



Chapter 3. Socioeconomics

3.1 Overview

This chapter describes existing socioeconomic conditions in and around ARC. Information regarding population and employment at the regional, county, and local levels; the local housing market and fiscal conditions of the county; local jurisdictions; school districts; and ARC are analyzed. Applicable regulations are discussed as well as relevant policies and measures that address potential socioeconomic impacts of operations and future development at ARC. Information presented in this chapter was obtained from the November 2009 NASA ARC ERD (NASA 2009), NADP EIS (Design, Community & Environment 2002), U.S. Census, and other sources.

3.2 Regulatory Background

3.2.1 Federal Regulations

3.2.1.1 *National Environmental Policy Act*

Under NEPA, an EIS must consider social and economic effects if they are interrelated to natural or physical environmental effects, and its definition of effects includes social and economic factors (40 CFR 1508.8 and 1508.14). However, social and economic effects do not, by themselves, require preparation of an EIS.

3.2.2 Local Regulations

3.2.2.1 *Santa Clara County*

The Growth and Development and Economic Well-Being chapters of the County's General Plan contain a number of socioeconomic goals, strategies, and policies that are relevant to ARC (Santa Clara County 1994). Additionally, the County's updated 2009-2014 Housing Chapter, adopted in August 2010, addresses projected growth in the County's housing need and identifies the future development of housing at ARC as a potential source of housing credits to help the County meet its state-mandated regional housing allocation (Santa Clara County 2010).

3.2.2.2 *City of Mountain View*

The City's General Plan contains themes and overarching strategies for improving the City's overall health and wellness and economic prosperity (City of Mountain View 2012). Strategies include enhancing the City's stock of affordable housing, improving the overall economic base and diversity of businesses, and increasing land use intensities in key planning areas to support continued growth. Relevant socioeconomic policies are found in the Land Use and Design and Housing Elements of the General Plan.



3.2.2.3 City of Sunnyvale

The City of Sunnyvale's 2011 Consolidated General Plan includes Citywide Vision Goals that cover the full range of the City's social and economic aspirations, as well as individual goals that affect certain neighborhoods or business areas of the City (City of Sunnyvale 2011a). Relevant socioeconomic goals and policies are found in the Community Vision, Land Use and Transportation, and Housing Chapters.

3.3 Regional setting

3.3.1 Population Characteristics

This section describes regional, county, and local population characteristics. Based on the 2010 Census data, the cities of Mountain View and Sunnyvale had estimated populations of 74,066 and 140,081, respectively.

3.3.1.1 San Francisco Bay Area

Based on the 2010 Census, the Bay Area has a population of 7,150,739, approximately one fifth of the state's population. The Bay Area includes the counties of Alameda, Contra Costa, Marin, Napa, San Francisco, San Mateo, Santa Clara, Solano, and Sonoma. Although Santa Cruz is sometimes included as a 10th county, ARC adheres to a nine-county definition as set forth by the Association of Bay Area Governments (ABAG).

Table 3-1 shows the population growth experienced in the Bay Area between 2000 and 2010, increasing at an average annual rate of 0.5%. Santa Clara, Alameda, and Contra Costa counties are the largest counties and make up 60% of the Bay Area population and account for 72% of the growth. The Bay Area is expected to grow by approximately 13% between 2010 and 2025, to an expected population of 8.1 million.

Table 3-1. Population and Household Trends

	2000	2010	Average Annual Change 2000-2010
Ames Research Center Area¹			
Population ²	202,468	214,147	0.6%
Households ²	83,781	85,341	0.2%
Average Household Size ²	2.40	2.50	0.4%
Employed Residents per Household ²	1.36	1.25	-0.8%
Household Type-Families ²	58%	62%	0.7%
Household Type-Non-Families ²	42%	38%	-1.0%
Tenure-Owner ²	45%	46%	0.1%
Tenure-Renter ²	55%	54%	-0.1%
Santa Clara County			
Population	1,682,585	1,781,642	0.6%
Households	565,863	604,204	0.7%
Average Household Size	2.92	2.90	-0.1%
Employed Residents per Household	1.49	1.33	-1.2%
Household Type-Families	70%	71%	0.1%
Household Type-Non-Families	30%	29%	-0.2%



	2000	2010	Average Annual Change 2000-2010
Tenure-Owner	60%	58%	-0.4%
Tenure-Renter	40%	42%	0.5%
San Francisco Bay Area			
Population	6,783,762	7,150,739	0.5%
Households	2,466,020	2,608,023	0.6%
Average Household Size	2.69	2.69	0.0%
Employed Residents per Household	1.37	1.25	-0.9%
Household Type-Families	65%	65%	0.0%
Household Type-Non-Families	35%	35%	0.0%
Tenure-Owner	58%	56%	-0.3%
Tenure-Renter	42%	44%	0.4%
Notes:			
¹ ARC area includes the combined jurisdictions of Mountain View and Sunnyvale.			
² All data from the 2000 and 2010 U.S. Census, except for 2010 employed residents, which is from <i>ABAG Projections 2013</i> .			
Source: U.S. Census n.d.; ABAG 2013.			

3.3.1.2 Santa Clara County

Between 2000 and 2010, the County population grew from 1.7 million to 1.8 million, at an annual rate of 0.6%. This increase accounts for 27.0% of growth in the Bay Area during this time. The 2010 Census recorded 1,781,642 residents residing in the County, making it the most populous county in the Bay Area (ABAG 2013). ABAG has projected a population increase of slightly fewer than 300,000 in the County between 2010 and 2025, an increase of 16.8%. Current population data and forecasts for the County are contained in Tables 3-1 and 3-2.

