

San Manuel Airport
Airport Master Plan 2014



Presentation to

**THE PINAL COUNTY
BOARD OF SUPERVISORS**

May 13, 2015



nicholas j pela & associates
airport planners

in association with

Dibble
Engineering

The Master Plan Process

Master Plan Work Phases

The Airport Master Plan process starts with the formation of a sound communication plan, with hands-on involvement of a Planning Advisory Committee.

The phases of work build upon one another, culminating in a reasonable and adequate improvement plan for the airport.

The eleven Chapters of the Master Plan correspond to the work phases presented at right.

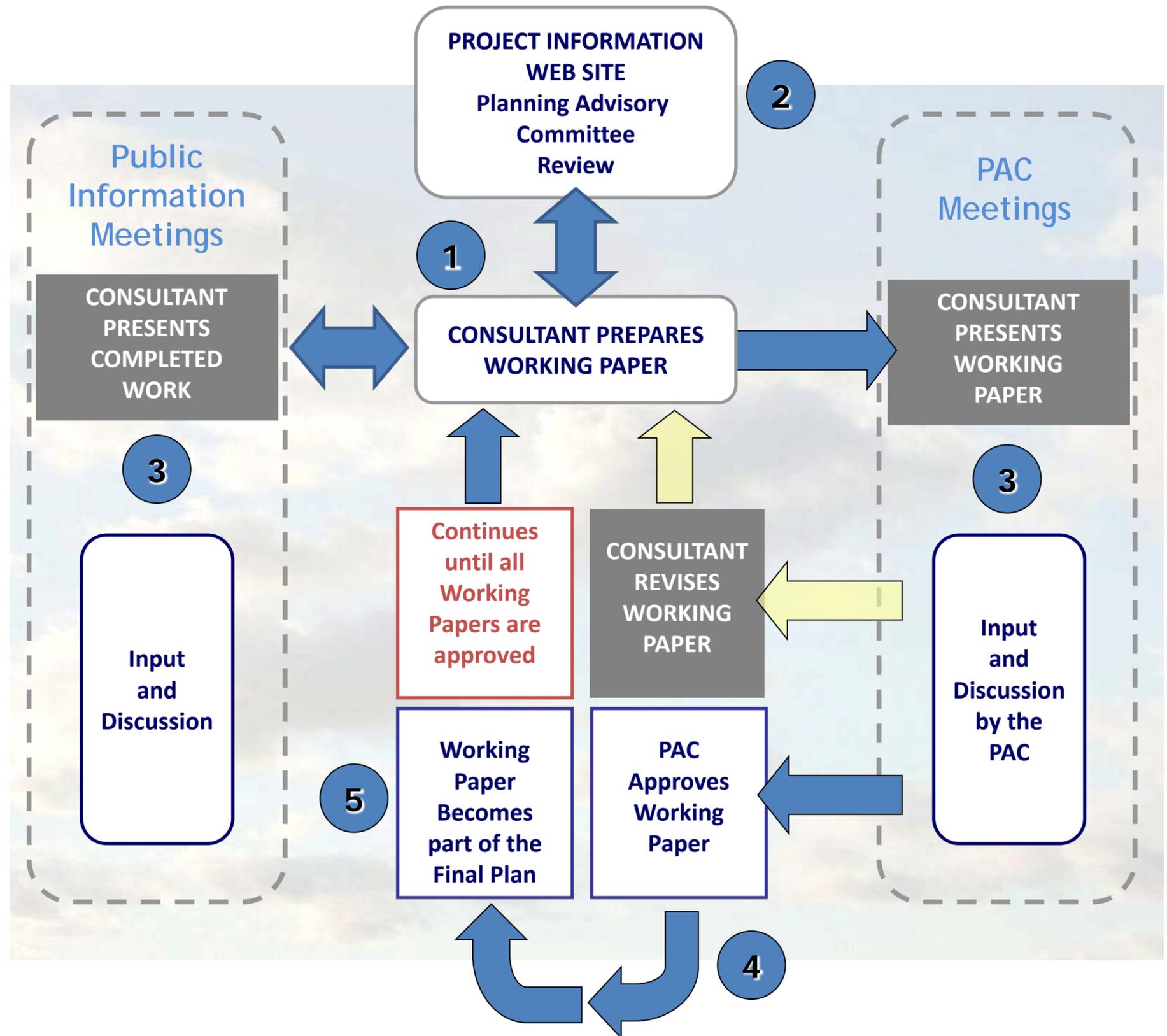


The Master Plan Process

Planning Advisory Committee (PAC) and Public Involvement...

Four PAC Meetings and two Public Information Meetings were scheduled at strategic points in the planning process.

The purpose of the Public Information Meetings was to inform the members of the local community about the airport's future plans, and to solicit input from the public concerning the plans.

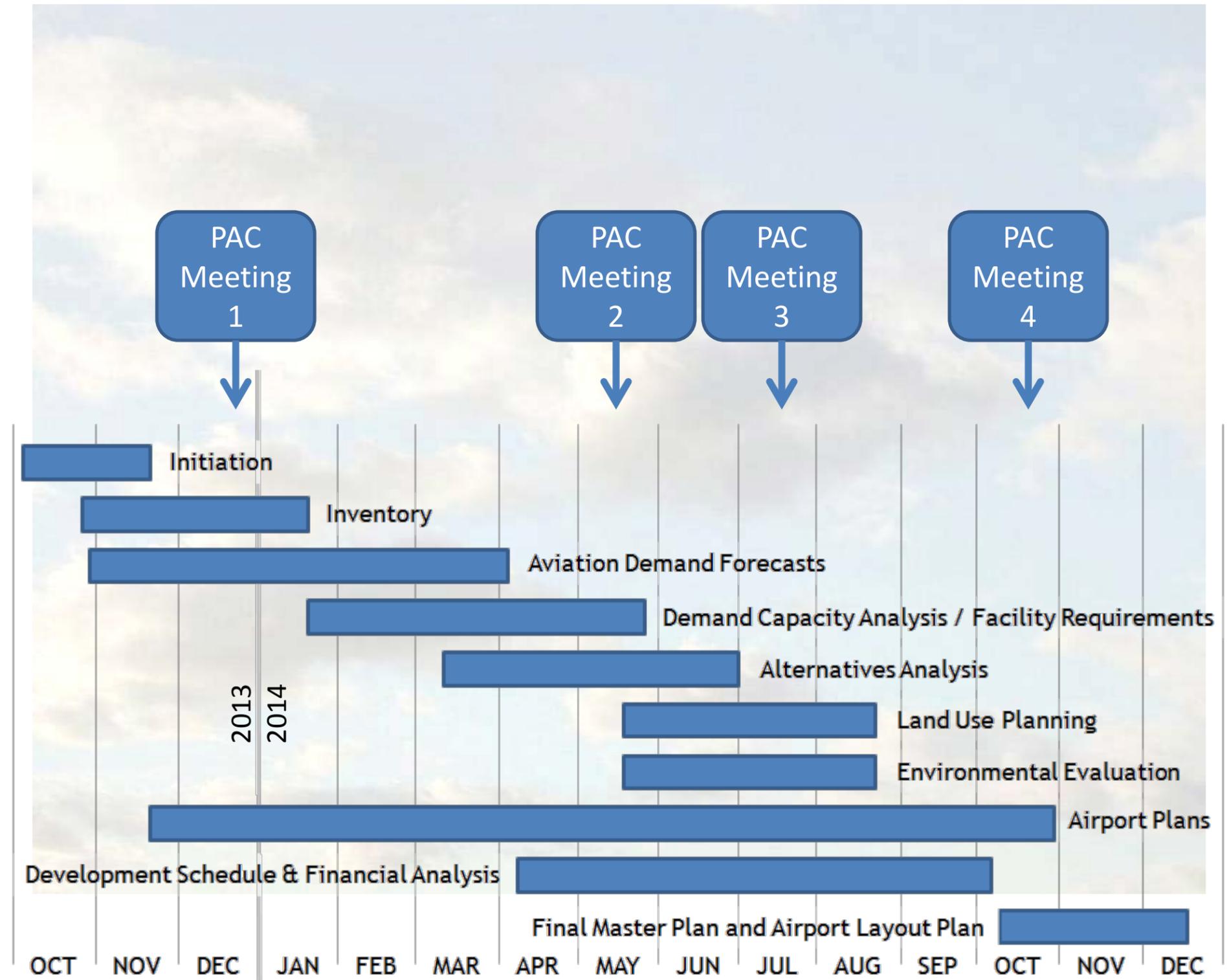


Planning Advisory Committee (PAC)

Four PAC Meetings were convened at key points during the Master Plan preparation.

At each meeting, the Consultant Team presented the work completed to date. The PAC discussed the draft documents and provided their input.

The PAC members (and the FAA and ADOT) were provided with the draft documents for review two weeks prior to each meeting, through postings on the Project Web Site.

