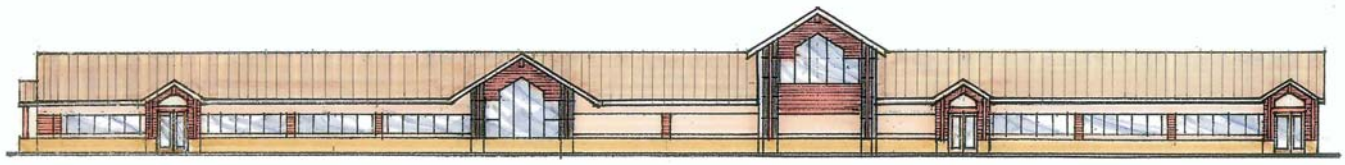
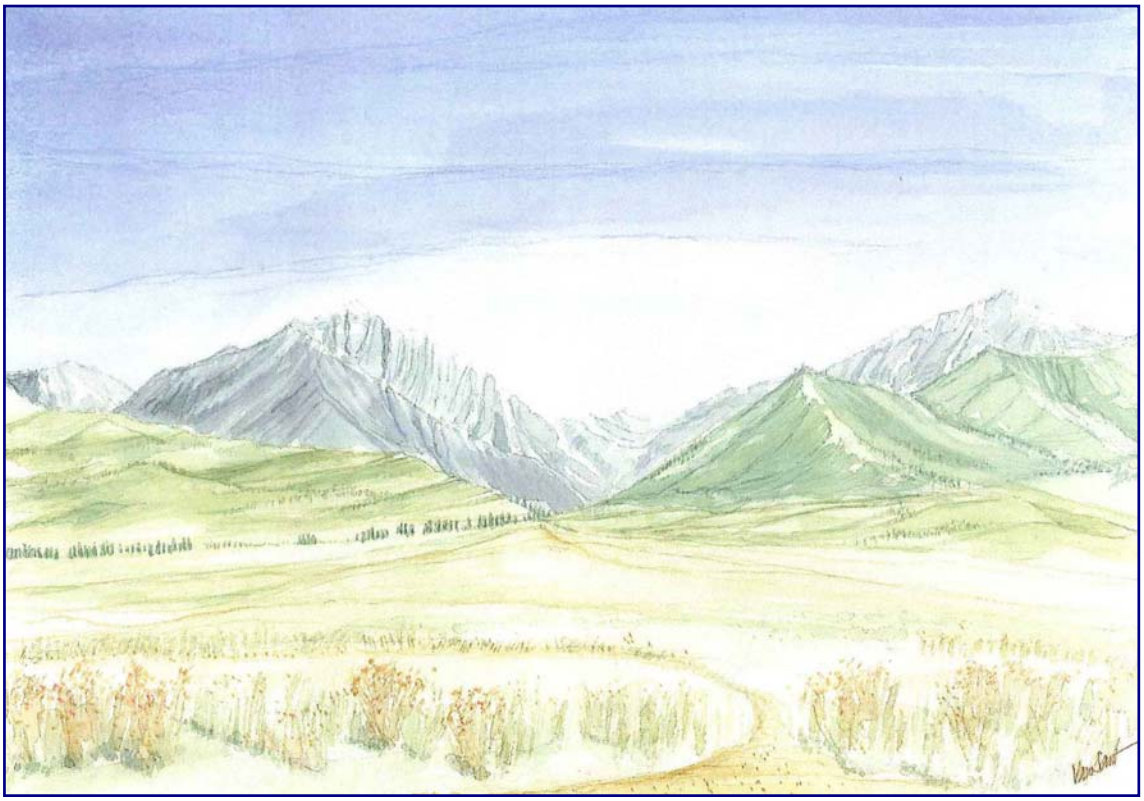
MAMMOTH YOSEMITE AIRPORT
TERMINAL AREA DEVELOPMENT PLAN

TOWN OF MAMMOTH LAKES, CALIFORNIA



AIRSIDE ELEVATION



LANDSIDE ELEVATION

August 2013

Reinard W. Brandley
CONSULTING AIRPORT ENGINEER

VAN SANT GROUP
Architects □ Interiors □ Planners

MAMMOTH YOSEMITE AIRPORT
TERMINAL AREA DEVELOPMENT PLAN

Prepared for
Town of Mammoth Lakes, California

Prepared by:
Reinard W. Brandley
Consulting Airport Engineer

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Architects

August 2013

MAMMOTH YOSEMITE AIRPORT
TERMINAL AIRPORT DEVELOPMENT PLAN
TOWN OF MAMMOTH LAKES, MONO COUNTY, CALIFORNIA

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CHAPTER 1. INTRODUCTION

1-1 History

Mammoth Yosemite Airport (MMH) was originally constructed by the U.S. Army for use as an auxiliary landing strip during World War II. The original landing strip was 4,000 feet long by 30 feet wide and was unpaved. Mono County acquired the airfield from the U.S. Army after the war and renamed it Long Valley Field. In 1965 the runway was relocated 300 feet to the north and was constructed to a length of 5,000 feet and a width of 100 feet. Mammoth Sky Lodge Corporation, then the airport operator, extended the runway to 6,500 feet in 1970. A small terminal building and airport office, currently used as an FBO office and pilots' lounge, was constructed in 1972.

In 1973 Sierra Pacific Airlines initiated service using Convair 440 aircraft and continued the service until 1980. Mono County acquired the airport from Mammoth Sky Lodge Corporation in 1980.

In 1985 Trans World Express began commuter service to Los Angeles and San Francisco using 19-seat Beech 1900 turboprop aircraft. Royal Sky West began seasonal winter service for the 1987 ski season using British Aerospace BAE 146 turboprop aircraft, but ceased operations in 1988.

The Town of Mammoth Lakes purchased the airport from Mono County in September 1992. United Express operated flights from Mammoth Lakes to Fresno using 19-seat Jetstream 31 turboprop aircraft for the winter seasons of 1993 and 1994, at which time service was discontinued. Trans World Express terminated flight operations in 1995.

In 2007 Alaska Air, backed by a contract with Mammoth Mountain Ski Area (MMSA), began airline service to Los Angeles during the ski season using Q400 airplanes. This service has increased in scope and airline participation.

1-2 Aviation Forecasts

In 2007 Mammoth Mountain Ski Area developed a plan to provide airline service to the area. The plan called for year-round service with significantly more operations during the ski season. Mammoth Mountain Ski Area has negotiated contracts with various airlines to provide service and has prepared an MMH Growth Plan for the years 2008 through 2028. This plan is included in Table No. 1-1. The growth rate forecast for the first four years of this plan has been realized, and during the 2012 calendar year 27,246 enplaned passengers utilized the airline service. In Table No. 1-1 56,360 total seats are forecast in the 2012-13 period, which at a 60 percent load factor represents 33,816 passengers. In calendar year 2012 there were 27,246 enplaned passengers even though it was a poor snow year at Mammoth Mountain.

The airlines provided seven flights a day to MMH during the 2012-13 ski season – four by United Airlines using Sky West CRJ 700 and three by Alaska Airlines using the Q400 aircraft.

The forecast growth showing forecast enplaned passengers, airline operations, itinerant operations, local operations, and total operations is shown in Table No. 1-2. Table No. 1-3 presents an MMH Summarization and Documentation of Airport Planning Forecasts. These forecasts are taken from the recently submitted Airport Layout Plan Update Narrative dated August 2013.

Studies have shown that the growth rate forecast for Mammoth Yosemite Airport is similar to that which was experienced at airports serving similar recreation facilities in the Western United States after airline service began including Yampa Valley in Colorado, Eagle County Regional Airport in Colorado, Aspen/Pitkin County Airport in Colorado, Glacier Park International Airport in Montana, and Friedman Memorial (Sun Valley) in Idaho.

1-3 Existing Facilities

When the new airline operations began in 2008, there were no appropriate terminal facilities at the airport to handle these operations. Environmental constraints would not allow the construction of a new terminal at that time and it was required that the terminal be constructed inside an existing building such that there would be no increase in footprint of the building. The largest building available was the existing equipment storage building, which had an area of 5,060 square feet. In 2008 a temporary airline terminal was constructed within the walls of this building. This terminal building has served the airlines in the intervening period. The building is overcrowded and too small to accommodate airline and security requirements, so a temporary sprung structure was installed in the fall of 2011 to improve the service to passengers until a new terminal can be constructed.

1-4 Required Action

To accommodate the forecast traffic it will be necessary to construct a much larger new airline terminal facility at the airport. It is not economically or operationally feasible to expand the existing temporary terminal. It is

recommended that an entirely new terminal facility be constructed at an appropriate site on the airport. The new terminal facilities will include a new terminal building itself, airline aircraft parking apron, a deicing apron, access roads, automobile parking facilities, maintenance facilities, and airport offices. The facilities need to be sized to accommodate forecast traffic for the next 20 years and have the capability of expanding to accommodate unanticipated growth with minimal interference with operations in the new facility.

A detailed Terminal Area Development study and plan has been developed and the results of this study are included in this report. This study and report was conducted by the Mammoth Yosemite Airport Terminal Design Team consisting of Reinard W. Brandley, Consulting Airport Engineer, and the Van Sant Group, Architects. Terry Van Sant is the principal for the Van Sant Group working on this project and Reinard W. Brandley is the principal for Brandley Engineering.

Table No. 1-1

MMH Growth Plan 2008 to 2013 - FY Oct 1 to Sept 30

As of 4/18/13

Early Winter/Winter Scheduled Air Service (Dec 1 to April 30)

(Actuals ending 4/30/13)

				2008-09		2009-10		2010-11		2011-12		2012-13	
	Aircraft			Total	Seats	Total	Seats	Total	Seats	Total	Seats	Total	Seats
City	Type	Seats	Airline	Operations	Per Season	Operations	Per Season	Operations	Per Season	Operations	Per Season	Operations	Per Season
LAX	Q-400	76	AS	116	8816	115	8740	143	10868	143	10868	143	10868
LAX	Q-400	76	AS			114	8664	115	8740	131	9956	102	7752
SNA	RJ	66	UA							71	4686	67	4422
SAN	RJ	66	UA							123	8118	117	7722
SFO	RJ	66	UA					115	7590	123	8118	117	7722
SFO	RJ	66	UA							71	4686	67	4422
SJC	Q-400	76	AS			115	8740	130	9880	70	5320		
SEA	RJ	70	AS										
RNO	Q-400	76	AS			115	8740						
LAS	RJ	70	AS										
PHX	RJ	70	AA										
DFW													
Totals				**116**	**8816**	**459**	**34884**	**503**	**37078**	**732**	**51752**	**613**	**42908**
							296%		**6%**		**40%**		**-17%**

Spring/Summer/Fall Scheduled Air Service (May 1 to Nov 30)

				2008-09		2009-10		2010-11		2011-12		2012-13	
	Aircraft			Total	Seats	Total	Seats	Total	Seats	Total	Seats	Total	Seats
City	Type	Seats	Airline	Operations	Per Season	Operations	Per Season	Operations	Per Season	Operations	Per Season	Operations	Per Season
LAX	Q-400	76	AS			214	16264	214	16264	177	13452	177	13452
LAX	Q-400	76	AS										
SNA	RJ	66	UA										
SAN	RJ	66	UA										
SFO	RJ	66	UA										
SFO	RJ	66	UA										
SJC	Q-400	76	AS										
SEA	RJ	70	AS										
PDX	RJ	70	AS										
RNO	Q-400	76	AS										
LAS	RJ	70	AS										
PHX	RJ	70	AA										
DFW													
Totals				**0**	**0**	**214**	**16264**	**214**	**16264**	**177**	**13452**	**177**	**13452**
									0%		**-17%**		**0%**

Total Year Round Scheduled Air Service

				2008-09		2009-10		2010-11		2011-12		2012-13	
	Aircraft			Total	Seats	Total	Seats	Total	Seats	Total	Seats	Total	Seats
City	Type	Seats	Airline	Operations	Per Season	Operations	Per Season	Operations	Per Season	Operations	Per Season	Operations	Per Season
LAX	Q-400	76	AS	116	8816	329	25004	357	27132	320	24320	320	24320
LAX	Q-400	76	AS			114	8664	115	8740	131	9956	102	7752
SNA	RJ	66	UA							71	4686	67	4422
SAN	RJ	66	UA					115	7590	123	8118	117	7722
SFO	RJ	66	UA					115	7590	123	8118	117	7722
SFO	RJ	66	UA							71	4686	67	4422
SJC	Q-400	76	AS			115	8740	130	9880	70	5320		
SEA	RJ	70	AS										
PDX	RJ	70	AS										
RNO	Q-400	76	AS			115	8740						
LAS	RJ	70	AS										
PHX	RJ	70	AA									0	0
DFW													
Totals				**116**	**8816**	**673**	**51148**	**832**	**60932**	**909**	**65204**	**790**	**56360**
							480%		**19%**		**7%**		**-14%**

Season			Days	Dates
Winter Season			115	Dec 17 to April 10
Spring/Summer Season			173	April 11 to Sept 30
Fall Season			49	Oct 1 to Nov 18
Early Winter Season			28	Nov 19 to Dec 16
Summer only			82	June 15 to Sept 4

Season			Days
Winter Season			115
Spring/Summer Season			173
Fall Season			49
Early Winter Season			28
Totals			365

Seasonal day counts will vary some from year to year

Ops	ns and Days	Ops	Seasons and Days	Ops	Seasons and Days
16	Weekend Day only	115	Winter Daily	173	Spring Summer Daily
28	rly Winter	131	Winter Daily + One Weekend Day	197	Winter Daily +Summer only
32	vo Weekend Days	143	Early Winter + Winter Daily	222	Spring Summer and Fall Daily
82	nmer Daily	147	Winter Daily + Two Weekend Days	230	Winter 2X Daily

Table No. 1-1

MMH Growth Plan 2014 to 2018 - FY Oct 1 to Sept 30

As of 4/18/13

Early Winter/Winter Scheduled Air Service

				2013-14		2014-15		2015-16		2016-17		2017-18	
	Aircraft			Total	Seats	Total	Seats	Total	Seats	Total	Seats	Total	Seats
City	Type	Seats	Airline	Operations	Per Season	Operations	Per Season	Operations	Per Season	Operations	Per Season	Operations	Per Season
LAX	Q-400	76	AS	143	10868	143	10868	143	10868	143	10868	143	10868
LAX	Q-400	76	AS	64	4864	64	4864	47	3572	30	2280	30	2280
SNA	RJ	66	UA					71	4686	71	4686	71	4686
SAN	RJ	66	UA	123	8118	115	7590	115	7590	115	7590	115	7590
SFO	RJ	66	UA	71	4686	71	4686	44	2904	44	2904	44	2904
SFO	RJ	66	UA	115	7590	115	7590	115	7590	115	7590	115	7590
DEN	RJ	66	UA	16	1056	32	2112	48	3168	64	4224	115	7590
PDX	Q-400	76	AS					16	1216	32	2432	48	3648
LAS	Q-400	76	AS	51	3876	51	3876	68	5168	85	6460	85	6460
PHX	RJ	70	AA							48	3360	64	4480
DFW													
Totals			**42908**	**583**	**41058**	**591**	**41586**	**667**	**46762**	**747**	**52394**	**830**	**58096**
					-4%		**1%**		**12%**		**12%**		**11%**

