WATSONVILLE MUNICIPAL AIRPORT
MASTER PLAN
CITY OF WATSONVILLE, SANTA CRUZ COUNTY, CALIFORNIA

CHAPTER 3. AVIATION FORECASTS
REVISED APRIL 2010

WATSONVILLE MUNICIPAL AIRPORT
MASTER PLAN
CITY OF WATSONVILLE, SANTA CRUZ COUNTY, CALIFORNIA

TABLE OF CONTENTS

LIST OF TABLES

LIST OF TABLES
(Continued)

LIST OF PLATES

LIST OF EXHIBITS

Chapter 2. Inventory

AIRPORT PLANS

REDUCED SIZE INCLUDED IN REPORT – FULL SIZE SUBMITTED SEPARATELY

APPENDICES

CHAPTER 3. AVIATION FORECASTS

3-1 Introduction

The aviation forecasts provide estimates of future aviation demand at the airport. Projections of aviation demand are important in the planning process as they provide the basis for the following:

- Documentation of the role of the airport and determination of type of aircraft to be accommodated in the future
- Evaluation of the capacity of existing airport facilities and their ability to accommodate demands
- Estimation of the extent of airside and landside facilities required for future years.

3-2 Airport Role

Watsonville Municipal Airport is the only airport within Santa Cruz County. The nearest airport to this airport is the South County Airport in San Martin, California. Statistical data indicate that for the past several years most of the pilots who have aircraft based at Watsonville Municipal Airport live in Santa Cruz County, including the City of Watsonville. It is, therefore, considered that Santa Cruz County, including the City of Watsonville, is the basic area served by the Watsonville Municipal Airport.

Watsonville Municipal Airport does not serve any airline, air cargo, or air taxi operations at this time. There is charter service available at the airport. The major airline operations for the area are served by the San Francisco Bay Area airports of San Jose, Oakland, and San Francisco, and by the Monterey Municipal Airport. It is expected that these airports will continue to serve the airlines. Short-haul commuter, air taxi, and small air cargo operations are feasible uses in the future at the Watsonville Municipal Airport.

Watsonville Municipal Airport principally serves the general aviation fleet ranging from jet aircraft to twin-engine and single-engine non-jet aircraft varying in size up to the Convair 240 and Falcon 50 class aircraft. There is a significant helicopter operation at the airport driven mainly by the helicopter flight school.

There are a few Coast Guard helicopter operations and some private helicopter operations throughout the year, but the major user of the helicopter facilities is the flight school. The major helicopter operations

are dependent on the student enrollment at the flight school and not on activities that are used to forecast based aircraft and annual operations of the general aviation fleet. The forecasts prepared in this report are, therefore, presented separately for the fixed wing aircraft and the helicopters.

3-3 Projections

The Watsonville Municipal Airport is a general aviation airport serving the City of Watsonville and the County of Santa Cruz. Aviation activity levels result from the interaction of demand and supply factors. The demand for aviation is largely a function of demographic and economic activities. Supply factors that influence activity levels include cost, competition, and regulations. General aviation activity at this airport is largely developed by local population and income levels and the number of based aircraft at the airport. Most aircraft based at this airport are owned by residents of the City of Watsonville and the County of Santa Cruz. The basic steps for forecasting aviation activity at this airport are presented herewith:

3-3.1 Aviation Activity Parameters and Measures to Forecast

The major aviation activities and measures to forecast include:

- Based Aircraft
- Annual Operations – itinerant, local, and total
- Fleet Mix – number and type of operations
- Comparison of Airport Planning to TAF Forecasts
- Peak Operations
- Design Aircraft

3-3.2 Collect and Review Previous Airport Forecasts

Forecasts have been prepared and submitted with previous Airport Layout Plans. These forecasts have been reviewed and found to be either old or inadequate for use and were used only for comparison purposes with new historical and forecast data.

3-3.3 Data Collection

Pertinent data available for all demographics used in these forecasts were collected and included in this report. The most recent F.A.A. Terminal Area Forecasts (TAF) were obtained for the historical and forecast aviation activity for the entire United States, the F.A.A. Southwest Regional Area, and the Watsonville Municipal Airport. Forecasts presented in the California Aviation System Plan

(CASP) were also obtained and reviewed. The data collected included the following:

- *Population* – Historical and forecast population growth data for Santa Cruz County and City of Watsonville were collected. The sources of these data were the State of California Department of Finance and AMBAG (Association of Monterey Bay Area Governments). These data are summarized in Table No. 3-1 and presented graphically in Plate No. 3-1.

- *Employment* – Historical and forecast employment data for Santa Cruz County and City of Watsonville were collected. The sources of these data were the State of California Department of Finance and AMBAG (Association of Monterey Bay Area Governments). These data are summarized in Table No. 3-1 and presented graphically in Plate No. 3-2.

- *Based Aircraft* – Historical and forecast based aircraft data were collected from the F.A.A. TAF for the entire United States system, the F.A.A. Southwest Region area, and the Watsonville Municipal Airport. Historic and forecast based aircraft data for Watsonville Municipal Airport were also collected from the California Aviation System Plan (CASP). These data are presented in Tables No. 3-1 and 3-4 and presented graphically in Plates No. 3-3 and 3-5.

- *Annual Aircraft Operations* – Historical and forecast annual aircraft operations data were obtained from F.A.A. TAF for the entire U.S. airport system, the F.A.A. Southwest Regional Airports, and the Watsonville Municipal Airport. Data were also collected from the CASP forecasts. These data are presented in Tables No. 3-1 and 3-4 and presented graphically in Plates No. 3-4 and 3-6.

- *Fleet Mix* – Fleet mix data were acquired from the Airport and included the fleet mix for jet aircraft based on fuel sales as counted over a one-year period from May 2006 to May 2007 and from the remaining general aviation fleet including twin engine propeller-driven aircraft and single-engine propeller-driven aircraft. These data are presented in Table No. 3-12.

- *Helicopter Operations and Based Helicopters* – Data were obtained from the Airport Management and the helicopter school. There are currently 12 helicopters based at the airport, 9 of which are owned by the school and 3 by private parties. These data are included in Table No. 3-4 and shown graphically in Plates No. 3-5 and 3-6.

3-3.4 Forecast Methods

Regression and trend analyses were conducted using population and jobs as the comparable feature. Share analysis was used with a share of based aircraft compared to total national and total Western Pacific Region number of based aircraft. The annual operations forecast methods also used an analysis of average historical annual operations per based aircraft at the airport. In all evaluations historical data were used to develop a reasonable relationship between the number of based aircraft or number of aircraft operations per unit of population or employment. This ratio was applied to the forecast population and employment data available from local agencies.

In the share analysis the historical share of total aircraft based at Watsonville Municipal Airport compared to those based at either the total United States airports or F.A.A. Southwest Regional Airports was determined. This ratio was applied to the TAF forecasts for total U.S. based aircraft and operations and total Southwest Region based aircraft and operations.