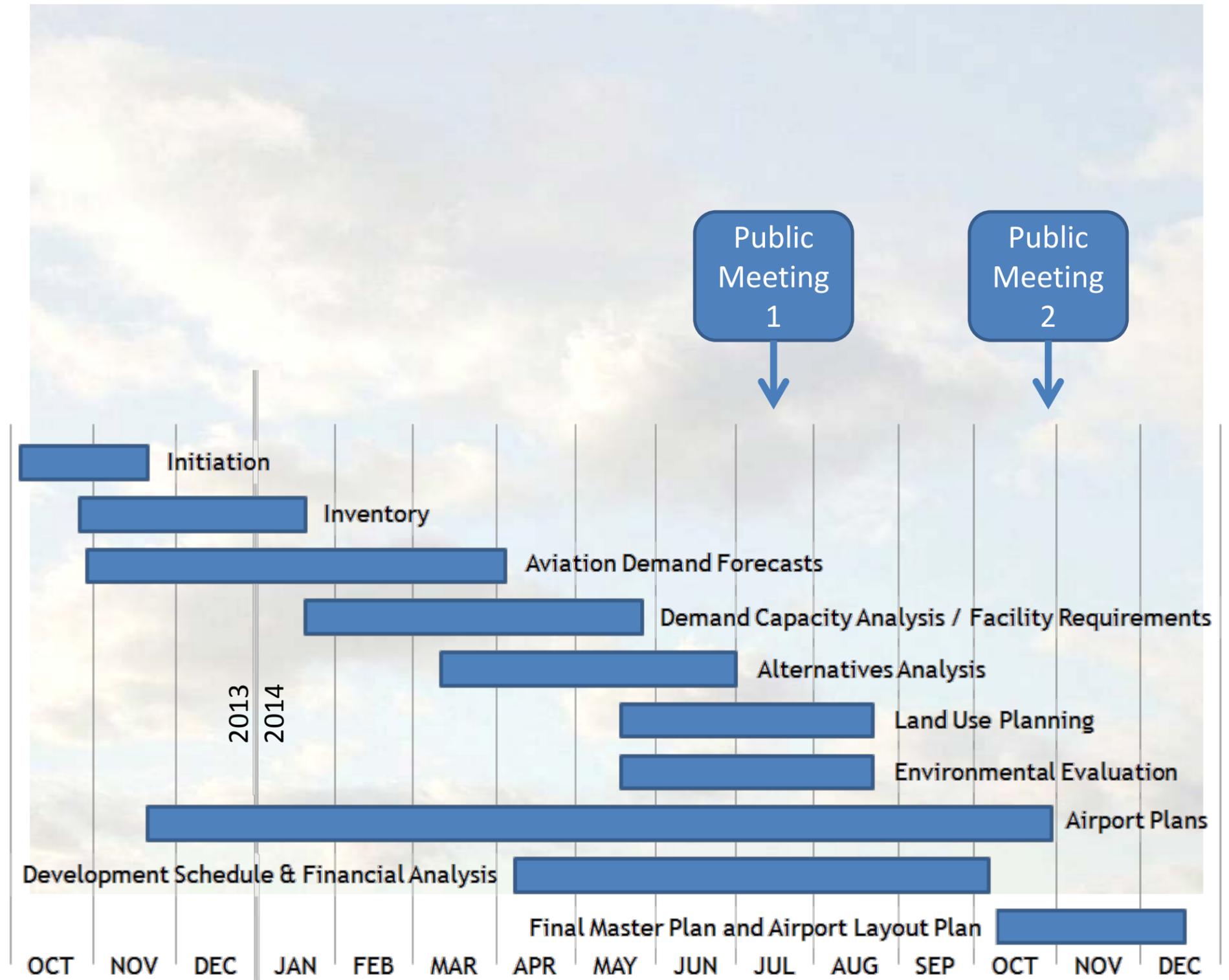


Public Involvement

Two Public Information Meetings were convened at key points during the Master Plan preparation.

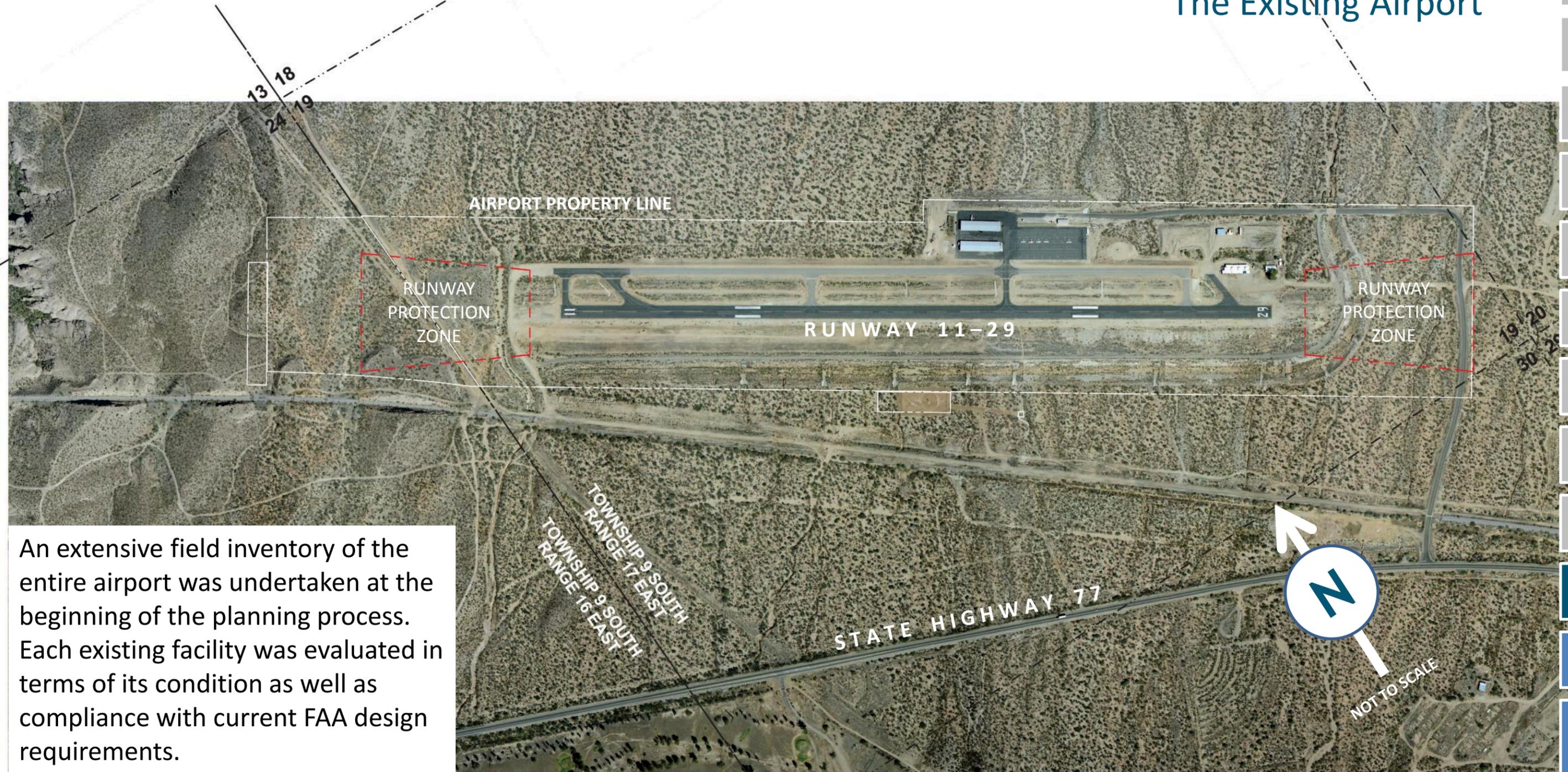
At each meeting, the Consultant Team formally presented the work completed to date. Input and informal discussion with the participants were incorporated into each meeting's proceedings.

The Project Web Site is open to anyone, so all of the Master Plan documents can be reviewed at will. Comments are solicited through the web site via an email link to the Consultant Team.



Facilities Inventory

The Existing Airport



An extensive field inventory of the entire airport was undertaken at the beginning of the planning process. Each existing facility was evaluated in terms of its condition as well as compliance with current FAA design requirements.

The airport was found to be in generally good condition.

Some maintenance needs and additional facility needs were also identified.

Service Area Map

Who uses the airport?

The map to the right shows the locations of where the owners of the airplanes that are currently based at San Manuel Airport live. Many of the airplane owners are residents of San Manuel, Oracle, or the nearby area. However, over the past several years more and more based airplanes are owned by residents of the Oro Valley/Tucson area.

This “migration” of aircraft toward San Manuel brings increased activity to the airport, and potentially an increase in economic activity to the community.



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2014 AIRCRAFT OPERATIONS

Current Activity

Base year 2014...

