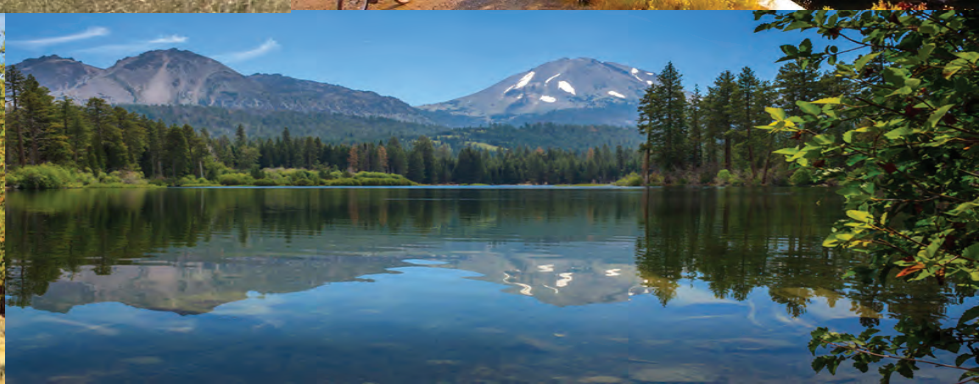
Lassen County 2017
Final TDP



Prepared for the

Lassen County Transportation Commission

Prepared by

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Lassen County 2017 Final TDP

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Chapter 1
Introduction

Public transit services have been provided in Lassen County since 1981. These services have provided mobility to the county's residents, including access to important medical, recreational, social, and economic services and opportunities. Public transit is an integral element in the quality of life the community provides its citizens. The intent of this study is to evaluate the specific needs for transit services, as well as to develop plans for improvements and service revisions. This is accomplished through the review of existing transit conditions, evaluation of operations, and extensive public outreach (via on-board surveys, community-wide surveys, and stakeholder interviews). In subsequent documents, a wide range of service alternatives will then be evaluated, and stable funding sources for operations and capital improvements of transit services will be identified.

The document presented herein presents the setting in which transportation services are provided, as well as a thorough evaluation of existing transit services.

STUDY ISSUES

The Lassen Transit Services Agency (LTSA) provided oversight and input for this Transit Development Plan. Through meetings with the LTSA, and discussions with transit staff, the following study issues were identified:

- **Service Frequency** – Passengers often express a desire for increased service, particularly on the City Route. Furthermore, the large-loop structure results in long in-vehicle travel time. Is increased frequency, possibly through a second route, warranted? Is on-time performance an issue?

- **Address Funding Issues** – The funding agreement with Lassen College has not been adjusted since its inception in 1998. Is the current fee appropriate? In addition, while LTSA finances are stable, it is important that the study acknowledges the continuous decrease in STA funding. What are the projections for other Federal, State and private funding sources, and what opportunities exist to apply for additional funding sources?

- **Increase Grant Coordination and Education with Local Agencies –** The Lassen Senior Services (LSS) vans (one of which LTSA owns) have been experiencing issues with regular gas siphoning, and could benefit from a fenced yard. In addition, LSS and Big Valley 50 Plus are eligible to apply for their own 5311 grants. It is a priority to encourage and educate these agencies on grant opportunities to help address various needs.

- **Transit Plaza** – In the event of a second City Route, the establishment of a transit plaza might be warranted. A transit plaza could provide a centralized location for transfers to other services, for getting bus information, and for heightening the awareness of services.

- **Potentially Serve New Stops/Areas** – Bus stops or service has been requested or recommended at the mental health clinic (during the Unmet Needs Process), the new swimming pool, areas outside of ¾ mile buffer in north Susanville, and the Westwood Apartments. The study should evaluate these requests to determine which, if any, are warranted.

- **Evaluate Marketing Mechanisms** – While there are currently extensive marketing efforts, their effectiveness is unclear. Efforts should be made to ensure that marketing efforts are maximized. In addition, the study should evaluate the possibility of advertising on the outside of buses.

- **Driver Retention** – Driver turnover is high, and recruiting new drivers is difficult. Operators require extensive training and excellent customer service skills, which are benefitted by increasing driver retention. How can hiring and retention be improved?

- **Senior Center Training** – There may be a need for travel training for seniors.

- **Route Reductions/Elimination** – The Eagle Lake route has extremely low ridership. The service is provided if just one individual requests a trip. Should the limits be revised? Service has been expanded to Chester, which creates some redundancy in service with Plumas County Transit. Is continued service warranted?

These issues will provide guidance for the direction of the study.

STUDY AREA

Located in the northeast quadrant of California, Lassen County is composed of mountains, high desert, and fertile valleys. The major arterial highway through Lassen County is US 395, connecting the county to Alturas and Modoc County to the north and Reno, Nevada to the south. State Routes 44 and 36 also service the area, connecting Lassen County to the greater Sacramento Valley and the city of Redding. Susanville is the largest community and the county seat. It serves as the governmental, commercial, lodging, medical, educational, and tourist center of the region. The study area also includes extensive public lands for recreation, as well as attractions such as the Bizz Johnson Trail. The study area is shown in Figure 1.

Lassen County's climate is characterized by warm, dry summers and cold, moderately wet winters. Low temperatures in January average 21 degrees Fahrenheit, while the high temperatures in July average 93 degrees Fahrenheit. Annual precipitation levels range from less than 10 inches of rain in Susanville up to 45 inches of snow and rain over Fredonyer Pass.

Air Quality

Lassen County is part of the Northeast Plateau Air Basin. The low population density, limited number of industrial and agricultural installations, and no significant problems with traffic congestion all contribute to Lassen County's generally excellent air quality. The only standard which Lassen County is not in attainment is the State Particulate Matter (PM) 10 standard. This may have an impact on which fuel choices are selected for purchase of new vehicles.

MAJOR ACTIVITY CENTERS

The identification of major activity centers is useful in determining where transportation services might be needed. The region's major activity centers are situated in and around Susanville, as well as in the smaller communities of Chester, Janesville, Herlong and others, as described below.

Major Activity Centers and Social Service Programs

As the county seat and largest community in Lassen County, Susanville provides the majority of the regions' governmental, medical, educational, and shopping activities. Most major businesses and government offices are within several blocks of Main Street (State Route 36) in Susanville. In addition, Lassen Community College, with an enrollment of approximately 2,500 students, is located north of town, and three large correctional facilities are located east of town.

Figure 1
Lassen County Site and Location Map

Senior Services

Lassen Senior Services (LSS) provides senior meals four days per week at their main location on Sunkist Drive in Susanville and their location at Westwood Senior Apartments. There is also a service location in Doyle, which provides meals one day per week. In addition, all three nutritional sites provide food delivery to homebound seniors. LSS also offers donation-only transportation for seniors to and from the Susanville and Westwood sites, medical appointments, grocery stores, banks, and other destinations.

In addition to LSS, Big Valley 50 Plus is a non-profit organization, located in Bieber, which is dedicated to providing services to Lassen County citizens (particularly those who are elderly). Big Valley 50 Plus provides in-center and home-delivered meals on Tuesdays, Wednesdays and Thursdays, with frozen meals available for the weekends. Meals are provided at a suggested donation of $6.00 for non-seniors and $3.00 for seniors and caregivers. Other services, such as community events, computer help, and transportation (to shopping and out of town) are available to people of all ages.

Additionally, there are four senior residential developments within Lassen County:

- Country Villa River View, a skilled nursing facility, provides 96 beds and is located at 2005 River Street in Susanville.

- Eagle Lake Village, located at 2001 Paul Bunyan Road in Susanville, is a senior residential care facility with 76 beds.

- With 82 units, Eskaton Lassen Manor (located at 205 North Mesa Street) provides affordable housing to seniors and disabled adults in Susanville.