3-3.5 Evaluation of Forecasts

The historical data and forecast data for based fixed wing aircraft and total annual operations of fixed wing aircraft were presented graphically for each analysis method used. These data are shown on Plate No. 3-3 for based fixed wing aircraft and on Plate No. 3-4 for annual operations of fixed wing aircraft. The forecasts for fixed base helicopters and helicopter annual operations were obtained from conferences with the flight school and Airport Management and are presented graphically in Plates No. 3-5 and 3-6.

(1) Based Aircraft – Fixed Wing

On Plate No. 3-3 historical and forecast based aircraft for fixed wing aircraft are shown as developed from County population, City population, County jobs, and City jobs. The forecasts obtained from TAF and CASP were also included. The Terminal Area Forecasts (TAF) show no increase in number of based aircraft over the next 20 years, but recently published F.A.A. Forecast Fact Sheet, Fiscal Years 2010 to 2030, dated March 9, 2010, indicates that the national trend for based aircraft shows an annual increase of 0.9%. The operations and potential for growth at Watsonville Municipal Airport is equal to or greater than the average national trend. The TAF

forecasts increased annually at 0.9% beyond the base year 2010 are also indicated on Plate No. 3-3. Based on the data available and calculated, the airport based fixed wing aircraft has been developed and is shown on Plate No. 3-3. The Airport forecast is near or slightly below the forecasts based on City population, City jobs, and County jobs and is significantly higher than the TAF forecasts and somewhat higher than the TAF forecasts increased by 0.9% annually.

TAF forecasts are based on data obtained from the City Clerk's office. Annually the City Clerk takes an inventory of based aircraft for taxation purposes. For the past several years the Airport has made their own count of based aircraft before and after the City Clerk's count and found that the Airport's count is 20 to 30 aircraft higher than the City Clerk's. It is apparent that some aircraft owners are aware of the timing of the City Clerk's count and remove their aircraft from the airport during this period of time to avoid being included. The TAF forecasts for based aircraft are probably 20 to 30 aircraft lower than the correct numbers.

Based aircraft at the airport decreased somewhat during the severe recession of 2008/2009, but recent trends indicate an increase in the number of based aircraft at the airport. Historically the number of based aircraft has decreased at this airport during each recession and increased after the recession is over. The rate of increase over the long period is fairly uniform with some dips at the point of the recession. It is estimated that the same trend will follow after the current recession is over, and forecasts have been based on the rate of increase in number of based aircraft continuing uniformly and not being influenced by the dip caused by the recession.

Taking into consideration historical data, competition of other airports, and forecast increases in population and employment in the airport air trade area, it is indicated that the Airport Forecasts shown for based fixed wing aircraft on Plate No. 3-3 are reasonable.

(2) Annual Operations – Fixed Wing Aircraft

On Plate No. 3-4 historical and forecast annual operations for fixed wing aircraft are shown. These forecasts are developed from analysis of County population, City population, County jobs, City jobs, local share of U.S. total general aviation aircraft operations, and local share of total general aviation

aircraft operations in the F.A.A. Southwest Region. The forecasts obtained from TAF and CASP are also included.

The Terminal Area Forecasts (TAF) show no increase in the number of annual operations over the next 20 years, but recently published F.A.A. Forecast Fact Sheet, Fiscal Years 2010 to 2030, dated March 9, 2010, indicates that the national trend for general aviation aircraft operations shows an annual increase of 1.3%. The operations and potential for growth at Watsonville Municipal Airport is equal to or greater than the national average trend. The TAF forecasts increased annually at 1.3% beyond the base year are also indicated on Plate No. 3-4. Based on the data available and calculated, the airport annual operations of fixed wing aircraft has been developed and is shown on Plate No. 3-4.

The Airport forecast annual operations are near or slightly below the forecast operations based on City population, County jobs, City jobs, and calculated from based aircraft forecasts. The Airport forecast is significantly higher than the TAF forecast and is somewhat higher than the TAF plus 1.3% annual growth, the CASP forecast, and the share based on U.S. total operations.

Taking into consideration historical data, competition of other airports, and forecast increases in population and employment in the airport air trade area, it is indicated that the Airport Forecasts shown for airport operations on Plate No. 3-4 are reasonable.

(3) Helicopter – Based Helicopters and Helicopter Operations

There is a helicopter school at the airport, which owns 9 out of 12 of the based helicopters at the airport and accounts for the majority of the helicopter operations. There are three privately owned helicopters at the airport and a few minor operations by the Coast Guard. The number of based helicopters and annual operations is largely dependent upon the success of the school. Based on conferences with the school and Airport Administration, it is estimated that there will be some small increases in the number of based helicopters and the number of annual operations of the helicopters over the forecast period. The forecast increases in based helicopters and helicopter operations are shown on Plates No. 3-5 and 3-6.

(4) Fleet Mix

A significant number of jet engine aircraft utilize the Watsonville Municipal Airport. From May 2006 to May 2007 the Airport made a detailed count of the annual operations of jet engine aircraft using this airport. This count included a record of all fuel sales of all aircraft with registered N numbers and fuel sales of jet aircraft with reserved or unknown N numbers. They also estimated the number of jet aircraft not purchasing fuel. This estimate was developed based on a detailed 90-day count. These counts did not include the few operations that occurred after business hours and are, therefore, somewhat conservative. The results of this analysis are shown on Table No. 3-11. On this table, not only is the number of operations of each aircraft listed, but the gross takeoff weight of that aircraft is also listed.

Based on airport statistics and counts, estimates have been made as to the percentage of twin-engine non-jet aircraft and single engine non-jet aircraft using the airport. The operations and statistics were broken down into itinerant, local, and total operations and each type operation were broken down into jet engine, twin-engine non-jet, and single-engine non-jet aircraft. The results of this study are shown in Table No. 3-12. In this table the forecasts are presented for the base year 2010 and for 2015, 2020, 2025, and 2030.

(5) Comparison of Airport Planning Forecasts to TAF Forecasts

a. Annual Operations

In order to determine the relationship between Airport forecasts and the TAF forecasts, a comparative study of these forecast annual operations has been made. In Table No. 3-5 a summarization and documentation of airport planning forecasts is shown. A comparison of Airport forecasts and TAF forecasts for total general aviation operations has been made and is included in Table No. 3-6.

The TAF forecasts were modified to represent an annual increase in TAF operations from the base year of 1.3% as indicated to be representative of the entire United States in the F.A.A. Forecast Fact Sheet, Fiscal Years 2010 to 2030, dated March 9, 2010. The comparison of

the Airport Planning with the modified TAF forecasts is presented in Table No. 3-7.

It will be noted that the difference between the Airport forecast total operations and the TAF forecast ranges from 6.4 to 34.0 percent, which is considered high but is based on no increase in operations in the 20-year period for the TAF forecast. This assumption appears to be unreasonable. It will be noted on Table No. 3-7 that the difference between Airport forecast and TAF forecast with the 1.3% increase per year ranges from 3.5 to 6.4 percent, which is considered to be an acceptable range.

b. Based Aircraft

In order to determine the relationship between Airport forecasts and the TAF forecasts, a comparative study of these forecast based aircraft has been made. In Table No. 3-5 a summarization and documentation of airport planning forecasts is shown. A comparison of Airport forecasts and TAF forecasts for total based fixed wing aircraft has been made and is included in Table No. 3-8.