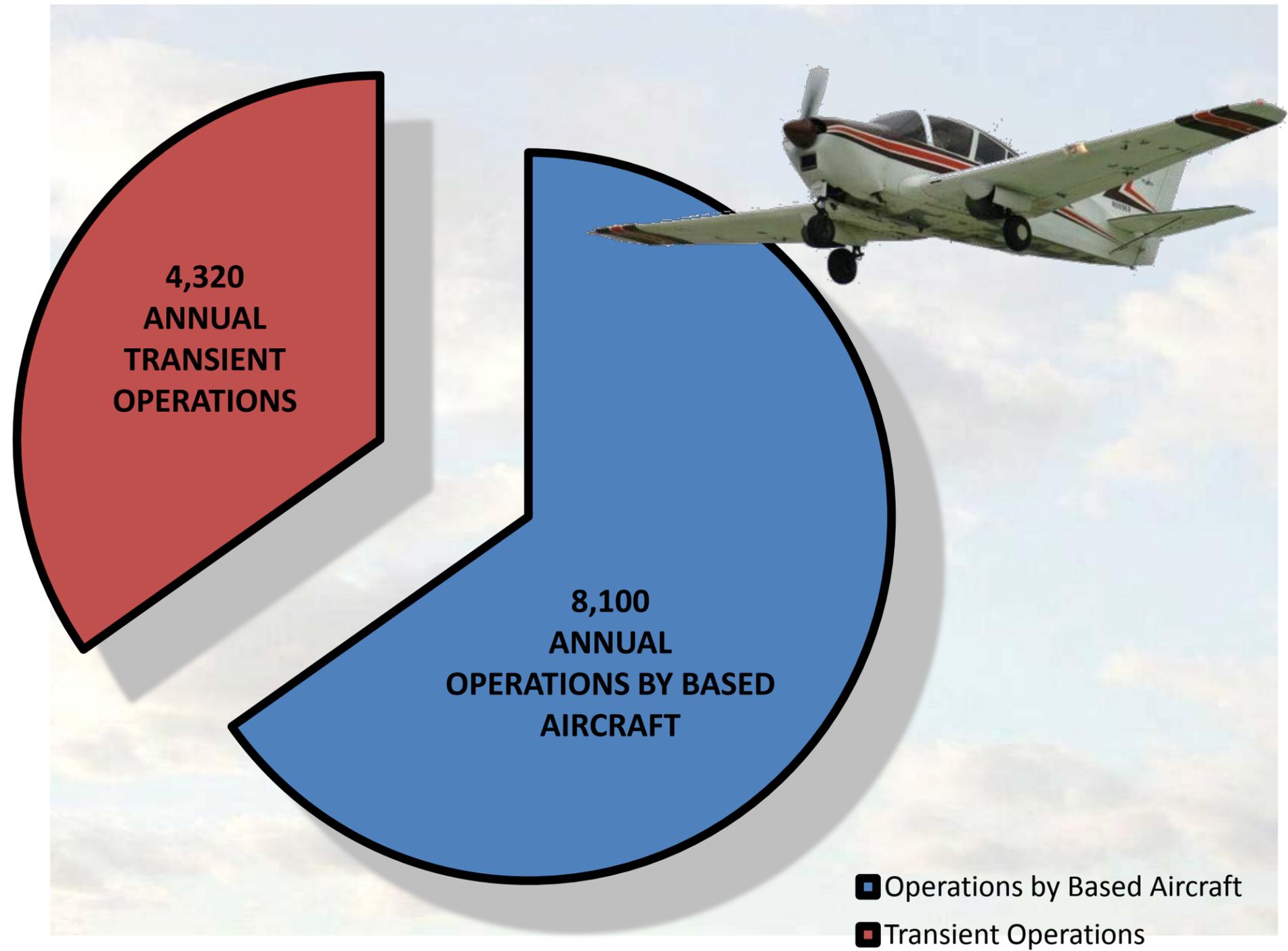
The chart to the right illustrates the estimated existing activity at San Manuel Airport, expressed as annual operations.

An operation is either a landing or a departure.

Operations by Based Aircraft are operations by the 36 aircraft that are currently based at San Manuel.

Transient Operations are operations by “visiting” aircraft.

Current activity is primarily by small, single engine propeller aircraft and by rotorcraft.



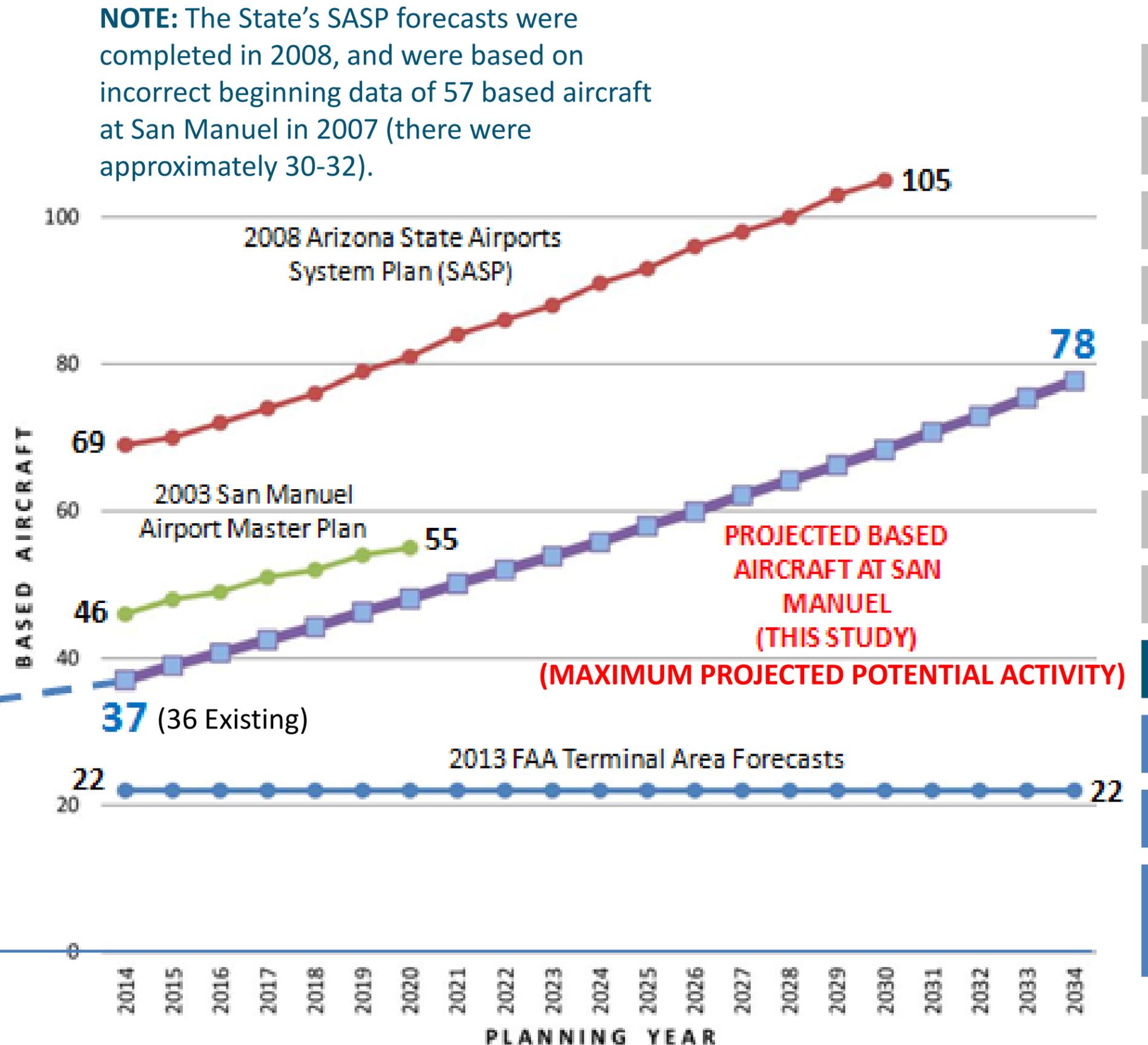
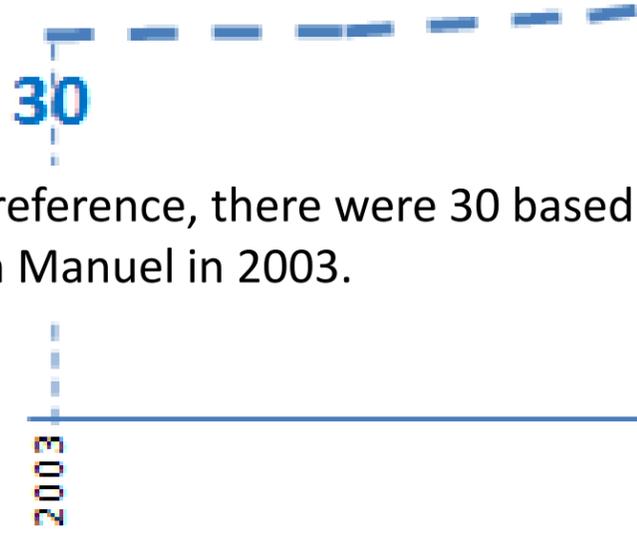
Growth Projections

BASED AIRCRAFT

The chart to the right shows the projected growth in the number of based airplanes at San Manuel Airport, and includes a comparison with three other independent studies that were completed for the airport in the past.