- Lastly, Westwood Senior Apartments, located at 671315 Finland Dr in Westwood, provides 24 affordable housing units to Lassen County Seniors.

Disabled Services

There are a number of organizations that serve disabled residents. North Valley Services, as part of Far Northern Regional Development Disabilities Center, provides life skills training to developmentally disabled adults. Clients live in their own homes, with guardians, or in group homes. Services are provided between 9:00 AM and 3:00 PM, Monday through Friday. North Valley has two vehicles for transporting clients. They are located near the corner of Alexander and Main Streets in Susanville. They serve an average of 23 clients each weekday.

Lassen Life Skills is a community-based program that serves adults with developmental disabilities. Clients are provided with transportation to medical and dental appointments in town and outlying areas. Clients are taught life skills, and a family respite program is also available. Services are provided between 8:00 AM and 5:00 PM, Monday through Friday. Approximately 45 clients are served through this program, which has its main programs on San Francisco Street in Susanville.

In addition, there are numerous residential resources for disabled persons in Lassen County. As aforementioned, Eskaton Lassen Major provides affordable housing to disabled adults. There are also four facilities that offer adult residential care for disabled persons, including Redwine Family Home (Janesville), Mountain Jewels Home (Little Valley), Zamora Residence (Susanville), and Zamora Residence II (Susanville).

Health Services

The following five facilities comprise the key health facilities in Lassen County:

- Banner Lassen Medical Center is a hospital located north of Lassen College that provides basic services and emergency services. Residents must generally travel to Reno or Redding for medical specialists and Veterans' services.

- Lassen Indian Health Center provides medical and dental services for Native Americans and non-Native American members of Native American households. This facility is located at 795 Joaquin Street in Susanville.

- Northeastern Rural Health Clinics, Inc., a not-for-profit community health center with administrative offices located on Spring Ridge Road, has physician and medical services provided through family practices in Doyle, Westwood, and Susanville.

- Susanville Nursing and Rehabilitation Center, located at 2005 River Street, is a 96-bed nursing facility providing 24-hour skilled nursing care.

- The Veteran Affairs Diamond View Clinic, which is located at 110 Bella Way in Susanville, provides healthcare and other services to veterans.

Other Social Service and Non-Profit Services

The Lassen County Health and Human Services (HHS) Agency seeks to meet the needs of Lassen County residents through its nine branches, which include: Environmental and Public Health, Veteran Services, Public Guardianship, Adult Protective and In-Home Services, Alcohol and Drug Services, Mental Health, Lassen WORKS, and Family and Children Protective Services.

The Lassen County Veterans Service Office (VSO) provides an array of services to veterans in Lassen County. These services include (but are not limited to) assistance with healthcare, benefits, compensation, education, and employment. The VSO is located at the Memorial Building in Susanville.

DEMOGRAPHIC PROFILE

The demographics of the area are derived primarily from the 2010 US Census, and more specifically, the American Community Survey data which is regularly updated with sample data.

Current Population

The study provides detailed demographic data broken down by Census Tract, so as to allow for a thorough understanding of population trends and locations of transit dependent persons. Estimates of the Lassen County population at the block group level were obtained from the US Census American Community Survey 2010-2014 5-year estimates. The total non-institutionalized population of the County in 2015 is estimated to be 23,929 people, with 8,137 (34 percent) residing in the Susanville area. Populations by census tract block group are shown in Table 1 and Figure 2. Most of the population is concentrated in and around Susanville, Janesville, and Herlong.

Transit Dependent Population

Nationwide, transit system ridership is drawn largely from various groups of persons who make up what is often called the "transit dependent" population. This category includes youths, elderly persons, persons with disabilities, low-income persons, and members of households with no available vehicles. There is considerable overlap among these groups. Table 1 presents the transit dependent population by Census Tract in Lassen County from the 2014 American Community Survey from the U.S. Census.

Youth Population

The youth population (children aged 10 to 17 years of age) represents 7.7 percent of the study area population, totaling 2,477 persons. The youth population is considered to be transit dependent persons, as children of school age that travel independently may need public transit to go to/from school or after school activities. Census tracts with the most number of youth are located in Litchfield/Standish (187 youths), Johnstonville north of Gold Run (183 youths), and Susanville north of SR 36 (182 youths). As a whole, the census tracts making up Susanville have a total of 487 youths (roughly 6.0 percent of the City of Susanville's population).

Figure 3 displays the proportion of youth population in each block group. Although the population of Bieber/Nubieber is relatively small, there is a relatively high concentration of youth (19.5 percent). The communities of Standish and Litchfield (16.5 percent) and census tract 403.5.2 in Susanville (16.7 percent) also have a high percentage of youth.

Senior Population

There are an estimated 2,603 persons aged 65 or over residing in Lassen County, comprising 10.9 percent of the total population. The percentage of elderly persons is the highest in the community of Spaulding near Eagle Lake where 41.6 percent or 284 persons are 65 or older (Figure 4). The community of Doyle (23.5 percent, 159 person) and block group 403.02.2 south of Gold Run/south of Susanville (259 persons, 20.8 percent) has a high proportion of seniors.

Table 1: Lassen County Population Characteristics

Census Tract	BG	Description	Total Population	Institutionalized Pop. [1]	Total Non-Institutionalized Population	Households	Youth (10-17)		Elderly (65+)		With a Disability		Below Poverty		Zero Vehicle Households	
							#	%	#	%	#	%	#	%	#	%
401	1	Bieber/Nubieber	329	81	248	133	48	19.5%	63	25.2%	36	14.6%	25	10.2%	3	2.3%
401	2	Ash Creek Wildlife Area	569	-	569	298	32	5.6%	152	26.7%	83	14.6%	58	10.2%	7	2.3%
401	3	Madeline/Termo	983	-	983	107	24	2.4%	60	6.1%	143	14.6%	100	10.2%	1	0.9%
402	1	Spaulding	682	-	682	306	55	8.1%	284	41.6%	134	19.6%	133	19.5%	8	2.6%
402	2	Westwood	1,198	-	1,198	530	160	13.4%	149	12.4%	235	19.6%	234	19.5%	17	3.2%
402	3	Norville, Lasco, Coppervale	493	-	493	247	46	9.3%	90	18.3%	97	19.6%	96	19.5%	16	6.5%
403.02	1	Lake Leavitt	1,451	-	1,451	536	227	15.6%	139	9.6%	167	11.5%	213	14.7%	5	0.9%
403.02	2	South of Gold Run	1,257	10	1,247	502	113	9.1%	259	20.8%	144	11.5%	183	14.7%	3	0.6%
403.02	3	North of Gold Run	1,401	-	1,401	569	183	13.1%	189	13.5%	162	11.5%	206	14.7%	0	0.0%
403.03	1	Lassen CC, outskirts	1,343	209	1,134	564	99	8.7%	197	17.3%	266	23.5%	386	34.0%	162	28.7%
403.03	2	E of Hall, N of Main	815	-	815	433	55	6.7%	173	21.2%	191	23.5%	277	34.0%	53	12.2%
403.03	3	W of Hall, E of Grand, N of Main	1,267	-	1,267	489	127	10.0%	84	6.6%	297	23.5%	431	34.0%	65	13.3%
403.04	1	Susanville HS	623	-	623	336	50	8.0%	126	20.2%	143	23.0%	188	30.1%	26	7.7%
403.04	2	E. of Alexander, S of Main	992	81	911	415	84	9.2%	157	17.2%	210	23.0%	274	30.1%	129	31.1%
403.05	1	Susanville Rch Prk to Eagle Lk	1,640	-	1,640	697	175	10.7%	101	6.2%	187	11.4%	233	14.2%	4	0.6%
403.05	2	E of Roop, N of Main	923	-	923	350	154	16.7%	42	4.6%	105	11.4%	131	14.2%	30	8.6%
403.05	3	W of Roop, N of Hwy 36	1,456	-	1,456	596	182	12.5%	205	14.1%	166	11.4%	207	14.2%	28	4.7%
404	1	Litchfield, Standish	1,134	-	1,134	433	187	16.5%	184	16.2%	181	16.0%	90	7.9%	19	4.4%
404	2	Correctional Facilities	8,007	8,007	0	0	0	0.0%	0	0.9%	--	--	--	--	--	--
405	1	East of Hwy 395/Janesville	1,111	-	1,111	465	123	11.1%	173	15.6%	170	15.3%	97	8.7%	8	1.7%
405	2	South of Janesville	594	-	594	250	63	10.6%	49	8.2%	91	15.3%	52	8.7%	0	0.0%
405	3	Janesville	1,552	-	1,552	544	180	11.6%	266	17.1%	237	15.3%	135	8.7%	9	1.7%
406	1	Milford, Wendel, Honey Lake	1,039	1,039	0	502	0	6.3%	0	16.5%	--	--	--	--	42	8.4%
406	2	Herlong	1,820	-	1,820	141	35	1.9%	9	0.5%	441	24.2%	198	10.9%	16	11.3%
406	3	Doyle/S. County	677	-	677	378	75	11.1%	159	23.5%	164	24.2%	74	10.9%	13	3.4%
		TOTAL STUDY AREA	33,356	9,427	23,929	9,821	2,477	7.7%	2,603	10.9%	4,049	16.9%	4,020	16.8%	664	6.8%
		City of Susanville	16,537	8,400	8,137	3,932	487	6.0%	603	7.4%	1,604	19.7%	2,113	26.0%	493	12.5%