The TAF forecasts were modified to represent an annual increase in TAF based aircraft from the base year of 0.9% as indicated to be representative of the entire United States in the F.A.A. Forecast Fact Sheet, Fiscal Years 2010 to 2030, dated March 9, 2010. The comparison of the Airport Planning with the modified TAF forecasts is presented in Table No. 3-9.

It will be noted that the difference between the Airport forecast total based aircraft and the TAF forecast ranges from 4.3 to 24.6 percent, which is considered high but is based on no increase in based aircraft in the 20-year period for the TAF forecast. This assumption appears to be unreasonable. It will be noted on Table No. 3-9 that the difference between Airport forecast and TAF forecast with the 0.9% increase per year ranges from 4.3 to 4.8 percent, which is considered to be an acceptable range.

3-3.6 Peaking Characteristics

When planning future airport facilities and determining adequacy of existing facilities, it is important to identify and project peak period

activity levels. Peaking characteristics are developed for aircraft operations using the following methodologies:

- Annual operations are determined from previously described forecasts, and the peak month activity is typically considered to be approximately 10 percent of the year's total activity.
- The average peak day is determined by dividing the peak month activity by 30.
- The peak hour percentages are applied to the projected average peak day operations. The peak hour operations typically range from 12 to 20 percent of the peak day operations.

Projections of peak month, peak day, and peak hour operations for the Watsonville Municipal Airport have been calculated using this methodology and are presented in Table No. 3-10. Forecast peak hour and peak day operations indicate that the existing runway configuration will be adequate during the forecast period.

3-3.7 Design Aircraft

F.A.A. defines the design aircraft for planning purposes to be the largest aircraft group that has more than 500 operations per year. The jet aircraft using the airport are the critical aircraft from an operational standpoint, both from the standpoint of weight and of takeoff run required. Total operations of jet aircraft using the airport based on fuel sales and Airport count from May 2006 to May 2007 was 1,334. A breakdown of aircraft by type using the airport during this period, with the number of annual departures and annual operations, is presented in Table No. 3-11. The maximum gross takeoff weight of each of these aircraft is also listed on this table.

A summary of annual operations of aircraft heavier than limiting maximum takeoff weight obtained from this table is shown herewith:

ANNUAL OPERATIONS OF AIRCRAFT HEAVIER THAN LIMITING MAXIMUM TAKEOFF WEIGHT

Limiting Maximum Takeoff Weight – lb.	Annual Operations 2006-2007		
	Aircraft Buying Fuel	Unknown Aircraft or Aircraft Not Buying Fuel	Total
20,000	20	14	34
16,000	200	130	330
12,000	810	524	1,334

It will be noted that at this time the design aircraft meeting the requirement of 500 operations per year for that aircraft or heavier aircraft will be the Cessna Citation 500 with a maximum takeoff weight of 12,000 pounds. It is expected that by 2020 the design aircraft will be the Cessna Citation 560 with a maximum takeoff weight of 16,000 pounds.

Table No. 3-1
Watsonville Municipal Airport
Historical and Forecast Data

Year	Population		Employment		Based Aircraft				Annual Aircraft Operations		
					TAF			CASP	TAF		CASP
	County	City	County	City	U.S.	S.W. Region	Watsonville Airport		U.S.	Watsonville Airport	
1985	206,000	26,200					319				
1990	228,700	30,850					376			181,000	
1995	239,900	36,350					309	319		106,600	126,530
2000	255,602	44,246	149,618	26,135			329	308		120,000	122,890
2005	260,092	49,571	155,098	26,856	198,401	25,224	331	310	40,413,116	126,890	123,890
2010	268,016		173,223	29,820	179,648	21,410	345	327	38,676,305	126,890	130,190
2015			183,146	32,187	187,435	22,492	345	345	37,073,811	126,890	137,160
2020	287,480		193,066	34,553	195,807	23,666	345		38,603,277	126,890	138,307
2025			203,160	36,354	204,992	24,957	345		40,256,501	126,890	145,528
2030	304,465		213,251	38,155	214,500	26,342	345		42,057,126	126,890	153,498

Notes:
1. 2010 Considered Base Year
2. Data presented prior to 2010 is historic.
3. Data presented 2010 and beyond are forecast by source agency.

Sources:
Population: California Department of Finance (DOF)
Employment: Association of Monterey Bay Area Governments (AMBAG)
Based Aircraft: F.A.A. Terminal Area Forecasts (TAF) and California Aviation System Plan (CASP)
Annual Operations: F.A.A. Terminal Area Forecasts (TAF) and California Aviation System Plan (CASP)

Prepared by: Reinard W. Brandley, Consulting Airport Engineer

Table No. 3-2
Watsonville Municipal Airport
Historical and Forecast Fixed Wing Based Aircraft

Year	Based Aircraft									
	Population Basis		Employment Basis		Market Share Basis		TAF	TAF + 0.9% Annually	CASP	Airport
	County	City	County	City	Total U.S.	S.W. Region				
1985							319			
1990							376			
1995							309		319	309
2000							329		308	329
2005							331		310	331
2010	349	379	369	386	314	331	345	345	327	360
2015		408	391	397	328	348	345	361	345	377
2020	373	436	412	427	342	367	345	377		395
2025		453	453	449	359	387	345	394		413
2030	382	469	455	471	375	408	345	413		430

Notes:
1. 2010 Considered Base Year
2. Data presented prior to 2010 is historic.
3. Data presented 2010 and beyond are forecast by source agency.
4. Market Share = 0.175% of U.S. Total
5. Market Share = 1.55% of S.W. Region

Sources: F.A.A. Terminal Area Forecasts (TAF) and California Aviation System Plan (CASP)
Watsonville Municipal Airport

Prepared by: Reinard W. Brandley, Consulting Airport Engineer

Table No. 3-3
Watsonville Municipal Airport
Historical and Forecast Fixed Wing Aircraft Annual Operations

Year	Annual Operations									
	Population Basis		Employment Basis		Market Share Basis	Based Aircraft Basis	TAF	TAF +1.3% Annually	CASP	Airport
	County	City	County	City	Total U.S.					
1985										
1990							181,000			181,000
1995							106,600		126,530	106,600
2000							120,000		122,890	120,000
2005							126,890		123,890	126,890
2010	127,627	141,948	141,986	142,000	123,764	129,600	126,890	126,890	130,190	135,000
2015		152,816	150,120	153,271	118,636	135,720	126,890	135,355	137,160	144,000
2020	136,895	163,683	158,251	164,538	123,530	142,200	126,890	144,385	138,307	153,000
2025		169,865	166,525	173,114	128,820	148,700	126,890	154,015	145,528	161,500
2030	144,883	176,045	174,796	181,690	134,583	154,800	126,890	164,290	153,498	170,000

Notes:
1. 2010 Considered Base Year
2. Data presented prior to 2010 is historic.
3. Data presented 2010 and beyond are forecast by source agency.
4. Market Share = 0.320% of U.S. Total
5. Operation per based aircraft = 360