There are currently 36 based aircraft. The forecasts suggest that this could increase to 78 aircraft over the next twenty years.

As a point of reference, there were 30 based aircraft at San Manuel in 2003.



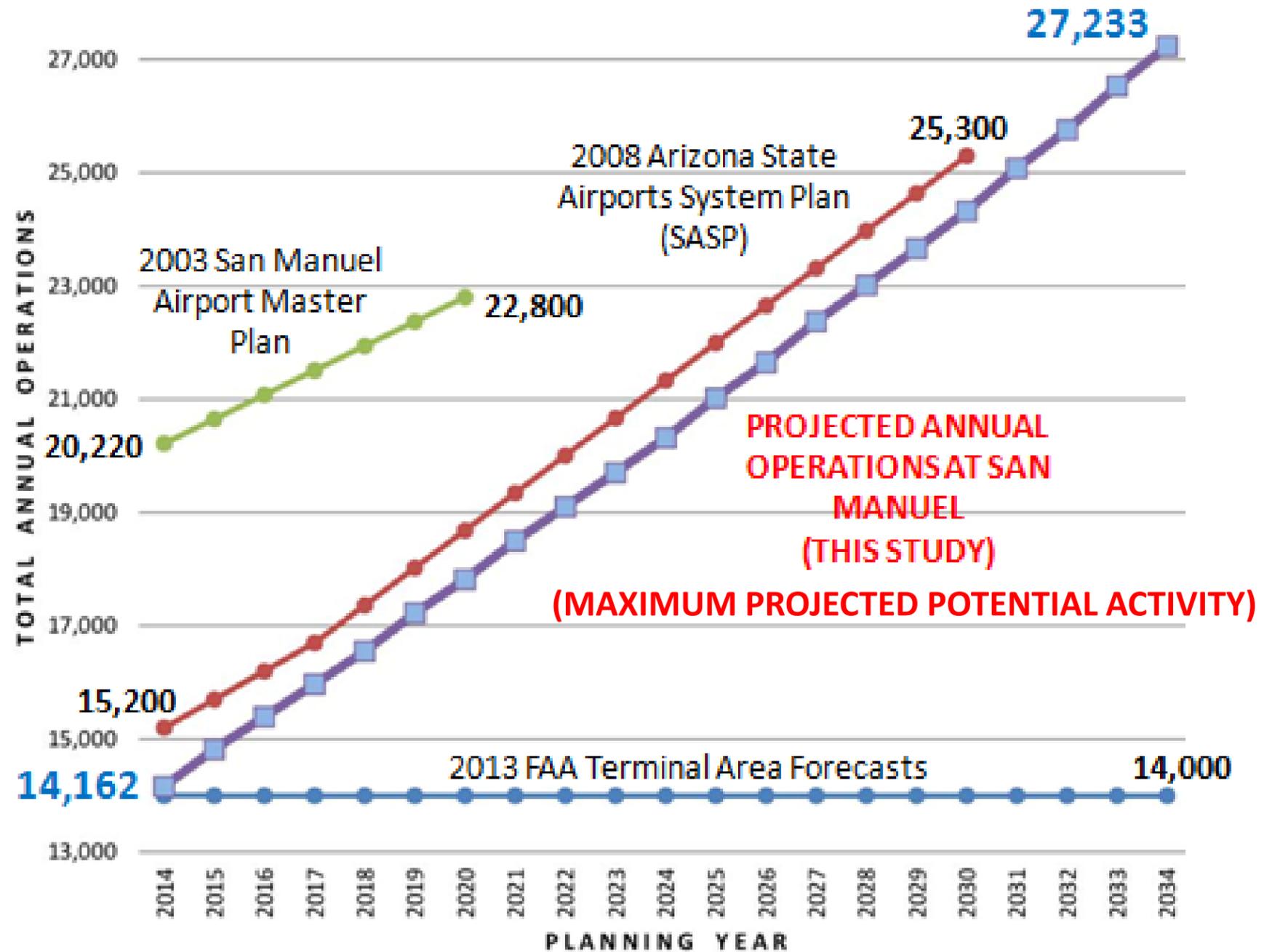
Growth Projections

TOTAL OPERATIONS

The chart to the right shows the projected growth in the number of aircraft operations per year at San Manuel (an “operation” is either a landing or a takeoff). The chart includes a comparison with three other independent studies that were completed for the airport in the past.

It is estimated that about 65% of the landings and takeoffs are by the aircraft that are based at San Manuel. The remaining 35% are by visiting (“transient”) aircraft.

The projections represent the potential maximum activity that may occur at the airport. Actual activity will most likely be less than the projected maximum, but probably will not exceed the maximum.



FAA Forecast Approval Received...

The forecasts were submitted to the FAA
Phoenix AFO on January 23, 2014.

The FAA responded with minor comments.
These were addressed and the forecasts
were resubmitted on April 1, 2014.

**The official FAA approval was received on
April 21, 2014.**



U.S. Department
of Transportation
**Federal Aviation
Administration**

Federal Aviation Administration
Phoenix Airports Field Office

3800 N Central Ave
Suite 1025
Phoenix, AZ 85012

April 21, 2014

Mr. Jim Petty
Airport Economic Director
31 N Pinal Street
Building A
Florence, Arizona 85132

Dear Mr. Petty:

San Manuel Municipal Airport (E77) Aviation Activity Forecast Approval

The Federal Aviation Administration (FAA) has reviewed the aviation forecast for the airport master plan for San Manuel (E77) dated April 1, 2014. The FAA approves these forecasts for airport planning purposes, including Airport Layout Plan development.

In summary, while the difference between the FAA Terminal Area Forecast (TAF) and San Manuel's forecast update regarding total operations isn't within the 10 percent and 15 percent allowance for 5 and 10 year planning horizons, the airport forecast update appropriately attributes these differences to variances in reported based aircraft and their associated operations as reported in the master plan update and the TAF. Therefore, for future TAF reporting years please ensure that the additional based aircraft and associated operations are included in the airport's annual operations counts.

However, regardless of this discrepancy the FAA locally approves this forecast for planning purposes at the San Manuel Municipal Airport. It is important to note that the approval of this forecast doesn't guarantee future funding for large scale capital improvements as future projects will need to be justified by current activity levels reached at the time the projects are proposed for implementation.

If you have any questions about this forecast approval, please call me at 602-379-3023.

Sincerely,

Kyler Erhard
Airport Planner

cc: Mr. Scott Driver, ADOT, Airport Grant Manager

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Critical Aircraft Identification

The most demanding aircraft that may use the airport

The runway length is adequate for ARC B-I.

In the future, it may be necessary to both upgrade the airport's classification to ARC B-II and to extend the runway to accommodate larger/faster aircraft. A maximum planning length of 6,000' was identified.

The actual timing of the upgrade to ARC B-II, and the timing and length of the runway extension will be based on actual changes in demand.