Note 1: Institutionalized population includes persons incarcerated and living in a skilled nursing facility.

Source: US Census American Fact Finder 2010 - 2015 Five Year Estimates

Figure 2
Total Population by Block Group

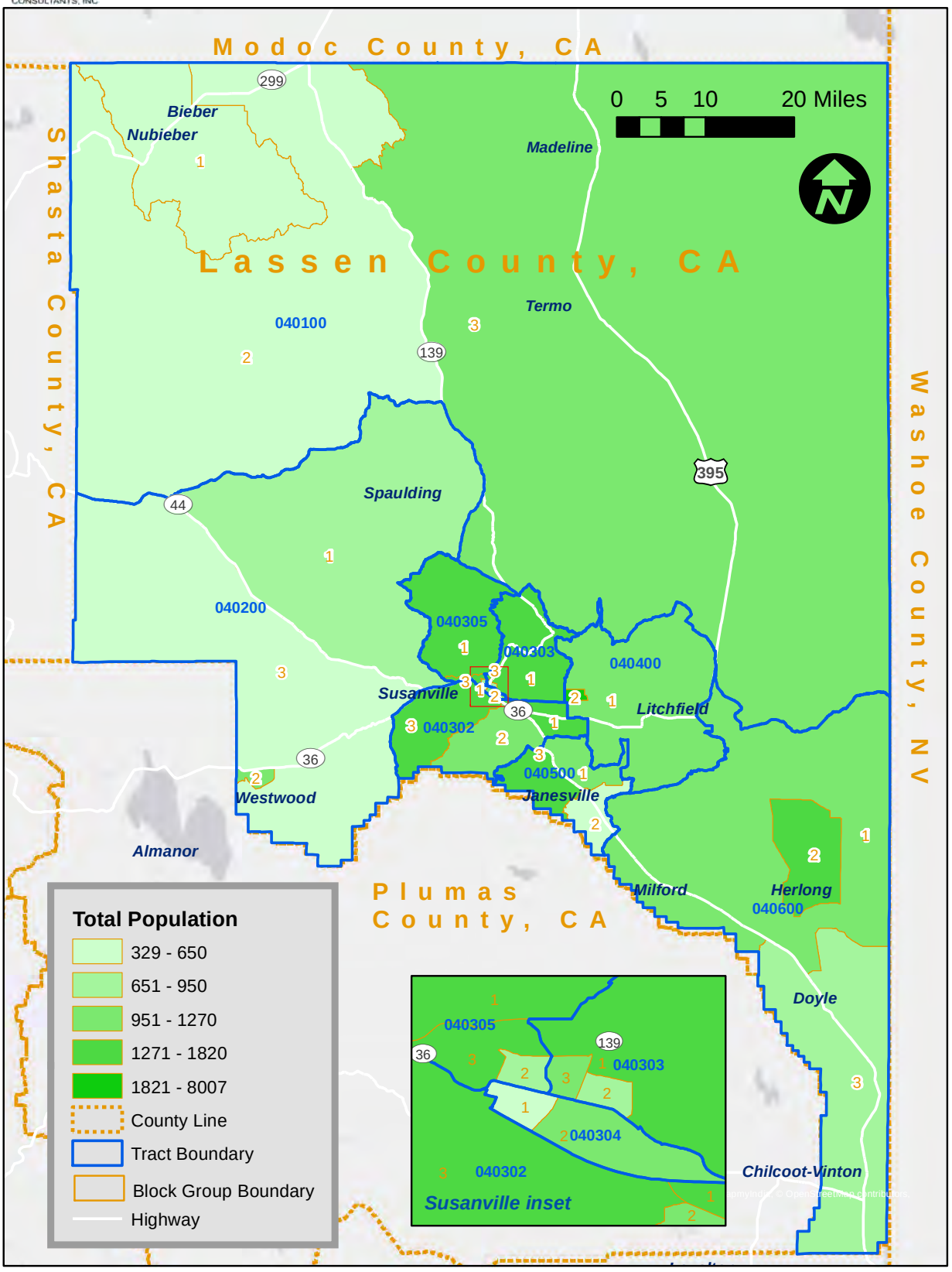


Figure 3
Youth Population (10 to 17 years) by Block Group

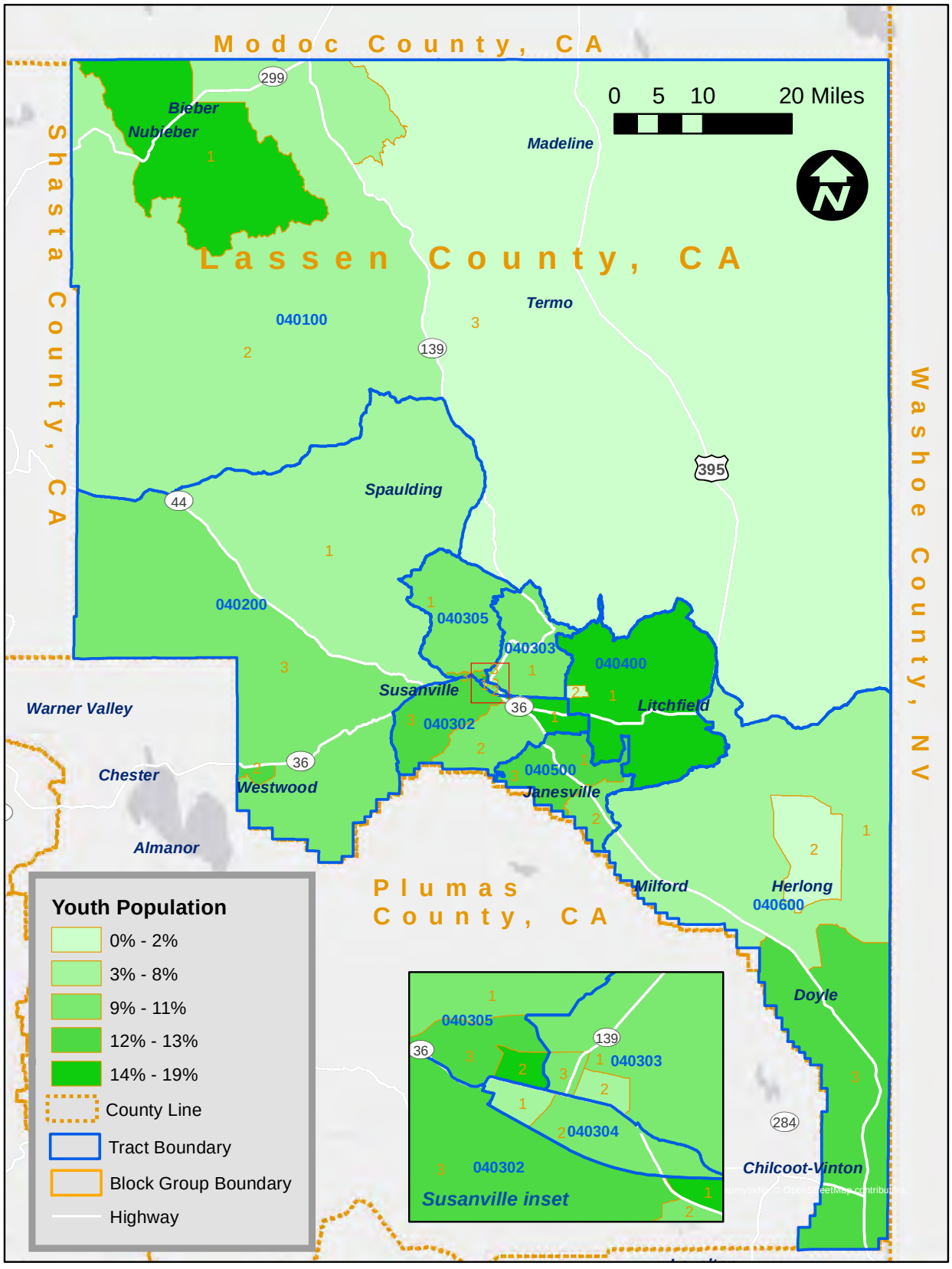
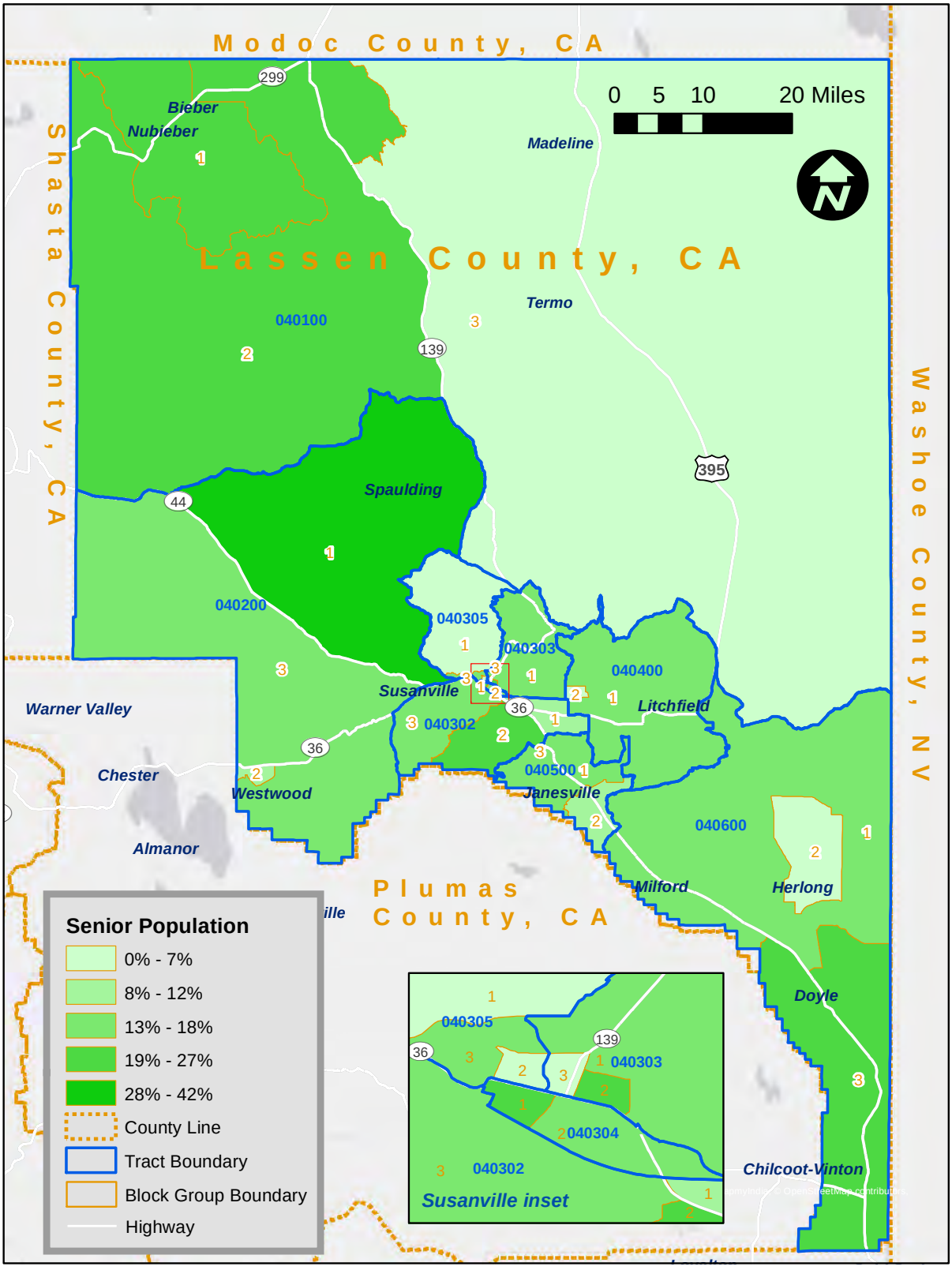


Figure 4
Senior Population (65 and Over) by Block Group



Disabled Population

Table 1 and Figure 5 display the proportion of residents with any type of disability. Currently, it is estimated there are 4,049 disabled persons in Lassen County, which comprises 16.9 percent of the study area population. Census block groups in the Susanville, Herlong and Doyle have a high proportion of disabled residents (23 to 24 percent). The community of Herlong has the greatest number of disabled residents, 441 people.

Low-Income Population

Low-income persons are another likely market for transit services, as measured by the number of persons living below the poverty level. An estimated 4,020 low-income persons reside in the study area, representing 16.9 percent of the non-institutionalized population. The percentage and concentration of those below poverty status are highest in the Susanville area, where 34 percent of the population in Census Tract 403.3 are considered low-income. Other areas with relatively large low-income populations include Census Tract 402 around Westwood with 19.5 percent of the population living below the poverty level. See Figure 6 for details.

Zero Vehicle Households

The last important category to consider is households that do not have a vehicle available, as public transit is likely the only option for travel. The number of households without a vehicle available is estimated at 664, as shown in the table. This represents 6.8 percent of the total households in the area. The greatest concentration of zero-vehicle households is in the Susanville area, specifically block group 403.04.2 and 403.03.1, with 31.1 percent (129 households) and 28.7 percent of households (162 households) in the block group having no vehicle available. This information is presented graphically in Figure 7.

Historical Population and Projections

The population of Lassen County has had steady but slow growth over the past fifteen years, less than one per cent per year. According to the US Census, from 2000 to 2015 Lassen County grew by only 1,362 people or 4 percent, as shown in Table 2. Going forward, the California Department of Finance projects the Lassen County will grow at a slightly faster pace, increasing by 3,034 people or 8.6 percent between 2015 and 2030.

