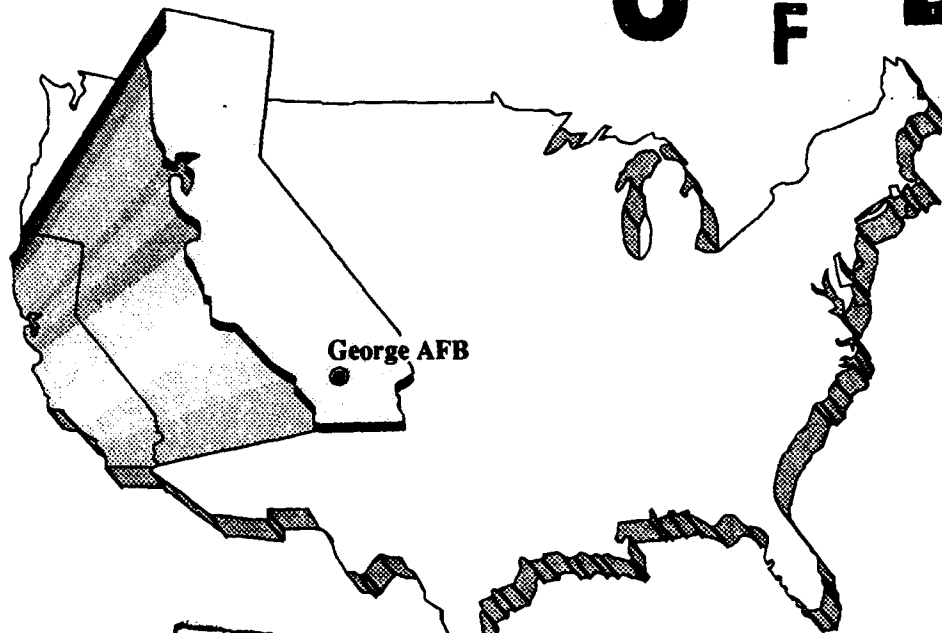


AD-A281 258



DRAFT
SOCIOECONOMIC IMPACT ANALYSIS
STUDY
September 1991

DTIC
ELECTE
JUL 08 1984
S F D



This document has been approved
for public release and sale; its
distribution is unlimited.

DISPOSAL AND REUSE OF
GEORGE AIR FORCE BASE, CALIFORNIA

94-20854



27386

DTIC QUALITY INSPECTED 6

94 7 7 068

**ERRATA SHEET
GEORGE AFB
DISPOSAL AND REUSE
SOCIOECONOMIC IMPACT ANALYSIS STUDY**

1. Page S-1, fourth paragraph, first sentence—change beginning to "This Socioeconomic Impact Analysis Study provides assistance to local governments and redevelopment agencies and addresses the"
2. Page S-1, next to last paragraph, first sentence—replace with "George AFB is currently the home of the 35th Fighter Wing, under TAC."
3. Page S-1, fifth paragraph, second sentence—change "these Air Force activities" to "this Air Force activity."
4. Page S-4—replace with Figure S-1 from the EIS. See attached replacement figure on page 5.
5. Page S-6—delete the dot on the first line of the page.
6. Page 1-4, second paragraph under Section 1.4, line 3—delete the word "for" after "is required."
7. Page 1-11, first paragraph under Section 1.4.4, fourth line and last line—delete "open space" and add "vacant land."
8. Page 1-14, next to last paragraph, first sentence—delete "650 jobs" and add "1,000 jobs."
9. Page 2-10, second paragraph, first sentence—change beginning to "In addition to its primary role as home of the 35th Fighter Wing under TAC, the base offers..."
10. Page 3-1, Section 3.1, first paragraph, line 2—delete "region of influence" and the parentheses around ROI.
11. Page 3-1, first paragraph, line 6—delete "up to base closure in 1993" and replace with "through 1993, the first year following base closure."
12. Page 3-7, Section 3.2.5, last line and Section 3.2.6, last line—change "George AFB Closure and Reuse EIS" to "George AFB Disposal and Reuse EIS."
13. Page 3-8, Section 3.3, first paragraph, line 2—change "both for the post-closure baseline" to "for post-closure conditions."
14. Page 3-8, Section 3.3.1, second paragraph, line 2—change "for the future baseline" to "for post-closure conditions."
15. Page 3-16, third paragraph, last sentence—delete repeated phrase "shortfalls experienced by school districts."
16. Page 3-36, line 3—change "D'Errice" to "D'Errico."

**ERRATA SHEET
GEORGE AFB
(Continued)**

17. Page 3-36, Table 3.4-11 – Realign as follows:

San Bernardino County
City of Adelanto
Town of Apple Valley
City of Hesperia
City of Victorville
Rest of Victor Valley
Riverside County

18. Page 3-41, Table 3.4-14 – See attached replacement table on page 6.

19. Page 3-49, Table 3.4-17 – Realign as follows:

San Bernardino County
City of Adelanto
Town of Apple Valley
City of Hesperia
City of Victorville
Rest of Victor Valley
Riverside County

20. Page 3-53, Table 3.4-18 – Realign as follows:

San Bernardino County
City of Adelanto
Town of Apple Valley
City of Hesperia
City of Victorville
Rest of Victor Valley
Riverside County

21. Page 3-71, third paragraph, line 2 – change "George AFB Closure and Reuse EIS" to "George AFB Disposal and Reuse EIS."
22. Page 3-72, first paragraph, line 5 – change "Figure 3.4-19" to "Figure 3.2-11."
23. Page 3-72, first paragraph, last 2 lines and second paragraph, line 3 – change "George AFB Closure and Reuse EIS" to "George AFB Disposal and Reuse EIS."
24. Page 3-72, last paragraph, first sentence – change "approximately two hours" to "approximately two to three hours."

**ERRATA SHEET
GEORGE AFB
(Continued)**

25. Page 3-74, first paragraph, last 2 lines – change "George AFB Closure and Reuse EIS" to "George AFB Disposal and Reuse EIS."
26. Page 3-76, first paragraph, last 2 lines – change "George AFB Closure and Reuse EIS" to "George AFB Disposal and Reuse EIS."
27. Page 3-78, Table 3.4-29 – See attached replacement table on page 7.
28. Page 4-1, fifth paragraph, last line – change "open space and recreation" to "vacant land and recreation."
29. Page 4-2, first paragraph, third sentence – change "recreation and open spaces" to "recreation and vacant land."
30. Page 4-2, second paragraph, third sentence – change "remain as open space" to "remain as vacant land."
31. Page 4-2, third paragraph, second sentence – change "allocated as open space" to "allocated as vacant land."
32. Page 4-28, Tables 4.3-1 and 4.3-2 – Realign as follows:

San Bernardino County
City of Adelanto
Town of Apple Valley
City of Hesperia
City of Victorville
33. Page 4-31, Tables 4.3-3, 4.3-4, and 4.3-5 – Realign as follows:

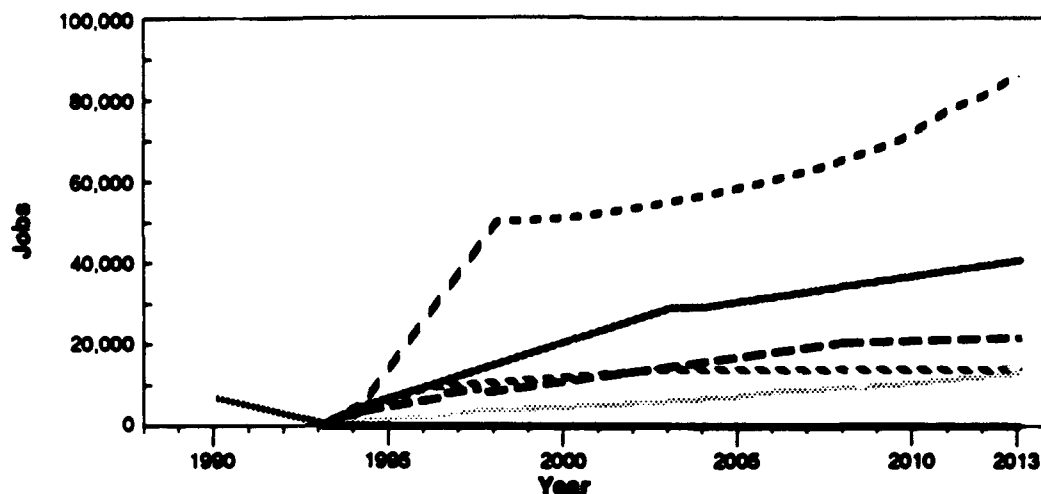
San Bernardino County
City of Adelanto
Town of Apple Valley
City of Hesperia
City of Victorville
34. Page 4-53, Section 4.3.6.4, first sentence – change "see subsection 4.3.6.1" to "see Section 4.3.6.1."
35. Page 4-59, second paragraph, third sentence – change "change existing statues" to "change existing statutes."

**ERRATA SHEET
GEORGE AFB
(Continued)**

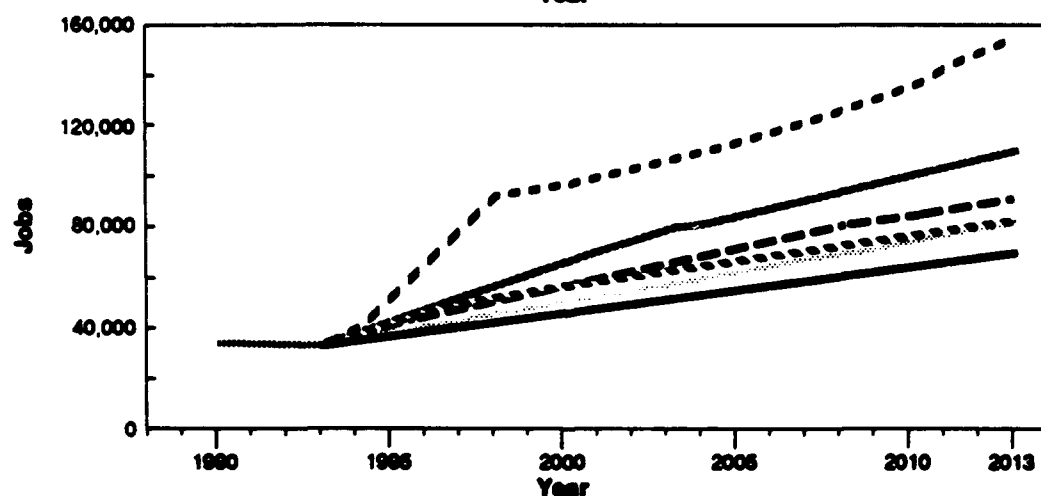
36. Page 4-61, second full paragraph, second line from bottom-change "inparted" to "impacted."
37. Page 4-69, first paragraph, line 4-change "inparted" to "impacted."
38. Page 4-70, first paragraph, line 2-change "inparted" to "impacted."
39. Page 4-70, second paragraph, fourth line from bottom-change "imported" to "impacted."
40. Page 4-71, third paragraph, second line from bottom-change "imported" to "impacted."
41. Page 4-73, fourth paragraph, second line from bottom-change "imported" to "impacted."
42. Page 4-78, third paragraph, second line from bottom-change "imported" to "impacted."
43. Page 4-81, second paragraph last line-change "parks and open space" to "parks and vacant land."
44. Page 4-84, first paragraph, last line – change "parks and open space" to "parks and vacant land."
45. Page 4-84, sixth paragraph, last line – change "parks and open space" to "parks and vacant land."
46. Page 4-85, fourth full paragraph, last sentence – change "parks and open space" to "parks and vacant land."
47. Page 4-89, Table 4.6-1, solid waste generation – See attached replacement table on page 8.
48. Page 4-90, Table 4.6-2 – solid waste generation – See attached replacement table on page 9.
49. Page 4-92, Table 4.6-3 – solid waste generation – See attached replacement table on page 10.
50. Page 4-93, Table 4.6-4 – solid waste generation – See attached replacement table on page 11.
51. Page 4-95, Table 4.6-5 – solid waste generation – See attached replacement table on page 12.
52. Page 4-99, second paragraph, second sentence – change to read "by which 1,000 direct jobs."
53. Page 4-101, Table 4.8-1 – See attached replacement table on page 13.
54. Page 5-15, fourth paragraph, third sentence – change "George AFB Closure and Reuse EIS" to "George AFB Disposal and Reuse EIS."
55. Page 6-2 – change "D'Errice" to "D'Errico."
56. Page 8-3 – revise to read "Hayley-Jane M. Wihongi, B.S., 1937."

ALTERNATIVE	1995	2005	2025	2035
Proposed Action	70	14,200	27,900	40,400
International Airport	70	48,800	54,700	65,900
Commercial Airport with Residential	70	8,000	13,800	21,200
General Aviation Center	70	10,000	13,200	13,100
Non-Aviation	70	3,400	5,800	12,200
No Action	70	70	70	70

**Site-Related
Victor Valley
Job Impacts**



**Site-Related
Victor Valley
Job Impacts**



**Total Victor Valley
Jobs with Impacts
of Alternatives**

EXPLANATION

- No Action/Post-Closure
- Proposed Action
- - - International Airport
- Non-Aviation
- - - Commercial Airport
- - - General Aviation Center
- Preclosure

Site-Related Victor Valley Employment Impacts and Total Employment Projections

George AFB, California

Data refer to employment impacts within the Victor Valley area of San Bernardino County directly or indirectly related to the George AFB site.

Figure S-1

Table 3.4-14. Enrollment Breakdown by School District, Fall 1990

School	Federal Enrollment	Non-Federal Enrollment	Total Enrollment	Federal Enrollment As % of Total	Non-Federal Enrollment As % of Total
Adelanto Elementary School	1,222	1,255	2,477	49.3	50.7
District Total					
Adelanto Elementary	24	547	571	4.2	95.8
Westside Elementary	37	540	577	6.4	93.6
Eagle Ranch Elementary ^(a)	10	136	146	6.8	93.2
George Elementary	499	11	510	97.8	2.2
Sheppard Elementary	652	21	673	96.9	3.1
Apple Valley Unified School District	300	9,488	9,788	3.0	97.0
Victor Elementary School District	350	3,988	4,338	8.0	92.0
Victor Valley Union High School District	471	4,239	4,710	10.0	90.0
Total	2,343	18,970	21,313	11.0	89.0

Notes: (a) Opened September 1990.

(b) Data unavailable for Hesperia Unified School District.

Sources: Adelanto Elementary School District, 1990; Hild, 1991; Warner, 1991; Mitchell, 1991.

**Table 3.4-29. Solid Waste Generation within the Victor Valley
(millions of cubic yards per year)**

	1987	1990	1993
Implicit Forecast	0.61	0.74	0.87
Closure Baseline	0.61	0.74	0.80
Change From Forecast	0.0	0.0	-0.07
Percent Change	0.0	0.0	-8.1

Sources: Based on San Bernardino County Solid Waste Management Department, 1989; 1991.

Table 4.6-1. Utility Demand Changes in the Victor Valley, Proposed Action

	1993	1996	2003	2013
Water Demand				
Upper Basin Region (in MGD)				
Post-Closure	40.4	49.7	59.0	77.5
Proposed Action	40.4	51.5	62.8	83.6
Change from Post-Closure	0.0	1.8	3.9	6.1
Percent Change	0.0	3.7	6.5	7.9
Wastewater Generation				
VVWRA Service Area (in MGD)				
Post-Closure	6.7	10.4	15.5	22.5
Proposed Action	6.7	10.8	16.6	24.3
Change from Post-Closure	0.0	0.4	1.1	1.8
Percent Change	0.0	4.0	6.8	8.0
Solid Waste Generation				
Victor Valley Landfills (in millions of cubic yards per year)				
Post-Closure	0.8	1.01	1.22	1.64
Proposed Action	0.8	1.05	1.30	1.77
Change from Post-Closure	0.0	0.04	0.08	0.13
Percent Change	0.0	1.5	3.2	5.3
Electricity Demand				
SCE Victorville District (in MWH/day)				
Post-Closure	4,801	6,192	7,592	10,275
Proposed Action	4,801	6,363	7,955	10,855
Change from Post-Closure	0	170	363	580
Percent Change	0.0	2.8	4.8	5.6
Natural Gas Demand				
SWG Victorville District (in therms/day)				
Post-Closure	305,680	446,616	588,696	875,154
Proposed Action	305,680	455,875	608,035	905,643
Change from Post-Closure	0	9,529	19,337	30,489
Percent Change	0.0	2.1	3.3	3.5

Sources: Based on Mojave Water Agency, 1990; Victor Valley Wastewater Reclamation Authority, 1988a; San Bernardino County Solid Waste Management Department, 1989; 1991; California Energy Commission, 1990; Southern California Edison Company, 1991; Southwest Gas Company, 1991.

Table 4.6-2. Utility Demand Changes in the Victor Valley, International Airport Alternative

	1993	1998	2003	2013
Water Demand				
Upper Basin Region (in MGD)				
Post-Closure	40.4	49.7	59.0	77.5
International Airport Alternative	40.4	57.0	67.3	90.4
Change from Post-Closure	0.0	7.3	8.3	13.0
Percent Change	0.0	14.7	14.1	16.7
Wastewater Generation				
VVWRA Service Area (in MGD)				
Post-Closure	6.7	10.4	15.5	22.5
International Airport Alternative	6.7	12.0	17.8	26.4
Change from Post-Closure	0.0	1.6	2.3	3.9
Percent Change	0.0	15.7	14.8	17.1
Solid Waste Generation				
Victor Valley Landfills (in millions of cubic yards per year)				
Post-Closure	0.8	1.01	1.22	1.64
International Airport Alternative	0.8	1.16	1.40	1.92
Change from Post-Closure	0.0	0.16	0.18	0.28
Percent Change	0.0	15.7	14.8	17.1
Electricity Demand				
SCE Victorville District (in MWH/day)				
Post-Closure	4,801	6,192	7,592	10,275
International Airport Alternative	4,801	6,867	8,376	10,511
Change from Post-Closure	0	674	784	1,236
Percent Change	0.0	10.9	10.3	12.0
Natural Gas Demand				
SWG Victorville District (in therms/day)				
Post-Closure	305,680	446,616	588,698	875,154
International Airport Alternative	305,680	483,270	630,461	940,105
Change from Post-Closure	0	36,654	41,763	64,952
Percent Change	0.0	8.2	7.1	7.4

Sources: Based on Mojave Water Agency, 1990; Victor Valley Wastewater Reclamation Authority, 1988a; San Bernardino County Solid Waste Management Department, 1989; 1991; California Energy Commission, 1990; Southern California Edison Company, 1991; Southwest Gas Company, 1991.

**Table 4.6-3. Utility Demand Changes in the Victor Valley, Commercial Airport
with Residential Alternative**

	1993	1998	2003	2013
Water Demand				
Upper Basin Region (in MGD)				
Post-Closure	40.4	49.7	59.0	77.5
Commercial Airport with Residential				
Alternative	40.4	50.8	60.9	80.7
Change from Post-Closure	0.0	1.1	2.0	3.2
Percent Change	0.0	2.3	3.4	4.2
Wastewater Generation				
VWRA Service Area (in MGD)				
Post-Closure	6.7	10.4	15.5	22.5
Commercial Airport with Residential				
Alternative	6.7	10.7	16.1	23.5
Change from Post-Closure	0.0	0.3	0.5	1.0
Percent Change	0.0	2.5	3.5	4.2
Solid Waste Generation				
Victor Valley Landfills (in millions of cubic yards per year)				
Post-Closure	0.8	1.01	1.22	1.64
Commercial Airport with Residential				
Alternative	0.8	1.03	1.26	1.71
Change from Post-Closure	0.0	0.02	0.04	0.07
Percent Change	0.0	2.5	3.5	4.2
Electricity Demand				
SCE Victorville District (in MWH/day)				
Post-Closure	4,801	6,192	7,592	10,275
Commercial Airport with Residential				
Alternative	4,801	6,298	7,778	10,582
Change from Post-Closure	0	106	186	307
Percent Change	0.0	1.7	2.5	3.0
Natural Gas Demand				
SWG Victorville District (in therms/day)				
Post-Closure	305,680	446,616	588,698	875,154
Commercial Airport with Residential				
Alternative	305,680	452,367	598,628	891,293
Change from Post-Closure	0	5,721	9,930	16,139
Percent Change	0.0	1.3	1.7	1.8

Sources: Based on Mojave Water Agency, 1990; Victor Valley Wastewater Reclamation Authority, 1988a; San Bernardino County Solid Waste Management Department, 1989; 1991; California Energy Commission, 1990; Southern California Edison Company, 1991; Southwest Gas Company, 1991.

Table 4.6-4. Utility Demand Changes in the Victor Valley, General Aviation Center Alternative

	1993	1998	2003	2013
Water Demand				
Upper Basin Region (in MGD)				
Post-Closure	40.4	49.7	59.0	77.5
General Aviation Center Alternative	40.4	51.2	61.0	79.7
Change From Post-Closure	0.0	1.5	2.0	2.2
Percent Change	0.0	3.0	3.5	2.9
Wastewater Generation				
VVWRA Service Area (in MGD)				
Post-Closure	6.7	10.4	15.5	22.5
General Aviation Center Alternative	6.7	10.7	16.1	23.2
Change From Post-Closure	0.0	0.3	0.6	0.7
Percent Change	0.0	3.2	3.6	2.9
Solid Waste Generation				
Victor Valley Landfills (in millions of cubic yards per year)				
Post-Closure	0.8	1.01	1.22	1.64
General Aviation Center Alternative	0.8	1.04	1.26	1.69
Change From Post-Closure	0.0	0.03	0.04	0.05
Percent Change	0.0	3.2	3.6	2.9
Electricity Demand				
SCE Victorville District (in MWH/day)				
Post-Closure	4,801	6,192	7,592	10,275
General Aviation Center Alternative	4,801	6,329	7,784	10,486
Change From Post-Closure	0	137	192	211
Percent Change	0.0	2.2	2.5	2.1
Natural Gas Demand				
SWG Victorville District (in therms/day)				
Post-Closure	305,680	446,616	588,698	875,154
General Aviation Center Alternative	305,680	454,072	598,943	886,263
Change From Post-Closure	0	7,456	10,245	11,110
Percent Change	0.0	1.7	1.7	1.3

Sources: Based on Mojave Water Agency, 1990; Victor Valley Wastewater Reclamation Authority, 1988; San Bernardino County Solid Waste Management Department, 1989; 1991; California Energy Commission, 1990; Southern California Edison Company, 1991; Southwest Gas Company, 1991.

Table 4.6-5. Utility Demand Changes in the Victor Valley, Non-Aviation Alternative

	1993	1998	2003	2013
Water Demand				
Upper Basin Region (in MGD)				
Post-Closure	40.4	49.7	59.0	77.5
Non-Aviation Alternative	40.4	50.4	60.2	80.3
Change from Post-Closure	0.0	0.7	1.3	2.9
Percent Change	0.0	1.4	2.2	3.7
Wastewater Generation				
VWRA Service Area (in MGD)				
Post-Closure	6.7	10.4	15.5	22.5
Non-Aviation Alternative	6.7	10.6	15.9	23.4
Change from Post-Closure	0.0	0.2	0.4	0.8
Percent Change	0.0	1.5	2.3	3.8
Solid Waste Generation				
Victor Valley Landfills (in millions of cubic yards per year)				
Post-Closure	0.8	1.01	1.22	1.64
Non-Aviation Alternative	0.8	1.02	1.25	1.70
Change from Post-Closure	0.0	0.02	0.03	0.06
Percent Change	0.0	1.5	2.3	3.8
Electricity Demand				
SCE Victorville District (in MWH/day)				
Post-Closure	4,801	6,192	7,592	10,275
Non-Aviation Alternative	4,801	6,257	7,714	10,547
Change from Post-Closure	0	64	122	273
Percent Change	0.0	1.0	1.6	2.7
Natural Gas Demand				
SWG Victorville District (in therms/day)				
Post-Closure	305,680	446,616	588,698	875,154
Non-Aviation Alternative	305,680	450,118	595,214	889,479
Change from Post-Closure	0	3,502	6,516	14,325
Percent Change	0.0	0.8	1.1	1.6

Sources: Based on Mojave Water Agency, 1990; Victor Valley Wastewater Reclamation Authority, 1988a; San Bernardino County Solid Waste Management Department, 1989; 1991; California Energy Commission, 1990; Southern California Edison Company, 1991; Southwest Gas Company, 1991.

Table 4.8-1. Socioeconomic Effects of Federal Transfers and Independent Land Use Concepts

Agency/Concept	Employment/Population	Relevant Alternative	Net Effect
U.S. Department of Justice/ Prison	1,000 direct jobs; 2,375 inmates	Proposed Action	Reduced industrial development; reduction of 2,480 on-site jobs.
		International Airport	Reduced industrial development; reduction of 2,480 on-site jobs.
		Commercial Airport with Residential	Reduced residential development; net increase of 1,000 on-site jobs; residential opportunities by proximity to Federal Correctional Complex.
		General Aviation Center	Reduced open space; net increase of 1,000 on-site jobs; residential opportunities by proximity to Federal Correctional Complex.
U.S. Department of the Interior/Recreational Facilities	5 direct jobs	Non-Aviation	Same effects as for Commercial Airport with Residential Alternative.
		Proposed Action	Reduced commercial development; net reduction of 960 on-site jobs.
		International Airport	Reduced business park usage; net reduction of 205 on-site jobs.
		Non-Aviation	Reduced residential development; net increase of 5 direct jobs.
U.S. Department of Housing and Urban Development/ Alaska Circle	No direct jobs; no impact on population	Proposed Action	Reduced industrial development; net reduction of 677 on-site jobs; positive impact to homeless population in region.
		International Airport	Reduced industrial development; net reduction of 1,700 on-site jobs; positive impact to homeless population in region.
		All	Garage space for 7 vehicles; no socioeconomic effects.
U.S. Department of Transportation/Garage	None	All	
U.S. Department of Education/Schools	102 direct jobs; 1,161 students	Proposed Action	Reduced commercial development; net reduction of 578 jobs.
		International Airport	Reduced business park usage; net reduction of 45 jobs.
San Bernardino County Work Furlough Program/Dormitories	20 direct jobs; 200 inmates	Proposed Action	Reduced commercial development; net reduction of 480 on-site jobs.
		International Airport	Reduced industrial development; net reduction of 102 on-site jobs.
		All	Existing dormitories used to house inmates in program; potential for reduced demand for residential opportunities by proximity to inmates.
Victor Valley Medical Facilities/Private Medical Institution	60 direct jobs	All	Use of existing base hospital, probably for out-patient clinic, special purpose, or medical teaching facility.
		Proposed Action	Net reduction of 327 on-site jobs.
		International Airport	Net reduction of 915 on-site jobs.

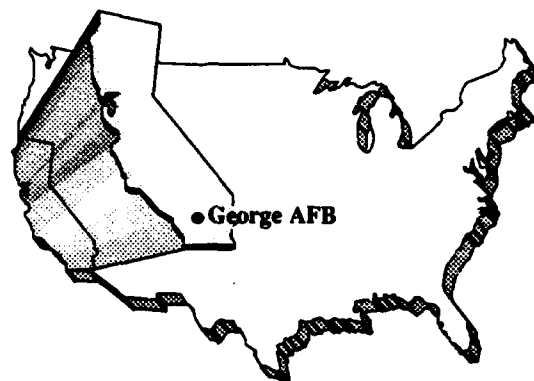
DRAFT

**SOCIOECONOMIC IMPACT ANALYSIS STUDY
DISPOSAL AND REUSE OF
GEORGE AIR FORCE BASE
CALIFORNIA**

SEPTEMBER 1991

Accession For	
NTIS CRA&I	<input checked="" type="checkbox"/>
DTIC TAB	<input type="checkbox"/>
Unannounced	<input type="checkbox"/>
Justification	
By <i>per tti</i>	
Distribution/	
Availability Codes	
Dist	Avail and/or Special
A-1	

U.S. Department of the Air Force



SUMMARY

SUMMARY

On 3 May 1988, Secretary of Defense established the Commission on base Realignment and Closure to examine the issue of military installation realignments and closures. On 24 October 1988, the Congress and the President endorsed the Commission and its charter by passing the Defense Authorization Amendments and Base Closure and Realignment Act (BCRA) (Public Law 100-526).

The Commission submitted its report to the Secretary of Defense on 29 December 1988. George Air Force Base (AFB), California, was one of the bases recommended by the Commission for closure. The Secretary of Defense approved the Commission's recommendations on 5 January 1989 and announced that the Department of Defense would implement them.

BCRA also requires the Secretary of Defense to comply with the National Environmental Policy Act (NEPA) in the implementation of the base closures and realignments. The Secretary of Defense, through the Air Force, is preparing the required NEPA documents for the base closures. On 4 May 1990, the Air Force released the *Final Environmental Impact Statement for the Closure of George AFB*, which addressed environmental impacts associated with base closure. The *Record of Decision (ROD)* was signed on 20 June 1990. The *George AFB Disposal and Reuse Draft EIS*, currently available for public comment, analyzes environmental effects of the disposition of the base and its reuse under alternative redevelopment plans.

This *Socioeconomic Impact Analysis Study* is a companion document to these EISs and addresses the socioeconomic effects of closure and potential reuse of the base. The scope of this study includes economic activity, population and housing, public services, public finance, transportation, utilities, and airspace.

The primary role of George AFB is to provide a headquarters for the 831st Air Division, and a home for the 35th Tactical Training Wing and the 37th Tactical Fighter Wing. The transfer and consolidation of these Air Force activities to other Air Force bases in the United States has been initiated. The base contains an airfield, a hospital, residential areas, and other support facilities.

George AFB is located in the western Mojave Desert in southwestern San Bernardino County, California, in an area known locally as the Victor Valley. The base is bordered by the city of Adelanto to the west and southwest, and the city of Victorville to the southeast. Direct and secondary employment related to base activities, in the region composed of San Bernardino and Riverside counties, has decreased from more than 8,900 jobs in 1987 to less than 7,200 jobs in 1990. Employment due to residual base operations is expected to

continue declining from this level through 1992, and then level off at less than 70 jobs by the start of 1993.

If the base is placed in caretaker status and not reused for other purposes, most or all of the "mothballed" facilities would be restricted from access. Security and minimal maintenance activities would provide only limited employment opportunities on the base. A total of less than 70 direct and secondary jobs would be required to maintain the premises. This closure and caretaker scenario serves as the baseline and No-Action Alternative for this study.

George AFB is scheduled to close during a period of continued job and population growth in the Victor Valley, the rest of San Bernardino County, and in Riverside County. Even with the base closed, and assuming no reuse occurs through the year 2013, the Victor Valley population is projected to increase from about 197,200 in 1990 to about 285,500 in 2013. With the base closed and in caretaker status, the two-county region population is projected to increase from 2.3 million in 1990 to 4.2 million in 2013. These projections also incorporate the scheduled closure of Norton AFB in San Bernardino, and the transfer of some Norton AFB personnel to March AFB in Riverside.

This report analyzes the socioeconomic effects of five conceptual plans involving reuse of the base by private and public entities. All five plans are compared to projected post-closure conditions, and, as appropriate, to preclosure conditions. The alternative plans are the following:

- Proposed Action, or Commercial Airport Alternative
- International Airport Alternative
- Commercial Airport with Residential Alternative
- General Aviation Center Alternative
- Non-Aviation Alternative.

All five plans involve new construction and/or base renovation activity. These plans do not currently include such activities until cessation of residual base operations.

The Proposed Action, or Commercial Airport Alternative, utilizes the existing airfield and infrastructure at George AFB for several aviation-related and non-aviation-related uses. The primary function of the Proposed Action would be to provide the Victor Valley with a major commercial airport. Office, business, and industrial parks also are included in this plan, along with public ownership of the existing 9-hole golf course, and conversion or expansion of other recreational areas and facilities.

The International Airport Alternative is more ambitious than the Proposed Action. This alternative anticipates the service of as many as 25 million

passengers annually by the year 2013, and would make use of fewer existing facilities. The airfield would be expanded under this alternative to include about 6,300 acres currently off base, and would include a large hotel park in addition to aviation support facilities, a business park, and an industrial park. These plans would leave little or no space for the recreation areas planned in the Proposed Action.

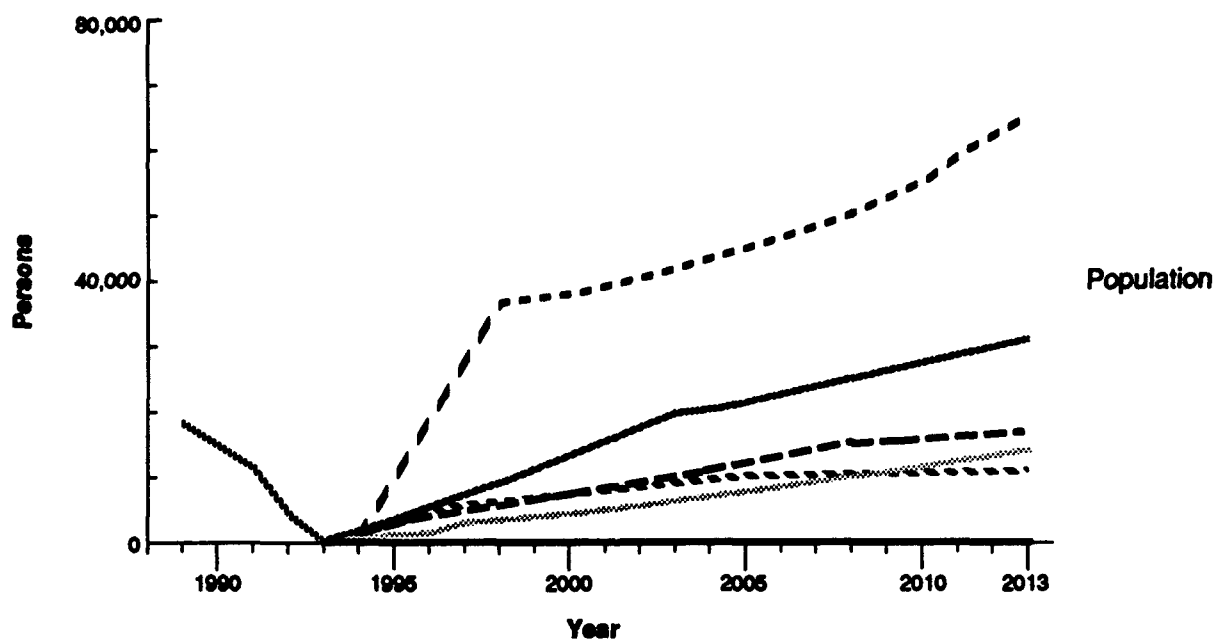
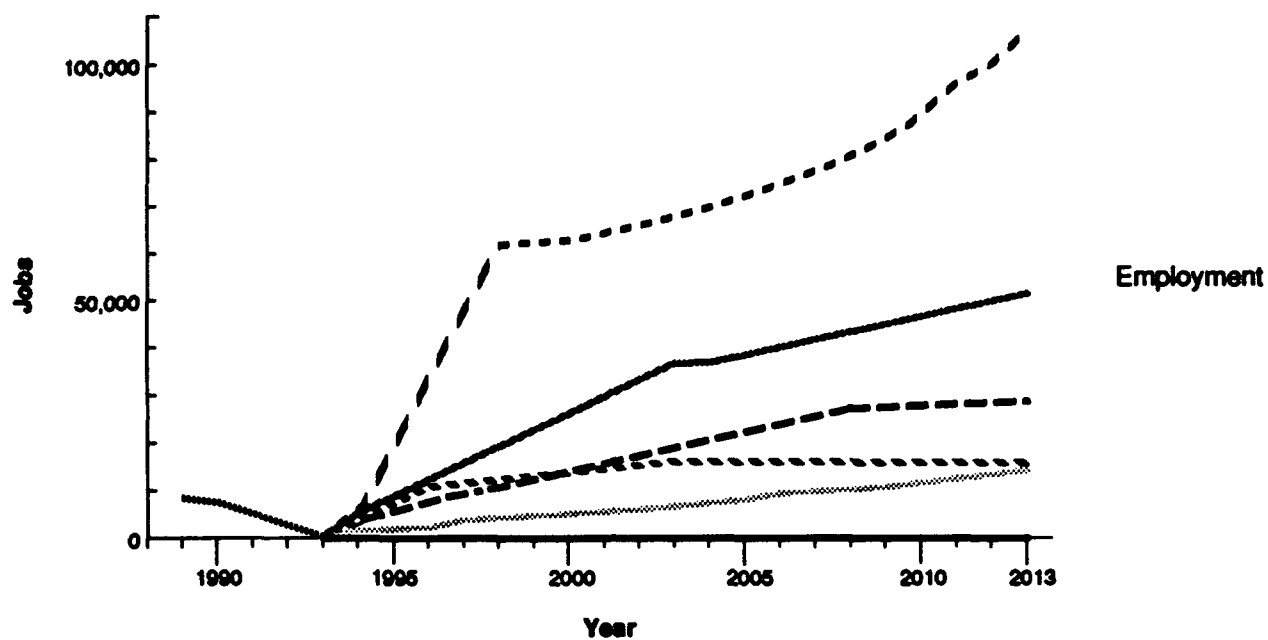
The Commercial Airport with Residential Alternative includes use of most of the existing airfield to serve as an airport comparable to that under the Proposed Action. This alternative emphasizes the use of remaining George AFB property for residential purposes, in response to the growing market demand for housing in the Victor Valley. An industrial park and a commercial retail area also are planned, along with some form of higher education (small college, vocational, or training facility), conversion of the base hospital to civilian uses, and some recreation areas.

The General Aviation Center Alternative focuses upon a variety of private aviation activities. A minimal amount of new construction is proposed; nearly all operations would reuse existing facilities. However, approximately 50 percent of the base has not been identified for development and, thus, is considered to remain inactive. Airfield activities and/or potential users identified include national air shows, corporate and private aviation, fixed base operations, and experimental and kit plane demonstrations.

The Non-Aviation Alternative reflects a combination of market demand and maximum use of existing facilities at George AFB. This plan includes reuse of runway and taxiway surfaces for roadways, industrial usage of existing airport facilities, and residential development of most of the rest of the base. A business park, a commercial retail area, use of the base hospital for civilian purposes, and use of existing recreation areas and facilities are planned.

The net effects of reuse on the communities in the vicinity of George AFB would vary with the reuse alternative developed. Figure S-1 illustrates the projected profile of future employment (both direct and secondary jobs) within the Victor Valley for each of the reuse alternatives, while Figure S-2 depicts associated Victor Valley population impacts. Key findings of this study include the following:

- The Proposed Action would build up to the point by 2013 where more than 51,000 direct and secondary jobs would be supported in San Bernardino and Riverside counties, a nearly six-fold increase over the 1987 levels supported by George AFB operations. Approximately 40,400 of these jobs would be in the Victor Valley. About 26,600 persons would relocate to the Victor Valley in response to these job opportunities, almost doubly compensating for the estimated loss of



EXPLANATION

- No Action/Post-Closure
- Proposed Action
- - - - - International Airport
- Non-Aviation
- - - - - Commercial Airport
- - - - - General Aviation Center
- Preclosure

Site-Related Regional* Population and Employment Effects

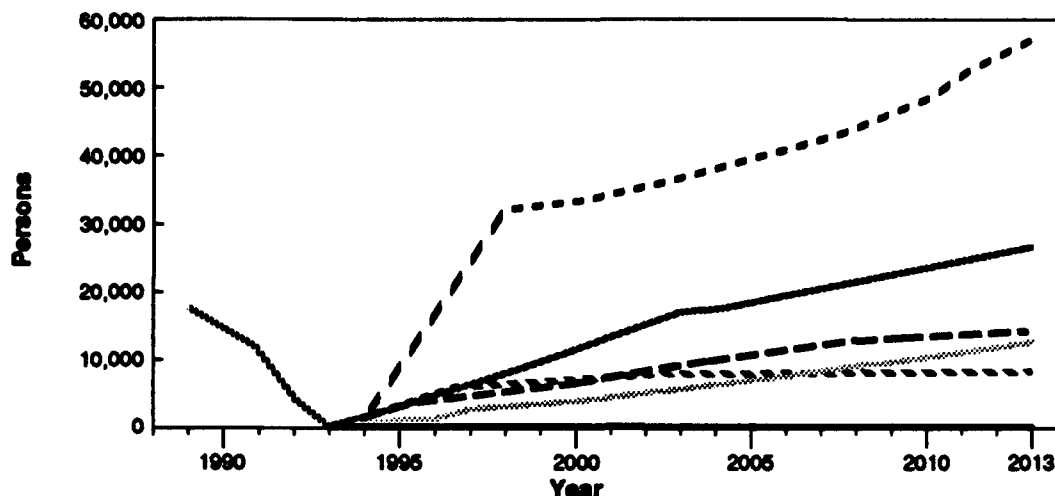
George AFB, California

* Data refer to population and employment impacts within San Bernardino and Riverside Counties directly or indirectly related to the George AFB site

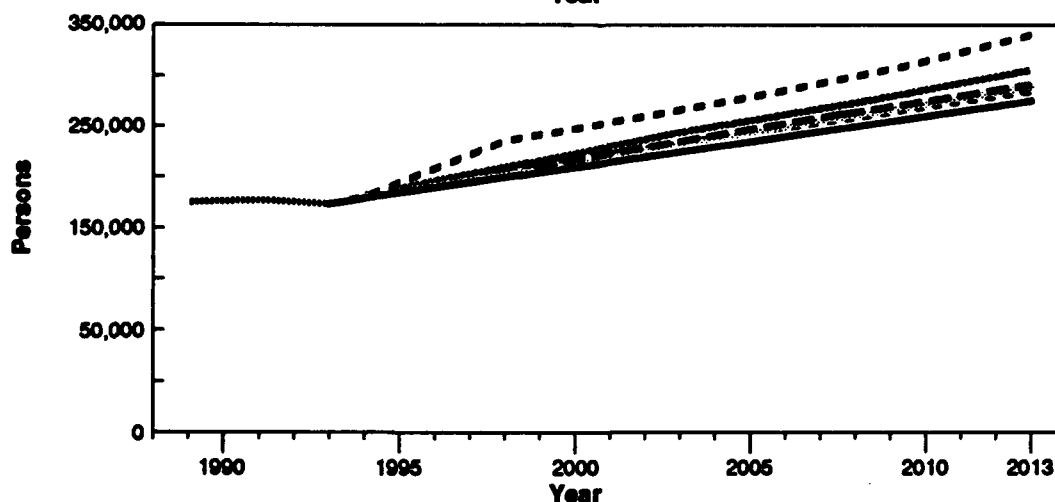
Figure S-1

ALTERNATIVE	1993	1998	2003	2013
Proposed Action	0	8,100	16,900	26,600
International Airport	0	32,000	36,400	56,700
Commercial Airport with Residential	0	5,000	8,700	14,100
General Aviation Center	0	5,700	7,800	8,500
Non-Aviation	0	3,100	5,700	12,500
No Action	0	0	0	0

**Site-Related
Victor Valley
Population
Impacts**



**Site-Related
Victor Valley
Population
Impacts**



**Total
Victor Valley
Population
with Impacts
of Alternatives**

EXPLANATION

- No Action/Post-Closure
- Proposed Action
- - - International Airport
- Non-Aviation
- - - Commercial Airport
- - - General Aviation Center
- Preclosure

Site-Related Victor Valley Population Impacts and Total Population Projections

George AFB, California

Figure S-2

Data refer to population impacts within the Victor Valley area of San Bernardino County directly or indirectly related to the George AFB site.

- about 14,200 persons associated with George AFB. Fiscal shortfalls associated largely with base closure would be reversed for most of the jurisdictions studied by the year 2000, with the notable exception of the Adelanto Elementary School District. Airspace made available as a result of base closure would be withdrawn for aviation use. This would restrict some flight operations under visual flight rules and some non-aviation uses. In some cases, certain uses would be prohibited, such as construction of high rise buildings in the clear zone.
- The International Airport Alternative would have much greater effects, supporting more than 105,000 direct and secondary jobs in San Bernardino and Riverside counties by 2013. About 85,900 of these jobs would be in the Victor Valley. This alternative would attract about 56,700 more people to the Victor Valley. Fiscal shortfalls largely associated with base closure would be reversed for all jurisdictions studied, except the Adelanto Elementary School District. This alternative could cause encroachment into Edwards AFB airspace, thereby adversely affecting mission accomplishment. Airspace made available as a result of base closure would be withdrawn for aviation use. This would restrict some flight operations under visual flight rules and some non-aviation uses. In some cases, certain land uses would be prohibited, such as construction of high rise buildings in the clear zone.
- The Commercial Airport with Residential Alternative would have smaller socioeconomic impacts, resulting in about 28,000 direct and secondary jobs in San Bernardino and Riverside counties by 2013. Approximately 21,200 of these jobs would be in the Victor Valley. This alternative would draw about 14,100 people to the Victor Valley. Fiscal shortfalls largely associated with base closure would be reversed by 2007 for most jurisdictions, but would not be recovered by 2013 for either the Adelanto Elementary School District or the Victor Valley Union High School District. Airspace made available as a result of base closure would be withdrawn for aviation use. This would restrict some flight operations under visual flight rules and some non-aviation uses. In some cases, certain land uses would be prohibited, such as construction of high rise buildings in the clear zone.
- The General Aviation Center Alternative would generate approximately 16,000 direct and secondary jobs in San Bernardino and Riverside counties by the year 2013. About 13,100 of these jobs would be in the Victor Valley. A projected population increase of 8,500 over the post-closure baseline is estimated by the year 2013 for the Victor Valley. Fiscal shortfalls largely associated with base closure would continue through 2013 for the Adelanto Elementary School District and the Victor Valley Union High School District. Airspace made available as a result of base closure would be withdrawn for aviation use. This would restrict some flight operations under visual flight rules and some non-aviation uses. In some cases, certain land uses would be prohibited, such as construction of high rise buildings in the clear zone.
- The Non-Aviation Alternative would support almost 14,000 direct and secondary jobs in San Bernardino and Riverside counties by 2013. Approximately 12,200 of these jobs would be in the Victor Valley. This

alternative would bring about 12,500 persons to the Victor Valley, and thus would approximately compensate for the population loss associated with cessation of George AFB operations. Fiscal shortfalls largely associated with base closure would still be evident by 2013, however, for the city of Adelanto, the Adelanto Elementary School District and the Victor Valley Union High School District.

- The No-Action Alternative would create approximately 70 direct and secondary jobs in San Bernardino and Riverside counties starting in 1993 and continuing through 2013. Nearly all of these jobs would be in the Victor Valley. No increases in site-related population are expected. Fiscal shortfalls in the absence of program adjustments would continue through 2013, and would be in excess of \$100,000 annually for the Adelanto Elementary School District, city of Victorville, Victor Elementary School District, Victor Valley Union High School District, and Apple Valley Unified School District.

THIS PAGE INTENTIONALLY LEFT BLANK

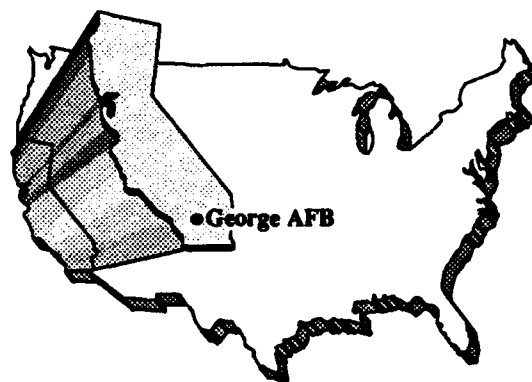


TABLE OF CONTENTS

TABLE OF CONTENTS

	Page
1.0 INTRODUCTION.....	1-1
1.1 PURPOSE OF THE STUDY.....	1-1
1.2 CLOSURE OF GEORGE AFB.....	1-2
1.3 PREVIOUS BASE CLOSURES.....	1-3
1.4 REUSE OPTIONS.....	1-4
1.4.1 Proposed Action.....	1-4
1.4.2 International Airport Alternative.....	1-8
1.4.3 Commercial Airport with Residential Alternative.....	1-9
1.4.4 General Aviation Center Alternative.....	1-11
1.4.5 Non-Aviation Alternative.....	1-12
1.4.6 No-Action Alternative.....	1-13
1.4.7 Other Land Use Concepts.....	1-14
2.0 COMMUNITY SETTING AND BASE PROFILE.....	2-1
2.1 COMMUNITY SETTING.....	2-1
2.2 PRECLOSURE BASE PROFILE.....	2-7
2.2.1 Employment.....	2-7
2.2.2 Population and Housing.....	2-7
2.2.3 Payrolls.....	2-9
2.2.4 Expenditures.....	2-9
2.2.5 Programs and Services.....	2-10
2.2.6 Educational Facilities.....	2-11
2.3 CLOSING BASE PROFILE.....	2-11
2.3.1 Closure Profile.....	2-11
2.3.2 Post-Closure (Caretaker Status).....	2-11
3.0 EVALUATION AND CHARACTERIZATION OF SOCIOECONOMIC RESOURCES.....	3-1
3.1 REGION OF INFLUENCE AND AREA OF CONCENTRATED STUDY.....	3-1
3.1.1 Economic Activity.....	3-3
3.1.2 Population and Housing.....	3-3
3.1.3 Public Services.....	3-3
3.1.4 Public Finances.....	3-4
3.1.5 Transportation.....	3-4
3.1.6 Utilities.....	3-4
3.1.7 Airspace.....	3-5
3.2 DATA SOURCES.....	3-5
3.2.1 Economic Activity.....	3-5
3.2.2 Population and Housing.....	3-5
3.2.3 Public Services.....	3-6
3.2.4 Public Finances.....	3-7
3.2.5 Transportation.....	3-7
3.2.6 Utilities.....	3-7
3.2.7 Airspace.....	3-7
3.3 METHODS.....	3-8
3.3.1 Economic Activity.....	3-8
3.3.2 Population and Housing.....	3-12
3.3.3 Public Services.....	3-13
3.3.4 Public Finances.....	3-14
3.3.5 Transportation.....	3-16
3.3.6 Utilities.....	3-18
3.3.7 Airspace.....	3-19

TABLE OF CONTENTS (CONT'D)

	Page
3.4 AFFECTED ENVIRONMENT.....	3-21
3.4.1 Economic Activity	3-23
3.4.2 Population and Housing.....	3-29
3.4.2.1 Population	3-29
3.4.2.2 Housing.....	3-31
3.4.3 Public Services.....	3-33
3.4.3.1 Governmental Structure	3-33
3.4.3.2 Public Education.....	3-37
3.4.3.3 Police Protection.....	3-47
3.4.3.4 Fire Protection	3-50
3.4.3.5 Health Care	3-53
3.4.3.6 Recreation	3-56
3.4.4 Public Finances	3-57
3.4.5 Transportation	3-70
3.4.5.1 Roadways.....	3-70
3.4.5.2 Air Transportation	3-72
3.4.5.3 Railroads	3-73
3.4.6 Utilities	3-74
3.4.6.1 Water Supply.....	3-74
3.4.6.2 Wastewater.....	3-75
3.4.6.3 Solid Waste	3-76
3.4.6.4 Energy	3-78
3.4.7 Airspace.....	3-80
4.0 SOCIOECONOMIC EFFECTS OF PROPOSED ACTION AND REUSE ALTERNATIVES ...	4-1
4.1 ECONOMIC ACTIVITY	4-4
4.1.1 Proposed Action	4-4
4.1.2 International Airport Alternative.....	4-4
4.1.3 Commercial Airport with Residential Alternative	4-8
4.1.4 General Aviation Center Alternative	4-10
4.1.5 Non-Aviation Alternative	4-10
4.1.6 No-Action Alternative	4-13
4.2 POPULATION AND HOUSING.....	4-13
4.2.1 Population.....	4-14
4.2.1.1 Proposed Action.....	4-14
4.2.1.2 International Airport Alternative.....	4-14
4.2.1.3 Commercial Airport with Residential Alternative.....	4-17
4.2.1.4 General Aviation Center Alternative.....	4-19
4.2.1.5 Non-Aviation Alternative	4-19
4.2.1.6 No-Action Alternative.....	4-20
4.2.2 Housing	4-20
4.2.2.1 Proposed Action	4-20
4.2.2.2 International Airport Alternative.....	4-22
4.2.2.3 Commercial Airport with Residential Alternative.....	4-23
4.2.2.4 General Aviation Center Alternative.....	4-23
4.2.2.5 Non-Aviation Alternative	4-25
4.2.2.6 No-Action Alternative.....	4-25
4.3 PUBLIC SERVICES	4-26
4.3.1 Local Government.....	4-26
4.3.1.1 Proposed Action	4-27
4.3.1.2 International Airport Alternative.....	4-29

TABLE OF CONTENTS (CONT'D)

	Page
4.3.1.3 Commercial Airport with Residential Alternative	4-30
4.3.1.4 General Aviation Center Alternative	4-30
4.3.1.5 Non-Aviation Alternative	4-32
4.3.1.6 No-Action Alternative	4-33
4.3.2 Public Education	4-33
4.3.2.1 Proposed Action	4-33
4.3.2.2 International Airport Alternative	4-35
4.3.2.3 Commercial Airport with Residential Alternative	4-37
4.3.2.4 General Aviation Center Alternative	4-37
4.3.2.5 Non-Aviation Alternative	4-40
4.3.2.6 No-Action Alternative	4-40
4.3.3 Police Protection	4-40
4.3.3.1 Proposed Action	4-42
4.3.3.2 International Airport Alternative	4-42
4.3.3.3 Commercial Airport with Residential Alternative	4-44
4.3.3.4 General Aviation Center Alternative	4-44
4.3.3.5 Non-Aviation Alternative	4-46
4.3.3.6 No-Action Alternative	4-46
4.3.4 Fire Protection	4-47
4.3.4.1 Proposed Action	4-47
4.3.4.2 International Airport Alternative	4-47
4.3.4.3 Commercial Airport with Residential Alternative	4-49
4.3.4.4 General Aviation Center Alternative	4-51
4.3.4.5 Non-Aviation Alternative	4-51
4.3.4.6 No-Action Alternative	4-52
4.3.5 Health Care	4-52
4.3.5.1 Proposed Action	4-52
4.3.5.2 International Airport Alternative	4-52
4.3.5.3 Commercial Airport with Residential Alternative	4-52
4.3.5.4 General Aviation Center Alternative	4-52
4.3.5.5 Non-Aviation Alternative	4-52
4.3.5.6 No-Action Alternative	4-52
4.3.6 Recreation	4-53
4.3.6.1 Proposed Action	4-53
4.3.6.2 International Airport Alternative	4-53
4.3.6.3 Commercial Airport with Residential Alternative	4-53
4.3.6.4 General Aviation Center Alternative	4-53
4.3.6.5 Non-Aviation Alternative	4-54
4.3.6.6 No-Action Alternative	4-54
4.4 PUBLIC FINANCE	4-54
4.4.1 Proposed Action	4-54
4.4.2 International Airport Alternative	4-67
4.4.3 Commercial Airport with Residential Alternative	4-72
4.4.4 General Aviation Center Alternative	4-75
4.4.5 Non-Aviation Alternative	4-78
4.4.6 No-Action Alternative	4-80
4.5 TRANSPORTATION	4-80
4.5.1 Proposed Action	4-81
4.5.1.1 Roadways	4-81
4.5.1.2 Air Transportation	4-81
4.5.1.3 Railroad Transportation	4-82

TABLE OF CONTENTS (CONTD)

	Page
4.5.2 International Airport Alternative.....	4-82
4.5.2.1 Roadways.....	4-82
4.5.2.2 Air Transportation.....	4-83
4.5.2.3 Railroad Transportation.....	4-83
4.5.3 Commercial Airport with Residential Alternative.....	4-83
4.5.3.1 Roadways.....	4-83
4.5.3.2 Air Transportation.....	4-84
4.5.3.3 Railroad Transportation.....	4-84
4.5.4 General Aviation Center Alternative.....	4-84
4.5.4.1 Roadways.....	4-84
4.5.4.2 Air Transportation.....	4-85
4.5.4.3 Railroad Transportation.....	4-85
4.5.5 Non-Aviation Alternative.....	4-85
4.5.5.1 Roadways.....	4-85
4.5.5.2 Air Transportation.....	4-85
4.5.5.3 Railroad Transportation.....	4-85
4.5.6 No-Action Alternative.....	4-86
4.6 UTILITIES.....	4-86
4.6.1 Proposed Action.....	4-88
4.6.2 International Airport Alternative.....	4-88
4.6.3 Commercial Airport with Residential Alternative.....	4-91
4.6.4 General Aviation Center Alternative.....	4-91
4.6.5 Non-Aviation Alternative.....	4-94
4.6.6 No-Action Alternative.....	4-94
4.7 AIRSPACE.....	4-94
4.7.1 Proposed Action.....	4-96
4.7.2 International Airport Alternative.....	4-97
4.7.3 Commercial Airport with Residential Alternative.....	4-98
4.7.4 General Aviation Center Alternative.....	4-98
4.7.5 Non-Aviation Alternative.....	4-98
4.7.6 No-Action Alternative.....	4-98
4.8 EFFECTS OF OTHER LAND USE CONCEPTS.....	4-99
5.0 COMPARATIVE ANALYSIS OF PROPOSED ACTION AND ALTERNATIVES.....	5-1
5.1 ECONOMIC ACTIVITY.....	5-1
5.2 POPULATION AND HOUSING.....	5-9
5.3 PUBLIC SERVICES.....	5-12
5.4 PUBLIC FINANCES.....	5-13
5.5 TRANSPORTATION.....	5-14
5.6 UTILITIES.....	5-15
6.0 REFERENCES.....	6-1
7.0 CONSULTATION AND COORDINATION.....	7-1
7.1 FEDERAL AGENCIES.....	7-1
7.2 STATE AGENCIES.....	7-1
7.3 LOCAL/REGIONAL AGENCIES.....	7-1
7.4 PRIVATE ORGANIZATIONS.....	7-2
8.0 LIST OF PREPARERS AND CONTRIBUTORS.....	8-1

LIST OF TABLES

<u>Table</u>	<u>Page</u>
1.4-1 Land Use Acreage by Alternative, George AFB, California	1-6
2.2-1 George AFB Employment.....	2-8
2.2-2 Military Population and Housing, George AFB	2-8
2.2-3 George AFB Payrolls (in \$ thousands)	2-9
2.2-4 George AFB Annual Expenditures (in \$ thousands)	2-10
3.1-1 Residential Locations of George AFB Military and Civilian Personnel by School District and Zip Code	3-2
3.3-1 Assumed Percentages of Population Relocation by Employment Category	3-10
3.3-2 Projected Distribution of Future Relocating Workers (percent)	3-12
3.3-3 Road Transportation Levels of Service (LOS)	3-17
3.3-4 Estimated Average Per Capita Utility Demand in the Victor Valley.....	3-19
3.4-1 Impacts of Closure of George AFB.....	3-22
3.4-2 Summary of Economic Indicators, Riverside and San Bernardino PMSA and United States	3-23
3.4-3 Site-Related Employment and Earnings Projections 1987-1993	3-27
3.4-4 Population Trends for Riverside and San Bernardino Counties: 1950-1990	3-29
3.4-5 Selected Population Data for Communities in the Victor Valley	3-30
3.4-6 Site-Related Regional Population Projections 1987-1993.....	3-31
3.4-7 Housing Units and Vacancies for the George AFB ROI: 1980-1990	3-32
3.4-8 Housing Tenure, Median Value, and Median Contract Rent for the George AFB ROI and the ACS: 1990.....	3-32
3.4-9 Housing Units Authorized by Building Permits, for Selected Portions of the George AFB ROI and the ACS: 1981-1990	3-33
3.4-10 Projected Site-Related Housing Demands 1987-1993	3-34
3.4-11 Site-Related Government Employees, 1987-1993.....	3-36
3.4-12 Regional Public School Enrollments and Student/Certified Staff Ratios	3-39
3.4-13 Historic Fall Enrollments in Public School Districts in the Victor Valley: 1980-1988.....	3-39

LIST OF TABLES (CONT'D)

Table	Page
3.4-14 Enrollment Breakdown by School District, Fall 1990.....	3-41
3.4-15 Site-Related Enrollments, 1987-1993	3-45
3.4-16 Site-Related School District Staff Employment, 1987-1993.....	3-45
3.4-17 Site-Related Police Officer Employment, 1987-1993	3-49
3.4-18 Site-Related Firefighter Employment, 1987-1993.....	3-53
3.4-19 City of Adelanto, Revenues and Expenditures, General and Special Revenue Funds, FY 1988-89 (current dollars)	3-58
3.4-20 Net Fiscal Effects of Closure of George AFB on Potentially Affected Local Government Units, FY 1990-1993 (thousands of 1990 \$)	3-59
3.4-21 Adelanto Elementary School District, Revenues and Expenditures, General Fund, FY 1988-90 (current dollars)	3-60
3.4-22 City of Victorville, Revenues and Expenditures, General and Special Revenue Funds, FY 1988-90 (current dollars)	3-63
3.4-23 Victor Elementary School District, Revenues and Expenditures, General Fund, FY 1988-90 (current dollars).....	3-65
3.4-24 Victor Valley Union High School District, Revenues and Expenditures, General Fund, FY 1988-90 (current dollars)	3-66
3.4-25 Town of Apple Valley, Revenues and Expenditures, General and Special Funds, FY 1990 (current dollars)	3-69
3.4-26 Apple Valley Unified School District, Revenues and Expenditures, General Fund and Expenditures, FY 1988-90 (current dollars)	3-70
3.4-27 Average Daily Water Demand within the Upper Basin Region of the Mojave Water Agency (in MGD).....	3-75
3.4-28 Average Daily Wastewater Generation within the Victor Valley Wastewater Treatment Authority Service Area (in MGD)	3-76
3.4-29 Solid Waste Generation within the Victor Valley (in millions of cubic yards, cumulative)	3-78
3.4-30 Average Daily Electricity Demand within the Victorville District of SCE (in MWH/day).....	3-79
3.4-31 Average Daily Natural Gas Demand within the Victorville District of the Southwest Gas Company (in therms/day)	3-80
4.1-1 Employment and Earnings Projections - Proposed Action.....	4-5

LIST OF TABLES **(CONT'D)**

Table	Page
4.1-2 Employment and Earnings Projections - International Airport Alternative	4-7
4.1-3 Employment and Earnings Projections - Commercial Airport with Residential Alternative	4-9
4.1-4 Employment and Earnings Projections - General Aviation Center Alternative	4-11
4.1-5 Employment and Earnings Projections - Non-Aviation Alternative	4-12
4.2-1 Proposed Action - Total Regional Population Impacts - Counties and Selected Cities	4-15
4.2-2 International Airport Alternative - Total Regional Population Impacts - Counties and Selected Cities	4-15
4.2-3 Commercial Airport with Residential Alternative - Total Regional Population Impacts - Counties and Selected Cities	4-18
4.2-4 General Aviation Center Alternative - Total Regional Population Impacts - Counties and Selected Cities	4-18
4.2-5 Non-Aviation Alternative - Total Regional Population Impacts - Counties and Selected Cities	4-18
4.2-6 Proposed Action - Site-Related Housing Demand	4-21
4.2-7 International Airport Alternative - Site-Related Housing Demand	4-21
4.2-8 Commercial Airport with Residential Alternative-Site-Related Housing Demand	4-24
4.2-9 General Aviation Center Alternative - Site-Related Housing Demand	4-24
4.2-10 Non-Aviation Alternative - Site-Related Housing Demand	4-24
4.3-1 Proposed Action - Total Government Employment Impacts - Counties and Selected Cities	4-28
4.3-2 International Airport Alternative - Total Government Employment Impacts - Counties and Selected Cities	4-28
4.3-3 Commercial Airport with Residential Alternative - Total Government Employment Impacts - Counties and Selected Cities	4-31
4.3-4 General Aviation Center Alternative - Total Government Employment Impacts - Counties and Selected Cities	4-31
4.3-5 Non-Aviation Alternative - Total Government Employment Impacts - Counties and Selected Cities	4-31

LIST OF TABLES **(CONT'D)**

Table		Page
4.3-6	Proposed Action - Total Enrollment Impacts - School Districts	4-34
4.3-7	Proposed Action - Total Staffing Impacts - School Districts.....	4-34
4.3-8	International Airport Alternative - Total Enrollment Impacts - School Districts.....	4-36
4.3-9	International Airport Alternative - Total Staffing Impacts - School Districts	4-36
4.3-10	Commercial Airport with Residential Alternative - Total Enrollment Impacts - School Districts	4-38
4.3-11	Commercial Airport with Residential Alternative - Total Staffing Impacts - School Districts	4-38
4.3-12	General Aviation Center Alternative - Total Enrollment Impacts - School Districts	4-39
4.3-13	General Aviation Center Alternative - Total Staffing Impacts - School Districts.....	4-39
4.3-14	Non-Aviation Alternative - Total Enrollment Impacts - School Districts	4-41
4.3-15	Non-Aviation Alternative - Total Staffing Impacts - School Districts.....	4-41
4.3-16	Proposed Action - Total Police Protection Impacts - Counties and Selected Cities.....	4-43
4.3-17	International Airport Alternative - Total Police Protection Impacts - Counties and Selected Cities.....	4-43
4.3-18	Commercial Airport with Residential Alternative - Total Police Protection Impacts - Counties and Selected Cities	4-45
4.3-19	General Aviation Center Alternative - Total Police Protection Impacts - Counties and Selected Cities	4-45
4.3-20	Non-Aviation Alternative - Total Police Protection Impacts - Counties and Selected Cities.....	4-45
4.3-21	Proposed Action - Total Fire Protection Impacts - Counties and Selected Cities.....	4-48
4.3-22	International Airport Alternative - Total Fire Protection Impacts - Counties and Selected Cities.....	4-48
4.3-23	Commercial Airport with Residential Alternative - Total Fire Protection Impacts - Counties and Selected Cities	4-50
4.3-24	General Aviation Center Alternative - Total Fire Protection Impacts - Counties and Selected Cities	4-50
4.3-25	Non-Aviation Alternative - Total Fire Protection Impacts - Counties and Selected Cities.....	4-50

**LIST OF TABLES
(CONT'D)**

<u>Table</u>		<u>Page</u>
4.6-1	Utility Demand Changes in the Victor Valley, Proposed Action.....	4-89
4.6-2	Utility Demand Changes in the Victor Valley, International Airport Alternative	4-90
4.6-3	Utility Demand Changes in the Victor Valley, Commercial Airport with Residential Alternative	4-92
4.6-4	Utility Demand Changes in the Victor Valley, General Aviation Center Alternative	4-93
4.6-5	Utility Demand Changes in the Victor Valley, Non-Aviation Alternative.....	4-95
4.8.1	Socioeconomic Effects of Other Land Use Concepts.....	4-101
5.1-1	Comparison of Reuse Alternatives	5-2

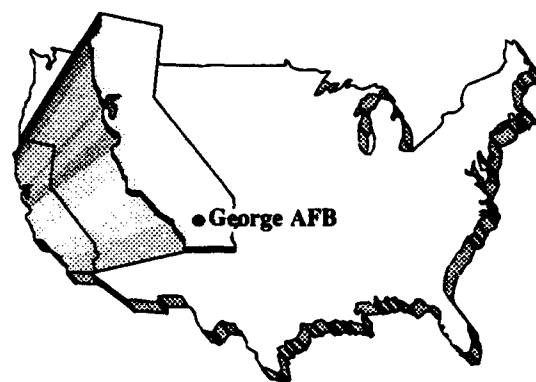
LIST OF FIGURES

Figure	Page
1.3-1 Summary of Air Force Installation Closure and Reuse Actions Completed between 1961 and 1990.....	1-5
2.1-1 Socioeconomic Study Area Map	2-2
2.1-2 Area of Concentrated Study.....	2-3
3.4-1 Distribution of ROI Jobs by Major Industrial Sectors, 1988.....	3-25
3.4-2 Victor Valley Base-Related and Total Employment Projections.....	3-28
3.4-3 School District Boundaries	3-38
3.4-4 Adelanto Elementary School District Revenue Sources.....	3-61
3.4-5 Victor Valley Union High School District Revenue Sources.....	3-67
4.1-1 Victor Valley Employment Projections.....	4-6
4.2-1 Victor Valley Population Projections.....	4-16
4.4-1 Net Fiscal Effects, City of Adelanto, Proposed Action and Alternatives (1990 \$).....	4-57
4.4-2 Net Fiscal Effects, Adelanto Elementary School District, Proposed Action and Alternatives (1990 \$).....	4-58
4.4-3 Net Fiscal Effects, City of Victorville, Proposed Action and Alternatives (1990 \$)	4-60
4.4-4 Net Fiscal Effects, Victor Elementary School District, Proposed Action and Alternatives (1990 \$).....	4-62
4.4-5 Net Fiscal Effects, Victor Valley Union High School District, Proposed Action and Alternatives (1990 \$).....	4-63
4.4-6 Net Fiscal Effects, Town of Apple Valley, Proposed Action and Alternatives (1990 \$).....	4-65
4.4-7 Net Fiscal Effects, Apple Valley Unified School District, Proposed Action and Alternatives (1990 \$).....	4-66
5.1-1 ROI Employment Impacts.....	5-6
5.1-2 Site-Related Victor Valley Employment Impacts and Total Employment Projections	5-7
5.2-1 ROI Population Impacts.....	5-10
5.2-2 Site-Related Victor Valley Population Impacts and Total Population Projections	5-11

LIST OF FIGURES
Cont'd

Figure		Page
5.6-1	Average Daily Water Demand - All Alternatives (1990-2013).....	5-16
5.6-2	Average Daily Wastewater Generation - All Alternatives (1990-2013).....	5-17
5.6-3	Total Solid Waste Generation - All Alternatives (1990-2013)	5-18
5.6-4	Average Daily Electricity Demand - All Alternatives (1990-2013)	5-19
5.6-5	Average Daily Natural Gas Demand - All Alternatives (1990-2013)	5-20

THIS PAGE INTENTIONALLY LEFT BLANK



CHAPTER 1

INTRODUCTION

1.0 INTRODUCTION

Chapter 1.0 presents the purpose of this study, briefly discusses the reason for and nature of the closure of George Air Force Base (AFB), reviews results of previous base closures, and defines the potential reuse alternatives in terms relevant to the analysis of socioeconomic impacts.

This report is organized to provide an assessment of the current socioeconomic characteristics and impacts of base operation; the post-closure conditions for activities related to the site assuming the base remains in caretaker status and is not redeveloped; and the impacts of alternative site reuse scenarios on the region. The structure of the report is as follows:

Chapter 2.0 -- provides the current community setting and profile of personnel, payrolls, and activities at the base.

Chapter 3.0 -- establishes the preclosure reference and closure baseline for the area after the base closes and assuming it remains in caretaker or "mothballed" status.

Chapter 4.0 -- evaluates the impacts of alternative reuse plans and compares them to the post-closure conditions.

Chapter 5.0 -- compares the effects of the alternative reuse plans to each other.

1.1 PURPOSE OF THE STUDY

The Final Environmental Impact Statement (EIS) for the Closure of George AFB, California was released by the Air Force on 4 May 1990 (U.S. Air Force, 1990a). That document evaluated expected environmental impacts as a result of base closure. *The George AFB Disposal and Reuse Draft EIS*, currently available for public comment, will analyze the environmental issues associated with disposal of the base and its reuse under a range of potential redevelopment plans.

These environmental documents were initiated to fulfill National Environmental Policy Act (NEPA) requirements which apply to federal actions, such as the decision to close George AFB. Socioeconomic factors are addressed within the EIS only from the perspective of their potential effect on the biophysical environment. For instance, changes in economic activity, particularly in regional spending and employment, may lead to changes in area population, public service demand, and vehicular traffic on the area's road network. These effects, in turn, have the potential for beneficial or adverse environmental

consequences on land use, air quality, water quality, noise, and biological and cultural resources.

The *Socioeconomic Impact Analysis Study* is not a NEPA document. This report focuses on the socioeconomic effects resulting from the closure and potential reuse of George AFB. The scope of issues addressed includes economic activity, population and housing, and other major issues of local concern, such as public services, public finance, transportation, utilities, and airspace. These factors substantially influence the character of communities in the vicinity of the base, and are important to local residents. The analysis of these issues is intended to provide local planning officials with the necessary information with which to plan for changes at George AFB.

1.2 CLOSURE OF GEORGE AFB

It is the policy of DOD to identify installations that are not essential to mission readiness plans or national security objectives. This policy, in conjunction with the fiscal prudence necessitated by provisions in the Gramm-Rudman-Hollings Act, has provided an opportunity to consider the downscaling and realignment of U.S. military forces (U.S. Air Force, 1990b).

The closure of George AFB is authorized by the provisions of the Defense Authorization Amendments and Base Closure and Realignment Act (BCRA) of 1988 (Public Law [P.L.] 100-526). The Secretary of Defense established this commission on 3 May 1988 to recommend military installations for realignment and closure, focusing on the military value of the installation as the primary criterion in identifying candidate bases. The United States Congress and the President endorsed the commission and its charter by implementing the Defense Authorization Amendments and BCRA on 24 October 1988.

The commission submitted its report to the Secretary of Defense on 29 December 1988, recommending realignments and closures affecting 145 military installations. Of these installations, 86 are to be closed, including George AFB. The Secretary of Defense approved the commission's recommendations on 5 January 1989 and announced that the Department of Defense (DOD) would implement the realignments and closures of the selected installations. Under the provisions of BCRA, the Secretary of Defense must initiate the recommended closures and realignments by 30 September 1991 and complete them before 30 September 1995.

The George AFB property will be disposed of in compliance with the Defense Authorization Amendments, BCRA, the Federal Property and Administrative Services Act of 1949, and the Surplus Property Act of 1944.

George AFB is scheduled to be closed in December 1992. This action involves consolidation of Air Force activities and personnel transfers from George AFB to

other Air Force bases in the United States. (Defense Secretary's Commission on Base Realignment and Closure, 1988).

The projected post-closure conditions identified for this study occur once the base has gone into "caretaker status" after the phase-down of residual operations at the base and its subsequent closure. Caretaker status includes provision of security, minimal repair, and minor use to keep base facilities in "mothballed" condition.

Analysis of this projected closure baseline scenario provides an assessment of near-term and long-term conditions in communities near the base with the base no longer in operation. This baseline then provides a benchmark for comparison of the socioeconomic consequences of alternative reuse plans.

1.3 PREVIOUS BASE CLOSURES

Because of the potential for severing long-standing social and economic relationships, base closures can be a very disrupting experience for host communities. The future state of the local economy is always of concern, although many communities affected by base closures have successfully implemented installation reuse plans. A recent study completed by the President's Economic Adjustment Committee indicates that opportunities exist for successful conversion of military installations to civilian use (U.S. Department of Defense, Office of Economic Adjustment, 1990).

After reviewing the experiences of nearly 100 communities that lost a local military base between 1961 and 1990, the study reached several important findings:

- Military jobs that were transferred out of the local communities numbered almost 138,000. These transfers represented permanent long-term reductions in the economic base of the communities.
- Conversion to civilian use led to a total of 158,000 direct jobs, more than replacing the 93,000 DOD civilian and contractor jobs lost due to the closing.
- Fifty-seven former bases became the seat of a number of four-year colleges, community colleges, and post-secondary vocation-technical programs. These schools presently accommodate 73,000 college students, 25,000 secondary vocational-technical students, and 62,000 trainees.
- Seventy-five former bases are host to industrial parks or plants, and 42 established municipal or general aviation airports.

The study concluded that in the short term, closure can have substantial negative effects on the local economy. The difficult transition period generally

lasts 3 to 5 years (U.S. Department of Defense, Office of Economic Adjustment, 1990).

Figure 1.3-1 provides employment statistics for 44 Air Force installation closure and reuse actions completed between 1961 and 1990. These Air Force actions resulted in the transfer of approximately 93,500 military personnel. About 17,000 on-base civilian jobs were lost in these actions. Nearly 63,200 civilian jobs were gained due to reuse of the sites. Considering individual installations, in most cases the number of civilian jobs in 1990 was greater than when the base was under military control. In only about 20 percent of the cases, however, does the number of new civilian jobs exceed the number of both civilian and military jobs lost as a result of base closure.