Spring/Summer/Fall Scheduled Air Service

				2013-14		2014-15		2015-16		2016-17		2017-18	
	Aircraft			Total	Seats	Total	Seats	Total	Seats	Total	Seats	Total	Seats
City	Type	Seats	Airline	Operations	Per Season	Operations	Per Season	Operations	Per Season	Operations	Per Season	Operations	Per Season
LAX	Q-400	76	AS	222	16872	222	16872	222	16872	222	16872	222	16872
LAX	Q-400	76	AS			82	6232	82	6232	82	6232	82	6232
SNA	RJ	66	UA										
SAN	RJ	66	UA										
SFO	RJ	66	UA					82	5412	82	5412	82	5412
SFO	RJ	66	UA									82	5412
DEN	RJ	66	UA										
PDX	Q-400	76	AS										
LAS	Q-400	76	AS										
PHX	RJ	70	AA										
DFW			AA										
Totals			**13452**	**222**	**16872**	**304**	**23104**	**386**	**28516**	**386**	**28516**	**468**	**33928**
					25%		**37%**		**23%**		**0%**		**19%**

				2013-14		2014-15		2015-16		2016-17		2017-18	
	Aircraft			Total	Seats	Total	Seats	Total	Seats	Total	Seats	Total	Seats
City	Type	Seats	Airline	Operations	Per Season	Operations	Per Season	Operations	Per Season	Operations	Per Season	Operations	Per Season
LAX	Q-400	76	AS	365	27740	365	27740	365	27740	365	27740	365	27740
LAX	Q-400	76	AS	64	4864	146	11096	129	9804	112	8512	112	8512
SNA	RJ	66	UA					71	4686	71	4686	71	4686
SAN	RJ	66	UA	123	8118	115	7590	115	7590	115	7590	115	7590
SFO	RJ	66	UA	71	4686	71	4686	126	8316	126	8316	126	8316
SFO	RJ	66	UA	115	7590	115	7590	115	7590	115	7590	197	13002
DEN	RJ	66	UA	16	1056	32	2112	48	3168	64	4224	115	7590
PDX	Q-400	76	AS					16	1216	32	2432	48	3648
LAS	Q-400	76	AS	51	3876	51	3876	68	5168	85	6460	85	6460
PHX	RJ	70	AA							48	3360	64	4480
DFW			AA										
Totals			**56360**	**805**	**57930**	**895**	**64690**	**1053**	**75278**	**1133**	**80910**	**1298**	**92024**
					3%		**12%**		**16%**		**7%**		**14%**

Table No. 1-1
MMH Growth Plan 2019 to 2022 - FY Oct 1 to Sept 30

As of 4/18/13

Early Winter/Winter Scheduled Air Service

				2018-19		2019-20		2020-21		2021-22		2022-23	
	Aircraft			Total	Seats	Total	Seats	Total	Seats	Total	Seats	Total	Seats
City	Type	Seats	Airline	Operations	Per Season	Operations	Per Season	Operations	Per Season	Operations	Per Season	Operations	Per Season
LAX	Q-400	76	AS	143	10868	143	10868	143	10868	143	10868	143	10868
LAX	Q-400	76	AS	30	2280	30	2280	30	2280	30	2280	30	2280
LAX	Q-400	76	AS	115	8740	115	8740	115	8740	115	8740	115	8740
SNA	RJ	66	UA	71	4686	71	4686	71	4686	71	4686	71	4686
SAN	RJ	66	UA	115	7590	115	7590	115	7590	115	7590	115	7590
SFO	RJ	66	UA	44	2904	115	7590	115	7590	115	7590	115	7590
SFO	RJ	66	UA	115	7590	115	7590	115	7590	115	7590	115	7590
DEN	RJ	66	UA	115	7590	115	7590	115	7590	115	7590	115	7590
SEA	RJ	70	AS	48	3360	64	4480	90	6300	64	4480	115	8050
PDX	Q-400	70	AS	64	4480	90	6300	115	8050	115	8050	115	8050
LAS	Q-400	76	AS	85	6460	85	6460	85	6460	85	6460	85	6460
PHX	RJ	70	AA	115	8050	115	8050	115	8050	115	8050	115	8050
DFW	A-319	124	AA							16	1984	32	3968
Totals			**58096**	**1060**	**74598**	**1173**	**82224**	**1224**	**85794**	**1214**	**85958**	**1281**	**91512**
					28%		**10%**		**4%**		**0%**		**6%**

Spring/Summer/Fall Scheduled Air Service

				2018-19		2019-20		2020-21		2020-21		2021-22	
	Aircraft			Total	Seats	Total	Seats	Total	Seats	Total	Seats	Total	Seats
City	Type	Seats	Airline	Operations	Per Season	Operations	Per Season	Operations	Per Season	Operations	Per Season	Operations	Per Season
LAX	Q-400	76	AS	222	16872	222	16872	222	16872	222	16872	222	16872
LAX	Q-400	76	AS	82	6232	82	6232	82	6232	82	6232	82	6232
LAX	Q-400	76	AS										
SNA	RJ	66	UA										
SAN	RJ	66	UA					82	5412	82	5412	82	5412
SFO	RJ	66	UA	82	5412	82	5412	82	5412	82	5412	82	5412
SFO	RJ	66	UA	82	5412	82	5412	82	5412	82	5412	82	5412
DEN	RJ	66	UA										
SEA	RJ	70	AS										
PDX	Q-400	70	AS										
LAS	Q-400	76	AS	48	3648	48	3648	48	3648	64	4864	64	4864
PHX	RJ	70	AA					82	5740	82	5740	82	5740
DFW	A-319	124	AA										
Totals			**33928**	**516**	**37576**	**516**	**37576**	**680**	**48728**	**696**	**49944**	**696**	**49944**
					11%		**0%**		**30%**		**2%**		**0%**

Total Year Round Scheduled Air Service

				2018-19		2019-20		2020-21		2020-21		2021-22	
	Aircraft			Total	Seats	Total	Seats	Total	Seats	Total	Seats	Total	Seats
City	Type	Seats	Airline	Operations	Per Season	Operations	Per Season	Operations	Per Season	Operations	Per Season	Operations	Per Season
LAX	Q-400	76	AS	365	27740	365	27740	365	27740	365	27740	365	27740
LAX	Q-400	76	AS	112	8512	112	8512	112	8512	112	8512	112	8512
LAX	Q-400	76	AS	115	8740	115	8740	115	8740	115	8740	115	8740
SNA	RJ	66	UA	71	4686	71	4686	71	4686	71	4686	71	4686
SAN	RJ	66	UA	115	7590	115	7590	197	13002	197	13002	197	13002
SFO	RJ	66	UA	126	8316	197	13002	197	13002	197	13002	197	13002
SFO	RJ	66	UA	197	13002	197	13002	197	13002	197	13002	197	13002
DEN	RJ	66	UA	115	7590	115	7590	115	7590	115	7590	115	7590
SEA	RJ	70	AS	48	3360	64	4480	90	6300	64	4480	115	8050
PDX	Q-400	70	AS	64	4480	90	6300	115	8050	115	8050	115	8050
LAS	Q-400	76	AS	133	10108	133	10108	133	10108	149	11324	149	11324
PHX	RJ	70	AA	115	8050	115	8050	197	13790	197	13790	197	13790
DFW	A-319	124	AA	0	0	0	0	0	0	16	1984	32	3968

Table No. 1-1

MMH Growth Plan 2023 to 2028 - FY Oct 1 to Sept 30

As of 4/18/13

Early Winter/Winter Scheduled Air Service

				2023-24		2024-25		2025-26		2026-27		2027-28	
	Aircraft			Total	Seats	Total	Seats	Total	Seats	Total	Seats	Total	Seats
City	Type	Seats	Airline	Operations	Per Season	Operations	Per Season	Operations	Per Season	Operations	Per Season	Operations	Per Season
LAX	Q-400	76	AS	143	10868	143	10868	143	10868	143	10868	143	10868
LAX	Q-400	76	AS	30	2280	30	2280	30	2280	30	2280	30	2280
LAX	Q-400	76	AS	115	8740	115	8740	115	8740	115	8740	115	8740
SNA	RJ	66	UA	115	7590	115	7590	115	7590	115	7590	115	7590
SAN	RJ	66	UA	115	7590	115	7590	115	7590	115	7590	115	7590
SFO	RJ	66	UA	115	7590	115	7590	115	7590	115	7590	115	7590
SFO	RJ	66	UA	115	7590	115	7590	115	7590	115	7590	115	7590
DEN	Mix*	66/124	UA	115	9000	115	11500	115	13000	115	14260	115	14260
SEA	Mix*	66/124	AS	115	7590	115	7590	115	9000	115	11500	115	13000
PDX	Mix*	66/124	AS	131	7590	131	9000	131	11500	131	13000	131	14260
LAS	Q-400	76	AS	115	8740	115	8740	115	8740	115	8740	115	8740
PHX	RJ	70	AA	115	8050	115	8050	115	8050	115	8050	115	8050
DFW	A-319	124	AA	64	7936	115	14260	115	14260	115	14260	115	14260
Totals			**91512**	**1403**	**101154**	**1454**	**111388**	**1454**	**116798**	**1454**	**122058**	**1454**	**124818**
	*Mix of RJ and A-319 aircraft				**11%**		**10%**		**5%**		**5%**		**2%**

Spring/Summer/Fall Scheduled Air Service

				2023-24		2024-25		2025-26		2026-27		2027-28	
	Aircraft			Total	Seats	Total	Seats	Total	Seats	Total	Seats	Total	Seats
City	Type	Seats	Airline	Operations	Per Season	Operations	Per Season	Operations	Per Season	Operations	Per Season	Operations	Per Season
LAX	Q-400	76	AS	222	16872	222	16872	222	16872	222	16872	222	16872
LAX	Q-400	76	AS	82	6232	82	6232	82	6232	82	6232	82	6232
LAX	Q-400	76	AS										
SNA	RJ	66	UA										
SAN	RJ	66	UA	82	5412	82	5412	82	5412	82	5412	82	5412
SFO	RJ	66	UA	82	5412	82	5412	82	5412	82	5412	82	5412
SFO	RJ	66	UA	82	5412	82	5412	82	5412	82	5412	82	5412
DEN	RJ	66	UA										0
SEA	RJ	70	AS										0
PDX	RJ	70	AS										0
LAS	Q-400	76	AS	64	4864	82	6232	82	6232	82	6232	82	6232
PHX	RJ	70	AA	82	5740	82	5740	82	5740	82	5740	82	5740
PHX	RJ	70	AA	82	5740	82	5740	82	5740	82	5740	82	5740
Totals			**49944**	**778**	**55684**	**796**	**57052**	**796**	**57052**	**796**	**57052**	**796**	**57052**
					11%		**2%**		**0%**		**0%**		**0%**

Total Year Round Scheduled Air Service

				2023-24		2024-25		2025-26		2026-27		2027-28	
	Aircraft			Total	Seats	Total	Seats	Total	Seats	Total	Seats	Total	Seats
City	Type	Seats	Airline	Operations	Per Season	Operations	Per Season	Operations	Per Season	Operations	Per Season	Operations	Per Season
LAX	Q-400	76	AS	365	27740	365	27740	365	27740	365	27740	365	27740
LAX	Q-400	76	AS	112	8512	112	8512	112	8512	112	8512	112	8512
LAX	Q-400	76	AS	115	8740	115	8740	115	8740	115	8740	115	8740
SNA	RJ	66	UA	115	7590	115	7590	115	7590	115	7590	115	7590
SAN	RJ	66	UA	197	13002	197	13002	197	13002	197	13002	197	13002
SFO	RJ	66	UA	197	13002	197	13002	197	13002	197	13002	197	13002
SFO	RJ	66	UA	197	13002	197	13002	197	13002	197	13002	197	13002
DEN	RJ	66	UA	115	9000	115	11500	115	13000	115	14260	115	14260
SEA	RJ	70	AS	115	7590	115	7590	115	9000	115	11500	115	13000
PDX	RJ	70	AS	131	7590	131	9000	131	11500	131	13000	131	14260
LAS	Q-400	76	AS	179	13604	197	14972	197	14972	197	14972	197	14972
PHX	RJ	70	AA	279	13790	279	13790	279	13790	279	13790	279	13790
DFW	A-319	124	AA	64	13676	115	20000	115	20000	115	20000	115	20000