Sources: F.A.A. Terminal Area Forecasts (TAF) and California Aviation System Plan (CASP)
Watsonville Municipal Airport

Prepared by: Reinard W. Brandley, Consulting Airport Engineer

Table No. 3-4
Watsonville Municipal Airport
Forecast Helicopters
Based Helicopter and Annual Operations

Year	Based Helicopters	Annual Operations	Operations per Based Helicopter
2010	12	3,110	259
2015	13	3,370	259
2020	14	3,630	259
2025	15	3,890	259
2030	16	4,150	259

Source: Watsonville Municipal Airport Statistics

Prepared by: Reinard W. Brandley, Consulting Airport Engineer

Table No. 3-5
Watsonville Municipal Airport
Summarization and Documentation of Airport Planning Forecasts

A. Forecast Levels and Growth Rates
Base Year: 2010

	Base Yr. Level	Base Yr. + 1 Yr.	Base Yr. + 5 Yrs.	Base Yr. + 10 Yrs	Base Yr. + 15 Yrs	Average Annual	
						Base Yr. to +20	Base Yr. to + 5
Passenger Enplanements							
Air Carrier	0	0	0	0	0	0	0
Commuter	0	0	0	0	0	0	0
TOTAL	0	0	0	0	0	0	0
Operations - Fixed Wing							
Itinerant							
Air carrier	0	0	0	0	0	0	0
Commuter/air taxi	0	0	0	0	0	0	0
Total Commercial Operations	0	0	0	0	0	0	0
General aviation	82,350	83,448	87,840	93,330	98,515	103,700	85,095
Military	0	0	0	0	0	0	0
Local							
General aviation	52,650	53,352	56,160	59,670	62,985	66,300	54,405
Military	0	0	0	0	0	0	0
TOTAL OPERATIONS	135,000	136,800	144,000	153,000	161,500	170,000	139,500
Instrument Operations	10,000		10,400	10,700	11,000	10,000	10,200
Peak Hour Operations	69	69	75	80	86	89	72
Cargo/mail (enplaned + deplaned tons)	0	0	0	0	0	0	0
Based Aircraft - Fixed Wing							
Single Engine (Nonjet)	312	314	325	340	354	378	320
Multi Engine (Nonjet)	37	38	40	42	44	41	38
Jet Engine	11	11	12	13	15	11	11
Other							
TOTAL	360	363	377	395	413	430	369
Helicopter*							
Based helicopters	12	12	13	14	15	16	12
Helicopter operations	3,110	3,110	3,370	3,630	3,890	4,100	3,280

*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 Annual	
						Base Yr. to +20	Base Yr. to + 5
Average aircraft size (seats)							
Air carrier	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Commuter	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Average enplaning load factor							
Air carrier	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Commuter	N/A	N/A	N/A	N/A	N/A	N/A	N/A
GA operations per based aircraft	373	373	373	373	368	384	373

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

Table No. 3-6
Watsonville Municipal Airport
Comparison of Airport Planning and TAF Forecasts of Annual Operations - Fixed Wing Aircraft

	Year	Airport Forecast	TAF	AF/TAF (% Difference)
Passenger Enplanements				
Base yr. - 2010	2010	0		
Base yr. + 5 yrs.	2015	0		
Base yr. + 10 yrs.	2020	0		
Base yr. + 15 yrs.	2025	0		
Commercial Operations				
Base yr. - 2010	2010	0		
Base yr. + 5 yrs.	2015	0		
Base yr. + 10 yrs.	2020	0		
Base yr. + 15 yrs.	2025	0		
Total Operations				
Base yr. - 2010	2010	135,000	126,890	6.4
Base yr. + 5 yrs.	2015	144,000	126,890	13.5
Base yr. + 10 yrs.	2020	153,000	126,890	20.6
Base yr. + 15 yrs.	2025	161,500	126,890	27.3
Base yr. + 20 yrs.	2030	170,000	126,890	34.0

Note: TAF data is on a U.S. government fiscal year basis (October through September).

Reason for discrepancy:

1. TAF assumed no increase in forecast annual operations since 1995.
2. Normal growth of airport operations expected to relate to population and employment growth.

Sources: F.A.A. Terminal Area Forecasts (TAF)
Watsonville Municipal Airport

Prepared by: Reinard W. Brandley, Consulting Airport Engineer

Table No. 3-7
Watsonville Municipal Airport
Comparison of Airport Planning and Modified TAF Forecasts of Annual Operations - Fixed Wing Aircraft

	Year	Airport Forecast	TAF	AF/TAF (% Difference)
Passenger Enplanements				
Base yr. - 2010	2010	0		
Base yr. + 5 yrs.	2015	0		
Base yr. + 10 yrs.	2020	0		
Base yr. + 15 yrs.	2025	0		
Commercial Operations				
Base yr. - 2010	2010	0		
Base yr. + 5 yrs.	2015	0		
Base yr. + 10 yrs.	2020	0		
Base yr. + 15 yrs.	2025	0		
Total Operations				
Base yr. - 2010	2010	135,000	126,890	6.4
Base yr. + 5 yrs.	2015	144,000	135,355	6.4
Base yr. + 10 yrs.	2020	153,000	144,385	6.0
Base yr. + 15 yrs.	2025	161,500	154,015	4.9
Base yr. + 20 yrs.	2030	170,000	164,290	3.5

Note:

1. TAF data is on a U.S. government fiscal year basis (October through September).
2. Increased TAF forecast operations by 1.3% per year starting in 2010 per FAA Forecast Fact Sheet Fiscal Years 2010-30 dated March 9, 2010.

Sources: F.A.A. Terminal Area Forecasts (TAF)
Watsonville Municipal Airport

Prepared by: Reinard W. Brandley, Consulting Airport Engineer

Table No. 3-8
Watsonville Municipal Airport
Comparison of Airport Planning and TAF Forecasts of Based Fixed Wing Aircraft

	Year	Airport Forecast	TAF	AF/TAF (% Difference)
Total Based Aircraft - Fixed Wing				
Base yr. - 2010	2010	360	345	4.3
Base yr. + 5 yrs.	2015	377	345	9.3
Base yr. + 10 yrs.	2020	395	345	14.5
Base yr. + 15 yrs.	2025	413	345	19.7
Base yr. + 20 yrs.	2030	430	345	24.6

Note: TAF data is on a U.S. government fiscal year basis (October through September).

Reason for discrepancy:

1. TAF assumed no increase in forecast annual operations since 1995.
2. Normal growth of airport operations expected to relate to population and employment growth.

Sources: F.A.A. Terminal Area Forecasts (TAF)
Watsonville Municipal Airport

Prepared by: Reinard W. Brandley, Consulting Airport Engineer

Table No. 3-9
Watsonville Municipal Airport
Comparison of Airport Planning and Modified TAF Forecasts of Based Fixed Wing Aircraft

	Year	Airport Forecast	TAF	AF/TAF (% Difference)
Total Based Aircraft - Fixed Wing				
Base yr. - 2010	2010	360	345	4.3
Base yr. + 5 yrs.	2015	377	361	4.4
Base yr. + 10 yrs.	2020	395	377	4.8
Base yr. + 15 yrs.	2025	413	394	4.8
Base yr. + 20 yrs.	2030	430	412	4.4

Note:

1. TAF data is on a U.S. government fiscal year basis (October through September).
2. Increased TAF forecast based fixed wing aircraft by 0.9% per year starting in 2010 per FAA Forecast Fact Sheet Fiscal Years 2010-30 dated March 9, 2010.

