These include the runway safety area (RSA), object free area (OFA), obstacle free zone (OFZ), and runway protection zone (RPZ). **Table 3E** presents the applicable design standards for each runway.

TABLE 3E
Airfield Design Standards
Santa Maria Public Airport

Runway Design Code (RDC)	C/D-III	B-II
Applicable Runway	**Existing/Ultimate 12-30**	**Existing/Ultimate 2-20**
RUNWAYS		
Runway Length	8,004	5,199
Runway Width	150	75
Runway Shoulder Width	20	10
Runway Safety Area		
Width	500	150
Length Prior to Threshold	600	300
Length Beyond End	1,000	300
Runway Object Free Area		
Width	800	500
Length Beyond End	1,000	300
Runway Obstacle Free Zone		
Width	400	400
Length Beyond End	200	200
Separation Standards - Runway Centerline to:		
Holding Position	253	200
Parallel Taxiway	400	240
Aircraft Parking Area	500	250

Note: All dimensions in feet.
Source: AC 150/5300-13A, Airport Design

The entire RSA, OFZ, and OFA should be under the direct control of the airport sponsor to ensure these areas remain free of obstacles and can be readily accessed by maintenance and emergency personnel. It is not required that the RPZ be under airport ownership, but it is strongly recommended. An alternative to fee-simple ownership of the RPZ is the purchase of avigation easements (acquiring control of designated airspace within the RPZ) or have sufficient land use control measures in place which ensure the RPZ remains free of incompatible development. **Exhibit 3D** depicts the existing/ultimate safety areas at SMX.

Dimensional standards for the various safety areas associated with the runways are a function of the type of aircraft (ARC) expected to use the runways as well as the approved instrument approach visibility minimums. Each runway can be designed to serve a different type of aircraft based on ARC. At SMX, Runway 12-30 is the designated primary runway and should meet design standards for RDC C/D-III[2]. Runway 2-20 should meet design standards for RDC B-II.

Runway Safety Area (RSA)

The RSA is defined in FAA AC 150/5300-13A, *Airport Design,* as a "surface surrounding the runway prepared or suitable for reducing the risk of damage to airplanes in the event of undershoot, overshoot, or excursion from the runway." The RSA is centered on the runway and dimensioned in accordance to the approach speed of the critical design aircraft using the runway. The FAA requires the RSA to be cleared and graded, drained by grading or storm sewers, capable of accommodating the design aircraft and fire and rescue vehicles, and free of obstacles not fixed by navigational purpose such as runway edge lights or approach lights.

The FAA has placed a higher significance on maintaining adequate RSA at all airports. Under Order 5200.8, effective October 1, 1999, the FAA established the *Runway Safety Area Program.* The Order states, "The objective of the Runway Safety Area Program is that all RSAs at federally-obligated airports…shall conform to the standards contained in Advisory Circular 150/5300-13, *Airport Design*, to the extent practicable." Each Regional Airports Division of the FAA is obligated to collect and maintain data on the RSA for each runway at the airport and perform airport inspections.

For RDC C/D-III design, the FAA calls for the RSA to be 500 feet wide and extend 1,000 feet beyond the runway ends. It should be noted that only 600 feet of RSA is needed prior to the landing threshold on each runway end under RDC C/D-III standards. The RDC B-II RSA dimensions for Runway 2-20 are 150 feet wide extending 300 feet beyond the end of the runway.

An examination of the RSA for both runways did not identify any current non-standard conditions. The RSAs for both runways should be maintained through the planning period.

[2] RDC C-III and D-III standards are the same. RDC C/D-III will be used to describe design standards as they relate to Runway 12-30 for the safety design standards discussion.

LEGEND

- Airport Property LIne
- Runway Safety Area (RSA)
- Runway Object Free Area (ROFA)
- Runway Obstacle Free Zone (ROFZ)
- Precision Obstacle Free Zone (POFZ)
- High Energy Area
- Runway Protection Zone (RPZ)
- Taxiway Object Free Area (TOFA)
- Taxiway Safety Area (TSA)
- Runway Visibility Zone (RVZ)
- Building Restriction Line (BRL)

NORTH

0 1000 2000

SCALE IN FEET

Martinez Geospatial: 8/06/2016

Runway 12-30 8,004' x 150'

Runway 2-20 5,199' x 75'

HOT SPOT 1

HOT SPOT 2

HOT SPOT 3

HOT SPOT 4

Skyway Dr

Industrial Pkwy

Terminal Dr

Auto Park Dr

Lakeview Rd

Dutard St

135

Exhibit 3D
AIRFIELD SAFETY AREAS

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Runway Object Free Area (ROFA)

The ROFA is "a two-dimensional ground area, surrounding runways, taxiways, and taxilanes, which is clear of objects except for objects whose location is fixed by function (i.e., airfield lighting)." The ROFA does not have to be graded and level as does the RSA; instead, the primary requirement for the ROFA is that no object in the ROFA penetrate the lateral elevation of the RSA. The ROFA is centered on the runway, extending out in accordance to the critical aircraft design category utilizing the runway. For RDC C/D-III design, the ROFA is 800 feet wide and extends 1,000 feet beyond the runway ends. For RDC B-II, the ROFA is 500 feet wide and extends 300 feet beyond the runway ends.

According to the current SMX ALP, there are two known obstructions to the ROFA:

- An obstruction light on the distance measuring equipment (DME) off of Runway 30 is within the ROFA.
- A frangible wind cone is located within the ROFA.

These obstructions are noted on the current ALP and are planned to remain in place. No other obstructions to the ROFA have been identified.

Obstacle Free Zones (OFZ)

The OFZ is an imaginary surface which precludes object penetrations, including taxiing and parked aircraft. The only allowance for OFZ obstructions is navigational aids mounted on frangible bases which are fixed in their location by function such as airfield signs. The OFZ is established to ensure the safety of aircraft operations. If the OFZ is obstructed, the airport's approaches could be removed or approach minimums could be increased.

For all runways serving aircraft over 12,500 pounds, the OFZ is 400 feet wide, centered on the runway, and extends 200 feet beyond the runway ends. This standard will apply to both runways at SMX. Currently, there are no OFZ obstructions at SMX. Future planning should maintain the OFZ for the appropriate runway type.

Precision Obstacle Free Zone (POFZ)

For runways providing a vertically-guided approach, a precision obstacle free zone (POFZ) is required. The POFZ is defined as "a volume of airspace above an area beginning at the runway threshold, at the threshold elevation, and centered on the extended runway centerline, 200 feet long by 800 feet wide." The POFZ is only in effect when the following operational conditions are met:

I. Vertically-guided approach
II. Reported ceiling below 250 feet and/or visibility less than three-quarters-of-a-statute-mile
III. An aircraft on final approach within two miles of the runway threshold

When these conditions are met, aircraft holding for take-off must hold in such a position so that neither the fuselage nor the tail of the aircraft penetrates the POFZ. The wings of the aircraft are allowed to penetrate the surface. Runway 12 provides a qualifying ILS approach; thus, the POFZ standards will apply to this runway end when conditions are met. This runway currently meets POFZ requirements.

Runway Protection Zones (RPZ)

The RPZ is a trapezoidal area centered on the runway, typically beginning 200 feet beyond the runway end. The RPZ has been established by the FAA to provide an area clear of obstructions and incompatible land uses, in order to enhance the protection of people and property on the ground. The RPZ is comprised of the central portion of the RPZ and the controlled Activity area. The central portion of the RPZ extends from the beginning to the end of the RPZ, is centered on the runway, and is the width of the ROFA. The controlled Activity area is any remaining portions of the RPZ. The dimensions of the RPZ vary according to the visibility minimums serving the runway and the type of aircraft (design aircraft) operating on the runway. **Table 3F** provides the applicable RPZ dimensions for the runways at SMX.

TABLE 3F
Runway Protection Zones
Santa Maria Public Airport

	Runway 12	Runway 30	Runway 2	Runway 20
Approach Runway Protection Zones				
Approach Visibility Minimum	½-mile	1-mile or Greater	1-Mile or Greater	1-Mile or Greater
Inner Width (ft.)	1,000	500	500	500
Outer Width (ft.)	1,750	1,010	700	700
Length (ft.)	2,500	1,700	1,000	1,000
Acres	78.914	29.465	13.770	13.770
Departure Runway Protection Zones				
Inner Width (ft.)	500	500	500	500
Outer Width (ft.)	1,010	1,010	700	700
Length (ft.)	1,700	1,700	1,000	1,000
Acres	29.465	29.465	13.770	13.770

Source: FAA AC 150/5300-13A, Airport Design

While the RPZ is intended to be clear of incompatible objects or land uses, some uses are permitted with conditions and other land uses are prohibited. According to AC 150/5300-13A, the following land uses are permissible within the RPZ:

- Farming that meets the minimum buffer requirements,
- Irrigation channels as long as they do not attract birds,
- Airport service roads, as long as they are not public roads and are directly controlled by the airport operator,
- Underground facilities, as long as they meet other design criteria, such as RSA requirements, as applicable, and

- Unstaffed navigational aids (NAVAIDs) and facilities, such as required for airport facilities that are fixed by function in regard to the RPZ.

Any other land uses considered within RPZ land owned by the airport sponsor must be evaluated and approved by the FAA Office of Airports. The FAA has published *Interim Guidance on Land Uses within a Runway Protection Zone*, September 27, 2012, which identifies several potential land uses that must be evaluated and approved prior to implementation. The specific land uses requiring FAA evaluation and approval include:

- Buildings and structures (examples include, but are not limited to: residences, schools, churches, hospitals or other medical care facilities, commercial/industrial buildings, etc.)
- Recreational land use (examples include, but are not limited to: golf courses, sports fields, amusement parks, other places of public assembly, etc.)
- Transportation facilities. Examples include, but are not limited to:
  - Rail facilities - light or heavy, passenger or freight
  - Public roads/highways
  - Vehicular parking facilities
- Fuel storage facilities (above and below ground)
- Hazardous material storage (above and below ground)
- Wastewater treatment facilities
- Above-ground utility infrastructure (i.e., electrical substations), including any type of solar panel installations.

The *Interim Guidance on Land within a Runway Protection Zone* states, "RPZ land use compatibility also is often complicated by ownership considerations. Airport owner control over the RPZ land is emphasized to achieve the desired protection of people and property on the ground. Although the FAA recognizes that in certain situations the airport sponsor may not fully control land within the RPZ, the FAA expects airport sponsors to take all possible measures to protect against and remove or mitigate incompatible land uses."

Currently, the RPZ review standards are applicable to any new or modified RPZ. The following actions or events could alter the size of an RPZ, potentially introducing an incompatibility:

- An airfield project (e.g., runway extension, runway shift),
- A change in the critical design aircraft that increases the RPZ dimensions,
- A new or revised instrument approach procedure that increases the size of the RPZ, and/or
- A local development proposal in the RPZ (either new or reconfigured).

Since the interim guidance only addresses a new or modified RPZ, existing incompatibilities are essentially grandfathered under certain circumstances. While it is still necessary for the airport sponsor to take all reasonable actions to meet the RPZ design standard, FAA funding priority for certain actions, such as relocating existing roads in the RPZ, will be determined on a case by case basis.

RPZs have been further designated as approach and departure RPZs. The approach RPZ is a function of the AAC and approach visibility minimums associated with the approach runway end. The departure RPZ is a function of the AAC and departure procedures associated with the runway. For a particular runway end, the more stringent RPZ requirements (usually associated with the approach RPZ) will govern the property interests and clearing requirements that the airport sponsor should pursue.

As depicted in **Figures 3A**, **3B**, **3C**, **and 3D** the majority of the existing RPZs associated with each runway are controlled by ownership of the Airport. Two minor incompatibilities have been identified with the existing RPZs including: less than one acre of the north corner of the Runway 12 RPZ extends beyond Airport property; and the Runway 20 RPZ encompasses a corporate hangar. The alternatives analysis will examine potential corrections for these incompatibilities.

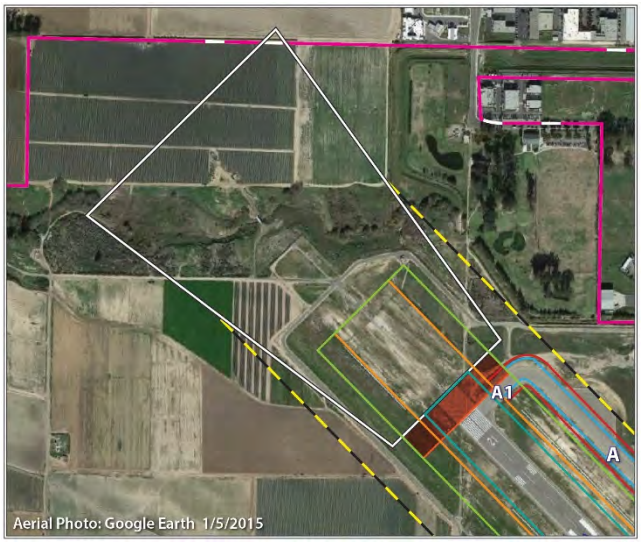


Figure 3A

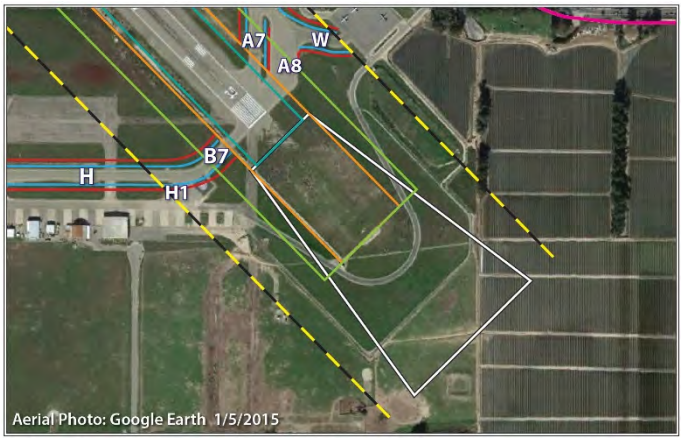


Figure 3B

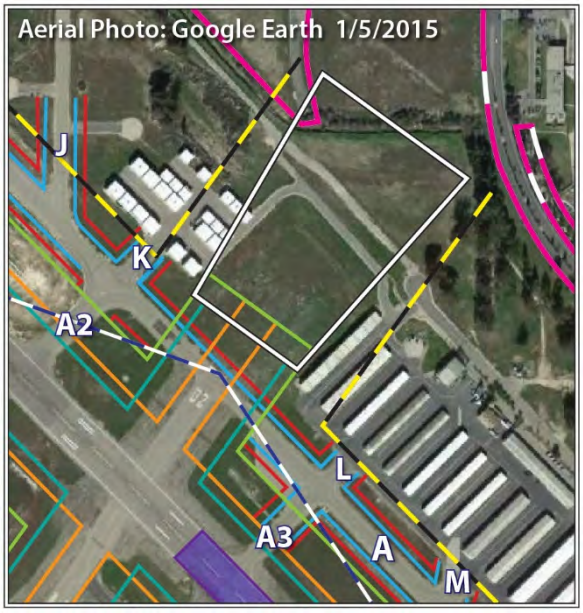


Figure 3C

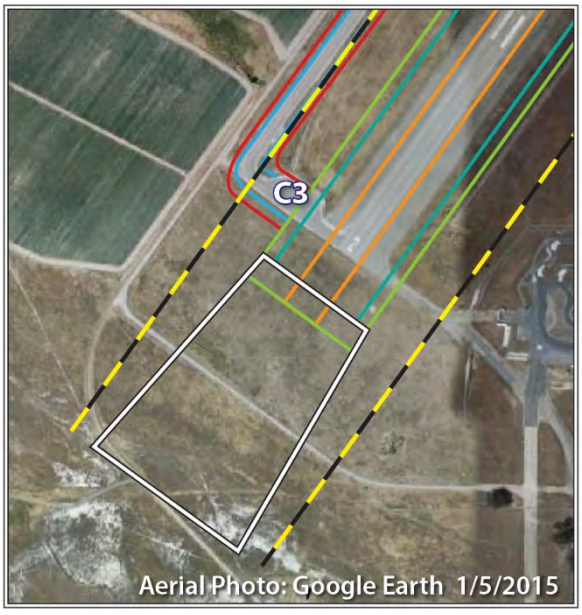


Figure 3D

In addition, consideration in the alternatives chapter will be given to improving instrument approach capabilities with lower visibility minimums to Runway 30 and Runway 2-20 along with a discussion of the potential impacts this would have on the size of the RPZs.

RUNWAY/TAXIWAY SEPARATION

The design standard for the required separation between runways and parallel taxiways is a function of the critical design aircraft and the instrument approach visibility minimum. The separation standard for RDC C/D-III with ½- mile visibility minimums is 400 feet from the runway centerline to the parallel taxiway centerline. Parallel Taxiway A is 525 feet from the runway centerline and Taxiway B is 400 feet from the runway centerline. Therefore, both meet or exceed the design standard.

For RDC B-II, the separation standard is 240 feet. Parallel Taxiway C is 525 feet from Runway 2-20 (centerline to centerline). Therefore, Taxiway C exceeds the runway/taxiway separation design standard.

RUNWAY VISIBILITY ZONE (RVZ)

The RVZ is an area formed by imaginary lines connecting the line of sight points of intersecting runways. The purpose of the RVZ is to facilitate coordination among aircraft and between aircraft and vehicles that are operating on active runways. Having a clear line of sight allows departing aircraft and arriving aircraft to verify the location and actions of other aircraft and vehicles on the ground that could create a conflict. Within the RVZ, any point five feet above the runway centerline must be mutually visible with any other point five feet above the centerline of the crossing runway. The RVZ at SMX is depicted on **Exhibit 3D**. Currently, there are no known obstructions to the line of sight within the RVZ.

BUILDING RESTRICTION LINE (BRL)

The BRL identifies suitable building area locations on the airport. The BRL encompasses the RPZs, the OFA, navigational aid critical areas, areas required for terminal instrument procedures, and other areas necessary for meeting airport line-of-sight criteria, such as the RVZ.

Two primary factors contribute to the determination of the BRL: type of runway (utility or other-than-utility) and the capability of the instrument approaches. Runway 12-30 is considered a “precision instrument” runway with a CAT-I ILS with visibility minimums down to ½-mile. Runway 2-20 is considered a “visual” runway as it is not equipped with instrument approaches.

The BRL is the product of CFR Part 77 transitional surface clearance requirements. These requirements stipulate that no object be located in the primary surface, defined as being 500 feet wide for visual runways and 1,000 feet wide for precision instrument runways. From the primary surface, the transitional surface extends outward at a slope of one vertical foot to every seven horizontal feet. For Runway 12-30, the 30-foot BRL is set at 710 feet from the runway centerline. For Runway 2-20, the 30-foot BRL is

set at 460 feet from the runway centerline. The BRL is depicted on **Exhibit 3D** and identifies several hangar facilities within the Runway 2-20 30-foot BRL off the end of Runway 20. These buildings will be evaluated to determine whether they are obstructions to the CFR Part 77 transitional surface.

HOLDING POSITION SEPARATION

Holding position markings are placed on taxiways leading to runways. When instructed, pilots are to stop short of the holding position marking line. For RDC C/D-III, the holding position marking line should be increased one foot for every 100 feet above sea level. With SMX's elevation at 261 feet above mean sea level (MSL), the hold lines for Runway 12-30 should be set at least 253 feet from the runway centerline. Existing hold position markings for Runway 12-30 are located at least 253 feet from the runway centerline, meeting the design standard. Runway 2-20 holding position marking lines are situated at 200 feet or greater from the runway centerline, which meets the RDC B-II design standard.

INSTRUMENT APPROACH CAPABILITY

Instrument approaches are categorized as either precision or non-precision. Precision instrument approach aids provide an exact course alignment and vertical descent path for an aircraft on final approach to a runway, while non-precision instrument approach aids provide only course alignment information. In the past, most existing precision instrument approaches in the United States have been the ILS; however, with advances in global positioning system (GPS) technology, it can now be used to provide both vertical and lateral navigation for pilots under certain conditions.

SMX currently has straight-in instrument approach capability to Runway 12-30, including the ILS or localizer (LOC) approach, area navigation (RNAV) GPS approach, and very high omnidirectional range (VOR) approach. The ILS approach available on Runway 12 provides for the lowest minimums with ½-mile visibility and 200-foot cloud ceilings. Runway 30 is equipped with an RNAV GPS approach, which provides visibility minimums down to 1¼-mile. The wind analysis and observations by ATCT personnel has indicated that Runway 30 would be more widely utilized if it were equipped with an instrument approach with lower visibility minimums. However, lower visibility minimums on Runway 30 are currently impaired by rising terrain and antennas to the southeast of the runway end. The alternatives chapter will consider various potential scenarios to achieve lower visibility minimums for Runway 30.

Runway 2-20 is not currently equipped with instrument approach capabilities. Consideration will be given in the alternatives chapter to the implementation of instrument approaches to the crosswind runway.

Runway 12 is served by a medium intensity approach lighting system with runway alignment indicator lights (MALSR). The MALSR, in conjunction with the localizer antenna and glide slope antenna, provides ideal approach minimums to Runway 12 down to 200-foot cloud ceilings and ½-mile visibility minimums. This approach lighting system enhances safety at the Airport, especially during inclement weather or nighttime activity.

VISUAL APPROACH AIDS

In most instances, the landing phase of any flight must be conducted in visual conditions. To provide pilots with visual guidance information during landings to the runway, electronic visual approach aids are commonly provided at airports. Currently, Runway 12 is equipped with a four-box precision approach path indicator (PAPI-4) system, while Runway 30 is equipped with a VASI system. A project is currently underway to replace the VASI system with a PAPI. Runway 2-20 is not equipped with a visual guidance system. Consideration should be given to installing PAPI-4s on Runway 2-20.

Runway end identification lights (REILs) are flashing lights located at the runway threshold end that facilitate rapid identification of the runway end at night and during poor visibility conditions. REILs provide pilots with the ability to identify the runway thresholds and distinguish the runway end lighting from other lighting on the airport and in the approach areas. The FAA indicates that REILs should be considered for all lighted runway ends not planned for a more sophisticated approach lighting system. Neither runway is currently equipped with REILs. REILs should be considered for Runway 30 and Runway 2-20.

AIRFIELD LIGHTING, MARKING, AND SIGNAGE

The location of the airport at night is universally indicated by a rotating beacon. For civil airports, a rotating beacon projects two beams of light, one white and one green, 180 degrees apart. The existing beacon at SMX should be maintained through the planning period.

Runway and Taxiway Lighting

Runway lighting provides the pilot with positive identification of the runway and its alignment. Runway 12-30 is equipped with high intensity runway lighting (HIRL), and Runway 2-20 is not currently equipped with an edge lighting system. The Runway 12-30 system should be maintained through the planning period, while consideration should be given to adding a medium intensity runway lighting (MIRL) system to Runway 2-20. Having a secondary runway available will give the Airport more utility during nighttime and crosswind conditions.

Medium intensity taxiway lighting (MITL) is provided on most of the existing taxiway system, including parallel Taxiway A and its connectors. The entirety of the existing MITL system at SMX has been upgraded to light emitting diode (LED) fixtures. Taxiways B and C are not currently equipped with MITL. Consideration should be given to expanding MITL to all non-lit taxiways and future taxiway expansions to improve the safety and efficiency of ground movements.

SMX has already begun the process of transitioning to LED airfield lighting technology with its MITL system. LEDs have many advantages, including lower energy consumption, longer lifespan, increased durability, reduced size, greater reliability, and faster switching. While a larger initial investment is required upfront, the energy savings and reduced maintenance costs will outweigh any additional costs in the long run. Consideration should be given to gradually replacing all runway edge lighting systems with LED systems as well.

Pavement Markings

Runway markings are typically designed to the type of instrument approach available on the runway. FAA AC 150/5340-1K, *Standards for Airport Markings*, provides guidance necessary to design airport markings.

Runway 12-30 is served by precision markings. This aids in accommodating the ILS approach to the runway end and provides enhanced identification for both ends of the primary runway at the Airport. Runway 2-20 currently has basic markings. The Runway 12-30 markings should be maintained through the long term planning period. Consideration will be given to upgrading Runway 2-20 to non-precision markings in association with the potential to implement instrument approach procedures to that runway.

Airfield Signs

Airfield identification signs assist pilots in identifying their location on the airfield and directing them to their desired location. Lighted signs are installed on the runway and taxiway system on the airfield. The signage system includes runway and taxiway designations, holding positions, routing/directional, distance remaining, and runway exits. All of these signs should be maintained throughout the planning period, and similar to the pavement edge lighting, consideration should be given to gradually replacing all lighted signs with LED technology for those that have not already been upgraded.

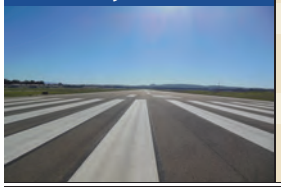
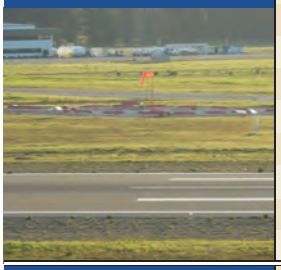
WEATHER AND COMMUNICATION INFORMATION

SMX has a lighted wind cone and segmented circle, as well as additional supplemental wind cones in various locations on the airfield. The wind cones provide information to pilots regarding wind speed and direction. The segmented circle consists of a system of visual indicators designed to provide traffic pattern information to pilots. These should be maintained throughout the planning period.

The Airport is equipped with an ASOS which provides weather observations 24 hours per day. The system updates weather observations every minute, continuously reporting significant weather changes as they occur. This information is then transmitted at regular intervals (usually once per hour) on the Airport's automated terminal information service (ATIS). Aircraft in the vicinity can receive this information if they have their radio tuned to the correct frequency (121.15 MHz). In addition, pilots and individuals can call a published telephone number and receive the information via an automated voice recording. This system should be maintained through the planning period.

AIRFIELD FACILITY REQUIREMENTS SUMMARY

A summary of the airside facilities previously discussed at SMX is presented on **Exhibit 3E**.

	AVAILABLE	SHORT TERM	LONG TERM
Runway 12-30 	RDC C-III-2400	RDC C-III-2400	RDC C-III-2400
	8,004' x 150'	Maintain	Maintain
	75,000 lbs. SWL/181,000 lbs. DWL/ 400,000 lbs. DTWL	Maintain	Maintain
	Standard RSA/ROFA/ROFZ	Maintain	Maintain
	Standard RPZs - Minor Incompatibilities	Explore corrective measures for incompatible conditions	Maintain
Runway 2-20 	RDC B-II-VIS	RDC B-II-VIS	RDC B-II-5000
	5,199' x 75'	Maintain	Maintain
	70,000 lbs. SWL/90,000 lbs. DWL/ 150,000 lbs. DTWL	Maintain	Maintain
Taxiways 	TDG-4	TDG-4	TDG-3; Consider TDG-5 for future USFS Aerial Firefighting Facilities
	All taxiways at least 50' wide	Consider Taxiway B expansion to full-length parallel to Runway 12-30	Consider construction of Taxiway D as a full-length parallel to Runway 2-20
	Runway 12-30/Parallel Taxiway Separation - ≥400'	Maintain	Maintain
	Runway 2-20/Parallel Taxiway Separation - >240'	Maintain	Maintain
	Four runway incursion hot spots	Explore corrective measures to mitigate hot spots	Maintain mitigated condition
	Several existing non-standard taxiway geometry conditions	Mitigate non-standard conditions	Maintain mitigated condition
Navigational and Approach Aids 	ILS or LOC - Runway 12	Maintain	Maintain
	RNAV (GPS) - Runways 12, 30	Maintain	Consider RNAV (GPS) for Runway 2-20
	LOC/DME BC-A - Circling Only	Maintain	Maintain
	VOR - Runway 12	Maintain	Maintain
	ASOS	Maintain	Maintain
	ATCT	Maintain	Maintain
	Lighted Windcones	Maintain	Maintain
	PAPI-4 - Runway 12, 30	Maintain	Consider PAPI-4s for Runway 2-20
	MALSR - Runway 12	Maintain	Maintain
	REILs - not currently available	REILs - Runway 30	REILs - Runway 2-20
Lighting, Marking, and Signage 	Rotating Beacon	Maintain	Maintain
	Precision Markings - Runway 12-30	Maintain	Maintain
	Basic Markings - Runway 2-20	Maintain	Upgrade to non-precision markings
	HIRL - Runway 12-30	Consider gradual replacement with LED technology	Maintain
	Runway 2-20 - unlit	MIRL - Runway 2-20	Maintain
	Runway 12-30 - hold lines >252' from runway centerline	Maintain	Maintain
	Runway 2-20 hold lines >200' from runway centerline	Maintain	Maintain
	Lighted airfield signs	Consider gradual replacement with LED technology; Add distance remaining signage	Maintain
	LED MITL - All Taxiways	Maintain	Maintain

KEY:

ASOS - Automated weather observatoon station
ATCT - Airport Traffic Control Tower
DWL - runway weight bearing capacity for aircraft with dual-wheel type landing gear
HIRL/MIRL - High/Medium Intensity Runway Lights
ILS - Instrument Landing System
LOC - Localizer
MALSR - Medium Intensity Approach Lighting System with Runway Alignment Indicator Lights
PAPI - Precision Approach Path Indicator
RDC - Runway Design Code
REIL - Runway End Identification Lighting
RNAV - Area Navigation
ROFA - Runway Object Free Area
RPZ - Runway Protection Zone
RSA - Runway Safety Area
SWL - Runway weight bearing capacity for aircraft with single-wheel type landing gear

PASSENGER TERMINAL COMPLEX REQUIREMENTS

Components of the terminal area complex include the terminal building, gate positions, aircraft apron area, vehicle parking, and surface access roads. This section identifies the facilities required to meet the Airport's needs through the planning period.

The review of the capacity and requirements for various terminal complex functional areas was performed with guidance from FAA AC 150/5360-13, *Planning and Design Guidelines for Airport Terminal Facilities*. Also sourced is *Airport Passenger Terminal Planning and Design, Report 25* published by the Airport Cooperative Research Program (ACRP). Passenger terminal complex requirements have been developed to reflect the planning horizon milestones for enplanements. The forecast enplanement levels are 49,400 in the short term, 53,000 in the intermediate term, and 64,500 in in the long term. **Table 3G** summarizes the current and future capacity requirements for the terminal building.

Passenger terminal building requirements were developed for the following functional areas:

- Airline Ticketing and Operations
- Security Screening
- Departure Facilities
- Baggage Claim
- Terminal Services – Rental Cars and Concessions
- Public Use Areas – Restrooms and Lobby Areas
- Internal Facilities – Circulation, Mechanical, HVAC

TICKETING AND CHECK-IN

The first destination for enplaning passengers in the terminal building is usually the airline ticket counter. The ticketing area consists of the ticket counters, queuing area for passengers in line at the counters, and the ticket lobby which provides circulation.

The ticket lobby should be arranged so that the enplaning passenger has immediate access and clear visibility to the individual airline ticket counters upon entering the building. Circulation patterns should allow the option of bypassing the counters with minimum interference. Provisions for seating should be minimal to avoid congestion and to encourage passengers to proceed to the security checkpoint and gate area. Airline ticket counter frontage, counter area, counter queuing area, ticketing lobby and airline office and operations area requirements for each potential enplanement level have been calculated.

TABLE 3G
Terminal Building Requirements
Santa Maria Public Airport

	Existing	Current Need	Short Term	Intermediate Term	Long Term
Passenger Enplanements		**44,340**	**49,400**	**53,000**	**64,500**
Ticketing/Check-In					
No. of airlines	1	1	2	2	2
No. of Agent Positions	14	5	5	6	7
Counter Frontage (lf)	60	30	30	36	42
Ticket Lobby Queue (sf)	1,069	330	330	400	460
Airline Operations (sf)					
Counter Area	240	330	330	400	460
Airline Ops/Makeup	3,186	1,230	1,230	1,480	1,720
Outbound Baggage (sf)	995 [a]	1,440	1,440	1,730	2,020
Subtotal Airline Operations (sf)	4,421	3,000	3,000	3,610	4,200
Security Screening					
Security Checkpoints	1	1	1	1	1
Checkpoint Station Area (sf)	1,507	360	360	360	360
Security Queue Area (sf)	350	460	460	560	620
Security Office Space (sf)	1,829	700	700	700	700
Subtotal Security Checkpoint (sf)	3,686	1,520	1,520	1,620	1,680
Departure Facilities					
Peak Occupants	143	143	143	173	192
Holdroom Area (sf)	4,514	2,550	2,950	3,400	3,690
Baggage Claim					
Claim Display (lf)	98	90	90	100	120
In-Bound Baggage (sf)	1,218 [a]	1,080	1,080	1,200	1,440
Claim Display floor area (sf)	700	450	450	500	600
Claim Lobby area (sf)	2,219	1,230	1,230	1,480	1,650
Subtotal Bag claim area (sf)	4,137	2,760	2,760	3,180	3,690
Rental Car Counters					
Counter frontage (lf)	55	29	29	35	39
Counter Office Area (sf)	735	430	430	520	580
Counter Queue Area (sf)	225	230	230	280	310
Subtotal Rental Car Area (sf)	960	660	660	800	890
Concessions					
Food and Beverage (sf)	6,485	530	590	640	770
Gift Shops/Retail (sf)	--	370	420	450	540
Subtotal Concessions (sf)	6,485	900	1,010	1,090	1,310
Public Waiting Lobby/Circulation					
Subtotal Public Waiting Lobby/Circulation (sf)	10,426[a]	8,010	8,010	9,720	10,780
Restrooms					
Subtotal Restrooms (sf)	1,714	1,370	1,370	1,670	1,850
Subtotal Functional Space (sf)	35,923	21,100	21,610	25,490	28,550
Internal Facilities					
HVAC/Mechanical/Stairwells (sf)	1,583	2,180	2,220	2,640	2,960
Gross Terminal Building Space (sf)	**38,995[b]**	**23,280**	**23,830**	**28,130**	**31,510**

[a] Includes exterior spaces outside the building footprint
[b] Leasable commercial office space is excluded from the gross building space as spacing needs for this functional element is determined by the SMPAD and potential lessees.
Source: Coffman Associates analysis

There are currently 14 agent positions at the ticketing counter. By the long term planning period, a maximum of seven are forecast to be needed. There is approximately 60 feet of linear ticket counter space. This meets the short, intermediate, and long term need identified. The existing ticket lobby queue area is estimated at 1,069 square feet, which is more than adequate to meet the long term need.

AIRLINE OPERATIONS

The airline operations area encompasses all space necessary for the processing of passengers and baggage. This includes the area behind the ticket counter, offices, and baggage make-up and storage areas. The existing counter area is estimated at 240 square feet. Behind the counter area, separated by three doors, is approximately 3,186 square feet of space for airline offices and initial baggage make-up. This area includes the checked baggage screening device. There are several doors on the west side of these office/baggage make-up spaces leading to the outbound baggage loading area on the exterior of the building. The exterior outbound baggage area encompasses approximately 995 square feet. In total, the airline operations area encompasses approximately 4,421 square feet of space. This is forecast to be adequate through the long term planning period.

SECURITY SCREENING

Security screening requirements are subject to Transportation Security Administration (TSA) regulations and the level of security may be changed by TSA security directive if unusual levels of threat are perceived. The screening checkpoints are a regulated requirement and must be designed to meet the TSA mandates for operational space and equipment support as specified in TSA's *Security Checkpoint Design Guide,* February 2006.

The security checkpoint area can be functionally divided into three components: checkpoints, checkpoint area, and queue area. The checkpoint station area, where actual passenger screening takes place, is currently estimated at 1,507 square feet. The appropriate size for the checkpoint area is estimated by providing 360 square feet per checkpoint station. The available checkpoint station area is adequate through the long term.

The security checkpoint queue is the area that accommodates passengers as they wait in line to be screened. The queue line is calculated by providing 16 square feet per design hour enplaning passenger. In the short term, approximately 460 square feet should be provided for the security line. By the long term, 620 square feet is forecast to be needed for the security line queue. It is currently estimated that 350 square feet is dedicated for the security checkpoint queue. Like many airports, the security line will often extend into circulation and other public areas for brief periods of time.

Space in the terminal building should be provided for TSA personnel. This office space should be located away from the security screening functions. TSA and other security personnel office space in the terminal is estimated at approximately 1,829 square feet, which includes two offices beyond the security check point and second level office spaces leased to the TSA. Future planning considers 700 square feet

of TSA office space per available security checkpoint. The available security office space should be adequate through the long term.

Approximately 3,686 square feet are available for the various TSA security functions. This should be more than adequate through the long term.

DEPARTURE GATES AND HOLDROOMS

At the present time, there are four gate positions, each oriented for ground boarding of commercial passenger aircraft at the Airport. The need for jetways is dependent upon the airline schedule and the type of aircraft utilized. Currently, within one hour, it is estimated that one aircraft needs gate access. In the planning horizons, it is estimated that during the design hour, two airlines will need gate access. Therefore, the four available gates should adequately serve the Airport through the long term.

The secure hold room is the waiting area for passengers who have completed the screening process and are waiting to board the aircraft. The current hold room is estimated at 4,514 square feet. Future hold room space is calculated at approximately 15 square feet per peak hour enplaned passenger plus 350 square feet per gate. At SMX, the current peak hour is 143 passengers; therefore, a hold room of approximately 2,550 square feet is needed. By the long term, hold room area need is 3,690 square feet. Therefore, the existing hold room should be adequate through the planning period.

BAGGAGE CLAIM

Passenger baggage claim facilities are located on the east side of the terminal building. There is a single baggage claim carousel providing a total of approximately 98 linear feet. The future claim display need is estimated at 60 percent of peak hour deplaning passengers. Thus, there is a current need for 90 linear feet of baggage claim carousel. This length would accommodate the unloading of an MD-80 series aircraft (166 seats). By the long term, the baggage carousel needed is estimated at 120 linear feet, which would accommodate the simultaneous unloading of an Airbus A320 (177 seats) and a CRJ700 (66 seats).

The inbound baggage unloading area is located on the southeast exterior of the terminal building. This area is designed to allow ground support equipment to pull into a covered sally-port where baggage is offloaded onto the baggage claim carousel. The existing inbound baggage unloading area is estimated at approximately 1,218 square feet. Future inbound baggage unloading area needs are estimated at 12 square feet per linear foot of baggage carousel frontage need. The existing unloading area should be adequate through the intermediate term with a long term need of an additional 222 square feet.

Baggage claim floor area is calculated at five square feet per linear foot of claim display (carousel length). There is currently approximately 344 feet of claim display floor area. It is estimated that 550 square feet would be needed at peak periods. By the long term, 850 square feet of claim display floor area is needed.

The baggage claim lobby is determined by taking into consideration the number of deplaning passengers during the peak hour and the estimated number of visitors greeting arriving passengers. There is approximately 1,431 square feet of baggage claim lobby available. By the long term, an area of approximately 3,370 square feet is estimated to be needed.

TERMINAL SERVICES

Similar to airline ticketing, rental car counter facilities include office, counter area, and queue areas. There are currently four counters available for rental car services. Combined, they provide approximately 55 linear feet of counter space. This exceeds the long term need at the Airport of 39 linear feet of counter space. The available office space is estimated at 735 square feet, which also exceeds the long term need of 580 square feet. The rental car queue area is currently estimated at 225 square feet. Queue area is projected at eight square feet per counter frontage need. According to this calculation, the existing rental car queue area is slightly undersized with a need of an additional 85 square feet to meet the long term facility need.

A family restaurant that serves the community in addition to passengers traveling through the terminal is available in the unsecured portion of the terminal building along with a concession area in the secure holdroom area. Calculations for concessions are based primarily on annual enplanements, so the spacing requirements do not account for the requirements of a family restaurant serving the community, which is what is available at the SMX terminal. The restaurant and the concession area combined is approximately 6,485 square feet, which exceeds the long term need of 770 square feet. The concession area located in the hold room is approximately 960 square feet on its own, so this space is adequate for the passenger volume levels anticipated during the planning period.

Consideration should be given to the development of a retail gift shop. By the long term planning period, a gift shop encompassing approximately 540 square feet is estimated.

PUBLIC WAITING AND GREETING LOBBY/CIRCULATION

The public lobby and circulation areas are where passengers or visitors may comfortably relax while waiting for arrivals or departures. The greeting lobby area is typically immediately outside security stations. In today's post-9/11 environment, visitors must remain outside of the secure departure areas, so a public lobby is important. Public lobby seating and waiting areas are available at the terminal immediately outside the secure area, near the airline ticketing and check-in area, and there is an outdoor observation area immediately to the east of the secure holdroom where visitors can watch for arriving and departing aircraft. The terminal building provides approximately 10,426 square feet of space for circulation/public lobby and greeting lobby functions. This should be adequate through the intermediate term. By the long term, an additional 354 square feet of circulation/public spaces should be planned.

RESTROOMS

Restrooms are currently available in both the public area and the secure area of the terminal building, totaling approximately 1,714 square feet of space. Future public restroom space is a function of total peak hour passengers and visitors at the airport. The public restroom facilities are adequate through the intermediate term planning period, with a long term need of an additional 136 square feet.

INTERNAL FACILITIES

Internal facilities include mechanical/HVAC functions and stairwells. Future needs for these internal facilities are estimated at eight percent of the total programmed terminal building space. Any additions to the terminal building should take into consideration the internal facilities need.

COMMERCIAL AIRLINE TERMINAL BUILDING REQUIREMENTS SUMMARY

The existing commercial passenger terminal building is approximately 39,000 square feet in area, which includes the inbound and outbound baggage loading spaces and the observation area on the exterior of the building, but does not include leasable spaces not currently utilized by TSA or other security personnel. The current terminal area need is estimated at 23,280 square feet. Existing functional areas satisfy the current need identified. By the short term planning period, a total building encompassing 23,830 square feet is forecast to be needed to accommodate peaking conditions. By the long term, a building of approximately 31,510 square feet would be needed. As a result, the existing facility is well situated to meet the long term need with only minor improvements necessary.

GROUND ACCESS REQUIREMENTS

Access system facility requirements, based upon demand/capacity relationships, were developed for the system components of access roadway, terminal curb frontage, and vehicle parking. Requirements for each component are presented in the following subsection.

TERMINAL ACCESS ROADWAY

The capacity of the airport access and terminal area roadways is the maximum number of vehicles that can pass over a given section of a lane or roadway during a given time period. It is normally preferred that a roadway operate below capacity to provide reasonable flow and minimize delay to the vehicles using it.

Principal access to the Airport is from Skyway Drive, a four-lane divided roadway that provides access to Airpark Drive and Terminal Drive, which accommodate internal vehicle circulation near the terminal

building. Airpark Drive and Terminal Drive also provide access to the public parking lots, which offer free parking.

TERMINAL CURB FRONTAGE

The terminal curb element is the interface between the terminal building and the ground transportation system. The length of curb required for the loading and unloading of passengers and baggage is determined by the type and volume of ground vehicles anticipated in the peak period on the design day.

A typical problem for terminal curb capacity is the length of dwell time for vehicles utilizing the curb. At airports where the curb front has not been strictly patrolled, vehicles have been known to be parked at the curb while the driver and/or riders are inside the terminal checking in, greeting arriving passengers, or awaiting baggage pick-up. Since most curbs are not designed for vehicles to remain curbside for more than two to three minutes, capacity problems can ensue. Since the events of September 11, 2001, most airports police the curb front much more strictly for security reasons. This alone has reduced the curb front capacity problems at most airports.

At SMX, Terminal Drive splits as it approaches the terminal building with a median dividing the two lanes. The southwestern lane widens along the terminal curb to allow for the circulation of pick-up and drop-off vehicles. The departure drop-off curb, closest to the airline ticketing and check-in area, is approximately 185 feet long and the arrival pick-up curb is approximately 290 feet long, extending to the baggage claim area. Future drop-off and pick-up curb length needs are estimated at 80 percent of peak hour enplanements and deplanements. The available terminal curb length is adequate through the intermediate term planning period. Additional length may be needed for the pick-up curb by the intermediate and long term planning horizons. **Table 3H** presents the terminal curb requirements.

TERMINAL VEHICLE PARKING

Vehicle parking in the airline passenger terminal area of the airport includes those spaces utilized by passengers, visitors, and employees of the airline terminal facilities. Parking spaces are classified as public, employee, and rental car. There is currently a total of 753 spaces provided for the various users including the general public, employees, rental cars, and handicapped spaces. The SMPAD does not charge for public parking, which has led to overflow situations with influxes of non-airport users, especially during peak holiday travel periods. In addition, the terminal lot is often used as a park-and-ride facility for carpools, which increases lot congestion.

Calculations of vehicle parking needs take into consideration estimates of the mode of transportation to and from the airport, peak hour enplanements, and annual enplanements. For SMX, it is estimated that 80 percent of passengers arrive/depart by private automobile, 18 percent utilize rental car services, and two percent utilize a taxi or car service. Employee parking space requirements are estimated at five percent of total private automobile space requirements. As shown in **Table 3H**, the existing surface lots appear adequate through the long term planning period; however, this does not account for non-airport

users taking advantage of the free parking. Consideration should be given to alternatives to either reduce the use of the terminal lot by non-airport users or expand capacity to accommodate peak periods.

TABLE 3H
Terminal Automobile Requirements
Santa Maria Public Airport

	Existing	Short Term	Intermediate Term	Long Term
Terminal Curb				
Drop-off Curb (ft)	185	120	140	150
Pick-up Curb (ft)	290	270	320	350
Total Curb (ft)	475	390	460	500
Auto Parking				
Total Public Parking	666[a]	412	500	554
Employee	--	21	25	28
Rental Car	87	31	33	40
Total All Parking	**753**	**463**	**558**	**622**

[a] Includes all public, employee, restaurant, and handicapped spaces.
Source: Coffman Associates analysis.

GENERAL AVIATION FACILITIES

General aviation (GA) facilities are those necessary for handling general aviation aircraft, passengers, and cargo while on the ground. This section is devoted to identifying future GA facility needs during the planning period for the following types of facilities normally associated with general aviation terminal areas:

- Aircraft Storage Hangars
- Aircraft Parking Aprons
- General Aviation Terminal Services
- Auto Parking and Access

HANGARS

Utilization of hangar space varies as a function of local climate, security, and owner preferences. The trend in general aviation aircraft, whether single or multi-engine, is toward more sophisticated aircraft (and consequently, more expensive aircraft); therefore, many aircraft owners prefer enclosed hangar space to outside tie-downs.

The demand for aircraft storage hangars is dependent upon the number and type of aircraft expected to be based at the airport in the future. For planning purposes, it is necessary to estimate hangar requirements based upon forecast operational activity. However, actual hangar construction should be based upon actual demand trends and financial investment conditions.

There are a variety of aircraft storage options typically available at an airport including T-hangars, corporate/box hangars, and bulk storage conventional hangars. T-hangars are intended to accommodate

one small single engine piston or, in some cases, one multi-engine piston aircraft. T-hangars are so named because they are in the shape of a "T," providing a space for the aircraft nose and wings, but no space for turning the aircraft within the hangar. Basically, the aircraft can be parked in only one position. T-hangars are commonly "nested" with several individual storage units to maximize hangar space. In these cases, taxiway access is needed on both sides of the nested T-hangar facility. T-hangars are popular with aircraft owners with tighter budgets as they tend to be the least expensive enclosed hangar space to build and lease. There are currently 147 T-hangar positions at SMX totaling approximately 198,879 sf of aircraft storage capacity.

The next type of aircraft hangar common for storage of general aviation aircraft is the corporate/box hangar. Corporate/box hangars typically provide a larger space, generally with an area between 2,500 and 6,000 square feet. This type of hangar can provide for maneuverability within the hangar, can accommodate more than one aircraft, and may have a small office and utilities. Corporate/box hangars may be connected in a row of units with doors facing a taxilane. Corporate box hangars may also be stand-alone hangars. These hangars are typically utilized by a corporate/business entity or to support an on-airport business. SMX currently has 58 individual corporate/box hangars providing approximately 132,261 sf of storage capacity.

Conventional hangars are the large, clear span hangars typically located facing the main aircraft apron at airports. These hangars provide for bulk aircraft storage and are often utilized by airport businesses, such as a fixed base operator (FBO) and/or aircraft maintenance business. Conventional hangars are generally larger than corporate/box hangars and can range in size from 6,000 square feet to more than 20,000 square feet. Often, a portion of a conventional hangar is utilized for non-aircraft storage needs such as maintenance or office space. There are several conventional hangars at SMX encompassing approximately 152,668 sf. Of that total conventional hangar space, approximately 91,385 sf is utilized for aircraft storage and approximately 61,283 sf is utilized for aircraft maintenance/modification/service functions.

Planning for future aircraft storage needs is based on typical owner preferences and standard sizes for hangar space. For determining future aircraft storage needs, a planning standard of 1,200 square feet per based aircraft is utilized for T-hangars. For conventional hangars, a planning standard of 3,000 square feet is utilized for turboprop aircraft, 6,000 square feet is utilized for business jet aircraft, and 1,500 square feet is utilized for helicopter storage needs.

At SMX, with a total of 235 based aircraft, there are currently approximately 12 aircraft owners utilizing outside aircraft tie-down positions. With the trend towards aircraft owners preferring enclosed aircraft storage space, only approximately five percent of future based single-engine piston aircraft are projected to utilize outside aircraft tie-downs. Providing a mix of aircraft storage options is preferred when planning storage needs, in order to meet the varied needs of aircraft owners. **Table 3J** provides a summary of the aircraft storage needs through the long term planning horizon.

TABLE 3J
Aircraft Hangar Storage Requirements
Santa Maria Public Airport

	Current Estimate	Future Requirements		
		Short Term	Intermediate Term	Long Term
Total Based	235	269	294	346
T-Hangar Unit Requirements				
T-Hangar Units	147	170	180	201
Hangar Area Requirements (s.f.)				
T-Hangar Area	198,879	227,800	239,700	265,700
Corporate Hangar Area	132,261	148,800	175,100	238,100
Conventional Hangar Area	91,385	107,900	160,400	286,400
Service/Maintenance Area	61,283	67,300	73,500	86,500
Total Hangar Storage Area (s.f.)	483,808	551,800	648,700	876,700

As can be seen in the table, it is estimated that there is approximately 483,808 sf of hangar storage capacity currently available at the Airport. Over the planning period, total hangar storage capacity is anticipated to need to be expanded by an additional 392,900 sf.

Construction of aircraft storage space should be determined and phased to maximize existing demand. Construction can be undertaken by the SMPAD or by a private developer, either of which will contribute to fulfilling the overall need at the Airport.

AIRCRAFT PARKING APRON

FAA Advisory Circular 150/5300-13A, *Airport Design*, suggests a methodology by which transient apron requirements can be determined from knowledge of busy-day operations. At SMX, the number of itinerant spaces required was determined to be approximately 13 percent of the busy-day itinerant operations for general aviation operations. A planning criterion of 800 square yards per aircraft was applied to determine future transient apron requirements for single and multi-engine aircraft. For business jets (which can be much larger), a planning criterion of 1,600 square yards per aircraft position was used. For planning purposes, business jet aircraft spaces are estimated at 60 percent of the total itinerant space requirement. Apron parking requirements are presented in **Table 3K**. Transient apron parking needs are divided into business jet needs and smaller single and multi-engine aircraft needs. The based aircraft parking position needs are estimated at five percent of future based single-engine piston aircraft as more sophisticated aircraft are all anticipated to be stored in hangars.

TABLE 3K
General Aviation Aircraft Parking Apron Requirements
Santa Maria Public Airport

	Available	Short Term	Intermediate Term	Long Term
Based Aircraft Positions	16	13	14	15
Transient Single/Multi-Engine Aircraft Positions	40	17	19	20
Transient Business Jet Positions	--	10	11	12
Helicopter Positions	6	6	7	8
Total Positions	62	47	51	55
Total Apron Area (s.y.)	106,700	38,700	42,900	45,700

There are three general aviation aprons at SMX including the tower apron, the transient apron, and the apron serving Central Coast Jet Center. Combined, these three aprons total approximately 106,700 square yards (sy) of pavement. The tower apron has 16 based aircraft positions along with six helicopter positions; the transient apron has approximately 40 marked positions for all types of aircraft; and the Central Coast Jet Center does not have marked tie-down positions but is capable of accommodating a variety of small and large aircraft.

According to the projected facility needs, the existing general aviation aprons at SMX are more than adequate to meet long term demands.

GENERAL AVIATION TERMINAL FACILITIES

General aviation terminal facilities have several functions. Space is required for a pilots' lounge, flight planning, concessions, management, storage, and various other needs. This space is not necessarily limited to a single, separate terminal building, but can include space offered by FBOs for these functions and services. Currently, GA terminal services are provided by Central Coast Jet Center, which has approximately 6,000 sf of space dedicated to this function.

The methodology for estimating general aviation terminal facility needs is based on the number of airport users expected to utilize general aviation facilities during the design hour. General aviation space requirements were then based upon providing 120 sf per design hour itinerant passenger. Design hour itinerant passengers are determined by multiplying design hour itinerant operations by the number of passengers on the aircraft (multiplier). An increasing passenger count (from 2.0 to 2.5) is used to account for the likely increase in the number of passengers utilizing general aviation services. **Table 3L** outlines the general aviation terminal facility space requirements for SMX.

TABLE 3L
General Aviation Terminal Area Facilities
Santa Maria Public Airport

	Available	Short Term	Intermediate Term	Long Term
Design Hour Itinerant Operations	17	18	19	21
Passenger Multiplier	2	2.2	2.3	2.5
Design Hour Itinerant Passengers	34	40	44	53
General Aviation Terminal Services Space (s.f.)	6,000	4,800	5,300	6,400

The general aviation terminal facility offered by the Airport's FBO appears to be adequately sized for the intermediate term planning period. Consideration should be given to expanding general aviation terminal facility spaces up to 6,400 sf by the long term horizon.

GENERAL AVIATION AUTOMOBILE PARKING

General aviation vehicular parking demands have been determined for SMX. General aviation vehicle parking needs can effectively be characterized as either itinerant or local. Itinerant vehicle parking would include needs for visitors to the FBOs or other SASOs and passengers utilizing general aviation services. Local vehicle parking is dedicated parking for owners of aircraft based at the Airport. Although some based aircraft owners prefer to park their vehicles in their hangars, safety can be compromised when automobile and aircraft movements are intermixed on the apron areas. Therefore, consideration will be given to providing dedicated vehicle parking for local aircraft owners as well.

Itinerant vehicle parking space determinations were based on an evaluation of existing Airport use, as well as industry standards. Terminal automobile parking spaces required to meet general aviation itinerant demands were calculated by taking the design hour itinerant passengers and using a multiplier of 1.9, 2.0, and 2.2 for each planning period. This multiplier represents the anticipated increase in corporate operations and passengers. The parking requirements for based aircraft owners are estimated as one-half of the based aircraft at the Airport.

Table 3M summarizes general aviation vehicle parking needs for the airport. The various general aviation operators at the Airport each provide vehicle parking lots at their own facilities. Overall, through the planning period, between 149 and 219 individual parking spaces are needed to satisfy current and long term demand.

The availability of based owner parking limits the need for vehicles to enter the aircraft apron area. In the future, consideration should be given to constructing a dedicated based owner parking area in close proximity to any new hangar development. This will encourage based aircraft owners to utilize the available parking, thus limiting vehicular movements on the apron.

TABLE 3M
GA Vehicle Parking Requirements
Santa Maria Public Airport

		Future Requirements		
	Current Need	Short Term	Intermediate Term	Long Term
Design Hour Itinerant Passengers	34	40	44	53
GA Terminal Spaces[1]	31	34	38	46
GA Based Owner Spaces[2]	118	135	147	173
Total GA Parking Spaces	149	169	185	219
GA Terminal Parking Area (sf)[3]	10,900	11,900	13,300	16,100
GA Based Owner Parking Area (sf)[3]	41,300	47,300	51,500	60,600
Total GA Parking Area (sf)[3]	52,200	59,200	64,800	76,700

[1]Calculated as 1.8 times design hour itinerant passengers
[2]Calculated as ½-based aircraft
[3]Calculated as 350 square feet per space
Source: Coffman Associates analysis

SUPPORT FACILITIES

Various facilities that do not logically fall within classifications of airside or landside facilities have also been identified. These other areas provide certain functions related to the overall operation of the airport.

FUEL STORAGE

Central Coast Jet Center has an above ground fuel farm consisting of 40,000 gallons of Jet A storage capacity and 12,000 gallons of 100LL (AvGas) storage capacity. In addition, Central Coast Jet Center leases a 12,000-gallon AvGas self-service station. Central Coast Jet Center also has a fleet of fuel distribution trucks with capacities of 17,000 gallons of Jet A and 4,000 gallons of AvGas. The SMPAD also has two above ground fuel storage tanks with capacities for 20,000 gallons of Jet A and 12,000 gallons of AvGas, both of which are not presently in use. Combined fuel storage capacity at SMX totals 77,000 gallons of Jet A and 40,000 gallons of AvGas.

Maintaining a 14-day fuel supply would allow the Airport to limit the impact of a disruption of fuel delivery. Currently, the Airport has enough static fuel storage to meet the 14-day supply criteria for both Jet A and AvGas fuel.

In the future, based on average usage assumptions, fuel storage has been estimated and is presented in **Table 3N**. The existing fuel storage capacity should be adequate through the long term.

TABLE 3N
Fuel Storage Requirements
Santa Maria Public Airport

			Planning Horizon		
	Available	Current	Short Term	Intermediate Term	Long Term
Jet A					
Daily Usage (gal.)		2,867	3,164	3,455	3,663
14-Day Supply (gal.)	77,000	40,131	44,301	48,367	51,282
Annual Usage (gal.)		1,046,280	1,155,000	1,261,000	1,337,000
AvGas					
Daily Usage (gal.)		1,183	1,247	1,313	1,403
14-Day Supply (gal.)	40,000	16,561	17,462	18,382	19,648
Annual Usage (gal.)		431,775	455,250	479,250	512,250

Assumptions:
Jet A
100 gallons per airline/charter operation
50 gallons per itinerant other air taxi operation
20 gallons per itinerant GA operation
20 gallons per military operation
AvGas
15 gallons per general aviation and military operation

AIRCRAFT RESCUE AND FIRE FIGHTING (ARFF)

Part 139 airports are required to provide Aircraft Rescue and Fire Fighting (ARFF) services during air carrier operations. Each certificated airport maintains equipment and personnel based on an ARFF index established according to the length of aircraft and scheduled daily flight frequency. There are five indices, A through E, with A applicable to the smallest aircraft and E the largest (based on wingspan).

SMX currently meets ARFF Index C requirements. In the future, as the scheduled airline aircraft fleet mix transitions to larger aircraft such as the CRJ700 which has a length of 107 feet, or the Airbus A320 which has a length of 123 feet, the Airport will need to maintain ARFF equipment to meet at least ARFF Index B requirements. **Table 3P** presents the vehicle requirements and capacities for each index level.

The SMX ARFF facility is operated by the Santa Maria Fire Department under contract with the SMPAD and is located just southeast of the terminal building. The facility operates 24 hours per day, 365 days a year. All ARFF personnel are trained in basic emergency medical care. Live fire drills are conducted at least once a year. The ARFF personnel receive initial and recurrent training (at least every 12 months) in the following areas:

a. Airport familiarization, including signs, marking, and lighting.
b. Aircraft familiarization.
c. Rescue and firefighting personnel safety
d. Emergency communications systems on the airport, including fire alarms.
e. Use of fire hoses, nozzles, turrets, and other appliances required.

f. Application of the types of extinguishing agents required for Part 139 Certification.
g. Emergency aircraft evacuation assistance.
h. Firefighting operations.
i. Using firefighting equipment for aircraft rescue and firefighting.
j. Aircraft cargo hazards and materials.
k. Familiarization with the Airport Emergency Plan.

TABLE 3P
ARFF Index Requirements

Index	Aircraft Length	Requirements
Index A	<90'	1. One ARFF vehicle with 500 lbs. of sodium-based dry chemical or
		2. One vehicle with 450 lbs. of potassium-based dry chemical and 100 lbs. of water and AFFF for simultaneous water and foam application
Index B	90'-126'	1. One vehicle with 500 lbs. of sodium-based dry chemical and 1,500 gallons of water and AFFF or
		2. Two vehicles, one with the requirements for Index A and the other with enough water and AFFF for a total quantity of 1,500 gallons
Index C	126'-159'	1. Three vehicles, one having Index A, and two with enough water and AFFF for all three vehicles to combine for at least 3,000 gallons of agent or
		2. Two vehicles, one with Index B and one with enough water and AFFF for both vehicles to total 3,000 gallons
Index D	159'-200'	1. One vehicle carrying agents required for Index A and
		2. Two vehicles carrying enough water and AFFF for a total quantity by the three vehicles of at least 4,000 gallons
Index E	>200'	1. One vehicle with Index A and
		2. Two vehicles with enough water and AFFF for a total quantity of the three vehicles of 6,000 gallons

AFFF: Aqueous Film-Forming Foam
ARFF: Aircraft Rescue and Fire Fighting
Source: 14 CFR Part 139

U.S. FOREST SERVICE (USFS) FACILITIES

The USFS operates out of a temporary aerial firefighting tanker base at SMX utilizing a variety of aircraft including the Boeing 737, DC-9/10, Lockheed P-2 Neptune, BAe 146, Lockheed C-130, and Sky Crane helicopters. The USFS utilizes three fire retardant loading pits located on the Central Coast Jet Center apron, which is also utilized as a general aviation apron. Each aircraft in the fleet is capable of utilizing these loading pits with the exception of the DC-10, which can only utilize the pit farthest from the FBO building to the northeast. As a result, a fourth temporary pit located adjacent to the terminal apron has been set up for use by DC-10 aircraft. The current USFS facilities do not include crew quarters for the fire crews that base at SMX during fire season. Consideration will be given in the alternatives analysis to the improvement of the existing USFS facilities or potential development sites for a new permanent firefighting tanker base, which would include dedicated apron space for the fire loading pits and facilities including crew quarters to more adequately serve the USFS.

PERIMETER SERVICE ROAD AND FENCING

The perimeter of the Airport is accessible to Airport staff and emergency vehicles via a paved perimeter service road. Access restriction controls are in place to prevent unauthorized access to the perimeter service road. Where the perimeter road coincides with or crosses aircraft movement areas such as aprons and taxiways, the perimeter road should be equipped with appropriate edge markings so the road is clearly defined for vehicle and aircraft operators helping to prevent vehicle/aircraft collisions. The perimeter road at SMX does not include distinct edge markings in certain areas where it coincides with apron areas. Consideration should be given to adding appropriate markings to the perimeter road in these areas including: roadway edge lines to delineate each edge of the roadway; a dashed line to separate lanes within the edges of the roadway; and roadway stop lines or bars at intersections.

The Airport's perimeter is fenced with wire chain-link security fencing with three strands of barbed wire. Perimeter fencing is used at airports primarily to secure the aircraft operational area. The physical barrier of perimeter fencing provides the following functions:

- Gives notice of the legal boundary of the outermost limits of a facility or security-sensitive area.
- Assists in controlling and screening authorized entries into a secured area by deterring entry elsewhere along the boundary.
- Supports surveillance, detection, assessment, and other security functions by providing a zone for installing intrusion-detection equipment and closed-circuit television (CCTV).
- Deters casual intruders from penetrating a secured area by presenting a barrier that requires an overt action to enter.
- Demonstrates the intent of an intruder by their overt action of gaining entry.
- Causes a delay to obtain access to a facility, thereby increasing the possibility of detection.
- Creates a psychological deterrent.
- Optimizes the use of security personnel, while enhancing the capabilities for detection and apprehension of unauthorized individuals.
- Demonstrates a corporate concern for facilities.
- Limits inadvertent access to the aircraft operations area by wildlife.

SMX's security fencing is adequate for the existing facilities. As new development occurs on the landside area, security fencing should be expanded as well to ensure proper access controls.

SUMMARY

The intent of this chapter has been to outline the facilities required to meet potential aviation demands projected for SMX for the planning horizon. In an effort to provide a more flexible master plan, the yearly forecasts from Chapter Two have been converted to planning horizon levels. The short term roughly corresponds to a five-year time frame, the intermediate term is approximately 10 years, and the long term is 20 years. By utilizing planning horizons, the SMPAD can focus on demand indicators for initiating projects and grant requests rather than on specific dates in the future.

Primary Runway 12-30 is planned to accommodate regular use by aircraft within RDC C/D-III including the MD-80 series, Airbus A320 and all business aircraft up to the Boeing Business Jet (BBJ). The existing runway length of 8,004 feet was found to be adequate to meet existing and forecasted users. Crosswind Runway 2-20 is planned to accommodate regular use by aircraft within RDC B-II, which includes many small- to mid-size business jet aircraft including the Citation jet family of aircraft. Its existing length of 5,199 feet was also found to be adequate for the aircraft anticipated to use the crosswind runway on a regular basis.

Airfield conditions that need to be addressed include the correction of taxiway geometry issues including the mitigation of four runway incursion "hot spots," as identified by the FAA. In addition, consideration will be given to improving instrument approach capabilities to Runway 30 and equipping Runway 2-20 with pavement edge lighting and instrument approach capabilities to expand the utility of the Airport during nighttime and poor visibility conditions.

On the landside, planning calculations show the existing passenger terminal facility is well suited to meet the long term enplanement forecasts with only minor adjustments in functional areas over the planning period. Aircraft storage hangar capacity need is forecasted to grow over the planning period. The availability of additional hangar space is a significant factor as to whether the Airport will experience and can accommodate the forecast growth in based aircraft.

The next chapter, Alternatives, will examine potential improvements to the airfield system and the landside. Most of the alternatives discussion will focus on those capital improvements that would be eligible for federal grant funds. Other projects of local concern will also be presented. On the landside, several facility layouts that meet the forecast demands over the next 20 years will be presented. Ultimately, an overall airport layout that presents a vision beyond the 20-year scope of the Master Plan will be developed.

A summary of the airside and landside requirements is presented on **Exhibits 3E** and **3F**, respectively.

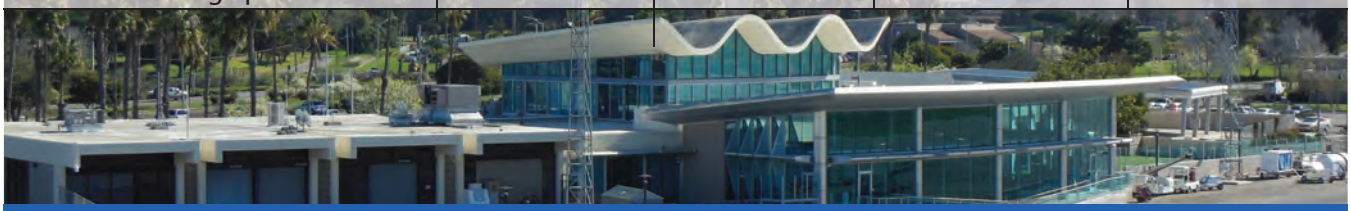
	Current	Short Term	Intermediate Term	Long Term
AIRCRAFT STORAGE HANGAR REQUIREMENTS				
T-Hangar Area (sf)	198,879	227,800	239,700	265,700
Corporate Hangar Area (sf)	132,261	148,800	175,100	238,100
Conventional Hangar Area (sf)	91,385	107,900	160,400	286,400
Service/Maintenance Area (sf)	61,283	67,300	73,500	86,500
Total Hangar Storage Area (sf)	483,808	551,800	648,700	876,700



AIRCRAFT PARKING APRON				
Based GA Positions	16	13	14	15
Transient Single/ Multi-Engine Aircraft Positions	40	17	19	20
Transient Business Jet Positions	--	10	11	12
Helicopter Positions	6	6	7	8
Total Positions	62	47	51	55
Total Apron Area (sy)	106,700	38,700	42,900	45,700



GENERAL AVIATION TERMINAL FACILITIES AND PARKING				
Building Spaces (sf)	6,000	4,800	5,300	6,400
GA Terminal Parking Spaces	31	34	38	46
GA Based Owner Spaces	118	135	147	173
Total GA Parking Spaces	149	169	185	219



SUPPORT FACILITIES				
14-Day Fuel Storage - 100LL	40,000	17,462	18,382	19,648
14-Day Fuel Storage - Jet A	77,000	44,301	48,367	51,282
ARFF Index	Index C	Maintain	Maintain	Maintain
Security Fencing/Gates	6-foot chainlink fence w/ barbed wire	Maintain	Maintain	Maintain
Perimeter Service Road	Pavement perimeter service roadway with access controls	Add distinct markings to delineate roadway from aircraft movement areas	Maintain	Maintain
USFS Aerial Firefighting Base	Temporary facility with three retardant loading pits	Consider potential development sites for a permanent firefighting base		

SANTA MARIA
PUBLIC AIRPORT



CHAPTER FOUR
DEVELOPMENT ALTERNATIVES



SANTA MARIA PUBLIC AIRPORT

CHAPTER FOUR
DEVELOPMENT ALTERNATIVES

In the previous chapter, airside and landside facilities required to satisfy the projected demand at Santa Maria Public Airport (SMX or Airport) through the long range planning period were identified. The next step in the planning process is to evaluate reasonable ways these facilities can be provided. There are numerous design alternative options, but the alternatives presented here have been limited to those considered most reasonable and that have the greatest apparent potential for implementation.

Any development proposed for a Master Plan is derived from an analysis of projected needs for a set period of time. Though the needs were determined by utilizing industry accepted statistical methodologies, unforeseen future events could impact the timing of the needs identified. The master planning process aims to produce a viable development concept to meet the needs created by aviation demand elements throughout the next 20 years; however, no plan of action should be developed which may be inconsistent with the future goals and objectives of the Santa Maria Public Airport District (SMPAD) and the local communities, which have a vested interest in the development and operation of the Airport.

The on-Airport development alternatives for SMX can be categorized into two functional areas: **airside** (runways, navigational aids, taxiways, etc.) and **landside** (hangars, aprons, and terminal area). Within each of these areas, specific capabilities and facilities are required or desired. In addition, the utilization of Airport property to provide revenue support for the Airport and to benefit the economic well-being of the community and surrounding region must be considered.

Each functional area interrelates and affects the development potential of the other. Therefore, all relevant airside and landside areas are examined individually and then combined as a whole to ensure the final plan is functional, efficient, and cost-effective. The total impact of all these functional areas on the existing Airport must be evaluated to determine if investment in the Airport will meet the needs of the community, both during and beyond the 20-year planning period.