TABLE NO. 1-2
MMH and Comparable Airports
Historical and Forecast Growth

	Yampa Valley			Eagle County Regional			Aspen-Pitkin CO			Glacier Park International			Friedman Memorial			Montrose Regional			Mammoth Yosemite Airport										
	Enplaned Passengers	Airline Operations	Total Operations	Enplaned Passengers	Airline Operations	Total Operations	Enplaned Passengers	Airline Operations	Total Operations	Enplaned Passengers	Airline Operations	Total Operations	Enplaned Passengers	Airline Operations	Total Operations	Enplaned Passengers	Airline Operations	Total Operations	Seats Available	Enplaned Passengers		Airline Operations		Itinerent Operantions		Local Operantions		Total Operations		
Year	TAF	TAF		TAF	TAF		TAF	TAF		TAF	TAF		TAF	TAF	TAF	TAF	TAF			TAF	MMH	TAF	MMH	TAF	MMH	TAF	MMH	TAF	MMH	Year
1976	11,500			5,157			109,525			31,657			18,093			16,008				16,141										1976
1977	8,109			4,604			93,369			38,082			19,000			16,422				9,836										1977
1978	12,175			4,448			128,824			43,542			22,000			23,352				16,626										1978
1979	15,070			2,947			137,632			51,372			24,000			32,736				16,230										1979
1980	12,012			14			132,128			39,141			14,924			26,963				2,373										1980
1981	9,801			0			112,149			36,690			5,680			23,097				5,161										1981
1982	3,984			13,453			120,539			41,039			2,587			21,581				5,681										1982
1983	1,296			0			127,674			53,158			12,384			35,333				3,950										1983
1984	22			0			153,971			52,751			25,240			24,110				402										1984
1985	132			0			173,189			53,743			29,537			19,900				2,183										1985
1986	573			0			190,709			57,052			21,833			21,375				4,403										1986
1987	24,495			0			257,311			47,044			29,007			22,850				3,053										1987
1988	35,544			63			227,475			57,317			37,218			24,325				3,211										1988
1989	45,419			300			214,841			67,473			39,912			25,800				6,986										1989
1990	44,862	1,800	7,630	8,398	4,814	20,664	214,067	11,052	41,259	69,776	12,270	65,190	34,712	4,824	46,066	24,120	0	28,448		5,247		2,900		17,030		4,000		23,930		1990
1991	59,355	3,932	8,256	29,749	1,484	21,234	204,137	12,935	47,662	79,069	12,465	64,715	38,938	9,337	53,719	25,425	0	23,014		5,897		3,000		17,030		4,000		24,030		1991
1992	55,953	3,668	6,442	34,558	1,458	21,208	234,511	14,228	47,889	85,914	10,500	40,700	50,614	11,078	65,672	28,330	10	25,910		5,777		3,000		17,030		4,000		24,030		1992
1993	63,866	3,668	6,442	53,200	2,048	21,798	250,981	14,102	47,315	88,937	10,500	40,700	54,066	9,767	63,019	37,096	40	25,940		9,328		3,000		17,030		4,000		24,030		1993
1994	62,778	3,918	6,692	62,347	1,755	6,425	251,533	13,956	45,438	102,995	11,400	40,500	65,336	9,939	66,931	36,053	60	27,812		8,169		1,500		9,030		3,000		13,530		1994
1995	81,549	8,982	11,806	77,167	6,699	27,399	204,907	8,894	43,934	114,845	10,670	62,050	63,109	8,570	54,245	40,867	160	19,610		7,518		1,500		9,030		3,000		13,530		1995
1996	95,643	10,518	13,960	109,118	3,097	25,458	206,672	10,166	42,614	121,176	11,450	58,730	67,179	9,229	71,223	43,284	100	23,217		1,762		1,500		9,100		3,000		13,600		1996
1997	105,906	7,138	10,602	164,415	4,364	29,511	217,343	14,396	44,612	133,275	8,660	55,460	60,356	7,596	64,320	55,591	104	23,540		0		1,200		9,050		3,000		13,250		1997
1998	104,428	5,146	8,635	173,041	5,944	30,030	251,448	16,945	47,067	133,502	13,450	76,015	60,771	8,738	61,984	62,721	106	23,744		0		1,200		9,050		3,000		13,250		1998
1999	109,066	5,436	8,950	172,429	7,847	33,307	219,909	11,036	44,510	142,698	13,730	64,610	66,996	10,443	58,296	72,119	107	23,969		0		800		9,050		3,000		12,850		1999
2000	110,561	6,672	10,211	183,502	10,440	39,355	214,358	14,225	49,586	156,384	15,044	65,924	71,463	13,825	67,278	66,976	110	24,194		0		800		9,050		3,000		12,850		2000
2001	102,290	5,670	11,278	173,478	10,327	39,267	363,654	15,843	46,042	159,376	15,044	65,924	63,540	12,768	52,375	71,098	2,000	23,964		0		800		9,050		3,000		12,850		2001
2002	104,815	4,004	9,673	163,948	10,926	40,735	336,561	17,155	47,018	156,964	14,107	48,364	65,572	16,122	57,100	70,510	2,059	24,194		0		800		9,050		3,000		12,850		2002
2003	100,475	4,098	9,828	166,416	11,270	43,341	192,251	16,629	43,780	169,265	15,914	50,761	72,621	14,733	44,473	67,813	2,081	24,387		0		800		9,050		3,000		12,850		2003
2004	117,604	4,566	10,356	187,549	11,257	38,980	180,519	17,302	43,256	173,985	16,109	62,083	71,128	14,469	45,300	72,129	2,103	24,578		0		800		9,050		3,000		12,850		2004
2005	125,563	4,762	10,614	209,764	11,316	41,041	191,579	17,834	44,778	195,385	19,250	65,602	69,604	15,228	43,978	77,203	2,247	25,206		0		0		9,100		3,000		12,800		2005
2006	131,864	4,853	10,762	213,891	11,852	40,774	202,137	19,009	44,464	174,305	15,049	52,252	69,003	15,377	41,442	81,264	2,269	25,380		0		0		5,389		1,896		7,285		2006
2007	140,765	4,947	10,914	228,421	13,053	42,033	180,951	19,022	42,947	185,390	16,459	55,017	67,863	14,220	48,220	93,110	2,292	25,558		0		0		5,389		1,896		7,285		2007
2008	140,289	7,578	13,843	217,914	12,758	42,842	215,833	21,006	46,536	189,254	10,983	37,470	66,564	13,390	36,239	87,582	5,412	17,791		0	557	0	36	5,389	5,600	1,896	600	7,285	6,236	2008
2009	122,076	6,862	12,399	180,272	8,994	31,302	207,165	18,444	40,924	162,826	9,116	28,502	50,540	10,929	29,243	90,943	5,412	17,791	8,816	5,021	6,157	120	330	5,389	5,600	1,896	600	7,405	6,530	2009
2010	110,715	6,862	12,399	201,484	11,380	35,061	226,684	18,297	38,292	172,383	8,868	29,267	52,861	11,136	31,450	94,849	5,054	22,505	51,148	18,252	19,798	1,000	1,346	5,389	5,600	1,896	600	8,285	7,546	2010
2011	105,750	5,273	9,677	190,739	10,664	32,484	204,287	17,755	37,121	178,282	8,836	28,150	50,985	10,195	28,304	89,283	5,054	22,505	60,932	24,471	26,196	1,000	1,664	5,389	5,700	1,896	605	8,285	7,969	2011
2012	103,449	6,134	10,582	175,086	11,435	36,574	224,379	18,995	37,718	184,754	8,685	25,286	48,618	9,471	26,969	78,735	5,105	22,686	65,204	28,917	27,246	1,000	1,818	5,389	5,800	1,896	612	8,285	8,230	2012
2013	**106,289**	**6,251**	**10,744**	**178,803**	**11,664**	**36,766**	**229,741**	**19,217**	**37,077**	**187,646**	**8,771**	**24,905**	**50,308**	**9,635**	**25,869**	**78,983**	**5,154**	**22,866**	**56,360**	**28,917**	**33,816**	**1,000**	**1,580**	**5,389**	**5,900**	**1,896**	**620**	**8,285**	**8,100**	**2013**
2014	**109,205**	**6,371**	**10,909**	**182,603**	**11,895**	**37,120**	**235,232**	**19,441**	**37,423**	**190,595**	**8,859**	**25,069**	**52,057**	**9,804**	**26,188**	**79,235**	**5,205**	**23,050**	**57,930**	**28,917**	**34,758**	**1,000**	**1,610**	**5,389**	**6,000**	**1,896**	**630**	**8,285**	**8,240**	**2014**
2015	**112,203**	**6,494**	**11,077**	**186,489**	**12,134**	**37,483**	**240,854**	**19,669**	**37,774**	**193,602**	**8,947**	**25,234**	**53,866**	**9,975**	**26,510**	**79,492**	**5,258**	**23,239**	**64,690**	**28,917**	**38,814**	**1,000**	**1,790**	**5,389**		**1,896**		**8,285**	**8,420**	**2015**
2016	**115,283**	**6,618**	**11,248**	**190,461**	**12,377**	**37,851**	**246,612**	**19,898**	**38,126**	**196,668**	**9,038**	**25,403**	**55,738**	**10,150**	**26,838**	**79,755**	**5,309**	**23,427**	**75,278**	**28,917**	**45,167**	**1,000**	**2,106**	**5,389**		**1,896**		**8,285**	**8,736**	**2016**
2017	**118,447**	**6,746**	**11,421**	**194,522**	**12,625**	**38,225**	**252,505**	**20,130**	**38,483**	**199,797**	**9,129**	**25,572**	**57,675**	**10,327**	**27,169**	**80,022**	**5,362**	**23,620**	**80,910**	**28,917**	**48,546**	**1,000**	**2,266**	**5,389**		**1,896**		**8,285**	**8,896**	**2017**
2018	**121,699**	**6,877**	**11,599**	**198,671**	**12,881**	**38,608**	**258,539**	**20,368**	**38,847**	**202,990**	**9,221**	**25,743**	**59,681**	**10,506**	**27,504**	**80,294**	**5,415**	**23,815**	**92,024**	**28,917**	**55,214**	**1,000**	**2,596**	**5,389**	**6,350**	**1,896**	**670**	**8,285**	**9,616**	**2018**
2019	**125,040**	**7,010**	**11,779**	**202,912**	**13,141**	**38,996**	**264,718**	**20,608**	**39,213**	**206,247**	**9,316**	**25,917**	**61,754**	**10,690**	**27,845**	**80,571**	**5,468**	**24,013**	**112,174**	**28,917**	**67,304**	**1,000**	**3,152**	**5,389**		**1,896**		**8,285**	**10,172**	**2019**
2020	**128,472**	**7,146**	**11,963**	**207,245**	**13,405**	**39,389**	**271,043**	**20,851**	**39,584**	**209,567**	**9,412**	**26,093**	**63,901**	**10,876**	**28,189**	**80,856**	**5,521**	**24,213**	**119,800**	**28,917**	**71,880**	**1,000**	**3,379**	**5,389**		**1,896**		**8,285**	**10,399**	**2020**
2021	**131,999**	**7,285**	**12,150**	**211,674**	**13,675**	**39,789**	**277,519**	**21,099**	**39,961**	**212,952**	**9,509**	**26,271**	**66,122**	**11,066**	**28,538**	**81,145**	**5,577**	**24,418**	**134,523**	**28,917**	**80,714**	**1,000**	**3,808**	**5,389**		**1,896**		**8,285**	**10,828**	**2021**
2022	**135,621**	**7,425**	**12,338**	**216,203**	**13,951**	**40,196**	**284,151**	**21,349**	**40,340**	**216,391**	**9,608**	**26,451**	**68,420**	**11,259**	**28,892**	**81,440**	**5,633**	**24,625**	**141,456**	**28,917**	**84,874**	**1,000**	**3,820**	**5,389**		**1,896**		**8,285**	**10,840**	**2022**
2023	**139,343**	**7,567**	**12,529**	**220,835**	**14,232**	**40,609**	**290,941**	**21,603**	**40,725**	**219,916**	**9,708**	**26,633**	**70,800**	**11,458**	**29,254**	**81,741**	**5,689**	**24,835**	**151,748**	**28,917**	**91,049**	**1,000**	**3,954**	**5,389**	**6,700**	**1,896**	**730**	**8,285**	**11,384**	**2023**
2024	**143,170**	**7,712**	**12,722**	**225,573**	**14,519**	**41,029**	**297,895**	**21,860**	**41,113**	**223,510**	**9,811**	**26,819**	**73,261**	**11,661**	**29,621**	**82,046**	**5,745**	**25,046**	**156,839**	**28,917**	**94,102**	**1,000**	**4,367**	**5,389**		**1,896**		**8,285**	**11,792**	**2024**
2025	**147,102**	**7,858**	**12,916**	**230,415**	**14,812**	**41,456**	**305,014**	**22,123**	**41,508**	**227,175**	**9,915**	**27,006**	**75,810**	**11,866**	**29,992**	**82,358**	**5,801**	**25,260**	**168,440**	**28,917**	**101,064**	**1,000**	**4,500**	**5,389**		**1,896**		**8,285**	**11,930**	**2025**
2026	**151,140**	**8,008**	**13,114**	**235,364**	**15,109**	**41,888**	**312,304**	**22,388**	**41,907**	**230,915**	**10,021**	**27,196**	**78,446**	**12,075**	**30,369**	**82,676**	**5,857**	**25,476**	**173,850**	**28,917**	**104,310**	**1,000**	**4,500**	**5,389**		**1,896**		**8,285**	**11,930**	**2026**
2027	**155,290**	**8,160**	**13,316**	**240,425**	**15,415**	**42,330**	**319,767**	**22,658**	**42,311**	**234,729**	**10,128**	**27,387**	**81,175**	**12,289**	**30,753**	**82,999**	**5,913**	**25,694**	**179,110**	**28,917**	**107,466**	**1,000**	**4,500**	**5,389**		**1,896**		**8,285**	**11,930**	**2027**
2028	**159,554**	**8,317**	**13,523**	**245,596**	**15,730**	**42,782**	**327,409**	**22,933**	**42,721**	**238,618**	**10,236**	**27,579**	**83,998**	**12,506**	**31,141**	**83,329**	**5,970**	**25,916**	**181,870**	**28,917**	**109,122**	**1,000**	**4,500**	**5,389**	**7,200**	**1,896**	**770**	**8,285**	**12,470**	**2028**
2029	**163,933**	**8,476**	**13,733**	**250,885**	**16,050**	**43,241**	**335,233**	**23,212**	**43,137**	**242,585**	**10,345**	**27,773**	**86,919**	**12,727**	**31,534**	**83,665**	**6,027**	**26,140**		**28,917**	**114,000**	**1,000**		**5,389**		**1,896**		**8,285**		**2029**
2030	**168,434**	**8,638**	**13,947**	**256,297**	**16,375**	**43,706**	**343,245**	**23,492**	**43,554**	**246,634**	**10,456**	**27,969**	**89,942**	**12,953**	**31,934**	**84,009**	**6,085**	**26,369**		**28,917**	**115,500**	**1,000**		**5,389**		**1,896**		**8,285**		**2030**
2031																				**28,917**	**116,500**	**1,000**		**5,389**		**1,896**		**8,285**		**2031**
2032																				**28,917**	**118,200**	**1,000**		**5,389**		**1,896**		**8,285**		**2032**
2033	**182,691**	**9,143.00**	**14,610**	**273,275**	**17,394**	**45,151**	**368,449**	**24,357**	**44,835**	**259,272**	**10,797**	**28,570**	**99,655**	**13,657**	**33,169**	**85,079**	**6,263**	**27,073**		**28,917**	**120,000**	**1,000**	**4,700**	**5,389**	**7,700**	**1,896**	**820**	**8,285**	**13,220**	**2033**

Bold = Future Projection

Table No. 1-3
MMH Forecasts

A. Forecast Levels
Base Year: 2013

	Annual Operations						Average Annual Compound Growth Rates - Percent				
	Base Yr. Level	Base Yr. + 1 Yr.	Base Yr. + 5 Yrs.	Base Yr. + 10 Yrs	Base Yr. + 15 Yrs	Base Yr. to +20	Base Yr. + 1 Yr.	Base Yr. + 5 Yrs.	Base Yr. + 10 Yrs.	Base Yr. + 15 Yrs.	Base Yr. to +20
Passenger Enplanements											
Air Carrier	33,816	34,758	55,214	91,049	109,122	120,000	2.87	10.30	10.41	8.12	6.54
Commuter	0	0	0	0	0	0	0.00	0.00	0.00	0.00	0.00
TOTAL	33,816	34,758	55,214	91,049	109,122	120,000	2.87	10.30	10.41	8.12	6.54
Operations - Fixed Wing											
Itinerant											
Air carrier	1,580	1,610	2,596	3,954	4,500	4,700	1.90	10.44	9.61	7.23	5.60
Commuter/air taxi	0	0	0	0	0	0	0.00	0.00	0.00	0.00	0.00
Total Commercial Operations	1,580	1,610	2,596	3,954	4,500	4,700	1.90	10.44	9.61	7.23	5.60
General aviation	5,900	6,000	6,350	6,700	7,200	7,700	1.69	1.48	1.28	1.34	1.34
Military	0	0	0	0	0	0	0.00	0.00	0.00	0.00	0.00
Local											
General aviation	620	630	670	730	770	820	1.61	1.56	1.65	1.45	1.41
Military	0	0	0	0	0	0	0.00	0.00	0.00	0.00	0.00
TOTAL OPERATIONS	8,100	8,240	9,616	11,384	12,470	13,220	1.73	3.49	3.46	2.92	2.48
Instrument Operations	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.00	0.00	0.00	0.00
Peak Hour Operations	4.0	4.1	4.8	5.6	6.2	6.6	2.50	3.71	3.42	2.96	2.54
Cargo/mail (enplaned + deplaned tons)											
Based Aircraft - Fixed Wing											
Single Engine (Nonjet)	6	6	6	7	7	8	0.00	0.00	1.55	1.03	1.45
Multi Engine (Nonjet)	2	2	2	2	2	2	0.00	0.00	0.00	0.00	0.00
Jet Engine	0	0	0	0	0	0	0.00				
Other	0	0	0	0	0	0	0.00				
TOTAL	8	8	8	9	9	10	0.00	0.00	1.18	0.79	1.12
Helicopter*											
Based helicopters	0	0	0	0	0	0	0.00	0.00	0.00	0.00	0.00
Helicopter operations	0	0	0	0	0	0	0.00	0.00	0.00	0.00	0.00
TAF Total Operations	8,285	8,285	8,285	8,285	8,285	8,285					
TAF Based Aircraft	4	4	4	4	4	4					