Small single and twin engine piston aircraft

Existing:
ARC B-I

Example:
Cessna 402

DESIGN TO
ACCOMMODATE



Ultimate:
ARC B-II

Example:
Beechcraft
King Air 200

Business turboprops and jet
aircraft

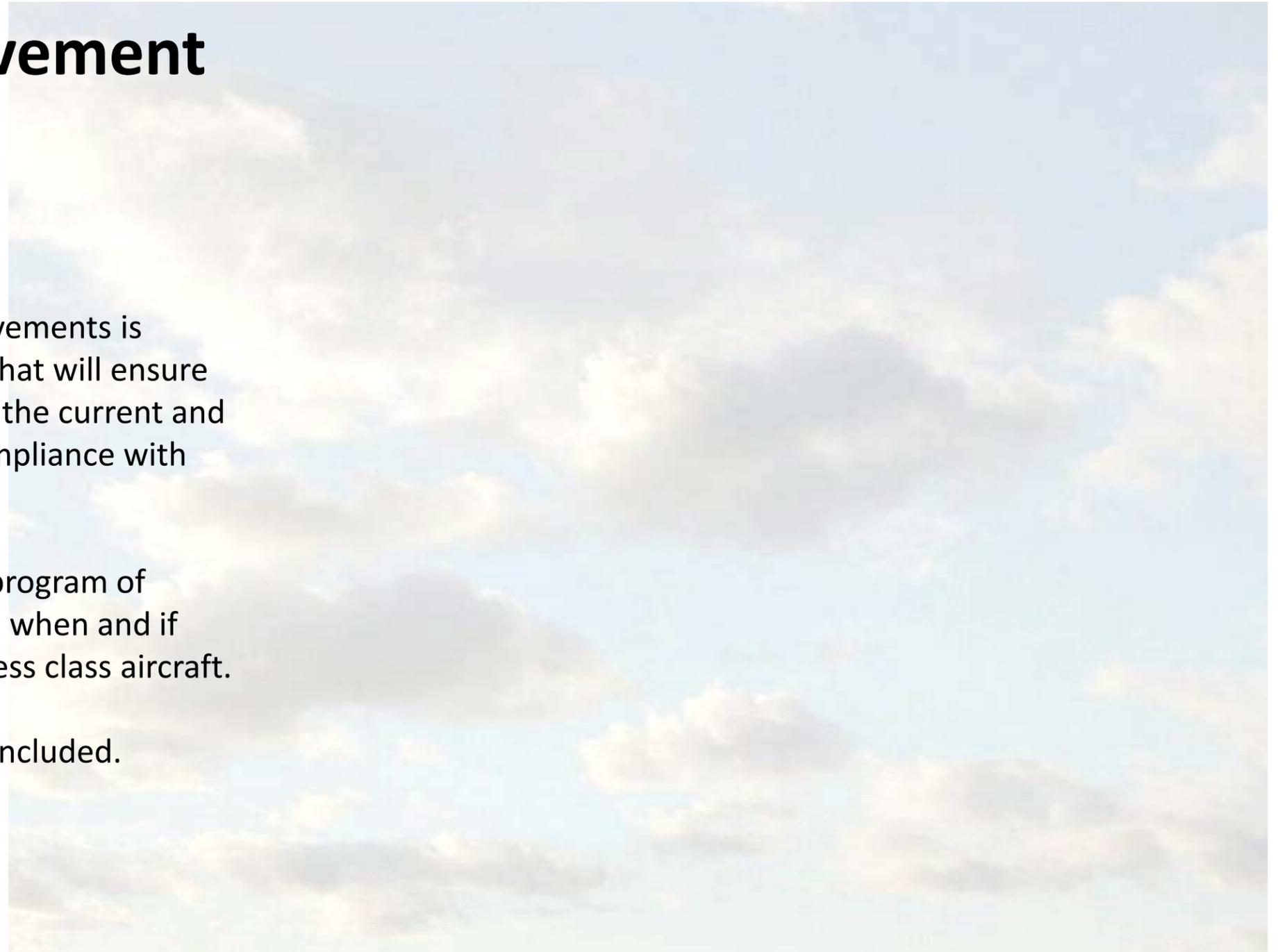
Recommended Improvement Program

20-Year Planning Period

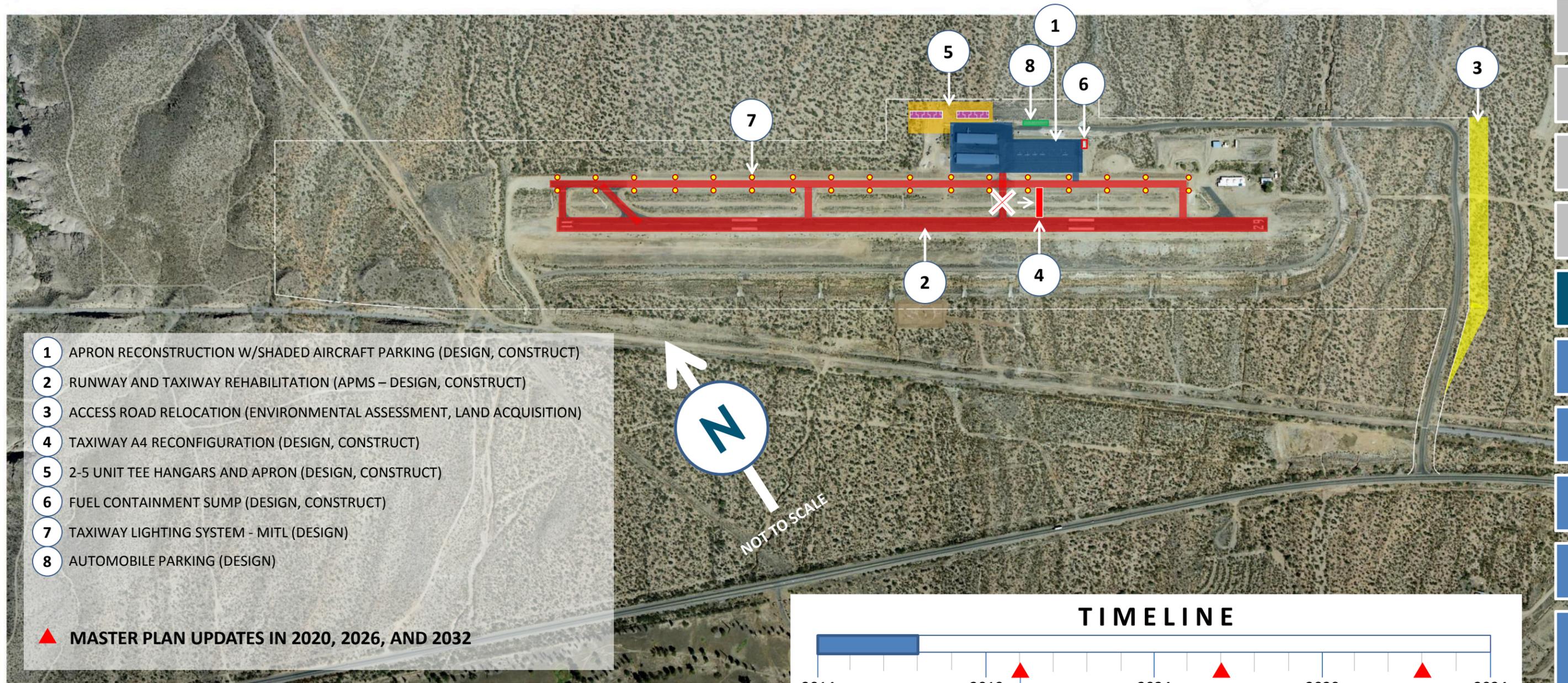
The recommended program of airport improvements is focused on a short term schedule of actions that will ensure that the airport will be able to accommodate the current and short term activity, and that will maintain compliance with current FAA design criteria.

The Master Plan also includes a longer term program of development that will be ready to implement when and if there is a need to accommodate larger business class aircraft.

A program of pavement maintenance is also included.



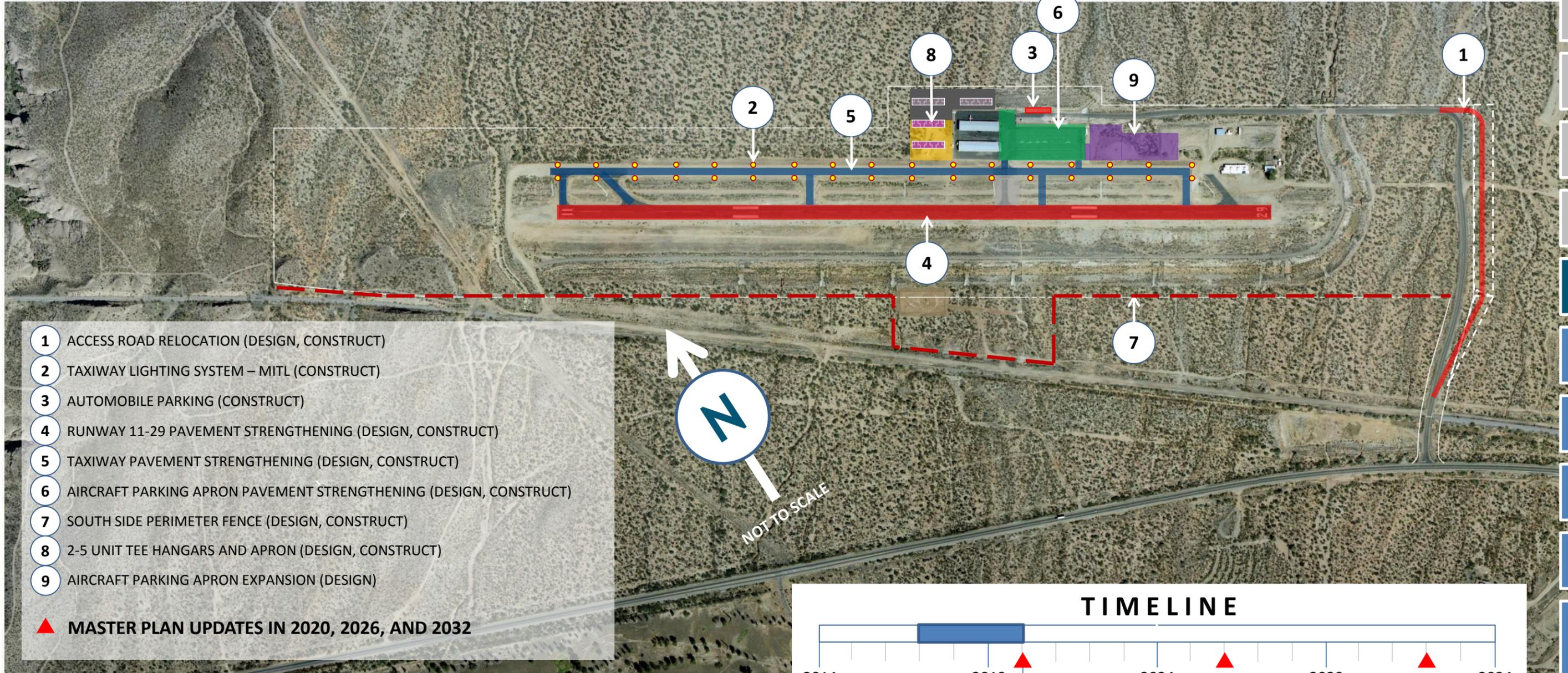
Immediate/Short Term Development Phasing Plan (2014-2016)



The work in this phase consists primarily of maintenance, rehabilitation, capacity, and safety projects that will allow the airport to better accommodate its existing activity.