Sources: F.A.A. Terminal Area Forecasts (TAF)
Watsonville Municipal Airport

Prepared by: Reinard W. Brandley, Consulting Airport Engineer

Table No. 3-10
Watsonville Municipal Airport
Forecast Peak Aircraft Operations

Year	Annual Operations	Peak Month Operations	Average Peak Day Operations	Peak Hour Operations
2010	135,000	13,500	450	68
2015	144,000	14,400	480	72
2020	153,000	15,300	510	77
2025	161,500	16,150	538	81
2030	170,000	17,000	567	85

Prepared by: Reinard W. Brandley, Consulting Airport Engineer

Table No. 3-11
Watsonville Municipal Airport
Turbojet Aircraft Annual Operations
Based on Fuel Sales
May 2006 to May 2007

Aircraft	Annual Departures	Annual Operations	Max. Gross Takeoff Weight - lb.
Convair 240	1	2	42,500
Falcon 50	2	4	40,780
Canada Air CL 600	1	2	40,125
Citation 750	1	2	35,700
Citation 650	1	2	22,450
Lear 45	4	8	21,500
Falcon 10	4	8	18,739
Beechjet 400	41	82	16,100
Citation 680	1	2	16,000
Citation 560	44	88	16,630
Citation 550	7	14	14,800
Citation 525	154	308	12,300
Citation 500	143	286	11,850
Hawker 800	1	2	12,701
Unknown[1]	105	210	
No Fuel[2]	157	314	
Total Sales[3]	667	1,334	

[1]Reserved or unknown N numbers.

[2]Estimated number of jet aircraft not purchasing fuel - based on 90-day count.

[3]Does not include after-business-hour activity.

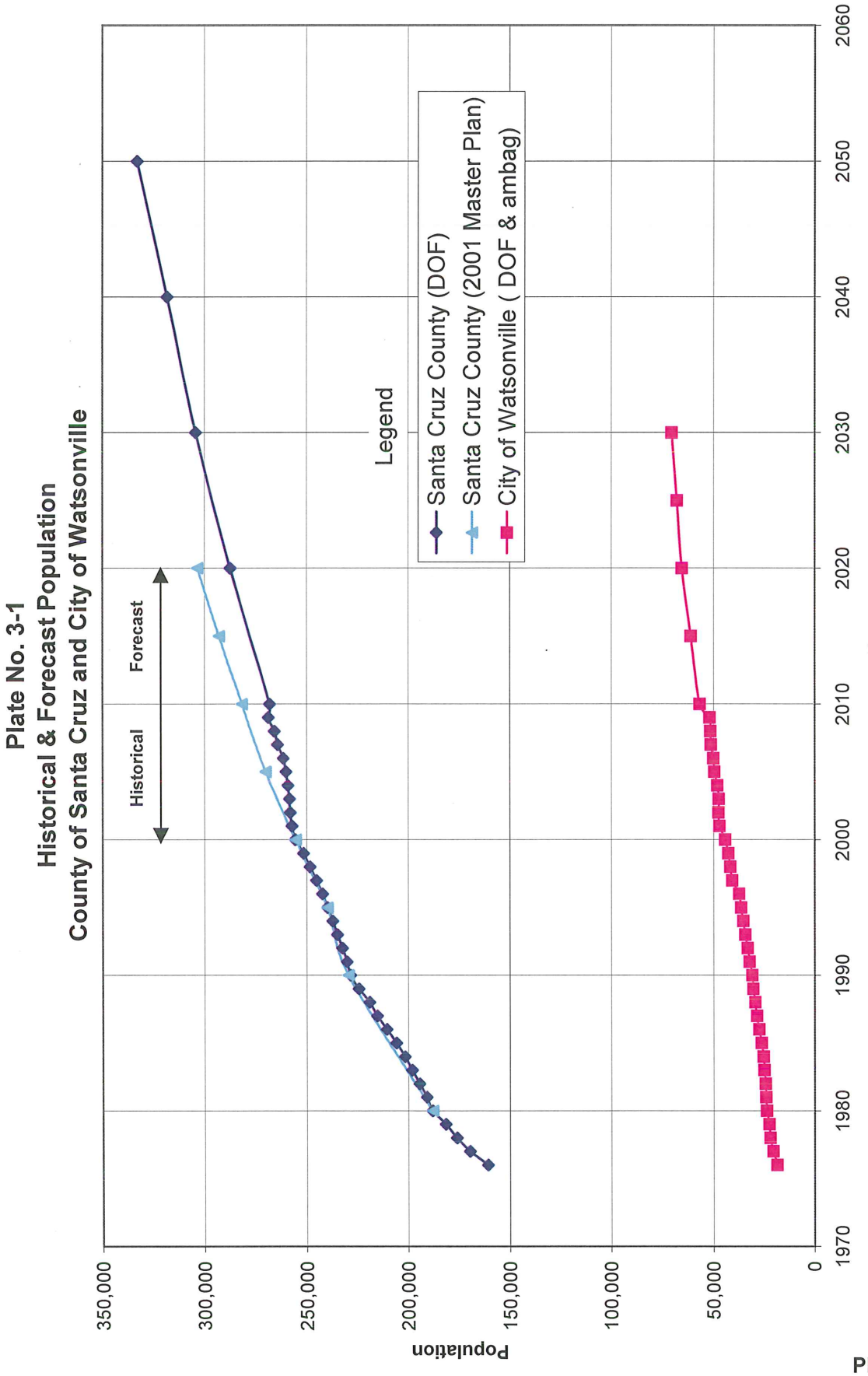
Table No. 3-12
Watsonville Municipal Airport
Forecast Annual Operations by Aircraft Type - Fixed Wing Aircraft - Airport Forecasts

	Annual Operations											
	Itinerant				Local[3]				Total			
Year	Jet Engine	Twin Engine Non Jet	Single Engine Non Jet	Total	Jet Engine	Twin Engine Non Jet	Single Engine Non Jet	Total	Jet[1] Engine	Twin Engine Non Jet[2]	Single Engine Non Jet	Total
1985												
1990												181,000
1995												106,600
2000												120,000
2005												126,890
2010	1,400	10,400	70,550	82,350	0	2,600	50,050	52,650	1,400	13,000	120,600	135,000
2015	1,600	11,200	75,040	87,840	0	2,800	53,360	56,160	1,600	14,000	128,400	144,000
2020	1,900	12,000	79,430	93,330	0	3,000	56,670	59,670	1,900	15,000	136,100	153,000
2025	2,200	12,800	83,515	98,515	0	3,200	59,785	62,985	2,200	16,000	143,300	161,500
2030	2,600	13,600	87,500	103,700	0	3,400	62,900	66,300	2,600	17,000	150,400	170,000

[1]Assumed annual growth rate of 1.3% based on FAA Fact Sheet - Fiscal Years 2010-30.

