



# **SOLTRANS COMPREHENSIVE OPERATIONAL ANALYSIS**

Working Paper One: Market Analysis

Prepared for  
**SOLANO COUNTY TRANSIT**  
**Vallejo, California**

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# **SOLTRANS COMPREHENSIVE OPERATIONAL ANALYSIS**

## **Working Paper 1: Market Analysis**

Prepared for

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Solano County Transit (SolTrans) provides important services to many Vallejo and Benicia residents. Over the past five years, SolTrans has been effective in providing between 1.3 and 1.5 million passenger-trips per year. Meanwhile, there are changes occurring in the communities, such as new development, changes in population characteristics and changes in school programs that all have the potential to impact the need and role of transit services.

To ensure that services can best serve the community in the future, SolTrans has initiated a thorough review and reassessment of the existing local transportation services including fixed route (local and school trippers), General Public Dial-a-Ride and the Local Taxi Scrip program. This document, focusing on the market for transit service, is the first of several *Working Papers* that provide interim information on the study. Subsequent *Working Papers* will focus on the review of existing services and ridership characteristics and evaluation of service options. After public review, these documents will form the basis of the draft and final plan documents.

This Working Paper first presents a discussion of demographic conditions in the study area, focusing on those elements of the population that most relies on public transportation services. The existing services are then compared to identify areas that are not currently well-served. In addition, current plans and development proposals are reviewed to assess near-term expected changes in the need for transit services. Finally, the results of these evaluations are summarized.

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Understanding the existing population trends, land use patterns and commute patterns of Vallejo and Benicia will lay the foundation to understand existing transit needs and transit demand. This chapter presents a review of existing population, trends in population, and population characteristics—particularly those that have an influence on the need for transportation. Included in this overview is an analysis of how the current fixed route system serves the existing population and housing. Also reviewed in this chapter are activity patterns, focusing on location of employment, centers of education, and social service programs. Finally, conclusions are drawn regarding the various potential markets for transit service.

### STUDY AREA POPULATION

#### General Population Trends: Historic and Projected Population

The cities of Vallejo and Benicia are growing communities, despite a downturn in the economy and population declines in the past decade. The cities are optimally located within commuting distance of the San Francisco Bay Area, and are also home to major employment centers. Due to relatively low housing costs (compared to other portions of the Bay Area) and the attractiveness of the communities, Benicia and Vallejo serve as a residential area for both those employed locally and commuters. While early development was focused around industry, more recently Vallejo and Benicia have increased the balance of commercial, public sector, medical services, higher education and entertainment/recreational services. Touro University and California State University Maritime Academy provide specialized programs in medical training and nautical training, while Kaiser Permanente continues to be the largest employer in the area. Six Flags Discovery Kingdom also continues to play an important role in the local economy.

Table 1 and Figure 1 illustrate the population and projected population in Vallejo and Benicia (as well as Solano County and California for comparison purposes) from 1970 through 2040. As shown, Vallejo's population increased from 71,710 residents in 1970 to 115,942 in 2010, while Benicia grew from 7,439 to 26,997 in the same period. Between 2000 and 2010, the population in both communities stayed even or slightly declined, but recent trends and projections indicate growth over the next two decades.

#### Existing Demographics

US Census data at the census tract level was reviewed for insight into area demographics, and transit dependent populations in particular. The census tracts are shown in Figure 2. The populations of various groups of people who have a high propensity to use transit are presented, such as youth, elderly, residents of zero-vehicle households, and individuals with disabilities.

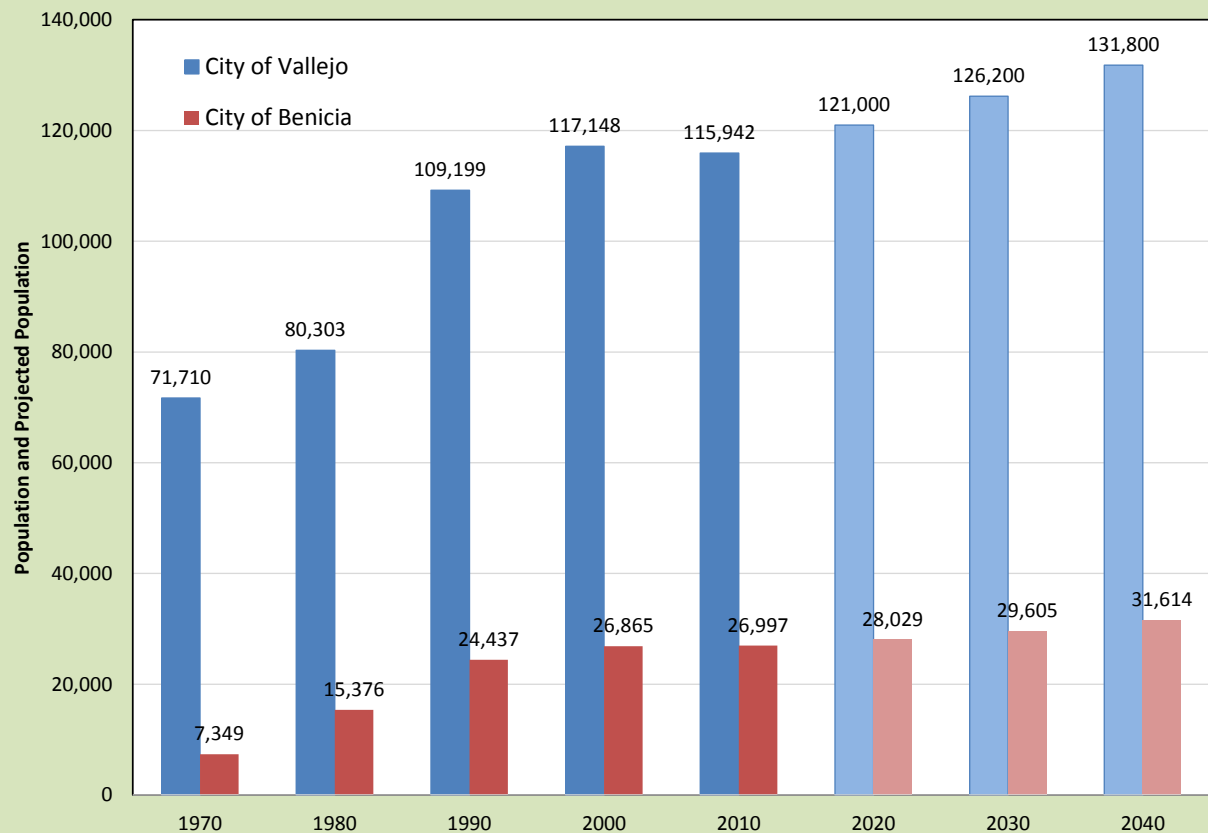
**TABLE 1: Historic and Projected Population of the Cities of Vallejo and Benicia**

	Historic					Projected		
	1970	1980	1990	2000	2010	2020	2030	2040
City of Vallejo <sup>1</sup>	71,710	80,303	109,199	117,148	115,942	121,000	126,200	131,800
Annual Percent Growth	--	1.2%	3.6%	0.7%	-0.1%	0.4%	0.4%	0.4%
Over Previous Period	--	12%	36%	7%	-1%	4%	4%	4%
City of Benicia <sup>2</sup>	7,349	15,376	24,437	26,865	26,997	28,029	29,605	31,614
Annual Percent Growth	--	10.9%	5.9%	1.0%	0.0%	0.4%	0.6%	0.7%
Over Previous Period	--	109%	59%	10%	0%	4%	6%	7%
Solano County <sup>3</sup>	171,989	235,203	339,471	394,930	413,117	447,217	493,422	551,491
Annual Percent Growth	--	3.7%	4.4%	1.6%	0.5%	0.8%	1.0%	1.2%
Over Previous Period	--	37%	44%	16%	5%	8%	10%	12%
California Population <sup>3</sup>	19,971,068	23,667,836	29,758,213	33,873,086	37,253,956	40,719,999	44,019,846	46,884,801
Annual Percent Growth	--	1.9%	2.6%	1.4%	1.0%	0.9%	0.8%	0.7%
Over Previous Period	--	19%	26%	14%	10%	9%	8%	7%

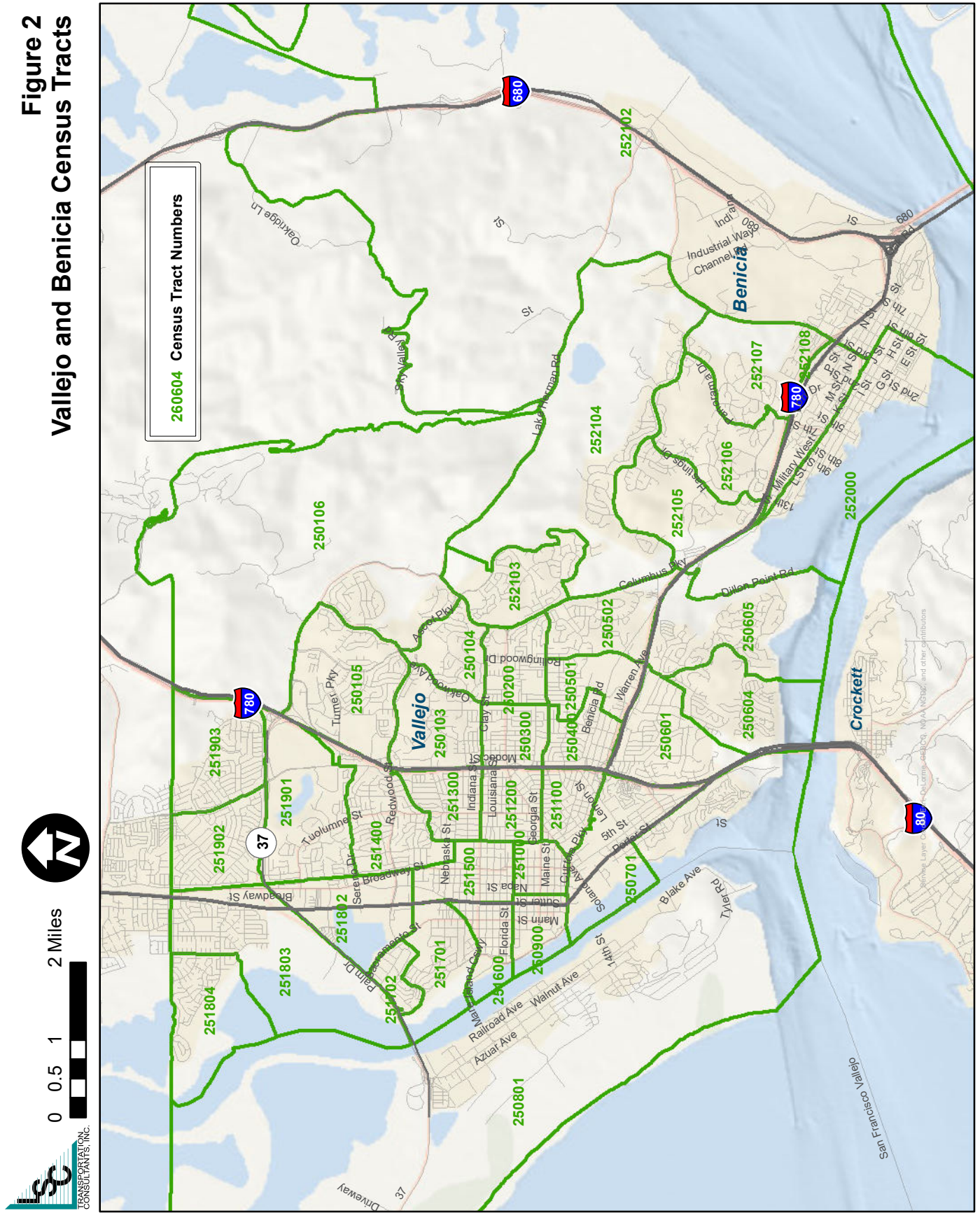
Note 1: Projections per Association of Bay Area Governments, as cited in the 2014 Vallejo Economic Trends Report.

Note 2: Population forecasts were calculated by applying the 2010 ratios of Vallejo and Benicia to Solano County population to future year population forecasts for Solano County, with adjustments for historic declines in percentage of county-wide populations.

Note 3: County and State Population projections are derived from the California Dept. of Finance Demographic Research Unit "Age Projections."

**FIGURE 1: Existing and Projected Population Growth of Vallejo and Benicia**

**Figure 2**  
**Vallejo and Benicia Census Tracts**



## Overall Population

The total population of Vallejo is 120,774 and Benicia is 28,284, per the most recent Census data (2016). Table 2 presents key demographic data for Vallejo and Benicia at the US census tract level. Population density, shown in Figure 3, is highest in census tract 2517.02 (Federal Terrace) in the northwest portion of Vallejo, south of Highway 37. This area is served by SolTrans Route 5. Other census tracts with relatively high population density include 2510 (just east of downtown, served by SolTrans Routes 1, 3, 4, 7 and 8), 2503 (east of I-80 between Tennessee and Georgia Streets, served by SolTrans Routes 6, 7 and 8) and 2515 (west of Highway 29 and north of Florida Street—served by SolTrans Routes 1, 6 and 7). Overall, Benicia