Figure 8 compares population projections by age group for Lassen County over the next five years. According to California Department of Finance forecasts, the population of Mature Retirees (ages 75 – 84) will increase by 33.0 percent from 2015 to 2020 in Lassen County, which represents the fastest growing age category. The next largest increase is seniors aged 65 to 74 (30.7 percent over the five year period). The adult and young adult populations are projected to decrease over the five year period (by 1.4 and 8.4 percent respectively), while seniors over 85 will increase by 13.4 percent, and preschoolers will increase by 15.8 percent.

Figure 5
People with Disabilities by Block Group

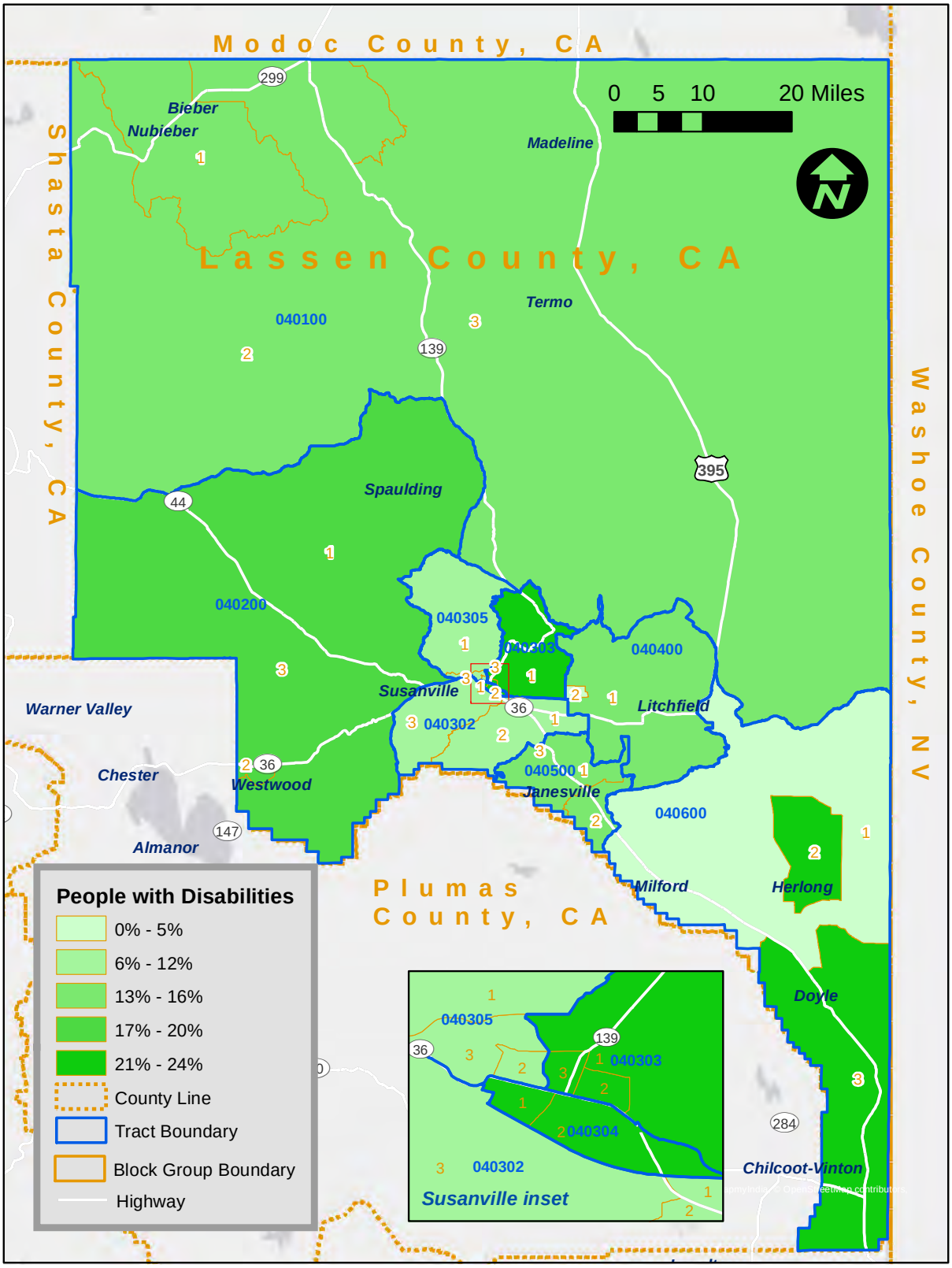


Figure 6
People Living Below the Poverty Line by Block Group

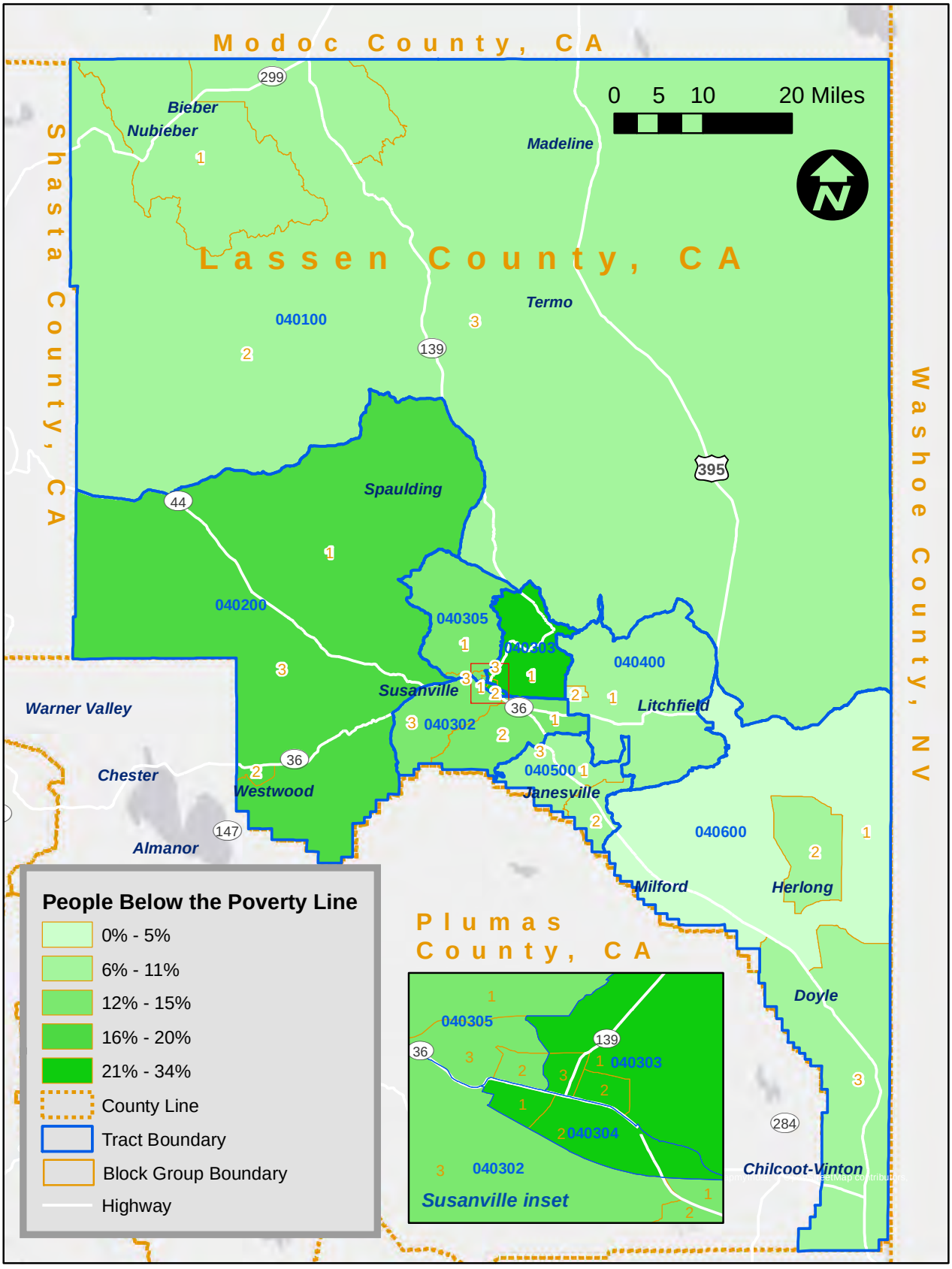


Figure 7
Zero Vehicle Households by Block Group

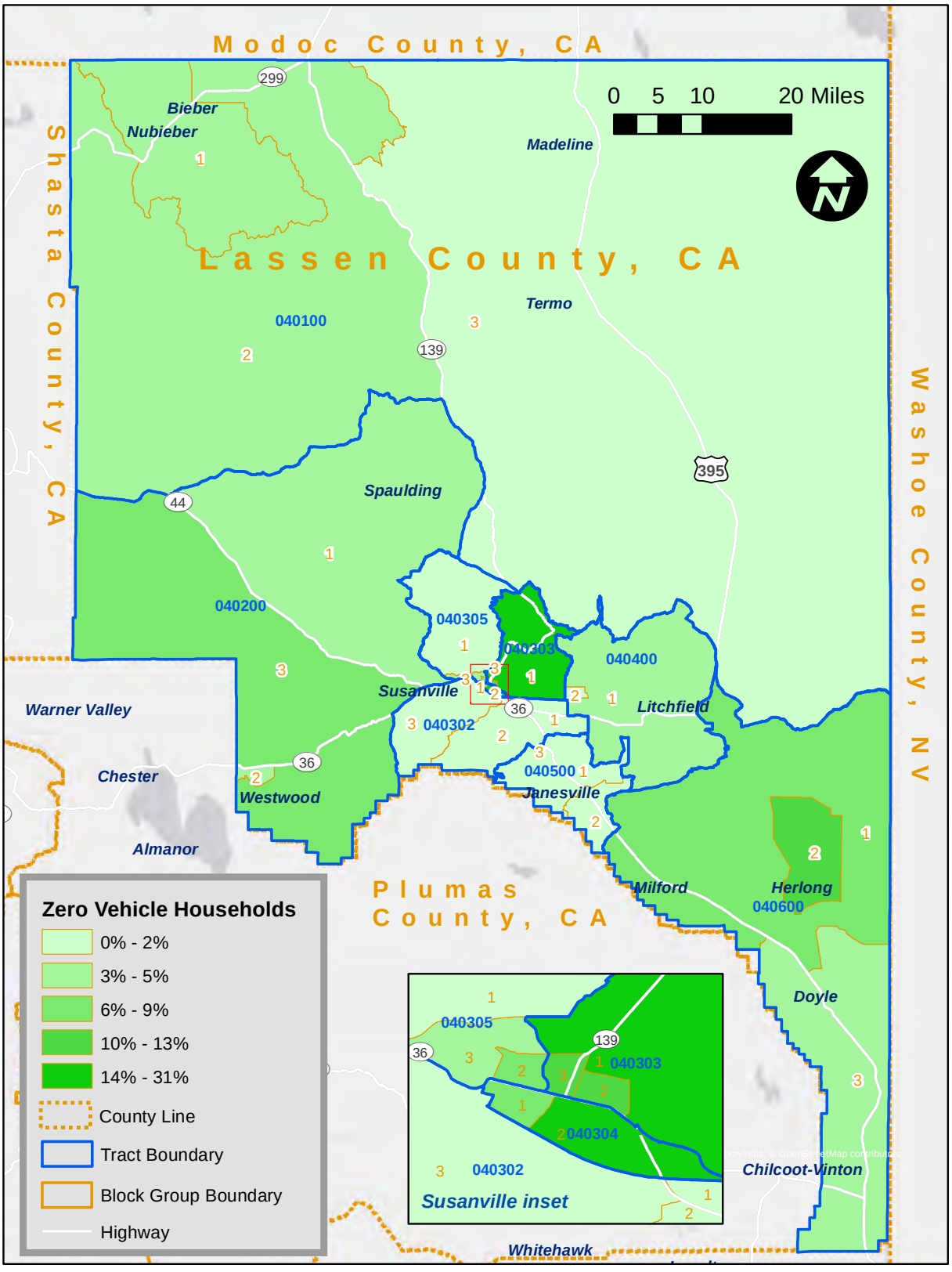
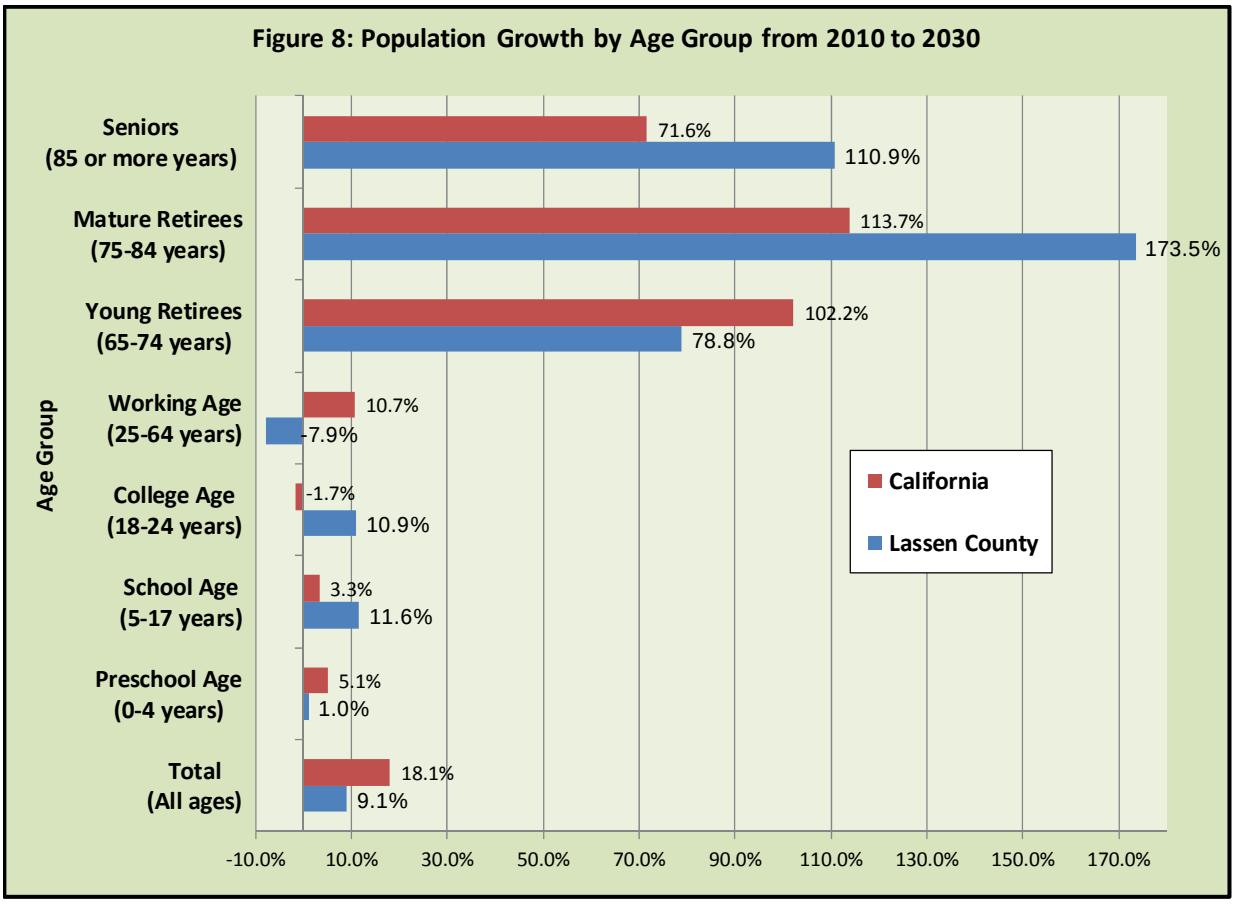