[2]Assumed twin-engine non-jet operations to be approximately 10% of total operations.

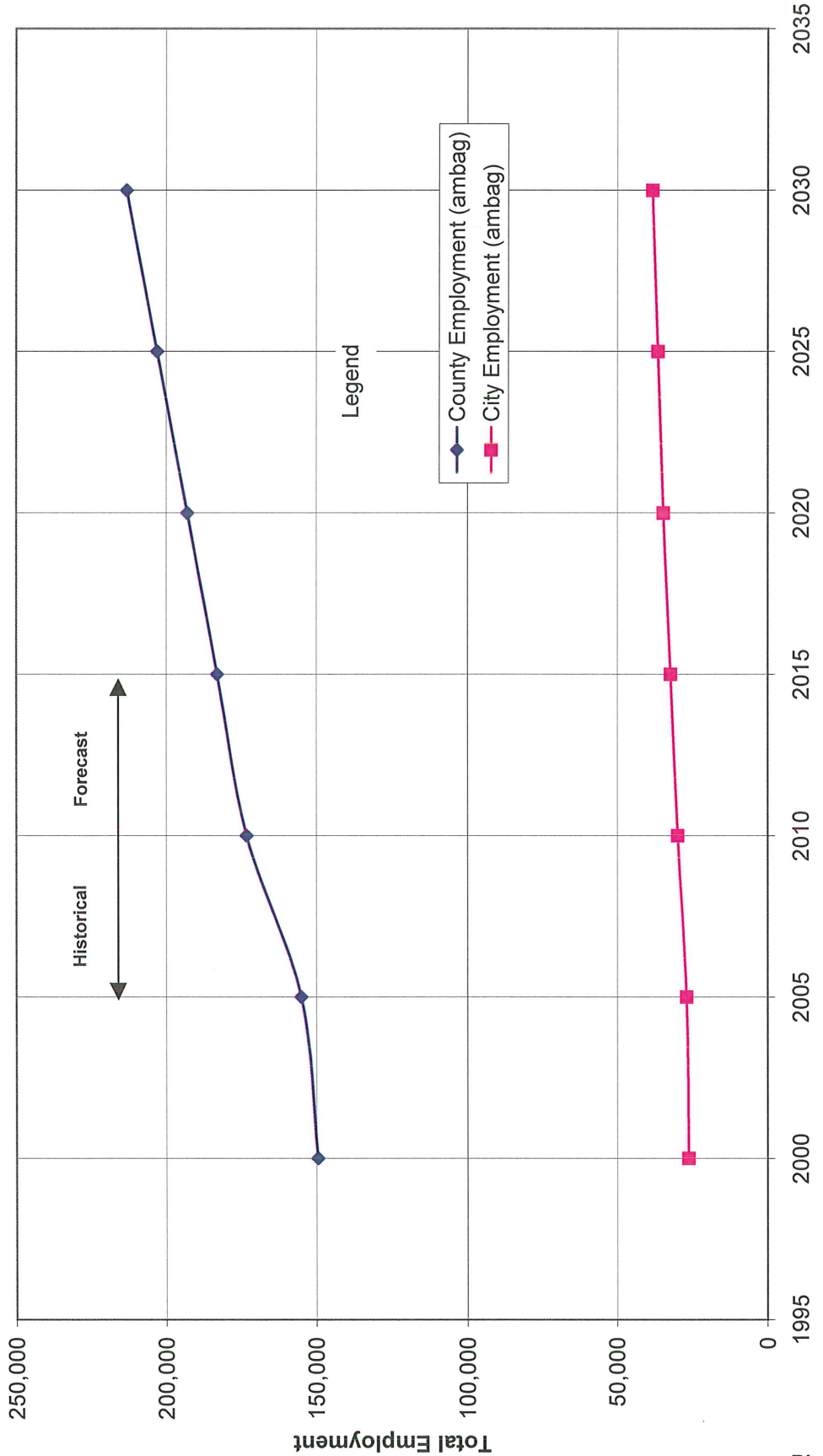
[3]Local operations for both twin engine and single engine non jet aircraft assumed to be 20% of total operations.



Sources:
California Department of Finance (DOF)
Association of Monterey Bay Area Governments (ambag)
2001 Watsonville Municipal Airport Master Plan (2001 Master Plan)
Prepared by: Reinard W. Brandley, Consulting Airport Engineer