***Note**: Helicopter based and operations are not included in data for total operations.

B. Operational Factors

	Base Yr. Level	Base Yr. + 1 Yr.	Base Yr. + 5 Yrs.	Base Yr. + 10 Yrs	Base Yr. + 15 Yrs.
Average aircraft size (seats)					
Air carrier	72	72	71	73	81
Commuter	0	0	0	0	0
Air taxi	0	0	0	0	0
Average enplaning load factor					
Air carrier	49	60	60	60	60
Commuter	0	0	0	0	0
Air taxi	0	0	0	0	0
GA operations per based aircraft	**815**	**829**	**877**	**826**	**886**

Sources: F.A.A. Terminal Area Forecasts (TAF)
Mammoth Yosemite Airport
Prepared by: Reinard W. Brandley, Consulting Airport Engineer

CHAPTER 2. PURPOSE AND NEED

The purpose of this study is to evaluate and prepare recommendations for the required new airline terminal development at Mammoth Yosemite Airport. The following factors were included in the study:

- Terminal Area Location
- Terminal Area Size and Configuration
- Terminal Building Configuration and Size
- Aircraft Parking Apron
- Aircraft Deicing Facilities
- Automobile Parking
- Access and Service Roads
- Terminal Area Support Facilities, Baggage Handling, Delivery and Maintenance Access
- Maintenance Facilities

CHAPTER 3. SITE SELECTION

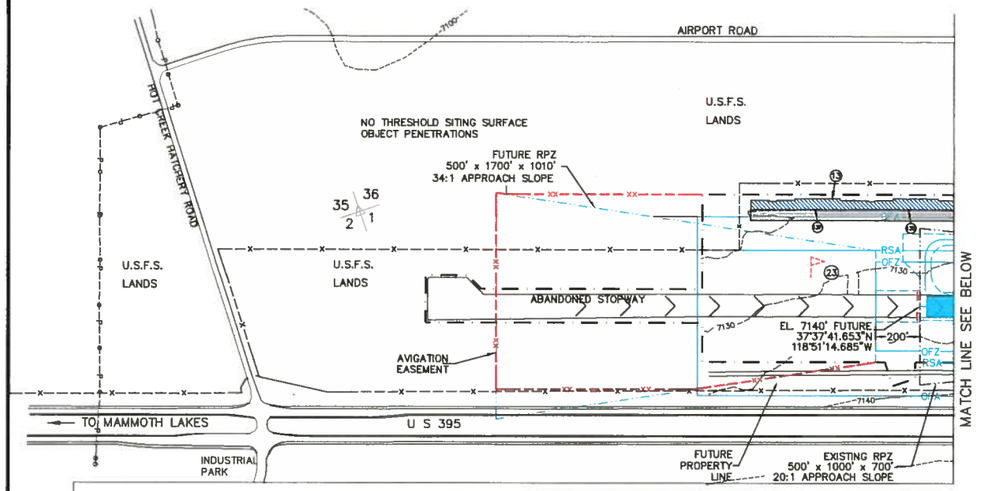
There are many constraints to the location available for terminal area development on the airport without major disruption to existing facilities. The airport is further constrained from growth for development of terminal facilities by the location of U.S. Highway 395 on the entire south side of the airport, the location of Doe Ridge on the northeast side of the airport, and the existence of U.S. Forest Service land surrounding the airport. As a result, it was determined that the only area available for a major terminal development would be that area between the existing temporary terminal building and Doe Ridge to the east. It is important to keep the terminal on land currently owned by the Airport since it takes several years to acquire leases or ownership of land from the U.S. Forest Service and terminal development is necessary before that time.

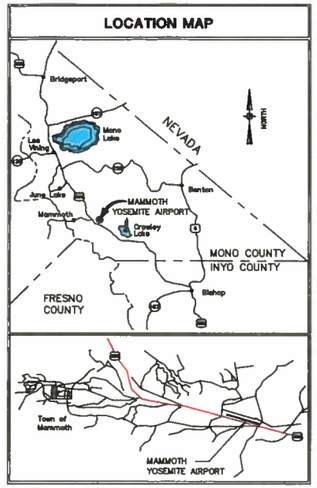
Two terminal area sites were considered as shown on Plate No. 3-1. These sites are designated Terminal Area Site A and Terminal Area Site B. Terminal Area Site A proposes locating the outer edge of the airline apron parallel with the south edge of the existing tie down apron, which is at the building restriction line and OFA of the runway. This location provides good access to the taxiways and runway. The existing runway and taxiway do not meet all requirements for an F.A.A. Airport Reference Code (ARC) C III airport, which is anticipated to be required in the future as airline service increases and larger aircraft of the C III class are introduced. If at some time in the future it is required to modify the runway/taxiway configuration to conform to all standards, then the proposed location of Terminal Area Site A would not allow these changes and the terminal would, therefore, need to be relocated.

Terminal Area Site B moves the terminal to the northwest of Site A, which provides room for any airfield modification as necessary, and the terminal building itself is located adjacent to the current and future access roads. Automobile parking facilities on the airport property would be limited to parking on both sides of the terminal, which may not be sufficient for forecast growth. The access road only serves the airport and, therefore, it is appropriate to have the terminal building facing the access road. There is significant land north of the Terminal Area Site B on U.S. Forest Service land that could be acquired and used for future automobile parking facilities.

In order to provide maximum flexibility on development of the airport, it is recommended that Terminal Area Site B be approved. All additional studies were conducted using the Site B development area.

A detailed layout showing the proposed Terminal Area Site B development is presented on Plate 3-2. On this drawing the proposed first stage and possible expansion of the facilities are shown, except for future automobile parking north of the access road if necessary. The sizing and location of these facilities were developed from the detailed terminal area studies presented in the following chapters of this report.



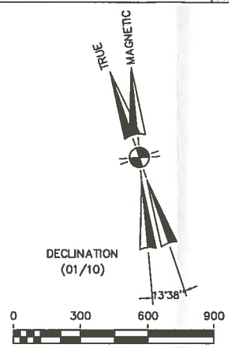


BUILDING INVENTORY

No.	FACILITY	TOP ELEV.	No.	FACILITY	TOP ELEV.
1	EXISTING TEMPORARY TERMINAL BUILDING & BEACON FUTURE ADMINISTRATION BUILDING	7144.4	18	WATER STORAGE PUMP HOUSE	7119.4
2	AIRPORT OFFICE	7122.2	19	EXISTING STREET LIGHT	7086.3
3	ELECTRICAL & TELEPHONE VAULT	7120.3	20	EXISTING CHURCH STEEPLE	7074.8
4	EXISTING PILOTS LOUNGE	7121.9	21	P.A.P.I.	
5	EXISTING FBO OFFICE	7125.8	22	WIND CONE AND SEGMENTED CIRCLE	
6	AIRCRAFT HANGARS A1 THRU A6	7138.9	23	SUPPLEMENTAL WIND CONES	
7	AIRCRAFT HANGARS B1 THRU B6	7136.8	24	DOE RIDGE OBSTRUCTION LIGHT	
8	AIRCRAFT HANGARS C1 THRU C6	7140.0	25	REIL	
9	AIRCRAFT HANGARS D1 THRU D5	7142.3	26	TERMINAL APRON	
10	AIRCRAFT HANGARS E1 THRU E4	7141.6	27	TIEDOWN APRON	
11	AIRCRAFT HANGARS F1 THRU F4	7158.1	28	AWOS TOWER	
12	AIRCRAFT HANGARS G1 THRU G6	7145.7	29	FUEL STORAGE TANKS	
13	WEST EXECUTIVE HANGARS		30	AV. GAS STORAGE. SELF SERVICE	
13A	HANGAR 3 THRU 6	7153.4	31	WELL #99-1 GRND. ELEV. 7095.4'	
13B	HANGAR 15 THRU 16	7154.4	32	WELL #99-2 GRND. ELEV. 7094'	
13C	HANGAR 25 THRU 28	7154.0	33	AIRPORT WELL	
13D	HANGAR 38 THRU 39	7153.8	34	FUTURE TERMINAL BUILDING SITE	
13E	HANGAR 50 THRU 53	7153.7	35	FUTURE TERMINAL APRON	
13F	HANGAR 62 THRU 65	7151.5	36	FUTURE DEICING RAMP	
14	EAST CORPORATE HANGARS		37	FUTURE AUTOMOBILE PARKING	
14A	CORPORATE HANGAR 1	7134.9	38	FUTURE RENTAL CAR PARKING LOT	
14B	CORPORATE HANGAR 5	7131.1	39	FUTURE SEWAGE TREATMENT PLANT AND LEACHING FIELD	
14C	CORPORATE HANGAR 10	7128.0	40	FUTURE APRON & PARKING LOT STORM WATER LEACHING FIELD	
14D	CORPORATE HANGAR 15	7123.2	41	FUTURE ARFF / SNOW EQUIPMENT BUILDING	
15	EXISTING POWER POLE WITH OBSTRUCTION LIGHT	7157.0	42	FUTURE AIRCRAFT HANGARS	
16	EXISTING TELEPHONE POLE WITH OBSTRUCTION LIGHT	7096.0	43	FUTURE AWOS	
17	WATER STORAGE TANK	7123.6	44	AVIATION DEVELOPMENT AREA (HANGARS & FBO BUILDINGS)	

DECLARED DISTANCES

	RUNWAY 9 – 27	
	EXISTING R/W 9 -- R/W 27	FUTURE R/W 9 -- R/W 27
TAKEOFF RUN AVAILABLE	7000 ---- 7000	8200 ---- 8200
TAKEOFF DISTANCE AVAILABLE	8000 ---- 8000	9200 ---- 9200
ACCELERATE STOP DISTANCE AVAILABLE	7000 ---- 7000	8200 ---- 8200
LANDING DISTANCE AVAILABLE	7000 ---- 7000	8200 ---- 8200



LEGEND

	EXISTING	FUTURE (0-5 YRS)
GROUND CONTOUR	7070	
AIRPORT PROPERTY LINE		XX
RUNWAY SAFETY AREA (RSA)	RSA	RSA
RUNWAY OBJECT FREE AREA (OFA)	OFA	OFA
RUNWAY OBJECT FREE ZONE (OFZ)	OFZ	OFZ
BUILDING RESTRICTION LINE (BRL)	BRL	
AIRFIELD PAVEMENT AIRCRAFT MOVEMENT AREA		
FACILITIES		
PROPOSED TERMINAL SITE		
ROAD (PAVED)		
DIRT/GRAVEL ROAD		
FENCE		
RUNWAY THRESHOLD LIGHT		
SUPPLEMENTAL WINDCONE		
AIRPORT DEVELOPMENT AREA		
SECTION CORNER		
AIRPORT REFERENCE POINT		

NOTES:

1. ALL COORDINATES BASED ON NORTH AMERICAN DATUM (NAD 83)
2. ALL ELEVATIONS BASED ON NAVD 88. REFERENCE USGS BENCH MARK 7066 B 1905 B 10, PID #HR0401.
3. WIND DATA FROM AWOS ON SITE 1/1/09 TO 12/31/09.
4. THIS DRAWING IS FOR PLANNING PURPOSES ONLY AND IS NOT INTENDED FOR CONSTRUCTION OR NAVIGATIONAL PURPOSES.

DATE

FAA DISCLAIMER

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APPROVED DATE
AIRPORT MANAGER – WILLIAM B. MANNING

Reinard W. Brandley
CONSULTING AIRPORT ENGINEER
6125 King Road, Suite 201 • Loomis, California 95650 • (916) 652-4725

COUNTY OF MONO
STATE OF CALIFORNIA

MAMMOTH YOSEMITE AIRPORT

MAMMOTH LAKES, CALIFORNIA

TERMINAL SITE LOCATION PLAN

NO.	REVISIONS	BY	APP	DATE

REGISTERED PROFESSIONAL ENGINEER REINARD W. BRANDLEY No. C 8044 Exp. 9-30-2014 CIVIL STATE OF CALIFORNIA

DATE AUG. 1, 2013
SHEET NUMBER
PLATE No. 3-1

TRUE
MAGNETIC
DECLINATION
14°56.7'
(5/97)
SCALE: 1" = 50'

130 SPACES
60 SPACES
FUTURE ACCESS ROAD
FUTURE PARKING LOT STORM WATER LEACHING FIELD
RESERVED FOR FUTURE PARKING LOT
STORAGE TANK (E)
RESERVED FOR FUTURE TERMINAL EXPANSION & RENTAL CARS
TERMINAL APRON PCC
737-500
TERMINAL APRON EXPANSION PCC
VAULT
FUEL
FUTURE SANITARY SEWER LEACHING FIELD
FUTURE APRON STORM WATER LEACHING FIELD
MAINTENANCE BUILDING (F)
DE-ICING APRON
RESERVED FOR FUTURE TIEDOWN APRON
AWOS
TAXIWAY 'A'
RSA
T/W 'A2'

LEGEND	EXISTING	FUTURE (0–5) YEARS	FUTURE (10–15) YEARS
AIRFIELD PAVEMENT			
FACILITIES			
ROAD (PAVED)			
DIRT/GRAVEL ROAD			
FENCE			

DATE

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APPROVED DATE
AIRPORT MANAGER – WILLIAM B. MANNING

Reinard W. Brandley
CONSULTING AIRPORT ENGINEER
8125 King Road, Suite 201 • Loomis, California 95650 • (916) 652-4725

STATE OF CALIFORNIA

MAMMOTH YOSEMITE AIRPORT

MAMMOTH LAKES, CALIFORNIA

TERMINAL AREA SITE B

NO.	REVISIONS	BY	APR	DATE

REINARD W. BRANDLEY No. C 8044 Exp. 9-30-2014 CIVIL STATE OF CALIFORNIA

DATE AUG. 1, 2013
SHEET NUMBER
PLATE No. 3–2

CHAPTER 4. TERMINAL BUILDING

The terminal building studies and requirements were prepared by the architectural firm of the Van Sant Group. The results of their studies are included in this chapter. Also included in this chapter is Table No. 4-1, which shows the terminal facility requirements. Table No. 4-2 shows probable architectural design and construction costs for the terminal building. Plate 4-1 shows the proposed terminal building floor plan. Plate 4-2 shows typical elevations of the proposed terminal building.