Table 3-2. Population and Household Projections

	2010	2015	2020	2025	Projected Change 2010-2025
Population					
Ames Research Center Area ¹	214,147	226,400	238,800	251,600	17.49%
Santa Clara County	1,781,642	1,877,700	1,977,900	2,080,600	16.78%
San Francisco Bay Area	7,150,739	7,461,400	7,786,800	8,134,000	13.75%
Households					
Ames Research Center Area ¹	85,341	90,130	95,080	99,800	16.94%
Santa Clara County	604,204	639,160	675,670	710,610	17.61%
San Francisco Bay Area	2,608,023	2,720,410	2,837,680	2,952,910	13.22%
Notes:					
¹ ARC area includes the combined jurisdictions of Mountain View and Sunnyvale.					
Source: ABAG 2013.					



The growth in households in the County mirrors population growth. In 2010, 58% of County households owned their home, an ownership rate slightly higher than that of the overall Bay Area (56%). Homeownership rates declined slightly over the 2000-2010 decade for both the County and the Bay Area.

The County's median household income in 2012 was \$91,425, higher than the Bay Area, but lower than the ARC area, as shown in Table 3-3. The 2012 County household income distribution is presented in Table 3-4.

Table 3-3. Median Household Income

	2012 ¹
Ames Research Center Area ²	\$100,653
Santa Clara County	\$91,425
San Francisco Bay Area ²	\$76,209
Notes:	
¹ All income amounts are expressed in nominal 2012 dollars.	
² ARC area includes the combined jurisdictions of Mountain View and Sunnyvale. Median calculated by BAE from grouped frequency distribution.	
Source: U.S. Census Bureau n.d.	

Table 3-4. Estimated 2012 Household Income Distribution

2012 Income	Ames Research Center Area ¹	Santa Clara County	San Francisco Bay Area
Less than \$15,000	5.3%	7.5%	9.3%
\$15,000 to \$24,999	6.5%	6.3%	7.7%
\$25,000 to \$34,999	4.9%	6.2%	6.9%
\$35,000 to \$49,999	8.1%	9.1%	10.3%
\$50,000 to \$74,999	12.3%	13.2%	15.3%
\$75,000 to \$99,999	12.6%	11.8%	11.8%
\$100,000 to \$149,999	23.5%	19.8%	17.6%
\$150,000 and above	26.9%	26.1%	21.2%
Notes:			
¹ ARC area includes the combined jurisdictions of Mountain View and Sunnyvale.			
Source: U.S. Census Bureau n.d.			

The 2010 median age in the County was 36.2 years, as compared to 37.8 for the Bay Area (see Table 3-5).



Table 3-5. Age Distribution 2000 AND 2010

	2000	2010
Ames Research Center Area¹		
Under 18	19.6%	21.5%
18–24	7.9%	6.9%
25–34	23.7%	20.1%
35–44	18.3%	17.0%
45–54	12.2%	13.8%
55–64	7.7%	9.7%
65+	10.6%	11.0%
Median Age	34.5	35.8
Santa Clara County		
Under 18	24.7%	24.1%
18–24	9.3%	8.9%
25–34	17.8%	15.1%
35–44	17.6%	15.6%
45–54	13.0%	14.8%
55–64	8.0%	10.4%
65+	9.5%	11.1%
Median Age	34.0	36.2
San Francisco Bay Area		
Under 18	23.6%	22.2%
18–24	8.8%	9.0%
25–34	16.5%	14.7%
35–44	17.3%	14.9%
45–54	14.2%	15.0%
55–64	8.4%	11.9%
65+	11.2%	12.3%
Median Age	35.6	37.8
Notes: ¹ ARC area includes the combined jurisdictions of Mountain View and Sunnyvale. Source: U.S. Census Bureau n.d.		

3.3.1.3 Ames Research Center Area

The ARC area includes the cities of Sunnyvale and Mountain View, which surround the ARC. Although portions of ARC lie within the boundaries of both cities, it is primarily located in unincorporated Santa Clara County. The ARC area has a 2010 population of 214,000, or approximately 12% of County residents. The ARC area experienced an annual population



increase of 0.6% between 2000 and 2010, the same rate as the County over the same time period. ABAG projects a 12.8% population increase in this area from 2010 to 2025, adding 37,500 residents.

As of 2010, 46% of ARC area households own their homes, as compared with 58% in the County. Home ownership rates within the ARC area increased at a rate of only 0.1% annually from 2000 to 2010, while the county home ownership rate dropped at an annual rate of 0.4% over the decade.

At \$100,653, the ARC area has a higher median income than either the County or the Bay Area (see Tables 3-3 and 3-4 above). As of 2010, the median age for the ARC area population is 35.8 years, while the median for the County is 36.2 (see Table 3-5).

3.3.2 Employment

This section presents employment data for the region, County, and local area.

3.3.2.1 San Francisco Bay Area

The Bay Area has approximately 3.4 million full- and part-time jobs as of 2010. The number of jobs in the Bay Area declined by nearly 10% between 2000 and 2010, but employment is expected to grow by approximately 1.3% annually from 2010 through 2035 (see Table 3-6). Services, retail trade and manufacturing & wholesale comprise 68% of the Bay Area's economy as of 2010, and are expected to dominate through 2025.

Table 3-6. Employment Projections by Industry Sector

Industry Sector	2000		2010		2025		2010-2025
	Number	Percent	Number	Percent	Number	Percent	Annual Change
San Francisco Bay Area							
Agriculture & Natural Resources	24,470	0.7%	24,640	0.7%	24,800	0.6%	0.0%
Construction	231,380	6.2%	142,350	4.2%	203,280	5.0%	2.4%
Manufacturing & Wholesale	685,480	18.3%	460,170	13.6%	476,580	11.7%	0.2%
Retail	402,670	10.7%	335,930	9.9%	372,210	9.1%	0.7%
Transportation & Utilities	177,940	4.7%	98,710	2.9%	120,650	3.0%	1.3%
Information	177,440	4.7%	121,070	3.6%	150,890	3.7%	1.5%
Financial & Leasing	283,350	7.5%	186,070	5.5%	226,770	5.5%	1.3%
Professional & Managerial Services	568,260	15.1%	596,740	17.6%	814,300	19.9%	2.1%