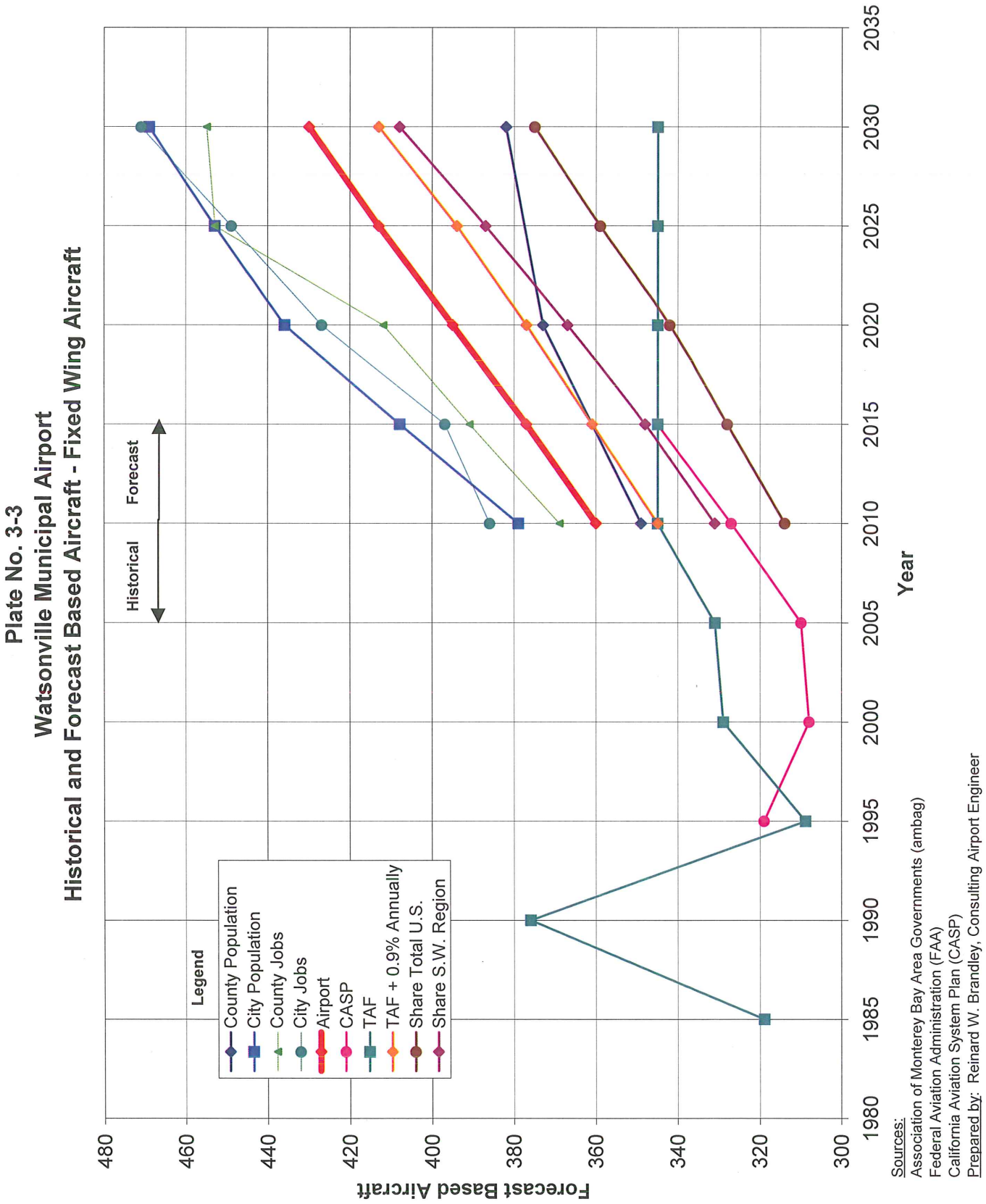
Plate No. 3-1

Plate No. 3-2
Historical & Forecast Employment
County of Santa Cruz and City of Watsonville



Sources:
Association of Monterey Bay Area Governments (ambag)
Prepared by: Reinard W. Brandley, Consulting Airport Engineer

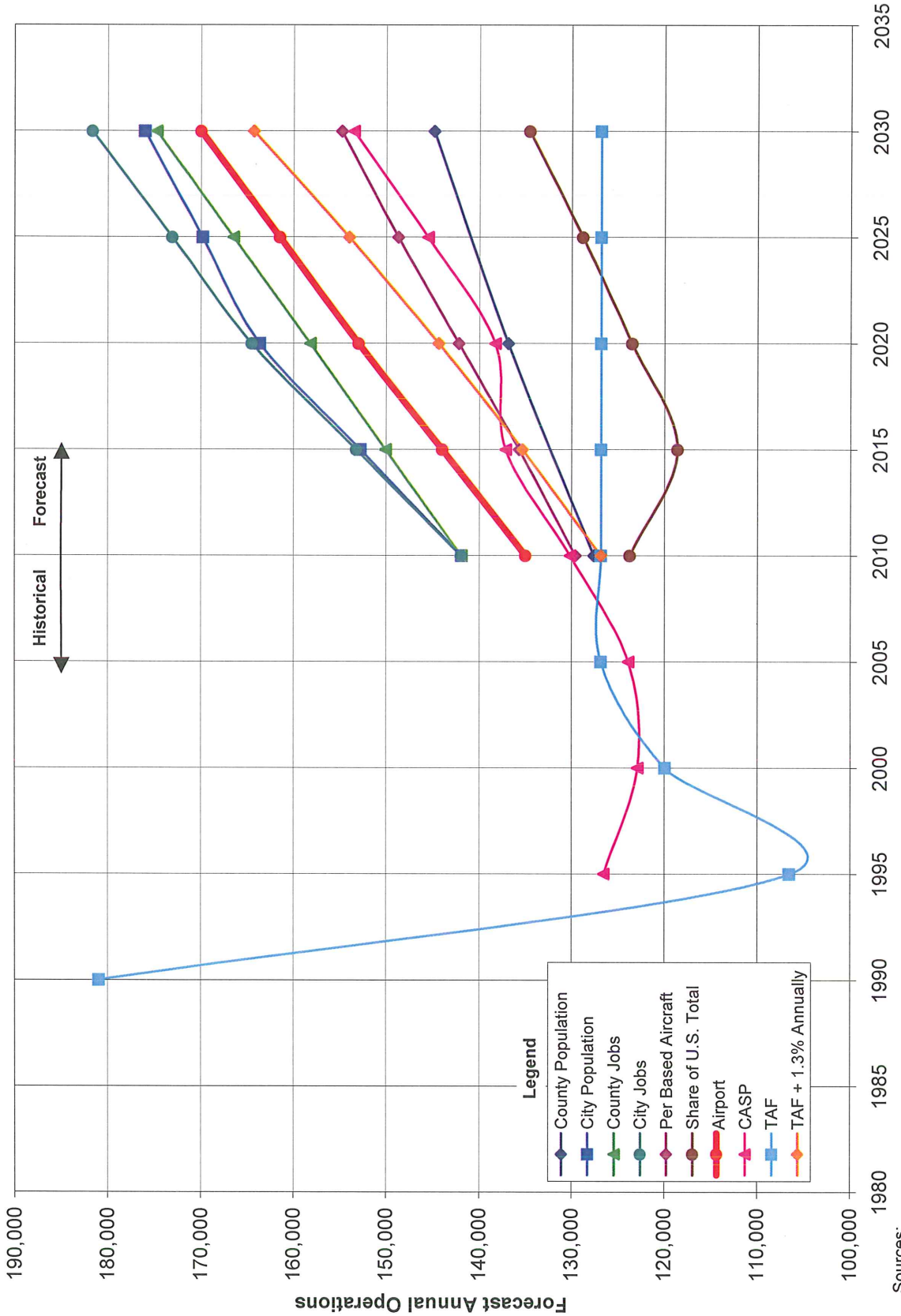
Plate No. 3-2



Sources:
Association of Monterey Bay Area Governments (ambag)
Federal Aviation Administration (FAA)
California Aviation System Plan (CASP)
Prepared by: Reinard W. Brandley, Consulting Airport Engineer