4-1 Terminal Building Requirements

The passenger terminal at Mammoth Yosemite Airport represents a starting point for terminal planning. This minimum facility program is needed to support the current and anticipated levels of passenger activity. This program in conjunction with specific terminal configurations, will need to be adjusted to accommodate actual building footprints. The gross terminal area derived herein may vary as a result of actual configuration. For example, the amount of secure and non-secure circulation may vary from the program due to the terminal configuration, whereas the amount of airline space is relatively independent of the concepts. Certain configuration assumptions have been included and are discussed in the appropriate sections.

4-1.1 Aircraft Gates

The Airport will need to accommodate the ever-changing airline industry, and the differing aircraft serving markets such as Mammoth Yosemite Airport. The need to provide space which can meet the varying capacity requirements of different aircraft is paramount to the success of the terminal facility. The design

aircraft for terminal planning of the new facility is Group II, Medium Commuter. This is defined by FAA standards to include the CRJ, regional jets, and similar aircraft, like the Q 400, which can accommodate from 66 to 80 passengers. This aircraft will meet the needs of the terminal for maximum efficiency and utilization of the space. The facility will be able to accommodate aircraft on an occasional basis of Group III, which includes Narrowbody / Large Commuter aircraft.

Departure Lounges (Holdrooms) are based on the mix of aircraft and the average seating capacity of the Group II aircraft, one aircraft with 76 passengers and one with 66 passengers. The holdroom area is based on providing a minimum area for 80% of the aircraft capacity with 50% of the passengers seated @ 15 square feet per person and the remaining 50% standing @ 12 SF per person. A 5% factor is then added for circulation and airline ticket counters. All holdrooms should be grouped to allow for better flexibility of use.

The enplaning holdrooms should provide for the accommodation of three aircraft at the terminal at the same time. This would require a minimum square footage of 3,914 square feet. The configuration should reflect this area.

4-1.2 Airline Space

Airline space includes both exclusive leased areas (for example, offices, operations and miscellaneous support), and joint use space (such as baggage claim).

Airline Ticket Counter (ATO Counter) length is typically based on the number of enplaning passengers to be processed in a peak hour. It is therefore incumbent in the space program to provide ample space for the proposed two

airlines, and expansion capability for future entrants to the market. This would provide two positions (5' wide each) for each airline, which includes two ticketing positions and a bag well in each 5'counter position. The depth for each position is approximately 8’ to the backwall. This space will accommodate the location of TDS baggage screening equipment behind the ticket counters. A queue space of 10' minimum should be included in front of each ticket counter position.

Airline Offices include the ATO offices and other airline administrative spaces. The ATO offices are usually located directly behind or adjacent to the ATO counter and provide support to the ticket agents. These spaces are normally 25' deep along the length of the counter. In a commuter terminal airline operations support spaces are generally located in the same ATO space, and usually include parts storage, break room, and crew support.

Baggage Make-up includes either manual or automated make-up units, the cart container staging areas and maneuvering space for the carts. Normal cart make-up containers include a minimum of two containers and the tug. All space should be covered at a minimum and provide weather related protection, if possible. The space should be at close proximity to the ATO operations space to maximize utilization of airline personnel. All baggage related elements should include accommodations for ski equipment and over-sized elements.

Baggage Service Offices are typically required at major airline hub operations, therefore are not included in the terminal. Airlines serving MMH will provide this service at their ticket counters.

Baggage Claim requirements are based on the peak demand of deplaning passengers and checked baggage per passenger ratios. The requirements of this facility will be accommodated with approximately 120 lineal feet of claim device. Two units should be adequate, with the capability to add an additional unit as the number of passengers increases. Ski equipment should include a separate slide area.

Baggage Claim Off-load Areas includes the lanes and maneuvering areas, which are required accommodating the baggage train of two carts. Circulation area is also included and this area, like the baggage make-up area should provide cover and minimum weather protection from the elements.

4-1.3 Concessions

Rental Car Counters provide an important service to the passengers and revenue to the Airport. Adequate space should be provided for all companies serving the terminal. These include counter space and office area. A common standard of 10 lineal feet of counter would be adequate, with ancillary office space of 75-80 square feet.

Ground Transportation Services also provide needed service to the terminal passengers. Adequate counter and office space should be included for their use. These areas can serve as extra space for charters, special events accommodation and other uses, if required.

Food and Beverage Services should accommodate a restaurant and should be located on the secure side of the terminal. Seating should be adequate for approximately 50 patrons. Kitchen space should be derived as a result of the

desired menu service and include adequate storage space as well as delivery access from the non-secured side of the terminal roadway system.

News/Gifts/Lease Space category includes news stands, gift, retail and specialty shops, business services and other miscellaneous services. There should be adequate locations on the secured side for these functions. A minimum area of 200-300 square feet should be provided, preferably adjacent to the food service to maximize the potential for cross-utilization of personnel.

Other Services consist of miscellaneous revenue producing areas, including automated teller machines, insurance and related customer services. Advertising should be included as an area and location specific space. Free-standing and those utilizing walls are desirable. Telephones should be included on both the secure and non-secure sides of the facility.

Concession Support consists of storage areas, preparation areas. employee lockers, loading and delivery areas, and administrative offices. Most support spaces should be integrated into the back of the house area adjacent to the customer serving spaces, rather than in remote locations.

4-1.4 Public Spaces

Public spaces, include most of the non-revenue producing areas of the terminal including queuing areas, seating and waiting area, and circulation corridors. Some of the areas are functions of passenger volumes, whereas others are functions of specific facility requirements.

Ticket Lobby includes ticket queuing area, cross circulation, entrance vestibules and general circulation at the main entrance to the building. The

minimum distance from the face of the ticket counter to any obstruction should be 40'- 45' for a terminal of the required size. This includes queuing depth of 20'- 25' and the remainder in cross circulation.

Public Seating areas include general (non-secure) waiting areas near the ticket lobby, baggage claim areas and concessions. Programmed square footage should include seating for approximately 15% of the peak hour passengers, in these areas. This represents approximately 40 seats and 600 square feet.

Rental Car Counter Queuing should be 10' deep in area facing the counters. Additional area should accommodate cross-circulation adjacent to the queuing space.

Restrooms should have an adequate number of fixtures to accommodate the peak hour passengers utilizing the facility. Restrooms will be required on both the non-secure and secure side areas of the terminal. The number of fixtures should be designed to meet the local codes and ordinances. The American with Disabilities Act (ADA) requires that restroom facilities be provided.

Secure Circulation will accommodate the processing of passengers through the TSA Security Checkpoint. The present terminal provides one lane of security, however it would be wise to provide room for two lanes in the new facility initially, and expansion for an additional lane, to accommodate expansion. Exit corridor from the holdrooms for deplaning passengers should be 16’ wide, and prohibit wrong way access from the non-secure side.

Other Public Circulation includes all corridors and architectural spaces which tie the functional elements of the terminal together. The terminal

configuration will accommodate the inclusion of necessary additional space based on the layout.

4-1.5 Other Areas

An Information Counter, including skier information, should be located near the main entrance(s).

Mechanical/Electrical/Utility areas should be provided throughout the facility, as required and should comprise approximately 8-10 % of the terminal gross area. All systems, mechanical, electrical, plumbing and communication should be designed for expansion.

Janitorial/Storage areas should be included in the facility and located adjacent to mechanical/electrical areas, and be supplemented with additional spaces outside the main terminal area.

Airport Administration/Operations is presently located in another building and is assumed to be similar in size to existing administration space in the present location. This will probably be located on the second floor of the new terminal.

4-1.6 Expansion

The new terminal building should be designed to meet the program needs of the Airport for at least five years after it is opened, and also provide the opportunity to be expanded, should the market dictate. The fluid nature of the airline industry and the need to respond to the inherent changes it creates require the Airport to be responsive to the market potential of the terminal. The new facility should be able to be expanded with minimal interruption to the

existing operations of the terminal. Critical areas of the building, which may require expansion should be located away from critical built-in program areas. Sensitivity to the placement of expandable areas should be a major criteria of the actual layout.

4-2 Design Narrative

4-2.1 Architectural Design

The architectural plan and space design layout of the New Terminal Building reflects the clear concise symmetry of the linear terminal configuration. The layout of the Landside functions of Ticketing and Bag Claim allow the building users to experience each function separate from the other, thereby permitting a smaller scale building use for both enplaning and deplaning passengers.

The center spine of the building is the Security Checkpoint and deplaning passenger exit way, which connect the landside and airside functions, for the passengers. This central connection is expressed in the aesthetic design of the building as the Main Entry Façade element. The expression includes a gable element, with large expanse of glass, which illuminates the entryway. In addition, the façade includes vertical polished black granite, with stained wood columns, accenting the entry on both sides. The entryways to Bag Claim and Ticketing, are also emphasized in the façade, in a slightly smaller fashion. In addition to the stone and wood columns, the façade has a native stone base, with stucco above, and accent panels of stained horizontal wood siding, further recalling the horizontal expression of the building design. Windows are provided at all appropriate locations to accent the views from all sides of the building. Interior

finishes include colors and finishes similar to the exterior palette, and utilize maintenance free materials, where appropriate. The overall palette presents warm colors, in various materials and finishes.

The overall aesthetic expression is one of a horizontal expression, which reflects the site, and presents a building, which is less than 35 feet in height, at the highest point. The overall horizontal expression in both form and proportion reflects this harmony with the site.

The fenestration of the linear concourse, which comprises the Holdrooms, repeats the same use of materials, and also continues the horizontal expression of the building. The function associated with the Food Service/Lounge areas is emphasized with a gable roof element, similar to the landside main entry, with stone and wood accents, highlighted with vaulted glass. This element further dramatizes the expansive view of the Mammoth mountain range, and will be a featured area for passengers.

The entire building design and layout will accommodate future expansion of all major areas of the building, as the need arises, with minimal interruption to the operations. In that regard, the building core, including restrooms, mechanical, electrical have been designed to allow for possible expansion of holdroom and lobby spaces. This will be invaluable as the need arises to expand the building, when increases in air service warrant additional space, and allow for that to occur, without interruption. Also, TSA checkpoint and associated office space is expandable without interruption of any adjoining spaces. The need to provide expansion space for the security checkpoint is important at all increasing service

terminals, as the need to process the passengers remains very fluid, with new machinery and protocols changing constantly.

The materials and colors utilized afford low maintenance and express the simplicity and detail necessary to convey a positive public image of the building to the users and an overall pride for the residents in the Mammoth Lakes region.

4-2.2 Structural Design

The selected structural system will be designed to utilize the most economical, durable and functional type of construction and compliment the architectural design. Structural steel frame with wood sub framing will probably be utilized. The exposed columns at the facades will be heavy timber members, with appropriate anchors. Primary consideration will be given to the bay spacing (spans) and the bearing properties of the supporting soil strata to efficiently size the structural system members. Where required, structural design will accommodate future expansion.

All lateral forces on the structure, such as seismic and wind forces, will be analyzed in accordance with local governing building codes. It is important to note that Mammoth is an active seismic and volcanic area, and structural design will accommodate these forces. Lateral bracing, where required, will be integrated into the design, to compliment the aesthetic. Moment frames will also be studied in future phases of the design, to provide lateral stability.

The roof trusses will be designed to reflect the desired open effect, and will be scissor type. They will reflect the desired spacing and have minimal impact on the space utilization of the building.

The construction of the exterior walls will be designed for maximum economy and ease of construction, and match the aesthetic value. Wood framing for the walls will be utilized, where possible, with concrete masonry used to ease maintenance and where desired to reduce wear.

Foundations will be designed to reflect the existing soils, and be based on recommendations made during subsurface soils investigations and laboratory testing, which will be done in future phases. Preliminary discussions indicate that either spread footings on compacted sub-fill or drilled piers will be the two preferred alternatives for the foundation system

4-2.3 Utilities Design

Utilities Design required for the Building will be designed by the Building Engineers in conjunction with the Site Utilities design for the New Terminal Site. Building load data will be derived in future phases of design, and given to Site Engineer for inclusion in master site utility design. A defined utility corridor, established away from future expansion(s), will be the point where the Building design engineers will bring the various utilities into the building. It is desirable to have the utility corridor completely encompass the terminal site; to accommodate the double feed of desired utilities. The Airport Engineer will obtain water for the building, from on-site wells, located east of the terminal site, adequately sized to provide the required domestic and fire protection pressure of the facility. Also, the sewer system will be accommodated by the Airport, with the construction of a new on-site sewage disposal plant, to serve the needs of the terminal, other

airport facilities and the fixed base operators' commercial development. The plant would treat the sewage, with effluent disposed of by leach lines.

4-2.4 Building Systems

Electrical Design – The building should be fed underground with power from a nearby substation. The preferred enclosure would be an underground vault, with conduit encased in concrete, within 600 to 1,000 feet apart. From there, loop feeds to pad mounted transformers, near the building, would be utilized, for secondary service. There will be at least two transformers; one each for the main terminal and concourse, with power supplied of 277/480V, three-phase, four-wire from the main supply to the building. Final total load will be determined in the next design phase and submitted to the providing utility (Southern California Edison). Transformers will be located on concrete pads, and secured from the public. The building will provide a secure (non-public) electric room for step down panels and other appropriate distribution to all areas within the facility. The room should be designed for expansion of service needs, which may arise. A provision for emergency power for critical components of the building would be desirable.

The airlines will require 400 Hz power at each gate for aircraft service needs, and need to have tenant panels for their own power needs, associated with their operations.

Lighting for the building will be provided based on NEC standards, and include the use of energy-efficient fixtures throughout the facility. Light levels will meet the required footcandles for the areas and their associated tasks. Public

area light fixtures will be designed to compliment the aesthetic values of the spaces. It is essential to limit the replacement lamps, wherever possible, to assist in the replacement of bulbs, while still meeting the required light levels. Lighting for the apron area will be included in the site work, designed by the Airfield Engineer.

Mechanical Design – The primary energy source for the heating of the building will be propane gas. Cooling energy will be provided by electricity. Mechanical equipment will be included in the central mechanical room, including the major air handling units and central control system. All distribution will include concealed ductwork, with multiple zones throughout the facility. Energy conserving variable air volume systems with independent perimeter heating will be used where architectural and functional conditions permit. Supplementary mechanical units will be used where necessary.

All equipment will include the state-of-the-art filtration to assist in the removal of dust and odors generated by the high occupancy rate of the building. In addition, fresh air will be obtained away from the airfield side, so as not to include the fumes associated with the airside. The desired effect of an energy conserving and pollution-free air circulation system is paramount in the design.