The alternatives presented in this chapter are developed to meet projected aviation demand and Federal Aviation Administration (FAA) design standards to the greatest extent practicable. While capital outlays necessary to implement a plan are important, the alternative analysis completed here will not limit or judge reasonable development plans based on projected costs. The investment necessary for each alternative is not considered at this point to ensure that the final plan first meets the needs of the Airport. The approach is intended to ensure that the best plan is put forth, not the most cost-effective plan. Only where a project cost would be extraordinary is it considered as a limiting factor. Once a final plan is developed, cost estimates will be developed for each individual project considered during the next 20 years.

The Planning Advisory Committee (PAC), SMPAD, and the public will be asked to review these alternatives and to provide suggestions and comments. Following that review, a recommended concept will be developed. In most cases, the recommended concept will include the most appropriate elements from each applicable alternative.

AIRPORT DEVELOPMENT OBJECTIVES

Prior to identifying objectives specifically associated with development of the Airport, non-development alternatives are considered. Non-development alternatives include a “no-build” or “do-nothing” alternative, the transfer of services to another existing airport, or the development of a new airport at a different location.

SMX plays a critical role in the economic development of the region as well as the national aviation network, and there is significant public and private investment at the Airport. Pursuit of non-development alternatives would slowly devalue these investments, lead to infrastructure deterioration, and potentially result in the loss of significant levels of federal funding for Airport improvements. Ultimately, the safety of aircraft, pilots, and persons on the ground could be jeopardized. SMX is fully capable of continued development necessary to meet the demand in the region. Its continued operation, maintenance, and future improvement is an important component within the City, region, state, and national transportation systems. Therefore, the non-development alternatives will not be further evaluated.

It is the goal of this effort to produce a safe and efficient airfield as well as landside facilities, which includes appropriate commercial terminal spaces, aircraft storage mix, and aviation businesses to best serve forecast aviation demands. However, before defining and evaluating alternatives, specific Airport development objectives will be considered. As owner and operator, the SMPAD provides the overall guidance for the operation and development of the Airport. It is of primary concern that the Airport is

marketed, developed, and operated for the betterment of the community and its users. With this in mind, the following development objectives have been defined for this planning effort:

- To preserve and protect public and private investments in existing Airport facilities.
- To develop a safe, attractive, and efficient aviation facility in accordance with applicable federal, state, and local regulations.
- To develop a balanced facility that is responsive to the current and long term needs of all users (commercial airlines, aerial firefighting, general aviation).
- To be reflective and supportive of the long-term planning efforts currently applicable to the region.
- To develop a facility with a focus on self-sufficiency in both operational and developmental cost recovery.
- To ensure that future development is environmentally compatible.

REVIEW OF PREVIOUS AIRPORT PLANS

The previous Master Plan for SMX was completed in 2003 with an addendum of supplemental analyses added in 2004. The primary recommendations from this plan included the following:

- Extension of Runway 12-30 to 8,004 feet;
- Implement an instrument landing system (ILS) on Runway 30;
- Construct a west parallel taxiway for Runway 12-30;
- Construct an east parallel taxiway for Runway 2-20;
- Expansion of the terminal including the passenger holdroom and baggage claim areas;
- Siting for the installation of the Airport Surveillance Radar (ASR);
- Construction of the air cargo apron

Since the completion of that Master Plan, the SMPAD has undertaken several of the recommended projects, including extending Runway 12-30 to its current length of 8,004 feet, construction of the partial parallel Taxiway B on the west side of Runway 12-30, the terminal has been expanded with additional holdroom and baggage claim space, the ASR has been installed, and the cargo apron has been constructed.

The current Airport Layout Plan (ALP), most recently approved on March 6, 2015, indicates that the Airport is designed to meet airport reference code (ARC) C-IV design standards with the critical aircraft identified as the Boeing 757-200. Runway 2-20 is identified as an ARC B-II runway with the critical design aircraft identified as the Embraer 120. The ALP, depicted on **Exhibit 4A**, identifies future projects including the construction of a full-length parallel Taxiway D on the southeast side of Runway 2-20 and the extension of Taxiway B to the Runway 12 and 30 thresholds. Landside improvements shown include new hangar facilities primarily on the south side of the airfield along with new associated taxiways and public access road construction.

The assumptions made and conclusions drawn from the previous planning efforts will be independently evaluated in this Master Plan. Some elements from the previous planning efforts may continue to be viable and could be included in this planning effort. Other elements may no longer be viable based on changes to design standards (FAA published new design standards in September of 2012), changes in the long-term vision for the Airport, environmental concerns, and/or financial considerations. The remainder of this chapter will present various alternatives to consider for both the airside and landside development of the Airport.

AIRSIDE PLANNING ISSUES

Generally, airside issues relate to those airport elements that contribute to the safe and efficient transition of aircraft and passengers from air transportation to the landside facilities at an airport. This includes consideration of the established design standards, instrument approach capabilities, airfield capacity, runway length and strength, and taxiway layout. Each of these elements was introduced in previous chapters. This chapter will examine airside issues specific to SMX, which will then be applied to several development alternatives. The major airside considerations include the following:

AIRSIDE ALTERNATIVE CONSIDERATIONS

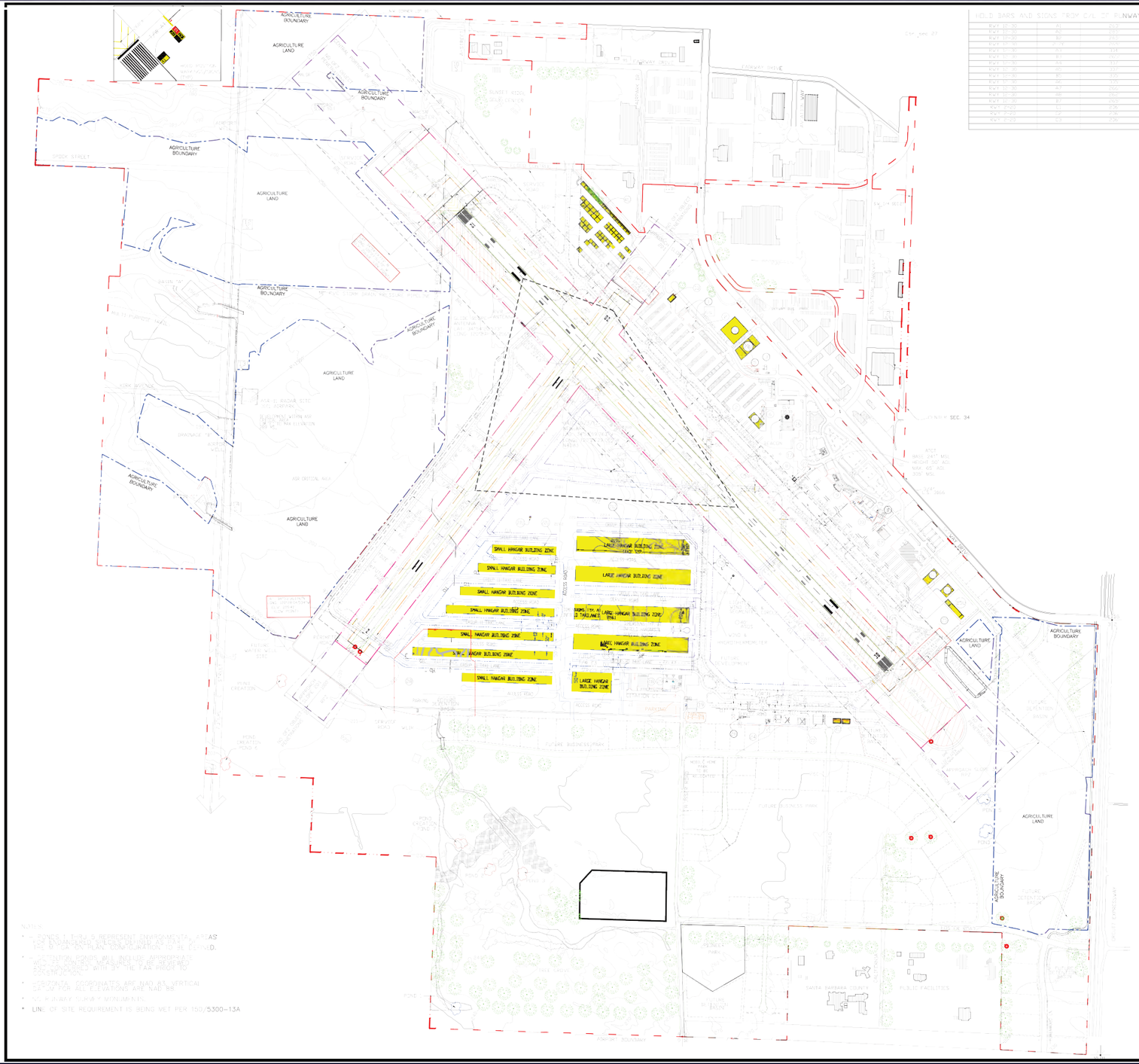
- **Meet TDG 5 Design Standards for All Taxiways Associated with Runway 12-30**
- **Corrective Measures for Non-Standard Taxiway Geometry Including Hot Spots**
- **Explore Lower Instrument Approach Visibility Minimums for Runway 30**
- **Explore Implementing Instrument Approach Procedures to Runway 2-20**
- **Consider Visual Aids for Runway 2-20**

Not all airside or landside elements will require a detailed alternatives analysis. The alternatives analysis is reserved for presenting viable solutions to specific problems or challenges. For those airside or landside elements where only one solution is reasonable or where no alternative is necessary, an explanatory narrative is provided.

CRITICAL DESIGN AIRCRAFT

The critical design aircraft is the aircraft or grouping of general aviation aircraft that account for at least 500 annual itinerant operations at an airport. The critical design aircraft is categorized based on operational characteristics (approach speed in landing configuration) and physical characteristics (wing span and tail height). The critical design aircraft is then identified by its corresponding Aircraft Approach Category (AAC), Airplane Design Group (ADG), and Taxiway Design Group (TDG).

As previously discussed in Chapter Two, the current and future critical design aircraft for Runway 12-30 is the DC-10 aerial firefighting aircraft, which falls in design group C-IV-5. The current and future critical



HOLD BARS AND SIGNS FROM C/L OF RUNWAY

RWY 12-30	A1	250'
RWY 12-30	B1	250'
RWY 12-30	C1	250'
RWY 12-30	D1	250'
RWY 12-30	C/D	250'
RWY 12-30	E1	250'
RWY 12-30	B2	250'
RWY 12-30	C2	250'
RWY 12-30	D2	250'
RWY 12-30	E2	250'
RWY 12-30	A2	250'
RWY 12-30	B3	250'
RWY 12-30	C3	250'
RWY 7-25	A1	250'
RWY 7-25	B1	250'
RWY 7-25	C1	250'

LEGEND

EXISTING	ULTIMATE	ITEM
		BUILDING
		TO BE REMOVED / RELOCATED
		VEHICLE PAVEMENT
		AIRFIELD PAVEMENT
		RUNWAY PROTECTION ZONE
		RUNWAY PROTECTION ZONE (RPZ)
		AIRPORT BOUNDARY
	SAME	FENCE
	SAME	ARC/AS OBSTACLE
	SAME	RUNWAY & TAXIWAY EDGE LIGHTS
	SAME	ROTATING BEACON
	SAME	AIRPORT REFERENCE POINT (ARP)
	SAME	WIND CONE
	SAME	RUNWAY SAFETY AREA
	SAME	DISTANCE REMAINING MARKERS
	SAME	WIND CONE & SEGMENTED CIRCLE
	SAME	DRAINAGE
	SAME	SECTION CORNER
	SAME	TAXILANE
	SAME	BOUNDARY MONUMENT
	SAME	RUNWAY OBSTACLE FREE ZONE (OFZ)
	SAME	RUNWAY OBSTACLE FREE AREA (OFA)
	SAME	CENTER LINE
	SAME	ENTRANCE ROAD
	SAME	AUTOMATIC WEATHER OBS.
	SAME	OBSTACLE LIMITATION SURFACE (OLS) ZONE
	SAME	AIRPORT CONTROL TOWER
	SAME	CITY WATER MAIN & NO.
	SAME	REVISIONS TO ALP (SEE REVISION BLOCK)
	SAME	AIRPORT BEACON
	SAME	CONCRETE OBSTRUCTION MARKER
	SAME	GATE FOR POSITION MARKING
	SAME	FENCE
	SAME	MASTER SIGNAGE
	SAME	WINDSOCK LIGHTED
	SAME	RUNWAY VISIBILITY ZONE
	SAME	RUNWAY SHOULDER
	SAME	FUTURE BUSINESS PARK
	SAME	CURRENT AGRICULTURE LAND
	SAME	FUTURE EXPANSION OF AIRPORT

BUILDING/FACILITIES

EXISTING	ULTIMATE	DESCRIPTION
1	SAME	MUSEUM
2	SAME	DISTRICT OWNED AIRCRAFT RENTAL HANGARS
3	SAME	SMVAD MAINTENANCE FACILITIES
4	SAME	PRIVATE AIRCRAFT STORAGE HANGARS
5	SAME	FUEL STORAGE
6	SAME	T-HANGARS
7	SAME	AIRPORT ADMINISTRATION BLDG.
8	SAME	AIR TRAFFIC CONTROL TOWER
9	SAME	PASSENGER TERMINAL BLDG.
10	SAME	CENTRAL JET BLAST CENTER
11	SAME	ARFF STATION
12	SAME	T-HANGARS
13	SAME	TRANSIENT HEITZ
14	REMOVED	BOY SCOUTS BUILDING REMOVED
15	SAME	T-HANGAR ORIENTATION AIR AVIATION
16	SAME	T-HANGARS (ARTCRAFT PAINT)
17	SAME	SELF FUELING
18	SAME	CENTRAL COAST JET CENTER
19	SAME	ARCTIC AIR SERVICES
	20A	FUTURE LARGE AIRCRAFT HANGARS
	20B	FUTURE SMALL AIRCRAFT HANGARS
	23A	FUTURE RENTAL CAR FACILITY
24	SAME	UNITED STATES FOREST SERVICE
25	25A	CARGO COMPLEX
26	SAME	CAL STAR
27	27A	EMPAS POWER VAULT
28	SAME	KARTING TRACK
29	SAME	HELICOPTER
30,31,32	SAME	CITY WATER WELLS

NOTES:
* SEE TABLE 5-3 FOR PREFERRED RUNWAY USE AREAS
* THIS IS A CERTAIN PLAN CONFIGURATION TO BE DEPICTED.
* ALL DISTANCES SHALL INCLUDE APPROPRIATE SAFETY AREAS AND BE CONSISTENT WITH 5TH YEAR PRIOR TO ESTABLISHED
* COORDINATES ARE NAD 83, VERTICAL DATUM FOR ALL ELEVATIONS ARE NAD 88
* ALL RUNWAY LOW-E WINDSHIELD
* LINE OF SITE REQUIREMENT IS BEING MET PER 150/5300-13A

FAA SIGNATURE BLOCK

NO.	REVISION	DATE	BY	CHECK
5	SLF, ROSATE & AWAY TO 3 RWY EXTENSION	3/6/15	BH	
4	FINAL DRAFT AIRPORT LAYOUT PLAN	11/24/08	BH	

THE CONTENTS DO NOT NECESSARILY REFLECT THE OFFICIAL VIEWS OR POLICIES OF THE FAA. NOR DOES APPROVAL OF THE DOCUMENT BY THE FAA IN ANY WAY CONSTITUTE A COMMITMENT ON THE PART OF THE UNITED STATES TO PARTICIPATE IN ANY DEVELOPMENT DEPICTED HEREIN NOR DOES IT INDICATE THAT THE PROPOSED DEVELOPMENT IS ENVIRONMENTALLY ACCEPTABLE IN ACCORDANCE WITH APPROPRIATE PUBLIC LAWS.

SANTA MARIA PUBLIC AIRPORT DISTRICT
3217 TERMINAL DRIVE
SANTA MARIA, CA 93455
(805) 922-1726

AIRPORT LAYOUT PLAN DRAWING

SPONSOR SIGNATURE
APPROVED BY: Chris Hastert
TITLE: Director of Airports
APPROVED DATE: January 6, 2015

AIRPORT LAYOUT PLAN UPDATES

REVISION NO.	DATE SUBMITTED	DATE APPROVED	NOTES
5	3/6/15	3/24/15	Update
4	5/6/09	9/15/2009	Conditioned
3	8/23/2007	10/12/2007	Conditioned
2	5/24/2006	6/19/2006	Accepted

Date: 3/6/15 Checked By: JS
Drawn By: BH Approved By:

DRAWING NUMBER
SMX ALP - 2

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design aircraft for Runway 2-20 includes small to mid-sized business jet aircraft such as the Cessna Citation family of business jets. This family or grouping of aircraft fall within design group B-II-2.

TAXIWAY CONSIDERATIONS

The existing taxiways at SMX generally satisfy the TDG 3/4 width standard of 50 feet. With increased activity by larger aerial firefighting aircraft including the DC-10, the taxiways associated with Runway 12-30 need to be designed to meet TDG 5 standards including widening to 75 feet and expanded fillets[1]. Furthermore, consideration will be given to extending Taxiway B to create a full-length parallel taxiway on the southwest side of Runway 12-30, which would more easily serve existing and future landside developments on the south side of the airfield.

Runway 2-20 is planned to accommodate smaller aircraft, so the width of its associated taxiways (C, C1, C2, and C3) and any planned new taxiways should be maintained at their existing width. The alternatives will also consider a future Taxiway D, which would serve as a full-length parallel taxiway on the east side of Runway 2-20. Taxiway D would also support the future development of the in-field and south side of the airfield.

In addition to the taxiway improvements suggested above, analysis in Chapter Three identified the following hot spots non-standard taxiway geometry conditions:

1. Taxiways A, A7, A8, V, and W converge to form complex taxi routes in close proximity of the runway. The FAA has identified this as Hot Spot 1.
2. Taxiways A, A6, A5, R, and S converge to form a complex taxiway in close proximity of the runway. The FAA has identified this as Hot Spot 2.
3. Aircraft on Taxiway A sometimes fail to hold short of Runway 20. The FAA has identified this as Hot Spot 3.
4. Aircraft on Taxiway B2 and Taxiway A2 sometimes fail to hold short of Runway 12. The FAA has identified this as Hot Spot 4.
5. Taxiways A4, A5, and A6 are acute-angled exit taxiways. An examination will be made on whether these acute-angled exits are appropriate or if new right-angled exits are more appropriate.
6. Taxiways A4/B5 cross Runway 12-30 in the high energy area[2].
7. Taxiways L/A3 provide direct access to the runway from the T-hangar area and crosses Runway 12-30 to B3 in the high energy area.
8. Taxiways K/A2 provide direct access to Runway 12-30 from the corporate hangar area.
9. Taxiway A7 is an acute-angled bypass taxiway that does not provide high-speed exit capabilities.
10. Taxiways A7/A8 form into a wide expansive pavement area of approximately 280 feet at the Runway 30 threshold.

[1] As an airplane negotiates a turn designed for cockpit over centerline taxiing, the main gear requires additional pavement in the form of fillets to maintain the taxiway edge safety margin.

[2] The high energy area is the middle third of the runway. Crossings are not recommended in this area as they can increase the potential for runway incursions.

11. A portion of Taxiway J is not visible to airport traffic control tower (ATCT) personnel where the corporate hangar area obstructs it.

Taxiway Exit Alternatives for Runway 12-30

An analysis of the taxiway exits serving Runway 12-30 was conducted to address non-standard taxiway geometry and to examine potential opportunities to improve circulation. **Exhibit 4B** presents an analysis of the current exit taxiways serving Runway 12-30. The exhibit shows the distance from the landing threshold to the exit taxiway in both directions. FAA AC 150/5300-13A, *Airport Design*, presents a methodology to assess the utilization percentages for taxiway exits based on location. The methodology considers both right-angled and acute-angled exits (which typically have a higher utilization rate for larger aircraft) and presents an approximate percentage of the small[3] single-engine, small twin-engine, large[4], and heavy[5] aircraft fleet that can utilize the exits under both wet and dry conditions.

For arrivals on Runway 12, most small aircraft can exit the runway at A3/B3 and A5/B5. Under dry conditions, large and heavy aircraft are more likely to utilize A5 or rollout to the end of the runway. Under wet conditions, most large and heavy aircraft rollout to the runway end. For arrivals on Runway 30, small aircraft can exit the runway at A6 and A4/B5. Large and heavy aircraft exit at A3/B3 and A2/B2 during dry conditions, and either A2/B2 or rollout to the end of the runway under wet conditions.

As shown on the exhibit, an alternative is considered that eliminates the acute-angled exits, A4, A5, and A6. Acute-angled exits are typically planned to accommodate large and heavy aircraft, and in their current location, A4, A5, and A6 are not largely usable by these aircraft types. The exception is A5, which accommodates approximately 65 percent of large aircraft and 36 percent of heavy aircraft landing on Runway 12 in dry conditions. However, A5 and A6 contribute to create Hot Spot 2, so their elimination would mitigate this hot spot. As a result, the alternative considers a new acute-angled exit at 6,000 feet from the Runway 12 threshold that would accommodate 96 percent and 89 percent of large and heavy aircraft respectively under dry conditions and 38 percent of large aircraft under wet conditions.

A new right-angled exit is also considered between A4 and A5 at approximately 4,800 feet from the Runway 12 threshold and 3,200 feet from the Runway 30 threshold, which is usable in both landing directions. This new exit would be slightly less functional than the existing exits; however, A4 provides only one percent utilization for large aircraft landing on Runway 30, so this impact is minimal. A5 provides 31 percent better utilization for large aircraft and 32 percent better utilization for heavy aircraft than the proposed right-angled exit. However, as previously discussed, a new acute-angled exit at 6,000 feet from the Runway 12 end would essentially replace A5 and provide 31 percent and 53 percent increased utilization rates for large and heavy aircraft respectively.

[3] Small aircraft are defined as those weighing less than 12,500 pounds.
[4] Large aircraft are defined as those weighing between 12,500 and 300,000 pounds.
[5] Heavy aircraft are defined as those weighing greater than 300,000 pounds.

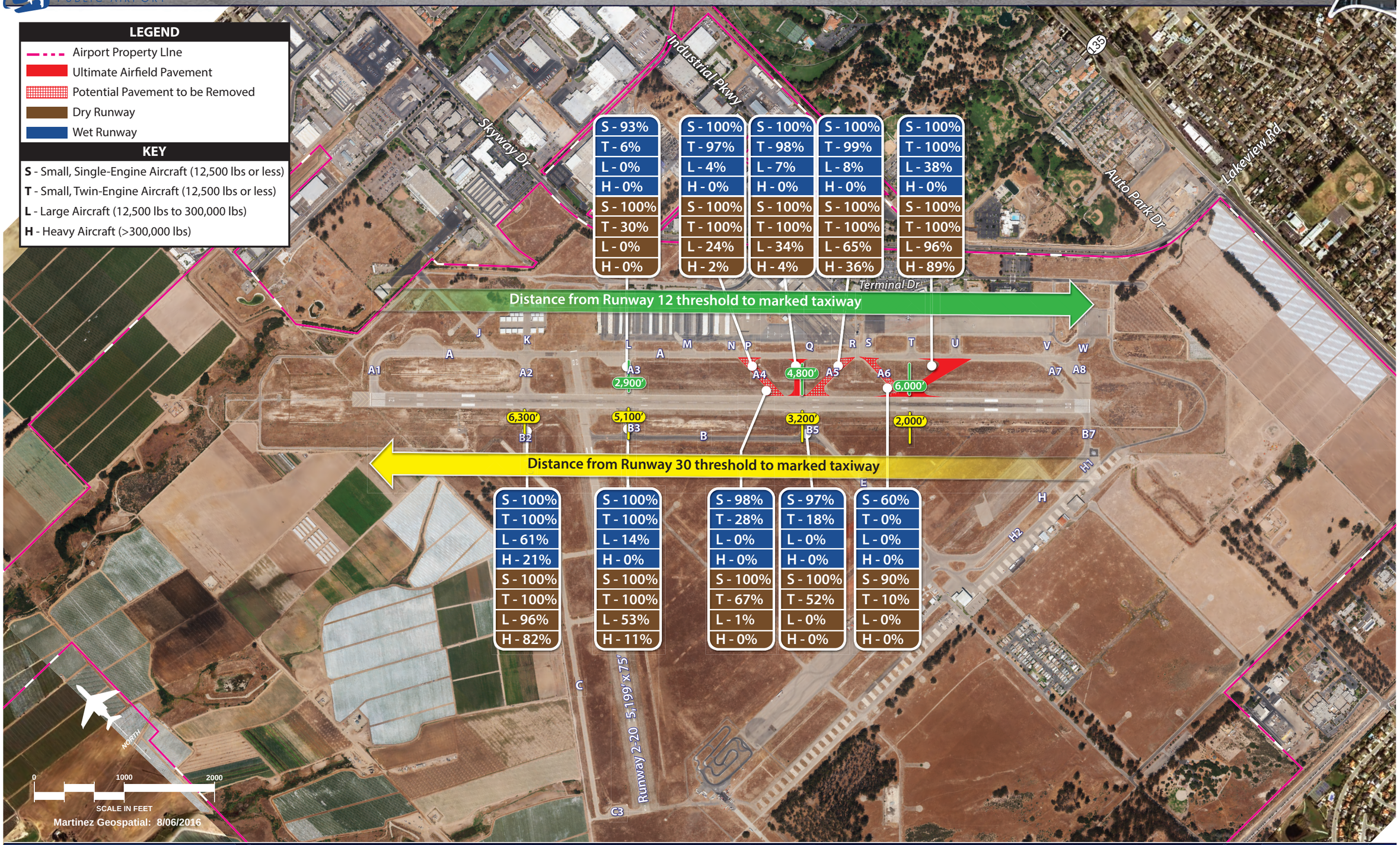


Exhibit 4B
RUNWAY 12-30 TAXIWAY EXIT ANALYSIS

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Taxiway Geometry Alternatives

Improvements to the taxiway system at SMX are necessary to correct the non-standard geometry conditions previously outlined and to meet design standards. **Exhibit 4C** depicts the taxiway geometry alternatives to be considered. Overall, the taxiway system associated with Runway 12-30 is shown as being widened to 75 feet to satisfy TDG 5 standards. FAA design standards require paved taxiway shoulders for ADG IV and larger aircraft, which includes the DC-10; therefore, the alternatives include a 30-foot shoulder on all taxiways associated with Runway 12-30.

Consideration is being given to extending Taxiway B to create a full-length parallel taxiway on the south side of Runway 12-30 to provide better access and taxiway circulation. The southern portion of the proposed Taxiway B extension leading to Runway 30 could remain at the existing runway/taxiway centerline separation distance of 400 feet. The northern portion leading to Runway 12 is shown at a separation distance of 500 feet so that taxiway construction would not require the relocation of the glideslope antenna currently in place; however, Taxiway B would still extend through the glideslope critical area as depicted on **Exhibit 4C** and **Figure 4A**. This will require a holding position marking be located outside of the critical area where aircraft would hold until authorized by ATCT personnel to taxi to the Runway 12 threshold. This critical area holding position is depicted on **Figure 4A**.

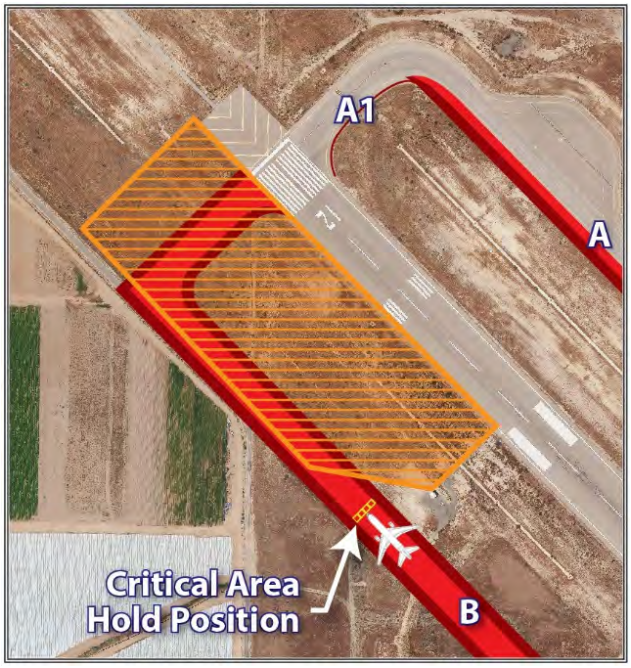


FIGURE 4A
Glide Slope Critical Area and Holding Position

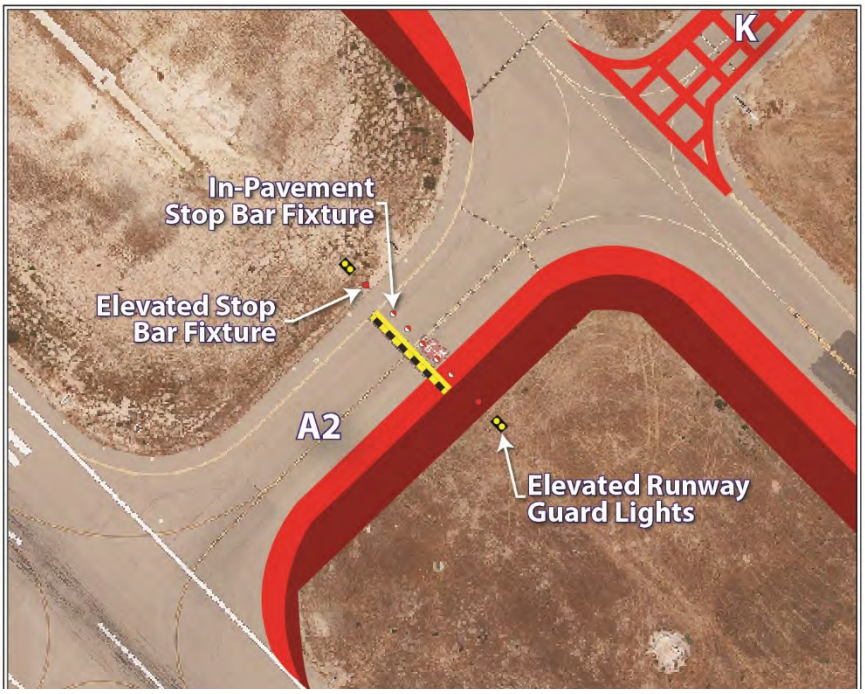
A full-length parallel taxiway is also being considered for the southeast side of Runway 2-20 to provide better access and circulation for future landside developments on the south side of the airfield. Since Runway 2-20 is planned to accommodate smaller aircraft within TDG 3, the proposed taxiway would be designed to a width of 50 feet. Taxiways for smaller aircraft are also not required to be equipped with paved shoulders; however, the Airport should maintain the turf at the taxiway edges to protect against erosion.

To address Hot Spot 1, which consists of Taxiways A, A7, A8, V, and W, the taxiway geometry alternative considers reconstructing A7 and A8 as right-angled taxiways. FAA design standards recommends right-angled intersections for all runway entrance taxiways where possible as they provide pilots with the best field of view along the runway in both directions. A7 and A8 should be designed to a centerline separation distance of 215 feet to meet ADG IV design standards. Taxiway A7 functionally serves as a bypass taxiway in lieu of a holding apron. Taxiway W, which provides access to the air cargo apron, should be reconstructed to form a right-angled turn from Taxiway A to the cargo apron. Since the larger ADG IV aircraft do not utilize the air cargo apron, Taxiway W can remain at its current width of 50 feet, which satisfies

TDG 3 and 4 design standards. The result of this taxiway reconstruction alternative is the elimination of the existing convergence of complex taxi routes.

Hot Spot 2, which consists of Taxiways A, A6, A5, R, and S, is also created by the convergence of complex taxiways. To address this hot spot, the taxiway geometry alternative considers eliminating Taxiways A5 and A6 and adding a new acute-angled exit farther to the southeast and a new right-angled exit between A4 and A5, as was discussed in the taxiway exit analysis section. Taxiway R, which provides access to the tower apron, would be rerouted from accessing Taxiway A at an acute angle to accessing Taxiway S at a right-angle.

Hot Spots 3 and 4, located at the intersections of Runway 2-20 and Taxiway A and Taxiways A2/B2 and Runway 12-30, have been established due to aircraft failing to hold short of the runways. Taxiways A, A2, and B2 are currently equipped with enhanced holding position markings, which indicate to a pilot that they are about to cross into the runway environment. At airports served by an ATCT, pilots cannot cross holding position markings without prior approval from ATCT personnel. Physically rerouting Taxiway A and A2/B2 would not feasibly address this issue, so corrective measures to raise pilot situational awareness are considered. The taxiway geometry alternative considers the addition of runway guard light (RGL) systems including elevated bars, commonly referred to as wig-wags, and a row of in-pavement RGLs at each hold position. The elevated bar consists of two yellow pulsing elevated fixtures across a taxiway at the hold position marking, and the in-pavement RGL is a single row of yellow pulsing in-pavement fixtures across the taxiway at the holding position marking. The RGL lighting configuration is depicted in **Figure 4B**. The added lights should raise the situational awareness, mitigating the potential for a pilot to cross the hold position marking without ATCT personnel approval.



Taxiways A4/B5 cross Runway 12-30 in the high-energy area. Runway crossings should not be located within the high energy area as these crossings increase the potential for runway incursions. The extension of Taxiway B to the Runway 12 and 30 thresholds would alleviate much of the need to cross Runway 12-30 in this location as aircraft taxiing to/from the south landside area could utilize the full-length parallel Taxiway B rather than crossing Runway 12-30 to utilize Taxiway A.

FIGURE 4B
Runway Guard Light Configuration

NORTH
0 1000 2000
SCALE IN FEET
Martinez Geospatial: 8/06/2016

0 500
SCALE IN FEET

Remove Taxiway J from Movement Area

Hot Spot 4 Mitigation: Install elevated flashing wig-wag lights and a row of in-pavement runway guard lights located at the hold line positions on Taxiway A2 and B2

Hot Spot 3 Mitigation: Install elevated flashing wig-wag lights and a row of in-pavement runway guard lights located at the hold line positions on Taxiway A

HOT SPOT 2

HOT SPOT 1

Runway 12-30 8,004' x 150'

Runway 2-20 5,199' x 75'

Skyway Dr

Industrial Pkwy

Terminal Dr

Lakeview Rd

135

LEGEND
- Airport Property LIne
- Ultimate Airfield Pavement
- Ultimate Airfield Shoulder
- Potential Pavement to be Removed
- Glide Slope Critical Area

Exhibit 4C
TAXIWAY GEOMETRY ALTERNATIVES

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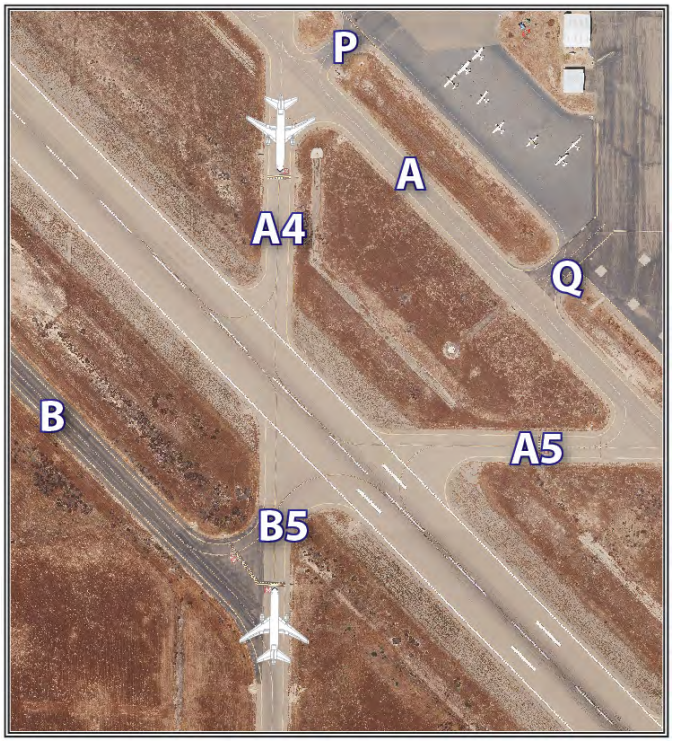


FIGURE 4C
Existing Taxiway and Holding Position Alignment

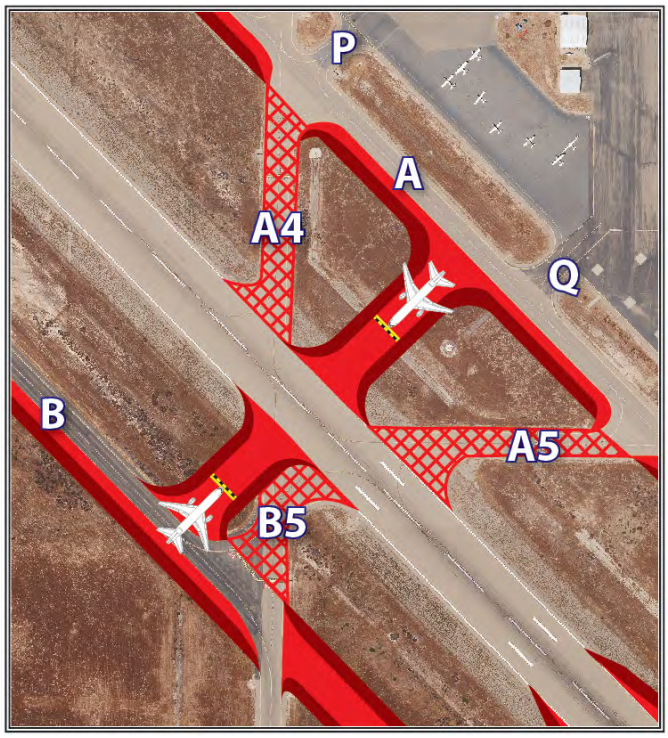


FIGURE 4D
Realigned Taxiways and Holding Position Markings

As was previously discussed, A4, an acute-angled exit, is being considered for removal with the construction of a new right-angled exit to replace it. Taxiway B5 is also an acute-angled exit that aligns A4 directly with Taxiway E, which provides access to the south landside facilities. An additional non-standard condition is the location of the holding position markings, which are not parallel with the Runway 12-30 centerline, as depicted in **Figure 4C**. As a result, aircraft holding short of Runway 12-30 have a limited view of the runway environment, which can reduce pilot situational awareness. To address these issues, the taxiway geometry alternatives consider the construction of new right-angled taxiways. The right-angled taxiways would allow for holding position markings to be parallel with the runway to maximize pilot situational awareness, as depicted in **Figure 4D**.

Taxiway L, which provides access to the north side T-hangar area from Taxiway A, provides direct access from the hangar area to Runway 12-30 via A3. FAA design standards recommend avoiding direct access taxiways when possible. The taxiway geometry alternatives consider relocating Taxiway L to the south, which would force pilots to make a turn onto Taxiway A prior to entering the runway environment.

Taxiway K, which provides access to the corporate hangar area from Taxiway A, also provides direct access to Runway 12-30 via A2. Similar to Taxiway L, the taxiway geometry alternative considers closing Taxiway K and constructing a new access taxiway from Taxiway J. This new taxiway would force aircraft to turn onto Taxiway J and then on Taxiway A prior to entering the runway environment.

Taxiway J provides access from the airfield via Taxiway A to Zodiac Aerospace, a through-the-fence operator. ATCT personnel have indicated that portions of Taxiway J are not visible from the tower cab due to the construction of the corporate hang-

ars between the tower and Taxiway J. Possible alternatives to address this include the removal of the corporate hangars; reconstructing or relocating the ATCT so that its cab is at a height or vantage point that all of Taxiway J is visible to tower personnel; or the elimination of Taxiway J from the movement area. The first two alternatives are not feasible due to the large capital investments made in the corporate hangar complex, and the costs associated with reconstructing or relocating the ATCT would outweigh the benefit gained. Removing Taxiway J from the movement area would result in it functioning essentially as an apron. Tower personnel would no longer be responsible for the movement of aircraft on Taxiway J, and pilots would be responsible for maintaining separation from other aircraft.

INSTRUMENT APPROACHES

The instrument approach capability at an airport is an important consideration that directly impacts the utility of the airport, with lower visibility minimums increasing the utility of an airport. From an economic development standpoint, it is important to achieve the lowest possible visibility minimums. SMX is currently equipped with a ½-mile visibility minimum (Category I or CAT-I) precision instrument approach to Runway 12. Runway 30 is equipped with a non-precision RNAV[6] GPS approach, which provides visibility minimums down to 1¼-mile. Runway 2-20 is not equipped with straight-in instrument approach capabilities, which means all operations to this runway must operate under visual conditions only.

Analysis in the *Facility Requirements* chapter indicated that Runway 30 is more widely utilized than Runway 12. Runway 30 also provides better wind coverage than Runway 12. Therefore, the alternatives analysis has explored the potential for a precision approach (PA) or an approach with vertical guidance (APV) with lower visibility minimums for Runway 30. Consideration has also been given to implementing non-precision GPS-based instrument approaches to Runway 2 and 20 with visibility minimums down to one mile.

The FAA has set forth various conditions and criteria for a runway to achieve lower visibility minimums. These conditions and criteria are outlined in **Table 4A** on the next page.

Runway 30 Instrument Approach

Previous studies have concluded that lower visibility minimums for Runway 30 are restricted due to rising terrain and obstructions in the approach surfaces for Runway 30. In December 2016, a project was undertaken to remove/trim trees that penetrated the Runway 30 approach surface. As part of this Master Plan, new topographic, planimetric, and obstruction mapping is being assembled, which will allow for an updated examination of airspace obstructions surrounding the Airport. This data is still under development and will be incorporated into the analysis later in the Master Plan process.

A preliminary examination of the Runway 30 threshold siting surface (TSS) and glide slope qualification surface (GQS) has been prepared to identify potential ground and object obstructions. The TSS and GQS

[6] RNAV – Area Navigation. The RNAV GPS approach for Runway 30 provides non-precision lateral navigation (LNAV) capabilities.

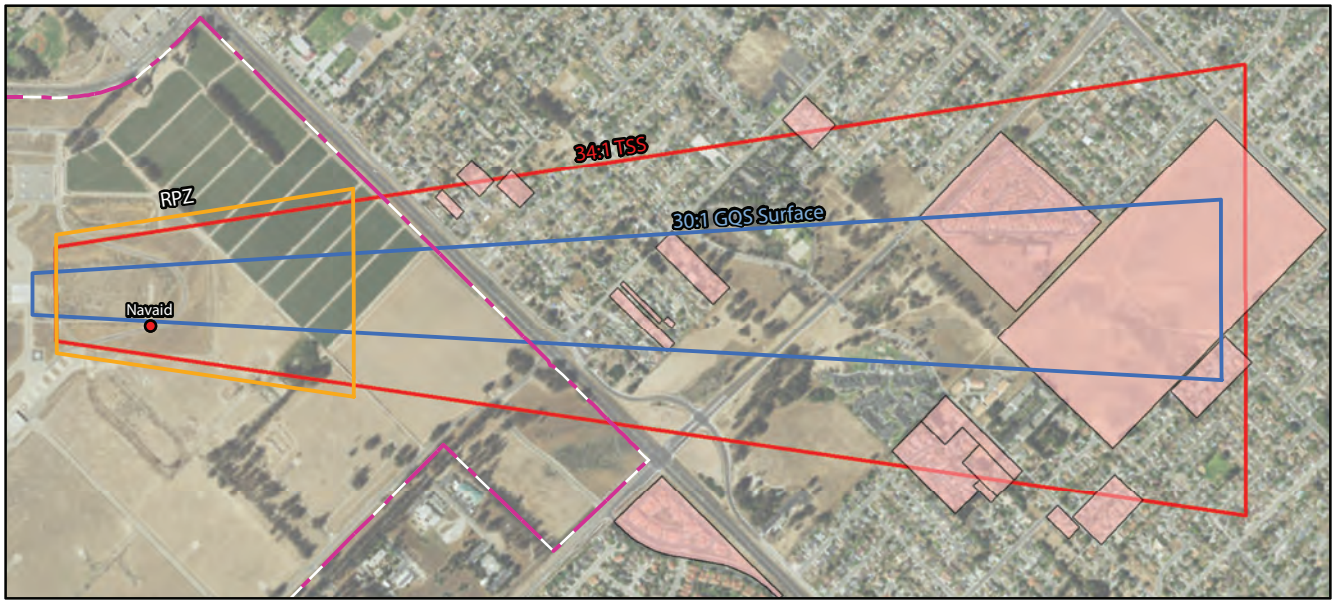
are approach surfaces considered by the FAA when establishing instrument approach procedures. Obstructions to the TSS or GQS, such as terrain or objects, left unmitigated, can increase approach visibility minimums or restrict the establishment of instrument approach procedures entirely.

TABLE 4A
Standards for Instrument Approach Procedures

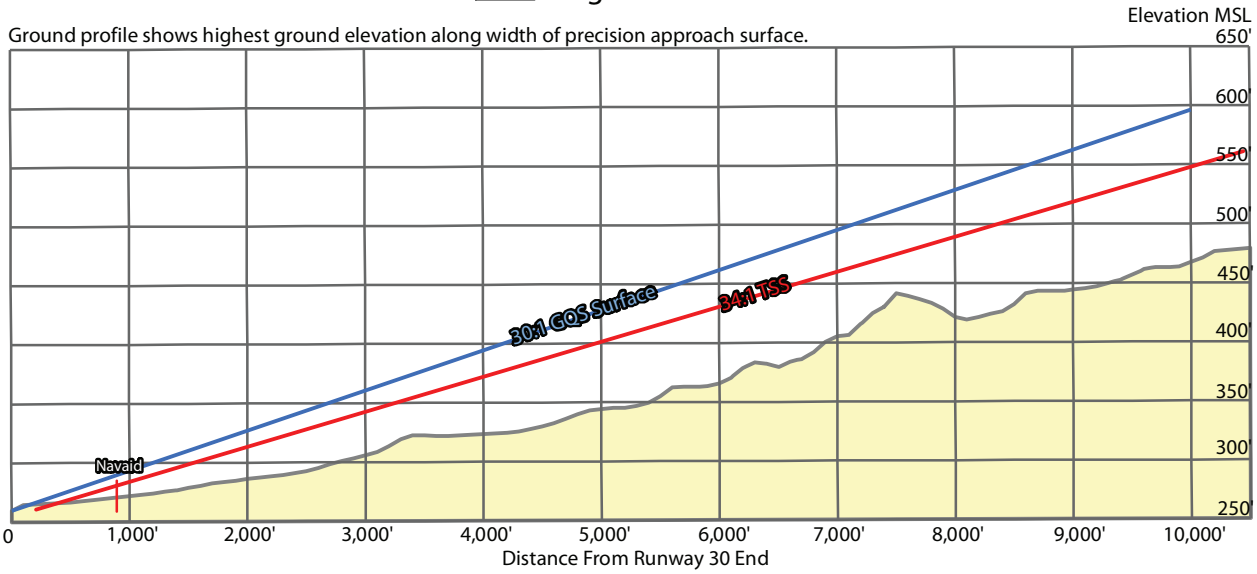
Criteria	Visibility Minimums	
	¾-mile to < 1 Mile	< ¾-mile
HATh	≥ 250 feet	<250 feet
TERPS GQS	Clear	Clear
PA final approach surfaces	Not Required	Clear
POFZ (PA & APV only)	Not Required	Required
TERPS Chapter 3, Section 3	20:1 Clear	34:1 Clear
ALP	Required	Required
Minimum Runway Length	3,200 feet	4,200 feet (paved)
Runway Markings	Non-precision	Precision
Holding Position Signs & Markings	Non-precision	Precision
Runway Edge Lights	HIRL/MIRL	HIRL/MIRL
Parallel Taxiway	Required	Required
Approach Lights	Recommended	MALSR, SSALR, or ALSF
Applicable Runway Design Standards, e.g. OFZ	≥ ¾-statute mile approach visibility minimums	< ¾-statute mile approach visibility minimums
Threshold Siting Criteria to be Met	20:1 Clear	34:1 Clear
Survey Required	VGS (PA & APV)/NVGS	VGS

HATh – Height Above Threshold
TERPS – United States Standard for Terminal Instrument Procedures
GQS – Glide Path Qualification Surface
OFZ – Obstacle Free Zone
PA – Precision Approach
POFZ – Precision Obstacle Free Zone
ALP – Airport Layout Plan
HIRL – High Intensity Runway Lights
MIRL – Medium Intensity Runway Lights
MALSR – Medium Intensity Runway Lights with Runway Alignment Indicator Lights
SSALR – Simplified Short Approach Lighting System with Runway Alignment Indicator Lights
ALSF – Approach Lighting System with Sequenced Flashing Lights
VGS – Vertically Guided Survey
NVGS – Non-Vertically Guided Survey
APV – Approach with Vertical Guidance
Source: FAA Advisory Circular 150/5300-13A, *Airport Design*

For this examination, the FAA's Digital Obstruction Database was utilized to identify potential object/structure obstructions. **Exhibit 4D** depicts the TSS and GQS that would apply if ½-mile visibility minimums were applied to Runway 30. The TSS in this scenario has a slope of 34:1 and the GQS has a slope of 30:1. Both surfaces extend out along the extended runway centerline, with the GQS extending 10,000 feet from the edge of runway pavement and the TSS starting 200 feet beyond the edge of runway pavement and extending for 10,000 feet. Based upon this preliminary analysis, the GQS is clear of obstructions and ground penetrations; however, the TSS is obstructed by the equipment shelter building for the localizer antenna, which is identified on the exhibit as a navigational aid (navaid). This is a known obstruction as the equipment shelter has been equipped with an obstruction light.



Airport Property Line
Glideslope Qualification Surface
Runway Protection Zone
Threshold Siting Surface
Avigation Easements



Source: Obstruction - FAA Digital Obstruction File downloaded 07/12/16.
Ground Elevations - USDA 10m or Better NED.

In addition to the TSS and GQS, the FAA considers a wider area of airspace that can extend out for approximately ten miles when establishing instrument approach procedures. If this wider airspace includes ground or object penetrations, visibility minimums can be raised. This is likely the case for Runway 30 as the Solomon Hills, which has a peak at 1,346 feet (approximately 1,085 feet above the Runway 30 end elevation of 261.04 feet MSL), are located approximately 28,000 feet from the Runway 30 threshold.

Other considerations for a PA or APV for Runway 30 include the installation of an approach lighting system (ALS). To achieve lower than ¾-mile minimums, a medium intensity approach lighting system (MALSR) or equivalent ALS would need to be installed. A MALSR, which is the system that is currently installed for Runway 12, extends for 2,400 feet beyond the runway end and consists of a combination of threshold lamps, steady burning light bars and flashers, which provide visual information to pilots on runway alignment, height perception, roll guidance, and horizontal references. If an ALS were to be installed for Runway 30, there is sufficient property.

An additional consideration is the sizing of the runway protection zone (RPZ). The RPZ is a trapezoidal area centered on the runway that is established to protect people and property on the ground. The size of the RPZ is determined by the available visibility minimums serving the runway and the types of aircraft operating on the runway. The current RPZ for Runway 30 encompasses 29.465 acres and is based upon the current visibility minimums of greater than one mile. If ½-mile visibility minimums are implemented, the RPZ would increase in size to 78.914 acres. This larger RPZ dimension is depicted on **Exhibit 4D**. As depicted, the larger RPZ would remain on Airport property and not encompass any existing incompatible land uses.

Since the FAA is responsible for establishing instrument approach procedures at airports, the SMPAD should coordinate with the FAA on exploring the potential for establishing a PA or APV for Runway 30.

Runway 2-20 Instrument Approaches

Similar consideration was given to the establishment of non-precision GPS-based instrument approaches to Runway 2-20. Equipping the crosswind runway with instrument approach procedures would further increase the utility and accessibility of the Airport during instrument meteorological conditions.

Previous planning has not considered instrument approach procedures for Runway 2-20. The runway is not currently equipped with runway edge lights, which are recommended for runways with instrument approach procedures. Runway 2-20 is also equipped with basic runway markings, which would need to be upgraded to non-precision markings, as depicted in **Figure 4E**. The RPZs beyond each runway end would not change in size from the current condition with the implementation of one-mile visibility instrument approach procedures, and an ALS would not be required.



FIGURE 4E
Non-Precision Runway Markings on Runway 2-20

As with Runway 30, a preliminary examination of the applicable approach surfaces was prepared. In this case, since non-precision instrument approaches are being considered, the GQS does not apply. The TSS for the procedures considered in this alternative has a slope of 20:1, starting 200 feet beyond the runway pavement edge and extending out 10,000 feet. As shown in **Exhibits 4E** and **4F**, this preliminary analysis did not identify any ground or object penetrations to the TSS.

Once new obstruction data is collected, this obstruction analysis will be updated. Implementation of instrument approach procedures for Runway 2-20 will require the installation of a medium intensity runway edge lighting system (MIRL) and re-marking the thresholds to non-precision marking standards. The SMPAD should coordinate with the FAA, which is responsible for establishing instrument approach procedures at airports.

ANCILLARY AIRFIELD ALTERNATIVES

Visual Aids

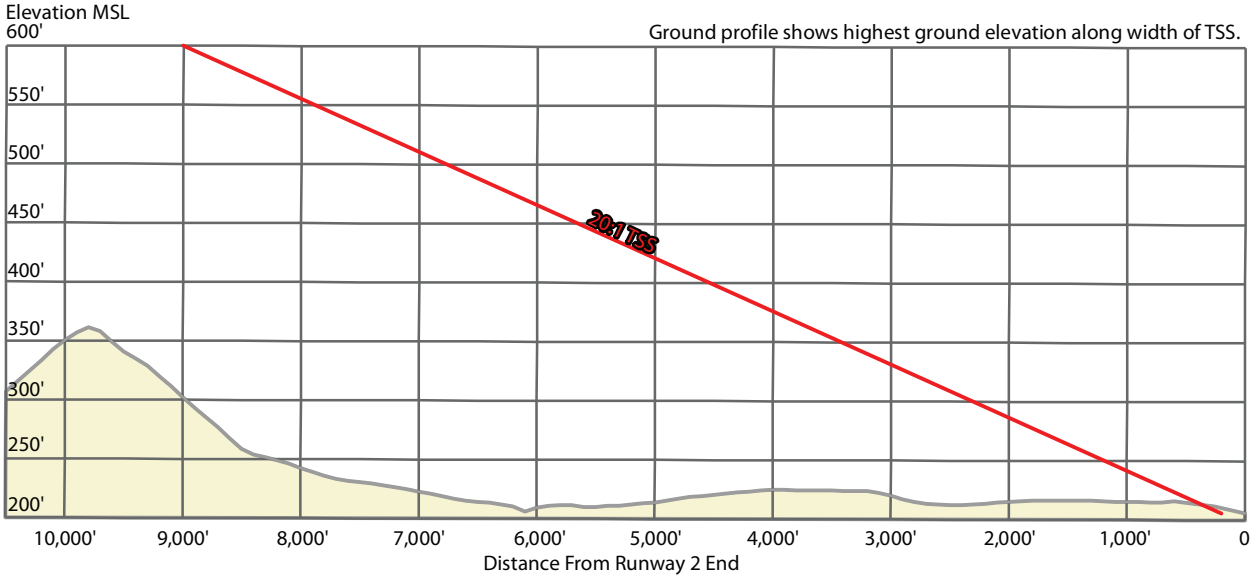
Taxiway C and its associated connecting taxiways to Runway 2-20 is not currently equipped with edge lighting. As consideration is given to establishing runway edge lighting for Runway 2-20 and implementing instrument approach procedures, consideration should also be given to implementing medium intensity taxiway lighting (MITL) for Taxiway C and its connectors (C1, C2, and C3). A taxiway edge lighting system increases pilot situational awareness during nighttime and periods of low visibility, improving operational safety.



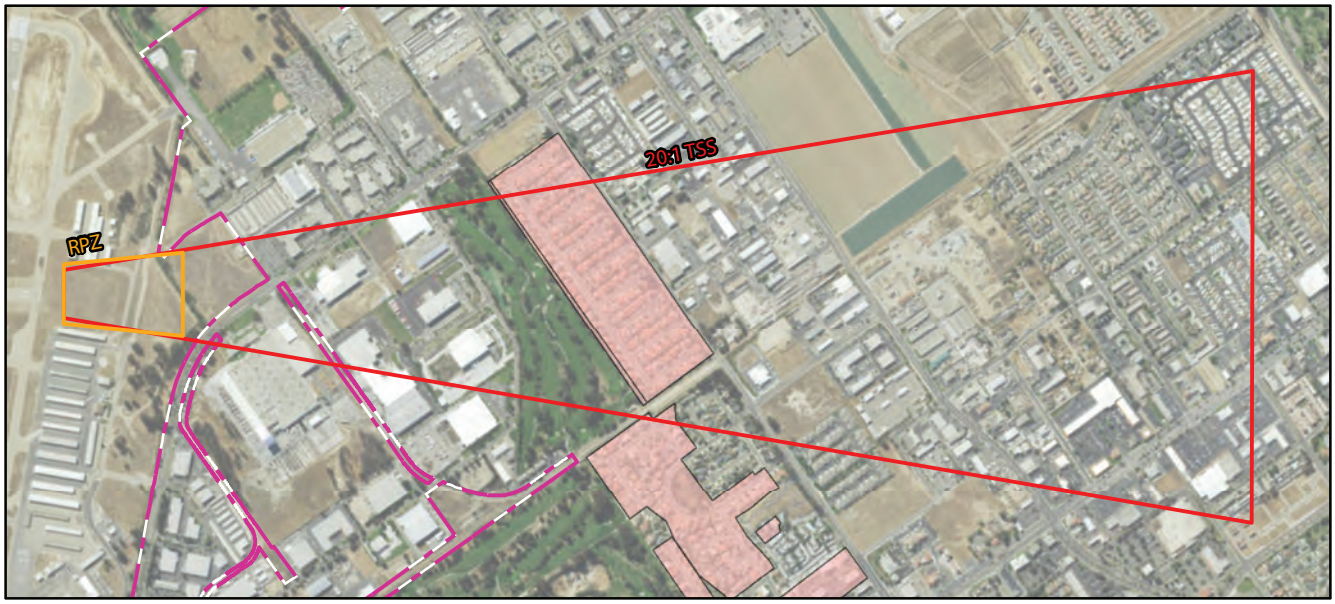
Airport Property Line

Runway Protection Zone

Threshold Siting Surface



Source: Ground Elevations - USDA 10m or Better NED.

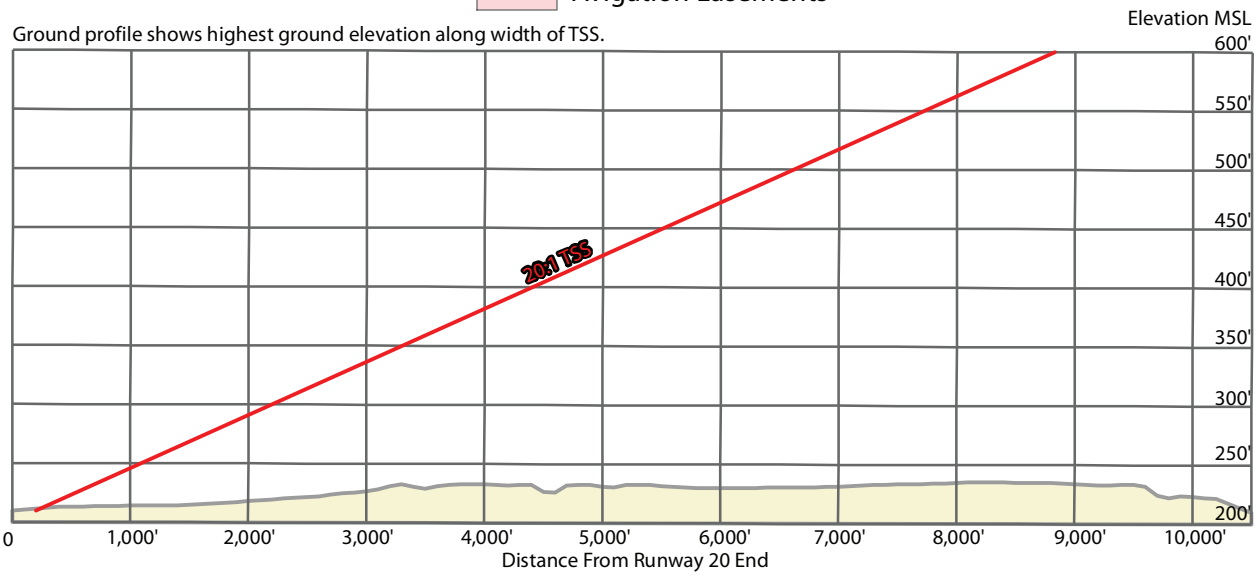


Airport Property Line

Runway Protection Zone

Threshold Siting Surface

Avigation Easements



Source: Ground Elevations - USDA 10m or Better NED.

Runway 2-20 is not currently equipped with visual approach aid systems such as a four-box precision approach path indicator (PAPI-4). PAPIs provide pilots with visual guidance information while on approach to land. PAPI-4s are typically located on the left side of the runway for approaching aircraft, at a distance from the threshold that would be determined during the installation process to achieve the correct threshold crossing height (TCH) and obstacle clearance surface (OCS). PAPIs have a standard 3° glide slope.

Runways 30 and 2-20 are not equipped with runway end identifier lights (REILs). REILs aid pilots in the identification of the runway end and are recommended for runway ends not equipped with an ALS. REILs consist of two flashing lights at 40 feet on either side of the runway edge, in line with existing runway threshold lights. REILs improve pilot situational awareness and, consequently, operational safety.



4-Box Precision Approach Path Indicators



Runway End Identifier Light (REIL)

LANDSIDE ALTERNATIVES

Generally, landside issues relate to those airport facilities necessary, or desired, for the safe and efficient parking and storage of aircraft, movement of passengers and pilots to and from aircraft, airport land use, and overall revenue support functions. The primary landside alternative considerations include the following:

LANDSIDE ALTERNATIVE CONSIDERATIONS

- **Passenger Terminal Building Growth**
- **Vehicle Parking Lot Expansion**
- **Hangar Development Potential**
- **Permanent USFS Aerial Firefighting Tanker Base Development**

Landside planning issues focus on facility locating strategies following a philosophy of separating activity levels. The number of structures and the storage capacity available is limited. Therefore, it is important to plan for an appropriate mix of smaller T-hangars, corporate hangars, and larger conventional hangars.

The orderly development of the airport terminal area (those areas parallel to the runway and along the flight line) can be the most critical, and probably the most difficult, development to control on an airport. A development approach of "taking the path of least resistance" can have a significant effect on the long-term viability of an airport. Allowing development without regard to a functional plan can result in a haphazard array of buildings and small ramp areas which will eventually preclude the most efficient use of valuable space along the flight line.

AVIATION ACTIVITY LEVELS

The aviation development areas should be divided into high, medium, and low activity levels at an airport. The high activity area should be planned and developed to provide aviation services on the airport. An example of the high activity areas is the terminal building and adjoining aircraft parking apron, which provides tiedown locations and circulation for aircraft. In addition, hangars used for FBOs, flight departments, or storing many aircraft would be considered a high activity use area. The best location for high activity areas is along the flight line near midfield, for ease of access to all areas on the airfield. All major utility infrastructure would need to be provided to these areas.

The medium activity use category defines the next level of airport use and primarily includes smaller aircraft that may desire their own corporate hangar storage on the airport. The best location for medium activity use is off the immediate flight line, but still readily accessible to aircraft. Due to an airport's layout and other existing conditions, if this area is to be located along the flight line, it is best to keep it out of the midfield area of the airport, to not cause congestion with transient aircraft utilizing the airport. Parking and utilities, such as water and sewer, should also be provided in this area.

The low activity use category defines the area for storage of smaller single and multi-engine aircraft. Low activity users are personal or small business aircraft owners who prefer individual space in linear box hangars or T-hangars. Low activity areas should be in less conspicuous areas. This use category will require electricity, but generally does not require water or sewer utilities.

In addition to the functional compatibility of the terminal area, the proposed development concept should continue to provide a first-class appearance for SMX. Consideration to aesthetics should be given high priority in all public areas, as an airport often serves as the first and last impression a visitor may have of the community.

To allow for maximum development of the airport while keeping with mandated safety design standards, it is very important to devise a plan that allows for the orderly development of airport facilities. Typically, airports will reserve property adjacent to the runway system for aviation related activity exclusively. This will allow for the location of taxiways, aprons, and hangars.

SEPARATION STANDARDS

When planning landside facilities, consideration must be given to the design standards for separating structures. The separation standards are a function of the critical design aircraft for the future condition. Separation standards are directly related to the wingspan of the critical design aircraft, which ranges from 118 feet to 171 feet for ADG IV.

The taxiway object free area (TOFA) is the area required to be clear of object penetrations surrounding taxiways. For ADG IV aircraft, the TOFA is 259 feet wide centered on the taxiway. For ADG IV taxilanes, the TOFA is 225 feet wide.

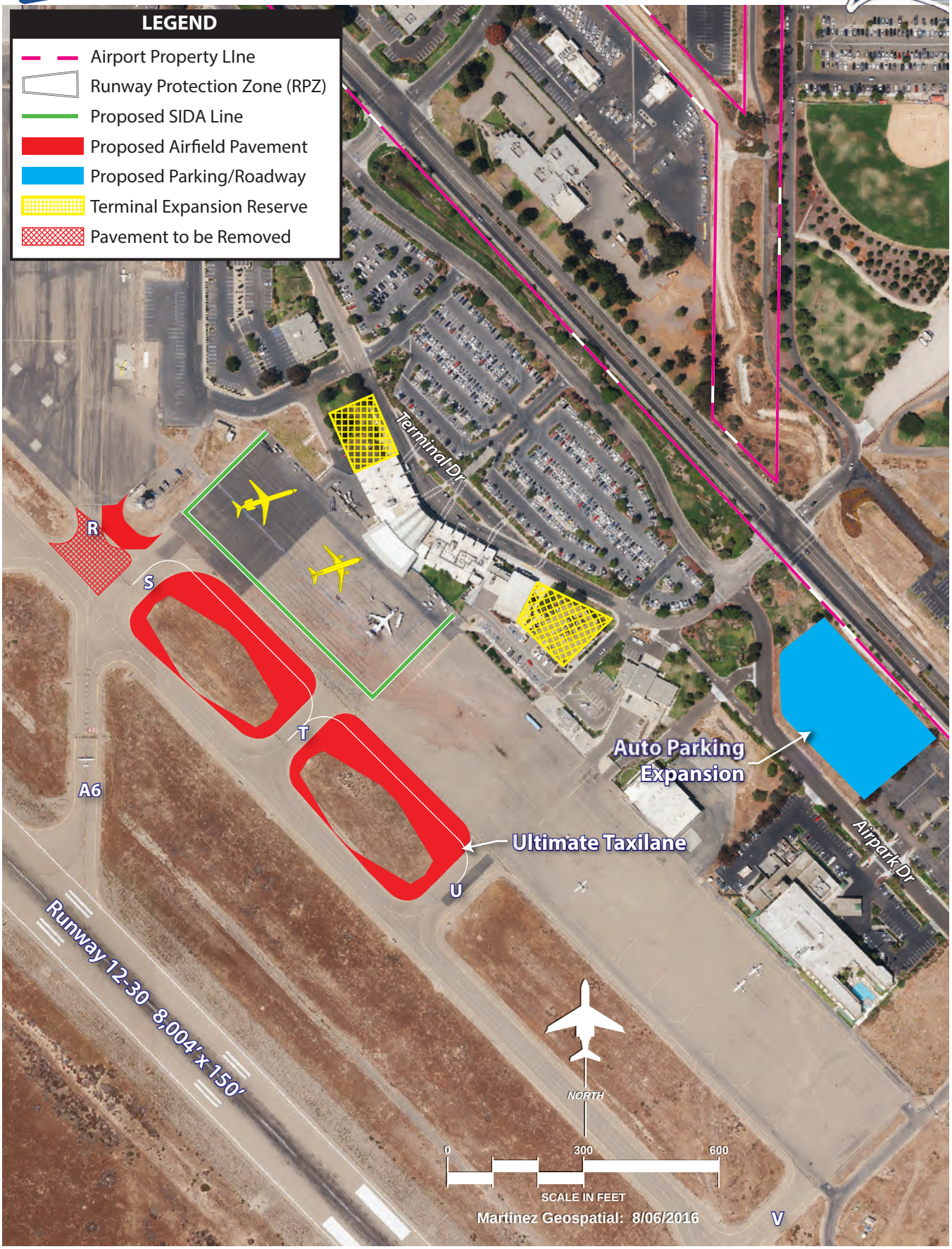
While these design standards should be implemented for all primary movement areas (e.g., parallel taxiways, aprons), facilities not intended to serve the critical design aircraft can be designed to different separation standards. For example, an area that is planned for nested T-hangars can apply separation standards for smaller single-engine aircraft.

PASSENGER TERMINAL ALTERNATIVES

The facility requirements analysis concluded that the existing passenger terminal building, which has a total area of 39,000 sf, generally satisfies the current and forecasted space needs. However, functional area needs were identified including additional space needed for: airline counter area; security queuing area; baggage claim display; rental car counter queuing area; gift shops/retail space; restrooms; and HVAC/mechanical space. The space needs identified for these functional areas are considered minor and could potentially be addressed through adjustments in the layout of the existing building footprint. However, consideration should still be given to potential footprint expansion alternatives should overall functional area need to be added in the future.

The existing terminal building is a linear style concept, which is common for most non-hub airports serving primarily origin and destination (O&D) passenger traffic. Aircraft park perpendicular to the building on the airside facing the building. The advantage of this terminal style is that it allows for easy expansion potential to either side, easy passenger orientation, close-in public parking, long curb frontage, flexible gate assignments, and minimal walking distances.

Exhibit 4G depicts the terminal area development alternative. This alternative considers potential terminal building expansions on either side (north and south) of the existing building footprint. The northern terminal expansion reserve area would allow for an addition of approximately 15,000 sf, which could accommodate expansions of the airline counter area and gift shops/retail and, as a result, expansion of the security queuing area in the central portion of the building. The southern expansion reserve area would allow for an addition of approximately 19,000 sf for baggage claim display and rental car counter space. Both expansion areas could also accommodate additional restrooms and HVAC/mechanical spaces. As was previously mentioned, the Master Plan has not identified a need to expand the terminal building footprint over the next 20 years; however, prudent planning should still preserve areas to allow for future terminal expansions should they become necessary.