**TABLE 2: Population Characteristics of Cities of Vallejo and Benicia**

*Total Population, Housing, Youth and Seniors*

Census Tract #	Census Tract Description	Total Population <sup>1</sup>	Square Miles	Occupied Housing Units <sup>2</sup>		Youth (10-17) <sup>3</sup>			Elderly (65+) <sup>3</sup>		
				#	Per Sq. Mi.	#	%	Per Sq. Mi.	#	%	Per Sq. Mi.
V a l l e j o	2501.03 E of I-80, S of Redwood Pkwy	4,560	0.8	1,547	1,986	356	7.8%	457	828	18.2%	1,063
	2501.04 N of Tennessee, E of Oakwood Pkwy	2,150	0.5	814	1,600	102	4.7%	200	578	26.9%	1,136
	2501.05 Gateway Plaza	7,164	1.3	2,207	1,658	525	7.3%	394	908	12.7%	682
	2501.06 Sulphur Springs Valley	5,037	7.3	1,396	191	458	9.1%	63	619	12.3%	85
	2502 S of Tennessee, Oakwood Ave to	3,987	0.5	1,472	2,839	377	9.5%	727	582	14.6%	1,122
	2503 S of Tennessee, I-80 to Okawood Ave	3,406	0.4	1,114	2,624	364	10.7%	858	461	13.5%	1,086
	2504 S of Georgia, E of I-80, N of 780	2,573	0.4	1,034	2,400	212	8.2%	492	298	11.6%	692
	2505.01 N of I-780, S of Georgia, W Rollingwood	2,247	0.5	776	1,521	178	7.9%	349	312	13.9%	612
	2505.02 N of I-780, S of Georgia, E Rollingwood	3,156	0.7	1,000	1,360	267	8.5%	363	599	19.0%	814
	2506.01 E of I-80, S of Lewis Ave	5,132	0.9	1,560	1,696	695	13.5%	756	446	8.7%	485
	2506.04 Glen Cove, West	3,599	0.8	1,384	1,712	253	7.0%	313	463	12.9%	573
	2506.05 Glen Cove, East	4,230	1.2	1,577	1,351	320	7.6%	274	702	16.6%	601
	2507.01 W of I-80, S of Curtola Pkwy	3,457	0.8	1,132	1,347	270	7.8%	321	540	15.6%	643
	2508.01 Mare Island & Carquinez Heights	3,866	14.9	1,436	96	235	6.1%	16	502	13.0%	34
	2509 S of Florida, W of Sonoma	2,468	0.3	1,207	3,846	102	4.1%	325	340	13.8%	1,083
	2510 S of Florida, E of Sonoma	2,674	0.3	1,058	3,767	419	15.7%	1,492	254	9.5%	904
	2511 S of Georgia Solano to I-80	3,105	0.4	1,105	2,662	353	11.4%	850	314	10.1%	757
	2512 S of Tennessee Almond to I-80	3,503	0.5	1,282	2,770	398	11.4%	860	438	12.5%	946
	2513 N of Tennessee, Amador to I-80	2,626	0.5	1,179	2,433	187	7.1%	386	596	22.7%	1,230
	2514 S of Sereno Dr, E of I-80, N of Greenfield	5,203	0.9	2,126	2,441	309	5.9%	355	959	18.4%	1,101
	2515 N of Florida, E of Sonoma	4,253	0.5	1,464	2,754	652	15.3%	1,227	251	5.9%	472
	2516 N of Florida, W of Sonoma Blvd	2,603	0.3	1,069	3,215	141	5.4%	424	212	8.1%	638
	2517.01 River Park	3,657	0.6	1,368	2,239	230	6.3%	376	469	12.8%	767
	2517.02 Federal Terrace	2,755	0.2	937	4,211	282	10.2%	1,267	333	12.1%	1,497
	2518.02 S of Marine Wrld Pkwy, E of Broadway	2,478	0.8	1,213	1,442	189	7.6%	225	640	25.8%	761
	2518.03 N of Marine Wrld Pkwy, E of Broadway	4,925	1.3	1,384	1,060	589	12.0%	451	651	13.2%	499
	2518.04 NW Vallejo, borders Napa County	3,511	0.6	972	1,521	397	11.3%	621	440	12.5%	689
	2519.01 Harry Floyd Terrace/Dan Foley Park	5,353	1.2	1,829	1,506	508	9.5%	418	983	18.4%	809
	2519.02 Chabot Terrace	6,080	0.8	1,773	2,245	672	11.1%	851	757	12.5%	958
	2519.03 NE Vallejo, borders Napa County	5,756	1.0	1,653	1,665	551	9.6%	555	572	9.9%	576
	2521.03 Highlands Park	5,260	0.9	1,980	2,285	419	8.0%	483	901	17.1%	1,040
	<b>Subtotal Vallejo</b>	<b>120,774</b>	<b>42.4</b>	<b>42,048</b>	<b>993</b>	<b>11,010</b>	<b>9.1%</b>	<b>260</b>	<b>16,948</b>	<b>14.0%</b>	<b>400</b>
B e n i c i a	2520 Benicia Waterfront / State Park	4,279	1.2	2,148	1,803	266	6.2%	223	1,147	26.8%	963
	2521.02 E Benicia / Industrial NE area <sup>4</sup>	3,773	17.9	1,473	82	466	12.4%	26	516	13.7%	29
	2521.04 N of Rose Dr, E of Columbus Pkwy	5,717	3.8	1,812	478	772	13.5%	203	555	9.7%	146
	2521.05 N of 780, W of Hastings Dr. to Ross Dr.	3,187	1.0	1,250	1,218	382	12.0%	372	509	16.0%	496
	2521.06 N of 780, W of Panorama to Hastings Dr.	4,456	1.1	1,717	1,539	441	9.9%	395	700	15.7%	628
	2521.07 N of 780, W of 2nd to Panorama Dr	3,595	1.0	1,404	1,340	338	9.4%	323	729	20.3%	696
	2521.08 S of 780, N of Military W Street	3,277	0.6	1,345	2,149	305	9.3%	487	497	15.2%	794
	<b>Subtotal Benicia</b>	<b>28,284</b>	<b>26.7</b>	<b>11,149</b>	<b>418</b>	<b>2,970</b>	<b>10.5%</b>	<b>111</b>	<b>4,653</b>	<b>16.5%</b>	<b>174</b>
<b>Total SolTrans Area</b>		<b>149,058</b>	<b>69.0</b>	<b>53,197</b>	<b>771</b>	<b>13,980</b>	<b>9.4%</b>	<b>203</b>	<b>21,601</b>	<b>14.5%</b>	<b>313</b>

Note 1: US Census Table B01003, ACS 2016 5 Year Estimates

Note 2: US Census Table B25044: Tenure by Vehicles Available

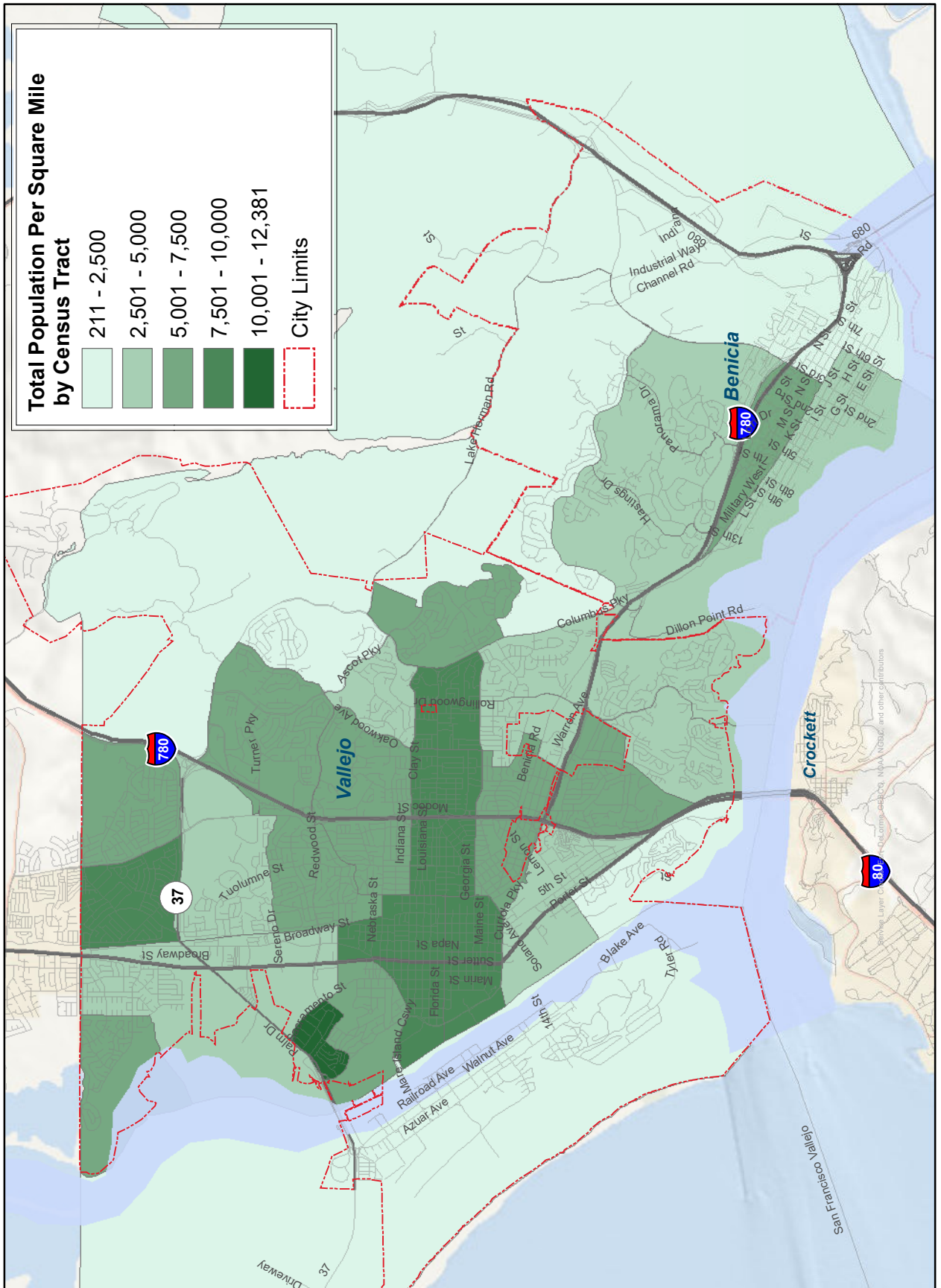
Note 3: US Census Table B01001, ACS 2013 5 Year Estimates



**Figure 3**  
**Vallejo and Benicia Total Population Density**



0 0.5 1 2 Miles



is much less dense than Vallejo. The densest tract is 2521.08, which is south of I-780 and north of Military W Street, east of East Second Street.

### *Youth*

For transit purposes, youth are considered to be ages 10 to 17—old enough to begin riding independently, but too young to have a license or a car. There are a total of 11,010 youth in Vallejo and 2,970 youth in Benicia (9.1 percent and 10.5 percent of the population, respectively), also shown in Table 2. Areas with relatively high numbers of youth mirror those with the densest total population (except for tract 2517.02, Federal Terrace). These include tract 2510 (east of downtown), tract 2503 (east of I-80 between Tennessee and Georgia Streets) and tract 2515 (west of Highway 29 and north of Florida Street), and in Benicia, tract is 2521.08, which is south of I-780 and north of Military W Street, east of East Second Street. The youth population per square mile is depicted in Figure 4.

### *Seniors*

There are around 16,950 elderly persons age 65 and over in Vallejo (which constitutes 14 percent of the population), and 4,650 in Benicia (16.5 percent). The density of elderly populations is spread throughout the study area, as depicted in Table 2 and Figure 5. The highest densities are in tracts 2517.02 (Federal Terrace) and 2513 (north of Tennessee and east of I-80).

### *Individuals with Disabilities*

While various types of disability can affect a person's need for transit, the best indicator in the myriad data collected by the US Census is the "self-care difficulty". The number of people who indicated they have a self-care difficulty in Vallejo totals 3,564 (3.0 percent) and just 438 in Benicia (1.5 percent). The countywide average is 2.7 percent. This number is particularly high in tract 2515.08 (south of Marine World Parkway and east of Broadway, with 8.0 percent identifying as having a self-care difficulty). The density of persons with disabilities is listed in Table 3 and shown in Figure 6.

### *Median Household Income*

In 2016, the median household income in Vallejo was \$59,600, compared to a median household income of \$87,011 in Benicia. Median incomes were as low as \$20,039 (in Census Tract 2509, south of Florida and west of Sonoma in Vallejo) to as high as \$149,759 in Census Tract 2501.06, Sulphur Springs). This data is shown in Table 3.

### *Population Living in Poverty*

In 2016, a total of 20,526 people were living below poverty (17 percent of the population) in Vallejo and 1,994 (7 percent) in Benicia. As shown in Table 3 and Figure 7, the low income population is concentrated in central Vallejo and in the north central area, particularly census

tracts 2509 (south of Florida Street and west of Sutter) and tract 2516 (north of Florida Street and west of Sonoma Boulevard). The waterfront area of Benicia (tract 2520) has the highest concentration of people living below poverty (15 percent).

**TABLE 3: Population Characteristics of Cities of Vallejo and Benicia**

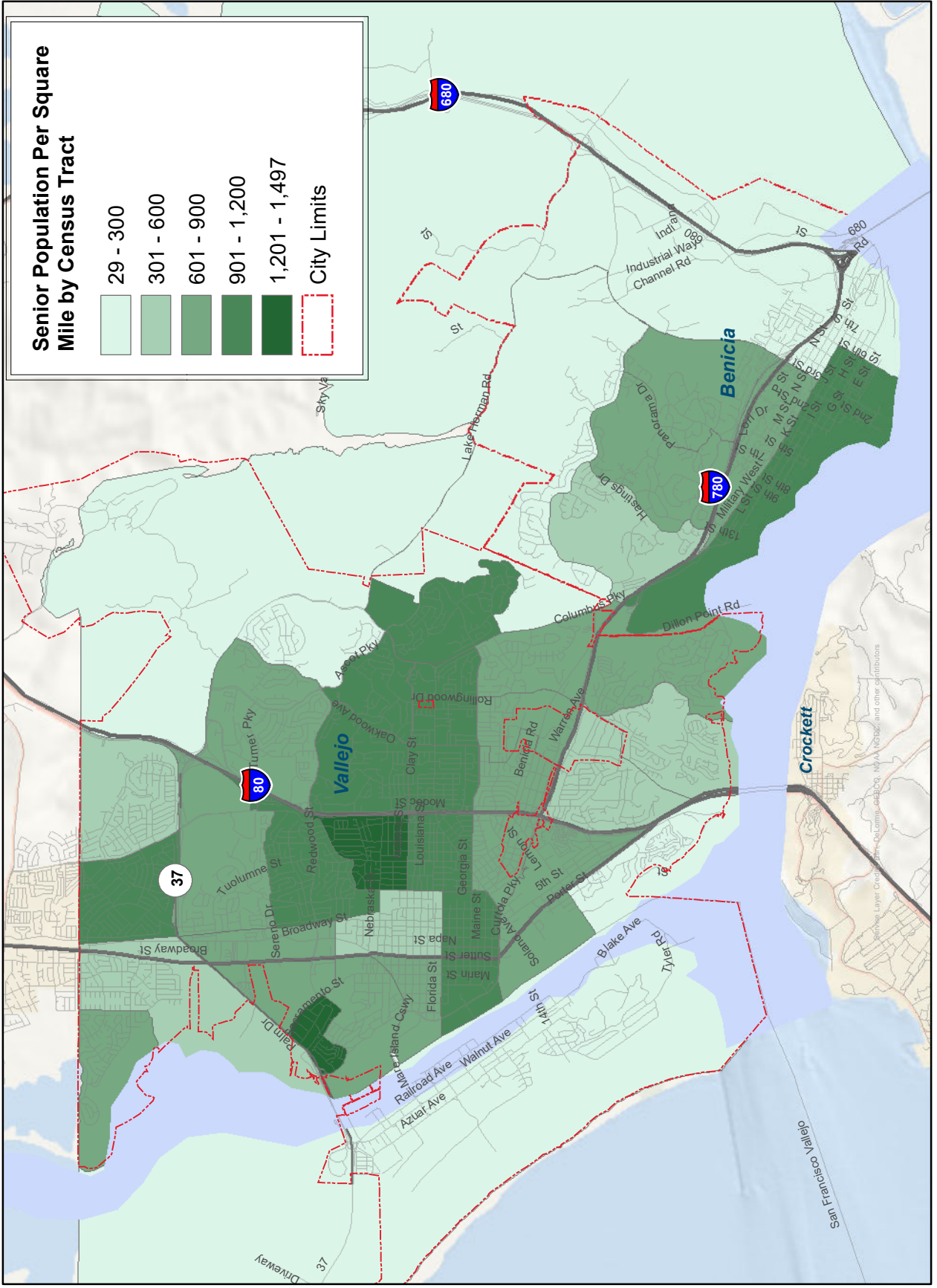
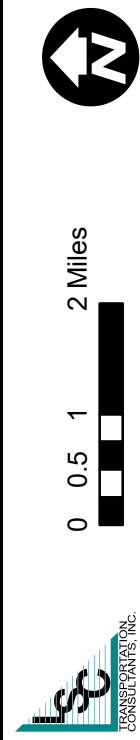
*Population With a Disability, Median Household Income, Poverty Level and Zero Vehicle Households*