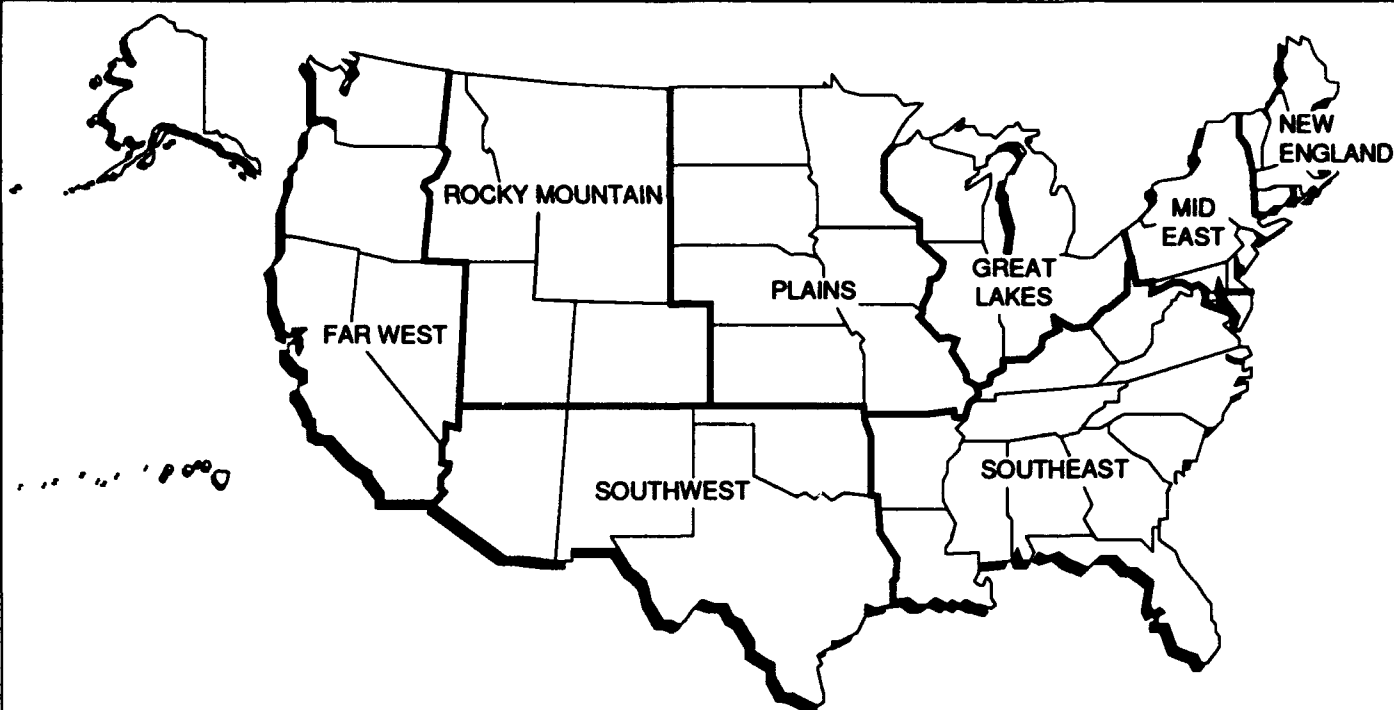
1.4 REUSE OPTIONS

The Proposed Action for reuse of George AFB is the Commercial Airport Alternative; it is discussed in Section 1.4.1. Four other alternatives have also been identified for reuse of the property. The International Airport Alternative is discussed in Section 1.4.2; the Commercial Airport with Residential Alternative is discussed in Section 1.4.3; the General Aviation Center Alternative is discussed in Section 1.4.4; and the Non-Aviation Alternative is discussed in Section 1.4.5. Under the No-Action Alternative the Air Force would retain ownership of the base after closure. This alternative is discussed in Section 1.4.5. Under the No-Action Alternative, caretaker services would be provided to assure base security and to maintain grounds and existing facilities and infrastructure. Since the decision to close the base has already been made, caretaker status is considered to represent post-closure conditions.

Under the various reuse alternatives, the acreages proposed to be utilized may differ from the existing 5,073 acres of base property at George AFB. Additional off-base property acquisition is required for under the Proposed Action and the International Airport Alternative for use as an airport safety zone buffer, an airport facility expansion area, and as aviation support or airport-related industrial land use.

1.4.1 Proposed Action

The Proposed Action, or Commercial Airport Alternative, utilizes the existing infrastructure and existing airport runways at George AFB for several aviation- and non-aviation-related uses. Table 1.4-1 lists the proposed reuse activities by type of use and the proposed acreage of each use.



REGION	No. of Bases Closed	Military Jobs Transferred	Civilian Jobs Transferred	New Civilian Jobs on Base
1. New England	5	11,241	921	9,947
2. Mid East	1	114	24	498
3. Great Lakes	7	6,171	2,539	7,515
4. Plains	4	17,232	2,638	9,275
5. Southeast	10	22,103	3,349	20,252
6. Southwest	9	24,472	6,058	10,942
7. Rocky Mountain*	3	3,663	336	307
8. Far West	5	8,539	1,093	4,421
Total	44	93,535	16,958	63,157

Source: U.S. Department of Defense, Office of Economic Adjustment, 1990.

* Data for one AFB not available.

Summary of Air Force Installation Closure and Reuse Actions Completed between 1961 and 1990

George AFB, California

Figure 1.3-1

Table 1.4-1. Land Use Acreage by Alternative, George AFB, California

Land Use	Proposed Action	International Airport Alternative	Commercial Airport with Residential Alternative	General Aviation Center Alternative	Non-Aviation Alternative
Airfield	1,913 ^(a)	9,258 ^(e)	1,400	1,573	-
Aviation Support	2,625 ^(b)	1,750 ^(f)	286	465	-
Commercial	612	530	26	282	20
Office Park	612	-	-	-	-
Hotel Park	-	530	-	-	-
Retail	-	-	26	282	20
Industrial	1,901	1,888	1,048	-	942
Business Park	1,051 ^(c)	331	-	-	942
Industrial - General	850	982	1,048	-	-
Industrial - Aviation	-	575 ^(g)	-	-	-
Institutional	-	-	77	55	510
Hospital	-	-	20	20	20
College	-	-	37	-	470
School	-	-	20	35	20
Recreation/Vacant Land	374	-	261	2,358	367
Golf Course	77	-	-	-	77
Other	297	-	261	2,358 ⁽ⁱ⁾	290
Residential	-	-	1,975 ^(h)	340	3,234 ^(h)
Total	7,425^(d)	13,426	5,073	5,073	5,073

(a) Includes 338 acres off base.

(b) Includes 1,879 acres off base.

(c) Includes 135 acres off base.

(d) Includes 2,352 acres off base.

(e) Includes 6,338 acres off base.

(f) Includes 1,750 acres off base.

(g) Includes 285 acres off base.

(h) Includes 337 acres of existing housing.

(i) 2,233 acres open space; 125 acres of recreational.

The primary function of the Proposed Action would be to provide the Victor Valley with a major commercial airport, with the option to expand it into an international airport when demand warrants. Under the Proposed Action, however, demand for an international airport would be beyond the horizon year of 2013 used for this study.

Under the Proposed Action the airport would handle one million annual passengers (MAP) by the year 2013. This is similar to the passenger volume of the Palm Springs Regional Airport. Nine regularly scheduled air carriers operating from the airport served 915,000 passengers in 1990. The airport is municipally-owned by the city of Palm Springs and has an operating budget of \$7.8 million. The airport employs 45 permanent personnel and 10 temporary personnel during peak visitor periods.

The main components of the Proposed Action involve an airfield, and aviation-related uses such as aviation-support activities and general aviation (approximately 4,500 acres of the total of about 7,400 acres). Other

components include office, business, and industrial parks; a golf course; and parks and open space.

Airfield. Under the Proposed Action, the existing runways would be reused. The airfield would comprise about 1,900 acres and could be expanded beyond the year 2013 by another 1,600 acres of off-base land (although a portion or all of that area could be used for industrial purposes). Future plans could include acquisition of additional land north of the base for both runway extension and/or noise/safety zones. Most navigational aids are already in place. Specific improvements required to meet Federal Aviation Administration (FAA) requirements will be determined, in detail, as the types of aircraft and operations planned for the airport are further defined.

Aviation Support. Aviation support would require about 750 acres of on-base land and nearly 1,880 acres off base for an air terminal, general aviation facilities, air cargo, aircraft maintenance, fire department, possible national guard, and other governmental contract facilities. Initial uses would utilize existing buildings along the operational apron, but eventually a new terminal facility would be constructed in this area. Other new construction would also be required, including demolition of about forty older buildings to provide an additional 60 acres of parking. Such development would provide for about 1 MAP by the year 2013.

Commercial. The commercial (office park) area would occupy about 610 acres in the vicinity of the existing administration area on the base. It would contain general office buildings and support services such as financial institutions, restaurants, and gas stations in a campus-type environment.

Industrial. Two types of industrial uses are planned, totalling about 1,900 acres.

- **Business Park.** The business park area would require about 1,050 acres in the area just north of Air Base Road. It would contain flex-type buildings served by a common roadway system similar to an office or industrial park. The buildings are generally single level but occasionally are two levels. The tenant space is flexible to house a variety of uses. Generally 20 to 30 percent of the space would be offices and the remainder would be warehouses or light industrial. Tenants may be start-up companies or fully matured, relatively small companies requiring a mix of space configurations.
- **Industrial-General.** This use would occupy 850 acres with at least 500,000 square feet of floor space. The uses would be both airport- and non-airport-related. Existing facilities east of the runways and south of Air Base Road would be used initially, with areas west of the runways reserved until the area necessary for the future airport can be determined. The industrial park would be characterized by a mix of manufacturing, service, and warehouse facilities with wide variation possible in the proportion of each type of use. Aviation-related uses

such as air cargo storage and aircraft maintenance or aircraft assembly, and other uses not necessarily dependent upon immediate access to the airport, might be located in these areas.

Recreational/Vacant Land. The golf course would be retained and other recreational uses are planned.

- **Golf Course.** The existing 9-hole golf course occupies about 80 acres of land on the eastern edge of the base. Ownership would be public. No expansion would occur under the Proposed Action.
- **Other.** Recreational land would cover about 300 acres. It would include existing ball fields, tennis courts, a swimming pool, and a gymnasium building. The athletic field could be used for further development of either recreational or other uses. The golf course could be expanded to an 18-hole course by using land north of the existing course. Areas of steep slopes would be retained as natural vacant land.

1.4.2 International Airport Alternative

Upon build-out, the International Airport Alternative would retain fewer existing facilities than the Proposed Action concept. An international airport would be phased in when its development is justified. In this proposal, it is assumed that an airport would be developed to serve as many as 25 MAP by the year 2013.

This figure is 1.7 times greater than the number of passengers who used the National Airport in Washington, D.C., in 1990 (15,805,496) and five times greater than the number of passengers who used the Ontario International Airport (ONT) in 1990 (5,335,269). ONT is a medium-hub, full-service airport with commercial jet service to every major city in the United States and through service to some international destinations. ONT employs 150 airport personnel and had revenues of \$23 million in 1990. By comparison, the Los Angeles International Airport (LAX) served 46 million passengers in 1990. Facilities at LAX include four runways, several terminals, an air traffic control tower/administration building, a cargo handling complex, utility and services plants that house the Los Angeles Police Department and maintenance services, a Coast Guard Air Station, restaurants and gift shops, public and private transportation agencies, and parking lots. LAX employs 1,400 personnel and had revenues of \$210 million in 1990. Both LAX and ONT are owned by the city of Los Angeles and operated by the Los Angeles Department of Airports (Los Angeles Department of Airports, 1991b).

The International Airport Alternative would probably have its passenger terminal located west of the base boundary, depending upon the ultimate layout of new runways. The phased-out on-base terminal area would be used for air cargo operations. Access improvements from the proposed east/west freeway, as well as the realigned U.S. 395, would be required. In addition, this alternative assumes the availability of the Super Speed Train (SST) (or some other high

volume rapid-transit system) from Orange County to bring at least half of the passengers to the International Airport. The total area of the International Airport would be about 13,400 acres including about 8,350 acres of off-base area. In addition to commercial passenger services, the proposed land uses would include business and industrial park areas and a large hotel complex. Table 1.4-1 sets forth the proposed land uses and acreage, respectively.

Airfield. Including about 6,300 acres off base, the airfield would occupy about 9,300 acres. Upon build-out for 25 MAP, new runways would be constructed west of the existing westerly runways. All airport complex expansion would take place north and west of George AFB.

Aviation Support. Aviation support would require about 1,750 acres under the International Airport Alternative. The types of components of the aviation support element would be the same as cited under the Proposed Action.

Industrial. Three types of industrial uses are planned, for a total of about 1,890 acres.

- **Business Park.** About 330 acres are designated for business park purposes. They would generally be located along the north and south sides of Air Base Road and the east side of the new alignment of U.S. 395. Uses within the business park would be the same as set forth in the Proposed Action description.
- **Industrial-General.** The general industrial area under this alternative would occupy about 980 acres and would be located both south of Air Base Road and north of the airfield area. Uses would be similar to those cited for the Proposed Action.
- **Industrial-Aviation.** A total of 575 acres close to George AFB and an air cargo facility makes this area ideal for aviation industrial zoning. Operations such as aircraft maintenance, overhaul and parts manufacturing would be suitable for this park.

Commercial. About 530 acres would be set aside for a hotel park area on the east side of the base, just north of Air Base Road. Hotels would be located in a campus-type setting and would be served by a roadway system. In addition to hotels, there would be restaurants, service stations, and convenience shopping. Convention and conference facilities could also occupy this area.

1.4.3 Commercial Airport with Residential Alternative

Presently the greatest market demand in the Victor Valley is for housing; therefore, this alternative emphasizes residential uses. Any areas outside the 65 community noise equipment levels (CNEL) contour are proposed for new and existing residential uses. With a smaller airport than envisioned for the Proposed Action, this alternative would accommodate commuter and feeder commercial passenger traffic, together with general-aviation and

aviation-support facilities. Both airport- and non-airport-related facilities would be included. Table 1.4-1 lists the proposed reuse activities by type of use and estimated acreage. A total of about 5,100 acres are proposed for this alternative.

An airport comparable to the one proposed under this alternative is the Palmdale Regional Airport. In 1990 nearly 50,000 passengers used the airport. One commuter air carrier currently operates out of the Palmdale Regional Airport with six flights a day. The airport employs five personnel and had revenues of \$477,000 in 1990 (Los Angeles Department of Airports, 1991).

Airfield. Under this alternative, 1,400 acres of existing airfield area at George AFB would be reused. Most navigational aids are in place. Specific improvements required to meet FAA requirements would be determined as the types of aircraft and operations planned for the airport are further defined.

Aviation Support. Aviation support would use about 290 acres, with the development of a central terminal area and the reuse of existing nearby buildings. Included would be general aviation and aircraft maintenance facilities, as well as space for air cargo and fire protection operations. Such development would provide for about 1 MAP by the year 2013.

Commercial. The proposed commercial area of approximately 25 acres would be located at the existing Base Exchange and restaurant area, and dormitories in that area could be remodeled for motel use.

Industrial. Industrial uses under this alternative would occupy about 1,050 acres located, for the most part, within the 65 CNEL contour or where existing construction suggests industrial use.

Institutional. Hospital and educational facilities cover about 77 acres.

- **Hospital.** About 20 acres are provided for the existing hospital and possible expansion.
- **College.** Facilities for higher education and aviation-related occupational training could be located on 37 acres, in the vicinity of the existing on-base school.
- **School.** The elementary/middle school is currently on 20 acres of land.

Recreational/Vacant Land. Recreational land for this alternative is about 260 acres. Existing recreational facilities would be reused and additional facilities, such as neighborhood parks, could be added. The existing track and field area would be redeveloped for recreational uses.

Residential. About 2,000 acres of residential area is proposed, including approximately 340 acres of existing family housing with about 1,800 units.

Some of the dormitory buildings adjacent to the family housing area could be converted into apartments.

1.4.4 General Aviation Center Alternative

The General Aviation Center Alternative utilizes existing structures with a minimum of proposed new construction. Approximately 50 percent of the base has not been identified for development and, thus, is considered to remain as open space. The total acreage for this alternative includes 2,840 acres of aircraft-related, commercial, institutional, and residential land uses, and 2,233 acres of recreation and open space.

All flying that is not categorized as scheduled air carrier (airline) service, or military, is considered "general aviation." General aviation encompasses a wide range of activities, including flights of corporate-owned jet aircraft, air ambulance services, vacation travel by owner-operated aircraft, private pilot training, and business travel. For example, the Van Nuys Airport, a general aviation airport, leases to fifteen firms that operate fuel sales, hangars, paved tiedown areas, sales and service for aircraft and helicopter manufacturers, flight and ground schools and charter and air taxi services. The Van Nuys Airport employs 50 personnel and had revenues of \$8 million in 1990 (Los Angeles Department of Airports, 1991b).

Airfield. The working airfield would reuse the existing runways, taxiways, and runway protection zones. Other specific features of the airfield are similar to those of the Proposed Action, as described in Section 1.4.1. A parallel north-south runway will be constructed by 2008. The parking apron surrounding hangar 676 will be hardened within five years of closure. The airfield would comprise 1,573 acres as proposed.

Aviation Support. The aviation support land use zone would cover approximately 465 acres. It would include facilities for aircraft maintenance, aircraft parking, aviation sales center, and other leased properties, as will be defined by market demand. Some new construction would be undertaken for aviation support. An area of approximately 55 acres at the west end of Runway 03/21, currently used for weapons storage, would be leveled and paved to support storage of aircraft awaiting refurbishment.

Commercial. A commercial area of 282 acres would occupy a large part of the cantonment area of the base. Land uses would include an aircraft museum, a sound stage and videotape processing studio, a data processing center, restaurants, service station and supermarket, movie theater, and flight shop to sell souvenirs of the aviation center.

Institutional. Fifty-five acres are designated for an institutional land use zone.

- **Hospital.** The existing base hospital, on 20 acres of land, would be leased to a private medical group.
- **School.** The elementary/middle school, occupying 35 acres of land would retain its current use.

Recreational/Vacant Land. The recreational land use area comprises a total of 125 acres. Recreational areas and facilities such as parks, the golf course, athletic field, the gymnasium, and swimming pools would be made available to the general public. Administration of these facilities would be jointly held by the General Aviation Center and a local jurisdiction. Open space or vacant lands constitute 2,233 acres for this alternative. Vacant land will be used as motion picture and/or television sets as the need arises.

Residential. The residential land use zone covers approximately 340 acres. A minimum of 1,000 of the 1,641 existing units would be retained for rentals. The dormitories would be converted to apartments or town houses. Some of the quadruplexes in base housing would be converted to duplexes.

1.4.5 Non-Aviation Alternative

The Non-Aviation Alternative reflects a combination of market demand and maximum use of existing facilities at George AFB. This includes reuse of runway and taxiway surfaces for roadways. The existing airport and central core area would be used for industrial purposes, but most of the remainder of the base would be used for residential purposes. Table 1.4-1 lists the types of uses proposed for this alternative and the acreage of each. A total of about 5,100 acres is proposed.

Commercial. A relatively small, new commercial center of about 20 acres is proposed, and would be located along Air Base Road at the intersection of Phantom Road.

Industrial. A major business park center of about 940 acres would be provided west of the existing north-south runway (which would be converted into a major highway). The need for such facilities has not been proven, but space for such an eventuality should be provided. Uses would be similar to those described for business parks under the Proposed Action.

Institutional. A total of 510 acres is proposed for institutional land use.

- **Hospital.** The hospital would occupy about 20 acres, as previously described under the other alternatives.
- **College.** The proposed college would occupy 470 acres and would have a much larger campus than described under the Commercial Airport with Residential Alternative.

- **School.** The existing on-base school, on 20 acres, would be reused.

Recreational/Vacant Land. Nearly 370 acres would be designated for recreational use.

- **Golf Course.** The existing golf course of approximately 80 acres as described above under the Proposed Action would be incorporated into this alternative.
- **Other.** Proposed land for other recreational use is 290 acres. Existing recreational facilities would be reused and additional facilities, such as neighborhood parks, could be added. The existing track and field area would be redeveloped for recreational uses.

Residential. Approximately 3,200 proposed acres of residential area would generally surround the central industrial and institutional areas. The existing military family housing area would expand to become a gated retirement community. Some additional housing would be developed along the fairways of the golf course. Of the 3,200 acres, about 1,300 acres of new residential area would be developed on the west side of the base. In addition, an approximate 850-acre residential area would be developed around the golf course south of Air Base Road.

1.4.6 No-Action Alternative

The No-Action Alternative would result in the U. S. Government retaining ownership of the property after closure. The property would not be put to further use. The base would be preserved, i.e., placed in a condition intended to limit deterioration and ensure public safety. A disposal management team (DMT) would be provided to ensure base security and maintain the grounds and physical assets, including the existing utilities and structures. No other military activities/missions would be performed on the property.

The future land uses and levels of maintenance would be as follows:

- Maintain structures in mothballed condition. This would involve disconnecting or draining some utility lines and securing facilities
- Isolate or deactivate utility distribution lines on base
- Provide limited maintenance of roads to ensure access
- Provide limited grounds maintenance of open areas. This would primarily consist of infrequent cutting to eliminate fire, health, and safety hazards
- Maintain golf course in such a manner as to facilitate economical resumption of use
- Maintain existing leases, where applicable.

A DMT has been established at George AFB. The responsibilities of this team include coordinating closure activities, establishing a caretaker force to maintain Air Force properties after closure, and serving as the Air Force liaison supporting community reuse. For the purposes of environmental analysis, it was assumed that this team would comprise approximately 50 people at the time of closure.

The base would maintain its license with the State Water Resources Control Board to continue to fill its water requirements from the same well system although the amount drawn would be significantly reduced. Nonessential water lines would be drained and shut off. The Victor Valley Wastewater Reclamation Authority (VWRA) would continue to provide wastewater treatment under caretaker status, but the flow would be negligible or zero. Solid waste collection from the base would likely be reduced to a negligible level under this alternative. The existing power and space-heating systems serving George AFB would likely be utilized at substantially reduced levels while the base is in caretaker status. Electrical power would be required for security lighting and other essential systems, and natural gas would probably be required during winter months to maintain minimal space heating in mothballed facilities.

1.4.7 Other Land Use Concepts

This section describes proposed land use concepts that are not part of any integrated reuse option, but would be initiated on an individual basis. These concepts include proposed federal transfers and conveyances to non-federal agencies and private parties.

U.S. Department of Justice. The Federal Bureau of Prisons (BOP), through the U.S. Department of Justice, has submitted a specific request for land at George AFB. An 860-acre parcel located south of Air Base Road has been designated as a proposed Federal Correctional Complex (FCC). This parcel is the present site of the base munitions storage area. IRP sites have been identified in this area (see Section 3.3.3 for location details). The BOP has requested that the uncontaminated portion be made available immediately following publication of the Record of Decision (ROD). Construction would begin soon after the ROD is filed, and will not be dependent upon completion of the final cleanup phase of the contaminated area.

The BOP estimates that the proposed complex could house 2,000 to 2,750 inmates, and generate 650 jobs. Capital construction costs could reach \$200 million, and the annual operating budget would be approximately \$32 million.

U.S. Department of the Interior. The U.S. Department of the Interior (National Park Service) has requested the transference of base recreational facilities to a local jurisdiction through the public benefit program. Specific facilities identified include, but are not limited to, the following:

- Schmidt Park and Pool
- Ballfields
- Base gymnasium
- Base youth center
- Golf course
- Base recreation center

Apart from administration of the aforementioned public benefit program, the National Park Service is not interested in acquiring any George AFB properties for its own use.

U.S. Department of Housing and Urban Development. As part of the McKinney Act of 1987 (P.L. 100-77), the Department of Housing and Urban Development, in conjunction with the Department of Health and Human Services and the General Services Administration, identifies surplus government buildings and properties for suitability as housing for the homeless. Housing for low-income families and individuals and for the homeless population in the Victor Valley has been identified within the existing housing area in the southeast region of George AFB. There are 60 residential units along Alaska Circle, Hawaii Street, and Sheppard Street east of Cory Boulevard. The Alaska Circle Community lies just north of Air Base Road, close to the hospital and adjacent to the golf course. It is surrounded on all sides by approximately 400 feet of vacant land.

All 60 units were constructed in 1966, and represent the most recent construction within the housing area. There are 56 three- or four-bedroom duplexes within the Alaska Circle Community. The remaining buildings consist of four-bedroom detached individual homes. The houses and their associated landscaping have been well maintained. Needed renovations would be minor, and consist primarily of interior/exterior painting, and carpet and fixture replacement. The residences could be occupied soon after base closure.

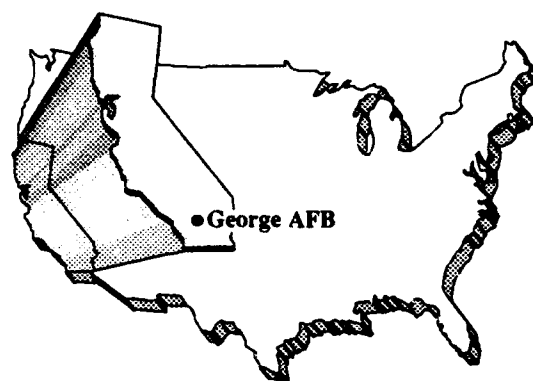
U.S. Department of Transportation. The FAA, through the U.S. Department of Transportation, has expressed interest in obtaining a garage at George AFB for use by the Boron Airway Facilities Sector Field Office (AFSFO). The base automotive hobby shop has been identified as adequate to meet the AFSFO's need for a facility to house seven government vehicles.

U.S. Department of Education. Following the completion of a preliminary screening, the U.S. Department of Education has expressed interest in certain facilities and property on George AFB on behalf of San Bernardino County and the Adelanto Elementary School District. Details of the preliminary proposals for reuse are as follows:

- **Adelanto Elementary School District**
 - 10-acre parcel that includes George AFB School
 - 30-acre parcel consisting of (1) a 10-acre site surrounding the Harry R. Sheppard School, (2) a 10-acre site adjacent to the southern boundary of the Sheppard School, and (3) a 10-acre site located between the eastern boundary of the Sheppard School and the southern boundary of George School
 - 10-acre parcel on Texas Street, on the northern side of the base
 - Base gymnasium and athletic fields.
- **San Bernardino County Library**
 - An unidentified 35,000 square foot facility is requested for a regional library and bookmobile headquarters.
- **San Bernardino County Museum**
 - An unidentified 8,000 square foot facility has been proposed for research and operations.
- **San Bernardino County Superintendent of Schools**
 - Community College and school districts have expressed interest in reuse of some of George AFB property. Specific proposals have not yet been formulated.

San Bernardino County Work Furlough Program. San Bernardino County is interested in obtaining one or more of the existing facilities on George AFB to house inmates in support of their Work Furlough Program. Although specific buildings have not yet been identified, it is likely, based on a similar request in another location, that a dormitory or barracks type of facility would be selected. This program would support approximately 200 inmates and require 20 staff members.

Medical Facilities. Several private medical facilities in the Victor Valley have expressed a desire to acquire the base hospital. Reuse would most likely entail conversion to an out-patient clinic, special purpose, or medical teaching facility, and would generate 60 jobs on site.



CHAPTER 2

COMMUNITY SETTING AND BASE PROFILE

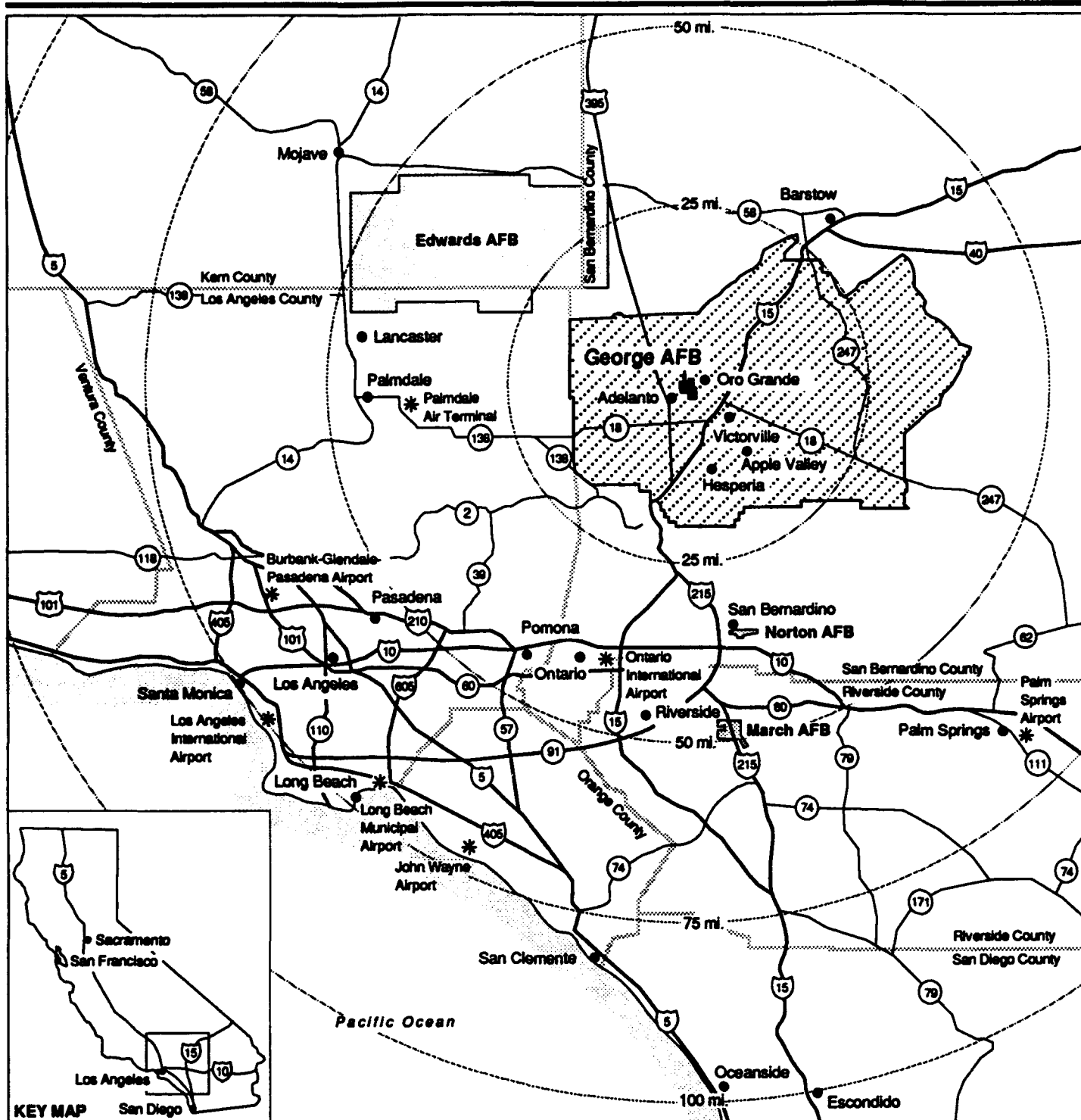
2.0 COMMUNITY SETTING AND BASE PROFILE

This chapter describes the community setting and George AFB activity and program levels prior to and following the closure announcement as reflected in the base's Economic Resource Impact Statements for fiscal years (FYs) 1987 through 1990. Federal government fiscal years span the period October through September.

2.1 COMMUNITY SETTING

George AFB, established in 1941, is in the Mojave Desert in southwestern San Bernardino County, California (Figure 2.1-1). The base is bordered by the cities of Adelanto to the west and southwest and Victorville to the southeast. The base is situated in a geographic subregion of the southwestern Mojave Desert known as the Victor Valley. This analysis utilizes census tract boundaries to approximate the geographic area known as the Victor Valley. These boundaries are illustrated in Figure 2.1-1. It is also called the "High Desert," designated as such by virtue of its elevation of approximately 3,000 feet, in contrast to the below-sea level Colorado and Sonoran deserts to the southeast. Most of the population of the Victor Valley resides in the cities of Adelanto, Victorville, and Hesperia and the town of Apple Valley (Figure 2.1-2). The internationally known attractions associated with greater southern California – such as the beaches, summer and winter mountain resorts, amusement parks, theaters, and cultural sites of Los Angeles and Orange counties – are within 120 miles to the south and southwest of the Victor Valley.

The Victor Valley in this context is an area defined by nine census tracts, accounting for the shape of the area of concentrated study (see Figures 2.1-1 and 2.1-2). Some cities in this study are made up of a single census tract, while the boundaries of other cities span two to six census tracts. Adelanto, Apple Valley, and George AFB are each contained within single census tracts – 9101, 9703, and 9102 respectively. Hesperia falls within two adjoining tracts, 10001 and 10002. Victorville city limits include portions of six tracts, 9101, 9602, 9701, 9800, 9900, and 10001. A single census tract may include multiple communities as well as the adjacent unincorporated area. Census tract 9800 is contained within Victorville; it is the only tract in the Victor Valley which does not overlap into an unincorporated area. This delineation of the Victor Valley accounts for over 94 percent of the George AFB 1990 permanent party strength by place of residence.



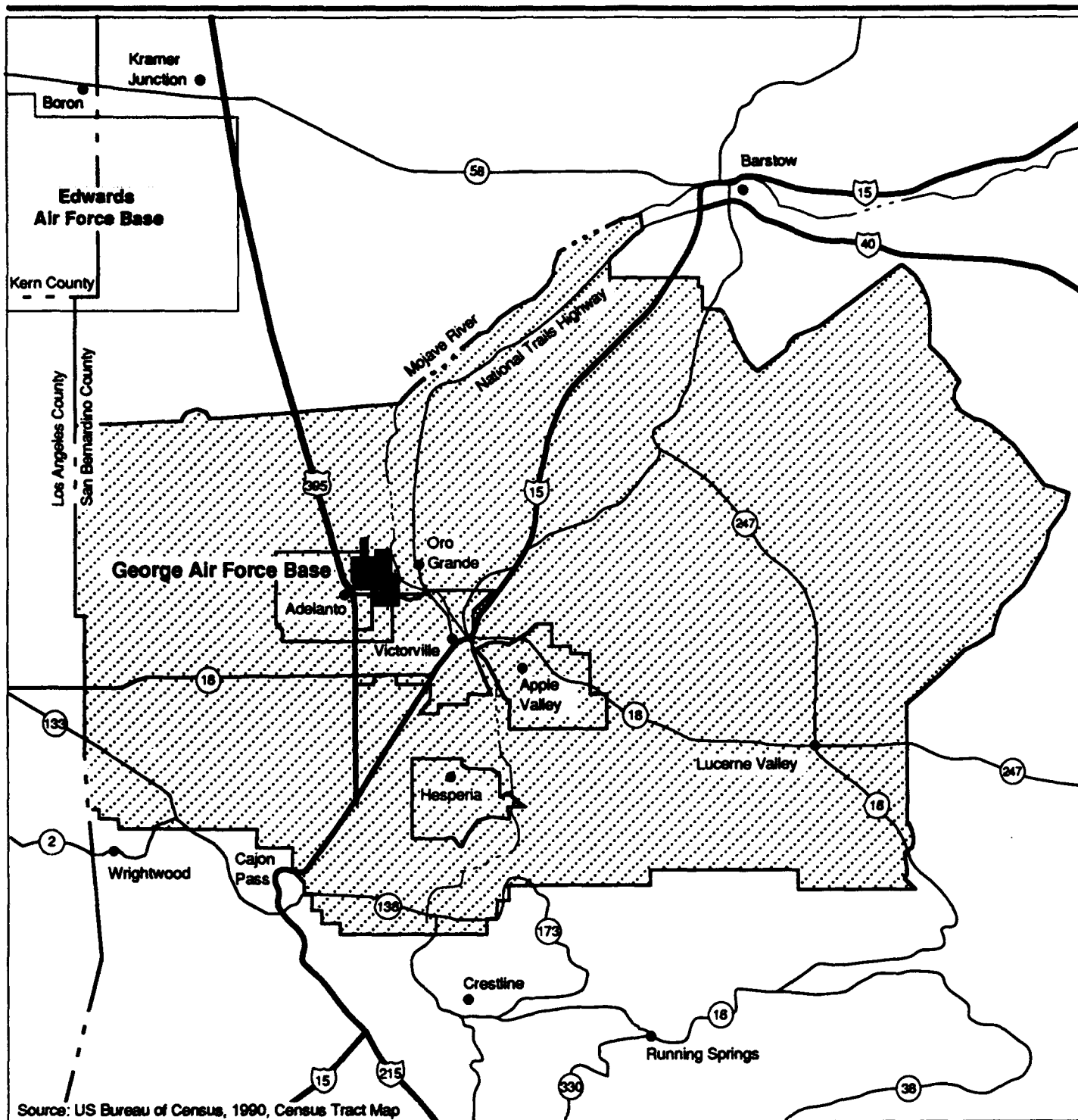
EXPLANATION

- * Airports
- ▨ "Victor Valley" Census Tracts
- 15 Interstate Highway
- 101 U. S. Highway
- 74 State Highway





Socioeconomic Study Area Map

George AFB, California

Figure 2.1-1



EXPLANATION

-  "Victor Valley" Census Tracts
-  Interstate Highway
-  U.S. Highway
-  State Highway



Area of Concentrated Study

George AFB, California

Figure 2.1-2

Economic Activity

San Bernardino and Riverside counties are among the fastest growing areas in the nation. These counties' economic growth is generated by the eastward expansion of manufacturing, service industries, and construction activity of the Los Angeles basin. Communities in the Victor Valley have developed rapidly and continue to do so, because of their proximity to the center of the Inland Empire (the cities of San Bernardino and Riverside) and the relative affordability of housing compared with other areas of southern California.

Total employment in 1988 amounted to roughly 856,000 jobs in the two-county Riverside and San Bernardino Primary Metropolitan Statistical Area (PMSA); approximately 25 percent was in the services sector, 18 percent in retail trade, 19 percent in government, 10 percent in manufacturing, 9 percent in construction, and 7 percent in finance, insurance, and real estate, with the remaining 12 percent in other sectors.

This region, and the Victor Valley in particular, is much more dependent upon military employment than the nation as a whole. Over the past 20 years, however, dependence on government employment has been declining as a result of large population and job growth, not loss of military jobs.

In 1987, there were approximately 28,700 total jobs in the Victor Valley. It is estimated that in 1990 there were approximately 34,100 jobs in the Victor Valley, representing a 5.8-percent annual growth rate in jobs (Southern California Association of Governments, 1989). The largest employers in the Victor Valley are George AFB, Continental Telephone of California, Victor Valley School District, Hesperia Unified School District, and the Southwest Portland Cement Company (with at least 900 jobs at each organization).

Population and Housing

The populations of San Bernardino and Riverside counties were among the four fastest growing in California during the 1980s. Although San Bernardino County's population grew more slowly than Riverside County's, it still increased from 895,000 to about 1,418,000 during the decade, a gain of approximately 523,000 persons. Victor Valley communities all witnessed rapid population growth during the 1980s, particularly during the last half of the decade when the valley comprised the fastest growing portion of San Bernardino County. The populations of Adelanto and Hesperia nearly quadrupled between 1980 and 1990, while Apple Valley and Victorville both tripled in population during the decade. Both San Bernardino and Riverside counties are projected to continue their rapid growth through the year 2020.

As was the case with many facets of San Bernardino and Riverside counties, the number of housing units increased dramatically during the 1980s. Some of the

most rapid housing growth in San Bernardino County occurred in the Victor Valley. Total housing units in Adelanto, Apple Valley, and Hesperia nearly tripled between 1980 and 1990; total units in Victorville, in turn, increased by roughly 2.5 times over the same period. Estimated 1990 vacancy rates were high in all Victor Valley communities except Victorville, though these magnitudes largely reflect recent rapid construction of new housing.

Public Services

The four cities in the vicinity of George AFB (Adelanto, Apple Valley, Hesperia and Victorville) have established municipal governments which provide a full range of community services to their residents, including public safety and correction, structural fire protection and brush fire suppression, health care services, and public works. Each of these cities is relatively young; two of the four communities (Apple Valley and Hesperia) were incorporated as recently as 1988.

In addition to each city's municipal services, other entities also provide community services in the region. For example, San Bernardino County provides law enforcement and corrections services from the Victor Valley Station of the Sheriff's Office, and the California Department of Forestry and Fire Protection offers fire prevention and suppression services for unincorporated areas throughout the High Desert.

Five public school districts in the Victor Valley provide public primary and secondary education to local school-aged children. In recent years, each school district has experienced increasing enrollments and each anticipates this accelerating growth in enrollment to continue. Dependents of personnel at George AFB attend classes in each of the area's school districts, although the concentration of dependents within each district varies. Victor Valley Community College in Victorville offers continuing education and training for university-bound students and adults. Also within an approximate 50-mile radius are campuses of the University of California (Riverside), California State University (San Bernardino), and California State Polytechnic University (Pomona).

The region offers a diverse range of municipal recreational facilities, as well as desert recreational areas that offer unique outdoor activities. Other attractions found in southern California are within 120 miles to the south and southwest of the Victor Valley.

Public Finance

Four cities (Adelanto, Apple Valley, Hesperia, and Victorville) provide and finance basic public services to area residents. In addition, five school districts provide and finance basic public education services. Local property and

non-property tax revenue, license and fee revenue, and intergovernmental transfers generally are the principal revenue sources of the cities. School districts depend, to a large degree, upon state education aid programs. In addition, federal impact assistance under Public Law 81-874 programs plays an important role in the Adelanto Elementary School District and Victor Valley Union High School District.

In addition, upon implementation of the reuse plans for George AFB, the Victor Valley Economic Development Authority (VVEDA) will play an important role in the development and operation of the planned facilities.

Transportation

Access to and through the region is provided by road, rail, and air transportation systems. The major highway serving the Victor Valley is Interstate 15 (I-15) which links the area with Barstow and Las Vegas to the northeast and San Bernardino (via I-215), Ontario, and San Diego to the south. Connections in San Bernardino, using the extensive greater Los Angeles freeway system and other interstate highways, can be made to provide access throughout southern California. Smaller arteries, such as State Route (SR) 18, link the region with Palmdale to the west and the San Bernardino mountain resorts to the southeast.

AMTRAK provides direct passenger service from Victorville north to Las Vegas and south to San Bernardino and Los Angeles; connections to other parts of the nation can be made from these destinations. Rail service with the Union Pacific and Santa Fe Railroads is available in Victorville. "Piggyback" freight service (truck trailers on railroad cars) is available for pickup and delivery by Santa Fe Railroad; Union Pacific requires independent carrier service.

Although small private airports designed for recreational use and pilot training operate in the Victor Valley (at Adelanto, Apple Valley, and Hesperia), the largest major airport serving the region is ONT, approximately 45 miles to the southwest. ONT is served by at least eight major carriers with direct or connecting flights to all major cities in the nation with limousine/shuttle service available between Victor Valley and the airport.

Utilities

Utilities in the area surrounding George AFB are supplied by both regional commercial suppliers and local municipalities. There are over 100 public and private water purveyors in the Victor Valley region. Major water purveyors include the Hesperia Water District; Victor Valley Water District; Apple Valley Ranchos Water Company; City of Adelanto Water Department; Southern California Water Company - Victorville Nos. 1, 4, and 5; County Service Area 70-J; Marianna Ranchos County Water District; and Apple Valley Heights

County Water District. The Mojave Water Agency is the state water project administrator for the area.

Sewerage service is provided by VVWRA, although a relatively large percentage of residences and commercial buildings use septic sewerage systems. VVWRA is a joint powers agency with each user-community responsible for its individual sewerage collection system. VVWRA is responsible for maintenance and service of the region's treatment plant and the major interceptor lines connecting the plant with each of the municipalities' individually-operated collection systems.

Solid waste in the Victor Valley region is currently disposed of in the Apple Valley, Hesperia, Phelan, and Victorville landfills. Each community has contracted with disposal companies for solid waste removal from their municipalities.

Providers of gas and electricity service include the Southwest Gas Corporation (SW Gas) and Southern California Edison Company (SCE). The networks or service ranges of each of these public utility companies extend beyond the limits of the High Desert.

Airspace

Flight activities at George AFB currently have little or no direct effect on ONT, Palmdale Airport, Edwards AFB, and Norton AFB, the closest major airfield operations. General aviation users of Hesperia and Apple Valley airports and other public and private airfields in the vicinity of George AFB are required to contact the base's control tower when transiting the control zone surrounding the base 5 miles in every direction.

2.2 PRECLOSURE BASE PROFILE

2.2.1 Employment

Total full- and part-time military and civilian employment (excluding students) at George AFB in FY 1990 totalled approximately 5,460 jobs. This total has decreased since FY 1987 by more than 1,200 jobs (Table 2.2-1). This decrease included more than 1,100 permanent-party military personnel, from 5,527 in FY 1987 to 4,346 in FY 1990, and 28 civilian positions, from 1,145 in FY 1987 to 1,117 in FY 1990. Very nearly all of the recent reductions occurred from FY 1989 to FY 1990.

2.2.2 Population and Housing

At the end of FY 1990, the total George AFB military population was approximately 13,300 persons (permanent party military members plus their

Table 2.2-1. George AFB Employment

Employment Category	FY 87	FY 88	FY 89	FY 90
Permanent-party military	5,527	5,246	5,364	4,346
Civilian personnel				
Appropriated fund	516	519	425	437
Nonappropriated fund/Base Exchange	415	426	484	420
Contract civilians	33	78	237	188
Private business	97	68	48	41
Other	84	28	28	31
Subtotal	1,145	1,119	1,222	1,117
Total Employment	6,672	6,365	6,586	5,463

Note: Closure announcement was made in FY 1989.
 Source: U.S. Air Force, 1988a, 1989a, 1990c, 1991a.

dependents) (see Table 2.2-2). This represented an increase of about 1,740 persons since FY 1987, due entirely to a rise in the number of military dependents while the number of military personnel declined. Nearly 7,500 personnel and dependents lived on base in FY 1990, representing 56 percent of total military population. The remaining military population, approximately 5,800 persons, resided in various communities in the vicinity of the base.

Table 2.2-2. Military Population and Housing, George AFB

Category	FY 87	FY 88	FY 89	FY 90
Permanent party				
Living on base	3,134	2,897	2,496	2,310
Living off base	2,393	2,349	2,868	2,036
Subtotal	5,527	5,246	5,364	4,346
Military dependents				
Living on base	3,205	3,208	5,919	5,186
Living off base	2,818	3,051	5,268	3,759
Total - permanent party plus* dependents	11,550	11,505	16,551	13,291
Military retirees**	2,249	2,350	2,422	2,537
Housing assets				
Family housing units	1,641	1,641	1,641	1,639
Unaccompanied quarters				
Dormitory facilities	37	27	26	26
Bed capacity	2,199	1,754	1,786	1,786

* Due to Differences in how military dependents were calculated in the George AFB ERISs, total permanent party plus dependents for FYs 87 and 88 are not comparable to FYs 89 and 90.

** Retirees in George AFB Economic Impact Region are represented by the following zip codes: 92301, 92307, 92342, 92345, 92368, 92371, 92372, 92392, 92394, and 92397 (George AFB FY 90 ERIS).

Note: Closure announcement was made in FY 1989.
 Source: U.S. Air Force, 1988a, 1989a, 1990c, 1991a.

The number of military retirees in the vicinity of George AFB totalled about 2,540 in FY 1990 (see Table 2.2-2 for the list of zip code areas in which these retirees live). The number of military retirees in the area has increased gradually in the past several years, from about 2,250 in FY 1987.

The number of military family housing (MFH) units on base total approximately 1,640. For unaccompanied personnel, living quarters are available on base for nearly 1,790 persons in 26 dormitory structures. The number of dormitories in use on base has decreased since FY 1987.

2.2.3 Payrolls

Total payrolls have declined from \$126 million in FY 1987 to \$114 million in FY 1990 (Table 2.2-3). Although the civilian payroll increased between FYs 1989 and 1990, the large drop in military payroll during the same period accounts for the overall decrease in George AFB's total payroll. This military payroll reduction corresponds to the decline in George AFB permanent party military personnel assignments. Like the reduction in military personnel, the payroll decline occurred from FY 1989 to FY 1990.

Table 2.2-3. George AFB Payrolls (In \$ thousands)

Category	FY 87	FY 88	FY 89	FY 90
Military	107,850	109,148	112,146	93,820
Appropriated fund civilians	10,982	12,378	12,067	13,425
Nonappropriated funds and other civilians	6,855	7,749	4,773	7,116
Total payrolls	125,687	129,275	128,986	114,361

Note: Closure announcement was made in FY 1989.

Source: U.S. Air Force, 1988a, 1989a, 1990c, 1991a.

2.2.4 Expenditures

George AFB's local expenditures totalled approximately \$33 million during FY 1990 (Table 2.2-4). Annual local spending by the base has declined more than \$7 million from FY 1989 to FY 1990, and more than \$20 million from FY 1987 to FY 1990.

Local spending by the base has historically included outlays for construction, services, commissary and base exchange goods, education support, health care, and other materials, equipment, and supplies. Between FY 1987 and FY 1990, annual base construction spending fell by nearly \$26 million, or more than 90 percent. This reduction reflects the cessation of new and renovation investment in base facilities following announcement of plans to close the base.

Table 2.2-4. George AFB Annual Expenditures (in \$ thousands)

Expenditure Category	FY 87	FY 88	FY 89	FY 90
Total Construction	28,239	32,080	19,749	2,431
Services Contracts	8,633	10,258	11,675	17,814
Building and Grounds	1,658	1,682	2,599	6,172
Telecommunications	42	49	302	344
Utilities and Energy	5,452	6,943	6,245	6,351
Computer Costs	200	230	154	112
Other Services	1,281	1,344	2,375	4,835
Commissary/Base Exchange	7,110	7,110	3,433	5,198
Education	1,912	2,344	2,518	2,751
Health	3,841	3,886	2,975	4,703
Temporary Duty (TDY)	3,469	1,266	297	133
Total Annual Expenditures	53,204	56,944	40,647	33,030

Note: TDY expenditures are local outlays for contract quarters when on-base quarters were not available for visitors. FY 89 construction spending includes unspecified portion of building and grounds services. Closure announcement was made during FY 89.

Source: U.S. Air Force, 1988a, 1989a, 1990c, 1991a.

Spending for commissary and base exchange goods and other materials, equipment, and supplies also declined from FY 1987 to FY 1990. Outlays for services, education, and health increased from FY 1987 to FY 1990, but only enough to partially offset the declines in construction and other spending.

2.2.5 Programs and Services

In addition to its primary role as 831st Air Division Headquarters, home of the 35th Tactical Training Wing, and the 37th Tactical Fighter Wing, the base offers a full range of programs and services for active and reserve military personnel, their dependents, and retired personnel. These services include a hospital, recreational facilities, a base exchange and commissary, and housing services. The following discussion focuses on the hospital and recreational facilities; operational details of the base exchange employment and expenditures are shown in Tables 2.2-1 and 2.2-4 respectively; housing information is contained in Section 2.2.2.

The George AFB Hospital provides multiple medical and dental services to both in- and out-patients in the tri-county area around the base. The hospital has a 25-bed in-patient facility which had 2,123 admissions and served 161,366 out-patients in FY 1989 (U.S. Air Force, 1990c). Medical care is provided free to all active and retired military personnel and their dependents. The hospital complex offers services in internal medicine, family practice, obstetrics, gynecology, physical therapy, pathology, radiology, general surgery, optometry, dentistry, and orthodontics, as well as providing a full pharmacy, emergency room, and ambulance service. The base hospital also serves as one

of the three clinical training sites for the nursing program at Victor Valley Community College.

On-base recreational facilities include 30 buildings for various indoor activities, as well as numerous outdoor recreational areas. Among these facilities are a golf course, three swimming pools, bowling center, community center, and a child care center.

2.2.6 Educational Facilities

The Adelanto Elementary School District operates two elementary schools on George AFB: George Elementary and Sheppard Elementary. Over 90 percent of these schools' enrollments are dependents of George AFB personnel. Victor Valley Community College offers more than 50 post-secondary courses at facilities on the base. Classes on-base are open to military personnel and their dependents, as well as the general public. A modern on-base fire fighting training facility is used exclusively for Air Force personnel instruction.

2.3 CLOSING BASE PROFILE

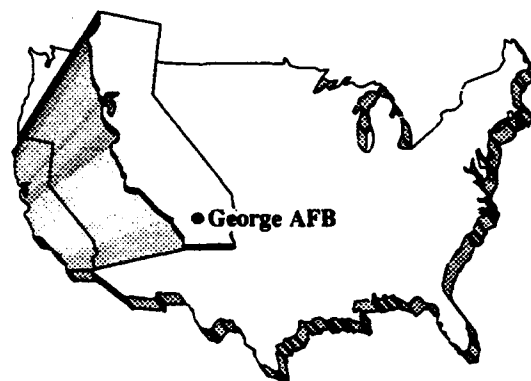
2.3.1 Closure Profile

Although actual draw-down plans have not been finalized, it is assumed that a constant level of base employment (military, direct and indirect civilian) continues through September 1991. The level of base-related employment will gradually decrease from October 1991 to April 1992. From May 1992 through the end of the year, there will be major reductions in base-related employment. The base will be officially closed in December 1992.

2.3.2 Post-Closure (Caretaker Status)

At closure, and assuming no reuse activities, DMT activities will occur at the base. Under caretaker status, a minimal staffing level would be required to maintain existing facilities and grounds. It is estimated that approximately 50 direct on-site jobs would be generated as a result of DMT activities.

THIS PAGE INTENTIONALLY LEFT BLANK



CHAPTER 3

EVALUATION AND CHARACTERIZATION OF SOCIOECONOMIC RESOURCES

3.0 EVALUATION AND CHARACTERIZATION OF SOCIOECONOMIC RESOURCES

Chapter 3 defines the socioeconomic region of influence (ROI) and areas of concentrated study (ACS) for individual socioeconomic issues, presents the data sources and methods used for both baseline and impact analyses, and describes baseline socioeconomic conditions. Preclosure conditions are described for two distinct periods of time: recent actual conditions through 1990 and projected future conditions up to base closure in 1993. Closure baseline is defined as those socioeconomic conditions at the time of base closure. Post-closure conditions, with the base assumed to be in caretaker status, and projected impacts resulting from potential reuse activities associated with the Proposed Action and the alternatives, are discussed in Chapter 4.

3.1 REGION OF INFLUENCE AND AREA OF CONCENTRATED STUDY

This study evaluates the socioeconomic effects of closure and reuse of George AFB at two geographic scales. The first scale is the region of influence (ROI), intended as the region in which the principal direct and secondary socioeconomic effects of actions at George AFB are likely to occur. The second scale is the ACS, the area where socioeconomic effects are expected to be of most consequence for local jurisdictions.

Two factors were important in determining the ROI and ACS used in this analysis. The first was the distribution of residences for current military and civilian personnel stationed at George AFB. This residential distribution will have a critical influence on where the greatest effects of closure will occur. It will also provide a useful guide to the possible effects of reusing the base, since it reflects current availability of suitable housing, existing commuting patterns, and attractiveness of area communities for people employed on the site. As described in Section 3.3.1, both the civilian distribution and the distribution of military personnel serve to quantify the effects of closure. However, the current distribution of civilian personnel is used only to estimate the future distribution of direct worker residences.

Table 3.1-1 displays the residential distribution by school district and zip code for all personnel employed at the base for which data are available. School districts are used to present and analyze this information because they provide a comprehensive and mutually exclusive coverage of the entire geographic area. Data on the zip codes of residences for a large portion of base personnel were obtained from the base personnel offices. These zip codes were mapped to school districts to derive the information presented in Table 3.1-1. Most base

Table 3.1-1 Residential Locations of George AFB Military and Civilian Personnel by School District and Zip Code

District and Code	Military	Civilian	Total	Percent of Total
Adelanto ESD	2,841	88	2,929	62.2
Adelanto (92301)	226	32	258	-
George AFB (92394)	2,615	56	2,671	-
Helendale ESD (92342)	17	2	19	0.4
Oro Grande ESD (92368)	1	1	2	0.0
Victor ESD (92392-92393)	830	180	1,010	21.5
Apple Valley USD				
(92307-92308)	415	108	523	11.1
Hesperia USD (92345)	59	41	100	2.1
Barstow USD (92311)	8	5	13	0.3
Snowline JUSD (92371, 92372, and 92397)	11	12	23	0.5
SW San Bernardino County	43	16	59	1.3
Rest of San Bernardino County	14	3	17	0.4
Riverside County	5	2	7	0.2
Total Sample	4,244	458	4,702	100.0

Note: Data shown include all personnel for which information was available. Less than 1 percent of the sample resided outside San Bernardino and Riverside counties.

Source: George AFB, 1991. Mapping to school districts prepared for this study, March 1991.

personnel presently live within the boundaries of the Adelanto, Victor, and Apple Valley school districts.

The second factor in determining the extent of socioeconomic impacts was the degree of linkage among the economics of communities in the region. This linkage, based on trade among sectors within the region, determines the nature and magnitude of multiplier effects of actions at the base. George AFB is located within the Riverside-San Bernardino PMSA, a two-county region identified by the federal government as possessing extensive economic interactions and linkages. Due to these interactions, most of the regional socioeconomic effects associated with closure and reuse of George AFB would occur within San Bernardino and Riverside counties.

Considering both the residential locations of George AFB personnel and the nature of economic interactions in the region, San Bernardino and Riverside counties were selected as the ROI for this analysis. Due to the expectation that the Victor Valley area would be most affected by persons relocating from and to the area due to George AFB closure and reuse, Victor Valley communities were selected as areas of concentrated study for the issues addressed in this analysis. Specific socioeconomic factors further influencing the selection of study areas are discussed below.

3.1.1 Economic Activity

Regional purchases associated with George AFB, both base spending for goods and services and base personnel spending of payrolls, were reported in Economic Resource Impact Statements prepared annually for the past 4 FYs, 1987 through 1990 (see Section 2.2). The regional expenditures cited in these statements were reported for an area within a 50-mile radius around the base, which primarily includes the Riverside-San Bernardino PMSA. Although the 50-mile radius includes portions of both southeastern Kern and northeastern Los Angeles counties, it is anticipated that almost all of the regional demands associated with reported payroll expenditures, and most of the demands associated with reported goods and services expenditures, occur within Riverside and San Bernardino counties. Most demands associated with regional economic effects of base closure and potential reuse activities at the site also are anticipated to be concentrated within the two-county ROI. The Victor Valley, defined along Census tract boundaries as described in Section 2.1, is expected to experience the greatest levels of employment effects, and was chosen as the ACS for analysis of economic impacts. Potential indirect effects which may occur outside the two-county ROI, in Los Angeles or other southern California counties, are expected to be minimal after dispersion in such a large economic region, and are excluded from further analysis.

3.1.2 Population and Housing

Population and housing effects from closure and the potential reuse of the base were analyzed for the two-county ROI and for the Victor Valley ACS. Additional impact information is provided for the Victor Valley communities of Adelanto, Apple Valley, Hesperia, and Victorville. These communities individually accounted for at least 5 percent and together accounted for more than 90 percent of the places of residence of civilian personnel currently employed at George AFB (Table 3.1-1). Military and civilian personnel working at the base represent at least 1 percent of 1990 population for each of these communities except Hesperia. Hesperia was included in the analysis because of the potential for reuse impacts which may affect the city. Population and housing effects within individual communities in the remainder of San Bernardino and Riverside counties were expected to be too small to warrant further analysis.

3.1.3 Public Services

The area of concentrated study for the public service analysis is the Victor Valley subregion of San Bernardino County. Within this geographic area, the analysis focuses on the principal jurisdictions which have the closest linkages to the George AFB site: those providing services directly to George AFB military and civilian personnel or their dependents; those having public service and facility arrangements with the base; and those likely to be most affected by potential reuse of the base.

Potentially affected municipalities include the cities of Adelanto, Victorville, and Hesperia, and the town of Apple Valley. School districts that may be affected by closure and reuse of the base include Adelanto Elementary, Victor Elementary, Victor Valley Union High, Apple Valley Unified, and Hesperia Unified School Districts. These school districts, except for Hesperia, individually accounted for at least 10 percent of the places of residence of total George AFB military and civilian personnel (see Table 3.1-1). In each of these districts, again excluding Hesperia, federal enrollments accounted for at least 3 percent of total 1990 enrollments. Hesperia was included in addition to the other jurisdictions due to the potential for greater impacts under reuse alternatives.

Component police departments, fire protection agencies, and recreation departments, including the units of the San Bernardino County government responsible for providing services to unincorporated areas, are also included.

3.1.4 Public Finances

The area of concentrated study for public finances consists of the local governmental units that are expected to receive the majority of impacts from base closure and/or potential reuse. These jurisdictions include the city of Adelanto, the Adelanto Elementary School District, the town of Apple Valley, the Apple Valley Unified School District, the city of Victorville, the Victor Elementary School District, the Victor Valley Union High School District, and Victor Valley Economic Development Authority. These jurisdictions individually accounted for at least 10 percent of the total military and civilian personnel currently assigned to George AFB. Other jurisdiction in the region, such as the city of Hesperia and Hesperia Unified School District, will also experience project-related effects. However, these changes would likely represent less than a 1-percent difference from baseline levels; therefore, their impacts would likely be negligible.

3.1.5 Transportation

The area of concentrated study for the transportation analysis includes the Victor Valley portion of San Bernardino County with emphasis on the area surrounding George AFB. Within this geographic area, the analysis examines the principal existing road, air, and rail transportation networks, including the segments of the transportation networks in the region that serve as direct or mandatory indirect linkages to the base, and those that are commonly used by military and civilian personnel at George AFB.

3.1.6 Utilities

The area of concentrated study for the utilities analysis (including water supply and distribution, wastewater collection and treatment, solid waste collection and disposal, and energy supply and distribution) generally consists of the service

areas of the local purveyors that serve George AFB and the surrounding Victor Valley.

3.1.7 Airspace

The area of concentrated study for assessing economic effects from changes in airspace use is the area encompassing the principal airports and smaller public and private airfields where operations could be affected by closure and/or reuse of George AFB. Based on personal communications with local FAA, airport, and airfield personnel, this area was found to be enclosed within an approximately 50-mile radius around George AFB. Airports and airfields included in this assessment are Ontario, Palmdale, Hesperia, Apple Valley, Norton AFB, Rialto, Redlands, and Edwards AFB, and one private airfield (Paisades Ranch). There are other air operations in the area. The impacts analyzed are an indication of possible impacts on other locations.

3.2 DATA SOURCES

3.2.1 Economic Activity

County-level jobs and earnings data, provided by major industrial sector, and per-capita personal income data were obtained for the years 1969 through 1988 from the Regional Economic Information System (U.S. Bureau of Economic Analysis, 1990). Unpublished data on national output and employment, by industrial sector, were obtained for the years 1958 through 1988 from computer files of the Office of Economic Growth (U.S. Bureau of Labor Statistics, 1989). Indices for the conversion of current year dollars to constant 1990 dollars were provided in the *Annual Report of the U.S. Council of Economic Advisors* (1991). Data pertaining to the existing labor force, employed and unemployed workers, and unemployment rates in the Riverside-San Bernardino PMSA were obtained from the California Employment Development Department (1990). This source also provided additional information pertaining to recent trends in the major industrial sectors of the regional economy. Information concerning the largest employers in the Victor Valley was obtained from local municipal planning departments and chambers of commerce publications. Data on recent and projected employment by census tract within the Victor Valley were obtained from the Southern California Association of Governments (1989).

Data concerning George AFB employment, payrolls, and spending within the region were obtained from *George AFB Economic Resource Impact Statements* (U.S. Air Force, 1988a, 1989a, 1990c, 1991a).

3.2.2 Population and Housing

The principal source of population data for this study was the U.S. Bureau of the Census. The data examined included the final 1990 census counts for counties

and places (U.S. Bureau of the Census, 1991). Supplemental population data were available from the 1980 census of population (U.S. Bureau of the Census, 1982a), which when compared with the 1990 data, provided the trend in population change experienced in the ROI. Population projections prepared for individual counties by the Demographic Research Unit of the California Department of Finance (CDF) and by the Southern California Association of Governments (SCAG) were used to indicate anticipated population changes in Riverside and San Bernardino counties over the next two decades (California Department of Finance, 1985, 1991; Southern California Association of Governments, 1989). Data regarding the residential distribution of base personnel were obtained from the George AFB Consolidated Assistance and Relocation Effort (CARE) Officer (George AFB CARE Office, 1991).

The main source of data on housing characteristics was the 1990 census of population and housing (U.S. Bureau of the Census, 1991). Additional housing data were obtained from the 1980 census of housing (U.S. Bureau of the Census, 1982b). The 1980 and 1990 data were used to assess recent trends for several key housing characteristics.

Data found in the current construction reports series provided information on housing units authorized by construction permits (U.S. Bureau of the Census, 1981, 1982c, 1983, 1984, 1985, 1986, 1987b, 1988, 1989, 1990). Supplemental housing data were provided by various other federal, state, county, community, and private sector sources. Particularly useful were planning documents from the rapidly growing communities in the Victor Valley (City of Hesperia Planning Department, 1990a, 1990b, 1990c, 1991; City of Victorville Planning Department, 1991; Town of Apple Valley, 1990).

3.2.3 Public Services

Due to the jurisdiction-specific nature of the public service analysis, there exists no single clearinghouse of data from which all pertinent and necessary information addressing government structure, public education, police and fire protection, health care, and recreation can be acquired. Therefore, information regarding staffing levels, jurisdictional boundaries, degrees of use, equipment, and facilities for public service providers was obtained through personal communication with agency representatives or from documents published by these agencies. Additional information regarding public education was obtained from the California Department of Education in Sacramento and the County Superintendent of Schools in San Bernardino as well as the individual school districts within the ROI. Information related to similar community services currently provided by the federal government within the boundaries of George AFB was acquired directly from the base.

3.2.4 Public Finances

Data sources for public finance included the most recent financial reports back to FY 1988 and the current year budget reports for the potentially affected local government units. The financial reports provided the actual amount of revenue collected and money spent in the jurisdictions and compared these amounts to budgeted levels. Budget reports were used as supplements to the financial reports as sources of specific property tax information and projections of current year revenues and expenditures. Formulas for calculating state revenue limits for local school districts were obtained from the State Department of Education.

3.2.5 Transportation

Data regarding road and highway transportation, including maps, circulation plans, highway improvements plans, and traffic volume counts were collected from George AFB, local jurisdictions (including the city of Victorville and San Bernardino County), SCAG and the California Department of Transportation (Caltrans) District 8 Office. Data addressing private, passenger, and cargo air service in the region were acquired directly from representatives of airports serving the area and air transportation studies of the area. Information regarding rail transportation was obtained from VVEDA and from maps of the region (see George AFB Closure and Reuse EIS).

3.2.6 Utilities

Staff of functional offices at George AFB, including Civil Engineering and the Comptroller's Office, provided historic consumption data, peak demand characteristics, storage and distribution capacities, and related information for base utilities. Information also was obtained from various engineering reports and *George AFB Comprehensive Plan* maps. Public and private utility suppliers, and related county and local agencies, were also contacted to obtain historic consumption data, peak demand characteristics, storage and distribution capacities, and related information, including projections of future utility demands for the particular service areas of each utility provider (see George AFB Closure and Reuse EIS).

3.2.7 Airspace

The principal source of information for the airspace assessment included in this study was interviews with operations personnel and/or FAA representatives at airfields in the study area. Interviews were conducted from January through July 1991 regarding the nature and extent of current interactions between potentially affected airports and George AFB, and expected changes in this interaction upon closure and reuse of the base. Interviews were conducted with two FAA representatives responsible for Ontario and Palmdale airports and

Edwards AFB; the Air Force Flight Test Center's Plans and Programs Office at Edwards AFB; operators of Hesperia, Rialto, Redlands, and Apple Valley airports; and the owner of one private airfield (Paisades Ranch).

3.3 METHODS

This section presents methods used to evaluate existing and future socioeconomic conditions, both for the post-closure baseline (closure and caretaker status) and for the Proposed Action and other alternatives. The description of existing socioeconomic conditions includes important indicators that provide a basis for comparison to national trends, as well as to future conditions with and without the Proposed Action and alternatives.

All changes exclusive of potential reuse were considered baseline changes and include impacts of closure. The baseline refers to conditions without reuse. All changes associated with proposed reuse actions and alternatives were considered impacts. The No-Action Alternative was considered equivalent to closure baseline conditions.

Historic data were used to define existing conditions and recent trends, as well as to develop projections of future socioeconomic conditions that would result from base closure without reuse. This section identifies any potential beneficial or limiting factors present within the region. Impact assessment (Chapter 4) then determines whether such factors might make the region either more or less susceptible to negative socioeconomic impacts as a result of the Proposed Action and alternatives.

3.3.1 Economic Activity

The socioeconomic impact analysis utilized total output, employment, and earnings multipliers for the Riverside-San Bernardino PMSA, obtained from the U.S. Bureau of Economic Analysis (BEA) Regional Interindustry Multiplier System (RIMS II). These interindustry multipliers were prepared by the BEA using the U.S. input-output table in combination with the most recent region-specific information describing the relationship of the regional economy to the national economy. The BEA's RIMS II model is based on research by Cartwright, et al. (1981).

The same methodology was used to develop quantitative projections of economic activity for the future baseline, the Proposed Action, and the other reuse alternatives. Changes in regional demand in each local industrial and household sector were first estimated:

- For preclosure and closure conditions, demands from residual base operations and caretaker activities were estimated from employment, payroll, and contract data published in *Economic Resource Impact Statements* for George AFB.

- For reuse, construction-phase demands were estimated from cost data published by R.S. Means Company, Inc., from parameters developed in the *George AFB Land Use Concept Plan*, and from RIMS II labor and material coefficients. Operations phase demands were estimated from land use-jobs planning factors and RIMS II coefficients.

These primary or direct effects were then multiplied, using RIMS II coefficients specific to the regional economy, to provide estimated total spending associated with the reuse alternatives. Input-output sectors were selected to reflect the anticipated spending profile associated with the Proposed Action and alternatives in order to capture the economic characteristics of each scenario within the ROI. The forecasts of total output, employment, and earnings within the ROI then became inputs to the local area impact analysis for distribution to sub-county areas.

Numbers of in-migrant workers associated with each alternative and out-migrant workers associated with phase-down of base operations were estimated according to a set of proportional assumptions. The percentages were extrapolated from assumptions developed by Spiegel and Hewings (1989) for a study of the closure of Chanute AFB in Rantoul, Illinois. All military personnel would leave the area when the base closes. Most civil service employees are in skilled positions, which increases the likelihood of migration from the area. Contract employees generally are employed under service contracts at the base, many of which are in low-skilled positions, which decreases the likelihood of out-migration.

The ROI for George AFB is much more urbanized than the region studied by Spiegel and Hewings, so out-migration in each category is expected to be less. There are generally more job opportunities for various skill levels than was the case in the Spiegel and Hewings study which should encourage more people to remain in the ROI. Similarly, military retirees will still be within commuting distance of medical care at March AFB.

In-migrant parameter values are related to the out-migrant parameter values. Direct on-site operations were assumed to require skill levels similar to those of civil service personnel. The number of students in-migrating would be less for a community college than for a four year college or university. These parameter values are specified in Table 3.3-1.

Under relocation parameter values used in this analysis, employment impacts are expected to be greater than population impacts. For example, for each 100 direct jobs created by a reuse plan, 30 are projected to be filled by workers moving into the ROI while the remaining 70 jobs would be filled by local hires. For indirect jobs an even smaller fraction of jobs (10 percent) is projected to be filled by relocating workers. Depending on the mix of direct and indirect jobs, it is likely that employment impacts of a reuse scenario would exceed population

Table 3.3-1. Assumed Percentages of Population Relocation by Employment Category

Employment Category*	Percent Relocating to/from Region	Household Size
Out-migration categories^(a)		
Military	100	3.07
Civil service (Appropriated fund)	40	2.91
Non-appropriated fund	5	2.91
Contract	5	2.91
Indirect	5	2.91
Retired Military	10	2.00
In-migration categories^(b)		
Direct on-site operation ^(c)	30	2.91
Construction	10	2.91
Indirect (on and off site)	5	2.91
Students (4-year college)	50	1.00

* Note: Not all categories are applicable to all options.

(a) The out-migration categories relate to current base operations. Assumptions were developed for this analysis, February 1991.

(b) The in-migration categories relate to the various reuse alternatives. Assumptions were developed for this analysis, February 1991.

(c) This assumption was applied to all the reuse alternatives except Caretaker Status, for which in-migration was assumed to be zero.

impacts, even with dependents included as a component of the population impact.

This outcome is consistent with the general economic and demographic character of the Victor Valley and the rest of the ROI. At present, the Victor Valley serves largely as a residential area, with most resident workers commuting outside the area and often enduring very long commutes to work in employment centers to the south and west. It is assumed that many of these same commuters would be available to take many of the jobs that would be created under the Proposed Action or reuse alternatives. In addition, the massive influx of would-be homeowners into the ROI has created secondary and tertiary demands for construction, light manufacturing, and commercial and professional employment to service the area's burgeoning population. A large and diverse labor force currently resides within the ROI. Moreover, this pool of skilled labor should become larger as the number of non-project related in-migrants from neighboring Los Angeles and Orange counties continues to grow in their search for affordable housing. Thus, the available pool of skilled workers to draw from will be expanding. Creation of jobs at the George AFB site would draw upon a portion of the readily available supply of local labor.

The relocation assumptions specified in Table 3.3-1 were judged to be the most likely values applicable to this study. Other parameters values would result in either higher or lower population impacts than those resulting from the

assumptions specified. Such outcomes are certainly possible, especially considering the major structural changes that might accompany such alternatives as the International Airport. Such changes are quite difficult to assess, however, and would not alter the availability of workers of all skill types, including retired Air Force personnel, already in the area.

Average household sizes were assumed to correspond, for most categories, with the average size of state-to-state migrating families between 1980 and 1985. For out-migrating military families, the household size is based on George AFB personnel records. For students and retired military, the average household sizes were assumed to be 1.00 and 2.00, respectively. These assumptions were specific to each type of employment, including direct and indirect employment by category (Table 3.3-1).

The intra-regional allocation analysis separately accounts for the distribution of direct and indirect workers and their families among the various residential areas within the region. The direct portion of the impact allocation process accounts for the two main factors affecting the distribution of in-migrant direct workers: (1) the number of workers anticipated to be directly involved with each alternative; and (2) the locations and relative attractiveness of residential opportunities within the region.

The number of workers associated with each alternative was estimated from land uses and other characteristics of each alternative. The relative attractiveness of residential areas was estimated from George AFB personnel files of civilian workers. The residential choices of current George AFB civilian workers, 40 percent of whom were assumed to leave the region after closure, were anticipated to coincide with the residential choices of direct in-migrants to the area. This assumption was based on the expectations that the attractiveness of each residential location, including attributes such as adequate public and commercial services and proximity to work location, would best be measured by the revealed preferences of current base civilian workers.

Table 3.3-2 shows the relative percentages of military personnel, other direct workers, and indirect workers residing in each local area. These percentages were calculated from the sample data presented in Table 3.1-1. In the first stage of the allocation process, data on residential locations of employees by zip code were mapped to school districts. Further allocation to selected communities was made according to the ratio of community population to school district population, using data derived from census reports. The distribution of secondary jobs was assumed to be proportional to the relative sizes of communities in the region.

Once the allocation of direct and secondary workers and their families was made, other attributes that were results from RIMS II, such as earnings and gross sales, were distributed in accordance with the allocation of in-migrants.

Table 3.3-2. Projected Distribution of Future Relocating Workers (percent)

Local Areas	Military	Civilian Direct	Civilian Secondary	
			Worker Spending	Goods and Services
Adelanto S.D.	66.9	19.0	19.0	0.5
Helendale S.D.	0.4	0.4	0.4	0.1
Oro Grande S.D.	0.0	0.2	0.2	0.0
Victor S.D.	19.5	39.0	39.0	2.1
Apple Valley S.D.	9.8	23.4	23.4	2.4
Hesperia S.D.	1.4	8.9	8.9	1.9
Subtotal, Victor Valley	98.0	90.9	90.9	7.0
Barstow S.D.	0.2	1.1	1.1	1.5
Snowline JUSD	0.3	2.6	2.6	0.8
SW San Bernardino S.D.	1.0	3.5	3.5	42.2
Rest of San Bernardino County	0.3	0.6	0.6	3.2
Riverside County	0.1	0.4	0.4	45.2
Total	99.9	99.1	99.1	100.0

Notes: Assumed an 18.8 enrollment/population ratio. Military and Civilian Direct are based on Air Force-provided zip code data. The Civilian Direct distribution was also applied to secondary jobs created by workers spending. The distribution of secondary jobs created by spending for (non-labor) goods and services is proportional to baseline population distribution in the ROI.