LEGEND
Airport Property LIne
Runway Protection Zone (RPZ)
Proposed SIDA Line
Proposed Airfield Pavement
Proposed Parking/Roadway
Terminal Expansion Reserve
Pavement to be Removed
Terminal Dr
R
S
T
U
V
A6
Auto Parking Expansion
Ultimate Taxilane
Airpark Dr
Runway 12-30 8,004' x 150'
NORTH
0
300
600
SCALE IN FEET
Martinez Geospatial: 8/06/2016

The planned expansion of the terminal apron is also depicted on **Exhibit 4G**. A rehabilitation project is already underway, which will reconstruct the apron pavement. An expansion of the terminal apron, which will allow for its use by larger aircraft, is already in the design phase. As shown on the exhibit, this project would add pavement in the existing island between the terminal apron and Taxiway A, creating a taxilane for improved aircraft circulation on the apron. The aviation forecasts for SMX anticipates the commercial aircraft fleet mix to transition to larger aircraft over time to include the Airbus A320 and larger regional jet aircraft such as the CRJ-700. This planned apron expansion will adequately serve these larger planes. This exhibit also depicts the proposed change to Taxiway R that was discussed in the taxiway geometry alternatives section. Taxiway R, which provides access to the tower apron, is planned in this alternative to be rerouted from accessing Taxiway A at an acute angle to accessing Taxiway S at a right-angle. This will mitigate the existing wide expansive pavement area and improve operational safety.

VEHICLE PARKING ALTERNATIVES

The existing parking lot for the terminal building provides a total of 753 vehicle spaces for public parking, terminal employees, and rental cars. The existing capacity exceeds the demand projected in this Master Plan; however, the demand considers only terminal passenger and employee needs. The SMPAD does not currently charge a fee for parking in the terminal parking lot and, as a result, non-airport users often utilize the lot as a makeshift park-and-ride facility. During peak travel seasons, the parking lot can reach capacity, creating congestion. Therefore, consideration is given to alternatives to alleviate terminal parking lot congestion.

Parking lot congestion can be alleviated in one of two ways: 1) suppress demand or 2) increase capacity. The simplest method of suppressing demand is by implementing parking fees. A nominal fee would deter non-airport users from utilizing the lot and would create a revenue stream for the SMPAD; however, with several competing airports in the region, free parking is utilized as an incentive to prevent passenger leakage.

An additional alternative is the implementation of a signage campaign that threatens towing non-airport user or employee vehicles. An active signage campaign would require a monitoring system to determine Airport-users and employees from those using it as a park-and-ride. Furthermore, enforcement of such a campaign can lead to controversy and a negative public image for the Airport, particularly if Airport user/employee vehicles are mistakenly towed. However, a signage campaign, even without monitoring or enforcement, could be used as a psychological deterrent to reduce usage of the parking lot by non-Airport users/employees.

If parking fees or a signage campaign are not desirable, the other alternative is to construct additional parking capacity.

The existing terminal area is limited in developable land available for parking lot expansion. The undeveloped land between Airpark Drive and Skyway Drive north of the Radisson Hotel parking lot could serve as a parking lot expansion area. One disadvantage to using this area for a terminal parking lot is the

walking distance to the terminal. Passengers would be required to walk between 850 to 1,200 feet from their space to the ticketing area of the terminal.

With limited developable land in the immediate terminal area, another alternative is to construct a remote parking lot elsewhere on Airport property and shuttle passengers to/from the terminal. The Airport has developable land southeast of the Radisson Hotel parking lot that is accessible from Airpark Drive. For this alternative to work, the SMPAD would need to construct the parking lot, purchase shuttle vehicles, and hire drivers to shuttle passengers to/from the terminal. Operating a shuttle operation is costly and is typically the least desirable alternative to add vehicle parking capacity.

An additional alternative is to go vertical with the construction of a vehicle parking garage in the existing parking lot. A parking garage would allow for increased close-in parking capacity without the disturbance of undeveloped land and without the need to shuttle passengers. A garage can also be expanded with additional levels over time as demand dictates. A drawback to a parking garage is that it can be difficult to construct one that blends with the existing aesthetic of the terminal building. Furthermore, a parking garage would be significantly more expensive to construct than a standard surface lot, and would temporarily restrict the use of a substantial portion of the existing parking lot during construction.

GENERAL AVIATION ALTERNATIVES

The *Facility Requirements* chapter identified a need for additional hangar capacity of approximately 393,000 square feet (sf) through the long term planning horizon. Hangar development takes on a variety of sizes corresponding with several different intended uses.

Commercial general aviation activities are essential to providing the necessary services on an airport. This includes privately owned businesses involved with, but not limited to, aircraft rental and flight training, aircraft charters, aircraft maintenance, line service, and aircraft fueling. These types of operations are commonly referred to as FBOs or specialized aviation service operators (SASOs). The facilities associated with businesses such as these include conventional type hangars that hold several aircraft. High levels of activity often characterize these operations, with a need for apron space for the storage and circulation of aircraft. These facilities are best placed along ample apron frontage with good visibility from the runway system for transient aircraft. Utility services are needed for these types of facilities, as well as vehicle parking areas.

Aircraft hangars used for the storage of smaller aircraft primarily involve T-hangars or linear box hangars. Since storage hangars often have lower levels of activity, these types of facilities can be located away from the primary apron areas in more remote locations of an airport. Limited utility services are needed for these areas.

Other types of hangar development can include corporate hangars for accommodating either one larger aircraft or multiple smaller aircraft. These types of hangars can be used by corporations with company-owned aircraft or by an individual or group of individuals with multiple aircraft. These hangar areas typically require all utilities and segregated roadway access. **Table 4B** summarizes the aircraft hangar types and corresponding size and aviation uses that are typically associated with each facility.

TABLE 4B
Aircraft Hangar Types

Hangar Type	Typical Size	Aviation Uses
Conventional	Clear span hangars greater than 10,000 square feet	FBOs, SASOs, and other commercial aviation activities resulting in high activity uses
Corporate	Clear span hangars less than 10,000 square feet	SASOs, flight departments, and private aircraft storage resulting in medium-to-high activity uses
T-Hangar/Linear Box	Individual storage spaces offering 1,200 - 1,500 square feet	Private aircraft storage resulting in low activity uses

FBO – Fixed Base Operator
SASO – Specialized Aviation Service Operator

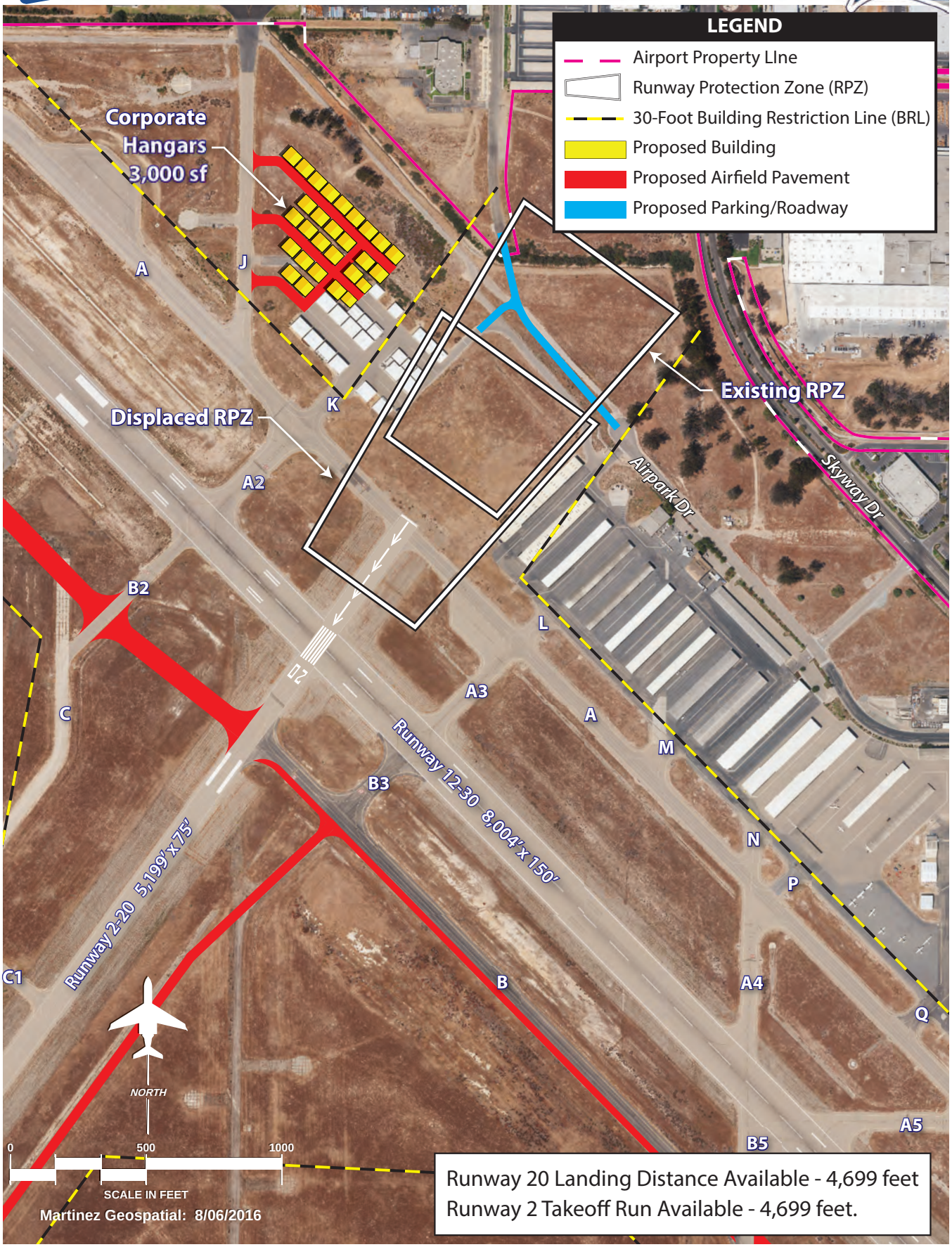
Much of the north/northeast side of the Airport is essentially built-out with limited opportunity for new general aviation developments. An exception to this is the private corporate hangar development area north of Taxiway A and east of Taxiway J. Access to this area is limited to hangar owners and cannot be accessed by the public.

Consideration could be given to extending Airpark Drive to this area and continuing north; however, this would result in Airpark Drive passing through the Runway 20 RPZ, as depicted on **Exhibit 4H**. Public roadways are considered an incompatible land use with RPZs, so the FAA would need to review and approve of the roadway construction through the RPZ. If the FAA would not approve of the roadway construction through the RPZ, another alternative is to displace the Runway 20 threshold by approximately 500 feet to shift the Runway 20 approach RPZ to the southwest so that Airpark Drive could be constructed without penetrating the RPZ. A displacement of this amount would reduce the landing distance available on Runway 20 to 4,699 feet. Furthermore, the Runway 2 departure RPZ would also need to be shifted to the southwest to allow for the construction of Airpark Drive. This departure RPZ shift would result in the reduction of the Runway 2 takeoff runway available (TORA) by approximately 500 feet to 4,699 feet.

If extending Airpark Drive to the hangar area and continuing to the north is determined to be infeasible due to the impacts on Runway 2-20, the SMPAD can carry forward existing plans to expand corporate hangar development in this area, as depicted on **Figure 4F**.

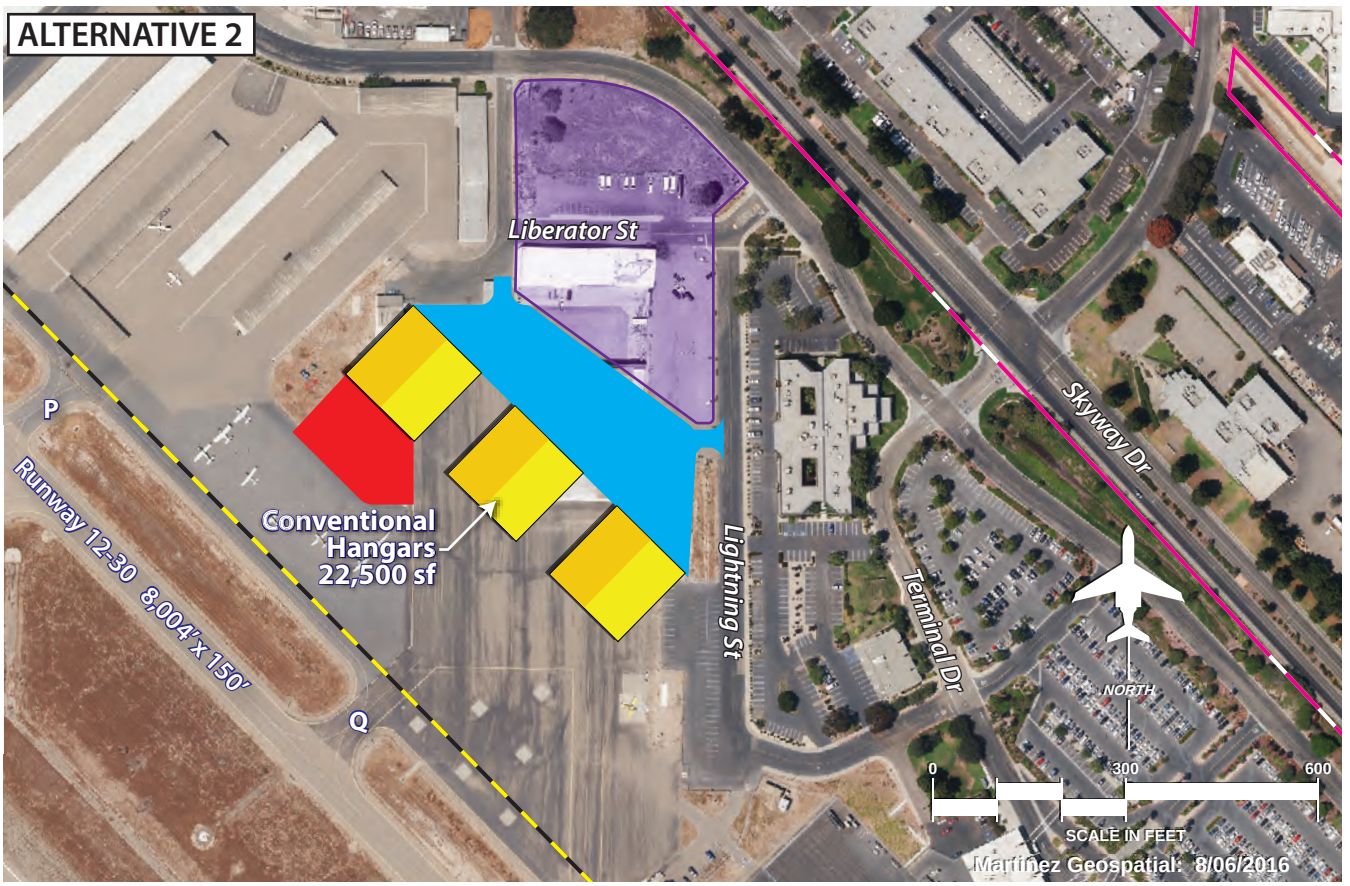
Another consideration is the identification of redevelopment areas on the Airport that may be underutilized or where facilities have exceeded their useful life and new opportunities can be considered. One such area where redevelopment can be considered at SMX is the tower apron where several older hangar facilities are within the primary runway flightline with convenient vehicle access off Airpark Drive, which makes it a prime location for high activity activities.

Two alternatives, depicted on **Exhibit 4J**, consider possible redevelopment opportunities for the tower apron. The first alternative considers the development of small T-hangar and executive hangar facilities into this area while maintaining an apron area for transient parking. While there is most certainly demand for such facilities, smaller hangars are considered low and medium activity uses, which are better



Runway 20 Landing Distance Available - 4,699 feet
Runway 2 Takeoff Run Available - 4,699 feet.


ALTERNATIVE 1
LEGEND
Airport Property LIne
30-Foot Building Restriction Line (BRL)
Proposed Building
Proposed Airfield Pavement
Proposed Parking/Roadway
Non-Aviation Development Reserve
Liberator St
Lightning St
Skyway Dr
Terminal Dr
10-Unit T-Hangars
6-Unit Box Hangars
Executive Hangars 5,625 sf
Runway 12-30 8,004' x 150'
P
Q


ALTERNATIVE 2
Liberator St
Lightning St
Skyway Dr
Terminal Dr
Conventional Hangars 22,500 sf
Runway 12-30 8,004' x 150'
P
Q
NORTH
0
300
600
SCALE IN FEET
Martinez Geospatial: 8/06/2016

suited for other areas of the airfield that are away from the primary runway flight line. A second alternative considers redevelopment with larger 22,500 sf conventional hangars for FBO/SASO-related activities. Again, due to the prime location, this area is better suited for high activity commercial general aviation uses. Both alternatives would also create non-aviation related development reserve parcels with frontage along Airpark Drive and with good visibility from Skyway Drive.

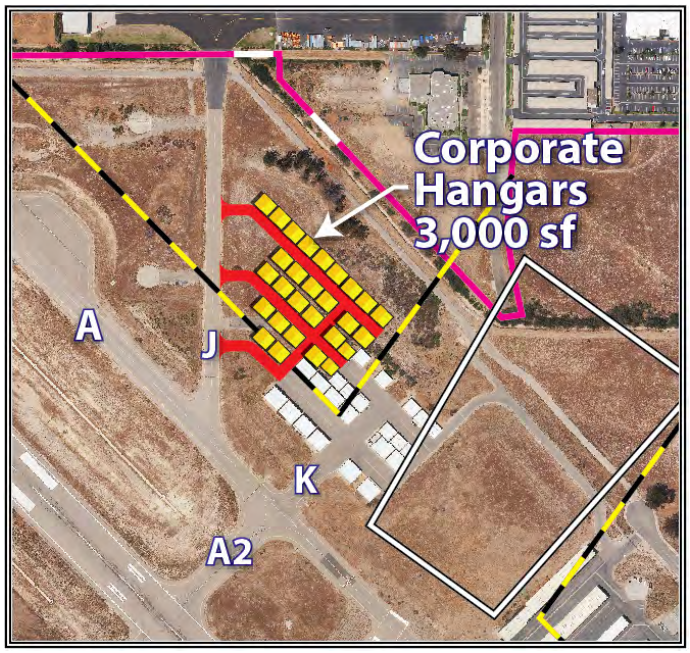


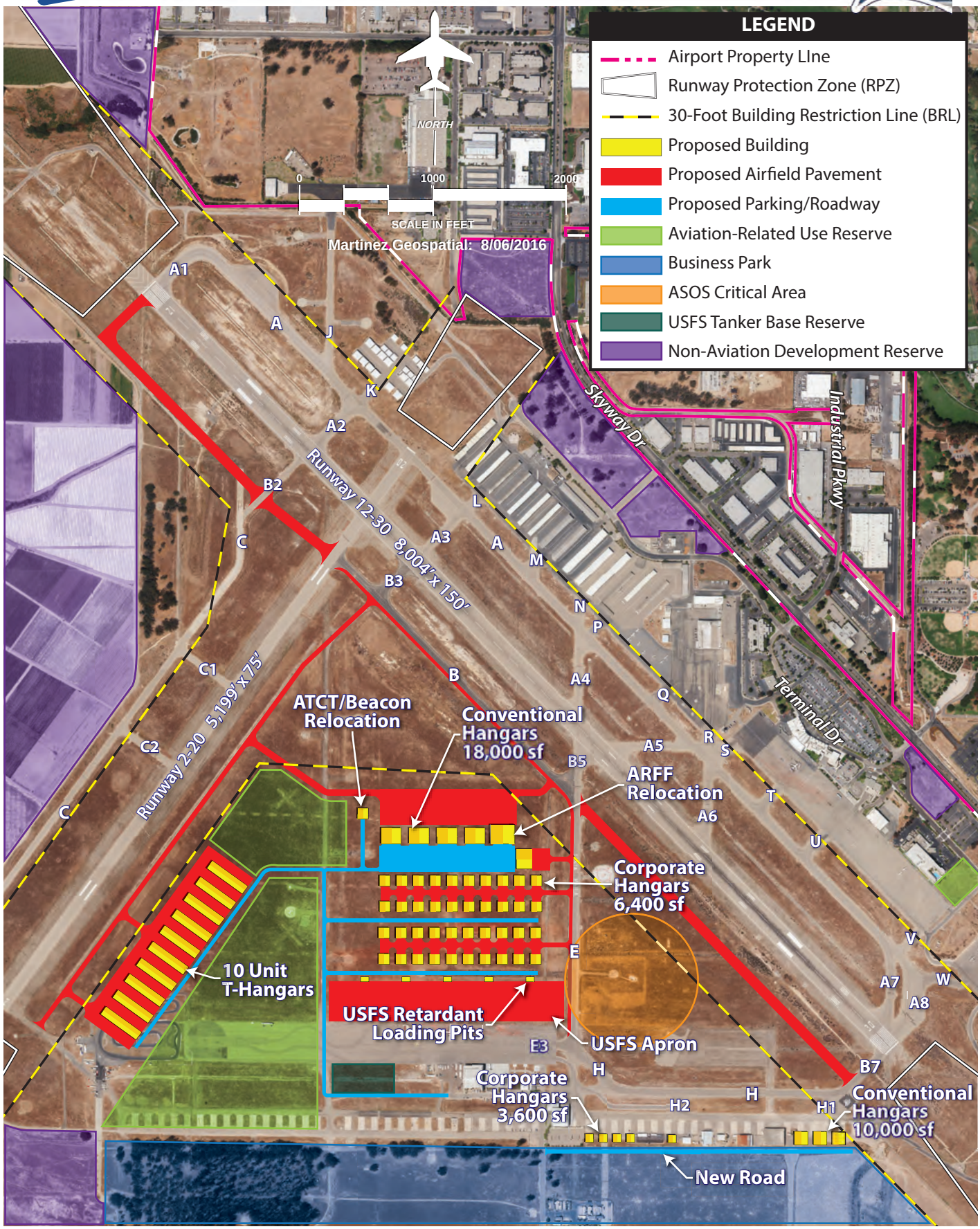
FIGURE 4F
North Side Corporate Hangar Development

The south side of the airfield has the most potential for future general aviation development. Three alternatives have been developed that consider various facility layouts for the south side. The following sections describe these alternatives as they relate to identified general aviation facility needs. The alternatives are straight-forward development plans aimed at meeting the needs of several service levels, including the potential for a permanent United States Forest Service (USFS) aerial firefighting development site and new ATCT and aircraft rescue and firefighting (ARFF) sites. The three alternatives discussed below are not the only options for development. In some cases, a portion of one alternative could be intermixed with another. Also, some development concepts could be replaced with others. The final recommended plan only serves as a guide for the SMPAD, which will aid in the strategic planning of available properties. Many times, airport operators change their plan to meet the need of specific users. The goal in analyzing landside development alternatives is to focus future development so that the highest and best use of airport property can be maximized.

South Landside Alternative 1

The first alternative is depicted on **Exhibit 4K**. As presented, the primary development items include:

- Reservation of land for a permanent USFS aerial tanker base along the existing apron;
- Expansion of the south general aviation apron for the exclusive use of USFS tanker aircraft including five retardant loading pits;
- Widening of Taxiway E to 75 feet to accommodate up to the DC-10 USFS tanker aircraft;
- Extension of a new public vehicle access road into the infield area to serve hangar developments;
- Relocation sites for the ATCT and ARFF facilities;
- Hangar development including new conventional, corporate, and T-hangar facilities;
- Extension of Taxiway B and construction of a parallel taxiway for Runway 2-20 to serve south side development;


LEGEND
Airport Property LIne
Runway Protection Zone (RPZ)
30-Foot Building Restriction Line (BRL)
Proposed Building
Proposed Airfield Pavement
Proposed Parking/Roadway
Aviation-Related Use Reserve
Business Park
ASOS Critical Area
USFS Tanker Base Reserve
Non-Aviation Development Reserve
NORTH
0
1000
2000
SCALE IN FEET
Martinez Geospatial: 8/06/2016
Runway 12-30 8,004' x 150'
Runway 2-20 5,199' x 75'
Skyway Dr
Industrial Pkwy
Terminal Dr
ATCT/Beacon Relocation
Conventional Hangars 18,000 sf
ARFF Relocation
Corporate Hangars 6,400 sf
10 Unit T-Hangars
USFS Retardant Loading Pits
USFS Apron
Corporate Hangars 3,600 sf
Conventional Hangars 10,000 sf
New Road

- Reservation of land south of the existing hangars and apron for the proposed Airport business park;
- Construction of a new vehicle access road connecting Mitchell Road and Blosser Road for better access to proposed hangar developments.

This alternative reserves approximately 3.6-acres of land for the establishment of a permanent USFS aerial tanker base including a command center and crew quarters. The alternative considers expanding the apron by approximately 57,800 square yards (sy) for the exclusive use of the USFS tanker aircraft. The USFS currently has three fire retardant loading pits on the existing apron and a temporary loading pit located on the terminal apron. The proposed apron could accommodate at least five loading pits and the full range of USFS aircraft, including the DC-10.

The infield area includes the development of several facilities including a relocation site for a new ATCT and ARFF facility. The existing tower needs repairs and more modern amenities. If it is decided that the existing ATCT cannot be updated or if a new tower facility is more desirable, consideration may be given to the construction of a new ATCT in a more centralized location with better visibility to each runway end. Furthermore, the existing beacon is at the same elevation as the current ATCT and must be shielded so as not to impact tower controllers. Therefore, this alternative considers the installation of a new airport beacon on top of the proposed ATCT.

Consideration may be given in the future to relocating the ARFF facility to the infield area, which is more centrally located on the airfield to achieve quicker response times to airfield incidents. The relocation of ARFF facilities would also make the existing ARFF facility available for future terminal/terminal services or commercial general aviation redevelopment. In this alternative, an ARFF facility is planned near midfield with direct access to the taxiway and runway system.

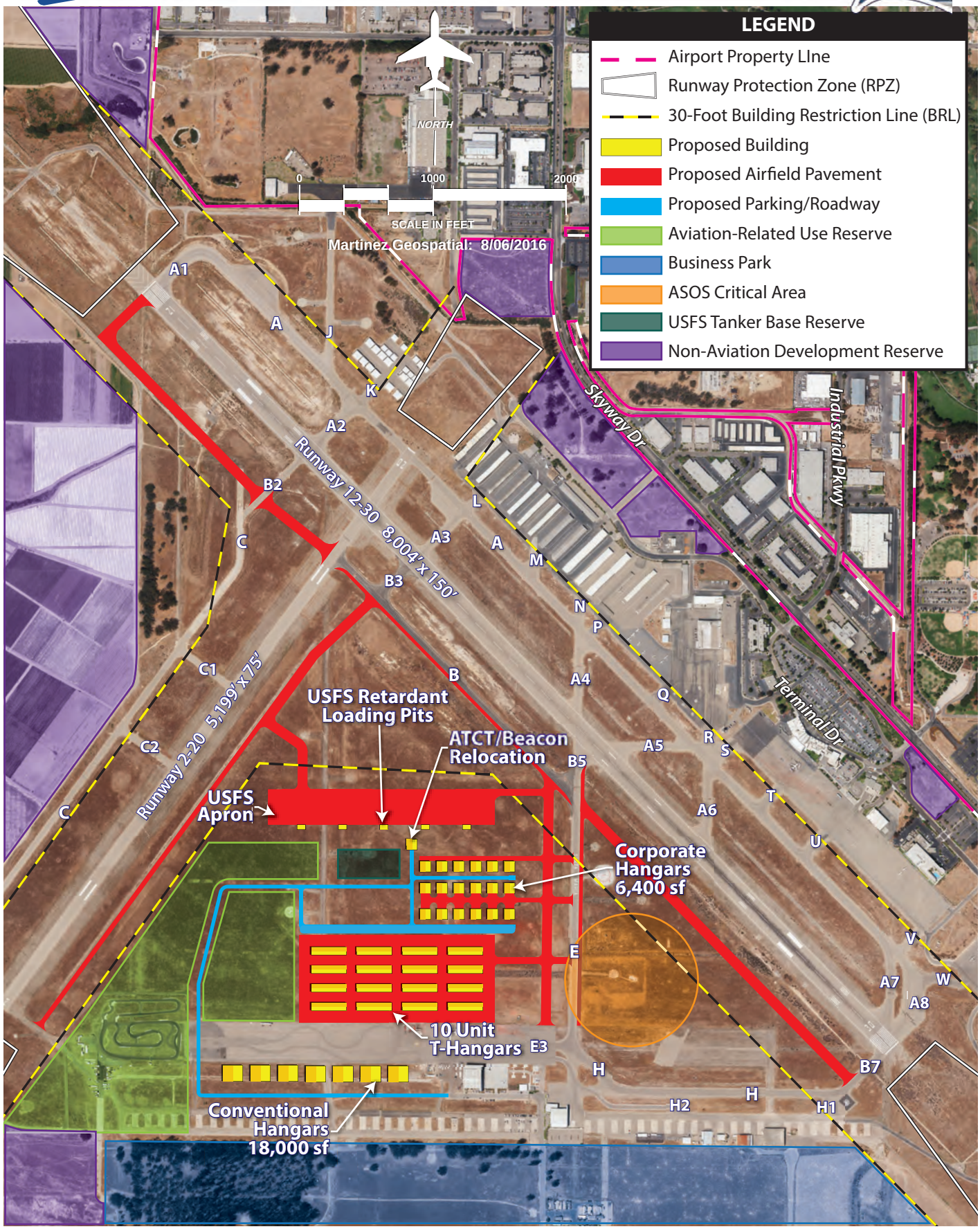
Hangar facilities planned in the midfield area include four 18,000 sf conventional hangars along with a dedicated apron. Between the USFS apron and the conventional hangars, 40 individual 6,400 sf corporate hangars are considered which would have taxiway access constructed from Taxiway E. An additional three 10,000 sf conventional hangars and five 3,600 sf corporate hangars are considered along Taxiway H among the existing hangar facilities.

A complex of 10 T-hangar facilities is considered along the Runway 2-20 flight line, providing a total of 100 individual storage units. Additional areas, shown with green shading, are reserved for future aviation use.

South Landside Alternative 2

The second alternative is depicted on **Exhibit 4L**. As presented, the primary development items include:

- Reservation of land for a permanent USFS aerial tanker base at the northern point of the infield area;
- Construction of a new apron adjacent to the USFS tanker base reserve parcel for the exclusive use of USFS tanker aircraft including five retardant loading pits;


LEGEND
Airport Property LIne
Runway Protection Zone (RPZ)
30-Foot Building Restriction Line (BRL)
Proposed Building
Proposed Airfield Pavement
Proposed Parking/Roadway
Aviation-Related Use Reserve
Business Park
ASOS Critical Area
USFS Tanker Base Reserve
Non-Aviation Development Reserve
NORTH
0
1000
2000
SCALE IN FEET
Martinez Geospatial: 8/06/2016
Runway 12-30 8,004' x 150'
Runway 2-20 5,199' x 75'
Skyway Dr
Industrial Pkwy
Terminal Dr
USFS Retardant Loading Pits
ATCT/Beacon Relocation
USFS Apron
Corporate Hangars 6,400 sf
10 Unit T-Hangars
Conventional Hangars 18,000 sf
A1
A
J
K
A2
B2
C
L
A3
M
B3
N
P
B
A4
Q
C1
C2
A5
R
S
B5
T
A6
U
V
W
A7
A8
E
E3
H
H2
H1
B7

- Widening of Taxiway E to 75 feet to accommodate up to the DC-10 USFS tanker aircraft;
- Relocation site for the ATCT;
- Construction of a parallel taxiway to Taxiway E to provide two access/egress points to the south landside area;
- Extension of a new public vehicle access road into the infield area to serve hangar developments;
- Hangar development including new conventional, corporate, and T-hangar facilities;
- Extension of Taxiway B and construction of a parallel taxiway for Runway 2-20 to serve south side development;
- Reservation of land south of the existing hangars and apron for the proposed Airport business park.

This alternative considers locating the 3.6-acre USFS tanker base parcel and 57,800 sy apron at the northernmost point of the infield area. In this location, tanker aircraft would have shorter taxi distances, particularly to the Runway 12 threshold. However, since aerial firefighting is a seasonal activity, this use may not be considered the most appropriate for an area of the airfield that should be reserved for a high-activity use.

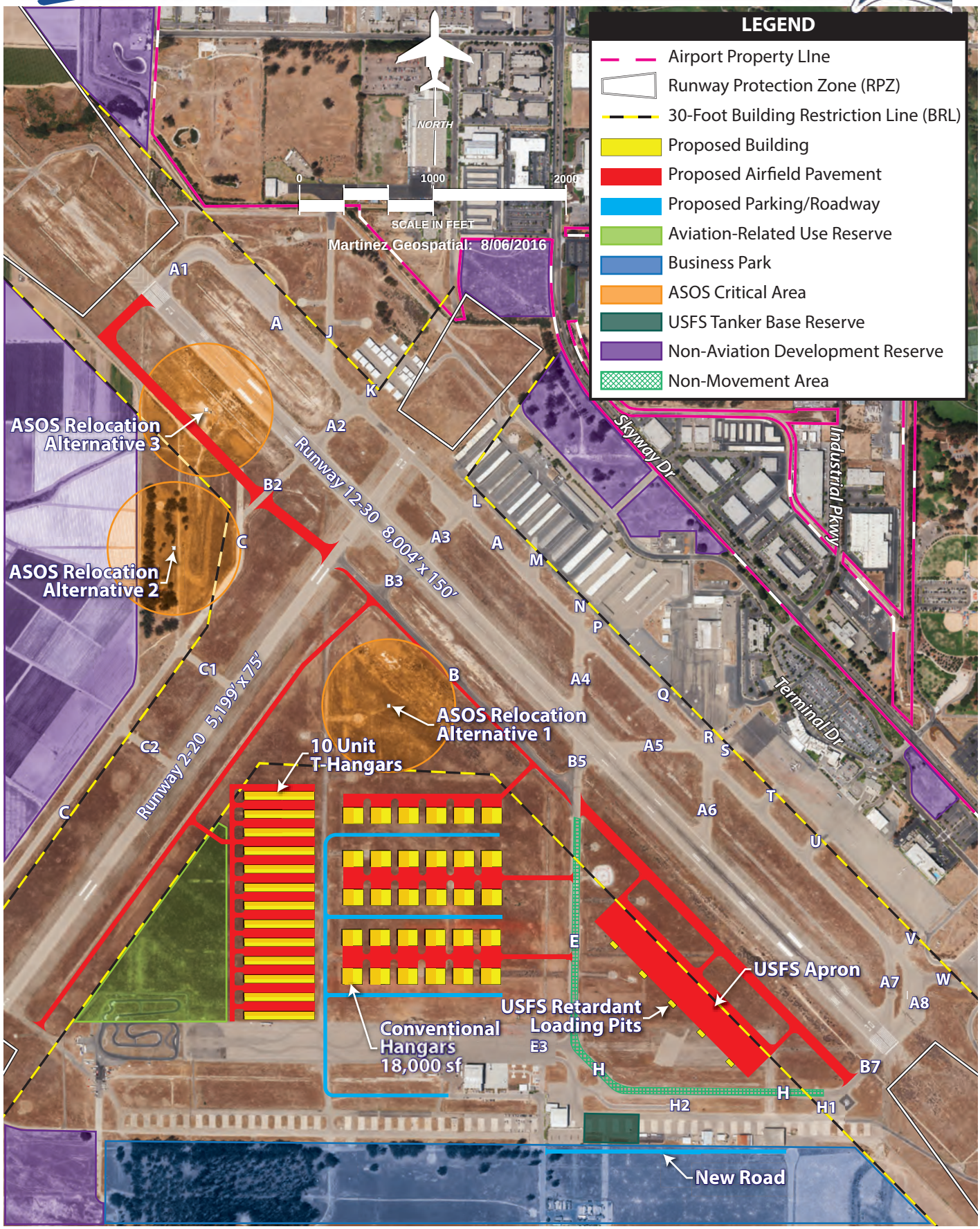
The ATCT relocation site proposed in this alternative is adjacent to the USFS tanker base reserve parcel near midfield. Like the previous alternative, this site could provide for a modern facility with better visibility to the entire airfield and would include a new airport beacon on top of the ATCT.

The infield area includes medium- and low-activity uses, including 18 6,400 sf conventional hangars and 16 T-hangar facilities that would provide 160 individual aircraft storage units. Seven 18,000 sf conventional hangars are planned for the existing apron. An overall disadvantage of this alternative is that it places medium- and low-activity uses nearer the primary runway flightline and high-activity use farthest from the flightline. In this scenario, to better serve the high-activity areas, a second taxiway access point is considered to parallel Taxiway E. Having a dual parallel taxiway to serve this area will improve taxiing efficiency and circulation and mitigate the potential for conflicts.

South Landside Alternative 3

The third alternative is depicted on **Exhibit 4M**. As presented, the primary development items include:

- Reservation of land for a permanent USFS aerial tanker base along Taxiway H;
- Construction of a new apron along Taxiway B for the exclusive use of USFS tanker aircraft including five retardant loading pits;
- Relocation of the Automated Surface Observation System (ASOS) equipment to allow for the construction of the USFS apron;
- Removal of Taxiway H and E from the movement area to allow for easier USFS vehicle access to the USFS apron;
- Extension of a new public vehicle access road into the infield area to serve hangar developments;
- Hangar development including new conventional, corporate, and T-hangar facilities;


LEGEND
Airport Property LIne
Runway Protection Zone (RPZ)
30-Foot Building Restriction Line (BRL)
Proposed Building
Proposed Airfield Pavement
Proposed Parking/Roadway
Aviation-Related Use Reserve
Business Park
ASOS Critical Area
USFS Tanker Base Reserve
Non-Aviation Development Reserve
Non-Movement Area
NORTH
0
1000
2000
SCALE IN FEET
Martinez Geospatial: 8/06/2016
ASOS Relocation Alternative 3
ASOS Relocation Alternative 2
ASOS Relocation Alternative 1
Runway 12-30 8,004' x 150'
Runway 2-20 5,199' x 75'
10 Unit T-Hangars
Conventional Hangars 18,000 sf
USFS Retardant Loading Pits
USFS Apron
New Road
Skyway Dr
Industrial Pkwy
Terminal Dr
A1
A
J
K
A2
B2
C
L
A3
M
B3
N
P
C1
B
A4
Q
C2
A5
R
S
B5
T
A6
U
C
E
V
W
A7
A8
E3
H
B7
H2
H1

- Extension of Taxiway B and construction of a parallel taxiway for Runway 2-20 to serve south side development;
- Reservation of land south of the existing hangars and apron for the proposed Airport business park;
- Construction of a new vehicle access road connecting Mitchell Road and Blosser Road for better access to the proposed USFS tanker base.

This alternative considers locating the 3.6-acre USFS tanker base parcel along Taxiway H and 57,800 sy apron along Taxiway B, parallel to Runway 12-30. In this location, the USFS apron would be more easily accessible and aircraft would have shorter taxi distances when using Runway 12-30. This apron location would require the relocation of the ASOS equipment.

FAA's ASOS siting requirements provide for relocation options at airports with precision instrument runways. Siting standards require ASOS equipment be located between 1,000 feet and 3,000 feet from the runway threshold and between 750 feet and 1,000 feet from the runway centerline. This alternative identifies three alternative sites for ASOS relocation. Alternative site #1 is located south of the Runway 12-30 and Runway 2-20 intersection. This site meets the parameters of the FAA's siting requirements; however, it is also located within the runway visibility zone (RVZ), which is intended to preserve appropriate line-of-site for aircraft operating on the intersecting runways. The ASOS equipment, if relocated to this site could be considered an obstruction to the line-of-site between the intersecting runways. The second alternative ASOS relocation site is to the west of the runway intersection, where it would be outside of the RVZ. This alternative also meets siting requirements; however, it is within closer proximity to the agricultural lands west of the airfield. The ASOS sensors should be sited as far as practicable from cultivated land to reduce the potential for contamination from dust and dirt. Furthermore, there are several trees in this area that would be within the ASOS critical area. Depending on their height, these trees may need to be removed so that they do not obstruct the ASOS sensors. The third alternative is to relocate the ASOS equipment to be co-located with the ILS glideslope antenna tower located approximately 1,000 feet from the Runway 12 threshold on the south side of the runway. This site is outside of the RVZ and is a greater distance from the agricultural lands.

Taxiways H and E are currently part of the Airport's movement area, which means they are under the positive control of ATCT controllers. This alternative considers removing these taxiways from the movement area so that vehicle access to the USFS ramp from the proposed USFS tanker base could be made without contact and approval from ATCT personnel. The taxiways would still function as taxiways, but ATCT personnel would no longer provide movement approval and pilots/vehicle operators would be responsible for operating in a safe manner by maintaining appropriate separation clearances.

For the remainder of the infield area, this alternative closely resembles the current plan depicted on the ALP. The middle portion is reserved for 30 18,000 sf conventional hangars and the western portion is reserved for 13 T-hangar facilities, which would provide 130 individual aircraft storage units.

ALTERNATIVES SUMMARY

This chapter has presented analysis covering both the airside and landside development options for the Airport. On the airside, the taxiway system and instrument approach procedures are the focus of the analysis. The alternatives have shown viable solutions to correct non-standard taxiway geometry and the challenges faced with improved instrument approach procedures.

On the landside, alternatives were presented to consider terminal expansion possibilities, vehicle parking lot capacity improvements, permanent USFS aerial firefighting tanker base, and additional hangar development. Primarily, the south side of the airfield is the focus of future landside development. The alternatives focused on meeting the long-term facility demands of each of the various commercial and general aviation activities within the existing Airport property boundary.

After review by the SMPAD, Planning Advisory Committee (PAC), and public, a recommended concept will be presented in the next chapter. The resulting plan will represent an airside facility that fulfills safety and design standards and a landside complex that can be developed as demand dictates.

SANTA MARIA
PUBLIC AIRPORT



CHAPTER FIVE
RECOMMENDED CONCEPT/ FINANCIAL PLAN



SANTA MARIA PUBLIC AIRPORT

CHAPTER FIVE
RECOMMENDED CONCEPT/ FINANCIAL PLAN

The planning process for the Santa Maria Public Airport (SMX or Airport) Airport Master Plan has included several analytical efforts in the previous chapters intended to project potential aviation demand, establish airside and landside facility requirements, and evaluate alternatives for improving the Airport to meet the identified facility needs. The purpose of this chapter is to describe, in narrative and graphic form, the recommended Master Plan concept for the future of SMX.

AIRPORT DESIGN STANDARDS

Advisory Circular 150/ 5300-13A, Change 1, *Airport Design*, is the key reference used to ensure compliance with Federal Aviation Administration (FAA) design standards. Design and safety standards are based primarily upon the characteristics of aircraft expected to use an airport on a regular basis. As previously discussed in Chapter Three, the design codes are based upon the approach speeds and wingspans of these "critical" aircraft. This is comprised of the most demanding aircraft or "family" of aircraft conducting at least 500 annual operations at the Airport.

A critical design aircraft is identified for each runway at an airport to establish its associated design standards. Analysis in Chapter Two – Aviation Demand Forecasts indicated that the current and future critical design aircraft for Runway 12-30, the primary runway, are the DC-10 and C-130 aerial firefighting aircraft, which are designated within the runway design code (RDC) C-IV category.

Runway 2-20, the secondary or crosswind runway, serves smaller aircraft that are more greatly affected by high crosswind conditions. The most demanding aircraft that regularly use the secondary runway are in the RDC B-II family of aircraft represented by small and mid-sized business jets such as the Cessna Citation family of business jets. The critical design aircraft for the secondary runway is not anticipated to change over the course of the Master Plan; therefore, Runway 2-20 should be planned to satisfy RDC B-II design standards through the planning period.

The recommended developments to address airfield and landside demands are summarized in the following sections.

AIRSIDE CONCEPT

The principal airfield recommendations should always focus first upon safety and security. Of key importance is to ensure that proposed airfield improvements will be designed to meet all appropriate FAA airport design standards. Recommendations are then designed to improve the operational efficiency, circulation, and capability of the airfield. **Exhibit 5A** depicts the principal airfield recommendations. The following subsections summarize the elements of the airfield recommendations.

RUNWAY 12-30

It was previously determined that Runway 12-30, at 8,004 feet long and 150 feet wide, adequately accommodates the existing commercial, aerial firefighting, and general aviation fleet mix of aircraft currently using and anticipated to use the Airport in the future. Therefore, it is recommended that the Airport maintain these runway dimensions for the duration of the planning period.

Runway 12 is equipped with a ½-mile visibility minimum (Category I or CAT-I) precision approach, while Runway 30 has a non-precision RNAV GPS approach with visibility minimums down to 1¼-mile. The wind analysis conducted for the Master Plan indicated that Runway 30 provides better wind coverage than Runway 12 and is therefore used more frequently than Runway 12. Due to this, the alternatives analysis explored the potential for a precision vertically-guided approach for Runway 30. An airspace analysis utilizing data from a new topographic and obstruction survey conducted as part of this Master Plan concluded that the Runway 30 threshold siting surface (TSS), at a slope of 34:1, is penetrated by the service road and trees, as shown in **Figure 5A**. The glideslope qualification surface (GQS), at a slope of 30:1, is only penetrated by trees. Tree penetrations are easily mitigated by topping the trees or removing them. However, rising terrain to the south, notably the Solomon Hills, are likely the cause for higher visibility minimums to Runway 30. The Solomon Hills peak at 1,346 feet (approximately 1,085 feet above the Runway 30 end elevation of 261.04 feet mean sea level [MSL]) and are located approximately 28,000 feet along the extended Runway 30 centerline, beyond the range of the TSS and GQS. Due to the impact

NORTH

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LEGEND

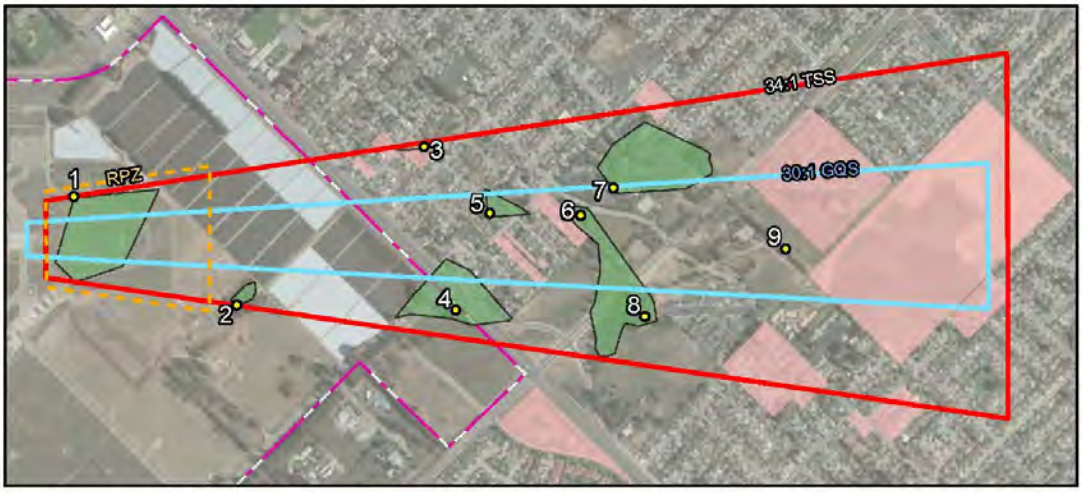
- Airport Property LIne
- Runway Safety Area (RSA)
- Runway Object Free Area (ROFA)
- Runway Obstacle Free Zone (ROFZ)
- Precision Obstacle Free Zone (POFZ)
- High Energy Area
- Runway Protection Zone (RPZ)
- Taxiway Object Free Area (TOFA)
- Taxiway Safety Area (TSA)
- Building Restriction Line (BRL)
- Ultimate Building
- Ultimate Airfield Pavement
- Ultimate Airfield Shoulder
- Ultimate Parking/Roadway
- Ultimate Pavement/Building to be Removed
- Glide Slope Critical Area
- Aviation-Use Reserve
- Business Park
- Non-Movement Area
- Non-Aviation Development Reserve
- Vehicle Roadway Markings

Skyway Dr
950' Displaced Threshold
Airpark Dr
Industrial Pkwy
ASOS Relocation
Runway 12-30 8,004' x 150'
Runway 2-20 5,199 x 75'
Terminal Dr
Auto Park Dr
135
Lakeview Rd

Exhibit 5A
RECOMMENDED DEVELOPMENT CONCEPT

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of terrain, it is likely that lower visibility minimums for Runway 30 are not achievable. Ultimately, the FAA is responsible for establishing instrument approach procedures, so it is recommended that the Santa Maria Public Airport District (SMPAD) continue to coordinate with the FAA on the potential for lower visibility minimums for Runway 30.

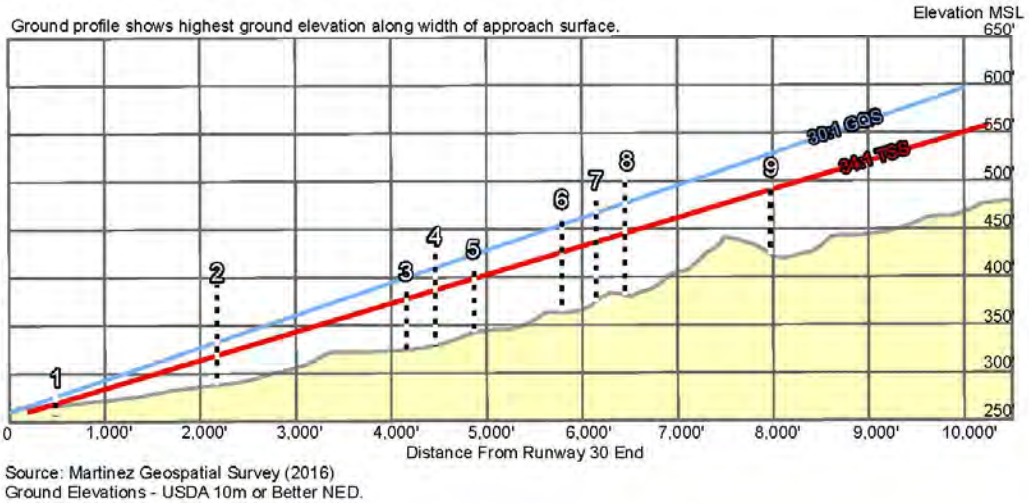


ESRI Basemap Imagery (2016)

- Obstruction Point
- Runway Protection Zone
- 30 GQS
- 30 TSS
- Obstruction Grouping
- Avigation Easements
- Airport Property Line

Note: Obstructions grouped, most penetrating obstruction shown.

Obstruction	Surface Obstructed	Top Elevation (msl)	Penetration Value (ft.)
1. Road	TSS	277.5	7.78
2. Tree	TSS	386	66.46
3. Tree	TSS	387.6	10.65
4. Tree	TSS	431.2	44.64
5. Tree	TSS	411	14.01
6. Tree	GQS	465	11.81
7. Tree	GQS	486	21.39
8. Tree	TSS	505.2	60.82
9. Tree	TSS	496.6	9.13



Source: Martinez Geospatial Survey (2016)
Ground Elevations - USDA 10m or Better NED.

Figure 5A
Runway 30 TSS and GQS Obstruction Analysis

Runway 30 is not currently equipped with runway end identifier lights (REILs) or another type of approach lighting system (ALS). It is recommended that REILs be installed for Runway 30 to improve pilot situational awareness.

RUNWAY 2-20

Runway 2-20, at 5,199 feet long and 75 feet wide, is capable of safely accommodating the existing and future fleet mix of aircraft, which includes primarily piston-driven aircraft and small turbine and business jet aircraft. The runway is not currently equipped with pavement edge lighting, making it usable only during daytime hours. Furthermore, Runway 2-20 is not equipped with visual approach aids or instrument approach procedures. The alternatives analysis considered the addition of medium intensity runway lighting (MIRL) for the runway and the installation of precision approach path indicator (PAPI) systems for both ends; however, due to the limited use of Runway 2-20 (only approximately five percent of annual operations are conducted on Runway 2-20), the installation of these lighting systems is considered unnecessary. Therefore, it is recommended that Runway 2-20 remain unlit and without visual approach aid systems or instrument approach procedures.

The SMPAD plans to extend Airpark Drive in the area beyond the Runway 20 end and within the runway protection zone (RPZ). The extension of Airpark Drive will improve traffic flow through the area and make currently undeveloped airport property along Skyway Drive more attractive for potential development. Since public roads are an incompatible land use within RPZs, it is recommended that the SMPAD displace the Runway 20 threshold and implement declared distances. It was determined that a 950-foot displacement of the Runway 20 threshold would shift the RPZ to the southwest so that the planned extension of Airpark Drive would not pass through it and the resulting Runway 20 threshold markings would not overlap on Runway 12-30. The resulting declared distances are summarized in **Table 5A**. The reduction of the Runway 2 TORA and the Runway 20 LDA are not anticipated to significantly impact the operational capabilities of aircraft utilizing Runway 2-20. Furthermore, Runway 2-20 is used infrequently and aircraft needing additional runway length can utilize Runway 12-30.

TABLE 5A
Proposed Runway 2-20 Declared Distances
Santa Maria Public Airport

Declared Distance	Description	Length
Takeoff Run Available (TORA)	The length of runway declared available and suitable for satisfying takeoff run requirements.	Runway 2: 4,249' – reflects a 950' reduction to shift the departure RPZ to the southwest
		Runway 20: 5,199' – full pavement length
Takeoff Distance Available (TODA)	The TORA plus the length of any remaining runway or clearway beyond the departure end of the TORA.	Runway 2-20: 5,199' – full pavement length
Accelerated Stop Distance Available (ASDA)	Extends the length of the runway plus stopway declared available and suitable for satisfying accelerate-stop distance requirements for a rejected takeoff.	Runway 2-20: 5,199' – full pavement length
Landing Distance Available (LDA)	The length of runway declared available and suitable for satisfying landing distance requirements.	Runway 2: 5,199' – full pavement length
		Runway 20: 4,249' – reflects a 950' reduction due to the Runway 20 threshold displacement

Sources: FAA AC 150/5300-13A, *Airport Design*; Coffman Associates analysis.

TAXIWAY IMPROVEMENTS

The existing taxiway system for Runway 12-30 meets Taxiway Design Group (TDG) 3 and 4 width standards of 50 feet, which is sufficient for the current fleet mix of commercial and general aviation aircraft utilizing the Airport. However, with the DC-10 aerial firefighting aircraft as the current and ultimate critical design aircraft, the taxiway system needs to be improved to meet TDG 5 standards with 75-foot wide taxiways, taxiway shoulders, and expanded fillets. Several additional taxiway improvements are planned to correct taxiway geometry issues, which will enhance operational safety, and to accommodate the future expansion of landside facilities. Recommended taxiway improvements are as follows:

- **Taxiway A** | Rehabilitate and widen pavement to 75 feet including expanded fillets to meet TDG 5 standards and adding taxiway shoulders. This includes connecting Taxiways A1 to A8.

- **Taxiway A4** | The runway exit analysis conducted in Chapter Four found that this acute-angled exit is not positioned to accommodate a high percentage of large and heavy aircraft and is only usable for aircraft landing on Runway 30. It is recommended that A4 be reconstructed as a right-angled exit so that it is usable for aircraft traveling in both directions.

- **Taxiways A5 and A6** | These acute-angled exit taxiways contribute to Hot Spot #2, which is the convergence of complex taxiways that creates the potential for runway incursions. The runway exit analysis found that these exits are not positioned to be usable by a high percentage of large and heavy aircraft. The closure/removal of A5 and A6 will eliminate the complex convergence of taxiways. A new right-angled exit is planned south of A6 to connect with Taxiway A between Taxiways T and U.

- **Taxiways A7 and A8** | These taxiways make up Hot Spot #1, which is another convergence of complex taxi routes. Additionally, the FAA recommends that all runway entrance taxiways be oriented at right-angles. Therefore, it is recommended that A7 and A8 be reconstructed to be right-angled connectors to provide the best field of view in both directions on the runway. A7, which serves as a bypass taxiway, is planned at a centerline separation distance of 215 feet to meet ADG IV standards.

- **Taxiway B** | Widen the existing Taxiway B pavement to 75 feet, add taxiway shoulders, and extend to the Runway 12 and 30 thresholds creating a full-length parallel taxiway on the south side of the runway. The extension to the north is moved to a runway centerline separation distance of 500 feet so that the ILS glideslope antenna does not need to be relocated. Taxiway B would still pass through the glideslope critical area, requiring a holding position marking outside of the critical area for aircraft to hold until authorized by airport traffic control (ATC) to taxi to the Runway 12 threshold.

- **Taxiway B5** | Taxiway B5 is not oriented in a right-angle with Runway 2-20. It is recommended that B5 be realigned at a right-angle to satisfy FAA design standards.

- **Taxiway C** | The alternatives analysis considered equipping Taxiway C with pavement edge lighting in association with Runway 2-20 so that both could be used for nighttime operations. As was previously discussed, the crosswind runway is used on an infrequent basis and it was determined that lighting the runway and associated taxiway is not necessary. Therefore, Taxiway C should be maintained as-is for the duration of the planning period.

- **Taxiway D** | In anticipation of future landside development of the south side of the airfield, the Master Plan recommends the construction of a south parallel taxiway for Runway 2-20 including two connecting taxiways (D1 and D2). Taxiway D is planned to a width of 50 feet, which satisfies TDG 3 standards. As with Taxiway C, Taxiway D is planned to be unlit.

- **Taxiway H** | Taxiway H is planned to be converted to a non-movement area, which means that aircraft movements on this taxiway will no longer be monitored by ATC and pilots will be responsible for maintaining separation from other aircraft and objects. The removal of H from the movement area will make it easier for ground vehicles and personnel to access the planned United States Forest Service (USFS) aerial tanker apron along Taxiway B.

- **Taxiway J** | Portions of Taxiway J are not visible to ATC due to the construction of the corporate hangars between the tower and Taxiway J. It is recommended that Taxiway J be removed from the movement area so that it is no longer monitored by ATC, making pilots responsible for maintaining separation from other aircraft and objects.

- **Taxiway K** | Taxiway K provides for direct access from the corporate hangar area to Runway 12-30 via A2. This is a non-standard taxiway geometry alignment. It is recommended that Taxiway K be closed and a new taxiway constructed from the hangar area to Taxiway J allowing aircraft to access the runway. This new alignment will force pilots to make several turns prior to entering the runway environment.

- **Taxiway L** | Taxiway L provides for direct access from the T-hangar area to Runway 12-30. This is a non-standard taxiway geometry alignment. It is recommended that Taxiway L be shifted to the south so that it is offset from Taxiway A3. This new alignment will force pilots to make several turns prior to entering the runway environment.

- **Taxiway R** | Taxiway R contributes to Hot Spot #2 by converging into a complex taxiway alignment with Taxiways A, A5, A6, and S. It is recommended that Taxiway R be realigned to provide access only from the tower apron to Taxiway S so that there is a single access point from both aprons to Taxiway A. Due to the location of the tower, Taxiway R is planned to be used by Aircraft Design Group (ADG) II and smaller aircraft only.

- **Taxiway W** | Taxiway W contributes to Hot Spot #1 by converging into a complex taxiway alignment with Taxiways A, A7, A8, and V. It is recommended that Taxiway W be realigned to form a right-angled turn from Taxiway A to the cargo apron. Taxiway W is planned to be maintained at a 50-foot width meeting TDG 3 and 4 standards.

Additional taxiway projects include:

- As the south side of the airfield is developed with more hangars resulting in more activity, taxiway circulation may become congested with a single taxiway access point via Taxiway E. It is recommended that the Airport construct a new taxiway, parallel to Taxiway E, to provide dual access/egress points for the south side of the airfield to alleviate any potential congestion. This taxiway is planned to TDG 3/4 standards at 50 feet wide and a centerline separation distance of 152 feet to meet ADG III standards.

- Hot Spots #3 and #4, located at the intersections of Runway 2-20 and Taxiway A and Taxiways A2/B2 and Runway 12-30, have been established due to aircraft failing to hold short of the runways. To raise pilot situational awareness, it is recommended that runway guard light (RGL) systems including elevated runway guard lights, commonly referred to as wig-wags, and a row of in-pavement stop bar light fixtures be installed at each hold position marking.

SERVICE ROAD

A paved service road at SMX allows for the movement of vehicles and equipment on the airfield. However, in certain areas where the service road continues onto aprons, the roadway edge is not properly marked. Distinct vehicle roadway markings are necessary to delineate roadways located on or that cross paved areas used by aircraft so that collisions are avoided. Standard vehicle roadway markings on aircraft maneuvering areas consist of roadway edge lines to delineate each edge of the roadway, a dashed line to separate lanes within the edges of the roadway, and a roadway stop line, where appropriate, such as at taxi route crossings.

The recommended development concept, depicted on **Exhibits 5A** and **5B**, identifies areas of the terminal and transient aprons as well as on the south landside area for the addition of appropriate vehicle roadway markings and extensions of the service road to accommodate safer passage of vehicles.

LANDSIDE CONCEPT

The primary goal of landside facility planning is to provide adequate space to meet reasonably anticipated passenger general aviation needs, while also optimizing operational efficiency and land use. Achieving these goals yields a development scheme which segregates functional uses while maximizing the airport's revenue potential. **Exhibit 5B** presents the planned landside developments for the Airport.

Several potential layouts were presented in the previous chapter; however, the recommended layout depicted is a compilation of the alternatives presented.

PASSENGER TERMINAL BUILDING

The existing terminal building has an approximately gross area of 39,000 square feet (sf) made up of functional areas serving airline ticketing and operations, security screening, post-security passenger holdrooms, baggage handling and claim and rental car counters, concessions, restaurant, pre-security public circulation areas, and HVAC/mechanical spaces. Terminal space needs were determined based upon anticipated growth in passenger enplanements, which also considers the potential for expanded and/or new airline service. Recommended terminal facility expansions are based upon this potential growth in demand; however, if this demand does not materialize, the existing terminal facility could continue to adequately serve the Airport for many years.

Areas that were identified as needing additional space over the course of the planning period include: airline counter area; security queuing area; baggage claim display; rental car counter queuing area; gift shops/retail space; restrooms; and HVAC/mechanical space.

Due to the linear style of the terminal building, the most practical method to expand the building is to add building footprint on the north and south sides of the building as depicted in **Figure 5B**. The north expansion adds 15,000 sf to the building and allows for an increase of the airline ticket counter and gift shops/retail and security queuing area. The south expansion adds 19,000 sf to the building and allows for an increase of baggage claim display and rental car counter space. Restrooms and HVAC/mechanical spaces would be incorporated into both areas as well.

The existing 18,333 sy terminal apron is currently being rehabilitated and an expansion of the apron is in the design phase. The ultimate terminal apron, depicted in **Figure 5B**, includes a new taxilane for aircraft circulation and expands the security identification display area (SIDA), which previously had a depth of approximately 150 feet and will now have a depth of 250 feet. These improvements will accommodate larger aircraft at the terminal.

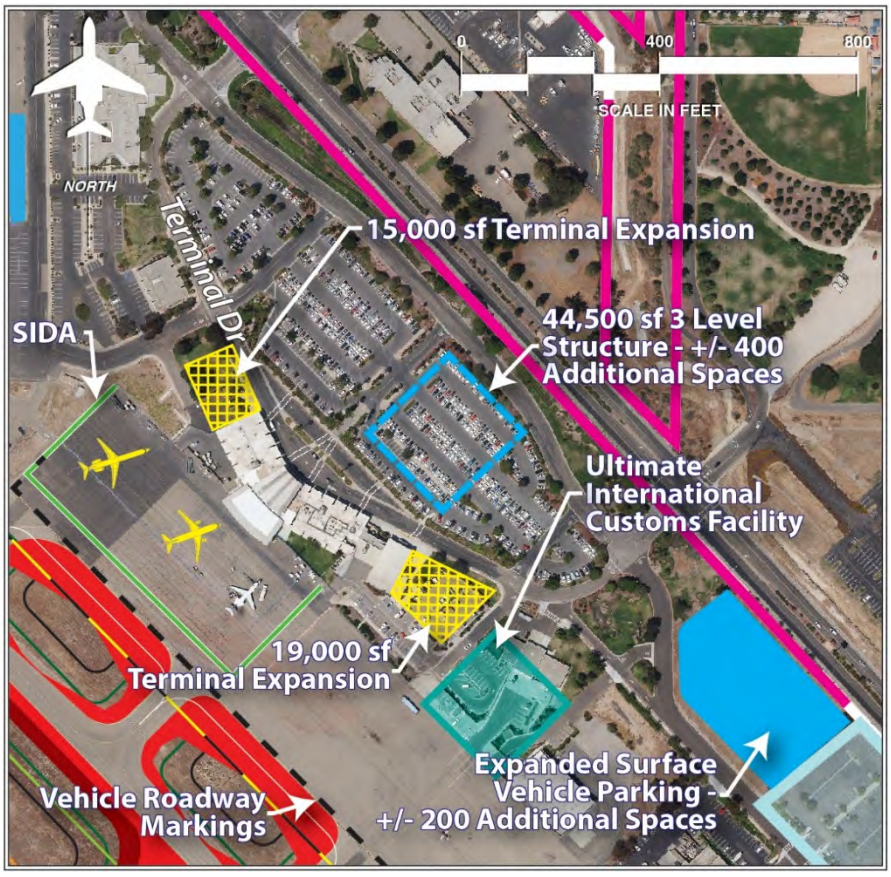


FIGURE 5B
Recommended Terminal Area Concept

NORTH
0 600 1200
SCALE IN FEET
Martinez Geospatial: 8/06/2016

Runway 12-30 8,004' x 150'
Runway 2-20 5,199' x 75'
Industrial Pkwy
Terminal Dr
SANTA MARIA

24,000 sf Hangars
ATCT Relocation
78,500 sy
306,000 sf Aircraft Manufacturing/ MRO facility
50,400 sy
54,000 sf Hangar
24,000 sf Hangars
72,000 sf Hangar
10 Unit T-Hangars
USFS Apron 94,000 sy
USFS Retardant Loading Pits
Service Road Extension

4-Unit T-Hangar Expansion
3,600 sf Box Hangars
72,000 sf Hangar
5,625 sf Hangars
27,000 sf Hangar
Relocated ARFF
0 300
SCALE IN FEET

A A3 A11 A12 A13 A14 A15 A4 A5 A17 A18 A19 A6 A20 A7 A8 A21
B B3 B5 B6 B7 B8
C C1 C2
D D1 D2 D3
E E3
F
H H1 H2

LEGEND
- Airport Property LIne
- Runway Safety Area (RSA)
- Runway Object Free Area (ROFA)
- Runway Obstacle Free Zone (ROFZ)
- Runway Protection Zone (RPZ)
- Taxiway Object Free Area (TOFA)
- Taxiway Safety Area (TSA)
- Building Restriction Line (BRL)
- Ultimate Building
- Ultimate Airfield Pavement
- Ultimate Airfield Shoulder
- Ultimate Parking/Roadway
- Ultimate Pavement/Building to be Removed
- Aviation-Use Reserve
- Business Park
- Non-Movement Area
- Non-Aviation Development Reserve
- Vehicle Roadway Markings

Exhibit 5B
RECOMMENDED LANDSIDE DEVELOPMENT CONCEPT

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TERMINAL PARKING

There are 753 vehicle parking spaces available at the terminal building, which is sufficient to meet long term demand of air travelers, terminal restaurant patrons, rental car ready/return, and terminal employees. As has been discussed, the terminal parking lot is also utilized by non-airport users as a makeshift park-and-ride facility. This added usage causes the lot to reach its capacity during peak travel seasons. The alternatives analysis discussed various options to suppress demand by charging parking fees and to increase parking capacity by constructing new parking spaces. Through discussion with the SMPAD and the Master Plan Planning Advisory Committee (PAC), it was determined that adding additional capacity was the preferred option. As a result, a new surface vehicle parking lot is planned between Airpark Drive and Skyway Drive immediately north of the Radisson hotel parking lot. This location provides an additional 200 spaces with reasonable walking distances (between 850 and 1,200 feet) to the main terminal entrance.

If additional parking capacity is needed over the course of the planning period, the recommended concept includes a parking garage option. The footprint for a proposed parking garage encompasses approximately 44,500 sf and could provide approximately 400 spaces in a three-level structure. In the proposed location, a parking garage would displace approximately 180 existing spaces in the terminal lot. To accommodate future parking capacity needs, the garage should be designed to allow for additional levels as needed.

INTERNATIONAL CUSTOMS FACILITY

The Recommended Concept includes plans to relocate the Airport's Aircraft Rescue and Firefighting (ARFF) activities to a new facility on the tower apron. This would make the existing ARFF building available for the establishment of an international customs facility to conduct Federal Inspection Services (FIS). Having FIS services would open SMX up to international passenger and cargo activities and make the Airport more competitive in its regional market. This site has adjacent apron for aircraft parking and is close to the terminal building for easy movement of aircraft and passengers.

AIRCRAFT RESCUE AND FIREFIGHTING (ARFF) FACILITY

The existing ARFF facility is located immediately south of the terminal building and houses the Airport's Index C equipment, including two firefighting vehicles. As was discussed above, this site is planned for the future establishment of an international customs facility. As a result, the recommended concept includes relocating the ARFF facility to a site within the tower apron redevelopment area north of the terminal building. This site includes space for a similarly sized building to what is currently available and associated vehicle parking spaces. From this location, ARFF vehicles would have easy access to the terminal apron and this site is more centrally located on the airfield, which would result in faster response times to airfield incidents.

AIRPORT TRAFFIC CONTROL TOWER (ATCT)

The ATCT structure, located at the north end of the terminal apron, needs repairs and more modern amenities. Consideration was given in the alternatives analysis to a potential relocation site for a new ATCT should it be determined that updating the existing facility is not practical or feasible. If the ATCT is to be relocated, the most desirable location would be on the south side of Runway 12-30 near midfield. The proposed relocation site is identified on **Exhibit 5B**, just south of the intersection of both runways. In this location, tower controllers would have good line-of-site to each end of both runways as well as the terminal apron.

USFS TANKER BASE

The USFS conducts aerial firefighting activities from a temporary base at SMX utilizing aircraft ranging in size from small spotter aircraft to C-130 and DC-10 tankers. The temporary base consists of three fire retardant loading pits on the Central Coast Jet Center apron on the south side of the airfield and one temporary loading pit adjacent to the terminal apron that has been set up for use by DC-10 aircraft. The alternatives analysis considered options for a dedicated apron for USFS aircraft and up to five loading pits. The recommended site for this 94,000 sy apron is along the extended Taxiway B at the south end of Runway 12-30. This location would provide for easy in/out flow to Taxiway B allowing for quick turn-around times.