Census Tract #	Census Tract Description	With a Disability <sup>1</sup>			Median Household Income <sup>2</sup>	Below Poverty <sup>3</sup>			Zero Vehicle Households <sup>4</sup>		
		#	%	Per Sq Mi		#	%	Per Sq Mi	#	%	Per Sq Mi
Vallejo	2501.03 E of I-80, S of Redwood Pkwy	188	4.1%	241	\$65,668	749	16.4%	962	59	3.8%	76
	2501.04 N of Tennessee, E of Oakwood Pkwy	111	5.2%	218	\$81,389	205	9.5%	403	56	6.9%	110
	2501.05 Gateway Plaza	279	3.9%	210	\$87,950	520	7.3%	391	38	1.7%	29
	2501.06 Sulphur Springs Valley	76	1.5%	10	\$149,479	277	5.5%	38	10	0.7%	1
	2502 S of Tennessee, Oakwood Ave to	65	1.6%	125	\$47,941	670	16.8%	1,292	86	5.8%	166
	2503 S of Tennessee, I-80 to Okawood Ave	112	3.3%	264	\$48,913	411	12.1%	968	64	5.7%	151
	2504 S of Georgia, E of I-80, N of 780	111	4.3%	258	\$45,705	324	12.6%	752	47	4.5%	109
	2505.01 N of I-780, S of Georgia, W Rollingwood	101	4.5%	198	\$56,250	314	14.0%	615	29	3.7%	57
	2505.02 N of I-780, S of Georgia, E Rollingwood Dr.	91	2.9%	124	\$62,733	325	10.3%	442	67	6.7%	91
	2506.01 E of I-80, S of Lewis Ave	194	3.8%	211	\$61,029	630	12.3%	685	101	6.5%	110
	2506.04 Glen Cove, West	70	1.9%	87	\$84,734	455	12.6%	563	38	2.7%	47
	2506.05 Glen Cove, East	60	1.4%	51	\$88,188	112	2.6%	96	44	2.8%	38
	2507.01 W of I-80, S of Curtola Pkwy	194	5.6%	231	\$40,500	738	21.3%	878	124	11.0%	148
	2508.01 Mare Island & Carquinez Heights	113	2.9%	8	\$52,054	700	18.1%	47	65	4.5%	4
	2509 S of Florida, W of Sonoma	65	2.6%	207	\$20,039	1,371	55.6%	4,368	539	44.7%	1,717
	2510 S of Florida, E of Sonoma	22	0.8%	78	\$47,841	460	17.2%	1,638	119	11.2%	424
	2511 S of Georgia Solano to I-80	119	3.8%	287	\$45,072	985	31.7%	2,373	153	13.8%	369
	2512 S of Tennessee Almond to I-80	60	1.7%	130	\$42,794	761	21.7%	1,644	119	9.3%	257
	2513 N of Tennessee, Amador to I-80	80	3.0%	165	\$74,063	268	10.2%	553	7	0.6%	14
	2514 S of Sereno Dr, E of I-80, N of Greenfield	217	4.2%	249	\$61,583	846	16.3%	971	83	3.9%	95
	2515 N of Florida, E of Sonoma	98	2.3%	184	\$36,193	1,187	27.9%	2,233	160	10.9%	301
	2516 N of Florida, W of Sonoma Blvd	14	0.5%	42	\$31,161	1,009	38.8%	3,035	296	27.7%	890
	2517.01 River Park	80	2.2%	131	\$40,476	1,023	28.0%	1,674	271	19.8%	443
	2517.02 Federal Terrace	66	2.4%	297	\$70,575	465	16.9%	2,090	54	5.8%	243
	2518.02 S of Marine Wrld Pkwy, E of Broadway	213	8.6%	253	\$17,601	1,037	41.8%	1,233	378	31.2%	449
	2518.03 N of Marine Wrld Pkwy, E of Broadway	41	0.8%	31	\$71,611	251	5.1%	192	19	1.4%	15
	2518.04 NW Vallejo, borders Napa County	126	3.6%	197	\$73,587	501	14.3%	784	16	1.6%	25
	2519.01 Harry Floyd Terrace/Dan Foley Park	200	3.7%	165	\$41,830	1,424	26.6%	1,172	190	10.4%	156
	2519.02 Chabot Terrace	193	3.2%	244	\$56,233	1,245	20.5%	1,576	94	5.3%	119
	2519.03 NE Vallejo, borders Napa County	59	1.0%	59	\$79,539	794	13.8%	800	24	1.5%	24
	2521.03 Highlands Park	146	2.8%	168	\$71,214	469	8.9%	541	38	1.9%	44
	<b>Subtotal Vallejo</b>	<b>3,564</b>	<b>3.0%</b>	<b>84</b>	<b>\$59,600</b>	<b>20,526</b>	<b>17.0%</b>	<b>485</b>	<b>3,388</b>	<b>8.1%</b>	<b>80</b>
Benicia	2520 Benicia Waterfront / State Park	104	2.4%	87	\$62,361	645	15.1%	541	191	8.9%	160
	2521.02 E Benicia / Industrial NE area <sup>8</sup>	122	3.2%	7	\$64,661	307	8.1%	17	38	2.6%	2
	2521.04 N of Rose Dr, E of Columbus Pkwy	73	1.3%	19	\$140,405	287	5.0%	76	33	1.8%	9
	2521.05 N of 780, W of Hastings Dr. to Ross Dr.	33	1.0%	32	\$89,310	118	3.7%	115	30	2.4%	29
	2521.06 N of 780, W of Panorama to Hastings Dr.	46	1.0%	41	\$93,936	252	5.7%	226	52	3.0%	47
	2521.07 N of 780, W of 2nd to Panorama Dr	10	0.3%	10	\$84,239	196	5.5%	187	0	0.0%	0
	2521.08 S of 780, N of Military W Street	50	1.5%	80	\$75,662	189	5.8%	302	43	3.2%	69
	<b>Subtotal Benicia</b>	<b>438</b>	<b>1.5%</b>	<b>16</b>	<b>\$87,011</b>	<b>1,994</b>	<b>7.0%</b>	<b>75</b>	<b>387</b>	<b>3.5%</b>	<b>15</b>
<b>Total SolTrans Area</b>		<b>4,002</b>	<b>2.7%</b>	<b>58</b>	<b>--</b>	<b>22,520</b>	<b>15.1%</b>	<b>326</b>	<b>3,775</b>	<b>7.1%</b>	<b>55</b>
Note 1: US Census Table B18106: Sex by Age by Self-Care Difficulty, ACS 2015 Estimates											
Note 2: US Census Table S1903, Median Income in the past 12 months (in 2016 inflation-adjusted dollars).											
Note 3: US Census Table DP03: Selected Economic Characteristics, ACS 2015 5 Year Estimates (Workers 16+ Who Commute Outside the Home)											
Note 4: US Census Table B25044: Tenure by Vehicles Available											





**Figure 5**  
**Vallejo and Benicia Senior Population**  
**( 65 and Over ) Density**



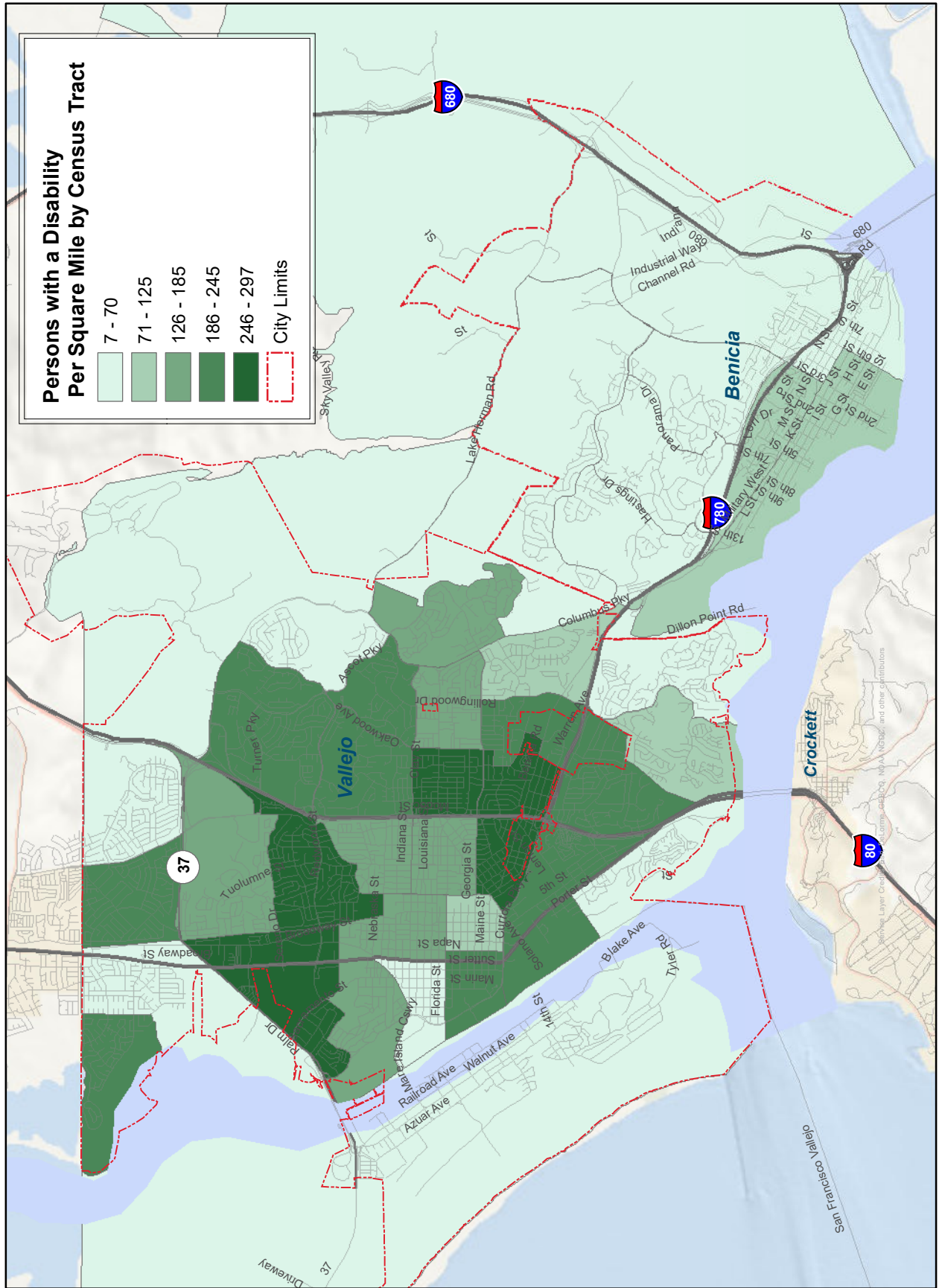
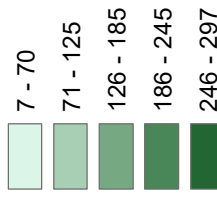
**Figure 6**  
**Vallejo and Benicia Population With a Disability Density**



0 0.5 1 2 Miles



**Persons with a Disability  
 Per Square Mile by Census Tract**





TRANSPORTATION  
CONSULTANTS, INC.





## *Zero-Vehicle Households*

One of the best indicators of transit dependency is the number of households without a vehicle available. There are 3,388 such households in Vallejo (8.1 percent) and 387 in Benicia (3.5 percent). The concentration of zero-car households by census tract is shown in Table 3 and Figure 8. The census tract with the highest concentration of zero-car households is 2509 (south of Florida Street and west of Sutter) and tract 2516 (north of Florida and west of Sonoma Boulevard).

## **Projections of Population by Age**

Table 4 and Figure 9 illustrate population projections by age group for Solano County between the years of 2010 and 2030, as estimated by the California Department of Demographic Research Unit<sup>1</sup>. Vallejo and Benicia make up approximately 35 percent of Solano County's total population, so applying the County's projections to the cities provides a general estimate of population growth by age. The fastest growing population in the next decade, by far, will be among mature retirees (aged 75-84) and seniors over age 85. This is likely to have a significant impact on the need for ADA paratransit.

## **Populations Not Well-Served by Transit**

It is useful for purposes of this study to review how well existing transit routes serve the various portions of the study area. A quarter mile is generally considered a reasonable walking distance in the transit industry. There is no standard to account for elevation, so this analysis does not take into consideration that much of Vallejo and Benicia is hilly, which may impact individuals' ability to walk to stops. The presence of sidewalks or slopes of walking routes will be considered when assessing individual stop location changes.

Current SolTrans fixed routes were mapped and an area within a quarter mile of existing fixed routes was identified as being served by transit, as shown in Figure 10. The areas around the tripper routes were excluded due to their limited service hours. For each census tract, the percentage of area within walking distance was then estimated, as shown in Table 5. Based on this analysis, existing SolTrans routes can be considered to serve 85 percent of the overall population of Vallejo, but just 33 percent of Benicia (not including General Public Dial-a-Ride). According to Appendix D of the adopted SolTrans Title VI Program, the coverage standard states "In areas where General Public Dial-a-Ride service is not provided, at least 80% of residents should be within  $\frac{1}{2}$  mile of a bus stop on the local fixed-route bus system." This standard is easily being met in Vallejo, as 85 percent are within a  $\frac{1}{4}$  mile.

This analysis was also used to determine the extent the overall population and the transit dependent populations are not currently served by transit on a tract-by-tract basis. Based on the population by census tract, the populations per square mile not served by transit were also identified. Benicia is served by General Public Dial-a-Ride, but this analysis only considers non-

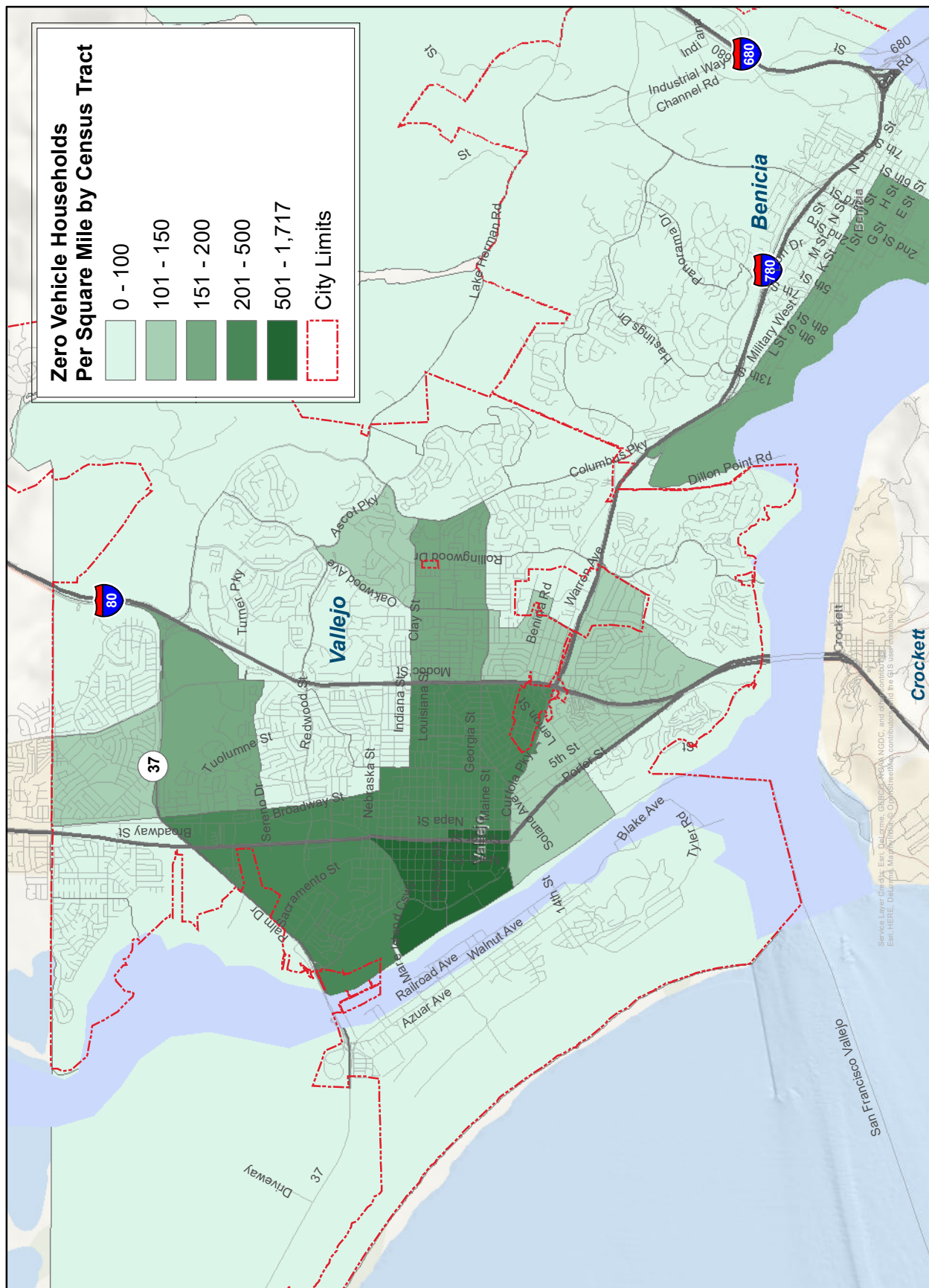
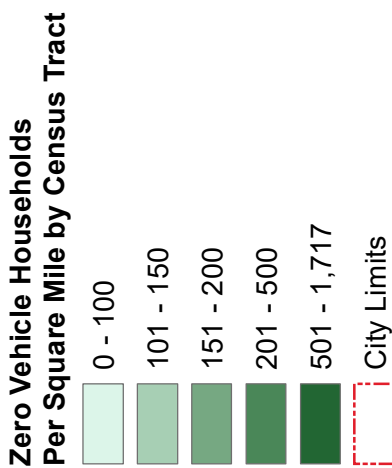
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<sup>1</sup> Unfortunately, this data is not available specific to the Cities of Vallejo or Benicia.