Table 2: Historical and Projected Lassen County Population

Year	2000	2010	2015	2020	2025	2030
Population	33,828	34,895	35,190	36,386	37,490	38,224

	Total Change		
	#	%	Annual %
Growth from 2000 - 2015	1,362	4.0%	0.3%
Growth from 2015 - 2020	1,196	3.4%	0.7%
Growth from 2015 - 2030	3,034	8.6%	0.6%

Source: US Census, CA Department of Finance



ECONOMIC PROFILE

Historically, the local economy of western Lassen County has been based on mining and timber. Today, services, retail trade and government dominate the current economic base. Additionally, occupations are growing in the gaming industry, computer network and systems administration, and correctional facilities, adding to the diversity of the economy.

Area Employers

There is a mix of industry associated with these employers, ranging from government offices to health care to grocery stores. There are three prisons in Lassen County (High Desert Prison in Susanville, California Correctional Center in Susanville, and the Federal Correctional Institute in Herlong) and around half of adults living in Susanville, work in one of these prisons. Other major employers in Susanville include the City of Susanville, Lassen County, Diamond Mountain Casino, Forestry and Fire Protection, Walmart, Lassen National Forest, Northeastern Rural Health Clinics and school districts. The US Army Depot in Herlong is also a major employer.

Unemployment

The US Census American Community Survey 5-Year Estimates for 2009 – 2014 provide insight into the employment conditions in Lassen County. The most recent data shows that the unemployment rate in Lassen County was roughly 7.3 percent in 2015. This is slightly higher than the statewide unemployment rate of 6.2 percent. In terms of number, this equates to 10,100 employed workers living in Lassen County with 10,890 residents in the labor force. It is interesting to note that less than half (46 percent) of the non-institutionalized population is in Figure 8 the labor force, reflecting in part the high proportion of retired residents or persons unable to work and living on a fixed income.

COMMUTE PROFILE

Means of Transportation to Work

The American Community Survey's 5-Year Estimates for 2010 – 2014 include data regarding what mode of transportation workers in the County use to get to / from work. As shown in Table 3, the majority of employed residents (76 percent) drove alone, while 11 percent carpooled. Of other means of transportation to work, 6 percent walked, 4 percent worked at home and only 1 percent used public transit. The north side of Susanville has the highest public transit mode split (4 percent) as well as the highest walk mode split (21 percent).

Commute Patterns

A common trip purpose for public transit trips is "work". Therefore a review of commute patterns is important to a transit study. Table 4 presents commute pattern data for both residents of Lassen County and persons travelling to Lassen County for work. Data was obtained from US Census Longitudinal Employer Household Dynamics (LEHD) Origin Destination Employment Statistics. It should be noted that there are some limitations to this data source as only 7,586 of the 10,100 employed residents in Lassen County are included in the data. Additionally, the work place address identified for the survey may not necessarily represent the actual work location of the employee. Examples are: large companies with several offices or

Table 3: Lassen County Commute Travel Characteristics

Census Tract	Description	Drove Alone		Carpooled		Public Transit		Walked		Other		Worked At Home		Total Work Force
		#	%	#	%	#	%	#	%	#	%	#	%	
401	Bieber/Nubieber, Ash Creek, Madeline, Termo	248	71%	-	0%	0	0%	31	9%	0	0%	68	20%	347
402	Westwood, Norville, Lasco, Coppervale	645	78%	58	7%	0	0%	46	6%	43	5%	38	5%	830
403.02	Lake Leavitt, Gold Run Valley	1,479	84%	140	8%	13	1%	25	1%	33	2%	68	4%	1,758
403.03	North Side of Susanville	660	56%	110	9%	43	4%	251	21%	59	5%	52	4%	1,175
403.04	South Side of Susanville	537	83%	67	10%	6	1%	29	5%	0	0%	5	1%	644
403.05	NE Susanville	1,311	77%	174	10%	17	1%	98	6%	1	0%	100	6%	1,701
404	Litchfield, Standish	448	81%	52	9%	9	2%	16	3%	7	1%	20	4%	552
405	Janesville and surrounds	1,130	86%	116	9%	15	1%	0	0%	33	3%	21	2%	1,315
406	Milford, Wendel, Honey Lake, Herlong, Doyle	503	60%	292	35%	0	0%	14	2%	0	0%	36	4%	845
	TOTAL STUDY AREA	6,961	76%	1,009	11%	103	1%	510	6%	176	2%	408	4%	9,167
	City of Susanville	*2,574*	*73%*	*349*	*10%*	*66*	*2%*	*350*	*10%*	*59*	*2%*	*150*	*4%*	*3,548*

Source: US Census ACS 2010-14 5-Year Estimates, Table DP03: Selected Economic Characteristics

persons working from home. Overall, this data combined with US Census American Community Survey data provides a good overview of commute patterns and reveals the following:

- Around half of Lassen County employed residents work within the City of Susanville (45.5 percent or 3,453 employees). Johnstonville (2 percent, 154 employees) and Westwood (1.7 percent, 132 residents) are other Lassen County communities with relatively high number of jobs for Lassen County residents.

- Of the residents commuting out of the county for work, the largest number travel to Redding (220 or 2.9 percent). Other out-of-county locations include Sacramento and Chico but many of these could be telecommuting. It should be noted that according to the US Census 92.1 percent of Lassen County employed residents work within the County.

- One third (2,585) of the people who work in Lassen County live in Susanville. Others live in Reno, Nevada (210, 2.8 percent), Janesville (206, 2.7 percent), and Johnstonville (205, 2.7 percent).

Table 4: Lassen County Commute Patterns

Where Lassen County Employed Residents Work			Where Lassen County Workers Live		
Susanville	3,453	45.5%	**Susanville**	2,585	34.4%
Redding	220	2.9%	Reno, NV	210	2.8%
Johnstonville	154	2.0%	**Janesville**	206	2.7%
Sacramento	147	1.9%	**Johnstonville**	205	2.7%
Chico	140	1.8%	**Westwood**	132	1.8%
Westwood	132	1.7%	Redding	119	1.6%
Medford, OR	71	0.9%	Cold Springs , NV	118	1.6%
San Francisco	70	0.9%	Sparks, NV	105	1.4%
Red Bluff	61	0.8%	Loyalton	70	0.9%
Quincy	59	0.8%	Alturas	45	0.6%
All Other Locations	3,079	40.6%	All Other Locations	3,711	49.4%
Total Workers	7,586	100%	Total Workers	7,506	100.0%

Note: **Bold font** denotes Lassen County community

Source: U.S. Census Bureau, OnTheMap Application and LEHD Origin-Destination Employment Statistics (Beginning of Quarter Employment, 2nd Quarter of 2002-2014).

- According to American Fact Finder, roughly one quarter of employed Lassen County residents' travel time is less than 10 minutes. Common commute times are between 9:00 AM and 11:00 AM (23.3 percent), 7:30 AM to 7:59 AM (15.4 percent), and 5:30 AM to 5:59 AM (11.2 percent).