A control system with full energy management and preventative maintenance capabilities will be included in the main mechanical room. This computer-based system will allow for monitoring the system in remote areas, for load analysis and optimum utilization of the heating and cooling needs.

Plumbing Design – A conventional soil/waste and vent system will be designed to serve the needs of all plumbing fixtures throughout the facility. All public toilet room fixtures will be provided with automatic infrared sensors for control and use.

Domestic water supply to all concessionaires will be sub-metered to control and monitor usage. Tempered water supply to public lavatories will be provided at 95 degrees F. The main distribution system will be recirculated to minimize temperature loss. A central hot water heater (gas) for each of the two restroom cores (terminal and concourse) will supply the required hot water for each. The system will include shutoff capabilities to groups of fixtures to prevent water supply interruptions to public toilet rooms and concessionaires, for ease of maintenance. Where advantageous, individual hot water of electric instantaneous type may be utilized for remote locations.

Tenants requiring hot water will be required to provide their own domestic hot water heating equipment.

All tenants utilizing water and gas can be separately sub-metered. Fixtures throughout the building will be low water usage type, with lavatories of the timed, regulated-flow type.

Backflow preventers will be installed on all service and fire lines entering the building. Metering of all domestic service lines will be required. All sewer and waste shall conform to those standards in place at the Airport, and in conformance with the Town of Mammoth Lakes.

Fire Protection – A fire alarm and detection system will be provided, including all detectors and manual pull stations. The individual specific requirements of respective areas, in conjunction with local governing codes, will determine the location of sprinkler flow alarms and valve monitoring. Alarm systems will be directly transmitted to the local fire department, in addition to the local fire annunciator panel.

The fire protection will consist of wet- and dry-pipe, automatic closed head sprinkler systems, for all required areas. Sprinkler systems will be hydraulically designed with maximum square feet of sprinkler area as required by codes. Automatic sprinkler risers will include a fire alarm flow switch.

Communications – All communication systems required for terminals will be included in the Project. Telephone service for the building users and tenants will be included, with the main service panel located in the electric/communication room on the secured side of the building. Private lines will be provided for the airlines and other tenants. Public phones will be provided in the main terminal and concourse, including ADA required volume control, text-type, and assertive listening telephones. Telephone service will be brought into the terminal from the closest available source.

A wireless local area network (wlan) will be provided throughout the terminal, with protection services available for users. The individual tenants will be responsible for their own wi-fi.

A public address system, utilizing the telephone system, with secure controlled access, for all parties, will be provided. Speakers for the system will be

included in the building and located strategically throughout the facility. In addition, a joint use flight information display system (FIDS) will be provided at strategic locations.

The flight information provided will include arrivals and departures for all carriers at Mammoth Yosemite.

A security monitoring camera system, implemented by the Airport, will provide monitoring of gate holdrooms, bag claim, access points, security, and other secured areas of the terminal and other site related areas. Monitors for the system will be located in the Airport Administration security offices. The system will also be expandable.

4-2.5 Estimate of Probable Design and Construction Costs

An estimate of the costs of design and construction of the proposed terminal building initial development, mid-range development, and long-range development has been prepared and is included in Table No. 4-2. All costs shown are based on 2013 prices and must be adjusted for inflation.

TABLE NO. 4-1

MAMMOTH YOSEMITE AIRPORT
ESTIMATE OF PROBABLE DESIGN AND CONSTRUCTION COSTS
TERMINAL BUILDING

A.	SHORT-RANGE PROJECT (within 5 years)	
	1. Design New Terminal Building	$ 1,630,850
	2. Construct New Terminal Building	15,531,928
	B. MID-RANGE PROJECT (approximately 5-10 years)	
	1. Design Expanded Terminal	907,440
	2. Construct Expanded Terminal	7,562,000
C.	LONG-TERM PROJECT (approximately 11-20 years)	
	1. Design Expanded Terminal	514,685
	2. Construct Expanded Terminal	4,117,500

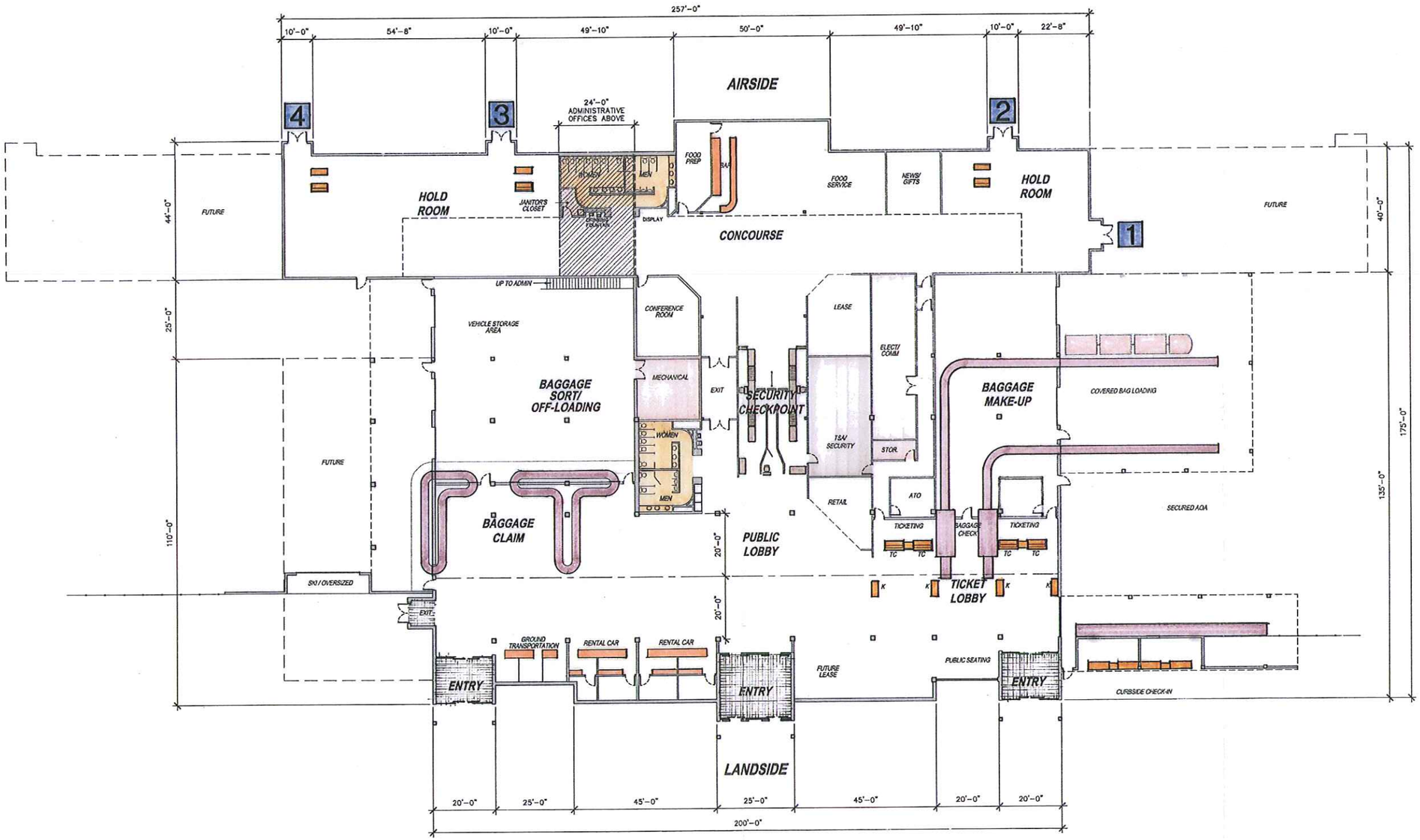
TERMINAL BUILDING STUDY
MAMMOTH YOSEMITE AIRPORT

TABLE NO. 4-2

MAMMOTH YOSEMITE AIRPORT
TERMINAL BUILDING REQUIREMENTS

	Existing Facility 2011	FAA Rqmts New Facility	New Facility 2018	2023	2028	2033
Annual Enplanements	26,196		55,214	91,049	109,122	120,00
Peak Hour Total PAX	142		245	438	472	544
LEASE SPACE						
AIRLINES						
Holdrooms	940	2,820	3,914	6,614	9,314	9,314
Ticket Counter	18 LF	50 LF	30 LF	30 LF	30 LF	30 LF
Ticket Kiosk			20 LF	24 LF	28 LF	28 LF
Ticket Counter Area	420	1,100	872	872	872	872
ATO	120	450	332	332	332	332
Baggage Make-up	285		3,185	5,825	5,825	5,825
Curbside Baggage			1,563	2,283	3,003	3,003
Baggage Sort/Off-Loading			3,874	7,234	9,634	9,634
Baggage Claim	120	1,500	2,111	4,222	6,022	6,022
Ski/Oversized Baggage			182	364	514	514
SUB-TOTAL	1,885 SF		15,993 SF	27,746 SF	35,516 SF	35,516 SF
RENT CARS						
Lease Space	150		1,202	2,327	2,327	2,327
Counter Length	25 LF					
Front			34 LF	34 LF	34 LF	34 LF
Back			27 LF	27 LF	27 LF	27 LF
RESTAURANT		1,750	1,822	3,347	3,347	3,347
RETAIL	22	350	324	684	684	684
VENDING		50	23	23	23	23
NEWS/GIFTS		350	340	340	340	340
LEASE/DISPLAY			315	315	315	315
SUB-TOTAL	172 SF		4,126 SF	7,036 SF	7,036 SF	7,036 SF
GATES	1		3	4	5	5
PUBLIC SPACE						
Ticket Lobby	504	1,325	1,360	1,360	1,360	1,360
Restrooms-Non Secure	285		429	429	429	429
Restrooms - Secure	76		539	539	539	539
Security Checkpoint	835	TSA Plan	2,294	3,414	3,414	3,414
Circulation	1,215		11,112	13,164	14,064	14,064
SUB-TOTAL	2,915 SF		15,734 SF	18,906 SF	19,806 SF	19,806 Sf
OTHER AREAS						
Ground Transportation			344	344	344	344
Airport Administration			897	897	897	897
Multi-Purpose/Support (Conf)			473	473	473	473
SUPPORT						
Mechanical/Elec/Utility	24		1,098	1,748	2,048	2,048
Support/Storage	64		83	443	623	623
TOTAL TERMINAL AREA	***5,060 SF***		***38,688 SF***	***57,593 SF***	***66,743 SF***	***66,743 SF***

VSG 6.13



TERMINAL BUILDING – FLOOR PLAN

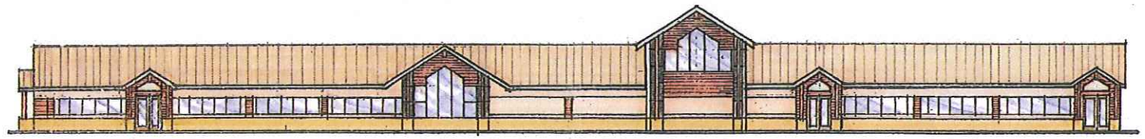
MAMMOTH YOSEMITE AIRPORT
MAMMOTH, CALIFORNIA

PLAN NORTH

SCALE: 1/16" = 1'-0" FULL SHEET 24" x 36"

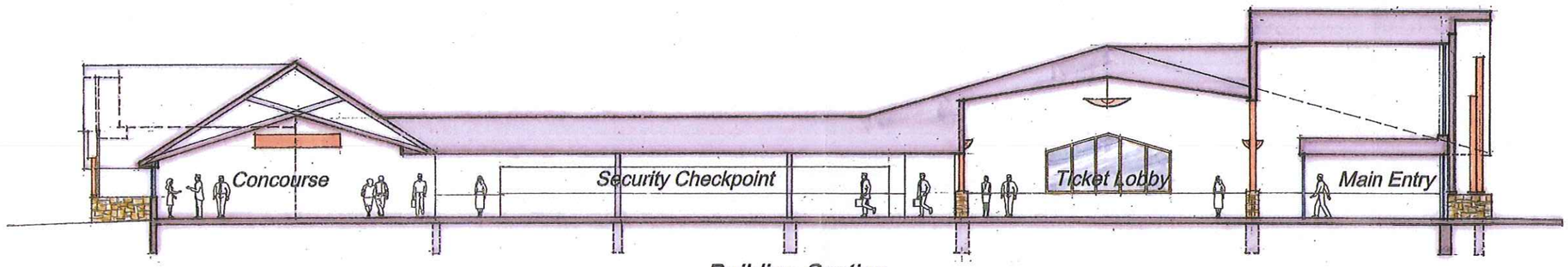
Van Sant Group

PLATE NO. 4-1

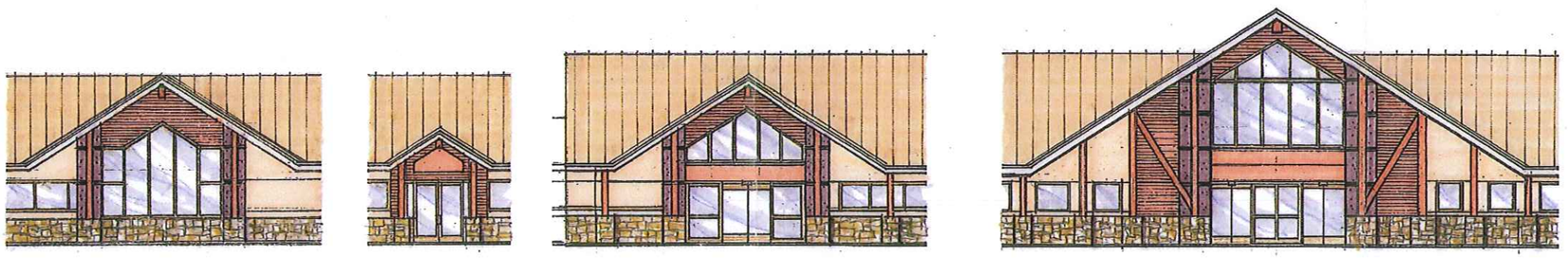


AIRSIDE ELEVATION
(South)

Scale 1/16" = 1'-0"



Building Section



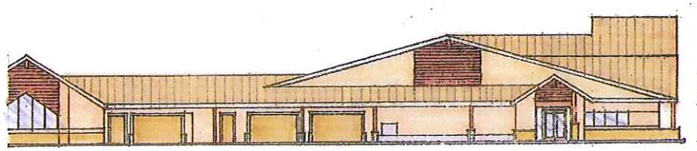
Concourse Food Service

Hold Room Entrance

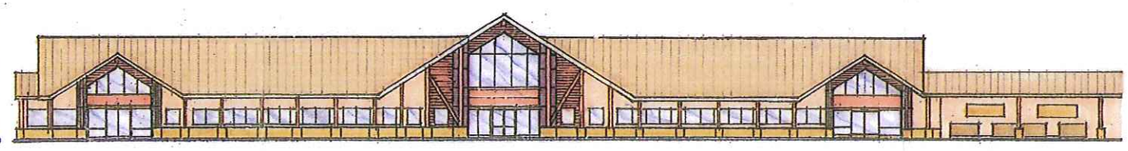
Ticket Lobby/ Bag Claim Entry

Main Entry

Scale: 1/8"= 1'-0"



EAST ELEVATION



LANDSIDE ELEVATION
(North)

Scale: 1/16"= 1'-0"

TERMINAL BUILDING – ELEVATIONS

MAMMOTH YOSEMITE AIRPORT
MAMMOTH, CALIFORNIA

SCALE: 1/8" = 1'-0" (FULL SIZE 24" x30")
SCALE: 1/16" = 1'-0"

Van Sant Group

PLATE NO. 4-2

CHAPTER 5. TERMINAL SUPPORT FACILITIES – CIVIL WORKS

The terminal support facilities include all areas and facilities required to support the airline operations and passengers in the airport terminal building. These facilities include aircraft parking aprons, deicing facilities, access roads, automobile parking areas, maintenance facilities, utilities, and other facilities required to provide a complete and functional airline terminal facility. These facilities are civil engineering design features commonly known as Civil Works and are shown on Plates 5-1 and 5-2.