	2000		2010		2025		2010-2025
Industry Sector	Number	Percent	Number	Percent	Number	Percent	Annual Change
Health & Educational Services	623,590	16.6%	447,720	13.2%	584,230	14.3%	1.8%
Arts, Recreation & Other Services	432,440	11.5%	472,930	14.0%	589,000	14.4%	1.5%
Government	146,440	3.9%	498,970	14.7%	526,610	12.9%	0.4%
Total Employment	3,753,460	100.0%	3,385,300	100.0%	4,089,320	100.0%	1.3%
Santa Clara County							
Agriculture & Natural Resources	4,560	0.4%	4,530	0.5%	4,120	0.4%	-0.6%
Construction	55,460	5.3%	33,590	3.6%	45,660	4.0%	2.1%
Manufacturing & Wholesale	317,520	30.4%	203,800	22.0%	209,240	18.2%	0.2%
Retail	100,570	9.6%	84,280	9.1%	96,470	8.4%	0.9%
Transportation & Utilities	29,000	2.8%	12,950	1.4%	17,130	1.5%	1.9%
Information	50,180	4.8%	47,480	5.1%	57,940	5.1%	1.3%
Financial & Leasing	45,230	4.3%	32,490	3.5%	38,710	3.4%	1.2%
Professional & Managerial Services	166,020	15.9%	177,220	19.1%	254,700	22.2%	2.4%
Health & Educational Services	154,120	14.8%	122,420	13.2%	176,940	15.4%	2.5%
Arts, Recreation & Other Services	93,410	8.9%	106,750	11.5%	143,090	12.5%	2.0%
Government	28,060	2.7%	100,760	10.9%	103,020	9.0%	0.1%
Total Employment	1,044,130	100.0%	926,270	100.0%	1,147,020	100.0%	1.4%
Source: ABAG 2009, 2013.							

The manufacturing and wholesale sector comprises 14% of jobs in the Bay Area. The region benefits from a research and development infrastructure with nine research facilities, as well as other high technology and research and development companies, which attract highly skilled labor for manufacturing.

ABAG projects the number of construction jobs to grow at an annual rate of 2.4% from 2010 to 2025 as the sector recovers from the recession, faster than any other employment sector in the Bay Area. Professional and managerial services is projected to grow at an annual rate of 2.1% over the same period.



3.3.2.2 *Santa Clara County*

The County is recognized worldwide as a major center for high technology development, which includes the following high-profile firms:

- Adobe Systems, Inc.
- Apple Computer
- Applied Materials, Inc.
- Advanced Micro Devices (AMD)
- Cisco Systems, Inc.
- Facebook
- Google
- Hewlett-Packard Company
- Intel Corporation
- Lockheed-Martin Missiles and Space
- VM Software
- Tesla Motors

In 2010, manufacturing, service, wholesale, and retail trade sectors comprised 78% of all jobs in the County. The manufacturing and wholesale sector is particularly large in Santa Clara County, albeit smaller than in 2000. Employment in this sector is expected to grow minimally from 2010 through 2025 (see Table 3-6 above).

As of 2013, there were 951,600 wage and salary workers in the County (State of California EDD 2014); in 2010 County employment represented 27% of total employment in the Bay Area (ABAG 2013). By 2025, the number of workers in the County is projected to increase by 24% from 2010 levels.

3.3.2.3 *Ames Research Center Area*

As of 2010, 13 percent of all jobs in the County are in the ARC area (Table 3-7), 28% of which are in the manufacturing and wholesale and transportation sector. Major technology firms in the ARC area include Google, Symantec, Intuit, Yahoo!, Juniper Networks, Network Appliances, and AMD.



Table 3-7. Employment Projections by Industry Sector, Ames Research Center Area

Industry Sector	2000		2010		2025		2010-2025
	Number	Percent	Number	Percent	Number	Percent	Annual Change
Agriculture and Natural Resources Jobs	230	0.1%	210	0.2%	200	0.1%	-0.3%
Manufacturing, Wholesale and Transportation Jobs	70,640	41.5%	34,590	28.2%	36,260	24.8%	0.3%
Retail Jobs	15,360	9.0%	11,980	9.8%	13,590	9.3%	0.8%
Financial and Professional Service Jobs	38,330	22.5%	25,680	20.9%	33,630	23.0%	1.8%
Health, Educational and Recreational Service Jobs	23,840	14.0%	21,910	17.8%	30,680	21.0%	2.3%
Other Jobs	21,670	12.7%	28,390	23.1%	31,960	21.8%	0.8%
Total	170,070	100.0%	122,760	100.0%	146,320	100.0%	1.2%
Notes: ARC Area includes the combined jurisdictions of Mountain View and Sunnyvale. Source: ABAG 2009							

3.3.3 Housing Areas Adjacent to ARC

This section describes existing housing conditions in areas adjacent to ARC.

Bay Area housing markets do not conform uniformly to geographic and jurisdictional boundaries. Therefore, data from the Metropolitan Transportation Commission's (MTC's) Commuter Forecasts for the San Francisco Bay Area 1990–2020 was used to define this specific market for the socioeconomic analysis.¹ MTC organizes this data into “superdistricts” that do not correspond directly with jurisdictional boundaries. This definition assumes that workers in Superdistrict 9, which includes Sunnyvale and Mountain View, serves as a good example for this area. Commuter forecasts for 2010 were used to conduct this analysis. The complete MTC data set is contained in Table 3-8.

¹ To maintain consistency with the original EIS, the Housing Impact Area (HIA) definition has not been redefined based on more recent data; in any case, it is likely that the general commute patterns and overall impact area has remained approximately the same, i.e., the superdistricts containing and nearest to the Ames Research Center.