To develop this site, the Airport's automated surface observation system (ASOS) equipment will need to be relocated to a site on the northwest side of the airfield outside of all safety areas.

GENERAL AVIATION

While SMX is a commercial service airport, most operations and based aircraft are associated with general aviation (GA) activities. Master Plan recommendations will accommodate the GA operators at SMX with new hangar and apron development. GA facility development is focused in three areas: the tower apron; the corporate hangar area; and the south side of the airfield.

Tower Apron

The tower apron has several existing hangar facilities leased by GA specialty aviation service operators (SASOs). These are some of the oldest hangars on the Airport and there is interest in redeveloping this area with a new hangar arrangement that makes for a more efficient use of the space. The recommended concept proposes the demolition of several of the existing hangars to make way for new hangars to be built. Hangars proposed include expanded T-hangar facilities, 3,600 sf box hangars and larger conventional hangars that range in size from 5,625 sf to 72,000 sf for a large-scale SASO or FBO operation. The plan includes expanded vehicle parking that is easily accessible from Liberator Street and Airpark Drive.

As previously discussed, the Airport's ARFF facility is also planned to be relocated to the tower apron. The plan identifies a building similarly sized to the existing ARFF facility with adjacent vehicle parking to be located at the southeast end of the apron.

Corporate Hangar Area

Privately-owned corporate hangars, 23 units in total, have been constructed on the north side of the airfield. Vehicle accessibility to these hangars is via a secured access gate off Airpark Drive. This site is not well suited for high-activity GA operators such as FBOs or SASOs due to its relative isolation on the airfield, so the plan includes continued expansion of private corporate hangars. New taxilanes are planned as hangar development occurs that will provide access from the hangar area to Taxiway J. On Taxiway K, the current access point is planned to be removed as it provides direct access from Runway 12-30 via A2, which is non-standard taxiway geometry. The corporate hangar development concept is depicted in **Figure 5C**.

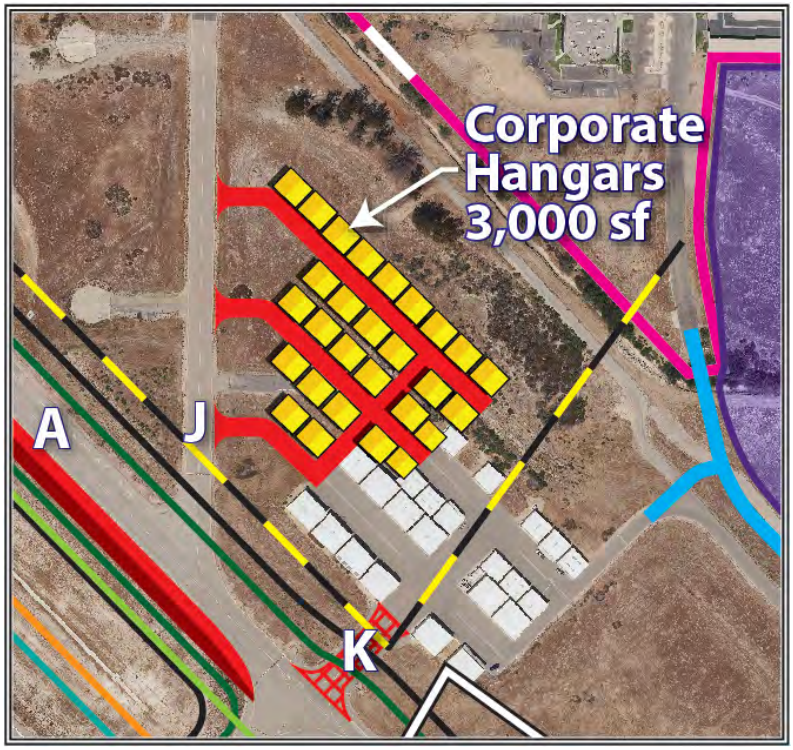


FIGURE 5C
Recommended Corporate Hangar Development

South Airfield

The south side of the airfield is home to several GA SASOs and the Airport's FBO, Central Coast Jet Center. The in-field area between the runways and the existing south GA facilities consists of approximately 200 acres of undeveloped land. The alternatives analysis considered several alternatives for facility development within these 200 acres. The plan, depicted on **Exhibit 5B**, includes development related to all levels of GA activity from high-activity FBO/SASO operator facilities to low-activity T-hangar development. Land along the Runway 12-30 flightline, accessible from Taxiway B, is reserved for the development of a large 78,500 sy apron to serve a large-scale aircraft manufacturing facility or an aircraft maintenance/repair/overhaul (MRO) facility. Space is available for several hangar buildings, including a 306,000 sf structure and additional hangars on either side along with a large surface vehicle parking lot.

South of the planned aircraft manufacturing/MRO facilities, a row of large 54,000 sf conventional hangars is planned with taxilane access extended from Taxiway E and its planned parallel taxiway. These hangars can serve a corporate flight department and house multiple turbine aircraft.

Additional hangar development is planned along the existing Central Coast Jet Center apron, including a 72,000 sf hangar, several 24,000 sf conventional hangars, and taxilane access to a T-hangar development site that has space available for up to 18 T-hangar facilities with capacity of up to 180 individual storage units. Also planned is a taxilane along the southern boundary beyond the FBO facilities that could serve future aviation-use development within a portion of the business park. An additional 24-acre aviation-use reserve parcel is identified along the proposed Taxiway D flightline. This area is intended to be reserved for low-activity uses such as T-hangars or corporate hangars.

Vehicle roadway access to the south infield areas is planned to be extended from a planned extension of Airpark Drive that will loop around the end of Runway 30 from the terminal area to the south side of the Airport. The infield area access road will extend north along the west edge of the infield area and provide access to each of the development areas and the planned ATCT relocation site.

As a reminder, all hangar-related development should occur only as dictated by demand. The locations and sizes of hangars proposed in the recommended concept are conceptual and may not reflect the needs of future developers and their customers. The recommended concept is intended to be used strictly as a guide for SMPAD staff when considering new developments.

NON-AVIATION DEVELOPMENT RESERVE

Areas of the Airport where accessibility to the airfield is limited or infeasible have been reserved for non-aviation revenue support purposes such as commercial or industrial development. These parcels are identified on **Exhibit 5A** with blue shading and are located primarily between Airpark Drive and Skyway Drive and along Fairway Drive on the north side of the Airport. In addition, the planned Santa Maria Airport Business Park (previously depicted on Exhibit 1F) is not impacted by any of the planned development of this Master Plan. The business park encompasses approximately 740 acres of SMPAD property on the south and southeast side of the airfield and combines light industrial, research, manufacturing, and commercial land uses around an 18-hole golf course. Retail opportunities, government facilities, and limited commercial and office development are also included in the business park plans.

AIRPORT RECYCLING, REUSE, and WASTE REDUCTION

The *FAA Modernization and Reform Act of 2012* (FMRA), which amended Title 49, United States Code (USC), included several changes to the Airport Improvement Program (AIP). Two of these changes are related to recycling, reuse, and waste reduction at airports.

- Section 132 (b) of the FMRA expanded the definition of airport planning to include "developing a plan for recycling and minimizing the generation of airport solid waste, consistent with applicable State and local recycling laws, including the cost of a waste audit."
- Section 133 of the FMRA added a provision requiring airports that have or plan to prepare a master plan, and that receive AIP funding for an eligible project, to ensure that the new or updated master plan addresses issues relating to solid waste recycling at the airport, including:

- The feasibility of solid waste recycling at the airport;
- Minimizing the generation of solid waste at the airport;
- Operation and maintenance requirements;
- A review of waste management contracts; and,
- The potential for cost savings or the generation of revenue.

The SMPAD has purview over waste and recycling at the terminal building, the maintenance facility and fuel farm, the Art-Craft Paint Hangar, the Central Coast Jet Center buildings, and one container located along Airpark Drive near the T-hangar facilities. Waste and recycling for all other Airport facilities is handled independently by those entities/tenants that lease those spaces from the Airport. While the focus of this plan is on Airport-operated facilities, the Airport should work to incorporate facility-wide strategies that create consistency in waste disposal mechanisms. This would ultimately result in the reduction of materials sent to the landfill.

Understanding the Airport's waste stream requires an understanding of the types of waste typically generated at airports. Generally, waste from airports can be divided into eight categories, with additional types of municipal solid waste (MSW).[1]

- **Municipal Solid Waste** – more commonly known as trash or garbage – consists of everyday items that are used and then discarded, like product packaging. The following subcategories are either combined with MSW or sorted separately depending on an airport's solid waste practices.
    - **Construction and Demolition Waste** (C&D) is considered non-hazardous trash resulting from land clearing, excavation, demolition, renovation or repair of structures, roads and utilities, including concrete, wood, metals, drywall, carpet, plastic, pipe, cardboard, and salvaged building components.
    - **Green Waste** is yard waste consisting of tree, shrub and grass clippings, leaves, weeds, small branches, seeds, and pods.
    - **Food Waste** includes unconsumed food products or waste generated and discarded during food preparation.
    - **Deplaned Waste** is waste removed from passenger aircrafts. Deplaned waste includes bottles, cans, newspaper, mixed paper (newspaper, napkins, paper towels), plastic cups, service ware, food waste, and food soiled paper/packaging.
- **Lavatory Waste** is a special waste that is emptied through a hose and pumped into a lavatory service vehicle. The waste is then transported to an on-airport dump station where it flows into the municipal waste stream.
- **Spill Clean and Remediation Wastes** are also special wastes and are generated during cleanup of spills and/or the remediation of contamination from several types of sites on an airport.

*Approximately **25 – 35%** of deplaned waste, by weight, consists of recyclables.*

[1] Recycling, Reuse and Waste Reduction at Airports, FAA (April 24, 2013)

- **Hazardous Wastes** are governed by the *Resource Conservation and Recovery Act* (RCRA), as well as the regulations in 40 Code of Federal Regulations (CFR) Subtitle C, Parts 260 to 270. The Environmental Protection Agency (EPA) developed less stringent regulations for certain hazardous waste, known as universal waste, described in 40 CFR Part 237 – The Universal Waste Rule. Common sources of aviation hazardous waste are included in the sidebar.[3]

Common sources of aviation hazardous waste:

- Solvents
- Caustic parts washes
- Heavy metal paint waste & paint chips
- Wastewater sludges from metal etching & electroplating
- Unused epoxies & monomers
- Waste fuels & other ignitable products
- Unusable water conditioning chemicals
- Contaminated sludge
- Nickel cadmium batteries
- Waste pesticides

As seen on **Exhibit 5C**, there are seven potential areas of an airport contributing to the waste stream, including terminals, airfields, aircraft maintenance hangars, cargo hangars, flight kitchens, offices, and airport construction projects. To create a comprehensive waste reduction and recycling plan for SMX, all potential inputs must be considered.

There are often few key staff members that are directly involved in the waste management system, making their support and participation critical. It is also crucial to gain the participation of tenants to ensure buy-in of the Airport's recycling efforts. SMX must establish consistent internal procedures to ensure there are no unacceptable items contaminating recycling containers, or recyclables thrown in the trash. Clearly marked signage of what is and is not accepted placed near the solid waste and recycling containers is another significant part of a consistent, effective recycling system. Currently at SMX, there are no signs near the recycling bin that say what can be recycled. The graphic on the following page provides an example of signage that the Airport could use to explain what can and cannot be recycled.

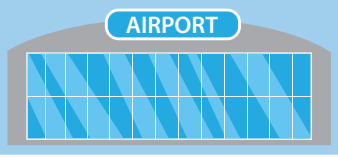
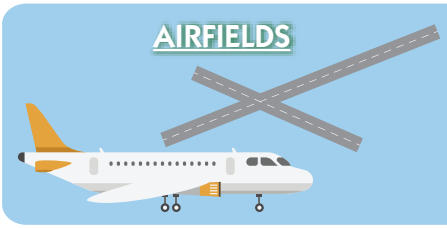
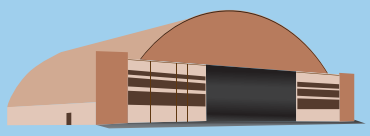
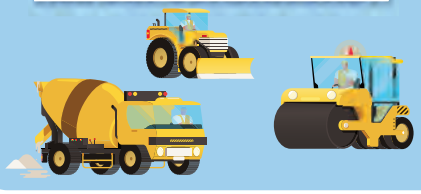
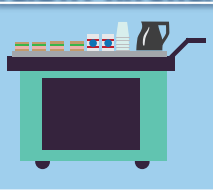
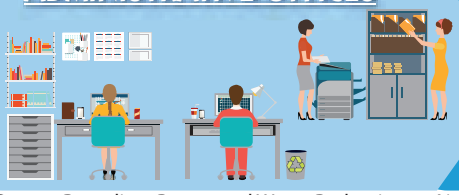
The FAA's Airport Cooperative Research Program (ACRP) identified five key best practices in its report, *Recycling Best Practices – A Guidebook for Advancing Recycling from Aircraft Cabins* (2014), that are most effective at advancing aviation recycling.

1. Secure top-down and bottom-up commitment within the airport for recycling efforts
2. Develop consistent recycling procedures and infrastructure
3. Increase the efficiency of existing systems
4. Track, evaluate, and share data on program performance
5. Make recycling a part of everyday business

The Airport should ensure that the waste and recycling containers are right-sized to the existing operation, as well as on a collection schedule that picks up only when the containers are full. The Airport should also track tenant-specific recycling rates and waste quantities to identify cost saving measures that are currently unidentified simply based on the lack of quantitative data. Lastly, the Airport should make recycling a part of everyday business. The Airport can provide training, education, and support to Airport personnel, tenants, and others who conduct business at the Airport. In-person meetings with Airport tenants should be held to create mutual understanding of the Airport's solid waste and recycling goals and how tenants play a vital role in the Airport's overall success.

[3] Recycling, Reuse and Waste Reduction at Airports, FAA (April 24, 2013)

AIRPORT WASTE STREAMS

AIRPORT AREA	POTENTIAL INPUTS	POTENTIAL OUTPUTS
TERMINALS 	Restaurants Shops Passengers Employees	Food Waste, Paper Plastic, Aluminum Cans Trash, Grease & Oil Green Waste Deplaned Waste
AIRFIELDS 	Aircraft Operations	Runway Rubber Green Waste
CARGO HANGERS 	Goods Movements	Plastic Wood Vehicle Waste (Tires & Fluids)
AIRCRAFT 	Aircraft Ground Support Equipment (GSE)	Vehicle Waste Plastic Wastewater Hazmat
AIRPORT CONSTRUCTION 	Construction Re-Construction Demolition	Reused Concrete Reused Asphalt Vehicle Waste Soils, Building Materials Wood, General Waste
FLIGHT KITCHENS 	Aircraft Food Services	Food Waste Waste Water Plastic Wood
ADMINISTRATIVE OFFICES 	Employees	Food Waste Paper, Plastic Aluminum Cans Trash

Source: Recycling, Reuse, and Waste Reduction at Airports, FAA (April 24, 2013)

The implementation of an effective program requires accurate data of current waste and recycling rates. There are several ways an airport can gain insight into their waste stream. The waste audit is the most comprehensive and intensive way to assess waste stream composition, opportunities for waste reduction, and capture of recyclables. This Recycling Plan is based on information provided by the Airport using an examination of records.



Examination of Records

- Waste hauling and disposal records and contracts
- Supply and equipment invoices
- Other waste management costs (commodity rebates, container costs, etc.)

Facility Walk-Through

- Qualitative waste information
- Understanding waste pickup and hauling practices

Waste Audit

- Collection and analysis of the types of waste produced

SOLID WASTE

Solid waste services are provided by the City of Santa Maria for the Airport. The SMPAD is responsible for solid waste services at five buildings, as seen in **Table 5B**. As shown in the data, monthly expenditures for solid waste services fluctuate from $1,190 to $1,255. No information was available regarding the weight of solid waste hauled.

TABLE 5B
Monthly Solid Waste Service Expenditures
Santa Maria Public Airport District

	2016								2017				
Location	**May**	**Jun**	**Jul**	**Aug**	**Sep**	**Oct**	**Nov**	**Dec**	**Jan**	**Feb**	**Mar**	**Apr**	**May**
Terminal Building	$329	$320	$320	$320	$320	$320	$320	$320	$320	$329	$329	$329	$329
Hangar Area	$329	$320	$320	$320	$320	$320	$320	$320	$320	$329	$329	$329	$329
Maintenance Facility & Fuel Farm	$167	$162	$162	$162	$162	$162	$162	$162	$162	$167	$167	$167	$167
Art-Craft Paint Hangar	$329	$383	$383	$383	$383	$383	$382	$383	$383	$395	$395	$395	$329
Central Coast Jet Center	$35	$34	$34	$34	$34	$34	$34	$34	$34	$35	$35	$35	$35
Total	**$1,190**	**$1,219**	**$1,219**	**$1,219**	**$1,219**	**$1,219**	**$1,219**	**$1,219**	**$1,219**	**$1,255**	**$1,255**	**$1,255**	**$1,190**

Note: Monthly values rounded to nearest whole dollar
Source: SMPAD

RECYCLING

The Airport currently has one recycling receptacle in the terminal building located in the security checkpoint queuing area. This recycling receptacle, as seen in the photo, does not explain what 'mixed recyclables' is, which could cause contamination with non-recyclable items.

The Airport currently contracts with VTC Enterprises for a paper collection service that picks up paper recycling twice per month. For the two monthly pick-ups, the Airport is currently charged $54 per month.



Recycling Receptacle in Terminal Building

SOLID WASTE MANAGEMENT SYSTEM

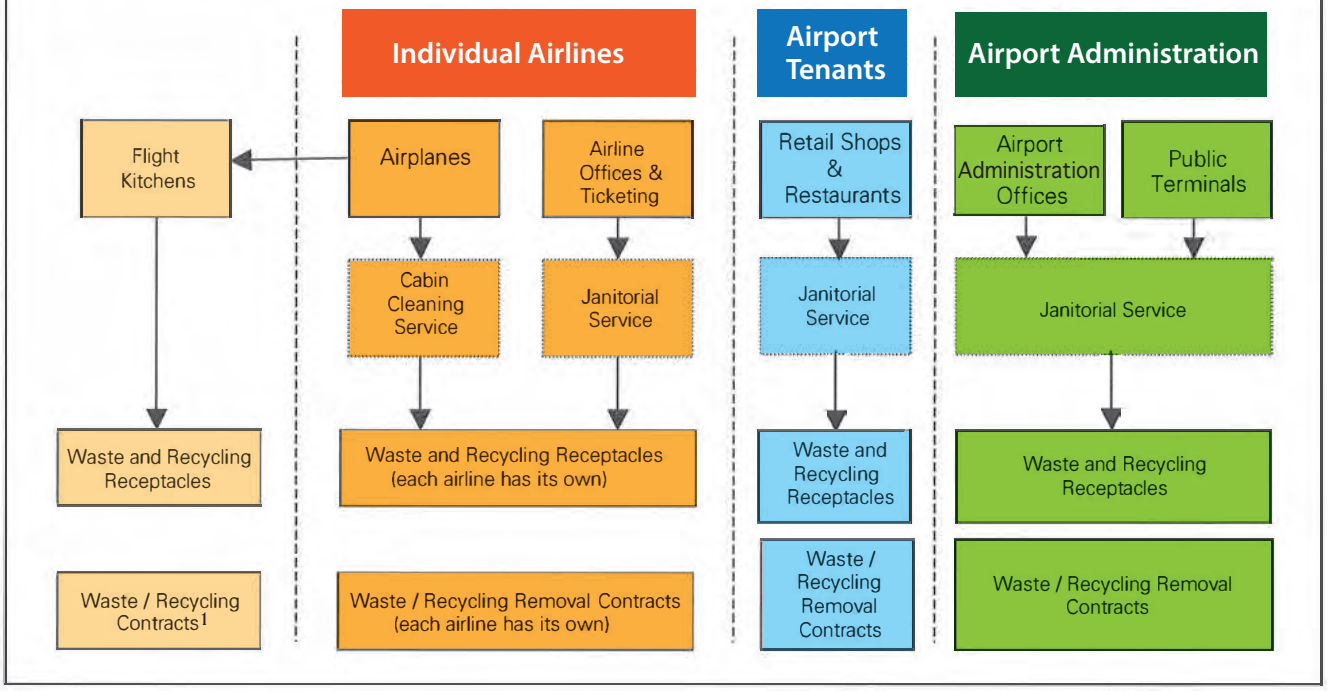
Waste management services at SMX are presently managed independently by various tenants and entities in what is known as a *decentralized* waste management system. To maximize recycling efforts, the SMPAD should more actively engage tenants by transitioning to a *centralized* waste management system. **Exhibit 5D** summarizes the differences between these two styles.

Centralized waste management systems provide greater opportunity for participation from Airport tenants who may not be incentivized to recycle on their own. The centralized system is advantageous in that is has less players involved in the overall management of the solid waste and recycling efforts. This management style allows greater control by the Airport over the type, placement, and maintenance of compactors and dumpsters, saving space and eliminating the need for each tenant to have their own containers. A centralized strategy can be inefficient for some airports as it requires more effort and oversight on the part of airport management. Ultimately, a centralized waste management system will streamline waste and recycling collection, maximizing the opportunity to reduce waste generation and increase diversion of recyclables.

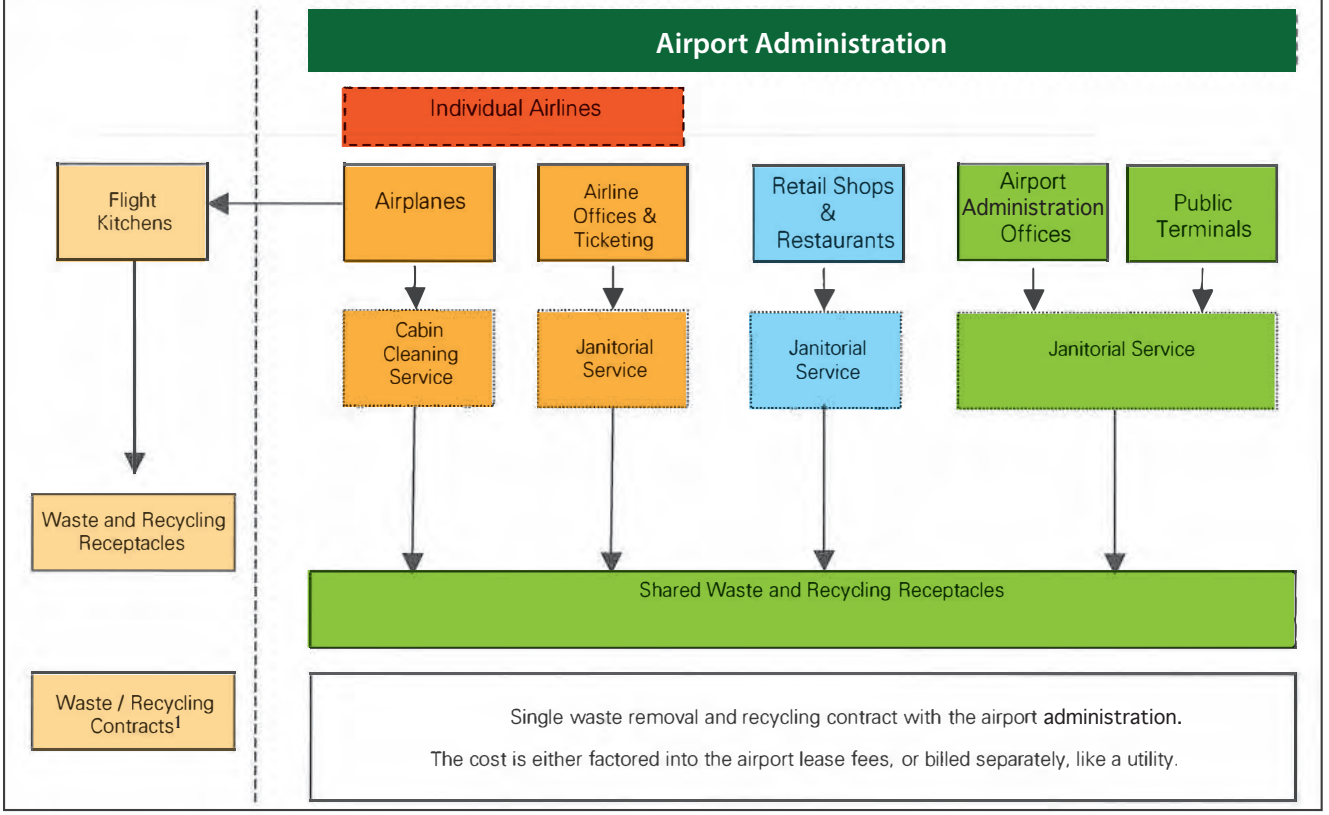
SOLID WASTE AND RECYCLING GOALS

While the Airport may or may not pursue the implementation of a centralized waste management system, there are other opportunities for improvement. **Table 5C** outlines objectives that could help reduce waste generation and increase recycling efforts at SMX. To increase the effectiveness of tracking progress at the Airport, a baseline state of all suggested metrics should be established to provide a comparison over time.

Components of a Decentralized Airport Waste Management System



Components of a Centralized Airport Waste Management System



[1] Flight kitchens usually manage their own waste even if an airport relies on a centralized system

Source: Natural Resources Defense Council, Trash Landings: How Airlines and Airports Can Clean Up Their Recycling Programs, December 2006.

TABLE 5C
Waste Management and Recycling Goals
Santa Maria Public Airport

Goals	Objectives to Meet Goals	Metrics
Reduce amount of solid waste generated	Switch to online bill pay to eliminate monthly paper bills	No longer receiving monthly paper bills
	Conduct a waste audit to identify most common types of waste	Identification of most common solid waste
	Eliminate purchase of items that are not recyclable (i.e. Styrofoam, plastic bags)	Number of items purchased that are not recyclable
Increase amount of material recycled	Improve recycling tracking and data management	Monthly data reports
	Increase the number of recycling bins in public areas	Number of recycling bins available to the public
	Incorporate recycling requirements and/or recommendations into tenant lease agreements	Number of tenant contracts with recycling requirements and /or recommendations
	Expand recycling marketing & promotion efforts throughout public areas	Number of marketing & promotional materials
	Require contractors to implement strategies to reduce, reuse & recycle construction & demolition waste	Incorporation of waste reduction, reuse & recycling language into construction contracts

MSW: Municipal Solid Waste

CAPITAL FINANCIAL PLAN

The analyses completed in previous sections evaluated development needs at the Airport over the next 20 years and beyond, based on forecast activity and operational efficiency. The next step is the development of a capital improvement plan (CIP) for those projects that are expected to be implemented over the near-term. A more general discussion of the funding of the medium and long term projects is provided because of the possible shifts in the importance of those projects.

The presentation of the CIP has been organized into three sections. First, the Airport's capital program needs are recognized by various categories ranging from enhancing safety to satisfying demand. Second, the Airport development schedule and project cost estimates are presented in narrative and graphic form. Third, capital improvement funding sources on the state/federal and local levels are identified and discussed.

The CIP is developed following FAA guidelines for Master Plans and primarily identifies those projects that are likely eligible for grant funding through the Federal Airport Improvement Program (AIP). Other aviation projects that are not programmed to receive federal funding participation are also presented.

AIRPORT DEVELOPMENT NEEDS

To identify capital needs at the Airport, this section provides an analysis regarding the associated development needs of projects included in the CIP. While some projects will be demand-based, safety or rehabilitation needs will dictate others.

Each development need is categorized according to this schedule. The applicable category, or categories, included are presented on **Exhibit 5E**. The proposed projects can be categorized as follows:

1) **Safety/Security (SS)** – these are capital needs considered necessary for operational safety and protection of aircraft and/or people and property on the ground near the Airport.

2) **Environmental (EN)** – these are capital needs which are identified to enable the Airport to operate in an environmentally acceptable manner.

3) **Maintenance (MN)** – these are capital needs required to maintain the existing infrastructure at the Airport.

4) **Efficiency (EF)** – these are capital needs intended to optimize aircraft ground operations or users of landside facilities.

5) **Demand (DM)** – these are capital needs required to accommodate levels of aviation demand. The implementation of these projects should only occur when demand for these needs is verified.

6) **Opportunities (OP)** – these are capital needs intended to take advantage of opportunities afforded by the Airport setting. Typically, this will involve improvements to property intended for lease to aviation or non-aviation related development.

AIRPORT DEVELOPMENT SCHEDULE AND COST SUMMARIES

With the recommended Master Plan concept developed and specific needs and improvements for the Airport having been established, the next step is to determine a realistic implementation timeline and associated costs for the plan. The recommended improvements are grouped by planning horizon: short term (current – 5 years), intermediate term (6 – 10 years), and long term (11 – 20 years). **Table 5D** summarizes key activity milestones for the three planning horizons.

A key aspect of this Master Plan is the use of demand-based planning milestones. Many projects should be considered based on actual demand levels. As short term horizon activity levels are reached, it will then be time to program for the intermediate term based upon the next activity milestones. Similarly, when the intermediate term milestones are reached, it will be time to program for the long term activity milestones.

	Project Description	Development Category	Total Project Cost	Federal Share	Local Share
	Short Term Program (Years 1-5)				
2018	1 Rehabilitate (reconstruct) Terminal Apron, Ph 2 (construct & Reimburse design)	MN	$6,507,000	$5,899,240	$607,760
2019	2 Environmental Assessment for Master Plan and Near-Term Projects	EN	$440,000	$398,900	$41,100
	3 Rehabilitate Twy A from A6 to A8, & from A2 to A3. Rehabilitate Twy S & U. Rehabilitate & reconfigure Twy A7 & A8 (design only)	SS/EF	$380,000	$344,500	$35,500
2020	*No Project*				
2021	4 Rehabilitate Twy A from A6 to A8, & from A2 to A3. Rehabililtate Twy S & U. Rehabilitate & reconfigure Twy A7 & A8 (construct)	SS/EF	$6,850,000	$6,210,200	$639,800
2022	*No Project*				
	Short Term Program Total		**$14,177,000**	**$12,852,840**	**$1,324,160**
	Intermediate Term Program (Years 6-10)				
	5 Design/Construct: Rehabilitate Runway 12-30 (Reimburse)	MN	$6,800,000	$6,164,880	$635,120
	6 Design/Construct: Extend Taxiway B South from Taxiway E to Taxiway B7 (Reimburse)	SS/EF	$4,900,000	$4,442,340	$457,660
	7 Rehabilitate Twy A2 & A4, Rehabilitate Twy A from A4 to A6 (construct & reimburse design)	MN	$8,300,000	$7,524,780	$775,220
	8 Design/Construct: Airfield Geometry Improvements - Phase I - Remove A5, A6; Reroute A4, B5	SS/EF	$4,800,000	$4,351,579	$448,421
	9 Design/Construct: Airfield Geometry Improvements - Phase II - Remove K; Reroute L, R, W, New Corporate Hangar Taxilane to J	SS/EF	$3,300,000	$2,991,711	$308,289
	10 Design/Construct: Taxiway A Widen to 75 feet from A1 to A2 and from A3 to A4	SS/EF	$3,700,000	$3,354,342	$345,658
	11 Design/Construct: Taxiway B Widening to 75 feet from B5 to Runway 2-20	SS/EF	$3,400,000	$3,082,368	$317,632
	12 Design/Construct: Runway 20 Threshold Displacement - 950 feet	OP	$100,000	$90,658	$9,342
	13 Design/Construct: Airpark Drive Extension	OP	$2,500,000	$0	$2,500,000
	14 Design/Construct: Vehicle Roadway Markings and Signage Improvements on Aircraft Movement Areas	SS	$1,000,000	$906,579	$93,421
	15 Design/Construct: In-Pavement Stop Bar Fixtures and Elevated Runway Guard Lights	SS	$2,200,000	$1,994,474	$205,526
	16 Design/Construct: Runway End Identifier Lights (REILs) for Runway 30	SS	$100,000	$90,658	$9,342
	17 Design/Construct: Vehicle Parking Lot Expansion	DM	$1,500,000	$1,359,868	$140,132
	18 Design/Construct: Tower Apron Redevelopment	OP	$2,500,000	$0	$2,500,000
	19 Design/Construct: ARFF Station Relocation	OP	$8,800,000	$7,977,895	$822,105
	20 Design/Construct: International Customs Facility	OP	$5,400,000	$4,895,526	$504,474
	21 Design/Construct: Corporate Hangar Taxilane Expansion	DM	$2,700,000	$2,447,763	$252,237
	22 Design/Construct: Water Well Relocation	OP	$1,500,000	$1,359,868	$140,132
	23 Design/Construct: Transient Apron Expansion	DM	$2,700,000	$2,447,763	$252,237
	24 Design/Construct: Relocate ASOS Equipment	OP	$300,000	$271,974	$28,026
	25 Design/Construct: USFS Apron	DM/EF	$17,000,000	$0	$17,000,000
	Intermediate Term Program Total		**$83,500,000**	**$55,755,026**	**$27,744,974**
	Long Term Program (Years 11-20)				
	26 Design/Construct: Rehabilitate Taxiways E & H	MN	$4,100,000	$3,717,060	$382,940
	27 Rehabilitate Terminal Apron, Phase 3, & Twy V (construct & reimburse design)	MN	$3,800,000	$3,445,080	$354,920
	28 Design/Construct: Rehabilitate Main Hangar Apron	MN	$3,300,000	$2,991,780	$308,220
	29 Extend Twy B north to Rwy 12 (construct & reimburse design)	SS/EF	$8,800,000	$7,978,080	$821,920
	30 Rehabilitate Rwy 2-20 (construct & reimburse design)	MN	$4,000,000	$3,626,400	$373,600
	31 Design/Construct: Terminal Building Expansion - Phase I	DM/OP	$4,500,000	$4,079,605	$420,395
	32 Design/Construct: Terminal Building Expansion - Phase II	DM/OP	$6,650,000	$6,028,750	$621,250
	33 Design/Construct: Parking Garage Structure	DM	$14,000,000	$12,692,105	$1,307,895
	34 Site Prep: Midfield Development	DM/OP	$11,500,000	$0	$11,500,000
	35 Design/Construct: Roadway Extension to South Infield Area	DM/OP	$1,200,000	$0	$1,200,000
	36 Design/Construct: New ATCT	DM	$5,000,000	$4,532,895	$467,105
	37 Design/Construct: Midfield Apron	DM/OP	$14,500,000	$13,145,395	$1,354,605
	38 Design/Construct: Dual-Parallel Taxiway from Taxiway B to Central Coast Jet Center Apron	EF	$3,500,000	$3,173,026	$326,974
	39 Design/Construct: Taxiway D, D1, D2	EF	$7,800,000	$7,071,316	$728,684
	40 Design/Construct: T-Hangar Taxilanes	DM/OP	$3,600,000	$3,263,684	$336,316
	Long Term Program Total		**$96,250,000**	**$75,745,176**	**$20,504,824**
	TOTAL PROGRAM COSTS		**$193,927,000**	**$144,353,043**	**$49,573,957**

Development Category - SS - Safety/Security DM - Demand EF - Efficiency EN - Environmental MN - Maintenance OP - Opportunity

Many development items included in the recommended concept will need to follow these demand indicators. For example, the plan includes new hangar development. Based aircraft necessitating the need for additional hangar development and the need to accommodate growth in overall Airport activity will be the primary indicator for these projects. If based aircraft growth occurs as projected, additional hangars should be constructed to meet the demand. If growth slows or does not occur as forecast, some projects may be delayed. As a result, capital expenditures are planned to be made on an as-needed basis, which leads to a more responsible use of capital assets.

TABLE 5D
Planning Horizon Activity Levels
Santa Maria Public Airport

	BASE YEAR	PLANNING HORIZONS		
	2015	Short Term	Intermediate Term	Long Term
Enplaned Passengers	**44,340**	**49,400**	**53,000**	**64,500**
Commercial Operations				
Air Carrier Airline	324	411	568	1,064
Air Taxi/Commuter Airline	1,429	3,770	3,752	3,056
Air Cargo	1,972	2,470	2,660	2,830
Air Carrier Charter	41	50	50	50
Other Air Taxi	5,838	6,800	7,700	8,600
Total Commercial Operations	9,604	13,500	14,730	15,600
General Aviation Operations				
Itinerant	17,718	19100	20,500	22,200
Local	9,896	10100	10,300	10,800
Total General Aviation Operations	27,614	29,200	30,800	33,000
Military Operations				
Itinerant	445	450	450	450
Local	726	700	700	700
Total Military Operations	1,171	1,150	1,150	1,150
Total Airport Operations	**38,389**	**43,850**	**46,680**	**49,750**
Based Aircraft	**235**	**269**	**294**	**346**

At SMX, many facilities/hangars are owned and managed by the SMPAD and leased to individual tenants; however, there are privately owned hangars that were constructed on land leased from the SMPAD. Because of economic realities, many airports are relying on private developers to construct new hangars. In some cases, private developers can keep construction costs lower, which in turn lowers the monthly fee necessary to amortize the cost of development. The CIP for the Airport assumes a potential for future hangars to be constructed through public/private partnerships. This assumption does not preclude the possibility of the Airport constructing new hangars. Ultimately, the SMPAD will determine, based upon demand and the specific needs of a potential developer, whether to self-fund hangar construction or to rely on private developers.

Not all projects identified are necessary to meet projected demand. Other projects are necessary to enhance the safety and efficiency of the Airport, maintain existing pavement infrastructure, or to address FAA design standards.

Since an Airport Master Plan is a conceptual document, implementation of the capital projects should only be undertaken after further refinement of their design and costs through architectural and engineering analyses. Moreover, some projects may require additional unforeseen infrastructure improvements (i.e., drainage improvements, extension of utilities, etc.) that may increase the estimated cost of the project or increase the timeline for completion.

Once a list of necessary projects was identified and refined, project-specific cost estimates were developed. The cost estimates include design, engineering, construction administration, and contingencies that may arise on the project. Cost estimates for each of the development projects in the CIP are based on present-day construction, design, and administration costs. Adjustments will need to be applied over time as construction costs or capital equipment costs change. Capital costs presented here should be viewed only as estimates subject to further refinement during design. Nevertheless, they are considered sufficient for planning purposes.

Some projects, particularly those in the short term period, have been taken from SMX's 5-year Airport Capital Improvement Program (ACIP) that has been prepared for the FAA. Based on current ACIP project scheduling, no projects are planned for certain years in the short term, which allows the SMPAD to bank its entitlement funding for use in later years.

Exhibit 5E presents the proposed 20-year CIP for SMX. An estimate of federal funding eligibility has been included, although actual funding is not guaranteed. For projects that are eligible for federal funding, AIP grants provide up to 90.7 percent of the total project cost. The remaining 9.3 percent, or more, of project costs are funded locally by the SMPAD.

Some projects identified in the CIP will require environmental documentation. The level of documentation necessary for each project must be determined in consultation with the FAA. There are three major levels of environmental review to be considered under the *National Environmental Policy Act* (NEPA) that include categorical exclusions (CatEx), Environmental Assessments (EA), and Environmental Impact Statements (EIS). Each level requires more time to complete and more detailed information. Guidance on what level of documentation is required for a specific project is provided in FAA Order 1050.1F, *Environmental Impacts: Policies and Procedures*. The Environmental Overview, presented in Appendix B, addresses NEPA and provides an evaluation of potential environmental impacts for SMX.

Several projects identified in the Recommended Master Plan Concept are not planned to be constructed within the time period covered in the CIP (2018 – 2036). For example, development of the entire south landside side area may not occur until beyond the 20-year period; therefore, some of this development is not included within the CIP. These projects are simply placeholders for development that could occur beyond the planning timeframe of this Airport Master Plan. Development projects that are not anticipated to occur during the timeframe of the CIP are identified on **Exhibit 5F** with white shading.

The following sections will describe in greater detail the projects identified for the Airport over the next 20 years. The short term projects are subdivided into yearly increments and refer to the federal fiscal year (FY) (October – September). The intermediate and long terms are grouped by local priority. While the CIP shows the priority ranking of the projects, the list should be evaluated and revised on a regular basis.

SHORT TERM PROGRAM

The short term planning period is the only planning horizon separated into single years. This is to allow the CIP to be coordinated with the planning cycle of the FAA. If any of these projects cannot be funded in the timeframe indicated, the SMPAD should consider the project for the following year.

Projects called out during this timeframe are very specific in terms of actual design and construction. Several projects in the short term may also need to be addressed in a CatEx or an EA. As such, some projects are initially put through an environmental and/or design phase and then followed up with actual construction.

The short term program considers four projects for the planning period as presented on **Exhibit 5E** and depicted on **Exhibit 5F**. The following provides a detailed breakdown of each project within FY 2018 through 2022.

FY 2018 Projects

Project #1: Rehabilitate (reconstruct) Terminal Apron, Ph 2 (construct & reimburse design)
Description: This is funding for the continuation of the rehabilitation of the terminal apron.
Cost Estimate: $6,507,000
Funding Eligibility: AIP – 90.7% / Local – 9.3%

FY 2019 Projects

Project #2: Environmental Assessment for Master Plan and Near-Term Projects
Description: NEPA examination for projects listed on the Airport's ACIP.
Cost Estimate: $440,000
Funding Eligibility: AIP – 90.7% / Local – 9.3%

Project #3: Rehabilitate Twy A from A6 to A8, & from A2 to A3. Rehabilitate Twy S & U. Rehabilitate & reconfigure Twy A7 & A8 (design only)
Description: The taxiway system needs to be rehabilitated and upgraded to meet TDG 5 standards to accommodate the critical design aircraft, the DC-10 aerial firefighting tanker. This project will increase taxiway width and fillets to allow for easier maneuverability for this aircraft on the taxiway system. This is a design only project.
Cost Estimate: $380,000
Funding Eligibility: AIP – 90.7% / Local – 9.3%

SHORT TERM (Years 1-5)

2018

1. Rehabilitate (reconstruct) Terminal Apron, Ph 2 (construct & Reimburse design)

2019

2. Environmental Assessment for Master Plan and Near-Term Projects - *Not Pictured*
3. Rehabilitate Twy A from A6 to A8, & from A2 to A3. Rehabilitate Twy S & U. Rehabilitate & reconfigure Twy A7 & A8 (design only)

2020

No Project

2021

4. Rehabilitate Twy A from A6 to A8, & from A2 to A3. Rehabililtate Twy S & U. Rehabilitate & reconfigure Twy A7 & A8 (construct)

2022

No Project

INTERMEDIATE TERM (Years 6-10)

5. Design/Construct: Rehabilitate Runway 12-30 (Reimburse)
6. Design/Construct: Extend Taxiway B South from Taxiway E to Taxiway B7 (Reimburse)
7. Rehabilitate Twy A2 & A4, Rehabilitate Twy A from A4 to A6 (construct & reimburse design)
8. Design/Construct: Airfield Geometry Improvements - Phase I - Remove A5, A6; Reroute A4, B5
9. Design/Construct: Airfield Geometry Improvements - Phase II - Remove K; Reroute L, R, W, New Corporate Hangar Taxilane to J
10. Design/Construct: Taxiway A Widen to 75 feet from A1 to A2 and from A3 to A4
11. Design/Construct: Taxiway B Widening to 75 feet from B5 to Runway 2-20
12. Design/Construct: Runway 20 Threshold Displacement - 950 feet
13. Design/Construct: Airpark Drive Extension
14. Design/Construct: Vehicle Roadway Markings and Signage Improvements on Aircraft Movement Areas
15. Design/Construct: In-Pavement Stop Bar Fixtures and Elevated Runway Guard Lights - *Not Pictured*
16. Design/Construct: Runway End Identifier Lights (REILs) for Runway 30
17. Design/Construct: Vehicle Parking Lot Expansion
18. Design/Construct: Tower Apron Redevelopment
19. Design/Construct: ARFF Station Relocation
20. Design/Construct: International Customs Facility
21. Design/Construct: Corporate Hangar Taxilane Expansion
22. Design/Construct: Water Well Relocation
23. Design/Construct: Transient Apron Expansion
24. Design/Construct: Relocate ASOS Equipment
25. Design/Construct: USFS Apron

LONG TERM (Years 11-20)

26. Design/Construct: Rehabilitate Taxiways E & H
27. Rehabilitate Terminal Apron, Phase 3, & Twy V (construct & reimburse design)
28. Design/Construct: Rehabilitate Main Hangar Apron
29. Extend Twy B north to Rwy 12 (construct & reimburse design)
30. Rehabilitate Rwy 2-20 (construct & reimburse design)
31. Design/Construct: Terminal Building Expansion - Phase I
32. Design/Construct: Terminal Building Expansion - Phase II
33. Design/Construct: Parking Garage Structure
34. Site Prep: Midfield Development - *Not Pictured*
35. Design/Construct: Roadway Extension to South Infield Area
36. Design/Construct: New ATCT
37. Design/Construct: Midfield Apron
38. Design/Construct: Dual-Parallel Taxiway from Taxiway B to Central Coast Jet Center Apron
39. Design/Construct: Taxiway D, D1, D2
40. Design/Construct: T-Hangar Taxilanes

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Martinez Geospatial: 8/06/2016

LEGEND

- Airport Property LIne
- Runway Protection Zone (RPZ)
- Short Term Program
- Intermediate Term Program
- Long Term Program
- Private Development/Beyond Planning Period
- Aviation-Use Reserve
- Business Park
- Non-Aviation Development Reserve

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FY 2020 Projects

No projects are planned for FY 2020. The Airport's entitlement funds will be banked for use in later years.

FY 2021 Projects

Project #4: Rehabilitate Twy A from A6 to A8, & from A2 to A3. Rehabililtate Twy S & U. Rehabilitate & reconfigure Twy A7 & A8 (construct)
Description: The taxiway system needs to be rehabilitated and upgraded to meet TDG 5 standards to accommodate the critical design aircraft, the DC-10 aerial firefighting tanker. This project will increase taxiway width and fillets to allow for easier maneuverability for this aircraft on the taxiway system.
Cost Estimate: $6,850,000
Funding Eligibility: AIP – 90.7% / Local – 9.3%

FY 2022 Projects

No projects are planned for FY 2020. The Airport's entitlement funds will be banked for use in later years.

Short Term CIP Summary

The short term CIP includes projects that enhance the overall safety, efficiency, and maintenance of the airfield. The total investment necessary for the short term CIP is approximately $14.2 million. Approximately $12.9 million is programmed for federal funding assistance. The remaining $0.6 million is to be provided through local funding sources.

INTERMEDIATE TERM PROGRAM

The intermediate term covers the period 6 through 10 years and includes 21 projects. These projects are listed on **Exhibit 5E** and depicted on **Exhibit 5F**. Planning new projects beyond the short term timeframe can be challenging. Due to the fluid nature of funding availability and the possibility of changing priorities, these projects have been grouped together into a single project list and not prioritized by year. Further evaluation of these projects should occur during this planning horizon to determine their order of importance based on airport safety, demand, and efficiency.

Project #5: Design/Construct: Rehabilitate Runway 12-30
Description: Pavement rehabilitation is a routine preservation project to extend the useful life of airfield pavement.
Cost Estimate: $6,800,000
Funding Eligibility: AIP – 90.7% / Local – 9.3%

Project #6: Design/Construct: Extend Taxiway B South from Taxiway E to Taxiway B7
Description: Extending Taxiway B to the Runway 30 threshold creates a safer and more efficient taxiway system.
Cost Estimate: $4,900,000
Funding Eligibility: AIP – 90.7% / Local – 9.3%

Project #7: Rehabilitate Twy A2 & A4, Rehabilitate Twy A from A4 to A6 (construct & reimburse design)
Description: The taxiway system needs to be rehabilitated and upgraded to meet TDG 5 standards to accommodate the critical design aircraft, the DC-10 aerial firefighting tanker. This project will increase taxiway width and fillets to allow for easier maneuverability for this aircraft on the taxiway system.
Cost Estimate: $8,300,000
Funding Eligibility: AIP – 90.7% / Local – 9.3%

Project #8: Design/Construct: Airfield Geometry Improvements - Phase I - Remove A5, A6; Reroute A4, B5
Description: This project implements the recommended taxiway geometry improvements by replacing several acute-angled exits with right-angled exits to mitigate taxiway hot spots.
Cost Estimate: $4,800,000
Funding Eligibility: AIP – 90.7% / Local – 9.3%

Project #9: Design/Construct: Airfield Geometry Improvements - Phase II - Remove K; Reroute L, R, W, New Corporate Hangar Taxilane to J
Description: This is the continuation of taxiway geometry improvements to eliminate direct-access points and excessively wide pavement areas.
Cost Estimate: $3,300,000
Funding Eligibility: AIP – 90.7% / Local – 9.3%

Project #10: Design/Construct: Taxiway A Widen to 75 feet from A1 to A2 and from A3 to A4
Description: This project is a continuation of improvements intended to provide geometry upgrades including widening the pavement to meet TDG 5 standards to Taxiway A. This project will complete the widening of Taxiway A for the remaining length from A2 to A1 and from A3 to A4.
Cost Estimate: $3,700,000
Funding Eligibility: AIP – 90.7% / Local – 9.3%

Project #11: Design/Construct: Taxiway B Widening to 75 feet from B5 to Runway 2-20
Description: This project improves Taxiway B to meet TDG 5 standards.
Cost Estimate: $3,400,000
Funding Eligibility: AIP – 90.7% / Local – 9.3%

Project #12: Design/Construct: Runway 20 Threshold Displacement - 950 feet
Description: To allow for the extension of Airpark Drive, this project displaces the Runway 20 threshold so that the roadway extension does not pass through the RPZ.
Cost Estimate: $100,000
Funding Eligibility: AIP – 90.7% / Local – 9.3%

Project #13: Design/Construct: Airpark Drive Extension
Description: This project connects Airpark Drive so that it is a through-street from the terminal area to Fairway Drive. The intent is to make Airport property along Skyway Drive more accessible for potential non-aviation related developments.
Cost Estimate: $2,500,000
Funding Eligibility: AIP – 0.0% / Local – 100.0%

Project #14: Design/Construct: Vehicle Roadway Markings and Signage Improvements on Aircraft Movement Areas
Description: This project will add vehicle roadway markings and signage to apron areas where they do not currently exist and expand the service road on the south side of the airfield.
Cost Estimate: $1,000,000
Funding Eligibility: AIP – 90.7% / Local – 9.3%

Project #15: Design/Construct: In-Pavement Stop Bar Fixtures and Elevated Runway Guard Lights
Description: This project adds visual aids at all holding position markings on the airfield to improve pilot situational awareness to mitigate potential runway incursions including airfield hot spots.
Cost Estimate: $2,200,000
Funding Eligibility: AIP – 90.7% / Local – 9.3%

Project #16: Design/Construct: Runway End Identifier Lights (REILs) for Runway 30
Description: REILs are a visual aid for pilots on approach to the runway. Installing REILs for Runway 30 improves operational safety.
Cost Estimate: $100,000
Funding Eligibility: AIP – 90.7% / Local – 9.3%

Project #17: Design/Construct: Vehicle Parking Lot Expansion
Description: This project is the expansion of vehicle parking capacity in the terminal area adding approximately 200 new spaces.
Cost Estimate: $1,500,000
Funding Eligibility: AIP – 90.7% / Local – 9.3%

Project #18: Design/Construct: Tower Apron Redevelopment
Description: This project begins the redevelopment of the tower apron by demolishing old hangar structures, clearing and grading the site for development of new hangar facilities and the ARFF station, and utility upgrades.
Cost Estimate: $2,500,000
Funding Eligibility: AIP – 0.0% / Local – 100.0%

Project #19: Design/Construct: ARFF Station Relocation
Description: This is the construction of a new ARFF station on the tower apron. The current ARFF station will then be vacated and made available for the establishment of an international customs facility.
Cost Estimate: $8,800,000
Funding Eligibility: AIP – 90.7% / Local – 9.3%

Project #20: Design/Construct: International Customs Facility
Description: Once a new ARFF station is constructed on the tower apron, the vacated ARFF station site will be redeveloped for use as an international customs facility.
Cost Estimate: $5,400,000
Funding Eligibility: AIP – 90.7% / Local – 9.3%

Project #21: Design/Construct: Corporate Hangar Taxilane Expansion
Description: As dictated by demand, this project constructs new taxilane pavement to access new privately-constructed corporate hangars.
Cost Estimate: $2,700,000
Funding Eligibility: AIP – 90.7% / Local – 9.3%

Project #22: Design/Construct: Water Well Relocation
Description: A water well located between the itinerant and cargo aprons will be relocated to a location to be determined on the Airport to allow for an expansion connecting the itinerant and cargo aprons.
Cost Estimate: $1,500,000
Funding Eligibility: AIP – 90.7% / Local – 9.3%

Project #23: Design/Construct: Transient Apron Expansion
Description: This project extends the transient apron connecting with the cargo apron providing additional aircraft parking capacity.
Cost Estimate: $2,700,000
Funding Eligibility: AIP – 90.7% / Local – 9.3%

Project #24: Design/Construct: Relocate ASOS Equipment
Description: The ASOS equipment is currently located south of Runway 12-30 on the site planned for the dedicated USFS apron. This project relocates the ASOS equipment to a site on the northwest side of the airfield.
Cost Estimate: $300,000
Funding Eligibility: AIP – 90.7% / Local – 9.3%

Project #25: Design/Construct: USFS Apron
Description: A dedicated USFS apron will provide for adequate aircraft parking and fire-retardant loading pits to accommodate the entire aerial firefighting fleet operating at SMX.
Cost Estimate: $17,000,000
Funding Eligibility: AIP – 0.0% / Local – 100.0%

Intermediate Term CIP Summary

Projects included in the intermediate term continue to improve the overall safety and efficiency of the airfield, establish dedicated facilities for the USFS and international customs, and expand other landside facility capacities. The total investment necessary for the intermediate term CIP is approximately $83.5

million. Approximately $55.8 million is programmed as eligible for federal funding assistance. The remaining $27.7 million is to be provided through local funding sources.

LONG TERM PLANNING PROGRAM

The long term covers the period beyond 2027. This planning horizon includes 15 projects for the timeframe as listed on **Exhibit 5E** and depicted on **Exhibit 5F**. The following section includes a description of each project.

Project #26: Design/Construct: Rehabilitate Taxiways E & H
Description: Pavement rehabilitation is a routine preservation project to extend the useful life of airfield pavement.
Cost Estimate: $4,100,000
Funding Eligibility: AIP – 90.7% / Local – 9.3%

Project #27: Rehabilitate Terminal Apron, Phase 3, & Twy V (construct & reimburse design)
Description: This is funding for the continuation of the rehabilitation of the terminal apron.
Cost Estimate: $3,800,000
Funding Eligibility: AIP – 90.7% / Local – 9.3%

Project #28: Design/Construct: Rehabilitate Main Hangar Apron
Description: Pavement rehabilitation is a routine preservation project to extend the useful life of airfield pavement.
Cost Estimate: $3,300,000
Funding Eligibility: AIP – 90.7% / Local – 9.3%

Project #29: Extend Twy B north to Rwy 12 (construct & reimburse design)
Description: This project improves Taxiway B to serve as a full-length parallel taxiway on the south side of Runway 12-30.
Cost Estimate: $8,800,000
Funding Eligibility: AIP – 90.7% / Local – 9.3%

Project #30: Rehabilitate Rwy 2-20 (construct & reimburse design)
Description: Pavement rehabilitation is a routine preservation project to extend the useful life of airfield pavement.
Cost Estimate: $4,000,000
Funding Eligibility: AIP – 90.7% / Local – 9.3%

Project #31: Design/Construct: Terminal Building Expansion - Phase I
Description: The terminal building is planned to be expanded in two phases. This first phase includes an expansion on the north side of the building adding 15,000 square feet of building space.
Cost Estimate: $4,500,000
Funding Eligibility: AIP – 90.7% / Local – 9.3%

Project #32: Design/Construct: Terminal Building Expansion - Phase II
Description: The terminal building is planned to be expanded in two phases. This second phase includes an expansion on the south side of the building adding 19,000 square feet of building space.
Cost Estimate: $6,650,000
Funding Eligibility: AIP – 90.7% / Local – 9.3%

Project #33: Design/Construct: Parking Garage Structure
Description: A planned parking garage structure would add approximately 400 parking spaces on a three-level structure.
Cost Estimate: $14,000,000
Funding Eligibility: AIP – 90.7% / Local – 9.3%

Project #34: Site Prep: Midfield Development
Description: This project includes the site preparation and utility upgrades of the 200-acre infield area to prepare it for planned hangar and apron development.
Cost Estimate: $11,500,000
Funding Eligibility: AIP – 0.0% / Local – 100.0%

Project #35: Design/Construct: Roadway Extension to South Infield Area
Description: This project extends a new vehicle roadway access to the south infield area.
Cost Estimate: $1,200,000
Funding Eligibility: AIP – 0.0% / Local – 100.0%

Project #36: Design/Construct: New ATCT
Description: This project will construct a new ATCT on the south side of the airfield equipped with modern amenities and equipment for controllers.
Cost Estimate: $5,000,000
Funding Eligibility: AIP – 90.7% / Local – 9.3%

Project #37: Design/Construct: Midfield Apron
Description: A 78,500 square yard apron is planned to accommodate aviation-related businesses on the south side of the airfield.
Cost Estimate: $14,500,000
Funding Eligibility: AIP – 90.7% / Local – 9.3%

Project #38: Design/Construct: Dual-Parallel Taxiway from Taxiway B to Central Coast Jet Center Apron
Description: A dual-parallel taxiway to Taxiway E creates a secondary access/egress point for the south side of the airfield. As development occurs on the south side, this additional taxiway will improve taxiing efficiency.
Cost Estimate: $3,500,000
Funding Eligibility: AIP – 90.7% / Local – 9.3%

Project #39: Design/Construct: Taxiway D, D1, D2
Description: Taxiway D will accommodate aircraft utilizing the crosswind runway on the south side of the airfield.
Cost Estimate: $7,800,000
Funding Eligibility: AIP – 90.7% / Local – 9.3%

Project #40: Design/Construct: T-Hangar Taxilanes
Description: This project adds new taxilane pavement to accommodate six new T-hangar facilities on the south side of the airfield.
Cost Estimate: $3,600,000
Funding Eligibility: AIP – 90.7% / Local – 9.3%

Long Term CIP Summary

The total costs associated with the long term program are estimated at $96.3 million. Of this total, approximately $75.7 million could be eligible for federal funding, and the local share is projected at $20.5 million.

CAPITAL IMPROVEMENT SUMMARY

The CIP is intended as a road map of airport improvements to help guide the SMPAD, Caltrans Aviation Division, and the FAA. The plan as presented will help accommodate increases in forecast demand at SMX over the next 20 years and beyond. The first five years of the CIP are separated into yearly installments, and the intermediate and long term projects are grouped together respectively. The sequence of projects may change due to availability of funds or changing priorities. Nonetheless, this is a comprehensive list of capital projects the Airport should consider in the next 20 years.

The total 20-year CIP proposes approximately $193.9 million in airport development needs. Of this total, approximately $144.4 million (74.4 percent) could be eligible for federal funding assistance. The local funding estimate for the proposed 20-year CIP is $49.6 million. The bulk of the local funding is from projects to prepare the south side for private hangar development and for the construction of a dedicated USFS apron, which can be funded by the Airport or through agreements with third-parties.

CAPITAL IMPROVEMENT FUNDING SOURCES

There are generally four sources of funds used to finance airport development: airport cash flow, revenue/general obligation bonds, federal/state/local grants, and passenger facility charges (PFCs), which are reserved for commercial service airports. Access to these sources of financing varies widely among airports, with some large airports maintaining substantial cash reserves and most small commercial ser-

vice and general aviation airports often requiring subsidies from their sponsors (local and state governments) to fund operating expenses and to finance modest improvements. The SMPAD's revenue sources include airport operating revenues and annual property taxes.

Financing capital improvements at the Airport will not rely solely on the financial resources of the SMPAD. Capital improvement funding is available through various grant-in-aid programs on both the state and federal levels. While some years more funds could be available, the CIP was developed with project phasing in order to appropriately space projects. The following discussion outlines key sources of funding potentially available for capital improvements at the Airport.

FEDERAL GRANTS

Through federal legislation over the years, various grant-in-aid programs have been established to develop and maintain a system of public use airports across the United States. The purpose of this system and its federally based funding is to maintain national defense and to promote interstate commerce. The most recent legislation affecting federal funding was enacted on February 17, 2012 and is titled, the *FAA Modernization and Reform Act of 2012*. The law authorizes FAA appropriations (AIP) at $3.35 billion for fiscal years 2012 through 2015. In 2016, Congress passed legislation (H.R. 636, *FAA Extension, Safety, and Security Act of 2016*) amending the law to expire on September 30, 2017. Subsequently, Congress passed a bill (H.R. 3823, *Disaster Tax Relief and Airport and Airway Extension Act of 2017*) authorizing appropriations to the FAA through March 31, 2018.

Some airport projects are eligible for FAA funding through the Airport Improvement Program (AIP), which provides entitlement funds to airports based, in part, on their annual enplaned passengers and pounds of landed cargo weight. Additional AIP funds, designated as discretionary, may also be used for eligible projects, based on the FAA's national priority system. Although the AIP has been reauthorized several times and the funding formulas have been periodically revised to reflect changing national priorities, the program has remained essentially the same. Public use airports that serve civil aviation like SMX may receive AIP funding for eligible projects, as described in FAA's *Airport Improvement Program Handbook.* The Airport must fund the remaining project costs using a combination of other funding sources, as discussed further below.

Eligible airports, which include those in the *National Plan of Integrated Airport Systems* (NPIAS), such as SMX, can apply for airport improvement grants. **Table 5E** presents the approximate distribution of the AIP funds. Currently, the Airport is eligible to apply for grants which may be funded through several categories.

Funding for AIP-eligible projects is undertaken through a cost-sharing arrangement in which the FAA share varies by airport size and is generally 75 percent for large and medium hub airports and 90 percent for all other airports. Since the early days of federal participation in airport infrastructure projects, Congress has provided a higher federal share for airports located in states with more than five percent of their geographic acreage comprised of public lands and nontaxable Indian lands. For states that qualify,

such as California with 15.74% public/Indian lands, the federal share is increased depending on the airport classification. As a non-hub commercial service airport, the federal share of eligible capital improvement projects for the Airport is up to 90.66 percent of eligible project costs. In exchange for this level of funding, the airport sponsor is required to meet various Grant Assurances, including maintaining the improvement for its useful life, usually 20 years.

TABLE 5E
Federal AIP Funding Distribution

Funding Category	Percent of Total	Funds*
Apportionment/Entitlement		
Passenger Entitlements	26.6%	$891,100,000
Cargo Entitlements	3.5%	$117,250,000
Alaska Supplemental	0.7%	$23,450,000
State Apportionment for Nonprimary Entitlements	12.5%	$418,750,000
State Apportionment Based on Area and Population	7.4%	$247,900,000
Carryover	22.1%	$740,350,000
Small Airport Fund		
Small Hubs	2.2%	$73,700,000
Nonhubs (i.e., MRY)	8.7%	$291,450,000
Nonprimary (GA and Reliever)	4.3%	$144,050,000
Discretionary		
Capacity/Safety/Security/Noise	5.4%	$180,900,000
Pure Discretionary	1.8%	$60,300,000
Set Asides		
Noise	4.2%	$140,700,000
Military Airports Program	0.5%	$16,750,000
Reliever	0.1%	$3,350,000
Totals	100.00%	$3,350,000,000

* FAA *Modernization and Reform Act of 2012 – expired September 30, 2015*
AIP: Airport Improvement Program
Source: FAA Order 5100.38D, Airport Improvement Program Handbook

The *FAA Modernization and Reform Act of 2012* included specific limitations about the eligibility of terminal building construction projects. According to the Act, discretionary funding is limited to $20 million for the cumulative total of all terminal development project costs, which includes access roads leading to/from the terminal building.

The source for AIP funds is the Aviation Trust Fund. The Aviation Trust Fund was established in 1970 to provide funding for aviation capital investment programs (aviation development, facilities and equipment, and research and development). The Aviation Trust Fund also finances the operation of the FAA. It is funded by user fees, including taxes on airline tickets, aviation fuel, and various aircraft parts.

Apportionment (Entitlement) Funds

AIP provides funding for eligible projects at airports through an apportionment (entitlement) program. Primary commercial service airports receive a guaranteed minimum level of federal assistance each year, based on their enplaned passenger levels and Congressional appropriation levels. A primary airport is defined as any commercial service airport enplaning at least 10,000 passengers annually.

An airport enplaning 10,000 or more passengers annually will receive the higher of $1,000,000 or an amount based upon the entitlement formula. The entitlement formula is $7.80 per enplaned passenger for the first 50,000 enplanements, and $5.20 per enplanement for the next 50,000 enplanements. The next 400,000 enplanements provide $2.60 each, and an airport receives $0.65 for the next 500,000 enplanements. For each annual enplanement above one million, the airport receives $0.50.

Under the authorizing statute, individual entitlements are doubled (with a maximum of $26 million and a minimum of $1.0 million per airport sponsor) if Congressional AIP funding in a fiscal year is at least $3.2 billion. The FAA utilizes the official enplanement totals from the Air Carrier Activity Information System (ACAIS) database, which is two years behind the current date for determination of entitlement funds.

Provided the entitlement formula remains the same through the next 20 years, the Airport entitlement funding levels will grow as presented in **Table 5F**; however, it will remain below $1,000,000. Therefore, the Airport will receive the minimum entitlement funding level of $1,000,000 for each FAA Fiscal Year.

TABLE 5F
Formula-based AIP Entitlement Funding
Santa Maria Public Airport

CY	For FY	Passenger Enplanements	First 50,000 Enplanements @ $7.80	Next 50,000 Enplanements @ $5.20	Raw Total	Calculated Passenger Entitlement
2018	2020	46,801	$365,048	$-	$365,048	$730,096
2019	2021	47,652	$371,686	$-	$371,686	$743,371
2020	2022	48,518	$378,440	$-	$378,440	$756,881
2021	2023	49,400	$385,320	$-	$385,320	$770,640
2022	2024	50,100	$390,000	$520	$390,520	$781,040
2023	2025	50,810	$390,000	$4,211	$394,211	$788,422
2024	2026	51,530	$390,000	$7,954	$397,954	$795,908
2025	2027	52,260	$390,000	$11,751	$401,751	$803,501
2026	2028	53,000	$390,000	$15,600	$405,600	$811,200
2027	2029	54,051	$390,000	$21,066	$411,066	$822,131
2028	2030	55,123	$390,000	$26,639	$416,639	$833,279
2029	2031	56,216	$390,000	$32,324	$422,324	$844,648
2030	2032	57,331	$390,000	$38,121	$428,121	$856,242
2031	2033	58,468	$390,000	$44,033	$434,033	$868,067
2032	2034	59,628	$390,000	$50,063	$440,063	$880,125
2033	2035	60,811	$390,000	$56,212	$446,212	$892,423
2034	2036	62,017	$390,000	$62,483	$452,483	$904,965
2035	2037	63,247	$390,000	$68,878	$458,878	$917,756
2036	2038	64,500	$390,000	$75,400	$465,400	$930,800

CY – Calendar Year FY – Fiscal Year
Source: Coffman Associates analysis.

In addition, airports that have over 100 million pounds of landed weight by all-cargo carriers receive a cargo entitlement. The national cargo entitlement fund is established at three percent of the annual AIP appropriation. The airport cargo entitlement is based upon the airport's percentage of total landed weight at all eligible airports. The Airport air cargo figures are not anticipated to exceed the federal threshold for entitlement funds through the planning period.

Small Airport Fund

If a large or medium hub commercial service airport chooses to institute a passenger facility charge (PFC), discussed in more detail below, which is a fee of up to $4.50 on each airline ticket for funding of capital improvement projects, then their apportionment is reduced. A portion of the reduced apportionment goes to the small airport fund. The small airport fund is reserved for small-hub primary commercial service airports, non-hub commercial service airports, and general aviation airports. As a non-hub commercial service airport, SMX is eligible for funds from this source.

Discretionary Funds

In a number of cases, airports face major projects that will require funds in excess of the airport's annual entitlements. Thus, additional funds from discretionary apportionments under AIP become desirable. The primary feature about discretionary funds is that they are distributed on a priority basis. These priorities are established by the FAA, utilizing a priority code system. Under this system, projects are ranked by their purpose. Projects ensuring airport safety and security are ranked as the most important priorities, followed by maintaining current infrastructure development, mitigating noise and other environmental impacts, meeting standards, and increasing system capacity.

It is important to note that competition for discretionary funding is not limited to airports in the State of California or those within the FAA Western Pacific Region. The funds are distributed to all airports in the country and, as such, are more difficult to obtain. High priority projects will often fare favorably, while lower priority projects many times will not receive discretionary grants.

Set-Aside Funds

Portions of AIP funds are set-asides designed to achieve specific funding minimums for noise compatibility planning and implementation, select former military airfields (Military Airport Program), and select reliever airports. It is not anticipated that the Airport will be eligible for this funding category.

FAA Facilities and Equipment (F&E) Program

The Airway Facilities Division of the FAA administers the Facilities and Equipment (F&E) Program. This program provides funding for the installation and maintenance of various navigational aids and equipment of the national airspace system. Under the F&E program, funding is provided for FAA ATCTs, en-route navigational aids, on-airport navigational aids, and approach lighting systems.

Facilities at SMX that are eligible to receive funding from the F&E program include the ATCT and navaids including the instrument landing system.

PASSENGER FACILITY CHARGES

The *Aviation Safety and Capacity Expansion Act of 1990* contained a provision for airports to levy passenger facility charges (PFCs), which is a user fee, for the purposes of preserving, enhancing, or making a significant contribution to airport safety, capacity, security, or to reduce or mitigate noise impacts, improve local air quality, enhance competition, or reduce current or anticipated congestion. PFC revenue may be used on a "pay-as-you-go" basis or leveraged to pay debt service on bonds or other debt used to pay for PFC-eligible projects.

14 CFR, Part 158, of May 29, 1991, establishes the regulations that must be followed by airports choosing to levy PFCs. Passenger facility charges may be imposed by public agencies controlling a commercial service airport with at least 2,500 annual passengers with scheduled service. Authorized agencies were allowed to impose a charge of $1.00, $2.00, or $3.00 per enplaned passenger. Legislation (*AIR-21*) passed in 2000 allowed the cap to increase to $4.50, which remains the current cap level. Prior approval is required from the Department of Transportation (DOT) before an airport is allowed to levy a PFC. The DOT must find that the projected revenues are needed for specific, approved projects. Although FAA is required to approve the collection and use of PFCs, the program permits local collection of PFC revenue through the airlines operating at an airport and provides more flexibility to airport sponsors than AIP funds.