Short Term Development Phasing Plan (2017-2019)

NOTE: THIS DRAWING DOES NOT SHOW MAINTENANCE PROJECTS

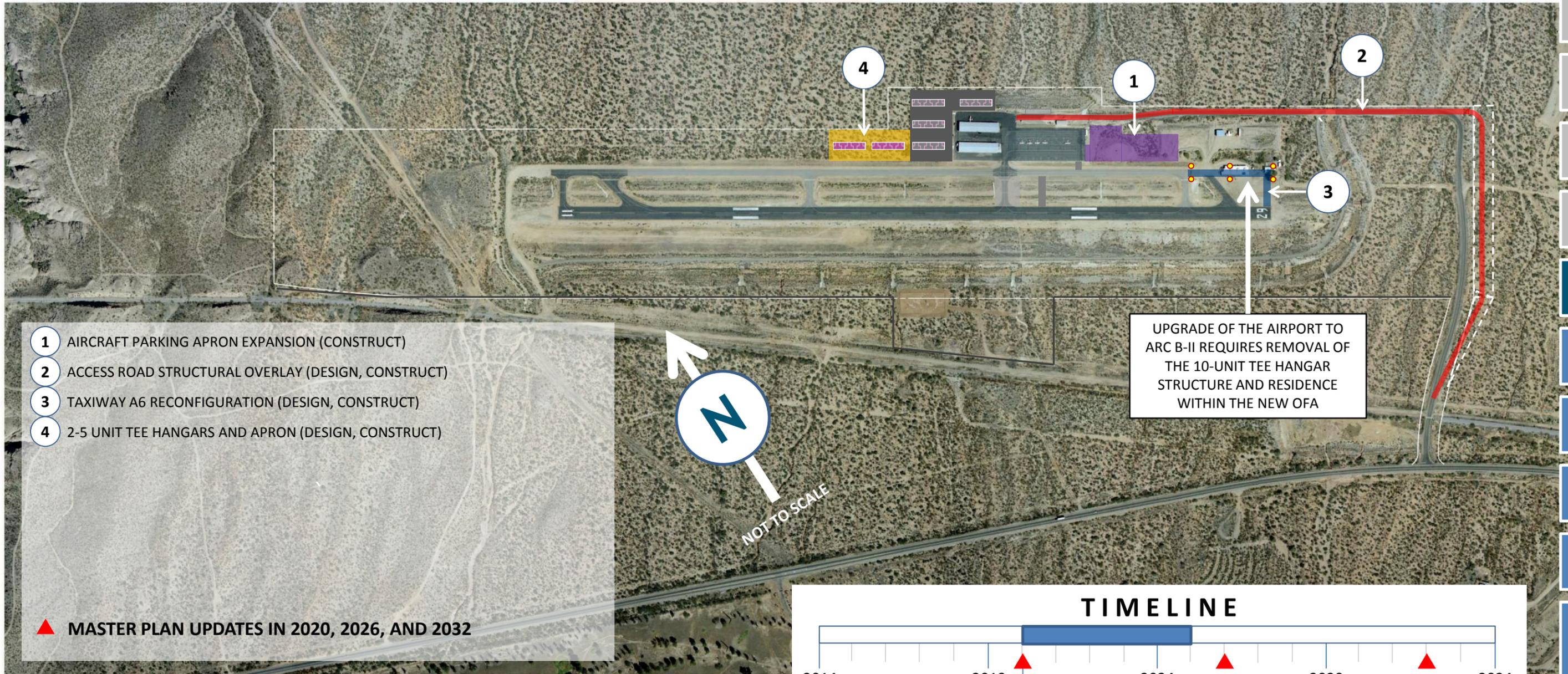


The work in this phase consists primarily of maintenance, rehabilitation, capacity, and safety projects that will allow the airport to better accommodate its existing activity.



Intermediate Term Development Phasing Plan (2020-2024)

NOTE: THIS DRAWING DOES NOT SHOW MAINTENANCE PROJECTS

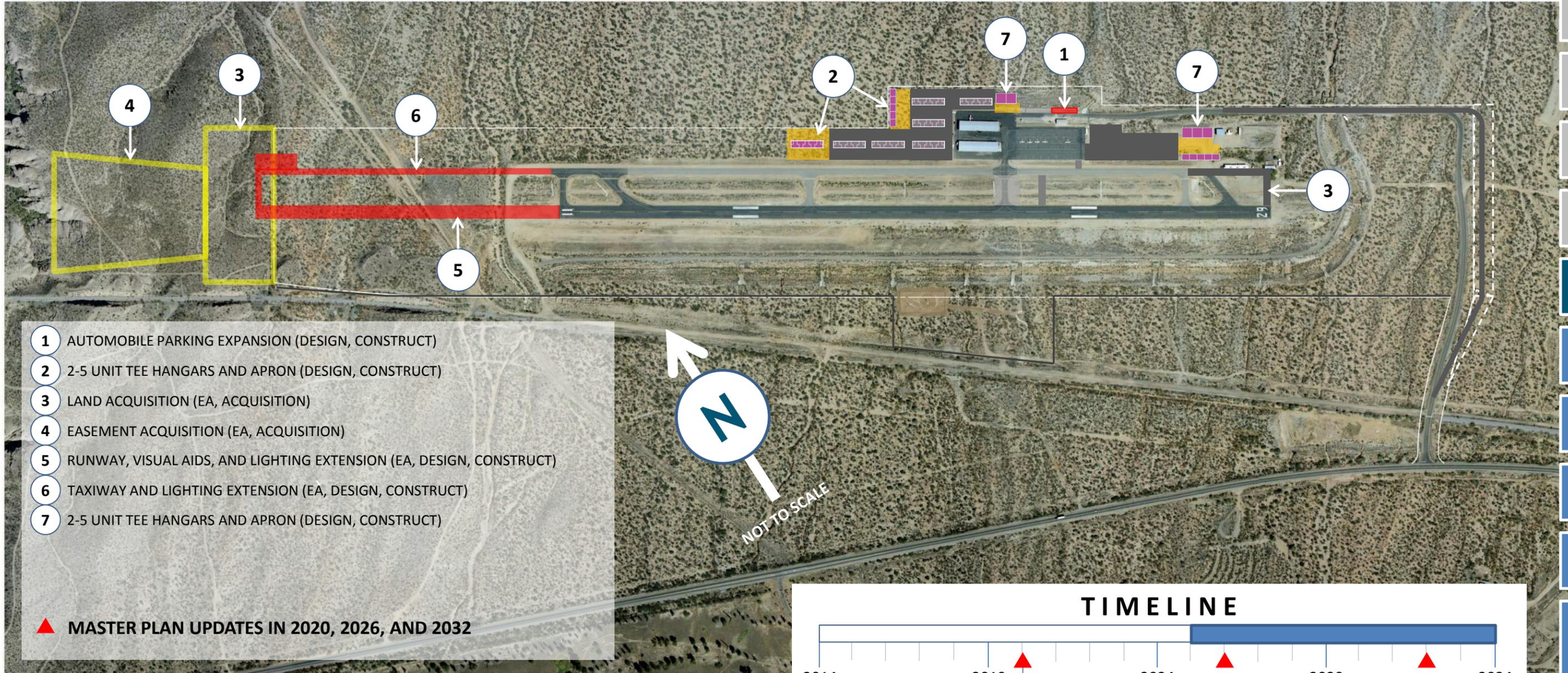


The work in this phase includes preparation for accommodating some larger business class aircraft.



Long Term Development Phasing Plan (2025-2034)

NOTE: THIS DRAWING DOES NOT SHOW MAINTENANCE PROJECTS



The work in this phase includes major projects that will allow the airport to accommodate a range of larger/faster business class aircraft.

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Pavement Maintenance

A program of periodic pavement maintenance is included in the Plan.

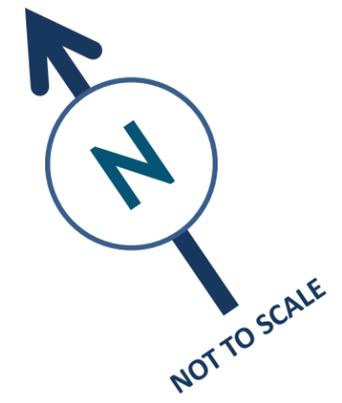
There is an immediate need for maintenance of the runway and taxiways. This is an in-progress project that is being funded by ADOT’s Airport Pavement Maintenance System (APMS) program.

Much of the recommended periodic maintenance work may also be funded by the ADOT Airport Pavement Maintenance System (APMS) program.