Table 3-8. Commuters to Sunnyvale/Mountain View Superdistrict

Super-district	District of Residence	District of Work	2000 Number	% of Total	2010 Estimate	% of Total
1	Downtown SF	Sunnyvale/ Mountain View	548	0.1%	599	0.1%
2	Richmond District	Sunnyvale/ Mountain View	1,153	0.3%	1,197	0.2%
3	Mission District	Sunnyvale/ Mountain View	1,513	0.4%	1,593	0.4%
4	Sunset District	Sunnyvale/ Mountain View	910	0.2%	942	0.3%
5	Daly City/San Bruno	Sunnyvale/ Mountain View	2,306	0.6%	2,510	0.6%
6	San Mateo/Burlingame	Sunnyvale/ Mountain View	5,497	1.5%	6,095	1.5%
7	Redwood City/ Menlo Park	Sunnyvale/ Mountain View	9,838	2.6%	11,180	2.7%
8	Palo Alto/Los Altos	Sunnyvale/ Mountain View	22,128	5.9%	24,526	5.8%
9	Sunnyvale/ Mountain View	Sunnyvale/ Mountain View	74,583	19.9%	87,497	20.8%
10	Saratoga/ Cupertino	Sunnyvale/ Mountain View	56,462	15.0%	61,248	14.5%
11	Central San Jose	Sunnyvale/ Mountain View	38,805	10.3%	43,348	10.3%
12	Milpitas/East San Jose	Sunnyvale/ Mountain View	61,051	16.3%	67,192	16.0%
13	South San Jose/Almaden	Sunnyvale/ Mountain View	29,403	7.8%	31,735	7.5%
14	Gilroy/Morgan Hill	Sunnyvale/ Mountain View	5,568	1.5%	5,386	1.3%
15	Livermore/ Pleasanton	Sunnyvale/ Mountain View	5,950	1.6%	7,128	1.7%
16	Fremont/Union City	Sunnyvale/ Mountain View	23,652	6.3%	25,349	6.0%
17	Hayward/San Leandro	Sunnyvale/ Mountain View	3,992	1.1%	4,204	1.0% ¹
18	Oakland/ Alameda	Sunnyvale/ Mountain View	1,558	0.4%	1,626	0.4%
19	Berkeley/Albany	Sunnyvale/ Mountain View	467	0.1%	483	0.1%
20	Richmond/El Cerrito	Sunnyvale/ Mountain View	522	0.1%	553	0.1%
21	Concord/ Martinez	Sunnyvale/ Mountain View	731	0.2%	825	0.2%
22	Walnut Creek/ Lamorinda	Sunnyvale/ Mountain View	592	0.2%	660	0.2%
23	Danville/San Ramon	Sunnyvale/ Mountain View	2,487	0.7%	2,997	0.7%
24	Antioch/ Pittsburg	Sunnyvale/ Mountain View	1,135	0.3%	1,419	0.3%



Super-district	District of Residence	District of Work	2000 Number	% of Total	2010 Estimate	% of Total
25	Vallejo/Benicia	Sunnyvale/Mountain View	386	0.1%	408	0.1%
26	Fairfield/Vacaville	Sunnyvale/Mountain View	534	0.1%	614	0.1%
27	Napa	Sunnyvale/Mountain View	61	0.0%	54	0.0%
28	St. Helena/ Calistoga	Sunnyvale/Mountain View	65	0.0%	63	0.0%
29	Petaluma/Sonoma	Sunnyvale/Mountain View	59	0.0%	56	0.0%
30	Santa Rosa/Sebastopol	Sunnyvale/Mountain View	99	0.0%	84	0.0%
31	Healdsburg/Cloverdale	Sunnyvale/Mountain View	77	0.0%	72	0.0%
32	Novato	Sunnyvale/Mountain View	136	0.0%	140	0.0%
33	San Rafael	Sunnyvale/Mountain View	190	0.1%	198	0.0%
34	Mill Valley/Sausalito	Sunnyvale/Mountain View	107	0.0%	115	0.0%
	Santa Cruz County	Sunnyvale/Mountain View	6,514	1.7%	8,192	1.9%
	San Joaquin County	Sunnyvale/Mountain View	4,672	1.2%	6,027	1.4%
	Stanislaus County	Sunnyvale/Mountain View	5,389	1.4%	6,713	1.6%
	Sacramento County	Sunnyvale/Mountain View	3,216	0.9%	4,033	1.0%
	Monterey County	Sunnyvale/Mountain View	647	0.2%	940	0.2%
	San Benito County	Sunnyvale/Mountain View	894	0.2%	1,152	0.3%
	Placer County	Sunnyvale/Mountain View	639	0.2%	859	0.2%
	Merced County	Sunnyvale/Mountain View	603	0.2%	711	0.1%
	Yolo County	Sunnyvale/Mountain View	160	0.0%	176	0.0%
	Lake County	Sunnyvale/Mountain View	56	0.0%	62	0.0%
	Mendocino County	Sunnyvale/Mountain View	0	0.0%	0	0.0%
	Colusa County	Sunnyvale/Mountain View	0	0.0%	0	0.0%
		Total	375,355	100%	420,961	100%

Notes:

Shaded superdistricts are within HIA.

¹ Percentage shown is due to rounding. Actual percentage is below 1%.

Source: MTC 2001.



The MTC data found workers traveling to Superdistrict 9 from several counties outside the Bay Area, including but not limited to Santa Cruz, San Joaquin, and Stanislaus counties. The San Joaquin Council of Governments' Altamont Pass 2000 Commuter Survey found that 21% of drivers commuting through the Altamont Pass were destined for Santa Clara County. These trends suggest that the housing area considered to be adjacent to ARC is very broad.

This broad adjacent housing area spreads across a large market, possibly masking effects of the local economy on local communities. To avoid this result, this document takes a more conservative approach and defines the area of effect for potential housing effects for a smaller area than the full commute-shed. The methodology for defining this smaller area of effect assumes that NRP workers will search areas near their workplace for affordable housing before going farther. MTC data validates this assumption, showing that the vast majority of commuters to Superdistrict 9 in 2010 will reside in the immediate County.