Source: Projections developed for this study 1991; based on George AFB, 1991.

3.3.2 Population and Housing

Population changes associated with preclosure and post-closure baseline trends, the Proposed Action, and all reuse alternatives are an important determinant of other socioeconomic and environmental impacts. These population changes have three key components: (1) baseline growth, (2) relocation of workers and their dependents, and (3) natural increase of population (births minus deaths) over the long term.

Baseline population trends for the ROI and the Victor Valley ACS were prepared by SCAG in 1988 and adopted in 1989 (SCAG, 1989). These projections assumed continued operation of George AFB and Norton AFB within the ROI. The forecasts were then adjusted to reflect the impacts of base closure by subtracting the estimated population loss expected with closure of the base.

The relocation of workers in response to closure and subsequent reuse was determined by utilizing the methods and assumptions discussed in Section 3.3-1. The number of dependents expected to relocate with these workers was estimated based on household size parameters derived from Census demographic data (see Table 3.3-1).

Natural increase of population relocating to the area was calculated using demographic data developed for San Bernardino County by the CDF (CDF, 1990). The CDF data indicate a natural increase (resulting from births in excess of deaths) in the county of 9.1 percent between 1980 and 1999 (CDF, 1990). This is equivalent to approximately a 20 percent gain from natural increase over a 20-year period. This analysis assumes the in-migrating population would exhibit similar fertility and mortality characteristics during the 20-year study period.

To evaluate anticipated population impacts, potential future changes associated with each reuse scenario were compared to changes projected without reuse and to changes that occurred prior to base closure. Both graphic and numerical comparisons were employed in this evaluation. Population changes in Adelanto, Apple Valley, Hesperia, and Victorville, as well as the rest of the Victor Valley, received primary emphasis in this analysis.

The population changes associated with closure and reuse would result in further changes in housing demand. Housing demand impacts of closure and reuse were estimated from migration projected for each scenario, assuming each in-migrating household would require one unit and each out-migrating household would relinquish one unit. The number of relocating households was calculated by dividing the number of people projected to in-migrate to each place by the average family size of state-to-state migrating families (U.S. Bureau of the Census, 1987a).

Expected housing availability was considered for the ROI, ACS, and key communities based on recent housing construction and vacancy trends. Housing projections prepared by government agencies and reuse plans for George AFB housing units also were used to evaluate housing availability. Projected demands associated with reuse scenarios were then assessed in the context of recent housing construction trends and vacancies in key communities.

3.3.3 Public Services

Potential impacts to local public services due to changes in demand associated with closure and reuse of George AFB were determined for the region's key public services: general government, public education, police protection, fire protection, health care, and recreation. Impacts were determined for the jurisdictions that have the closest linkages to George AFB, base military and civilian personnel and their dependents, as well as jurisdictions likely to be most affected by reuse of the base.

Several key assumptions regarding future jurisdictional control of base property were made in determining the impacts to public services. These assumptions also apply to assessment of public finance impacts.

The base is currently located in an unincorporated portion of San Bernardino County; however, public service provision and facility support (with some exceptions, such as public education) has been the responsibility of the federal government. After base closure, under all alternatives except the International Airport Alternative, the county of San Bernardino would become responsible for serving the demand for municipal services, police protection, fire protection, health care services, and recreational services over the base area. Under the International Airport Alternative the base property is proposed for annexation to the city of Adelanto, therefore under this alternative the city of Adelanto would become responsible for providing services to the base area.

The levels of general public service were determined by the ratio of employees (e.g., municipal employees, sworn officers, professional firefighters) to serviced population and by student/teacher ratios at the primary and secondary public school levels. Existing level-of-service ratios were determined for each affected jurisdiction individually. These service ratios were used to estimate jurisdiction-specific future requirements for service.

Projected changes in public school enrollments were estimated based upon the results of the population analysis. The number of future public school instructors that would be required was based on enrollment projections and existing student/teacher ratios. The number of future public-sector employees needed to meet future demand and maintain existing levels of service for other public services was determined using projected population changes and existing level of service ratios. Finally, the analysis examined the geographical distribution of potential impacts. Because of the magnitude of some effects of closure and reuse, past level-of-service ratios may not adequately meet new service requirements. Changes in land area served and types of services to be provided were considered. Discussions with staff at key local agencies were used to assess these particular factors. In particular, under the International Airport Alternative, where the city of Adelanto is to annex the base property, staff members from the city were consulted regarding their ability to provide facilities, services, the number and type of personnel needed.

3.3.4 Public Finances

Local jurisdiction finances were evaluated based on changes in historic revenues and expenditure levels, changes in fund balances, and reserve bonding capacities. The analysis concentrated on each jurisdiction's governmental funds (general fund, special revenue funds, and, as applicable, capital projects and debt service funds). Other funds, such as enterprise funds for operation of an airport authority, which support government activities funded principally through user charges without contributing to the general tax burden of area residents, have not been included in the analyses.

Post-closure conditions (assuming closure and caretaker status of George AFB) and effects of alternative future scenarios (assuming base reuse) were determined by:

- Gains (or losses) of jobs in the region
- Population increases (or decreases) in each jurisdiction, including school districts
- Earnings and income gains (or losses)
- Potential changes in each jurisdiction's property tax base.

Revenue impacts were estimated for both the tax and non-tax revenue sources of each jurisdiction. Changes in tax revenue were estimated for the major types of tax collected by the local jurisdiction based on the change in the tax base resulting from closure or reuse (e.g., taxable retail sales based on earnings and income gains or losses, and assessed values) and the effective tax rate associated with that tax source (e.g., the applicable sales tax rate or property tax rate applicable to each jurisdiction). Non-tax revenue impacts, such as changes in service charges, intergovernmental transfers, fines, fees, and miscellaneous revenues were estimated on a per capita basis. The recent increase in the state sales tax from a basic rate of 6.00 percent to 7.25 percent would not affect local revenues, as the additional funds collected will go directly to the state's general fund. San Bernardino County collects an additional 0.5 cent for transportation projects, but these funds are also not available to support general local government operations. No other additional sales taxes are levied by cities in the Victor Valley area.

Expenditure impacts were estimated based on the historic per capita costs of the principally affected service functions of each jurisdiction (e.g., law enforcement, fire protection, recreation), and the estimated change in the population base of each jurisdiction. Under the International Airport Alternative, where annexation of base property is proposed, the population base affected includes the additional population in the annexed areas. Certain functions, such as administrative and general government functions are assumed to exhibit some economies of scale. Rates for these functions were lowered to reflect the potential savings for these services.

Net fiscal effects, or shortfalls, are based on the projected increase (or decrease) in revenues minus the projected increase (or decrease) in expenditures.

This analysis required specific assumptions regarding jurisdictional control over the George AFB site after base closure. Local redevelopment agencies, such as VVEDA and the city of Adelanto, may have jurisdiction over part or all of the base vicinity during reuse. These agencies would receive the incremental

property tax revenues, above an initial base-year value, associated with site redevelopment.

In the absence of a redevelopment agency, the county government would receive all property taxes due on the land and improvements. These tax revenues typically are shared by the county government, school districts, and other local jurisdictions. Property tax funds available to school districts in this fashion are available to support both operating expenses and capital improvement programs.

Redevelopment agencies are not required to support local school district budgets out of agency property tax receipts. School districts have the option, however, to negotiate with local redevelopment agencies to establish trust funds for capital improvements based on a portion of incremental property taxes. The nature of any such agreements is at the discretion of the school districts and redevelopment agencies. No agreements were assumed for this analysis, although VVEDA is part of existing socioeconomic conditions.

State support of local school districts in California is concentrated on assistance in financing operating expenses. State funding formulas are designed to make up any shortfalls in local district property tax revenues. Hence, allocation of increased property taxes to redevelopment agencies, which are not required to support school district budgets, would mean that any future operating budget shortfalls experienced by school districts shortfalls experienced by school districts would, under current law, be compensated by state funding.

The state is not, however, required to make up any shortfalls in local district capital budgets. Therefore allocation of property taxes to redevelopment agencies instead of to county governments can be expected, in the absence of specific agreements, to reduce capital funds available to affected school districts. This report identifies any potential impacts which could be compounded by these financial considerations.

3.3.5 Transportation

The transportation network of the Victor Valley was examined to identify potential impacts to levels of service (LOS) arising from post-closure baseline conditions (caretaker status of George AFB) and effects of alternative future scenarios. Changes in traffic volumes and peak-hour LOS ratings were projected for road segments (excluding intersections and highway ramps). LOS ratings were based on Highway Capacity Manual recommendations (Transportation Research Board, 1985).

Traffic volumes typically are reported as either the daily number of vehicular movements in both directions on a segment of roadway averaged over a full calendar year (average annual daily traffic, [AADT]) or the number of vehicular

movements on a road segment during the average peak hour. The average peak hour volume typically is about 10 percent of the AADT (Transportation Research Board, 1985). These values are useful indicators in determining the extent to which the roadway segment is used and in assessing the potential for congestion and other problems.

Traffic flow conditions are generally reported in terms of LOS, rating factors that represent the general freedom (or restriction) of movement on roadways (Table 3.3-3). The LOS scale ranges from A to F, with low-volume, high-speed, free-flowing conditions classified as LOS A. LOS E is representative of conditions that, although not favorable from the point of view of the motorist, provide the greatest traffic volume per hour. With minor interruptions, however, LOS E will deteriorate to LOS F (Transportation Research Board, 1985). As traffic volumes increase or traffic-handling capacities along given roadways decrease, free-flow conditions become restricted and LOS deteriorates. LOS F represents breakdown, stop-and-go conditions. Levels of service generally are evaluated and reported for typical clear-weather conditions.

Table 3.3-3. Road Transportation Levels of Service (LOS)

LOS	Description	Criteria (Volume/Capacity)		
		4-Lane Freeway	4-Lane Arterial	2-Lane Highway
A	Free flow with users unaffected by presence of others in traffic stream.	0-0.35	0-0.28	0-0.10
B	Stable flow, but presence of other users in traffic stream becomes noticeable.	0.36-0.54	0.29-0.45	0.11-0.23
C	Stable flow, but operation of single users becomes affected by interactions with others in traffic stream.	0.55-0.77	0.46-0.60	0.24-0.39
D	High density, but stable flow; speed and freedom of movement are severely restricted; poor level of comfort and convenience.	0.78-0.93	0.61-0.76	0.40-0.57
E	Unstable flow; operating conditions near capacity with reduced speeds, maneuvering difficulty, and extremely poor levels of comfort and convenience.	0.94-1.00	0.77-1.00	0.58-0.94
F	Forced or breakdown flow with traffic demand exceeding capacity; unstable stop-and-go traffic.	> 1.00	> 1.00	> 0.94

Source: Transportation Research Board, 1985.

Traffic flow conditions usually are most congested during morning and evening peak hours and depend on the physical characteristics of the roadway, traffic volumes, and the vehicular mix of traffic. A common design goal is to provide peak-hour service at levels no lower than LOS C or D. A typical two-lane rural highway will have a maximum two-way design capacity of 2,000 to 2,800 passenger vehicles per hour. On such roads, travel is affected substantially by traffic in the opposing lane, and by curves and hills, all of which impair a motorist's ability to pass safely. By contrast, each lane of an interstate highway (divided with restricted access) provides a capacity of about 2,000 vehicles per hour under a wide range of conditions. In urban or suburban settings, the capacity of signalized intersections that restrict traffic flow tends to influence LOS more than the capacity of a roadway segment. LOS ratings presented in this study were determined by peak-hour traffic volumes and capacity for key roadways.

Traffic volumes for the study area were derived from the AADT counts provided by Caltrans, WVEDA, and the cities of Adelanto and Victorville. Changes in traffic volumes arising from land use changes at George AFB are estimated and resulting volume changes on the local road network are determined. Resulting changes in peak-hour LOS ratings are then determined. Changes in work and associated travel patterns are derived by assigning or removing workers (by place of residence) to or from the most direct commuting routes. Those portions of the transportation system on which conditions are projected to decline to LOS F were assumed to be upgraded to support LOS E. These improvements were assumed to be part of the reuse alternative under analysis.

Changes in demand for air, rail freight, and passenger service, arising from closure and reuse of the base, were determined from data developed for each alternative. It is assumed in this study that effects of alternative uses of George AFB on passenger volume at the Victorville AMTRAK station would change in proportion to population changes induced by each of the alternatives.

3.3.6 Utilities

The utility systems addressed in this analysis include the facilities and infrastructure used for:

- Potable water pumping, treatment, storage, and distribution
- Wastewater collection and treatment
- Solid waste collection and disposal
- Energy generation and distribution, including the provision of electricity and natural gas.

For the reuse alternatives, local purveyors of potable water, wastewater treatment, and energy were anticipated to provide services within the area of the

existing base, and these entities would acquire most or all related on-base utilities infrastructure, including the potable water treatment and distribution system, wastewater collectors, natural gas lines and electrical substation and distribution equipment. It was also assumed that reuse activities would generate solid wastes that would be disposed of in area landfills.

Long-term projections of demand and population were obtained from the various utility purveyors within the Victor Valley (through 2010) for each of their respective service areas. In each case, the most recent comprehensive projections available were made prior to the base closure announcement and/or do not take into account a change in demand from the base. These projections, therefore, were adjusted to reflect the decrease in demand associated with closure of George AFB and its subsequent operation under caretaker status. These adjusted forecasts were then considered the baseline for comparison with potential reuse alternatives.

The potential effects of reuse alternatives were evaluated by estimating and comparing the additional direct and indirect demand associated with each alternative to the existing and projected operating capabilities of each utility system. All changes to the utility purveyors' long-term forecasts were based on estimated population changes in the Victor Valley and the future rates of per capita demand implicitly or explicitly indicated by each purveyor's projections (Table 3.3-4). Projections in the utilities analysis include demand for water, wastewater treatment, solid waste disposal, electricity and natural gas, both on the site of George AFB from activities planned under the Proposed Action and alternatives, as well as resulting changes in domestic demand associated with direct and indirect population changes in the Victor Valley.

Table 3.3-4. Estimated Average Per Capita Utility Demand in the Victor Valley

	1993	1998	2003	2013
Water demand (gallons/day)	227.4	227.9	228.2	228.7
Wastewater generation (gallons/day)	41.4	50.9	62.8	67.7
Solid waste generation (cubic yards/year)	2.9	2.9	2.9	2.9
Electricity demand (KWH/day)	20.5	21.1	21.5	21.8
Natural gas demand (therms/day)	1.1	1.1	1.1	1.1

Sources: Projections developed for this study April 1991; based on Mojave Water Agency, 1990; Victor Valley Wastewater Reclamation Authority, 1988a; San Bernardino County Solid Waste Management Department, 1989, 1991; California Energy Commission, 1990; Southern California Edison Company, 1991; Southwest Gas Corporation, 1991.

3.3.7 Airspace

Airspace is defined as a four-dimensional resource (reflecting potential uses over time of an area having length, width, and height). Airspace can be leased, sold, traded, or rationed.

Opportunity cost is incurred when use of airspace by one precludes use of the same airspace by another user. For example, a property owner may opt to construct a 10 story office building on a property with a clear zone. If a runway were built within 1 mile of said property, its utility as a commercial complex would be lost. Likewise, if the property is located in a high noise contour, the value of the property for a residential building may be reduced. Similarly, recreational uses of airspace may come in conflict with other airspace uses like commercial aircraft operations. Sometimes one type of commercial operation interferes with another, resulting in scheduled air traffic delays and accidents.

The availability and use of airspace will have possible spill-over effects on some property values, as is the case for commercial and industrial properties near major commercial airports.

Discussion of the economic impacts of airspace use in this section will be limited to the following issues:

- Effects the Proposed Action or alternatives could have by eliminating or severely limiting non-commercial uses of airspace
- Potential effects of the Proposed Action or alternatives on instrument and visual flight operations of commercial, non-commercial, and government air traffic
- Possible effects on construction, property use, and other commercial activities
- The positive economic spill-over impacts on the Proposed Action and alternatives.

Economic effects are considered to include changes in the value or utility of airspace directly or indirectly related to changes at George AFB. Particular attention was concentrated on the following standards of measure applied to closure and all reuse alternatives:

- Current restrictions which might be relaxed or efficiency gains which could occur with George AFB closed and reused for non-aviation purposes only
- Changes in operating procedures or regulations which may be necessary to accommodate increased airspace use attributable to reuse of George AFB as a commercial or international airport (serving 1 MAP and 25 to 50 MAP, respectively) and/or providing general aviation services
- Possible competition with other commercial and general air operations from aviation reuse of George AFB
- Cumulative impacts potentially resulting from the reuse of Norton AFB as a commercial airport
- Impacts on non-aviation use of airspace, including air rights.

Interview responses were evaluated to provide a comparative and qualitative assessment of efficiency gains or losses and possible economic competition among airspace users for each alternative.

3.4 AFFECTED ENVIRONMENT

This subsection presents preclosure and closure baseline socioeconomic conditions in the region, consisting of recent trends (through 1990) and the projected impacts of closure (through 1993).

Direct and secondary employment from current George AFB operations are expected to continue declining until January 1993, by which time all military personnel will have been transferred from the base and all civilian jobs will have been eliminated (Table 3.4-1). All that would remain are about 50 jobs associated with security and minimal activities supporting an additional 18 secondary jobs in the region.

These military transfers and civilian job losses will reduce regional population growth by nearly 13,000 persons between 1990 and 1993. Housing demand growth would decline by almost 3,400 units during that period. Forecasts for the Victory Valley area suggest that population and housing demand would remain stable during this period, however, due to growth from other sources.

All major Air Force operations at George AFB would cease with base closure, but jurisdiction over and minimal maintenance of the base area would remain the charge of the federal government. In this case, potential impacts to public services in the region would not include an increase in provision areas arising from conveyance of base property. On the contrary, with the base-related population declining to caretaker personnel and their families by 1993, all demand for public services directly and indirectly related to operations at George AFB would be eliminated.

Public finance shortfalls would impact several jurisdictions, including the cities of Adelanto and Victorville, and a number of local school districts. These shortfalls would become apparent by FY 1993.

Local roadways would experience reductions in traffic volumes, including Air Base Road, U.S. 395, and Village Drive. Service improvement would be particularly marked for Air Base Road East, which now operates at LOS E and would be upgraded to LOS B by 1993 under this alternative. Air Base Road West would be upgraded from LOS C to LOS A during that period. No other important LOS changes are expected.

Table 3.4-1. Impacts of Closure of George AFB

Short-Term Changes (through 1993)	
ECONOMIC ACTIVITY	
Employment	Growth reduced by 8,600 jobs between 1989 and January 1993
Earnings (\$1990)	Growth reduced by \$178 million/year between 1989 and January 1993
POPULATION	
Military	Decline of approximately 13,300 people between 1990 and January 1993
Civilian	Growth reduced by 1,300 people between 1990 and January 1993
Housing	Growth reduced by 3,400 units between 1990 and January 1993
PUBLIC SERVICES	
General Government, Police, and Fire	
City of Adelanto	Growth in population served reduced by 2,400 between 1989 and January 1993
City of Victorville	Growth in population served reduced by 2,800 between 1989 and January 1993
San Bernardino County	Growth in population served reduced by 18,000 between 1989 and January 1993
Education	Growth in regional enrollments reduced by 3,000 students, 1989 to 1993
Health	George AFB Hospital closed
PUBLIC FINANCES (\$1990)	
City of Adelanto	Shortfalls to \$30,000 per year
Adelanto School District	Shortfalls to \$1.9 million per year
City of Victorville	Shortfalls to \$150,000 per year
Town of Apple Valley	Shortfalls to \$40,000 per year
Victor Valley Union High SD	Shortfalls to \$700,000 per year
Apple Valley Unified SD	Shortfalls to \$160,000 per year
Victor Elementary SD	Shortfalls to \$340,000 per year
TRANSPORTATION	
Air Base Road East	Decline in total p.m. peak hour traffic volume (PK-HR) of more than 1,300 (LOS E to B)
Air Base Road West	Almost 600 PK-HR decline (LOS C to A)
U.S. 395	Less than 100 PK-HR decline (LOS D remains)
Village Drive	Decline of 750 PK-HR (LOS A remains)
Shay Road	No change (LOS A)
El Mirage Road	No change (LOS A)
Helendale Road	No change (LOS A)
UTILITIES	
Water	Demand growth reduced by 3.2 MGD
Wastewater	Demand growth reduced by 0.6 MGD
Solid Waste	Almost 80,000 CY less waste by 1993
Electricity	Demand reduced by about 300 MWH/day
Natural Gas	Demand reduced by more than 16,000 therms/day

Source: Projections developed for this study

Sources: Projections developed for this study, April 1991; based on Mojave Water Agency, 1990; Victor Valley Wastewater Reclamation Authority, 1989a; San Bernardino County Solid Waste Management Department, 1990; 1991; California Energy Commission, 1990; Southern California Edison Company, 1991; Southwest Gas Company, 1991.

With the base closing, reductions in the consumption of utilities would occur. By 1993, annual consumption levels would be reduced for water, wastewater treatment, solid waste disposal, electricity, and natural gas. Closure would not require any major infrastructure changes.

3.4.1 Economic Activity

Recent Trends

Jobs. The number of full- and part-time jobs within the ROI (Riverside-San Bernardino PMSA) totalled about 856,000 in 1988. This key measure of regional economic activity grew between 1970 and 1988 at a rate nearly double the national average. Annual job growth averaged 4.2 percent in the two-county region during this period, while the number of jobs in the United States increased at an average annual rate of 2.2 percent during the same period (Table 3.4-2).

Table 3.4-2. Summary of Economic Indicators, Riverside and San Bernardino PMSA and United States

	1970	1980	1988	Average Annual % Change
Riverside-San Bernardino PMSA				
Total jobs (000)	409	595	856	4.2
Civilian (000)	375	569	821	4.5
Military (000)	34	26	35	0.1
Military (% of Total)	8.4	4.4	4.1	-
Civilian labor force (000)	N/A	586	960	6.3
Unemployment rate (%)	N/A	7.6	5.8	-
Earnings per job (90\$)	\$24,812	\$22,810	\$23,639	-0.3
Per capita income (90\$)	\$13,834	\$15,998	\$17,296	1.2
United States				
Total jobs (000)	89,753	112,257	132,503	2.2
Civilian	86,521	109,806	129,732	2.3
Military (000)	3,232	2,451	2,771	-0.9
Military (% of Total)	3.6	2.2	2.1	-
Civilian labor force (000)	82,771	106,940	121,669	2.2
Unemployment rate (%)	4.9	7.1	5.5	-
Earnings per job (90\$)	\$24,687	\$23,810	\$24,298	0.0
Per capita income (90\$)	\$13,646	\$15,733	\$18,218	1.5

Notes: Jobs are full- and part-time civilian and military employment by place of work. Civilian labor force and unemployment rate are by place of residence. Earnings and income are in constant 1990 dollars. Average annual percent change is shown for period covering the earliest and most recent years of available data.

Sources: U.S. Bureau of Economic Analysis, 1990; California Employment Development Department, 1990; and U.S. Council of Economic Advisors, 1991.

Military Sector. The percentage of total jobs provided by the military sector of the ROI economy historically has been about twice as high as the respective percentage for the nation, although the military share of jobs for both the ROI and the nation have decreased steadily between 1970 and 1988. In 1988, ROI military jobs stood at about 35,000, or 4.1 percent of the ROI total. By comparison, military jobs comprised 8.4 percent of all ROI jobs in 1970. Two factors have contributed to the decline in the ROI's share of military employment: (1) the number of military jobs increased only slightly from 34,200 in 1970 to 34,800 in 1988, while (2) over the same period there was a substantial increase in non-military jobs from 374,400 in 1970 to 821,300 in 1988 (non-military jobs include both private and civilian jobs within federal, state, and local governments). The slight increase in the number of military jobs in the ROI during the past two decades ran counter to the national trend, where military jobs decreased by 0.9 percent annually during the same period.

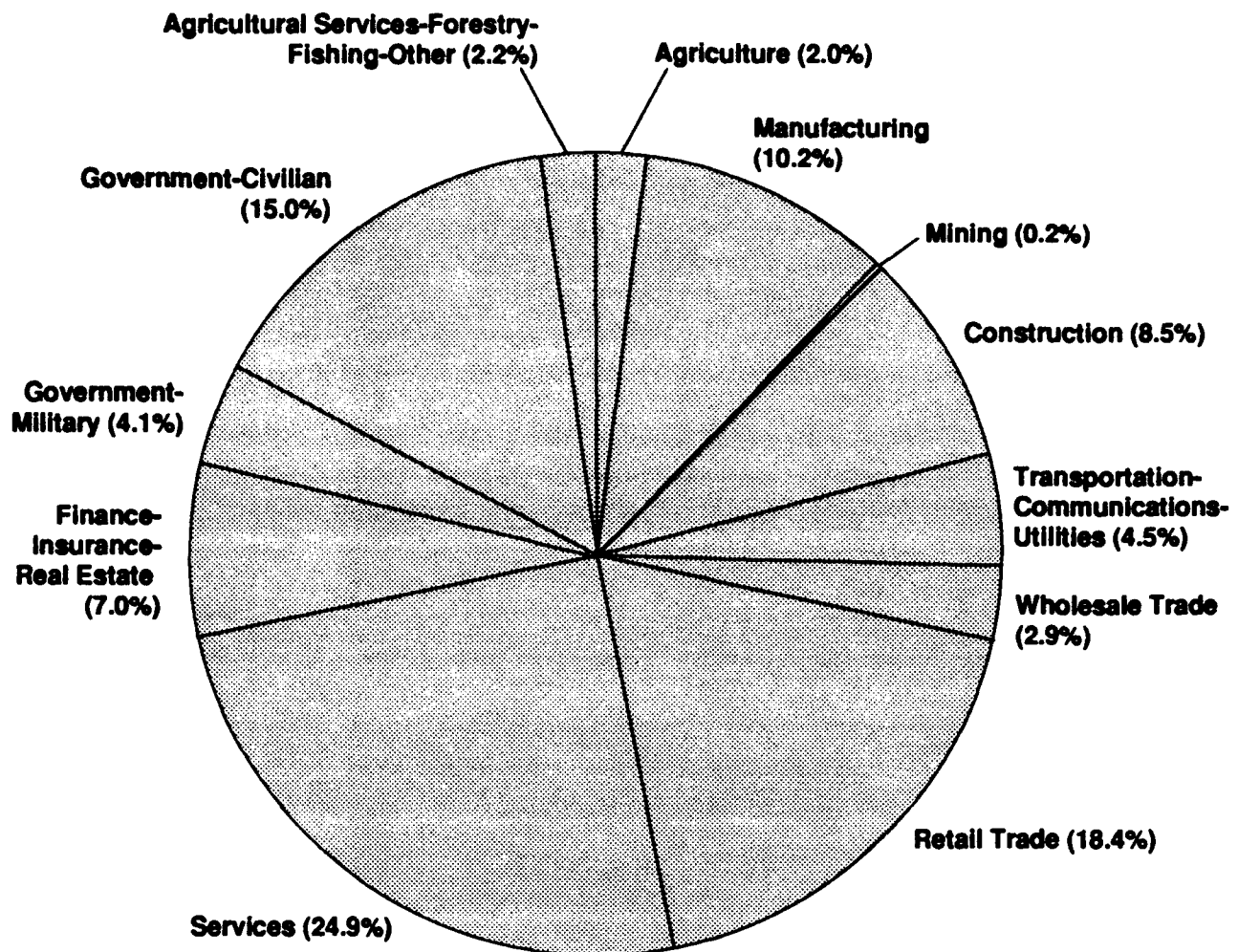
Jobs by Major Sectors. The major employment sectors within the ROI are services, government, retail trade, manufacturing, and construction (Figure 3.4-1). Services provided approximately 213,000 jobs, which was nearly one-fourth of total employment in the ROI in 1988. Government, including both the civilian and military sectors, provided over 163,000 jobs, which was nearly one-fifth of all jobs in the region. There were also more than 157,000 retail trade jobs and about 87,000 manufacturing jobs within the two counties in 1988.

Unemployment. The ROI unemployment rate in 1990 averaged 6.6 percent (Lau, 1991). This rate was lower than the most recent peak rate of 12.2 percent experienced during the last recessionary period in 1982, when approximately 77,100 persons were unemployed. By comparison, the unemployment rates for both the United States and California were lower than in the PMSA in 1990.

Earnings and Income. Average annual earnings per job and per capita personal income in the ROI were lower than the national averages in 1988. Real per capita income in the ROI was \$17,296 in 1988, an increase from \$13,834 in 1970. A comparison of average earnings per job by sector for 1980 through 1988 indicates that jobs in the mining sector had earnings higher than the average for other sectors. Average earnings per job in the transportation-public utilities, construction, and agriculture sectors of the two-county economy were the next highest; jobs in retail trade, agricultural services-forestry-fishing-other, and finance-insurance-real estate sectors had the lowest average earnings per job. Real earnings per job declined in most sectors of the ROI economy between 1980 and 1988, although in more recent years the overall trend has been slightly upward.

Base-Related Jobs, 1987 to 1989. Although direct employment at George AFB remained relatively constant between FYs 1987 and 1989, decreased base spending for regional goods and services procurements likely caused

Major Industrial Sectors, 1988



Total ROI Jobs: 856,100

Source: U.S. Bureau of Economic Analysis, 1990.

EXPLANATION

ROI (Region of Influence) is Riverside-San Bernardino PMSA, consisting of Riverside and San Bernardino counties, California

Distribution of ROI Jobs by Major Industrial Sectors, 1988

George AFB, California

Figure 3.4-1

secondary employment declines of about 450 jobs in the region during FY 1989. An estimated 130 of the 450 secondary jobs that were affected by base closure in the ROI between FYs 1988 and 1989 were local jobs in the Victor Valley. These job losses were a result of reduced spending primarily in the construction, services and trade sectors. Base-related ROI earnings levels declined during the year by almost \$20 million.

Base-Related Jobs, 1990. During FY 1990, base procurement declined further and more than 1,100 direct jobs were lost to the regional economy as military and civilian personnel were either transferred to other bases or positions were phased out. Based on George AFB regional economic activity reports, the drawdown of the direct jobs in conjunction with the loss of regional goods and services procurement by the base created an additional loss of 270 ROI secondary jobs. Approximately 190 of the 270 secondary jobs were local Victor Valley jobs related to decreases in spending by on-site direct workers primarily affecting the services and retail trade sectors. Between FYs 1989 and 1990, base-related regional earning levels declined by an additional \$26 million. About \$4.0 million of this decline was in secondary earnings estimated to have occurred in the Victor Valley economy between FYs 1989 and 1990.

Impacts of Closure

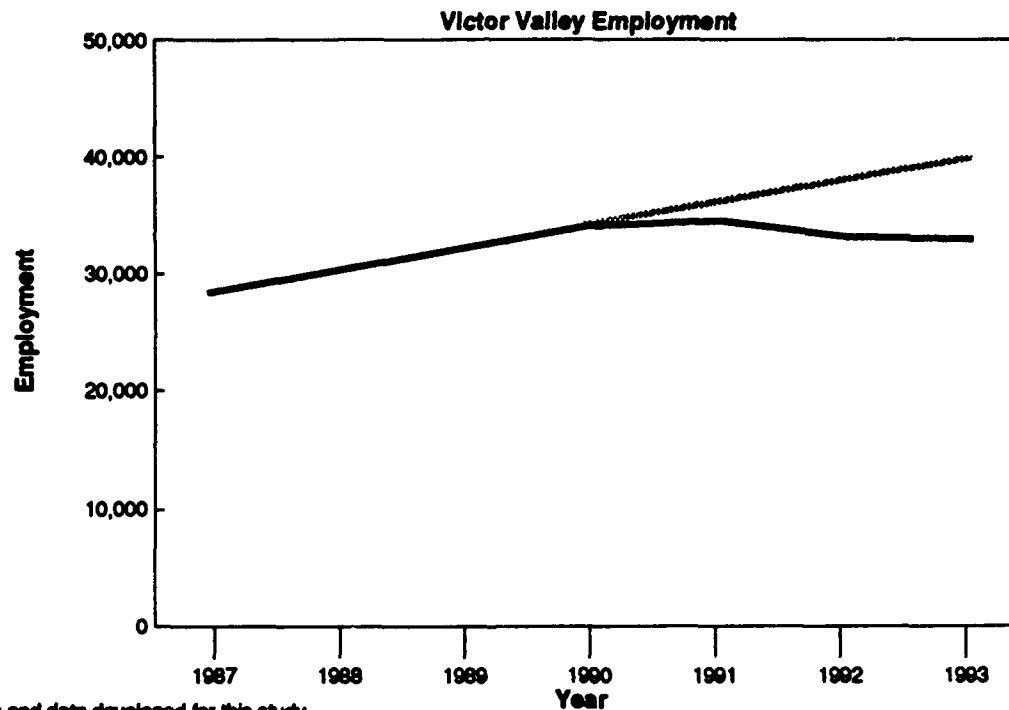
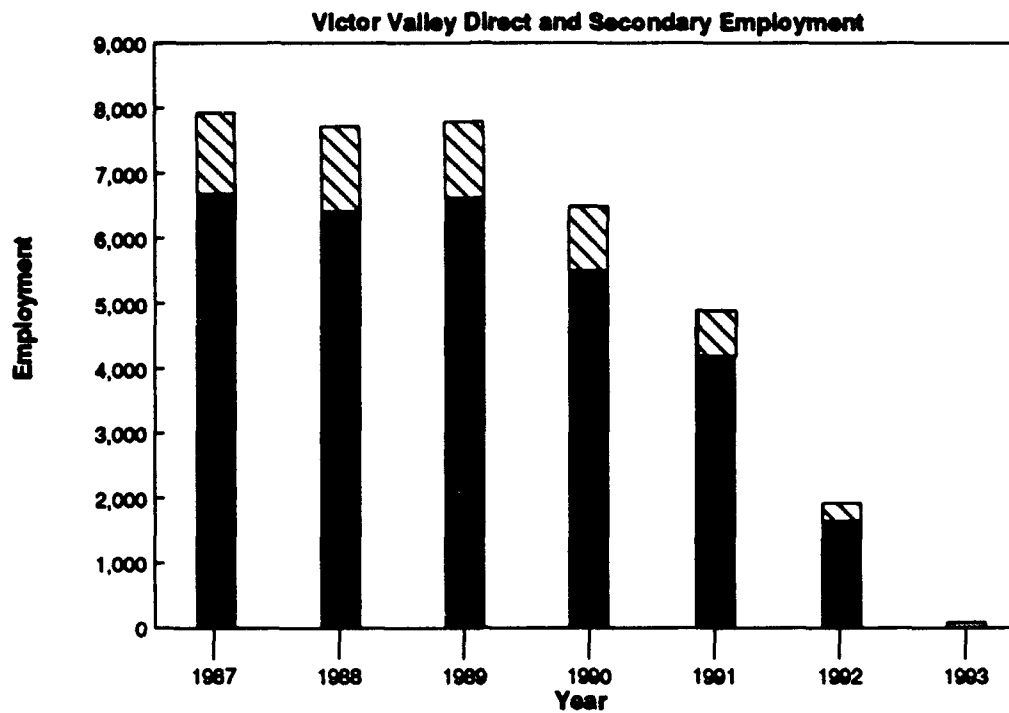
The residual George AFB operation employment levels will continue to decline during 1991 and 1992 as the drawdown of military and civilian personnel at the base continues (Table 3.4-3, Figure 3.4-2). During 1991 and 1992, nearly 4,200 of the remaining military and civilian positions will be transferred out of the ROI economy or phased out, causing an indirectly related decrease of approximately 1,200 secondary ROI jobs. About 690 of the 1,200 ROI secondary jobs that will be affected during this period are estimated to be local Victor Valley jobs, primarily in the services and retail trade sectors caused by decreased spending by on-site direct workers. By the end of 1992, direct and indirect regional earnings levels will decline by an additional \$114 million. About \$14 million of this decline will be secondary annual earnings estimated to have occurred in the Victor Valley economy.

The Victor Valley and ROI totals presented at the bottom of Table 3.4-3 are primarily based on employment forecasts prepared by SCAG. These forecasts anticipate rapid employment growth in the ROI and in the Victor Valley area, but do not incorporate changes associated with base closures and realignment activities. Therefore, both forecasts have been adjusted for this study, first by subtracting the annual change in George AFB operations-related employment. Since both Norton AFB, which is scheduled to close, and March AFB, to which some of the Norton activities will be moved, are within the ROI, these totals also are adjusted accordingly. Specifically, the portion of Norton AFB operations-related employment that either is being eliminated altogether, or being moved outside the region, is subtracted from the regional total. Victor

Table 3.4-3. Site-Related Employment and Earnings Projections 1987-1993

	1987	1988	1989	1990	1991	1992	1993
Base Operation							
Employment							
Direct	8,925	8,792	8,563	7,172	5,366	2,059	0
Secondary	6,672	6,365	6,566	5,463	4,185	1,800	0
Victor Valley	2,253	2,427	1,977	1,709	1,201	459	0
Rest of ROI	1,243	1,303	1,176	983	680	264	0
Earnings (\$000)	1,010	1,124	802	727	511	195	0
Direct	189,992	198,151	178,311	152,669	114,426	43,736	0
Secondary	136,840	140,736	132,774	114,390	87,530	33,458	0
Earnings (\$000)	53,152	57,415	45,536	38,309	26,896	10,281	0
Caretaker Status							
Employment	0	0	0	0	0	0	68
Direct	0	0	0	0	0	0	50
Secondary	0	0	0	0	0	0	18
Victor Valley	0	0	0	0	0	0	17
Rest of ROI	0	0	0	0	0	0	1
Earnings (\$000)	0	0	0	0	0	0	1,895
Direct	0	0	0	0	0	0	1,800
Secondary	0	0	0	0	0	0	395
Combined Total							
Employment	8,925	8,792	8,563	7,172	5,366	2,059	68
Earnings (\$000)	189,992	198,151	178,311	152,669	114,426	43,736	1,895
Baseline Employment							
Victor Valley	28,704	30,505	32,306	34,107	34,368	33,128	33,116
ROI (Piverside-San Bernardino PMSA)	815,338	856,106	896,137	916,566	947,002	972,764	999,654

Source: Projections developed for this study, March 1991.



Source: SCAG, 1989; and data developed for this study.

EXPLANATION

- Direct Employment
- Secondary Employment (Victor Valley)
- Disposal Management Team
- Actual & Closure Projection
- SCAG Forecast

Victor Valley Base-Related and Total Employment Projections

George AFB, California

Figure 3.4-2

Valley employment by place of work would not be affected by activities at Norton AFB and March AFB.

George AFB would be retained by the federal government in a caretaker status for an indefinite period of time following the drawdown of residual operation of the base, which will be completed by January 1993. It was estimated that about 50 direct jobs and related purchases of small amounts of goods and services would generate about 18 secondary jobs in the regional economy, most of which would be located in the Victor Valley. Direct earnings levels were estimated to be about \$1.5 million annually with local secondary earnings of about \$350,000 annually.

3.4.2 Population and Housing

3.4.2.1 Population

Recent Trends

Final 1990 census counts for Riverside and San Bernardino counties indicate that population within the two-county ROI increased at an average annual rate of 5.2 percent from 1980 levels (Table 3.4-4). The rapid population growth witnessed during the 1980s in the two ROI counties contrasts with the slower growth experienced during the 1970s. Population changes between 1980 and 1990 for the communities examined in this study were even more rapid, with some communities gaining population at an average annual rate in excess of 14 percent (Table 3.4-5). Between 1980 and 1990, Victor Valley was the fastest growing portion of San Bernardino County (San Bernardino County Planning Department, 1990).

Table 3.4-4. Population Trends for Riverside and San Bernardino Counties: 1950-1990

	San Bernardino County	Riverside County	2-County ROI
Population			
1950	281,642	170,046	451,688
1960	503,591	306,191	809,782
1970	682,233	456,916	1,139,149
1980	895,016	663,166	1,558,182
1990	1,418,380	1,170,413	2,588,793
Average Annual Growth Rate			
1950-60	6.0	6.1	6.0
1960-70	3.1	4.1	3.5
1970-80	2.8	3.8	3.2
1980-90	4.7	5.8	5.2

Sources: U.S. Bureau of the Census, 1982a, 1991.

Table 3.4-5. Selected Population Data for Communities in the Victor Valley

	Population		Average Annual Rate of Change
	1980 ^(a)	1990 ^(b)	1980-1990
Adelanto	2,164	8,517	14.7
Apple Valley	14,305	46,079	12.4
Hesperia	13,540	50,418	14.1
Victorville	14,220	40,674	11.1

Notes: (a) 1980 Census Counts

(b) 1990 Census Counts

Sources: U.S. Bureau of the Census, 1982a, 1991.

The population changes projected by SCAG (1989) for the future in Riverside and San Bernardino counties, not taking into account the closure of George AFB, are substantially less than growth experienced during the 1980s. This conservative growth trend is forecast through 2020 (CDF, 1989; SCAG, 1989; see also City of Hesperia Planning Department, 1990c; Town of Apple Valley, 1990).

Impacts of Closure

As the base closes, the total population residing in the ROI due to activities associated with George AFB will decline by more than 14,600 between 1990 and 1993 (Table 3.4-6). Reductions are projected for both civilian and military personnel associated with the installation. The effects of total population loss in the ROI, as a consequence of base closure, would be the greatest in San Bernardino County. Although the greatest absolute losses of population at the community level are projected for Victorville, in relative terms the greatest impacts would occur in Adelanto, which would lose roughly 1,900 persons between 1990 and 1993. Impacts on Adelanto would be exacerbated by population losses at George AFB, which is not a part of the community's incorporated area and in Table 3.4-6 comprises the majority of the "Rest of Victor Valley" figure. Population impacts in Apple Valley and Hesperia would be less than those projected for Adelanto and Victorville.

The Victor Valley and ROI totals presented at the bottom of Table 3.4-6 are primarily based on population forecasts prepared by SCAG. These forecasts anticipate rapid population growth in the region and in the Victor Valley area, but do not incorporate changes associated with base closures and realignment activities. Therefore, both forecasts have been adjusted for this study, first by subtracting the annual change in George AFB operations-related population. Furthermore, persons projected to out-migrate from the region due to the closure of Norton AFB (net of Norton realignment to March AFB) also are subtracted from the ROI totals; and a small percentage of the out-migrating

Table 3.4-8. Site-Related Regional Population Projections 1987-1993

	1987*	1988*	1989	1990	1991	1992	1993
San Bernardino County	12,919	12,911	17,838	14,571	11,473	4,699	3
Adelanto	1,665	1,659	2,364	1,905	1,498	577	0
Apple Valley	1,118	1,121	1,477	1,238	984	455	0
Hesperia	326	331	389	351	295	190	0
Victorville	2,047	2,048	2,759	2,278	1,787	753	0
Rest of Victor Valley	7,417	7,398	10,433	8,449	6,647	2,624	3
Rest of County	346	354	415	348	262	100	0
Riverside County	81	89	72	64	46	18	2
Total Site Related	13,000	13,000	17,910	14,635	11,519	4,716	5
Preclosure/Closure Baseline Population Victor Valley	N/A	N/A	N/A	197,221	198,681	196,460	196,247
ROI	2,131,500	2,277,600	2,433,197	2,588,793	2,664,972	2,738,673	2,814,272

Note: Data before 1989 are not strictly comparable to data from 1989 on because of changes in methodology.

Sources: Projections developed for this study, March 1991; based on SCAG, 1989.

Norton AFB population (2.4 percent of the military personnel and 1.6 percent of civilians), which Norton AFB records show to reside in the Victor Valley, are subtracted from the forecasts for that area.

3.4.2.2 Housing

Recent Trends

As with population, the number of housing units within the George AFB ROI increased dramatically during the 1980s (Table 3.4-7). Both counties witnessed substantial housing growth over this decade. In relative terms, Adelanto, Apple Valley, Hesperia, and Victorville experienced even greater growth than did the ROI.

Vacancy rates in the ROI in 1990 averaged 15.5 percent (Table 3.4-7). This was a substantial increase from the range of vacancies (4.7 percent for owners, 9.4 percent for renters) observed in the ROI in 1980. The increase in vacancies reflects the large amount of new construction that took place during the decade, as well as the slowdown in the southern California housing market in 1990. Vacancy rates in 1990 in the ACS communities (Adelanto, Apple Valley, Hesperia, and Victorville) ranged from 4.6 percent to 10.7 percent, well below the ROI average.

Table 3.4-7. Housing Units and Vacancies for the George AFB ROI: 1980-1990

County and Community	Total Housing Units		Annual Growth Rate %/yr	Vacancy Rates (%)	
	1980	1990		1980 ^(a)	1990 ^(b)
San Bernardino County	370,155	542,332	3.9	4.5-9.2	14.3
Adelanto	1,035	3,227	12.0	2.5-20.0	10.7
Apple Valley	5,900	16,672	10.9	5.5-22.1	6.5
Hesperia	5,702	17,359	11.8	6.6-14.8	4.6
Victorville	6,108	15,627	9.8	7.9-12.9	8.9
Riverside County	295,043	483,847	5.1	5.0-9.6	16.9
ROI Total	665,198	1,026,179	4.3	4.7-9.4	15.5

Notes: (a) First figure shown is for owners, second is for rental units.
(b) Data are for all units.

Sources: U.S. Bureau of the Census, 1982b, 1991.

ROI and ACS data on housing unit tenure and costs in 1990 are presented in Table 3.4-8. Housing costs were lower in San Bernardino County than in Riverside County, and costs were lower in the Victor Valley communities than in the rest of San Bernardino County.

Table 3.4-8. Housing Tenure, Median Value, and Median Contract Rent for the George AFB ROI and the ACS: 1990

	Percent Owner Occupied	Median Value ^(a)	Median Contract Rent ^(b)
San Bernardino County	63.3	\$ 129,200	\$ 489
Adelanto	30.3	70,400	370
Apple Valley	69.0	118,100	461
Hesperia	73.6	105,400	468
Victorville	55.4	102,800	443
Riverside County	67.4	139,100	502

Notes: All figures are Occupied Year-Round units.

(a) Owner-Occupied Units, 1990 Dollars.

(b) Renter-Occupied Units, 1990 Dollars (by month).

Source: U.S. Bureau of the Census, 1982b.

Housing construction during the 1980s was active in the Victor Valley (Table 3.4-9). Construction slowed considerably in both places in 1987, possibly as a reaction to rumored realignment at George AFB; it rebounded in Victorville, but continued at a reduced rate in Adelanto. Construction data for Apple Valley and Hesperia, available only for 1989 and 1990, indicate robust housing construction industries in both communities (Table 3.4-9; City of Hesperia Planning Department, 1990a, 1990b).

Table 3.4-9. Housing Units Authorized by Building Permits, for Selected Portions of the George AFB ROI and the ACS, 1981-1990

	Range of Annual Permits		Average Annual Permits
	Minimum	Maximum	
San Bernardino County	5,439	34,292	17,455
Adelanto	15	670	191
Apple Valley	765	988	877
Hesperia	660	768	714
Victorville	89	2,385	952

Note: Data for Apple Valley and Hesperia are available for 1989 and 1990 only.

Source: U.S. Bureau of the Census, 1982c, 1983, 1984, 1985, 1986, 1987, 1988, 1989, 1990.

Much of the Victor Valley housing growth experienced during this decade was single family homes (City of Victorville Planning Department, 1991; City of Hesperia Planning Department, 1990c). In the coming decade, some communities anticipate an increase in the proportion of multi-family homes (City of Hesperia Planning Department, 1990c).

Impacts of Closure

Reductions in housing demand associated with base closure are anticipated for both counties in the ROI and communities in Victor Valley (Table 3.4-10). The nature of these impacts parallels the population impacts previously discussed. For San Bernardino County as a whole, site-related housing demand is projected to decrease from more than 3,350 units in 1990 to zero in 1993. Among the communities considered, the greatest absolute reduction for site-related housing in demand is projected for Victorville, decreasing from nearly 800 housing units in 1990 to zero in 1993. As with population, the greatest site-related relative housing impacts are anticipated in Adelanto, decreasing from a demand for roughly 650 units in 1990 to zero in 1993. Reductions in housing demand elsewhere in the Victor Valley would be less than these two places. Because these site-related impacts focus on private sector housing impacts, the decreased demand in the remainder of the Victor Valley is dampened by the units on George AFB which would be used until closure of the installation.

3.4.3 Public Services

3.4.3.1 Governmental Structure

Recent Trends

George AFB is located in an unincorporated area of the Victor Valley in San Bernardino County adjacent to the cities of Adelanto and Victorville. Several other communities located within the Victor Valley serve as home for George AFB personnel.

Table 3.4-10. Projected Site-Related Housing Demands, 1987-1993

	1987	1988	1989	1990	1991	1992	1993
San Bernardino County	2,798	2,798	4,489	3,368	2,303	1,313	0
Adelanto	572	570	812	655	515	198	0
Apple Valley	384	385	508	425	338	156	0
Hesperia	112	114	134	121	101	65	0
Victorville	703	704	948	783	614	259	0
Rest of Victor Valley	908	901	1,944	1,264	645	600	0
Rest of County	119	122	143	120	90	34	0
Riverside County	28	31	25	22	16	6	0
Total	2,826	2,826	4,513	3,390	2,319	1,319	0

Note: Columns may not sum to totals because of computer rounding. Caretaker status beginning in 1993 would create minimal housing demands; in-migration was assumed to be zero.
Data before 1989 are not strictly comparable to data from 1989 on because of changes in methodology.

Source: Projections developed for this study, March 1991.

San Bernardino County

San Bernardino County was created in 1853; its County Charter was approved by the California legislature in 1913, granting the Board of Supervisors fundamental powers as the county's legislative and executive body. The board consists of five supervisors from five districts who are elected to 4-year terms; one supervisor serves as board chairman. Each of the supervisorial districts is apportioned based on population: George AFB and the remainder of the Victor Valley are located in the county's First Supervisorial District (San Bernardino County, 1991).

The stated chief priority of the Board of Supervisors is to produce the highest levels of service to county residents at the lowest cost. San Bernardino County administers more than 100 major services, including road work, public protection, health care, and social benefits. The county employs approximately 11,000 full- and part-time personnel throughout the county, leading to an overall level of service of 7.8 personnel per 1,000 people. Of the county's various departments, the San Bernardino County Sheriff's Office, Department of Public Social Services, and Department of Public Works are the largest in employment (Garrison, 1991).

City of Adelanto

The city of Adelanto, incorporated in 1970, operates under a mayor/council form of government. The City Council consists of five elected trustees, including the mayor who serves as president of the council and four at-large members. The

principal responsibilities of the City Council include legislating ordinances and setting policy. The city of Adelanto provides numerous municipal services for its residents which include police, fire, water and sewer, planning, streets, engineering, building safety, finance, administration, and return to custody, a new department. The city's Return to Custody Department is in charge of a new state prison which opened in April 1991, within the Adelanto city limits. The prison is operated by the city under a 20-year contract with the state of California. This minimum-security prison is designated to aid prisoner conversion from correctional to civilian life and offers inmates educational and vocational training (Adelanto City Council, 1991).

The city, excluding its Return to Custody Department, currently employs 46 full-time workers and maintains a level of municipal service of 5.4 personnel per 1,000 residents. The Return to Custody Department employs an additional 97 personnel on its state prison contract.

City of Victorville

The city of Victorville was incorporated in 1962 and operates under a mayor/council system of government. The City Council is comprised of four at-large council members and the mayor, who presides over the council. The city has nine municipal departments: city manager, human resources, public works, building, fire, engineering, planning, finance, and parks and recreation. The city employs 225 full-time workers which provides a level of service of 5.5 personnel per 1,000 people; the city's Public Works Department has the largest number of employees (Koksha, 1991).

Town of Apple Valley

Apple Valley was incorporated in 1988 as a "town", an indication that its citizens want the area to keep its rural character. The town operates under a mayor/council system of government. The Town Council consists of five elected trustees, including the mayor who serves as president of the council and four at-large members. The town's governmental structure is divided into nine municipal departments, of which planning and administration are the largest. The town directly employs 37 personnel and contracts out an additional 56 employees, leading to a municipal level of service of 2.0 personnel per 1,000 people (Canney, 1991).

City of Hesperia

The city of Hesperia was incorporated in 1988 and operates under a council/manager form of government. The City Council consists of five members; the City Manager oversees the council. The honorary position of mayor is held by a member of the City Council. The municipal government is divided into seven departments: city manager, administrative services, building

and safety, finance, planning, public safety, and public works (which is the largest). The city employs 195 full-time personnel and maintains a municipal level of service of 3.9 employees per 1,000 people (Smith, 1991; D'Errice, 1991).

Victor Valley Economic Development Authority (VVEDA)

VVEDA is composed of representatives of four local governments: the city of Victorville, the city of Hesperia, the town of Apple Valley, and San Bernardino County. It is a Joint Powers Authority created for the purpose of planning and implementing the reuse of George Air Force Base. These four jurisdictions in Victor Valley created VVEDA with the view that it would become an "implementation entity" which may take on a wide variety of administrative, developmental, and operations responsibilities. VVEDA could serve as a commercial airport operator, redevelopment agency, a landowner, and a landlord. VVEDA developed three alternatives for the reuse of George AFB. Each of the alternatives involves the base property evolving into a commercial airport with adjacent support facilities, but with different levels of long-term growth, ranging from a regional commercial and corporate aviation airport with surrounding institutional and office park land uses, to a large hub commercial airport that may require additional property acquisitions.

Impacts of Closure

Changes to local government employment, arising from base closure, are presented in Table 3.4-11. Effects arising from changes in demand for local government services would follow the pattern of project-related population changes and would primarily affect Adelanto and Victorville.

Table 3.4-11. Site-Related Government Employees, 1987-1993

	1987	1988	1989	1990	1991	1992	1993
San Bernardino County	101	101	139	114	89	37	0
Adelanto	9	9	13	10	8	3	0
Apple Valley	2	2	3	2	2	1	0
Hesperia	1	1	2	1	1	1	0
Victorville	11	11	15	13	10	4	0
Rest of Victor Valley	0	0	0	0	0	0	0
Rest of County	0	0	0	0	0	0	0
Riverside County	0	0	0	0	0	0	0
Total	124	124	171	150	111	46	0

Note: Columns may not sum to totals because of computer rounding.
Data before 1989 are not strictly comparable to data from 1989 on because of changes in methodology.
Source: Projections developed for this study, April 1991.

Projected, temporary population decreases in San Bernardino County and the cities of Adelanto and Victorville, arising from base closure, would imply that decreased municipal staffs could maintain the current per capita levels of service. These potential reductions in municipal and county government personnel are unlikely since population in the Victor Valley and in the county is growing at an average annual rate that either matches or exceeds the population that would be lost by closing the base (see Table 3.4-5). Therefore, natural population growth, unrelated to George AFB, and in-migration to the region would maintain or expand existing levels of demand for the area's public services and facilities.

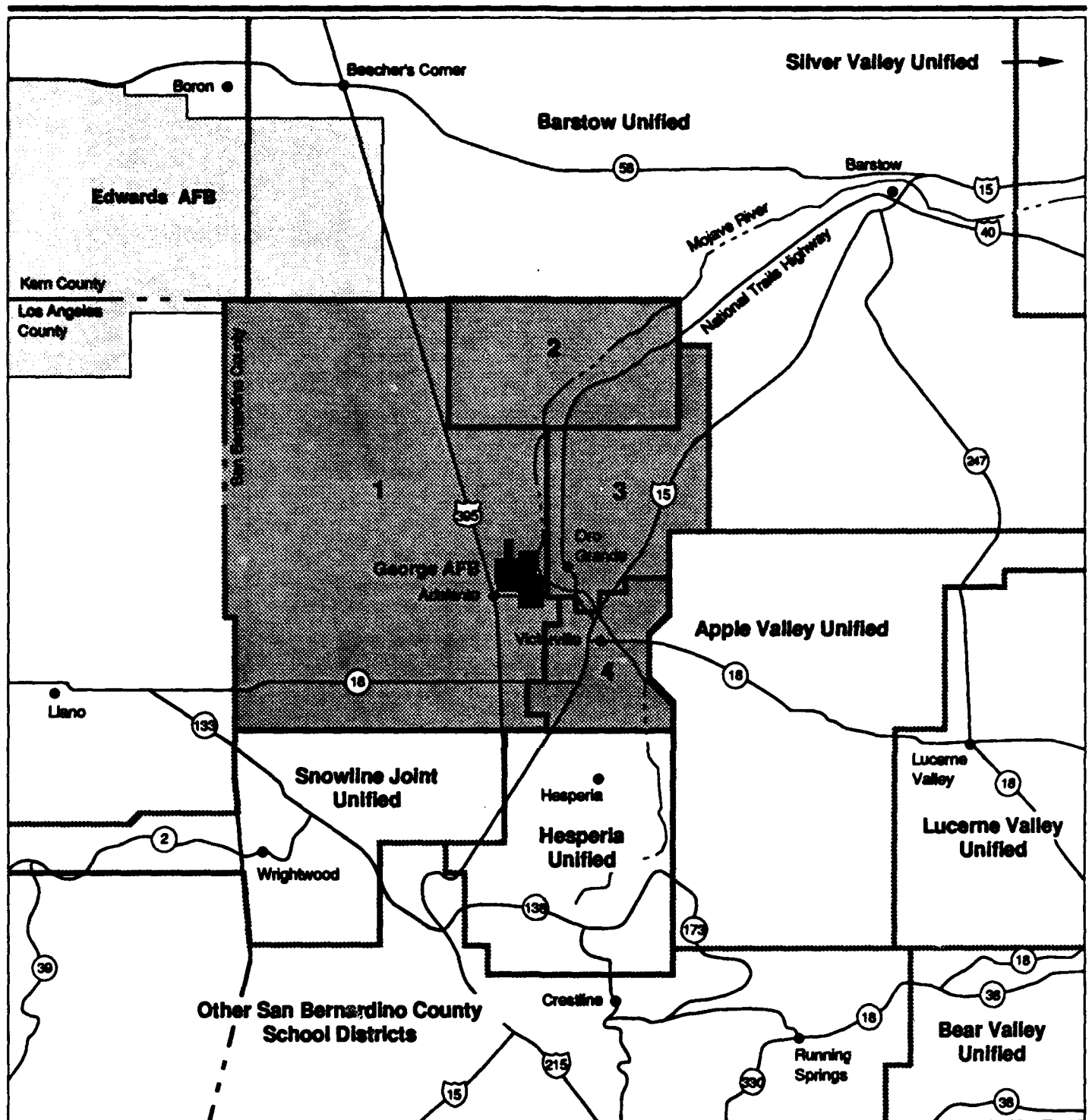
3.4.3.2 Public Education

Recent Trends

Five school districts provide public education facilities and services to more than 30,000 students in the area surrounding George AFB (Figure 3.4-3, Table 3.4-12). In 1988, these school districts ranged in enrollment size from slightly more than 2,100 students in Adelanto Elementary School District to more than 10,000 students in Hesperia Unified School District, according to the most recent figures available from the San Bernardino County Superintendent of Schools (1990). Special education enrollments represent less than 1 percent of the county's total enrollments and are dispersed throughout the county. Since errors in projecting impacts to special education could be rather large because enrollments are so small, special education is not examined in this analysis.

Between 1980 and 1988, total enrollments at public school districts in the area have increased at an annual rate of 9.6 percent, or approximately 107.7 percent for that entire period (Table 3.4-13). The greatest percentage enrollment increases have been at Apple Valley Unified School District (414.9 percent) and Hesperia Unified School District (378.9 percent). These districts, however, expanded from elementary to elementary and secondary districts and their boundaries were redefined between 1986 and 1987 resulting in a sudden surge in enrollment growth. That change also resulted in the loss of secondary enrollment at Victor Valley Union High School District, the district formerly providing secondary education to Apple Valley and Hesperia. Victor Elementary School District, which has remained an elementary district during this period, has experienced an average annual enrollment growth rate of 11.8 percent, or 144.3 percent growth during the 8-year period (San Bernardino County Superintendent of Schools, 1990).

In 1988, ratios of students to certified staff members at school districts in the area ranged from 19.6 in Adelanto Elementary School District to 22.5 in Victor Elementary School District (San Bernardino County Superintendent of Schools, 1990). The student/staff ratio averaged over the ROI was 21.5 students per



EXPLANATION

- 1 Adelanto Elementary
- 2 Helendale Elementary
- 3 Oro Grande Elementary
- 4 Victor Elementary
- Victor Valley Union High



UFG
3-38

School District Boundaries

George AFB, California

Figure 3.4-3

Table 3.4-12. Regional Public School Enrollments and Student/Certified Staff Ratios

School District	Fall 1987			Fall 1988		
	Enrolled	Staff	Students/Staff	Enrolled	Staff	Students/Staff
Adelanto Elementary School District	1,863	88	21.2	2,114	108	19.6
Apple Valley Unified School District ^(a)	8,492	389	21.8	9,454	436	21.7
Hesperia Unified School District ^(a)	9,499	432	22.0	10,823	514	21.1
Victor Elementary School District	3,673	153	24.0	4,338	193	22.5
Victor Valley Union High School District ^(a)	3,558	158	22.5	3,693	166	22.2
ROI Total	27,085	1,220	22.2	30,422	1,417	21.5

Note: (a) District boundary changes between 1986 and 1987.

Source: San Bernardino County Superintendent of Schools, 1989, 1990.

Table 3.4-13. Historic Fall Enrollments in Public School Districts in the Victor Valley: 1980-1988

School District	1980	1981	1982	1983	1984	1985	1986	1987	1988	Total % Change '80-'88	Average Annual Change
Adelanto Elementary School District	1,374	1,415	1,517	1,537	1,597	1,725	1,720	1,863	2,114	53.9%	5.5%
Apple Valley Unified School District ^(a)	1,836	2,113	2,164	2,259	2,518	3,059	3,715	8,492	9,454	414.9%	22.7%
Hesperia Unified School District ^(a)	2,260	2,545	2,643	2,907	3,422	4,051	4,687	9,499	10,823	378.9%	21.6%
Victor Elementary School District	1,776	2,071	2,221	2,410	2,702	3,061	3,591	3,673	4,338	144.3%	11.8%
Victor Valley Union High School District ^(a)	7,404	7,694	7,362	7,732	8,688	9,396	10,313	3,558	3,693	-50.1%	-8.3%
ROI Totals	14,650	15,838	15,907	16,845	18,927	21,292	24,026	27,085	30,422	107.7%	9.6%

Note: (a) District boundary changes during 1980-89 period.

Source: San Bernardino County Superintendent of Schools, 1990.

certified staff member, compared to a state average of 23.0 students per teacher (Galbreath, 1991) and a national average of 18.0 students per teacher (U.S. Department of Education, 1987).

The school districts whose enrollments are most affected by military and civilian personnel force strength at George AFB are the two districts that directly serve the base. Two public schools operated by Adelanto Elementary School District are located on the base; dependents of Air Force personnel receive primary public education through Adelanto Elementary School District and secondary education through Victor Valley Union High School District.

Adelanto Elementary School District

Adelanto Elementary School District operates five elementary (K-6) schools in the city of Adelanto, George AFB, and surrounding vicinity. Two of the schools, George and Sheppard elementaries, are located adjacent to each other at the base on two separate 10-acre parcels. Enrollments, staff strength, and service ratios are presented in Table 3.4-12. The Adelanto Elementary School District is a "feeder" district for Victor Valley Union High School District.

Each of the district's schools operates at or beyond its design capacity — some using portable classrooms; two schools, Westside Park and Eagle Ranch elementaries, consist solely of portables. Enrollments at each school (with a range of 500 to 700 students) are fairly evenly distributed, with the exception of Eagle Ranch, recently opened in September 1990, which has just 146 students. Between 1980 and 1988, total district enrollment has grown steadily — at a rate of 53.9 percent for the period, or an annual rate of 5.5 percent. This growth is attributed largely to population growth in the community outside the influence of activities and staffing strength at George AFB (Kincald, 1991). With a certified staff (which includes teachers, counselors, and other certified personnel) strength of 108 personnel, the student/certified staff ratio, a level of service indicator, was 19.6 for the 1988 to 1989 school year, the lowest ratio of all school districts in the region (San Bernardino County Superintendent of Schools, 1990).

The Adelanto Elementary School District serves more dependents of George AFB personnel than any other. The total district enrollment in 1990 was nearly 50 percent military or federally-employed-civilian dependents (Table 3.4-14). Of the students in special education programs, 30 percent were federal dependents. The percentage of total enrollment comprised of military or federally-employed-civilian dependents had declined from nearly 57 percent in 1989 and is anticipated to continue declining as the non-federal-related population in the community increases (Kincald, 1991).

Table 3.4-14. Enrollment Breakdown by School District, Fall 1990

School	Federal Enrollment	Non-Federal Enrollment	Total Enrollment	Federal Enrollment As % of Total	Non-Federal Enrollment As % of Total
Adelanto Elementary School District Total	1,222	1,25	2,47	49.3	50.7
Adelanto Elementary	24	547	571	4.2	95.8
Westside Elementary	37	540	577	6.4	93.6
Eagle Ranch Elementary ^(a)	10	136	146	6.8	93.2
George Elementary	499	11	510	97.8	2.2
Sheppard Elementary	652	21	673	96.9	3.1
Apple Valley Unified School District	300	9,48	9,78	3.0	97.0
Victor Elementary School District	350	3,98	4,33	8.0	92.0
Victor Valley Union High School District	471	4,23	4,71	10.0	90.0
Total	2,343	18,970	21,33	11.0	89.%

Notes: (a) Opened September 1990.

(b) Data unavailable for Hesperia Unified School District.

Source: Adelanto Elementary School District, 1990; Hild, 1991; Warner, 1991; Mitchell, 1991.

The Adelanto Elementary School District is currently attempting to unify into a single primary-secondary education district (providing secondary education to Adelanto students who now must attend Victor Valley Union High School District Schools); a petition of 25 percent of registered voters in the district is being assembled to present before the County Committee on School District Organization which would either permit or deny unification. If the unification attempt succeeds, the district foresees combining the George and Sheppard elementary campuses into a single secondary school campus. Surrounding vacant parcels and extant base facilities could be incorporated into the campus design, including athletic fields, the base gymnasium, and the base chapel, which could serve as an auditorium (Kincaid, 1991).

Victor Elementary School District

Primary public education in the city of Victorville and the unincorporated Spring Valley Lake community is provided by the Victor Elementary School District (Hild, 1991).

Total enrollment in the Victor Elementary School District increased throughout the 1980s. Between 1980 and 1988, the district experienced total growth in enrollment of 144.3 percent, or an average annual enrollment growth rate of 11.8 percent, from 1,776 students in 1980 to 4,338 students in 1988. Of this fall

1988 enrollment, 8 percent (350 students) consisted of dependents of military and civilian personnel employed at George AFB. In the fall of 1988, the district's certified staff strength was 193 personnel, leading to a student/certified staff ratio 22.5 (San Bernardino County Superintendent of Schools, 1990; Hild, 1991).

Today, the district is operating nine schools with a total enrollment capacity in permanent buildings of 4,500 students; the district currently enrolls slightly more than 6,000 students. The excess enrollment is accommodated in portable classrooms. The percentage of enrollment, consisting of dependents of military and civilian personnel employed at George AFB, has decreased to less than 4 percent due to a decrease in base-related dependents and a rapidly expanding community (non-base-related) enrollment population (Hild, 1991).

Victor Valley Union High School District

The Victor Valley Union High School District provides secondary public education to those students residing in the Adelanto, Victor, Helendale, and Oro Grande elementary school districts. This secondary district operates four schools: one high school, one continuation high school, and two junior high schools (Bryson, 1991).

Enrollment in the Victor Valley Union High School District fluctuated dramatically during the 1980s largely due to school district boundary changes. In 1986, the district's enrollment peaked with more than 10,300 students. The following year, resulting from unification of primary and secondary education in school districts of Hesperia and Apple Valley, enrollment in Victor Valley Union High School District dropped to slightly more than 3,500 students. Since 1987, the district's enrollment has increased to a level of 4,500 students in the fall of 1990. In the fall of 1988, the district maintained a certified staff strength of 166 personnel, leading to a student/certified staff ratio of 22.2 (San Bernardino County Superintendent of Schools, 1990; Bryson, 1991).

Even with the decrease from the 1986 enrollment levels, the district continues to operate beyond its building capacity and, therefore, accommodates excess student capacity in portable classrooms. Plans are currently underway for a new high school, and long-term plans for two new junior high schools are being formulated (Bryson, 1991).

In the fall of 1990, approximately 10 percent, or 471 students, of the total district enrollment consisted of dependents of personnel (federal and civilian) employed at George AFB (of the special education students, 5 percent were dependents of base personnel). This level represents an absolute increase in George AFB-related dependents from the previous year (464 students in 1989) but a decrease in the percentage of total number of students (11.5 percent in 1989). This percentage decrease results from the stabilizing George AFB-related enrollment combined with the rapid growth of non-federal-related enrollment in the district. This trend is anticipated to continue (Warner, 1991).

Apple Valley Unified School District

The Apple Valley Unified School District provides public primary and secondary educational services through nine schools: six elementary schools, one junior high school, one high school, and one continuation high school (Mitchell, 1991).

Total enrollment in the district increased steadily during the 1980s. Between 1986 and 1987, the school district redefined its boundaries and unified from an elementary district to a primary-secondary district. As a result, district enrollment jumped from 3,715 students in the fall of 1986 to nearly 8,500 in the fall of 1987. Enrollment has continued to increase since, growing by another 1,000 students by the fall of 1988. Of the 9,778 students enrolled in the district in the fall of 1990, approximately 300 of the students, or 3.1 percent, were dependents of personnel (military and civilian) employed at George AFB (Mitchell, 1991). The student/certified staff ratio, a level of service indicator, was 21.7 for the 1988 to 1989 school year (San Bernardino County Superintendent of Schools, 1990).

Each school in the district currently is operating at capacity while attempting to provide educational services to increasing numbers of students. More than 50 percent of the district's total enrollment is accommodated in portable classrooms. Presently, students in kindergarten through sixth grade attend school year-round; beginning in July 1992, grades 7 and 8 will also become year-round. To maintain pace with this enrollment growth, the district has already broken ground on two new schools, one elementary and one junior high school. In February 1991, funding for a third school was secured. Furthermore, the district is pursuing funding from the state of California for one additional high school, one continuing high school, and two elementary schools. In the interim, the district is collecting developer fees to fund portable classrooms where necessary; however, space is limited at school campuses for additional portables (Mitchell, 1991).

Hesperia Unified School District

Public primary and secondary education in the city of Hesperia is provided by the Hesperia Unified School District. The school district operates 10 elementary schools, two junior high schools, one high school, and one continuation school which provides individualized attention (Jackson, 1991).

As at other school districts in the area, total enrollment increased steadily during the 1980s. Prior to the fall of 1987, the district operated as an elementary district; however, in the fall of 1987, the school district redefined its boundaries and began operating as a unified district, providing both primary and secondary educational services. As a result, district enrollment increased from nearly 4,700 students in the fall of 1986 to 9,500 in the fall of 1987. Enrollment has continued to increase by approximately 10 percent annually since (Jackson, 1991). The

student/certified staff ratio for the school district was 21.1 for the 1988 to 1989 school year (San Bernardino Superintendent of Schools, 1990).

Schools in the district currently are operating at or above design capacity. To accommodate these students, many schools use portable classrooms and all schools in the district operate on a year-round schedule. The school district anticipates that enrollment growth will continue at its current rate. In order to keep pace with this growth, the district has proposed development of three new elementary schools and one new high school (Jackson, 1991).

Victor Valley Community College

Victor Valley Community College is part of the California community college system which consists of 107 colleges. The college is structured to provide post-secondary education for future university-transfer students, re-entry students, students investigating career changes, and students seeking self-improvement. The college offers a wide range of academic courses (including liberal and fine arts, sciences, pre-medical, and nursing), vocational and technical training (such as construction, justice, automotive, drafting, and computer science), special programs (e.g., English as a Second Language), and continuing education courses designed to allow students to earn a high school diploma (Victor Valley Community College, 1990).

The college also offers post-secondary education opportunities at George AFB. Evening and selected weekday and weekend courses and training are available to George AFB personnel and dependents, as well as the general public through facilities at the base (Victor Valley Community College, 1990).

Approximately 1,100 students each semester are either military personnel or dependents of George AFB personnel at Victor Valley Community College (these students typically enroll in 1 to 5 classes per semester). This represents 11.9 percent of the total spring 1991 semester enrollment of 9,693 students (2,000 to 7,693 credits). Victor Valley Community College offers approximately 125 classes per year through four main facilities on the base. Spring 1991 enrollment was 700 students, of which 268 are civilian, in 58 currently offered classes. Civilians enjoy taking classes at the base for the conveniences of commuting and parking.

Impacts of Closure

Potential impacts to public school enrollments and certified staff strength arising from base closure are presented in Tables 3.4-15 and 3.4-16. While nearly all school districts in Victor Valley would experience some enrollment decreases due to base closure, the greatest decreases would be concentrated in Adelanto Elementary School District and Victor Valley Union High School District.

Table 3.4-15. Site-Related Enrollments, 1987-1993

	1987	1988	1989	1990	1991	1992	1993**
Victor Valley UHSD	836	834	1,171	950	746	295	0
Adelanto ESD	1,427	1,422	2,027	1,633	1,284	495	0
Helendale ESD	6	6	8	7	6	3	0
Oro Grande ESD	0	0	0	0	0	0	0
Victor ESD	300	300	405	334	262	110	0
Apple Valley USD	268	269	355	297	236	109	0
Hesperia USD	84	86	101	91	76	49	0
Barstow USD	7	7	8	7	5	2	0
Snowline Joint USD	11	11	13	11	8	3	0
SW San Bernardino SDs*	39	40	45	38	29	11	0
Rest of San Bernardino	8	8	11	9	7	3	0
Riverside County	15	17	14	12	9	3	0
Total	3,002	3,001	4,158	3,390	2,668	1,083	0

Note: Columns may not sum to totals because of computer rounding.
Data before 1989 are not strictly comparable to data from 1989 on because of changes in methodology.

Source: Projections developed for this study, March 1991.

Legend:

UHSD = Union High School District
ESD = Elementary School District
USD = Unified School District

* Southwestern San Bernardino County School Districts.

** Indicates base in caretaker status.

Table 3.4-16. Site-Related School District Staff Employment, 1987-1993

	1987	1988	1989	1990	1991	1992	1993**
Victor Valley UHSD	38	38	53	43	34	13	0
Adelanto ESD	73	73	103	83	65	25	0
Helendale ESD	0	0	0	0	0	0	0
Oro Grande ESD	0	0	0	0	0	0	0
Victor ESD	13	13	18	15	12	5	0
Apple Valley USD	12	12	16	14	11	5	0
Hesperia USD	4	4	5	4	4	2	0
Barstow USD	0	0	0	0	0	0	0
Snowline Joint USD	1	1	1	1	0	0	0
SW San Bernardino SDs*	2	2	2	2	1	1	0
Rest of San Bernardino	0	0	1	0	0	0	0
Riverside County	1	1	1	1	0	0	0
Total	144	144	200	163	128	52	0

Note: Columns may not sum to totals because of computer rounding.
Data before 1989 are not strictly comparable to data from 1989 on because of changes in methodology.

Source: Projections developed for this study, March 1991.

Legend:

UHSD = Union High School District
ESD = Elementary School District
USD = Unified School District

* Southwestern San Bernardino County School Districts.

** Indicates base in caretaker status.

Since both school districts serve base housing and provide public education to the areas closest to the base, both Adelanto Elementary School District and Victor Valley Union High School District have enrollments that include large numbers of dependents of workers (both military and civilian) involved with activities at George AFB. In 1989, an estimated 2,027 (88.9 percent) of the 2,280 students in Adelanto and 1,171 (29.0 percent) of the 4,035 students in Victor Valley Union were dependents of workers associated directly and indirectly with operations at George AFB. By 1993, these enrollments related to base operations would decline to zero.

Under closure baseline conditions, enrollments at the two schools that Adelanto Elementary School District operates at the base would decline drastically. Following base closure, however, the district would likely maintain these schools' operation and redirect students from other crowded campuses that use portable classrooms to these two schools.