5-1 Terminal Apron

The first stage airline terminal building has three main gate positions. The proposed first-stage apron will be capable of accommodating three Q400 aircraft or three CRJ-700 aircraft in a taxi-in/taxi-out type operation or three B 737 aircraft in a taxi-in/push-out type operation. This should adequately serve the proposed airline services for the first 5 to 10 years after opening of the terminal. The first stage terminal apron will be 14,500 square yards and will be a rigid pavement design using a 14-inch Portland cement concrete surfacing material. Space should be reserved to enlarge the concourse and apron to accommodate a total of six B 737 aircraft positions

The existing grades require that the terminal apron drain toward the terminal building. A continuous grated slot drain will be installed at the north edge of the apron and immediately behind the aircraft parking position to accommodate all drainage from the apron and terminal. The preliminary grading and drainage plan has been prepared and is included in Plate 5-1. The terminal apron at the north edge will slope from west to east at 1 percent grade to

accommodate the drainage and minimize embankments. This will require that the adjoining concourse on the terminal have level areas for the hold rooms and shallow ramps between the hold room areas to accommodate the change in grade.

Apron lighting will be provided by floodlights located along the north edge of the apron.

5-2 Deicing Apron

The majority of the airline aircraft forecast to use Mammoth Yosemite Airport will operate during the winter months, and in the winter many of these aircraft require deicing immediately prior to takeoff. From an environmental standpoint it is not appropriate to deice the aircraft in their parking positions at the gates. A separate deicing apron is proposed adjacent to the apron. This deicing apron will also serve the business jets that frequent the airport in the winter.

The deicing apron will also be constructed of a rigid pavement section with a 14-inch Portland cement concrete slab. It will be graded to a central drain in the middle of the apron. Storm water and/or deicing fluid from this apron will be picked up in the central drop inlet and carried by pipe to an area immediately southeast of the deicing apron where a holding tank will be installed to hold the deicing fluid that washes off the aircraft until it can be pumped out and transported to a suitable disposal area. The pipe discharge from the drop inlet in the center of the deicing pad will have a dual discharge controlled by valves. One discharge will be into the deicing fluid holding tank and a second will be in a

storm water leaching field in the same area as the holding tank. The valves will be controlled so that at all times when deicing operations are taking place the valve to the storm water leaching field will be closed and the valve to the holding tank will be open. During storms, only when deicing is not occurring, the valve to the holding tank will be closed and the valve to the storm water leaching field will be open.

5-3 Connecting Taxiways

Two connecting taxiways, 230 and 280 feet long, will connect the new aircraft parking apron and deicing apron to Taxiway A. These taxiways will be flexible pavement sections using asphalt concrete for the surfacing.

5-4 Automobile Parking

There is enough space on the existing airport property adjacent to the terminal for two small automobile parking areas. The parking area to the west of the terminal will be used for rental car company vehicles and will accommodate 130 automobiles. The parking lot to the east of the terminal will be used by airline passengers and other visitors and there is space for 60 parked automobiles. As the airport grows, it will no doubt be necessary to expand both the rental car and the visitor parking facilities. Provision is made in the Airport Layout Plan for this supplemental parking facility to be located in front of the terminal across the access road on U.S. Forest Service land. Security lighting will be provided for each parking lot.

5-5 Access Road and Service Roads

An access road will be constructed as an extension to Airport Road. In the first stage this road will have a cul-de-sac at the east end of the east automobile parking lot as shown on Plate 5-1. During this stage there will be a 20-foot concrete sidewalk in front of the terminal building, then a 9-foot space for parallel automobile parking used for loading and unloading, two 12-foot eastbound travel lanes, a 10-foot concrete island and two 12-foot westbound travel lanes.

It is planned in the future to extend Airport Road to the east and connect it to Benton Crossing Road in order to provide two access points to the airline terminal facilities. When this happens, the access road north of the center island will be expanded 9 feet to the north and remarked to provide a 9-foot parallel parking position (loading) adjacent to the island and two 12-foot westbound travel lanes. The 20-foot sidewalk in front of the terminal will be extended both east and west to provide direct access to both automobile parking lots and curb loading and unloading areas. Floodlighting will be provided on the access road in front of the terminal building and parking lots to provide light for all loading and unloading operations.

An asphalt-paved access road, service area, and automobile parking will also be constructed to the proposed new maintenance building to be located immediately east of the deicing apron.

5-6 Maintenance Building

The Airport currently has need of a new maintenance building to store and maintain snow plows, snow blowers, and other maintenance gear since the maintenance building they original had was converted to the temporary terminal facility. It is proposed to construct a 9,000 square foot maintenance building to the east of the deicing facility. Automobile parking will be provided in front of the building to the north and a paved operations area will be provided to the south of the building.

5-7 Utilities

Utilities within the terminal building and for a distance of 10 feet outside the building are included in the terminal building plan. Utilities serving the building and other facilities on the airport are included in the civil engineering design section of the project and consist of:

- Sewer
- Water
- Electrical
- Telephone

These utilities of the size and type required for the terminal building will be installed both in front of the terminal building and on the airside portion of the concourse.

There is no natural gas available. Propane will be provided for each facility developed at the airport.

A preliminary Utility Plan showing the location and routing of the proposed utilities in the terminal area is presented in Plate 5-2.

5-7.1 Electricity

Electricity is provided to the airport by Southern California Edison from a primary power line located to the south of U.S. Highway 395 and is carried to the airport electrical vault building for distribution to the airport users. It will, no doubt, be necessary to enlarge the service to the electrical vault building or directly to the airline terminal facility, which can be readily handled by Southern California Edison. Power will be carried from the vault to the terminal building by underground duct.

5-7.2 Telephone

Telephone service is provided by Verizon and also terminates in the electrical vault building. A significant capacity is available, but if additional capacity is needed to the terminal it can be provided by Verizon. Service to the terminal building will be provided from the electrical vault.

5-7.3 Gas

There are no gas lines in the area of the airport and all facilities that require gas are served by propane from local suppliers. The terminal facilities can also be served by propane as necessary.

5-7.4 Water

Potable water is obtained from wells on the airport. There are two wells and a 450,000-gallon storage tank located immediately east of the terminal facilities. An emergency generator is available at the pump house to provide power for the pumps in an emergency. There is adequate water supply to accommodate both domestic and fire use for the new terminal facilities.

5-7.5 Sewer

The soils at Mammoth Yosemite Airport are very porous clean sand soils with some small cobbles embedded. The ground water table is deep and these soils provide good leaching characteristics. Currently all facilities at the airport are served by septic tanks and leaching fields. With the development of the new terminal facility and the potential development of additional commercial facilities on the airport, it is proposed to construct a package sewage treatment plant and to discharge the effluent from this plant into a leaching field adjacent to the plant. The plant will be located west of the airline apron. New sewer lines will be installed to carry the sewage from the new terminal facility and existing facilities on the airport to this new package plant.

5-8 Security

Security will be provided in the terminal building as necessary, including alarmed doors and security cameras. In the new terminal area the security fencing will be installed and/or relocated such as to separate the airport operations area from the non-secure civilian use area. The existing barbed wire fence around the entire airport will be replaced with a new 8-foot chain link fence with coded gates as required. There will be security cameras at all entrance gates and at critical points on the aircraft parking apron.

The airline apron, automobile parking lots, and access roads will be lighted with floodlights that will be provided with cut-off features such that full light is available on the apron and parking lots but the light is not visible from the runway, Highway 395, or other surrounding areas.

TRUE
MAGNETIC
DECLINATION
14°58.7' (5/97)
SCALE: 1" = 50'

130 SPACES
80 SPACES
FUTURE ACCESS ROAD
FUTURE PARKING LOT STORM WATER LEACHING FIELD
RESERVED FOR FUTURE PARKING LOT
STORAGE TANK (E)
RESERVED FOR FUTURE TERMINAL EXPANSION & RENTAL CARS
FLUSH GUTTER
TERMINAL APRON PCC
737-500
FUTURE SANITARY SEWER LEACHING FIELD
TERMINAL APRON EXPANSION PCC
VAULT
FUEL
FLUSH GUTTER
FUTURE APRON STORM WATER LEACHING FIELD
MAINTENANCE BUILDING (F)
DE-ICING APRON
RESERVED FOR FUTURE REDOWN APRON
AWOS
3.0% TO MATCH
TAXIWAY 'A'
T/W 'A2'

LEGEND	EXISTING	FUTURE (0–5) YEARS	FUTURE (10–15) YEARS
AIRFIELD PAVEMENT			
FACILITIES			
ROAD (PAVED)			
DIRT/GRAVEL ROAD			
FENCE			

DATE

FAA DISCLAIMER

THE CONTENTS DO NOT NECESSARILY REFLECT THE OFFICIAL VIEWS OR POLICY OF THE FAA. ACCEPTANCE OF THIS PLAN BY THE FAA DOES NOT IN ANY WAY CONSTITUTES A COMMITMENT ON THE PART OF THE UNITED STATES TO PARTICIPATE IN ANY DEVELOPMENT DEPICTED THEREIN NOR DOES IT INDICATE THAT THE PROPOSED DEVELOPMENT IS ENVIRONMENTALLY ACCEPTABLE IN ACCORDANCE WITH APPROPRIATE PUBLIC LAWS.

DATE
APPROVED
AIRPORT MANAGER – WILLIAM B. MANNING

Reinard W. Brandley
CONSULTING AIRPORT ENGINEER
8125 King Road, Suite 201 • Loomis, California 95650 • (916) 652-4725

STATE OF CALIFORNIA

MAMMOTH YOSEMITE AIRPORT

MAMMOTH LAKES, CALIFORNIA

TERMINAL AREA GRADING AND DRAINAGE PLAN

NO.	REVISIONS	BY	APP	DATE

No. C 8044 Exp. 9-30-2014 Civil STATE OF CALIFORNIA

DATE AUG. 1, 2013
SHEET NUMBER
PLATE No. 5–1

TRUE
MAGNETIC
DECLINATION
14°58.7'
(5/97)
SCALE: 1" = 50'

130 SPACES
60 SPACES
FUTURE ACCESS ROAD
FUTURE PARKING LOT STORM WATER LEACHING FIELD
RESERVED FOR FUTURE PARKING LOT
STORAGE TANK (E)
RESERVED FOR FUTURE TERMINAL EXPANSION & RENTAL CARS
TERMINAL APRON PCC
737-500
TERMINAL APRON EXPANSION PCC
VAULT
ELEC
FUTURE SANITARY SEWER LEACHING FIELD
FUTURE APRON STORM WATER LEACHING FIELD
MAINTENANCE BUILDING (F)
DE-ICING APRON
RESERVED FOR FUTURE TIEDOWN APRON
AWOS
TAXIWAY 'A'
RSA
T/W 'A2'

LEGEND	EXISTING	FUTURE (0–5) YEARS	FUTURE (10–15) YEARS
AIRFIELD PAVEMENT			
FACILITIES			
ROAD (PAVED)			
DIRT/GRAVEL ROAD			
FENCE	X	X	
SEWER		SS	
WATER		W	
DRAINAGE		SD	
ELECTRICAL		E	

DATE

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DATE
APPROVED
AIRPORT MANAGER – WILLIAM B. MANNING

Reinard W. Brandley
CONSULTING AIRPORT ENGINEER
8125 King Road, Suite 201 • Loomis, California 95650 • (916) 652-4725

STATE OF CALIFORNIA

MAMMOTH YOSEMITE AIRPORT

MAMMOTH LAKES, CALIFORNIA

UTILITY PLAN

NO.	REVISIONS	BY	APP	DATE

REGISTERED PROFESSIONAL ENGINEER — REINARD W. BRANDLEY — No. C 8044 — Exp. 9-30-2014 — CIVIL — STATE OF CALIFORNIA

DATE AUG. 1, 2013
SHEET NUMBER
PLATE No. 5–2

CHAPTER 6. ESTIMATE OF PROBABLE DEVELOPMENT COSTS

Van Sant Group Architects have prepared an estimate of probable construction costs for the terminal building. These costs are included in Table No. 6-1. The probable construction costs of all civil works required to support the new terminal building have been prepared by Reinard W. Brandley and are included in Table No. 6-2. A summary of estimated total costs for the terminal area development including design fees, construction inspection fees, and 10 percent allowance for administrative costs has been prepared and is included in Table No. 6-3.

Funding sources to cover the cost of the proposed development include:

- F.A.A. Airport Improvement Program (AIP) Grants
- Passenger Facility Charges (PFC)
- Mammoth Mountain Ski Area (MMSA) Funding
- Fees and Rents
- Town Financing
- Municipal Bonds

All cost estimates are based on 2013 prices and must be adjusted for inflation if construction is scheduled beyond that timeframe.