Superdistricts that generated 1% or more of the total commuters to Superdistrict 9 were included in the HIA. Santa Cruz, Stanislaus, and San Joaquin Counties fell above the 1% cutoff line. These counties are excluded from the HIA because commuters from these areas come from an entire county, which is larger than a single superdistrict. Therefore, the greater than 1% standard does not apply. Table 3-9 contains the superdistricts included in the HIA and lists the number of commuters from each superdistrict. Together, these superdistricts generated more than 88% of commuters to Superdistrict 9.

Table 3-9. Definition of the Housing Impact Area

District of Residence	District of Work	Number¹	Percent of All Commuters to Sunnyvale/Mountain View Superdistrict
Sunnyvale/Mountain View	Sunnyvale/Mountain View	87,497	20.8%
Milpitas/East San Jose	Sunnyvale/Mountain View	67,192	16.0%
Saratoga/Cupertino	Sunnyvale/Mountain View	61,248	14.5%
Central San Jose	Sunnyvale/Mountain View	43,348	10.3%
South San Jose/Almaden	Sunnyvale/Mountain View	31,735	7.5%
Palo Alto/Los Altos	Sunnyvale/Mountain View	24,526	5.8%
Fremont/Union City	Sunnyvale/Mountain View	25,349	6.0%
Redwood City/Menlo Park	Sunnyvale/Mountain View	11,180	2.7%
Livermore/Pleasanton	Sunnyvale/Mountain View	7,128	1.7%
San Mateo/Burlingame	Sunnyvale/Mountain View	6,095	1.4%
Gilroy/Morgan Hill	Sunnyvale/Mountain View	5,386	1.3%
TOTAL		370,684	88.1%
All Commuters to Sunnyvale/Mountain View Superdistrict		420,961	
Notes:			
¹ Forecasts for 2010 were used, as this is the closest date available to NRP's anticipated buildout year of 2013.			
Source: MTC 2001.			



3.3.3.1 Adjacent Housing Area Population Characteristics

This section concentrates on population and household trends in the adjacent housing area between 2010 and 2030.²

Population characteristics of the area adjacent to ARC are summarized in Table 3-10. The population in this housing area is expected to increase from 2.7 million in 2010 to 3.3 million by 2030, a population increase of 0.9% per annum. The number of households is expected to increase from 940,000 to 1.14 million over the same period, at an average annual rate of 1.0%. The average household size is expected to remain approximately the same, decreasing slightly from 2.87 to 2.86 persons per household.

Table 3-10. Housing Impact Area Characteristics

HIA ¹	2010	2030	Total Change 2010 to 2030	Annual Change 2010 to 2030
Population	2,736,928	3,291,096	554,168	0.9%
Households	938,753	1,140,106	201,353	1.0%
Average Household Size	2.87	2.86	-0.01	-0.01%
Average Workers Per Household	1.24	1.41	0.17	0.65%
Notes: ¹ HIA includes the MTC Superdistricts listed in Table 3-9 Source: MTC 2013.				

3.3.3.2 Housing Market in the Housing Impact Area

The Bay Area housing market is one of the most competitive in the country, with limits on supply combined with substantial demand for housing, and with many workers commuting from outside the area due to limited inventory and high prices within the region.

3.3.3.3 Housing Stock in Areas Adjacent to ARC

ABAG estimates the total number of occupied units in 2010 in the adjacent areas at 938,753, of which 621,100 (66.2%) are single-family dwellings and 317,653 (33.8%) are multifamily dwellings (see Table 3-11). The total number of occupied units is expected to increase by 21.4% to 1.14 million by 2030, with a shift toward a higher proportion (40.1%) of multifamily units, with over two-thirds of the additional units being multifamily.

The superdistricts of Livermore/Pleasanton, Sunnyvale/Mountain View, Central San Jose, and Milpitas/East San Jose are expected to absorb approximately 59% of new households in the areas adjacent to ARC between 2010 and 2030. The Sunnyvale/Mountain View Superdistrict will gain more than 38,000 units, representing 19% of all units constructed in the adjacent area during this period. The Central San Jose Superdistrict will gain more than

² Data not available for 2025.



34,000 units, or 17.1% of all units constructed in the adjacent area between 2010 and 2030.

Table 3-11. Housing Stock in Housing Impact Area

Superdistrict	2010		2030		Percent Change 2010-2030	Change as % of Total New Units in HIA
	Number of Units ¹	Percent of Total	Number of Units ¹	Percent of Total		
Sunnyvale/Mountain View	97,647	10.4%	136,088	11.9%	39.4%	19.1%
Milpitas/East San Jose	106,695	11.4%	134,023	11.8%	25.6%	13.6%
Saratoga/Cupertino	119,481	12.7%	135,782	11.9%	13.6%	8.1%
Central San Jose	102,760	10.9%	137,216	12.0%	33.5%	17.1%
South San Jose/Almaden	72,900	7.8%	83,744	7.3%	14.9%	5.4%
Palo Alto/Los Altos	70,855	7.5%	81,702	7.2%	15.3%	5.4%
Fremont/Union City	104,069	11.1%	120,673	10.6%	16.0%	8.2%
Redwood City/Menlo Park	77,107	8.2%	89,688	7.9%	16.3%	6.2%
Livermore/Pleasanton	71,031	7.6%	89,113	7.8%	25.5%	9.0%
San Mateo/Burlingame	82,341	8.8%	93,538	8.2%	13.6%	5.6%
Gilroy/Morgan Hill	33,867	3.6%	38,539	3.4%	13.8%	2.3%
Multi-Family Dwellings	317,653	33.8%	457,307	40.1%	44.0%	69.4%
Single-Family Dwellings	621,100	66.2%	682,799	59.9%	9.9%	30.6%
Total	938,753	100.0%	1,140,106	100.0%	21.4%	

Notes:
¹ Only includes occupied units
Source: MTC 2013.