**Figure 8**  
**Vallejo and Benicia Zero Vehicle Household Density**



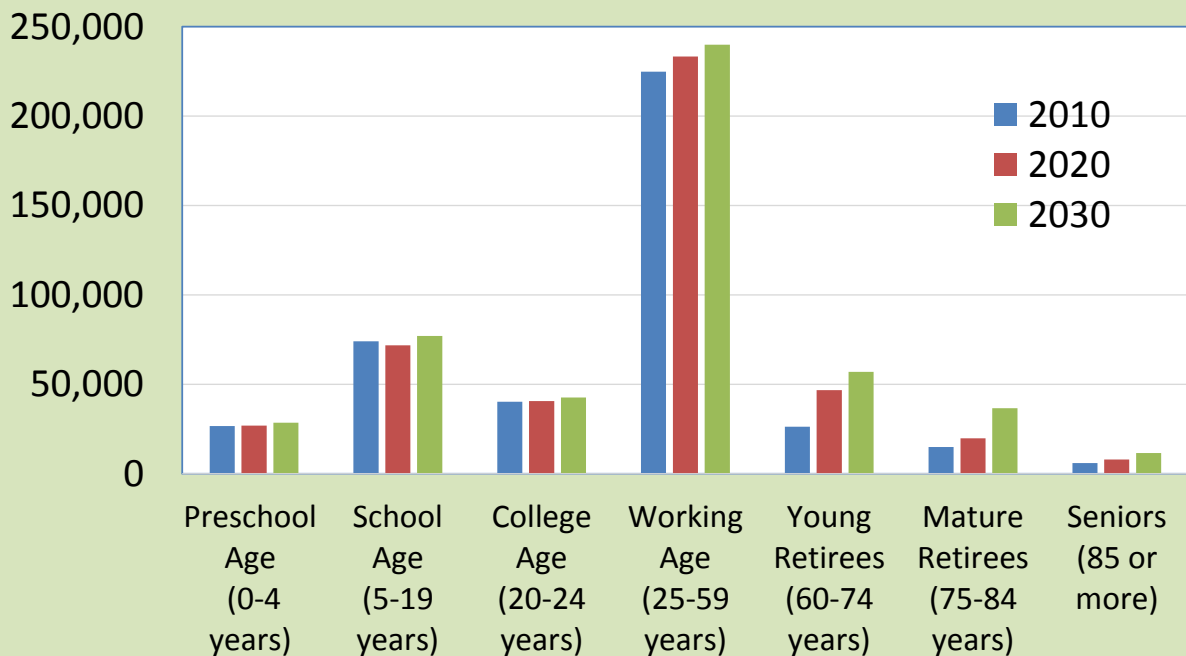
0 0.5 1 2 Miles



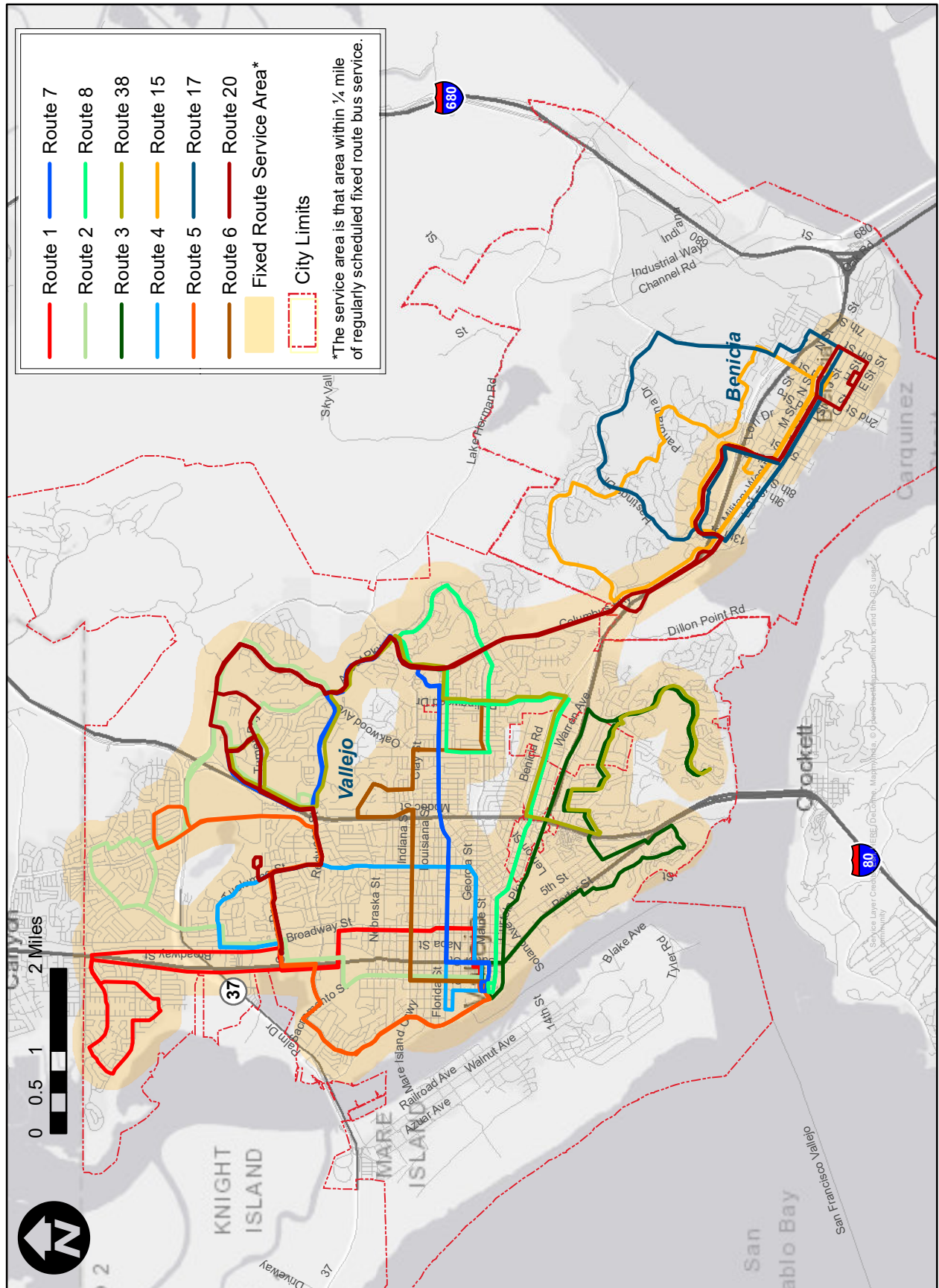
**TABLE 4: Population Projections by Age Groups for Solano County**

Year	Total (All ages)	Preschool Age (0-4 years)	School Age (5-19 years)	College Age (20-24 years)	Working Age (25-59 years)	Young Retirees (60-74 years)	Mature Retirees (75-84 years)	Seniors (85 or more)
2010	413,117	26,700	74,068	40,291	224,819	26,303	14,909	6,027
2020	447,217	26,887	71,778	40,653	233,340	46,750	19,879	7,930
2030	493,422	28,530	77,068	42,640	239,965	56,980	36,634	11,606
<b>2010-20 Change</b>								
#	34,100	188	-2,290	362	8,522	20,447	4,969	1,903
%	8%	1%	-3%	1%	4%	78%	33%	32%
<b>2010-30 Change</b>								
#	80,305	1,830	3,000	2,349	15,146	30,677	21,724	5,579
%	19%	7%	4%	6%	7%	117%	146%	93%

*Source: California Department of Finance Demographic Research Unit Age Projections*

**Figure 9: Population Projections by Age Group for Solano County**

**Figure 10**  
**Areas in Vallejo and Benicia with Regularly Scheduled Fixed Route Service**





**TABLE 5: Vallejo and Benicia Populations Not Served by Fixed Route Transit**

*Total Population and Population Below Poverty*

			Coverage	Total Population <sup>2</sup>		Below Poverty <sup>2</sup>	
			Estimated % of Census Tract Served by SolTrans	Not in Transit Service Area	Persons/sq. mile Not in Transit Area	Not in Transit Service Area	Persons/sq. mile Not in Transit Area
Census Tract	Description						
Vallejo Area							
2508.01	Mare Island & Carquinez Heights	0%	3,866	259	700	47	
2501.06	Sulphur Springs Valley	50%	2,519	345	139	19	
2506.05	Glen Cove, East	50%	2,115	1,812	56	48	
2501.04	N of Tennessee, E of Oakwood Ave.	65%	753	1,479	72	141	
2506.01	E of I-80, S of Lewis Ave	75%	1,283	1,395	158	171	
2504	S of Georgia, E of I-80, N of 780	75%	643	1,493	81	188	
2519.03	NE Vallejo, borders Napa County	80%	1,151	1,160	159	160	
2521.03	Highlands Park	80%	1,052	1,214	94	108	
2506.04	Glen Cove, West	80%	720	890	91	113	
2518.04	NW Vallejo, borders Napa County	80%	702	1,099	100	157	
2505.01	N of I-780, S of Georgia, W Rollingwood Dr.	80%	449	881	63	123	
2501.03	E of I-80, S of Redwood Pkwy	85%	684	878	112	144	
2503	S of Tennessee, I-80 to Oakwood Ave.	85%	511	1,204	62	145	
2518.03	N of Marine Wrld Pkwy, E of Broadway	90%	493	377	25	19	
2511	S of Georgia Solano to I-80	90%	311	748	99	237	
2519.01	Harry Floyd Terrace/Dan Foley Park	95%	268	220	71	59	
2518.02	S of Marine Wrld Pkwy, E of Broadway	95%	124	147	52	62	
2501.05	Gateway Plaza	100%	0	0	0	0	
2502	S of Tennessee, Oakwood Ave to Columbus	100%	0	0	0	0	
2505.02	N of I-780, S of Georgia, E Rollingwood Dr.	100%	0	0	0	0	
2507.01	W of I-80, S of Curtola Pkwy	100%	0	0	0	0	
2509	S of Florida, W of Sonoma	100%	0	0	0	0	
2510	S of Florida, E of Sonoma	100%	0	0	0	0	
2512	S of Tennessee Almond to I-80	100%	0	0	0	0	
2513	N of Tennessee, Amador to I-80	100%	0	0	0	0	
2514	S of Sereno Dr, E of I-80, N of Greenfield	100%	0	0	0	0	
2515	N of Florida, E of Sonoma	100%	0	0	0	0	
2516	N of Florida, W of Sonoma Blvd	100%	0	0	0	0	
2517.01	River Park	100%	0	0	0	0	
2517.02	Federal Terrace	100%	0	0	0	0	
2519.02	Chabot Terrace	100%	0	0	0	0	
Subtotal	Vallejo	85%	17,642	15,601	2,132	1,941	
Percent Not Served by Fixed Route			15%		10%		
Benicia Area							
2520	Benicia Waterfront / State Park	3%	5,545	1,461	278	73	
2521.02	E Benicia / Industrial NE area 8	15%	3,207	179	261	15	
2521.04	N of Rose Dr, E of Columbus Pkwy	15%	3,056	2,917	167	159	
2521.05	N of 780, W of Hastings Dr. to Ross Dr.	30%	3,119	2,796	176	158	
2521.06	N of 780, W of Panorama to Hastings Dr.	40%	1,912	1,864	71	69	
2521.07	N of 780, W of 2nd to Panorama Dr	70%	983	1,571	57	91	
2521.08	S of 780, N of Military W Street	75%	1,070	898	161	135	
Subtotal	Benicia	33%	18,893	11,687	1,171	700	
Percent Not Served by Fixed Route			67%		59%		
Total SolTrans Area			75%	36,535	27,288	3,303	2,641
Legend: Areas with lowest to highest levels of unserved transit populations.				lowest	middle	highest	
Note 1: Coverage assumes housing and population are within 1/4 mile walking distance of a regularly scheduled SolTrans fixed route, as depicted in Figure 9. Does not include Trippers, General Public DAR, or regional routes.							
Note 2: Populations as shown in Table 2.							
Note 3: Using graduated shading: lightest (green) indicates lowest numbers and darkest (burnt orange) indicates highest numbers.							



tripper fixed route service (Route 20). Note that this analysis assumes an even distribution of population groups throughout the census tract.

The data for population below poverty not served by transit is presented in Table 5. Shading is used to identify those tracts with a relatively high number or density of persons not served. The percentage of people living below poverty who are within a convenient walking distance of transit lines are similar to the overall population in Vallejo (90 percent) and Benicia (41 percent), which indicates SolTrans is serving the low income population at a higher level than the population at large.

Table 6 shows the elderly and youth populations not served by transit. The percentage of elderly and youth who are within a convenient walking distance of the transit lines was similar to that of the overall population in Vallejo, 85 and 87 percent respectively, which indicates that the distribution patterns of elderly and youth do not differ significantly from that of the overall population. In Benicia, on the other hand, a higher than average number of elderly (39 percent) and lower than average number of youth (28 percent) are served by fixed route (not considering GP DAR or the school trippers).

Persons with disabilities are served at a slightly higher level (87 percent in Vallejo and 37 percent in Benicia) than the total population. The existing transit routes serve a higher proportion of zero-vehicle households than any other transit dependent group, with 93 percent served in Vallejo and 54 percent served in Benicia, as presented in Table 7.

Areas where there are high numbers of individuals potentially not served may be good candidates for potential modifications to the transit routes to serve these areas. In terms of sheer numbers, these include the following tracts:

- Sulphur Springs Valley (Census Tract 2501.06)
- Mare Island and Carquinez Heights (Census Tract 2508.01)
- Eastern Benicia, and the northeast Industrial area (Census Tract 2521.02)
- North of Rose Drive and east of Columbus Parkway (Census Tract 2521.04)

In terms of people per square mile unserved by census tract, the highest needs include:

- East of I-80 and south of Lewis Avenue (Census Tract 2506.01)
- East Glen Cove (Census Tract 2506.05)
- South of Georgia Street between Solano and I-80 (Census Tract 2511)
- The Benicia Waterfront and State Park area (Census Tract 2520)
- North of Rose Drive and east of Columbus Parkway (Census Tract 2521.04)

Note that the area north of Rose Drive/east of Columbus Parkway in Benicia is the only area on both lists. Furthermore, Columbus Drive has limited sidewalk construction. The remaining residential areas of Vallejo and Benicia are generally within a convenient walk of a transit route.

**TABLE 6: Vallejo and Benicia Population Not Served by Fixed Route Transit***Elderly and Youth*

Elderly and Youth Census Tract      Description		Elderly Population <sup>2</sup>		Youth Population <sup>2</sup>	
		Not in Transit Service Area	Not in Transit Area	Not in Transit Service Area	Persons/sq. mile Not in Transit Area
Vallejo Area					
2508.01	Mare Island & Carquinez Heights	502	34	235	16
2506.05	Glen Cove, East	351	301	160	137
2501.06	Sulphur Springs Valley	310	42	229	31
2501.04	N of Tennessee, E of Oakwood Ave.	202	398	36	70
2506.01	E of I-80, S of Lewis Ave	112	121	174	189
2504	S of Georgia, E of I-80, N of 780	75	173	53	123
2521.03	Highlands Park	180	208	84	97
2519.03	NE Vallejo, borders Napa County	114	115	110	111
2506.04	Glen Cove, West	93	115	51	63
2518.04	NW Vallejo, borders Napa County	88	138	79	124
2505.01	N of I-780, S of Georgia, W Rollingwood Dr.	62	122	36	70
2501.03	E of I-80, S of Redwood Pkwy	124	159	53	69
2503	S of Tennessee, I-80 to Oakwood Ave.	69	163	55	129
2518.03	N of Marine Wrld Pkwy, E of Broadway	65	50	59	45
2511	S of Georgia Solano to I-80	31	76	35	85
2519.01	Harry Floyd Terrace/Dan Foley Park	49	40	25	21
2518.02	S of Marine Wrld Pkwy, E of Broadway	32	38	9	11
2501.05	Gateway Plaza	0	0	0	0
2502	S of Tennessee, Oakwood Ave to Columbus	0	0	0	0
2505.02	N of I-780, S of Georgia, E Rollingwood Dr.	0	0	0	0
2507.01	W of I-80, S of Curtola Pkwy	0	0	0	0
2509	S of Florida, W of Sonoma	0	0	0	0
2510	S of Florida, E of Sonoma	0	0	0	0
2512	S of Tennessee Almond to I-80	0	0	0	0
2513	N of Tennessee, Amador to I-80	0	0	0	0
2514	S of Sereno Dr, E of I-80, N of Greenfield	0	0	0	0
2515	N of Florida, E of Sonoma	0	0	0	0
2516	N of Florida, W of Sonoma Blvd	0	0	0	0
2517.01	River Park	0	0	0	0
2517.02	Federal Terrace	0	0	0	0
2519.02	Chabot Terrace	0	0	0	0
Subtotal	Vallejo	2,459	2,293	1,483	1,390
Percent Not Served by Fixed Route		15%		13%	
Benicia Area					
2521.04	N of Rose Dr, E of Columbus Pkwy	538	142	749	197
2521.07	N of 780, W of 2nd to Panorama Dr	620	591	287	274
2521.02	E Benicia / Industrial NE area 8	439	25	396	22
2521.06	N of 780, W of Panorama to Hastings Dr.	490	439	309	277
2521.05	N of 780, W of Hastings Dr. to Ross Dr.	305	298	229	223
2521.08	S of 780, N of Military W Street	149	238	92	146
2520	Benicia Waterfront / State Park	287	241	67	56
Subtotal	Benicia	2,828	1,974	2,128	1,196
Percent Not Served by Fixed Route		61%		72%	
Total SolTrans Area		5,287	4,266	3,611	2,586
Percent Not Served by Fixed Route		24%			
Legend: Areas with lowest to highest levels of unserved transit populations.			lowest	middle	highest

Note 1: Coverage assumes housing and population are within 1/4 mile walking distance of a regularly scheduled SolTrans fixed route, as depicted in Figure 9. Does not include Trippers, General Public DAR, or regional routes.