Any AIP-eligible project, whether development or planning related, is eligible for PFC funding. Gates and related areas for the movement of passengers and baggage are eligible, as are on-airport ground access projects. Any project approved must preserve or enhance safety, security, or capacity; reduce/ mitigate noise impacts; or enhance competition among carriers.

PFCs may be used only on approved projects. However, PFCs can be utilized to fund 100 percent of a project. They may also be used as matching funds for AIP grants or to augment AIP-funded projects. PFCs can be used for debt service and financing costs of bonds for eligible airport development. These funds may also be commingled with general revenue for bond debt service. Before submitting a PFC application, the airport must give notice and an opportunity for consultation with airlines operating at the airport.

PFCs are to be treated similar to other airport improvement grants, rather than as airport revenues, and are administered by the FAA. Airlines retain up to 11 cents per passenger for collecting PFCs. It should also be noted that only revenue passengers pay PFCs. Non-revenue passengers, such as those using frequent flier rewards or airline personnel, are counted as enplanements but do not generate PFCs. The Airport already imposes a $4.50 PFC to fund capital projects. **Table 5G** presents the maximum PFC revenue that can be generated based on the enplanement forecast and the current PFC rate imposed at the Airport.

TABLE 5G
Projected Annual PFC Funding Availability
Santa Maria Public Airport

CY	Enplanements	PFC Revenue
2018	46,801	$205,456
2019	47,652	$209,192
2020	48,518	$212,994
2021	49,400	$216,866
2022	50,100	$219,939
2023	50,810	$223,056
2024	51,530	$226,217
2025	52,260	$229,421
2026	53,000	$232,670
2027	54,051	$237,284
2028	55,123	$241,990
2029	56,216	$246,788
2030	57,331	$251,683
2031	58,468	$256,675
2032	59,628	$261,767
2033	60,811	$266,960
2034	62,017	$272,255
2035	63,247	$277,654
2036	64,500	$283,155

CY - Calendar Year
Note: Assumes $4.39 per enplanements.
Source: Coffman Associates analysis.

STATE FUNDING PROGRAMS

All California state grant programs for airports are funded from the Aeronautics Account in the California State Transportation Fund. Tax revenues, which are collected on general aviation fuel, are deposited in the Aeronautics Account. General aviation jet fuel is taxed at $.02 per gallon, and Avgas is taxed at $.18 per gallon.

The Revenue and Taxation Code spells out the priority for expenditure of funds:

- Administration and collection of taxes;
- Operations of Division of Aeronautics; and
- Grants to airports.

The Public Utilities Code further specifies the priority of allocation of Aeronautics Account funds to airports:

- Annual Credit Grants;
- AIP Matching; and
- Acquisition and Development (A&D) grants.

Annual Credit Grants

To receive an Annual Credit Grant, the airport cannot be designated by the FAA as a reliever or commercial service airport. The Annual Credit Grant can fund projects for "airports and aviation purposes" as defined in the *State Aeronautics Act*. It can also be used to fund fueling facilities, restrooms, showers,

wash racks, and operations and maintenance. The annual funding level is $10,000, and up to five years' worth of Annual Credit Grants may be accrued at the sponsor's discretion. No local match is required. SMX is not eligible for an Annual Credit Grant as it is a commercial service airport.

AIP Matching Grants

A portion of FAA AIP grants can be matched with state funds. The current matching rate is 5.0 percent of the federal portion of the total project cost. A project which is being funded by an AIP grant must be included in the airport CIP. The amount set aside for AIP matching is determined by the California Transportation Commission (CTC) each year. Unused set-aside funds are available for additional A&D Grants.

State matching is limited to projects at airports that are not designated as commercial service airports. SMX is not eligible for AIP Matching Grants as it is a commercial service airport.

Acquisition & Development (A&D) Grants

This grant program is open to general aviation, reliever, and commercial service airports. Also, a city or county may receive grants on behalf of a privately owned, public-use airport. An airport land use commission (ALUC) can receive funding to either prepare or update a comprehensive land use plan. Similar to state Annual Grants, an A&D grant can fund projects for "airport and aviation purposes" as defined in the *State Aeronautics Act*. An A&D grant cannot be used as a local match for an AIP grant. The minimum amount of an A&D grant is $10,000, while the maximum amount that can be allocated to an airport in a single fiscal year is $500,000 through single or multiple grants. The local match can vary from 10 to 50 percent of the project's cost and is set annually by the CTC. A 10 percent rate has been used the past 15 years.

California Airport Loan Program

Eligible airports, including SMX, can obtain low interest loans for airport development projects, the local matching portion of an AIP grant, and revenue-generating projects, such as fuel farms and hangars. Land banking, airport access roads, parking lots, and airline facilities are not eligible under the loan program. Currently, there is no limit on the size of the loans except the availability of funds.

LOCAL FUNDING

The balance of project costs, after consideration has been given to grants, must be funded through local resources. A goal for any airport is to generate enough revenue to cover all operating and capital expenditures, if possible. For most airports, this is not always possible and other financing methods may be needed.

There are several local financing options to fund future development at airports, including airport revenues, issuance of a variety of bond types, and leasehold financing. These strategies could be used to fund the local matching share or complete a project if grant funding cannot be arranged.

Bonding

Bonding is a common method to finance large capital projects at airports. A bond is an instrument of indebtedness of the bond issuer to the bond holders, thus a bond is a form of loan or IOU. While bond terms are negotiable, typically the bond issuer is obligated to pay the bond holder interest at regular intervals and/or repay the principal at a later date.

Leasehold Financing

Leasehold financing refers to a developer or tenant financing improvements under a long-term ground lease. The advantage of this arrangement is that is relieves SMPAD of the responsibility of having to raise capital funds for the improvement. As an example, an FBO might consider constructing hangars and charging fair market lease rates while paying the airport for a ground lease. A fuel farm can be undertaken in the same manner with the developer of the facility paying the airport a fuel flowage fee.

Customer Facility Charge (CFC)

A CFC is the imposition of an additional fee charged to customers for the use of certain facilities. The most common example is when an airport constructs a consolidated rental car facility and imposes a fee for each rental car contract. That fee is then used by the airport to pay down the debt incurred from building the facility.

FUNDING PLAN

The underlying strategy used to develop the funding plan of the CIP is to apply the maximum anticipated AIP entitlement funding to eligible project costs. The local matching share is then added to that, and then the anticipated maximum PFC funds are applied (PFC funds can be applied to the local matching share). Once AIP entitlement and PFC funding sources have been applied to eligible project costs, the remaining balance is what is eligible for FAA discretionary funding. At a minimum, the Airport would have to provide a match of any discretionary funds provided. In addition, the Airport would be responsible for any non-eligible project costs (typically revenue-producing facilities).

Table 5H outlines the maximum potential funds from AIP entitlements, PFCs, and FAA discretionary funds that could be attained during each planning horizon, based upon the activity levels forecast and current FAA funding mechanisms. This analysis assumes that the short term horizon would be attained

in five years, the intermediate horizon would be achieved in the next five years, and the long term horizon would be achieved in an additional nine years to 2036. Each horizon includes the aggregate total costs and funds available for the given planning horizon. The last two rows of the table show the range of potential expenses for the Airport to complete all projects in the 20-year CIP.

TABLE 5H
CIP Financial Assumptions (2018$)
Santa Maria Public Airport

	Short Term	Intermediate Term	Long Term
Total Project Costs	$14,177,000	$83,500,000	$96,250,000
Grant Eligible	$12,852,840	$55,755,026	$75,745,176
AIP Entitlements (-)	$5,000,000	$5,000,000	$10,000,000
Remaining Grant Eligible Costs	$7,852,840	$50,755,026	$65,745,176
Matching Share Costs (+)	$1,324,160	$5,744,974	$7,804,824
Remaining PFC-Eligible Costs	$9,177,000	$56,500,000	$73,550,000
Total PFC Funds Applicable (-)	$436,805	$1,148,645	$2,358,910
Remaining Eligible for FAA Discretionary Funds	$8,740,195	$55,351,355	$71,191,090
Remaining Local Match	$816,518	$5,170,982	$6,650,747
Non-Eligible Costs	$-	$22,000,000	$12,700,000
Airport CIP Costs High End[1]	$8,740,195	$55,351,355	$71,191,090
Airport CIP Costs Low End[2]	$816,518	$27,170,982	$19,350,747

[1]Assumes no discretionary FAA funding.
[2]Assumes eligible costs receive full discretionary FAA funding.
AIP - Airport Improvement Program
PFC - Passenger Facility Charge

Note: This table does not reflect the $20 million limit on discretionary funding for certain terminal construction projects as outlined in the FAA Modernization and Reform Act of 2012.
Note: This table assumes current FAA funding sources/levels remain in place through the 20-year planning horizon.

All projects identified for the short term planning horizon are considered eligible for FAA AIP and/or PFC funding. Approximately $8.7 million in short term eligible project costs would not be covered by anticipated AIP/PFC funds but would be eligible for discretionary FAA funding. With full FAA discretionary funding, the SMPAD would be responsible for their matching share of $0.8 million.

In the intermediate planning horizon, approximately $83.5 million in project costs have been identified. Of this total, approximately $22.0 million is considered non-eligible for FAA grant funding and would therefore be the local responsibility. Approximately $55.4 million in eligible project costs would remain after applying the maximum anticipated AIP and PFC funds. With full FAA discretionary funding, the SMPAD would be responsible for their matching share ($5.2 million) plus the non-eligible costs, or a total of $27.2 million.

In the long term planning horizon, approximately $96.3 million in project costs have been identified. Of this total, approximately $12.7 million is considered non-eligible for FAA grant funding. Eligible project

costs remaining after applying maximum anticipated AIP and PFC funds total approximately $71.2 million. The SMPAD would be responsible for their matching share ($6.7 million) plus the non-eligible costs for a total of $19.4 million.

SUMMARY

The best means to begin implementation of the recommendations in the Master Plan is to first recognize that planning is a continuous process that does not end with completion and approval of this document. Rather, the ability to continuously monitor the existing and forecast status of Airport activity must be provided and maintained. The issues upon which the Master Plan is based will remain valid for a number of years. The primary goal is for the Airport to best serve the air transportation needs of the region, while continuing to be economically self-sufficient.

The actual need for facilities is most appropriately established by Airport activity levels rather than a specified date. For example, projections have been made as to when additional hangars may be needed at the Airport. However, the timeframe in which the development is needed may be substantially different. Actual demand may be slower to develop than expected. On the other hand, high levels of demand may establish the need to accelerate the development. Although every effort has been made in this master planning process to conservatively estimate when facility development may be needed, actual aviation demand will dictate when facility improvements need to be delayed or accelerated.

The real value of a usable master plan is in keeping the issues and objectives in the minds of the managers and decision-makers so that they are better able to recognize change and its effect. In addition to adjustments in aviation demand, decisions made as to when to undertake the improvements recommended in the Master Plan will impact the period that the plan remains valid. The format used in this Plan is intended to reduce the need for formal and costly updates by simply adjusting the timing. Updating can be done by the SMPAD, thereby improving the plan's effectiveness.

In summary, the planning process requires the Airport management to consistently monitor the progress of the Airport in terms of aircraft operations and based aircraft. Analysis of aircraft demand is critical to the timing and need for certain airport facilities. The information obtained from continually monitoring Airport activity will provide the data necessary to determine if the development schedule should be accelerated or decelerated.

SANTA MARIA
PUBLIC AIRPORT



APPENDIX A
GLOSSARY OF TERMS

Glossary of Terms

A

ABOVE GROUND LEVEL: The elevation of a point or surface above the ground.

ACCELERATE-STOP DISTANCE AVAILABLE (ASDA): See declared distances.

ADVISORY CIRCULAR: External publications issued by the FAA consisting of nonregulatory material providing for the recommendations relative to a policy, guidance and information relative to a specific aviaı on subject.

AIR CARRIER: An operator which: (1) performs at least five round trips per week between two or more points and publishes flight schedules which specify the ı mes, days of the week, and places between which such flights are performed; or (2) transports mail by air pursuant to a current contract with the U.S. Postal Service. Cerı fied in accordance with Federal Aviaı on Regulaı on (FAR) Parts 121 and 127.

AIRCRAFT: A transportaı on vehicle that is used or intended for use for flight.

AIRCRAFT APPROACH CATEGORY: A grouping of aircraı based on 1.3 ı mes the stall speed in their landing configuraı on at their maximum cerı ficated landing weight. The categories are as follows:

- Category A: Speed less than 91 knots.
- Category B: Speed 91 knots or more, but less than 121 knots.
- Category C: Speed 121 knots or more, but less than 141 knots.
- Category D: Speed 141 knots or more, but less than 166 knots.
- Category E: Speed greater than 166 knots.

AIRCRAFT OPERATION: The landing, takeoff, or touch-and-go procedure by an aircraft on a runway at an airport.

AIRCRAFT OPERATIONS AREA (AOA): A restricted and secure area on the airport property designed to protect all aspects related to aircraft operaı ons.

AIRCRAFT OWNERS AND PILOTS ASSOCIATION: A private organizaı on serving the interests and needs of general aviaı on pilots and aircraı owners.

AIRCRAFT RESCUE AND FIRE FIGHTING: A facility located at an airport that provides emergency vehicles, exı nguishing agents, and personnel responsible for minimizing the impacts of an aircraı accident or incident.

AIRFIELD: The porı on of an airport which contains the facilıı es necessary for the operaı on of aircraı .

AIRLINE HUB: An airport at which an airline concentrates a significant portion of its activity and which often has a significant amount of connecting traffic.

AIRPLANE DESIGN GROUP (ADG): A grouping of aircraı based upon wingspan. The groups are as follows:

- Group I: Up to but not including 49 feet.
- Group II: 49 feet up to but not including 79 feet.
- Group III: 79 feet up to but not including 118 feet.
- Group IV: 118 feet up to but not including 171 feet.
- Group V: 171 feet up to but not including 214 feet.
- Group VI: 214 feet or greater.

AIRPORT AUTHORITY: A quasi-governmental public organizaı on responsible for seı ng the policies governing the management and operaı on of an airport or system of airports under its jurisdicı on.

AIRPORT BEACON: A navigaı onal aid located at an airport which displays a rotaı ng light beam to ideni fy whether an airport is lighted.

AIRPORT CAPITAL IMPROVEMENT PLAN: The planning program used by the Federal Aviaı on Administraı on to ideni fy, priorii ze, and distribute funds for airport development and the needs of the Naı onal Airspace System to meet specified naı onal goals and objecı ves.

AIRPORT ELEVATION: The highest point on the runway system at an airport expressed in feet above mean sea level (MSL).

AIRPORT IMPROVEMENT PROGRAM: A program authorized by the Airport and Airway Improvement Act of 1982 that provides funding for airport planning and development.

AIRPORT LAYOUT DRAWING (ALD): The drawing of the airport showing the layout of exis. ng and proposed airport facilities.

AIRPORT LAYOUT PLAN (ALP): A scaled drawing of the existing and planned land and facilities necessary for the operation and development of the airport.

AIRPORT LAYOUT PLAN DRAWING SET: A set of technical drawings depicting the current and future airport conditions. The individual sheets comprising the set can vary with the complexities of the airport, but the FAA-required drawings include the Airport Layout Plan (sometimes referred to as the Airport Layout Drawing (ALD), the Airport Airspace Drawing, and the Inner Portion of the Approach Surface Drawing, On-Airport Land Use Drawing, and Property Map.

AIRPORT MASTER PLAN: The planner's concept of the long-term development of an airport.

AIRPORT MOVEMENT AREA SAFETY SYSTEM: A system that provides automated alerts and warnings of potential runway incursions or other hazardous aircraft movement events.

AIRPORT OBSTRUCTION CHART: A scaled drawing depicting the Federal Aviation Regulation (FAR) Part 77 surfaces, a representation of objects that penetrate these surfaces, runway, taxiway, and ramp areas, navigational aids, buildings, roads and other detail in the vicinity of an airport.

AIRPORT REFERENCE CODE (ARC): A coding system used to relate airport design criteria to the operational (Aircraft Approach Category) to the physical characteristics (Airplane Design Group) of the airplanes intended to operate at the airport.

AIRPORT REFERENCE POINT (ARP): The latitude and longitude of the approximate center of the airport.

AIRPORT SPONSOR: The entity that is legally responsible for the management and operation of an airport, including the fulfillment of the requirements of laws and regulations related thereto.

AIRPORT SURFACE DETECTION EQUIPMENT: A radar system that provides air traffic controllers with a visual representation of the movement of aircraft and other vehicles on the ground on the airfield at an airport.

AIRPORT SURVEILLANCE RADAR: The primary radar located at an airport or in an air traffic control terminal area that receives a signal at an antenna and transmits the signal to air traffic control display equipment defining the location of aircraft in the air. The signal provides only the azimuth and range of aircraft from the location of the antenna.

AIRPORT TRAFFIC CONTROL TOWER (ATCT): A central operations facility in the terminal air traffic control system, consisting of a tower, including an associated instrument flight rule (IFR) room if radar equipped, using air/ground communications and/or radar, visual signaling and other devices to provide safe and expeditious movement of terminal air traffic.

AIR ROUTE TRAFFIC CONTROL CENTER: A facility which provides en route air traffic control service to aircraft operating on an IFR flight plan within controlled airspace over a large, multi-state region.

AIRSIDE: The portion of an airport that contains the facilities necessary for the operation of aircraft.

AIRSPACE: The volume of space above the surface of the ground that is provided for the operation of aircraft.

AIR TAXI: An air carrier certificated in accordance with FAR Part 121 and FAR Part 135 and authorized to provide, on demand, public transportation of persons and property by aircraft. Generally operates small aircraft "for hire" for specific trips.

AIR TRAFFIC CONTROL: A service operated by an appropriate organization for the purpose of providing for the safe, orderly, and expeditious flow of air traffic.

AIR ROUTE TRAFFIC CONTROL CENTER (ARTCC): A facility established to provide air traffic control service to aircraft operating on an IFR flight plan within controlled airspace and principally during the en route phase of flight.

AIR TRAFFIC CONTROL SYSTEM COMMAND CENTER: A facility operated by the FAA which is responsible for the central flow control, the central altitude reservation system, the airport reservation position system, and the air traffic service contingency command for the air traffic control system.

AIR TRAFFIC HUB: A categoriza. on of commercial service airports or group of commercial service airports in a metropolitan or urban area based upon the proportion of annual national enplanements existing at the airport or airports. The categories are large hub, medium hub, small hub, or non-hub. It forms the basis for the apportionment of entitlement funds.

AIR TRANSPORT ASSOCIATION OF AMERICA: An organization consisting of the principal U.S. airlines that represents the interests of the airline industry on major aviation issues before federal, state, and local government bodies. It promotes air transportation safety by coordinating industry and governmental safety programs and it serves as a focal point for industry efforts to standardize practices and enhance the efficiency of the air transportation system.

ALERT AREA: See special-use airspace.

ALTITUDE: The vertical distance measured in feet above mean sea level.

ANNUAL INSTRUMENT APPROACH (AIA): An approach to an airport with the intent to land by an aircraft in accordance with an IFR flight plan when visibility is less than three miles and/or when the ceiling is at or below the minimum initial approach altitude.

APPROACH LIGHTING SYSTEM (ALS): An airport lighting facility which provides visual guidance to landing aircraft by radiating light beams by which the pilot aligns the aircraft with the extended centerline of the runway on his final approach and landing.

APPROACH MINIMUMS: The altitude below which an aircraft may not descend while on an IFR approach unless the pilot has the runway in sight.

APPROACH SURFACE: An imaginary obstruction limiting surface defined in FAR Part 77 which is longitudinally centered on an extended runway centerline and extends outward and upward from the primary surface at each end of a runway at a designated slope and distance based upon the type of available or planned approach by aircraft to a runway.

APRON: A specified portion of the airfield used for passenger, cargo or freight loading and unloading, aircraft parking, and the refueling, maintenance and servicing of aircraft.

AREA NAVIGATION: The air navigation procedure that provides the capability to establish and maintain a flight path on an arbitrary course that remains within the coverage area of navigational sources being used.

AUTOMATED TERMINAL INFORMATION SERVICE (ATIS): The continuous broadcast of recorded non-control information at towered airports. Information typically includes wind speed, direction, and runway in use.

AUTOMATED SURFACE OBSERVATION SYSTEM (ASOS): A reporting system that provides frequent airport ground surface weather observation data through digitized voice broadcasts and printed reports.

AUTOMATIC WEATHER OBSERVATION STATION (AWOS): Equipment used to automatically record weather conditions (i.e. cloud height, visibility, wind speed and direction, temperature, dew point, etc.)

AUTOMATIC DIRECTION FINDER (ADF): An aircraft radio navigation system which senses and indicates the direction to a non-directional radio beacon (NDB) ground transmitter.

AVIGATION EASEMENT: A contractual right or a property interest in land over which a right of unobstructed flight in the airspace is established.

AZIMUTH: Horizontal direction expressed as the angular distance between true north and the direction of a fixed point (as the observer's heading).

B

BASE LEG: A flight path at right angles to the landing runway off its approach end. The base leg normally extends from the downwind leg to the intersection of the extended runway centerline. See "traffic pattern."

BASED AIRCRAFT: The general aviation aircraft that use a specific airport as a home base.

BEARING: The horizontal direction to or from any point, usually measured clockwise from true north or magnetic north.

BLAST FENCE: A barrier used to divert or dissipate jet blast or propeller wash.

BLAST PAD: A prepared surface adjacent to the end of a runway for the purpose of elimina. ng the erosion of the ground surface by the wind forces produced by airplanes at the initiation of takeoff operations.

BUILDING RESTRICTION LINE (BRL): A line which identifies suitable building area locations on the airport.

C

CAPITAL IMPROVEMENT PLAN: The planning program used by the Federal Aviation Administration to identify, prioritize, and distribute Airport Improvement Program funds for airport development and the needs of the National Airspace System to meet specified national goals and objectives.

CARGO SERVICE AIRPORT: An airport served by aircraft providing air transportation of property only, including mail, with an annual aggregate landed weight of at least 100,000,000 pounds.

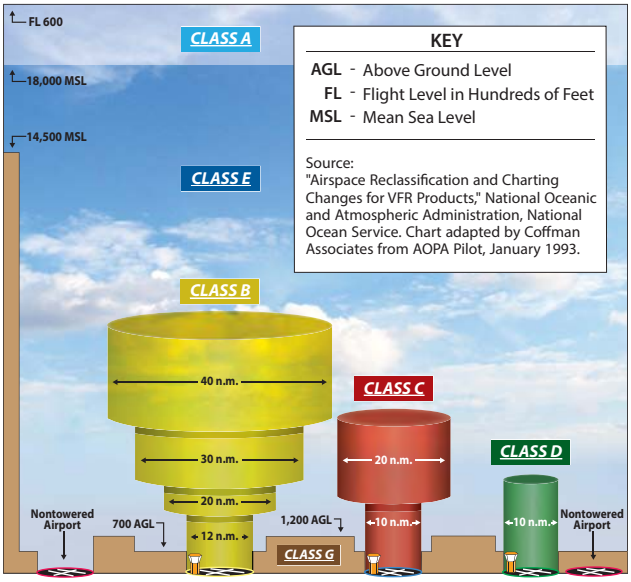
CATEGORY I: An Instrument Landing System (ILS) that provides acceptable guidance information to an aircraft from the coverage limits of the ILS to the point at which the localizer course line intersects the glide path at a decision height of 200 feet above the horizontal plane containing the runway threshold.

CATEGORY II: An ILS that provides acceptable guidance information to an aircraft from the coverage limits of the ILS to the point at which the localizer course line intersects the glide path at a decision height of 100 feet above the horizontal plane containing the runway threshold.

CATEGORY III: An ILS that provides acceptable guidance information to a pilot from the coverage limits of the ILS with no decision height specified above the horizontal plane containing the runway threshold.

CEILING: The height above the ground surface to the location of the lowest layer of clouds which is reported as either broken or overcast.

CIRCLING APPROACH: A maneuver initiated by the pilot to align the aircraft with the runway for landing when flying a predetermined circling instrument approach under IFR.



CLASS A AIRSPACE: See Controlled Airspace.

CLASS B AIRSPACE: See Controlled Airspace.

CLASS C AIRSPACE: See Controlled Airspace.

CLASS D AIRSPACE: See Controlled Airspace.

CLASS E AIRSPACE: See Controlled Airspace.

CLASS G AIRSPACE: See Controlled Airspace.

CLEAR ZONE: See Runway Protection Zone.

COMMERCIAL SERVICE AIRPORT: A public airport providing scheduled passenger service that enplanes at least 2,500 annual passengers.

COMMON TRAFFIC ADVISORY FREQUENCY: A radio frequency identified in the appropriate aeronautical chart which is designated for the purpose of transmitting airport advisory information and procedures while operating to or from an uncontrolled airport.

COMPASS LOCATOR (LOM): A low power, low/medium frequency radio-beacon installed in conjunction with the instrument landing system at one or two of the marker sites.

CONICAL SURFACE: An imaginary obstruction-limiting surface defined in FAR Part 77 that extends

from the edge of the horizontal surface outward and upward at a slope of 20 to 1 for a horizontal distance of 4,000 feet.

CONTROLLED AIRPORT: An airport that has an opera. ng airport traffic control tower.

CONTROLLED AIRSPACE: Airspace of defined dimensions within which air traffic control services are provided to instrument flight rules (IFR) and visual flight rules (VFR) flights in accordance with the airspace classification. Controlled airspace in the United States is designated as follows:

- **CLASS A**: Generally, the airspace from 18,000 feet mean sea level (MSL) up to but not including flight level FL600. All persons must operate their aircraft under IFR.

- **CLASS B**:
  Generally, the airspace from the surface to 10,000 feet MSL surrounding the nation's busiest airports. The configuration of Class B airspace is unique to each airport, but typically consists of two or more layers of air space and is designed to contain all published instrument approach procedures to the airport. An air traffic control clearance is required for all aircraft to operate in the area.

- **CLASS C**: Generally, the airspace from the surface to 4,000 feet above the airport elevation (charted as MSL) surrounding those airports that have an operational control tower and radar approach control and are served by a qualifying number of IFR operations or passenger enplanements. Although individually tailored for each airport, Class C airspace typically consists of a surface area with a five nautical mile (nm) radius and an outer area with a 10 nautical mile radius that extends from 1,200 feet to 4,000 feet above the airport elevation. Two-way radio communication is required for all aircraft.

- **CLASS D**: Generally, that airspace from the surface to 2,500 feet above the air port elevation (charted as MSL) surrounding those airports that have an operational control tower. Class D airspace is individually tailored and configured to encompass published instrument approach procedure. Unless otherwise authorized, all persons must establish two-way radio communication.

- **CLASS E**: Generally, controlled airspace that is not classified as Class A, B, C, or D. Class E airspace extends upward from either the surface or a designated altitude to the overlying or adjacent controlled airspace. When designated as a surface area, the airspace will be configured to contain all instrument procedures. Class E airspace encompasses all Victor Airways. Only aircraft following instrument flight rules are required to establish two-way radio communication with air traffic control.

- **CLASS G**: Generally, that airspace not classified as Class A, B, C, D, or E. Class G airspace is uncontrolled for all aircraft. Class G airspace extends from the surface to the overlying Class E airspace.

CONTROLLED FIRING AREA: See special-use airspace.

CROSSWIND: A wind that is not parallel to a runway centerline or to the intended flight path of an aircraft.

CROSSWIND COMPONENT: The component of wind that is at a right angle to the runway centerline or the intended flight path of an aircraft.

CROSSWIND LEG: A flight path at right angles to the landing runway off its upwind end. See "traffic pattern."

D

DECIBEL: A unit of noise representing a level relative to a reference of a sound pressure 20 micro newtons per square meter.

DECISION HEIGHT/ DECISION ALTITUDE: The height above the end of the runway surface at which a decision must be made by a pilot during the ILS or Precision Approach Radar approach to either continue the approach or to execute a missed approach.

DECLARED DISTANCES: The distances declared available for the airplane's takeoff runway, takeoff distance, accelerate-stop distance, and landing distance requirements. The distances are:

- **TAKEOFF RUNWAY AVAILABLE (TORA):** The runway length declared available and suitable for the ground run of an airplane taking off.

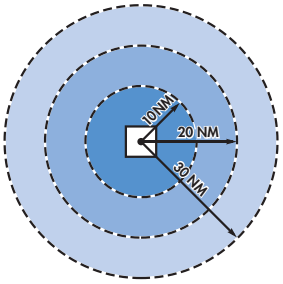
- **TAKEOFF DISTANCE AVAILABLE (TODA):** The TORA plus the length of any remaining runway and/or clear way beyond the far end of the TORA.
- **ACCELERATE-STOP DISTANCE AVAILABLE (ASDA):** The runway plus stopway length declared available for the accelera. on and deceleration of an aircraft aborting a takeoff.
- **LANDING DISTANCE AVAILABLE (LDA):** The runway length declared available and suitable for landing.

DEPARTMENT OF TRANSPORTATION: The cabinet level federal government organization consisting of modal operating agencies, such as the Federal Aviation Administration, which was established to promote the coordination of federal transportation programs and to act as a focal point for research and development efforts in transportation.

DISCRETIONARY FUNDS: Federal grant funds that may be appropriated to an airport based upon designation by the Secretary of Transportation or Congress to meet a specified national priority such as enhancing capacity, safety, and security, or mitigating noise.

DISPLACED THRESHOLD: A threshold that is located at a point on the runway other than the designated beginning of the runway.

DISTANCE MEASURING EQUIPMENT (DME): Equipment (airborne and ground) used to measure, in nautical miles, the slant range distance of an aircraft from the DME navigational aid.



DNL: The 24-hour average sound level, in Aweighted decibels, obtained after the addition of ten decibels to sound levels for the periods between 10 p.m. and 7 a.m. as averaged over a span of one year. It is the FAA standard metric for determining the cumulative exposure of individuals to noise.

DOWNWIND LEG: A flight path parallel to the landing runway in the direction opposite to landing. The downwind leg normally extends between the crosswind leg and the base leg. Also see "traffic pattern."

E

EASEMENT: The legal right of one party to use a portion of the total rights in real estate owned by another party. This may include the right of passage over, on, or below the property; certain air rights above the property, including view rights; and the rights to any specified form of development or activity, as well as any other legal rights in the property that may be specified in the easement document.

ELEVATION: The vertical distance measured in feet above mean sea level.

ENPLANED PASSENGERS: The total number of revenue passengers boarding aircraft, including originating, stop-over, and transfer passengers, in scheduled and nonscheduled services.

ENPLANEMENT: The boarding of a passenger, cargo, freight, or mail on an aircraft at an airport.

ENTITLEMENT: Federal funds for which a commercial service airport may be eligible based upon its annual passenger enplanements.

ENVIRONMENTAL ASSESSMENT (EA): An environmental analysis performed pursuant to the National Environmental Policy Act to determine whether an action would significantly affect the environment and thus require a more detailed environmental impact statement.

ENVIRONMENTAL AUDIT: An assessment of the current status of a party's compliance with applicable environmental requirements of a party's environmental compliance policies, practices, and controls.

ENVIRONMENTAL IMPACT STATEMENT (EIS): A document required of federal agencies by the National Environmental Policy Act for major projects are legislative proposals affecting the environment. It is a tool for decision-making describing the positive and negative effects of a proposed action and citing alternative actions.

ESSENTIAL AIR SERVICE: A federal program which guarantees air carrier service to selected small cities by providing subsidies as needed to prevent these cities from such service.

F

FEDERAL AVIATION REGULATIONS: The general and permanent rules established by the execu. ve departments and agencies of the Federal Government for aviation, which are published in the Federal Register. These are the aviation subset of the Code of Federal Regulations.

FEDERAL INSPECTION SERVICES: The provision of customs and immigration services including passport inspection, inspection of baggage, the collection of duties on certain imported items, and the inspections for agricultural products, illegal drugs, or other restricted items.

FINAL APPROACH: A flight path in the direction of landing along the extended runway centerline. The final approach normally extends from the base leg to the runway. See "traffic pattern."

FINAL APPROACH AND TAKEOFF AREA (FATO). A defined area over which the final phase of the helicopter approach to a hover, or a landing is completed and from which the takeoff is initiated.

FINAL APPROACH FIX: The designated point at which the final approach segment for an aircraft landing on a runway begins for a non-precision approach.

FINDING OF NO SIGNIFICANT IMPACT (FONSI): A public document prepared by a Federal agency that presents the rationale why a proposed action will not have a significant effect on the environment and for which an environmental impact statement will not be prepared.

FIXED BASE OPERATOR (FBO): A provider of services to users of an airport. Such services include, but are not limited to, hangaring, fueling, flight training, repair, and maintenance.

FLIGHT LEVEL: A measure of altitude used by aircraft flying above 18,000 feet. Flight levels are indicated by three digits representing the pressure altitude in hundreds of feet. An airplane flying at flight level 360 is flying at a pressure altitude of 36,000 feet. This is expressed as FL 360.

FLIGHT SERVICE STATION: An operations facility in the national flight advisory system which utilizes data interchange facilities for the collection and dissemination of Notices to Airmen, weather, and administrative data and which provides pre-flight and in-flight advisory services to pilots through air and ground based communication facilities.

FRANGIBLE NAVAID: A navigational aid which retains its structural integrity and stiffness up to a designated maximum load, but on impact from a greater load, breaks, distorts, or yields in such a manner as to present the minimum hazard to aircraft.

G

GENERAL AVIATION: That portion of civil aviation which encompasses all facets of aviation except air carriers holding a certificate of convenience and necessity, and large aircraft commercial operators.

GENERAL AVIATION AIRPORT: An airport that provides air service to only general aviation.

GLIDESLOPE (GS): Provides vertical guidance for aircraft during approach and landing. The glideslope consists of the following:

1. Electronic components emitting signals which provide vertical guidance by reference to airborne instruments during instrument approaches such as ILS; or

2. Visual ground aids, such as VASI, which provide vertical guidance for VFR approach or for the visual portion of an instrument approach and landing.

GLOBAL POSITIONING SYSTEM (GPS): A system of 48 satellites used as reference points to enable navigators equipped with GPS receivers to determine their latitude, longitude, and altitude.

GROUND ACCESS: The transportation system on and around the airport that provides access to and from the airport by ground transportation vehicles for passengers, employees, cargo, freight, and airport services.

H

HELIPAD: A designated area for the takeoff, landing, and parking of helicopters.

HIGH INTENSITY RUNWAY LIGHTS: The highest classification in terms of intensity or brightness for lights designated for use in delineating the sides of a runway.

HIGH-SPEED EXIT TAXIWAY: A long radius taxiway designed to expedite aircra. turning off the runway after landing (at speeds to 60 knots), thus reducing runway occupancy time.

HORIZONTAL SURFACE: An imaginary obstruction-limiting surface defined in FAR Part 77 that is specified as a portion of a horizontal plane surrounding a runway located 150 feet above the established airport elevation. The specific horizontal dimensions of this surface are a function of the types of approaches existing or planned for the runway.

I

INITIAL APPROACH FIX: The designated point at which the initial approach segment begins for an instrument approach to a runway.

INSTRUMENT APPROACH PROCEDURE: A series of predetermined maneuvers for the orderly transfer of an aircraft under instrument flight conditions from the beginning of the initial approach to a landing, or to a point from which a landing may be made visually.

INSTRUMENT FLIGHT RULES (IFR): Procedures for the conduct of flight in weather conditions below Visual Flight Rules weather minimums. The term IFR is often also used to define weather conditions and the type of flight plan under which an aircraft is operating.

INSTRUMENT LANDING SYSTEM (ILS): A precision instrument approach system which normally consists of the following electronic components and visual aids:

1. Localizer.
2. Glide Slope.
3. Outer Marker.
4. Middle Marker.
5. Approach Lights.

INSTRUMENT METEOROLOGICAL CONDITIONS: Meteorological conditions expressed in terms of specific visibility and ceiling conditions that are less than the minimums specified for visual meteorological conditions.

ITINERANT OPERATIONS: Operations by aircraft that are not based at a specified airport.

K

KNOTS: A unit of speed length used in navigation that is equivalent to the number of nautical miles traveled in one hour.

L

LANDSIDE: The portion of an airport that provides the facilities necessary for the processing of passengers, cargo, freight, and ground transportation vehicles.

LANDING DISTANCE AVAILABLE (LDA): See declared distances.

LARGE AIRPLANE: An airplane that has a maximum certified takeoff weight in excess of 12,500 pounds.

LOCAL AREA AUGMENTATION SYSTEM: A differential GPS system that provides localized measurement correction signals to the basic GPS signals to improve navigational accuracy integrity, continuity, and availability.

LOCAL OPERATIONS: Aircraft operations performed by aircraft that are based at the airport and that operate in the local traffic pattern or within sight of the airport, that are known to be departing for or arriving from flights in local practice areas within a prescribed distance from the airport, or that execute simulated instrument approaches at the airport.

LOCAL TRAFFIC: Aircraft operating in the traffic pattern or within sight of the tower, or aircraft known to be departing or arriving from the local practice areas, or aircraft executing practice instrument approach procedures. Typically, this includes touch and-go training operations.

LOCALIZER: The component of an ILS which provides course guidance to the runway.

LOCALIZER TYPE DIRECTIONAL AID (LDA): A facility of comparable utility and accuracy to a localizer, but is not part of a complete ILS and is not aligned with the runway.

LONG RANGE NAVIGATION SYSTEM (LORAN): Long range navigation is an electronic navigational aid which determines aircraft position and speed by measuring the difference in the time of reception of synchronized pulse signals from two fixed transmitters. Loran is used for en route navigation.

LOW INTENSITY RUNWAY LIGHTS: The lowest classificaı on in terms of intensity or brightness for lights designated for use in delineaı ng the sides of a runway.

M

MEDIUM INTENSITY RUNWAY LIGHTS: The middle classificaı on in terms of intensity or brightness for lights designated for use in delineaı ng the sides of a runway.

MICROWAVE LANDING SYSTEM (MLS): An instrument approach and landing system that provides precision guidance in azimuth, elevaı on, and distance measurement.

MILITARY OPERATIONS: Aircraı operaı ons that are performed in military aircraı .

MILITARY OPERATIONS AREA (MOA): See special-use airspace

MILITARY TRAINING ROUTE: An air route depicted on aeronauı cal charts for the conduct of military flight training at speeds above 250 knots.

MISSED APPROACH COURSE (MAC): The flight route to be followed if, aı er an instrument approach, a landing is not affected, and occurring normally:

1. When the aircraı has descended to the decision height and has not established visual contact; or

2. When directed by air traffic control to pull up or to go around again.

MOVEMENT AREA: The runways, taxiways, and other areas of an airport which are uı lized for taxiing/hover taxiing, air taxiing, takeoff, and landing of aircraı , exclusive of loading ramps and parking areas. At those airports with a tower, air traffic control clearance is required for entry onto the movement area.

N

NATIONAL AIRSPACE SYSTEM: The network of air traffic control facili. es, air traffic control areas, and navigational facilities through the U.S.

NATIONAL PLAN OF INTEGRATED AIRPORT SYSTEMS: The national airport system plan developed by the Secretary of Transportation on a biannual basis for the development of public use airports to meet national air transportation needs.

NATIONAL TRANSPORTATION SAFETY BOARD: A federal government organization established to investigate and determine the probable cause of transportation accidents, to recommend equipment and procedures to enhance transportation safety, and to review on appeal the suspension or revocation of any certificates or licenses issued by the Secretary of Transportation.

NAUTICAL MILE: A unit of length used in navigation which is equivalent to the distance spanned by one minute of arc in latitude, that is, 1,852 meters or 6,076 feet. It is equivalent to approximately 1.15 statute mile.

NAVAID: A term used to describe any electrical or visual air navigational aids, lights, signs, and associated supporting equipment (i.e. PAPI, VASI, ILS, etc.)

NAVIGATIONAL AID: A facility used as, available for use as, or designed for use as an aid to air navigation.

NOISE CONTOUR: A continuous line on a map of the airport vicinity connecting all points of the same noise exposure level.

NON-DIRECTIONAL BEACON (NDB): A beacon transmitting nondirectional signals whereby the pilot of an aircraft equipped with direction finding equipment can determine his or her bearing to and from the radio beacon and home on, or track to, the station. When the radio beacon is installed in conjunction with the Instrument Landing System marker, it is normally called a Compass Locator.

NON-PRECISION APPROACH PROCEDURE: A standard instrument approach procedure in which no electronic glide slope is provided, such as VOR, TACAN, NDB, or LOC.

NOTICE TO AIRMEN: A notice containing information concerning the establishment, condition, or change in any component of or hazard in the National Airspace System, the timely knowledge of which is considered essential to personnel concerned with flight operations.

O

OBJECT FREE AREA (OFA): An area on the ground centered on a runway, taxiway, or taxilane centerline provided to enhance the safety of aircra. operations by having the area free of objects, except for objects that need to be located in the OFA for air navigation or aircraft ground maneuvering purposes.

OBSTACLE FREE ZONE (OFZ): The airspace below 150 feet above the established airport elevation and along the runway and extended runway centerline that is required to be kept clear of all objects, except for frangible visual NAVAIDs that need to be located in the OFZ because of their function, in order to provide clearance for aircraft landing or taking off from the runway, and for missed approaches.

ONE-ENGINE INOPERABLE SURFACE: A surface emanating from the runway end at a slope ratio of 62.5:1. Air carrier airports are required to maintain a technical drawing of this surface depicting any object penetrations by January 1, 2010.

OPERATION: The take-off, landing, or touch-and-go procedure by an aircraft on a runway at an airport.

OUTER MARKER (OM): An ILS navigation facility in the terminal area navigation system located four to seven miles from the runway edge on the extended centerline, indicating to the pilot that he/she is passing over the facility and can begin final approach.

P

PILOT CONTROLLED LIGHTING: Runway lighting systems at an airport that are controlled by activating the microphone of a pilot on a specified radio frequency.

PRECISION APPROACH: A standard instrument approach procedure which provides runway alignment and glide slope (descent) information. It is categorized as follows:

- **CATEGORY I (CAT I)**: A precision approach which provides for approaches with a decision height of not less than 200 feet and visibility not less than 1/2 mile or Runway Visual Range (RVR) 2400 (RVR 1800) with operative touchdown zone and runway centerline lights.
- **CATEGORY II (CAT II)**: A precision approach which provides for approaches with a decision height of not less than 100 feet and visibility not less than 1200 feet RVR.
- **CATEGORY III (CAT III)**: A precision approach which provides for approaches with minima less than Category II.

PRECISION APPROACH PATH INDICATOR (PAPI): A lighting system providing visual approach slope guidance to aircraft during a landing approach. It is similar to a VASI but provides a sharper transition between the colored indicator lights.

PRECISION APPROACH RADAR: A radar facility in the terminal air traffic control system used to detect and display with a high degree of accuracy the direction, range, and elevation of an aircraft on the final approach to a runway.

PRECISION OBJECT FREE AREA (POFA): An area centered on the extended runway centerline, beginning at the runway threshold and extending behind the runway threshold that is 200 feet long by 800 feet wide. The POFA is a clearing standard which requires the POFA to be kept clear of above ground objects protruding above the runway safety area edge elevation (except for frangible NAVAIDS). The POFA applies to all new authorized instrument approach procedures with less than 3/4 mile visibility.

PRIMARY AIRPORT: A commercial service airport that enplanes at least 10,000 annual passengers.

PRIMARY SURFACE: An imaginary obstruction limiting surface defined in FAR Part 77 that is specified as a rectangular surface longitudinally centered about a runway. The specific dimensions of this surface are a function of the types of approaches existing or planned for the runway.

PROHIBITED AREA: See special-use airspace.

PVC: Poor visibility and ceiling. Used in determining Annual Service Volume. PVC conditions exist when the cloud ceiling is less than 500 feet and visibility is less than one mile.

R

RADIAL: A navigational signal generated by a Very High Frequency Omni-directional Range or VORTAC station that is measured as an azimuth from the station.

REGRESSION ANALYSIS: A statistical technique that seeks to identify and quantify the relationships between factors associated with a forecast.

REMOTE COMMUNICATIONS OUTLET (RCO): An unstaffed transmitter receiver/facility remotely controlled by air traffic personnel. RCOs serve flight service stations (FSSs). RCOs were established to provide ground-to-ground communications between air traffic control specialists and pilots at satellite airports for delivering en route clearances, issuing departure authorizations, and acknowledging instrument flight rules cancellations or departure/ landing times.

REMOTE TRANSMITTER/RECEIVER (RTR): See remote communications outlet. RTRs serve ARTCCs.

RELIEVER AIRPORT: An airport to serve general aviation aircraft which might otherwise use a congested air-carrier served airport.

RESTRICTED AREA: See special-use airspace.

RNAV: Area navigation - airborne equipment which permits flights over determined tracks within prescribed accuracy tolerances without the need to overfly ground-based navigation facilities. Used en route and for approaches to an airport.

RUNWAY: A defined rectangular area on an airport prepared for aircraft landing and takeoff. Runways are normally numbered in relation to their magnetic direction, rounded off to the nearest 10 degrees. For example, a runway with a magnetic heading of 180 would be designated Runway 18. The runway heading on the opposite end of the runway is 180 degrees from that runway end. For example, the opposite runway heading for Runway 18 would be Runway 36 (magnetic heading of 360). Aircraft can takeoff or land from either end of a runway, depending upon wind direction.

RUNWAY ALIGNMENT INDICATOR LIGHT: A series of high intensity sequentially flashing lights installed on the extended centerline of the runway usually in conjunc. on with an approach lighting system.

RUNWAY DESIGN CODE: A code signifiying the design standards to which the runway is to be built.

RUNWAY END IDENTIFICATION LIGHTING (REIL): Two synchronized flashing lights, one on each side of the runway threshold, which provide rapid and positive identification of the approach end of a particular runway.

RUNWAY GRADIENT: The average slope, measured in percent, between the two ends of a runway.

RUNWAY PROTECTION ZONE (RPZ): An area off the runway end to enhance the protection of people and property on the ground. The RPZ is trapezoidal in shape. Its dimensions are determined by the aircraft approach speed and runway approach type and minima.

RUNWAY REFERENCE CODE: A code signifying the current operational capabilities of a runway and associated taxiway.

RUNWAY SAFETY AREA (RSA): A defined surface surrounding the runway prepared or suitable for reducing the risk of damage to airplanes in the event of an undershoot, overshoot, or excursion from the runway.

RUNWAY VISIBILITY ZONE (RVZ): An area on the airport to be kept clear of permanent objects so that there is an unobstructed line of- site from any point five feet above the runway centerline to any point five feet above an intersecting runway centerline.

RUNWAY VISUAL RANGE (RVR): An instrumentally derived value, in feet, representing the horizontal distance a pilot can see down the runway from the runway end.

S

SCOPE: The document that identifies and defines the tasks, emphasis, and level of effort associated with a project or study.

SEGMENTED CIRCLE: A system of visual indicators designed to provide traffic pattern information at airports without operating control towers.

SHOULDER: An area adjacent to the edge of paved runways, taxiways, or aprons providing a transi. on between the pavement and the adjacent surface; support for aircraft running off the pavement; enhanced drainage; and blast protection. The shoulder does not necessarily need to be paved.

SLANT-RANGE DISTANCE: The straight line distance between an aircraft and a point on the ground.

SMALL AIRCRAFT: An aircraft that has a maximum certified takeoff weight of up to 12,500 pounds.

SPECIAL-USE AIRSPACE: Airspace of defined dimensions identified by a surface area wherein activities must be confined because of their nature and/or wherein limitations may be imposed upon aircraft operations that are not a part of those activities. Special-use airspace classifications include:

- **ALERT AREA**: Airspace which may contain a high volume of pilot training activities or an unusual type of aerial activity, neither of which is hazardous to aircraft.
- **CONTROLLED FIRING AREA**: Airspace wherein activities are conducted under conditions so controlled as to eliminate hazards to nonparticipating aircraft and to ensure the safety of persons or property on the ground.
- **MILITARY OPERATIONS AREA (MOA)**: Designated airspace with defined vertical and lateral dimensions established outside Class A airspace to separate/segregate certain military activities from instrument flight rule (IFR) traffic and to identify for visual flight rule (VFR) traffic where these activities are conducted.
- **PROHIBITED AREA**: Designated airspace within which the flight of aircraft is prohibited.
- **RESTRICTED AREA**: Airspace designated under Federal Aviation Regulation (FAR) 73, within which the flight of aircraft, while not wholly prohibited, is subject to restriction. Most restricted areas are designated joint use. When not in use by the using agency, IFR/VFR operations can be authorized by the controlling air traffic control facility.
- **WARNING AREA:** Airspace which may contain hazards to nonparticipating aircraft.

STANDARD INSTRUMENT DEPARTURE (SID): A preplanned coded air traffic control IFR departure routing, preprinted for pilot use in graphic and textual form only.

STANDARD INSTRUMENT DEPARTURE PROCEDURES: A published standard flight procedure to be utilized following takeoff to provide a transition between the airport and the terminal area or en route airspace.

STANDARD TERMINAL ARRIVAL ROUTE (STAR): A preplanned coded air traffic control IFR arrival routing, preprinted for pilot use in graphic and textual or textual form only.

STOP-AND-GO: A procedure wherein an aircraft will land, make a complete stop on the runway, and then commence a takeoff from that point. A stop-and-go is recorded as two operations: one operation for the landing and one operation for the takeoff.

STOPWAY: An area beyond the end of a takeoff runway that is designed to support an aircraft during an aborted takeoff without causing structural damage to the aircraft. It is not to be used for takeoff, landing, or taxiing by aircraft.

STRAIGHT-IN LANDING/APPROACH: A landing made on a runway aligned within 30 degrees of the final approach course following completion of an instrument approach.

T

TACTICAL AIR NAVIGATION (TACAN): An ultrahigh frequency electronic air navigation system which provides suitably-equipped aircraft a continuous indication of bearing and distance to the TACAN station.

TAKEOFF RUNWAY AVAILABLE (TORA):
See declared distances.

TAKEOFF DISTANCE AVAILABLE (TODA):
See declared distances.

TAXILANE: The portion of the aircraft parking area used for access between taxiways and aircraft parking positions.

TAXIWAY: A defined path established for the taxiing of aircraft from one part of an airport to another.

TAXIWAY DESIGN GROUP: A classification of airplanes based on outer to outer Main Gear Width (MGW) and Cockpit to Main Gear (CMG) distance.

TAXIWAY SAFETY AREA (TSA): A defined surface alongside the taxiway prepared or suitable for reducing the risk of damage to an airplane unintentionally departing the taxiway.

TERMINAL INSTRUMENT PROCEDURES: Published flight procedures for conducting instrument approaches to runways under instrument meteorological conditions.

TERMINAL RADAR APPROACH CONTROL: An element of the air traffic control system responsible for monitoring the en-route and terminal segment of air traffic in the airspace surrounding airports with moderate to high levels of air traffic.

TETRAHEDRON: A device used as a landing direction indicator. The small end of the tetrahedron points in the direction of landing.

THRESHOLD: The beginning of that portion of the runway available for landing. In some instances the landing threshold may be displaced.

TOUCH-AND-GO: An operation by an aircraft that lands and departs on a runway without stopping or exiting the runway. A touch-and go is recorded as two operations: one operation for the landing and one operation for the takeoff.

TOUCHDOWN: The point at which a landing aircraft makes contact with the runway surface.

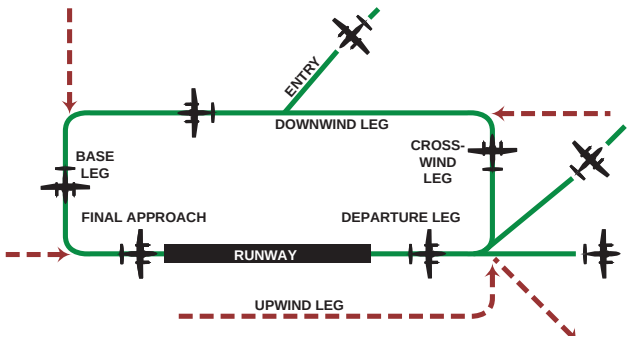
TOUCHDOWN AND LIFT-OFF AREA (TLOF): A load bearing, generally paved area, normally centered in the FATO, on which the helicopter lands or takes off.

TOUCHDOWN ZONE (TDZ): The first 3,000 feet of the runway beginning at the threshold.

TOUCHDOWN ZONE ELEVATION (TDZE): The highest elevation in the touchdown zone.

TOUCHDOWN ZONE (TDZ) LIGHTING: Two rows of transverse light bars located symmetrically about the runway centerline normally at 100- foot intervals. The basic system extends 3,000 feet along the runway.

TRAFFIC PATTERN: The traffic flow that is prescribed for aircraı landing at or taking off from an airport. The components of a typical traffic paı ern are the upwind leg, crosswind leg, downwind leg, base leg, and final approach.



U

UNCONTROLLED AIRPORT: An airport without an air traffic control tower at which the control of Visual Flight Rules traffic is not exercised.

UNCONTROLLED AIRSPACE: Airspace within which aircra. are not subject to air traffic control.

UNIVERSAL COMMUNICATION (UNICOM):
A nongovernment communication facility which may provide airport information at certain airports. Locations and frequencies of UNICOM's are shown on aeronautical charts and publications.

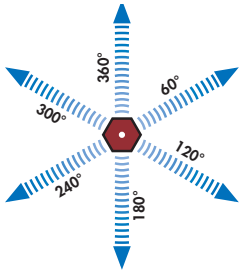
UPWIND LEG: A flight path parallel to the landing runway in the direction of landing. See "traffic pattern."

V

VECTOR: A heading issued to an aircraft to provide navigational guidance by radar.

VERY HIGH FREQUENCY/ OMNIDIRECTIONAL RANGE (VOR): A ground-based electronic navigation aid transmitting very high frequency navigation signals, 360 degrees in azimuth, oriented from magnetic north. Used as the basis for navigation in the national airspace system. The VOR periodically identifies itself by Morse Code and may have an additional voice identification feature.

VERY HIGH FREQUENCY OMNI-DIRECTIONAL RANGE/ TACTICAL AIR NAVIGATION (VORTAC): A naviga. on aid providing VOR azimuth, TACAN azimuth, and TACAN distance-measuring equipment (DME) at one site.



VICTOR AIRWAY: A control area or portion thereof established in the form of a corridor, the centerline of which is defined by radio navigational aids.

VISUAL APPROACH: An approach wherein an aircraft on an IFR flight plan, operating in VFR conditions under the control of an air traffic control facility and having an air traffic control authorization, may proceed to the airport of destination in VFR conditions.

VISUAL APPROACH SLOPE INDICATOR (VASI): An airport lighting facility providing vertical visual approach slope guidance to aircraft during approach to landing by radiating a directional pattern of high intensity red and white focused light beams which indicate to the pilot that he is on path if he sees red/ white, above path if white/white, and below path if red/red. Some airports serving large aircraft have three-bar VASI's which provide two visual guide paths to the same runway.

VISUAL FLIGHT RULES (VFR): Rules that govern the procedures for conducting flight under visual conditions. The term VFR is also used in the United States to indicate weather conditions that are equal to or greater than minimum VFR requirements. In addition, it is used by pilots and controllers to indicate type of flight plan.

VISUAL METEOROLOGICAL CONDITIONS: Meteorological conditions expressed in terms of specific visibility and ceiling conditions which are equal to or greater than the threshold values for instrument meteorological conditions.

VOR: See "Very High Frequency Omnidirectional Range Station."

VORTAC: See "Very High Frequency Omnidirectional Range Station/Tactical Air Navigation."

W

WARNING AREA: See special-use airspace.

WIDE AREA AUGMENTATION SYSTEM: An enhancement of the Global Positioning System that includes integrity broadcasts, differential corrections, and additional ranging signals for the purpose of providing the accuracy, integrity, availability, and continuity required to support all phases of flight.

Abbreviations

AC: advisory circular

ADF: automatic direction finder

ADG: airplane design group

AFSS: automated flight service station

AGL: above ground level

AIA: annual instrument approach

AIP: Airport Improvement Program

AIR-21: Wendell H. Ford Aviation Investment and Reform Act for the 21st Century

ALS: approach lighting system

ALSF-1: standard 2,400-foot high intensity approach lighting system with sequenced flashers (CAT I configuration)

ALSF-2: standard 2,400-foot high intensity approach lighting system with sequenced flashers (CAT II configuration)

AOA: Aircraft Operation Area

APV: instrument approach procedure with vertical guidance

ARC: airport reference code

ARFF: aircra. rescue and fire fighting

ARP: airport reference point

ARTCC: air route traffic control center

ASDA: accelerate-stop distance available

ASR: airport surveillance radar

ASOS: automated surface observation station

ATCT: airport traffic control tower

ATIS: automated terminal information service

AVGAS: aviation gasoline - typically 100 low lead (100LL)

AWOS: automatic weather observation station

BRL: building restriction line

CFR: Code of Federal Regulation

CIP: capital improvement program

DME: distance measuring equipment

DNL: day-night noise level

DWL: runway weight bearing capacity of aircraft with dual-wheel type landing gear

DTWL: runway weight bearing capacity of aircraft with dual-tandem type landing gear

FAA: Federal Aviation Administration

FAR: Federal Aviation Regulation

FBO: fixed base operator

FY: fiscal year

GPS: global positioning system

GS: glide slope

HIRL: high intensity runway edge lighting

IFR: instrument flight rules (FAR Part 91)

ILS: instrument landing system

IM: inner marker

LDA: localizer type directional aid

LDA: landing distance available

LIRL: low intensity runway edge lighting

LMM: compass locator at middle marker

LOM: compass locator at outer marker

LORAN: long range navigation

MALS: medium intensity approach lighting system with indicator lights

MIRL: medium intensity runway edge lighting

MITL: medium intensity taxiway edge lighting

MLS: microwave landing system

MM: middle marker

MOA: military operations area

MSL: mean sea level

NAVAID: navigational aid

NDB: nondirectional radio beacon

NM: nautical mile (6,076.1 feet)

NPES: National Pollutant Discharge Elimination System

NPIAS: National Plan of Integrated Airport Systems

NPRM: notice of proposed rule making

ODALS: omnidirectional approach lighting system

OFA: object free area

OFZ: obstacle free zone

OM: outer marker

PAC: planning advisory commi. ee

PAPI: precision approach path indicator

PFC: porous friction course

PFC: passenger facility charge

PCL: pilot-controlled lighting

PIW public information workshop

PLASI: pulsating visual approach slope indicator

POFA: precision object free area

PVASI: pulsating/steady visual approach slope indicator

PVC: poor visibility and ceiling

RCO: remote communications outlet

RRC: Runway Reference Code

RDC: Runway Design Code

REIL: runway end identification lighting

RNAV: area navigation

RPZ: runway protection zone

RSA: runway safety area

RTR: remote transmitter/receiver

RVR: runway visibility range

RVZ: runway visibility zone

SALS: short approach lighting system

SASP: state aviation system plan

SEL: sound exposure level

SID: standard instrument departure

SM: statute mile (5,280 feet)

SRE: snow removal equipment

SSALF: simplified short approach lighting system with runway alignment indicator lights

STAR: standard terminal arrival route

SWL: runway weight bearing capacity for aircraft with single-wheel tandem type landing gear

TACAN: tactical air navigational aid

TAF: Federal Aviation Administration (FAA) Terminal Area Forecast

TDG: Taxiway Design Group

TLOF: Touchdown and lift-off

TDZ: touchdown zone

TDZE: touchdown zone elevation

TODA: takeoff distance available

TORA: takeoff runway available

TRACON: terminal radar approach control

VASI: visual approach slope indicator

VFR: visual flight rules (FAR Part 91)

VHF: very high frequency

VOR: very high frequency omni-directional range

VORTAC: VOR and TACAN collocated

SANTA MARIA
PUBLIC AIRPORT



APPENDIX B
ENVIRONMENTAL OVERVIEW

Appendix B
ENVIRONMENTAL OVERVIEW

This Environmental Overview begins with an Environmental Inventory (Part One) that addresses the existing conditions at Santa Maria Public Airport (SMX or Airport) and its environs. This inventory is intended to help identify relevant environmental issues that should be considered during preparation of the Airport Master Plan. The inventory is organized using the resource categories contained in Federal Aviation Administration (FAA) Order 1050.1F, *Environmental Impacts: Policies and Procedures* (FAA 2015). Available information regarding the environmental conditions at the Airport and within the surrounding area has been derived from internet resources, agency maps, and existing literature.

Following the environmental inventory information, an evaluation of the potential environmental impacts of proposed airport development projects will be provided (Environmental Evaluation – Part Two) once Chapter Five of the Master Plan has been prepared. The primary purpose of this part of the Environmental Overview will be to evaluate the proposed development program to determine whether proposed actions would affect the quality of the environment using the significance thresholds for the various resource categories contained in FAA Orders 1050.1F and 5050.4B, *National Environmental Policy Act* (NEPA) *Implementing Instructions for Airport Actions*. A preliminary determination of the most likely environmental action under NEPA for proposed short term projects will also be given.

The construction of improvements depicted on the recommended development concept plan will require compliance with NEPA to receive federal financial assistance. For projects not "categorically excluded" under FAA Order 1050.1F, compliance with NEPA is generally satisfied

through the preparation of an Environmental Assessment (EA). In instances where significant environmental impacts are expected, an Environmental Impact Statement (EIS) may be required. While this Environmental Overview is not designed to satisfy the NEPA requirements for a Documented Categorical Exclusion (CatEx), EA, or EIS, it is intended to supply a preliminary review of environmental issues that might affect Master Plan implementation.

PART ONE: ENVIRONMENTAL INVENTORY

Air Quality

The United States (U.S.) Environmental Protection Agency (EPA) has established National Ambient Air Quality Standards (NAAQS) based on health risks for six pollutants: carbon monoxide (CO); nitrogen dioxide (NO_2); sulfur dioxide (SO_2); lead (Pb); ozone (O_3); and two sizes of particulate matter (PM), PM measuring between 10 and 2.5 micrometers in diameter (PM_{10}) and PM measuring 2.5 micrometers or less in diameter ($PM_{2.5}$).

An area with ambient air concentrations exceeding the NAAQS for a criteria pollutant is said to be a nonattainment area for the pollutant's NAAQS, while an area where ambient concentrations are below the NAAQS is considered an attainment area. The U.S. EPA requires that areas designated as nonattainment demonstrate how they will attain the NAAQS by an established deadline. To accomplish this, states are required to prepare State Implementation Plans (SIPs). SIPs are typically a comprehensive set of reduction strategies and emissions budgets designed to bring the area into attainment.

SMX is located in Santa Barbara County, California. According to the U.S. EPA's *Green Book – California Nonattainment/Maintenance Status for Each County by Year for All Criteria Pollutants*, as of October 1, 2015, Santa Barbara County is in attainment for all of the NAAQS standards.

Biological Resources

U.S. Fish and Wildlife Service (USFWS) is charged with overseeing the requirements of the *Endangered Species Act* (ESA), specifically Section 7, which sets forth requirements for consultation to determine if a proposed action "may affect" a federally endangered or threatened species. If an agency determines that an action "may affect" a federally protected species, then Section 7(a)(2) requires the agency to consult with USFWS to ensure that any action the agency authorizes, funds, or carries out is not likely to jeopardize the continued existence of any federally-listed endangered or threatened species, or result in the destruction or adverse modification of critical habitat. If a species has been listed as a candidate species, Section 7(a)(4) states that each agency must confer with USFWS.

Additional federal laws protecting fish, wildlife, and plants include the *Migratory Bird Treaty Act,* which prohibits activities that would intentionally harm migratory birds, their eggs, or nests, and

the *Bald and Golden Eagle Protection Act*, which prohibits the take (defined as "pursue, shoot, shoot at, poison, wound, kill, capture, trap, collect, molest or disturb") of bald and golden eagles, including their parts, nests, or eggs, without a permit. Executive Order (E.O.) 13312, *Invasive Species* aims to prevent the introduction of invasive species as a result of a proposed action. (E.O. 11990, *Protection of Wetlands* is discussed under the *Water Resources* section of this report.)

There are nine federally-listed species that should be considered prior to development at the Airport, as well as critical habitat for one species (California tiger salamander), based on the USFWS's Information for Planning and Conservation (IPaC) species list (USFWS website). These species are listed in **Table B1**.

TABLE B1
***Endangered Species Act* Species List**
Santa Maria Public Airport

Species Name	Federal/State Status	Habitat Requirements	Habitat in Proximity?[1]
Amphibians			
California red-legged frog *(Rana draytonii)*	Threatened/ None	Ponds in humid forests, woodlands, grass-lands, coastal scrub, and stream sides with plant cover.	Yes
California tiger salamander *(Ambystoma californiense)*	Endangered/ Threatened	Limited to the vicinity of large, fishless vernal pools or similar water bodies.	Yes
Birds			
California condor *(Gymnogyps californianus)*	Endangered/ Endangered	Rocky, forested regions, including canyons, gorges, and mountains.	No
Least Bell's vireo *(Vireo bellii pusillus)*	Endangered/ Endangered	Nests in dense riparian woodland, mostly in warmer climates of southern California, where it is present from late March through August.	No
Southwestern willow flycatcher *(Empidonx traillii extimus)*	Endangered/ Endangered	Riparian woodlands of southern California with habitat patches at least 0.25 acres in size and at least 30 ft. wide.	No
Crustaceans			
Vernal pool fairy shrimp *(Bran-chineta lynchi)*	Threatened/ None	Small, clear-water, sandstone-depression pools and grassed swale, earth slump, or bas-alt-flow depression pools.	Yes
Flowering Plants			
Gambel's watercress *(Rorippa gambellii)*	Endangered/ Threatened	Occurs in marshes and swamps with fresh or brackish water.	No
La Graciosa thistle *(Cirsium loncholepis)*	Endangered/ Threatened	Found only on the coast of southern San Luis Obispo and northern Santa Barbara counties, and grows in riparian habitat, often around seeps or in marshes.	No[1,2]
Marsh sandwort *(Arenaria paludicola)*	Endangered/ Endangered	Occurs in marshes and swamps. Grows through dense mats of *Typha*, *Juncus*, *Scirpus*, etc. in freshwater marsh.	No

Sources: USFWS IPaC website, http://ecos.fws.gov/ipac/, accessed April 2016.
[1] Based on CNNDB occurrences mapped for the Santa Maria 7.5 quadrangle, https://map.dfg.ca.gov/bios/?tool=cnddbQuick, accessed April 2016.
[2] Based on revised Final Rule for Critical Habitat, 74 Federal Register (FR) 56978.

The Airport also contains two small freshwater ponds (less than 0.5-acre) and two areas of freshwater emergent wetland (approximately 5.5 and 0.7 acres, respectively), as identified on the National Wetland Inventory maintained by the USFWS (USFWS IPaC and Wetlands Mapper websites). The approximate locations of these wetland features are shown in **Exhibit B1**. In addition, potential jurisdictional wetlands identified as riparian and vernal pool/wetland habitat were located within the Airport Business Park Specific Planning Area as part of that project's environmental review. Formal wetland delineations will be necessary to fully document the extent of these biological resources (Rincon 2007).

Climate

Increasing concentrations of greenhouse gases (GHGs) can affect global climate by trapping heat in the Earth's atmosphere. Scientific measurements have shown that Earth's climate is warming, with concurrent impacts, including warmer air temperatures, increased sea level rise, increased storm activity, and an increased intensity in precipitation events. This climate change is a global phenomenon that can also have local impacts (IPCC 2014; U.S. Global Change Research Program 2009). Greenhouse gases, such as water vapor (H_2O), carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), and O_3 are both naturally occurring and anthropogenic (man-made).

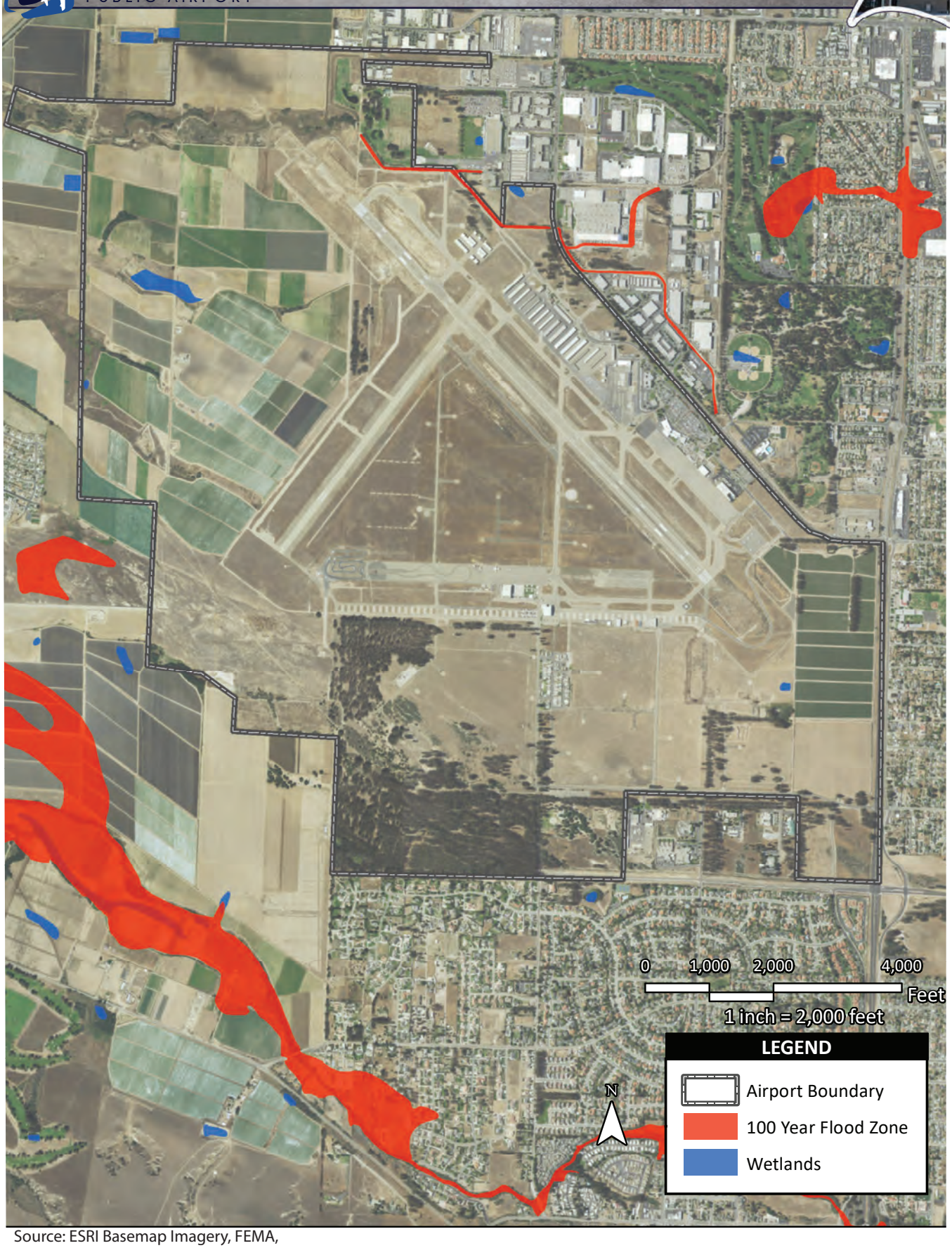
Research has also shown that there is a direct correlation between fuel combustion and GHG emissions. GHGs from anthropogenic sources include CO_2, CH_4, N_2O, hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF_6). CO_2 is the most important anthropogenic GHG because it is a long-lived gas that remains in the atmosphere for up to 100 years.