3.3.3.4 Rental Housing Market

According to Real Facts, a service that tracks apartment market conditions across the U.S., in the second quarter of 2014 the average monthly rent in the adjacent area for multifamily complexes of at least 50 units was \$2,287, with an average vacancy rate of 4.8% (see Tables 3-12 and 3-13). Rents have been increasing in recent years; between 2013 and the 2014 year-to-date, the average rent increased by 7.3%, while the vacancy rate has remained relatively stable.



Table 3-12. Overview of the Housing Impact Area Rental Housing Market

Current Market Data (2nd Quarter 2014)					
Unit Type	Number	Percent of Mix	Average Square Feet	Average Rent	Average Rent/ Square Feet
Studio	6,712	5.5%	467	\$1,637	\$3.51
1 BR/1 BA	50,970	41.5%	718	\$2,052	\$2.86
2 BR/1 BA	14,482	11.8%	883	\$2,172	\$2.46
2 BR/2 BA	34,834	28.4%	1,035	\$2,665	\$2.57
2 BR Townhouse	4,022	3.3%	1,117	\$2,626	\$2.35
3 BR/2 BA	3,853	3.1%	1,293	\$3,104	\$2.40
Other Unit Types ¹	7,822	6.4%	na	na	na
Totals	122,695	100.0%	854	\$2,287	\$2.68

Notes:
¹ Unit types making up less than 3% of the market are not shown separately. Included in "Other" are urban lofts, Jr 1BR, 1 BR/1.5BA, 1BR townhouses, 2BR/1.5BA, 3BR/1BA,3BR/1.5BA,3BR townhouses, and 4BR units.
 Source: RealFacts 2014.

Table 3-13. Average Rent and Occupancy in the Housing Impact Area

Average Rent History (2nd Quarter 2014)							
Unit Type	2011	2012	2011-2012 Change	2013	2012-2013 Change	2014 YTD ¹	2013-2014 Change
Studio	\$1,161	\$1,310	12.8%	\$1,465	11.8%	\$1,591	8.6%
1 BR/1 BA	\$1,530	\$1,704	11.4%	\$1,856	8.9%	\$1,998	7.7%
2 BR/1 BA	\$1,635	\$1,808	10.6%	\$1,972	9.1%	\$2,106	6.8%
2 BR/2 BA	\$2,025	\$2,225	9.9%	\$2,420	8.8%	\$2,588	6.9%
2 BR Townhouse	\$2,029	\$2,219	9.4%	\$2,407	8.5%	\$2,559	6.3%
3 BR/2 BA	\$2,387	\$2,603	9.0%	\$2,804	7.7%	\$3,025	7.9%
3 BR Townhouse	\$2,545	\$2,785	9.4%	\$3,098	11.2%	\$3,279	5.8%
Average	\$1,719	\$1,902	10.6%	\$2,071	8.9%	\$2,223	7.3%

Occupancy Rate (2nd Quarter 2014)	
Year	Average Occupancy
2010	95.8%
2011	96.4%
2012	96.1%
2013	95.2%

Notes:
¹ Average of first two quarters of 2000
 Source: RealFacts 2014.



Affordable monthly rent (assuming 30% of income and including utilities) for households at the 25th percentile of household income is \$1,080. For those at the median household income, affordable monthly rent is \$2,286, and \$3,878 for those at the 75th percentile (see Table 3-14). To compare these affordable rents to actual rents, Tables 3-13 and 3-14 show the range of monthly rent for various unit types in the adjacent housing area.

Table 3-14. Rental Housing Affordability Analysis

Income and Affordability		
Income Level	Estimated Household Income	Monthly Affordable Rent ¹
25th Percentile	\$43,216	\$1,080
Median	\$91,425	\$2,286
75th Percentile	\$155,136	\$3,878
Rents ²		
Unit Type	Average Rent	
Studio	\$1,382	
1 BR/1 BA	\$1,650	
2 BR Townhouse	\$2,048	
2 BR/1 BA	\$1,732	
2 BR/2 BA	\$2,139	
3 BR Townhouse	\$2,446	
3 BR/2 BA	\$2,396	
Totals	\$1,820	
Notes:		
¹ Affordable gross rent is considered to be 30% of household income.		
² From Real Facts survey of apartment complexes with 50 or more units in HIA. Rents as of June 2014.		
Source: RealFacts 2014; U.S. Census Bureau n.d.		

3.3.3.5 Ownership Housing Market

All sales noted as full-price sales in the HIA between June 1, 2014 and June 15, 2014 are shown in Table 3-15. The median cost for a single-family home is \$860,000, and the median cost of a condominium is \$496,000, revealing the high housing costs typical of the Bay Area.

Table 3-15. Overview of Housing Impact Area For-Sale Housing Market

Single-Family			Condominiums		
Sale Price	Number of Units	Percent of Total	Sale Price	Number of Units	Percent of Total
Less than \$300,000	21	2.7%	Less than \$300,000	26	7.9%
\$300,000 to \$399,999	12	1.5%	\$300,000 to \$399,999	65	19.8%
\$400,000 to \$499,999	45	5.7%	\$400,000 to \$499,999	75	22.9%



Single-Family			Condominiums		
Sale Price	Number of Units	Percent of Total	Sale Price	Number of Units	Percent of Total
\$500,000 to \$599,999	76	9.7%	\$500,000 to \$599,999	53	16.2%
\$600,000 to \$699,999	92	11.7%	\$600,000 to \$699,999	43	13.1%
\$700,000 to \$799,999	101	12.8%	\$700,000 to \$799,999	28	8.5%
\$800,000 to \$899,999	78	9.9%	\$800,000 to \$899,999	12	3.7%
\$900,000 to \$999,999	56	7.1%	\$900,000 to \$999,999	16	4.9%
\$1,000,000 to \$1,499,999	164	20.8%	\$1,000,000 to \$1,499,999	6	1.8%
\$1,500,000 to \$1,999,999	71	9.0%	\$1,500,000 to \$1,999,999	4	1.2%
\$2,000,000 and above	71	9.0%	\$2,000,000 and above	0	0.0%
Total ¹	787	100.0%	Total ¹	328	100.0%
Median Sale Price	\$860,000		Median Sale Price	\$496,000	
Average Sale Price	\$1,066,279		Average Sale Price	\$541,237	

Notes:
¹ Represents all full, verified, and confirmed sales within the HIA between June 1, 2014 and June 15, 2014.
Source: DataQuick 2014.