Corresponding reductions in base-related demand for certified staff strength (e.g., teachers and counselors) and facility use would accompany these projected enrollment decreases. These potential reductions in public school enrollments and certified staff personnel are likely to be lessened by natural population growth and non-George AFB-related in-migration to the region. This incoming population would tend to counter the decreased demand arising from base closure; however, the replacement effectiveness of this new demand would be a function of the resident geographic distribution patterns and may not significantly increase demand in districts that are projected to experience large enrollment losses.

The superintendent of the Adelanto Elementary School District anticipates that the district will experience a substantial decrease in enrollment following base closure, and that natural enrollment growth would not entirely replace the lost enrollments until after 1993. The anticipated drop in enrollment at base closure would require teacher layoffs (Kincaid, 1991).

The superintendent of the Victor Valley Union High School District expects that the natural baseline growth in enrollment in the district, projected to be approximately 10 percent in 1992 and 1993, will balance out the loss of enrollment associated with base closure. Thus, overall the district would experience no enrollment growth in 1992 and 1993, and staff reductions would not be necessary. During this two-year period a new high school and junior high school will be constructed to relieve the overcrowding that is currently a problem in the district (Victor Valley Union High School District, 1991).

Enrollments at Victor Valley Community College related to base personnel would decline from approximately 1,100 students per semester to zero. Although base-related enrollments would be eliminated, the college plans to

maintain an education center at the base site from which classes would be offered to the community.

3.4.3.3 Police Protection

Recent Trends

Police protection in the region surrounding George AFB is provided by forces from the base; the cities of Adelanto, Victorville, Hesperia; the town of Apple Valley; the San Bernardino County Sheriff's Office; and the California Highway Patrol. Three of these police departments — Victorville, Apple Valley, and Hesperia — contract their law enforcement services from the San Bernardino County Sheriff's Office. Under these contracts, the county provides vehicles, officers, and staff (appearing through demarcation and uniforms as the contract municipal police department); the cities generally provide stations, fuel, and vehicle maintenance services.

Several departments maintain small holding facilities for detainees; however, the principal correctional facility in the Victor Valley is the Victor Valley Jail. Located at the San Bernardino County Sheriff's Office Substation in Victorville, the jail has 90 cells and serves all police departments in the High Desert.

George AFB Security Police Squadron

Law enforcement and police protection within the boundaries of George AFB are provided by the 831st Security Police Squadron. The squadron maintains a staffing strength of 158 total personnel, three of whom are sworn officers. It operates from one station on the base with 13 vehicles, including 4 sedans, 7 trucks, and 2 vans. The squadron runs one 12-bed holding facility but also relies on similar facilities at Edwards AFB, approximately 70 miles to the northwest. In addition to on-base emergencies, this security police force has been available to support local law enforcement agencies as needed (U.S. Air Force, 1991b). Support has been provided by the squadron's canine unit, which has been asked by civilian authorities to help with bomb threats six times since 1988. The squadron has not provided any other assistance with off-base disturbances in recent years. Similarly, the squadron has not requested assistance from local law enforcement agencies (George AFB CARE Office, 1991).

City of Adelanto Police Department

The Adelanto Police Department provides law enforcement and police protection services within incorporated limits of the city of Adelanto. The department operates out of a single police station in central Adelanto with a strength of 13 sworn officers (including the police chief), 16 reserve officers, and 9 administrative staff members. The city's level of service for police protection is

1.5 officers per 1,000 people. The department maintains eight police cruisers and one holding facility with a four-cell capacity (Gardner, 1991).

San Bernardino County Sheriff's Office

The San Bernardino County Sheriff's Office Station 7 (Victor Valley Station) is responsible for law enforcement, corrections, and court services in unincorporated areas of the county bounded by Wrightwood on the west, Lucerne Valley on the east, Cajon summit to the south, and Helendale to the north. The Sheriff's Office has mutual aid agreements with all other municipal forces in the Victor Valley to provide additional support when necessary (Natividad, 1991).

In the Victor Valley, the Sheriff's Office operates from their substation in Victorville. This substation has a staff of 60 sworn officers and maintains 12 marked police cruisers. The Victor Valley Substation also is in charge of operating the Victor Valley Jail adjacent to the Sheriff's Office. As previously discussed, this correctional center has a 90-cell capacity and takes prisoners from all parts of the High Desert (Natividad, 1991).

City of Victorville Police Department

Law enforcement within the city limits of Victorville is provided by the Victorville Police Department. This department is contracted to the San Bernardino County Sheriff's Office and is funded by the city of Victorville. The department operates from one police station and has a total staff of 63 of which 49 are sworn officers, leading to an operating level of service of 1.2 officers per 1,000 people. The Victorville Police Department maintains 28 vehicles and 2 motorcycles (Whitus, 1991).

Town of Apple Valley Police Department

The Apple Valley Police Department provides law enforcement and police protection services within incorporated limits of the town of Apple Valley. This department is contracted to the San Bernardino County Sheriff's Office and is funded by the town of Apple Valley. The department operates out of a single police station with a strength of 36 personnel with peace officer powers and 11 administrative staff members. The town's level of service for police protection is 0.8 officers per 1,000 people. The department maintains 10 marked patrol vehicles, 6 unmarked vehicles, one off-road vehicle, one canine patrol, and one van to serve at accident sites (Kootwyk, 1991).

City of Hesperia Police Department

Law enforcement within the city limits of Hesperia is provided by the Hesperia Police Department. Operation of the department is contracted to the San

Bernardino County Sheriff's Office and is funded by the city of Hesperia. The Hesperia Police Department has a staff strength of 40 sworn officers and 8 support staff members; the department provides police protection at a level of service of 0.8 officers per 1,000 people. The department maintains 21 marked and 10 unmarked vehicles from its single station in Hesperia (Reagan, 1991).

Impacts of Closure

Projected effects on police protection in the ROI resulting from base closure are presented in Table 3.4-17 from preclosure conditions through one year of caretaker activities. Potential impacts resulting from changes in demand for police protection services reflect the pattern of project-related population changes in the region under the closure baseline conditions. Declining requirements for police protection due to base closure likely would be replaced by demand arising from natural population increases and continued rapid in-migration to the area.

Table 3.4-17. Site-Related Police Officer Employment, 1987-1993

	1987	1988	1989	1990	1991	1992	1993
San Bernardino County	0	0	0	0	0	0	0
Adelanto	2	2	4	3	2	1	0
Apple Valley	1	1	1	1	1	0	0
Hesperia	0	0	0	0	0	0	0
Victorville	2	2	3	3	2	1	0
Rest of Victor Valley	0	0	0	0	0	0	0
Rest of County	0	0	0	0	0	0	0
Riverside County	0	0	0	0	0	0	0
Total	6	6	8	7	5	2	0

Note: Columns may not sum to totals because of computer rounding.
Data before 1989 are not strictly comparable to data from 1989 on because of changes in methodology.

Source: Projections developed for this study, March 1991.

With the closure of the base, the 831st Security Police Squadron would no longer provide police protection for the base area. The San Bernardino County Sheriff's Office would support the on-site DMT in assuming responsibility for law enforcement and police protection of the area as long as the base remains in an unincorporated area of the county (i.e., the base is not annexed by a city). The limited support previously provided to off-base communities by the base's canine patrol would need to be provided through some other means.

3.4.3.4 Fire Protection

Recent Trends

Fire protection in the George AFB region is provided by the base, municipal fire departments, and municipal and rural fire protection districts. Each of these organizations' staffs comprise both professional and volunteer firefighters. Firefighters are trained, not only to fight structural fires and address hazardous waste and civilian emergencies, but to battle brush fires which can flare in the scrub desert environment. Each fire department or district maintains mutual aid agreements and cooperates with other departments in the region during emergencies. The strongest ties between departments are represented by the Regional Fire Protection Authority which operates a joint communications center and coordinates joint training, investigations, and fire protection and operations among six fire departments in the southern Mojave Desert.

George AFB Fire Department (831 CES/DEF)

The George AFB Fire Department provides fire protection services for the base area. This fire protection force has maintained a staffing strength of 50 firefighters and 7 support personnel annually since 1988. From the single base fire station, the department operates 15 vehicles. The base fire department supports six other Victor Valley firefighting departments through mutual aid agreements. Since 1988, the fire department has responded to 12 mutual aid emergencies which mostly have included support against brush/wildland and structural fires. The George AFB Fire Department maintains no special firefighting equipment that surrounding community fire departments do not have; however, the base staff's training is more specialized than surrounding departments to respond to aviation and hazardous materials emergencies.

Adelanto Fire Department

The Adelanto Fire Department provides fire protection services for the city of Adelanto. With 4 full-time professional firefighters, 9 part-time professionals, and 17 volunteers, the department maintains a 0.5 firefighter per 1,000 population level of service. The department currently operates two pumpers, one aerial truck, one water tanker, one brush truck, one rescue squad, and one utility vehicle out of one fire station. A second station is expected to be operational by the end of July 1991. The Adelanto Fire Department maintains mutual aid agreements with George AFB, Victorville Fire Department, and the California Department of Forestry and Fire Protection (Luetke, 1991).

Regional Fire Protection Authority

The Regional Fire Protection Authority is a union of six High Desert fire departments that work together to provide fire protection and other safety

services to the local communities of Victorville, Apple Valley, Hesperia, Lucerne Valley, Barstow, and Wrightwood-Pinon Hills. The Authority operates a joint communications center and coordinates joint training, investigations, and fire protection and operations (Lewis, 1991).

Victorville Fire Department. The Victorville Fire Department provides fire protection, emergency medical services, and hazardous materials services for the city of Victorville. The department maintains a firefighting strength of 32 professional firefighters and 35 volunteers and provides a firefighting level of service of 0.8 firefighters per 1,000 people. Through three fire stations, the department operates five Class A pumpers, two brush fire pumpers, one elevated platform, two water tankers, one hazardous materials unit, one medical rescue, and one reserve squad. The department expects to have a fourth station operational by July 1991. In addition to the mutual aid agreements under the Regional Fire Protection Authority, the Victorville Fire Department also maintains separate mutual aid agreements with George AFB and the Adelanto Fire Department (Cabriales, 1991).

Apple Valley Fire Protection District. Fire protection in the town of Apple Valley and its immediate vicinity is provided by the Apple Valley Fire Protection District. This district operates from five stations and maintains a staff strength of 51 professional firefighters and 51 volunteers (on-call, part-time), leading to a level of service of 1.1 firefighters per 1,000 people. The district operates six engine companies, one ladder truck, two water tankers, two brush fire engines, and one emergency breathing support unit (i.e., for smoke inhalation cases). In addition to the mutual aid agreements under the Regional Fire Protection Authority, the district also maintains separate mutual aid agreements with other departments in the region, including that at George AFB. This district averages approximately one emergency per year that requires cooperation between it and fire protection services from George AFB — these emergencies are usually structure-related on the base and either structure- or brush-related in Apple Valley (Lewis, 1991).

Hesperia Fire Protection District. The jurisdiction of the Hesperia Fire Protection District is defined by Hesperia's city limits. With 45 professional firefighters and 20 volunteers (pay-call), the district provides fire protection services at a level of service of 0.9 firefighters per 1,000 people. The district runs three fire stations in the city — two stations are staffed with full-time personnel and the third is manned by volunteers — and maintains four structure rigs, one brush rig, one water tanker, three ambulances, and one rescue squad. Mutual aid agreements are held with all other fire departments and protection districts in the region (Oubre, 1991).

California Department of Forestry and Fire Protection

The California Department of Forestry and Fire Protection (CDFFP) is a state-wide agency responsible for wildland fire protection -- with approximately 3,600 full-time professional firefighters, 1,400 seasonal personnel, 3,600 volunteer firefighters, 2,500 volunteers in prevention, and 4,600 inmates or wards and is the largest fire department in the nation. Firefighting battalions sponsored by CDFFP in the George AFB region rely on San Bernardino County for funding (California Department of Forestry and Fire Protection, 1991).

CDFFP provides fire suppression services for wildlands and structures and performs rescue and hazardous materials emergency services in unincorporated areas of the Victor Valley and surrounding areas (roughly bounded by Phelan on the west, Lucerne Valley on the east, West Cajon Valley to the south, and Red Mountain to the north) from battalions operating out of 10 fire stations. From these 10 fire stations, CDFFP maintains a firefighting strength of 28 professional firefighters and 123 volunteers. Equipment maintained at these stations include eight Type 1 Engines, three Type 2 Engines, six Type 3 Engines, and one Type 4 Engine (California Department of Forestry and Fire Protection, 1991). CDFFP also provides fire protection support through mutual aid and/or automatic aid agreements with the surrounding communities of Adelanto, Victorville, Hesperia, Lucerne Valley, Wrightwood, and George AFB (California Department of Forestry and Fire Protection, 1991).

Impacts of Closure

Potential effects on fire protection services in the ROI are presented in Table 3.4-18. With George AFB closed and in caretaker status, there would be no base-related personnel in the surrounding communities and, correspondingly, no requirements for community fire protection services for base-related personnel.

In addition, local fire districts and communities no longer would be able to rely on the George AFB firefighting squadron to assist in fire protection, fire suppression, or hazardous materials emergencies. Also, management and use of the advanced fire-fighter training facilities at the base may not be readily assumed by the Regional Fire Protection Authority, which has stated interest in these facilities. The Regional Fire Protection Authority, however, has expressed that since the authority already has the mechanism in place for regional fire protection and communication, it can provide fire protection services to base property following closure (Lewis, 1991).

Table 3.4-18. Site-Related Firefighter Employment, 1987-1993

	1987	1988	1989	1990	1991	1992	1993
San Bernardino County	0	0	0	0	0	0	0
Adelanto	1	1	1	1	1	0	0
Apple Valley	1	1	2	1	1	1	0
Hesperia	0	0	0	0	0	0	0
Victorville	2	2	2	2	1	1	0
Rest of Victor Valley	0	0	0	0	0	0	0
Rest of County	0	0	0	0	0	0	0
Riverside County	0	0	0	0	0	0	0
Total	4	4	5	4	3	2	0

Note: Columns may not sum to totals due to computer rounding.
Data before 1989 are not strictly comparable to data from 1989 on because of changes in methodology.

Source: Projections developed for this study, March 1991.

3.4.3.5 Health Care

Recent Trends

Currently, 2,572 medical doctors (MDs) and surgeons, 745 dentists, 10,294 registered nurses (RNs), and 3,554 licensed vocational nurses (LVNs) are registered to practice in San Bernardino County (Marcia, 1991), leading to health care level of service ratios of 1.8 MDs, 0.5 dentists, 7.2 RNs, and 2.5 LVNs per 1,000 people in the county. More than 300 MDs and dentists offer medical services in the greater Victor Valley area. Four acute care hospitals and 31 clinics including the George AFB Hospital are located within 30 miles of the base.

Military Health Care Services

The George AFB Hospital, designed to accommodate 35 in-patients, is currently functioning with a 20-bed capacity. The hospital and associated base clinics provide health care services to active military personnel and their dependents, retired military personnel and their dependents, and to dependents of deceased military personnel. The hospital offers 24-hour emergency care as well as in- and out-patient medical and dental services. During FY 1989, the George AFB Hospital had 2,123 in-patient admissions, with monthly utilization ranging between 100 and 200 patient nights (Samiley, 1991). The hospital's clinics served 131,196 medical and 30,170 dental out-patients in FY 1989, for an average of slightly more than 13,000 visits per month (U.S. Air Force, 1990c). The hospital also serves as one of the four medical facilities at which student nurses from Victor Valley Community College serve as interns.

Out-patient services at the George AFB hospital are offered in family practice, pediatrics, gynecology and obstetrics, internal and general medicine, physical therapy, optometry, psychiatry, dentistry and orthodontics, and 1-day surgery. A full service pharmacy, immunology clinic, and pathology laboratory are also located at the base.

The closest Veteran's Administration (VA) Hospital is located in San Bernardino, approximately 35 miles south of George AFB, with 440 general medical/surgical beds and 128 nursing home beds (Felton, 1991). VA hospitals generally provide medical services only to veterans with active-duty related injuries or illnesses and to former prisoners-of-war. Dependents of veterans are not eligible for VA hospital care.

The two Air Force base hospitals closest to George AFB are located at Edwards AFB, approximately 40 miles northwest of Adelanto, and at March AFB, approximately 60 miles southeast of Adelanto. Edwards AFB operates a small hospital facility with 15 beds (Whitaker, 1991). March AFB operates a larger hospital and clinic facility with 82 beds (Huggins, 1991). Some of the other southland locations where medical care is available to active and retired military personnel include Ft. Irwin, Long Beach Naval Facility, Marine Corps Base Camp Pendleton, Marine Corps Air Ground Combat Center Twentynine Palms, and Marine Corps Logistics Base Barstow; all of these installations are within a three hour commute distance. The medical facilities and the variety and extent of medical and dental services available at different military bases can vary considerably.

In addition to military health services offered through the base hospital, military personnel and dependents have access to the Civilian Health and Medical Program of the Uniformed Services (CHAMPUS). A co-payment medical plan with a \$50 deductible, CHAMPUS provides payment for specific medical services to eligible dependents of active, retired, or deceased military personnel. As with many insurance plans, CHAMPUS pays approximately three quarters of the cost of medical services. CHAMPUS is honored by hospitals, clinics, and doctors nationwide, including all the health care facilities mentioned in this report. However, because of the limitations and constraints to the coverage offered by CHAMPUS, retired military personnel are encouraged to supplement this health care plan with secondary coverage.

Community Health Care Services

Three acute care facilities are located in communities surrounding George AFB. Victor Valley Community Hospital is staffed for 116 general medical and psychiatric beds. This hospital is a paramedic base station with a 24-hour emergency room and offers services in general and internal medicine and surgery, family planning, gynecology and obstetrics, mental health, oncology and a newly-opened open heart surgery and cardiac catheterization unit. St.

Mary Desert Valley Hospital is a 109-bed facility with a 24-hour emergency room in Apple Valley. The hospital offers general and internal medical and surgical services, gynecology and obstetrics, mental health, physical therapy, cardiac and pulmonary rehabilitation, diagnostic radiology and angiography, and services in home care and hospice.

Barstow Community Hospital, a 56-bed facility, located approximately 30 miles northeast of George AFB, averaged almost 15,000 emergency room visits per month in 1989 (Weiss, 1991). Barstow Community Hospital offers services in general and internal medicine and surgery, family practice, gynecology and obstetrics, pediatrics, psychiatry and mental health, physical therapy and cardiac care. Each of these hospitals takes CHAMPUS as a method of payment for medical and dental services.

Other Regional Health Care Services

Two large hospitals are located in southwestern San Bernardino County: San Bernardino Community Hospital and Loma Linda University Medical Center, a teaching and research hospital. San Bernardino Community Hospital is a 332-bed regional medical center offering a wide variety of medical services in acute and chronic care, rehabilitation services, special services in substance abuse (chemical and drug dependency and eating disorders), and a mental health crisis intervention program. Loma Linda University Medical Center in Loma Linda, a pioneer in cardiac procedures and transplant technology, is currently licensed for 627 beds. Along with its clinics, Loma Linda Medical Center and Faculty Medical Group offer alcohol and drug recovery, cardiology, eye care, family medicine, general and internal medicine, gynecology and obstetrics, optical services, orthopedics, neurosurgery, pediatrics, psychiatry, rehabilitation services, urology, and a pain control and personal health support center.

Impacts of Closure

At base closure, George AFB Hospital would be closed. The three acute care hospitals, 31 clinics and various resident medical personnel in the Victor Valley would be able to provide adequate medical, dental and emergency services as required by the community if the base hospital closes. Hospital closure might potentially impact retirees and their dependents by requiring increased driving time to Edwards AFB, March AFB or any of the other military facilities in greater San Bernardino, Riverside, and Los Angeles counties to receive their free medical care to which they are entitled. The Victor Valley Community College does not anticipate any problems from losing George AFB Hospital from its Nursing Program because there is sufficient training space for interns at three other community hospitals (Laxton, 1991).

3.4.3.6 Recreation

Recent Trends

Victor Valley offers a diverse range of recreational opportunities. In addition to the municipal recreation facilities such as tennis courts, golf courses, playing fields, and swimming pools, several desert recreation areas, such as El Mirage Dry Lake, offer unique opportunities for outdoor activities, including hang gliding and off-road vehicle recreation. The High Desert also is located within 40 miles of the mountain resorts of the San Bernardino mountains which provide boating and camping in the summer and skiing in the winter. The great number of recreational attractions associated with greater southern California -- such as the beaches, amusement parks, theaters, and cultural sites of Los Angeles and Orange counties -- are within 120 miles to the south and southwest of Victor Valley. Less than 180 miles to the northeast, Las Vegas and the Lake Mead National Recreation Area offer additional attractions.

George AFB

George AFB supports a well-developed and -maintained recreation infrastructure for base personnel, dependents, and civil servants. Recreational facilities on the base are highlighted by a 9-hole golf course which includes club house and pro shop, a new golf cart barn, and a driving range. The base gymnasium contains racquetball courts, a weight room, and a basketball court. Additional athletic facilities on the base include three swimming pools, five baseball fields, two sets of tennis courts, a park with several pavilions, and a quarter-mile track. Other recreational and leisure activities are offered through the base recreational center, arts and crafts center, auto hobby shop, bowling center, and skeet shooting range (Victor Valley Economic Development Authority, 1990a).

Victor Valley

Located in the center of Victor Valley is Mojave Narrows Regional Park, an open "nature" area administered by San Bernardino County. The park is located at the narrows of the Mojave River and offers outdoor activities such as fishing, camping, horseback riding, and nature-trail hiking.

The city of Adelanto maintains tennis courts, two public parks, a baseball diamond, and a public swimming pool (operated by the Adelanto Elementary School District). Total parkland in the city is approximately 6.0 acres, or 0.7 acres per 1,000 population. El Mirage Dry Lake, approximately 10 miles northwest of Adelanto, offers opportunities for outdoor activities such as hang gliding, land sailing, ultra-lite aircraft flying, and off-road vehicle recreation (Department of Economic and Community Development, undated; San Bernardino County, 1988b). Spectator sports in Adelanto include the

minor-league High Desert Mavericks baseball team, the farm team of the San Diego Padres.

The Victorville Parks and Recreation Department offers recreational activities and facilities at 16 city parks and numerous city schools. Total parkland in the city is approximately 115 acres, or 2.8 acres per 1,000 people. The city operates two swimming pools, four tennis courts, racquetball courts, basketball courts, softball fields, golf at the Victorville Municipal Golf Course, youth sports programs, and group picnic areas. The Hook Community Center, which will house recreational and program registration offices and feature a gymnasium, exercise room, basketball/volleyball courts, table tennis, and game room, is expected to be completed in May 1991 (Victorville Parks and Recreation Department, 1991).

The town of Apple Valley maintains standard municipal recreational facilities, such as small parks and athletic facilities. The town also is host to the Jess Ranch which offers many lakes, a trout fishing pond, and picnic areas for the public. In addition, there are several private recreational facilities, including an 18-hole golf course and country club, in the community (Department of Economic and Community Development, undated).

The Hesperia Recreation and Park District currently operates four parks and plans to build several more to accommodate demand from a growing population. The parks offer residents equestrian arenas, campgrounds, picnic grounds, and a 15-acre fishing lake. The park district and local equestrian council are working together to develop a network of horse trails throughout the city (Department of Economic and Community Development, undated; City of Hesperia, 1989).

Impacts of Closure

With the base closed, recreational facilities at the base no longer would be available for use. The reduced demand for recreational facilities in the community, arising from population changes attributable to base closure, would have a minimal effect on the use of community facilities, because natural population increases and non-George AFB-related in-migration would soon replace this temporary reduced demand.

3.4.4 Public Finances

The financial characteristics of the potentially affected local jurisdictions surrounding George AFB are presented below. Recent trends are discussed first and are followed by discussion of the impacts associated with base closure and placement in caretaker status.

City of Adelanto

Recent Trends

Services provided by the city of Adelanto are funded principally through the city's general and special revenue funds. In FY 1988, revenues and expenditures of these funds were \$1.1 million and \$1.7 million, respectively (Table 3.4-19). Fund balances were approximately \$70,000, representing about 4 percent of operating expenditures in this year. Taxes and special assessments, licenses and permit revenues, charges for services, and intergovernmental transfers are the principal revenue sources of the city. In FY 1989, revenues increased to approximately \$1.3 million while expenditures increased to \$1.8 million resulting in fund balances declining to a deficit of about \$460,000. This is the result of the demand for city services exceeding revenue collections and actual expenditures exceeding appropriations by about \$100,000. FY 1990 financial reports are unavailable at this time. Deficit balances, however, were to be made up in this year with added revenue from Return to Custody Facility reimbursement from the state of California.

Table 3.4-19. City of Adelanto, Revenues and Expenditures, General and Special Revenue Funds, FY 1988-89 (current dollars)

	1988	1989
Revenues		
Taxes and Assessments	\$460,707	\$398,432
Licenses and Permits	194,650	86,043
Fines and Forfeits	33,144	17,219
Intergovernmental	167,153	311,278
Charges for Services	168,554	375,846
Other	57,055	78,530
Subtotal	1,081,263	1,267,348
Expenditures		
General Government	531,113	701,930
Public Safety	855,513	757,860
Public Works	163,090	240,605
Parks, Recreation, & Cultural	34,728	45,753
Community Development		860
Capital Outlay	111,783	45,865
Subtotal	1,696,227	1,792,873
Fund Balances	69,531	(455,884)

Source: Lance, Soll & Lungard, 1989; 1990

Public safety services (police and fire protection) account for the largest expenditures of the city. In FY 1989, police department expenditures were approximately \$560,000, representing about 37 percent of general fund expenditures in that year. Fire department expenditures were \$170,000, representing about 11 percent of general fund expenditures. Public works

expenditures from both the general and special revenue accounts amounted to about \$240,000, representing about 13 percent of all general and special revenue fund expenditures.

The city also operates two enterprise funds of which the water fund is the principal account. In FY 1989, revenues of these funds, principally from the sale of water to area residents, were approximately \$450,000 and expenses were \$390,000. Retained earnings at the end of FY 1989 amounted to \$580,000.

The city has no general obligation bond indebtedness. Total assessed property valuation is approximately \$440 million. Assessed property valuation after the Redevelopment Agency increment is subtracted is about \$100 million.

Impacts of Closure

The closure of George AFB, with the subsequent out-migration of direct base employees and their dependents and the secondary job losses in the community, will result in a reduction in the amount of revenues available to the city. Lower general and special revenue fund revenues, principally from reduced license and permit revenues, fines and fees, and charges for services would amount to approximately \$390,000 by FY 1993. Lower population levels also may result in lower expenditure demands, although not in direct proportion to the out-migrating population. Some services, such as administrative and general government functions, as well as some public works and public safety functions may still be required at near-preclosure levels. What expenditure reductions may be required, however, would not be sufficient to offset projected revenue declines and shortfalls of approximately \$30,000 beginning in FY 1993 (Table 3.4-20). It is likely that increased local taxes or lower service levels would be required to maintain a balanced fiscal position in the event no reuse options are implemented at the base. If no budget cutbacks were implemented, for example, and staffing levels in the city remained at current levels, shortfalls would amount to the full value of the revenue lost, or \$390,000 by FY 1993.

Table 3.4-20. Net Fiscal Effects of Closure of George AFB on Potentially Affected Local Government Units, FY 1990-1993 (thousands of 1990\$)

Jurisdiction	FY 1990	FY 1991	FY 1992	FY 1993
City of Adelanto	(\$5)	(\$12)	(\$21)	(\$27)
Adelanto Elementary School District	(523)	(794)	(1,090)	(1,935)
City of Victorville	(13)	(44)	(113)	(156)
Victor Elementary School District	(59)	(120)	(247)	(340)
Victor Valley Union High School District	(127)	(244)	(503)	(673)
Town of Apple Valley	(4)	(27)	(35)	(38)
Apple Valley Unified School District	(27)	(55)	(114)	(165)

Notes: Data reflect the difference in projected revenue losses less expected expenditure reductions in city general and special revenues funds and general funds of the school districts. Parentheses indicate negative values, or net shortfalls.

Adelanto Elementary School District

Recent Trends

Services provided by the Adelanto Elementary School District are funded principally through the district's general fund. In FY 1988, revenues and expenditures of this fund were approximately \$6.9 million and \$7.5 million, respectively (Table 3.4-21).

Table 3.4-21. Adelanto Elementary School District, Revenues and Expenditures, General Fund, FY 1988-90 (current dollars)

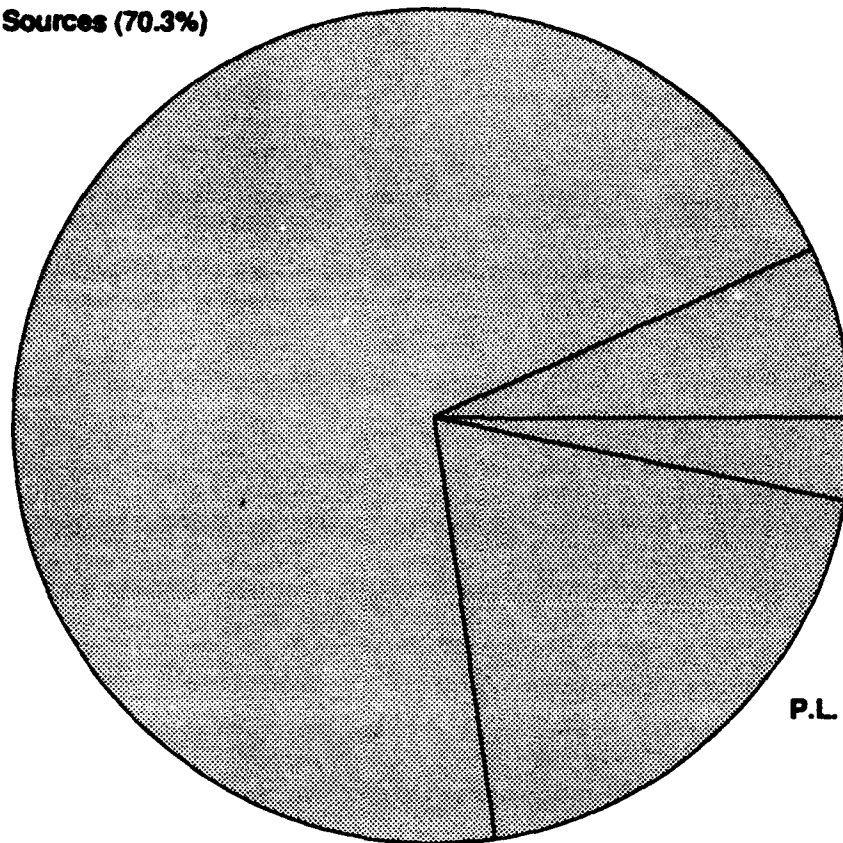
	1988	1989	1990
Revenues			
Local Sources	\$517,499	\$518,650	\$686,003
Taxes	425,428	460,956	562,814
Other	92,071	57,694	123,189
State Sources	4,820,284	5,954,941	6,973,429
Federal Sources	1,514,696	2,397,554	2,259,750
P.L. 81-874	1,375,470	2,117,273	1,956,136
Other	139,226	280,281	303,614
Subtotal	6,852,479	8,871,145	9,919,182
Expenditures			
Instruction	4,066,182	4,616,057	5,253,192
Support Services	2,060,490	2,229,222	2,744,053
Other	1,389,702	1,348,162	1,863,168
Subtotal	7,516,374	8,193,441	9,860,413
Fund Balance	192,228	788,124	756,341

Source: James M. Quinn C.P.A., 1988a, 1989a, 1990a.

Fund balances were approximately \$190,000, representing about 3 percent of operating expenditures in this year. Since FY 1988, revenues have increased more than expenditures, resulting in increasing fund balances. Fund balances by FY 1990 were approximately \$760,000, representing about 8 percent of operating expenditures in that year. State education aid programs are the principal revenue sources of the district, accounting for about 70 percent of all revenues in FY 1990 (Figure 3.4-4). State educational aid program revenue is based on a per pupil revenue limit amount comprised of a local contribution and the state's contribution. State funding is subject to legislative appropriation, and may or may not keep pace with local costs. The per pupil revenue limit for the Adelanto Elementary School District in FY 1991 is approximately \$2,700 per student, of which about 90 percent is from state sources. As local source contributions (principally from property tax revenue) increase, for example, state aid levels would decrease so that the overall level remains within the revenue limit amount.

Revenue Sources by Type, FY 1990

State Sources (70.3%)



Local Sources (6.9%)

Other Federal (3.1%)

P.L. 81-874 (19.7%)

Total FY 1990 Revenues: \$9.9 Million

EXPLANATION

P.L. = Public Law

**Adelanto Elementary
School District
Revenue Sources**

George AFB, California

Figure 3.4-4

Military dependents in the district numbered approximately 1,100 students in FY 1988, resulting in approximately \$1.4 million in Public Law (P.L.) 81-874 revenues. This amount grew to \$2.1 million in FY 1989 and was about \$2 million in FY 1990. Funds under the P.L. 81-874 program are not considered local source revenues and do not enter into state aid calculations.

Principal financial concerns of the district currently include the level of state aid covering operating expenses, as well as sources of funding for capital improvements (particularly new schools).

Impacts of Closure

Net fiscal effects are presented in Table 3.4-20. The principal effects of George AFB closure would be the loss of both federal and state education aid program revenues. By FY 1993 federal aid reductions, principally from P.L. 81-874 program revenues, would amount to \$1.8 million. If Section 3 transition entitlements were fully funded, these effects would be less severe and be apportioned, in reducing amounts, over a three-year period beginning in FY 1993.

Revenue limit sources (principally state contributions) would be reduced by about \$4.6 million. Total revenue reductions would amount to about \$8.1 million. A lower student load would also result in lower expenditure requirements, although not in direct proportion to the lower enrollment levels. Some services, such as administration and buildings and grounds maintenance, will continue to be required at or near preclosure levels. Reductions in numbers of personnel associated with direct instruction functions could be necessary upon closure. Reduced expenditures could amount to approximately \$6.2 million. These reductions would not be sufficient, however, to offset the revenue losses, shortfalls of about \$1.9 million annually, due principally to lost P.L. 81-874 revenues which are not made up by state sources and do not enter state aid formulas.

City of Victorville

Recent Trends

Services provided by the city of Victorville are funded principally through the city's general and special revenue funds. In FY 1988, revenues and expenditures of these funds were \$16.5 million and \$15.1 million, respectively (Table 3.4-22). Fund balances were \$590,000, representing about 4 percent of operating expenditures in that year. All of this surplus was accounted for by the general fund balance (\$5.2 million in FY 1988) while the special revenue accounts showed deficit balances (totalling \$4.6 million in FY 1988). Local property and non-property tax revenue and charges for services are the principal revenue sources of the city. Since FY 1988, revenues have increased

Table 3.4-22. City of Victorville, Revenues and Expenditures, General and Special Revenue Funds, FY 1988-90 (current dollars)

	1988	1989	1990
Revenues			
Taxes and Assessments	\$8,471,902	\$9,430,569	\$11,436,887
Licenses and Permits	662,886	1,557,872	1,792,013
Fines, Forfeitures & Use of Money and Property	699,415	876,223	132,706
Intergovernmental Revenue	1,672,905	2,271,961	2,731,927
Charges for Services	3,472,189	5,061,353	5,601,184
Other	1,558,754	265,747	2,294,332
Subtotal	16,538,051	19,463,725	23,989,049
Expenditures			
General Government	3,110,883	2,135,128	2,718,041
Public Safety	3,994,841	5,503,138	6,837,812
Public Works	3,267,005	4,493,177	5,356,254
Community Development	966,943		
Health	1,523,246		
Parks and Recreation	2,202,048	2,822,902	1,692,230
Capital Outlay		2,920,612	4,340,495
Subtotal	15,064,966	17,874,957	20,944,832
Fund Balances	585,666	2,158,707	951,213

Source: James M. Quinn, C.P.A., 1988b, 1989b, 1990b.

more than expenditures, resulting in increasing fund balances. Fund balances in FY 1990 amounted to \$950,000, representing about 5 percent of operating expenditures in that year.

Public safety functions (police and fire protection services) and public works account for the majority of city expenditures (other than general administrative functions). Budgeted FY 1991 police department expenditures are approximately \$4.5 million, representing about 17 percent of all governmental fund expenditures in that year. The fire department is budgeted at about \$2.8 million. Street maintenance, street sweeping, and traffic control accounts for about 12 percent of budgeted FY 1991 expenditures.

The city also operates three enterprise funds (a transit system, sanitary landfill, and golf course). In FY 1990, combined revenues and expenditures of these funds were \$12.2 million and \$2.8 million, respectively. Retained earnings at the end of the year amounted to \$18.3 million.

General obligation bond indebtedness at the end of FY 1990 was approximately \$0.4 million. Total assessed valuation in the city is \$1.8 billion. Assessed valuation after the Redevelopment Agency increment is subtracted is \$1.6 billion.

Impacts of Closure

Closure of George AFB will have effects on the city of Victorville similar to those described for the city of Adelanto. The out-migration of direct base employees and their dependents and the secondary job losses in the community will result in a reduction in the amount of revenues available to the city. However, because the city of Victorville serves as the principal commercial center in the area, effects of closure are projected to be greatest for Victorville. Lower general and special revenue fund revenues, principally from reduced sales and use taxes, license and permit revenue, intergovernmental transfers, and charges for services would amount to approximately \$1.2 million.

The effect on the net fiscal balance of the city resulting from base closure depends upon how the city responds to this projected revenue loss. Some city services may not be able to be reduced in response to these changes; other services could be reduced while still maintaining current service ratios. Services such as general government functions and some public works activities may still be required at or near preclosure announcement levels.

What expenditure reductions could be implemented, however, would not be sufficient to offset projected revenue losses, and shortfalls of \$150,000 annually beginning in FY 1993 are projected (Table 3.4-20). This assumes tax and non-tax schedules and service levels remain unchanged from current levels. It is likely that increased local taxes or lower service levels would be required to maintain a balanced fiscal position in the event no reuse options are implemented at the base. If no budget cutbacks were implemented, for example, and staffing remained at current levels, the shortfalls would amount to the full value of the revenue lost, or \$1.2 million.

Victor Elementary School District

Recent Trends

Educational services provided by the Victor Elementary School District are funded principally through the district's general fund. In FY 1988, revenues and expenditures of this fund were \$11.1 million and \$10.7 million, respectively (Table 3.4-23). Fund balances were \$1.7 million, representing about 16 percent of operating expenditures in that year. Both revenues and expenditures have increased substantially since FY 1988. FY 1990 revenues of \$18.8 million represent an increase of 70 percent over that two year period. Expenditures in FY 1990 were \$17 million representing an increase of 60 percent. Fund balances increased to \$4.4 million, representing about 26 percent of operating expenditures in FY 1990.

**Table 3.4-23. Victor Elementary School District, Revenues and Expenditures,
General Fund, FY 1988-90 (current dollars)**

	1988	1989	1990
Revenues			
Local Sources	\$3,142,437	\$3,636,438	N/A
Revenue Limit Sources	2,811,347	3,284,735	N/A
Other	331,090	351,703	N/A
State Sources	7,759,422	10,096,607	N/A
Federal Sources	206,111	449,739	N/A
P.L. 81-874	3,018	12,696	N/A
Other	203,093	437,043	N/A
Subtotal	11,107,970	14,182,784	18,819,561
Expenditures			
Instruction	5,701,148	6,981,094	9,033,878
Support Services	2,988,636	3,511,637	4,575,981
Other	1,961,053	2,504,735	3,418,109
Subtotal	10,650,837	12,997,466	17,027,968
Fund Balances	1,666,799	2,690,310	4,395,399

Note: FY 1990 line item revenue values not available.
Source: Smith Marion & Company, 1988, 1989, 1990.

State source revenue accounts for the majority of revenues available to the district (about 70 percent of all revenues). Revenue limits per pupil are approximately \$3,060 per student. P.L. 81-874 program revenues are minimal — \$3,000 in FY 1988 and \$12,700 in FY 1989 — representing less than one-tenth of one percent of all general fund revenues in these years. The district has no general obligation bond indebtedness. Total assessed valuation in the district is \$2.2 billion.

Impacts of Closure

Because the district does not rely on P.L. 81-874 program revenues to the extent the Adelanto Elementary School District does, effects of base closure will be felt principally through reduced state education aid program revenues. Based on a per pupil revenue limit of \$3,060 per student, by FY 1993 revenue limit sources are projected to be reduced by about \$1.1 million. Total revenue losses are estimated at about \$1.4 million. As with the Adelanto Elementary School District, the Victor Elementary School District may also face personnel reductions and reduced expenditure needs. These expenditure reductions would not be sufficient to offset the revenue reductions and shortfalls of \$300 thousand which are projected by FY 1993. Expenditure reductions could amount to \$1.1 million. The net fiscal effects of base closure are presented in Table 3.4-20.

Victor Valley Union High School District

Recent Trends

Services provided by the Victor Valley Union High School District are funded principally through the district's general fund. In FY 1988, revenues and expenditures of this fund were \$15.6 million and \$13.1 million, respectively (Table 3.4-24). Fund balances were \$3.2 million, representing about 24 percent of operating expenditures in that year. Revenues increased to \$18.3 million by FY 1990 and expenditures increased to \$17.5 million. Fund balances by FY 1990 also increased to about \$5 million, representing 28 percent of operating expenditures in that year. State educational aid programs are the principal revenue source of the district, accounting for about two-thirds of all revenues in FY 1989 (Figure 3.4-5). Per pupil revenue limits are approximately \$3,320 per student (in constant 1990 dollars). P.L. 81-874 program monies account for about 2 percent of all general fund revenues. P.L. 81-874 program revenues averaged about \$240,000 over the FY 1988 to 1990 period.

Table 3.4-24. Victor Valley Union High School District, Revenues and Expenditures, General Fund, FY 1988-90 (Current Dollars)

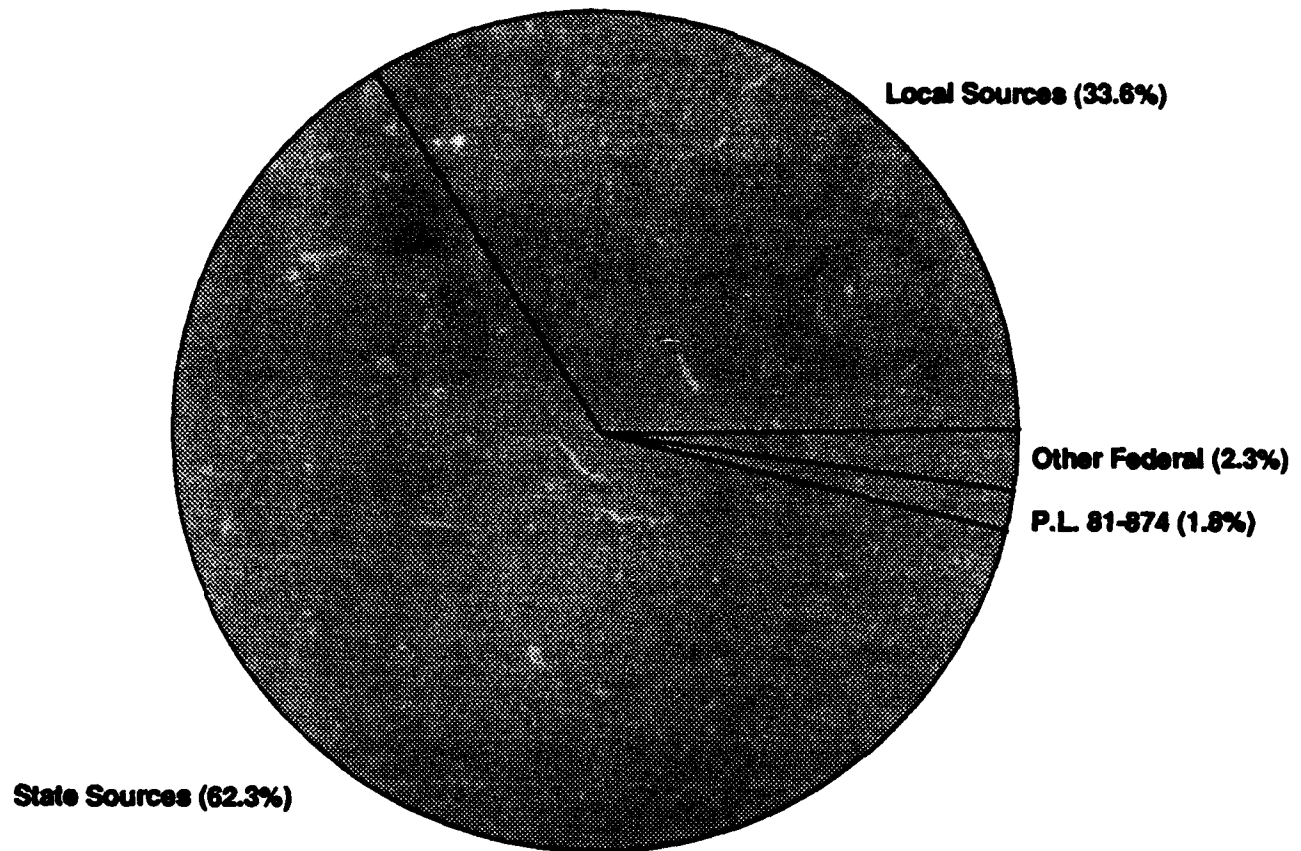
	1988	1989	1990
Revenues			
Local Sources	\$712,562	\$5,219,332	N/A
District Taxes	143,718	N/A	N/A
Other	568,844	N/A	N/A
State Sources	14,459,914	9,670,132	N/A
Federal Sources	465,964	644,404	720,309
P.L. 81-874	216,910	281,274	222,280
Other	249,054	363,130	498,029
Subtotal	15,638,440	15,533,868	18,343,632
Expenditures			
Instruction	6,756,678	7,391,637	N/A
Support Services	3,770,464	4,554,607	N/A
Other	2,619,771	2,553,175	N/A
Subtotal	13,146,913	14,499,419	17,492,533
Fund Balances	3,204,360	3,850,890	4,968,786

Note: FY 1989 local source revenue estimated as balance of total less state and federal revenues; FY 1990 line item local and state source revenues and expenditures not available.

Source: Victor Valley Union High School District, undated.

The district has \$1.6 million in general obligation bond indebtedness outstanding at the end of FY 1990. Total assessed valuation is \$3.2 billion. Assessed valuation after netting out the Redevelopment Agency increment is \$2.7 billion.

Revenue Sources by Type, FY 1989



EXPLANATION

P.L. = Public Law

**Victor Valley
Union High
School District
Revenue Sources**

George AFB, California

Figure 3.4-5

Impacts of Closure

The principal effects of George AFB closure would be the loss of both federal and state education aid program revenues. By FY 1993 federal aid reductions, principally from P.L. 81-874 program revenues, would amount to about \$400,000. If Section 3 transition entitlements are fully funded, these effects would be less and would be apportioned, in reducing amounts, over a three-year period starting in FY 1993. Revenue limit sources, principally the state aid contribution, would be reduced by \$3.4 million. Total revenue reductions would amount to \$5.1 million. A lower student load would also result in lower expenditure requirements, although not in direct proportion to the lower enrollment levels. Some services, such as administration and buildings and grounds maintenance, will continue to be required at or near preclosure levels. Reduced expenditures could amount to about \$4.4 million.

Town of Apple Valley

Recent Trends

The town of Apple Valley was incorporated in November 1988. Information on the first full year of town operations are presented in the FY 1990 financial statements. Town services are funded principally through the town's general and special revenue funds. In FY 1990, revenues and expenditures of these funds were \$11.5 million and \$11 million, respectively (Table 3.4-25). Fund balances were \$1.9 million, representing about 17 percent of operating expenditures in that year. The town has no general obligation bond indebtedness. Total assessed valuation in the town is \$1.7 billion.

Impacts of Closure

Effects of base closure on the town of Apple Valley are expected to be less severe than impacts on other municipalities. Revenue losses, principally from lower sales and use taxes, fines and fees, and charges for services, are projected to be approximately \$350,000 by FY 1993. Expenditure demands could be reduced by about \$310,000 depending on the specific response of the city to lower revenue levels. These reductions are not projected to be sufficient to offset revenue losses and shortfalls of about \$40,000 annually (Table 3.4-21). Increases in local tax and non-tax schedules or reductions in service levels would be required to maintain a balanced fiscal position for the town. If no budget cutbacks were implemented, for example, and staffing levels in the city remained at current levels, the shortfalls would amount to the full value of the revenues lost, or \$350,000 by FY 1993.

**Table 3.4-25. Town of Apple Valley, Revenues and Expenditures,
General and Special Revenue Funds, FY 1990 (current dollars)**

	1988
Revenues	
Sales Taxes	\$1,164,282
Fines and Fees	4,336,705
Licenses and Permits	1,916,825
Intergovernmental	2,031,672
Charges for Services	982,182
Miscellaneous	1,053,468
Subtotal	11,485,134
Expenditures	
General Government	1,798,266
Public Safety	2,639,456
Community Development	3,055,914
Legals	82,793
Highways and Streets	1,379,400
County Landfill Fees	1,186,351
Waste Disposal	907,059
Subtotal	11,049,239
Fund Balance	1,928,680

Source: Charles Z. Fedak and Company, 1990.

Apple Valley Unified School District

Recent Trends

Services provided by the Apple Valley Unified School District are funded principally through the district's general fund. In FY 1988, revenues and expenditures of this fund were \$27.7 million and \$28.5 million, respectively (Table 3.4-26). Fund balances were \$880,000, representing about 3 percent of operating expenditures in that year. Both revenues and expenditures have increased substantially since FY 1988. FY 1990 revenues of \$38.4 million represent an increase of about 41 percent over that two-year period. The per pupil revenue limit is \$2,785 per student. Expenditures in FY 1990 were \$36.4 million, representing an increase of 28 percent. Fund balances increased to \$4.6 million, representing about 13 percent of operating expenditures, in FY 1990. The district does not receive any P.L. 81-874 program revenues. The district has no general obligation bond indebtedness as of FY 1990. Assessed valuation in the district is \$2 billion.

**Table 3.4-26. Apple Valley Unified School District, Revenues and Expenditures,
General Fund and Expenditures, FY 1988-90 (current dollars)**

	1988	1989	1990
Revenues			
State and Local Revenue Limit Sources	\$23,540,078	\$26,920,542	\$31,021,789
Federal Sources	417,027	748,694	1,062,497
Other State Sources	2,956,144	5,927,795	5,491,930
Other Local Sources	816,745	604,020	838,485
Subtotal	27,729,994	34,201,051	38,414,701
Expenditures			
Salaries and Instruction Supplies	25,320,960	28,870,579	31,521,948
Services and Operating Expenses	1,918,353	2,430,872	2,558,907
Other	1,261,204	934,633	2,317,699
Subtotal	28,500,517	32,236,084	36,398,554
Fund Balances	879,422	2,660,032	4,587,006

Source: Apple Valley Unified School District, undated.

Impacts of Closure

Revenue losses from base closure are estimated at approximately \$1.3 million by FY 1993, principally because of lower state educational aid program revenues. While some reduction in expenditures may be expected, some outlays would still be required at or near preclosure announcement levels. Expenditure reductions could amount to about \$1.1 million. These reductions, however, would not be sufficient to offset projected revenue losses and shortfalls of about \$160,000 annually (see Table 3.4-20).

3.4.5 Transportation

3.4.5.1 Roadways

Recent Trends

The region surrounding George AFB is served by a network of interstate, U.S., and state highways, and city and county roads. I-15 provides direct access to Ontario, 45 miles to the southwest; and to Barstow, 35 miles to the northeast. I-215 connects the base to San Bernardino, about 45 miles to the south, via I-15. From Ontario, I-10 links the region with Los Angeles, about 50 miles west of Ontario, and Palm Springs, about 60 miles to the east. U.S. 395 intersects I-15 about 13 miles south of the base but angles away from I-15 toward the north while I-15 runs in a northeasterly direction. U.S. 395 is proposed to be

upgraded to full freeway status, and be relocated one to three miles west of its present alignment.

Access to George AFB is through either the Main Gate or the Housing Gate, both of which open onto the north side of Air Base Road and are about a mile apart. Air Base Road is a two-lane east-west connector road that extends from National Trails Highway, about three miles east of the Main Gate, to U.S. 395, about 2 miles west of that gate. The most important road leading into the city of Victorville from the base is Village Drive, a four-lane north-south arterial.

Under the various base reuse alternatives analyzed in Chapter 4.0 of this study, five other roadways will become important in providing access to the base area: Helendale Road is located in the unincorporated portion of San Bernardino County and extends north toward the community of Helendale from near the north base boundary. Crippen Road is an east-west roadway in Adelanto which crosses U.S. 395, 1 mile north of Air Base Road and extends to the west boundary of the base. Desert Flower Road is an unincorporated east-west road which runs between U.S. 395 and Helendale Road, about 4 miles north of Air Base Road. El Mirage Road is also an east-west road in Adelanto that presently extends west from U.S. 395, but is proposed to extend east to the base west boundary. Finally, Shay Road is an unincorporated north-south road that extends north from the Turner Road about 0.6 miles east of Air Base Road, along the east boundary of the base. All five of these roads are presently relatively minor 2-lane roadways for which no traffic data have been collected.

Descriptions of proposed improvements and preclosure conditions of these roadways is found in Section 3.2.4 of the George AFB Closure and Reuse EIS.

With the recent installation of another lane on Air Base Road at the Main Gate, the three most important intersections on Air Base Road function as follows (Victor Valley Economic Development Authority, 1990b):

INTERSECTION	LOS	
	a.m.	p.m.
Main Gate at Air Base Road	A	A
Housing Gate at Air Base Road	A	E
Village Drive at Air Base Road	A	B

A description of the condition of other pertinent intersections in the area follows (Victor Valley Economic Development Authority, 1990b):

- Air Base Road at Adelanto Road Four-way stop; long delays on Air Base Road, in both directions.
- Air Base Road at National Trails Hwy T-intersection; stop for Air Base Road, but free right turn; inadequate merge area.

- Highway 395 at Air Base Road

Flashing red at intersection; long delays on north, south, and westbound legs.

The three on-base roads that receive the heaviest traffic are Cory Boulevard and Phantom and Mustang streets. These roadways are designated as the key on-base roads for the purposes of this study. All are two-lane roads except for Phantom Street which has four lanes between the Main Gate and Pol Access Road (about 0.5 mile). Figure 3.4-19 shows the peak-hour volume, peak-hour capacity, and LOS of each of the key on-base roads in 1987, including two locations on Cory Boulevard and Phantom Street. Descriptions of the operating conditions of these roadways is found in Section 3.2.4 of the George AFB Closure and Reuse EIS.

Impacts of Closure

It is likely that traffic on the key roads will have increased in proportion to the area's population growth minus the traffic generated by the base. Section 3.2.4 of the George AFB Closure and Reuse EIS describes projected traffic conditions on the key community roads. Upon closure of George AFB in 1993, the only traffic on base will be generated by the 50-person DMT. LOS for all on-base roads will then be A.

3.4.5.2 Air Transportation

Air transportation includes passenger travel by commercial airline and charter flights; business and recreational travel by private (general) aviation; and priority package and freight delivery by commercial and other carriers. The closest commercial airline service to George AFB is at Ontario International Airport, approximately 45 road miles and 50 minutes driving time to the southwest in Ontario, California. Palmdale Airport is approximately 50 road miles and 55 minutes driving time to the west of George AFB.

Ontario International Airport is substantially larger in terms of passenger volume than Palmdale Airport, although both carry only a fraction of the passengers handled each year by LAX, in the city of Los Angeles approximately two hours driving time to the west of George AFB. Recent (1990) annual passenger volumes at the three airports were as follows (Los Angeles Department of Airports, 1991b).

- Ontario International Airport — approximately 5.4 MAP
- Palmdale Airport — less than 0.1 MAP
- LAX — approximately 45.8 MAP.

Ontario International Airport served as shipping and receiving point for approximately 210,000 tons of air cargo in 1986, the most recent year for which comprehensive regional air cargo data are available (SCAG, 1991b). This represented approximately 17 percent of all southern California air cargo shipments in that year. LAX accounted for 82 percent of air cargo volume in that year, while Burbank, John Wayne, and Long Beach airports combined represented only 1 percent of regional air cargo activity (SCAG, 1991b).

3.4.5.3 Railroads

Recent Trends

Victor Valley is served by three major transcontinental railroads: Southern Pacific, Union Pacific, and the Santa Fe. The lines of the latter two traverse north-south about a half mile east of the George AFB's easterly boundary, while the Southern Pacific line runs in a generally east-west direction across the southern part of Victor Valley from the Palmdale area. In addition, ridership into and out of Victorville is provided by the AMTRAK system.

In 1942, about two miles of 100-foot wide railroad spur right-of-way was acquired between the Union Pacific/Santa Fe line and the easterly base boundary, at a point about 3,000 feet south of Air Base Road. The right-of-way, however, remains in government ownership. This right-of-way could become an integral part of any reuse of George AFB (Victor Valley Economic Development Authority, 1990a).

There is currently a proposal to construct a super speed train (SST) line between Las Vegas, Nevada and Anaheim, California (Robert D. Niehaus, Inc. and the Canadian Institute of Guided Ground Transport, 1989). This privately financed system could pass very near George AFB, and with construction of a station there could provide access to the Victor Valley. SST access to the Victor Valley could potentially lessen congestion on roadways with a resulting beneficial impact on air quality; noise levels, however, likely would be increased. The level of business activity under all reuse alternatives could be at a higher level than the estimates discussed in Chapter 4. Likewise, the demand for housing and consequently, property values could also be higher than the levels projected in Chapter 4.

Impacts of Closure

Upon closure of George AFB, there would be some very small reductions in use of the AMTRAK system in Victorville. These reductions would be quickly overcome by the projected rapid population growth in Victor Valley.

3.4.6 Utilities

This section summarizes preclosure and closure baseline conditions of utilities on George AFB and in the surrounding Victor Valley. A more detailed presentation of these conditions is available in the George AFB Closure and Reuse EIS.

3.4.6.1 Water Supply

Recent Trends

George AFB currently gets its water from a group of eight wells, located adjacent to the Mojave River north of Turner Road, in an area about 0.5 to 1 mile east of the base. Well No. 7 is currently inoperative because of mechanical problems. The city of Adelanto owns the land on which the wells are located, but leases the land to the Air Force (U.S. Air Force, 1990a). The Air Force owns the wells and is responsible for their operation, and maintenance. The wells vary in depth from approximately 100 feet to 445 feet and productive capacities vary from 1.0 cubic foot per second (cfs) to 3.56 cfs (Lee and Ro Consulting Engineers, 1984). The state water permit for the wells is jointly held by the city of Adelanto and the Air Force.

Within the Victor Valley region surrounding George AFB, there are more than 100 public and private water purveyors covering service areas of various sizes and populations, as well as numerous private wells used for individual residences or agricultural use.

Virtually all of the water production in the Victor Valley is obtained from groundwater sources, although the High Desert region has an unused allotment of more than 50,000 acre-feet per year (af/yr) of water from the State Water Project. The Mojave Water Agency (MWA) was initially created in the 1960 to manage the distribution of this state water allotment throughout an area encompassing 4,800 square miles of the High Desert region, including the Victor Valley.

Impacts of Closure

Prior to the announcement of the closure of George AFB, the base was planning to make infrastructural changes to the water supply system to generally upgrade the existing system and accommodate additional long-term demand.

Four potential alternative plans for providing additional water supplies to the base were studied and cost estimates associated with each plan were prepared.

A fifth alternative was also studied although costs were not calculated. This alternative comprised a plan for the base to replace its present supply with new

infrastructure to link with the Victor Valley Water District, which is the major water purveyor bordering the base to the southeast.

MWA recently published a water demand projection in the *Master Plan for Delivery of Imported Water: Final Report* indicating that in 1990, domestic water demand averaged 38.1 million gallons per day (MGD) (i.e., 42,700 af/yr) within the Upper Basin region which underlies the Victor Valley, (Mojave Water Agency, 1990). Table 3.4-27 indicates water demand trends between 1987 and 1993, the time of base closure.

Table 3.4-27. Average Daily Water Demand within the Upper Basin Region of the Mojave Water Agency (in MGD)

	1987	1990	1993
Implicit MWA Forecast	32.6	38.1	43.7
Preclosure Reference/Closure Forecast	32.6	38.1	40.4
Change From MWA Forecast	0.0	0.0	-3.3
Percent Change	0.0	0.0	-7.6

Sources: Projections developed for this study, April 1991; based on Mojave Water Agency, 1990.

3.4.6.2 Wastewater

Recent Trends

Prior to 1981, George AFB operated its own wastewater treatment plant (located between the housing area and cross-wind runway (U.S. Air Force, 1989b). VVWRA constructed a new secondary treatment plant, located on property adjacent to the northeastern boundary of George AFB, to serve its member communities of Adelanto, Apple Valley, Hesperia, Victorville, Oro Grande (San Bernardino County Service Area [CSA] No. 42), and Spring Valley Lake (CSA No. 64). When the VVWRA treatment plant came on line, George AFB contracted for service from VVWRA and interceptor lines were constructed to connect the base with the plant. The VVWRA activated sludge plant currently treats an average of about 6.5 MGD.

At George AFB, most of the on-base wastewater mains are gravity flow and run toward the north side of the base. The base has two metered lines that connect to the VVWRA interceptor system. The base flow rate is normally between 0.8 MGD and 0.85 MGD. The maximum capacity of the two lines from the base is 1.1 to 1.2 MGD (Kurtz, 1991). Buildings located on the west side of the runways and south of Air Base Road dispose of wastewater in septic systems and leaching fields (U.S. Air Force, 1989b).

In April 1987, VVWRA issued George AFB an "Order Requiring Corrective Action Pursuant To VVWRA Sewer Use Ordinance." This corrective action order (CAO) outlined seven specific non-compliance issues related to wastewater flows from George AFB received at the VVWRA treatment plant and a timetable with due dates for corrective actions that would bring the base into compliance with the VVWRA Sewer Use Ordinance. A summary of the non-compliance issues and the required corrective actions are presented in the *George AFB Closure and Reuse Draft EIS*.

Impacts of Closure

VVWRA recently produced a wastewater treatment demand projection in the *Wastewater Master Plan* indicating that wastewater demand was 5.8 MGD in 1990 (VVWRA, 1988a). These projections include increased rates of sewage treatment in Victor Valley as existing residences and commercial facilities are transferred from septic systems to central treatment plants and existing cities continue to grow within their spheres of influence. Table 3.4-28 indicates wastewater generation trends between 1987 and 1993, the time of base closure.

Table 3.4-28. Average Daily Wastewater Generation within the Victor Valley Wastewater Treatment Authority Service Area (in MGD)

	1987	1990	1993
Implicit VVWRA Forecast	4.3	5.8	7.3
Preclosure Reference/Closure Forecast	4.3	5.8	6.7
Change From VVWRA Forecast	0.0	0.0	-0.6
Percent Change	0.0%	0.0%	-8.1%

Sources: Projections developed for this study, April 1991; based on VVWRA, 1988a.

3.4.6.3 Solid Waste

Recent Trends

Solid waste from George AFB currently is disposed of in the Victorville landfill, operated by San Bernardino County. The landfill is located in a hilly area approximately 5 miles northeast of the base in an unincorporated area of the county, immediately north of the city of Victorville. The facility is designated as a Class III landfill, suitable for the disposal of non-hazardous and general municipal waste. Presently, the landfill will accept clean construction and demolished building material with no volume restrictions.

Victor Valley Disposal serves as the private hauler for both George AFB and a total of approximately 113,000 persons in Adelanto, Apple Valley, and Victorville. The private hauler collects 420 tons (approximately 6,800 cubic yards) from the base and these municipalities per month. George AFB contributes approximately 5 to 7 percent of the total waste.

Impacts of Closure

The San Bernardino County Solid Waste Management Department (SWMD) recently prepared updated solid waste demand and capacity projections for all county landfills, including the four located in the Victor Valley: the Apple Valley, Hesperia, Phelan, and Victorville landfills.

The Victorville landfill had approximately 420,775 cubic yards of remaining capacity on permitted land as of June 30, 1990. At the current rate of 510 cubic yards per day (186,150 cubic yards per year), the site's life expectancy is 2 years (through the year 1992). Additional land, with a potential capacity of approximately 5,000,000 cubic yards, is owned by the U.S. Bureau of Land Management near the existing site; however, this area is not presently permitted for use as a landfill. The Hesperia landfill had a remaining capacity of 958,000 cubic yards (June 30, 1990) on currently permitted land, with a life expectancy of approximately 6 years (through 1996). The county is actively seeking to permit adjacent land with an undetermined potential expansion capacity (SWMD, 1991).

The Phelan landfill has a remaining capacity of 847,250 cubic yards, with a life expectancy of 16 years (through the year 2006) and the Apple Valley landfill has a remaining capacity of 172,430 cubic yards with a life expectancy of 2 years (through the year 1992). SWMD does not indicate any expansion potential at the Phelan landfill; the Apple Valley landfill is reported to have a potential 1.55 million cubic yard expansion capacity although the report also indicates that expansion of this landfill is not "actively pursued" (SWMD, 1991).

Table 3.4-29 indicates the implicit projection of SWMD at current rates of disposal for the four Victor Valley landfills. The cumulative capacity and expansion potential of the four landfills is adequate through about 2003; a reduction in the amounts of refuse placed in the landfills could extend the lives of these landfills several years into the future. Additional expansion or transfer of wastes to other High Desert landfills with additional capacity would be required in the long term.

Table 3.4-29. Solid Waste Generation Within the Victor Valley (in millions of cubic yards, cumulative)

	1987	1990	1993
Implicit Co. Forecast	0.61	0.74	0.87
Preclosure Reference/Closure Forecast	0.61	0.74	0.80
Change From Co. Forecast	0.0	0.0	-0.07
Percent Change	0.0	0.0	-8.1

Sources: Projections developed for this study, April 1991; based on San Bernardino County Solid Waste Management Department, 1989; 1991.

3.4.6.4 Energy

Electricity

Recent Trends

SCE supplies electricity to George AFB through parallel connections of two manually-switched 33 kilovolt (kV) circuits terminating at two power transformers at the on-base substation. The on-base substation and distribution system is owned by the Air Force. A few facilities located on the west side of the runways are serviced through a separate metered connection feeding in from the Adelanto area.

The base is part of SCE's High Desert District which had 101,000 meters in 1990. By the year 1995, SCE is expecting an additional 30,000 meter hookups (Britten, 1991).

SCE maintains interruptable service contracts with customers in the Victor Valley area for fluctuations in demand. A total of nine customers serving the Victor Valley area and over 300 customers in the "High Desert" area in general have these types of contracts with the SCE High Desert district. SCE has not used their interruptable service option since 1984 and does not anticipate any future uninterruptable service (Britten, 1991). The level of forecasted growth in energy consumption already assumes the contributions of major projects such as the recently proposed construction of Solar II near Barstow (solar power generation facilities). Since this and other similar projects are incorporated as part of the region's baseline growth, separate impacts for these projects were not considered for this study.

Impacts of Closure

The California Energy Commission (1990), prepared a long-term forecast (through 2009) of electricity demand within the entire SCE service area. The

forecast was used to obtain an average per capita electricity demand for future years within the SCE service area. This factor was multiplied by the long-term forecast of population within the SCE Victorville-High Desert District to obtain projected future electricity demand within the district. Using the same per capita rates, the reduction in electricity demand within the district associated with the closure of George AFB was estimated from the projected population decline in Victor Valley under the closure baseline (Table 3.4-30).

Table 3.4-30. Average Daily Electricity Demand within the Victorville District of the SCE Company (in MWH/day)

	1987	1990	1993
Implicit SCE Forecast	3,420	5,070	5,738
Preclosure Reference/Closure Forecast	3,420	5,070	5,446
Change From SCE Forecast	0.0	0.0	-291
Percent Change	0.0	0.0	-5.1

Sources: Projections developed for this study, April 1991; based on California Energy Commission, 1990; SCE 1991.

Natural Gas

Recent Trends

Natural gas service to George AFB and the High Desert region is provided by SW Gas. Natural gas service is provided via a 4-inch high pressure gas line entering the base from the west near Gasoline Alley and extending to a metering and regulating station, located on the east side of Sno Street. Approximately 36,000 linear feet of Air Force-owned gas lines extend through most areas of the base from this station, except the facilities located west of the runways and south of Air Base Road. The estimated on-base gas demand for space heating, water heating, and other natural gas appliances totalled 219,886 cubic feet per hour. The annual gas consumption has declined between 1987 and 1989.

SW Gas anticipates no future restrictions to natural gas service because a 30-inch, high-pressure natural gas pipeline (owned by Southern California Gas Company) has an existing tap near the intersection of Rancho and Adelanto roads. Although the existing tap is not yet in service, this line could be used by SW Gas to supply additional demands in the area of the base (Goodman, 1991).

In accordance with California Public Utility Commission approved rules, SW Gas maintains interruptible customer service for reductions and discontinuances of natural gas (curtailments). Currently, there are very few interruptible service customers in the Victor Valley area. There is no history of service curtailments,

and SW Gas anticipates no future curtailments due to projected population growths (Goodman, 1991).

Impacts of Closure

SW Gas (1989) prepared a long-term forecast (through the year 2020) of the population within its Victorville District. Natural gas demand rates within the district for the past 5 years (1986 to 1990) were used to estimate an average per capita demand factor for the district and obtain an implicit projection of future natural gas demand based on SW Gas's total population projections (SW Gas, 1991). Using the same per capita rate, the reduction in natural gas demand within the district associated with the closure of George AFB was estimated from the projected population decline in the Victor Valley under the closure baseline (Table 3.4-31).

**Table 3.4-31. Average Daily
Natural Gas Demand within the Victorville District of the Southwest Gas
Company (in therms/day)**

	1987	1990	1993
Implicit SW Gas Forecast	161,995	240,100	321,976
Preclosure/Reference	161,995	240,100	305,680
Closure Forecast			
Change From SW Gas	0	8	-16,296
Forecast			
Percent Change	0.0	0.0	-5.1

Source: Projections developed for this study, April 1991; based on SW Gas, 1991.

3.4.7 Airspace

The number of flights into and out of George AFB will diminish through the end of 1992, with all aviation activity at the base scheduled to cease in 1993. Other area airspace users include commercial airports, military airfields, smaller public airports, and private airfields. This action will make additional local airspace available for other aviation and non-aviation use. Examples of other aviation uses are hot air ballooning, gliding, hang gliding, commercial rocket launching, and aerobatic flying. Non-aviation uses examples are high rise structures, like buildings, antennas, theme park rides, and observation towers.

FAA representatives responsible for Ontario and Palmdale airport air traffic management were interviewed for this study (Ontario FAA, 1991; Edwards FAA RAPCON, 1991). Operation of George AFB was reported to have no direct effect on Ontario airport operations. Two military training routes pass through Ontario's approach control airspace, but they do not appear to limit airport operation. George AFB was likewise reported to have no adverse effect on

Palmdale airport operations. Consequently, closure of George AFB would have little impact on the efficiency of use of airspace associated with these airports.

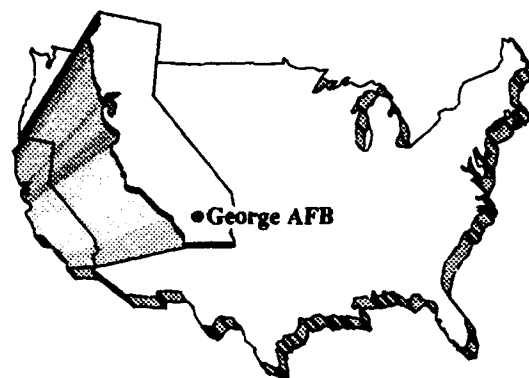
Likewise, the FAA representative for Edwards AFB (Edwards FAA RAPCON, 1991) reported that closure of George AFB would have no effect on airspace restrictions and management procedures at Edwards AFB. No gains in efficiency from Edwards or George AFB airspace use were anticipated.

The managers of the Hesperia and Apple Valley airports reported that the only current requirement affecting their operations is the need for pilots to contact the George AFB tower for permission to transit the control zone, the area within a 5-mile radius around the George AFB airfield (Hesperia Airport, 1991; Apple Valley Airport, 1991). However, most pilots simply choose to stay clear of the control zone, rather than contact the George AFB tower. This contact requirement would disappear with the closure of George AFB, making operations around the Hesperia and Apple Valley airports easier. Efficiency gains appear to be very small.

One private airfield owner reported a requirement for aircraft to contact the George AFB tower when arriving or departing his airfield (Palisades Ranch, 1991). No problems were reported with this arrangement. This requirement would be eliminated with the George AFB closure, though efficiency gains appear to be very slight.

Norton AFB is scheduled to close in 1994, also making airspace available, especially for operations at Ontario International Airport. No gains in efficiency of airspace use at Norton AFB would be realized from concurrent closure of George AFB. Rialto and Redlands airports reported that they have no current interaction with George AFB (Rialto Airport, 1991; Redlands Airport, 1991).

THIS PAGE INTENTIONALLY LEFT BLANK



CHAPTER 4

SOCIOECONOMIC EFFECTS OF REUSE OPTIONS

4.0 SOCIOECONOMIC EFFECTS OF PROPOSED ACTION AND REUSE ALTERNATIVES

This chapter discusses the potential socioeconomic effects associated with the Proposed Action and the following four alternatives for reuse of George AFB: International Airport Alternative, Commercial Airport with Residential Alternative, General Aviation Center Alternative, and Non-Aviation Alternative. The purpose of the study is to identify major socioeconomic issues related to each of the five possibilities for future activity at the base, and where possible, estimate the relative levels of probable socioeconomic effects through quantitative assessments.

Future reuse of the base is uncertain in its scope, activities, and timing. This report addresses these uncertainties by evaluating alternative reuse scenarios intended to encompass the full range of reasonably foreseeable reuses and their socioeconomic impacts.

Alternatives are defined for this analysis on the basis of (1) plans of local communities and interested individuals, and (2) general land use planning considerations. Reuse scenarios considered in this study must be sufficiently detailed to permit environmental analysis. Initial concepts and plans are taken as starting points for scenarios to be analyzed. Available information on any reuse alternative is then supplemented with economic, demographic, transportation, and other planning data to provide a reuse scenario for analysis.

Descriptions of the effects of the Proposed Action and five development alternatives are provided sequentially for each of seven major issues – Economic Activity, Population and Housing, Public Services, Public Finance, Transportation, Utilities, and Airspace – in Sections 4.1 through 4.7. A description of the effects caused by other proposed land use concepts is presented in Section 4.8. A brief summary of each of these options, including a description of the timing of construction and operation, is presented below.

Proposed Action. This plan for reuse of the base utilizes much of the existing aviation-related infrastructure as a regional airport facility. Aviation support uses also would be expected under this scenario, as well as non-aviation-related, industrial and business park uses. The existing golf course would remain in use under non-federal operation, and approximately 300 acres would be used for open space and recreation.

International Airport Alternative. Under this alternative, the base would be reused as a major international airport facility. Most of the land area of the existing base would be converted to this use, although approximately 330 acres would be used as a business park, about 980 acres would be used as an industrial park, and 530 acres would be designated for hotel development. Additional acreage surrounding George AFB would also be acquired by an

airport authority to ensure that any development on such property has adequate land use compatibility with the major airport facility. This acreage is not a subject of the current analysis. Most or all existing facilities on the base would ultimately be demolished.

Commercial Airport with Residential Alternative. This alternative would comprise a somewhat smaller airport facility than the Proposed Action (1,400 acres versus 1,913 acres) with a much smaller aviation support land use area (286 acres versus 2,625 acres), as well as numerous differences in surrounding non-aviation land uses. The primary non-aviation differences include 337 acres of the existing base residential housing areas that would be renovated and reused and 1,638 acres of additional new residential housing area that would be developed. Recreation and open spaces would encompass a slightly smaller area (261 acres versus 297 acres), and the existing base medical facility would be renovated and retained for use by either a private entity or a local public health provider. The existing on-base elementary schools would remain. Over 1,000 acres of industrial park area would be created and a commercial retail area of about 25 acres would also be developed.

General Aviation Center Alternative. This alternative focuses on a variety of private aviation activities. A minimal amount of new construction is proposed; nearly all operations would reuse existing facilities. However, approximately 50 percent of the base has not been identified for development and, thus, is considered to remain as open space. Airfield activities and/or potential users identified include national air shows, corporate and private aviation, fixed base operations, and experimental and kit plane demonstrations.