Plate No. 3-3

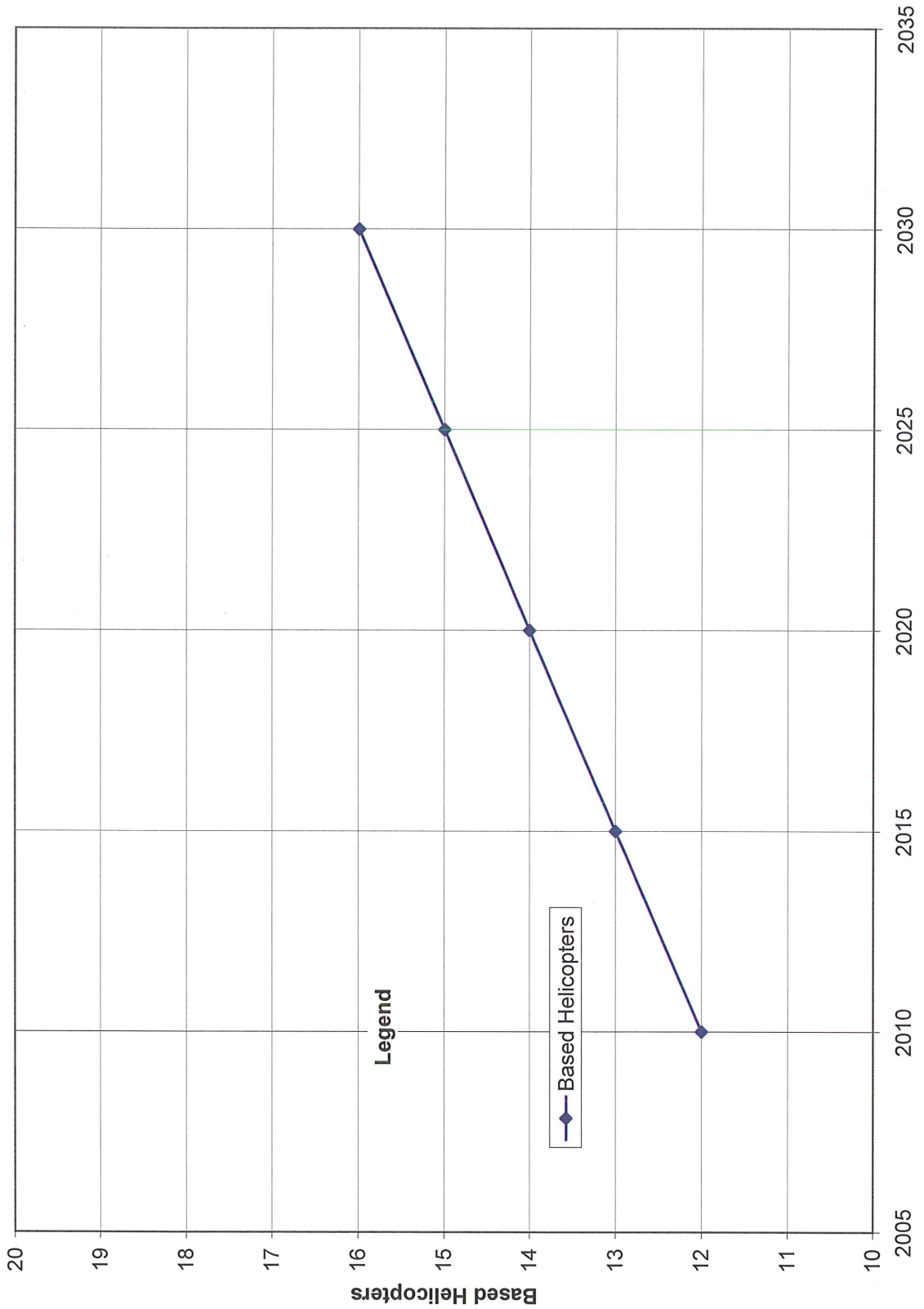
Plate No. 3-4
Watsonville Municipal Airport
Historical and Forecast Annual Operations - Fixed Wing Aircraft



Sources:
Federal Aviation Administration (FAA)
California Aviation System Plan (CASP)
Watsonville Municipal Airport Statistics
Prepared by: Reinard W. Brandley, Consulting Airport Engineer

Plate No. 3-4

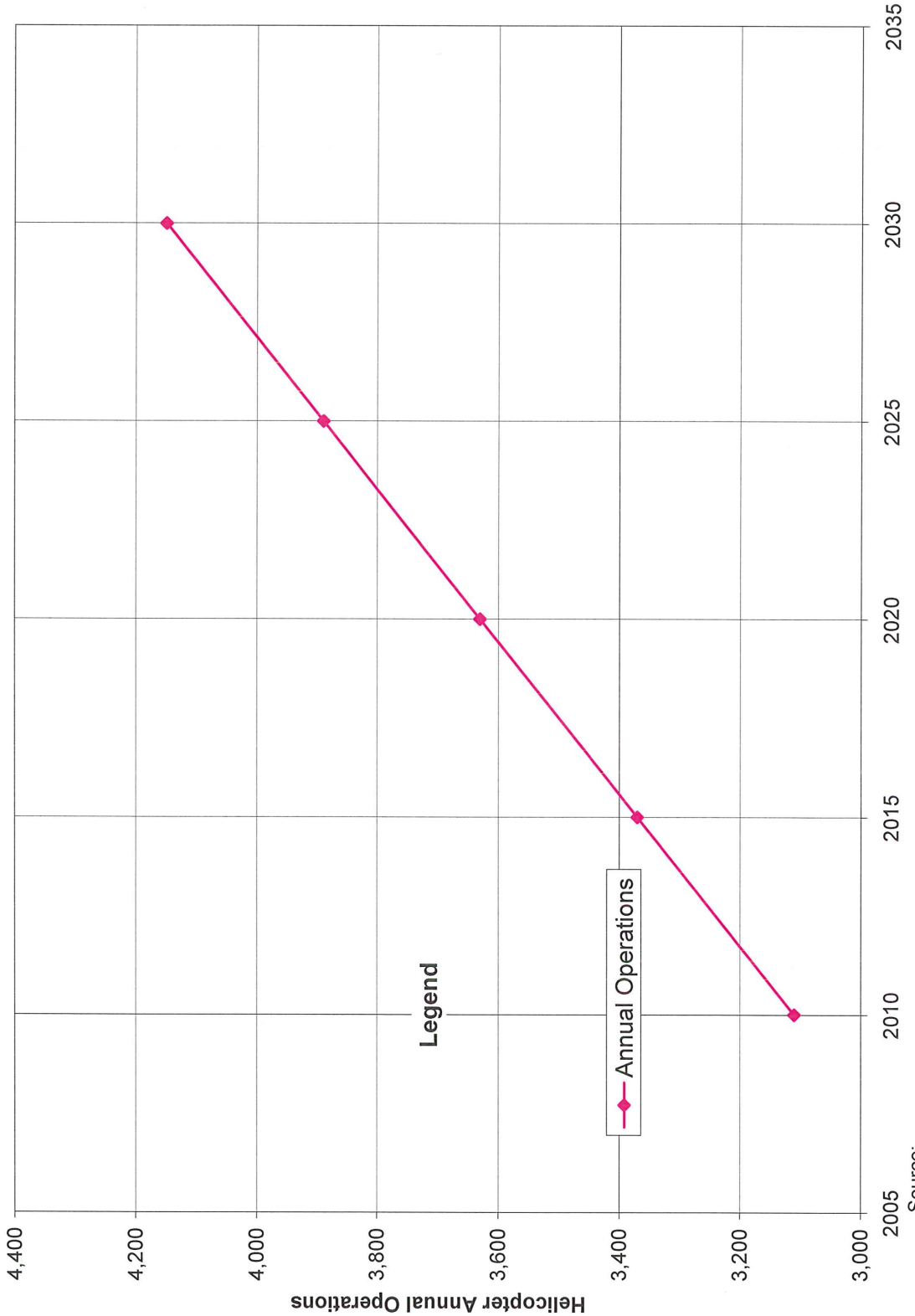
Plate No. 3-5
Watsonville Municipal Airport
Forecast Based Helicopters



Source:
Watsonville Municipal Airport Statistics
Prepared by: Reinard W. Brandley, Consulting Airport Engineer

Plate No. 3-5

Plate No. 3-6
Watsonville Municipal Airport
Forecast Helicopter Annual Operations



Source: Watsonville Municipal Airport Statistics
Prepared by: Reinard W. Brandley, Consulting Airport Engineer

Plate No. 3-6