The County's 2012 household income distribution is used as a basis for determining housing affordability (see Table 3-16). According to this distribution, households at the 25th percentile of household income could only afford approximately 1% of the single-family homes and 1.5% of the condominiums sold during the first 2 weeks of June 2014 in the area adjacent to ARC. Households at the median household income can afford 4.6% of the single-family homes and 18.9% of the condominiums sold during the same period, and households at the 75th percentile can afford 32.1% of single-family homes and 75.9% of the condominiums sold.

Table 3-16. For-Sale Housing Affordability Analysis

Income Level	Estimated Household Income ²	Single-Family Residence ¹			Condominium ¹		
		Affordable Sales Price ³	Number of Affordable Units ⁴	Percent of All Sales	Affordable Sales Price ⁵	Number of Affordable Units ⁶	Percent of All Sales
25th Percentile	\$43,216	\$195,052	9	1.1%	\$140,891	5	1.5%
Median	\$91,425	\$412,639	36	4.6%	\$358,478	62	18.9%
75th Percentile	\$155,136	\$700,195	253	32.1%	\$646,034	249	75.9%

Notes:
¹ Calculations by BAE Urban Economics.
² From Table 3-14.
³ Assumes 5.23% annual fixed interest, 30-year term, 20% of sales price down payment, 1.14% property tax, 0.21% of sales price annual insurance, 30% of household income available for principal, interest, taxes, and insurance.
⁴ Of all full-price single-family home sales in HIA from June 1, 2014 to June 15, 2014. Table 3-14 contains sales data.
⁵ Assumes 5.23% annual fixed interest, 30-year term, 20% of sale price down payment, 1.14% property tax,



\$300/month homeowners dues, 30% of household income available for principal, interest, taxes, and insurance.
⁶ Of all full-price condominium sales in HIA from June 1, 2014 through June 15, 2014.
Source: U.S. Census Bureau n.d.

3.3.4 Fiscal Environment

This section discusses the existing fiscal conditions in the County, the cities of Sunnyvale and Mountain View, and the school districts serving Moffett Field.

3.3.4.1 Ames Research Center

Portions of ARC are located within the cities of Sunnyvale (specifically parcel 015-36-009) and Mountain View (parcels 116-07-010 and 116-12-008). However, the majority of the ARC lies within unincorporated Santa Clara County. These multiple jurisdictions within the ARC create a complex tax system. More than 1/2 of Moffett Field is under federal exclusive jurisdiction.

Most of the Bay View area exists on lands over which the federal government has a proprietary interest, but has no legislative jurisdiction. Although this designation generally allows cities to provide law enforcement and public safety, the federal government has historically provided these services and is expected to continue to do so. Regardless of whether property is owned by the federal government or a non-federal entity, areas under exclusive federal legislative jurisdiction are not subject to property taxes.

However, Congress has waived the sovereign immunity of the federal government on exclusive jurisdiction land for other taxes. Under the Buck Act, 4 United States Code(USC)105-110, state and local sales taxes, income taxes, and use taxes are applicable within areas of exclusive federal legislative jurisdiction. Such taxes may not be levied on the federal government or any federal instrumentality. However, private for-profit corporations in exclusive federal legislative jurisdiction and nonprofit entities are subject to these taxes.

Areas under partial legislative jurisdiction or proprietary interest are subject to state and local taxes. Therefore, nonfederal entities in these areas are subject to all taxes, including property tax, unless the entities have another status (e.g., nonprofit or state entities) that would otherwise leave them exempt.

3.3.4.2 Santa Clara County

According to the Fiscal Year (FY) 2015 Recommended Budget (FY 2015 Budget), the County anticipates \$883 million in General Fund Unallocated Revenues for FY 2015. Motor vehicle in-lieu fees and secured property taxes represent the two largest unallocated revenue sources, with \$345 million and \$207 million, respectively, in revenues for FY 2015.

The FY 2015 Budget reports that County revenue has grown in conjunction as the Silicon Valley economy recovers from the recent recession. Three of the largest revenue sources of the County General Fund are secured property tax, motor vehicle in-lieu fees, and the Measure A sales tax, all of which are expected to increase between FYs 2014 and 2015; the projected budget surplus in FY 2015 is \$34.3 million. However, the FY 2015 Budget reports



that the Affordable Care Act and reductions in funding for the public safety realignment from Assembly Bill (AB) 209 leave a certain amount of uncertainty in the projections.

3.3.4.3 The City of Sunnyvale

The FY 2014/2015 Budget) for the City of Sunnyvale projects total revenue of \$321 million, and a general fund revenue of \$154 million. The two largest sources of general fund revenue are property tax, which comprises 34% of total general fund revenue, and sales tax, which comprises 20% of total general fund revenue. Transient occupancy tax and utility tax encompass 11% of the total revenue. Total expenditures for FY 2014/2015 are projected at \$321 million, with a total operating budget of \$235 million.

3.3.4.4 The City of Mountain View

The proposed FY 2014/2015 Budget for the City of Mountain View projects \$236 million in total revenue and \$100 million in General Fund revenues for FY 2014/2015. Property tax and sales tax, the two largest revenue sources, comprise 27% and 7% of the city's total revenue, respectively. Transient occupancy tax, business license tax, and utility user's tax make up another 6%, while other revenue sources, including but not limited to intergovernmental revenue, permits and fees, and interfund revenues and transfers, comprises 18% of total revenue for the city budget. The city estimates \$256 million in total expenditures in FY 2014/2015, \$98 million of which is for general operations. The general fund of the city has stabilized in recent years, but future trends are tied to the success of the regional economy.