The International Panel on Climate Change (IPCC) estimates that from 1990-2013 aviation accounted for 4.1 percent of global transportation GHG emissions. In the U.S., EPA data indicates that commercial aviation contributed 6.6 percent of total CO_2 emissions in 2013, compared with other sources, including the remainder of the transportation sector (20.7 percent), industry (28.2 percent), commercial (16.9 percent), residential (16.9 percent), agricultural (9.7 percent), and U.S. territories (0.05 percent) (U.S. EPA 2015). Scientific research is ongoing to better understand incremental atmospheric impacts that may be caused by aviation.

To date, there are no federal standards for aviation-related emissions. However, it is well documented that climate should be considered in NEPA analysis, including in the FAA's Order 1050.1F, Desk Reference.

Coastal Resources

Federal activities involving or affecting coastal resources are governed by the *Coastal Barriers Resource Act*, the *Coastal Zone Management Act*, and E.O. 13089, *Coral Reef Protection*.



Source: ESRI Basemap Imagery, FEMA, USFWS - National Wetlands Inventory

Exhibit B1
ONSITE WATER RESOURCES

The Airport is located approximately eight miles from the Pacific Ocean at its the nearest point; the Airport is not located within a Coastal Zone or near coastal barriers or reefs. The closest national marine sanctuary is the Channel Islands National Marine Sanctuary located 46 miles south of the Airport (USGS National Atlas shapefiles).

Department of Transportation (DOT) Act: Section 4(f)

Section 4(f) of the DOT Act, which was recodified and renumbered as Section 303(c) of Title 49 United States Code (USC), states that the Secretary of Transportation shall not approve programs or projects that require the use of any publicly owned land from a historic site, public park, recreation area, or waterfowl or wildlife refuge of national, state, regional, or local importance unless there is no feasible and prudent alternative to the use of such land, and the project includes all possible planning to minimize harm resulting from the use. The term "use" includes not only the physical taking of such lands, but "constructive use" of such lands. "Constructive use" of lands occurs when "a project's proximity impacts are so severe that the protected activities, features, or attributes that qualify a resource for protection under Section 4(f) are substantially impaired" (Title 23 Code of Federal Regulations [CFR] Section 771.135).

The closest historic property to the Airport that is listed on the National Register of Historic Places (NRHP) is the Minerva Club of Santa Maria, which is located approximately 2.5 miles to the northeast (U.S. Department of Interior, NPS website; USGS National Atlas shapefiles). As discussed later under *Historical, Architectural, Archaeological, and Cultural Resources*, former World War II (WW II) structures located at the Airport were evaluated for listing on the NRHP and were found ineligible (Santa Maria Public Airport District 2010).

There are two public recreation areas located within the airport property: Sunset Ridge Golf Center, located south of Fairway Drive; and Pioneer Park, designated south of W. Foster Road. Several public recreation areas are also adjacent to, or within one mile of, the Airport property line, including:

- Waller Park
- James Hagerman Softball Complex
- Santa Maria YMCA
- Rancho Maria Public Golf Course
- Stonebrook Open Space

Farmlands

The *Farmland Protection Policy Act* (FPPA) is intended to minimize the impact federal programs have on the unnecessary and irreversible conversion of farmland to nonagricultural uses. For the purpose of FPPA, farmland includes prime farmland, unique farmland, and land of statewide or local importance. Farmland subject to FPPA requirements does not have to be currently used for

cropland. It can also be forest land, pastureland, or other land, but not water or urban built-up land.

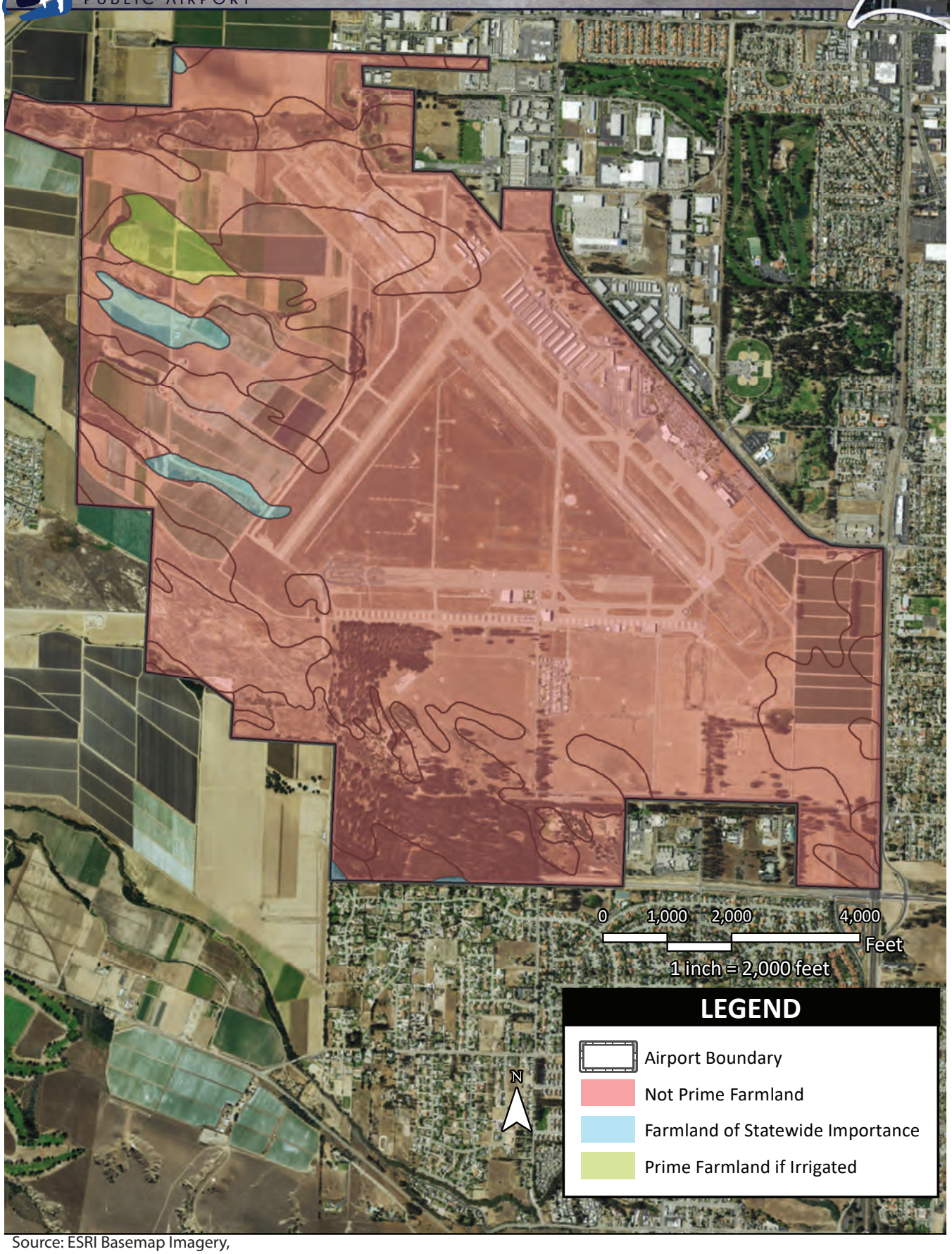
The U.S. Department of Agriculture, Natural Resources Conservation Service (USDA-NRCS) Web Soil Survey is a common source of information for soil types within mapped areas. Based on these soil survey maps, most of the Airport is rated as "Not prime farmland"; however, several small areas of Marina sand (MaA and MaC) or Oceano sand (OcD) are rated as Farmland of statewide importance, while approximately 32.5 acres of Pleasanton sandy loam (PnC) are rated as Prime farmland if irrigated (**Exhibit B2**). Based on the California Department of Conservation's Santa Barbara County Important Farmland map (2012), while land within the airfield is identified as Urban or Other, land west of the airfield is identified as Unique Farmland or Farmland of Statewide Importance (i.e., the 32.5-acre area of PnC soil).

Hazardous Materials, Solid Waste, and Pollution Prevention

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

According to the U.S. EPA's EJSCREEN website, there are no Superfund or Brownfield sites in proximity to the Airport. The closest Superfund site to the Airport is in Casmalia, more than four miles to the southwest. There are two Brownfield sites, one in Santa Maria, approximately five miles to the north, and one in Guadalupe, approximately six miles to the northwest. In addition, based on the California Department of Toxic Substance Control (DTSC) website (i.e., the Cortese List), there are no state clean-up sites. However, according to the DTSC's EnviroStor database, there are several military evaluation sites within, or adjacent to, the Airport, and the 2010 EA on the previous Airport Master Plan update listed the following known hazardous materials storage sites or potential contamination located on or near the Airport (**Table B2**).

Solid waste for the City of Santa Maria is disposed of at the Santa Maria Regional Landfill, located at 2065 E. Main Street on the east side of the City. However, this landfill is expected to cease operations in 2018 (CalRecycle website). The Santa Maria Integrated Waste Management Facility (IWMF), located just south of the City of Santa Maria in Las Flores Canyon, is currently under development. Currently, the Santa Maria IWMF has completed its state environmental process (Rincon 2010), and received its permits from the California Integrated Waste Management Board and the Central Coast Regional Water Quality Control Board (RWQCB). The facility is scheduled to open soon and will have a capacity of 108 million cubic yards (City of Santa Barbara 2015).



Source: ESRI Basemap Imagery,
USDA-NRCS, Web Soil Survey

Exhibit B2
ONSITE FARMLAND SOIL RATINGS

TABLE B2
Known Sites of Hazardous Materials Storage or Potential Contamination
Santa Maria Public Airport

Site Name/Location	Description/Status (as of 2007)
Santa Maria Public Airport	The Airport is listed on several databases and is permitted as a small quantity generator. Previous LUSTs have been removed and remediated.
CJJ Farming, located on Santa Maria Public Airport	Removal of oil-containing waste.
Santa Maria Army Air Force, located on and adjacent to Santa Maria Public Airport	Listed on FUDS database as a former Air Force pilot training base. Site contained an airfield, hangars, barracks, maintenance facilities, storage buildings, warehouses, and 220 USTs of various sizes and contents.
Former landfill, west end of Foster Road at Blosser Road	Closed household waste landfill.
UNOCAL Coaling Nose Unit, 3201 Skyway Drive	Listed as a toxic pit. Closure completed in 1988.
Santa Maria Army Airfield, 3217 Skyway Drive	Former Santa Maria Public Airport Open Dump. Previous study indicates groundwater contamination in the general area of 81 USTs. Contamination is likely from abandoned WWII USTs.
AEROFLAIR Inc., 3233 Skyway Drive	LUST containing jet fuel. Remediation activities occurred and case was closed in 1990.
SEMCO Twist Drill & Tool, 2936 Industrial	Reported groundwater and soil contamination. Cleanup, soil testing, and groundwater monitoring has occurred.

Source: Environmental Data Resources, Inc. (EDR). 2007. EDR Site Report: Santa Maria Airport, 3217 Terminal Drive, Santa Maria, CA 93455. December 14.
LUST = leaking underground storage tank
UST = underground storage tank
FUDS = formerly used defense sites

The Airport requires the owner of the fuel storage and distribution facilities on airport property to implement a spill prevention, control, and countermeasure plan (SPCC). In addition, the City participates in the state National Pollutant Discharge Elimination System (NPDES) program under the *Clean Water Act*, which is enforced by RWQCB. The Airport has a storm water pollution prevention plan (SWPPP), dated June 2015 (WDID Number 3421002545), in compliance with the Airport's NPDES General Industrial permit. The City also administers a Storm Water Management Program (SWMP). The purpose of the SWMP is to reduce the discharge of pollutants and protect downstream water quality. This effort will include implementing low impact development standards and hydro-modification control on new and redevelopment projects (City of Santa Maria Department of Utilities website).

Historical, Architectural, Archaeological, and Cultural Resources

Determination of a project's environmental impact to historic and cultural resources is made under guidance in the *National Historic Preservation Act* (NHPA) *of 1966*, as amended, the *Archaeological and Historic Preservation Act* (AHPA) *of 1974*, the *Archaeological Resources Protection Act* (ARPA), and the *Native American Graves Protection and Repatriation Act* (NAGPRA) *of 1990*, among others. Impacts can occur when a proposed project causes an adverse effect on a property which has been identified (or is unearthed during construction) as having historical, architectural, archaeological, or cultural significance.

Based on a cultural resources search completed for the 2010 Airport Master Plan update, there are two known prehistoric sites located in the southwestern part of the airport property in an area that is inaccessible to the public. A pedestrian survey was also completed on areas planned for ground disturbance as part of the previous Master Plan; no additional resources were identified. Although Native American tribes contacted at the time did not claim that there are spiritual or ceremonial sites at the Airport, they did feel that the area was archaeologically sensitive and several tribes requested the use of a Native American monitor during ground-disturbing activities (Santa Maria Public Airport District 2010).

The Airport's historical setting dates back to WW II, when the U.S. Army Air Force used the airfield (known as Santa Maria Army Air Field). Following the end of WW II, the County of Santa Barbara first acquired the property, which was subsequently transferred to the Santa Maria Public Airport District. According to the 2010 Master Plan EA, there are six buildings or structural groupings at the Airport that date back to the 1940s (WW II era). These potentially historical resources were evaluated for eligibility to be listed on the NRHP, but none were considered to be eligible. The airfield itself, as well as its remnant buildings, lack "original integrity" and "individual architectural distinction" and/or have had their historic properties and setting compromised (Santa Maria Public Airport District 2010).

Since the completion of the 2010 EA, one office building, located at 3123 Liberator Street, and a set of ten hangars, located at 3109 Airpark Drive, are now also more than 50 years of age. These buildings were constructed in 1962 and 1965, respectively, and have not been evaluated for their eligibility to be listed on the NRHP.

Land Use

Compatible land use evaluations for airports must consider the land uses in the vicinity of an airport to ensure those uses do not adversely affect safe aircraft operations. In addition, if an airport action would result in impacts exceeding FAA thresholds of significance which have land use ramifications, such as disruption of communities, relocation of businesses or residences, or socioeconomic impacts, the effects of the land use impacts shall be discussed.

The *Santa Maria Airport Business Park Specific Plan* was adopted by the City in 2007, effective 2008, and covers 740 acres of the overall 2,598 acres of airport property. The Santa Maria Airport

Business Park ("Business Park") will be developed under the Specific Plan provisions of the City of Santa Maria's zoning ordinance, which provides design flexibility across the entire project site and the capability of introducing design controls that are tuned to maintaining land use compatibility with airport operations (City of Santa Maria 2008). The remainder of the Airport is zoned for various airport uses, Open Space, or Light Manufacturing (M-1) with a Planned Development overlay. The Airport's zoning, related land use designations, and existing surrounding land uses are discussed in Chapter One, Inventory of the Master Plan.

Natural Resources and Energy Supply

The FAA has not established a significance threshold for the Natural Resources and Energy Supply impact category. However, a factor to consider is if an action has the potential to cause demand to exceed available or future natural resources or energy supplies (FAA Order 1050.1F, Exhibit 4-1).

Energy usage at the Airport includes the consumption of aviation fuel (Jet A and 100LL), gasoline and diesel fuel for vehicles and maintenance equipment, and electricity. Pacific Gas and Electric (PG&E) is the electricity provider, while Southern California Gas Company (SoCal Gas) is the natural gas service provider. Information regarding specific aviation fuel storage and dispersal systems at the Airport is included in Chapter One, Inventory of the Master Plan.

Water for the Airport is supplied by the City of Santa Maria Department of Utilities. Its water system includes imported State water and City wells and reservoirs with a total capacity of 20 million gallons (City of Santa Maria Department of Utilities' website). Groundwater is pumped from a total of eight wells in the Santa Maria Groundwater Basin. The City's rights to rely on basin water resources are governed by a stipulation approved by the Santa Clara County Superior Court (City of Santa Maria 2011). Based on recent State-mandated water requirements identified in 2015, the City must achieve a water conservation standard of 16 percent each month compared to the same month in 2013 (City of Santa Maria Department of Utilities 2015). The Airport, itself, has two water wells on its property, which are used for agriculture, and seven wells that are used as a municipal water source.

Noise and Compatible Land Use

Federal land use compatibility guidelines are established under 14 CFR 150, *Airport Noise Compatibility Planning*. According to 14 CFR 150, residential land uses and schools are not considered compatible with a 65 Day-Night Average Sound Level (DNL) (or Community Noise Equivalent Level [CNEL]) contour or higher.[1] Religious facilities, hospitals, or nursing homes located within a 65

[1] In California, CNEL is used in place of DNL. DNL accounts for the increased sensitivity to noise at night (10:00 p.m. to 7:00 a.m.) and is the metric preferred by FAA, EPA, and Department of Housing and Urban Development (HUD) as an appropriate measure of cumulative noise exposure. In California, however, these agencies accept the use of

CNEL contour are generally compatible if an interior noise level reduction of 25 decibel (dB) is incorporated into the design and construction of the structure.

The Airport's existing CNEL noise contours will be modeled as part of the Master Plan process and included in the Environmental Evaluation (Part 2) of this Environmental Overview. The most recent noise compatibility map for the Airport was prepared in 2012 and shows that, at that time, the 65 CNEL contour remained within the airport property (SBCAG/ALUC 2012). Noise-sensitive land uses in the vicinity of the Airport include: a 78-unit mobile home park located on Airport property east of S. Blosser Road; residences south of Union Valley Parkway; residences east of the Airport (along Highway 135 [Orcutt Road]); residences northeast of the Airport (along W. McCoy Lane); and several schools and places of worship.[2]

Socioeconomic Impacts, Environmental Justice, and Children's Environmental Health and Safety Risks

General socioeconomic information, such as population and economic trends, are addressed in Chapter One, Inventory of the Master Plan. FAA Order 1050.1F specifically requires that a federal action causing disproportionate impacts to an environmental justice population (i.e., a low-income or minority population) be considered, as well as an evaluation of environmental health and safety risks to children.

Based on information from the EPA's EJSCREEN website, using American Community Survey estimates for the five-year period from 2008-2012, approximately 47 percent of the population within the block group containing the Airport are minorities, primarily Hispanic, while approximately 33 percent of the population within a one-mile radius of the Airport's property line is Hispanic.

Approximately five percent of the population within the Airport's census tract are living below the poverty level; however, north of W. Betteravia Road, the population living below the poverty level increased to more than 25 percent. Within a one-mile radius of the Airport's property line, there are over 8,500 children (age 0-17) (i.e., approximately 34 percent of the total population), as well as parks and schools (U.S. EPA, EJSCREEN website).

CNEL which, in addition to nighttime sensitivities, also accounts for increased sensitivities during the evening hours (7:00 p.m. to 10:00 p.m.).

[2] Noise-sensitive land uses are generally residences, churches/places of worship, hospitals and healthcare facilities, and educational facilities. Churches/places of worship are defined as permanently established facilities intended solely for use as places of worship and not meant to be converted to other potential uses. For a hospital/healthcare facility to be considered a noise-sensitive medical facility, it must provide for overnight stays or provide for longer recovery periods, where rest and relaxation are key considerations for use of the facility. Schools are facilities that provide full time use for instruction and training to students.

Socioeconomic impacts to be considered under FAA Order 1050.1F may also include potential traffic impacts related to aviation development. The Airport is accessed from Skyway Drive via Highway 135 (Orcutt Road) from the east or W. Betteravia Road from the north.

Visual Resources

FAA has not established a significance threshold for light emissions or visual resources/visual character. However, the degree or extent to which the action would have the potential to create the following items should be considered prior to approval of airport development projects (i.e., would the project …)

- Create annoyance or interfere with normal activities from light emissions;
- Affect the visual character of the area, including the importance, uniqueness, and aesthetic value of the affected visual resources;
- Contrast with the visual resources and/or visual character in the study area; or
- Block or obstruct the views of visual resources, including whether these resources would still be viewable from other locations?

There are no County or State-designated scenic roads or other protected scenic resources in proximity to the Airport (Santa Barbara County 2009).

Water Resources

Wetlands. Certain drainages (both natural and human-made) that are considered "waters of the U.S." come under the purview of the U.S. Army Corps of Engineers (USACE) under Sections 401 and 404 of the *Clean Water Act*; wetlands are also protected. In addition, E.O. 11990, *Protection of Wetlands* provides definitions and calls for safeguarding wetlands. Wetlands typically exhibit three characteristics: hydrology, hydrophytes (plants able to tolerate various degrees of flooding or frequent saturation), and poorly drained or "hydric" soils.

As previously discussed under Biological Resources, the Airport contains several ponds identified as wetlands on the National Wetland Inventory maintained by the USFWS (Wetland Mapper website), as well as vernal pools, wetlands, and riparian habitat within the proposed Airport Business Park. Other waters of the U.S. may also occur on airport property (U.S. EPA, My WATERS Mapper website).

Floodplains. E.O. 11988, *Floodplain Management* directs federal agencies to take action to reduce the risk of flood loss, to minimize the impact of floods on human safety, health and welfare, and to restore and preserve the natural and beneficial values served by the floodplains. The limits of base floodplains are determined by Flood Insurance Rate Maps (FIRMs) prepared by

Federal Emergency Management Agency (FEMA). Due to the Airport's large size, FEMA has several FIRMs that cover portions of the Airport (Nos. 06083C0186F, -0187F, -0188G, and -0189G). Based on these maps, most of the Airport is not located within a 100-year floodplain. However, the 100-year floodplain is contained within the Waller Skyway Channel and a related unnamed channel north and east of the airfield (refer to **Exhibit B1**).

Surface waters. The Airport is located within two different subwatersheds, the Upper and Lower Orcutt Creek. The Lower Orcutt Creek subwatershed contains an impaired water per the *Clean Water Act* to the west of the airport property, (i.e., Lower Orcutt Creek) (U.S. EPA, My WATERS Mapper website).

The City of Santa Maria collaborates with the Santa Barbara County Flood Control District to manage storm water facilities for the city. Storm water is collected in the City and transmitted via storm drain systems to basins west of Santa Maria and the Santa Maria River. Drainage on the Airport is conveyed north and west via earthen swales and concrete or pipe culverts to the agricultural area northwest of the Airport. The City administers an SWMP to reduce the discharge of pollutants and protect downstream water quality. In addition, the City participates in the state NPDES program under the *Clean Water Act*, which is enforced by RWQCB; the Airport has a current SWPPP, dated June 2015, as part of the Airport's NPDES General Industrial permit compliance.

Groundwater. The City of Santa Maria is underlain by the Santa Maria Valley Groundwater Basin and Management Area. Although the local groundwater is plentiful, it has a high hardness and mineral content. The City blends the local supply with the imported supply to provide water with a lower hardness and mineral content than that available from the local supply alone. As of March 2016, the City supplied 50 percent of its domestic water supply needs from the groundwater basin (City of Santa Maria Department of Utilities' website).

Wild and Scenic Rivers. Wild and scenic rivers refer to designations within NPS's Nationwide Rivers Inventory. Public Law 90-542 states that such rivers are free-flowing and possess "outstanding remarkable scenic, recreational, geologic, fish and wildlife, historic, cultural or other similar values" (National Wild and Scenic Rivers System shapefiles). The closest designated Wild or Scenic River segment to the Airport is the Sisquoc River, located approximately 22 miles east. The nearest other National River Inventory feature is Sespe Creek, which is located approximately 58 miles southeast of the Airport.

REFERENCES

California Department of Conservation 2012. Important Farmland Map (Santa Barbara County). Available at: ftp://ftp.consrv.ca.gov/pub/dlrp/FMMP/pdf/2012/sba12.pdf, accessed April 2016.

California Department of Toxic Substance Control (DTSC), Cortese List and EnviroStor maps. Available at: http://www.dtsc.ca.gov/SiteCleanup/Cortese_List.cfm, accessed April 2016.

California Natural Diversity Database, Santa Maria 7.5 quadrangle. Available at: https://map.dfg.ca.gov/bios/?tool=cnddbQuick, accessed April 2016.

CalRecycle (CA.gov). Facility/Site Summary Details: Santa Maria Regional Landfill (42-AA-0016). Available at: http://www.calrecycle.ca.gov/SWFacilities/Directory/42-AA-0016/Detail/, accessed April 2016.

City of Santa Barbara 2015. *Draft Program Environmental Impact Report on the Proposed Airport Master Plan for Santa Barbara Municipal Airport*, SCH No. 2014061096, August.

City of Santa Maria 2008. *Santa Maria Airport Business Park Specific Plan*, prepared by Urban Planning Concepts, Inc., January 2015.

City of Santa Maria 2011. *2010 Urban Water Management Plan, City of Santa Maria* (Final Report), prepared by CH2M Hill, July.

City of Santa Maria Department of Utilities 2015. PowerPoint entitled "Water Conservation Efforts." Available at: http://www.cityofsantamaria.org/home/showdocument?id=12076, July.

City of Santa Maria Department of Utilities' website. Available at: http://www.cityofsantamaria.org/city-government/departments/utilities-sewer-water-trash, accessed April 2016.

Environmental Data Resources, Inc. (EDR) 2007. EDR Radius Map and Report: Santa Maria Airport, 3217 Terminal Drive, Santa Maria, CA 93455, November 27 (see *Santa Maria Public Airport Master Plan Update Final Environmental Impact Report*, Appendix L [May 2010]).

Federal Aviation Administration (FAA) 2015. Order 1050.1F, *Environmental Impacts: Policies and Procedures* (Exhibit 4-1, Significance Determination for FAA Actions), effective date July 2016.

Federal Emergency Management Agency (FEMA). Flood Insurance Rate Map Nos. 06083C0186F, -0187F, -0188G, and -0189G, dated September 30, 2005 and December 4, 2012. Available at: http://msc.fema.gov/portal, accessed April 2016.

Intergovernmental Panel on Climate Change (IPCC). *Fifth Assessment Report*, 2014. Available at: https://www.ipcc.ch/report/ar5/syr/.

National Wild and Scenic Rivers System website and shapefiles. Available at: http://www.rivers.gov/maps/conus.php, accessed April 2016.

Rincon Consultants, Inc. (Rincon) 2007. *Final Environmental Impact Report for the City of Santa Maria Airport Business Park Specific Plan*, SCH No. 2005051172, prepared for the City of Santa Maria, June.

Rincon 2010. *City of Santa Maria Integrated Solid Waste Facility Project Final Environmental Impact Report*, SCH No. 2006091069, prepared for City of Santa Maria Utilities Department, April. Available at: http://www.cityofsantamaria.org/city-government/departments/utilities-sewer-water-trash/santa-maria-integrated-waste-management-facility-final-environmental-impact-report.

Santa Barbara County 2009. *Santa Barbara County Comprehensive Plan*, Scenic Highways Element, republished May.

Santa Barbara County Association of Governments (SBCAG)/Santa Barbara County Airport Land Use Commission (ALUC) 2012. *Draft Santa Barbara County Airport Land Use Compatibility Plan*, Exhibit III-1, Noise Compatibility Policy Map: Santa Maria Public Airport, April 30. Available at: http://www.sbcag.org/uploads/2/4/5/4/24540302/noise_compatibility_policy_map_smx.pdf, accessed April 2016.

Santa Maria Public Airport District 2010. *Final Santa Maria Public Airport Master Plan Update Environmental Assessment*, April.

U.S. Department of Agriculture, Natural Resources Conservation Service (USDA-NRCS), Web Soil Survey. Available at: http://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx, accessed April 2016.

U.S. Department of the Interior, National Park Service (NPS) website. National Register of Historic Places. Available at: http://focus.nps.gov/nrhp/Download?path=/natreg/docs/Download.html, accessed April 2016.

U.S. Environmental Protection Agency (EPA), Climate Change Division, Office of Atmospheric Programs. *Technical Support Document for Endangerment and Cause or Contribute Findings for Greenhouse Gases under Section 202(a) of the Clean Air Act 2-3*, 2009. Available at: http://epa.gov/climatechange/endangerment.html.

U.S. EPA. EJSCREEN website. Available at: http://ejscreen.epa.gov/mapper/index.html, accessed April 2016.

U.S. EPA. *Green Book – California Nonattainment/Maintenance Status for Each County by Year for All Criteria Pollutants*, as of October 1, 2015. Available at: https://www3.epa.gov/airquality/greenbk/anayo_ca.html , accessed April 2016.

U.S. EPA 2015. *Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990-2013*. Available at: http://www.epa.gov/climatechange/ghgemissions/usinventoryreport.html#fullreport.

U.S. EPA. My WATERS Mapper website. Available at: https://watersgeo.epa.gov/mwm/, accessed April 2016.

U.S. Fish and Wildlife Service (USFWS). Information for Planning and Conservation (IPaC) website. Available at: http://ecos.fws.gov/ipac/, accessed April 2016.

USFWS. Wetlands Mapper website, National Wetland Inventory. Available at: http://www.fws.gov/wetlands/Data/Mapper.html, accessed April 2016.

U.S. Geologic Survey (USGS) shapefiles. *The National Atlas of the United States*. Accessed April 2016.

U.S. Global Change Research Program. *Global Climate Change Impacts in the United States*, 2009. Available at: http://www.globalchange.gov/what-we-do/assessment/previous-assessments/global-climate-change-impacts-in-the-us-2009.

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PART TWO: ENVIRONMENTAL EVALUATION

Consideration of potential environmental impacts of proposed airport development projects, as discussed in Chapter Five and depicted on Exhibit 5A, is an important component of the Master Plan process. The primary purpose of this section of the Environmental Overview is to identify significance thresholds for the various resource categories contained in FAA Order 1050.1F, Exhibit 4-1 and FAA Order 5050.4B, Table 7.1. The Master Plan development program is then evaluated to determine whether proposed actions could individually or collectively affect the quality of the environment.

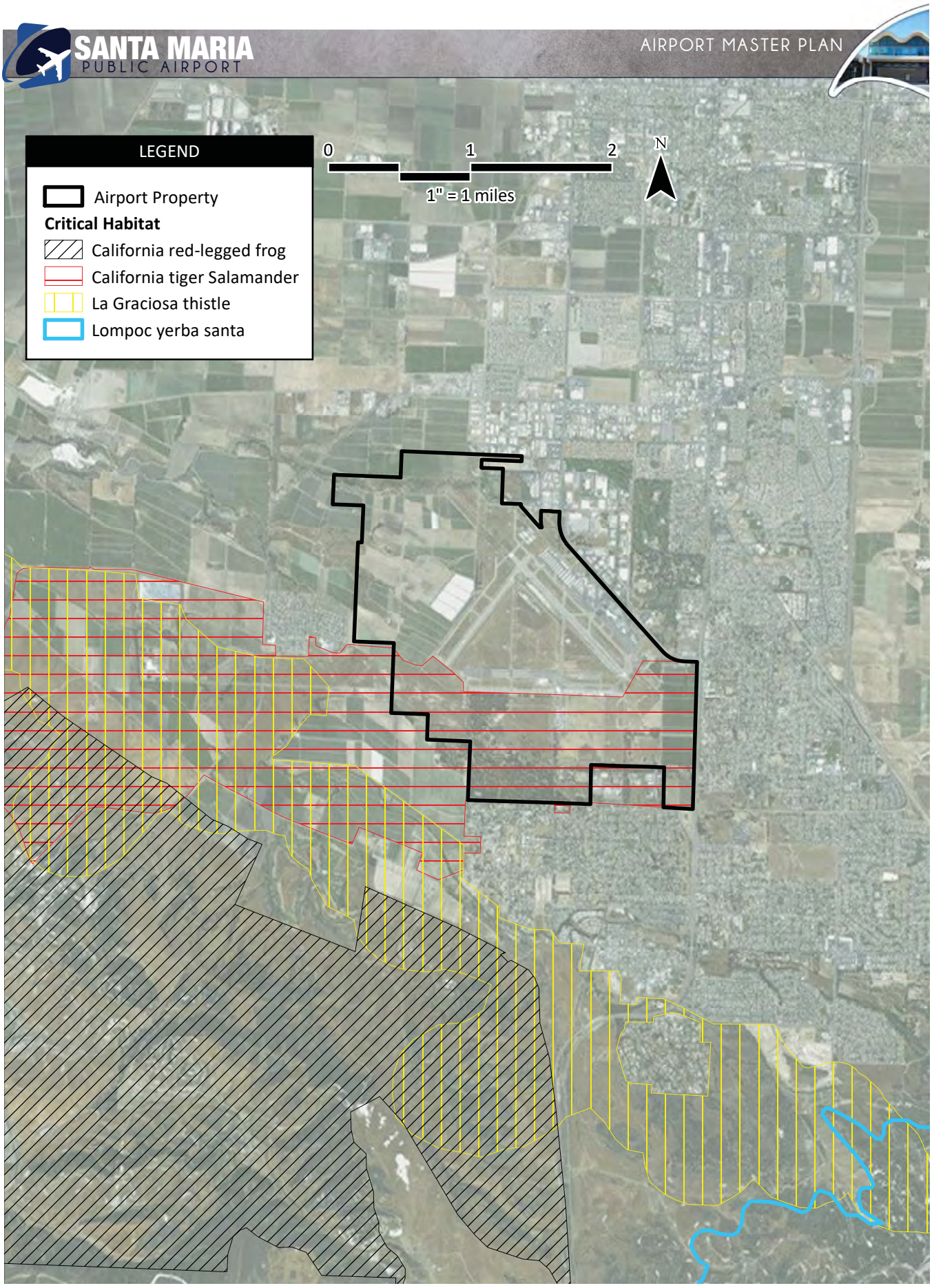
POTENTIAL ENVIRONMENTAL CONCERNS

The following table (**Table B3**) summarizes potential environmental concerns associated with implementation of the proposed Master Plan. These concerns are related to the future construction of specific projects that could be built under the Master Plan based on the recommended Capital Improvement Plan (CIP). Analysis under NEPA includes direct, indirect, and cumulative impacts.

TABLE B3
Summary of Potential Environmental Concerns
Santa Maria Public Airport Master Plan

Environmental Impact Category	Significance Threshold (per FAA Order 1050.1F)	Potential Concern(s)
Air Quality	**The action would cause pollutant concentrations to exceed one or more of the National Ambient Air Quality Standards (NAAQS), as established by the United States (U.S.) Environmental Protection Agency (EPA) under the *Clean Air Act*, for any of the time periods analyzed, or to increase the frequency or severity of any such existing violations.**	Although the projected increase in operations over the 20-year planning horizon of the Master Plan would result in additional emissions, Santa Barbara County currently (as of December 31, 2017) meets federal NAAQS standards. Thus, general conformity review per the *Clean Air Act* is not required. According to the most recent FAA *Aviation Emissions and Air Quality Handbook* (2015), an emissions inventory under the *National Environmental Policy Act* (NEPA) may be necessary for any proposed action that would result in a reasonable, foreseeable increase in emissions due to its implementation. For construction emissions, a qualitative or quantitative emissions inventory under NEPA may be required, depending on the type of environmental review required for the project.

Biological Resources (including fish, wildlife, and plants)	**The United States Fish and Wildlife Service (USFWS) determines that the action would be likely to jeopardize the continued existence of a federally listed threatened or endangered species or would result in the destruction or adverse modification of federally designated critical habitat.** FAA has not established a significance threshold for non-listed species.	**For federally-listed species:** The airport includes potential wetland and/or upland habitat for the following listed species: California red-legged frog, California tiger salamander, and vernal pool fairy shrimp. Any projects affecting wetland habitats must, therefore, assess potential impacts to these listed species prior to action in this area and may require consultation with USFWS. **For designated critical habitat:** The airport contains designated critical habitat for the California tiger salamander (**Exhibit B3**). **For non-listed species:** Non-listed species of concern include those protected by the *Migratory Bird Treaty Act*. The potential for the presence of migratory birds should be evaluated on a project-specific basis depending on whether construction is planned during the nesting season (typically February - August).
Climate	**FAA has not established a significance threshold for Climate.** Refer to FAA *1050.1F Desk Reference*, for the most up-to-date methodology for examining impacts associated with climate change.	An increase in greenhouse gases (GHG) would occur over the 20-year planning horizon of the Master Plan based on the projected increase in operations. Project-specific analysis may be required per the FAA *1050.1F Desk Reference*, based on the parameters of individual airport projects.
Coastal Resources	**FAA has not established a significance threshold for Coastal Resources.**	None. The airport is not located within a designated Coastal Zone.
Department of Transportation Act: Section 4(f)	**The action involves more than a minimal physical use of a Section 4(f) resource or constitutes a "constructive use" based on an FAA determination that the aviation project would substantially impair the Section 4(f) resource.** (Substantial impairment occurs when the activities, features, or attributes of the resource that contribute to its significance or enjoyment are substantially diminished.)	The airport is adjacent to several local recreational facilities, including Pioneer Park, Waller Park, and the James Hagerman Softball Complex. The airport's existing and expected future Community Noise Equivalent Level (CNEL) noise contours, based on fleet mix and aircraft operations, are shown in **Exhibits B4** and **B5**. Based on the existing and future noise levels, airport noise levels would not substantially impair the Section 4(f) resources since the 65 CNEL and higher noise contours would remain on airport property. There may be cultural resources at the airport that have not yet been discovered or evaluated for significance under Section 106 of the *National Historic Preservation Act* (NHPA). If impacts result to a cultural site that is determined to be significant, a Section 4(f) impact could occur.



Source: US Fish & Wildlife Service, ESRI Basemap Imagery (2016)

Exhibit B3
CRITICAL HABITAT IN PROXIMITY TO AIRPORT

LEGEND

- Airport Property LIne
- 65 Community Noise Equivalent Level (CNEL)
- 70 Community Noise Equivalent Level (CNEL)
- 75 Community Noise Equivalent Level (CNEL)

Note: Noise contours shown were generated using the FAA's Aviation Environmental Design Tool (AEDT). Runway 2-20 is included in the analysis; however due to its limited use, its noise exposure contour remains below the 65 CNEL level.

NORTH

0 1000 2000

SCALE IN FEET

Martinez Geospatial: 8/06/2016

Runway 12-30 8,004' x 150'

Runway 2-20 5,199' x 75'

Skyway Dr

Industrial Pkwy

Terminal Dr

Auto Park Dr

Lakeview Rd

Dutard St

135

Exhibit B4
EXISTING NOISE CONTOURS

LEGEND

- Airport Property LIne
- 65 Community Noise Equivalent Level (CNEL)
- 70 Community Noise Equivalent Level (CNEL)
- 75 Community Noise Equivalent Level (CNEL)

Note: Noise contours shown were generated using the FAA's Aviation Environmental Design Tool (AEDT). Runway 2-20 is included in the analysis; however due to its limited use, its noise exposure contour remains below the 65 CNEL level.

NORTH

0 1000 2000

SCALE IN FEET

Martinez Geospatial: 8/06/2016

Runway 12-30 8,004' x 150'

Runway 2-20 5,199' x 75'

Skyway Dr

Industrial Pkwy

Terminal Dr

Auto Park Dr

Lakeview Rd

Dutard St

135

Exhibit B5
FUTURE NOISE CONTOURS

Farmlands	**The total combined score on Form AD-1006, *Farmland Conversion Impact Rating*," ranges between 200 and 260.** Form AD-1006 is used by the U.S. Department of Agriculture, Natural Resources Conservation Service (NRCS) to assess impacts under the *Farmland Protection Policy Act* (FPPA).	None. Soils at the airport are primarily rated as "Not Prime Farmland" by the NRCS. Small areas of "Farmland of Statewide Importance" or "Prime Farmland, if Irrigated" soils are in the northwest quadrant of the airport and along the airport's southern property line (**Exhibit B2**). No development projects are recommended in these areas as part of the Master Plan and, thus, the FPPA is not expected to be applicable.
Hazardous Materials, Solid Waste, and Pollution Prevention	**FAA has not established a significance threshold for Hazardous Materials, Solid Waste, and Pollution Prevention.** Factors to consider are if an action would have the potential to: • Violate applicable federal, state, tribal, or local laws or regulations regarding hazardous materials and/or solid waste management; • Involve a contaminated site; • Produce an appreciably different quantity or type of hazardous waste; • Generate an appreciably different quantity or type of solid waste or use a different method of collection or disposal and/or would exceed local capacity; or • Adversely affect human health and the environment.	The airport has a fuel farm and provides opportunity for aircraft maintenance activities that could involve fossil fuels or other types of hazardous materials or wastes. In addition, a future maintenance/repair/overhaul (MRO) facility is recommended in the Master Plan. These operations are (or would be) regulated and monitored by the appropriate regulatory agencies, such as the U.S. EPA and the State Department of Toxic Substance Control (DTSC). In addition, there are previously known hazardous waste contamination sites at the airport (**Table B2**). In most cases, these sites have been closed and remediated. However, as a precaution, future projects should evaluate the potential for contamination. Existing and future solid waste is, or would be, collected and disposed of by a contracted waste handling/removal company.
Historical, Architectural, Archaeological, and Cultural Resources	**FAA has not established a significance threshold for Historical, Architectural, Archaeological, and Cultural Resources.** Factors to consider are if an action would result in a finding of "adverse effect" through the Section 106 process. However, an adverse effect finding does not automatically trigger preparation of an environmental impact statement (EIS) (i.e., a significant impact).	Although portions of the airport have been surveyed for cultural resources, unsurveyed areas of the airport have the potential to contain protected cultural resources. Any areas at the airport that would be subject to ground disturbance should be surveyed for cultural resources prior to construction unless previously disturbed to the point that artifacts could no longer be intact. Data recovery (to determine the extent and significance of resources) and/or monitoring during construction activities may also be required. There are also several buildings that are at least 45 years of age and have not been previously evaluated for their eligibility for inclusion on the National Register of Historic Places. These buildings (at 3123 Liberator Street, hangars at 3109 and 3111 Airpark Drive, and the fire station at 3339 Terminal Drive) were constructed in the 1960s or early 1970s. Some of them may be affected by proposed development and must be first evaluated under the NHPA. Consultation with federally-recognized Native American tribes by FAA would also occur under the NHPA for all federal projects.

Land Use	**FAA has not established a significance threshold for Land Use.** The determination that significant impacts exist is normally dependent on the significance of other impacts.	None. The proposed Master Plan does not involve development off the airport and would interface with the *Santa Maria Airport Business Park Specific Plan* (2008).
Natural Resources and Energy Supply	**FAA has not established a significance threshold for Natural Resources and Energy Supply.** Factors to consider are if an action would have the potential to cause demand to exceed available or future supplies of these resources.	Planned development projects at the airport would result in additional demand for natural resources and energy consumption. Potential impacts should be addressed on a project-specific basis using appropriate state or local thresholds, if available.
Noise and Noise-Compatible Land Use	**The action would increase noise by Day-Night Average Noise Level (DNL)[1] 1.5 dB or more for a noise-sensitive area that is exposed to noise at or above the DNL 65 dB noise exposure level, or that will be exposed at or above the DNL 65 dB level due to a DNL 1.5 dB or greater increase, when compared to the no action alternative for the same timeframe.** A factor to consider is that special consideration needs to be given to the evaluation of the significance of noise impacts on noise-sensitive areas within Section 4(f) properties where the land use compatibility guidelines in 14 CFR 150 are not relevant to the value, significance, and enjoyment of the area in question.	The airport's future CNEL noise exposure contours based on the anticipated fleet mix and operational changes are shown on **Exhibit B5**. The airport is bound by open farmland on its north and northwest sides, and by business park development on its north and south sides. The airport's 65 CNEL or higher noise exposure contours do not affect any developed noise-sensitive areas. See discussion above regarding Section 4(f) resource impacts. No impacts to Section 4(f) properties are anticipated.
Socioeconomic Impacts, Environmental Justice, and Children's Environmental Health and Safety Risks		
Socioeconomics	**FAA has not established a significance threshold for Socioeconomics.** Factors to consider are if an action would have the potential to: • Induce substantial economic growth in an area, either directly or indirectly (e.g., through establishing projects in an undeveloped area); • Disrupt or divide the physical arrangement of an established community; • Cause extensive relocation when sufficient replacement housing is unavailable; • Cause extensive relocation of community businesses that would cause severe economic hardship for affected communities; • Disrupt local traffic patterns and substantially reduce the levels of service of roads serving the airport and its surrounding communities; or • Produce a substantial change in the community tax base.	Proposed development projects would occur on the airport itself and would not result in a physical disruption or division within the surrounding community. No relocation of local housing or community businesses, disruption of local traffic patterns, or a substantial change in the community tax base would occur. There is an existing low-income residential neighborhood (i.e., trailer park) located on airport property approximately 500 feet south of proposed long-term development of the Airport's southern quadrant. Buildout of the *Santa Maria Airport Business Park Specific Plan* would require the removal of this neighborhood. However, if the residents are still in place at the time of the Airport's proposed south quadrant development, construction impacts should be evaluated and mitigated.

Environmental Justice	**FAA has not established a significance threshold for Environmental Justice.** Factors to consider are if an action would have the potential to lead to a disproportionately high and adverse impact to an environmental justice population (i.e., a low-income or minority population), due to: • Significant impacts in other environmental impact categories; or • Impacts on the physical or natural environment that affect an environmental justice population in a way that FAA determines is unique to the environmental justice population and significant to that population.	None. Construction or operation impacts may be significant if they disproportionately affect a disadvantaged population. Almost half of the population living within the Census block group containing the airport are minority populations. However, proposed development projects would occur on the airport itself and would not result in impacts to environmental justice populations. The closest residential neighborhood to a proposed Master Plan project location is approximately 0.25 mile away (i.e., homes located east of Auto Park Drive) and are separated from the airport by Waller Park. Residences south of the airport would be separated from proposed Master Plan projects by the planned Santa Maria Airport Business Park.
Children's Environmental Health and Safety Risks	**FAA has not established a significance threshold for Children's Environmental Health and Safety Risks.** Factors to consider are if an action would have the potential to lead to a disproportionate health or safety risk to children.	Construction or operation impacts may also be significant if they pose environmental health and safety risks to children. The closest potential area of impact to children would be airport development near Waller Park, a YMCA facility at 3400 Skyway Drive, the James Hagerman Softball Complex, and a Class 1 bike path along Skyway Drive. In addition, Lakeview Junior High School is located 0.5 mile east of the southeastern end of Runway 12-30. Future development proposals in these areas of the airport should evaluate potential risks to children's environmental health and safety.
Visual Effects		
Light Emissions	**FAA has not established a significance threshold for Light Emissions.** Factors to consider include the degree to which an action would have the potential to: • Create annoyance or interfere with normal activities from light emissions; and • Affect the visual character of the area due to the light emissions, including the importance, uniqueness, and aesthetic value of the affected visual resources.	Most new lighting associated with the Master Plan (such as proposed runway end indicator lights [REILs]) would remain on the airfield and other developed portions of the airport. However, the Master Plan also recommends potential non-aviation development on the northeast side of the airport. Development in these areas may involve additional building security lighting. Due to the distance between the airport and the closest residential development (i.e., the closest residence is more than 0.25 mile away from the airport), no significant lighting impacts are anticipated.

Visual Resources/ Visual Character	**FAA has not established a significance threshold for Visual Resources/Visual Character.** A factor to consider is the extent an action would have the potential to: • Affect the nature of the visual character of the area, including the importance, uniqueness, and aesthetic value of the affected visual resources; • Contrast with the visual resources and/or visual character in the study area; and • Block or obstruct the views of the visual resources, including whether these resources would still be viewable from other locations.	None. Development planned in the Master Plan would not change the overall visual character of the airport or impact the visual resources of the general area. No scenic roads or other protected scenic resources are in proximity to the airport.
Water Resources (including Wetlands, Floodplains, Surface Waters, Groundwater, and Wild and Scenic Rivers)		
Wetlands	**The action would:** **1. Adversely affect a wetland's function to protect the quality or quantity of municipal water supplies, including surface waters and sole source and other aquifers;** **2. Substantially alter the hydrology needed to sustain the affected wetland system's values and functions or those of a wetland to which it is connected;** **3. Substantially reduce the affected wetland's ability to retain floodwaters or storm runoff, thereby threatening public health, safety or welfare (the term welfare includes cultural, recreational, and scientific resources or property important to the public);** **4. Adversely affect the maintenance of natural systems supporting wildlife and fish habitat or economically important timber, food, or fiber resources of the affected or surrounding wetlands.** **5. Promote development of secondary activities or services that would cause the circumstances listed above to occur; or** 6. **Be inconsistent with applicable state wetland strategies.**	The airport contains several small wetlands (ponds or vernal pools) mapped by the National Wetland Inventory (NWI) for the southern end of the airport within the proposed business park. The areas proposed for development by the Master Plan do not contained mapped wetlands. This does not mean that wetlands are not present, but that they are on a local scale. Impacts to wetlands, including vernal pools, must be evaluated on a project-specific level.
Floodplains	**The action would cause notable adverse impacts on natural and beneficial floodplain values. Natural and beneficial floodplain values are defined in Paragraph 4.k of DOT Order 5650.2, *Floodplain Management and Protection.***	None. There are no 100-year floodplains located within the areas of the airport proposed for development in the Master Plan other than the channelized floodplain contained by the Waller Skyway Channel and a related unnamed channel north and east of the airfield (**Exhibit B1**).

Surface Waters	**The action would:** **1. Exceed water quality standards established by federal, state, local, and tribal regulatory agencies; or** **2. Contaminate public drinking water supply such that public health may be adversely affected.** Factors to consider include when a project would have the potential to: • Adversely affect natural and beneficial water resource values to a degree that substantially diminishes or destroys such values; • Adversely affect surface water such that the beneficial uses and values of such waters are appreciably diminished or can no longer be maintained and such impairment cannot be avoided or satisfactorily mitigated; or • Present difficulties based on water quality impacts when obtaining a permit or authorization.	The airport has an approved storm water pollution prevention plan (SWPPP) in compliance with its National Pollutant Discharge Elimination system (NPDES) General Industrial permit conditions. Airport projects, such as additional apron, parking lots, or other impervious surfaces, could increase the amount of runoff from the airport. Thus, the airport's storm water drainage system may need to be upgraded to handle additional runoff quantities, when necessary, and its NPDES permit and SWPPP updated accordingly. A Regional Water Quality Control Board (RWQCB) General Construction permit would be required for all projects involving ground disturbance of over one acre. FAA's Advisory Circular (AC) 150/5370-10G, *Standards for Specifying Construction of Airports, Item P-156, Temporary Air and Water Pollution, Soil Erosion and Siltation Control* should also be implemented during construction projects at the airport.
Groundwater	**The action would:** **1. Exceed groundwater quality standards established by federal, state, local, and tribal regulatory agencies: or** **2. Contaminate an aquifer used for public water supply such that public health may be adversely affected.** Factors to consider are when a project would have the potential to: • Adversely affect natural and beneficial groundwater values to a degree that substantially diminishes or destroys such values; • Adversely affect groundwater quantities such that the beneficial uses and values of such groundwater are appreciably diminished or can no longer be maintained and such impairment cannot be avoided or satisfactorily mitigated; or • Present difficulties based on water quality impacts when obtaining a permit or authorization.	See the previous discussion under Surface Water regarding water quality measures at the airport. The proposed Master Plan projects would not substantially change the amount of water used by the airport. The proposed Master Plan does include the relocation of one City water well. This relocation will occur under the appropriate state and local reviews and permits. Future water use at the airport should be addressed on a project-specific basis. If groundwater becomes a scarce resource in the Santa Maria Valley Groundwater Basin and Management Area, mitigation might be required.

Wild and Scenic Rivers	**FAA has not established a significance threshold for Wild and Scenic Rivers.** Factors to consider are when an action would have an adverse impact on the values for which a river was designated (or considered for designation) through: • Destroying or altering a river's free-flowing nature; • A direct and adverse effect on the values for which a river was designated (or under study for designation); • Introducing a visual, audible, or other type of intrusion that is out of character with the river or would alter outstanding features of the river's setting; • Causing the river's water quality to deteriorate; • Allowing the transfer or sale of property interests without restrictions needed to protect the river or the river corridor; or • Any of the above impacts preventing a river on the Nationwide Rivers Inventory (NRI) or a Section 5(d) river that is not included in the NRI from being included in the Wild and Scenic River System or causing a downgrade in its classification (e.g., from wild to recreational).	None. The closest designated Wild and Scenic river segment or NRI feature (i.e., Sisquoc River) is approximately 22 miles from the airport.

Source: FAA 2015. Order 1050.1F, *Environmental Impacts: Policies and Procedures.*
[1] - In California, CNEL is used in place of DNL.
CFR = Code of Federal Regulations

ENVIRONMENTAL ACTION SUMMARY

Prior to construction, most of the Master Plan-recommended projects would require NEPA environmental consideration and analysis. The three types of environmental documentation under NEPA are the CatEx, EA, or EIS. A CatEx must meet the criteria in 40 CFR §1508.4 and FAA Order 1050.1F and is defined as "a category of actions that do not normally require an EA or EIS because they do not individually or cumulatively have a significant effect on the human environment, with the exception of extraordinary circumstances." It is the duty of the responsible FAA official to determine whether extraordinary circumstances exist and, if so, deem the action appropriate for an EA.

An EA, at a minimum, must be prepared for a proposed action when the initial review of the proposed action indicates that it is not categorically excluded, involves at least one extraordinary circumstance, or the action is not one known normally to require an EIS and is not categorically excluded. The purpose of an EA is to document the FAA determination as to whether a proposed action has the potential for significant environmental impacts. If none of the potential impacts are likely to be significant, then the responsible FAA official shall prepare a Finding of No Significant Impact (FONSI), which briefly presents,

in writing, the reasons why an action, not otherwise categorically excluded, will not have a significant impact on the human environment and the approving official may approve it. Issuance of a FONSI signifies that FAA will not prepare an EIS and has completed the NEPA process for the proposed action.

If the responsible FAA official determines that the proposed action may significantly affect the quality of the human environment, an EIS shall be prepared. An EIS is a clear, concise, and appropriately detailed document that provides agency decision-makers and the public with a full and fair discussion of significant environmental impacts of the proposed action and reasonable alternatives and implements the requirement in NEPA §102(2)(C) for a detailed written statement.

Some of the actions normally requiring an EA are projects recommended by the proposed Master Plan (**Table B4**). However, most of the proposed improvements, unless involving extraordinary circumstances, could be evaluated in terms of NEPA compliance using one of the CatExes listed in FAA Order 1050.1F. In addition, some projects may not require a federal action or federal funding. Projects using only state/local funding and that do not require a federal approval are still required to be evaluated under the *California Environmental Quality Act* (CEQA) (Public Resources Code, §21000 et seq. and Cal. Code Regs., Title 14, §15378 [CEQA Guidelines]).

TABLE B4
Anticipated Environmental Review for Future Projects
Santa Maria Public Airport Master Plan

Recommended Project	Expected NEPA Action[1]
Short-Term Projects	
Rehabilitate TWs A, A2-A8, and K-V, including geometry upgrades	CatEx
Intermediate/Long Term Projects	
Extend TW B south from TW E to TW B7	CatEx
Rehabilitate RW 12-30	CatEx
Rehabilitate TWs E and H	CatEx
Rehabilitate main hangar apron	CatEx
Construct airfield geometry improvements - Phase I (remove TWs A5 and A6; reroute TWs A4, A7, A8, and B5)	CatEx
Construct airfield geometry improvements - Phase II (remove TW K; reroute TWs L, R, and W; construct new corporate hangar taxilane to TW J)	CatEx
Rehabilitate TW A, including geometry upgrades from A2 to A1	CatEx
Construct TW B widening to 75 feet from TW B5 to RW 2-20	CatEx
Construct TW B extension from RW 2-20 to RW 12 threshold	CatEx or EA
Construct RW 20 threshold displacement - 950 feet	CatEx
Construct Airpark Drive extension	CatEx
Install vehicle roadway markings and signage improvements in aircraft movement areas	CatEx
Install in-placement stop bar fixtures and elevated runway guard lights	CatEx
Install runway end identifier lights (REILs) for RW 30	CatEx
Expand vehicle parking lot	CatEx
Redevelop tower apron	CatEx
Relocate aircraft rescue and firefighting (ARFF) station	CatEx
Construct international customs facility	CatEx

Expand corporate hangar taxilanes	CatEx
Relocate water well	CatEx
Expand transient apron	CatEx
Relocate automated surface observing system (ASOS) equipment	CatEx
Construct United States Forest Service apron	CatEx or EA
Expand terminal building - Phase I and II	CatEx or EA
Construct parking garage	CatEx or EA
Construct roadway extension on south infield area	CatEx or EA
Construct new air traffic control tower	EA
Construct midfield apron	CatEx or EA
Construct dual-parallel taxiway from TW B to Central Coast Jet Center apron	CatEx or EA
Construct TW D, D1, and D2	CatEx or EA
Construct T-hangar taxilanes	CatEx or EA

NEPA – *National Environmental Policy Act*
CatEx – Categorical Exclusion
TW - taxiway
RW - runway
EA – Environmental Assessment

[1] Although most of the recommended projects may qualify for a CatEx if no extraordinary circumstances are present, due to the number of projects located in similar parts of the airport, FAA may require an EA to more fully address the combined cumulative impacts. The Recommended Capital Improvement Program includes an EA that is focused on the "near-term" projects. Similarly, an EA may be required to evaluate the combined impacts of the future buildout of the southwestern quadrant of the airport that is recommended for the long term.

SANTA MARIA
PUBLIC AIRPORT



APPENDIX C
FAA FORECAST APPROVAL LETTER

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

Western-Pacific Region
Airports Division
Los Angeles Airports District Office

P.O. Box 92007
Los Angeles, CA 90009-2007

January 31, 2017

Chris Hastert
General Manager
3217 Terminal Drive
Santa Maria, CA 93455

Dear Mr. Hastert,

Santa Maria Public Airport (SMX)
Aviation Activity Forecast Approval

The Federal Aviation Administration (FAA) has reviewed the aviation forecast for the Santa Maria Public Airport (SMX) dated December 9, 2017. The FAA approves these forecasts for airport planning purposes, including Airport Layout Plan development.

It is important to note that the approval of this forecast does not guarantee future funding for capital improvements that you may propose at SMX. Future projects will need to be justified by current activity levels reached at the time the projects are proposed for implementation. In addition, any projects proposed based on activity levels of firefighting aircraft will need to be further analyzed for Airport Improvement Program eligibility purposes.

If you have any questions about this forecast approval, please call me at 310-725-3633.

Sincerely,

Brenda Pérez
Community Planner

SANTA MARIA
PUBLIC AIRPORT



APPENDIX D
AIRPORT LAYOUT PLANS

Appendix D
AIRPORT LAYOUT PLAN

As part of this Master Plan, the Federal Aviation Administration (FAA) requires the development of Airport Layout Plan (ALP) drawings detailing specific parts of the airport and its environs. The ALP drawings are created on a computer-aided drafting (CAD) system and serve as the official depiction of the current and planned condition of the airport. The FAA will use the ALP as the basis for justification for funding decisions.

The ALP set was submitted to the FAA for review from a technical perspective to ensure all applicable federal regulations are met. On July 17, 2019, the FAA issued its conditional approval of the ALP. The FAA-approved ALP set along with the approval letter are included in this appendix.

It should be noted that FAA requires that any changes to the airfield (i.e., runway and taxiway system, navigational aids, etc.) be presented on the ALP. The landside configuration developed during the master planning process is also depicted on the ALP, but the FAA recognizes that landside development is much more fluid and dependent upon developer needs. Thus, an updated ALP set is typically not necessary for future landside development.

The five primary functions of the ALP that define its purpose are provided in Advisory Circular (AC) 150/5070-6B, *Airport Master Plans*, as follows:

1) An ALP creates a blueprint for airport development by depicting proposed facility improvements. The ALP provides a guideline by which the airport sponsor can ensure that development maintains airport design standards and safety requirements and is consistent with airport and community land use plans.

2) The ALP is a public document that serves as a record of aeronautical requirements, both present and future, and as a reference for community deliberations on land use proposals and budget resource planning.

3) The approved ALP enables the airport sponsor and the FAA to plan for facility improvements at the airport. It also allows the FAA to anticipate budgetary and procedural needs. The approved ALP will also allow the FAA to protect the airspace required for facility or approach procedure improvements.

4) The ALP can be a working tool for the airport sponsor, including its development and maintenance staff.

5) An approved ALP is necessary for the airport to receive financial assistance under the terms of the *Airport and Airway Improvement Act of 1982*, as amended, and to be able to impose and use Passenger Facility Charges. An airport must keep its ALP current and follow that plan because those are grant assurance requirements of the Airport Improvement Program (AIP) and previous airport development programs, including the 1970 *Airport Development Aid Program* (ADAP) and *Federal Aid Airports Program* (FAAP) of 1946, as amended.

The FAA requires that any planned changes to the airfield (i.e., runway and taxiway system, etc.) be represented on the drawings. However, the ALP drawing set is not intended to provide design engineering accuracy.

AIRPORT LAYOUT PLAN DRAWING SET

The ALP drawing set for the Airport Master Plan includes several technical drawings which depict various aspects of the current and future layout of the airport. The following is a description of the ALP drawings included with this Airport Master Plan.

AIRPORT LAYOUT PLAN DRAWING

An official ALP drawing has been developed for Santa Maria Public Airport, a draft of which is included in this appendix. The ALP drawing graphically presents the existing and future airport facilities and layout plan. The ALP drawing includes, but is not limited to, such elements as the physical airport features, wind data tabulation, location of airfield facilities (i.e., runways, taxiways, navigational aids), and landside development. Also presented on the ALP are the runway safety areas, airport property boundary, and revenue support areas.

The computerized plan provides detailed information on existing and future facility layouts on multiple layers that permit the user to focus on any section of the airport at a desired scale. The plan can be used as base information for subsequent planning and design efforts, and can be easily updated in the future to reflect new development and more detail concerning existing conditions as made available through design surveys.

TERMINAL AREA PLAN DRAWING

The Terminal Area Plan drawing presents a large-scale depiction of areas with significant terminal facility development. This drawing is an enlargement of a portion of the ALP. The drawing includes the landside facility areas as well as the supporting infrastructure, including access roads and parking facilities. The terminal area drawings include a listing of all airport buildings and identifies the aircraft apron areas.

FAR PART 77 AIRPORT AIRSPACE DRAWING

Federal Aviation Regulation (F.A.R.) Part 77, *Objects Affecting Navigable Airspace*, was established for use by local authorities to control the height of objects near airports. The FAR Part 77 Airport Airspace drawing included in this Airport Master Plan is a graphic depiction of this regulatory criterion. The FAR Part 77 Airport Airspace drawing is a tool to aid local authorities in determining if proposed development could present a hazard to aircraft using the airport. The FAR Part 77 Airport Airspace drawing can be a critical tool for the airport sponsor's use in reviewing proposed development near the airport.

The FAR Part 77 Airport Airspace drawing assigns three-dimensional imaginary surfaces associated with the airport. These imaginary surfaces emanate from the runway centerline(s) and are dimensioned according to the visibility minimums associated with the approach to the runway end and size of aircraft to operate on the runway. The FAR Part 77 imaginary surfaces include the primary surface, approach surface, transitional surface, horizontal surface, and conical surface.

The airport sponsor should do all in their power to ensure development stays below the FAR Part 77 surfaces to protect the role of the airport. The drawing includes a table detailing the penetrations to any of the FAR Part 77 surfaces. A recommended action or disposition is also presented for each penetration. This drawing is based on the planned future condition of the Airport.

Penetrations of the FAR Part 77 surfaces indicate an obstruction. Once an obstruction is identified, the FAA determines if the obstruction is a hazard to air navigation. When an obstruction is determined to be a hazard, a variety of actions can be taken to mitigate the hazard. The table included on the drawing presents a recommended action or disposition; however, the FAA is responsible to make the final determination as to what course of action should be taken. Potential mitigating measures include removing the hazard, lowering the hazard, adding an obstruction light, increasing instrument approach visibility minimums, or displacing runway landing thresholds. The following discussion will describe those surfaces that make up the recommended FAR Part 77 surfaces.

Primary Surface: The Primary Surface is longitudinally centered on the runways and extends 200 feet beyond each runway end. The elevation of any point on the Primary Surface is the same as the elevation along the nearest associated point on the runway centerline. The Primary Surface for Runway 12-30 is 1,000 feet wide as centered on the runway and 500 feet wide for Runway 2-20.

Approach Surface: An Approach Surface is also established for each runway end. The Approach Surface begins at the end of the Primary Surface, extends upward and outward, and is centered along an extended runway centerline. The dimensions of the Approach Surface leading to each runway is based upon the type of instrument approach available (instrument or visual) or planned.

Runway 12 is equipped with a precision instrument landing system (ILS); therefore, the Approach Surface extends a horizontal distance of 10,000 feet at a 50:1 slope with an additional 40,000 feet at a slope of 40:1. The outer width of the Approach Surface is 16,000 feet. With existing and planned visibility minimums of not lower than ¾-mile, the Approach Surface to Runway 30 extends a horizontal distance of 10,000 feet at a 34:1 slope. The outer width of the Approach Surface is 3,500 feet. As a visual-only runway, the Approach Surfaces to Runways 2 and 20 have an outer width of 1,500 feet and extend a horizontal distance of 5,000 feet at a 20:1 slope.

Transitional Surface: Each runway has a Transitional Surface that begins at the outside edge of the Primary Surface at the same elevation as the runway. The Transitional Surface also connects with the Approach Surfaces of runways with a precision approach, such as Runway 12. The Transitional Surface rises at a slope of 7:1, up to a height 150 feet above the highest runway elevation. At that point, the Horizontal Surface begins where the Transitional Surface ends.

Horizontal Surface: The Horizontal Surface is established at 150 feet above the highest elevation of the runway surface. Having no slope, the Horizontal Surface connects the Transitional and Approach Surfaces to the Conical Surface at a distance of 10,000 feet from the end of the Primary Surfaces of each runway.

Conical Surface: The Conical Surface begins at the outer edge of the Horizontal Surface. The Conical Surface then continues for an additional 4,000 feet horizontally at a slope of 20:1. Therefore, at 4,000 feet from the Horizontal Surface, the elevation of the Conical Surface is 350 feet above the highest airport elevation.

INNER APPROACH SURFACE DRAWING

The Inner Approach Surface drawing provides greater detail of penetrations to the Approach Surface and the Threshold Siting Surface within a few thousand feet of the runway end. Any penetrations are documented in the obstruction table. The obstruction table includes a description of the object, its top elevation, the depth of penetration, and a recommended disposition to mitigate the penetration.

DEPARTURE SURFACE DRAWING

For primary runways supporting instrument operations, a separate drawing depicting the Departure Surface is required. The Departure Surface, when clear, allows pilots to follow standard departure procedures. The Departure Surface emanates from the departure end of the runway to a distance of 10,200 feet. The inner width is 1,000 feet and the outer width is 6,466 feet. The slope of the Departure Surface is 40:1.

Obstacles frequently penetrate the Departure Surface. Where object penetrations exist, the departure procedure can be adjusted by:

a) Non-standard climb rates, and/or
b) Non-standard (higher) departure minimums.

Therefore, it is important for the airport sponsor to identify and remove Departure Surface obstacles whenever possible in order to enhance takeoff operations at the airport. The airport sponsor should also prevent any new obstacles from developing.

AIRPORT LAND USE DRAWING

The objective of the Airport Land Use drawing is to coordinate uses of the airport property in a manner compatible with the functional design of the airport facility. Airport land use planning is important for orderly development and efficient use of available space. There are two primary considerations for airport land use planning, which are to secure those areas essential to the safe and efficient operation of the airport and to determine compatible land uses for the balance of the property which would be most advantageous to the airport and community.

AIRPORT PROPERTY MAP

The Airport Property Map provides a drawing depicting the airport property boundary, the various tracts of land that were acquired to develop the airport, the method of acquisition, and other information on the property under airport control that is subject to FAA grant assurances. The various recorded deeds that make up the airport property are listed in tabular format. The primary purpose of the drawing is to provide information for analyzing the current and future aeronautical use of land acquired with federal funds.

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

Western-Pacific Region
Los Angeles Airports District Office

777 S. Aviation Blvd., Suite 150
El Segundo, CA 90245

July 17, 2019

Chris Hastert, CM
General Manager
3217 Terminal Drive
Santa Maria, CA 93455

Santa Maria Public Airport
Santa Maria, CA
Conditional Airport Layout Plan Approval

Dear Mr. Hastert,

The Santa Maria Public Airport (SMX) Airport Layout Plan (ALP), bearing your signature, is approved. A signed copy of the approved ALP is enclosed.

An aeronautical study (no. 2019-AWP-1668-NRA) was conducted on the proposed development. This determination does not constitute FAA approval or disapproval of the physical development involved in the proposal. It is a determination with respect to the safe and efficient use of navigable airspace by aircraft and with respect to the safety of persons and property on the ground.

In making this determination, the FAA has considered matters such as the effects the proposal would have on existing or planned traffic patterns of neighboring airports, the effects it would have on the existing airspace structure and projected programs of the FAA, the effects it would have on the safety of persons and property on the ground, and the effects that existing or proposed manmade objects (on file with the FAA), and known natural objects within the affected area would have on the airport proposal.

The FAA has only limited means to prevent the construction of structures near an airport. The airport sponsor has the primary responsibility to protect the airport environs through such means as local zoning ordinances, property acquisition, avigation easements, letters of agreement or other means.

This ALP approval is conditioned on acknowledgement that any development on airport property requiring Federal environmental approval must receive such written approval from FAA prior to commencement of the subject development. This ALP approval is also conditioned on acceptance of the plan under local land use laws. We encourage appropriate agencies to adopt land use and height restrictive zoning based on the plan.

Approval of the plan does not indicate that the United States will participate in the cost of any development proposed. AIP funding requires evidence of eligibility and justification at the time a funding request is ripe for consideration. When construction of any proposed structure or development indicated on the plan is undertaken, such construction requires normal 45-day advance notification to FAA for review in accordance with applicable Federal Aviation Regulations (i.e., Parts 77, 157, 152, etc.). More notice is generally beneficial to ensure that all statutory, regulatory, technical and operational issues can be addressed in a timely manner.