Note 2: Populations as shown in Table 2.

Note 3: Using graduated shading: lightest (green) indicates lowest numbers and darkest (burnt orange) indicates highest numbers.

**TABLE 7: Vallejo and Benicia Populations Not Served by Fixed Route Transit***Disabled and Without Vehicles*

Census Tract      Description		Disabled Population <sup>2</sup>		Zero Vehicles Households <sup>2</sup>	
		Not in Transit Service Area	Persons/sq mile Not in Transit Area	Not in Transit Service Area	Persons/sq. mile Not in Transit Area
<b>Vallejo Area</b>					
2508.01	Mare Island & Carquinez Heights	113	8	65	4
2506.05	Glen Cove, East	30	26	22	19
2501.06	Sulphur Springs Valley	38	5	5	1
2501.04	N of Tennessee, E of Oakwood Ave.	39	76	20	39
2506.01	E of I-80, S of Lewis Ave	49	53	25	27
2504	S of Georgia, E of I-80, N of 780	28	64	12	27
2506.04	Glen Cove, West	14	17	8	9
2521.03	Highlands Park	29	34	8	9
2505.01	N of I-780, S of Georgia, W Rollingwood Dr.	20	40	6	11
2519.03	NE Vallejo, borders Napa County	12	12	5	5
2518.04	NW Vallejo, borders Napa County	25	39	3	5
2503	S of Tennessee, I-80 to Oakwood Ave.	17	40	10	23
2501.03	E of I-80, S of Redwood Pkwy	28	36	9	11
2511	S of Georgia Solano to I-80	12	29	15	37
2518.03	N of Marine Wrld Pkwy, E of Broadway	4	3	2	1
2518.02	S of Marine Wrld Pkwy, E of Broadway	11	13	19	22
2519.01	Harry Floyd Terrace/Dan Foley Park	10	8	10	8
2501.05	Gateway Plaza	0	0	0	0
2502	S of Tennessee, Oakwood Ave to Columbus	0	0	0	0
2505.02	N of I-780, S of Georgia, E Rollingwood Dr.	0	0	0	0
2507.01	W of I-80, S of Curtola Pkwy	0	0	0	0
2509	S of Florida, W of Sonoma	0	0	0	0
2510	S of Florida, E of Sonoma	0	0	0	0
2512	S of Tennessee Almond to I-80	0	0	0	0
2513	N of Tennessee, Amador to I-80	0	0	0	0
2514	S of Sereno Dr, E of I-80, N of Greenfield	0	0	0	0
2515	N of Florida, E of Sonoma	0	0	0	0
2516	N of Florida, W of Sonoma Blvd	0	0	0	0
2517.01	River Park	0	0	0	0
2517.02	Federal Terrace	0	0	0	0
2519.02	Chabot Terrace	0	0	0	0
<b>Subtotal</b>	<b>Vallejo</b>	<b>478</b>	<b>502</b>	<b>242</b>	<b>259</b>
<b>Percent Not Served by Fixed Route</b>		<b>13%</b>		<b>7%</b>	
<b>Benicia Area</b>					
2521.04	N of Rose Dr, E of Columbus Pkwy	71	19	32	8
2521.02	E Benicia / Industrial NE area 8	104	6	32	2
2521.07	N of 780, W of 2nd to Panorama Dr	9	8	0	0
2521.06	N of 780, W of Panorama to Hastings Dr.	32	29	36	33
2521.05	N of 780, W of Hastings Dr. to Ross Dr.	20	19	18	18
2521.08	S of 780, N of Military W Street	15	24	13	21
2520	Benicia Waterfront / State Park	26	22	48	40
<b>Subtotal</b>	<b>Benicia</b>	<b>276</b>	<b>127</b>	<b>179</b>	<b>121</b>
<b>Percent Not Served by Fixed Route</b>		<b>63%</b>		<b>46%</b>	
<b>Total SolTrans Area</b>		<b>754</b>	<b>629</b>	<b>421</b>	<b>380</b>
<b>Legend: Areas with lowest to highest levels of unserved transit populations.</b>		lowest		middle	highest
Note 1: Coverage assumes housing and population are within 1/4 mile walking distance of a regularly scheduled SolTrans fixed route, as depicted in Figure 9. Does not include Trippers, General Public DAR, or regional routes.					
Note 2: Populations as shown in Table 2.					
Note 3: Using graduated shading: lightest (green) indicates lowest numbers and darkest (burnt orange) indicates highest numbers.					

## MAJOR ACTIVITY PATTERNS AND LAND USE

### Existing Land Use

The City of Vallejo encompasses an area of approximately 50 square miles, framed by San Pablo Bay and the Napa/Sonoma Marshes on the west, the Carquinez Strait to the south and unincorporated Solano County open space lands to the northeast. The urbanized area of Vallejo is predominantly residential in character, with single-family and multi-family development occupying 40 percent of the land within the city limit. Commercial uses, including shopping centers, retail stores, hotels, and gas stations, account for approximately 8 percent of existing land uses; while industrial and manufacturing uses, concentrated primarily on Mare Island, make up nearly 5 percent of land in the city. Vacant and undeveloped land accounts for 6 percent of the total land area, with wetlands, parks, and natural open space comprising the balance.

Vallejo is also home to the San Francisco Bay Ferry's Vallejo and Mare Island Terminals and the newly-opened Mare Island Ferry Dock (immediately across the channel). The ferries attract both commuters and tourists. Nearby land uses both support and are affected by ferry services. Ferry transportation will be further discussed in a subsequent *Working Paper* evaluating transportation services.

Benicia is located along the north bank of the Carquinez Strait just east of Vallejo and across the strait from Martinez. The town has four main areas: the East Side (east of First Street), the West Side (west of First Street), Southamptown (north of I-780), and the industrial park. Most of the town's older homes are on the east and west sides. Southamptown contains primarily single-family housing developments and condominiums, most of which were built between 1970 and 2000. The East Side includes the Benicia Arsenal, a former United States Army armory, which was bought by the city and is now used for a variety of purposes, most notably as live-work spaces for artists. The industrial park lies to the northeast of the residential areas of the city, and includes the Valero oil refinery. The Benicia State Recreation Area is on the far west edge of the city.

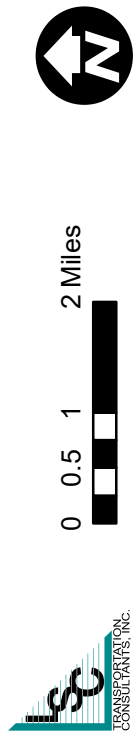
Major activity centers are depicted in Figure 11.

### Major Employers

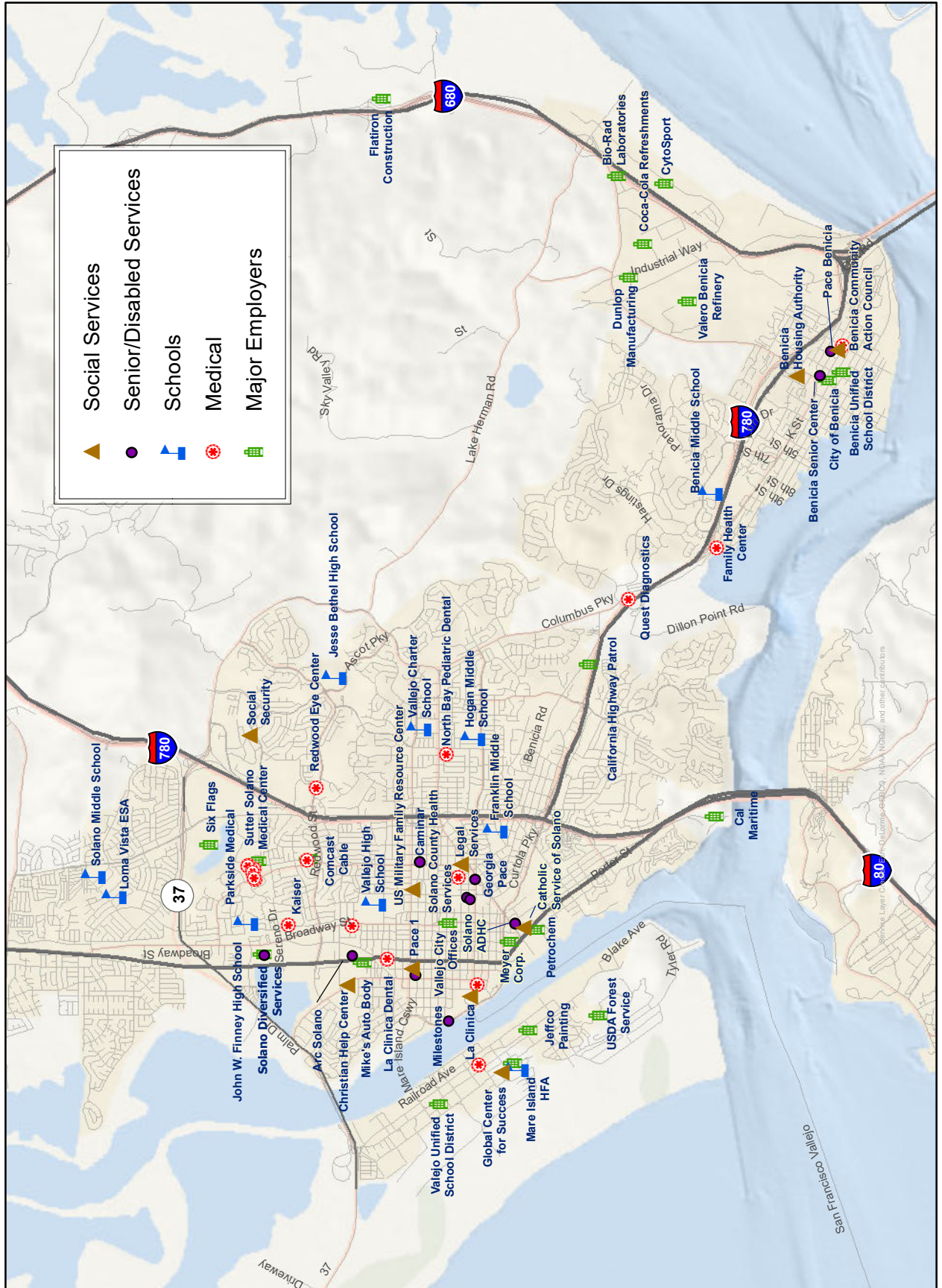
A number of sources were reviewed to generate a list of top employers in Vallejo and Benicia, as shown in Table 8. These companies are distributed throughout the SolTrans service area, with Kaiser Permanente as the largest employer, followed by Six Flags and Vallejo Unified School District. Particularly high corridors of employment are in the Downtown/Waterfront area of Vallejo, Mare Island, and along Sonoma Boulevard. In Benicia, large employers are located at the Industrial Park, as well as commercial areas along First Street and along Military East and Military West, and at the South Hampton Center. As shown, most of the major employers in Benicia are not served by SolTrans fixed route transit (all within the industrial park



**Figure 11**  
**Vallejo and Benicia Activity Centers**



0 0.5 1 2 Miles



**TABLE 8: Principal Employers in Benicia and Vallejo**

Employer	Industry	Number of Employees	Served by SolTrans Fixed
<b>Benicia</b>			
City of Benicia	City Government	229	Yes
Benicia Unified School District	Schools	465	Yes
Coca-Cola Refreshments	Manufacturing	162	No
Bio-Rad Laboratories	Laboratory	209	No
CytoSport	Manufacturing	221	No
Dunlop Manufacturing	Manufacturing	248	No
Valero Benicia Refinery	Oil Refiners (Mfrs)	516	No
Flatiron Construction Corp	General Contractors	NA	No
<b>Vallejo</b>			
Kaiser Permanente Vallejo Med	Hospitals	3,906	Yes
Six Flags Marine World	Amusement & Theme Parks	1,600	Yes
Vallejo Unified School District	Schools	1,600	Yes
Sutter Solano Medical Ctr	Hospitals	690	Yes
City of Vallejo	Government Offices-City	574	Yes
California Maritime Academy	Higher Education	410	Yes
Petrochem	Manufacturing	210	Yes
California Highway Patrol Regional Office	State Law Enforcement	NA	Yes
Comcast Cable	Television-Cable & CATV	NA	Yes
Meyers Corporation	Cookware - Manufacturing	NA	Yes
Mike's Auto Body	Automobile Body-Repairing & Painting	NA	Yes
Touro University - California	Higher Education	420	No
USDA Forest Svc	Government Offices-US	300	No
Jeffco/ABC/FBC Paint Co.	Industrial	NA	No
Source: <a href="https://www.citytowninfo.com/places/california/vallejo/work">https://www.citytowninfo.com/places/california/vallejo/work</a> , <a href="https://en.wikipedia.org/wiki/Vallejo,_California">https://en.wikipedia.org/wiki/Vallejo,_California</a> <a href="https://en.wikipedia.org/wiki/Benicia,_California">https://en.wikipedia.org/wiki/Benicia,_California</a>			

along I-680). It should be noted that the Benicia Industrial Park, while not served by SolTrans, is served by FAST. The three major employers in Vallejo that are not served by transit are all located on Mare Island.

### Housing Units and Fixed Route Transit

An analysis was undertaken to determine if major multi-family and multi-unit housing for seniors and/or low income are within walking distance of fixed route transit (i.e., within a quarter mile). Table 9 lists housing units in Vallejo while Table 10 list housing units in Benicia. As indicated, the majority of the listed housing is served by at least one route, and often multiple routes. In Vallejo, the single exception is Brookdale Vallejo Hills, which is a senior assisted and independent living facility. The closest stop is approximately half a mile away. Most residents at this facility use the facility's privately provided transportation, or they use SolTrans paratransit if they need public transportation. In Benicia, the Capitol Heights Public Housing and Burgess Point Apartments are not within walking distance of Route 20, but these residents also generally rely on SolTrans paratransit services as well.