Non-Aviation Alternative. This alternative comprises a variety of uses, including a business park area of about 940 acres, 20 acres of commercial retail space, and a 470-acre four-year college facility. Additionally, there would be approximately 1,685 renovated base housing units, 11,600 new residential units, and 290 acres allocated as open space for recreational purposes. Much of this new housing would serve baseline population growth, and represents a redistribution of housing growth within the Victor Valley. The existing golf course and medical facility would both remain in use under non-federal operation.

No-Action Alternative. Under this alternative, George AFB would be retained by the federal government in a caretaker status for an indefinite period of time following the phase-down of residual base operations, which will be completed by January 1993.

Other Land Use Concepts. Proposed other land use concepts are based on usage proposed by four federal agencies:

- U.S. Department of Justice, Federal Bureau of Prisons (Federal Correctional Complex occupying an 860-acre parcel and housing between 2,000 and 2,750 inmates)
- U.S. Department of Interior, National Park Service (reuse of base recreational facilities)
- U.S. Department of Housing and Urban Development (low income housing after renovation of base housing within the Alaska Circle Community)
- U.S. Department of Education (reuse by San Bernardino County and Adelanto School District).

Two independent land use concepts (described in Section 1.4.7) were also proposed and studied:

- work furlough program (San Bernardino County)
- medical facilities.

Context of Analysis. This analysis addresses the timing of impacts associated with each of the various alternative plans for future disposition of the base. The analysis covers a time period extending 21 years beyond the date of closure of George AFB, and results are presented for each of the alternatives for the years 1993 (the first year after complete base closure), 1998 (6 years after closure), 2003 (11 years after closure), and 2013 (21 years after closure).

Of particular importance in this analysis are "site-related" effects of the Proposed Action or an alternative. Site-related effects include both direct on-site and indirect secondary effects of reusing the base. Direct on-site effects are the changes immediately associated with an action, such as employment at an airport facility as planned under the Proposed Action. Secondary effects include the indirect and induced changes that may occur either on-site or off-site elsewhere in the region. The actual location of secondary effects is primarily dependent on personal and organizational purchasing choices (e.g., locational decisions).

This analysis recognizes the potential for community impacts stemming from "announcement effects" of information regarding the base's closure or reuse. Such announcements may impact the affected communities' perceptions and, thus, could have important local economic consequences.

An example of one such effect would be the in-migration of people anticipating employment under one of the reuse options. If it were announced later that the No-Action Alternative was chosen, many of these newcomers would leave the area seeking employment elsewhere. This announcement effect would, thus, include (1) a temporary increase in population in anticipation of future employment, and (2) a subsequent decline in population, as people leave the area after the announcement.

Changes associated with announcement effects, while potentially important, are highly unpredictable. Such effects thus were excluded from the quantitative

analysis in this study, and are not displayed in any of the tabular or graphic data presented in this report.

4.1 ECONOMIC ACTIVITY

Under the post-closure scenario, George AFB would not be reused and DMT activities at the base would contribute little economic stimulus to the ROI or ACS communities. ROI employment is projected by SCAG (1989), to increase at an average rate of 2.5 percent per year from 1993 to 2013, while ACS employment would increase 3.7 percent per year.

4.1.1 Proposed Action

Employment generated by the Proposed Action is projected to begin in 1994, following a 1-year period of interim caretaker status (see Table 4.1-1 for regional employment and earnings projections). The direct and secondary jobs that would result from construction and operation of the Proposed Action increase at a relatively stable rate during the 21-year projection period from about 68 direct and indirect interim caretaker status jobs in 1993 to over 51,000 jobs by 2013.

Of the 51,000 jobs that would be provided in the ROI by the Proposed Action in the year 2013, approximately 25,000 would be direct on-site jobs. Nearly 26,000 ROI secondary jobs would be generated from regional spending for goods and services by both the direct on-site workers and by the various companies and agencies that would be operating from the George AFB site. It was estimated that almost 15,000 of these secondary jobs would be located in the Victor Valley communities; these jobs were assumed to be generated from the first round of spending by on-site direct construction and operation workers and were, therefore, anticipated to be concentrated in the services and retail trade sectors of the local economy. By the year 2013, a combined total of over 40,000 direct and secondary jobs would be created in the Victor Valley as a result of the Proposed Action (Figure 4.1-1).

The level of earnings associated with the Proposed Action generally corresponds with projected employment increases. Over the course of the next 2 decades, regional earnings would increase to almost \$1.4 billion annually.

4.1.2 International Airport Alternative

Under the International Airport Alternative, new jobs would be generated beginning in 1994, 1 year following base closure (see Table 4.1-2 for regional employment and earnings projections). The direct and secondary jobs that would result from construction and operation of this alternative were assumed to increase during the 21-year projection period from about 68 interim caretaker status jobs in 1993 to over 105,000 jobs in 2013.

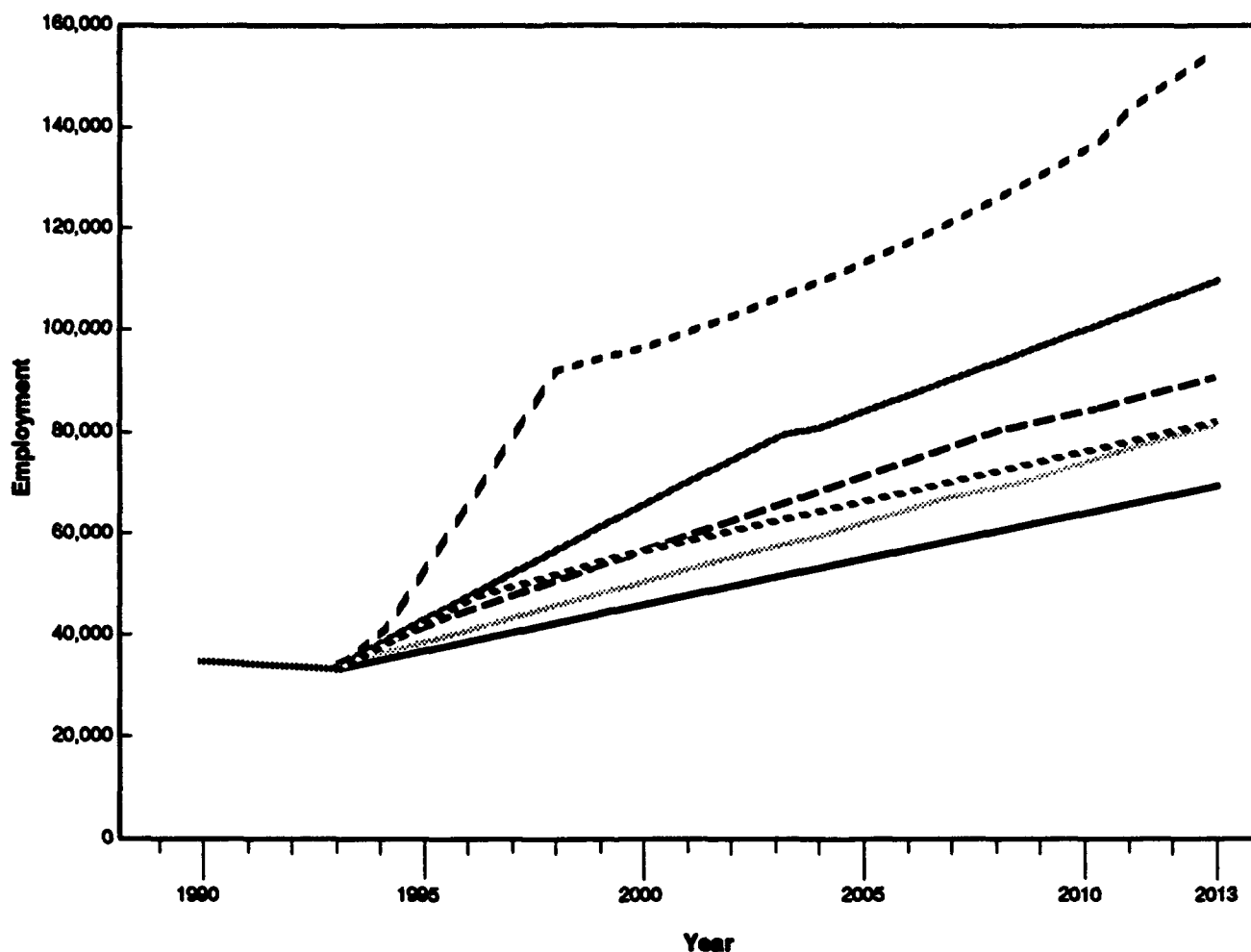
Table 4.1-1. Employment and Earning Projections - Proposed Action

	1993*	1998	2003	2013
Proposed Action				
Construction				
Employment	0	1,219	1,284	306
Direct	0	547	588	138
Secondary	0	672	696	168
Victor Valley	0	353	368	89
Rest of ROI	0	319	332	79
Earnings (\$000)	0	35,589	38,914	8,943
Direct	0	18,150	18,795	4,569
Secondary	0	17,439	18,119	4,374
Operations				
Employment	0	17,131	34,753	50,771
Direct	0	8,553	17,290	25,253
Secondary	0	8,578	17,463	25,517
Victor Valley	0	4,706	9,633	14,953
Rest of ROI	0	3,872	7,830	10,564
Earnings (\$000)	0	460,301	919,532	1,387,019
Direct	0	241,663	484,660	787,837
Secondary	0	208,638	434,882	619,181
Residual Base Operation and Interim				
Caretaker Status				
Employment	68	0	0	0
Direct	50	0	0	0
Secondary	18	0	0	0
Victor Valley	17	0	0	0
Rest of ROI	1	0	0	0
Earnings (\$000)	1,885	0	0	0
Direct	1,500	0	0	0
Secondary	385	0	0	0
Victor Valley	348	0	0	0
Rest of ROI	37	0	0	0
Total: Proposed Action and Residual				
Base Operations				
Employment	68	18,349	36,017	51,077
Direct	50	9,100	17,858	25,391
Secondary	18	9,249	18,161	25,685
Earnings (\$000)	1,885	465,890	958,446	1,395,962
Post-Closure				
Employment	68	68	68	68
Direct	50	50	50	50
Secondary	18	18	18	18
Earnings (\$000)	1,885	1,885	1,885	1,885
Change: Proposed Action minus				
Post-Closure				
Employment	0	18,282	35,949	51,009
Direct	0	9,050	17,808	25,341
Secondary	0	9,231	18,143	25,667
Earnings (\$000)	0	484,005	954,561	1,394,077

Source: Projections developed for this study, April 1991.

* Interim Caretaker Status only in 1993.

Notes The sums of employment figures may not equal totals due to rounding.
Direct employment will occur in the Victor Valley.



Source: Projections prepared for this study, May 1991; utilizes SCAG, 1989, adjusted for base closure.

Note: Employment impacts include direct on-site jobs plus secondary jobs in the Victor Valley (see Tables 4.1-1 through 4.1-5); assumes no announcement effect.

EXPLANATION

- No Action/Post-Closure
- Proposed Action
- - - - - International Airport
- Non-Aviation
- - - - - Commercial Airport
- . - . - General Aviation Center
- Preclosure

Victor Valley Employment Projections

George AFB, California

Figure 4.1-1

Table 4.1-2. Employment and Earnings Projections - International Airport Alternative

	1993*	1999	2009	2013
International Airport Alternative				
Construction				
Employment	0	1,419	127	2,393
Direct	0	646	57	1,107
Secondary	0	773	71	1,286
Victor Valley	0	418	37	716
Rest of ROI	0	355	34	571
Earnings (\$000)	0	41,361	3,715	69,685
Direct	0	21,447	1,893	36,757
Secondary	0	19,914	1,833	32,928
Operations				
Employment	0	69,827	67,252	102,914
Direct	0	35,534	36,736	53,736
Secondary	0	24,293	28,516	49,178
Victor Valley	0	12,979	15,906	30,324
Rest of ROI	0	11,314	12,610	18,854
Earnings (\$000)	0	1,230,747	1,484,202	2,730,114
Direct	0	666,485	816,796	1,557,142
Secondary	0	564,262	667,406	1,172,972
Residual Base Operation and Interim Caretaker Status				
Employment	66	0	0	0
Direct	50	0	0	0
Secondary	16	0	0	0
Victor Valley	17	0	0	0
Rest of ROI	1	0	0	0
Earnings (\$000)	1,885	0	0	0
Direct	1,500	0	0	0
Secondary	385	0	0	0
Victor Valley	348	0	0	0
Rest of ROI	37	0	0	0
Total: International Airport Alternative and Residual Operations				
Employment	66	61,246	67,379	105,307
Direct	50	36,180	36,793	54,843
Secondary	16	25,066	28,587	50,464
Earnings (\$000)	1,885	1,272,108	1,487,917	2,799,800
Post-Closure				
Employment	66	66	66	66
Direct	50	50	50	50
Secondary	16	16	16	16
Earnings (\$000)	1,885	1,885	1,885	1,885
Change: International Airport Alternative minus Post-Closure				
Employment	0	61,178	67,311	105,239
Direct	0	36,130	36,743	54,793
Secondary	0	25,048	28,568	50,446
Earnings (\$000)	0	1,270,223	1,486,032	2,797,915

Source: Projections developed for this study, April 1991.

* Interim Caretaker Status only in 1993.

Notes: The sums of employment figures may not equal totals due to rounding.
Direct employment will occur in the Victor Valley.

Of the 105,000 jobs provided in the ROI by this reuse alternative in the year 2013, nearly 55,000 would be direct on-site jobs. The additional 50,000 ROI secondary jobs would be generated from regional spending for goods and services by both the direct on-site workers and by the various businesses and organizations that would be operating from the international airport site. It was estimated that over 31,000 of the secondary jobs would be located in the Victor Valley communities. These local secondary jobs were assumed to be generated from the first round of spending by on-site direct operation workers, hence they were anticipated to be concentrated in the services and retail trade sectors of the Victor Valley economy. As a result of this alternative, a combined total of almost 86,000 direct and secondary jobs would be created in the Victor Valley by 2013 (Figure 4.1-1).

As would be expected, the level of earnings associated with the International Airport Alternative generally corresponds with increasing employment estimates. By 2013, regional earnings of about \$2.8 billion were projected annually from reuse activity at the George AFB site.

4.1.3 Commercial Airport with Residential Alternative

The Commercial Airport with Residential Alternative would create new construction and operation jobs at the site beginning in 1994, following a 1-year period of interim caretaker status (see Table 4.1-3 for regional employment and earnings projections). Direct and secondary jobs that would result from construction and operation of this alternative were assumed to be generated at a relatively steady rate of growth during the 21-year projection period from 68 interim caretaker jobs in 1993 to about 28,000 jobs in the year 2013.

Of the 28,000 jobs provided in the ROI by this reuse alternative in 2013, about 13,000 would be direct on-site jobs. The additional 15,000 ROI secondary jobs would be generated from regional spending for goods and services by both the direct on-site workers and by the various firms and agencies that would be operating from the primarily-industrial site. It was projected that about 8,000 of the secondary jobs would be located in the Victor Valley communities. These local secondary jobs were assumed to be generated from the first round of spending by on-site direct operation workers, hence they were anticipated to be concentrated in the services and retail trade sectors of the Victor Valley economy. A combined total of over 21,000 direct and secondary jobs would be created in the Victor Valley by 2013 as a result of this alternative (Figure 4.1-1).

The Commercial Airport with Residential Alternative earning levels would increase as employment increases. By the year 2013, regional earnings of almost \$800 million annually were projected from reuse of the base site.

Table 4.1-3. Employment and Earnings Projections-Commercial Airport with Residential Alternative

	1993*	1998	2003	2013
Commercial Airport with Residential Alternative				
Construction				
Employment	0	281	307	0
Direct	0	118	137	0
Secondary	0	144	170	0
Victor Valley	0	78	89	0
Rest of ROI	0	68	81	0
Earnings (\$000)	0	7,635	8,981	0
Direct	0	3,906	4,551	0
Secondary	0	3,729	4,410	0
Operations				
Employment	0	10,255	18,117	28,224
Direct	0	5,057	8,566	13,002
Secondary	0	5,199	9,552	15,223
Victor Valley	0	2,779	5,023	8,182
Rest of ROI	0	2,420	4,528	7,031
Earnings (\$000)	0	286,828	489,578	792,080
Direct	0	142,677	257,948	420,861
Secondary	0	124,151	231,630	371,399
Residual Base Operation and Interim Caretaker Status				
Employment	68	0	0	0
Direct	50	0	0	0
Secondary	18	0	0	0
Victor Valley	17	0	0	0
Rest of ROI	1	0	0	0
Earnings (\$000)	1,885	0	0	0
Direct	1,500	0	0	0
Secondary	385	0	0	0
Victor Valley	348	0	0	0
Rest of ROI	37	0	0	0
Total: Commercial Airport with Residential Alternative and Residual Operations & Interim Caretaker				
Employment	68	10,517	18,424	28,224
Direct	50	5,175	8,703	13,002
Secondary	18	5,343	9,722	15,223
Earnings (\$000)	1,885	274,463	498,539	792,080
Post-Closure				
Employment	68	68	68	68
Direct	50	50	50	50
Secondary	18	18	18	18
Earnings (\$000)	1,885	1,885	1,885	1,885
Change: Commercial Airport with Residential Alternative minus Post-Closure				
Employment	0	10,449	18,356	28,156
Direct	0	5,125	8,653	12,952
Secondary	0	5,325	9,704	15,205
Earnings (\$000)	0	272,578	496,654	790,175

Source: Projections developed for this study, April 1991.

* Interim Caretaker Status only in 1993.

Notes: The sums of employment figures may not equal totals due to rounding.
Direct employment will occur in the Victor Valley.

4.1.4 General Aviation Center Alternative

The General Aviation Center Alternative would create new construction and operation jobs at the site beginning in 1994, following a 1-year period of interim caretaker status (see Table 4.1-4 for regional employment and earnings projections). Direct and secondary jobs that would result from construction and operation of this alternative were assumed to be generated at a relatively steady rate of growth from 68 interim caretaker jobs in 1993 to just under 16,000 jobs in the year 2003, when the growth rate levels out.

Of the 16,000 jobs provided in the ROI by this reuse alternative in 2003, about 8,000 would be direct on-site jobs. The additional 7,700 ROI secondary jobs would be generated from regional spending for goods and services by both the direct on-site workers and by the various firms and agencies that would be operating from the site. It was projected that about 5,000 of the secondary jobs would be located in the Victor Valley communities. These local secondary jobs were assumed to be generated from the first round of spending by on-site direct operation workers, hence they were anticipated to be concentrated in the services and retail trade sectors of the Victor Valley economy. A combined total of over 13,000 direct and secondary jobs would be created in the Victor Valley by 2003 as a result of this alternative (Figure 4.1-1).

The General Aviation Center Alternative earnings levels would increase as employment increases. By the year 2003, regional earnings of almost \$450 million were projected annually from reuse of the base site.

4.1.5 Non-Aviation Alternative

The Non-Aviation Alternative would create new construction and operation jobs at the site beginning in 1994, following a 1-year period of interim caretaker status (see Table 4.1-5 for regional employment and earnings projections). Direct and secondary jobs that would result from construction and operation of this alternative were assumed to be generated at a relatively steady rate of growth during the 21-year projection period from 68 interim caretaker jobs in 1993 to about 14,000 jobs in the year 2013.

Of the 14,000 jobs provided in the ROI by this reuse alternative in 2013, about 9,000 would be direct on-site jobs. The additional 5,000 ROI secondary jobs would be generated from regional spending for goods and services by both the direct on-site workers and by the various firms and agencies that would be operating from the primarily-industrial site. It was projected that about 3,500 of the secondary jobs would be located in the Victor Valley communities. These local secondary jobs were assumed to be generated from the first round of spending by on-site direct operation workers, hence they were anticipated to be concentrated in the services and retail trade sectors of the Victor Valley economy. By 2013, a combined total of over 12,000 direct and secondary jobs

Table 4.1-4. Employment and Earnings Projections - General Aviation Center Alternative

	1993*	1998	2003	2013
General Aviation Center Alternative				
Construction				
Employment	0	20	65	0
Direct	0	9	28	0
Secondary	0	11	37	0
Victor Valley	0	6	18	0
Rest of ROI	0	5	18	0
Earnings (\$000)	0	579	1,905	0
Direct	0	297	942	0
Secondary	0	282	963	0
Operations				
Employment	0	11,986	15,781	15,781
Direct	0	6,131	8,046	8,046
Secondary	0	5,855	7,735	7,735
Victor Valley	0	3,849	5,090	5,090
Rest of ROI	0	2,006	2,645	2,645
Earnings (\$000)	0	331,097	437,706	437,706
Direct	0	197,652	261,366	261,366
Secondary	0	133,445	176,340	176,340
Residual Base Operations and Interim Caretaker Status				
Employment	68	0	0	0
Direct	50	0	0	0
Secondary	18	0	0	0
Victor Valley	17	0	0	0
Rest of ROI	1	0	0	0
Earnings (\$000)	1,885	0	0	0
Direct	1,500	0	0	0
Secondary	385	0	0	0
Victor Valley	348	0	0	0
Rest of ROI	37	0	0	0
Total: General Aviation Center Alternative Residential Operation and Interim Caretaker				
Employment	68	12,006	15,846	15,781
Direct	50	6,140	8,074	8,046
Secondary	18	5,866	7,772	7,735
Earnings (\$000)	1,885	331,676	439,611	437,706
Post-Closure Baseline				
Employment	68	68	68	68
Direct	50	50	50	50
Secondary	18	18	18	18
Earnings (\$000)	1,885	1,885	1,885	1,885
Change: General Aviation Center Alternative Minus Post-Closure Baseline				
Employment	0	11,938	15,778	15,713
Direct	0	6,090	8,024	7,996
Secondary	0	5,848	7,754	7,717
Earnings (\$000)	0	329,791	437,726	435,821

Source: Projections developed for this study, May 1991.

* Interim Caretaker Status only in 1993.

Notes: The sums of employment figures may not equal totals due to rounding.

Direct employment will occur in the Victor Valley.

Table 4.1-5. Employment and Earnings Projections - Non-Aviation Alternative

	1993*	1998	2003	2013
General Aviation Center				
Alternative				
Construction				
Employment	0	197	197	408
Direct	0	89	89	185
Secondary	0	108	108	223
Victor Valley	0	57	57	119
Rest of ROI	0	50	50	104
Earnings (\$000)	0	5,734	5,734	11,914
Direct	0	2,949	2,949	6,128
Secondary	0	2,785	2,785	5,786
Operations				
Employment	0	3,654	6,314	13,437
Direct	0	2,308	3,992	8,447
Secondary	0	1,346	2,322	4,991
Victor Valley	0	915	1,612	3,421
Rest of ROI	0	430	711	1,570
Earnings (\$000)	0	76,675	134,537	287,428
Direct	0	47,005	82,755	175,668
Secondary	0	29,671	51,782	111,760
Residual Base Operations and Interim Caretaker Status				
Employment	68	0	0	0
Direct	50	0	0	0
Secondary	18	0	0	0
Victor Valley	17	0	0	0
Rest of ROI	1	0	0	0
Earnings (\$000)	1,887	0	0	0
Direct	1,500	0	0	0
Secondary	386	0	0	0
Victor Valley	348	0	0	0
Rest of ROI	37	0	0	0
Interim Caretaker Status				
Total: Non-Aviation Alternative				
Residential Operation and Interim Caretaker				
Employment	68	3,850	6,511	13,845
Direct	50	2,397	4,081	8,632
Secondary	18	1,454	2,430	5,214
Earnings (\$000)	1,885	82,409	140,271	299,341
Post-Closure Baseline				
Employment	68	68	68	68
Direct	50	50	50	50
Secondary	18	18	18	18
Earnings (\$000)	1,885	1,885	1,885	1,885
Change: Non-Aviation Alternative				
Minus Post-Closure Baseline				
Employment	0	3,782	6,443	13,777
Direct	0	2,347	4,031	8,582
Secondary	0	1,436	2,412	5,196
Earnings (\$000)	0	80,524	138,386	297,456

Source: Projections developed for this study, April 1991

* Interim Caretaker Status only in 1993.

Notes: The sums of employment figures may not equal totals due to rounding.
Direct employment will occur in the Victor Valley.

would be created in the Victor Valley as a result of this alternative (see Figure 4.1-1).

Non-Aviation Alternative earnings levels would increase as employment increases. By 2013, regional earnings of almost \$300 million annually are projected from reuse of the base site with primarily industrial-related activity.

4.1.6 No-Action Alternative

Employment and earnings impacts under the No-Action Alternative would be the same as those described in Section 3.4.1 as closure baseline conditions.

4.2 POPULATION AND HOUSING

Population and housing demand are projected to increase substantially in the region, even without reuse of George AFB. ROI population is projected by SCAG (1989), to increase at an average annual rate of 2.3 percent from 1983 to 2013. ACS (Victor Valley) population is forecast to grow 1.9 percent per year, to the level forecast by SCAG (1989), adjusted for the effects of base closure. This ACS growth reflects population changes through 1990 which were more rapid than projected by SCAG.

Population and housing are projected to grow less rapidly through 2013 than employment, for both the ROI and ACS. This reflects a forecast change in the ROI and ACS ratio of jobs to population and housing.

The George ROI currently contains a large number of people who commute outside the region to work. Under the assumption that people would rather work near where they live, the abundance of workers in the ROI would enable many of the jobs created under various reuse alternatives to be filled by individuals already residing in the region (see Section 3.3.1). This would lead to a phenomenon where the number of workers in-migrating is less than the number of jobs created. Moreover, many aircraft-related businesses in the Greater Los Angeles area have sized down, making a large and experienced labor pool available. The proportion of in-migrants expected to fill various types of jobs are presented in Table 3.3-1. The number of individuals commuting on a weekly or daily basis to jobs in the ROI also tends to lower the need to move into the ACS. This is especially important during short-term construction peaks.

The Victor Valley currently is in a condition of groundwater overdraft, although local governments anticipate acquisition of state water supplies to support the approximate level of population projected by SCAG (1989). Additional discussion is provided in the utilities analysis portion of this report.

4.2.1 Population

4.2.1.1 Proposed Action. Population impacts under the Proposed Action comprise all individuals directly and indirectly associated with George AFB who would not be in the area were it not for activities at the site. Population impacts include these individuals, as well as their dependents. As discussed under the population and housing methodology in Section 3.3.2, the remaining individuals associated with on-site activities are assumed to be from within the ROI and would reside in the region regardless of activities at the site. Local hiring would reduce the in-migration associated with base reuse.

In general, population impacts of the Proposed Action would increase after 1993, as the regional airport is developed and becomes operational (Table 4.2-1). By 1998, more than 9,400 persons are projected to migrate to the ROI as a consequence of this alternative. Population impacts are anticipated to increase over the ensuing 15 years, reaching more than 30,700 persons by 2013.

San Bernardino and Riverside counties are projected to experience in-migration both in the short term and long term under the Proposed Action. Short-term population impacts in 1998 would be about 9,100 persons in San Bernardino County and 330 persons in Riverside County. By 2013, 29,770 persons are anticipated to migrate to San Bernardino County, and nearly 960 persons to Riverside County, as a consequence of the Proposed Action.

Population effects in the Victor Valley area would exceed 26,600 by 2013 (Figure 4.2-1). Among communities in the Victor Valley (Adelanto, Apple Valley, Hesperia, and Victorville), the largest share of population impacts are projected for Victorville (Table 4.2-1). The Proposed Action would increase the population of Victorville by about 2,600 persons by 1998, with impacts exceeding 8,500 persons by 2013. Adelanto, which is anticipated to experience the greatest relative impacts under post-closure conditions, would witness modest population growth (1,160 persons) throughout the period spanning 1998 to 2013 if the Proposed Action were implemented.

Population impacts associated with the Proposed Action include increases at all levels of geographic focus. However, the population of this area grew substantially during the 1980's, and is projected to continue growing over the coming decades. Impacts of the Proposed Action thus should be minimal in comparison, and absorbed easily in the course of population growth anticipated in the region regardless of reuse plans for George AFB.

4.2.1.2 International Airport Alternative. Under the International Airport Alternative, population in the ROI associated with the George AFB site would increase by about 36,500 persons in 1998 (Table 4.2-2). Once again, these individuals would comprise newcomers, including dependents, who would not reside in the region without the implementation of this alternative. Population effects of the International Airport Alternative would increase further over the

Table 4.2-1. Proposed Action Total Regional Population Impacts - Counties and Selected Cities

	1998	2003	2013
San Bernardino County	9,078	18,943	29,770
Adelanto	353	738	1,164
Apple Valley	1,563	3,264	5,146
Hesperia	711	1,485	2,339
Victorville	2,596	5,421	8,550
Rest of Victor Valley	2,857	5,967	9,411
Rest of County	998	2,067	3,160
Riverside County	327	667	957
Total	9,405	19,610	30,726

Note: Columns may not sum to totals because of rounding.

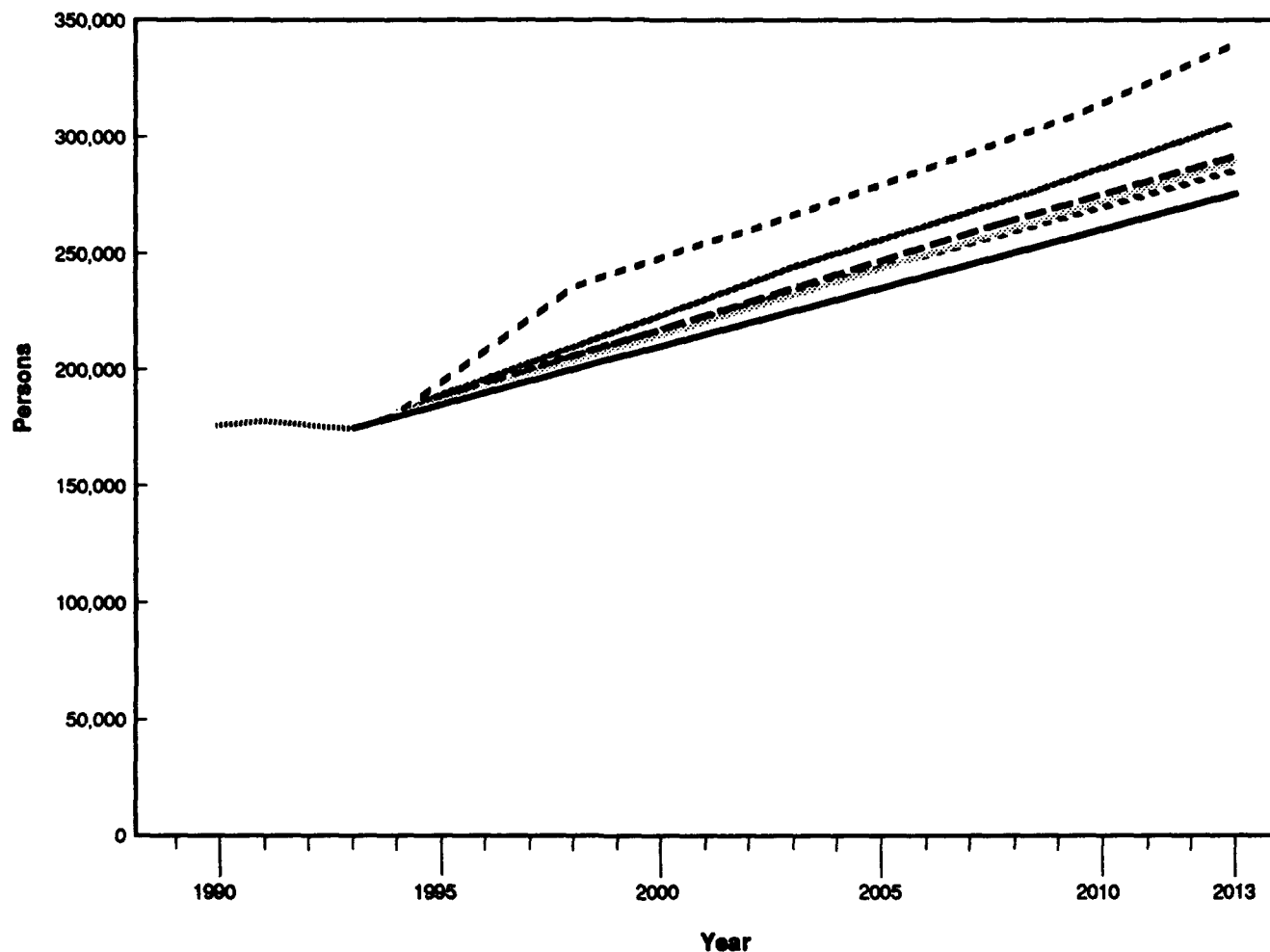
Source: Projections developed for this study, April 1991.

Table 4.2-2. International Airport Alternative Total Regional Population Impacts - Counties and Selected Cities

	1998	2003	2013
San Bernardino County	35,581	40,535	63,151
Adelanto	6,669	7,599	11,816
Apple Valley	6,184	7,046	10,960
Hesperia	2,807	3,198	4,976
Victorville	10,281	11,714	18,218
Rest of Victor Valley	6,048	6,890	10,716
Rest of County	3,592	4,087	6,465
Riverside County	951	1,078	1,781
Total	36,533	41,613	64,932

Note: Columns may not sum to totals because of rounding.

Source: Projections developed for this study, April 1991.



Data refer to population impacts within the Victor Valley area of San Bernardino County directly or indirectly related to the George AFB site. Projections utilize SCAG, 1989, adjusted for the base closure.

EXPLANATION

- No Action/Post-Closure
- Proposed Action
- - - - - International Airport
- Non-Aviation
- - - - - Commercial Airport
- - - - - General Aviation Center
- Preclosure

Victor Valley Population Projections

George AFB, California

Figure 4.2-1

long term, exceeding 64,900 by 2013; the closure baseline projects a long-term out-migration of about 14,600 persons. The total long-term impact of the International Airport Alternative would, therefore, be an increase of roughly 50,300 persons in the ROI.

San Bernardino and Riverside counties would experience in-migration under the International Airport Alternative. Population increases by 1998 are expected to reach approximately 35,600 persons in San Bernardino County and roughly 950 persons in Riverside County. By the year 2013, long-term impacts are projected at nearly 63,200 persons in San Bernardino County and nearly 1,800 persons in Riverside County.

In the Victor Valley, population effects would reach almost 56,700 by 2013 (Figure 4.2-1). The largest share of ROI population impacts at the community level are projected for Victorville (Table 4.2-2). As a result of the International Airport Alternative, Victorville's population would grow by roughly 10,300 persons by 1998; by 2013, Victorville population is projected to exceed the closure baseline population by more than 18,200 people. The population of Adelanto also is anticipated to grow substantially under this alternative, exceeding the future baseline by nearly 6,700 in 1998, and by more than 11,800 in 2013. Much of the Adelanto increase would be due to that community's planned annexation of the project site under this alternative.

The International Airport Alternative is projected to bring about population increases at all levels of geographic focus considered in this study. Increases are expected to be substantially greater than those projected to accompany the Proposed Action. Once again, population projections for this portion of southern California indicate substantial growth over the next 2 decades, both at the county level and for the communities within the Victor Valley. When compared to growth anticipated in the area with no changes in the status of George AFB, impacts of the magnitude anticipated to accompany the International Airport Alternative would be noticeable but not large enough to cause major problems.

4.2.1.3 Commercial Airport with Residential Alternative. The Commercial Airport with Residential Alternative is expected to result in the in-migration of more than 5,800 persons to the ROI by 1998 (Table 4.2-3). By 2013 this impact is anticipated to triple, reaching nearly 16,500 new persons in the region.

As with the other three alternatives, the greatest population impacts at the county level are projected for San Bernardino County. By 1998, more than 5,600 in-migrants are expected to reside in the county as a consequence of adopting this alternative, with the impact growing to nearly 15,900 by 2013. By comparison, population impacts in Riverside County are expected to be much less — on the order of 200 and 600 persons in 1998 and 2013, respectively.

Table 4.2-3. Commercial Airport with Residential Alternative Total Regional Population Impacts - Counties and Selected Cities

	1998	2003	2013
San Bernardino County	5,630	9,760	15,873
Adelanto	220	379	616
Apple Valley	971	1,677	2,725
Hesperia	441	763	1,241
Victorville	1,612	2,784	4,524
Rest of Victor Valley	1,775	3,064	4,980
Rest of County	611	1,093	1,788
Riverside County	195	373	616
Total	5,825	10,133	16,490

Note: Columns may not sum to totals because of rounding.

Source: Projections developed for this study, April 1991.

Table 4.2-4. General Aviation Center Alternative Total Regional Population Impacts - Counties and Selected Cities

	1998	2003	2013
San Bernardino County	6,342	8,713	9,450
Adelanto	250	343	372
Apple Valley	1,103	1,515	1,644
Hesperia	501	688	746
Victorville	1,834	2,519	2,733
Rest of Victor Valley	2,019	2,773	3,008
Rest of County	636	875	948
Riverside County	165	228	246
Total	6,507	8,941	9,696

Note: Columns may not sum to totals because of rounding.

Source: Projections developed for this study, June 1991.

Table 4.2-5. Non-Aviation Alternative Total Regional Population Impacts - Counties and Selected Cities

	1998	2003	2013
San Bernardino County	3,354	6,233	13,713
Adelanto	134	249	548
Apple Valley	590	1,099	2,415
Hesperia	267	497	1,093
Victorville	983	1,829	4,021
Rest of Victor Valley	1,083	2,013	4,425
Rest of County	297	546	1,211
Riverside County	47	80	187
Total	3,401	6,313	13,900

Note: Columns may not sum to totals because of rounding.

Source: Projections developed for this study, April 1991.

In the long term, more than 14,000 persons are expected to migrate to the Victor Valley as a consequence of this alternative (Figure 4.2-1). It is anticipated that Victorville would experience the greatest population impacts of the four Victor Valley communities examined in this analysis. Roughly 1,600 in-migrants associated with this alternative are projected for 1998, with the total population impact exceeding 4,500 by 2013 (Table 4.2-3). More than 200 persons are expected to move to Adelanto by 1998 if this reuse alternative is adopted; by 2013 the total population impact in Adelanto would exceed 600.

The population impacts associated with the Commercial Airport with Residential Alternative are relatively low, falling between the minimal impacts anticipated to accompany the Non-Aviation Alternative and the slightly higher impacts projected under the Proposed Action. As with these other two reuse options, impacts should be minimal at all levels of geographic focus considered in this study when compared to substantial baseline population growth projected for this portion of southern California.

4.2.1.4 General Aviation Center Alternative. More than 6,500 persons are projected to migrate to the ROI by 1998 under the General Aviation Center Alternative (Table 4.2-4). By 2013 this impact is anticipated to increase to nearly 9,700 new persons in the region (Figure 4.2-1).

At the county level, San Bernardino County is expected to experience the greatest population impacts. By 1998 more than 6,300 in-migrants are anticipated to reside in the county as a consequence of adopting this alternative. By 2013, the population impact of the General Aviation Center Alternative on San Bernardino County is projected to exceed 9,400 persons (see Table 4.2-4). Population impacts on Riverside County are expected to be much less — fewer than 200 persons in 1998, and only about 250 persons in 2013.

The greatest General Aviation Center Alternative population impact at the community level is anticipated for Victorville. Roughly 1,800 in-migrants associated with this reuse alternative are projected to reside in Victorville in 1998, with the total population impact exceeding 2,700 in-migrants by 2013 (see Table 4.2-4). More than 200 persons are expected to move to Adelanto by 1998 if this reuse alternative is adopted; by 2013 the total population impact in Adelanto would approach 400.

The long-term (year 2013) population impacts associated with this alternative are less than for each of the other reuse options considered in this study, excluding the No-Action Alternative. Impacts are expected to be small at all geographic levels compared to the substantial baseline growth projected for this portion of southern California.

4.2.1.5 Non-Aviation Alternative. The Non-Aviation Alternative would result in a short-term population impact of about 3,400 in the ROI by 1998 (Table 4.2-5).

Subsequent impacts are anticipated to be more substantial, and by 2013 population impacts are projected to be about 13,900 persons.

The greatest county-level population impacts associated with the Non-Aviation Alternative are projected for San Bernardino County: impacts in excess of 3,350 persons in 1998 are projected to increase further, with more than 13,700 persons moving to the county by 2013 due to this alternative. Riverside County's population is expected to increase much less, with about 200 additional persons in-migrating by 2013. Total population effects in the Victor Valley would be about 12,500 by 2013 (Figure 4.2-1). Of the communities in the ROI, the greatest share of population impacts are projected for Victorville (Table 4.2-5). Under the Non-Aviation Alternative, Victorville's population would increase by about 1,000 persons in 1998, and by more than 4,000 persons by 2013. Adelanto's population should increase throughout most of the 2 decades considered, with a net increase of about 550 persons anticipated by 2013.

These population impacts include students enrolled at the college on site. The student population was assumed to be 50 percent local and 50 percent from outside the ROI (see Table 3.3-1). Totals by year are as follows:

- In 1998, 2,100 total, including 1,050 in-migrating students
- In 2003, 4,200 total, including 2,100 in-migrating students
- In 2013, 8,400 total, including 4,200 in-migrating students.

4.2.1.6 No-Action Alternative. Population impacts under the No-Action Alternative would be those described in Section 3.4.2 as closure baseline conditions.

4.2.2 Housing

4.2.2.1 Proposed Action. Under the Proposed Action, an increased demand over the closure baseline of more than 3,200 housing units is anticipated in the ROI by 1998 (Table 4.2-6). Regional housing impacts are anticipated to grow continuously over the ensuing 15 years, with a demand for more than 10,500 additional units by 2013.

For the two counties considered in this analysis, the greatest increase in housing demand under the Proposed Action is anticipated in San Bernardino County. Totalling slightly more than 3,100 units in 1998, by 2013 the increased population in this county is expected to generate a demand for about 10,200 housing units (Table 4.2-6). In comparison, housing impacts in Riverside County are minimal, though more than 300 additional units would be required in 2013 to accommodate anticipated population increases associated with this alternative.

Table 4.2-6. Proposed Action Site-Related Housing Demand

	1998	2003	2013
San Bernardino County	3,120	6,509	10,230
Adelanto	121	254	400
Apple Valley	537	1,122	1,768
Hesperia	244	510	804
Victorville	892	1,863	2,938
Rest of Victor Valley	982	2,051	3,234
Rest of County	344	709	1,086
Riverside County	112	229	329
Total	3,232	6,738	10,559

Note: Columns may not sum to totals because of rounding.

Source: Projections developed for this study, April 1991.

Table 4.2-7. International Airport Alternative Site-Related Housing Demand

	1998	2003	2013
San Bernardino County	12,332	14,139	22,121
Adelanto	2,311	2,651	4,139
Apple Valley	2,143	2,458	3,839
Hesperia	973	1,116	1,743
Victorville	3,563	4,086	6,382
Rest of Victor Valley	2,086	2,403	3,754
Rest of County	1,246	1,425	2,264
Riverside County	330	376	624
Total	12,662	14,515	22,745

Note: Columns may not sum to totals because of rounding.

Source: Projections developed for this study, April 1991.

At the community level, Victorville would experience the greatest housing impacts in terms of absolute increases in demand. In 1998, this increased demand is anticipated to be about 900 units; by 2013 nearly 2,950 additional housing units would be required in Victorville to accommodate population growth projected to accompany the Proposed Action (Table 4.2-6). Housing demand also would increase in Adelanto, the community anticipated to experience the greatest decrease in residential demand under the No-Action Alternative; by 2013, an additional 400 housing units would be required to meet increased demand for housing.

As discussed in Chapter 3.0, rapid population growth in San Bernardino and Riverside counties over the past decade has given rise to a very active housing construction industry. Population projections indicate that housing demand will increase under post-closure conditions, and it is anticipated that housing construction will continue at a rapid pace. The impacts associated with the Proposed Action at George AFB are expected to include increased demand for housing over requirements anticipated under post-closure conditions for all levels of geographic focus considered. The local construction industry should be able to meet these demands with minimal effort. Moreover, if the type of housing desired under the Proposed Action differs qualitatively (e.g., size, number of bedrooms, etc.) from supply, the local construction industry could be expected to satisfy any new demand.

4.2.2.2 International Airport Alternative. As a result of implementing the International Airport Alternative, the future housing demand in the ROI is anticipated to increase substantially. By 1998, regional housing impacts would total more than 12,650 units. By 2013, this demand is expected to approach 22,750 additional units (Table 4.2-7).

Most of the increased demand for housing is expected to occur in San Bernardino County. Under the International Airport Alternative, county demand should approach 12,350 additional units by 1998, increasing steadily over the following 15 years to a demand for more than 21,100 additional units by 2013 (Table 4.2-7). Although much less in comparison, by 2013 increased housing demand in Riverside County would exceed over 600 units should this alternative be implemented.

Of the four individual communities considered, the greatest increase in housing demand is anticipated in Victorville: more than 6,300 additional units beyond the post-closure demand would be required by 2013 (Table 4.2-7). More than 2,300 additional housing units would be required in Adelanto in 1998 as a result of the International Airport Alternative; by 2013, a total of nearly 4,150 additional units would be needed to accommodate the population expected to move to this community.

In comparison to the Proposed Action, housing impacts associated with the International Airport Alternative are much greater. However, these impacts still do not exceed production capabilities of the housing construction industry in this portion of southern California. It is reasonable to expect that increased demands projected to accompany the International Airport Alternative could be met at all levels of geographic focus, both in absolute numbers and in the types of units desired.

4.2.2.3 Commercial Airport with Residential Alternative. Housing impacts in the ROI, as a result of implementing the Commercial Airport with Residential Alternative, are expected to exceed 2,000 houses beyond post-closure projections in 1998 (Table 4.2-8). By 2013, the additional demand for housing associated with this alternative is projected at more than 5,700.

For counties within the ROI, the greatest housing impacts are anticipated in San Bernardino County. These impacts are projected to approach 2,000 units in 1998 and 5,500 units by 2013 (Table 4.2-8). Additional demand for housing is also anticipated in Riverside County, though at levels much lower than those in San Bernardino County – requiring about 70 additional units in 1998, increasing to more than 200 units by 2013.

At the community level, Victorville once again is anticipated to experience the greatest requirement for additional housing units if the Commercial Airport with Residential Alternative is implemented. By 1998, these impacts are expected to exceed 550 housing units; 15 years later, a demand for more than 1,550 additional units is projected (Table 4.2-8). Impacts in Adelanto are projected at less than 100 housing units in 1998, increasing to more than 200 units by 2013.

Housing impacts associated with this alternative are relatively low – falling between those projected for the Non-Aviation Alternative and the Proposed Action. The highly productive housing construction industry in this region should be able to absorb these increased demands with minimal difficulty. Moreover, this alternative has an explicit residential component. As the plans currently stand, nearly 4,200 housing units would be constructed by 1998, increasing to more than 8,200 units by 2013. The number of housing units to be constructed would exceed the impacts associated with the Commercial Airport with Residential Alternative for all years examined and, thus, could absorb the associated housing impacts. Moreover, surplus units may serve to attract additional in-migration in search of affordable housing, as occurred throughout the 1980s in this section of San Bernardino County.

4.2.2.4 General Aviation Center Alternative. Housing impacts in the ROI associated with the General Aviation Alternative are expected to exceed 2,200 housing units in 1998 (Table 4.2-9). By 2013, the additional demand for housing due to this reuse alternative is projected at more than 3,300 units.

Table 4.2-8. Commercial Airport with Residential Alternative Site-Related Housing Demand

	1998	2003	2013
San Bernardino County	1,969	3,389	5,490
Adelanto	77	132	213
Apple Valley	340	582	942
Hesperia	154	265	429
Victorville	564	967	1,565
Rest of Victor Valley	621	1,064	1,722
Rest of County	214	379	618
Riverside County	68	130	213
Total	2,038	3,518	5,703

Note: Columns may not sum to totals because of rounding.

Source: Projections developed for this study, April 1991.

Table 4.2-9. General Aviation Center Alternative Site-Related Housing Demand

	1998	2003	2013
San Bernardino County	2,180	2,994	3,248
Adelanto	86	118	128
Apple Valley	379	521	565
Hesperia	172	236	256
Victorville	630	866	939
Rest of Victor Valley	694	953	1,034
Rest of County	219	301	326
Riverside County	57	78	85
Total	2,236	3,073	3,332

Note: Columns may not sum to totals because of rounding.

Source: Projections developed for this study, June 1991.

Table 4.2-10. Non-Aviation Alternative Site Related Housing Demand

	1998	2003	2013
San Bernardino County	1,152	2,142	4,712
Adelanto	46	86	188
Apple Valley	203	378	830
Hesperia	92	171	376
Victorville	338	629	1,382
Rest of Victor Valley	372	692	1,521
Rest of County	101	186	415
Riverside County	16	27	64
Total	1,168	2,169	4,777

Note: Columns may not sum to totals because of rounding.

Source: Projections developed for this study, April 1991.

The greatest county-level housing impacts are anticipated in San Bernardino County. Increased demand in this county is projected to approach 2,200 units in 1998, exceeding 3,200 units by 2013 (see Table 4.2-9). Additional demand for housing also is expected in Riverside County, where about 60 additional units would be required in 1998, increasing to slightly less than 90 units by 2013.

As with the other alternatives considered, at the community level Victorville once again is anticipated to experience the greatest housing impacts under this reuse option. By 1998 these impacts are expected to exceed 600 housing units; by 2013, housing impacts in Victorville are projected at more than 900 additional units (see Table 4.2-9). Impacts in Adelanto are projected at fewer than 100 housing units in 1998, increasing to about 130 units by 2013.

Housing impacts associated with this alternative are relatively low – in 2013 falling between impacts projected for the Proposed Action and those projected for the Commercial Airport with Residential Alternative. The highly adaptive housing construction industry in this region should be able to meet these increased demands with minimal difficulty.

4.2.2.5 Non-Aviation Alternative. As a result of the Non-Aviation Alternative, housing impacts in the ROI would approach 1,175 units in 1998. These impacts are anticipated to increase over the ensuing 15 years with a demand for nearly 4,800 additional units beyond closure baseline requirements by 2013 (Table 4.2-10).

Future housing demand in San Bernardino County, as a result of the Non-Aviation Alternative, is anticipated to comprise the majority of housing impacts in the ROI. Impacts in 1998 are expected to exceed 1,150 units, increasing to more than 4,700 units by 2013 (Table 4.2-10). Riverside County impacts also are projected to grow steadily, though in much smaller numbers; about 60 additional units would be needed by 2013 to accommodate in-migration associated with this alternative.

As with population impacts, Non-Aviation Alternative housing impacts are projected to be the lowest of all alternatives considered. Moreover, as was the case with the International Airport Alternative, there is a residential component associated with this scenario. An additional 4,200 housing units would be provided by 1998, increasing to more than 13,000 by 2013. This additional supply would greatly exceed projected demand associated with this alternative for the entire ROI. Much of this new housing would serve post-closure population growth, and represents a redistribution of housing growth within the Victor Valley. In summary, the additional demands projected to accompany the Non-Aviation Alternative should be absorbed with little difficulty.

4.2.2.6 No-Action Alternative. Housing impacts under the No-Action Alternative would be the same as those described in Section 3.4.2 under closure baseline conditions.

4.3 PUBLIC SERVICES

Impacts to key local public services are determined by the change in demand for personnel and facilities arising from project implementation. The ability to accommodate increased demand or to respond to decreases in demand while maintaining accustomed levels of local public service is examined based on potential changes in demand for services.

Direct impacts to public services would arise from changes in levels of employment at the project site and consequent changes in public service demand. The number of workers at the site, their accompanying dependents, and their settlement patterns would affect public service demand and corresponding service provision throughout the ROI. Current levels of public service (student/certified staff and key employee per 1,000 population ratios) are used as standards of service at each geographic level examined. Potential project impacts are determined by either the necessary addition or reduction of public service employees (e.g., municipal employees, school staff, police officers, firefighters, health care providers) needed to serve resulting project-related population increases or decreases.

Other direct impacts would focus on increased service demand resulting from additional area and infrastructure arising from the shift from federal administration of George AFB to public administration of that project area. The base currently is located in an unincorporated portion of San Bernardino County; however, public service provision and facility support (with some exceptions, such as public education) has been the responsibility of the federal government. Following disposition of any parcel to the private sector, either San Bernardino County (under all alternatives except the International Airport Alternative) or the city of Adelanto (under the International Airport Alternative) would become responsible for serving the demand for municipal services, police protection, fire protection, health care provision, and recreational services over the base area. Also, local service providers would lose Air Force support in the form of aid agreements (e.g., for public education and fire protection). Base property is proposed for annexation under only the International Airport Alternative (by the city of Adelanto).

The communities most affected by project-related population — and therefore public service demand — would be those in the Victor Valley (see Table 4.2-1). Impacts to public services associated with these population distributions would be greatest in Victorville and Adelanto.

4.3.1 Local Government

Potential impacts to local government structure and employment are examined for each alternative. The analysis considers project-related population changes and changes in service area infrastructure responsibility resulting under each alternative. Because of the magnitude of some effects of closure and reuse,

level-of-service ratios may not adequately meet new service requirements. Changes in land area served and types of services to be provided were considered. Discussion with staff at key local agencies were used to assess these particular factors. Changes in the level of services attributed to site acquisition and development are discussed in the Public Services Section 4.4.

4.3.1.1 Proposed Action. Potential impacts to local government employment, beginning with implementation of the Proposed Action and lasting its duration, are presented in Table 4.3-1. Impacts arising from changes in demand for local governmental services follow the pattern of project-related population changes and focus on Victorville, Adelanto, and San Bernardino County as a whole. The analysis also considers the effects of increased responsibility of public service provision to the project area and its infrastructure.

Under the Proposed Action, it is anticipated that the project site would not be annexed by a local city; therefore, administration of that area would become the responsibility of San Bernardino County. Duties such as public safety, public works, utilities, building code inspection and enforcement, and recreational services would need to be provided to this area by the county. In addition to the calculated per capita increases discussed below, further increases in municipal employment and facilities infrastructure — in addition to and complementing the existing base infrastructure — may be required.

At base closure, no local government personnel would be associated with operations at the project site. The greatest potential impacts to local government employment would occur in San Bernardino County. In order to maintain the existing service level of 7.8 county personnel per 1,000 people, the county would need to add 71 personnel by 1998, 148 personnel by 2003, and 232 personnel by 2013 under the Proposed Action. A large portion of this increase would be needed in law enforcement services for the project area — currently in an incorporated area of the county but served by the base security police squadron.

In Victorville and Adelanto, projected increasing population from the Proposed Action implementation would require gradually increasing municipal staffs in order to maintain current service levels. Victorville would require an additional 14 personnel by 1998 and 47 personnel by 2013 to maintain its service level of 5.5 municipal personnel per 1,000 population and meet public service demand. The municipal service staff in Adelanto would need to increase by a maximum of 6 personnel to maintain the current service level of 5.4 personnel per 1,000 population.

Municipal employment related to operations at George AFB historically has been relatively low in Apple Valley and Hesperia and would continue to remain so under the Proposed Action.

Table 4.3-1. Proposed Action Total Government Employment Impacts - Counties and Selected Cities

	1998	2003	2013
San Bernardino County	71	148	232
Adelanto	2	4	6
Apple Valley	3	7	10
Hesperia	3	6	9
Victorville	14	30	47
Total	93	194	304

Note: Columns may not sum to totals because of rounding.

Source: Projections developed for this study, April 1991.

Table 4.3-2. International Airport Alternative Total Government Employment Impacts - Counties and Selected Cities

	1998	2003	2013
San Bernardino County	278	316	493
Adelanto	52	57	80
Apple Valley	12	14	22
Hesperia	11	12	19
Victorville	57	64	100
Total	410	463	714

Note: Columns may not sum to totals because of rounding.

Source: Projections developed for this study, April 1991.

4.3.1.2 International Airport Alternative. Impacts to local government employment arising from implementation of the International Airport Alternative are presented in Table 4.3-2. As under the Proposed Action, potential impacts for local government services follow the pattern of project-related population changes and focus on Victorville, Adelanto, and San Bernardino County; however, under the International Airport Alternative, these impacts are projected to be greater. The analysis also considers the effects of increased responsibility of public service provision to the project area and infrastructure.

At base closure no local government personnel would be associated with operations at the project site. In the interim between the closure of the base and the transfer of ownership from the federal government to an implementing agency, base property would be maintained by a DMT consisting of approximately 50 federal employees. The base facilities would be unused and would require a minimum level of such government services as police and fire protection. The site-related demand for services would increase as implementation of the International Airport Alternative progresses.

Of all the public service jurisdictions in the project area, San Bernardino County would experience the greatest increase in public service demand arising from implementation of the International Airport Alternative. Based on current staffing of 7.8 county employees per 1,000 people, employment by San Bernardino County related to operations at the project site would need to grow to nearly 500 personnel by 2013 in order to maintain levels of public service to which the local population is accustomed. The city of Victorville also would experience considerable employment growth with 57 personnel by 1998, 64 personnel by 2003, and 100 personnel by 2013 to maintain the current level of municipal service of 5.5 municipal employees per 1,000 people.

Based on current staffing per 1,000 people, municipal staffing in the city of Adelanto related to operations at the project site would be 52 personnel by 1998, 57 by 2003, and 80 by 2013 to maintain current levels of municipal service. However, under the International Airport Alternative, it is assumed that the project site would be annexed by the city of Adelanto; therefore, municipal administration of that area would become the responsibility of that city. Duties such as public safety, public works, utilities, building code inspection and enforcement, and recreation services would need to be extended to serve the additional area and infrastructure requirements, and would demand further increases in municipal employment not modeled on a per capita basis. Based on consultation with representatives of the city of Adelanto, as many as 10 additional sworn police officers, a new fully-staffed fire substation (24 personnel), and 10-15 "as needed" (short-term or contracted) personnel in the city's Building and Safety, Streets, and Grounds and Maintenance departments may be needed. Furthermore, staffing to manage the project area's recreational facilities would have to be initiated. The number of employees that would be needed and the timing and duration of their services are uncertain at this time.

Municipal employment related to operations at George AFB historically have been low in Apple Valley and Hesperia and would continue to remain so under the International Airport Alternative.

A discussion of how the airport itself would operate, the types of employees needed, and the key functions to be performed is provided in Section 1.4.

4.3.1.3 Commercial Airport with Residential Alternative. Impacts to local government employment, arising from implementation of the Commercial Airport with Residential Alternative, are presented in Table 4.3-3. Impacts arising from changes in demand for local government services follow the pattern of project-related population changes and focus on Victorville, Adelanto, and San Bernardino County. The analysis also considers the effects of increased responsibility of public service provision to the project area and infrastructure.

Potential impacts attributable to development of this alternative are less than those of both the Proposed Action and the International Airport Alternative.

Under development of this alternative at the project site, county staffing in San Bernardino County would need to increase by 44 employees by 1998 and 124 employees by 2013 to meet projected increased demand and to maintain current levels of service. Similarly, municipal employment in Victorville would need to increase by 9 employees by 1998 and 25 employees by 2013. In Adelanto, municipal personnel would need to increase by one employee by 1998 and by three employees by 2013 to meet demand arising from development of this alternative at the project site.

Under this alternative, it is anticipated that the project site would not be annexed by any local city; therefore, administration of that area would become the responsibility of San Bernardino County. Duties such as public safety, public works, utilities, building code inspection and enforcement, and recreation services, would need to be provided to this area by the county. In addition to the calculated per capita increases presented above, further increases in municipal employment and facilities infrastructure – in addition to and complementing the existing base infrastructure – may be required.

4.3.1.4 General Aviation Center Alternative. Impacts to local government employment arising from changes in demand for local government services under the General Aviation Center Alternative follow the pattern of project related population changes and focus on Victorville, Adelanto, and San Bernardino County (these impacts are presented in Table 4.3-4). Also considered are the effects of increased responsibility of public service provision to the project area and infrastructure.

Under this alternative, it is anticipated that the project site would not be annexed by any local city; therefore, administration of that area would become the

Table 4.3-3. Commercial Airport with Residential Alternative Total Government Employment Impacts - Counties and Selected Cities

	1998	2003	2013
San Bernardino County	44	76	124
Adelanto	1	2	3
Apple Valley	2	3	5
Hesperia	2	3	5
Victorville	9	15	25
Total	57	100	162

Note: Columns may not sum to totals because of rounding.

Source: Projections developed for this study, April 1991.

Table 4.3-4. General Aviation Center Alternative Total Government Employment Impacts - Counties and Selected Cities

	1998	2003	2013
San Bernardino County	49	68	74
Adelanto	1	2	2
Apple Valley	2	3	3
Hesperia	2	3	3
Victorville	10	14	15
Total	64	90	97

Note: Columns may not sum to totals because of rounding.

Source: Projections developed for this study, April 1991.

Table 4.3-5. Non-Aviation Alternative Total Government Employment Impacts - Counties and Selected Cities

	1998	2003	2013
San Bernardino County	26	49	107
Adelanto	1	1	3
Apple Valley	1	2	5
Hesperia	1	2	4
Victorville	5	10	22
Total	35	66	141

Note: Columns may not sum to totals because of rounding.

Source: Projections developed for this study, April 1991.

responsibility of San Bernardino County. Duties such as public safety, public works, utilities, building code inspection and enforcement, and recreation services would need to be provided to this area by the county. In addition to the per capita increases presented below, further increases in municipal employment and facilities infrastructure – in addition to and complementing the existing base infrastructure – may be required.

Potential impacts attributable to development of this alternative are less than those of both the Proposed Action and International Airport Alternative and approximate those of the Commercial Airport with Residential Alternative. Under development of this alternative at the project site, county staffing in San Bernardino County would need to increase by about 49 employees by 1998 and by 74 employees by 2013 to meet projected increased demand and to maintain current levels of service. Similarly, municipal employment in Victorville would need to increase by about 10 employees by 1998 and by 15 employees by 2013. In Adelanto, municipal personnel would need to increase by about one employee by 1998 and by two employees by 2013 to meet demand arising from development of this alternative at the project site.

4.3.1.5 Non-Aviation Alternative. Impacts to local government employment, arising from implementation of the Non-Aviation Alternative, are presented in Table 4.3-5. Impacts arising from changes in demand for local government services follow the pattern of project-related population changes and focus on Victorville, Adelanto, and San Bernardino County. The analysis also considers increased demand as a function of increased area and infrastructure.

Under this alternative, it is anticipated that the project site would not be annexed by a local city; therefore, administration of that area would become the responsibility of San Bernardino County. Duties such as public safety, public works, utilities, building code inspection and enforcement, and recreation services, would need to be provided to this area by the county. In addition to the calculated per capita increases discussed below, further increases in municipal employment and facilities infrastructure – in addition to and complementing the existing base infrastructure – may be required.

Potential impacts attributable to development of the Non-Aviation Alternative are less than those of both the Proposed Action and the International Airport Alternative. Under development of this alternative at the project site, county staffing in San Bernardino County would need to increase by 26 employees by 1998, 49 employees by 2003, and 107 employees by 2013 to meet projected increased demand and to maintain current levels of service. Similarly, municipal employment in Victorville would need to increase by 5 employees by 1998 and 22 employees by 2013. In Adelanto, municipal personnel would need to increase by one employee by 1998 and by three employees by 2013 to meet demand arising from development of the Non-Aviation Alternative at the project site.

4.3.1.6 No-Action Alternative. Under the No-Action Alternative, the U.S. Government would retain ownership of the George AFB property. A caretaker contractor would maintain the facilities and grounds. Local government impacts for the No-Action Alternative would be those described in Section 3.4.3.1 as closure conditions. While no local jurisdiction would assume responsibility for services (especially law enforcement and fire protection) at the base, local service providers (such as the California Department of Forestry and Fire Protection and the County Sheriff's Office) would be the principal providers of services during emergencies.

4.3.2 Public Education

4.3.2.1 Proposed Action. Potential impacts to public school enrollments and school staffing strength, arising from implementation of the Proposed Action, are presented in Tables 4.3-6 and 4.3-7. These impact estimates are consistent with school district projections provided in conversations with the superintendents of the Adelanto Elementary School District and the Victor Valley Union High School District (Kincald, 1991; Victor Valley Union High School District, 1991).

Following closure, public school enrollments related to operations at the George AFB site would increase during implementation of the Proposed Action. Total Proposed Action-related enrollments would be nearly 1,500 students in 1998 and 4,885 by 2013. The greatest enrollment impacts would occur in Victor Valley Union High School District, Apple Valley Unified School District, Victor Elementary School District, and Adelanto Elementary School District, with enrollment increases ranging between 300 and 405 students in 1998 and between approximately 1,000 and 1,350 students for 2013.

These school districts are currently operating at or beyond capacity; projected enrollments are greater than previous enrollment levels attributable to George AFB operations prior to base closure at each of these districts except Adelanto. Such enrollment increases likely would exacerbate already overcrowded conditions. Additional classrooms or new schools would need to be constructed in order to accommodate new students.

Resulting changes in school staff strength and facility use would likely accompany these projected enrollment changes. By 1998, the certified staffs serving demand from project-site-generated enrollments would be 18 staff members for Victor Valley Union High School, 17 at Apple Valley Unified and Victor Elementary, and 15 at Adelanto Elementary. By 2013, long-term reuse activities would lead to demand for between 50 and 60 certified staff members at each of these school districts.

Public school enrollment increases also would occur at a lesser magnitude in Hesperia Unified School District, with a 604-student increase between 1993 and 2013. This long-term enrollment increase would require an accompanying

Table 4.3-6. Proposed Action Total Enrollment Impacts - School Districts

	1998	2003	2013
Victor Valley UHSD	405	847	1,335
Adelanto ESD	303	633	998
Helendale ESD	4	8	13
Oro Grande ESD	2	4	6
Victor ESD	381	795	1,254
Apple Valley USD	375	783	1,235
Hesperia USD	184	384	604
Barstow USD	20	42	65
Snowline JUSD	44	92	145
SW San Bernardino SDs	109	226	339
Rest of San Bernardino	14	29	44
Riverside Co	61	125	180
Total	1,902	3,968	6,220

Note: Columns may not sum to totals because of rounding.

Source: Projections developed for this study, April 1991.

Table 4.3-7. Proposed Action Total Staffing Impacts - School Districts

	1998	2003	2013
Victor Valley UHSD	18	38	60
Adelanto ESD	15	32	51
Helendale ESD	0	0	1
Oro Grande ESD	0	0	0
Victor ESD	17	35	56
Apple Valley USD	17	36	57
Hesperia USD	9	18	29
Barstow USD	1	2	3
Snowline JUSD	2	4	7
SW San Bernardino SDs	5	11	16
Rest of San Bernardino	1	1	2
Riverside Co	3	6	8
Total	89	185	290

Note: Columns may not sum to totals because of rounding.

Source: Projections developed for this study, April 1991.

certificated staff increase of 29 personnel to maintain existing student/certified staff ratios.

Adelanto Elementary School District currently operates two elementary schools at George AFB: George Elementary and Sheppard Elementary. Following base closure, enrollments at both these schools would decline; however, the district would likely redirect students from other crowded campuses that use portable classrooms to these two schools. The district is attempting to unify into a single primary-secondary district. If the unification attempt succeeds, the district foresees combining the George and Sheppard elementary campuses into a single secondary school campus. The district is planning to maintain operation of both George and Sheppard elementary schools – regardless of the outcome of unification.

4.3.2.2 International Airport Alternative. Potential impacts to public school enrollments and certificated staff strength arising from implementation of the International Airport Alternative are presented in Tables 4.3-8 and 4.3-9. These impact estimates are consistent with school district projections provided in conversations with the superintendents of the Adelanto Elementary School District and the Victor Valley Union High School District (Kincaid, 1991; Victor Valley Union High School District, 1991).

Under this alternative, regional public school enrollments related to operations at the George AFB site would be about 5,800 students in 1998, increasing to more than 10,300 students by 2013. As under the Proposed Action, the greatest effects to public school enrollments are estimated for Victor Valley Union High School District, Apple Valley Unified School District, Victor Elementary School District, and Adelanto Elementary School District; however, under the International Airport Alternative these impacts are projected to be greater.

These enrollment increases likely would exacerbate already overcrowded conditions at these school districts – most notably at Victor Elementary, Victor Valley Union High, Apple Valley Unified, and Hesperia Unified. (Previous enrollment levels attributable to base operations – prior to base closure – exceeded or approximated these impact enrollments at Adelanto Elementary School District.) Additional classrooms, or, more likely under this alternative, new schools would need to be constructed in order to accommodate these projected enrollment increases.

Corresponding changes in certified staff strength and facility use would likely accompany these projected enrollment changes. Increasing enrollments related to the International Airport Alternative through 2013 would result in demand for between 109 and 128 additional teachers at Victor Valley Union High, Adelanto Elementary, Victor Elementary, and Apple Valley Unified school districts.

Table 4.3-8. International Airport Alternative Total Enrollment Impacts - School Districts

	1998	2003	2013
Victor Valley UHSD	1,606	1,830	2,846
Adelanto ESD	1,200	1,368	2,127
Helendale ESD	16	18	28
Oro Grande ESD	8	9	14
Victor ESD	1,508	1,718	2,672
Apple Valley USD	1,484	1,691	2,630
Hesperia USD	725	826	1,286
Barstow USD	78	88	138
Snowline JUSD	174	198	309
SW San Bernardino SDs	373	424	678
Rest of San Bernardino	51	58	91
Riverside Co	179	203	335
Total	7,402	8,431	13,151

Note: Columns may not sum to totals because of rounding.

Source: Projections developed for this study, April 1991.

Table 4.3-9. International Airport Alternative Total Staffing Impacts - School Districts

	1998	2003	2013
Victor Valley UHSD	72	82	128
Adelanto ESD	61	70	109
Helendale ESD	1	1	1
Oro Grande ESD	0	0	1
Victor ESD	67	76	119
Apple Valley USD	68	78	121
Hesperia USD	34	39	61
Barstow USD	4	4	7
Snowline JUSD	8	9	15
SW San Bernardino SDs	18	20	32
Rest of San Bernardino	2	3	4
Riverside Co	8	10	16
Total	345	393	613

Note: Columns may not sum to totals because of rounding.

Source: Projections developed for this study, April 1991.

4.3.2.3 Commercial Airport with Residential Alternative. Potential impacts to public school enrollments and certified staff strength, arising from implementation of the Commercial Airport with Residential Alternative, are presented in Tables 4.3-10 and 4.3-11. These impact estimates are consistent with school district projections provided in conversations with the superintendents of the Adelanto Elementary School District and the Victor Valley Union High School District (Kincald, 1991; Victor Valley Union High School District, 1991).

Impacts to public education under this alternative are less than those under both the Proposed Action and the International Airport Alternative: regional public school enrollments related to operations at the project site would increase from 927 students in 1998 to more than 2,600 students in 2013. Again, the greatest effects to public school enrollments are estimated for Victor Valley Union High School District, Apple Valley Unified School District, Victor Elementary School District, and Adelanto Elementary School District. For each district, however, these enrollment projections are less than previous enrollment levels attributable to base operations prior to base closure.

Corresponding changes in certified staff strength and facility use likely would accompany these projected enrollment changes. Increasing enrollments related to this alternative through 2013 would result in demand for between 27 and 32 additional staff members at Victor Valley Union High, Adelanto Elementary, Victor Elementary, and Apple Valley Unified school districts.

4.3.2.4 General Aviation Center Alternative. Potential impacts to public school enrollments and certified staff strength arising from implementation of the General Aviation Center Alternative are less than those under both the Proposed Action and the International Airport Alternative and similar to those under the Commercial Airport with Residential Alternative, and are presented in Tables 4.3-12 and 4.3-13. These impact estimates are consistent with school district projections provided in conversations with the superintendents of the Adelanto Elementary School District and the Victor Valley Union High School District (Kincald, 1991; Victor Valley Union High School District, 1991).

Regional public school enrollments related to operations at the project site would increase from about 1,318 students in 1998 to more than 1,950 students in 2013. Again, the greatest effects to public school enrollments are estimated for Victor Valley Union High School District. However, projected enrollments for Apple Valley and Hesperia Unified School Districts would exacerbate already overcrowded conditions if these districts do not expand their capacities by 2013. Additional classrooms or new schools would need to be constructed in order to accommodate these projected enrollment increases. For the other Victor Valley school districts, these enrollment projections are less than previous enrollment levels attributable to base operations prior to base closure.

Table 4.3-10. Commercial Airport with Residential Alternative Total Enrollment Impacts - School Districts

	1998	2003	2013
Victor Valley UHSD	252	435	707
Adelanto ESD	188	325	528
Helendale ESD	2	4	7
Oro Grande ESD	1	2	3
Victor ESD	237	408	664
Apple Valley USD	233	402	654
Hesperia USD	114	197	321
Barstow USD	12	22	35
Snowline JUSD	27	47	77
SW San Bernardino SDs	67	121	199
Rest of San Bernardino	9	15	25
Riverside Co	37	70	116
Total	1,179	2,049	3,335

Note: Columns may not sum to totals because of rounding.

Source: Projections developed for this study, April 1991.

Table 4.3-11. Commercial Airport with Residential Alternative Total Staffing Impacts - School Districts

	1998	2003	2013
Victor Valley UHSD	11	20	32
Adelanto ESD	10	17	27
Helendale ESD	0	0	0
Oro Grande ESD	0	0	0
Victor ESD	11	18	29
Apple Valley USD	11	19	30
Hesperia USD	5	9	15
Barstow USD	1	1	2
Snowline JUSD	1	2	4
SW San Bernardino SDs	3	6	9
Rest of San Bernardino	0	1	1
Riverside Co	2	3	5
Total	55	96	155

Note: Columns may not sum to totals because of rounding.

Source: Projections developed for this study, April 1991.

Table 4.3-12. General Aviation Center Alternative Total Enrollment Impacts - School Districts

	1998	2003	2013
Victor Valley UHSD	287	394	427
Adelanto ESD	214	294	319
Helendale ESD	3	4	4
Oro Grande ESD	1	2	2
Victor ESD	269	369	401
Apple Valley USD	265	364	394
Hesperia USD	129	178	193
Barstow USD	14	19	20
Snowline JUSD	31	43	46
SW San Bernardino SDs	66	90	98
Rest of San Bernardino	9	12	13
Riverside Co	31	43	46
Total	1,318	1,812	1,965

Note: Totals may not sum to totals because of rounding.

Source: Projections developed for this study, April 1991.

Table 4.3-13. General Aviation Center Alternative Total Staffing Impacts - School Districts

	1998	2003	2013
Victor Valley UHSD	13	18	19
Adelanto ESD	11	15	16
Helendale ESD	0	0	
Oro Grande ESD	0	0	0
Victor ESD	12	16	18
Apple Valley USD	12	17	18
Hesperia USD	6	8	9
Barstow USD	1	1	1
Snowline JUSD	1	2	2
SW San Bernardino SDs	3	4	5
Rest of San Bernardino	0	1	1
Riverside Co	1	2	2
Total	61	84	92

Note: Totals may not sum to totals because of rounding.

Source: Projections developed for this study, April 1991.

Corresponding changes in certified staff strength and facility use would likely accompany these projected enrollment changes. Increasing enrollments related to this alternative through 2013 would result in demands for between 16 and 19 additional staff personnel at Victor Valley Union High, Adelanto Elementary, Victor Elementary, and Apple Valley Unified School Districts.

4.3.2.5 Non-Aviation Alternative. Potential impacts to public school enrollments and certificated staff strength, arising from implementation of the Non-Aviation Alternative, are presented in Tables 4.3-14 and 4.3-15. These impact estimates are consistent with school district projections provided in conversations with the superintendents of the Adelanto Elementary School District and the Victor Valley Union High School District (Kincald, 1991; Victor Valley Union High School District, 1991).

Impacts to public education under this alternative are for less than those under either the Proposed Action or the International Airport Alternative. Regional public school enrollments, related to operations at the project site, would increase from 537 students in 1998 to nearly 2,200 students in 2013. Again, the greatest effects to public school enrollments are estimated for Victor Valley Union High School District, Apple Valley Unified School District, Victor Elementary School District, and Adelanto Elementary School District. As opposed to the Proposed Action and the International Airport Alternative, these enrollment projections would be lower than previous, preclosure enrollments related to George AFB operations at each of these school districts.

Corresponding changes in certified staff strength and facility use would likely accompany these projected enrollment changes. Increasing enrollments related to the Non-Aviation Alternative through 2013 would result in demand for between 24 and 28 additional staff members at Victor Valley Union High, Adelanto Elementary, Victor Elementary, and Apple Valley Unified school districts.