Please attach this letter to the Airport Layout Plan and retain it in the airport. Please ensure that one approved ALP drawing along with a copy of this letter is forwarded to the State of California Department of Transportation (Caltrans), Aeronautics Division.

Should you have any questions or comments regarding this letter, please do not hesitate to contact Brenda Pérez of my staff at (424) 405-7276 or via email at brenda.perez@faa.gov.

Sincerely,



David F. Cushing
Manager, Los Angeles Airports District Office

Enc: SMX ALP
SMX ALP Request

cc: Michael Smith, Caltrans
Cynthia Diep, FAA

AIRPORT LAYOUT PLANS

for the

SANTA MARIA PUBLIC AIRPORT

Santa Maria, California

Prepared for the
Santa Maria Public Airport District

AIP No. 3-06-0237-034-2015



Source: ESRI USA Counties 2013

DRAWING INDEX

1. TITLE SHEET
2. AIRPORT DATA SHEET
3. EXISTING AIRPORT LAYOUT DRAWING
4. ULTIMATE AIRPORT LAYOUT DRAWING
5. TERMINAL AREA DRAWING I
6. TERMINAL AREA DRAWING II
7. AIRPORT AIRSPACE DRAWING I
8. AIRPORT AIRSPACE DRAWING II
9. APPROACH PROFILE DRAWING I
10. APPROACH PROFILE DRAWING II
11. INNER PORTION OF THE APPROACH SURFACE DRAWING RUNWAY 12
12. INNER PORTION OF THE APPROACH SURFACE DRAWING RUNWAY 30
13. INNER PORTION OF THE APPROACH SURFACE DRAWING RUNWAY 2
14. INNER PORTION OF THE APPROACH SURFACE DRAWING RUNWAY 20
15. RUNWAY 12-30 DEPARTURE SURFACE DRAWING
16. AIRPORT LAND USE DRAWING
17 EXHIBIT "A" AIRPORT PROPERTY MAP
18. AVIGATION EASEMENTS

LOCATION MAP



VICINITY MAP



SANTA MARIA PUBLIC AIRPORT

No.	REVISIONS	DATE	BY	APP'D.
△	.	.	.	.

"THE PREPARATION OF THESE DOCUMENTS WAS FINANCED IN PART THROUGH A GRANT FROM THE FEDERAL AVIATION ADMINISTRATION AS PROVIDED UNDER SECTION 505 OF THE AIRPORT AND AIRWAY IMPROVEMENT ACT OF 1982, AS AMENDED. THE CONTENTS DO NOT NECESSARILY REFLECT THE OFFICIAL VIEWS OR POLICY OF THE FAA. ACCEPTANCE OF THESE DOCUMENTS BY THE FAA DOES NOT IN ANY WAY CONSTITUTE A COMMITMENT ON THE PART OF THE UNITED STATES TO PARTICIPATE IN ANY DEVELOPMENT DEPICTED HEREIN NOR DOES IT INDICATE THAT THE PROPOSED DEVELOPMENT IS ENVIRONMENTALLY ACCEPTABLE IN ACCORDANCE WITH APPROPRIATE PUBLIC LAWS."

SANTA MARIA PUBLIC AIRPORT

TITLE SHEET

SANTA MARIA, CALIFORNIA

PLANNED BY: Eric S. Pfeifer
DETAILED BY: Diana L. Przybycien
APPROVED BY: James M. Harris

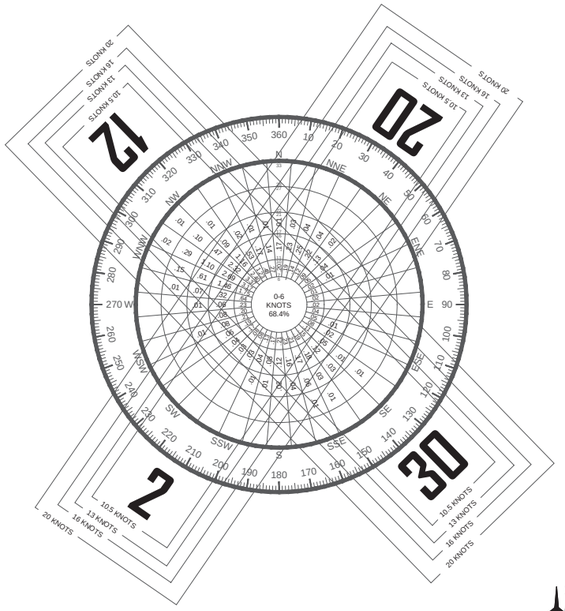
June 2019

Coffman Associates
Airport Consultants
www.coffmanassociates.com

Coffman Associates G:\Diana\MP\Santa Maria (SMX)\ALP\01 SMX COVER.dwg Printed Date: 6-13-19 09:48:19 AM dprzybycien

ALL WEATHER WIND COVERAGE

Runways	10.5 Knots	13 Knots	16 Knots	20 Knots
Runway 12-30	98.34%	99.22%	99.82%	99.97%
Runway 2-20	87.79%	91.58%	96.46%	98.77%
Combined	99.72%	99.96%	100%	100%

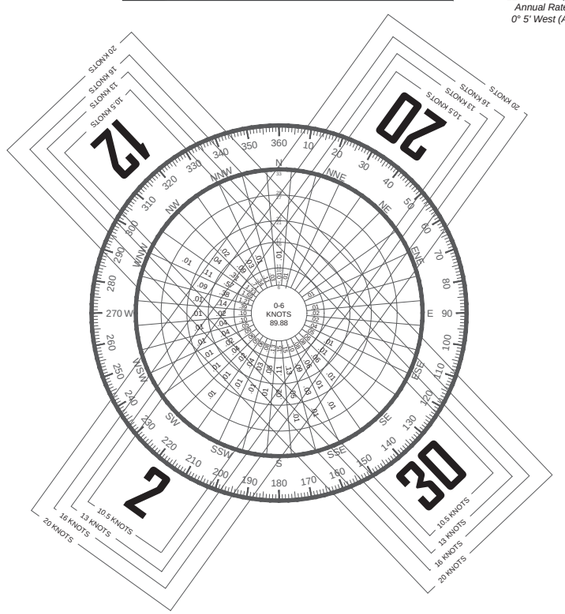


SOURCE:
NOAA National Climatic Center
Asheville, North Carolina
Santa Maria Public Airport
City, State Spelled Out

OBSERVATIONS:
126,233 All Weather Observations
33,618 IFR Observations
2006-2015

IFR WIND COVERAGE

Runways	10.5 Knots	13 Knots	16 Knots	20 Knots
Runway 12-30	99.53%	99.77%	99.92%	99.98%
Runway 2-20	97.80%	99.61%	99.57%	99.89%
Combined	99.89%	99.98%	100%	100%





Magnetic Declination
12° 37' East (August 2017)
Annual Rate of Change
0° 5' West (August 2017)

RUNWAY DATA

RUNWAY DATA	RUNWAY 12-30				RUNWAY 2-20			
	EXISTING		ULTIMATE		EXISTING		ULTIMATE	
	12	30	12	30	2	20	2	20
RUNWAY DESIGN CODE	C-IV-2400		C-IV-2400		B-II-VIS		B-II-VIS	
APPROACH REFERENCE CODE	D/IV/2400		D/IV/2400		B/II/VIS		B/II/VIS	
DEPARTURE REFERENCE CODE	D/IV, D/V		D/IV, D/V		B/II		B/II	
PERCENT ALL WEATHER WIND COVERAGE BASED ON ARC	99.82% (16 knots)		99.82% (16 knots)		91.58% (13 knots)		91.58% (13 knots)	
14 CFR PART 77 CATEGORY	50:1 / 40:1	34:1	50:1 / 40:1	34:1	20:1	20:1	20:1	20:1
APPROACH VISIBILITY MINIMUMS	2400	5000	2400	5000	5000	5000	5000	5000
APPROACH TYPE	Precision	Nonprecision	Precision	Nonprecision	Visual	Visual	Visual	Visual
TYPE OF AERONAUTICAL SURVEY REQUIRED FOR APPROACH	VG	NVG	VG	NVG	NVG	NVG	NVG	NVG
OBSTACLE CLEARANCE SURFACE TYPE	5	4	5	4	3	3	3	3
OBSTACLE CLEARANCE SURFACE SLOPE	34:1	20:1	34:1	20:1	20:1	20:1	20:1	20:1
DEPARTURE SURFACE	Yes	Yes	Yes	Yes	No	No	No	No
CRITICAL AIRCRAFT	Boeing DC-10		Boeing DC-10		Cessna Citation V		Cessna Citation V	
COCKPIT TO MAIN GEAR WIDTH	95'		95'		19.9'		19.9'	
MAIN GEAR WIDTH	35'		35'		17.58'		17.58'	
RUNWAY DIMENSIONS	8003' x 150'		8003' x 150'		5199' x 75'		5199' x 75'	
RUNWAY BEARING (TRUE)	136.81°	316.81°	136.81°	316.81°	37.39°	217.39°	37.39°	217.39°
RUNWAY END ELEVATION (MSL)	216.8'	261.1'	216.8'	261.1'	209.5'	226.2'	209.5'	226.2'
RUNWAY THRESHOLD DISPLACEMENT	N/A	N/A	N/A	N/A	N/A	N/A	N/A	950
DISPLACED THRESHOLD ELEVATION (MSL)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	225.0'
RUNWAY TOUCHDOWN ZONE ELEVATION (MSL)	230.1'	261.2'	230.1'	261.2'	216.9'	226.8'	216.9'	225.0'
RUNWAY EFFECTIVE GRADIENT (MAXIMUM)	0.6%		0.6%		0.3%		0.3%	
LINE OF SIGHT REQUIREMENT MET	No LOS Study Performed		No LOS Study Performed		No LOS Study Performed		No LOS Study Performed	
PAVEMENT STRENGTH BY WHEEL LOADING (in thousand lbs.)	75 (S), 181 (D), 400 (2D)		75 (S), 181 (D), 400 (2D)		70 (S), 90 (D), 150 (2D)		70 (S), 90 (D), 150 (2D)	
RUNWAY SURFACE MATERIAL	Asphalt		Asphalt		Asphalt		Asphalt	
STRENGTH BY PCN	56/F/B/X/U		56/F/B/X/U		6/F/B/Y/U		6/F/B/Y/U	
RUNWAY PAVEMENT SURFACE TREATMENT	Grooved		Grooved		None		None	
RUNWAY MARKING	Precision	Precision	Precision	Precision	Basic	Basic	Basic	Basic
RUNWAY SAFETY AREA LENGTH BEYOND RUNWAY END (STANDARD)	1000'	1000'	1000'	1000'	300'	300'	300'	300'
RUNWAY SAFETY AREA LENGTH BEYOND RUNWAY END (ACTUAL)	1000'	1000'	1000'	1000'	300'	300'	300'	300'
RUNWAY SAFETY AREA WIDTH (STANDARD)	500'		500'		150'		150'	
RUNWAY OBJECT FREE AREA LENGTH BEYOND RUNWAY END (STANDARD)	1000'	1000'	1000'	1000'	300'	300'	300'	300'
RUNWAY OBJECT FREE AREA LENGTH BEYOND RUNWAY END (ACTUAL)	1000'	1000'	1000'	1000'	300'	300'	300'	300'
RUNWAY OBJECT FREE AREA WIDTH	800'		800'		500'		500'	
RUNWAY OBSTACLE FREE ZONE LENGTH BEYOND RUNWAY END (STANDARD)	200'	200'	200'	200'	200'	200'	200'	200'
RUNWAY OBSTACLE FREE ZONE LENGTH BEYOND RUNWAY END (ACTUAL)	200'	200'	200'	200'	200'	200'	200'	200'
RUNWAY OBSTACLE FREE ZONE WIDTH	400'		400'		400'		400'	
RUNWAY PROTECTION ZONE	1000'x1750'x2500' (12) 500'x1010'x1700' (30)		1000'x1750'x2500' (12) 500'x1010'x1700' (30)		500'x700'x1000' (2) 500'x700'x1000' (20)		500'x700'x1000' (2) 500'x700'x1000' (20)	
DISTANCE FROM RUNWAY CENTERLINE TO HOLD BARS AND SIGNS	≥253'		≥253'		≥200'		≥200'	
RUNWAY CL TO PARALLEL TAXIWAY CL	400', 525' (400' Standard)		400', 525' (400' Standard)		525' (240' Standard)		525' (240' Standard)	
RUNWAY LIGHTING	HIRL		HIRL		None		None	
RUNWAY INSTRUMENT NAVIGATIONAL AIDS	ILS or LOC (12) GPS (12,30)		ILS or LOC (12) GPS (12,30)		None		None	
RUNWAY VISUAL AIDS	MALSR (12) PAPI-4 (12,30) Lighted Wind Cones Lighted Airfield Signs		MALSR (12) REILs (30) PAPI-4 (12,30) Lighted Wind Cones Lighted Airfield Signs		None		None	

1 SEE INNER PORTION OF THE APPROACH SURFACE DRAWINGS SHEETS 10 THROUGH 13 FOR OBSTACLE CLEARANCE SURFACE PENETRATION DETAILS.

RUNWAY END COORDINATES (NAD 83)

RUNWAY	LATITUDE	LONGITUDE
EXISTING RUNWAY 12	N 34° 54' 29.80"	W 120° 27' 51.69"
EXISTING RUNWAY 30	N 34° 53' 33.43"	W 120° 26' 44.23"
EXISTING RUNWAY 2	N 34° 53' 36.20"	W 120° 28' 04.56"
EXISTING RUNWAY 20	N 34° 54' 17.81"	W 120° 27' 27.88"
ULTIMATE RUNWAY 20 DISPLACED THRESHOLD	N 34° 54' 10.20"	W 120° 27' 34.58"

EXISTING COORDINATES DERIVED FROM SURVEY PROVIDED BY MARTINEZ GEOSPATIAL, EAGAN, MN, DATED AUGUST 2016.

DECLARED DISTANCE

DECLARED DISTANCE	RUNWAY 12-30				RUNWAY 2-20			
	EXISTING		ULTIMATE		EXISTING		ULTIMATE	
	12	30	12	30	2	20	2	20
TAKE-OFF RUN AVAILABLE	8003'	8003'	8003'	8003'	5199'	5199'	4249'	5199'
TAKE-OFF DISTANCE AVAILABLE	8003'	8003'	8003'	8003'	5199'	5199'	5199'	5199'
ACCELERATE STOP DISTANCE AVAILABLE	8003'	8003'	8003'	8003'	5199'	5199'	5199'	5199'
LANDING DISTANCE AVAILABLE	8003'	8003'	8003'	8003'	5199'	5199'	5199'	4249'

TAXIWAY DATA

| | STANDARD TDG PER CRITICAL AIRCRAFT | | PARALLEL TAXIWAYS | | | | | | ENTRANCE/EXIT TAXIWAYS | | | | | |

GENERAL NOTES:

1. UNLESS NOTED OTHERWISE ALL EXISTING COORDINATES, ELEVATIONS, AND BEARINGS FROM MARTINEZ GEOSPATIAL, EAGAN, MN, DATED AUGUST, 2016.
2. OTHER DATA SOURCES CONSULTED INCLUDE FAA AIRPORT MASTER RECORD FORM 5010, AND THE FAA AIRPORT FACILITY DIRECTORY http://www.faa.gov/air_traffic/flight_info/aeronav/digital_products/dafd/, AND http://webdatasheet.faa.gov/
3. EXISTING AIRFIELD LOCATIONS, RUNWAY INTERSECTION ELEVATIONS, RUNWAY ELEVATIONS, COORDINATE, AND BEARING CALCULATIONS DERIVED FROM GROUND SURVEY PREPARED BY MARTINEZ GEOSPATIAL, EAGAN, MN.
4. HORIZONTAL DATUM: NORTH AMERICAN DATUM 1983 - NAD83;
   VERTICAL DATUM: NORTH AMERICAN DATUM 1988 - NAVD88.
5. TRAVERSEWAY ELEVATIONS WHERE ROADWAYS INTERSECT PART 77 APPROACH SURFACE ARE ACTUAL ELEVATIONS.
6. SEE INNER PORTION OF THE APPROACH SURFACE DRAWINGS FOR OBSTACLE CLEARANCE SURFACE PENETRATIONS.
7. SEE TERMINAL AREA DRAWINGS, SHEETS 5 AND 6 OF 18 FOR BUILDING LISTS AND LANDSIDE DIMENSIONAL DETAILS.
8. WHERE NOTED, OBSTRUCTION LIGHT (OL) INFORMATION FROM NATIONAL GEODETIC SURVEY AERONAUTICAL DATA SHEET.

EXISTING 50:1/40:1 APPROACH SURFACE 1000'x50000'x16000'

EX RUNWAY 12 APPROACH RPZ 2500'X1000'X1750' PARTIALLY OWNED

EX RUNWAY 12 END/LOW POINT EL 216.8 34°54'29.80" N 120°27'51.69" W

SEE IPASD FOR EXISTING OBSTACLE CLEARANCE SURFACE PENETRATIONS: 800'x3400'x10000'

EX RUNWAY 20 APPROACH RPZ 500'X700'X1000' PARTIALLY OWNED

SEE IPASD FOR EXISTING OBSTACLE CLEARANCE SURFACE PENETRATIONS: 400'x1000'x1500'x8500'

EXISTING 20:1 APPROACH SURFACE 500'x1500'x5000'

EX RUNWAY 20 END EL 226.2 34°54'17.81" N 120°27'27.88" W

Through-the-Fence Access Point

Ex Runway 12-30 8,004' x 150'

Ex Runway 2-20 5,199' x 75'

Ex ARP 34°53'59.80" 120°27'29.09"

True Bearing 136.81°

True Bearing 37.35°

Ex PAPI-4

OL GS

OL LOC

OL DME

Windsock

Glideslope Critical Area

Localizer Critical Area

ASR Critical Area

Airport Surveillance Radar - 11

EX RUNWAY 30 END EL 261.1 34°53'33.43" N 120°26'44.23" W

EX RUNWAY 30 APPROACH RPZ 500'X1010'X1700'

SEE IPASD FOR OBSTACLE CLEARANCE SURFACE PENETRATIONS: EXISTING 400'x3400'x10000'

EXISTING 34:1 APPROACH SURFACE 1000'x3500'x10000'

EX RUNWAY 2 END EL 209.5 34°53'36.20" N 120°28'04.56" W

EX RUNWAY 2 APPROACH RPZ 500'X700'X1000'

EXISTING 20:1 APPROACH SURFACE 500'x1500'x5000'

NO EXISTING OBSTACLE CLEARANCE SURFACE PENETRATIONS: 400'x1000'x1500'x8500'

Skyway Drive

Airpark Drive

67 SMPAD Maintenance Yard

Tower Apron 210,497 s.f.

Existing Terminal Apron 324,147 s.f.

Existing Transient Apron 262,925 s.f.

Cargo Apron 96,552 s.f.

Special Event Area 820,260 s.f.

Santa Maria Karting Leasehold

Magnetic Declination
12° 37 East
Annual Rate of Change
0° 5' West
(Source: NOAA, NCEI, August 2017)

LEGEND

EXISTING	DESCRIPTION
	AIRPORT PROPERTY LINE
N/A	AVIATION RESERVE
	SECTION CORNERS
	AIRPORT REFERENCE POINT (ARP)
	AIRPORT ROTATING BEACON
	AVIGATION EASEMENT
BRL	BUILDING RESTRICTION LINE (35')
	STRUCTURE ON AIRPORT
	STRUCTURE OFF AIRPORT
	STRUCTURE TO BE REMOVED (TBR)
	CRITICAL AREA
	RUNWAY TAXIWAY APRON PAVEMENT
	RUNWAY TAXIWAY APRON PAVEMENT (TBR)
	SHOULDER PAVEMENT
x	FENCE LINE
	HOLD MARKING
	ROADS AND PARKING PAVEMENT
DESIGNATION	SURVEY MONUMENT WITH IDENTIFIER
OFA	OBJECT FREE AREA
RSA	RUNWAY SAFETY AREA
OFZ	OBSTACLE FREE ZONE
	PRECISION OBSTACLE FREE ZONE
RPZ	RUNWAY PROTECTION ZONE
RVZ	RUNWAY VISIBILITY ZONE
TOFA	TAXIWAY OBJECT FREE AREA
TSA	TAXIWAY SAFETY AREA
	TIE-DOWNS
	PAPI-4
	WINDSOCK
	LOCALIZER
5000	TOPOGRAPHIC CONTOURS

FAA APPROVAL STAMP

Approved conditionally 7-17-2019

Subject to comments contained in our letter dated 7-17-2019
FEDERAL AVIATION ADMINISTRATION
Western-Pacific Region

By _____
Manager - LAX/ADO

FOR APPROVAL BY
SANTA MARIA PUBLIC AIRPORT DISTRICT

Name Title _____ Date 7-8-19

0 400 800
SCALE IN FEET

No.	REVISIONS	DATE	BY	APP'D

"THE PREPARATION OF THESE DOCUMENTS WAS FINANCED IN PART THROUGH A GRANT FROM THE FEDERAL AVIATION ADMINISTRATION AS PROVIDED UNDER SECTION 505 OF THE AIRPORT AND AIRWAY IMPROVEMENT ACT OF 1982, AS AMENDED. THE CONTENTS DO NOT NECESSARILY REFLECT THE OFFICIAL VIEWS OR POLICY OF THE FAA. ACCEPTANCE OF THESE DOCUMENTS BY THE FAA DOES NOT IN ANY WAY CONSTITUTE A COMMITMENT ON THE PART OF THE UNITED STATES TO PARTICIPATE IN ANY DEVELOPMENT DEPICTED HEREIN NOR DOES IT INDICATE THAT THE PROPOSED DEVELOPMENT IS ENVIRONMENTALLY ACCEPTABLE IN ACCORDANCE WITH APPROPRIATE PUBLIC LAWS."

SANTA MARIA PUBLIC AIRPORT

EXISTING AIRPORT LAYOUT DRAWING

SANTA MARIA, CALIFORNIA

PLANNED BY: Eric S. Pfeifer
DETAILED BY: Diana L. Przybycien
APPROVED BY: James M. Harris

June 2019 SHEET 3 OF 18

Coffman Associates
Airport Consultants
www.coffmanassociates.com

Coffman Associates G:\Diana\MP\Santa Maria (SMX)\ALP\03 SMX ALD EX.dwg Printed Date: 8-09-19 03:34:28 PM dprzybycien

GENERAL NOTES:

1. UNLESS NOTED OTHERWISE ALL EXISTING COORDINATES, ELEVATIONS, AND BEARINGS FROM MARTINEZ GEOSPATIAL, EAGAN, MN, DATED AUGUST, 2016.
2. OTHER DATA SOURCES CONSULTED INCLUDE FAA AIRPORT MASTER RECORD FORM 5010, AND THE FAA AIRPORT FACILITY DIRECTORY http://www.faa.gov/air_traffic/flight_info/aeronav/digital_products/dafd/, AND http://webdatasheet.faa.gov/
3. EXISTING AIRFIELD LOCATIONS, RUNWAY INTERSECTION ELEVATIONS, RUNWAY ELEVATIONS, COORDINATE, AND BEARING CALCULATIONS DERIVED FROM GROUND SURVEY PREPARED BY MARTINEZ GEOSPATIAL, EAGAN, MN.
4. HORIZONTAL DATUM: NORTH AMERICAN DATUM 1983 - NAD83;
   VERTICAL DATUM: NORTH AMERICAN DATUM 1988 - NAVD88.
5. TRAVERSEWAY ELEVATIONS WHERE ROADWAYS INTERSECT PART 77 APPROACH SURFACE ARE ACTUAL ELEVATIONS.
6. SEE INNER PORTION OF THE APPROACH SURFACE DRAWINGS FOR OBSTACLE CLEARANCE SURFACE PENETRATIONS.
7. SEE TERMINAL AREA DRAWINGS, SHEETS 5 AND 6 OF 18 FOR BUILDING LISTS AND LANDSIDE DIMENSIONAL DETAILS.
8. WHERE NOTED, OBSTRUCTION LIGHT (OL) INFORMATION FROM NATIONAL GEODETIC SURVEY AERONAUTICAL DATA SHEET.

SEE IPASD FOR OBSTACLE CLEARANCE SURFACE PENETRATIONS:
EXISTING 400'x1000'x1500'x8500'
ULTIMATE 400'x1000'x1500'x8500'

EXISTING/ULTIMATE 20:1 APPROACH SURFACE 500'x1500'x5000'

ULT RUNWAY 20 APPROACH RPZ 500'X700'X1000' OWNED IN FEE

EX/ULT RUNWAY 20 END EL 226.2 34°54'17.81" N 120°27'27.88" W

EXISTING/ULTIMATE 50:1/40:1 APPROACH SURFACE 1000'x5000'x16000'

EX RUNWAY 12 APPROACH RPZ 1000'X1700'X2500' PARTIALLY OWNED

EX/ULT RUNWAY 12 END/LOW POINT EL 216.8 34°54'29.80" N 120°27'51.69" W

SEE IPASD FOR OBSTACLE CLEARANCE SURFACE PENETRATIONS:
EXISTING 800'x3400'x10000'
ULTIMATE 800'x3400'x10000'

Ex/Ult Runway 12-30 8,004' x 150'

True Bearing 136.81°

EX/ULT RUNWAY 30 END EL 261.1 34°53'33.43" N 120°26'44.23" W

SEE IPASD FOR OBSTACLE CLEARANCE SURFACE PENETRATIONS:
EXISTING 400'x3400'x10000'
ULTIMATE 400'x3400'x10000'

EX RUNWAY 30 APPROACH RPZ 500'X1010'X1700'

EXISTING/ULTIMATE 34:1 APPROACH SURFACE 1000'x3500'x10000'

ULT RUNWAY 20 DSP'D THRESHOLD EL 225.0 34°54'10.20" N 120°27'34.58" W

Ex/Ult Runway 7-25 5,199' x 75'

True Bearing 67.39°

EX/ULT RUNWAY 2 END EL 209.5 34°53'36.20" N 120°28'04.56" W

NO OBSTACLE CLEARANCE SURFACE PENETRATIONS:
EXISTING 400'x1000'x1500'x8500'
ULTIMATE 400'x1000'x1500'x8500'

EXISTING/ULTIMATE 20:1 APPROACH SURFACE 500'x1500'x5000'

EX RUNWAY 2 APPROACH RPZ 500'X700'X1000' PARTIALLY OWNED

Ex/Ult ARP 34°53'59.80" 120°27'29.09"

Airport Surveillance Radar - 11

ASR Critical Area

Aviation Use Reserve

Existing Special Event Area 820,260 s.f.

South General Aviation Apron 820,260 s.f.

Santa Maria Karting Leasehold

Future Business Park Detention Basin

Existing Terminal Apron 324,147 s.f.

Ultimate Terminal Apron 352,315 s.f.

Tower Apron 210,497 s.f.

Ultimate Auto Parking

Ultimate Apron

Cargo Apron 36,552 s.f.

USFS Apron 1650'

Auto Parking

Skyway Drive

Airpark Drive

Through-the-Fence Access Point

Drainage

Glideslope Critical Area

Localizer Critical Area

OL GS

OL LOC

OL DME

Ex PAPI-4

Relocate Road to Beyond Localizer Critical Area

Magnetic Declination
12° 37 East
Annual Rate of Change
0° 5' West
(Source: NOAA, NCEI, August 2017)

LEGEND

EXISTING	ULTIMATE	DESCRIPTION
	N/A	AIRPORT PROPERTY LINE
N/A		AVIATION RESERVE
		SECTION CORNERS
		AIRPORT REFERENCE POINT (ARP)
		AIRPORT ROTATING BEACON
		AVIGATION EASEMENT
BRL		BUILDING RESTRICTION LINE (35')
		STRUCTURES ON AIRPORT
		STRUCTURE OFF AIRPORT
N/A		ABANDON/REMOVE
		CRITICAL AREA
		RUNWAY TAXIWAY APRON PAVEMENT
		SHOULDER PAVEMENT
		FENCE LINE
		HOLD MARKING
		ROADS AND PARKING PAVEMENT
		SURVEY MONUMENT WITH IDENTIFIER
		OBJECT FREE AREA
		RUNWAY SAFETY AREA
		OBSTACLE FREE ZONE
		PRECISION OBSTACLE FREE ZONE
		RUNWAY PROTECTION ZONE
		RUNWAY VISIBILITY ZONE
		TAXIWAY OBJECT FREE AREA
		TAXIWAY SAFETY AREA
		TIE-DOWNS
		PAPI-4
		WINDSOCK
		LOCALIZER
		TOPOGRAPHIC CONTOURS

FAA APPROVAL STAMP

Approved conditionally 7-17-2019

Subject to comments contained in our letter dated 7-17-2019
FEDERAL AVIATION ADMINISTRATION
Western-Pacific Region

By _____
Manager - LAX/ADO

FOR APPROVAL BY
SANTA MARIA PUBLIC AIRPORT DISTRICT
Name: TSM
Date: 7-8-19

0 400 800
SCALE IN FEET

No.	REVISIONS	DATE	BY	APP'D
△	-	-	-	-

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SANTA MARIA PUBLIC AIRPORT

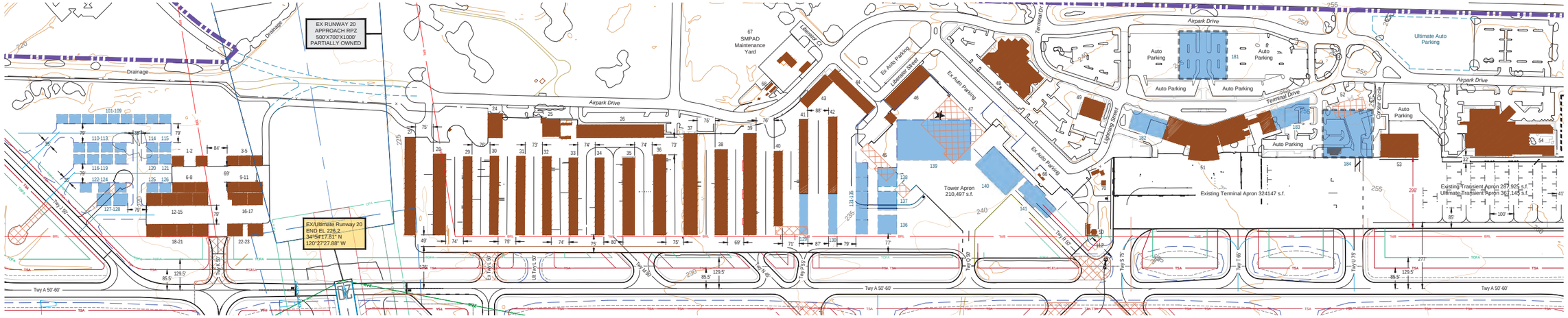
ULTIMATE
AIRPORT LAYOUT DRAWING
SANTA MARIA, CALIFORNIA

PLANNED BY: Eric S. Pfeifer
DETAILED BY: Diana L. Praybycien
APPROVED BY: James M. Harris

June 2019 SHEET 4 OF 18

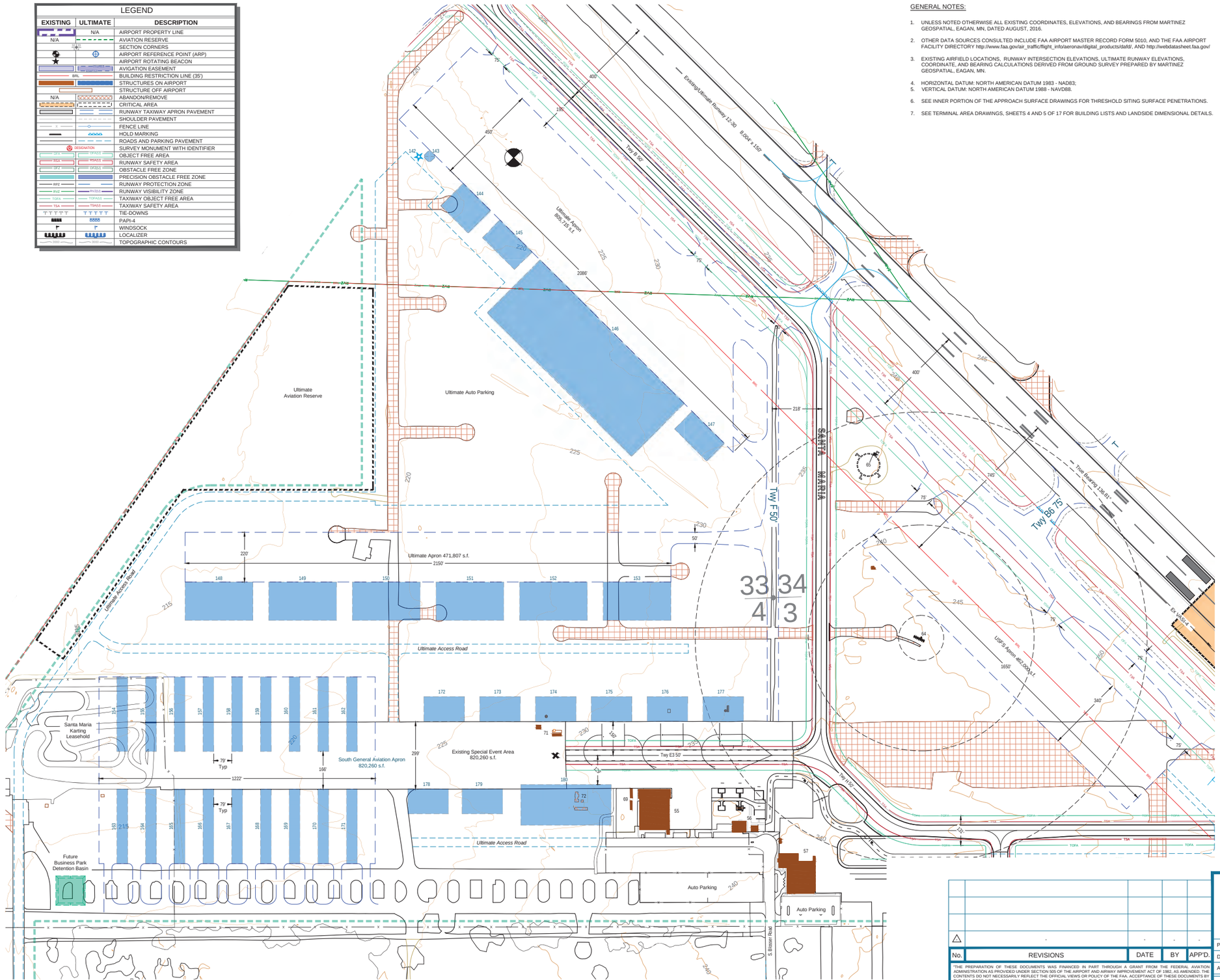
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EX RUNWAY 20
APPROACH RPZ
500'X700'X1000'
PARTIALLY OWNED
EX/Ultimate Runway 20
END EL 226.2
34°54'17.81" N
120°27'27.88" W
67
SMPAD
Maintenance
Yard
Elevator Ct
Ex Auto Parking
Elevator Street
Ex Auto Parking
Lightning Street
Terminal Dr
Airpark Drive
Auto
Parking
Terminal Drive
Ultimate Auto
Parking
Tower Apron
210,497 s.f.
Existing Terminal Apron 324147 s.f.
Existing Transient Apron 287,925 s.f.
Ultimate Transient Apron 367,145 s.f.
Drainage
Twy A 50'-60'
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Twy S 75'
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LEGEND

EXISTING	ULTIMATE	DESCRIPTION
	N/A	AIRPORT PROPERTY LINE
N/A		AVIATION RESERVE
		SECTION CORNERS
		AIRPORT REFERENCE POINT (ARP)
		AIRPORT ROTATING BEACON
		AVIGATION EASEMENT
BRL		BUILDING RESTRICTION LINE (35')
		STRUCTURES ON AIRPORT
		STRUCTURE OFF AIRPORT
N/A		ABANDON/REMOVE
		CRITICAL AREA
		RUNWAY TAXIWAY APRON PAVEMENT
		SHOULDER PAVEMENT
		FENCE LINE
		HOLD MARKING
		ROADS AND PARKING PAVEMENT
DESIGNATION		SURVEY MONUMENT WITH IDENTIFIER
OFA	OFA(U)	OBJECT FREE AREA
RSA	RSA(U)	RUNWAY SAFETY AREA
OFZ	OFZ(U)	OBSTACLE FREE ZONE
		PRECISION OBSTACLE FREE ZONE
RPZ		RUNWAY PROTECTION ZONE
RVZ	RVZ(U)	RUNWAY VISIBILITY ZONE
TOFA	TOFA(U)	TAXIWAY OBJECT FREE AREA
TSA	TSA(U)	TAXIWAY SAFETY AREA
		TIE-DOWNS
		PAPI-4
		WINDSOCK
		LOCALIZER
		TOPOGRAPHIC CONTOURS



GENERAL NOTES:

1. UNLESS NOTED OTHERWISE ALL EXISTING COORDINATES, ELEVATIONS, AND BEARINGS FROM MARTINEZ GEOSPATIAL, EAGAN, MN, DATED AUGUST, 2016.
2. OTHER DATA SOURCES CONSULTED INCLUDE FAA AIRPORT MASTER RECORD FORM 5010, AND THE FAA AIRPORT FACILITY DIRECTORY http://www.faa.gov/air_traffic/flight_info/aeronav/digital_products/dafd/, AND http://webdatasheet.faa.gov/
3. EXISTING AIRFIELD LOCATIONS, RUNWAY INTERSECTION ELEVATIONS, ULTIMATE RUNWAY ELEVATIONS, COORDINATE, AND BEARING CALCULATIONS DERIVED FROM GROUND SURVEY PREPARED BY MARTINEZ GEOSPATIAL, EAGAN, MN.
4. HORIZONTAL DATUM: NORTH AMERICAN DATUM 1983 - NAD83;
5. VERTICAL DATUM: NORTH AMERICAN DATUM 1988 - NAVD88.
6. SEE INNER PORTION OF THE APPROACH SURFACE DRAWINGS FOR THRESHOLD SITING SURFACE PENETRATIONS.
7. SEE TERMINAL AREA DRAWINGS, SHEETS 4 AND 5 OF 17 FOR BUILDING LISTS AND LANDSIDE DIMENSIONAL DETAILS.

ULTIMATE AIRPORT BUILDINGS

NO.	DESCRIPTION	ELEV. (MSL)
142	Airport Beacon	304.5'
143	ATCT	299.5'
144	Corporate Hangar	252.0'
145	T-Hangars	251.0'
146	Corporate Hangar	265.0'
147	Corporate Hangar	262..0'
148	Conventional Hangar	249.0'
149	Conventional Hangar	250.0'
150	Conventional Hangar	252.0'
151	Conventional Hangar	254.5'
152	Conventional Hangar	259.0'
153	Conventional Hangar	263.0'
154	T-Hangars	237.0'
155	T-Hangars	237.5'
156	T-Hangars	238.0'
157	T-Hangars	239.0'
158	T-Hangars	240.0'
159	T-Hangars	241.0'
160	T-Hangars	242.0'
161	T-Hangars	243.0'
162	T-Hangars	244.0'
163	T-Hangars	237.0'
164	T-Hangars	238.0'
165	T-Hangars	238.5'
166	T-Hangars	239.0'
167	T-Hangars	240.0'
168	T-Hangars	240.0'
169	T-Hangars	241.0'
170	T-Hangars	242.5'
171	T-Hangars	244.0'
172	Corporate Hangar	255.5'
173	Corporate Hangar	257.5'
174	Corporate Hangar	260.0'
175	Corporate Hangar	262.0'
176	Corporate Hangar	264.0'
177	Corporate Hangar	267.0'
178	Corporate Hangar	256.0'
179	Corporate Hangar	258.0'
180	Corporate Hangar	262.0'

EXISTING AIRPORT BUILDINGS

NO.	DESCRIPTION	ELEV. (MSL)
55	Central Coast Jet Center	270.9'
56	Rotorcraft Leasing	273.5'
57	Arctica Air Service	282.1'
58	CalStar	259.8'
64	ASOS-3 (OL)*	282.0
65	Segmented Circle/Ltd Windcone	282.0
69	FBO Fuel Farm	247.4'
71	Air Attack Support	235.6'
72	Air Attack Support	229.4'

*FROM NGS AERONAUTICAL DATA SHEET

NORTH (MAGNETIC NORTH)

Magnetic Declination
12° 37' East
Annual Rate of Change
00° 05' West
(Source: NOAA, NCEI, August 2017)

0 200 400
SCALE IN FEET

No.	REVISIONS	DATE	BY	APP'D.
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"THE PREPARATION OF THESE DOCUMENTS WAS FINANCED IN PART THROUGH A GRANT FROM THE FEDERAL AVIATION ADMINISTRATION AS PROVIDED UNDER SECTION 505 OF THE AIRPORT AND AIRWAY IMPROVEMENT ACT OF 1982, AS AMENDED. THE CONTENTS DO NOT NECESSARILY REFLECT THE OFFICIAL VIEWS OR POLICY OF THE FAA. ACCEPTANCE OF THESE DOCUMENTS BY THE FAA DOES NOT IN ANY WAY CONSTITUTE A COMMITMENT ON THE PART OF THE UNITED STATES TO PARTICIPATE IN ANY DEVELOPMENT DEPICTED HEREIN NOR DOES IT INDICATE THAT THE PROPOSED DEVELOPMENT IS ENVIRONMENTALLY ACCEPTABLE IN ACCORDANCE WITH APPROPRIATE PUBLIC LAWS."

SANTA MARIA PUBLIC AIRPORT

TERMINAL AREA DRAWING II

SANTA MARIA, CALIFORNIA

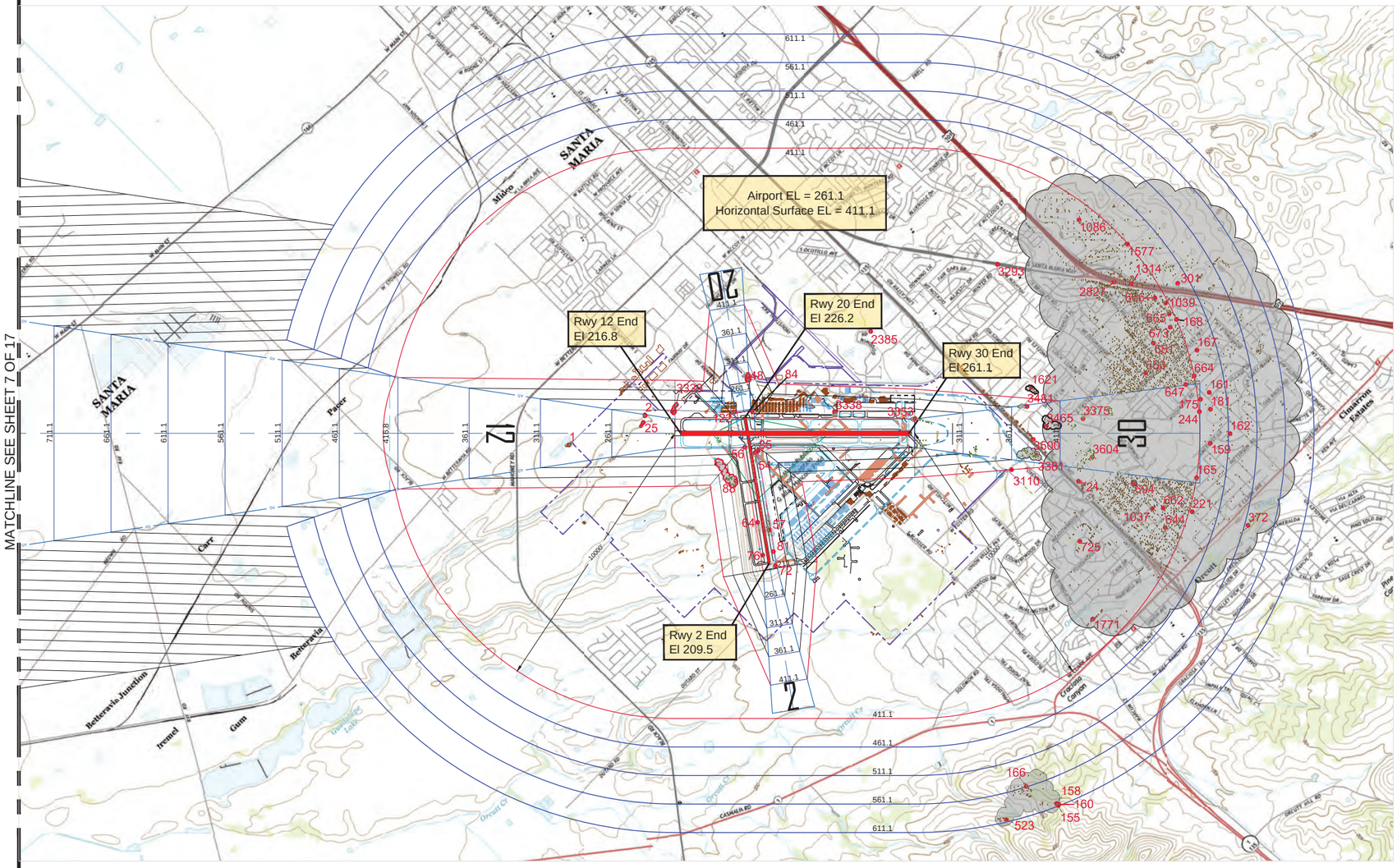
PLANNED BY: Eric S. Pfeifer
DETAILED BY: Diana L. Przybycien
APPROVED BY: James M. Harris

June 2019

Coffman Associates
Airport Consultants
www.coffmanassociates.com

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MATCHLINE SEE SHEET 7 OF 17



Number	Description	Top Elevation (msl)	Surface Penetrated	Object Penetration	Remediation	Date of Survey	Source
1	TREES	306.1	12 Inner Approach	14.9	TRIM OR REMOVE	8/6/2016	MTZ 12 PIR-30 NPC Obstructions
2	TREES	251.7	12 Inner Approach	13.9	TRIM OR REMOVE	8/6/2016	MTZ 12 PIR-30 NPC Obstructions
25	TREES	241.1	12 Inner Approach	2.1	TRIM OR REMOVE	8/6/2016	MTZ 12 PIR-30 NPC Obstructions
48	TREES	288.2	20 Approach	7.8	TRIM OR REMOVE	8/6/2016	MTZ 2-20 BV Obstructions
54	TREES	230.5	220 Primary	7.6	TRIM OR REMOVE	8/6/2016	MTZ 2-20 BV Obstructions
56	TREES	228.8	220 Primary	4.3	TRIM OR REMOVE	8/6/2016	MTZ 2-20 BV Obstructions
57	TREES	216.2	220 Primary	4.3	TRIM OR REMOVE	8/6/2016	MTZ 2-20 BV Obstructions
64	TREES	215.7	220 Primary	3.1	TRIM OR REMOVE	8/6/2016	MTZ 2-20 BV Obstructions
72	MANMADE SURFACE POINT	212	220 Primary	2.7	REVALUATE OEAA	8/8/2016	MTZ 2-20 BV Obstructions
76	TREES	212.5	220 Primary	2.3	TRIM OR REMOVE	8/6/2016	MTZ 2-20 BV Obstructions
81	TREES	212.2	220 Primary	1.9	TRIM OR REMOVE	8/6/2016	MTZ 2-20 BV Obstructions
85	TREES	231.2	220 Transitional	6.2	TRIM OR REMOVE	8/6/2016	MTZ 2-20 BV Obstructions
88	TREES	311	220 Transitional	32.5	TRIM OR REMOVE	8/6/2016	MTZ 2-20 BV Obstructions
122	BLDG PEAK ELEV	242.5	220 Transitional	3	ADD OBSTRUCTION LIGHT	8/8/2016	MTZ 2-20 BV Obstructions
155	TREES	756.7	Conical	146.2	REVALUATE OEAA	8/6/2016	MTZ P77 HORCON Obstructions
158	TREES	728.4	Conical	122.3	REVALUATE OEAA	8/6/2016	MTZ P77 HORCON Obstructions
159	TREES	548.5	Conical	119.8	REVALUATE OEAA	8/6/2016	MTZ P77 HORCON Obstructions
160	GROUND	722.7	Conical	114.2	REVALUATE OEAA	8/9/2016	MTZ P77_HORCON Obstructions
161	TREES	544.3	Conical	111.7	REVALUATE OEAA	8/6/2016	MTZ P77 HORCON Obstructions
162	TREES	566.6	Conical	102.4	REVALUATE OEAA	8/6/2016	MTZ P77 HORCON Obstructions
165	TREES	511.9	Conical	100.4	REVALUATE OEAA	8/6/2016	MTZ P77 HORCON Obstructions
166	TREES	660.2	Conical	100	REVALUATE OEAA	8/6/2016	MTZ P77 HORCON Obstructions
167	TREES	525.9	Conical	98.9	REVALUATE OEAA	8/6/2016	MTZ P77 HORCON Obstructions
168	TREES	508.4	Conical	97.9	REVALUATE OEAA	8/6/2016	MTZ P77 HORCON Obstructions
175	UTILITY POLE	506.5	Conical	90.7	ADD OBSTRUCTION LIGHT	8/6/2016	MTZ P77 HORCON Obstructions
181	UTILITY POLE	515.7	Conical	84.3	ADD OBSTRUCTION LIGHT	8/6/2016	MTZ P77 HORCON Obstructions
221	TREES	477	Conical	60.4	REVALUATE OEAA	8/6/2016	MTZ P77 HORCON Obstructions
244	GROUND	465	Conical	53.2	REVALUATE OEAA	8/14/2016	MTZ P77 HORCON Obstructions
301	GROUND	482	Conical	40.1	REVALUATE OEAA	8/19/2016	MTZ P77 HORCON_Obstructions
372	TREES	543.3	Conical	25.9	REVALUATE OEAA	8/6/2016	MTZ P77 HORCON Obstructions
523	TREES	617.5	Conical	9.9	REVALUATE OEAA	8/6/2016	MTZ P77 HORCON Obstructions
644	POLE	429	Horizontal	17.9	REVALUATE OEAA	9/15/2017	DOF 091517
647	POLE	493	Horizontal	81.9	REVALUATE OEAA	9/15/2017	DOF 091517
651	POLE	509	Horizontal	93.9	REVALUATE OEAA	9/15/2017	DOF 091517
662	TREES	529.7	Horizontal	118.6	REVALUATE OEAA	8/6/2016	MTZ P77 HORCON Obstructions
663	TREES	528.8	Horizontal	117.7	REVALUATE OEAA	8/6/2016	MTZ P77 HORCON Obstructions
664	TREES	524.9	Horizontal	113.8	REVALUATE OEAA	8/6/2016	MTZ P77 HORCON Obstructions
665	TREES	517.6	Horizontal	106.5	REVALUATE OEAA	8/6/2016	MTZ P77 HORCON Obstructions
666	TREES	516.8	Horizontal	105.7	REVALUATE OEAA	8/6/2016	MTZ P77 HORCON Obstructions
673	LT POLE	510.5	Horizontal	99.4	ADD OBSTRUCTION LIGHT	8/6/2016	MTZ P77 HORCON Obstructions
694	TREES	489.6	Horizontal	78.5	REVALUATE OEAA	8/6/2016	MTZ P77 HORCON Obstructions
721	TREES	482.8	Horizontal	71.7	REVALUATE OEAA	8/6/2016	MTZ P77 HORCON Obstructions
725	TREES	482.3	Horizontal	71.2	REVALUATE OEAA	8/6/2016	MTZ P77 HORCON Obstructions
1037	TREES	455.5	Horizontal	44.4	REVALUATE OEAA	8/6/2016	MTZ P77 HORCON Obstructions
1039	BLDG PEAK ELEV	455.5	Horizontal	44.4	ADD OBSTRUCTION LIGHT	8/6/2016	MTZ P77 HORCON Obstructions
1086	GROUND	453.6	Horizontal	42.5	REVALUATE OEAA	8/6/2016	MTZ P77 HORCON Obstructions
1314	LT_POLE	446.4	Horizontal	35.3	ADD OBSTRUCTION LIGHT		MTZ P77 HORCON_Obstructions
1577	GROUND	439.7	Horizontal	28.6	REVALUATE OEAA	8/21/2016	MTZ P77 HORCON_Obstructions
1621	TREES	438.6	Horizontal	27.5	REVALUATE OEAA	8/6/2016	MTZ P77 HORCON Obstructions
1771	TREES	435.9	Horizontal	24.8	REVALUATE OEAA	8/6/2016	MTZ P77 HORCON Obstructions
2385	TREES	424.9	Horizontal	13.8	REVALUATE OEAA	8/6/2016	MTZ P77 HORCON Obstructions
2827	HIGHWAY 101	418.6	Horizontal	7.5	REVALUATE OEAA		MTZ P77 HORCON_Obstructions
3110	TREES	414.4	Horizontal	3.3	TREES REMOVED OCTOBER 2016	8/6/2016	MTZ P77 HORCON_Obstructions
3293	TREES	411.6	Horizontal	0.5	REVALUATE OEAA	8/6/2016	MTZ P77 HORCON Obstructions
3338	AFFIXED BLDG OBJECT	320.8	1230 Transitional	38.9	TO REMAIN LIGHTED	8/6/2016	MTZ 12 PIR-30 NPC Obstructions
3339	TREES	287	1230 Transitional	36.2	TRIM OR REMOVE	8/6/2016	MTZ 12 PIR-30 NPC Obstructions
3353	GROUND	264.3	1230 Transitional	2.6	GRADE PER PART 77.19, (c)	8/6/2016	MTZ 12 PIR-30 NPC Obstructions
3375	TREES	486	30 Approach	51.2	REVALUATE OEAA	8/6/2016	MTZ 12 PIR-30 NPC Obstructions
3381	TREES	431.2	30 Approach	44.6	TREES REMOVED MARCH 2019	8/6/2016	MTZ 12 PIR-30 NPC Obstructions
3465	TREES	411	30 Approach	14	REVALUATE OEAA	8/6/2016	MTZ 12 PIR-30 NPC Obstructions
3481	TREES	387.6	30 Approach	10.7	REVALUATE OEAA	8/6/2016	MTZ 12 PIR-30 NPC Obstructions
3500	TREES	391	30 Approach	7.6	REVALUATE OEAA	8/6/2016	MTZ 12 PIR-30 NPC Obstructions

Magnetic Declination
12° 37 East
Annual Rate of Change
0° 5' West
(Source: NOAA, NCEI, August 2017)

0 2000 4000
SCALE IN FEET

LEGEND

OBSTRUCTION AREA - SAMPLED POINTS REPRESENT THE HIGHTES POINTS WITHIN THE VICINTIY OF OBJECTS.

1 OBSTRUCTION IDENTIFIER

GENERAL NOTES:

2. OSTRUCTIONS IDENTIFIED BY COFFMAN ASSOCIATES FROM SURVEY BY MARTINEZ GEOSPATIAL, EAGAN, MN, AUGUST 2016.
3. HORIZONTAL DATUM: NORTH AMERICAN DATUM 1983 - NAD83;
   VERTICAL DATUM: NORTH AMERICAN DATUM 1988 - NAVD88
4. OSTRUCTIONS IDENTIFIED BY COFFMAN ASSOCIATES FROM SURVEY BY MARTINEZ GEOSPATIAL, EAGAN, MN.
5. SUPPLEMENTAL DATA EXAMINED INCLUDE FAA DIGITAL OBSTACLE FILE (DOF), RELEASE DATE SEPTEMBER 15, 2017.
6. THE FOLLOWING USGS 7.5 QUAD MAPS OF THE STATE OF CALIFORNIA WERE APPLIED AS BACKGROUND: CASMALIA, GUADALUPE, NIPOMO, OCEANO, ORCUTT, SANTA MARIA, AND TWICHELL DAM.
7. SEE INNER PORTION OF THE APPROACH SURFACE DRAWINGS FOR CLOSE-IN APPROACH DETAILS.
8. ALL ELEVATIONS IN MSL FEET.

No.	REVISIONS	DATE	BY	APP'D.
△	-	-	-	-

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SANTA MARIA PUBLIC AIRPORT

AIRPORT AIRSPACE DRAWING I

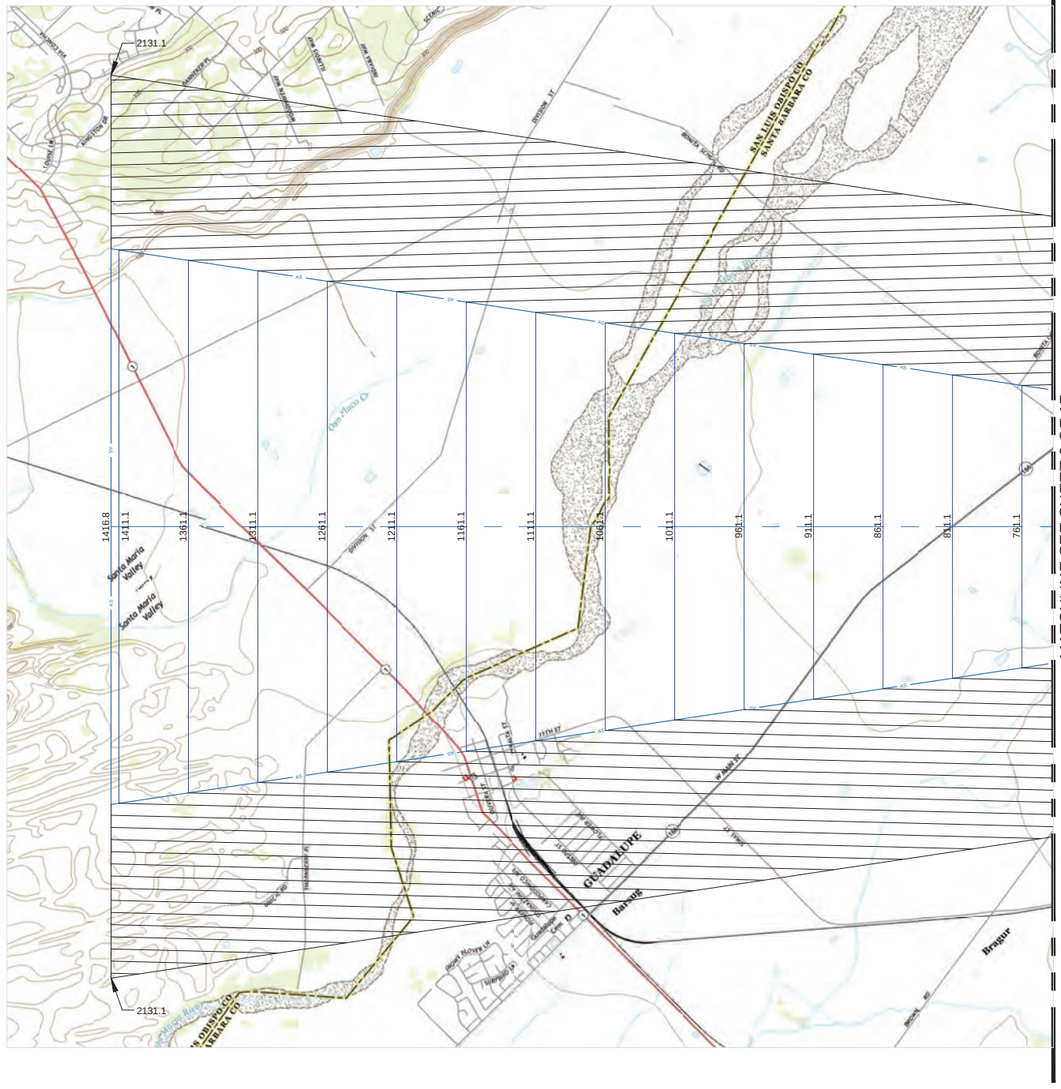
SANTA MARIA, CALIFORNIA

PLANNED BY: Eric S. Pfeifer
DETAILED BY: Diana L. Przybycien
APPROVED BY: James M. Harris

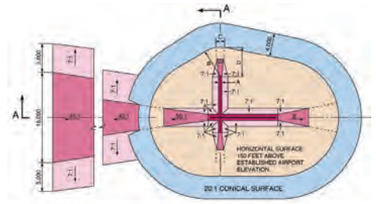
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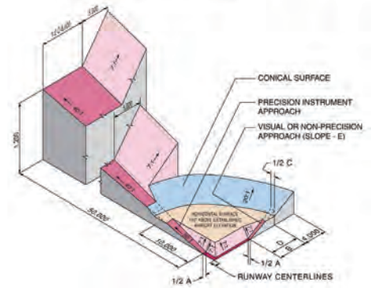


MATCHLINE SEE SHEET 6 OF 17



DIM	ITEM	DIMENSIONAL STANDARDS (FEET)					
		VISUAL RUNWAY		NON-PRECISION INSTRUMENT RUNWAY			PRECISION INSTRUMENT RUNWAY
		A	B	A	B C	B D	
A	WIDTH OF PRIMARY SURFACE AND APPROACH SURFACE WIDTH AT INNER END	250	500	500	500	1,000	1,000
B	RADIUS OF HORIZONTAL SURFACE	5,000	5,000	5,000	10,000	10,000	10,000
		VISUAL APPROACH		NON-PRECISION INSTRUMENT APPROACH			PRECISION INSTRUMENT APPROACH
		A	B	A	B C	B D	
C	APPROACH SURFACE WIDTH AT END	1,250	1,500	2,000	3,500	4,000	16,000
D	APPROACH SURFACE LENGTH	5,000	5,000	5,000	10,000	10,000	*
E	APPROACH SLOPE	20:1	20:1	20:1	34:1	34:1	*

A - UTILITY RUNWAYS
B - RUNWAYS LARGER THAN UTILITY
C - VISIBILITY MINIMUMS GREATER THAN 3/4 MILE
D - VISIBILITY MINIMUMS AS LOW AS 3/4 MILE
* - PRECISION INSTRUMENT APPROACH SLOPE IS 50:1 FOR INNER 10,000 FEET AND 40:1 FOR AN ADDITIONAL 40,000 FEET



ISOMETRIC VIEW OF SECTION A-A

SOURCE: FAA Order JO 7400.2J, Figure 6-3-3

Magnetic Declination
12° 37' East
Annual Rate of Change
0° 5' West
(Source: NOAA, NCEI, August 2017)

0 2000 4000
SCALE IN FEET

SAMPLE GENERAL NOTES:

2. OSTRUCTIONS IDENTIFIED BY COFFMAN ASSOCIATES FROM SURVEY BY MARTINEZ GEOSPATIAL, EAGAN, MN,
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7. SEE INNER PORTION OF THE APPROACH SURFACE DRAWINGS FOR CLOSE-IN APPROACH DETAILS.
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No.	REVISIONS	DATE	BY	APP'D.
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SANTA MARIA PUBLIC AIRPORT

AIRPORT AIRSPACE DRAWING II

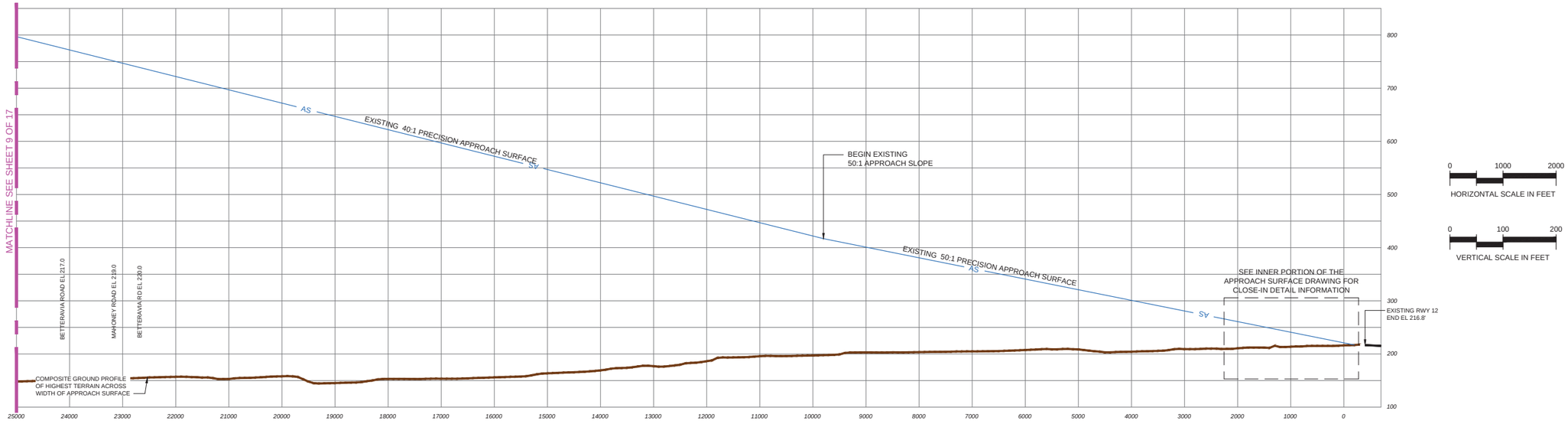
SANTA MARIA, CALIFORNIA

PLANNED BY: Eric S. Pfeifer
DETAILED BY: Diana L. Przybycien
APPROVED BY: James M. Harris

June 2019

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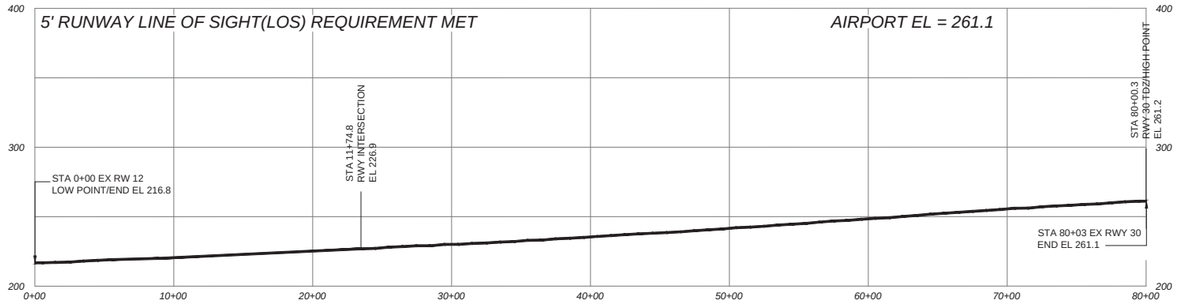


RUNWAY 12 PROFILE

RUNWAY 12 OBSTRUCTION TABLE				
No.	Description	Top Elevation	Approach Penetration	Remediation
	See Inner Portion of the Approach Surface Drawing for Close-In Detail Information			

GENERAL NOTES:

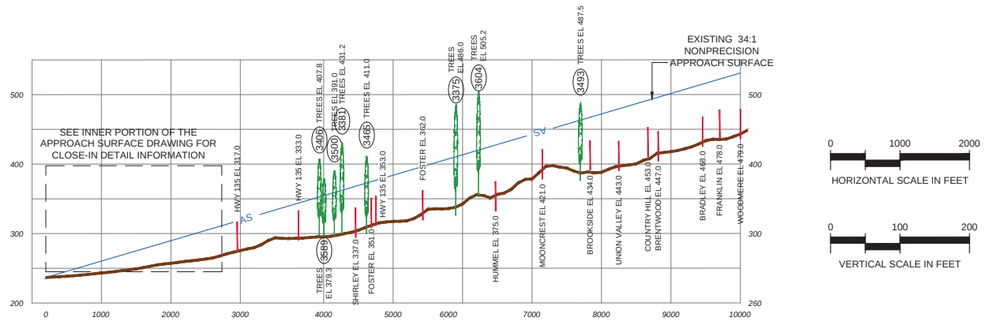
1. HORIZONTAL DATUM: NORTH AMERICAN DATUM 1983 - NAD83;
   VERTICAL DATUM: NORTH AMERICAN DATUM 1988 - NAVD88
2. ALL ELEVATIONS IN FEET.
3. MSL GROUND SURFACE ELEVATIONS ARE NOT AVAILABLE FOR OBJECT BASES.
4. NUMEROUS TREES OBSTRUCT APPROACH TO RUNWAY 30.



RUNWAY 12-30 PROFILE

0 500 1000
HORIZONTAL SCALE IN FEET

0 50 100
VERTICAL SCALE IN FEET



RUNWAY 30 PROFILE

RUNWAY 30 OBSTRUCTION TABLE				
No.	Description	Top Elevation	Approach Penetration	Remediation
3381	TREES	431.2	44.6	TREES REMOVED MARCH 2019
3406	TREES	387.6	10.7	TRIMMED TO 60' AGL OCTOBER 2016
3481	TREES	387.6	10.7	REQUEST AERONAUTICAL STUDY
3500	TREES	391.0	7.6	REQUEST AERONAUTICAL STUDY
3465	TREES	411.0	14.0	REQUEST AERONAUTICAL STUDY
3375	TREES	486.0	51.2	REQUEST AERONAUTICAL STUDY
3589	TREES	379.3	0.7	REMOVED MARCH 2019
3604	TREES	505.2	60.8	REQUEST AERONAUTICAL STUDY

GENERAL NOTES:

2. OSTRUCTIONS IDENTIFIED BY COFFMAN ASSOCIATES FROM SURVEY BY MARTINEZ GEOSPATIAL, EAGAN, MN, AUGUST 2016.
3. HORIZONTAL DATUM: NORTH AMERICAN DATUM 1983 - NAD83;
   VERTICAL DATUM: NORTH AMERICAN DATUM 1988 - NAVD88
4. OSTRUCTIONS IDENTIFIED BY COFFMAN ASSOCIATES FROM SURVEY BY MARTINEZ GEOSPATIAL, EAGAN, MN.
5. SUPPLEMENTAL DATA EXAMINED INCLUDE FAA DIGITAL OBSTACLE FILE (DOF), RELEASE DATE SEPTEMBER 15, 2017.
6. THE FOLLOWING USGS 7.5 QUAD MAPS OF THE STATE OF CALIFORNIA WERE APPLIED AS BACKGROUND: CASMALIA, GUADALUPE, NIPOMO, OCEANO, ORCUTT, SANTA MARIA, AND TWICHELL DAM.
7. SEE INNER PORTION OF THE APPROACH SURFACE DRAWINGS FOR CLOSE-IN APPROACH DETAILS.
8. ALL ELEVATIONS IN MSL FEET.