<b>TABLE 9: Vallejo Low Income &amp; Senior Housing Served by Fixed Route Transit</b>						
Housing Name	Target Group	Number of		Location	Routes Serving Housing <sup>1</sup>	Distance to nearest
		Unit	Resident			
Ascension Arms	Low income seniors	75	85	301 Butte St	4, 5	In front
Avian Glen Apts.	Low income families	87	150	301 Avian Dr	7	0.22 mi
Bayview Vista Apartments	Low income seniors	194	240	445 Redwood St	5	In front
Brookdale North Bay	Senior assisted & independent living	93	80	2261 Tuolumne St	4	0.07 mi
Brookdale Vallejo Hills	Senior assisted & independent living	150	140	350 Locust Dr	7, 8	0.50 to 0.65
Crestwood Manor	Mentally ill, seniors (temporary)	166	153	115 Oddstad Dr	4, 5, 20	0.10
Harbor Park	Low income families	74	200	969 Porter Street	3	In front (varies)
Marina Heights Apartments	Low income families	152	NA	135 Carolina St	4, 2, 6, 5	In front
Marina Tower & Annex	Low income seniors	212	400	575 and 601 Sacramento St	2, 4, 6	In front
Marina Vista Apartments	Low income families	236	350	201 Maine St	2, 3, 6, 7, 8	In front
Oakwood Senior Home	Seniors	16	20	1025 Oakwood Ave	6, 8	In front
Redwood Shores	Low income seniors	120	130	400 Redwood St	5	In front
Seabreeze Apartments <sup>3</sup>	Partial Low income families	184	250	100 Larissa Ln	3	In front
Sereno Village Apartments	Low income families	125	400	750 Sereno Drive	1, 2, 4, 5	In front
Solano Vista Senior Apartments	Low income seniors	96	150	40 Valle Vista Avenue	1, 2, 5	0.10 mi
Temple Art Lofts	Low income, artists preference	29	43	707 Marin St	1, 2, 3, 4, 6, 7	0.10 mi
The Legacy at Sonoma	Low income seniors	137	145	1825 Sonoma Blvd	4, 7, 1	0.10 mi
Vista	Senior assisted living/Memory care	38	23	105 Power Drive	4, 5, 20	0.19
<p>Note 1: Housing units are considered served by transit if they are within 1/4 mile (= reasonable walking distance), shown shaded.</p> <p>Note 2: Walking distance is estimated to nearest stop of nearest route.</p> <p>Note 3: 184 total units, 71 of which are designated for low income.</p> <p>Source: Public Housing (per City of Vallejo), measured distances by LSC Transportation Consultants, Inc.</p>						

<b>TABLE 10: Benicia Public Housing Units Served by Fixed Route Transit</b>				
<b>Housing Units/Location</b>	<b>Serves...</b>	<b>Closest Stop Location/Distance to Routes</b>		
		<b>Route 20</b>	<b>Route 15</b>	<b>Route 17</b>
Capitol Heights Public Housing – 75 units Riverhill Drive & Bayview Circle	Low income families	1st & Military West <i>0.45 mile</i>	2nd & Riverhill <i>0.10 mile</i>	1st & Military West <i>0.45 mile</i>
Burgess Point Apartments – 56 units 91 Riverview Terrace	Low income families	1st & Military West <i>0.60 mile</i>	2nd & Riverhill <i>0.25 mile</i>	1st & Military West <i>0.60 mile</i>
Casa de Vilarrasa I – 40 units 383 East I St	Seniors	E. I Street <i>In front of apts.</i>	E. 3rd & E. L Streets <i>3-4 blocks</i>	E. 3rd & E. L Streets <i>3-4 blocks</i>
Casa de Vilarrasa II – 40 units 921 East 4th St	Seniors	E. I St and E. 4th St. <i>Kitty-corner from apts.</i>	E. 3rd & E. K Streets <i>3-4 blocks</i>	E. 3rd & E. L Streets <i>3-4 blocks</i>
Rancho Benicia Mobile Homes- 231 units 300 E. H Street	Seniors	E. H St and E. 3rd St. <i>In front to 0.25 mi</i>	E. 3rd & E. L Streets <i>0.25 to 0.50 mi</i>	E. 3rd & Military West <i>0.31 to 0.70 mi</i>
Bay Ridge Apartments – 50 units 1061 Rose Drive	Low income families	Rose & Columbus <i>0.15 mile</i>	Rose and Cambridge Dr <i>Across street</i>	Cambridge Dr & Hastings <i>1 mile</i>
<b>Notes:</b> These housing units are within walking distance of transit (within 0.25 miles of bus stop) All housing units listed are served by General Public Dial-a-Ride weekdays and 7:00 AM to 7:00 PM Saturdays.				
<i>Source: Public Housing (per City of Benicia), measured distances by LSC Transportation Consultants, Inc.</i>				

## Social Service Agencies and Services for Seniors and Disabled

Clientele of social service agencies and programs are potentially highly transit dependent. Major programs serving the elderly and persons with disabilities are listed in 11, along with the current routes serving the programs, if any. As indicated, all of the major programs are currently served by one or more SolTrans fixed routes. It should be noted, however, that many clients of these programs are not able to use fixed routes due to disabilities.

Table 12 similarly shows existing social service programs serving low income, the general public and others. As indicated, these programs are also generally served by SolTrans fixed routes. One exception is the Global Center for Success, which is located on Mare Island.



**TABLE 11: Activity Centers for Seniors and Disabled Served by Fixed Route Transit**

Site	Type of Service/Program	Typical # Clients			Location	Routes Serving Program <sup>1</sup>	Distance to nearest Stop <sup>2</sup>
		Daily	Total	Monthly			
Arc-Solano	Offers employment skills, volunteerism and higher education for disabled individuals	22	22	500	3272 Sonoma Blvd., Vallejo	1, 2	0.15 mi
Benicia Community Center	Exercise classes for seniors	75	--	420	370 East L. Street, Benicia	20, 15, 17	0.10 mi
Benicia Senior Center	Hosts Senior Café/Meals, day trips, in-house activities.	12-20	--	330	187 East L St, Benicia	20, 15, 17	0.06 mi
Caminar	Support programs for individuals with mental illness, and substance abuse.	50	120/mo	120	915 Tuolumne St, Vallejo	4, 6	In front
Florence Douglas Senior Center	Weekday lunches, monthly dinners, classes, support services, thrift shop.	60	--	1,500	333 Amador Street Vallejo	4, 7	0.08 mi
Milestones Adult Development Center	Adult day care for disabled.	Varies			1 Florida Street, Vallejo	5	In front
PACE 1	Adult day care services	--	50	--	3686 Sonoma Blvd., Vallejo	1, 2, 5	In front
Pace Benicia	Adult day care services	--	30	--	425-E Military East, Benicia	20, 17	In front
Pace Georgia	Adult day care services	--	65	--	1330 Georgia Street, Vallejo	4	In front
PRIDE Industries <sup>3</sup>	Employment services for adults w/developmentally disabilities.	--	80	--	Dispersed	--	--
Solano Adult Day Health Care	Adults w/chronic medical condition and/or disabilities	55	75		100 Corporate Place, Vallejo	3	0.12 mi
Solano Diversified Services, Inc.	Employment and life skills training for persons with disabilities.	--	50	--	1761 Broadway Street, Vallejo	1, 2, 4	0.10 mi
Vallejo Community Center	Classes and workshops for seniors, REACH programs for disabled. (shared parking lot w/Florence Douglas Center)	50	--	1,100	225 Amador Street, Vallejo	4	0.05 mi
Note 1: Facilities/programs are considered served by transit if they are within 1/4 mile (= reasonable walking distance). However, disabled clients may not be capable of using fixed route.							
Note 2: Walking distance is estimated to nearest stop of nearest route.							
Note 3: Pride Industries headquartered in Fairfield serves clients throughout the County, with varying access to transit services.							
Source: Listing and info. Provided by SolTrans staff; measured distances by LSC Transportation Consultants, Inc.							

## Hospitals, Medical Clinics and Medical Offices

The two major hospitals, Kaiser Permanente and Sutter Hospital, both have direct SolTrans fixed route service to their facilities. Other major medical facilities and clinics are listed in Table 13. As indicated, all are served by fixed route transit except for the VA Outpatient Clinic located

on Mare Island (which is served by a VA shuttle service from the Vallejo Transit Center four times a day).

<b>TABLE 12: Social Service Programs Served by Fixed Route Transit</b>					Routes Serving Program <sup>1</sup>	Distance to nearest Stop <sup>2</sup>
Program Name or Site	Type of Service/Program	Typical # Clients		Location		
		Daily	Total			
Social Security Office	Benefits programs/govt services	NA	--	106 Plaza Dr., Vallejo	2, 38, 20	In front
Multipurpose Senior	Benefits programs/govt	NA	--	400 Contra Costa St.,	7, 4	3-4 blocks
Area Agency on Aging, Ombudsman	Needs for elderly	10-15	--	varies	--	--
Benicia Community Action Council	Practical assistance to low income Benicia families	--	150 families	480 Military East Benicia, CA 94510	20, 17	In front
Christian Help Center	Homeless shelter	150	--	2166 Sacramento St, Vallejo	2	In front
Catholic Social Service of Solano	Health and social services, especially the poor and disadvantaged.	15-20	--	125 Corporate Pl, Vallejo	3	In front
Legal Services of Northern California	Seniors/low income Solano County residents with specific civil law matters only.	--	2,000	1810 Capitol Street Vallejo	4	In front
City of Benicia Housing Authority	Housing	25	--	28 Riverhill Drive, Benicia	20, 15, 17	0.21 mi
Caminar / CLC –Vallejo	Support services to individuals with mental health disorders.	50	120/mo	902 Tuolumne St. Vallejo	4, 6	In front
U.S. Military Veteran Family Resource Center, Inc.	Services to vets and their families. WWII to present.	--	6,000/yr	1305 Tennessee St., Vallejo	6	In front
California Employment Development Department (EDD) and related branches	Job search, recruitment assistance, unemployment insurance & labor market info.	150	--	1440 Marin Street, Vallejo	6, 2	In front
Global Center for Success	Case Management, education, job and life skills development for homeless, near homeless, and underserved populations.	NA	NA	1055 Azuar Dr. Vallejo (on Mare Island)	--	--
Solano County Health & Social Services	Support for physical, emotional, and social well being of the people of Solano County.	NA	NA	365 Tuolumne Street Vallejo	4, 7	0.10 mi
Fighting Back Partnership	Non-profit collaboration with business, residents and government to improve neighborhoods, strengthen families and support youth development.	--	1,600/year	505 Santa Clara St. Vallejo	All	0.05 mi
Note 1: Facilities/programs are considered served by transit if they are within 1/4 mile (= reasonable walking distance). However, disabled clients may not be capable of using fixed route.						
Note 2: Walking distance is estimated to nearest stop of nearest route.						
Note 3: Pride Industries headquartered in Fairfield serves clients throughout the County, with varying access to transit services.						
Source: Listing and info. Provided by SolTrans staff; measured distances by LSC Transportation Consultants, Inc.						

## **Vallejo Unified School District**

The Vallejo City Unified School District serves approximately 12,500 students at 13 elementary schools, 3 K-8 schools, 3 middle schools, and 2 high schools, as well as a continuation school, a community day school, and an independent study/home study option. In addition, the District has an extensive child development and preschool program and an adult school which serves 4,000 adults. Enrollment has been declining. In 2016-17, VCUSD approved approximately 550 new transfer requests to attend a district other than the home district, and 21 transfers were approved to come to VCUSD.

The schools district only provides transportation for qualified individuals with disabilities. As a result, many students ride SolTrans routes. The K-8, middle schools and high schools in the district are listed in Table 14, along with current enrollment, bell times, and the routes which serve the schools. Routes 2 and 4 are 0.3 miles from John Finney High School, which is slightly further than typically considered to be a convenient “walking distance.” This high school has an enrollment of 193 students. Mare Island Health and Fitness Academy, a K-8 school with 457 students, is not served by public transit as no routes currently serve Mare Island.

## **Benicia Unified School District**

Benicia Unified School District serves 4,800 students at eight schools. Enrollment has been declining by approximately 100 students per year, and this trend is expected to continue in the next few years. Due to studies which indicate teenagers do better academically with later start times, the district will likely slowly change the bell schedules to make this change over the next few years, but bell schedules are not generally determined until late spring.

The school district only provides transportation for qualified individuals with disabilities. SolTrans operates two routes, Routes 15 and 17, which are open to the public, but specifically designed to meet the locations and times students need. Two morning buses depart on each route approximately 40 minutes apart. As indicated in Table 14, both Benicia Middle School and Benicia High school are served by both routes, and Route 20 also serves Benicia Middle School. These two schools have nearly 60 percent of the district-wide enrollment. While bell times often change each school year, the current bell times are listed.

## **Touro University**

Touro University is located on Mare Island, with an enrollment of approximately 1,400 students focusing on the health field. There are currently no near-term plans for new programs or development at Touro University. A concept for student housing on the campus is in the very early phases of planning, but no details such as the number of units or the timing has yet been determined. In 2017 Touro initiated a new evening nursing program attracting around 25 working nurses. There is currently no transit service to the campus provided by SolTrans.

<b>TABLE 13: Hospitals and Clinics Served by Fixed Route Transit</b>				
Facility	Type	Location	Routes Serving Program <sup>1</sup>	Distance to nearest Stop <sup>2</sup>
Associated Family Physicians	Doctor Offices	100 Hospital Drive #304, Vallejo	4, 20	In front
Family Health Center of Benicia	Doctor Offices	1440 Military W #101, Benicia	20, 15	0.05 mi
Kaiser Medical Offices & Hospital	Hospital/Medical Offices	975 Sereno Drive, Vallejo	4, 5	In front
La Clinica	Medical Clinic	243 Georgia Street, Suite B Vallejo	All	In front
La Clinica Dental Services	Dental Clinic	2920 Sonoma Blvd., Suite A, Vallejo	2	0.20 mi
La Clinica Vallejo Great Beginnings	OB/GYN	210 Hospital Drive, Vallejo	4, 20	In front
Napa Solano Foot and Ankle	Specialists	1460 N Camino Alto Suite 101, Vallejo	4, 20	0.10 mi
North Bay Pediatrics, Dentist	Specialists, Dentist	2001 Springs Rd # A, Vallejo	7, 6, 8	In front
Pain Management Center	Specialists Medical Complex	1208 E. 5th Street, Benicia	20	In front
Parkside Medical	Medical Offices Complex	1460 N Camino Alto, Vallejo	4, 20	0.10 mi
Quest Diagnostics	Lab	160 Hospital Dr, Vallejo	4, 20	In front
Quest Diagnostics	Lab	2042 Columbus Pkwy, Benicia	20, 15	0.10 mi
Redwood Eye Center	Eye Doctors	2852 Redwood Pkwy, Vallejo	7	In front
Redwood Square Shopping Center	Podiatrist, Dentist, Medical Supply	480 Redwood St, Vallejo	5	In front
Saint Helena Hospital	Psychiatric Hospital	525 Oregon St, Vallejo	1	In front
Solano County Family Health Clinic	Government Clinic	365 Toulumne St., Vallejo	4, 7	0.10 mi
Sutter Solano Medical Center	Hospital	300 Hospital Dr, Vallejo	4, 20	In front
Sutter Solano Cancer Center	Cancer Center	100 Hospital Drive, Vallejo	4, 20	In front
VA Medical and Dental Clinics	Veteran's Medical & Dental Clinic	201 Walnut Ave, Vallejo (Mare Island)	--	--
Note 1: Facilities are considered served by transit if they are within 1/4 mile (= reasonable walking distance).				
Note 2: Walking distance is estimated to nearest stop of nearest route.				
Note 3: Pride Industries headquartered in Fairfield serves clients throughout the County, with varying access to transit services.				
Source: Listing and info. Provided by SolTrans staff; measured distances by LSC Transportation Consultants, Inc.				

<b>TABLE 14: Schools Served by Fixed Route Transit</b>						Routes	Distance
Vallejo Schools	Enrollment	Location	Bell Times (2017-18)			Serving Program <sup>1</sup>	to nearest Stop <sup>2</sup>
			Early Bird	Regular	End		
Mare Island HFA (K-8)	457	400 Rickover St.	--	--	--	--	--
Loma Vista ESA (K-8)	531	146 Rainier St.	--	8:30 AM	3:00 PM	2	In front
Vallejo Charter School (K-8)	516	2833 Tennessee St.	--	8:30 AM	3:00 PM	6, 7, 8	0.20 mi
Franklin Middle School	693	501 Starr Ave.	--	7:50 AM	2:11 PM	8	0.23 mi
Hogan Middle School	930	850 Rosewood Ave.	--	7:50 AM	2:11 PM	6, 8	In front
Solano Middle School	599	1025 Corcoran Ave	--	7:50 AM	2:11 PM	2	In front
Jesse Bethel High School	1,468	1800 Ascot Pkwy	6:46 AM	7:50 AM	2:50 PM	2, 7, 20	In front
Vallejo High School	1,477	840 Nebraska St.	6:46 AM	7:43 AM	2:57 PM	1	0.18 mi
John Finney High School	193	233 Hobbs Ave	--	9:00 AM	2:05 PM	2, 4	0.31 mi
Bell Times (2017-18)							
Benicia Schools	Enrollment	Location	Early Bird	Regular	End	Routes	Distance
Benicia Middle School	1,142	1100 South Hampton Rd	--	8:30 AM	3:15 PM	15, 17, 20	In front
Benicia High School	1,667	1101 West Military	7:00 AM	8:00 AM	3:05 PM	15, 17	In front
Note 1: Schools are considered served by transit if they are within 1/4 mile (= reasonable walking distance). Route schedules may not match currently bell schedules.							
Note 2: Walking distance is estimated to nearest stop of nearest route.							
Source: School Accountability reports (online); measured distances by LSC							

## California State University Maritime Academy

“Cal Maritime” is part of the California State University system, with enrollment of approximately 1,100. The campus has purchased a hotel on the perimeter of campus which will provide temporary campus housing for 200 students in the fall of 2018. In 2023, Cal Maritime hopes to open a new residence hall that will house 400-500 students. At that time the hotel will be deactivated, resulting in approximately 200-300 new on-campus units overall. In addition, over the next five years, Cal Maritime expects its student enrollment to increase by 50 to 100 students. Cal Maritime is served by Route 3, with hourly runs from the Vallejo Transit center during the mid-day and half-hourly during peak times.