Maintenance of the airport’s infrastructure is required as part of the airport’s FAA grant assurances agreements.

Table 5r: RECOMMENDED MAINTENANCE PROGRAM
 San Manuel Airport – San Manuel, Arizona

Project	Demand-Based Action Point	Year
Immediate Need		
Runway crack seal, seal coat, pvmt marking	Immediate need	2014
Taxiway crack seal, seal coat, pvmt marking	Immediate need	2015
Access Rd drainage structure maintenance	Immediate Need	2015
Short Term (2014-2019)		
Runway crack seal, seal coat, pvmt marking	Observed pavement condition	2019
Apron seal coat, crack seal, pvmt marking	Observed pavement condition	2019
Auto Pkg seal coat, crack seal, marking	Observed pavement condition	2022
Intermediate Term (2020-2024)		
Runway crack seal, seal coat, pvmt marking	Observed pavement condition	2024
Taxiway crack seal, seal coat, pvmt marking	Observed pavement condition	2024
Apron seal coat, crack seal, pvmt marking	Observed pavement condition	2024
Long Term (2025-2034)		
Runway crack seal, seal coat, pvmt marking	Observed pavement condition	2029
Taxiway crack seal, seal coat, pvmt marking	Observed pavement condition	2029
Apron seal coat, crack seal, pvmt marking	Observed pavement condition	2029
Access Rd crack seal, seal, pvmt marking	Observed pavement condition	2031
Auto Pkg seal coat, crack seal, marking	Observed pavement condition	2031
Seal coat, pavement marking (4,214’ RWY)	Observed pavement condition	2034
Taxiway crack seal, seal coat, pvmt marking	Observed pavement condition	2034
Apron seal coat, crack seal, pvmt marking	Observed pavement condition	2034



State Trust Land

Private Land

Private Land

13 18
24 19

19 20
30 29

EASEMENT

Runway Extension

EXISTING RUNWAY 11-29

AWOS

EXISTING ACCESS EASEMENTS

EXISTING ACCESS ROAD EASEMENTS

-  LAND CURRENTLY OWNED IN FEE BY PINAL COUNTY
-  LAND CURRENTLY LEASED TO PINAL COUNTY BY BHP
-  RECOMMENDED INITIAL LAND ACQUISITION
-  EXISTING EASEMENTS

TOWNSHIP 9 SOUTH
 RANGE 16 EAST

TOWNSHIP 9 SOUTH
 RANGE 17 EAST

Private Land

STATE HIGHWAY 76

Private Land

State Trust Land

24 19
25 30

Airport Land Requirements

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Environmental Documentation Requirements

This section of the Master Plan identified which projects will require the preparation of an Environmental Assessment (EA).

All projects that use federal funding require preparation of Categorical Exclusion (CATEX) documentation prior to funding participation by the FAA.

Some projects are identified as requiring more in-depth environmental studies – the preparation of an Environmental Assessment.

Projects that will require preparation of an Environmental Assessment (EA):

- **Acquisition of airport land (programmed for 2015)**
- **Extension of Runway 11-29 (programmed for 2031)**

Short Term Capital Improvement Program

2015 through 2019
 Page 1 of 2

Most of the recommended improvements are eligible for FAA and/or ADOT grant participation.

91.06% FAA
 4.47% ADOT
 4.47% Pinal County

--- or ---

90% ADOT
 10% Pinal County

E77 San Manuel Airport

Pinal County, Arizona

Short Term Capital Improvement Program

2015	through	2019	2015	2016	2017	2018	2019
E77-002	Runway and Taxiway Pavement Rehabilitation (APMS)		\$400,000				
E77-004	Design - Reconfigure Taxiway A4		\$50,000				
E77-008	EA - Access Road Land Acquisition		\$50,000				
E77-022	Design/Construction - Access Road Bend Reconstruction		\$300,000				
E77-024	Design/Construction - Site Work for 2-5 Unit Tee Hangar Structure		\$1,500,000				
E77-042	Design/Construct – Fuel containment sump		\$200,000				
E77-051	Construction - Aircraft Apron Reconstruction / Reconfiguration		\$600,000				
E77-054	EA for Land Acquisition		\$200,000				
E77-056	Design - FAR Part 77 Obstruction Mitigation		\$100,000				
E77-058	Design/Construction - 2-5 Unit Tee Hangar Structure		\$135,000				
E77-201	Maintenance - Taxiway Crack Seal, Seal Coat, Pavement Marking		\$100,000				
E77-202	Maintenance - Access Road Drainage Structure Maintenance		\$125,000				
E77-005	Construction - Reconfigure Taxiway A4			\$300,000			
E77-009	Land Acquisition for Access Road			\$25,000			
E77-038	Design - Automobile Parking Lot			\$40,000			
E77-046	Design - Taxiway Edge Lighting System (MITL)			\$75,000			
E77-055	Acquisition of Airport Land			\$550,000			
E77-057	Construction - FAR Part 77 Obstruction Mitigation			\$400,000			
E77-010	Design/Construction - Access Road Relocation				\$225,000		
E77-039	Construction - Automobile Parking Lot				\$250,000		
E77-047	Construction - Taxiway Edge Lighting System (MITL)				\$300,000		
E77-052	Design - Rotorcraft Operations Area				\$75,000		
E77-006	Design RWY 11-29 Pavement Strengthening					\$80,000	

Programming is updated on an annual basis through the joint FAA/ADOT ACIP Program

Short Term Capital Improvement Program

2015 through 2019
 Page 2 of 2

Most of the recommended improvements are eligible for FAA and/or ADOT grant participation.

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 10% Pinal County

E77 San Manuel Airport

Pinal County, Arizona

Short Term Capital Improvement Program

2015 through 2019		2015	2016	2017	2018	2019
E77-016	Design - Taxiway Pavement Strengthening				\$50,000	
E77-029	Design - Aircraft Parking Apron Pavement Strengthening				\$50,000	
E77-044	Design and Construction - South Side Perimeter Fence				\$225,000	
E77-053	Construction - Rotorcraft Operations Area				\$510,000	
E77-007	Construction - RWY 11-29 Pavement Strengthening					\$500,000
E77-017	Construction - Taxiway Pavement Strengthening					\$250,000
E77-020	Design - Aircraft Parking Apron Expansion					\$85,000
E77-026	Design/Construction - Site Work for 2-5 Unit Hangar Structure					\$1,500,000
E77-030	Construct - Aircraft Parking Apron Pavement Strengthening					\$250,000
E77-059	Design/Construction - 2-5 Unit Hangar Structure					\$135,000
E77-203	Maintenance - Runway Crack Seal, Seal Coat, Pavement Marking					\$200,000
E77-204	Maintenance - Apron Crack Seal, Seal Coat, Pavement Marking					\$75,000

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Intermediate Term Capital Improvement Program

2020 through 2024
 Page 1 of 1

Most of the recommended improvements are eligible for FAA and/or ADOT grant participation.

91.06% FAA
 4.47% ADOT
 4.47% Pinal County

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 10% Pinal County

E77 San Manuel Airport

Pinal County, Arizona

Intermediate Term Capital Improvement Program

2020 through 2024		2020	2021	2022	2023	2024
E77-021	Construction - Aircraft Parking Apron Expansion	\$600,000				
E77-023	Design/Construction - Access Road Structural Overlay	\$300,000				
E77-031	Airport Master Plan Update	\$200,000				
E77-216	Maintenance - Auto Parking Crack Seal, Seal Coat, Pvmt Marking			\$50,000		
E77-014	Design - Taxiway A6 Relocation				\$60,000	
E77-015	Construction - Taxiway A6 Relocation					\$350,000
E77-025	Design/Construction - Site Work for 2-5 Unit Hangar Structure					\$1,500,000
E77-060	Design/Construction - 2-5 Unit Hangar Structure					\$135,000
E77-205	Maintenance - Runway Crack Seal, Seal Coat, Pavement Marking					\$200,000
E77-206	Maintenance - Taxiway Crack Seal, Seal Coat, Pavement Marking					\$100,000
E77-207	Maintenance - Apron Crack Seal, Seal Coat, Pavement Marking					\$100,000

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Long Term Part 1 Capital Improvement Program

2025 through 2029
 Page 1 of 1

Most of the recommended improvements are eligible for FAA and/or ADOT grant participation.

91.06% FAA
 4.47% ADOT
 4.47% Pinal County

--- or ---

90% ADOT
 10% Pinal County

E77 San Manuel Airport

Pinal County, Arizona

Long Term Capital Improvement Program (Part 1)

2025 through 2029

		2025	2026	2027	2028	2029
E77-040	Design - Automobile Parking Lot Expansion	\$50,000				
E77-032	Airport Master Plan Update		\$200,000			
E77-041	Construction - Automobile Parking Lot Expansion		\$250,000			
E77-027	Design/Construction - Site Work for 2-5 Unit Hangar Structure					\$1,500,000
E77-061	Design/Construction - 2-5 Unit Hangar Structure					\$135,000
E77-209	Maintenance - Runway Crack Seal, Seal Coat, Pavement Marking					\$200,000
E77-210	Maintenance - Taxiway Crack Seal, Seal Coat, Pavement Marking					\$100,000
E77-211	Maintenance - Apron Crack Seal, Seal Coat, Pavement Marking					\$100,000

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Long Term Part 2 Capital Improvement Program

2030 through 2034
 Page 1 of 1

Most of the recommended improvements are eligible for FAA and/or ADOT grant participation.