4.3.2.6 No-Action Alternative. Public education impacts for the No-Action Alternative would be those described in Section 3.4.3.2 as closure baseline conditions.

4.3.3 Police Protection

Under each alternative, potential impacts to police protection services are examined based on project-related population and responsibility changes resulting from increased areas and infrastructures. Because of the magnitude of some effects of closure and reuse, level-of-service ratios may not adequately meet new service requirements. Changes in land area served and types of services to be provided were considered. Representatives from the city of Adelanto were consulted to determine how annexation of the base area would affect police services under the International Airport Alternative.

Table 4.3-14. Non-Aviation Alternative Total Enrollment Impacts - School Districts

	1998	2003	2013
Victor Valley UHSD	154	288	628
Adelanto ESD	115	214	470
Helendale ESD	2	3	6
Oro Grande ESD	1	1	3
Victor ESD	144	268	590
Apple Valley USD	142	264	580
Hesperia USD	69	128	282
Barstow USD	7	13	29
Snowline JUSD	17	31	67
SW San Bernardino SDs	28	51	114
Rest of San Bernardino	4	8	17
Riverside Co	9	15	35
Total	691	1,281	2,821

Note: Columns may not sum to totals because of rounding.

Source: Projections developed for this study, April 1991.

Table 4.3-15. Non-Aviation Alternative Total Staffing Impacts - School Districts

	1998	2003	2013
Victor Valley UHSD	7	13	28
Adelanto ESD	6	11	24
Helendale ESD	0	0	0
Oro Grande ESD	0	0	0
Victor ESD	6	12	28
Apple Valley USD	7	12	27
Hesperia USD	3	6	13
Barstow USD	0	1	1
Snowline JUSD	1	1	3
SW San Bernardino SDs	1	2	5
Rest of San Bernardino	0	0	1
Riverside Co	0	1	2
Total	32	60	131

Note: Columns may not sum to totals because of rounding.

Source: Projections developed for this study, April 1991.

4.3.3.1 Proposed Action. Projected impacts to police protection in the ROI are presented in Table 4.3-16. Potential impacts resulting from changes in demand for police protection services reflect the pattern of project-related population changes in the Victor Valley.

Since the project site would not be annexed by any community under the Proposed Action, the Sheriff's Office would assume responsibility for law enforcement services (including police patrolling, responding to emergencies, and detaining suspects) at the site. Furthermore, local police agencies would no longer be able to request the assistance of the security police squadron's canine unit formerly stationed at the base. The county may need to provide a small police station at the airport site, as is the case at ONT. The Sheriff's Office could contract with a private firm to provide airport security and be responsible for baggage checking, patrolling, and other security operations (Ontario International Airport, 1991).

The San Bernardino County Sheriff's Office (Victor Valley Station) would experience changes in staffing as a result of changes in activity at George AFB. Projected changes in the Victor Valley population would require staffing levels associated with population at the project site to increase by 4 officers in 1998 and 12 officers in 2013 while maintaining the station's 0.4 officer per 1,000 population service level.

The Victorville Police Department currently employs 1.2 sworn officers per 1,000 population to meet law enforcement demand. Based on this per capita value, police staffing related to operations at the base would be need to be increased by 3 officers in 1998 and by 10 officers in 2013 to maintain current service levels.

4.3.3.2 International Airport Alternative. Projected impacts based on per capita demand to police protection in the ROI under the International Airport Alternative are presented in Table 4.3-17. Potential impacts resulting from changes in demand for police protection services reflect the pattern of project-related population changes in the Victor Valley; however, these projected impacts are greater under this alternative than those projected under the Proposed Action.

Based solely on current staffing per 1,000 people, sworn officer staffing at the Adelanto Police Department, related to development of the International Airport Alternative at the project site, would be 18 sworn officers by 2013 to maintain current levels of police protection. However, under the International Airport Alternative; it is assumed that the project site would be annexed by the city of Adelanto; therefore, police protection (including duties such as police patrolling, responding to emergencies, and detaining suspects) in the area would become the responsibility of that city. Augmented staffing at Adelanto Police Department, in addition to the establishment of a special site-specific security force, would be necessary to serve the resident and non-resident patrons of the International Airport and, furthermore, to guard the facility. An estimated eight

Table 4.3-16. Proposed Action Total Police Protection Impacts - Counties and Selected Cities

	1998	2003	2013
San Bernardino County	4	8	12
Adelanto	1	1	2
Apple Valley	1	3	4
Hesperia	1	1	2
Victorville	3	7	10
Total	10	20	30

Note: Columns may not sum to totals because of rounding.

Source: Projections developed for this study, April 1991.

Table 4.3-17. International Airport Alternative Total Police Protection Impacts - Counties and Selected Cities

	1998	2003	2013
San Bernardino County	14	16	25
Adelanto	10	11	18
Apple Valley	5	6	9
Hesperia	2	3	4
Victorville	12	14	22
Total	44	50	78

Note: Columns may not sum to totals because of rounding.

Source: Projections developed for this study, April 1991.

to ten additional sworn officers would be needed to serve the annexed area (Scarpa, 1991).

Under this alternative, the San Bernardino County Sheriff's Office (Victor Valley Station) would also experience the greatest staffing changes. Projected area population increases would require staffing levels associated with development at the project site to increase by 14 sworn officers in 1998 and by 25 sworn officers in 2013 to retain existing public service levels of 0.4 sworn officers per 1,000 people.

The sworn officer staff at the Victorville Police Department would need to be increased by 12 officers in 1998 and by 22 officers in 2013 to maintain current service levels and meet increased demand associated with development of the International Airport Alternative. Police departments in Apple Valley and Hesperia also would need to increase their sworn officer staffs by nine and four officers, respectively, by 2013 to maintain existing service levels.

4.3.3.3 Commercial Airport with Residential Alternative. Projected impacts to police protection in the ROI are presented in Table 4.3-18 for this alternative. Potential impacts resulting from changes in demand for police protection services under this alternative are less than those under either the Proposed Action or the International Airport Alternative. Based on consultation with the Adelanto Police Department, as many as 10 additional officers would be needed to serve the increased area of responsibility.

Under this alternative, the San Bernardino County Sheriff's Office (Victor Valley Station) again would experience the greatest changes in staffing as a result of changes in activity at George AFB. Staffing levels associated with activity at the project site would need to increase by two sworn officers in 1998 and by six officers in 2013 to maintain the station's current service level. Under this alternative, the project site would not be annexed by any community, therefore the Sheriff's Office would likely assume responsibility for law enforcement services at the site. Furthermore, local police agencies would no longer be able to rely on the security police squadron formerly active at the base.

The sworn officer staff at the Victorville Police Department would need to be increased by two officers in 1998 and by five officers in 2013 to maintain current service levels and meet increased demand associated with development of this Alternative. The Apple Valley Police Department would need an additional two sworn officers by 2013 to meet increased police protection demand. Police departments in Adelanto and Hesperia would each need to increase their sworn officer staffs by one officer by 2013 to maintain existing service levels.

4.3.3.4 General Aviation Center Alternative. Potential impacts resulting from changes in demand for police protection services under the General Aviation Center Alternative are less than those under either the Proposed Action or the

Table 4.3-18. Commercial Airport with Residential Alternative Total Police Protection Impacts - Counties and Selected Cities

	1998	2003	2013
San Bernardino County	2	4	6
Adelanto	0	1	1
Apple Valley	1	1	2
Hesperia	0	1	1
Victorville	2	3	5
Total	5	10	15

Note: Columns may not sum to totals because of rounding.

Source: Projections developed for this study, April 1991.

Table 4.3-19. General Aviation Center Alternative Total Police Protection Impacts - Counties and Selected Cities

	1998	2003	2013
San Bernardino County	3	3	4
Adelanto	0	1	1
Apple Valley	1	1	1
Hesperia	0	1	1
Victorville	2	3	3
Total	6	9	10

Note: Columns may not sum to totals because of rounding.

Source: Projections developed for this study, April 1991.

Table 4.3-20. Non-Aviation Alternative Total Police Protection Impacts - Counties and Selected Cities

	1998	2003	2013
San Bernardino County	1	2	5
Adelanto	0	0	1
Apple Valley	0	1	2
Hesperia	0	0	1
Victorville	1	2	5
Total	2	5	14

Note: Columns may not sum to totals because of rounding.

Source: Projections developed for this study, April 1991.

International Airport Alternative, but quite similar to those under the Commercial Airport with Residential Alternative. These impacts are presented in Table 4.3-19.

Under this alternative, the project site would not be annexed by any community, therefore the Sheriff's Office likely would assume responsibility for law enforcement services at the site. Furthermore, local police agencies would no longer be able to rely on the security police squadron formerly active at the base. Under this alternative, the San Bernardino County Sheriff's Office (Victor Valley Station) again would experience the greatest changes in staffing as a result of changes in activity at George AFB. Staffing levels associated with activity at the project site would need to increase by three sworn officers in 1998 and by four officers in 2013 to maintain the station's current service level.

The sworn officer staff at the Victorville Police Department would need to be increased by two officers in 1998 and by three officers in 2013 to maintain current service levels and meet increased demand associated with development of this alternative. Police departments in Apple Valley, Adelanto, and Hesperia would each need to increase their sworn officer staffs by one officer by 2003 to maintain existing service levels.

4.3.3.5 Non-Aviation Alternative. Projected impacts to police protection in the ROI are presented in Table 4.3-20 for the Non-Aviation Alternative. Potential impacts resulting from changes in demand for police protection services under this alternative are less than those under both the Proposed Action and the International Airport Alternative.

Under this alternative, the San Bernardino County Sheriff's Office (Victor Valley Station) again would experience the greatest changes in staffing as a result of changes in activity at George AFB. Staffing levels associated with activity at the project site would need to increase by one sworn officer in 1998 and by five officers in 2013 to maintain the station's current service level. Under this alternative, the project site would not be annexed by any community, therefore the Sheriff's Office would likely assume responsibility for law enforcement services at the site. Furthermore, local police agencies would no longer be able to rely on the security police squadron formerly active at the base.

The sworn officer staff at the Victorville Police Department would need to be increased by one officer in 1998 and by five officers in 2013 to maintain current service levels and meet increased demand associated with development of the Non-Aviation Alternative. The Apple Valley Police Department would need an additional two sworn officers by 2013 to meet increased police protection demand. Police departments in Adelanto and Hesperia would each need to increase their sworn officer staffs by one officer by 2013 to maintain existing service levels.

4.3.3.6 No-Action Alternative. Police protection impacts for the No-Action Alternative would be those described in Section 3.4.3.3 as closure baseline

conditions. While no local law enforcement agency would assume responsibility for services at the base, the County Sheriff's Department would be the principal provider of service during emergencies.

4.3.4 Fire Protection

Under each alternative, potential impacts to fire protection services are examined. The analysis considers project-related population, service areas, and infrastructure responsibility changes. Representatives from the city of Adelanto were consulted to determine how annexation by the city under the International Airport Alternative would affect fire services.

4.3.4.1 Proposed Action. Potential impacts to fire protection services in the ROI arising from development of the Proposed Action are presented in Table 4.3-21.

As with municipal and law enforcement services, once a portion of the base is conveyed, the responsibility for fire protection services at the site would revert to local providers, in this case the Regional Fire Protection Authority, which has already stated that since the authority has the mechanism in place for regional fire protection and communication, it is prepared to provide fire protection services to the increased area encompassing base property following closure (Lewis, 1991). The proposed airport would maintain its own fire department, which would have primary responsibility for fire protection on site. The airport would receive assistance from the Regional Fire Protection Authority when necessary.

The Victorville Fire Department would experience the greatest demand for increased fire protection service under this alternative; an additional seven professional fire fighters would be needed by 2013 to maintain current service levels and meet increased project-related demand. Apple Valley and Hesperia would also experience increased demand: Apple Valley would require six additional fire fighters and Hesperia two additional fire fighters to maintain existing service levels.

Local fire departments and communities would no longer be able to rely on the George AFB fire fighting squadron to assist in fire protection, fire suppression, or hazardous materials emergencies as is currently the case under mutual agreement; however, the on-base squadron maintains no major, specialized equipment that the community fire departments do not maintain or have access to use.

4.3.4.2 International Airport Alternative. Projected impacts to fire protection services in the ROI under the International Airport Alternative are presented in Table 4.3-22. These potential impacts are greater than those arising under development of the Proposed Action at the project site.

Table 4.3-21. Proposed Action Total Fire Protection Impacts - Counties and Selected Cities

	1998	2003	2013
San Bernardino County	0	0	0
Adelanto	0	0	1
Apple Valley	2	4	6
Hesperia	1	1	2
Victorville	2	4	7
Total	5	9	16

Note: Columns may not sum to totals because of rounding.

Source: Projections developed for this study, April 1991.

Table 4.3-22. International Airport Alternative Total Fire Protection Impacts - Counties and Selected Cities

	1998	2003	2013
San Bernardino County	0	0	0
Adelanto	3	4	6
Apple Valley	7	8	12
Hesperia	3	3	4
Victorville	8	9	15
Total	21	24	37

Note: Columns may not sum to totals because of rounding.

Source: Projections developed for this study, April 1991.

The greatest demand for increased fire protection service would occur at the Victorville Fire Department, which would need an additional 15 professional fire fighters by 2013 to maintain current service levels of 0.8 fire fighters per 1,000 people and to meet increased project-related demand. Apple Valley and Hesperia also would experience increased demand. Apple Valley would require an additional 12 fire fighters and Hesperia 4 fire fighters by 2013 to maintain existing service levels of 1.1 fire fighters per 1,000 people in Apple Valley and 0.9 fire fighters per 1,000 people in Hesperia.

Population growth, related to development of the International Airport Alternative at the project site, would increase demand for fire protection services in Adelanto by 6 professional fire fighters by 2013 in order to maintain the existing service ratio of 0.5 fire fighters per 1,000 population. However, as George AFB property is conveyed under this alternative, responsibility for fire protection services at the site would revert to the Adelanto Fire Department. As is the case with police protection under this alternative, the Adelanto Fire Department would be responsible for serving a larger area which would be intensely developed over a short period. In addition to the establishment of a site-specific fire department for the international airport, augmented staffing and expanded equipment and infrastructure, including establishment of a new substation, by the Adelanto Fire Department would likely be necessary to serve the resident and non-resident patrons using the facility. Based on consultation with city of Adelanto representatives, staffing strength required to serve this increased area would total 24 additional personnel.

Actions required to maintain fire insurance rating depend on in-migrating population choosing to reside within existing development areas currently served by existing facilities or in new development on the fringes of the community. If the population locates within existing service areas, response times would probably not degrade and fire insurance rating would not be affected. If the population were to relocate to new development areas on the fringes of the community, current response times and response ratings could be adversely affected unless new stations were built.

4.3.4.3 Commercial Airport with Residential Alternative. Projected impacts to fire protection in the ROI are presented in Table 4.3-23 for the Commercial Airport with Residential Alternative. Potential impacts resulting from changes in demand for fire protection services under this alternative are less than those under either the Proposed Action or the International Airport Alternative.

As with the Proposed Action, once a portion of the base is conveyed, the responsibility for fire protection services at the site would revert to local providers. The Regional Fire Protection Authority has already expressed that since the authority has the mechanism in place for regional fire protection and communication, it can provide fire protection services to base property following closure (Lewis, 1991). The proposed airport would maintain its own fire department, which would have primary responsibility for fire protection on

Table 4.3-23. Commercial Airport with Residential Alternative Total Fire Protection Impacts - Counties and Selected Cities

	1998	2003	2013
San Bernardino County	0	0	0
Adelanto	0	0	0
Apple Valley	1	2	3
Hesperia	0	1	1
Victorville	1	2	4
Total	2	5	8

Note: Columns may not sum to totals because of rounding.

Source: Projections developed for this study, April 1991.

Table 4.3-24. General Aviation Center Alternative Total Fire Protection Impacts - Counties and Selected Cities

	1998	2003	2013
San Bernardino County	0	0	0
Adelanto	0	0	0
Apple Valley	1	2	2
Hesperia	0	1	1
Victorville	1	2	2
Total	2	5	5

Note: Columns may not sum to totals because of rounding.

Source: Projections developed for this study, April 1991.

Table 4.3-25. Non-Aviation Alternative Total Fire Protection Impacts - Counties and Selected Cities

	1998	2003	2013
San Bernardino County	0	0	0
Adelanto	0	0	0
Apple Valley	1	1	3
Hesperia	0	0	1
Victorville	1	1	3
Total	2	2	7

Note: Columns may not sum to totals because of rounding.

Source: Projections developed for this study, April 1991.

site. The airport would receive assistance from the Regional Fire Protection Authority when necessary.

The Victorville Fire Department would experience the greatest demand for increased fire protection service under this alternative; an additional four professional fire fighters would be needed by 2013 to maintain current service levels and meet increased project-related demand. Apple Valley and Hesperia would also experience increased demand: Apple Valley would require three additional fire fighters and Hesperia one additional fire fighter to maintain existing service levels.

4.3.4.4 General Aviation Center Alternative. Under this alternative impacts to local fire protection services would be similar to those experienced under the Regional Airport with Residential Alternative (Table 4.3-24).

As with the Proposed Action, once a portion of the base is conveyed, the responsibility for fire protection services at the site would revert to local providers. The Regional Fire Protection Authority has already expressed that since the Authority has the mechanism in place for regional fire protection and communication, it can provide fire protection services to base property after closure. The proposed airport would maintain its own fire department, which would have primary responsibility for fire protection on site. The airport would receive assistance from the Regional Fire Protection Authority when necessary.

The Victorville and Apple Valley fire departments would experience the greatest demand for increased community fire protection under the General Aviation Center Alternative. An additional two fire fighters would be needed by 2003 and maintained through 2013 to preserve current service levels and meet increased project-related demand in each municipality.

4.3.4.5 Non-Aviation Alternative. Projected impacts to fire protection in the ROI are presented in Table 4.3-25 for the Non-Aviation Alternative. Potential impacts resulting from changes in demand for fire protection services under this alternative are less than those under either the Proposed Action or the International Airport Alternative.

As with the Proposed Action, once a portion of the base is conveyed, the responsibility for fire protection services at the site would revert to local providers. The Regional Fire Protection Authority has already stated that since it has the mechanism in place for regional fire protection and communication, it can provide fire protection services to base property following closure (Lewis, 1991).

The Victorville and Apple Valley fire departments would experience the greatest demand for increased fire protection service under this alternative; an additional three professional fire fighters would be needed by 2013 to maintain current service levels and meet increased project-related demand at each department.

4.3.4.6 No-Action Alternative. Fire protection impacts for the No-Action Alternative would be those described in Section 3.4.3.4 as closure baseline conditions.

4.3.5 Health Care

4.3.5.1 Proposed Action. Under the Proposed Action, George AFB Hospital would be closed. Health care impacts would be those described in Section 3.4.3.5 as closure baseline conditions.

4.3.5.2 International Airport Alternative. Under the International Airport Alternative, George AFB Hospital would be closed. Health care impacts would be those described in Section 3.4.3.5 as closure baseline conditions.

4.3.5.3 Commercial Airport with Residential Alternative. Under the Commercial Airport with Residential Alternative, George AFB Hospital would remain open but not operated by the military. Consequently, there may be a potential impact of increased costs for health care services to military retirees and their dependents who live in the Victor Valley area. Retirees can use CHAMPUS to pay for private health care provided to them in the community; however, they must pay a 25-percent co-payment. Medical care to military retirees and their dependents is free at any base hospital. To receive their accustomed free health care, retirees would need to drive 40 to 60 miles to Edwards AFB or March AFB, respectively. That distance would impact all retirees who rely on public transportation and those retirees in poor health, making an hour-long drive impossible. Jerry Pettis Memorial Hospital is the closest VA hospital to George AFB, approximately 35 miles south of the Victor Valley.

4.3.5.4 General Aviation Center Alternative. Under the General Aviation Center Alternative, the existing base hospital would remain in operation under lease to a private medical group. Military retirees in the Victor Valley region would be impacted by the loss of military health services at the base, and would have to seek non military medical services (under CHAMPUS if qualified) or travel to one of the military bases in the region. Due to the distance involved (30-40 miles or more) retirees might face similar hardship as addressed under 4.3.5.3 for the International Airport Alternative.

4.3.5.5 Non-Aviation Alternative. Under the Non-Aviation Alternative, George AFB Hospital would remain open but would not be operated by the military. Health care impacts would be those described in Section 4.3.5.3.

4.3.5.6 No-Action Alternative. Health care impacts for the No-Action Alternative would be those described in Section 3.4.3.5 as closure baseline conditions.

4.3.6 Recreation

4.3.6.1 Proposed Action. Potential impacts to recreation services in the ROI would focus on the facilities currently existing at the base, which include a 9-hole golf course, gymnasium, swimming pools, ball fields, tennis courts, and bowling center. These recreational facilities would be eligible for incorporation into either community parks or part of a regional recreational system. The addition of the base's well-developed recreation infrastructure would increase recreational opportunities for Victor Valley citizens and would help meet the increased demand for recreation and park land, which would amount to 48 additional acres in 1998 and 157 acres in 2013 over all of the Victor Valley. Of these totals, Victorville would require an additional 24 acres, Apple Valley 12 acres, Hesperia 3 acres, and Adelanto 1 acre in 2013 to meet increased demand related to the Proposed Action and maintain existing recreation levels of service. The remaining acreage would need to be dedicated into the regional park system.

4.3.6.2 International Airport Alternative. The effects on recreation services, resulting from implementation of the International Airport Alternative, are similar to those presented for the Proposed Action; that is, operation and maintenance would be transferred to local jurisdiction. Under this alternative, the recreational facilities of the base would fall under the jurisdiction of the city of Adelanto and would likely be incorporated into that city's recreation system. Under this alternative, demand in Adelanto would be met while maintaining existing service levels. However, to meet increased demand and maintain current recreation service levels, other Victor Valley cities would need to increase their recreation and park acreage: Victorville by 51 acres, Apple Valley by 26 acres, and Hesperia by 6 acres by 2014.

4.3.6.3 Commercial Airport with Residential Alternative. The effects on recreational services resulting from implementation of this alternative are similar to those presented for the Proposed Action with respect to the fate of on-base facilities (see Section 4.3.6.1). However, increased demand under this alternative would be less, totalling 83 acres for all of Victor Valley by 2013 to maintain current recreational service levels. Of that total, Victorville would require 13 additional acres, Apple Valley 7 acres, and Hesperia 2 acres to meet increased demand.

4.3.6.4 General Aviation Center Alternative. The effects on recreation services from implementation of the General Aviation Center Alternative would be similar to those presented for the Proposed Action (see subsection 4.3.6.1). Increased demand under this alternative, however, would be less, totalling 50 acres for all of Victor Valley by 2013 to maintain current recreational service levels. Of that total, Victorville would require 8 additional acres, Apple Valley 4 acres, and Hesperia 1 acre to meet increased demand.

4.3.6.5 Non-Aviation Alternative. The effects on recreational services, resulting from implementation of the Non-Aviation Alternative, are similar to those presented for the Proposed Action with respect to the fate of on-base facilities (see Section 4.3.6.1). However, increased demand under this alternative would be less than under the Proposed Action – totalling 74 acres for all of Victor Valley by 2013 to maintain current service levels. Of that total, Victorville would require 11 additional acres, Apple Valley 6 acres, and Hesperia 1 acre of additional recreational land.

4.3.6.6 No-Action Alternative. Recreational impacts for the No-Action Alternative would be those described in Section 3.4.3.6 as closure baseline conditions.

4.4 PUBLIC FINANCE

4.4.1 Proposed Action

Fiscal impacts to potentially affected jurisdictions under the Proposed Action are presented in this section. The results represent the net effects of the Proposed Action after accounting for the out-migration of the direct and indirect military and civilian jobs associated with phasing out the George AFB military mission.

Several key assumptions regarding future jurisdictional control of base property have been made which influence the fiscal assessments presented below. Under this alternative:

- VVEDA is reformed as an airport authority and a redevelopment agency and purchases or otherwise achieves control of all 5,300 acres of George AFB.
- Annexation by either neighboring jurisdictions (Adelanto and Victorville) is not proposed and public services are provided by the San Bernardino County and other service providers in the area.
- All land and airport-related improvements remain in public ownership. Non-airport related improvements in commercial and industrial areas (other than site development undertaken by the authority) would be performed by private interests. Airport-related improvements would be funded through a combination of grants and revenue bonds.
- The entire project area becomes a redevelopment project. Incremental tax revenues (generated by privately sponsored commercial and industrial improvements) flow to the airport authority/redevelopment agency. At build out (estimated at 20 years) and upon retirement of indebtedness undertaken by the authority, these incremental tax revenues would begin to accrue to the respective taxing jurisdictions in that area (County of San Bernardino, Adelanto Elementary School District, Victor Valley Union High School District, as examples).

Various state and federal grant programs are available to support acquisition of airport-related property. Examples include the FAA Airport Improvement

Program and the California Aid to Airports Program. In addition, WVEDA itself may also be required to contribute a portion of the acquisition costs but funding sources for this phase of project development are unknown at this time. As presently conceived, the transfer of George AFB lands is proposed as a public benefit conveyance.

Because the airport is proposed to be funded principally through user charges, local taxes are not expected to be affected by project development. If, however, some portions of either acquisition or development are funded through general obligation bond instruments, increased local property taxes would be expected. Issuance of general obligation bonds, however, is subject to local voter approval.

Public services would be provided by existing agencies responsible for public service provision in the unincorporated area of Victor Valley. In addition, the airport authority itself would be responsible for provision of specialized fire suppression activities and security for direct airport-related activities. If member jurisdiction of the airport authority is required to contribute additional money to maintain the airport, increased local taxes and/or impact to local public services (reduced service level) may be required.

Because WVEDA is assumed to be formed as an airport authority and redevelopment agency, any incremental property tax revenues generated by project activities are assumed to flow to the redevelopment agency and not to the general purpose governmental units in the Victor Valley area. However, these general purpose governmental units would still be required to provide increased municipal services to the area. Although these governmental units would not directly benefit from any direct increased property tax revenues which would be attributable to project activities, they still would benefit from increased revenues from other sources which typically accrue to these jurisdictions. These include sales tax revenue, other non-airport related user and service charges, developer fees, license and permit revenue, and intergovernmental transfers, as examples. The net fiscal effects for each governmental unit which are presented below exclude the potential benefits associated with the foregone incremental property tax revenue but do include projected increase in revenues from these other revenue sources as well as the projected increase in public service outlays due to the additional population base requiring public services. No direct project-related property tax revenues are assumed to accrue to the area within jurisdictions under the purview of the Redevelopment agency.

Although each jurisdiction may negotiate with the redevelopment agency to establish trust funds through which a portion of the tax revenues collected by the redevelopment agency would be used to support a jurisdiction's public service costs, the nature and terms of any such agreements would be at the discretion of the redevelopment agency and are unknown at this time. Therefore, no such agreements were assumed for this analysis.

City of Adelanto

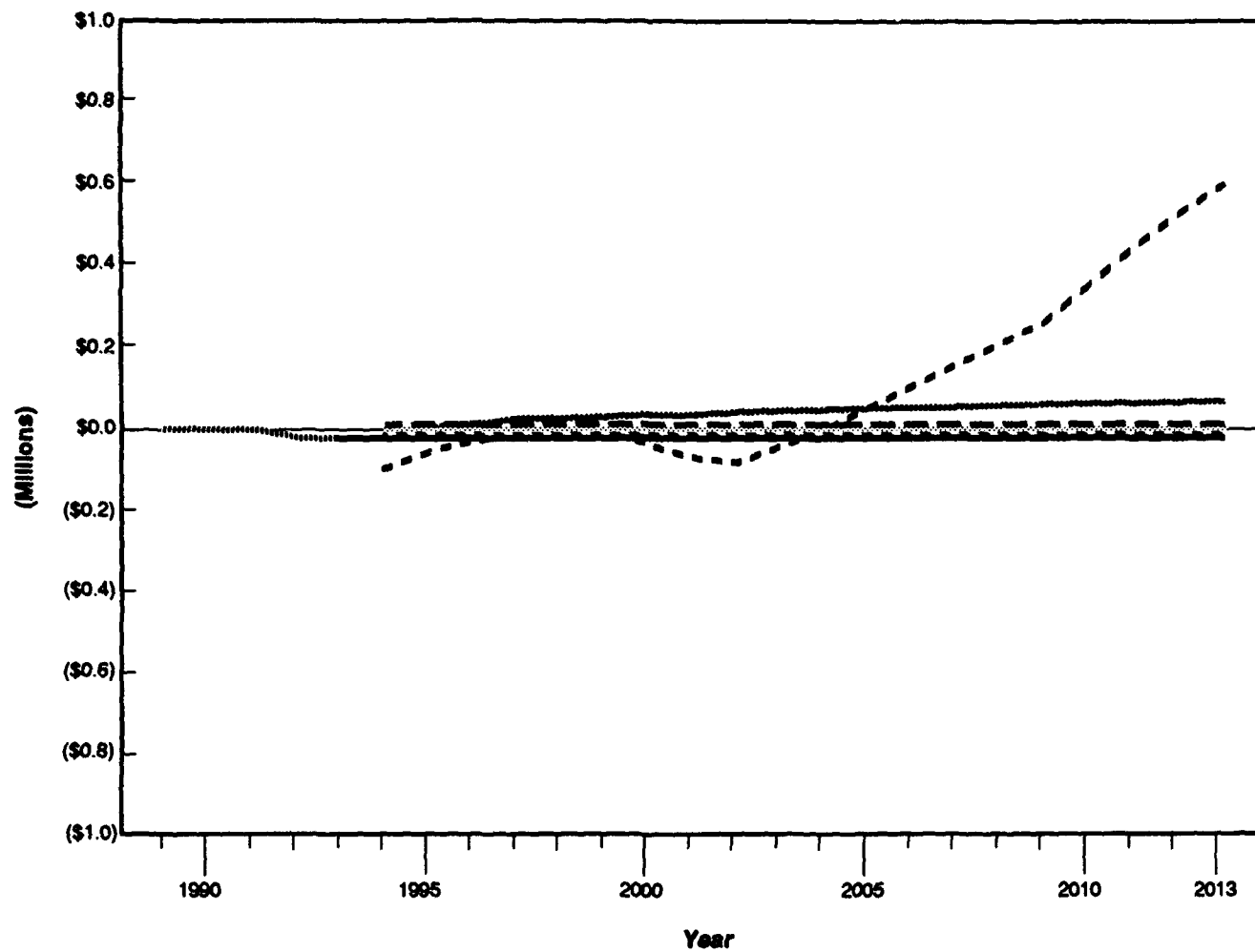
Analysis of the projected fiscal effects of the Proposed Action by itself indicates a net positive effect when compared to closure conditions (base closed and under caretaker status, Figure 4.4-1). However, projected surpluses of the proposed action by itself would not be sufficient to bring the city into a positive fiscal position until FY 2000. During the early years of project development, shortfalls ranging up to \$30,000 (occurring in FY 1994 and decreasing annually through FY 2000) are projected. The revenue calculations do not take into account the effects from Proposition 13. Under Proposition 13, whenever a home is sold its value is reassessed by the county for property tax purposes. The strong level of housing demand projected over the next twenty years may result in higher property tax collections for those inparted jurisdictions due to the turnover in housing anticipated from the base's closure and subsequent reuse. By FY 2001, the projected revenue increases, principally due to increased sales tax collections, would be sufficient to offset projected negative impacts under the closure scenario.

It should be noted, however, that under this reuse scenario, budget levels of the city of Adelanto would remain lower than under preclosure conditions (not counting effects associated with other non-base related growth). Base closure would result in reduced revenues and expenditures of approximately \$400,000, while under this reuse alternative increased revenues and expenditures would amount to \$200,000 to \$250,000 by buildout. Because the base is not within the boundaries of the city and also is not proposed for annexation by the city under this reuse alternative, the presence of a redevelopment agency (and the accrual of incremental property taxes by this agency) would not have a direct effect on projected revenues of the city.

This analysis assumes spending patterns of the new population and business base remain as under preclosure conditions. Changing patterns, such as increased ancillary spending or business development in the immediate Adelanto area, would increase the positive impacts while decreased secondary development in the Adelanto area would reduce the positive effects. The recent increase in the state sales tax from a base rate of 6 percent to 7.25 percent would not affect local collections, as the additional revenue collected go to the state's general fund. The projected revenue shortfalls during the FY 1994 to FY 2000 period would require the city to either develop alternative revenue sources and/or reduce service levels to maintain a balanced fiscal position.

Adelanto Elementary School District

The net fiscal position of the Adelanto Elementary School District would remain basically unchanged as that estimated under the closure scenario (Figure 4.4-2). Based on the state aid formulas used to calculate state aid payments, the additional student load from the proposed action itself would not generate sufficient revenues to offset the loss of P.L. 81-874 program revenues



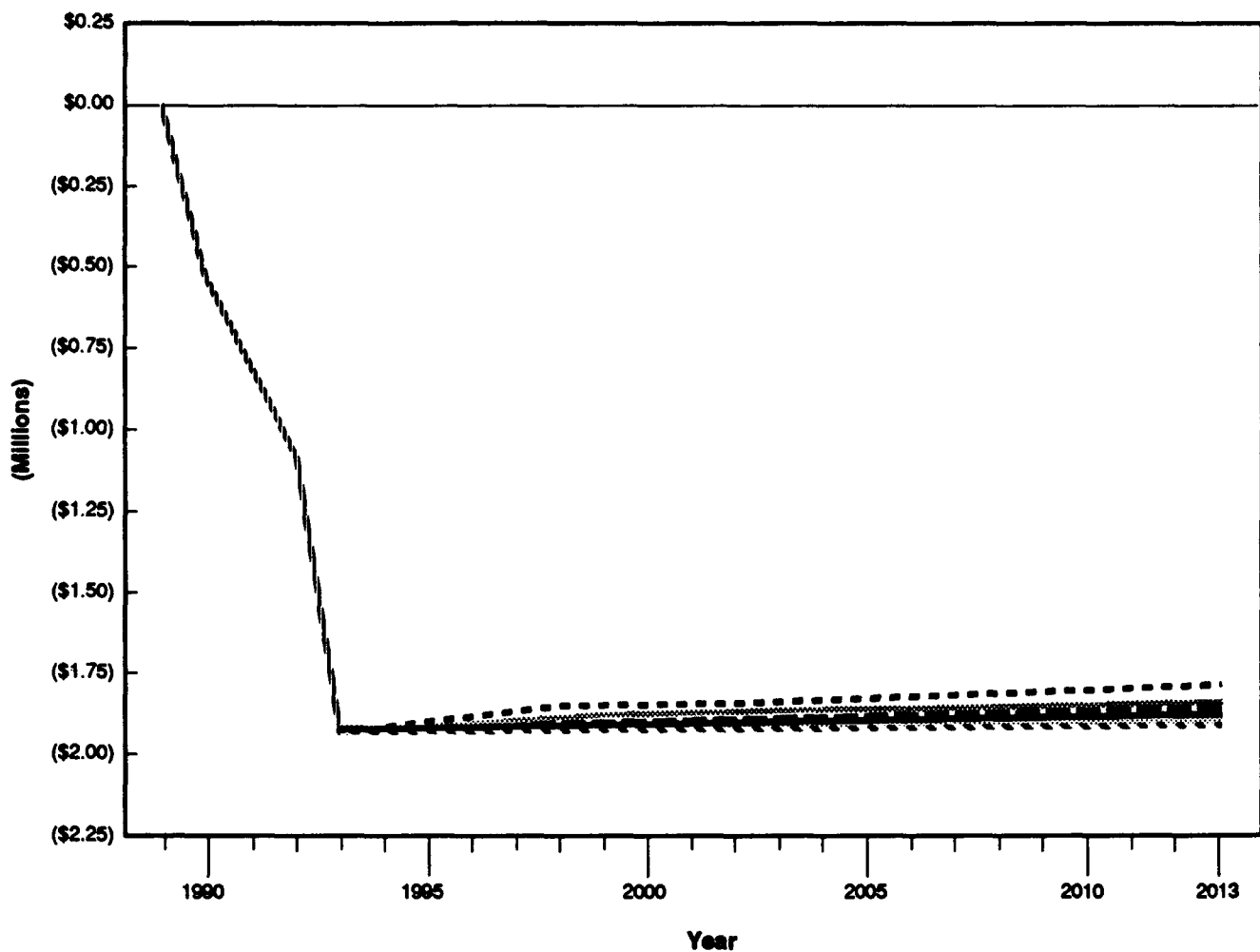
EXPLANATION

- No Action/Post-Closure
- Proposed Action
- - - International Airport
- Non-Aviation
- - - Commercial Airport
- - - General Aviation Center
- Preclosure

**Net Fiscal Effects,
City of Adelanto,
Proposed Action, and
Alternatives (1990\$)**

George AFB, California

Figure 4.4-1



EXPLANATION

- No Action/Post-Closure
- - - Proposed Action
- · · International Airport
- · - Non-Aviation
- - - Commercial Airport
- · - General Aviation Center
- * * * Preclosure

Net Fiscal Effects, Adelanto Elementary School District, Proposed Action, and Alternatives (1990\$)

George AFB, California

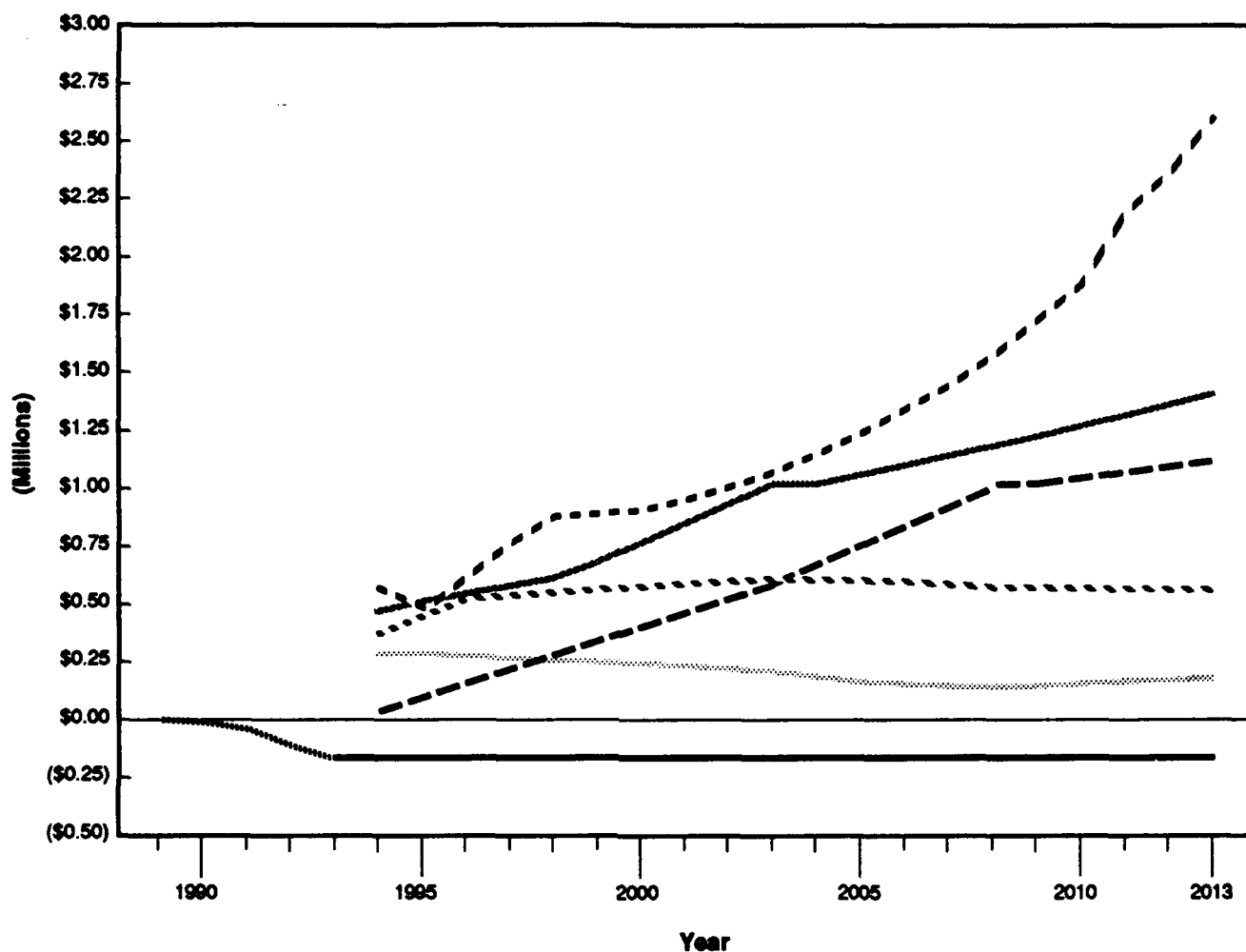
Figure 4.4-2

(lost P.L. 81-874 monies are not considered local source revenues and would not be made up through state sources). Revenue limit source revenue (based on per pupil revenue limits of \$2,450 in constant 1990 dollars), along with other non-revenue limit revenue sources, would generate approximately \$3 million in additional revenues, while increased direct instruction costs and additional support service costs would increase by a like amount at buildout. Because property tax collections would remain relatively stable (due to the incremental property taxes generated by project activities flowing to the Redevelopment Agency rather than the district), the increased revenue limit source revenue would be comprised principally of state apportionments. Foregone property tax revenues are estimated to be approximately \$1.3 million. The revenue calculations do not take into account the effects from Proposition 13. Under Proposition 13 whenever a home is sold its value is reassessed by the county for property tax purposes. The strong level of housing demand projected over the next twenty years may result in higher property tax collections for those imported jurisdictions due to the turnover in housing anticipated from the base's closure and subsequent reuse. Shortfalls (due principally to the previously lost P.L. 81-874 program revenues) would remain at approximately \$1.9 million.

These results assume Proposition 98 funding guarantees remain in effect at current levels. A reduction in the cost of living adjustments previously estimated for the district and/or reduced revenue availability at the state level would result in lower state revenue apportionments and increased shortfalls. Recent attempts to change existing statutes so that current year state aid apportionments can be based on prior year enrollment levels have not been successful. The recent increases in the state sales tax, however, could result in increased state revenues being available for educational purposes through the state equalization aid programs. The projected revenue shortfalls would require the district to develop alternative revenue sources and/or reduce service levels to maintain a balanced fiscal position.

City of Victorville

Under the VVEDA plan, the city of Victorville would stand to benefit substantially from conversion of the base to civilian use (Figure 4.4-3). For the Proposed Action itself, by buildout (FY 2013), increased revenues, principally from increased sales tax revenue, would amount to approximately \$5.5 million, while expenditure demands would amount to about \$4.0 million annually. This would reverse the deficit condition caused by base closure with the total net effect being a surplus of approximately \$1.4 million annually at buildout (FY 2013). This analysis assumes that the operational liabilities (and benefits) of airport operations remain vested in the independent airport authority. Similar to the city of Adelanto, because the base is not within the boundaries of the city of Victorville and also is not proposed for annexation by the city under this reuse alternative, the presence of a redevelopment agency (and the accrual of incremental property taxes by this agency) would not have a direct effect on projected revenues of the city. If, however, member jurisdictions of the airport



EXPLANATION

- No Action/Post-Closure
- Proposed Action
- - - International Airport
- Non-Aviation
- - - Commercial Airport
- - - General Aviation Center
- Preclosure

**Net Fiscal Effects,
City of Victorville,
Proposed Action, and
Alternatives (1990\$)**

George AFB, California

Figure 4.4-3

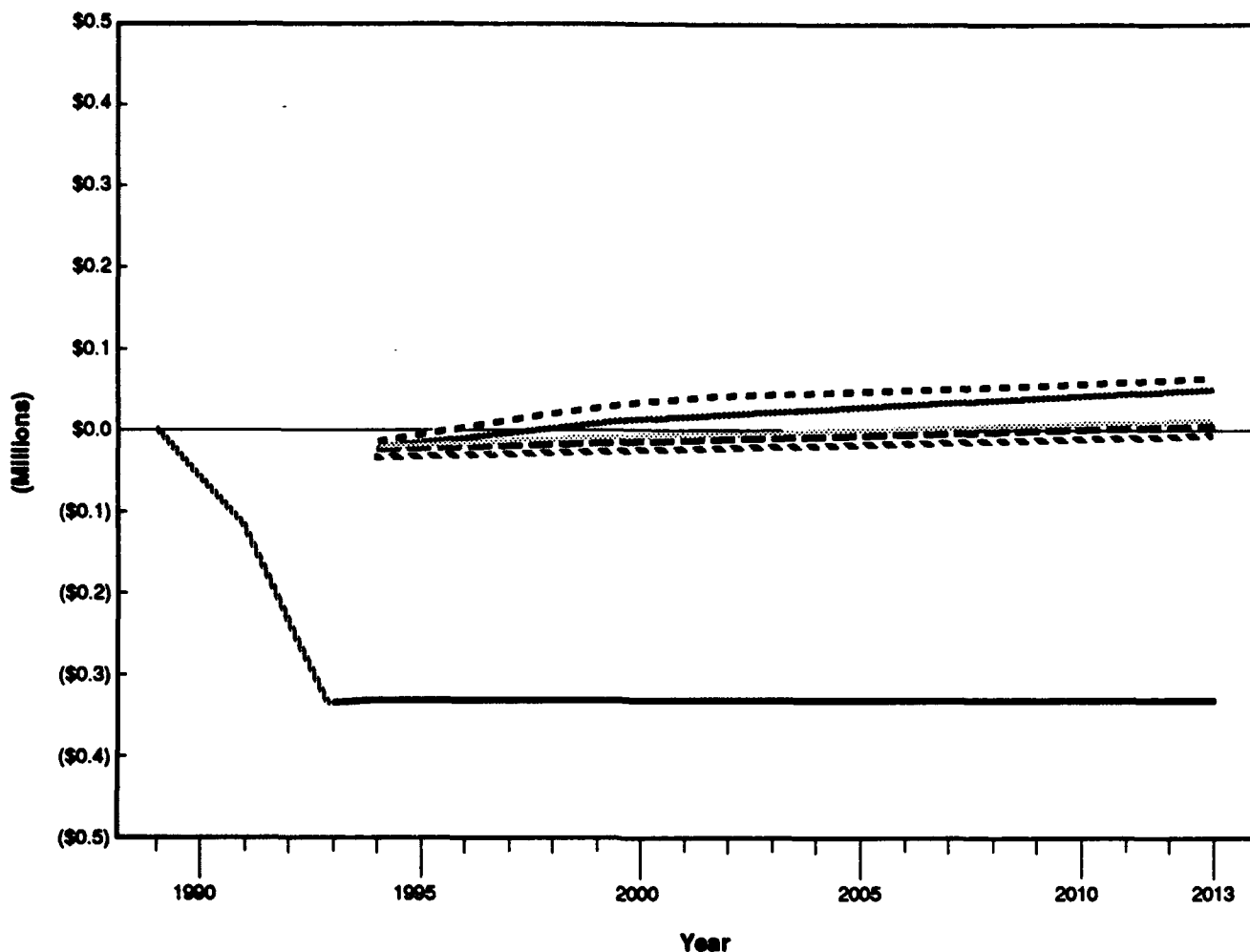
authority are required to contribute additional monies to maintain the airport, increased local taxes and/or impacts to local public services (reduced service levels) may be expected.

Victor Elementary School District

Net fiscal effects of the Proposed Action would represent a positive change compared to post-closure conditions (Figure 4.4-4). Based on revenue limits of approximately \$3,080 per pupil, these sources, along with other non-revenue limit local, state, and federal revenue sources, are projected to result in increased revenue collections of approximately \$4.5 million by buildout, while direct operational-related expenditures are projected at \$4.1 million. Because the district would not be in the proposed redevelopment area, the revenue limit source revenue would be comprised of both local property taxes and state aid revenue. These amounts would offset projected revenue losses of \$1.4 million and reduced expenditure demands of \$1.1 million projected under the closure baseline. However, the additional enrollment (net of the out-migration associated with base closure) may require additional facilities and capital expenditures. Based on a net increase of approximately 800 additional students by buildout, additional capital costs for new facilities could range between \$5 and \$7 million. These results are dependent upon similar assumptions regarding the availability of state funding as discussed above.

Victor Valley Union High School District

Net fiscal effects of the Proposed Action itself would represent a positive change compared to post-closure conditions (Figure 4.4-5). However, increased revenues during the build-up phase would not be sufficient to offset lost P.L. 81-874 revenues and the district would remain in a deficit position during the FY 1994 to FY 2013 period. By buildout, based on revenue limits of approximately \$ 3,320 per pupil (in constant 1990 dollars), these sources, along with other non-revenue limit local, state, and federal revenue sources, are projected to result in increased revenue collections of approximately \$ 5.5 million, while direct operational-related expenditures are projected at \$ 5.0 million. These amounts would offset projected revenue losses of \$ 5.1 million and reduced expenditure demands of \$ 4.4 million projected under post-closure conditions. Similar to the Adelanto Elementary School District, the increased revenue limit source revenue would be comprised principally of state apportionments and depend upon the continued availability of this revenue source at guaranteed levels. Foregone property tax revenues are estimated to be \$1.3 million annually. The revenue calculations do not take into account the effects from Proposition 13. Under Proposition 13, whenever a home is sold its value is reassessed by the county for property tax purposes. The strong level of housing demand projected over the next twenty years may result in higher property tax collections for those imported jurisdictions due to the turnover in housing anticipated from the base's closure and subsequent reuse. However,



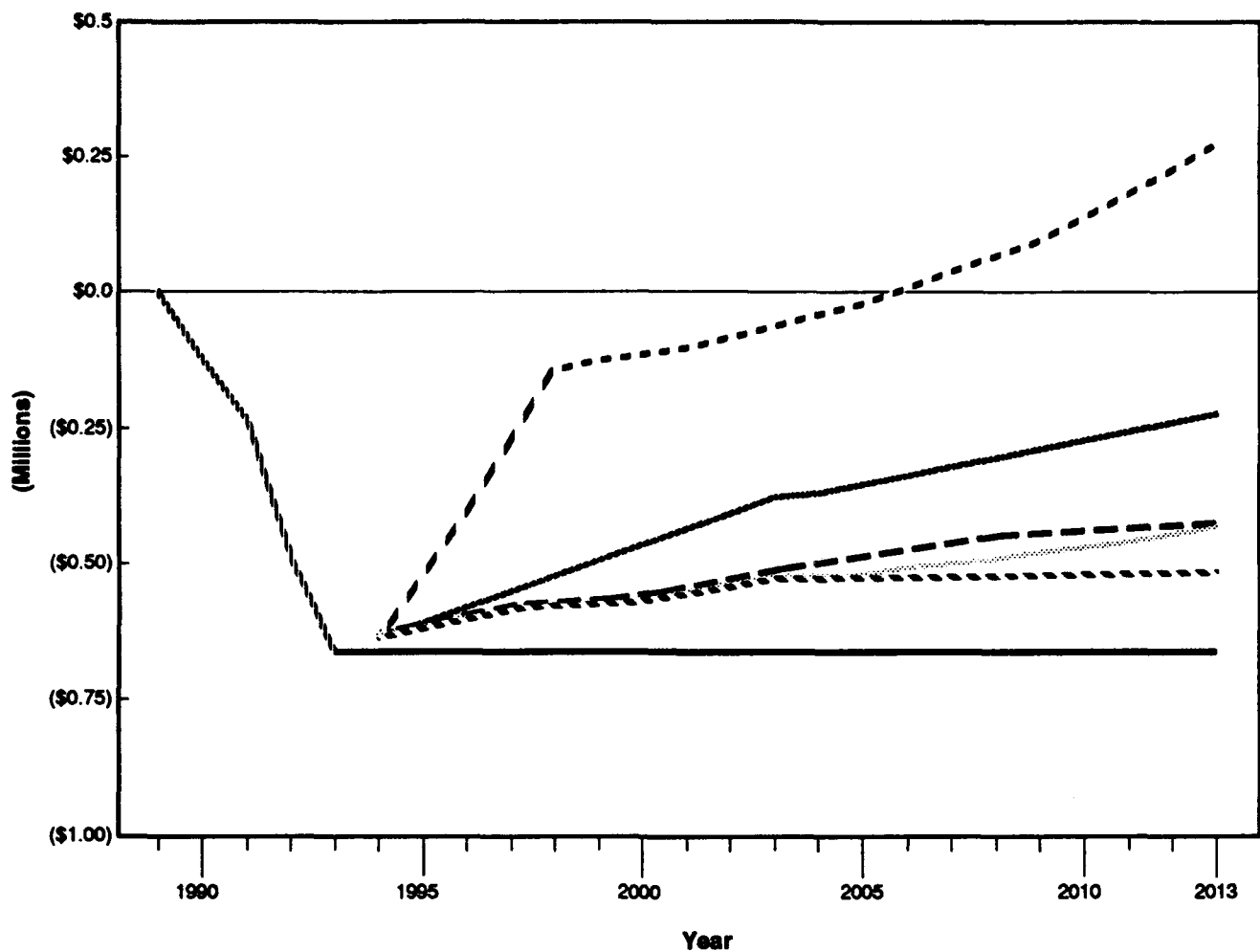
EXPLANATION

- No Action/Post-Closure
- Proposed Action
- ... International Airport
- ... Non-Aviation
- Commercial Airport
- General Aviation Center
- Preclosure

**Net Fiscal Effects,
Victor Elementary
School District,
Proposed Action, and
Alternatives (1990\$)**

George AFB, California

Figure 4.4-4



EXPLANATION

- No Action/Post-Closure
- - - Proposed Action
- - - International Airport
- Non-Aviation
- - - Commercial Airport
- - - General Aviation Center
- Preclosure

**Net Fiscal Effects,
Victor Valley Union
High School District,
Proposed Action, and
Alternatives (1990\$)**

George AFB, California

Figure 4.4-5

the additional enrollment (net of the out-migration associated with base closure) may require additional capital outlays for permanent or temporary facilities.

Town of Apple Valley

The town of Apple Valley is projected to benefit substantially under this alternative (Figure 4.4-6). This project assumes current tax rates and other revenue schedules remain unchanged over the period of analysis. By buildout, revenues directly associated with the Proposed Action would amount to about \$1.5 million (due principally from increased property and sales tax revenue), while expenditures are projected at approximately \$1.1 million. The projected surplus would more than offset deficits projected under post-closure conditions, over all years during the FY 1994-2013 period.

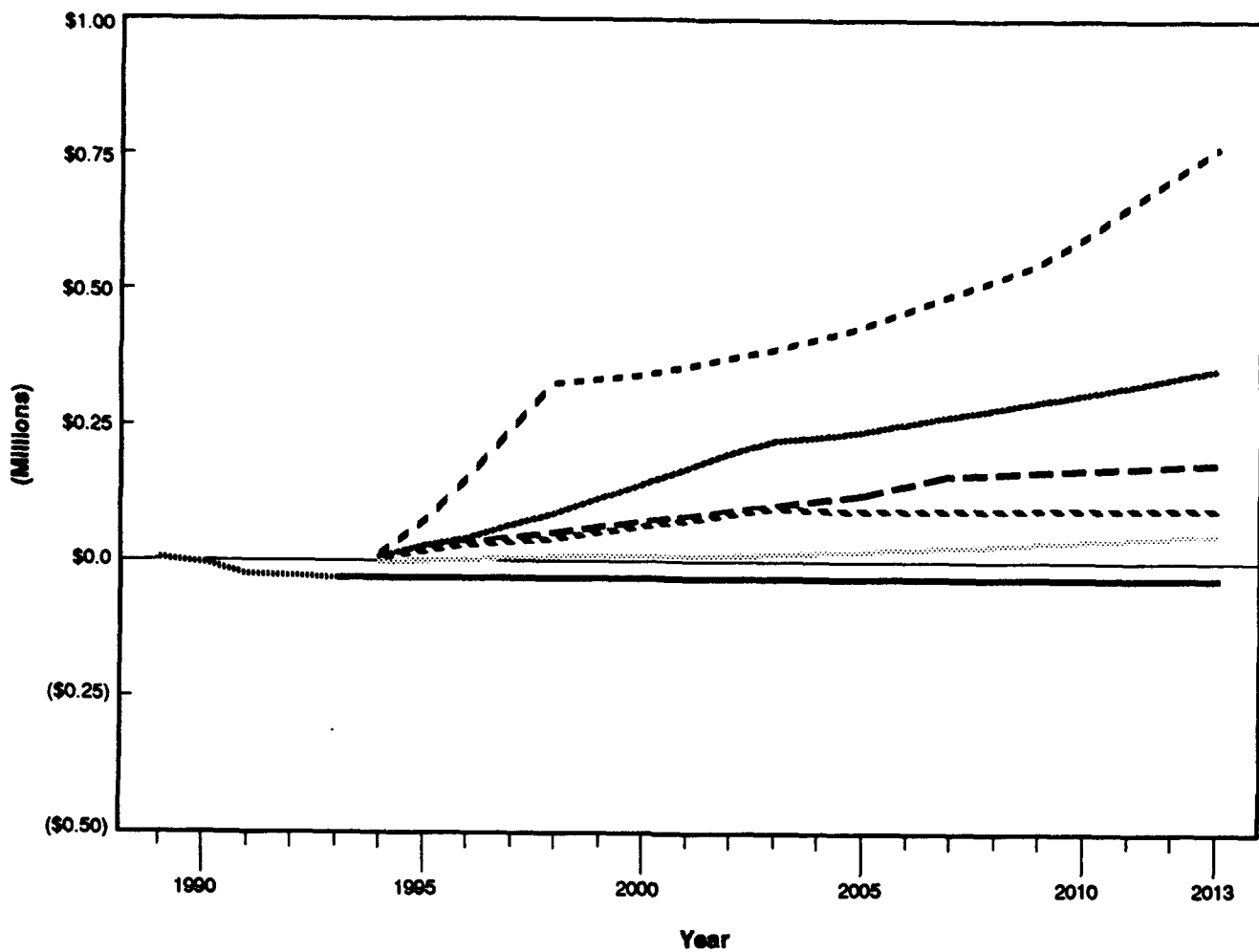
Because the base is not within the boundaries of the town, the presence of a redevelopment agency (and the accrual of incremental property taxes by this agency) would not have a direct effect on projected revenues of the town.

Apple Valley Unified School District

Net fiscal effects of the Proposed Action itself would represent a positive change compared to post-closure conditions (Figure 4.4-7). Based on revenue limits of approximately \$ 2,785 per pupil, these sources, along with other non-revenue limit local, state, and federal revenue sources, are projected to result in increased revenue collections of approximately \$ 4.7 million by buildout, while direct operational-related expenditures are projected at \$ 4.5 million. These amounts would offset projected revenue losses of \$ 1.3 million and reduced expenditure demands of \$1.2 million projected under post-closure conditions. However, the additional enrollment (net of the out-migration associated with base closure) may require additional facilities and capital expenditures. Based on a net increase of almost 1,000 additional students by buildout, additional capital costs could range between \$5 and \$10 million, depending on the type of facilities which would be required. Redevelopment agency activities would not have an effect on district finances.

VVEDA

VVEDA is composed of representatives of four local governments: the city of Victorville, the city of Hesperia, the town of Apple Valley, and San Bernardino County. It is a joint powers authority created for the purpose of planning and implementing the reuse of George AFB. Under the Proposed Action, VVEDA is reformed as an airport authority and a redevelopment agency which purchases or otherwise achieves control of all 5,300 acres of George AFB. VVEDA would serve as a commercial airport operator, a redevelopment agency, a landowner, and a landlord. The authority itself would have no taxing authority, and operating costs associated with these activities would be funded through a combination of user charges, terminal revenue, fuel flowage fees, lease



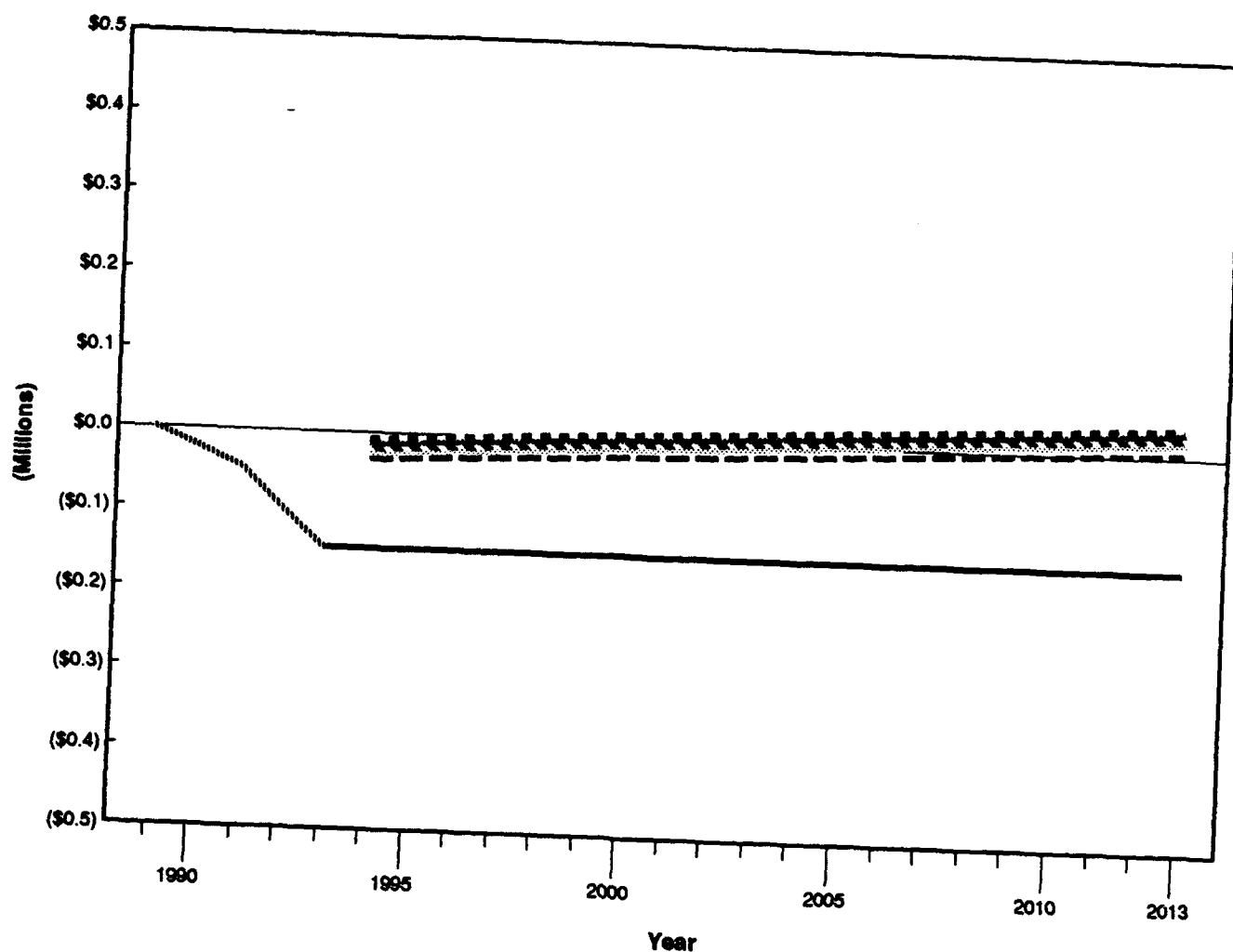
EXPLANATION

- No Action/Post-Closure
- Proposed Action
- - - International Airport
- Non-Aviation
- - - Commercial Airport
- - - General Aviation Center
- Preclosure

**Net Fiscal Effects,
Town of Apple Valley,
Proposed Action, and
Alternatives (1990\$)**

George AFB, California

Figure 4.4-6



EXPLANATION

- No Action/Post-Closure
- Proposed Action
- - - International Airport
- Non-Aviation
- - - Commercial Airport
- - - General Aviation Center
- Preclosure

**Net Fiscal Effects,
Apple Valley
Unified School District,
Proposed Action, and
Alternatives (1990\$)**

George AFB, California

Figure 4.4-7

revenues, redevelopment tax increments, and landing fees. Acquisition and development of base property would most likely be funded through a combination of grants and revenue bonds.

4.4.2 International Airport Alternative

Fiscal impacts to potentially affected jurisdictions under the International Airport Alternative are presented in this section. The results represent the net effects of the International Airport Alternative after accounting for the out-migration of the direct and indirect military and civilian jobs associated with phasing out the George AFB military mission.

The principal differences between this alternative and the Proposed Action are:

- The George AFB property, as well as land to the north of the base (approximately 62,100 acres) is annexed by the city of Adelanto
- The George AFB property is initially purchased by the city of Adelanto, turned into a redevelopment project under authority of the Adelanto Redevelopment Agency, and eventually sold to private interests. All other land is not purchased by the city, although 50 percent of the developable portion does become a redevelopment project(s).

The incremental property taxes generated by sale of improved George AFB property (approximately 5,300 acres or 8 square miles) will initially go to the Adelanto Redevelopment Agency. Incremental property taxes on 50 percent of the land not directly part of the George AFB development but potentially developable for residential, industrial, and commercial uses (approximately 31,050 acres or 49 square miles of the 62,100 acres or 97 square miles total developable property) also will flow initially to the Adelanto Redevelopment Agency. These incremental property taxes, estimated at \$138 million annually at buildout, would pay for the improvements undertaken by the city of Adelanto Redevelopment Agency. Property taxes accruing to school districts serving the area would be temporarily frozen at current levels. At the end of 20 years, assuming no extraordinary redevelopment improvements are undertaken, these taxes would begin to accrue to the respective taxing jurisdictions in that area (the City of Adelanto, the County of San Bernardino, the Adelanto Elementary School District, Victor Valley Union High School District, as examples).

Property taxes immediately accruing in the city of Adelanto's general fund (as well as other taxing agencies affected by the indirect development) would be those associated with the other 50 percent of the total potentially developable land not directly part of the George AFB conveyance and not part of any redevelopment project (31,050 acres or 49 square miles).

The airport would initially be operated by a regional airport authority, and as with other publicly-owned airports, operating expenses would be covered principally through user fees (landing and passenger fees) and terminal and

concession leases. Upon transfer to a private operator, these fees and leases would remain as the principal revenue sources to meet operating costs. Start-up costs would be funded through a combination of revenue bonds, general obligation bonds, city redevelopment tax increments, and grants.

- Operating staff levels and budgets for the International Airport would be comparable to those of LAX, Denver Stapleton, Dallas-Fort Worth, and other major international and hub airport facilities throughout the United States. The volume of revenues and expenditures would not, however, be likely to trigger federal limitations on excess profits from use of former federal land, since most net revenues would accrue in years beyond the 5-year excess profit limitation.

Various and federal programs are available to support acquisition of George AFB property. Examples include the FAA Airport Improvement Program and the California Aid to Airports Program. In addition, the city of Adelanto itself may also contribute a portion of the acquisition costs but funding sources for this phase of project development are unknown at this time.

Airport-related and other industrial-related infrastructure improvements would be funded through a combination of grants and revenue bonds.

Because airport operations are proposed to be funded principally through user charges and operated by an airport authority, local taxes are not expected to be affected by project development. If, however, some portions of either acquisition or development are funded through general obligation bond instruments, increased local property taxes would be expected. Issuance of general obligation bonds, however, are subject to local voter approval.

Public services would be provided by existing agencies responsible for public service provision in the unincorporated area of Victor Valley. In addition, the airport authority itself would be responsible for provision of specialized fire suppression activities and security for direct airport-related activities. If member jurisdiction of the airport authority is required to contribute additional money to maintain the airport, increased local taxes and/or impact to local public services (reduced service level) may be required.

Incremental property tax revenues generated by project activities are assumed to flow to the Adelanto Redevelopment Agency and not to the general purpose governmental units in the Victor Valley area. However, these general purpose governmental units still would be required to provide increased municipal services to this area. Although these governmental units would not directly benefit from any direct increased property tax revenues which would be attributable to project activities, they still would benefit from increased revenues from other sources which typically accrue to these jurisdictions. These include sales tax revenue, other non-airport related user and service charges, developer fees, license and permit revenue, and intergovernmental transfers, as examples. The revenue calculations do not take into account the effects from Proposition

13. Under Proposition 13 whenever a home is sold its value is reassessed by the county for property tax purposes. The strong level of housing demand projected over the next twenty years may result in higher property tax collections for those impacted jurisdictions due to the turnover in housing anticipated from the base's closure and subsequent reuse. The net fiscal effects for each governmental unit, which are presented below, exclude the potential benefits associated with the foregone incremental property tax revenue, but do include projected increases in revenues from these other sources, as well as the projected increase in public service outlays, due to the additional population base requiring public services. No direct project-related property tax revenues are assumed to accrue to these jurisdictions.

Although each jurisdiction may negotiate with the redevelopment agency to establish trust funds through which a portion of the tax revenues collected by the redevelopment agency would be used to support a jurisdiction's public service costs, the nature and terms of any such agreements would be at the discretion of the jurisdictions and the redevelopment agency, and are unknown at this time. Therefore, no such agreements were assumed for this analysis.

City of Adelanto

The city of Adelanto is projected to gain additional revenue in the long term under this alternative (Figure 4.4-1). However, because of the additional land acquired by annexation, the need to provide city services to this area, and the projected development schedule for this alternative, shortfalls are expected to occur in the early years of project development (FY 1994-2013). During the FY 1994 to 2003 time period, general and special revenue fund revenue and expenditure increases, due to the alternative itself, are expected to be about \$950,000 and \$1.0 million respectively, in FY 1993 and increase to about \$1.6 million and \$1.7 million, respectively, by FY 2003. Temporary shortfalls, ranging as high as \$100,000 during this period are projected. By FY 2004, revenue growth will outpace expenditure demands resulting in surpluses of approximately \$600,000 annually by buildout (FY 2013). By buildout, general and special revenue fund revenue increases, principally from increased property taxes on the annexed land not within the redevelopment project boundaries and sales tax revenue, are estimated to be \$2.4 million while expenditures are estimated at \$1.8 million.

Foregone property taxes on the land within the redevelopment project boundaries are projected at \$7.2 million.

The projected revenue shortfalls during the FY 1994-2003 period would require the city to either develop alternative revenue sources and/or reduce service levels to maintain a balanced fiscal position. Loans from the redevelopment agency also may be available during this period. The revenue calculations do not take into account the effects from Proposition 13. Under Proposition 13 whenever a home is sold its value is reassessed by the county for property tax

purposes. The strong level of housing demand projected over the next twenty years may result in higher property tax collections for those imported jurisdictions due to the turnover in housing anticipated from the base's closure and subsequent reuse.

Adelanto Elementary School District

Similar to effects under the Proposed Action, the net fiscal position of the Adelanto Elementary School District would remain basically unchanged from that estimated under post-closure conditions (Figure 4.4-2). The additional student load under this alternative would not generate sufficient revenues to offset the loss of P.L. 81-874 program revenues under post-closure conditions. Based on state formulas for calculating local revenue limits, along with other non-revenue limit revenue sources, projected reuse of the base would generate approximately \$6.5 million in additional revenues while increased direct instruction costs and additional support service costs would increase by a like amount at buildout. Because the incremental property taxes would flow to the redevelopment agency, the increased revenue limit source revenue would be comprised principally of state apportionments. Foregone property tax revenues are estimated at \$10.1 million annually. The revenue calculations do not take into account the effects from Proposition 13. Under Proposition 13 whenever a home is sold its value is reassessed by the county for property tax purposes. the strong level of housing demand projected over the next twenty years may result in higher property tax collections for those imported jurisdictions due to the turnover in housing anticipated from the base's closure and subsequent reuse. Shortfalls would remain at approximately \$1.9 million as a result of the lost P.L. 81-874 program revenues because of base closure.

In the absence of any negotiated agreements between the district and the redevelopment agency, other revenue sources would need to be made available to prevent reductions in service levels. These results also assume Proposition 98 funding guarantees remain in effect at current levels. A reduction in cost of living adjustments and/or reduced revenue availability at the state level would result in increased shortfalls.

City of Victorville

Similar to the city of Adelanto, the city of Victorville would stand to benefit substantially under this reuse alternative (Figure 4.4-3). Increased revenues, principally from increased sales taxes, charges for services, and property taxes, are projected at approximately \$12.3 million at buildout. Increased expenditure demands are projected to be \$9.5 million. Surpluses are projected in every year of the project which would more than offset deficits projected under post-closure conditions. Redevelopment activities would have no direct effect on city finances.

Victor Elementary School District

Net fiscal effects of this alternative would represent a positive change compared to the post-closure scenario (Figure 4.4-4). Increased operation and maintenance revenues would more than offset projected deficits projected under post-closure conditions. However, projected enrollment increases would require additional facilities and capital outlays. Depending upon the type and number of facilities required, general obligation bonds of up to \$ 20 million may be required. Redevelopment activities would have no direct effect on district finances.

Victor Valley Union School High District

The net fiscal effect of the alternative itself are projected surpluses through all years of the project (Figure 4.4-5). However, estimated increases in revenue limit source revenue, along with other non-revenue limit revenue sources, during the early years of project development (FYs 1994 to 2005) would not be sufficient to offset projected deficits under post-closure conditions. As indirect development associated with project activities continues; however, revenue growth would outpace expenditure demands and, by buildout, projected deficits under caretaker status would be offset.

Because the incremental property taxes would flow to the redevelopment agency, the increased revenue limit source revenue would be comprised principally of state apportionments. Foregone property tax revenues are estimated at \$10.1 million annually. The projected revenue shortfalls during the FY 1994-2005 period would require the district to either develop new revenue sources and/or reduce service levels to maintain a balanced fiscal position. The revenue calculations do not take into account the effects from Proposition 13. Under Proposition 13 whenever a home is sold its value is reassessed by the county for property tax purposes. The strong level of housing demand projected over the next twenty years may result in higher property tax collections for those imported jurisdictions due to the turnover in housing anticipated from the base's closure and subsequent reuse.

Town of Apple Valley

Similar to effects estimated for the other municipalities in the area, increased revenues would more than offset projected deficits under this alternative (Figure 4.4-6). Assuming expenditure patterns and both tax and non-tax revenue schedules remain unchanged, surpluses are projected in each year under this alternative. Redevelopment activities would have no direct effect on district finances.

Apple Valley Unified School District

Net fiscal effects of this alternative would represent a positive change compared to the post-closure scenario (Figure 4.4-7). Increased operation and maintenance revenues would more than offset projected deficits under closure baseline conditions. However, projected enrollment increases would require additional facilities and capital outlays. Depending upon the type and number of facilities required, capital outlays of up to \$10 to \$20 million may be required.

4.4.3 Commercial Airport with Residential Alternative

Fiscal impacts to potentially affected jurisdictions under the Commercial Airport with Residential Alternative are presented in this section. The results represent the net effects of this alternative after accounting for the out-migration of the direct and indirect military and civilian jobs associated with phasing out the George AFB military mission.

Several key assumptions regarding future jurisdictional control of base property have been made which influence the fiscal assessments presented below. Under this alternative:

- VVEDA is reformed as an airport authority and a redevelopment agency and purchases or otherwise achieves control of all 5,300 acres of George AFB
- Annexation by either neighboring jurisdictions (Adelanto and Victorville) is not proposed and public services are provided by San Bernardino County and other service providers in the area
- All land and airport-related improvements remain in public ownership. Non-airport related improvements in commercial, industrial, and residential areas (other than site development undertaken by the authority) would be performed by private interests
- The entire project area becomes a redevelopment project. Incremental tax revenues (generated by privately sponsored commercial, industrial, and residential improvements) flow to the airport authority/redevelopment agency. At buildout (estimated in 20 years) and upon retirement of indebtedness undertaken by the authority, these incremental tax revenues would begin to accrue to the respective taxing jurisdictions in that area (County of San Bernardino, Adelanto Elementary School District, Victor Valley Union High School District).

Various and federal grant programs to support acquisition of airport-related property are available. Examples include the FAA airport improvement Program and the California Aid to Airports Program. In addition, VVEDA itself may also be required to contribute a portion of the acquisition costs but funding sources for this phase of project development are unknown at this time. As presently conceived, the transfer of George AFB is proposed as a public benefit conveyance.

Airport-related improvements would be funded through a combination of grants and revenue bonds. Non-Airport related improvements in commercial, industrial, and residential areas (other than site development undertaken by authority) would be performed by private interests.

Because the airport is proposed to be funded principally through user charges, local taxes are not expected to be affected by project development. If, however, some portions of either acquisition or development are funded through general obligation bond instruments, increased local property taxes could be expected. Issuance of general obligation bonds, however, are subject to local voter approval.