TABLE NO. 6-1

MAMMOTH YOSEMITE AIRPORT
ESTIMATE OF PROBABLE CONSTRUCTION COST – TERMINAL BUILDING

	ELEMENT	COST/SF	COST
A.	**Terminal – Shell Space**		
1.	Ticketing and Queuing Ticket Lobby Bag Make-up Bag Claim Holdroom Airlines Lease Space Non-Airline Lease Spaces Restrooms Security Checkpoint Restaurant Circulation Support Spaces **Total Area = 40,010 SF**	$320/sf	Includes: Structural system Mechanical system Electrical system Plumbing system Finishes Public seating **$ 12,803,200**
B.	**Airline Lease Spaces / TSA – Tenant Improvements**		
1.	Airline Offices - 332 sf	$70/sf	$ 23,240
2.	TSA Offices - 950 sf	70/sf	66,500
3.	Lease/ Display - 515 sf	85/sf	43,775
4.	Ground Transportation / Rent Cars-1,546 sf	85/sf	131,410
5.	Airport Administration / Conference-1,370 sf	85/sf	116,450
6.	Restaurant / Lounge - 1,822 sf	90/sf	163,980
C.	**Other**		
1.	Generator		$ 210,585
2.	Baggage System – Inbound & Outbound		711,525
3.	Curbside Check-in		260,020
4.	Ski-Oversized Bag Claim		201,010
5.	Covered Bag Claim Area		213,145
6.	Covered Outbound Bag Make-Up		587,088
		TOTAL	**$ 15,531,928**

VS GROUP
June 2011
Revised August 2013

TABLE NO. 6-2
MAMMOTH YOSEMITE AIRPORT
ESTIMATE OF PROBABLE CONSTRUCTION COSTS - CIVIL ENGINEERING FACILITIES

Item No.	Description	Unit	Unit Price	Quantity	Cost
A. Stage 1 Airline Apron - 142,000 Sq. Ft., Taxiways - 35,600 Sq. Ft. & Delcing Apron - 65,000 Sq. Ft.					
A1	Mark & Light Closed Airport Facilities	L.S.	L.S.	L.S.	$ 20,000
A2	Mobilization	L.S.	L.S.	L.S.	50,000
A3	Clearing and Grubbing	Acre	$ 3,000.00	5.7	17,161
A4	Excavation	Cu. Yd.	15.00	11,000.0	165,000
A5	Imported Embankment	Cu. Yd.	25.00	6,200.0	155,000
A6	Recompact 12" of Native Subgrade	Sq. Yd.	2.00	28,000.0	56,000
A7	10" of Aggregate Subbase	Ton	40.00	2,200.0	88,000
A8	6" or 8" of Crushed Aggregate Base	Ton	60.00	12,000.0	720,000
A9	3" Bituminous Surface Course	Ton	120.00	700.0	84,000
A10	1 1/2" Bituminous Surface Course	Ton	120.00	2,000.0	240,000
A11	16" Portland Cement Concrete	Sq. Yd.	135.00	23,100.0	3,118,500
A12	Bituminous Prime Coat	Ton	1,400.00	16.0	22,400
A13	Bituminous Tack Coat	Ton	1,400.00	1.0	1,400
A14	Marking	Sq. Ft.	3.00	2,200.0	6,600
A15	Drainage Allowance	L.S.	L.S.	L.S.	100,000
A16	Floodlighting Allowance	Each	35,000.00	3.0	105,000
A17	Utilities Relocation	L.S.	L.S.	130,000.0	130,000.0
A18	Fencing	Ln. Ft.	25.00	1,350.0	33,750
	Total Airline Apron				$ 5,112,811

Item No.	Description	Unit	Unit Price	Quantity	Cost
B. Access Road - 26' x 1,000' & 22' x 1500'					
B1	Mark & Light Closed Airport Facilities	L.S.	L.S.	L.S.	$ 7,000
B2	Mobilization	L.S.	L.S.	L.S.	10,000
B3	Clearing and Grubbing	Acre	$ 2,000.00	2.7	5,400
B4	Excavation	Cu. Yd.	15.00	1,600.0	24,000
B5	Imported Embankment	Cu. Yd.	25.00	5,000.0	125,000
B6	Recompact 12" of Native Subgrade	Sq. Yd.	2.00	8,500.0	17,000
B7	10" of Aggregate Subbase	Ton	40.00	4,500.0	180,000
B8	6" Crushed Aggregate Base	Ton	60.00	3,000.0	180,000
B9	3" Bituminous Surface Course	Ton	120.00	1,300.0	156,000
B10	Bituminous Prime Coat	Ton	1,400.00	5.0	7,000
B11	Bituminous Tack Coat	Ton	1,400.00	2.0	2,800
B12	Marking	Sq. Ft.	2.00	5,000.0	10,000
B13	Drainage Allowance	L.S.	L.S.	L.S.	100,000
B14	Concrete Curb	Ln. Ft.	20.00	4,000.0	80,000
B15	Landscape Allowance	L.S.	L.S.	L.S.	80,000
B16	Floodlighting Allowance	L.S.	L.S.	L.S.	80,000
	Total Access Road				$ 1,064,200

Item No.	Description	Unit	Unit Price	Quantity	Cost
C. Automobile Parking Lot - 70,000 Sq. Ft.& Sidewalks - 24,000 Sq. Ft.					
C1	Mark & Light Closed Airport Facilities	L.S.	L.S.	L.S.	$ 2,000
C2	Mobilization	L.S.	L.S.	L.S.	5,000
C3	Clearing and Grubbing	Acre	$ 2,000.00	2.7	5,400
C4	Excavation	Cu. Yd.	14.00	2,000.0	28,000
C5	Imported Embankment	Cu. Yd.	25.00	10,700.0	267,500
C6	Recompact 12" of Native Subgrade	Sq. Yd.	2.00	10,500.0	21,000
C7	10" of Aggregate Subbase	Ton	40.00	5,000.0	200,000
C8	6" Crushed Aggregate Base	Ton	60.00	5,500.0	330,000
C9	3" Bituminous Surface Course	Ton	120.00	1,650.0	198,000
C10	Bituminous Prime Coat	Ton	1,400.00	6.0	8,400

TABLE NO. 6-2 (Continued)

Item No.	Description	Unit	Unit Price	Quantity	Cost
C11	Bituminous Tack Coat	Ton	1,400.00	2.0	2,800
C12	Marking	Sq. Ft.	2.00	1,900.0	3,800
C13	Drainage Allowance	L.S.	L.S.	L.S.	50,000
C14	4" Portland Cement Concrete Sidewalk	Sq. Yd.	25.00	2,700.0	67,500
C15	Concrete Curb	Ln. Ft.	20.00	1,300.0	26,000
C16	Landscape Allowance	L.S.	L.S.	L.S.	40,000
C17	Floodlighting Allowance	L.S.	L.S.	L.S.	120,000
	Total Automobile Parking Lot				$ 1,375,400

Item No.	Description	Unit	Unit Price	Quantity	Cost
D. Maintenance Building, Apron and Access Road					
D1	Maintenance Building	Sq. Ft.	$ 100.00	8,800.0	$ 880,000
D2	Mobilization	L.S.	L.S.	L.S.	5,000
D3	Clearing and Grubbing	Acre	$ 2,000.00	1.5	3,000
D4	Excavation	Cu. Yd.	14.00	2,000.0	28,000
D5	Imported Embankment	Cu. Yd.	25.00	18,000.0	450,000
D6	Recompact 12" of Native Subgrade	Sq. Yd.	2.00	5,250.0	10,500
D7	10" of Aggregate Subbase	Ton	40.00	2,800.0	112,000
D8	6" Crushed Aggregate Base	Ton	60.00	2,200.0	132,000
D9	3" Bituminous Surface Course	Ton	120.00	850.0	102,000
D10	Bituminous Prime Coat	Ton	1,400.00	3.0	4,200
D11	Bituminous Tack Coat	Ton	1,400.00	1.0	1,400
D12	Drainage Allowance	L.S.	L.S.	L.S.	50,000
D13	Floodlighting Allowance	L.S.	L.S.	L.S.	60,000
	Total Maintenance Building, Apron and Access Road.				$ 1,838,100

Item No.	Description	Unit	Unit Price	Quantity	Cost
E. Security System					
E1	CCTV - Network Digital Video Surveillance - 10 Cameras, 1 Monitoring Station	L.S.	L.S.	L.S.	$ 100,000
E2	Key Card Controller - 4 Gates, 6 Doors in Terminal	L.S.	L.S.	L.S.	100,000
E3	Vehicle Identification System	L.S.	L.S.	L.S.	40,000
E4	8-foot Chain Link Fence	Ln. Ft.	15.00	24,000.0	360,000
E5	24-foot Automatic Gates	Each	30,000.00	3.0	90,000
E6	24-foot Swing Gates	Each	12,000.00	4.0	48,000
	Total Security System				$ 738,000

F. Utilities					
F1	10" Water Line	Ln. Ft.	$ 60.00	2,285.0	$ 137,100
F2	10" Gate Valve	Each	2,000.00	5.0	10,000
F3	Fire Hydrant Assembly	Each	5,000.00	5.0	25,000
F4	Backflow Preventer	Each	3,000.00	1.0	3,000
F5	8" Sewer Main	Ln. Ft.	60.00	3,596.0	215,760
F6	36" Sewer Manhole	Each	5,000.00	10.0	50,000
F7	Package Sewer Station	Each	290,000.00	1.0	290,000
F8	2W-4" Electrical Duct	Ln. Ft.	50.00	2,374.0	118,700
F9	Electrical Pull Box	Each	5,000.00	12.0	60,000
F10	Apron, Parking, and Road Floodlights (45')	Each	15,000.00	18.0	270,000
F11	Electrical Service Allowance	L.S.	L.S.	L.S.	150,000
F12	Telephone Service Allowance	L.S.	L.S.	L.S.	200,000
	Total Utilities				$ 1,529,560
	Total Project Construction Cost				$ 11,658,071
	TOTAL PROJECT CONSTRUCTION COST - USE				$ 11,700,000

TABLE NO. 6-3
MAMMOTH YOSEMITE AIRPORT
SUMMARY OF ESTIMATED PROBABLE TOTAL DEVELOPMENT COSTS (x 1,000)
(Based on 2013 Costs)

	Project	Construction Costs	Design Fees	Construction Management Fees	Administration Cost	Total Cost
1.	Terminal Building - First Stage	$ 15,530	$ 1,630	$ 1,200	$ 1,600	$ 19,960
2.	Airline Apron, Taxiways & Deicing Apron	5,180	410	390	520	6,500
3.	Access Road	1,100	90	80	110	1,380
4.	Automobile Parking Lots	1,400	110	100	140	1,750
5.	Maintenance Building (9,000 sf) & Access Road	1,840	150	130	180	2,300
6.	Security System (not including building)	740	60	60	70	930
7.	Utilities					
	a. Sewer	560	50	40	56	706
	b. Water	180	18	18	18	234
	c. Electrical	600	55	45	60	760
	d. Telephone	200	20	15	20	255
	TOTALS	$ 27,330	$ 2,593	$ 2,078	$ 2,774	$ 34,775

MAMMOTH YOSEMITE AIRPORT
FINANCE AND IMPLEMENTATION

TABLE NO. 6-4

		Estimated Costs (in 2013 Dollars)		
Short-range projects (within 5 years)		Total	Federal	Town
1	Remark Runway, Taxiway and Apron	$ 183,000	$ 164,700	$ 18,300
2	**Engineering Design - Projects No. 6, 10, and 13**	12,000	10,800	1,200
3	Airport Land Use Compatibility Plan (ALUC)		State Funded	
4	**Environmental Assessment - Projects 12, 14-17 and 21**	450,000	405,000	45,000
5	**Engineering Design - Projects 7, 8, and 9**	42,000	37,800	4,200
6	Joint Seal Apron and Taxilane	85,000	76,500	8,500
7	Obstruction Light Row - North Side	256,000	230,400	25,600
8	Relocate Wind Socks and Segmented Circle	107,000	96,300	10,700
9	Install Obstruction Lights on Street Light Pole and Power Pole at Benton Crossing Road	42,000	37,800	4,200
10	Reconstruct General Aviation Aircraft Parking Apron - Phase 1	1,660,000	1,494,000	166,000
11	**Architectural/Engineering Design - Projects 12 thru 18**	2,875,000	2,587,500	287,500
12	Grade Runway Object Free Area From Runway Safety Area Edge to Highway 395 ROW Fence Line	3,278,000	2,950,200	327,800
13	Reconstruct General Aviation Aircraft Parking Apron - Phase 2	2,176,000	1,958,400	217,600
14	Airline Terminal Apron	18,330,000	16,497,000	1,833,000
15	Airline Terminal Apron, Deicing Pad, and Terminal Apron Taxiways	6,090,000	5,481,000	609,000
16	Access Road	1,790,000	1,611,000	179,000
17	Automobile Parking Lot	1,640,000	1,476,000	164,000
18	Terminal Area Utilities	1,812,000	1,630,800	181,200
19	Second ARFF Vehicle	1,000,000	900,000	100,000
20	**Engineering Design - Projects 21, 23, 25, 26, and 27**	375,000	337,500	37,500
21	Construct Security Fence and Cameras	870,000	783,000	87,000
22	**Environmental Assessment - LADWP & U.S. Forest Service Land Acquisition and/or Use Permits - Project No. 21**	50,000	45,000	5,000
23	Construct New General Aviation Apron (179,000 sq. ft.)	1,715,000	1,543,500	171,500
	Subtotal	*$ 44,838,000*	*$ 40,354,200*	*$ 4,483,800*
Mid-range projects (approximately 6 to 10 years)				
24	LADWP & U.S. Forest Service Land Acquisition and/or Use Permits	$ 120,000	$ 108,000	$ 12,000
25	Widen Runway Shoulders to 20'	1,416,000	1,274,400	141,600
26	Widen Taxiways from 50' to 75' to Meet Taxiway Edge Safety Margin for Q400 & 25' Wide Shoulders	3,405,000	3,064,500	340,500
27	Widen Aircraft Holding Aprons	375,000	337,500	37,500
28	**Architectural/Engineering Design - Projects No. 29 & 30**	300,000	270,000	30,000
29	ARFF Building and Administration Building - 8,800 sq. ft.	2,240,000	2,016,000	224,000
30	Maintenance Building Apron and Access Road	2,190,000	1,971,000	219,000
31	**Environmental Assessment - Projects No. 33 and 34**	120,000	108,000	12,000
32	**Engineering Design - Projects No. 33 and 34**	600,000	540,000	60,000
33	Reconstruct West Hangar Taxilanes*	650,500	585,450	65,050
34	Runway 9-27 Extension - 100' x 1,200'	4,386,000	3,947,400	438,600
	Subtotal	*$ 15,802,500*	*$ 14,222,250*	*$ 1,580,250*
Long-range projects (approximately 11 to 20 years)				
35	Pavement Maintenance/Management Program Update	$ 70,000	$ 63,000	$ 7,000
36	Abandon Green Church	110,000	99,000	11,000
37	**Architectural/Engineering Design - Project No. 38**	**900,000**	**810,000**	**90,000**
38	Terminal Building Addition	8,262,000	7,435,800	826,200
	Subtotal	*$ 9,342,000*	*$ 8,407,800*	*$ 934,200*
	TOTAL	$ 69,982,500	$ 62,984,250	$ 6,998,250

CHAPTER 7. RECOMMENDATIONS

The Mammoth Mountain Ski Area is dedicated to developing significant airline service to Mammoth Yosemite Airport. Airports in Colorado, Idaho, and Montana, which serve major skiing facilities, parks, and other recreation areas, have discovered that once airline service is established the demand increases to a point that it is attractive to other airlines and the growth usually exceeds forecast growth. It is, therefore, considered appropriate to construct the new terminal facilities to accommodate the traffic forecast for the 5-year period but to design the facilities and provide room to expand the terminal building, the air operations area, and the support facilities to accommodate possible future forecast and unanticipated growth. The design of the facility should be such that the expansions required can be performed with minimal interference to the operation of the existing facility. It is recommended that the size, location, and configuration of the first phase development presented in this report be developed. This development needs to occur as early as possible since the existing facilities are currently overloaded and major growth is expected within the next five years.