## Solano County Community College

Solano Community College has a main campus in Fairfield and branches in Vacaville and Vallejo. Within Vallejo, two sites are operated: the main campus at 545 Columbus Parkway and the nearby Auto Tech Center at 1687 North Ascot Parkway. Student enrollment is 10,000 among all campuses.

## Planned Development Projects in Vallejo

Major development is expected in Vallejo in the next five years, however most projects are still in a pre-application phase, and project details are limited. In general, development is planned along two key corridors – Sonoma Boulevard and Broadway Street – and two specific plan areas – Mare Island and the Waterfront. Development along Sonoma Boulevard will occur from south of downtown all the way to the northern border of Vallejo, culminating at the North Gateway area, a triangular section of land just south of Highway 29 and the city boundary. There will also be moderate development in the Solano 360 area in eastern Vallejo, near the intersection of Interstate 80 and State Route 37.

Additional key corridors and other areas for existing and future development are shown in a graphic in the City's most recent General Plan, *Propel Vallejo* (Figure 12). The graphic includes several elements which may be helpful for transit planning purposes. The general plan defines these elements as:

**Corridors** are areas that connect all of the elements of the city's structure and tie the community together. They pass through the residential neighborhoods, linking residents to key destinations around town. The corridors should provide safe, convenient connections for transit, bicycling, and walking, and provide opportunities for a range of housing options. Corridors also function as local destinations for nearby residents, serving as neighborhood "main streets" in the city's urban villages, where people run errands, hold festivals, and meet friends and neighbors. Commercial uses tend to be concentrated near key intersections in the urban villages, which themselves are smaller-scale mixed use districts that serve as focal points for community activity.

**Urban Villages** are located on mixed-use corridors and are walkable, bicycle-friendly, transit-oriented, mixed-use settings with shops and services catering to the daily needs of residents. Urban villages support transit use, incorporate civic spaces and facilities, and act as centers of community life and neighborhood focal points.

**Gateways** are entry points into Vallejo located along major regional thoroughfares. They heighten sense of place and announce arrival into the community through building design and placement and site features such as landscaping, plazas, art, and signage. Interstate 80 at Tennessee Street, while not at an entry point into Vallejo, is a planned gateway because it provides direct access to Mare Island.

**Employment centers** are areas of the city with significant concentrations of businesses and jobs. They tend to be well-served by public transit and transportation infrastructure, providing employees with a range of commute options. While the primary focus of activity in these areas is employment, they also provide public open spaces, plus cafes and daily services catering to the lunchtime and after-work needs of employees.

The information below describes four projects which are currently under development or expected within the next five years. There are other areas where development is expected in the near-term, but for which no plans have been submitted. General information about the densities and type of development allowed in these locations is included.

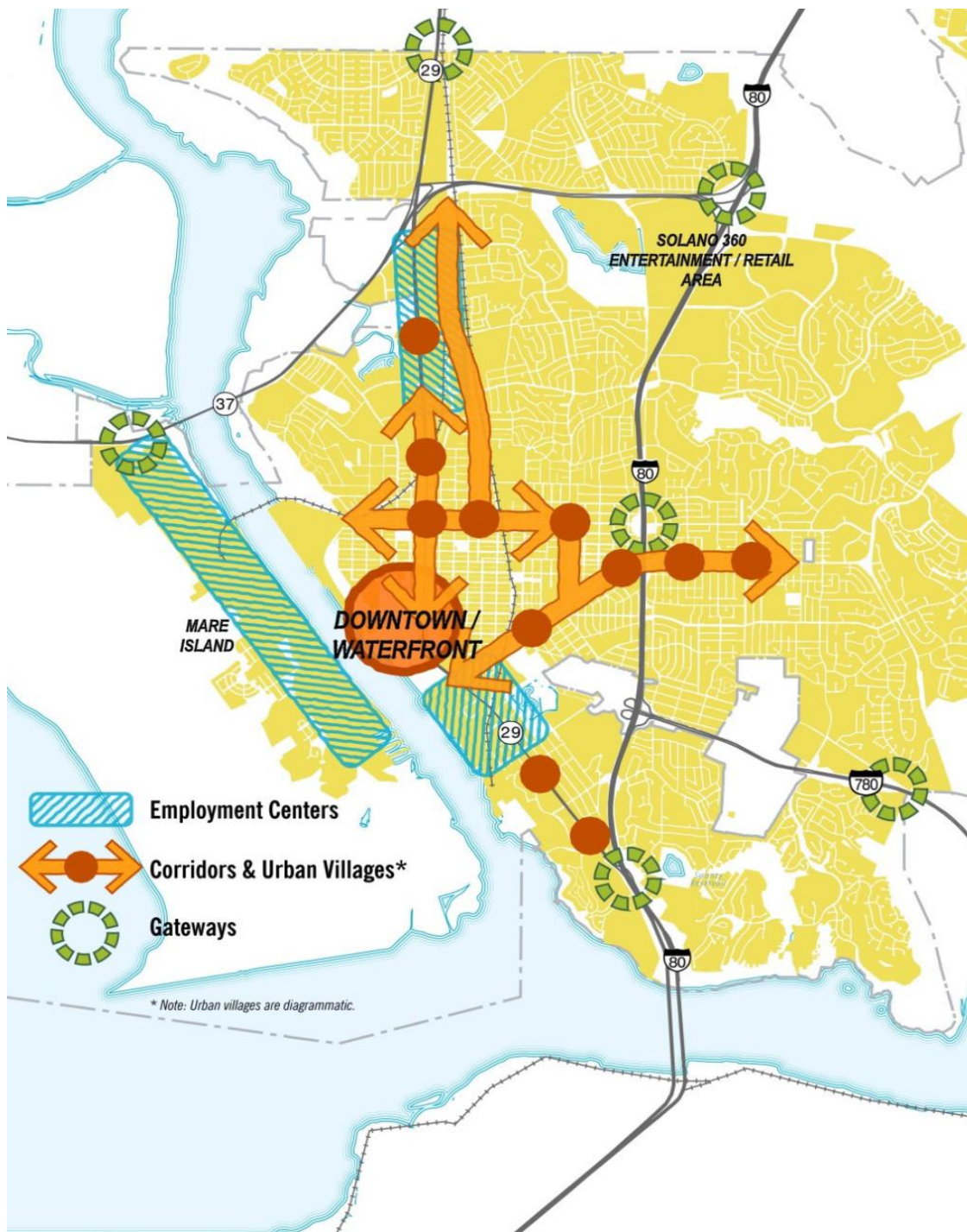
### *Projects in Progress*

#### Mare Island Specific Plan

The *Mare Island Specific Plan* calls for 1,400 residential units in Residential Low Density (less than 8.7 units/acre), Residential Medium Density (between 8.7 and 17.4 units/acre), Residential High Density (more than 17.4 units/acre), Mixed-Use and Live/Work units. It also calls for 1.54



**FIGURE 12: Key Development Corridors in Vallejo**



Source: City of Vallejo General Plan

million square feet of heavy industrial, 1.25 million square feet of Education/Civic, and 6.2 million square feet of light industrial, retail, office, and warehousing. To date, 280 Residential Medium Density units have been built (8-10 units/acre). The remaining 1,120 units are planned by 2023.

The City of Vallejo owns 157 acres of commercial industrial land on Mare Island while a private developer (Lennar Mare Island, LLC) controls 7.5 million square feet of commercial floor area. Lennar has renovated approximately four million of this commercial square footage which serve a variety of uses, from a brewery to light industrial, office, and other retail. In addition to pending commercial and residential development on Mare Island, the Bay Area's newest ferry terminal is located on Mare Island. Vallejo ridership accounts for a significant portion of ridership on the Bay Area's ferry system. There is currently no SolTrans Route on Mare Island, although there has previously been a trial route which is no longer in service. Additionally, several years prior to SolTran's formation, City of Vallejo Transit had a Mare Island route that poorly performed and was eliminated.

#### The Lodge at Glen Cove - Assisted Living and Memory Care Project

The five-acre project site for The Lodge at Glen Cove is located at 101, 120 and 140 Glen Cove Marina Road in the southern part of Vallejo, near the intersection with Glen Cove Parkway in Glen Cove. SolTrans Route 3 currently serves Glen Cove Parkway, which is about 600 feet north of the project. This project may be built in the next five years. The proposed project is an approximately 110,000-square foot Senior Assisted Living and Memory Care Facility with 140 residential units (150 beds) and 55 parking spaces<sup>2</sup>. The total number of employees expected is 75, spread among six shifts per day.

#### Caliber Charter School

The Caliber Charter School is located at 500 Oregon Street in the northern part of Vallejo and encompasses a total buildable area of slightly less than four acres. It was completed in early 2018 and is slated to open in March of 2018. This project is very close to the Sereno Transit Center and is served by SolTrans Routes 1, 2, 4, 5, and 80. This K-8 school, once in full operation, will have the capacity for 900 students and a staff of up to 70 employees.

#### 2850 Redwood Parkway

This 7.64-acre project site is located at 2850 Redwood Parkway within the City of Vallejo and has been sold to an assisted living developer. The proposed project is an approximately 174,000 square foot Assisted Living Facility with 156 residential units and 35 full-time employees. The project location is currently served by Routes 7, and 20.

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<sup>2</sup> Source: *The Initial Study/Mitigated Negative Declaration for The Lodge at Glen Cove*, published in August of 2017  
*Working Paper 1: Market Analysis* *LSC Transportation Consultants, Inc.*  
*SolTrans Comprehensive Operational Analysis* *Page 34*



### *Other Planned Development*

Additional potential developments in the pre-application phase with the City of Vallejo include projects in excess of 100 residential units or more. Timing and details are unknown, but they include the Cook site, the Leigh Family site, Borges Ranch, Blue Rock Golf Course, Sonoma Boulevard at Magazine Street site, and the Braddock-Logan subdivision. In addition, there are various smaller individual commercial developments (such as fast-food retail outlets) in the planning process.

## **COMMUTE PATTERNS AND EMPLOYMENT**

### **Employment Forecasts**

California's Employment Development Department (EDD) has forecasted industry and occupational employment in Solano County, and more specifically, for the Vallejo-Fairfield area (Benicia-specific data are not available.) The EDD forecasts that industry employment in the Vallejo-Fairfield metropolitan statistical area will increase approximately 40 percent between 2014 and 2024. Industries with the greatest projected growth include home health aides, construction laborers, cement/concrete finishers, software developers, market research analysts and specialists, and taxi drivers and chauffeurs—all with over 56 percent growth.

### **Commute Mode**

Tables 15 and 16 present the commute travel characteristics for Vallejo and Benicia, drawn from the American Community Survey (ACS). As shown, the majority of employees commute to work by driving alone, resulting in 72.2 percent of all Vallejo city commuters driving to work alone, and 74.7 percent in Benicia. Overall, just 1.7 percent of Vallejo residents commute by public bus, and 1.2 percent of Benicia residents commute by public bus. However, another 1.2 percent in Vallejo and 1.9 percent in Benicia commute by ferry, and 1.4 percent in Vallejo and 2.7 percent in Benicia commute by other BART or train.

A few outliers in the data include:

- Tracts with especially high levels of residents who drove alone (greater than 79 percent) include tracts 2502, south of Tennessee between Oakwood Ave and Columbus; tract 2504 south of Georgia and east of I-80; tract 2512 south of Tennessee between Almond and I-80, and tract 2519.02, Chabot Terrace. In Benicia, tracts 2521.02 (east of East 2<sup>nd</sup>/north of Military and east of 5<sup>th</sup> Street) and tract 2521.06 (north of 780, east of Hastings Drive and west of Panorama) also have high levels of commuters who drove alone.
- Tracts with especially high levels of carpooling (greater than 20 percent) include tracts 2501.05 by Gateway Plaza; tract 2518.02, south of Marine World Pkwy and east of Broadway; tract 2519.01 near Harry Floyd Terrace/Dan Foley Park; tract 2519.03 in