Public services would be provided by existing agencies responsible for public service provision in the unincorporated area of Victor Valley. In addition, the airport authority itself would be responsible for provision of specialized fire suppression activities and security for direct airport-related activities. If member jurisdiction of the airport authority is required to contribute additional money to maintain the airport, increased local taxes and/or impact to local public services (reduced service level) may be required.

The fiscal effects associated with involvement of a redevelopment agency in project development would remain as discussed under the Proposed Action. The principal local jurisdictions affected by redevelopment activities would be the Adelanto Elementary School District and the Victor Valley Union High School District. Based on the projected development cost of \$195,900 per acre, property taxes foregone under this scenario are estimated at \$1.8 million in each district. The revenue calculations do not take into account the effects from Proposition 13. Under Proposition 13, whenever a home is sold its value is reassessed by the county for property tax purposes. The strong level of housing demand projected over the next twenty years may result in higher property tax collections for those imported jurisdictions due to the turnover in housing anticipated from the base's closure and subsequent reuse.

City of Adelanto

Lower population and employment impacts under this alternative, compared to the other alternatives, result in lower fiscal impacts as well. With the alternative itself, surpluses are projected in each year of the project. During the early years of the project (FYs 1993 to 2006), the surpluses would not be sufficient to offset projected deficits estimated under post-closure conditions (Figure 4.4-1). Other revenue sources would need to be developed or service levels reduced for the city to maintain a balanced fiscal position.

In addition, as in the Proposed Action, it should be noted that under this reuse scenario budget levels of the city of Adelanto would still remain lower than under preclosure conditions (not including effects associated with other non-base related growth). Base closure would result in reduced revenues and

expenditures of approximately \$400,000. Under this reuse alternative increased revenues and expenditures would amount to \$100,000 to \$130,000 by buildout.

This analysis assumes spending patterns of the new population and business base remain as under preclosure conditions. Changing patterns, such as increased ancillary spending or business development in the immediate Adelanto area, would increase the positive impacts while decreased secondary development in the Adelanto area would reduce the positive effects.

Adelanto Elementary School District

The net fiscal position of the Adelanto Elementary School District would remain basically unchanged from that estimated under post-closure conditions (Figure 4.4-2). The additional student load associated with this alternative, would not generate sufficient revenues to offset the loss of P.L. 81-874 program revenues under caretaker status. Based on state formulas for calculating local revenue limits, along with other non-revenue limit revenue sources, the alternative itself would generate approximately \$1.6 million in additional revenues, while increased direct instruction costs and additional support service costs would increase by a like amount at buildout. The revenue limit source revenues would be comprised principally of state apportionments. Foregone property tax revenue is estimated at \$1.8 million annually. Shortfalls would remain at approximately \$1.9 million, and require either reduced service levels and/or other revenue sources be made available to maintain a balanced fiscal position in the district.

City of Victorville

Under this alternative, the city of Victorville would stand to benefit substantially from conversion of the base to civilian use (Figure 4.4-3), although at slightly lower levels than estimated under the Proposed Action. For the alternative itself, by buildout, increased revenues, principally from increased sales tax revenue, would amount to approximately \$2.9 million while expenditure demands would amount to about \$1.6 million annually. This would reverse the deficit condition caused by base closure, with the total net effect being a surplus of approximately \$1.1 million annually at buildout. This projection assumes that the operational liabilities (and benefits) of airport operations remain vested in the independent airport authority, as previously discussed.

Victor Elementary School District

Net fiscal effects of this alternative would represent a positive change compared to post-closure conditions (Figure 4.4-4). Based on revenue limits of approximately \$3,060 per pupil, these sources, along with other non-revenue limit local, state, and federal revenue sources, are projected to result in increased revenue collections of approximately \$ 2.4 million by buildout, while direct operational-related expenditures are projected at \$ 2.0 million. These

amounts would offset projected revenue losses of \$ 1.4 million and reduced expenditure demands of \$ 1.1 million projected under post-closure conditions. However, the additional enrollment (net of the out-migration associated with base closure) may require additional facilities and capital expenditures.

Victor Valley Union High School District

Net fiscal effects of this alternative would represent a positive change compared to post-closure conditions (Figure 4.4-5). However, increased revenues would not be sufficient to offset lost P.L. 81-874 revenues and the district would remain in a deficit position over the period of analysis. By buildout, based on revenue limits of approximately \$ 3,320 per pupil, these sources, along with other non-revenue limit local, state, and federal revenue sources, are projected to result in increased revenue collections of approximately \$ 2.9 million while direct operational-related expenditures are projected at \$ 2.7 million. Foregone property tax revenues is estimated at \$1.8 million annually. Reduced service levels or increases in other revenue sources would be required for the district to maintain a balanced fiscal position.

Town of Apple Valley

Similar to the Proposed Action, the town of Apple Valley is projected to benefit under this alternative, although to a lesser degree than estimated for the Proposed Action (Figure 4.4-6). This projection assumes current tax rates and other revenue schedules remain unchanged over the period of analysis. By buildout, revenues directly associated with this alternative would amount to about \$ 0.8 million (due principally from increased property and sales tax revenue), while expenditures are projected at approximately \$ 0.6 million. The projected surplus would more than offset deficits projected under post-closure conditions.

Apple Valley Unified School District

Net fiscal effects of this alternative would represent a positive change compared to post-closure conditions (Figure 4.4-7). Based on revenue limits of approximately \$ 2,785 per pupil, these sources, along with other non-revenue limit local, state, and federal revenue sources, are projected to result in increased revenues of approximately \$ 2.5 million by buildout, while direct operational-related expenditures are projected at \$ 2.3 million. These amounts would offset projected revenue losses of \$ 1.3 million and reduced expenditure demands of \$ 1.2 million projected under post-closure conditions. However, the additional enrollment (net of the out-migration associated with base closure) may require additional facilities and capital expenditures.

4.4.4 General Aviation Center Alternative.

Fiscal impacts to potentially affected jurisdictions under the General Aviation Center Alternative are presented in this subsection. The results represent the

net effects of this alternative after accounting for the out-migration of the direct and indirect military and civilian jobs associated with phasing out the George AFB military mission.

Several key assumptions regarding jurisdictional control of base property have been made and which influence the fiscal assessments presented below. Under this alternative:

- Base property is not annexed by neighboring cities.
- Approximately 2,840 acres of the base are purchased by private interests and developed as a mix of aircraft-related, commercial, industrial, and residential uses. No redevelopment agency is involved in project development.
- The remaining acreage is transferred as a public benefit conveyance and is to be used as a combination of open space, recreation-related activities, and institutional uses.
- Public services would be provided by existing agencies (County of San Bernardino, appropriate local school districts, and utility companies). Property taxes would accrue to each respective taxing entity based upon the increased level of development within each taxing jurisdiction.

Under this alternative, without the involvement of a redevelopment agency in project development, property taxes would accrue to each respective taxing entity based upon the increased level of development within each taxing jurisdiction. No foregone property tax impacts are projected.

City of Adelanto

Lower employment and population impacts under this alternative would result in lower fiscal effects as well. Under this alternative, surpluses are projected in every year (Figure 4.4-1), however, these surpluses would not be sufficient to offset projected post-closure deficits from base closure. For the alternative itself, increased revenues are projected at about \$ 80,000 while expenditure increases are projected to be approximately \$ 80,000 at buildout. This compares to reduced revenues and expenditures of \$ 390,000 and \$ 360,000, respectively, under post-closure conditions. Reduced service levels and/or increases in other revenue sources would be required for the city to maintain a balanced fiscal position.

Adelanto Elementary School District

Similar to other alternatives, the net fiscal effect under this alternative would remain basically unchanged from post-closure conditions (Figure 4.4-2). Total budget levels would also be substantially less than under preclosure conditions. Under this alternative by itself, increased revenues and expenditures are projected to be about \$ 1.0 million, while under post-closure conditions reduced revenues and expenditures are estimated to be approximately \$ 8.1 million and \$ 6.2 million, respectively. Shortfalls would remain at \$1.9 million, requiring

either new revenue sources be made available or reduced service level to maintain a balanced fiscal position in the district.

City of Victorville

For this alternative itself, increased revenues at buildout are projected at approximately \$ 1.7 million while expenditure increases are estimated to be \$ 1.0 million. Surpluses are projected in every year which would more than offset deficits projected under the post-closure scenario (Figure 4.4-3).

Victor Elementary School District

The net fiscal effects of the alternative itself would represent a positive change compared to post-closure conditions (Figure 4.4-4). By buildout, increased revenues are projected to be \$ 1.4 million while expenditure increases are estimated at \$ 1.1 million. These surpluses would be sufficient to offset projected deficits estimated under post-closure conditions.

Victor Valley Union High School District

For the alternative itself, surpluses are projected in every year of project development (Figure 4.4-5). However, these surpluses would not be sufficient to offset projected post-closure deficits. By buildout, assuming current revenue and post-closure expenditure patterns continue over the period of analysis, shortfalls of \$ 500,000 would be expected. Reduced revenue levels and/or increases in other revenue sources would be required for the district to maintain a balanced fiscal position.

Town of Apple Valley

For the alternative itself, surpluses are projected in every year of project development (Figure 4.4-6). However, during the early years of the project (FY 1983-94), these surpluses would not be sufficient to offset projected deficits under post-closure conditions. These deficits would range up to about \$ 30,000 (in FY 1983). By FY 1985, project-related revenue increases would more than offset projected post-closure deficits. These shortfalls would represent less than one percent of the town's budget.

Apple Valley Unified School District

Similar to other alternatives, projected surpluses estimated for the alternative itself would offset projected deficits under post-closure conditions (Figure 4.4-7). For the alternative itself, revenue increases are projected at approximately \$ 2.0 million at buildout while expenditure increases are estimated at about \$ 1.8 million at buildout.

4.4.5 Non-Aviation Alternative

Fiscal impacts to potentially affected jurisdictions under the Non-Aviation Alternative are presented in this section. The results represent the net effects of this alternative after accounting for the out-migration of the direct and indirect military and civilian jobs associated with phasing out the George AFB military mission.

Several key assumptions regarding jurisdictional control of base property have been made which influence the fiscal assessments presented below. Under this alternative:

- Base property is not annexed by neighboring cities
- Conveyance to public agencies as a public benefit conveyance is limited to 290 acres proposed for recreational/vacant land uses and 510 acres proposed for institutional uses
- The remaining acreage (4,500 acres) is purchased by private interests and developed as a mix of commercial, industrial, and residential uses by private interests
- Public services would be provided by existing agencies (San Bernardino County, appropriate local school districts, and utility companies). Property taxes would accrue to each respective taxing entity based upon the increased level of development within each taxing jurisdiction.

Similar to the General Aviation Center Alternative, no redevelopment agency would be involved in project development, and property taxes would accrue to each respective taxing entity based upon the increased level of development within each taxing jurisdiction. This situation principally affects the Adelanto Elementary School District and the Victor Valley Union High School District. The revenue calculations do not take into account the effects from Proposition 13. Under Proposition 13, whenever a home is sold its value is reassessed by the county for property tax purposes. The strong level of housing demand projected over the next twenty years may result in higher property tax collections for those imported jurisdictions due to the turnover in housing anticipated from the base's closure and subsequent reuse.

City of Adelanto

Lower employment and population impacts under this alternative result in lower fiscal effects as well. Under this alternative, surpluses are projected in every year (Figure 4.4-1); however, these surpluses would not be sufficient to offset projected post-closure deficits from base closure. For the alternative itself, increased revenues are projected at about \$ 110,000, while expenditure increases are projected to be approximately \$ 90,000 at buildout. This compares to lost revenues and expenditures of \$ 390,000 and \$ 360,000, respectively, under post-closure conditions. Reduced service levels or

increases in other revenue sources would be required for the city to maintain a balanced fiscal position.

Adelanto Elementary School District

Similar to other alternatives, the net fiscal effect under this alternative would remain basically unchanged as that estimated under post-closure conditions (Figure 4.4-2). Total budget levels also would be substantially less than under preclosure conditions. Under this alternative by itself, increased revenues and expenditures are projected to be about \$ 1.4 million, while under post-closure conditions lost revenues and expenditures are estimated to be approximately \$ 8.1 million and \$ 6.2 million, respectively. Shortfalls would remain at \$ 1.9 million, requiring either new revenue sources be made available or reduced service levels to maintain a balanced fiscal position.

City of Victorville

For this alternative itself, increased revenues at buildout are projected at approximately \$ 2.0 million, while expenditure increases are estimated to be \$ 1.6 million. Surpluses are projected in every year which would more than offset projected deficits projected under post-closure conditions (Figure 4.4-3). Because of the lower population and employment effects estimated under this alternative compared to other alternatives, fiscal effects also are correspondingly lower.

Victor Elementary School District

The net fiscal effects of the alternative itself would represent a positive change compared to post-closure conditions (Figure 4.4-4). However, these surpluses would not be sufficient during the early years of the project (FYs 1994 to 2010) to offset projected deficits estimated as a result of base closure. Small shortfalls, estimated at approximately \$ 30,000 in the FY 1993, are projected which gradually decrease through FY 2010. Reduced service levels and/or increases in other revenue sources would be required to maintain a balanced fiscal position in the district.

Victor Valley Union High School District

For the alternative itself, surpluses are projected in every year of project development (Figure 4.4-5). However, these surpluses would not be sufficient to offset projected post-closure deficits. By buildout, assuming current revenue and expenditure patterns continue over the period of analysis, shortfalls of \$ 400,000 would be expected. Reduced service levels and/or increases in other revenue sources would be required to maintain a balanced fiscal position in the district.

Town of Apple Valley

Under this alternative, surpluses are projected in every year of project development (Figure 4.4-6). However, during the early years (FYs 1994 to 2003), these surpluses would not be sufficient to offset projected deficits under post-closure conditions. These deficits would range up to about \$ 30,000 (in FY 1993). By FY 2004, projected revenue increases would more than offset projected post-closure deficits. These shortfalls would represent less than one percent of the town's budget.

Apple Valley Unified School District

Similar to other alternatives, projected surpluses estimated for the alternative would offset projected deficits under post-closure conditions (Figure 4.4-7). For the alternative itself, revenue increases are projected at approximately \$ 600,000 at buildout, while expenditure increases are estimated at about \$ 510,000 at buildout.

4.4.6 No-Action Alternative

Public finance impacts for the No-Action Alternative would be those described in Section 3.4.4 under closure baseline conditions.

4.5 TRANSPORTATION

The reuse of George AFB under the Proposed Action would lead to increased use of local roads and highways, especially in the vicinity of Adelanto and Victorville. Traffic volumes on community roadways would continue to increase through the year 2013. Air Base Road is the only roadway that currently provides direct access onto George AFB (via the Main and the Housing gates).

For analytical purposes in this study, Air Base Road is divided into two parts: Air Base Road East and Air Base Road West. Base-generated traffic bound for Victorville and I-15 would use Air Base Road East, and traffic having Adelanto for a destination would use Air Base Road West. Construction and renovation of on-site facilities are projected to take place throughout the study period. Effects of construction worker traffic have been added to the effects of traffic generated by potential on-base operations workers and visitors to the base area. U.S. 395 and Village Drive are also important to base generated traffic, with their direct connection to Air Base Road. Changes in the volume of peak-hour traffic on key community roads which are not due to project-generated traffic are assumed to be consistent with changes projected for Victor Valley population without the project. U.S. 395 would have the greatest non-project-generated traffic because it would start with a greater base in the year 1993. It would have a peak-hour volume of about 1,770 vehicles (LOS E without widening to more than its present two lanes) by the year 2013, not including project-generated traffic.

Roadway widening is generally accomplished when properties adjoining the roadway are improved. When widening is required after adjoining properties are already developed, it becomes necessary for local agencies (or the state, in the case of state highways) to institute roadway widening. This study also assumes that other roadway widenings will take place in years early enough to avoid unacceptable traffic conditions.

4.5.1 Proposed Action

4.5.1.1 Roadways. The roadways identified for this study as key community roads, and the percentage of base-generated traffic they are projected to carry, are: Air Base Road East (33 percent), Air Base Road West (15 percent), U.S. 395 (8 percent), Village Drive (19 percent), Shay Road (10 percent), El Mirage Road (10 percent), and Helendale Road (5 percent). The major traffic generator would be the 11,850 office park employees projected to use about 612 acres of land on the base by the year 2013. Other land uses include commercial aviation (about 1 MAP), general aviation (about 22,200 annual flights), aviation support, golf course, (20 employees), and parks and open space (30 employees).

Air Base Road East would be the most affected by the Proposed Action. After having an LOS of B at closure, it would degrade to an unacceptable LOS E by the year 1998, and would be unable to handle anticipated peak-hour traffic after that time. Likewise, by the year 1998, Air Base Road West would degrade to LOS C. If city and county plans for upgrading Air Base Road to a 4-lane highway are realized by 2013, the LOS for the entire length of that road would still be an acceptable LOS D that year, but would degrade after that time. U.S. 395 would degrade to LOS E without the project and require planned widening by the year 2003 under this alternative. Shay and El Mirage Roads would degrade to LOS E by 2013, but Village Drive and Helendale Road would maintain LOS B and C, respectively. More detailed descriptions of both on-base and off-base roadway conditions are found in Section 4.2.3 of the George AFB Disposal and Reuse EIS.

4.5.1.2 Air Transportation. The commercial airport identified under the Proposed Action would have a long-term (year 2013) passenger volume of approximately 1 MAP, although passenger volume could increase substantially beyond the 2013 study horizon. This passenger volume represents approximately 19 percent of the 1990 passenger traffic through Ontario International Airport (5.4 MAP), and 8 percent of the long-term projected traffic at Ontario (12 MAP).

SCAG recently completed forecasts of air passenger demand in southern California for the years 2000 and 2010 (SCAG, 1991b). Regional total air passenger demand was projected at approximately 90 MAP in the year 2000 and 118 MAP in the year 2010. These forecasts are substantially greater than the 58.7 MAP total of 1988. The commercial airport identified under the

Proposed Action would meet part of this unsatisfied demand for air travel. Other regional airports are expected to continue operating at or above capacity.

Air cargo shipments through the commercial airport under the Proposed Action can be expected to help meet the growing demand for air freight capacity projected by SCAG through the year 2010 (SCAG, 1991b).

4.5.1.3 Railroad Transportation. With the introduction of industrial uses at George AFB, the existing rail spur right-of-way extending east from the base about 2 miles to the Union Pacific/Santa Fe line, could be expected to be reconstructed to accommodate freight traffic. Depending upon the type of industrial uses developed at the base, the rail spur could be expected to serve one to five trains per week. Ridership on the AMTRAK system out of Victorville is expected to increase in proportion to population increases in the Victor Valley.

4.5.2 International Airport Alternative

4.5.2.1 Roadways. The roadways identified for this study as key community roads, and the percentage of base-generated traffic they are projected to carry, are: Air Base Road East (10 percent), Air Base Road West (5 percent), U.S. 395 (33 percent), Village Drive (12 percent), Desert Flower Road (20 percent), and El Mirage Road (20 percent).

The most important traffic generators would be the approximately 530 acres of hotel park area that could support nearly 26,000 resort hotel rooms and the airport terminal on the west side of the project area, with its projected 25,000,000 annual passengers by the year 2013. Between them, these two land uses would generate over 210,000 daily trips by the year 2013.

Parking for the International Airport Alternative is assumed to be provided in structures located just west of the terminal building, across from the terminal access road. The total number of parking spaces provided would be 1,500 to 2,500 per million enplaned passengers (18,750 to 31,250 for 12.5 million enplaned passengers). Assuming optimum rail transportation, the parking space requirement would be at the lower end of this range. Additional parking would be needed for airport employees and could be provided in portions of the area not containing airport operations (City of Adelanto, 1990).

All key community roads except Air Base Road West and Village Drive will require widening by the year 1998. Village Drive would not degrade to level E until after the year 2013. Air Base Road West would degrade to level F by the year 2013. If city and county plans for upgrading Air Base Road to a four-lane highway are realized by 1998, traffic conditions for that road would not degrade to LOS D that year. All key community roads would ultimately require upgrading to expressway status. More detailed descriptions of both off-base and on-base roadway conditions are found in Section 4.2.3 of the *George AFB Disposal and Reuse EIS*.

All of these effects assume that no form of public transportation would be available to potential commercial airline passengers. The city of Adelanto's High Desert International Airport (HDIA) plan assumes that the airport will remain relatively small until the Super Speed Train becomes available to the high desert. Construction of the Super Speed Train would considerably reduce roadway use in the Victorville/Adelanto area. Assuming that four trains per hour used a terminal at HDIA with 1,000 passengers on each train, these 4,000 passengers would save about 2,500 vehicles from the peak-hour volumes. This is equal to about 7 percent of the projected peak-hour traffic that could be generated by this alternative.

4.5.2.2 Air Transportation. The International Airport would handle 25 MAP by the year 2013. This passenger volume is nearly five times that of the 5.4 MAP handled by Ontario International Airport in 1990, and more than twice the 12 MAP volume projected at Ontario in the long term.

SCAG has forecast regional total air passenger demand at 118 MAP in the year 2010. Total air passenger volume through presently operating airports was estimated by SCAG to be constrained by airspace, ground noise, and ground access at approximately 63 MAP in the long term (SCAG, 1991b).

Consequently, by the horizon year used in this study (2013), about 55 MAP (118 MAP demand less 63 MAP capacity) in air travel demand would go unmet under SCAG's forecast without new airport development. The long-term passenger volume under the International Airport Alternative is well within this 55-MAP shortfall. Other regional airports consequently are expected to continue operating at or above capacity if the International Airport Alternative is implemented.

Air cargo shipments through the International Airport would help meet the growing demand for air freight capacity projected by SCAG (SCAG, 1991b).

4.5.2.3 Railroad Transportation. There would be no need for the reconstruction of a rail line on the existing rail right-of-way between the base and the Union Pacific/Santa Fe line about 2 miles to the east. Ridership on the AMTRAK system out of Victorville is expected to increase in proportion to population increases in the Victor Valley.

4.5.3 Commercial Airport with Residential Alternative

4.5.3.1 Roadways. The roadways identified for this study as key community roads, and the percentage of base-generated traffic they are projected to carry, are: Air Base Road East (33 percent), Air Base Road West (15 percent), U.S. 395 (8 percent), Village Drive (19 percent), Shay Road (10 percent), El Mirage Road (5 percent), Crippen Avenue (5 percent), and Helendale Road (5 percent).

The major generator would be the 8,200 dwelling units proposed on nearly 2,000 acres of base land by the year 2013. Other land uses include commercial aviation (about 1 MAP), general aviation (about 22,200 annual flights), aviation support (about 1,900 employees), commercial retail uses (about 280,000 square feet of floor space), college (about 700 students), high school (about 1,160 students), hospital (60 employees), and parks and open space (20 employees).

Air Base Road East would be most affected by this alternative. After having an LOS of B at closure, it would require widening by the year 1998. Likewise, by the year 1998, U.S. 395 would degrade to LOS F. Even if city and county plans for upgrading Air Base Road to a 4-lane highway are realized by 2013, the LOS for Air Base Road East would be an unacceptable LOS E that year. More detailed descriptions of both off-base and on-base roadway conditions are found on Section 4.2.3 of the *George AFB Disposal and Reuse EIS*.

4.5.3.2 Air Transportation. Air passenger volumes under the Commercial Airport with Residential Alternative are projected to be the same as for the Proposed Action. Air transportation impacts of this alternative, consequently, would be similar to those of the Proposed Action.

4.5.3.3 Railroad Transportation. With the introduction of industrial uses at George AFB, the existing rail spur right-of-way extending east from the base about 2 miles to the Union Pacific/Santa Fe line, may be reconstructed to accommodate freight traffic. Depending upon the type of industrial uses developed at the base, the rail spur could be expected to serve one to five trains per week. Ridership on the AMTRAK system out of Victorville is expected to increase in proportion to population increases in the Victor Valley.

4.5.4 General Aviation Center Alternative

4.5.4.1 Roadways. The roadways identified for this study as key community roads, and the percentage of base-generated traffic they are projected to carry, are: Air Base Road East (35 percent), Air Base Road West (20 percent), U.S. 395 (10 percent), Village Drive (20 percent), Shay Road (5 percent), and Crippen Avenue (10 percent).

The major traffic generator would be the 3,210 aviation support employees projected to use about 465 acres of land on the base by the year 2013. Other land uses include commercial/retail (about 1 million square feet of floor space), general aviation (about 50,000 annual flights), golf course (20 employees), and parks and open space (200 employees).

Air Base Road East would be most affected by the Proposed Action. After having a LOS of B at closure, it would require widening by the year 1998 to be able to handle anticipated peak-hour traffic after that. Likewise, by the year 1998, Air Base Road West would degrade to LOS E. If city and county plans for upgrading Air Base Road East to a 4-lane highway are realized by 1998, the

LOS for the entire length of the road would be an acceptable LOS B that year. U.S. 395 would degrade to LOS F by the year 1998 without the project. Crippen Avenue would degrade to LOS C by 2013. Village Drive and Shay Road would maintain LOS A and B, respectively. More detailed descriptions of both on-base and off-base roadway conditions are found in Section 4.2.3 of the *George AFB Disposal and Reuse EIS*.

4.5.4.2 Air Transportation. Implementation of the General Aviation Center Alternative would provide no commercial air passenger or air cargo service to meet projected regional demands.

4.5.4.3 Railroad Transportation. Ridership on the AMTRAK system out of Victorville is expected to increase in proportion to population increases in the Victor Valley.

4.5.5 Non-Aviation Alternative

4.5.5.1 Roadways. The roadways identified for this study as key community roads, and the percentage of project-generated traffic they are projected to carry, are: Air Base Road East (28 percent), Air Base Road West (13 percent), U.S. 395 (7 percent), Village Drive (16 percent), Shay Road (5 percent), Crippen Avenue (16 percent), El Mirage (10 percent), and Helendale Road (5 percent).

The major generator would be the proposed 13,150 residential units, developed in the project by the year 2013. Other land uses include commercial retail (218,000 square feet of floor space), business park (4,680 employees), high school students (about 1,160), college students (about 8,400), hospital (60 employees), golf course (20 employees), parks and open space (about 30 employees).

Air Base Road East would be most affected by the Non-Aviation Alternative. After having an LOS of B at closure, it would require widening by the year 1998. Likewise, by the year 2013, Air Base Road West would also require widening. Even if city and county plans for upgrading Air Base Road East to a four-lane highway are realized by 2013, the LOS would still degrade to level E that year. More detailed descriptions of both off-base and on-base roadway conditions are found in Section 4.2.3 of the *George AFB Disposal and Reuse EIS*.

4.5.5.2 Air Transportation. Implementation of the Non-Aviation Alternative would provide no commercial air passenger or air cargo service to meet projected regional demands.

4.5.5.3 Railroad Transportation. With the introduction of industrial uses at George AFB, the existing rail spur right-of-way extending east from the base about 2 miles to the Union Pacific/Santa Fe line could be expected to be reconstructed and serve one to five trains per week. Ridership on the AMTRAK

system out of Victorville is expected to increase in proportion to population increases in the Victor Valley.

4.5.6 No-Action Alternative

Transportation impacts of the No-Action Alternative would be the same as those conditions described in Section 3.4.5. With George AFB closed and in caretaker status, transportation demands in the study area would grow with area population.

4.6 UTILITIES

For each utility, the changes in land use associated with the Proposed Action and alternatives would likely create the need for changes in the existing distribution and collection systems at George AFB, including modifications to on-base water pumping and treatment facilities, wastewater collection systems, service providers for solid waste disposal, and distribution systems for electricity and natural gas. Utility corridors would likely be required and new service entrances with metering may be needed on existing facilities. The full extent of the effect of these changes, however, cannot presently be anticipated since only conceptual plans of future development currently exists for the site. Extensive changes in the on-base utility infrastructure systems would be subject to subsequent environmental review under the California Environmental Quality Act (CEQA), where applicable.

Although the reuse activities presently envisioned at George AFB are conceptual in nature, future water requirements could increase beyond present supply capabilities, particularly under the Proposed Action or International Airport Alternative. Furthermore, current extraction rates from the river wells that supply the base are in excess of levels granted by the California Department of Water Resources. If water consumption levels increase substantially from reuse, and/or adjudication of water rights in the Victor Valley limits the ability to pump from the existing river wells, several options may be available to future site developers for the provision of additional water. As indicated in baseline Section 3.2.5.1, water supply, of the accompanying EIS, George AFB studied several alternative plans to develop replacement and/or additional water supply infrastructure (Lee and Ro Consulting Engineers, 1984). Most of the alternatives studied by the Air Force would likely be considered by any future site developers, if procurement of additional water supply facilities were required. Other supply alternatives could also now exist that may also be considered.

Unless future site developers intend to completely replace existing water supply infrastructure to the base site, a relatively expensive undertaking, the city of Adelanto Water Department would be the most likely water purveyor for future development on George AFB. The Adelanto Water Department holds joint rights with the Air Force to pump from the river wells that presently supply water

to the base. Specific alterations to the water supply system would be dependent on the developers' requirements and the purveyors' plans to change the existing on-base supply infrastructure. Formal procedures, consisting of submission of a tariff map to the California Public Utilities Commission, as well as public review and hearings, would be required prior to annexation of the base site to the service area by the Adelanto Water Department or any other water purveyor.

As indicated in the baseline Section 3.2.5.2, Wastewater Treatment, of the accompanying EIS, VVWRA issued a CAO in 1987 which outlined seven specific non-compliance issues related to wastewater flows from George AFB received at the VVWRA treatment plant and a timetable with due dates for seven corrective actions that would bring the base into compliance with the VVWRA Sewer Use Ordinance. Since these corrective actions have not been completed by the Air Force, VVWRA has indicated that discharges from the base by future base occupants must fully comply with VVWRA ordinances if the base is to be served by VVWRA. VVWRA has also indicated that if one of its member agencies were to annex the site it would necessarily provide service to the site, although it would expect the member agency to complete any necessary improvements to eliminate hazardous discharges to the treatment plant.

It was assumed, for the analysis under each alternative, that the future site developers would undertake any corrective actions necessary to comply with VVWRA ordinances, including construction of pre-treatment facilities if necessary. Wastewater flows from the site would remain connected to the VVWRA interceptor system and treatment facilities. Under the International Airport Alternative, it was assumed that the city of Adelanto would annex the site. Because Adelanto is presently a member of VVWRA, the VVWRA treatment plant would necessarily accept effluent from the base site. Under each of the other alternatives, it was assumed that the site would remain an unincorporated area of San Bernardino County. VVEDA would become a regional airport redevelopment authority under the Proposed Action and the Commercial Airport with Residential Alternative, and although VVEDA is not presently a member of VVWRA, VVEDA is presently comprised of agencies that are VVWRA members. It is likely, therefore, that some arrangement, contractual or otherwise, could be made for the VVWRA treatment plant to accept effluent from the base site. Under the Non-Aviation Alternative, since VVWRA presently has other unincorporated areas of San Bernardino County in the Victor Valley as members, it is likely that a contractual or other type of arrangement could be made to include the base site into the service area of the VVWRA regional treatment plant.

Under any of the reuse alternatives, as indicated by VVWRA, necessary modifications to the existing on-base wastewater collection system, potentially including on-site pretreatment systems, would be required by VVWRA prior to acceptance of any wastewater flows.

For each of the reuse alternatives analyzed in this section, it was assumed that the site of George AFB would be serviced by local utility purveyors. It was also assumed that the specific infrastructural improvements required and the associated costs of such improvements would be borne directly or indirectly by the future site developer.

4.6.1 Proposed Action

Table 4.6-1 presents a summary of utility demand changes associated with the Proposed Action. In the short term, through about 1998, the increases in utility demand would range from 1 to 4 percent of the demand projected under post-closure conditions. By 2013, the increases in utility demand from this alternative would range from 4 to 8 percent over post-closure conditions. The increased population and resulting increase in utility demand from this alternative would require the various utility purveyors to make presently-planned long-term infrastructural improvements at most 1 to 2 years ahead of the schedule indicated by each purveyors' most recent forecasts. The overall changes to utility purveyors' short-and long-term plans, however, would not be substantially different from their current needs assessments which indicate the requirement for major improvements during the next two decades. Curtailments in interruptable services are not anticipated as a result of this alternative. The Upper Mojave river basin is in a state of overdraft. Groundwater levels continue to decline and are aggravated further by the dry weather condition in the region. Private wells in the region will be impacted by added demands created by this reuse alternative. Projected overdrafts may result in water supply shortages to people who access relatively shallow wells. The greater the overdraft, the higher the probability of a supply problem. The estimated contribution to the area's existing overdraft condition as a result of this alternative can be found in the discussion on groundwater, Section 4.4.2 of the *George AFB Disposal and Reuse EIS*.

4.6.2 International Airport Alternative

Short-term utility demand changes associated with the International Airport Alternative through about 1998 are greater than the increases associated with the Proposed Action (Table 4.6-2). These short term increases range from 5 to 16 percent over the demand projected under post-closure conditions. By 2013, utility demand increases from this alternative would reach levels of 7 to 17 percent over post-closure conditions. Increased utility demand resulting from population in-migration to the Victor Valley would require the various utility purveyors to make presently-planned long-term infrastructural improvements as many as 4 years ahead of schedules indicated by each purveyors' most recent forecasts. While this would accelerate utility purveyors' long-term planning strategies somewhat, their current needs assessments already indicate the requirement for major improvements during the next two decades. Curtailments in interruptable services are not anticipated as a result of this alternative.

Table 4.6-1. Utility Demand Changes in the Victor Valley, Proposed Action

	1993	1998	2003	2013
Water Demand				
Upper Basin Region (in MGD)				
Post-Closure	40.4	49.7	59.0	77.5
Proposed Action	40.4	51.5	62.8	83.6
Change from Post-Closure	0.0	1.8	3.9	6.1
Percent Change	0.0	3.7	6.5	7.9
Wastewater Generation				
VWRA Service Area (in MGD)				
Post-Closure	6.7	10.4	15.5	22.5
Proposed Action	6.7	10.8	16.6	24.3
Change from Post-Closure	0.0	0.4	1.1	1.8
Percent Change	0.0	4.0	6.8	8.0
Solid Waste Generation				
Victor Valley Landfills (in millions of cubic yards -- cumulative)				
Post-Closure	1.8	4.7	8.2	16.9
Proposed Action	1.8	4.7	8.4	17.8
Change from Post-Closure	0.0	0.1	0.3	0.9
Percent Change	0.0	1.5	3.2	5.3
Electricity Demand				
SCE Victorville District (in MWH/day)				
Post-Closure	4,801	6,192	7,592	10,275
Proposed Action	4,801	6,363	7,955	10,855
Change from Post-Closure	0	170	363	580
Percent Change	0.0	2.8	4.8	5.6
Natural Gas Demand				
SWG Victorville District (in therms/day)				
Post-Closure	305,680	446,616	588,698	875,154
Proposed Action	305,680	455,875	608,035	905,643
Change from Post-Closure	0	9,529	19,337	30,489
Percent Change	0.0	2.1	3.3	3.5

Sources: Projections developed for this study, April 1991; based on Mojave Water Agency, 1990; Victor Valley Wastewater Reclamation Authority, 1988a; San Bernardino County Solid Waste Management Department, 1989; 1991; California Energy Commission, 1990; Southern California Edison Company, 1991; Southwest Gas Company, 1991.

Table 4.6-2. Utility Demand Changes in the Victor Valley, International Airport Alternative

	1993	1998	2003	2013
Water Demand				
Upper Basin Region (in MGD)				
Post-Closure	40.4	49.7	59.0	77.5
International Airport Alternative	40.4	57.0	67.3	90.4
Change from Post-Closure	0.0	7.3	8.3	13.0
Percent Change	0.0	14.7	14.1	16.7
Wastewater Generation				
VVWRA Service Area (in MGD)				
Post-Closure	6.7	10.4	15.5	22.5
International Airport Alternative	6.7	12.0	17.8	26.4
Change from Post-Closure	0.0	1.6	2.3	3.8
Percent Change	0.0	15.7	14.8	17.1
Solid Waste Generation				
Victor Valley Landfills (in millions of cubic yards — cumulative)				
Post-Closure	1.8	4.7	8.2	16.9
International Airport Alternative	1.8	4.9	8.9	19.0
Change from Post-Closure	0.0	0.2	0.7	2.1
Percent Change	0.0	5.1	9.0	12.2
Electricity Demand				
SCE Victorville District (in MWH/day)				
Post-Closure	4,801	6,192	7,592	10,275
International Airport Alternative	4,801	6,867	8,376	10,511
Change from Post-Closure	0	674	784	1,236
Percent Change	0.0	10.9	10.3	12.0
Natural Gas Demand				
SWG Victorville District (in therms/day)				
Post-Closure	305,680	446,616	588,698	875,154
International Airport Alternative	305,680	483,270	630,461	940,105
Change from Post-Closure	0	36,654	41,763	64,952
Percent Change	0.0	8.2	7.1	7.4

Sources: Projections developed for this study, April 1991; based on Mojave Water Agency, 1990; Victor Valley Wastewater Reclamation Authority, 1988a; San Bernardino County Solid Waste Management Department, 1989; 1991; California Energy Commission, 1990; Southern California Edison Company, 1991; Southwest Gas Company, 1991.

The Upper Mojave river basin is in a state of overdraft. Groundwater levels continue to decline and are aggravated further by the dry weather conditions in the region. Private wells in the region would be impacted by the added demands created by this reuse alternative. Projected overdrafts may result in water supply shortages to people who have relatively shallow wells; the greater the overdraft, the higher the probability of a supply problem. The estimated contribution to the area's existing overdraft condition as a result of this alternative can be found in the discussion on groundwater, Section 4.4.2 of the *George AFB Disposal and Reuse EIS*.

4.6.3 Commercial Airport with Residential Alternative

A summary of utility demand changes associated with the Commercial Airport with Residential Alternative is presented in Table 4.6-3. During the short and long term, the increases in utility demand would range from 1 to 4 percent over the demand projected under post-closure conditions. Population changes and resulting increases in utility demands from this alternative would require the various utility purveyors to make presently-planned long-term infrastructural improvements at about the same schedule as indicated by each purveyors' most recent forecasts; no overall changes to utility purveyors' short- or long-term plans would be expected. Curtailments in interruptable services are not anticipated as a result of this alternative. The Upper Mojave river basin is in a state of overdraft. Groundwater levels continue to decline and are aggravated further by the dry weather conditions in the region. Private wells in the region would be impacted by the added demands created by this reuse alternative. Projected overdrafts may result in water supply shortages to people who have relatively shallow wells; the greater the overdraft, the higher the probability of a supply problem. The estimated contribution to the area's existing overdraft condition as a result of this alternative can be found in the discussion on groundwater, Section 4.4.2 of the *George AFB Disposal and Reuse EIS*.

4.6.4 General Aviation Center Alternative

Through 2003 the increases in utility demand associated with the General Aviation Center Alternative (Table 4.6-4) reflect increases similar to the Commercial Airport with Residential Alternative, less than 4 percent above post-closure. On through 2013 the demand levels out at approximately 3 percent above post-closure.

The population growth in the area and resulting increases in utility demands from this alternative would require the various utility purveyors to make current planned long-term infrastructural improvements at the same schedule they have indicated in their most current forecasts; no overall changes to these purveyors' short- and long-term plans are necessary. Curtailments in interruptable services are not anticipated as a result of this alternative.

**Table 4.6-3. Utility Demand Changes in the Victor Valley, Commercial Airport
with Residential Alternative**

	1993	1998	2003	2013
Water Demand				
Upper Basin Region (in MGD)				
Post-Closure Commercial Airport with Residential Alternative	40.4	49.7	59.0	77.5
Change from Post-Closure	40.4	50.8	60.9	80.7
Percent Change	0.0	1.1	2.0	3.2
	0.0	2.3	3.4	4.2
Wastewater Generation				
VWRA Service Area (in MGD)				
Post-Closure Commercial Airport with Residential Alternative	6.7	10.4	15.5	22.5
Change from Post-Closure	6.7	10.7	16.1	23.5
Percent Change	0.0	0.3	0.5	1.0
	0.0	2.5	3.5	4.2
Solid Waste Generation				
Victor Valley Landfills (in millions of cubic yards – cumulative)				
Post-Closure Commercial Airport with Residential Alternative	1.8	4.7	8.2	16.9
Change from Post-Closure	1.8	4.7	8.3	17.4
Percent Change	0.0	0.1	0.2	0.5
	0.0	1.1	1.9	3.0
Electricity Demand				
SCE Victorville District (in MWH/day)				
Post-Closure Commercial Airport with Residential Alternative	4,801	6,192	7,592	10,275
Change from Post-Closure	4,801	6,298	7,778	10,582
Percent Change	0	106	186	307
	0.0	1.7	2.5	3.0
Natural Gas Demand				
SWG Victorville District (in therms/day)				
Post-Closure Commercial Airport with Residential Alternative	305,680	446,616	588,698	875,154
Change from Post-Closure	305,680	452,367	598,628	891,293
Percent Change	0	5,721	9,930	16,139
	0.0	1.3	1.7	1.8

Sources: Projections developed for this study, April 1991; based on Mojave Water Agency, 1990; Victor Valley Wastewater Reclamation Authority, 1988a; San Bernardino County Solid Waste Management Department, 1989; 1991; California Energy Commission, 1990; Southern California Edison Company, 1991; Southwest Gas Company, 1991.

Table 4.6-4. Utility Demand Changes in the Victor Valley, General Aviation Center Alternative

	1993	1998	2003	2013
Water Demand				
Upper Basin Region (In MGD)				
Post-Closure	40.4	49.7	59.0	77.5
General Aviation Center Alternative	40.4	51.2	61.0	79.7
Change From Post-Closure	0.0	1.5	2.0	2.2
Percent Change	0.0	3.0	3.5	2.9
Wastewater Generation				
VWRA Service Area (In MGD)				
Post-Closure	6.7	10.4	15.5	22.5
General Aviation Center Alternative	6.7	10.7	16.1	23.2
Change From Post-Closure	0.0	0.3	0.6	0.7
Percent Change	0.0	3.2	3.6	2.9
Solid Waste Generation				
Victor Valley Landfills (In millions of cubic yards – cumulative)				
Post-Closure	1.8	4.7	8.2	16.9
General Aviation Center Alternative	1.8	4.7	8.3	17.3
Change From Post-Closure	0.0	0.1	0.2	0.5
Percent Change	0.0	1.5	2.3	2.7
Electricity Demand				
SCE Victorville District (In MWH/day)				
Post-Closure	4,801	6,192	7,592	10,275
General Aviation Center Alternative	4,801	6,329	7,784	10,486
Change From Post-Closure	0	137	192	211
Percent Change	0.0	2.2	2.5	2.1
Natural Gas Demand				
SWG Victorville District (In therms/day)				
Post-Closure	305,680	446,616	588,698	875,154
General Aviation Center Alternative	305,680	454,072	598,943	886,263
Change From Post-Closure	0	7,456	10,245	11,110
Percent Change	0.0	1.7	1.7	1.3

Sources: Projections developed for this study, April 1991; based on Mojave Water Agency, 1990; Victor Valley Wastewater Reclamation Authority, 1988; San Bernardino County Solid Waste Management Department, 1989; 1991; California Energy Commission, 1990; Southern California Edison Company, 1991; Southwest Gas Company, 1991.

4.6.5 Non-Aviation Alternative

In the short term, through about 1998, and throughout the 20-year forecast period to 2013, the increases in utility demand would remain within the 1 to 4 percent range over demand projected under post-closure conditions (Table 4.6-5). The increased population and resulting increase in utility demand from this alternative would require the various utility purveyors to make long-term infrastructural improvements about at about the same schedule as indicated by each purveyors' most recent forecasts, hence, no overall changes to utility purveyors' short- or long-term plans would be expected. Curtailments in interruptable services are not anticipated as a result of this alternative. The Upper Mojave river basin is in a state of overdraft. Groundwater levels continue to decline and are aggravated further by the dry weather conditions in the region. Private wells in the region would be impacted the by added demands created by this reuse alternative. Projected overdrafts may result in water supply shortages to people who have relatively shallow wells; the greater the overdraft, the higher the probability of a supply problem. The estimated contribution to the area's existing overdraft condition as a result of this alternative can be found in the discussion on groundwater, Section 4.4.2 of the *George AFB Disposal and Reuse EIS*.

4.6.6 No-Action Alternative

The conditions described under the closure baseline (Section 3.4.6) would remain unchanged under this alternative. Curtailments in interruptable services are not anticipated as a result of this alternative.

4.7 AIRSPACE

This section addresses the potential for conflicts and competition among airspace users in the vicinity of George AFB under each of the reuse scenarios. The post-closure baseline assumes that the base is placed in caretaker status without any reuse activity throughout the 20-year study period. Benefits associated with this caretaker status, as described for closure in Section 3.4.7, would continue through 2013, as follows:

- Absence of aviation uses at George AFB would have little impact on the efficiency of use of airspace associated with Ontario International Airport and Palmdale Airport
- Caretaker status of George AFB would not affect operating restrictions, management procedures, and efficiency of Edwards AFB airspace use
- Post-closure caretaker status would remove control zone radio contact requirements for pilots flying into and out of the Hesperia and Apple Valley airports, making operations near these airports somewhat easier.
- Caretaker status would remove control zone radio contact requirements for private airfield users in the vicinity of the base, though efficiency gains again would be small.

Table 4.6-5. Utility Demand Changes in the Victor Valley, Non-Aviation Alternative

	1993	1998	2003	2013
Water Demand				
Upper Basin Region (In MGD)				
Post-Closure	40.4	49.7	59.0	77.5
Non-Aviation Alternative	40.4	50.4	60.2	80.3
Change from Post-Closure	0.0	0.7	1.3	2.9
Percent Change	0.0	1.4	2.2	3.7
Wastewater Generation				
VWRA Service Area (In MGD)				
Post-Closure	6.7	10.4	15.5	22.5
Non-Aviation Alternative	6.7	10.6	15.9	23.4
Change from Post-Closure	0.0	0.2	0.4	0.8
Percent Change	0.0	1.5	2.3	3.8
Solid Waste Generation				
Victor Valley Landfills (In millions of cubic yards – cumulative)				
Post-Closure	1.8	4.7	8.2	16.9
Non-Aviation Alternative	1.8	4.7	8.3	17.3
Change from Post-Closure	0.0	0.0	0.1	0.4
Percent Change	0.0	0.6	1.1	2.1
Electricity Demand				
SCE Victorville District (In MWH/day)				
Post-Closure	4,801	6,192	7,592	10,275
Non-Aviation Alternative	4,801	6,257	7,714	10,547
Change from Post-Closure	0	64	122	273
Percent Change	0.0	1.0	1.6	2.7
Natural Gas Demand				
SWG Victorville District (In therms/day)				
Post-Closure	305,680	446,616	588,698	875,154
Non-Aviation Alternative	305,680	450,118	595,214	889,479
Change from Post-Closure	0	3,502	6,516	14,325
Percent Change	0.0	0.8	1.1	1.6

Sources: Projections developed for this study, April 1991; based on Mojave Water Agency, 1990; Victor Valley Wastewater Reclamation Authority, 1988a; San Bernardino County Solid Waste Management Department, 1989; 1991; California Energy Commission, 1990; Southern California Edison Company, 1991; Southwest Gas Company, 1991.

- Land use and airspace restrictions associated with airport operations would be eliminated or relaxed. Examples are the freedom to build in the former clear zone and bring the former airport and airspace for other industrial and recreational purposes.

Five standards of measure were applied to evaluate the Proposed Action and all alternatives (see Section 3.3.2):

1. The changes in operating restrictions, procedures, or regulations permissible at other facilities with non-aviation reuse of George AFB.
2. The changes in operating restrictions, procedures, or regulation necessary to accommodate aviation reuses at George AFB.
3. The possible competition with other commercial and general aviation activities.
4. The cumulative impacts from aviation reuses of Norton AFB.
5. The lost opportunities to non-aviation uses.

4.7.1 Proposed Action

Ontario International Airport's FAA representative reported that no operating procedures would require change under the Proposed Action (Ontario FAA, 1991). Some changes may be required to the flow of traffic transiting the region to accommodate added George AFB commercial airport traffic. Palmdale Airport's FAA representative reported that little initial change in procedures would be needed, although some adjustment may be necessary at higher air traffic volumes (Edwards FAA RAPCON, 1991). Edward's AFB's FAA representative reported that no new operating restrictions would be required under the Proposed Action, although some Edwards AFB approaching and departing air traffic flows may need adjustment (Edwards FAA RAPCON, 1991).

Hesperia and Apple Valley airports reported the potential for some competition under the Proposed Action resulting from general aviation uses at the new commercial airport, depending on fees charged (Hesperia Airport, 1991; Apple Valley Airport, 1991). These airports could experience losses in based aircraft to the new airport, although population growth associated with the Proposed Action may increase overall demand for general aviation services.

No competition under the Proposed Action was anticipated by the private airfield operator contacted (Palisades Ranch, 1991).

No cumulative impacts were identified from closure and reuse of Norton AFB on the Proposed Action at George AFB. Norton AFB lies within the 50-mile radius study area for George AFB, but the San Bernardino Mountains separating the two bases also separates their approach and takeoff lanes. As a consequence, activity at Norton AFB does not affect activity at George AFB, and activity at

George AFB does not affect Norton AFB. Airspace usage will limit certain developments within approach and departure areas, certain noise contour levels, and clear zoning concerns. Some non-aviation uses would now be prohibited or discouraged in the airport area. For example: residential, commercial and industrial structures that present a safety hazard to air traffic. Also recreational uses like trap shooting and ballooning would not be tolerated.

4.7.2 International Airport Alternative

Implementation of the International Airport Alternative would not require additional restrictions on operations at Ontario Airport, although through-traffic would be more congested than would be the case under post-closure conditions (Ontario FAA, 1991). Palmdale Airport approaching and departing air traffic would require segregation from International Airport traffic to a greater extent than under the Proposed Action (Edwards FAA RAPCON, 1991). Edwards AFB's range complex (R-2508) is projected to operate at or near capacity for test and training missions (Edwards AFB, 1991). The International Airport Alternative could cause encroachment into this airspace, thereby adversely affecting mission accomplishment.

The International Airport Alternative may potentially require aircraft flying into and out of the Hesperia and Apple Valley airports to be in radio contact with air traffic control. General aviation aircraft owners and operators using these airports typically are accustomed to unrestricted operations, and many do not have the communications equipment needed to operate in this type of environment. These owners would likely oppose reuses that limit their freedom to fly uncontrolled in the area, and would incur expenses associated with purchasing necessary radios and transponders. The International Airport Alternative also may impose communication or flight path controls that could limit flight school operations (Hesperia Airport, 1991).

It is not likely, however, that these requirements would prevent smaller airports from operating successfully in the vicinity of the new International Airport. Population growth would increase the demand for general aviation services which the smaller airports could meet. One owner cited the operation of small airports near LAX as an example (Hesperia Airport, 1991; Apple Valley Airport, 1991).

The private airfield owner contacted for this study reported that he expected to use his airfield without added restrictions if the International Airport Alternative were implemented (Palisades Ranch, 1991).

No cumulative impacts were identified from closure and reuse of Norton AFB on the International Airport Alternative at George AFB due to the mountainous terrain separating the two bases. Airspace usage will limit certain developments within approach and departure areas, certain noise contour levels, and clear zoning concerns. Some non-aviation uses would now be prohibited or

discouraged in the airport area. For example: residential, commercial and industrial structures that present a safety hazard to air traffic. Also recreational uses like trap shooting and ballooning would not be tolerated.

4.7.3 Commercial Airport with Residential Alternative

Aviation activities under this alternative would be very similar to those projected under the Proposed Action. Impacts on other commercial, military, and general aviation airspace users would consequently be very similar to the impacts of the Proposed Action. Airspace usage will limit certain developments within approach and departure areas, certain noise contour levels, and clear zoning concerns. Some non-aviation uses would now be prohibited or discouraged in the airport area. For example: residential, commercial and industrial structures that present a safety hazard to air traffic. Also recreational uses like trap shooting and ballooning would not be tolerated.

4.7.4 General Aviation Center Alternative

Impacts of this alternative on operation of Ontario and Palmdale airports and Edwards AFB would be negligible, since the volume of air traffic would be so small. Small airports in the vicinity would likely experience increased competition for general aviation services, depending on fees charged at the new General Aviation Center (Hesperia Airport, 1991; Apple Valley Airport, 1991). Operations at private airfields are not expected to be adversely affected (Palisades Ranch, 1991).

No cumulative impacts were identified from closure and reuse of Norton AFB on the General Aviation Center Alternative at George AFB, due to the mountainous terrain separating the two bases. Airspace usage will limit certain developments within approach and departure areas, certain noise contour levels, and clear zoning concerns. Some non-aviation uses would now be prohibited or discouraged in the airport area. For example: residential, commercial and industrial structures that present a safety hazard to air traffic. Also recreational uses like trap shooting and ballooning would not be tolerated.

4.7.5 Non-Aviation Alternative

Airspace impacts of this alternative are expected to be similar to the post-closure conditions described in the introduction to this section because no aviation reuse activities would occur.

4.7.6 No-Action Alternative

Airspace impacts of the No-Action Alternative are expected to be similar to the post-closure conditions described in the introduction to this section. Airspace usage will limit certain developments within approach and departure areas, certain noise contour levels, and clear zoning concerns.

4.8 EFFECTS OF OTHER LAND USE CONCEPTS

This study performs in-depth analysis only for those reuse options that, as a whole, provide an integrated plan for future site redevelopment. The other land use concepts described in Section 1.4.7 could occur on a piecemeal basis and would, therefore, selectively enhance or detract from site redevelopment. A descriptive treatment of these potential effects is presented in this section (and summarized in Table 4.8-1).

Several of these independent proposals would reduce total on-site employment if implemented in conjunction with either the Proposed Action or the International Airport Alternative, including those offered by the BOP, National Park Service, HUD, and the U.S. Department of Education. The BOP proposal, by which 650 direct jobs would be created but which would displace nearly 3,500 industrial job opportunities on the site, is the most extreme in this regard. The net effect of such displacement amounts to about 11 percent of the Proposed Action employment, and less than 6 percent of the total on-site employment afforded by the International Airport Alternative. By themselves, each of the other proposals would result in fewer job displacements. Combinations of these other land use concepts could represent major reductions in the employment opportunities afforded by these two alternatives, however, by utilization of base property that otherwise could be available for more labor intensive industrial and commercial uses.

Conversely, added on-site job opportunities would be afforded by the BOP proposal if it becomes part of either the Commercial Airport with Residential Alternative or the Non-Aviation Alternative, because residences rather than industrial or commercial establishments would be displaced. With these alternatives, the FCC jobs would increase on-site employment by about 8 percent for both alternatives.

As on-site employment (and thus earnings) are changed by these independent proposals, be it positively or negatively, local and regional secondary employment impacts of the various alternatives also would change. The degree to which these secondary effects are altered would depend on a number of factors, including the differences in non-payroll spending associated with independent proposals compared to displaced industrial or commercial endeavors, the differences in construction costs among the various land uses, and differences in the propensity to consume local goods and services by employees and occupants of the proposed facilities compared to those displaced.

Compatibility issues also could surface by the juxtaposition of certain land uses with one another. Both the FCC and the Work Furlough Program, for instance, could impact negatively the demand for housing on-site. In addition, the suitability of the Education Department's proposal in the midst of a major airport is questionable.

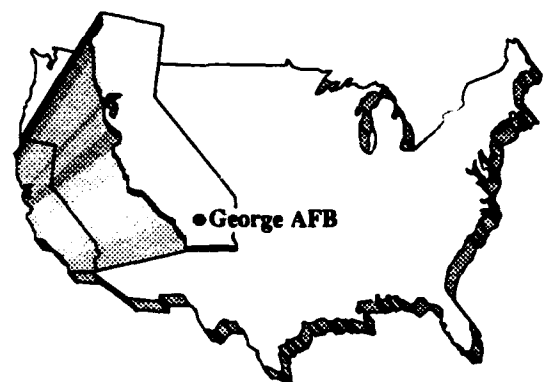
Neither the FAA's proposal for garage space nor the potential use of the base hospital by Victor Valley medical groups are expected to result in notable socioeconomic effects.

Table 4.8-1. Socioeconomic Effects of Other Land Use Concepts

Agency/Concept	Employment/Population	Relevant Alternative	Net Effect
U.S. Department of Justice Federal Bureau of Prisons/Prison	650 direct jobs; 2,375 inmates	Proposed Action	Reduced industrial development; net reduction of 2,836 on-site jobs.
		International Airport	Reduced industrial development; net reduction of 2,840 on-site jobs.
		Commercial Airport with Residential	Reduced residential development; net increase of 660 on-site jobs; residential opportunities by proximity to Federal Correctional Complex.
		Non-Aviation	Same effects as for Commercial Airport with Residential Alternative.
U.S. Department of the Interior National Park Service/ Recreational Facilities	5 direct jobs	International Airport	Reduced business park usage; net reduction of 205 on-site jobs.
U.S. Department of Housing and Urban Development/Alaska Circle	No direct jobs; 150 homeless persons	Proposed Action	Reduced industrial development; net reduction of 677 on-site jobs; positive impact to homeless population in region.
		International Airport	Reduced industrial development; net reduction of 1,700 on-site jobs; positive impact to homeless population in region.
U.S. Department of Transportation Federal Aviation Administration/Garage	None	All	Garage space for 7 vehicles; no socioeconomic effects.
U.S. Department of Education Adelanto School District/Schools	102 direct jobs; 1,161 students	Proposed Action	Reduced commercial development; net reduction of 578 jobs.
		International Airport	Reduced business park usage; net reduction of 45 jobs.
San Bernardino County Work Furlough Program/Dormitories	N/A	All	Existing dormitories used to house inmates in program; potential for reduced demand for residential opportunities by proximity to inmates.
Victor Valley Medical Facilities/ Private Medical Institution	N/A	All	Use of existing base hospital, probably for out-patient clinic, special purpose, or medical teaching facility; undetermined on-site employment impact.

Socioeconomic Impact Analysis Study for George AFB

THIS PAGE INTENTIONALLY LEFT BLANK



CHAPTER 5

COMPARATIVE ANALYSIS OF PROPOSED ACTION AND ALTERNATIVES

5.0 COMPARATIVE ANALYSIS OF PROPOSED ACTION AND ALTERNATIVES

5.1 ECONOMIC ACTIVITY

In both the short and the long term of the five reuse plans and the No-Action Alternative considered in this analysis, plans for the International Airport Alternative would provide the greatest stimulus to the regional and Victor Valley economies. The economic activities planned under the Proposed Action generate about half the number of jobs that would result from the International Airport Alternative. The Commercial Airport with Residential Alternative would generate about 60 percent of the number of jobs expected from the Proposed Action, and both the Non-Aviation Alternative and General Aviation Center Alternatives would each generate approximately 30 percent of the Proposed Action employment levels. Ultimately, all of the reuse plans except the No-Action Alternative, would generate more employment and earnings than were provided by George AFB prior to drawdown associated with the impending closure. The differences in projected regional and Victor Valley employment levels for each of the reuse plans from post-closure estimates (i.e., employment for each plan minus employment for caretaker status) are shown in Table 5.1-1 and Figures 5.1-1 and 5.1-2. For each of the reuse plans, both employment and earnings show continuous increases throughout the 21-year projection period.

The Proposed Action would begin reuse of the base in 1994, utilizing much of the existing aviation-related infrastructure as an airport facility with both commercial and general aviation activities. Airport-related industrial uses would also be expected under this scenario, as well as general, non-aviation-related, industrial uses. Part of the existing golf course would remain in use under a non-federal operation. Approximately 297 acres would be used as a regional or community park. Over 1,800 of the existing base housing units would be demolished, along with the existing base hospital and two elementary schools located on the base. The number of direct and secondary jobs that would result from implementation of the Proposed Action increases at a relatively stable rate during the 21-year projection period from about 68 interim caretaker jobs in 1993 to almost 51,000 jobs by 2013. Over the course of the next 2 decades, regional earnings would increase to almost \$1.4 billion annually due to the Proposed Action.

The International Airport Alternative would also begin in 1994, with most of the land area of the existing base converted to this use. Approximately 331 acres of land would be used as a business park, and a major hotel complex with nearly 26,000 rooms would be constructed. Additional acreage surrounding George AFB would also be required for purchase by an airport authority to ensure that

Table 5.1-1. Comparison of Reuse Alternatives
Page 1 of 4

	No-Action (Residual Base Operations and Caretaker Status)	Change from No-Action Alternative			
		Proposed Action	International Airport Alternative	Commercial Airport with Residential Alternative	General Aviation Center Alternative
Economic Activity Short-term effects (through 1993)					
	Employment	Minimal	Minimal	Minimal	Minimal
	Earnings (\$1990)	Minimal	Minimal	Minimal	Minimal
	Long-term effects (2013)				
Employment	From more than 8,600 jobs in 1989 to less than 70 jobs in 1993	More than 51,000 jobs	More than 105,000 jobs	More than 28,000 jobs	Almost 16,000 jobs
Earnings (\$1990)	From about \$178 million in 1989 to less than \$2 million in 1993	Almost \$1.4 billion	Almost \$2.8 billion	Almost 800 million	Almost 300 million
Population					
Short-term effects (through 1993)					
Military (including dependents)	From nearly 13,300 persons in 1990 to zero in 1993	Minimal	Minimal	Minimal	Minimal
Civilian	From more than 1,300 persons in 1980 to zero in 1993	Minimal	Minimal	Minimal	Minimal
Long-term effects (2013)	Zero site-related population change	About 30,700 people	Almost 65,000 people	About 18,500 people	Almost 9,700 people
Housing					
Short-term effects (through 1993)	From demand for almost 3,400 units in 1990 to zero demand	Minimal	Minimal	Minimal	Minimal
Long-term effects (2013)	Zero site-related housing demand	About 10,800 units	About 22,750 units	About 5,700 units	More than 3,300 units
Public Services					
Short-term effects (through 1993)					
General Government, Police, and Fire		Minimal	Minimal	Minimal	Minimal
City of Adelanto	From almost 2,400 site-related persons served in 1989 to zero in 1993	Minimal	Minimal	Minimal	Minimal

Table 5.1-1. Comparison of Reuse Alternatives
Page 2 of 4

	No-Action (Residual Base Operations and Caretaker Status)	Change from No-Action Alternative				
		Proposed Action	International Airport Alternative	Commercial Airport with Residential Alternative	General Aviation Center Alternative	Non-Aviation Alternative
City of Victorville	From nearly 2,900 site-related persons served in 1989 to zero in 1993	Minimal	Minimal	Minimal	Minimal	Minimal
San Bernardino County	Decline in site-related persons served from almost 18,000 in 1989 to zero in 1990	Minimal	Minimal	Minimal	Minimal	Minimal
Education	Decline in regional, site-related enrollments of almost 3,000 students in 1989 to zero in 1993	Minimal	Minimal	Minimal	Minimal	Minimal
Health	George AFB Hospital closed; increased cost for military retirees	Minimal	Minimal	Minimal	Minimal	Minimal
Long-term effects (2013) General Government, Police, and Fire						
City of Adelanto	Minimal site-related demand for services	Less than 1,200 site-related persons served	More than 11,800 persons served	About 600 persons served	Less than 400 persons served	Less than 550 persons served
City of Victorville	Minimal site-related demand for services	8,550 persons served	More than 18,200 persons served	About 4,500 persons served	About 2,700 persons served	About 4,000 persons served
San Bernardino County	Minimal site-related demand for services	Almost 30,000 persons served	More than 63,000 persons served	About 15,900 persons served	More than 9,400 persons served	About 13,700 persons served
Education	Zero site-related enrollments	More than 6,200 students	More than 13,100 students	More than 3,300 students	Almost 2,000 students	More than 2,800 students
Health	George AFB Hospital remains closed	Minimal	Minimal	Minimal	Minimal	Minimal
Public Finances						
Short-term effects (through 1993)						
City of Adelanto	Shortfalls to \$30,000/yr	Minimal	Minimal	Minimal	Minimal	Minimal
Adelanto School District	Shortfalls to \$1.9 million/yr	Minimal	Minimal	Minimal	Minimal	Minimal
City of Victorville	Shortfalls to \$150,000/yr	Minimal	Minimal	Minimal	Minimal	Minimal
Victor Elementary School District	Shortfalls to \$350,000/yr	Minimal	Minimal	Minimal	Minimal	Minimal
Town of Apple Valley	Shortfalls to \$40,000/yr	Minimal	Minimal	Minimal	Minimal	Minimal
Victor Valley Union High School District	Shortfalls to \$700,000/yr	Minimal	Minimal	Minimal	Minimal	Minimal
Apple Valley Unified School District	Shortfalls to \$180,000/yr	Minimal	Minimal	Minimal	Minimal	Minimal

Table 5.1-1. Comparison of Reuse Alternatives
Page 3 of 4

Change from No-Action Alternative						
	No-Action (Residual Base Operations and Caretaker Status)	Proposed Action	International Airport Alternative	Commercial Airport with Residential Alternative	General Aviation Center Alternative	Non-Aviation Alternative
Long-term effects (2013)						
City of Adelanto	Shortfalls to \$30,000/yr	Positive by FY 2000	Positive by FY 2004	Positive by FY 2007	Shortfalls decreasing to about \$10,000 by FY 2013	Shortfalls decreasing to about \$10,000 by FY 2013
Adelanto School District	Shortfalls to \$1.9 million/yr	Minimal	Minimal	Minimal	Minimal	Minimal
City of Victorville	Shortfalls to \$150,000/yr	Positive by FY 1994	Positive by FY 1994	Positive by FY 1994	Positive by FY 1994	Positive by FY 1994
Victor Elementary School District	Shortfalls to \$350,000/yr	Positive by FY 2000	Positive by FY 1996	Positive by FY 2007	Shortfalls decreasing to zero by FY 2013	Positive by FY 2011
Town of Apple Valley	Shortfalls to \$40,000/yr	Positive by FY 1994	Positive by FY 1994	Positive by FY 1995	Positive by FY 1995	Positive by FY 2003
Victor Valley Union High School District	Shortfalls to \$700,000/yr	Shortfalls decreasing to \$600,000 by FY 2013	Positive by FY 2006	Shortfalls decreasing to about \$400,000 by FY 2013	Shortfalls decreasing to about \$500,000 by FY 2013	Shortfalls decreasing to about \$400,000 by FY 2013
Apple Valley Unified School District	Shortfalls to \$160,000/yr	Positive by FY 1998	Positive by FY 1994	Positive by FY 2004	Positive by FY 2006	Positive by FY 2005
Roadways (LOS)						
Short-term (through 1993)						
Air Base Road East	LOS E upgraded to LOS B from 1980 to 1993	Minimal	Minimal	Minimal	Minimal	Minimal
Air Base Road West	LOS C upgraded to LOS A from 1980 to 1993	Minimal	Minimal	Minimal	Minimal	Minimal
U.S. 395	LOS D	Minimal	Minimal	Minimal	Minimal	Minimal
Village Drive	LOS A	Minimal	Minimal	Minimal	Minimal	Minimal
Shay Road	LOS A	Minimal	Minimal	Minimal	Minimal	Minimal
El Mirage Road	LOS A	Minimal	Minimal	Minimal	Minimal	Minimal
Helendale Road	LOS A	Minimal	Minimal	Minimal	Minimal	Minimal
Long-term (2013)						
Air Base Road East	LOS C	D**	C**	E**	B**	E**
Air Base Road West	LOS B	B**	B**	B**	E	B**
U.S. 395	LOS E	B**	D**	B**	B**	B**
Village Drive	LOS A	B	D	C	A	B
Shay Road	LOS A	E	N/A	E	B	D
El Mirage Road	LOS A	E	D**	D	N/A	E
Helendale Road	LOS A	C	N/A	D	N/A	D

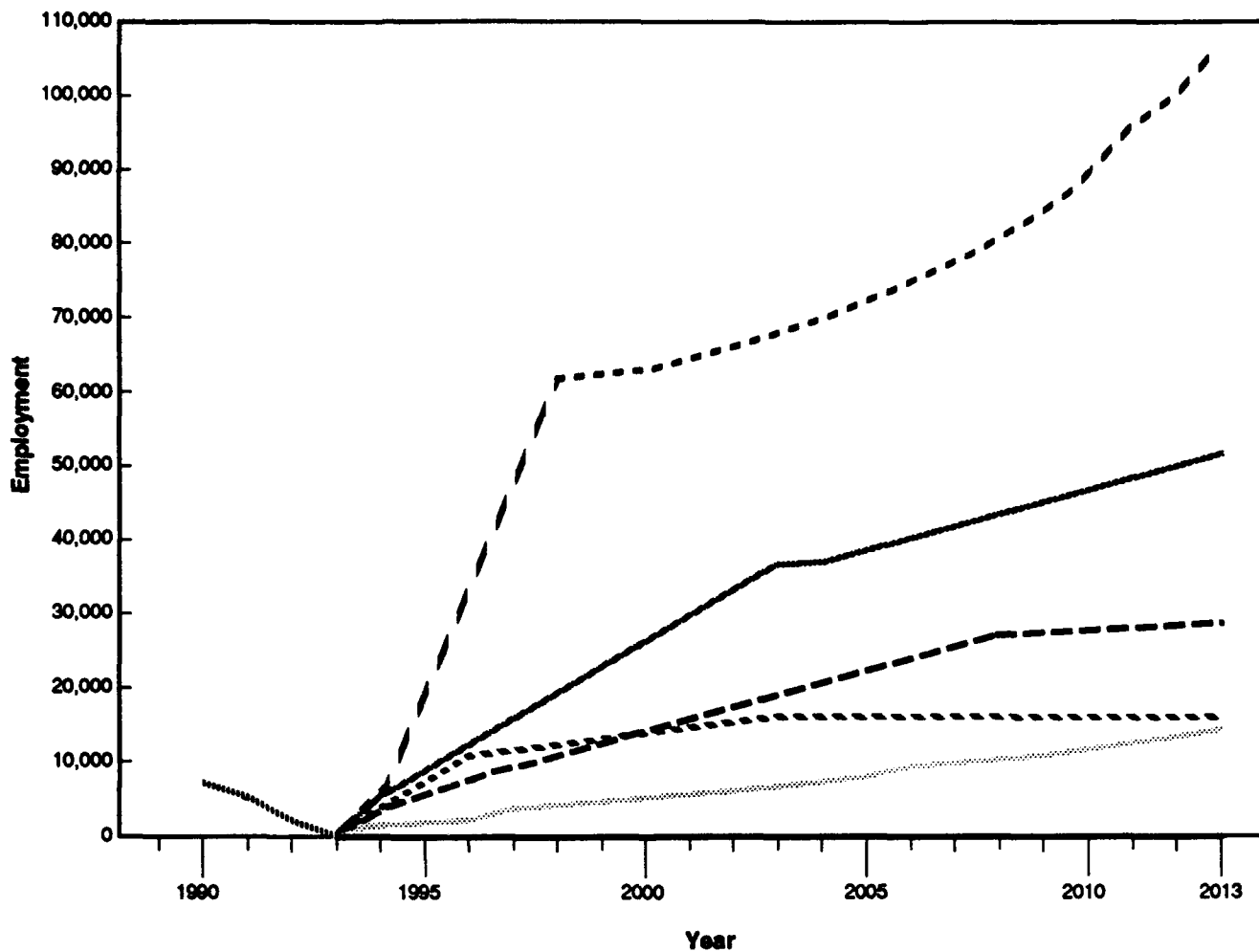
Socioeconomic Impact Analysis Study for George AFB

Table 5.1-1. Comparison of Reuse Alternatives
Page 4 of 4

	No-Action (Residual Base Operations and Caretaker Status)	Change from No-Action Alternative				Non-Aviation Alternative
		Proposed Action	International Airport Alternative	Commercial Airport with Residential Alternative	General Aviation Center Alternative	
Desert Flower	N/A	N/A	D*	N/A	N/A	N/A
Crippen Avenue	N/A	N/A	N/A	D	C	B**
Utilities						
Short-term effects (through 1993)						
Water	Reduced demand of 3.3 MGD	Minimal	Minimal	Minimal	Minimal	Minimal
Wastewater	Reduced generation of 0.6 MGD	Minimal	Minimal	Minimal	Minimal	Minimal
Solid Waste	Reduced cumulative landfill demand for almost 80,000 CY through 1993	Minimal	Minimal	Minimal	Minimal	Minimal
Electricity	Reduced demand of 300 MMH/day	Minimal	Minimal	Minimal	Minimal	Minimal
Natural Gas	Reduced demand of 16,000 therms/day	Minimal	Minimal	Minimal	Minimal	Minimal
Long-term effects (2013)						
Water	Reduced demand of 3.3 MGD	6.1 MGD	13.0 MGD	3.2 MGD	2.2 MGD	2.9 MGD
Wastewater	Reduced generation of 1.0 MGD	1.8 MGD	3.8 MGD	1.0 MGD	0.7 MGD	0.8 MGD
Solid Waste	Reduced cumulative landfill demand for almost 800,000 CY	800,000 CY	2,100,000 CY	500,000 CY	500,000 CY	400,000 CY
Electricity	Reduced demand of 300 MMH/day	590 MMH/day	1,236 MMH/day	307 MMH/day	211 MMH/day	273 MMH/day
Natural Gas	Reduced demand of 16,000 therms/day	30,500 therms/day	65,000 therms/day	16,000 therms/day	11,000 therms/day	14,300 therms/day

* No-Action alternative discussed in Chapter 3.

** This road segment will require widening before the year 2013.



EXPLANATION

- No Action/Post-Closure
- - - Proposed Action
- · · International Airport
- · · Non-Aviation
- - - Commercial Airport
- - - General Aviation Center
- · · Preclosure

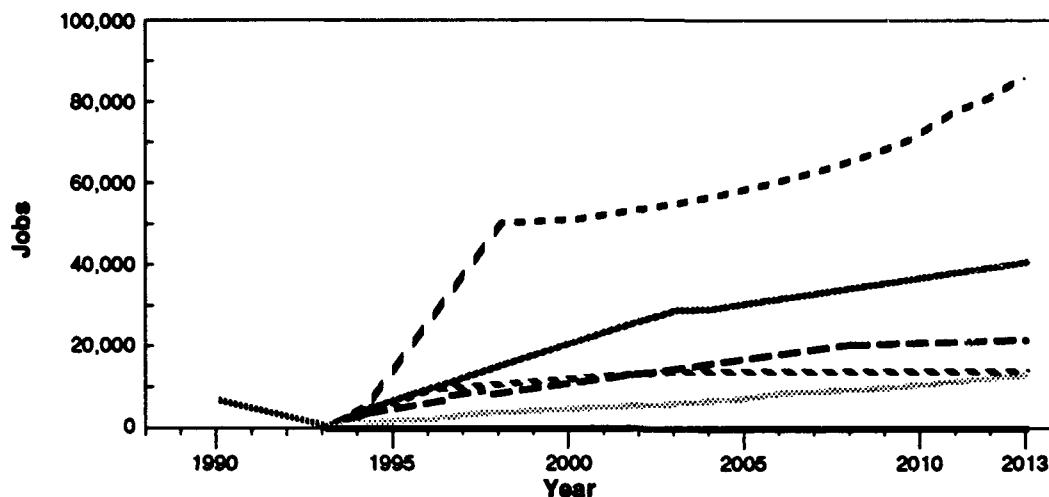
ROI Employment Impacts

George AFB, California

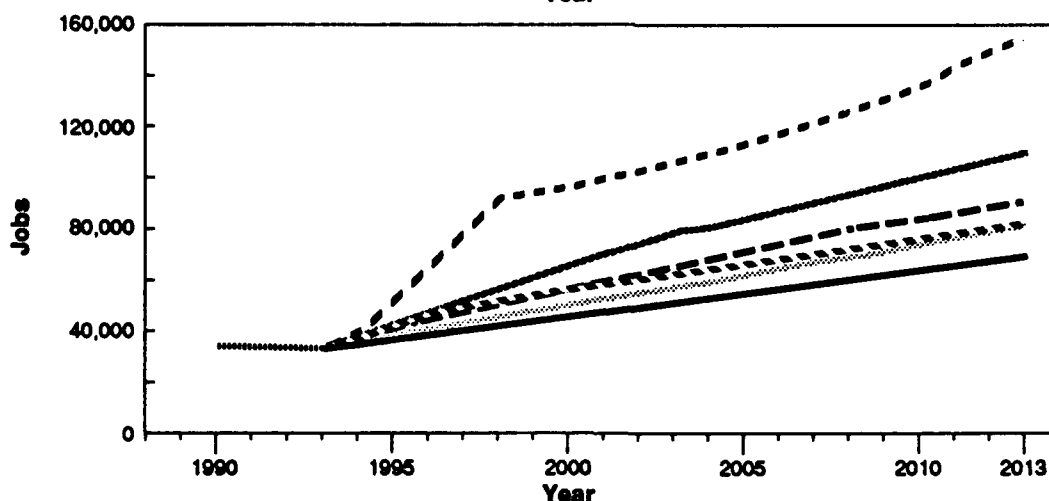
Figure 5.1-1

ALTERNATIVE	1993	1998	2003	2013
Proposed Action	70	14,200	27,900	40,400
International Airport	70	49,600	54,700	85,600
Commercial Airport with Residential	70	8,000	13,800	21,200
General Aviation Center	70	10,000	13,200	13,100
Non-Aviation	70	3,400	5,800	12,200
No Action	70	70	70	70

**Site-Related
Victor Valley
Job Impacts**



**Site-Related
Victor Valley
Job Impacts**



**Total Victor Valley
Jobs with Impacts
of Alternatives**

EXPLANATION

- No Action/Post-Closure
- Proposed Action
- - - International Airport
- Non-Aviation
- - - Commercial Airport
- - - General Aviation Center
- Preclosure

**Site-Related Victor Valley
Employment Impacts
and Total Employment
Projections**

George AFB, California

Data refer to employment impacts within the Victor Valley area of San Bernardino County directly or indirectly related to the George AFB site.