91.06% FAA
 4.47% ADOT
 4.47% Pinal County

--- or ---

90% ADOT
 10% Pinal County

E77 San Manuel Airport

Pinal County, Arizona

Long Term Capital Improvement Program (Part 2)

2030 through 2034		2030	2031	2032	2033	2034
E77-011	EA - RWY 11-29 Extension		\$200,000			
E77-212	Maintenance - Access Road Crack Seal, Seal Coat, Pavement Mark		\$50,000			
E77-217	Maintenance - Auto Parking Crack Seal, Seal Coat, Pvmt Marking		\$50,000			
E77-033	Airport Master Plan Update			\$200,000		
E77-050	Land Acquisition - Runway 11-29 Extension/RPZs			\$115,000		
E77-012	Design - RWY 11-29 Extension				\$400,000	
E77-018	Design - Taxiway A Extension				\$150,000	
E77-034	Design - MIRL extension and upgrade				\$75,000	
E77-036	Design – PAPI and REIL relocation				\$10,000	
E77-043	Design - Runway and Taxiway Signage Extension/Modification				\$20,000	
E77-048	Design – Taxiway lighting (MITL) extension				\$20,000	
E77-013	Construction - RWY 11-29 Extension					\$4,500,000
E77-019	Construction - Taxiway A Extension					\$1,500,000
E77-028	Design/Construction - Site Work for 2-5 Unit Hangar Structure					\$1,500,000
E77-035	Construction - MIRL extension and upgrade					\$250,000
E77-037	Construction – PAPI and REIL relocation					\$75,000
E77-045	Construction - Runway and Taxiway Signage Extension/Modificati					\$75,000
E77-049	Construction – Taxiway lighting (MITL) extension					\$50,000
E77-062	Design/Construction - 2-5 Unit Hangar Structure					\$400,000
E77-213	Maintenance - RWY (4,214') Crack Seal, Seal Coat, Pvmt Marking					\$200,000
E77-214	Maintenance - Taxiway Crack Seal, Seal Coat, Pavement Marking					\$100,000
E77-215	Maintenance - Apron Crack Seal, Seal Coat, Pavement Marking					\$100,000

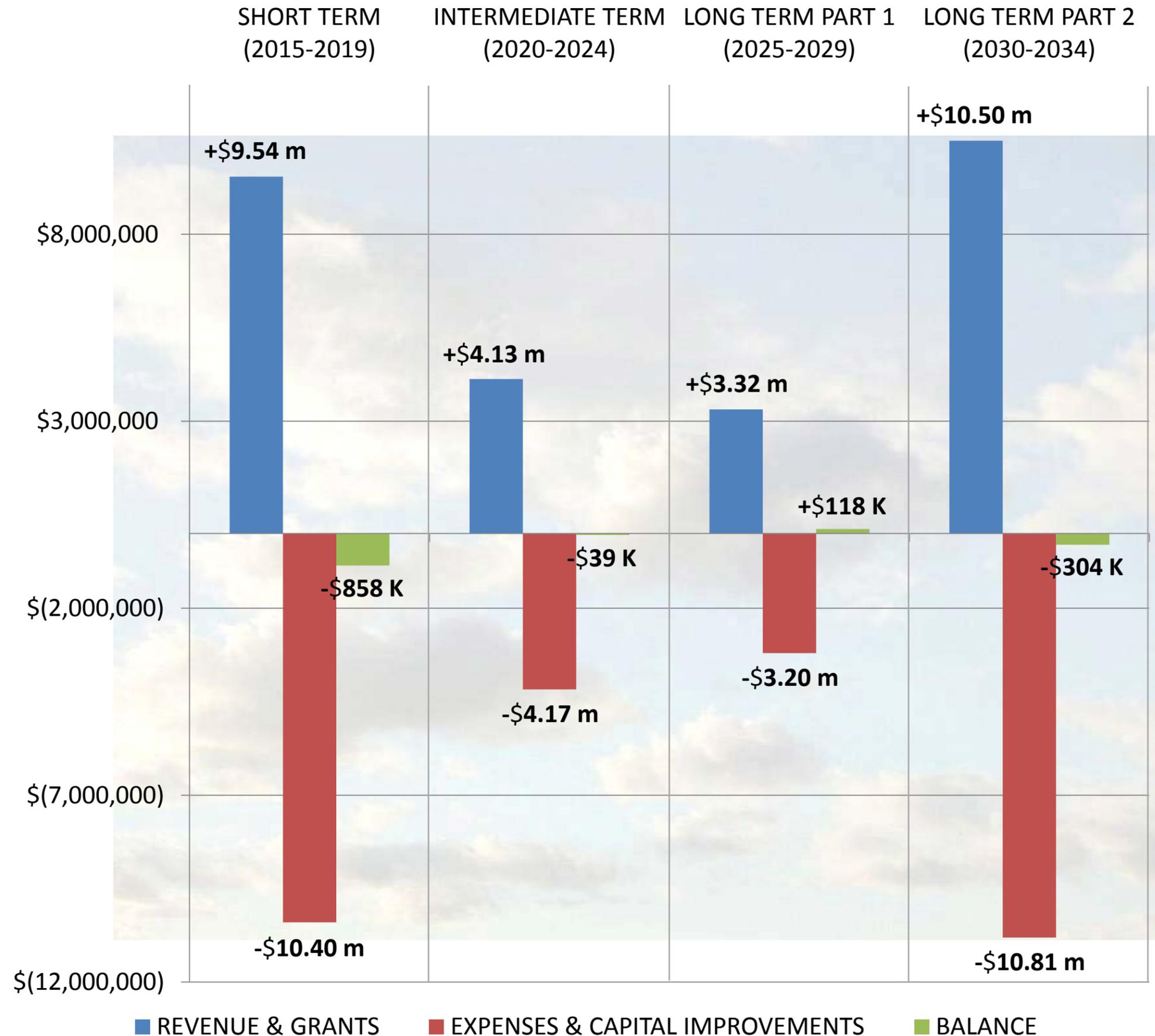
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Financial Analysis Summary

A 20-year analysis of projected revenues and expenditures was developed.

The financial analysis assumes full implementation of the recommended Capital Improvement Program, with full grant participation by the FAA and ADOT. This is an aggressive program and one that may not occur, but it represents the “worst case” scenario for future planning.

Detailed breakdowns for each year are included in the Master Plan document.



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More Information

The Project Web Site

The entire Airport Master Plan is published on an interactive web site. All chapters of the Master Plan as well as meeting agendas, copies of presentations, the project schedule, as well as the Executive Summary and this synoptic presentation are available for viewing, downloading or printing.

The project website can be accessed at the following link:

<http://www.nicholaspela.com/E77/welcome.html>

San Manuel Airport - San Manuel, Arizona
MASTER PLAN 2014 / PROJECT WEB SITE

Nicholas J. Pela & Associates
airport consultants

Dibble Engineering

UPDATED 10/01/2014

HOME REVIEW SCHEDULE MEETINGS

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4. Demand/Capacity Analysis	04/21/2014	VIEW
5. Airport Facility Requirements	09/22/2014	VIEW
6. Development Alternatives	07/01/2014	VIEW
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8. Environmental Evaluation	08/19/2014	VIEW
9. Airport Plans	09/23/2014	VIEW
10. Capital Improvement Program	09/24/2014	VIEW
11. Airport Financial Analysis	09/25/2014	VIEW
Appendix A: PAC Meetings	07/23/2014	VIEW
Appendix B: Public Involvement	07/23/2014	VIEW
Appendix C: Glossary of Aeronautical Terms	01/30/2014	VIEW

[VIEW EXECUTIVE SUMMARY](#)

Click on a button to view, save, or print a PDF copy of any document.

After you review a document, please provide your comments or questions via e-mail. Click the "E-Mail" icon below.

The Planning Advisory Committee will be notified via e-mail when new documents are posted on this web site.

NOTE: Chapters 1 through 11 constitute the entire Draft Airport Master Plan narrative.

E-MAIL

Summary

Next Steps...

The Director of Aviation and the San Manuel Airport Planning Advisory Committee are requesting that the Pinal County Board of Supervisors adopt the Airport Master Plan.



The San Manuel Airport Master Plan...

- ...is a thorough 20-year plan that focuses on the short term needs of the airport;
- ...provides a set of planning tools and detailed information for future upgrade of the airport should the projected potential demand occur;
- ...is useful as a reference for the development of the airport's annual budget and for the annual update of the FAA/ADOT Airport Capital Improvement Program (ACIP);
- ...provides background information and project justification to be used when applying for FAA and ADOT airport development grants; and
- ...provides a marketing tool to assist in attracting new businesses to the San Manuel area.