No.	REVISIONS	DATE	BY	APP'D.
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SANTA MARIA PUBLIC AIRPORT

APPROACH PROFILE DRAWING I

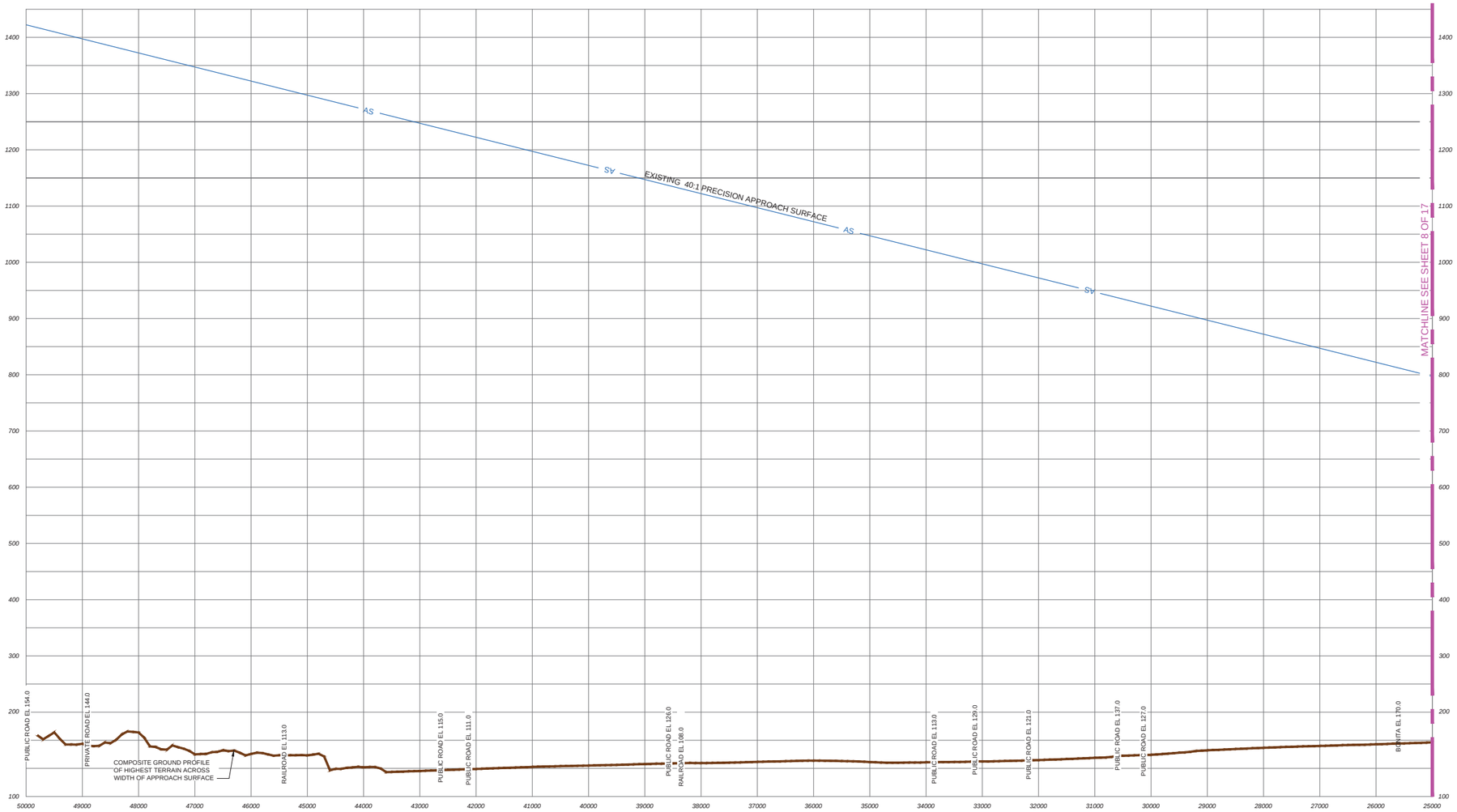
SANTA MARIA, CALIFORNIA

PLANNED BY: Eric S. Pfeifer
DETAILED BY: Diana L. Przybycien
APPROVED BY: James M. Harris

June 2019 | SHEET 9 OF 18

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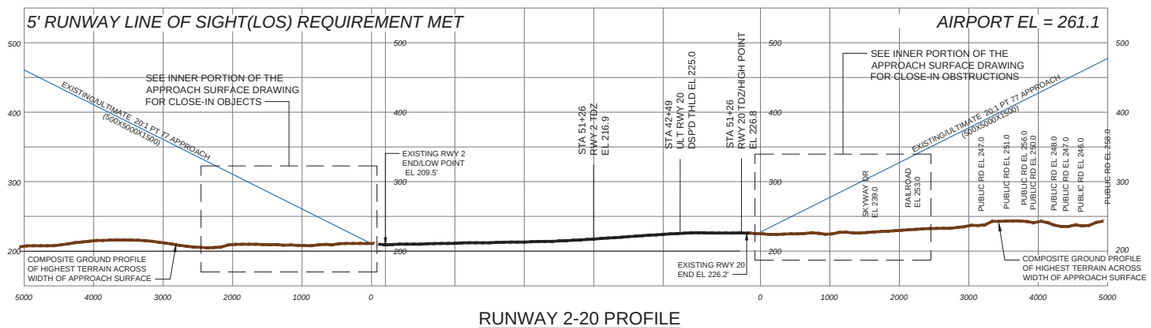
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RUNWAY 12 PROFILE

RUNWAY 12 OBSTRUCTION TABLE

No.	Description	Top Elevation	Approach Penetration	Remediation
	See Inner Portion of the Approach Surface Drawing for Close-In Detail Information			



RUNWAY 2-20 PROFILE

No.	REVISIONS	DATE	BY	APP'D.
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SANTA MARIA PUBLIC AIRPORT

APPROACH PROFILE DRAWING II

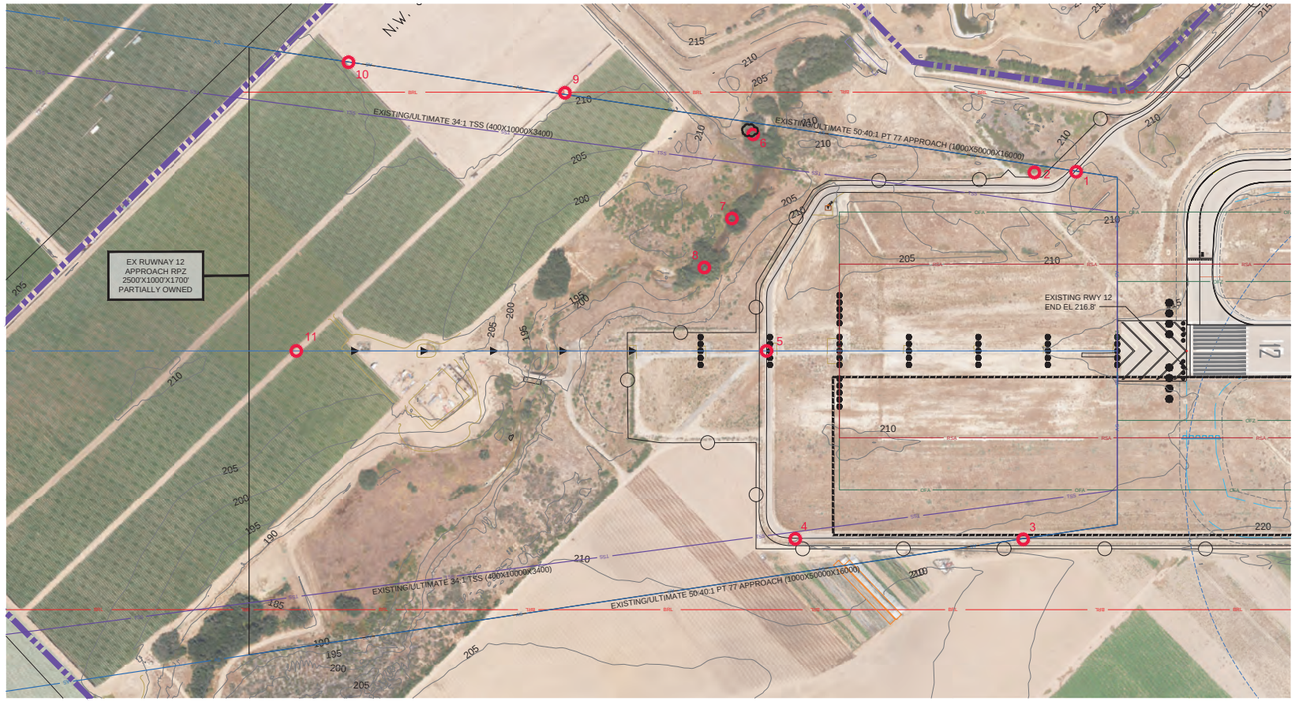
SANTA MARIA, CALIFORNIA

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June 2019

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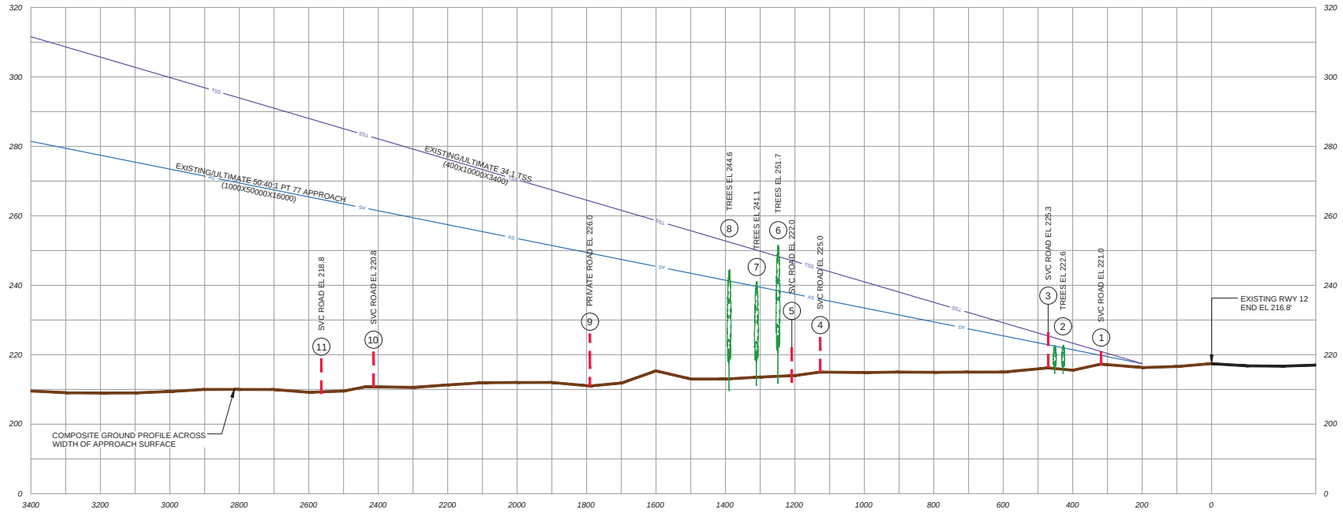


EXISTING/ULTIMATE RUNWAY 12 OBSTRUCTION TABLE						
Item	Description	Top Elevation	PT77 Approach Penetration	TSS Penetration	Remediation	Triggering Event
1	AIRPORT SVC RD	221.0	1.6	NOT IN TSS	CONTROLLED SVC ROAD; NAR	ALP UPDATE
2	TREES	222.6	1.3	NOT IN TSS	TRIM OR REMOVE	ALP UPDATE
3	AIRPORT SVC RD	225.3	1.5	NA	CONTROLLED SVC ROAD; NAR	ALP UPDATE
6	TREES	251.7	13.9	NA	TRIM OR REMOVE	ALP UPDATE
7	TREES	241.1	2.1	CLEAR	TSS CLEAR; NAR	ALP UPDATE
8	TREES	244.6	4.0	CLEAR	TSS CLEAR; NAR	ALP UPDATE

NAR - NO ACTION REQUIRED

GENERAL NOTES:

1. HORIZONTAL DATUM: NORTH AMERICAN DATUM 1983 - NAD83;
   VERTICAL DATUM: NORTH AMERICAN DATUM 1988 - NAVD88
2. OSTRUCTIONS IDENTIFIED BY COFFMAN ASSOCIATES FROM SURVEY BY MARTINEZ GEOSPATIAL, EAGAN, MN, DATED AUGUST 2016.
3. WHEN APPLICABLE, ELEVATIONS ADJUSTED UPWARD 10' FOR PRIVATE ROAD, 15' FOR PUBLIC ROADWAY, 17' FOR INTERSTATE HIGHWAY, 23' FOR RAILROADS
4. ALL ELEVATIONS IN MSL FEET.
5. THRESHOLD SITING SURFACE DIMENSIONS FROM DRAFT AC 150/5300-13A CHANGE 2.





Magnetic Declination
12° 37 East
Annual Rate of Change
0° 5' West
(Source: NOAA, NCEI, August 2017)

0 200 400
HORIZONTAL SCALE IN FEET

0 20 40
VERTICAL SCALE IN FEET

No.	REVISIONS	DATE	BY	APP'D.
△	-	-	-	-

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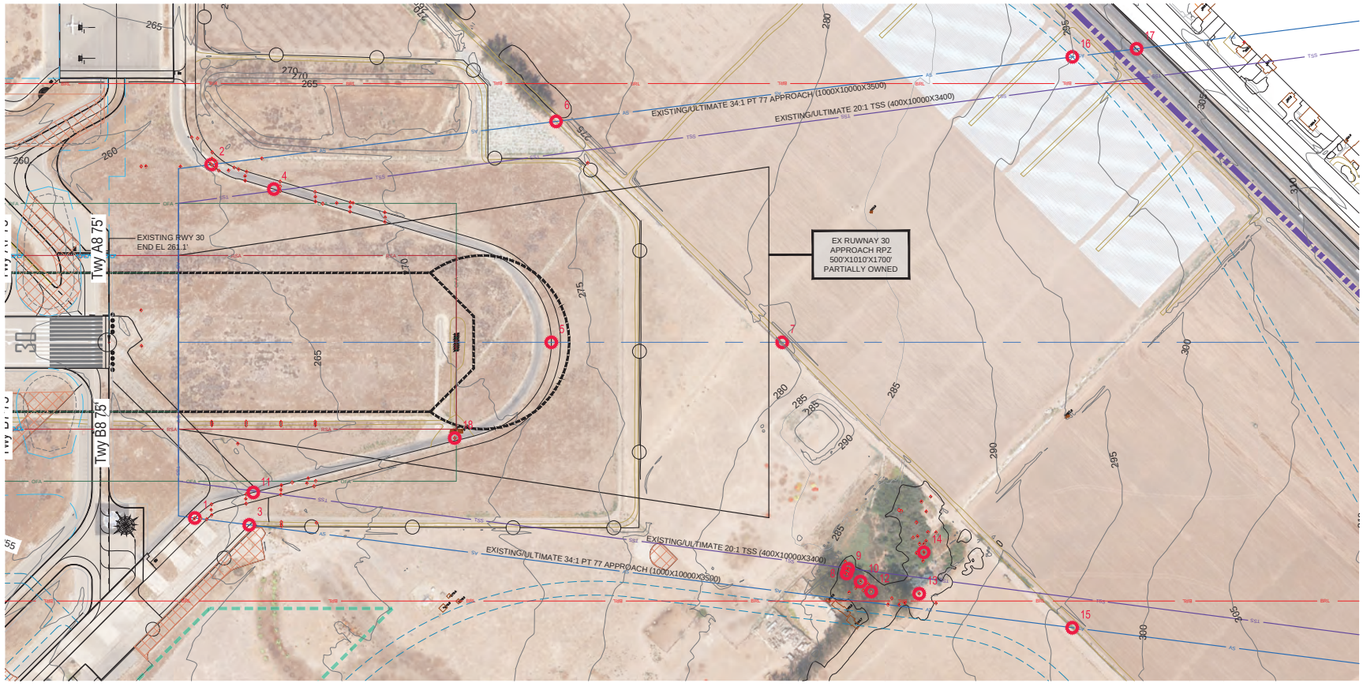
SANTA MARIA PUBLIC AIRPORT
INNER PORTION OF THE APPROACH SURFACE DRAWING
RUNWAY 12
SANTA MARIA, CALIFORNIA

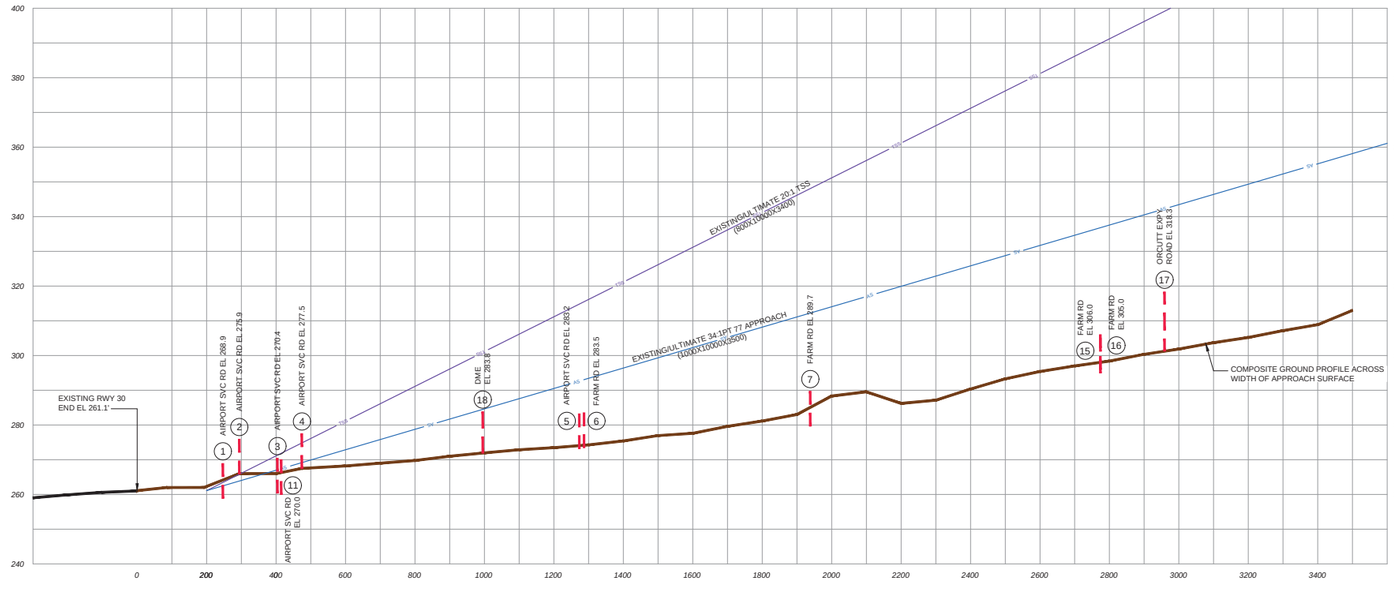
PLANNED BY: Eric S. Pfeifer
DETAILED BY: Diana L. Przybycien
APPROVED BY: James M. Harris

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EXISTING/ULTIMATE RUNWAY 30 OBSTRUCTION TABLE

Item	Description	Top Elevation	PT77 Approach Penetration	TSS Penetration	Remediation	Triggering Event
1	AIRPORT SVC RD	268.9	6.4	NA	CONTROLLED SVC ROAD; NAR	ALP UPDATE
2	AIRPORT SVC RD	275.9	12.0	NA	CONTROLLED SVC ROAD; NAR	ALP UPDATE
3	AIRPORT SVC RD	270.4	3.3	NA	CONTROLLED SVC ROAD; NAR	ALP UPDATE
4	AIRPORT SVC RD	277.5	7.8	NA	CONTROLLED SVC ROAD; NAR	ALP UPDATE
8	TREES	359.2	-	-	TREES REMOVED OCTOBER 2016	ALP UPDATE
9	TREES	372.6	-	-	TREES REMOVED OCTOBER 2016	ALP UPDATE
10	TREES	376.9	-	-	TREES REMOVED OCTOBER 2016	ALP UPDATE
11	AIRPORT SVC RD	270.0	2.6	CLEAR	CONTROLLED SVC ROAD; NAR	ALP UPDATE
12	TREES	395.0	-	-	TREES REMOVED OCTOBER 2016	
13	TREES	407.5	-	-	TREES REMOVED OCTOBER 2016	ALP UPDATE
14	TREES	330.5	-	-	TREES REMOVED OCTOBER 2016	ALP UPDATE

NAR - NO ACTION REQUIRED

GENERAL NOTES:

1. HORIZONTAL DATUM: NORTH AMERICAN DATUM 1983 - NAD83;
   VERTICAL DATUM: NORTH AMERICAN DATUM 1988 - NAVD88
2. OSTRUCTIONS IDENTIFIED BY COFFMAN ASSOCIATES FROM SURVEY BY MARTINEZ GEOSPATIAL, EAGAN, MN, AUGUST 2016.
3. WHEN APPLICABLE, ELEVATIONS ADJUSTED UPWARD 10' FOR PRIVATE ROAD, 15' FOR PUBLIC ROADWAY, 17' FOR INTERSTATE HIGHWAY, 23' FOR RAILROADS
4. ALL ELEVATIONS IN MSL FEET.
5. THRESHOLD SITING SURFACE DIMENSIONS FROM DRAFT AC 150/5300-13A CHANGE 2.

NORTH

Magnetic Declination
12° 37 East
Annual Rate of Change
0° 5' West
(Source: NOAA, NCEI, August 2017)

0 200 400
HORIZONTAL SCALE IN FEET

0 20 40
VERTICAL SCALE IN FEET

No.	REVISIONS	DATE	BY	APP'D.
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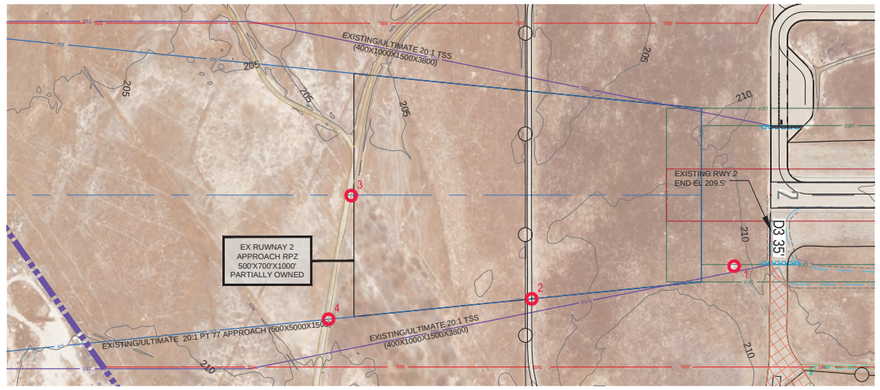
SANTA MARIA PUBLIC AIRPORT
INNER PORTION OF THE APPROACH SURFACE DRAWING
RUNWAY 30
SANTA MARIA, CALIFORNIA

PLANNED BY: Eric S. Pfeifer
DETAILED BY: Diana L. Przybycien
APPROVED BY: James M. Harris

June 2019

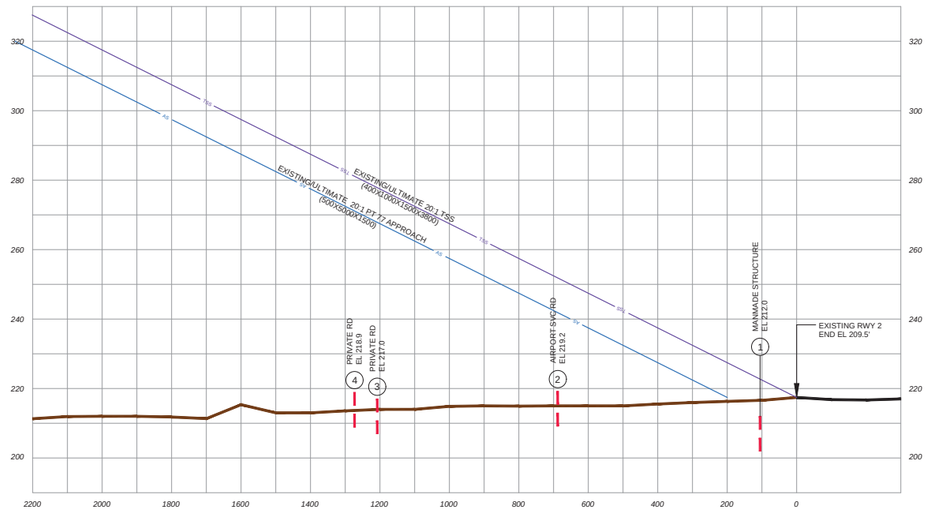
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EXISTING/ULTIMATE RUNWAY 2 OBSTRUCTION TABLE						
Item	Description	Top Elevation	PT77 Approach Penetration	TSS Penetration	Remediation	Triggering Event
	NONE					

NAR - NO ACTION REQUIRED



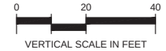
GENERAL NOTES:

1. HORIZONTAL DATUM: NORTH AMERICAN DATUM 1983 - NAD83;
   VERTICAL DATUM: NORTH AMERICAN DATUM 1988 - NAVD88
2. OSTRUCTIONS IDENTIFIED BY COFFMAN ASSOCIATES FROM SURVEY BY MARTINEZ GEOSPATIAL, EAGAN, MN, AUGUST 2016.
3. WHEN APPLICABLE, ELEVATIONS ADJUSTED UPWARD 10' FOR PRIVATE ROAD, 15' FOR PUBLIC ROADWAY, 17' FOR INTERSTATE HIGHWAY, 23' FOR RAILROADS
4. ALL ELEVATIONS IN MSL FEET.
5. THRESHOLD SITING SURFACE DIMENSIONS FROM DRAFT AC 150/5300-13A CHANGE 2.



Magnetic Declination
12° 37' East
Annual Rate of Change
00° 05' West
(Source: NOAA, NCEI, August 2017)





No.	REVISIONS	DATE	BY	APP'D.
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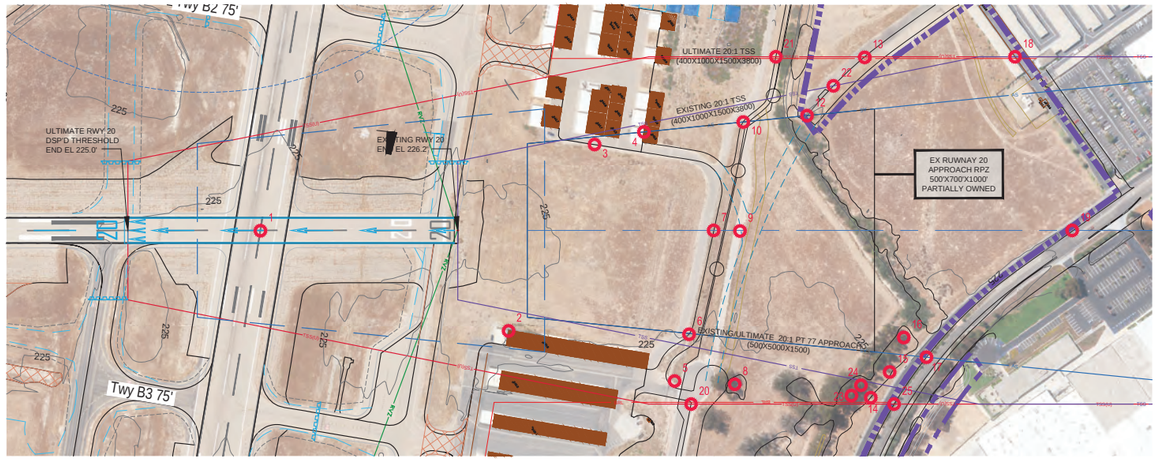
SANTA MARIA PUBLIC AIRPORT
INNER PORTION OF THE APPROACH SURFACE DRAWING
RUNWAY 2
SANTA MARIA, CALIFORNIA

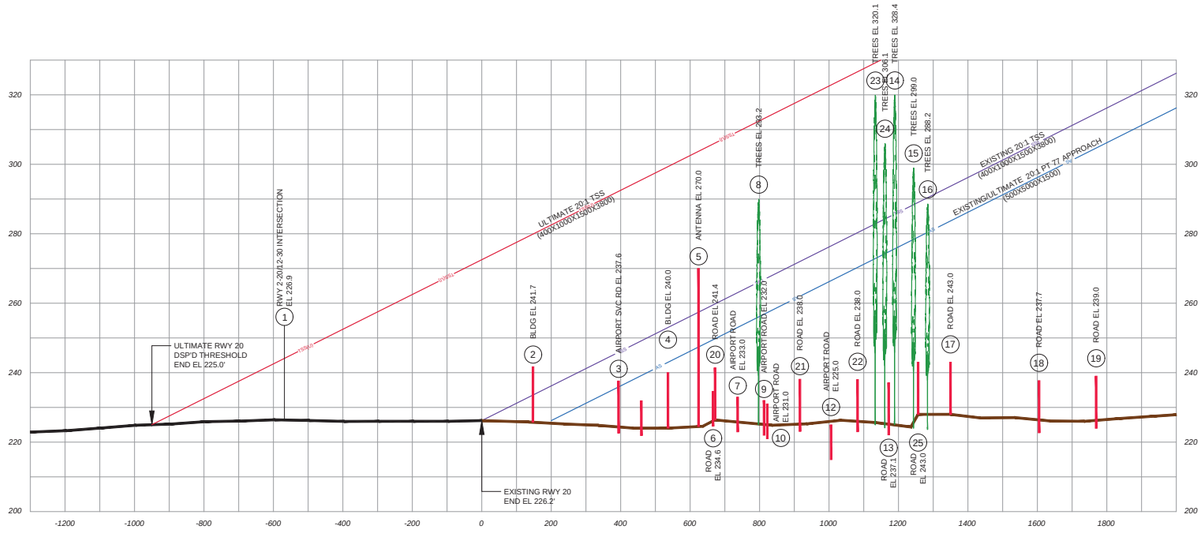
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EXISTING RUNWAY 20 OBSTRUCTION TABLE

Item	Description	Top Elevation	PT77 Approach Penetration	TSS Penetration	Remediation	Triggering Event
3	ROAD	237.6	1.7	CLEARS TSS	TSS CLEAR; NAR	ALP UPDATE
15	TREES	299.0	NA	13.1	TRIM OR REMOVE TREE	ALP UPDATE
16	TREES	288.2	7.8	NA	TSS CLEAR; NAR	

NAR - NO ACTION REQUIRED

ULTIMATE RUNWAY 20 OBSTRUCTION TABLE

Item	Description	Top Elevation	Approach Penetration	TSS Penetration	Remediation	Triggering Event
16	TREES	288.2	7.8	NA	TSS CLEAR; NAR	ALP UPDATE

NAR - NO ACTION REQUIRED

GENERAL NOTES:

1. HORIZONTAL DATUM: NORTH AMERICAN DATUM 1983 - NAD83;
   VERTICAL DATUM: NORTH AMERICAN DATUM 1988 - NAVD88
2. OSTRUCTIONS IDENTIFIED BY COFFMAN ASSOCIATES FROM SURVEY BY MARTINEZ GEOSPATIAL, EAGAN, MN, AUGUST 2016.
3. WHEN APPLICABLE, ELEVATIONS ADJUSTED UPWARD 10' FOR PRIVATE ROAD, 15' FOR PUBLIC ROADWAY, 17' FOR INTERSTATE HIGHWAY, 23' FOR RAILROADS
4. ALL ELEVATIONS IN MSL FEET.
5. THRESHOLD SITING SURFACE DIMENSIONS FROM DRAFT AC 150/5300-13A CHANGE 2.
6. OBJECT IDENTIFIER NUMBERS CORRESPOND TO



Magnetic Declination
12° 37' East
Annual Rate of Change
00° 05' West
(Source: NOAA, NCEI, August 2017)

0 200 400
HORIZONTAL SCALE IN FEET

0 20 40
VERTICAL SCALE IN FEET

No.	REVISIONS	DATE	BY	APP'D.
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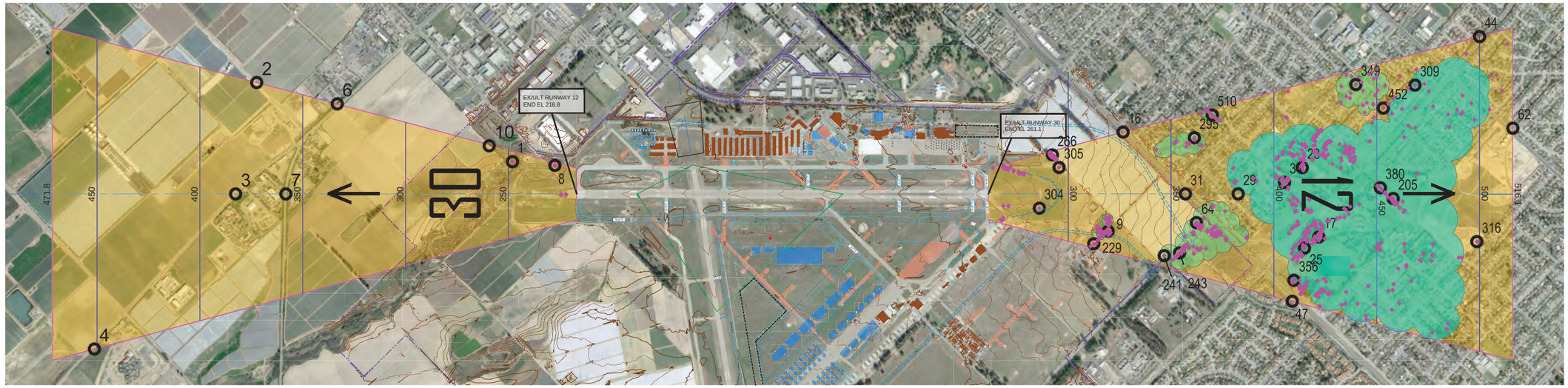
SANTA MARIA PUBLIC AIRPORT
INNER PORTION OF THE APPROACH SURFACE DRAWING
RUNWAY 20
SANTA MARIA, CALIFORNIA

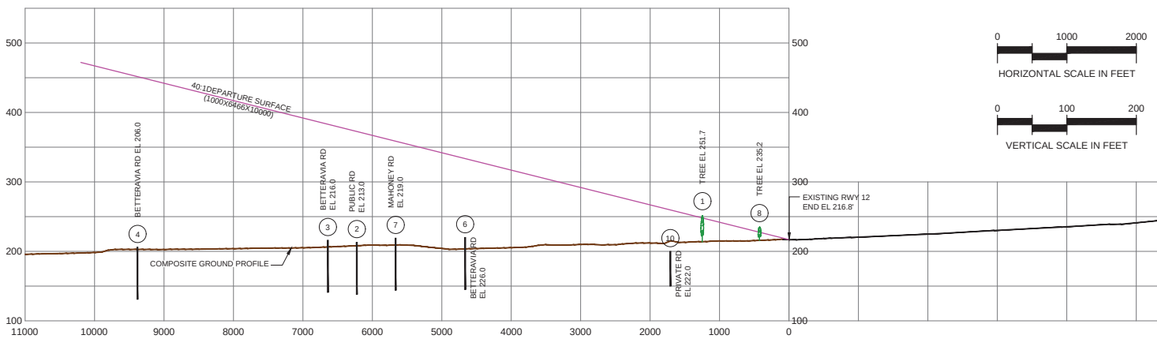
PLANNED BY: Eric S. Pfeifer
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APPROVED BY: James M. Harris

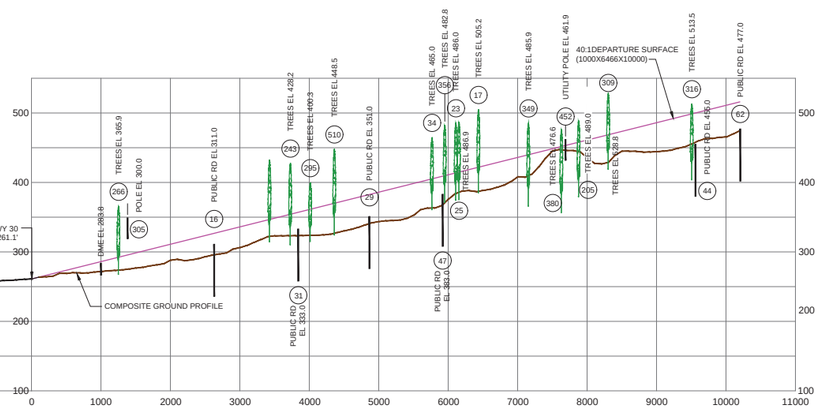
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No.	DESCRIPTION	TOP EL	PENETRATION	REMEDIATION
1	TREES	251.7	3.7	TRIM OR REMOVE
8	TREES	235.2	7.8	TRIM OR REMOVE

No.	DESCRIPTION	TOP EL	PENETRATION	REMEDIATION
9	TREES	407.5	88.1	REMOVED OCTOBER 2016
17	TREES	505.2	83.3	ASSESS DEPARTURE AREA, MAINTAIN/UPDATE OBSTACLE DEPARTURE PROCEDURE
23	TREES	486.	72.3	ASSESS DEPARTURE AREA, MAINTAIN/UPDATE OBSTACLE DEPARTURE PROCEDURE
25	TREES	486.9	72.0	ASSESS DEPARTURE AREA, MAINTAIN/UPDATE OBSTACLE DEPARTURE PROCEDURE
34	TREES	465	59.8	ASSESS DEPARTURE AREA, MAINTAIN/UPDATE OBSTACLE DEPARTURE PROCEDURE
64	TREES	402.5	40.1	REMOVED OCTOBER 2016
205	TREES	489	31.0	ASSESS DEPARTURE AREA, MAINTAIN/UPDATE OBSTACLE DEPARTURE PROCEDURE
229	TREES	404.5	92.1	REMOVED OCTOBER 2016
241	TREES	432.7	86.0	REMOVED OCTOBER 2016
243	TREES	428.2	74.0	REMOVED OCTOBER 2016
266	TREES	365.9	73.6	TRIM OR REMOVE
295	TREES	400.3	38.9	ASSESS DEPARTURE AREA, MAINTAIN/UPDATE OBSTACLE DEPARTURE PROCEDURE
305	POLE	300	4.4	ASSESS DEPARTURE AREA, MAINTAIN/UPDATE OBSTACLE DEPARTURE PROCEDURE
309	TREES	528.8	60.2	ASSESS DEPARTURE AREA, MAINTAIN/UPDATE OBSTACLE DEPARTURE PROCEDURE
316	TREES	513.5	14.8	ASSESS DEPARTURE AREA, MAINTAIN/UPDATE OBSTACLE DEPARTURE PROCEDURE
349	TREES	485.9	46.0	ASSESS DEPARTURE AREA, MAINTAIN/UPDATE OBSTACLE DEPARTURE PROCEDURE
356	TREES	482.8	73.0	ASSESS DEPARTURE AREA, MAINTAIN/UPDATE OBSTACLE DEPARTURE PROCEDURE
380	TREES	476.6	24.8	ASSESS DEPARTURE AREA, MAINTAIN/UPDATE OBSTACLE DEPARTURE PROCEDURE
452	UTILITY_POLE	461.9	8.8	ASSESS DEPARTURE AREA, MAINTAIN/UPDATE OBSTACLE DEPARTURE PROCEDURE
510	TREES	448.9	78.9	ASSESS DEPARTURE AREA, MAINTAIN/UPDATE OBSTACLE DEPARTURE PROCEDURE

APPLY GUIDELINES AND STANDARDS SET FORTH IN FAA ORDERS 8260.46F, DEPARTURE PROCEDURE (DP) PROGRAM, AND 8260.3C, U. S. STANDARD FOR TERMINAL INSTRUMENT PROCEDURES

GENERAL NOTES:

1. HORIZONTAL DATUM: NORTH AMERICAN DATUM 1983 - NAD83;
   VERTICAL DATUM: NORTH AMERICAN DATUM 1988 - NAVD88
2. OSTRUCTIONS IDENTIFIED BY COFFMAN ASSOCIATES FROM SURVEY BY MARTINEZ GEOSPATIAL, EAGAN, MN. AUGUST 2016.
3. OBSTRUCTION IDENTIFICATION NUMBERS CORRESPOND TO COFFMAN ASSOCIATES DEPARTURE SURFACE OBSTRUCTION ANALYIS FEATURE ID.
4. ALL ELEVATIONS IN FEET.
5. WHERE APPLICABLE, ELEVATIONS ADJUSTED UPWARD 10' FOR A PRIVATE RD, 15' FOR PUBLIC RDWAY, 17' FOR INTERSTATE HIGHWAY, 23' FOR RAILRDS PER PART 77-OBJECTS AFFECTING NAVIGABLE AIRSPACE, SUBPART C, SECTION 77.23.

LEGEND

OBSTRUCTION AREA - SAMPLED POINTS ARE REPRESENTITIVE OF THE HIGHEST POINTS WITHIN THE VICINTIY OF OBJECTS.

o1 OBSTRUCTION IDENTIFIER



Magnetic Declination
12° 37' East
Annual Rate of Change
00° 05' West
(Source: NOAA, NCEI, August 2017)

No.	REVISIONS	DATE	BY	APP'D.
△	-	-	-	-

"THE PREPARATION OF THESE DOCUMENTS WAS FINANCED IN PART THROUGH A GRANT FROM THE FEDERAL AVIATION ADMINISTRATION AS PROVIDED UNDER SECTION 505 OF THE AIRPORT AND AIRWAY IMPROVEMENT ACT OF 1982, AS AMENDED. THE CONTENTS DO NOT NECESSARILY REFLECT THE OFFICIAL VIEWS OR POLICY OF THE FAA. ACCEPTANCE OF THESE DOCUMENTS BY THE FAA DOES NOT IN ANY WAY CONSTITUTE A COMMITMENT ON THE PART OF THE UNITED STATES TO PARTICIPATE IN ANY DEVELOPMENT DEPICTED HEREIN NOR DOES IT INDICATE THAT THE PROPOSED DEVELOPMENT IS ENVIRONMENTALLY ACCEPTABLE IN ACCORDANCE WITH APPROPRIATE PUBLIC LAWS."

SANTA MARIA PUBLIC AIRPORT

RUNWAY 12-30
DEPARTURE SURFACE DRAWING

SANTA MARIA, CALIFORNIA

PLANNED BY: Eric S. Pfeifer
DETAILED BY: Diana L. Przybycien
APPROVED BY: James M. Harris

June 2019

Coffman Associates
Airport Consultants
www.coffmanassociates.com

Coffman Associates G:\Diana\MPS\Santa Maria (SMX)\ALP\15 SMX DEP 1230.dwg Printed Date: 6/27/19 11:06:19 AM dprzybycien

Santa Maria Korean Presbyterian

Santa Maria Valley Healing Rooms

Church for Life

Skyway Drive

Santa Barbara County Parks

Element Christian Church

Airport Mobile Home Park

Ex/Ult Runway 12-30 8,004' x 150'

True Bearing 136.81°

Ex/Ult Runway 2-20 5,196' x 75'

True Bearing 37.39°

N-739

Twy B 75

Twy A5 75

Twy A3 75

Twy A1 75

Twy B 50

Twy B1 50

Twy B2 50

Twy B3 50

Twy F 50

Twy H 50

Twy H1 50

Twy H2 50

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SANTA MARIA PUBLIC AIRPORT DISPOSAL BY EASEMENT

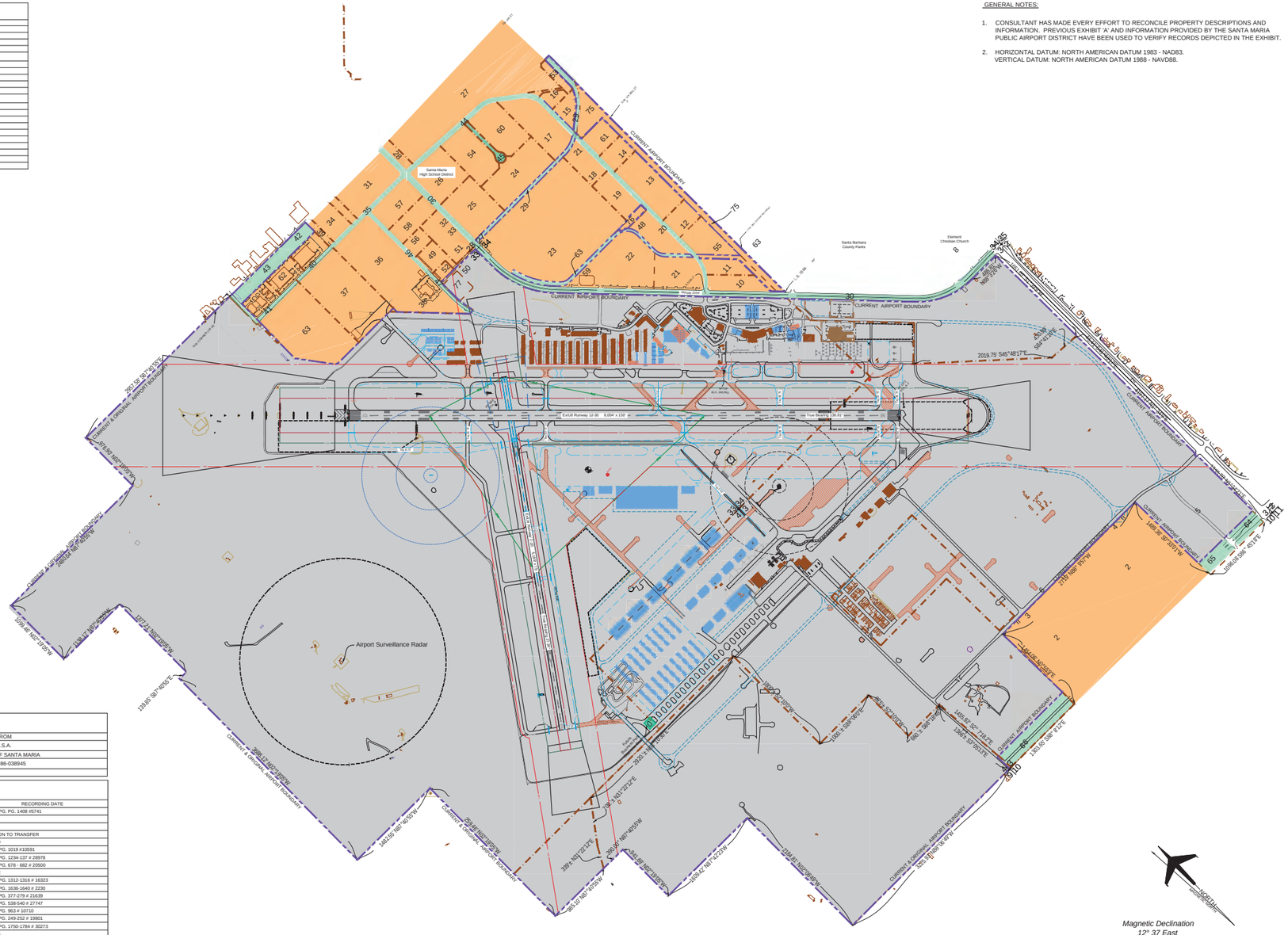
MAP #	ACRES	TRACT	NAME	DATE FAA RELEASE	LOT#	DISPOSAL DATE	RECORDED DATA
1	1.99	R.S.	CITY OF SANTA MARIA BLOSSSER RD.	3/5/1984		4/2/1984	#84-16945
5	2.25	R.S.	CITY OF SANTA MARIA FOXENWOOD LANE			9/13/1982	#82-36185
6	8.44	R.S.	CITY OF SANTA MARIA FOSTER RD.	4/9/1980		1/29/1982	#82-3957
29	2.38	5011	SANTA MARIA VALLEY RAILROAD EASEMENT	11/15/1966	6 & 22	7/22/1973	BK. 2417 PG. 721-742 #27385
30	25.75	5011	CITY OF SANTA MARIA SKYWAY DR.	11/15/1966		6/3/1968	BK. 2234 PG. 226-229 #17459
35	2.06	65-9	CITY OF SANTA MARIA FAIRWAY DR.	7/30/1964		4/30/1965	BK. 2103 PG. 206 #15277
40	1.0403	5281	CITY OF SANTA MARIA FAIRWAY DR.	8/14/1979		1/29/1982	82-9355
41	1.57	R.S.	CITY OF SANTA AMARIA FAIRWAY DR.	EXCHANGE		1/17/1985	#1985-002753
42	4.99	R.S.	COUNTY OF SANTA BARBARA	EXCHANGE		10/24/1972	BK. 2427 PG. 469 #41816
43	1.634	R.S.	COUNTY OF SANTA BARBARA	EXCHANGE		9/30/1981	#81-13639
44	8.99	5011	CITY OF SANTA MARIA INDUSTRAL PARKWAY	11/15/1966		4/26/1968	BK. 76 PG. 86
45	1.81	5380	CITY OF SANTA MARIA AVIATION WAY	11/15/1966		10/20/1980	BK. 25 PG. 86
46	1.24	5267	CITY OF SANTA MARIA AIRPARK DR.	11/15/1966		7/7/1979	BK. 22 PG. 30
47	0.6293	5281	CITY OF SANTA MARIA AIRPARK DR.	7/25/1966		1/29/1982	82-3955
63	4.04	5011	COUNTY OF SANTA BARBARA	11/15/1966	13 & 17	7/19/1968	BK. 76 PG. 35 - 42
64	2.604	R.S.	CITY OF SANTA MARIA UNION VALLEY PARKWAY	LETTER 2/2/2009		1/25/2009	2009-0052155
65	2.384	R.S.	CITY OF SANTA MARIA UNION VALLEY PARKWAY	LETTER 2/2/2009		1/25/2009	2009-0052155
66	7.435	R.S.	CITY OF SANTA MARIA UNION VALLEY PARKWAY	LETTER 2/2/2009		1/25/2009	2009-0052155

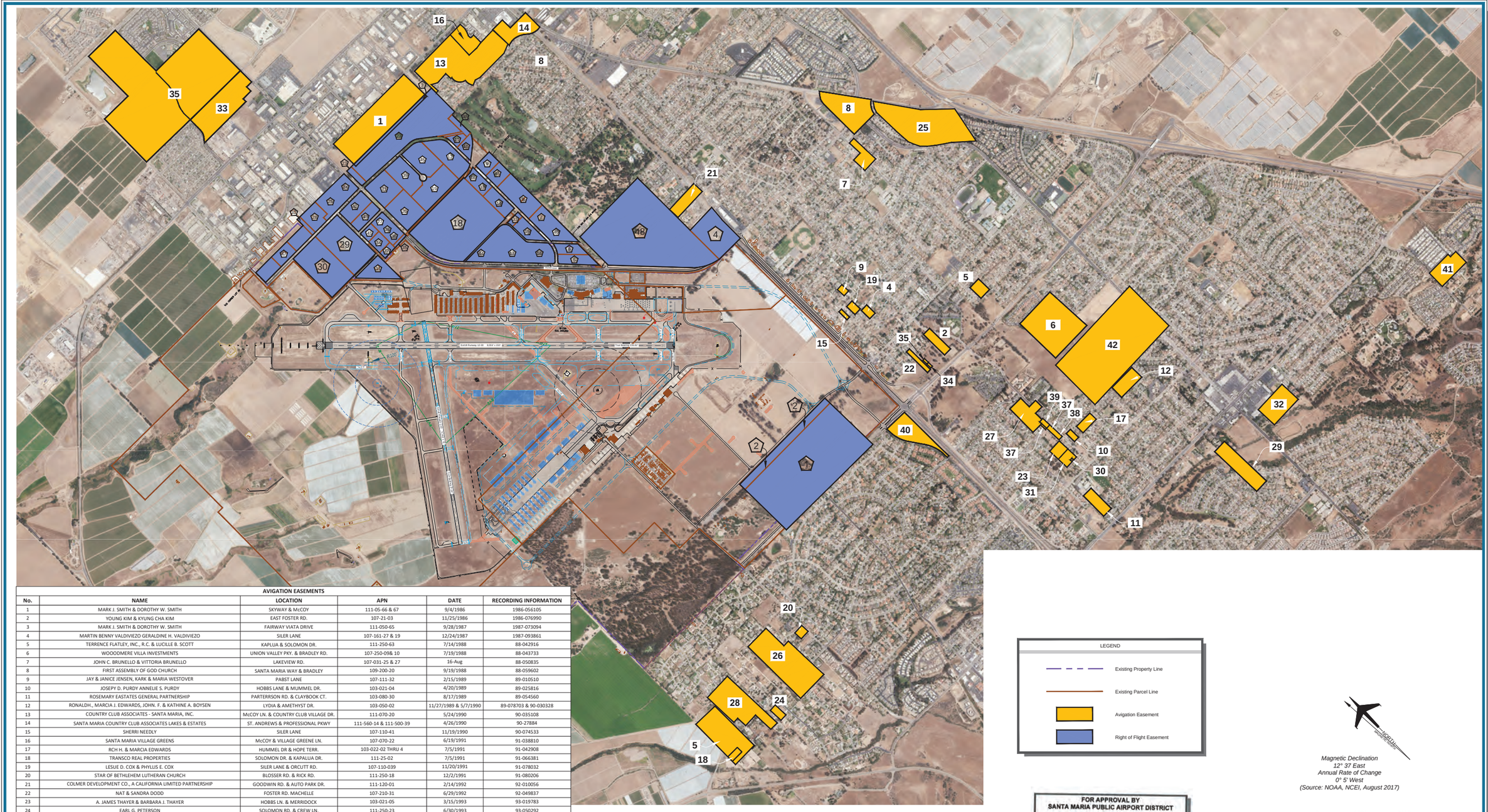
SANTA MARIA PUBLIC AIRPORT PROPERTY

DATE ACQUIRED	ACRES	ACQUIRED BY	MEANS	FROM
6/9/1949	3,069.183	COUNTY OF SANTA BARBARA/CITY IF SANTA MARIA	SURPLUS PROPERTY	U.S.A.
3/6/1964	3,069.183	SANTA MARIA PUBLIC AIRPORT	QUITCLAIM DEED	COUNTY OF SANTA BARBARA/CITY OF SANTA MARIA
6/30/1986	38.85	SANTA MARIA PUBLIC AIRPORT	LOCALLY FUNDED BY AIRPORT	CITY OF SANTA MARIA RECORDED 1986-038945

SANTA MARIA PUBLIC AIRPORT LAND DISPOSAL

MAP #	ACRES	TRACT	NAME	LOT #	FAA RELEASE DATE	DISPOSAL DATE	RECORDING DATE
2	81.76	50.57	COUNTY OF SANTA BARBARA		12/8/1967	2/13/1968	BK. 2221 PG. PG. 1408 #5741
3	4.25	R.S.	COUNTY OF SANTA BARBARA	2	9/4/1980	4/30/1981	#17445
4	5.18	R.S.	COUNTY OF SANTA BARBARA	1	9/4/1980	4/30/1981	#17445
7	26.70	R.S.	STATE OF CALIFORNIA HWY 135		3/9/1964		EXCEPTION TO TRANSFER
8	14.32	53.43	RENFROW		11/15/1966	1/9/1980	#80-50869
9	78.80	R.S.	COUNTY OF SANTA BARBARA		11/15/1966	3/9/1964	BK. 2571 PG. 1019 #10591
10	4.07	5113	SANTA MARIA TIMES	1	11/15/1966	8/7/1974	BK. 2528 PG. 1234-137 # 28978
11	3.36	5113	S.C. GAS CO.	2	11/15/1966	4/18/1975	BK. 2571 PG. 678 - 682 # 20500
12	3.46	5011	MICROWAVE APPLICATIONS (BOYD)	11	11/15/1966	4/19/1994	#94-20552
13	9.89	5011	SEMCO (STRAFORD)	10	11/15/1966	2/22/1968	BK. 3152 PG. 1312-1316 # 16323
14	3.10	5011	EAST JORDAN PLASTICS	8	11/15/1966	1/20/1976	BK. 2599 PG. 1636-1640 # 2230
15	5.54	5011	PG&E COMPANY	7	11/15/1966	7/11/1968	BK. 2238 PG. 377-279 # 21639
16	1.44	5011	MODERN INDUSTY (TAYLOR)	4	11/15/1966	9/5/1968	BK. 2224 PG. 538-540 # 27747
17	10.00	5011	ITE IMPERIAL (OLTMANS)	3	11/15/1966	3/29/1972	BK. 2382 PG. 963 # 10710
18	4.36	5011	COLUMBIA (OLTMANS)	21	11/15/1966	6/28/1971	BK. 2353 PG. 249-252 # 19801
19	5.04	5011	RADFORD	20	11/15/1966	7/20/1976	BK. 2620 PG. 1750-1784 # 30273
20	4.28	5011	MAPY-TRENCH (EVENS)	18	11/15/1966	4/24/1980	#80-16964
21	7.44	5011	MAYER INVESTMENT	15	11/15/1966	4/19/1978	#17355
22	15.36	5011	MAYER INVESTMENT	16	11/15/1966	12/5/1980	#80-50425
23	50.00	5003	OKONITE	23	11/15/1966	12/13/1966	BK. 2201 PG. 1389-1391 # 23512
24	12.00	5308	ARROW AUTO	3	11/15/1966	12/21/1980	# 80-24801
25	9.869	5003	ABEX (AMERICAN BRAKE)	1	11/15/1966	10/8/1964	BK. 2073 PG. 402-405 # 42927
26	8.72	5011	AEROCEANIC (OLTMANS)	2	11/15/1966	11/29/1968	BK. 2253 PG. 1219-1221 # 37182
27	37.52	R.S.	SANTA MARIA COUNTRY CLUB		12/22/1972	1/22/1973	BK. 2443 PG. 812-1818 # 2547
28	1.43	5011	SANTA MARIA COUNTRY CLUB		12/22/1972	1/22/1973	BK. 2443 PG. 812-1818 # 2547
31	10.00	65-9	GENERAL THEEPHONE CO.		7/30/1964	10/24/1965	BK. 2103 PG. 217-218 # 15280
31	10.00	65-9	GENERAL THEEPHONE CO.		7/30/1964	10/24/1965	BK. 2427 PG. 472-475 # 41818
32	2.39	5280	DEN MAT	5	11/15/1966	2/28/1966	# 1986-01706
33	2.39	5280	DEN MAT	5	11/15/1966	2/28/1966	# 1986-01706
34	5.56	R.S.	CITY OF SANTA MARIA		7/30/1964	4/30/1965	BK. 2103 PG. 209-211 # 15287
36	20.48	5267	PIPPER AIRCRAFT		11/15/1966	4/6/1979	# 79-14922
37	20.00	5281	PIPPER AIRCRAFT	A	7/20/1979	1/23/1980	# 80-2953
38	7.64	5281	SANTA MARIA DEVELOPMENT	B	7/21/1979	8/13/1985	# 1985-042114
39	1.028	5281	CITY OF SANTA MARIA		1/31/1972	10/25/1972	BK. 2427 PG. 482 # 41820
48	1.13	5011	MAPI-TRENCH (EVENS)	19	11/15/1966	4/30/1991	# 91-024729
49	2.386	5280	AIRPARK MIN. STORAGE (SEBETS)		11/15/1966	3/8/1996	# 96-14506
50	0.995	5280	AIRPARK MIN. STORAGE (SEBETS)		3/1/1996	3/8/1996	# 96-14506
51	1.58	5280	DEN MAT		11/15/1966	5/4/1995	# 95-017541
52	1.2418	5280	AIRPARK MIN. STORAGE (SEBETS)		4/7/1997	5/6/1979	# 97-025860
53	1.98	5280	HEBARD	5	11/15/1966	13/30/1996	# 96-077352
54	8.84	5308	BCI COCA-COLA	1	11/15/1966	8/15/1997	# 97-047599
55	5.80	5011	CHURCHMAN LIMITED	12	11/15/1966	10/9/1998	# 98-078212
56	2.39	5280	MELSHEIMER	3	11/15/1966	9/29/1998	# 98-075129
57	4.04	5280	FAIRSKY DEVELOPMENT CO.	2 & 7	11/15/1966	1/15/1999	# 99-000747
58	5.98	5280	FAIRSKY DEVELOPMENT CO.	1 & 8	11/15/1966	4/28/1999	# 99-034510
59	0.06	5011	MAYER ASSETMENT MANGEMENT	17	11/15/1966	6/23/1999	# 99-051816
60	9.12	5280	JORDANO'S	2	11/15/1966	12/7/1999	# 2000-0015074
61	3.53	5171	PARKWAY ENTERPRISES	1	11/15/1966	8/27/2003	# 2003-0116543
62	13.39	5484	SANTA MARIA PLAZA, LLC.	1,2 & 3	11/17/2005	12/6/2005	# 2005-0116280
63	21.09±	-	FED EX	15	11/6/2018	-	#2018-0047616
75	10.90	-		-	-	-	BK 111 PG 231


CURRENT AIRPORT BOUNDARY
CURRENT & ORIGINAL AIRPORT BOUNDARY
Santa Maria High School District
Santa Barbara County Parks
Element Christian Church
Airport Surveillance Radar
EVUN Runway 12-30 8,004' x 150'
Grid True Bearing 56.81°
2019.75' S45°48'17"E
1482.25' N87°46'53"W
1159.85' S87°40'53"E
1482.25' N87°46'53"W
1159.85' S87°40'53"E
2019.75' S45°48'17



AVIGATION EASEMENTS

No.	NAME	LOCATION	APN	DATE	RECORDING INFORMATION
1	MARK J. SMITH & DOROTHY W. SMITH	SKYWAY & McCOY	111-05-66 & 67	9/4/1986	1986-056105
2	YOUNG KIM & KYUNG CHA KIM	EAST FOSTER RD.	107-21-03	11/25/1986	1986-076990
3	MARK J. SMITH & DOROTHY W. SMITH	FAIRWAY VIATA DRIVE	111-050-65	9/28/1987	1987-073094
4	MARTIN BENNY VALDIVIEZO GERALDINE H. VALDIVIEZO	SILER LANE	107-161-27 & 19	12/24/1987	1987-093861
5	TERRENCE FLATLEY, INC., R.C. & LUCILLE B. SCOTT	KAPLUA & SOLOMON DR.	111-250-63	7/14/1988	88-042916
6	WOOODMERE VILLA INVESTMENTS	UNION VALLEY PKY. & BRADLEY RD.	107-250-09& 10	7/19/1988	88-043733
7	JOHN C. BRUNELLO & VITTORIA BRUNELLO	LAKEVIEW RD.	107-031-25 & 27	16-Aug	88-050835
8	FIRST ASSEMBLY OF GOD CHURCH	SANTA MARIA WAY & BRADLEY	109-200-20	9/19/1988	88-059602
9	JAY & JANICE JENSEN, KARK & MARIA WESTOVER	PABST LANE	107-111-32	2/15/1989	89-010510
10	JOSEPY D. PURDY ANNELIE S. PURDY	HOBBS LANE & MUMMEL DR.	103-021-04	4/20/1989	89-025816
11	ROSEMARY EASTATES GENERAL PARTNERSHIP	PARTERRSON RD. & CLAYBOOK CT.	103-080-30	8/17/1989	89-054560
12	RONALDH., MARCIA J. EDWARDS, JOHN. F. & KATHINE A. BOYSEN	LYDIA & AMETHYST DR.	103-050-02	11/27/1989 & 5/7/1990	89-078703 & 90-030328
13	COUNTRY CLUB ASSOCIATES - SANTA MARIA, INC.	McCOY LN. & COUNTRY CLUB VILLAGE DR.	111-070-20	5/24/1990	90-035108
14	SANTA MARIA COUNTRY CLUB ASSOCIATES LAKES & ESTATES	ST. ANDREWS & PROFESSIONAL PKWY	111-560-14 & 111-500-39	4/26/1990	90-27884
15	SHERRI NEEDLY	SILER LANE	107-110-41	11/19/1990	90-074533
16	SANTA MARIA VILLAGE GREENS	McCOY & VILLAGE GREENE LN.	107-070-22	6/19/1991	91-038810
17	RCH H. & MARCIA EDWARDS	HUMMEL DR & HOPE TERR.	103-022-02 THRU 4	7/5/1991	91-042908
18	TRANSCO REAL PROPERTIES	SOLOMON DR. & KAPALUA DR.	111-25-02	7/5/1991	91-066381
19	LESLIE D. COX & PHYLLIS E. COX	SILER LANE & ORCUTT RD.	107-110-039	11/20/1991	91-078032
20	STAR OF BETHLEHEM LUTHERAN CHURCH	BLOSSER RD. & RICK RD.	111-250-18	12/2/1991	91-080206
21	COLMER DEVELOPMENT CO., A CALIFORNIA LIMITED PARTNERSHIP	GOODWIN RD. & AUTO PARK DR.	111-120-01	2/14/1992	92-010056
22	NAT & SANDRA DODD	FOSTER RD. MACHELLE	107-210-31	6/29/1992	92-049837
23	A. JAMES THAYER & BARBARA J. THAYER	HOBBS LN. & MERRIDOCK	103-021-05	3/15/1993	93-019783
24	EARL G. PETERSON	SOLOMON RD. & CREW LN.	111-250-23	6/30/1993	93-050292
25	LAS BRISAS GENERAL PARTNERSHIP, A CALIFORNIA GENERAL PARTNERSHIP	BRADLEY RD. & TIERRA BRISAS DR.	107-070-42, 107-140-025, 109-200-019	11/16/1993	93-091325
26	ROBERT W. McCUTHEON, GRACE McCUTHEON, FERNANDO V. PADILLA STAR OF BETHELHEM	SOLOMON RD. & KRIS DR.	111-250-18, 56, 57	2/3/1994	94-010082
27	INDEPENDENT CONSTRUCTION COMPANY, INC.	HUMMEL DR. & MOONCREST LN.	107-270-08	4/4/1994	94-029163
28	EVERETT L. PARCHER & ELAINE PACHER	SOLOMON RD. & BEVERLY DR.	111-250-059-060	6/27/1994	94-053021
29	TIMOTHY BROOKSHIRE, BETTY BROOKSHIRE & CATHERINE BROOKSHIRE	CLARK AVE. PLAMINO LN.	103-181-19	1/20/1995	95-003330
30	JOHN F. BOYSEN	HOBBS LN. & MERRIDOCK	103-021-009-8	7/30/1996	96-045839
31	JOHN F. BOYSEN	HOBBS LN. & MERRIDOCK	103-021-009-8	2/19/1997	96-45839
32	MINSON COMPANY, A CALIFORNIA LIMITED PARTNERSHIP	BRADLEY RD. & CLARK AVE.	103-740-20, 21, 22, 23	11/23/1999	1999-0092613
33	MONTAEGRE DEVELOPMENT	BLOSSER RD. & CARMAN LN.	117-770-015 & 016	12/13/2000	2000-0078784
34	ALFRED J. RAMOS & TERRI L. RAMOS	FOSTER RD. & ODIE LN.	107-210-073	2/13/2001	2001-0010608
35	CAL-WESTGATE RANCH, LLC	BLOSSER RD. SOUTH OF BATTLES RD.	117-770-033 THRU 042	4/30/2001	2001-0032481
36	DONALD D. & MARY E. MYLAN	FOSTER RD. & ODIE LN.	107-210-073	4/30/2001	2001-0032480
37	R. BRADLEY STEVENSON & RITA L. STEVENSON	HOBBS LN. & MERRIDOCK CT.	107-290-04	6/26/2001	2001-0051378
38	R. BRADLEY STEVENSON & RITA L. STEVENSON (HEIGHT RESTRICTION)	HOBBS LN. & MERRIDOCK CT.	107-290-3, 4, 5, 6	4/5/2002	2002-0033372
39	R. BRADLEY STEVENSON & RITA L. STEVENSON (HEIGHT RESTRICTION)	HOBBS LN. & MERRIDOCK CT.	107-290-007	4/5/2002	2002-0033383
40	MARK J. SMITH & CAMERON L. SMITH	FOXENWOOD LN. & WELLINGTON DR.	111-70-1 THRU 21	1/7/2004	TRACT MAP 5763
41	WESTERN SKY COMMUNITIES, LLC, A CALIFORNIA LIMITED LIABILITY CO.	STELLWELL RD. & TUNSCAN WAY	129-300-001 THRU 21	2/22/2013	2013-0012452
42	NORBERT DICKMAN, TRUSTEE OF BARBARA FASKEN	BRADLEY RD. & VILLAGE DR.	107-250-08	9/29/2015	2015-0051959

LEGEND

- Existing Property Line
- Existing Parcel Line
- Avigation Easement
- Right of Flight Easement

Magnetic Declination
12° 37 East
Annual Rate of Change
0° 5' West
(Source: NOAA, NCEI, August 2017)

0 1000 2000
SCALE IN FEET

FOR APPROVAL BY
SANTA MARIA PUBLIC AIRPORT DISTRICT
Name
Title
Date 7-8-19

GENERAL NOTES:

1. CONSULTANT HAS MADE EVERY EFFORT TO RECONCILE PROPERTY DESCRIPTIONS AND INFORMATION. PREVIOUS EXHIBIT 'A' AND INFORMATION PROVIDED BY THE SANTA MARIA PUBLIC AIRPORT DISTRICT HAVE BEEN USED TO VERIFY RECORDS DEPICTED IN THIS EXHIBIT.
2. HORIZONTAL DATUM: NORTH AMERICAN DATUM 1983 - NAD83.
   VERTICAL DATUM: NORTH AMERICAN DATUM 1988 - NAVD88.

No.	REVISIONS	DATE	BY	APP'D.
△	-	-	-	-

"THE PREPARATION OF THESE DOCUMENTS WAS FINANCED IN PART THROUGH A GRANT FROM THE FEDERAL AVIATION ADMINISTRATION AS PROVIDED UNDER SECTION 505 OF THE AIRPORT AND AIRWAY IMPROVEMENT ACT OF 1982, AS AMENDED. THE CONTENTS DO NOT NECESSARILY REFLECT THE OFFICIAL VIEWS OR POLICY OF THE FAA. ACCEPTANCE OF THESE DOCUMENTS BY THE FAA DOES NOT IN ANY WAY CONSTITUTE A COMMITMENT ON THE PART OF THE UNITED STATES TO PARTICIPATE IN ANY DEVELOPMENT DEPICTED HEREIN NOR DOES IT INDICATE THAT THE PROPOSED DEVELOPMENT IS ENVIRONMENTALLY ACCEPTABLE IN ACCORDANCE WITH APPROPRIATE PUBLIC LAWS."

SANTA MARIA PUBLIC AIRPORT

AVIGATION EASEMENTS

SANTA MARIA, CALIFORNIA

PLANNED BY: Eric S. Pfeifer
DETAILED BY: Diana L. Przybycien
APPROVED BY: James M. Harris

June 2019 | SHEET 18 OF 18

Coffman Associates
Airport Consultants
www.coffmanassociates.com

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