Figure 5.1-2

any development on such property has adequate land use compatibility with the major airport facility, as planned. The majority of the direct and secondary jobs that would result from construction and operation of this alternative were assumed to be generated at a gradually increasing rate during the 21-year projection period from about 68 interim caretaker jobs in 1993 to over 105,000 jobs in 2013. By 2013, regional earnings of over \$2.8 billion were projected annually from reuse activity at the George AFB site.

The Commercial Airport with Residential Alternative comprises a variety of uses at the site beginning in 1994, including a regional airport facility on the same scale as the Proposed Action, a large 1,048-acre industrial area, approximately 26 acres of commercial retail area, and a 37-acre higher education facility (college or vocational school). Additionally, there would be approximately 8,240 residential units on the site and 261 acres of regional or community park. The medical facility would remain in use under a non-federal operation, and the existing elementary schools would be converted to high school use. Direct and secondary jobs that would result from construction and operation of this alternative were assumed to be generated at a relatively steady rate of growth during the 21-year projection period from about 68 caretaker jobs in 1993 to about 28,000 jobs in 2013. Earnings levels would increase as employment increases. By 2013, regional earnings of almost \$800 million were projected annually from reuse of the base site with this alternative.

The General Aviation Center Alternative comprises a variety of general aviation uses at the site beginning in 1994, utilizing most of the existing base infrastructure. General Aviation activities, including corporate and private aviation, air shows, and aircraft maintenance and refurbishing have been identified as airfield and aviation support activities. A 282-acre commercial area, which will occupy much of the cantonment area of the base, institutional reuse of the existing educational and hospital facilities, and a 340-acre residential area are all examples of the reuse of existing facilities under the General Aviation Center proposal. The direct and secondary jobs that would result from construction and operation under this alternative increase at a relatively stable rate through 1998, before leveling off through the year 2013. Earnings levels would level off as employment levels off past 1998.

The Non-Aviation Alternative comprises a variety of uses at the site beginning in 1994, including a large industrial area, approximately 20 acres of commercial area, 942 acres of business park, and a moderately-sized 470-acre higher education facility. Additionally, there would be approximately 13,273 residential units on the site and 290 acres of regional or community park. The existing golf course and medical facility would both remain in use under non-federal operation, and the existing elementary schools would be converted to high school use. Direct and secondary jobs that would result from construction and operation of this alternative were assumed to be generated at a relatively steady rate of growth during the 21-year projection period from about 68 DMT jobs in

1993 to about 14,000 jobs in 2013. Non-Aviation Alternative earnings levels would increase as employment increases. By 2013, regional earnings of almost \$300 million were projected annually from reuse of the base site with primarily industrial-related activity.

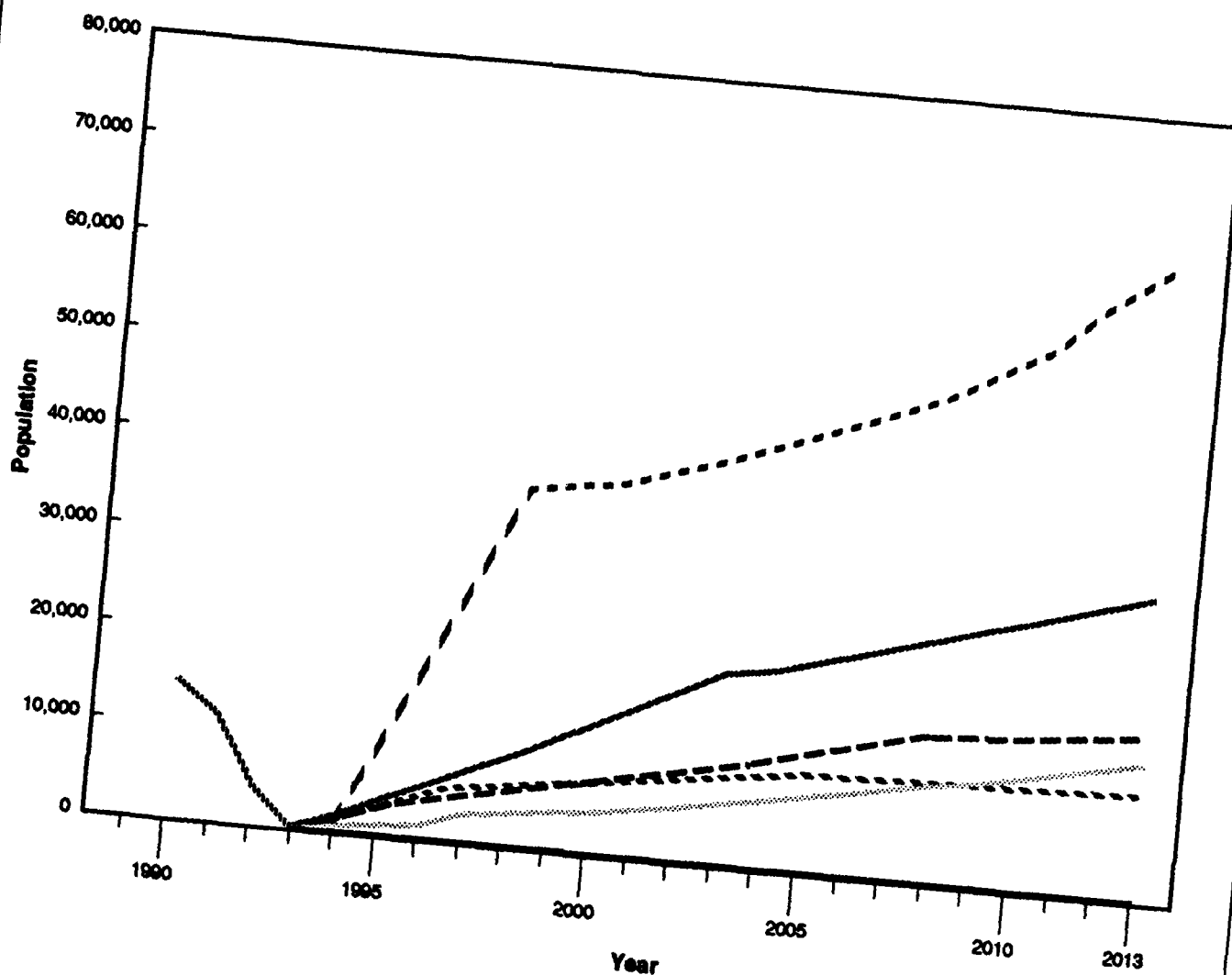
Under the No-Action Alternative, George AFB would be retained by the federal government in a caretaker status for an indefinite period of time following the closure by January 1993. It was estimated that this would generate about 50 direct jobs, and related procurements for small amounts of goods and services would generate an additional 18 secondary jobs in the regional economy, most of which would be located in the Victor Valley. Direct earning levels were assumed to be about \$1.5 million annually with local secondary earnings of about \$350,000 annually throughout the 21-year period of analysis.

5.2 POPULATION AND HOUSING

Regional population impacts for the six alternatives all begin at the same point in 1993, immediately following base closure, and subsequently diverge over time. The most dramatic changes are anticipated to accompany the International Airport Alternative, with population increasing rapidly between 1993 and 1998 before it begins a slower growth through 2013 (Figures 5.2-1 and 5.2-2). Population in the ROI is also projected to increase under the other four reuse alternatives (not including the No-Action Alternative), in (descending) order: Proposed Action, Commercial Airport with Residential Alternative, General Aviation Center Alternative, and Non-Aviation Alternative. The differences between the population impact of the International Airport Alternative and the others are substantial, with impacts in 2013 at least twice those associated with any of the four reuse options. Only the International Airport Alternative and the Proposed Action reach population levels associated with full base operation (1989) — the former by 1998, the latter by 2003 (see Table 3.4-7).

In comparing reuse alternatives, sub-regional level population impacts occur in the same order as regional impacts. In all alternatives, the number of in-migrants projected for San Bernardino County far outweigh those projected for Riverside County. Similarly, impacts associated with Victorville tend to be the greatest of all communities considered in absolute terms, with in-migration to Adelanto consistently the greatest in relative terms. In all alternatives except No-Action, population levels eventually reach those associated with full base operation in Victorville within the 20-year time period examined. However, only the International Airport Alternative is anticipated to produce in-migration at levels which will reach base operation levels in Adelanto.

For the five reuse alternatives, housing demands are anticipated to parallel the trends projected for the civilian population impacts. The International Airport Alternative again produces impacts at least twice as large as the Proposed



Source: Projections prepared for this study, May 1991.
 Note: Assumes no announcement effect.

EXPLANATION

- No Action/Post-Closure
- - - Proposed Action
- · · International Airport
- · - Non-Aviation
- - - Commercial Airport
- · - General Aviation Center
- · · Preclosure

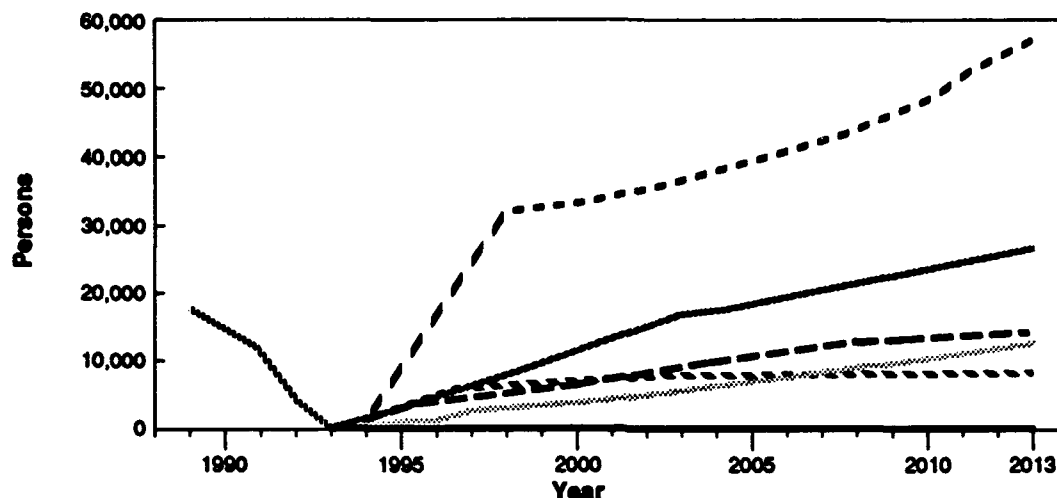
ROI Population Impacts

George AFB, California

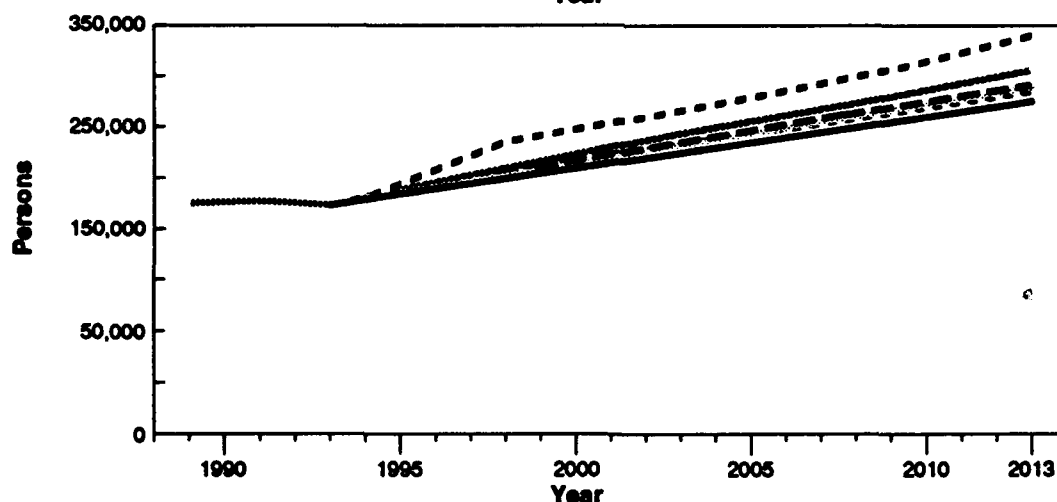
Figure 5.2-1

ALTERNATIVE	1993	1998	2003	2013
Proposed Action	0	8,100	16,900	26,600
International Airport	0	32,000	36,400	56,700
Commercial Airport with Residential	0	5,000	8,700	14,100
General Aviation Center	0	5,700	7,800	8,500
Non-Aviation	0	3,100	5,700	12,500
No Action	0	0	0	0

**Site-Related
Victor Valley
Population
Impacts**



**Site-Related
Victor Valley
Population
Impacts**



**Total
Victor Valley
Population
with Impacts
of Alternatives**

EXPLANATION

- No Action/Post-Closure
- - - Proposed Action
- International Airport
- Non-Aviation
- - - Commercial Airport
- - - General Aviation Center
- Preclosure

Site-Related Victor Valley Population Impacts and Total Population Projections

George AFB, California

Data refer to population impacts within the Victor Valley area of San Bernardino County directly or indirectly related to the George AFB site.

Figure 5.2-2

Action. The Commercial Airport with Residential, the General Aviation Center, and the Non-Aviation alternatives are anticipated to generate smaller increases in housing demand. Moreover, each of these latter two alternatives has associated an explicit residential component; in each case, the number of residential units expected to be built, as a component of an alternative, would exceed the demand generated from alternative-related population impacts. None of the impacts should exceed the local construction industry's capacity to construct housing. The housing surplus expected to accompany the Commercial Airport with Residential and Non-Aviation alternatives would likely attract additional in-migrants in search of affordable housing in the area.

5.3 PUBLIC SERVICES

Public service demands are expected to follow the trend and distribution of site-related population. Local demands for most municipal public services are accurately reflected in requirements for local government personnel.

San Bernardino County would be affected more than any other jurisdiction under the Proposed Action, since the project area currently is located outside all existing municipalities and no municipal annexation is foreseen for the site. Long-term (year 2013) site-related general government employment by San Bernardino County would be 232 personnel, if service standards (employees per 1,000 population) remain at the current actual levels. Site-related positions were estimated at 139 personnel in 1989, when total county government employment exceeded 11,000 personnel. Long-term government employment in the city of Victorville would be 47 employees — as compared with 15 base-related employees in 1989 of a total of 225 municipal personnel. The city of Adelanto, on the other hand, would experience a decrease in municipal employment under the Proposed Action; long-term government employment would be 20 personnel as compared to 40 base-related personnel (of a total of 143 employees) in 1989. Other service, including education and fire and police protection, are expected to follow this general pattern.

Under the International Airport Alternative, site-related general government employment in San Bernardino County would be 500 personnel assuming current service standards remain unchanged — a 361-employee increase over the 139 site-related employee level of 1989. Under this alternative, the project site is assumed to be annexed by the city of Adelanto, which would become responsible for provision, operation, and maintenance of public services and facilities at the site. As a result, long-term municipal staffing by the city of Adelanto related to demand at the project site would be 128 personnel — or 108 employees more than the 20 site-related employees in 1989. Long-term government employment by the city of Victorville would be 100 personnel under this scenario, again a 60-employee increase over the 1989 site-related level of 40 personnel.

The Commercial Airport With Residential Alternative would generate a long-term requirement for 124 site-related general government personnel in San Bernardino County in order to keep service levels unchanged; this represents a 15-employee decrease from the site-related employment level (139) of 1989. This alternative would generate a long-term requirement for 25 personnel in Victorville and 10 personnel in Adelanto in order to keep service levels unchanged. These requirements would be 10 personnel more than 1989 levels in Victorville and 30 personnel less in Adelanto.

The General Aviation Center Alternative would generate a long-term requirement for 74 site-related general government personnel in San Bernardino County in order to keep service levels unchanged; this represents a 65-employee decrease from the 139 site-related employment level of 1989. This alternative would generate a long-term requirement for 15 personnel in Victorville and 6 personnel in Adelanto in order to keep service levels unchanged. These requirements would be the same as 1989 levels in Victorville and 34 personnel less in Adelanto.

The Non-Aviation Alternative would create long-term requirements for 107 site-related general government personnel in San Bernardino County in order to keep service levels unchanged — a 32-employee decrease from 1989 levels related to the site. Victorville and Adelanto both would also experience decreased public service demand over the long-term under this alternative. This alternative would generate a long-term requirement for 22 personnel in Victorville and 9 personnel in Adelanto in order to keep service levels unchanged. These requirements would be 18 personnel less than 1989 levels in Victorville and 11 personnel less in Adelanto.

5.4 PUBLIC FINANCES

Under each of the alternatives analyzed, the net fiscal effect (projected increases in revenues less projected increases in expenditures) of the alternatives themselves represent a positive change from the mostly deficit conditions projected under the No-Action scenario (base closed and in caretaker status). Effects associated with the International Airport Alternative provide the greatest benefits to all jurisdictions analyzed, followed by the Proposed Action, the Commercial Airport with Residential Alternative, the General Aviation Center Alternative, and the Non-Aviation Alternative.

In some instances, however, when effects of both closing the base and converting it to civilian use are taken into account, projected benefits of the alternative itself would not be sufficient to completely offset projected post-closure deficits. This is the case for the Adelanto Elementary School District under all alternatives; the Victor Valley Union High School District under the Commercial Airport with Residential Alternative, General Aviation Center Alternative, and the Non-Aviation Alternative; and the city of Adelanto under the

General Aviation Center Alternative and the Non-Aviation Alternative. For the school districts, benefits of reuse still would not be sufficient to offset the loss of P.L. 81-874 program revenues under the No-Action (base closed and in caretaker status) scenario in those alternatives cited. For the city of Adelanto, revenues generated by General Aviation Center and Non-Aviation alternatives would be minimal and not be sufficient to offset projected deficits caused by base closure.

In addition, even under some of the reuse alternatives, situations would develop for some jurisdictions where actual population and enrollment levels would remain below preclosure announcement levels and overall budget levels also would be below historic levels (excluding effects not directly associated with base-related changes). This would be the case for the city of Adelanto and the Adelanto Elementary School District under all alternatives except the International Airport Alternative.

5.5 TRANSPORTATION

Under the No-Action Alternative, Cory Boulevard would serve as the only access onto the base. Under the other reuse scenarios, as many as seven community roadways could provide direct access onto the present air base. These roadways include Air Base Road, Village Drive, Shay Road, El Mirage Road, Helendale Road, Desert Flower Road, and Crippen Avenue. Peak-hour traffic on Air Base Road would be LOS B at closure and remain at B under the No-Action Alternative. For all other alternatives Air Base Road would degrade without widening to LOS E or would degrade further. Under each reuse scenario, it was assumed that mitigation measures would be used to prevent peak-hour traffic conditions from deteriorating. These measures included widening and improvement of existing roads, as well as construction of new roads. Without these changes, Desert Flower and El Mirage would degrade to an unacceptable level under the International Airport Alternative by 1998. Under the Non-Aviation Alternative, Crippen Avenue would degrade to LOS E by the year 2003. Village Drive and U.S. 395 are also identified as key community roads, but do not provide direct access onto George AFB. In every instance, U.S. 395 would degrade to LOS E or degrade further by 1998, but mostly due to non-project generated traffic except under the International Airport Alternative where degradation would be mostly from project-generated traffic. Village Drive would retain acceptable LOSs for all reuse alternatives.

Under the Proposed Action, International Airport Alternative, Commercial Airport with Residential Alternative, and General Aviation Center Alternative, Palmdale Airport would probably suffer a loss of patronage. Under the Non-Aviation Alternative, however, the Palmdale commuter/feeder service would increase in proportion with the region's projected population. AMTRAK usage would also increase in proportion with projected population under all reuse alternatives.

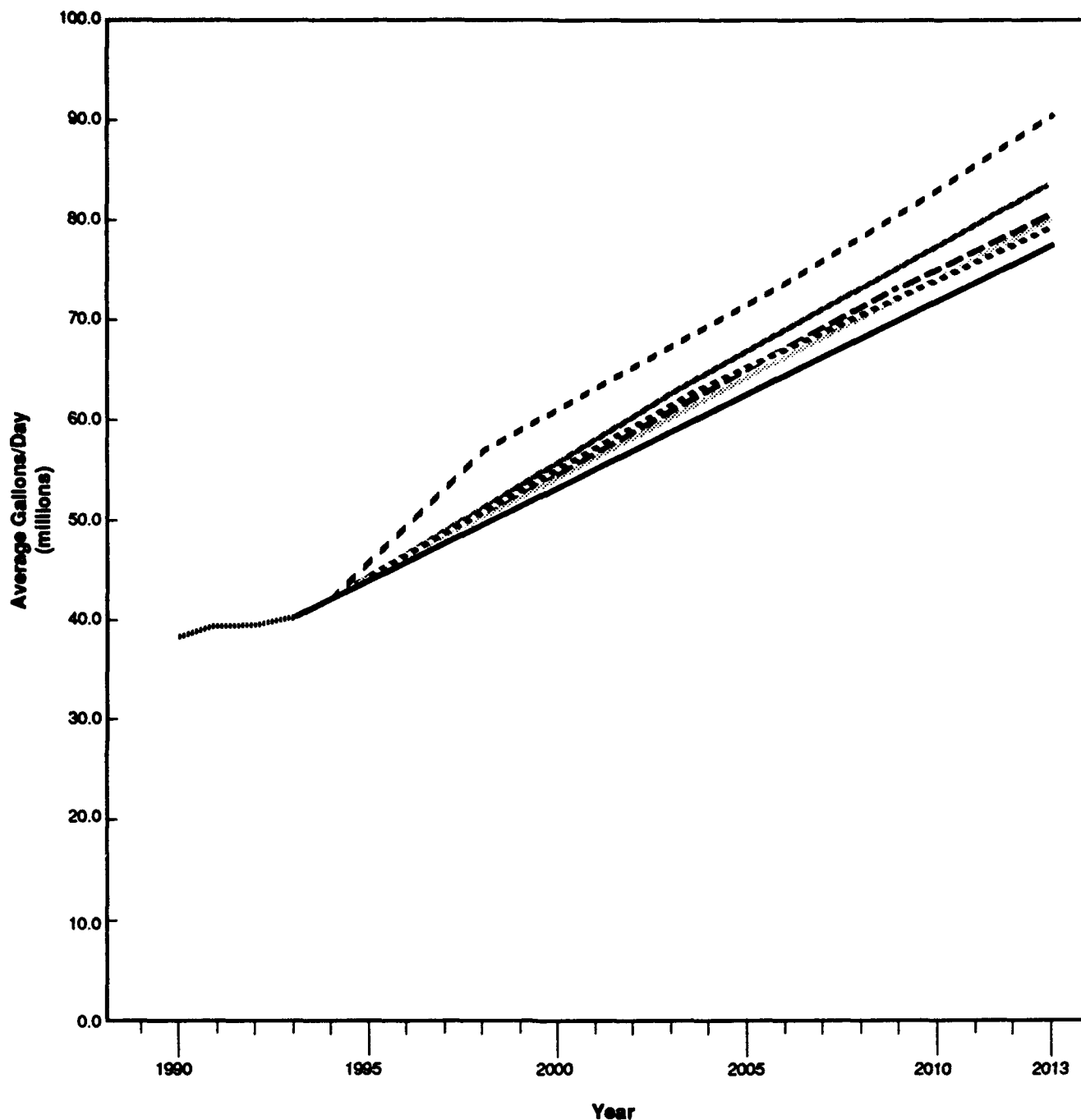
5.6 UTILITIES

The utilities projections for this analysis, including the demand for water, wastewater treatment, solid waste disposal, and electricity and natural gas were made both for on-site George AFB reuse activities planned under the Proposed Action and alternatives, as well as resultant increases in domestic demand associated with direct and indirect population changes in the Victor Valley.

Victor Valley utility providers would experience the greatest levels of increased demand over post-closure levels from the International Airport Alternative, due to the relatively high level of population in-migration associated with this alternative (Table 5.1-1 and Figures 5.6-1, 5.6-2, 5.6-3, 5.6-4, and 5.6-5). Estimated increases over post-closure utility demand, under the Proposed Action, would be approximately one half the demand increase associated with the International Airport Alternative. Utility demands by the other three reuse plans, the Commercial Airport with Residential, General Aviation Center, and Non-Aviation alternatives, increase demand by about half as much as the Proposed Action increase and about one-sixth of the International Airport Alternative projected increases over post-closure levels.

Water supply to private wells will be impacted by the demands of the reuse alternatives. Higher demands will accelerate the decline in groundwater levels of these wells. To the extent that each of these alternatives contributes to the projected overdraft conditions, alternative sources of water would be required if overdraft conditions are to be curtailed.

In 1987, VVWRA issued an "Order Requiring Corrective Action Pursuant To VVWRA Sewer Use Ordinance" to George AFB. This corrective action order outlined seven specific non-compliance issues related to wastewater flows from George AFB received at the VVWRA treatment plant and a timetable with due dates for seven corrective actions that would bring the base into compliance with the VVWRA Sewer Use Ordinance. A summary of the non-compliance issues and the required corrective actions are presented in the *George AFB Closure and Reuse EIS*. VVWRA has indicated that future discharges from the base, by future base occupants other than the Air Force, must fully comply with VVWRA ordinances if the base is to be served by VVWRA. VVWRA has also indicated that if one of its member agencies were to annex the site, it would not necessarily provide service to the site, although it would expect the member agency to complete any necessary improvements to eliminate hazardous discharges to the treatment plant.



Source: Projections prepared for this study, May 1991.

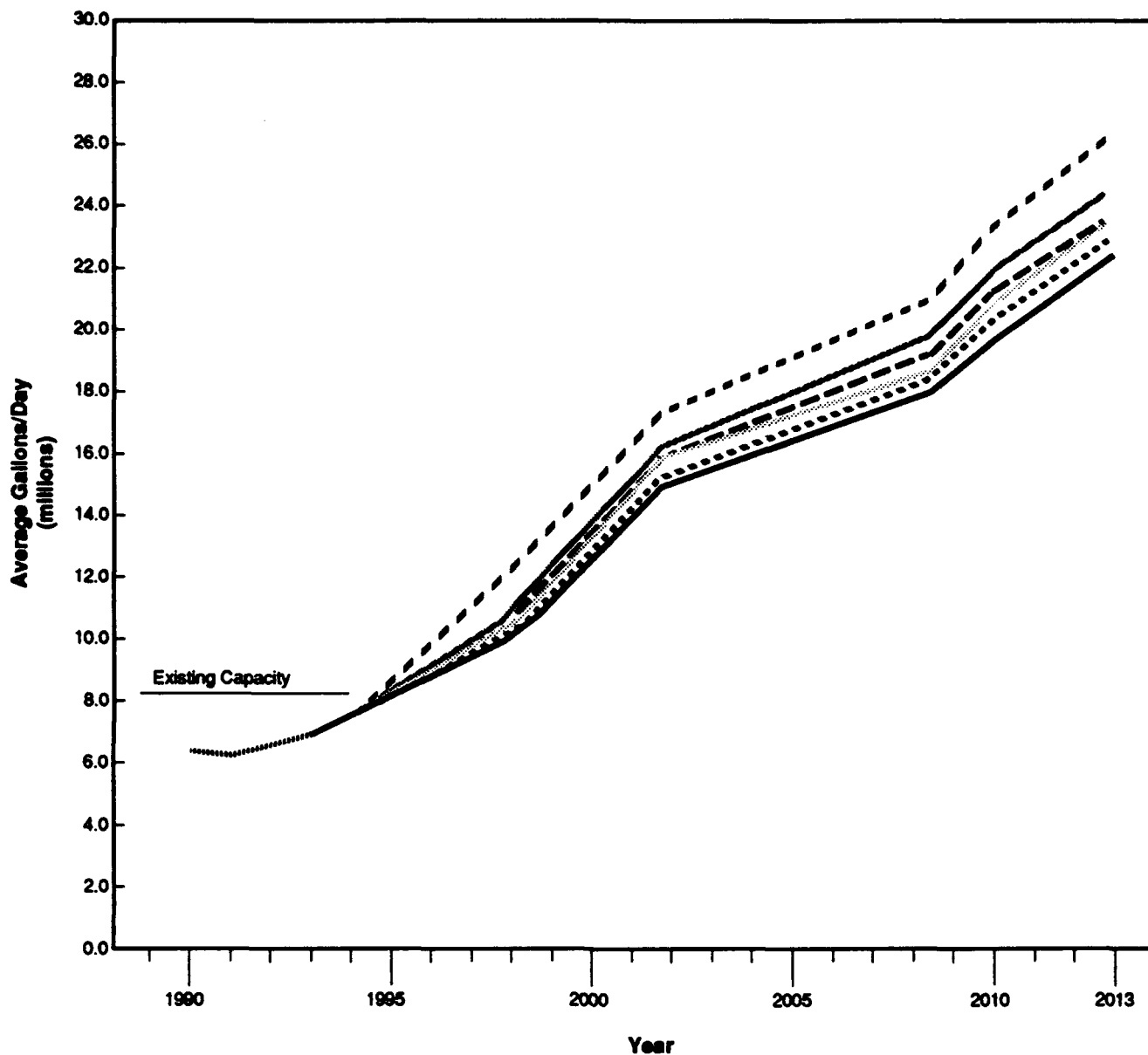
EXPLANATION

- No Action/Post-Closure
- Proposed Action
- - - International Airport
- Non-Aviation
- - - Commercial Airport
- - - General Aviation Center
- Preclosure

**Average Daily
Water Demand -
All Alternatives
(1990-2013)**

George AFB, California

Figure 5.6-1



Source: Projections prepared for this study, May 1991; based on VVWRA, 1988.

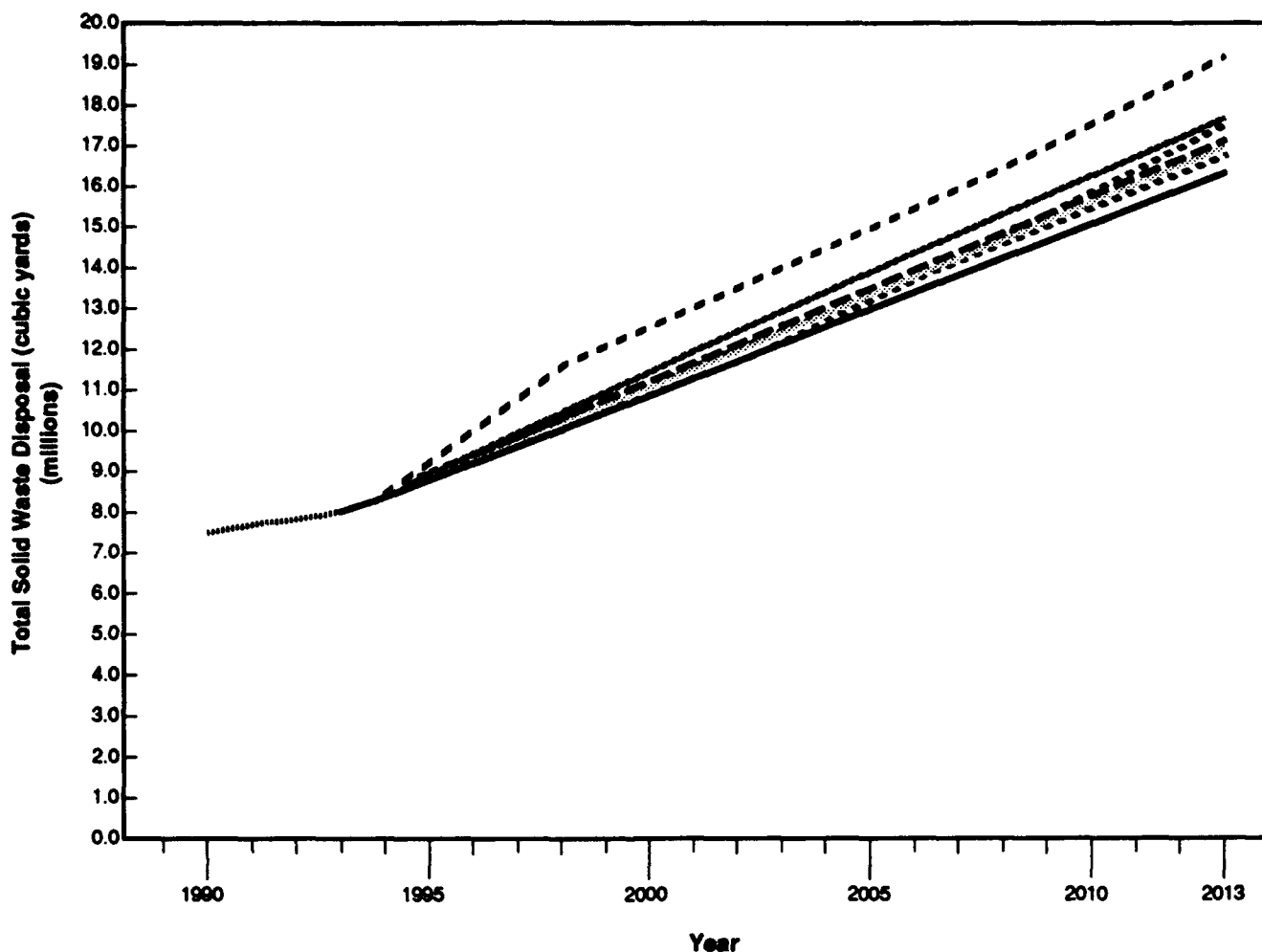
EXPLANATION

- No Action/Post-Closure
- Proposed Action
- - - - International Airport
- Non-Aviation
- - - - Commercial Airport
- - - - General Aviation Center
- Preclosure

Average Daily Wastewater Generation- All Alternatives (1990-2013)

George AFB, California

Figure 5.6-2



Source:

Projections prepared for this study, May 1991; based on San Bernardino County Solid Waste Management Dept., 1989; 1991.

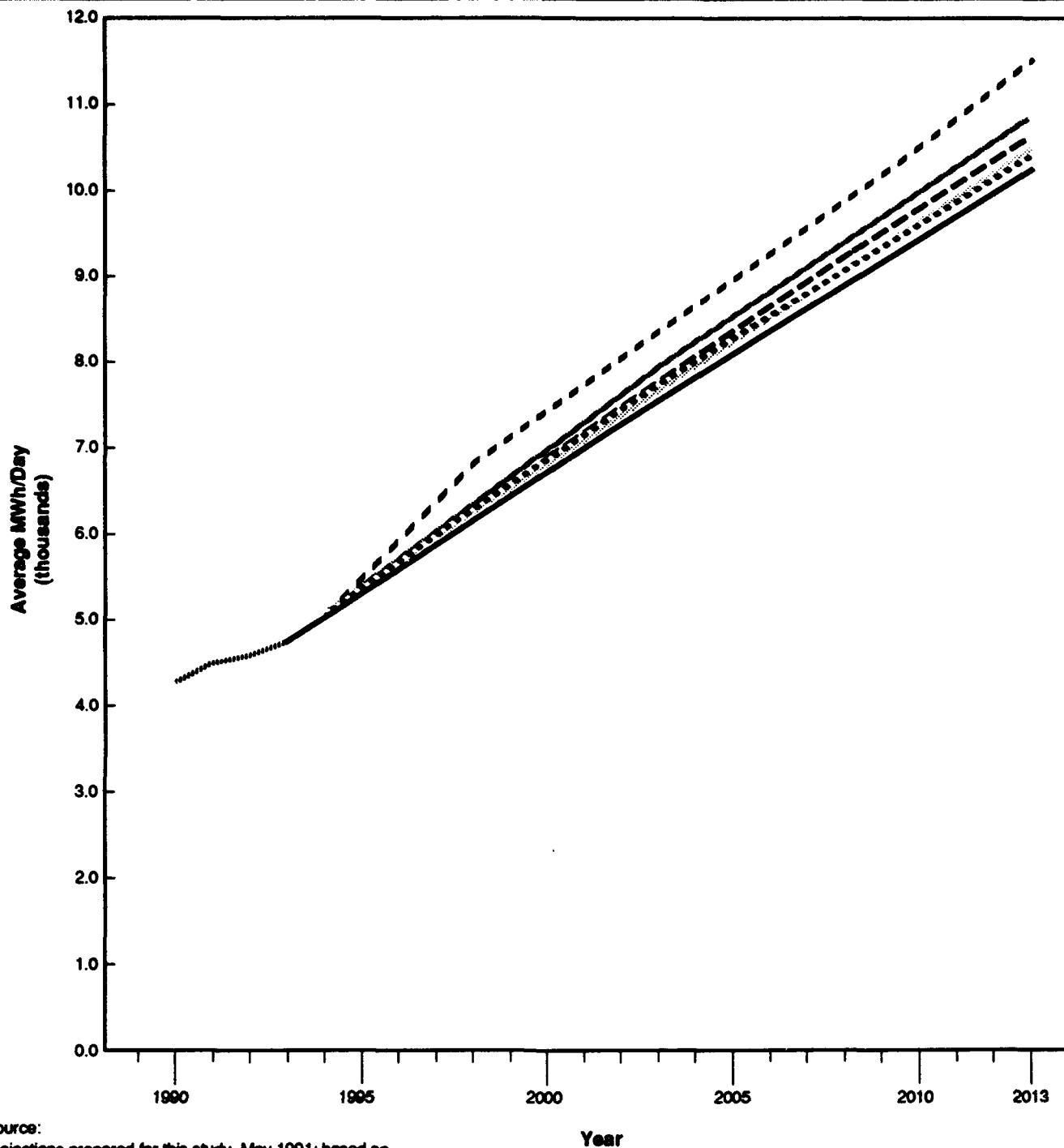
EXPLANATION

- No Action/Post-Closure
- Proposed Action
- International Airport
- Non-Aviation
- Commercial Airport
- General Aviation Center
- Preclosure

**Total Solid
Waste Generation-
All Alternatives
(1990-2013)**

George AFB, California

Figure 5.6-3



Source:
Projections prepared for this study, May 1991; based on
California Energy Commission, 1990; Southern California Edison, 1991.

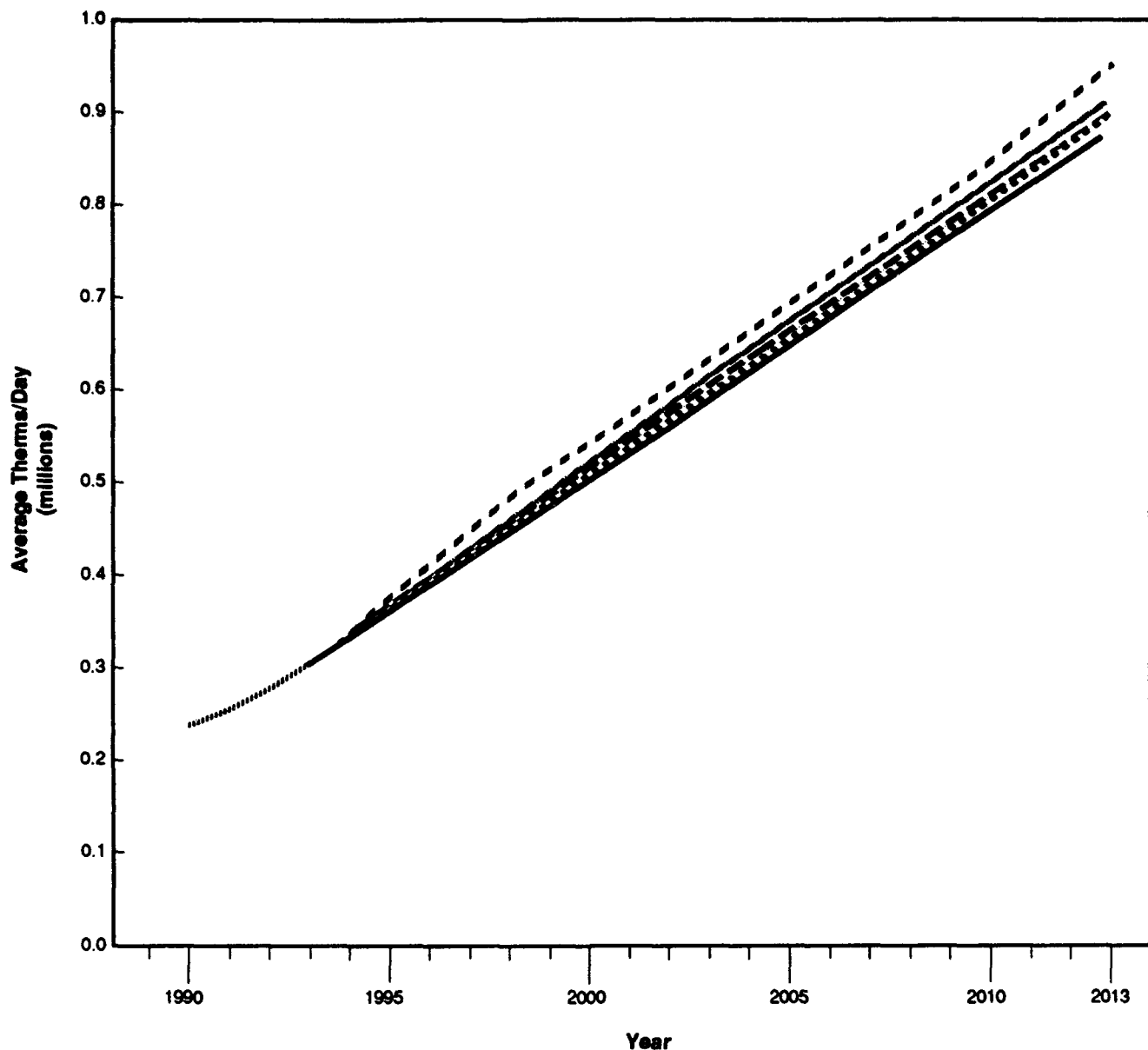
EXPLANATION

- No Action/Post-Closure
- Proposed Action
- - - International Airport
- Non-Aviation
- - - Commercial Airport
- - - General Aviation Center
- Preclosure

Average Daily Electricity Demand- All Alternatives (1990-2013)

George AFB, California

Figure 5.6-4



Source: Projections prepared for this study, May 1991; based on Southwest Gas Company, 1991.

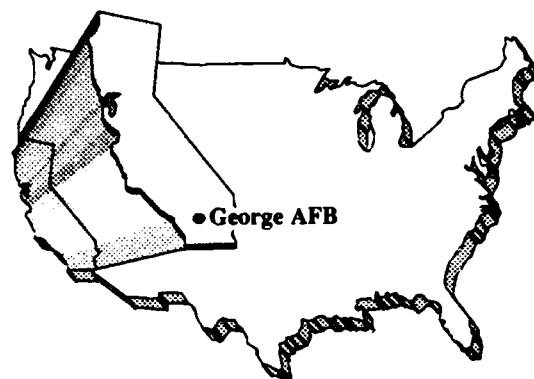
EXPLANATION

- No Action/Post-Closure
- Proposed Action
- - - International Airport
- Non-Aviation
- - - Commercial Airport
- - - General Aviation Center
- Preclosure

**Average Daily
Natural Gas Demand-
All Alternatives
(1990-2013)**

George AFB, California

Figure 5.6-5



CHAPTER 6

REFERENCES

6.0 REFERENCES

- Adelanto City Council, 1991. Personal communication with Ms. Mary Scarpa, Councilwoman, City of Adelanto, 17 July.
- Adelanto, City of, 1990. *High Desert International Airport*. Adelanto, California.
- Adelanto School District, 1989. Computer printout of enrollment breakdown, provided by David Kincaid, District Superintendent, Adelanto, California, October 19.
- Adelanto School District, 1990. Computer printout of enrollment breakdown, provided by David Kincaid, District Superintendent, Adelanto, California, October 17.
- Apple Valley, Town of, 1990. General Plan Program Hearing Draft Environmental Impact Report, prepared by Cotton/Beland/Associates, Inc., Pasadena, California.
- Apple Valley Airport, 1991. Personal communication with D. Brawley, owner and operator, Apple Valley, California, 9 July.
- Apple Valley Unified School District, undated. Combined statements of revenues, expenditures, and changes in fund balances, FY 1988-90, Photocopies, 6pp.
- Barnes, G., 1991. Personal communication, Victorville Disposal, Inc., Victorville, California.
- Britten, R., 1991. Personal communication, Area Manager, Southern California Edison Company, Victorville, California, February 20.
- Bryson, J., 1991. Personal communication, Superintendent's Office, Victor Valley Union High School District, Victorville, California, March.
- Cabriales, R., 1991. Personal communication, Fire Chief, Victorville Fire Department, Victorville, California, February.
- California Department of Finance, 1986. *Population Projections for California Counties 1980-2020 With Age/Sex Detail to 2020*, DOF Baseline 86, California Department of Finance, Sacramento, California.
- California Department of Finance, 1989. *California Population and Housing Estimates, January 1, 1990*. California Department of Finance, Sacramento, California.
- California Department of Finance, 1990. *Population and Housing Estimates for California Cities and Counties, Summary Report E-5.*, Sacramento, California.
- California Department of Finance, 1991. *Interim Population Projections for California, State and Counties, 1990-2005*, Report 91 P-1, California Department of Finance, Sacramento, California.
- California Department of Health Services, 1983. "Well Data," George AFB, California, February.
- California Department of Forestry and Fire Protection, 1991. Letter from Bob Balistreri, Desert Division Chief, to A. Goldschmidt, RDN, San Bernardino, California, February 14.
- California Employment Development Department, 1990. *Annual Planning Information, Riverside-San Bernardino Metropolitan Statistical Area*, July.
- California Employment Development Department, 1991. *Labor Market Bulletin, Riverside-San Bernardino Area*. November 1990 and February 1991. Riverside-San Bernardino, California.

California Energy Commission, 1990. Electricity - 1990 Report, P106-90-002, October 1990.

California-Nevada Super Speed Train Commission, October 1989. Ridership Economic Development and Environmental Impacts of Super-Speed Train Service for Selected Sites in the Southern California - Las Vegas Valley Corridor, prepared by the Canadian Institute of Guided Ground Transport and Robert D. Niehaus, Inc.

California-Nevada Super Speed Train Commission, 1990. Request for Qualifications -Professional Services in the Preparation of an Environmental Impact Report Statement Prepared by Paul Taylor, Executive Director, October.

California Regional Water Quality Control Board - Lahontan Region, 1989. Application for Wastewater Discharge Requirements to Discharge to State Waters, Public Notice #6-89-19, Application #CA 0102822.

Canney, C., 1991. Personal communication, Public Information Clerk, Town of Apple Valley, Apple Valley, California, February.

Cartwright, J.V., R.M. Beemiller and R.D. Gustely, 1981. RIMS II, Regional Input-Output Modeling System. U.S. Department of Commerce, Bureau of Economic Analysis, Washington, DC.

CDF, see California Department of Finance.

Charles Z. Fedak and Company, see Fedak, Charles Z. and Company.

City of Adelanto, see Adelanto, City of.

City of Hesperia, see Hesperia, City of.

City of Victorville, see Victorville, City of.

Clevenger, P., 1990. George Air Force Base Housing Report, prepared for Victor Valley Economic Development Authority, Victorville, California, February 14.

D'Errice, P., 1991. Personal communication, Director, Victor Valley Economic Development Authority Victorville, California, February.

Defense Secretary's Commission on Base Realignment and Closure, 1988. Base Realignments and Closures: Report of the Defense Secretary's Commission, Washington, DC, December.

Department of Economic and Community Development, undated. County of San Bernardino Desert Regions, Community Profiles, Economic Development Division, San Bernardino, California.

Edwards AFB, 1991. Personal communication with B. Johnstone, Air Force Flight Test Center, Plans and Programs Office, Edwards AFB, California, 23 January.

Edwards RAPCON FAA, 1991. Personal communication with J. Snavey, Edwards AFB, California, 8 July.

Fedak, Charles Z. and Company Company, 1990. Town of Apple Valley, California, Financial Statements June 30, 1990, Cypress, California.

Felton, M., 1991. Personal communication, Public Relations Administrator, Jerry Pettis Veterans Memorial Hospital, San Bernardino, California, April.

Galbreath, L., 1991. Personal communication, Educational Demographics, California Department of Education, Sacramento, California, February.

- Gardner, C., 1991. Personal communication, Adelanto Police Department, Adelanto, California, February.
- Garrison, M., 1991. Personal communication, Personnel, San Bernardino County, San Bernardino, California, February.
- George AFB, 1984. Report on Water Supply Improvements, George AFB, California, December.
- George AFB, 1985. Gas Distribution System Analysis, George AFB, California, June.
- George AFB, 1991. Active military and civilian personnel residence zip code breakout, George AFB, California, 1 March.
- George AFB CARE Office, 1991. Personal communication with TSgt. Ted Tsakalos, George AFB, California, 12 July.
- Goodman, R., 1991. Personal communication, Southwest Gas Corporation, Victorville, California.
- Hesperia Airport, 1991. Personal communication with R. Pollzin, airport manager. Hesperia, California, 3 July.
- Hesperia, City of, 1989. Welcome to Hesperia. A brochure introducing the City of Hesperia, Hesperia Chamber of Commerce, Hesperia, California.
- Hesperia, City of, Planning Department, 1990a. Tentative Tract List, Effective December 12, 1990, City of Hesperia Planning Department, Hesperia, California.
- Hesperia, City of, Planning Department, 1990b. Development Activity Report: Commercial, Industrial, & Multi-Family Complex Projects (4,000 Sq. Ft. or Larger), City of Hesperia Planning Department, Hesperia, California.
- Hesperia, City of, Planning Department, 1990c. City of Hesperia Draft Housing Element, City of Hesperia Planning Department, Hesperia, California.
- Hesperia, City of, Planning Department, 1991. Hesperia General Plan, Hesperia, California.
- Hild, J., 1991. Personal communication with John Hild, Facilities Manager, Victor Elementary School District, Victorville, California, March.
- Huggins, J., 1991. Personal communication, Facilities Manager, Victor Elementary School District, Victorville, California, March.
- Jackson, P., 1991. Personal communication, Personnel Division, Hesperia Unified School District, Hesperia, California, February.
- Kincaid, D., 1991. Personnel communication with Mr. Dave Kincaid, Superintendent, Adelanto Elementary School District, Adelanto, California, 18 July.
- Klootwyk, P., 1991. Personal communication with Lieutenant P. Klootwyk, Apple Valley Police Department, Apple Valley, California, February.
- Koksha, D., 1991. Personal communication with D. Koksha, Personnel Clerk, City of Victorville, Victorville, California, February.
- Kurtz, K., 1991. Personal communication with K. Kurtz, Victor Valley Wastewater Reclamation Authority, Victor Valley, California.

- Lance, Soll & Lunghard, 1989. *City of Adelanto Financial Statements, June 30, 1988*, Whittier, California.
- Lau, C., 1991. Personal communication, Employment Development Department, Labor Market Information Group, Los Angeles, California.
- Lee and Ro Consulting Engineers, 1984. *Report on Water Supply Improvements*, George Air Force Base, Pasadena, California, December.
- Lewis, B., 1991. Personal communication, Fire Chief, Apple Valley Fire Protection District, Apple Valley, California, February 1991.
- Lexion, A., 1991. Personal communication with A. Lexion, Administrator, Victor Valley Community College, School of Nursing, Victor Valley, California, April.
- Luetke, J., 1991. Personal communication with J. Luetke, Fire Chief, Adelanto Fire Department, Adelanto, California, February.
- Los Angeles Department of Airports, 1991a. Personal communication with Public Relations Office staff, Los Angeles International Airport, Los Angeles, California, 17 July.
- Los Angeles Department of Airports, 1991b. *Airport Fact Sheets*. Public and Community Relations Bureau, Los Angeles Department of Airports, Los Angeles, California.
- Maher, J., 1991. Personal communication with J. Maher, Senior Account Representative, Commercial/Industrial, Southern California Division, Southwest Gas Company Victorville, California, March 5.
- Marcia, M., 1991. Personal communication with M. Marcia, Department of Consumer Affairs, State of California, March.
- Military Traffic Management Command Transportation Engineering Agency, 1987. *Traffic Engineering Study George AFB, California*, Military Traffic Management Command Transportation Engineering Agency, MTMCTEA Report SE 87-6a-20, Newport News, Virginia, 23602-0276, November.
- Mitchell, R., 1991. Personal communication with R. Mitchell, Business Manager, Apple Valley Unified School District, Apple Valley, California, February.
- Mitchell-Webb Associates, Inc., 1982. *Report for Repair of Electrical Distribution System (GE 80-0251A)*, George AFB, Victorville, California, March 10.
- Mojave Water Agency, 1990. Master Plan for Delivery of Imported Water Final Report, 1990. Apple Valley, California, July.
- Natividad, J., 1991. Personal communication with J. Natividad, Deputy, San Bernardino County Sheriff's Office, Victorville, California, January.
- Ontario FAA, 1991. Personal communication with D. Fowler, Ontario TRACON, Ontario International Airport, California, 8 July.
- Oubre, E., 1991. Personal communication with E. Oubre, Division Chief in charge of Operations, Hesperia Fire Protection District, Hesperia, California, February.
- Palisades Ranch, 1991. Personal communication with S. Older, airfield owner, 3 July.
- Palm Springs Regional Airport, 1991. Personal communication with Mr. Jerry Riddle, Assistant Director of Operations, Palm Springs, California, 26 July.

- Quinn, James M., C.P.A., 1988a. Adelanto Elementary School District. County of San Bernardino. Adelanto, California. Audit Report. June 30, 1988, Victorville, California.
- Quinn, James M., C.P.A., 1988b. City of Victorville. Report on examination. Fiscal Year Ended June 30, 1989, Victorville, California.
- Quinn, James M., C.P.A., 1989a. Adelanto Elementary School District. County of San Bernardino. Adelanto, California. Audit Report. June 30, 1989, Victorville, California.
- Quinn, James M., C.P.A., 1989b. City of Victorville. Report on Examination Fiscal Year Ended June 30, 1989, Victorville, California.
- Quinn, James M., C.P.A., 1990a. Adelanto Elementary School District. County of San Bernardino. Adelanto, California. Audit Report. June 30, 1990, Victorville, California.
- Quinn, James M., C.P.A., 1990b. City of Victorville. Report on Examination Fiscal Year Ended June 30, 1990, Victorville, California.
- Reagan, D., 1991. Personal communication with D. Reagan, Public Affairs Officer, Hesperia Police Department, Hesperia, California, February.
- Redlands Airport, 1991. Personal communication with P. Lock, owner and operator, Redlands, California, 8 July.
- Rialto Airport, 1991. Personal communication with B. Fischer, Rialto, California, 27 June.
- R.S. Means Company, Inc., 1989. Means Square Foot Cost, 1990, Kingston, Massachusetts.
- Samiley, 1991. Personal communication with Sgt. Samiley, Resource Management, George AFB, George AFB, California, April.
- San Bernardino County, 1988a. General Plan Update - Background Report - Transportation/Circulation Issue (Draft), Office of Planning, San Bernardino, California.
- San Bernardino County, 1988b. Victor Valley Infrastructure Enhancement Program Engineer's Final Report, Victor Valley, California, September.
- San Bernardino County, 1991. The Board of Supervisors of San Bernardino County Welcomes You. A brochure introducing the Board of Supervisors, San Bernardino, California.
- San Bernardino County Planning Department, 1990. Population-Housing Bulletin, County of San Bernardino Planning Department, San Bernardino, California, July.
- San Bernardino County Solid Waste Management Department, 1989. San Bernardino County Solid Waste Management Plan 1989-1990 update, San Bernardino, California, November.
- San Bernardino County Solid Waste Management Department, 1991. San Bernardino County Solid Waste Management System Update, San Bernardino, California, January.
- San Bernardino County Superintendent of Schools, 1989. Demographic and Education Conditions of Public Schools in San Bernardino County 1987-88, A Statistical Report for 1989. Research, Evaluation & Administration Department, San Bernardino, California.
- San Bernardino County Superintendent of Schools, 1990. Demographic and Education Conditions of Public Schools in San Bernardino County 1988-89, A Statistical Report for 1990. Research, Evaluation & Administration Department, San Bernardino, California.

SCAG, see Southern California Association of Governments.

Scarpa, M., 1991. Personal communication with Ms. Mary Scarpa, Councilwoman, City of Adelanto, Adelanto, California, February.

SCE, See Southern California Edison Company.

Smith, M., 1991. Personal communication, Administrative Services, City of Hesperia, Hesperia, California, February.

Smith, Marion & Co., 1988. Victor Elementary School District, County of San Bernardino, Victorville, California. Audit Report for the Year Ended June 30, 1988, Redlands, California.

Smith, Marion & Co., 1989. Victor Elementary School District, County of San Bernardino, Victorville, California. Audit Report for the Year Ended June 30, 1989, Redlands, California.

Smith, Marion & Co., 1990. Victor Elementary School District, County of San Bernardino, Victorville, California. Audit Report for the Year Ended June 30, 1990, Redlands, California.

Southern California Association of Governments, 1989. 1987 Population Estimates and 2010 Population Projections, Riverside and San Bernardino Counties, Southern California Association of Governments, Los Angeles, California.

Southern California Association of Governments 1991a. Personal communication with Tim Merwin, Aviation Program Manager, Southern California Association of Governments, Los Angeles, 6 February.

Southern California Association of Governments 1991b. Southern California Aviation System Study update. Southern California Association of Governments, Los Angeles, California, April.

Southern California Edison Company, 1991. High Desert District Meter Hookup Projections.

Southwest Gas Corporation, 1991. Total annual Gas Consumption Tables for 1986-1989; Monthly Gas Consumption Tables for 1990; Victorville District Meter Hookup Projections.

Spiegel, D. and G.J.D. Hewings, 1989. Economic Impact Report of the Proposed Closure of Chanute AFB on the Village of Rantoul, University of Illinois, Urbana-Champaign, May 1.

Stager, R., 1991. Personal communication, Operations Supervisor, Victorville Operations. County of San Bernardino Solid Waste Management Department. Victorville, California.

SW Gas, See Southwest Gas Corporation.

SWMD, See San Bernardino Solid Waste Management Department.

Town of Apple Valley, see Apple Valley, Town of.

Transportation Research Board 1985. Highway Capacity Manual, Special Report 209, National Research Council National Academy of Sciences, Washington DC.

U.S. Air Force, 1988a. *George AFB Economic Resource Impact Statement: FY: 1987. Cost Branch Headquarters, 831st Air Division, George AFB, California.*

U.S. Air Force, 1988b. Base Comprehensive Plan: Electrical Distribution System, Tab G-4, January.

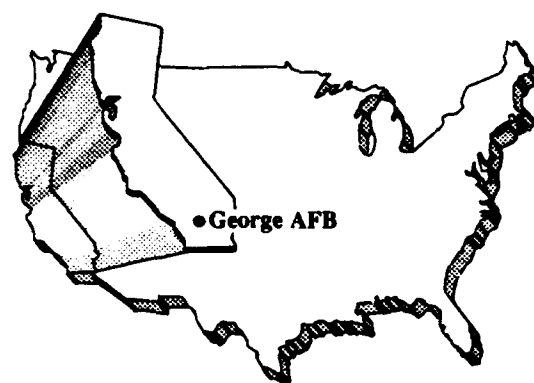
U.S. Air Force, 1988c. Base Comprehensive Plan: Natural Gas Distribution System, Tab G-2, January.

- U.S. Air Force, 1989a. *George AFB Economic Resource Impact Statement: FY: 1988. Cost Branch Headquarters, 831st Air Division, George AFB, California.*
- U.S. Air Force, 1989b. *Base Comprehensive Plan: Sanitary Sewer System, Tab G-2, January.*
- U.S. Air Force, 1989c. *A letter to Victor Valley Wastewater Reclamation Authority regarding George AFB Industrial wastewater pretreatment, dated January 26, 1989.*
- U.S. Air Force, 1990a. *Final Environmental Impact Statement (EIS) for the Closure of George AFB, California.*
- U.S. Air Force, 1990b. *Socioeconomic Impact Analysis Study, Pease AFB. Preliminary Draft, October, 1990.*
- U.S. Air Force, 1990c. *George AFB Economic Resource Impact Statement: FY 1989. Cost Branch Headquarters, 831st Air Division, George AFB, California.*
- U.S. Air Force, 1990d. *Base Comprehensive Plan: Water Supply System, Tab G-1, July.*
- U.S. Air Force, 1991a. *George AFB Economic Resource Impact Statement: FY: 1990. Cost Branch Headquarters, 831st Air Division, George AFB, California.*
- U.S. Air Force, 1991b. *Data sheet providing information regarding 831st Security Police Squadron. George AFB, California.*
- U.S. Air Force Bioengineering, 1990. *Aerospace Medicine, "Potable Water Monitoring Program," June.*
- U.S. Bureau of the Census, 1981. *Housing Units Authorized by Building Permits and Public Contracts: Annual 1980, Government Printing Office, Washington, DC.*
- U.S. Bureau of the Census, 1982a. *1980 Census of Population, Volume 1. Characteristics of the Population, Chapter B: General Population Characteristics, Part 6, California, Government Printing Office, Washington, DC.*
- U.S. Bureau of the Census, 1982b. *1980 Census of Housing, Volume 1. Characteristics of Housing Units, Chapter A: General Housing Characteristics, Part 6, California, Government Printing Office, Washington, DC.*
- U.S. Bureau of the Census, 1982c. *Housing Units Authorized by Building Permits and Public Contracts: Annual 1981, Government Printing Office, Washington, DC.*
- U.S. Bureau of the Census, 1983. *Housing Units Authorized by Building Permits and Public Contracts: Annual 1982, Government Printing Office, Washington, DC.*
- U.S. Bureau of the Census, 1984. *Housing Units Authorized by Building Permits and Public Contracts: Annual 1983, Government Printing Office, Washington, DC.*
- U.S. Bureau of the Census, 1985. *Housing Units Authorized by Building Permits and Public Contracts: Annual 1984, Government Printing Office, Washington, DC.*
- U.S. Bureau of the Census, 1986. *Housing Units Authorized by Building Permits and Public Contracts: Annual 1985, Government Printing Office, Washington, DC.*
- U.S. Bureau of the Census, 1987a. *Geographical Mobility: 1985, Government Printing Office, Washington, DC.*

- U.S. Bureau of the Census, 1987b. *Housing Units Authorized by Building Permits and Public Contracts: Annual 1986*, Government Printing Office, Washington, DC.
- U.S. Bureau of the Census, 1988. *Housing Units Authorized by Building Permits and Public Contracts: Annual 1987*, Government Printing Office, Washington, DC.
- U.S. Bureau of the Census, 1989. *Housing Units Authorized by Building Permits and Public Contracts: Annual 1988*, Government Printing Office, Washington, DC.
- U.S. Bureau of the Census, 1990. *Housing Units Authorized by Building Permits and Public Contracts: Government Printing Office, Washington, DC, September.*
- U.S. Bureau of the Census, 1991. *1990 Census of Population and Housing: Summary Tape File 1A. Data provided by the U.S. Bureau of the Census, Suitland, Maryland.*
- U.S. Bureau of Economic Analysis, 1990. *Regional Economic Information System. Machine-readable county and state data for employment and earnings by industrial sector, population and personal income, 1969-1988*, Department of Commerce, Washington, DC, April.
- U.S. Bureau of Labor Statistics, 1989. *Unpublished computer output, output and employment data, by industrial sector, 1958-1988*, Department of Commerce, Washington, DC, April.
- U.S. Council of Economic Advisors, 1991. *Annual Report*, Washington, DC, February.
- U.S. Department of Defense, Office of Economic Adjustment, 1990. *Civilian Reuse of Former Military Bases, 1961-1990: Summary of Completed Military Base Economic Adjustment Projects*, Washington, DC, April-June.
- U.S. Department of Education, 1987. *Digest of Education Statistics*. Office of Educational Research and Improvement, Washington, DC.
- Victor Valley Community College, 1990. *Course Listing and Schedule of Classes*.
- Victor Valley Economic Development Authority, 1990a. *Land Use Study, George AFB, California*, prepared by County of San Bernardino Land Management Department, Office of Planning, San Bernardino, California.
- Victor Valley Economic Development Authority, 1990b. *George AFB Reuse Study Traffic Analysis - Existing Conditions*. Prepared for Victor Valley Economic Development Authority by Nolte and Associates, Mission Viejo, California, January 16.
- Victor Valley Economic Development Authority, 1990c. *George AFB Marketing Strategy*. San Bernardino, California, October 9.
- Victor Valley Union High School District, undated. *[Combined Statements of Revenues, Expenditures and Changes in Fiscal Balances, FY 1988-90, Photocopies, 14pp.]*
- Victor Valley Union High School District, 1991. *Personal communication with Dr. Andrews, Superintendent, Victor Valley Union High School District, 19 July.*
- Victor Valley Wastewater Reclamation Authority, 1980. *Rules and Regulations for Sewerage Service. Ordinance No. 001*, Victorville, California.
- Victor Valley Wastewater Reclamation Authority, 1986 (effective). *Connection Fee Ordinance No. 002*, Victorville, California.

- Victor Valley Wastewater Reclamation Authority, 1987. A letter to George AFB, order requiring corrective action VVWRA sewer use ordinance, April 9.
- Victor Valley Wastewater Reclamation Authority, 1988a. Victor Valley Wastewater Master Plan Final as Adopted, Victorville, California, September 8.
- Victor Valley Wastewater Reclamation Authority, 1988b. Extract of minutes, regular meeting of the Victor Valley Wastewater Reclamation Authority, April 28.
- Victor Valley Wastewater Reclamation Authority, 1988c. A letter to George AFB regarding time extension request of April 14, 1988 with respect to VVWRA corrective action order of April 9, 1987, dated June 3.
- Victor Valley Wastewater Reclamation Authority, 1989. A letter to HQ TAC/DEEV regarding corrective actions to be taken as part of George AFB closure EIR/EIS, dated April 13, 1989.
- Victor Valley Wastewater Reclamation Authority, 1990. Deed for TCE cleanup easement, Victorville, California, June 7.
- Victor Valley Wastewater Reclamation Authority, 1990. A letter to Norton AFB regarding the EIS for disposal/reuse of George AFB, California, comments and corrective actions, October 22.
- Victorville, City of, City of Victorville Circulation Map, Victorville General Plan, 30 October.
- Victorville, City of, Planning Department, 1991. Growth and Development. Statistical Info on: Population, Housing, Employment, Building, City of Victorville Planning Department, Victorville, California.
- Victorville Parks and Recreation Department, 1991. Recreation Activities, Winter/Spring 1991, Recreation and Community Services Division, Victorville, California.
- VVWRA, See Victor Valley Wastewater Reclamation Authority.
- Warner, F., 1991. Personal communication, Business Office, Victor Valley Union High School District, Victorville, California, March.
- Weiss, E., 1991. Personal communication, Hospital Administrator, Barstow Community Hospital, Barstow, California, April.
- Whitaker, 1991. Personal communication, Resource Manager, Edwards AFB, California.
- Whitus, P., 1991. Personal communication, Secretary, Victorville Police Department, Victorville, California, February.

THIS PAGE INTENTIONALLY LEFT BLANK



CHAPTER 7

CONSULTATION AND COORDINATION

7.0 CONSULTATION AND COORDINATION

The federal, state and local agencies and private agencies/organizations that were contacted during the course of preparing this *Socioeconomic Impact Analysis Study* are listed below.

7.1 FEDERAL AGENCIES

U.S. Air Force, Edwards AFB
U.S. Air Force, George AFB
U.S. Air Force, March AFB
U.S. Bureau of the Census
Veterans Memorial Hospital, San Bernardino

7.2 STATE AGENCIES

California Department of Consumer Affairs
California Department of Education, Sacramento, CA
California Department of Finance
California Department of Forestry and Fire Protection
California Energy Commission

7.3 LOCAL/REGIONAL AGENCIES

City of Adelanto
City Council
Fire Department
Police Department
Adelanto Elementary School District

Town of Apple Valley
Public Information Office
Fire Protection District
Police Department
Apple Valley Unified School District

City of Hesperia
Administration Services
Fire Protection District
Police Department
Planning Department
Hesperia Unified School District

City of Victorville
Personnel Office
Planning Department
Fire Department
Police Department
Victor Elementary School District
Victor Valley Union High School District

County of San Bernardino
Personnel Department
Planning Department
Sheriff's Office (Victor Valley Station 7)
Solid Waste Management Department, Victorville Operations

Victor Valley
Infrastructure Enhancement Program
Wastewater Reclamation Authority

San Bernardino Association of Governments

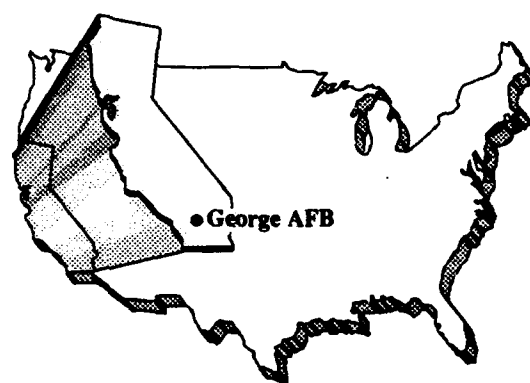
Southern California Association of Governments

Victor Valley Community College - School of Nursing

Victor Valley Economic Development Authority

7.4 PRIVATE ORGANIZATIONS

Barstow Community Hospital - Barstow
Southern California Edison Company
Southwest Gas Corporation, Victorville, CA
St. Mary's Desert Valley Hospital - Apple Valley
The Planning Center
Victor Valley Community Hospital
Victorville Disposal, Inc.



CHAPTER 8

LIST OF PREPARERS AND CONTRIBUTORS

8.0 LIST OF PREPARERS AND CONTRIBUTORS

Thomas J. Bartol, Lieutenant Colonel, U.S. Air Force, Director, Environmental Division, AFRCE-BMS/DEV
B.S., 1972, Civil Engineering, U.S. Air Force Academy, Colorado Springs
M.S., 1980, Management, Purdue University, Indiana
Years of Experience: 17

Craig M. Congdon, Environmental Planner, Robert D. Niehaus, Inc.
B.S., 1986, Geography/Geology, University of California, Riverside
Years of Experience: 5

C. Michael Costanzo, Regional Systems Manager, Robert D. Niehaus, Inc.
B.A., 1979, Geography, University of California, Santa Barbara
M.A., 1981, Geography, University of California, Santa Barbara
Ph.D., 1985, Geography, University of California, Santa Barbara
Years of Experience: 13

Tacy Costanzo, Geographer, Robert D. Niehaus, Inc.
B.A., 1988, Geography, University of California, Santa Barbara
Years of Experience: 4

Sandra Lee Cuttino, Environmental Manager, The Earth Technology Corporation
B.S., 1979, Civil Engineering, University of California, Davis
Years of Experience: 10

Paul Davis, Environmental Planner, Robert D. Niehaus, Inc.
B.A., 1978, Environmental Science, University of California, Riverside
M.A., 1984, Environmental Administration, University of California, Riverside
Years of Experience: 13.

Jackie Eldridge, Technical Editor, The Earth Technology Corporation
B.S., 1971, Biology, Fairleigh Dickinson University, New Jersey
M.S., 1979, Marine and Environmental Science, Long Island University, New York
M.B.A., 1983, National University, California
Years of Experience: 16

Aaron Goldschmidt, Environmental Analyst, Robert D. Niehaus, Inc.
B.A., 1984, Geography, University of California, Santa Barbara
M.A., 1987, Geography, University of California, Santa Barbara
Years of Experience: 6

Larry Gorenflo, Regional Systems Scientist, Robert D. Niehaus, Inc.
B.A., 1979, Anthropology, The Pennsylvania State University
M.A., 1981, Anthropology, The University of Michigan, Ann Arbor
PhD., 1985, Geography, University of California, Santa Barbara
Years of Experience: 11

William R. Livingstone, Principal Planner, Robert D. Niehaus, Inc.
B.A., 1950, Architecture, University of Southern California
M.A., 1966, Urban and Regional Planning, University of Southern California
Years of Experience: 41

Luanne Lum, Environmental Analyst, Robert D. Niehaus, Inc.
 B.E.P.D., 1985, Environmental Design and Planning, University of Colorado, Boulder
 Years of Experience: 3

Ken Matzkin, Senior Project Manager, Office of Economic Adjustment, Office of the Assistant Secretary of Defense
 B.A., 1969, Economics, Franklin and Marshall College
 M.B.A., 1972, The American University
 Years of Experience: 20

Jason Nakashima, 1st Lieutenant., U.S. Air Force, Environmental Project Officer, AFRCE-BMS/DEVE
 B.S., 1989 Electrical Engineering, University of California, Los Angeles
 Years of Experience: 1

Robert D. Niehaus, Principal Economist, Robert D. Niehaus, Inc.
 B.A., 1972, Government Oberlin College, Ohio
 Ph.D., 1979, Economics, University of Maryland, College Park
 Years of Experience: 20

Paul U. Pawlik, Economist, U.S. Air Force, AFRCE-BMS/DEPV
 B.A., 1965, Business Administration, North Central College
 M.A., 1967, Economics, Roosevelt University
 Ph.D., 1972, Economics, University of Arizona
 Years of Experience: 20

Adrian R. Sanchez, Senior Project Environmental Specialist, The Earth Technology Corporation
 B.A., 1979, Economics, California State University, San Bernardino
 M.A., 1983, Economics, University of Notre Dame
 Years of Experience: 7

Lee Schoenecker, Air Force Community Planner, HQUSAF/CEVP
 B.S., 1961, Political Science, University of Wisconsin, Madison
 M.S., 1964, Urban and Regional Planning, University of Wisconsin, Madison
 Years of Experience: 27

Robert M. Silsbee, Economic Analyst, Robert D. Niehaus, Inc.
 B.A., 1980, Economics/Environmental Studies, University of California, Santa Barbara
 M.A., 1989, Economics, University of California, Santa Barbara
 Years of Experience: 12

John K. Solld, Chief Environmental Protection Branch, U.S. Air Force, AFRCE-BMS/DEV
 B. Arch., 1968, Architecture, Tulane University, New Orleans
 Years of Experience: 18

Jeff D. Vitucci, Senior Economist, Robert D. Niehaus, Inc.
 B.A., 1974, Environmental Studies, San Jose State University, California
 M.A., 1978, Urban Economics, University of California, Santa Barbara
 Years of Experience: 13

Mary L. Vroman, Major, U.S. Air Force, Deputy, Programs and Environmental Division, AFRCE-BMS/DEV
 B.S., 1977, Engineering Operations, Iowa State University
 M.S., 1986, Engineering Management, Air Force Institute of Technology
 Years of Experience: 12

Margarita M. Weldman, Economist, Robert D. Niehaus, Inc.

B.A., 1971, Economics, Women's University

Research Certificate, 1976, London School of Economics and Political Science

M.A., 1978, Business Administration, University of Guam

Ph.D., 1985, Economics (Resource & Agriculture), University of Hawaii

Years of Experience: 20

Hayley-Jane M. Wihongi, Environmental Analyst, Robert D. Niehaus, Inc.

B.S., 1986, Sociology, Brigham Young University, Utah

Years of Experience: 4

THIS PAGE INTENTIONALLY LEFT BLANK