**TABLE 15: Vallejo Resident Commute Travel Characteristics**

Census Tract #	Description	Total Workforce <sup>1</sup>	Drove Alone				Carpooled				Public Transit				Other (Motorcycle, Bike, Etc.)				Worked at Home	
			#	%	#	%	#	%	#	%	Bus	Ferry	BART, Train	Walked	#	%	#	%	#	%
2501.03	E of I-80, S of Redwood Pkwy	1,642	1,234	75.2%	273	16.6%	15	0.9%	30	1.8%	0	0.0%	0	0.0%	13	0.8%	35	2.1%	42	2.6%
2501.04	N of Tennessee, E of Oakwood Pkwy	954	704	73.8%	155	16.2%	31	3.2%	5	0.5%	0	0.0%	0	0.0%	11	1.2%	0	0.0%	48	5.0%
2501.05	Gateway Plaza	3,646	<b>2,504</b>	68.7%	<b>831</b>	<b>22.8%</b>	45	1.2%	<b>46</b>	1.3%	22	0.6%	22	0.6%	14	0.4%	<b>95</b>	2.6%	89	2.4%
2501.06	Sulphur Springs Valley	2,435	1,821	74.8%	373	15.3%	41	1.7%	22	0.9%	43	1.8%	0	0.0%	0	0.0%	15	0.6%	<b>120</b>	4.9%
2502	S of Tennessee, Oakwood Ave to Columbus	1,650	1,310	<b>79.4%</b>	263	15.9%	20	1.2%	0	0.0%	3	0.2%	0	0.0%	18	1.1%	17	1.0%	19	1.2%
2503	S of Tennessee, I-80 to Oakwood Ave	1,484	1,110	74.8%	289	19.5%	13	0.9%	0	0.0%	0	0.0%	0	0.0%	25	1.7%	25	1.7%	22	1.5%
2504	S of Georgia, E of I-80, N of 780	1,047	829	<b>79.2%</b>	142	13.6%	0	0.0%	22	2.1%	0	0.0%	0	0.0%	10	1.0%	24	2.3%	20	1.9%
2505.01	N of I-780, S of Georgia, W Rollingwood Dr.	1,087	770	70.8%	213	19.6%	0	0.0%	9	0.8%	22	2.0%	0	0.0%	0	0.0%	23	2.1%	50	4.6%
2505.02	N of I-780, S of Georgia, E Rollingwood Dr.	1,405	971	69.1%	232	16.5%	51	3.6%	<b>48</b>	3.4%	32	2.3%	32	2.3%	17	1.2%	12	0.9%	42	3.0%
2506.01	E of I-80, S of Lewis Ave	2,164	1,537	71.0%	364	16.8%	19	0.9%	20	0.9%	61	2.8%	54	2.5%	54	2.5%	11	0.5%	98	4.5%
2506.04	Glen Cove, West	1,912	1,311	68.6%	261	13.7%	38	2.0%	33	1.7%	<b>76</b>	4.0%	28	1.5%	18	0.9%	<b>147</b>	<b>7.7%</b>	63	3.0%
2506.05	Glen Cove, East	2,118	1,653	78.0%	267	12.6%	0	0.0%	11	0.5%	<b>73</b>	3.4%	9	0.4%	42	2.0%	42	2.0%	0	0.0%
2507.01	W of I-80, S of Curtola Pkwy	1,358	1,047	77.1%	238	17.5%	11	0.8%	0	0.0%	0	0.0%	0	0.0%	20	1.5%	42	3.1%	0	0.0%
2508.01	Mare Island & Carquinez Heights	1,617	1,066	65.9%	241	14.9%	0	0.0%	15	0.9%	34	2.1%	34	2.1%	<b>106</b>	<b>6.6%</b>	61	3.8%	94	5.8%
2509	S of Florida, W of Sonoma	857	488	56.9%	154	18.0%	<b>90</b>	<b>10.5%</b>	37	4.3%	0	0.0%	0	0.0%	16	1.9%	35	4.1%	37	4.3%
2510	S of Florida, E of Sonoma	1,257	842	67.0%	247	19.6%	58	4.6%	2	0.2%	0	0.0%	0	0.0%	27	2.1%	0	0.0%	81	6.4%
2511	S of Georgia Solano to I-80	1,321	954	72.2%	274	20.7%	0	0.0%	0	0.0%	7	0.5%	7	0.5%	27	2.0%	13	1.0%	46	3.5%
2512	S of Tennessee Almond to I-80	1,372	1,106	<b>80.6%</b>	124	9.0%	5	0.4%	12	0.9%	0	0.0%	0	0.0%	22	1.6%	<b>98</b>	<b>7.1%</b>	5	0.4%
2513	N of Tennessee, Amador to I-80	1,303	876	67.2%	166	12.7%	15	1.2%	<b>43</b>	<b>3.3%</b>	<b>97</b>	<b>7.4%</b>	32	2.5%	32	2.5%	19	1.5%	55	4.2%
2514	S of Sereno Dr, E of I-80, N of Greenfield	2,302	1,691	73.5%	292	12.7%	<b>120</b>	<b>5.2%</b>	13	0.6%	21	0.9%	20	0.9%	20	0.9%	19	0.8%	<b>126</b>	5.5%
2515	N of Florida, E of Sonoma	1,593	1,219	76.5%	162	10.2%	34	2.1%	23	1.4%	22	1.4%	22	1.4%	1	0.1%	<b>82</b>	5.1%	50	3.1%
2516	N of Florida, W of Sonoma Blvd	1,259	922	73.2%	132	10.5%	40	3.2%	<b>67</b>	5.3%	0	0.0%	0	0.0%	63	<b>5.0%</b>	11	0.9%	24	1.9%
2517.01	River Park	1,431	862	60.2%	235	16.4%	52	3.6%	13	0.9%	32	2.2%	32	2.2%	<b>83</b>	<b>5.8%</b>	22	1.5%	<b>132</b>	<b>9.2%</b>
2517.02	Terrace Park	1,328	968	72.9%	183	13.8%	35	2.6%	42	3.2%	30	2.3%	30	2.3%	18	1.4%	6	0.5%	46	3.5%
2518.02	S of Marine World Pkwy, E of Broadway	779	479	61.5%	180	<b>23.1%</b>	68	<b>8.7%</b>	0	0.0%	0	0.0%	0	0.0%	30	3.9%	0	0.0%	22	2.8%
2518.03	N of Marine World Pkwy, E of Broadway	2,181	1,697	77.8%	315	14.4%	23	1.1%	26	1.2%	48	2.2%	48	2.2%	3	0.1%	11	0.5%	58	2.7%
2518.04	NW Vallejo, borders Napa County	1,662	1,248	75.1%	313	18.8%	11	0.7%	14	0.8%	5	0.3%	5	0.3%	6	0.4%	0	0.0%	65	3.9%
2519.01	Harry Floyd Terrace/Dan Foley Park	1,743	1,176	67.5%	440	<b>25.2%</b>	10	0.6%	<b>48</b>	2.8%	0	0.0%	0	0.0%	21	1.2%	0	0.0%	48	2.8%
2519.02	Chabot Terrace	2,102	1,661	<b>79.0%</b>	306	14.6%	0	0.0%	9	0.4%	20	1.0%	20	1.0%	0	0.0%	0	0.0%	<b>106</b>	5.0%
2519.03	NE Vallejo, borders Napa County	2,577	1,656	64.3%	<b>697</b>	<b>27.0%</b>	28	1.1%	0	0.0%	0	0.0%	0	0.0%	58	2.3%	70	2.7%	68	2.6%
2521.03	Highlands Park	2,325	1,779	76.5%	333	14.3%	30	1.3%	14	0.6%	<b>67</b>	2.9%	14	0.6%	14	0.6%	27	1.2%	61	2.6%
	Total	51,911	37,491	72.2%	8,695	16.7%	903	1.7%	624	1.2%	715	1.4%	766	1.5%	833	1.6%	1,884	3.6%		

Source: US Census Table B08301, 2016 ACS 5 Year Estimates

**Bold** = higher than average numbers or percentages.

TABLE 16: Benicia Resident Commute Travel Characteristics																				
Census Tract #	Description	Total Work-force <sup>1</sup>	Drove Alone				Carpooled				Public Transit				Other (Motorcycle, Bike, Etc.)				Worked at Home	
			#		%		#		%		#		%		#		%		#	%
			#	%	#	%	#	%	#	%	#	%	#	%	#	%	#	%		
2520	S of Military, west of East 5th	1,841	1,236	67.1%	213	11.6%	30	1.6%	66	3.6%	45	2.4%	77	4.2%	75	4.1%	99	5.4%		
2521.02	E of E. 2nd/N of Military & E of E. 5th	1,897	1,494	78.8%	174	9.2%	28	1.5%	46	2.4%	0	2.4%	21	1.1%	11	0.6%	123	6.5%		
2521.04	N of Rose Dr, E of Columbus Pkwy, W of Old Lake Herman Rd.	2,833	2,029	71.6%	304	10.7%	26	0.9%	42	1.5%	111	5.4%	0	0.0%	56	2.0%	265	9.4%		
2521.05	E of Rose Dr, W of Hastings, NE of 780	1,612	1,230	76.3%	229	14.2%	20	1.2%	29	1.8%	30	3.7%	10	0.6%	10	0.6%	54	3.3%		
2521.06	N. of 780, E of Hastings Dr., w of Panorama	2,147	1,724	80.3%	185	8.6%	0	0.0%	18	0.8%	116	6.2%	8	0.4%	18	0.8%	78	3.6%		
2521.07	N of 780, W of East 2nd, E of Panorama	1,473	1,119	76.0%	159	10.8%	44	3.0%	0	0.0%	37	2.5%	0	0.0%	7	0.5%	107	7.3%		
2521.08	S of 780, N of Military	1,673	1,238	74.0%	170	10.2%	9	0.5%	58	3.5%	20	4.7%	68	4.1%	0	0.0%	110	6.6%		
Total		13,476	10,070	74.7%	1,434	10.6%	157	1.2%	259	1.9%	359	2.7%	184	1.4%	177	1.3%	836	6.2%		

northeast Vallejo, bordering Napa County; and tract 2521.05 between Rose Drive and Hastings, northeast of I-780.

- A handful of tracts also have above average use of public bus (greater than 5 percent), including tract 2509 in the downtown area south of Florida and west of Sonoma, tract 2518.02 south of Marine World Parkway east of Broadway, and tract 2514, south of Sereno Drive and east of I-80, all in Vallejo.
- A few areas have a high number of commuters who get to work by walking. Tracts with more than 4 percent of employees who walk to work include tract 2508.01 on Mare Island; tract 2516 north of Florida and west of Sonoma Boulevard; tract 2517.01 River Park in Vallejo, and in Benicia, tract 2520 south of Military and west of East 5<sup>th</sup> Street.
- Finally, a few areas have a high number of employees who work at home. Tracts with more than 7 percent of employees who work at home include tract 2506.04, Glen Cove and tract 2517.01, River Park, both in Vallejo. In Benicia, tract 2521.04 (north of Rose Drive and west of Old Lake Herman Road) and tract 2521.07 (north of 780/west of East 2<sup>nd</sup> and east of Panorama) have high levels of work-at-home employees.

### **County-to-County Commute Patterns**

Table 17 illustrates the number of commuters into and out of both Vallejo and Benicia, drawn from the US Census 2015 Longitudinal Employer Household Dynamics (LEHD). This data is “synthesized” from employment location information collected by the Bureau of Labor Statistics, as well as residential location information from Internal Revenue Service, Social Security and other federal and state sources. There are several limitations in the data, such as when employers group employees that report to multiple sites into a single site. In addition, not all employees in the dataset commute on all workdays (and thus the LEHD data tends to over-report longer commutes that happen less frequently in comparison with average daily commutes). Nevertheless, the LEHD data provides the best available information on general commute patterns.

The data reflects the significance of Vallejo as a bedroom community. Residents hold a total of 53,695 jobs, just 8,741 which are in the City of Vallejo (16 percent). In contrast, Vallejo has a total of 31,285 jobs, 22,544 of which are held by workers not living in Vallejo (72 percent). This means Vallejo exports 22,510 workers on balance. The data also shows the city attracting the most Vallejo residents after Vallejo itself is San Francisco (8.9 percent) followed by Fairfield (4.7 percent).

Other common commute destinations for Vallejo residents include Oakland (4.3 percent), Napa (4.0) and Benicia (3.3 percent). As also shown in Table 8, 7.0 percent of Vallejo workers commute from Fairfield. Other cities that generate a relatively large number of commuters to Vallejo include Benicia (3.1 percent) and American Canyon (3.0 percent).

**TABLE 17: Commute Patterns Into and Out of SolTrans Service Area**

Vallejo Residents' Work Location			Vallejo Workers' Residential Location		
Commuting To	Count	Share	Commuting From	Count	Share
Vallejo, CA	8,741	16.3%	Vallejo, CA	8,741	27.9%
San Francisco, CA	4,793	8.9%	Fairfield, CA	2,182	7.0%
Fairfield, CA	2,498	4.7%	Vacaville, CA	1,096	3.5%
Oakland, CA	2,300	4.3%	Benicia, CA	966	3.1%
Napa, CA	2,122	4.0%	American Canyon, CA	923	3.0%
Benicia, CA	1,752	3.3%	Napa, CA	757	2.4%
Concord, CA	1,400	2.6%	Suisun, CA	610	1.9%
Richmond, CA	1,227	2.3%	San Francisco, CA	597	1.9%
Walnut Creek, CA	1,220	2.3%	San Jose, CA	523	1.7%
Sacramento, CA	1,055	2.0%	Oakland, CA	521	1.7%
All Other Locations	26,587	49.5%	All Other Locations	14,369	45.9%
<b>Total:</b>	<b>53,695</b>	<b>100.0%</b>	<b>Total:</b>	<b>31,285</b>	<b>100.0%</b>
<i>Subtotal: South/West</i>	<i>10,940</i>	<i>20.4%</i>	<i>Subtotal: South/West</i>	<i>1,641</i>	<i>5.2%</i>
<i>Subtotal: North/East</i>	<i>5,675</i>	<i>10.6%</i>	<i>Subtotal: North/East</i>	<i>5,568</i>	<i>17.8%</i>

Benicia Residents' Work Location			Benicia Workers' Residential Location		
Commuting To	Count	Share	Commuting From	Count	Share
Benicia, CA	2,078	15.1%	Benicia, CA	2,078	16.2%
San Francisco, CA	1,075	7.8%	Vallejo, CA	1,752	13.6%
Vallejo, CA	966	7.0%	Fairfield, CA	1,038	8.1%
Fairfield, CA	585	4.2%	Vacaville, CA	693	5.4%
Concord, CA	570	4.1%	Suisun, CA	317	2.5%
Walnut Creek, CA	570	4.1%	Concord, CA	305	2.4%
Oakland, CA	499	3.6%	San Francisco, CA	199	1.5%
Martinez, CA	430	3.1%	Napa, CA	187	1.5%
Richmond, CA	306	2.2%	San Jose, CA	177	1.4%
Napa, CA	281	2.0%	Martinez, CA	162	1.3%
All Other Locations	6,407	46.5%	All Other Locations	5,933	46.2%
<b>Total:</b>	<b>13,767</b>	<b>100.0%</b>	<b>Total:</b>	<b>12,841</b>	<b>100.0%</b>
<i>Subtotal: South/West</i>	<i>3,450</i>	<i>6.4%</i>	<i>Subtotal: South/West</i>	<i>843</i>	<i>2.7%</i>
<i>Subtotal: North/East</i>	<i>866</i>	<i>1.6%</i>	<i>Subtotal: North/East</i>	<i>2,235</i>	<i>7.1%</i>

Source: Longitudinal Employer-Household Dynamics from the 2014 US Census Bureau

Totaling the commute figures for these locations generating significant commuting indicates that the preponderance of Vallejo residents that do not work in Vallejo commute largely to the south or west (20.4 percent commute towards the Bay Area) versus those commuting to the north or east (10.6 percent). On the other hand, the balance of persons commuting to Vallejo is largely from the north and east (17.8 percent) compared to south and west (5.2 percent)



Benicia has a much more even inflow/outflow of employees. The number of jobs in Benicia totals 12,841, while the number of residents from Benicia holding jobs totals 13,767. In both Vallejo and Benicia, close to half of residents and workers come from or are employed at “other locations,” which indicates a wide dispersal of jobs and workers.

## CONCLUSIONS OF MARKET ANALYSIS

This marketing analysis makes it clear that there are myriad factors influencing the potential need for transit service, from current and future demographic factors, to locations of activity centers, to economic development and planning decisions. Furthermore, technological changes in communications and vehicle technology are rapidly changing and make the future of transportation difficult to predict. That said, there are consistent factors in this analysis which are expected to affect the need for transit service, and which should be considered when planning for future transit service. Key conclusions of this market analysis are as follows:

- Overall population growth may generate a modest increase in potential transit market over coming years. However, the large increase in young retirees (ages 60 to 74) over the last decade and projected into the next decade, and the even larger increase expected in mature seniors (ages 75 to 84) in the next decade will increase the need for transit services designed to accommodate persons with limited mobility.
- While portions of Vallejo are conducive to transit, many areas are more difficult to serve, and the widely dispersed residential patterns in portions of Vallejo and Benicia provide challenges to serve with transit. Furthermore, the hilliness of Vallejo makes it difficult to quantify how well residents’ needs are being met as walking a quarter mile in a flat location cannot be equivocated to walking a quarter mile on a hill. Nonetheless, Vallejo currently serves 85 percent of its population within a quarter mile of regular fixed route service, and Benicia serves 33 percent within a quarter mile of fixed route service and 100 percent with general public dial-a-ride.
- Vallejo serves its transit dependent populations at an even higher level of service than the general population. In particular, 93 percent of the zero vehicle households are within a quarter mile walking distance of a SolTrans fixed route.
- The largest “underserved” area across all categories of population in Vallejo (outside of Mare Island) is census tract 2501.04 (east of Oakwood Avenue and west of Ascot, and north of Tennessee Street). In particular, this tract has an equivalent of 398 elderly persons per square mile. Other census tracts with high concentrations of transit dependent populations include adjacent tracts 2511 and 2504 (north of Curtola Parkway, southeast of Solano Avenue, south of Georgia Street, and west of Banning), tract 2506.01 (east of I-80, south of I-780 and west of Glen Cove Road) and tract 2506.05 (east of Glen Cove Parkway, south of I-780 and west of Dillon Point Road). As shown in Figure 10, there are also several gaps in coverage in around Oakwood Avenue and Skyline Drive, and around Georgia Street and Steffan Street.

- Major senior housing, low income housing, facilities for the disabled, educational facilities, and medical facilities are well served by transit, as indicated in Tables 8 through 16. However, while this analysis takes into account the location of services, it does not take into account the span of service or frequency of service available to these locations. Given that SolTrans routes operate mostly on 30-minute headways, the frequency is fairly high for the size of community. However, as mentioned, determining the proximity to transit can be a deceptive measure when considering the hilliness of the area.
- The industrial areas of Benicia in the eastern portion of town are not well-served by SolTrans, but the Benicia Industrial Park is served by FAST. The Arsenal (the southernmost portion of Benicia Industrial Park), is not served by either transit agency.
- Most schools are directly served by SolTrans, though John Finney High School is not. While SolTrans works to accommodate student transportation, due to the late release of bell times each school year, often the tripper schedules do not match the bell times adequately.
- The commute patterns of Vallejo and Benicia residents and workers, as well as the geographic and demographic characteristics of the community, indicate that employment trips are significant for longer-distance travel (i.e. through the Express routes) and are likely a relatively small market for the SolTrans local routes.
- Transit demand has been low on Mare Island, as evidenced by the poor ridership when bus service was provided. However, high levels of residential and commercial development is planned for the island, and as such, it will be important to monitor the growth and consider what impact it will have on the overall transportation plan.
- Development along Sonoma Boulevard, and in particular, the potential for Bus Rapid Transit, will need to be considered in developing routing options and service levels in the plan.

These conclusions will be revisited once the results of the ridership and route analyses are completed in future study tasks.

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