3.3.4.5 Mountain View-Whisman School District

The Mountain View-Whisman School District serves elementary and middle school students from Moffett Field. In FY 2013/2014, the district projected \$42.8 million in revenue and \$45.9 million in expenditures for its general fund. Taking into account reserves and interfund transfers, the district will have an ending balance of \$16.9 million.

The revenue limit, which is determined by dividing average daily attendance by the total number of school days in the school year, comprises \$28.5 million, or 67% of the general fund. The general fund also receives federal funds of \$1.4 million and state funds of \$4.8 million. Local income sources, including a parcel tax, comprise the final \$3.7 million, or 19%, of the general fund.

3.3.4.6 Mountain View-Los Altos Union High School District

The Mountain View-Los Altos Union High School District serves high school students from Moffett Field. The FY 2013-2014 Budget for the district projects \$58.4 million in revenue and \$54.3 million in expenditures for its general fund, with a net increase in the general fund balance of \$897,589 after interfund transfers.

The revenue limit funding of \$47.5 million makes up more than 80% of total general fund income. As a State Basic Aid District, the district's revenue limit funding fluctuates with



changes in property tax collections. For the fiscal year, federal sources contribute \$833,946 to the general fund.

3.4 Existing Site Conditions

3.4.1 Employee Population and Income Levels at NASA Ames Research Center

In June 2014, 2,487 people were employed at ARC. Resident agencies and tenants include an additional 751 people employed at the Center (Lopez 2014). The average salary of ARC civil service employees was \$133,000 in FY 2014 (Selby 2014). In 2014, the median household income in the County was \$91,425, and \$100,653 in the Ames Research Center Area (Mountain View and Sunnyvale).

3.5 Environmental Requirements

NASA has identified the following environmental policies and measures that address potential socioeconomic impacts of operations and future development at ARC.

3.5.1 NASA Procedural Directive 8500.1, NASA Environmental Management

Per NASA Procedural Directive (NPD) 8500.1, it is NASA policy to: maintain compliance with all applicable federal, state, and local environmental requirements; to incorporate environmental risk reduction and sustainable practices to the extent practicable throughout NASA's programs, projects, and activities; and to consider environmental factors throughout the life cycle of programs, projects, and activities (as defined in NPD 7120.4, *NASA Engineering and Program/Project Management Policy*, and related documents), including planning, development, execution, and disposition activities. Examples of environmental factors include consideration of environmental impacts as required by the NEPA and National Historic Preservation Act (NHPA); the proposed use of hazardous materials; the potential for waste generation; the need to acquire necessary permits, waivers, and authorizations; and the use of environmentally-preferable materials and processes wherever practicable.

3.5.2 Ames Procedural Requirements 8500.1, Ames Environmental Procedural Requirements

Ames Procedural Requirements (APR) 8500.1 sets forth general procedural requirements to ensure compliance with applicable federal, state, and local environmental laws; regulations and executive orders (EOs); and NASA policies and procedures. Organizational directors, division chiefs, branch chiefs, section heads, supervisors, managers, and Contract Officer Representatives (CORs) are responsible for planning, designing, constructing, managing, operating, and maintaining facilities in conformance with applicable regulatory directives, and should obtain environmental review from the Environmental Management Division early in project planning consistent with NASA's NEPA implementing procedures (NPR 8580.1 and EO 12114), NASA policies and procedures for programs and projects (NPR 7120), and NASA regulations related to environmental quality (14 CFR 1216). Program and project managers should coordinate with the Environmental Management



Division in a timely manner to ensure that any new or modified programs, projects, and activities comply with regulatory requirements.

3.5.3 Ames Environmental Work Instructions

Ames's Environmental Work Instructions (EWIs), which replace the previous Ames Environmental Handbook (APR 8800.3), set forth requirements to ensure that programs, projects, and activities at ARC comply with applicable federal, state, and local laws; regulations and EOs; and NASA policies and procedures. Each EWI lists relevant regulatory authorities and documents, assigns individual and organizational responsibilities within ARC, and identifies specific requirements applicable to the work being performed.

The following EWIs are relevant to operations and future development at ARC with potential socioeconomic impacts.

- EWI 12, Public Involvement
- EWI 14, NEPA and Environmental Justice
- EWI 18, Environmental Requirements for Construction Projects (Under review)

3.5.4 NASA Ames Development Plan Final Programmatic Environmental Impact Statement

The NADP EIS identifies the following mitigation measure to address potential socioeconomic impacts from build out of NADP Mitigated Alternative 5.

3.5.4.1 Mitigation Measure SOCIO-1a

NASA will continue to attempt to acquire the rights to occupy as much of the Department of Defense (DOD) housing located at Moffett Field as possible to bolster the projected supply provided under each of the alternatives.

3.5.4.2 Mitigation Measure SOCIO-1b

In the Mitigated Alternative 5, NASA would require the provision of 1,120 townhome and apartment units in the Bay View area, and 810 student apartment and dormitory units in the NRP area. If this level of housing development could not be achieved, NASA would commensurately scale back the employment and student generating components of the project.

3.5.4.3 Mitigation Measure SOCIO-1c

NASA would continue to evaluate the possibility of constructing housing above retail uses proposed in the NRP area.

3.5.4.4 Mitigation Measure SOCIO-3

NASA and the Mountain View-Los Altos Union High School District will negotiate an agreement whereby in any given year, should the Mountain



View-Los Altos Union High School District's per student operating revenues decrease below a pre-determined baseline as a direct result of enrollment generated by the NADP, NASA or its partners will compensate the District for the shortfall associated with these students. The baseline would be set to the District's per student operating revenues in the year prior to when students residing at ARC first begin attending classes in the District, and would be adjusted for cost of living and inflationary changes over time.