REVIEW OF EXISTING PLANNING DOCUMENTS

The following presents a review of relevant existing planning documents that have helped guide the transit program in Lassen County. This is not an all-inclusive list, but rather the most recent and most pertinent reports that have been completed.

Lassen County Transit Development Plan, 2012

In 2012, Moore & Associates developed the *Lassen County Transit Development Plan* for Fiscal Years 2012 to 2016. The document focused on identifying and recommending potential service alternatives, as well as capital and financial plans for LCTA. The plan identified marketing improvements, suggested increased collaboration with Susanville Indian Rancheria for intercity service; looked at mobility management. The plan also recommended implementing a vanpool program for High Desert State Prison (HDSP) and California Correctional Center (CCC) employees and changing the City Route to 30-minute frequency by realigning into two loops (not implemented).

Lassen County Coordinated Public Transit-Human Services Plan (2008)

In 2008, the LCTC commissioned Nelson/Nygaard Consulting Associates to complete a Coordinated Public Transit-Human Services Transportation Plan. This Plan focused on mechanisms to enhance the mobility of low-income, disabled and elderly individuals. The Plan laid out "High Priority Strategies" and "Other Strategies."

Lassen County Bus Facility Expansion Plan

LTSA retained LSC Transportation Consultants to develop a bus facility expansion plan for the operations facility located on Johnstonville Road. A draft of the potential facility expansion was created. The maintenance facility and bus wash center were completed in 2016, but covered parking has yet to be provided as additional land has not been purchased.

Triennial Performance Audits

Triennial Performance Audits were conducted for both the Lassen County Transportation Commission and the Lassen Transit Service Agency for the three years ended June 30, 2012. Recommendations were made for the LCTC to improve productivity while lowering operating costs, if possible, and for the LTSA to improve accounting, funding and software skills. It was also suggested the LTSA work with Paratransit Services to ensure adequate monitoring of TDA, funding, and Operator Agreement requirements. Additionally, it was recommended the Agency should consider a developing a formal marketing plan (which is a task of this current project).

Lassen County Regional Transportation Plan and Transportation Improvement Program

This Regional Transportation Plan (RTP) was the developed in 2012 through LSC Transportation Consultants, Inc. This Plan was developed to identify the transportation needs within the Lassen County region through public input processes, thorough data analysis and coordination with other plans and studies. The RTP then developed appropriate action elements to meet short and long-term transit needs.

Lassen County General Plan

The Lassen County General Plan was updated in 2000 and included language encouraging adequate, cost-effective public transit services for elderly and handicapped peoples, and also supported implementation of the Regional Transportation Plans.

City of Susanville General Plan

The Circulation Plan element within the City of Susanville's General Plan was last updated in 1990 and the transportation element focused primarily on the roadway system with no mention of transit.

LASSEN COUNTY TRANSPORTATION COMMISSION

The Lassen County Transportation Commission (LCTC) is the designated Regional Transportation Planning Agency for Lassen County. It is responsible for preparation of transportation plans and for management of state and federal transportation funding. The LCTC is comprised of three members of the Lassen County Board of Supervisors and three members of the City of Susanville City Council. Each year the LCTC allocates transit funding to the Lassen Transit Service Agency for the operation of the Lassen Rural Bus System, which is the regional publicly owned and operated transit system. The LTSA also supports Senior Service Transportation (Susanville), Big Valley 50 Plus in the Big Valley area (Bieber) and service from Alturas to Reno, and has an agreement with Lassen Community College to provide students with transportation.

In addition the LCTC is also the Regional Transportation Planning Agency (RTPA) for Lassen County. The LCTC's key responsibilities as the RTPA include the preparation of the Regional Transportation Plan and the Regional Transportation Improvement Program and other transportation planning oversight. These documents prioritize and program funding for major highway projects within Lassen County and provide direction for transportation services in the county.

LASSEN TRANSIT SERVICE AGENCY

The Lassen Transit Service Agency (LTSA) is the institutional organization that provides public transportation services in Lassen County. Lassen County originally operated the public transit service known as Lassen Rural Bus (LRB) until July 12, 2001, when a Joint Powers Agreement (JPA) was signed between the County of Lassen and the City of Susanville creating the Lassen Transit Service Agency. The LTSA is charged with the administration and operation of LRB public transportation services within Lassen County under the jurisdiction of the LCTC. As mentioned, the LTSA receives funding through the LCTC. In addition to Transportation Development Act (TDA) funds, LTSA receives funding through several resources including the federal government and the State of California. The LTSA is currently party to five agreements, as follows:

- The Lassen Rural Bus System Operations Agreement
- Maintenance Agreement with Lassen Senior Services and Paratransit Services
- Lassen Senior Services for Senior Transportation Program
- Alturas to Susanville to Reno Service Agreement with Modoc County (Sage Stage)
- The Lassen College Agreement

The services provided under these agreements are detailed below.

LASSEN RURAL BUS

The Lassen Rural Bus (LRB) system began service in July of 1981 using two wheelchair-accessible vehicles to operate one fixed route and Dial-A-Ride service. The LRB system has since grown to a vehicle fleet of eleven, providing a City Route and a number of commuter and rural routes, which are shown in Figure 9 and described below. Additionally, Dial-A-Ride service is available for qualified individuals.

Susanville Fixed Route with Complementary Paratransit

Fixed route service is provided on the Susanville City Route on one-hour headways between 7:00 AM and 6:52 PM, Monday through Friday, and from 8:00 AM to 3:52 PM on Saturday. The service area is entirely within the Susanville city limits at designated stops only (no flag stops). The route is depicted in Figure 10. The City Route serves all the major activity centers in Susanville: Wal-Mart, the Sierra Shopping Center, the Lassen Shopping Center, the Susanville Shopping Center, Lassen Senior Services, the Lassen Banner Hospital, City/County Administrative offices, Meadowview School, Lassen High School, Lassen Community College, and the Safeway Shopping Center.

West County Commuter Route

The West County Commuter Route provides round trip service between Susanville, Westwood, Lake Almanor, and Chester (in Plumas County) three times per day during the week and twice on Saturdays. Points served on this route include Devil's Corral, Westwood, Clear Creek, and Hamilton Branch. Within Susanville, stops are scheduled at Riverside Drive, Main and Gay Street, Diamond Mountain Casino, Lassen Community College, and Wal-Mart. In addition, passengers may "flag" the bus anywhere along the route as long as it is a safe location. The route is shown in Figure 11.

The morning run leaves Susanville Wal-Mart at 5:21 AM, arriving in Westwood at 6:01 AM and Chester at 6:25 AM, and returning to Susanville at 7:26 AM. A midday trip leaves Susanville at Noon, arriving in Westwood at 1:02 PM and Chester at 1:26 PM, and returning to Lassen Community College at 2:35 PM. The evening trip leaves Susanville at 5:15 PM arriving in Westwood at 6:07 PM and Chester at 6:31 PM, and returning to Wal-Mart at 7:39 PM. This schedule not only allows college students to arrive on campus in time for 8:00 AM classes, but also allows for transfers onto the Susanville City Route and to Plumas County Transit in Chester.

South County Commuter Route and South County to Susanville Deviated Route

The South County Commuter provides service between Susanville and the Sierra Army Depot with stops along the way in Johnstonville, Janesville and Milford, as shown in Figure 12. Service is provided Monday through Friday. The bus departs Wamart in Susanville at 5:13 AM and arrives at the SIAD gate at 6:25 AM. The return commute departs the SIAD gate at 5:00 PM, arriving at Walmart at 6:15 PM.

Figure 9
Lassen County Routes

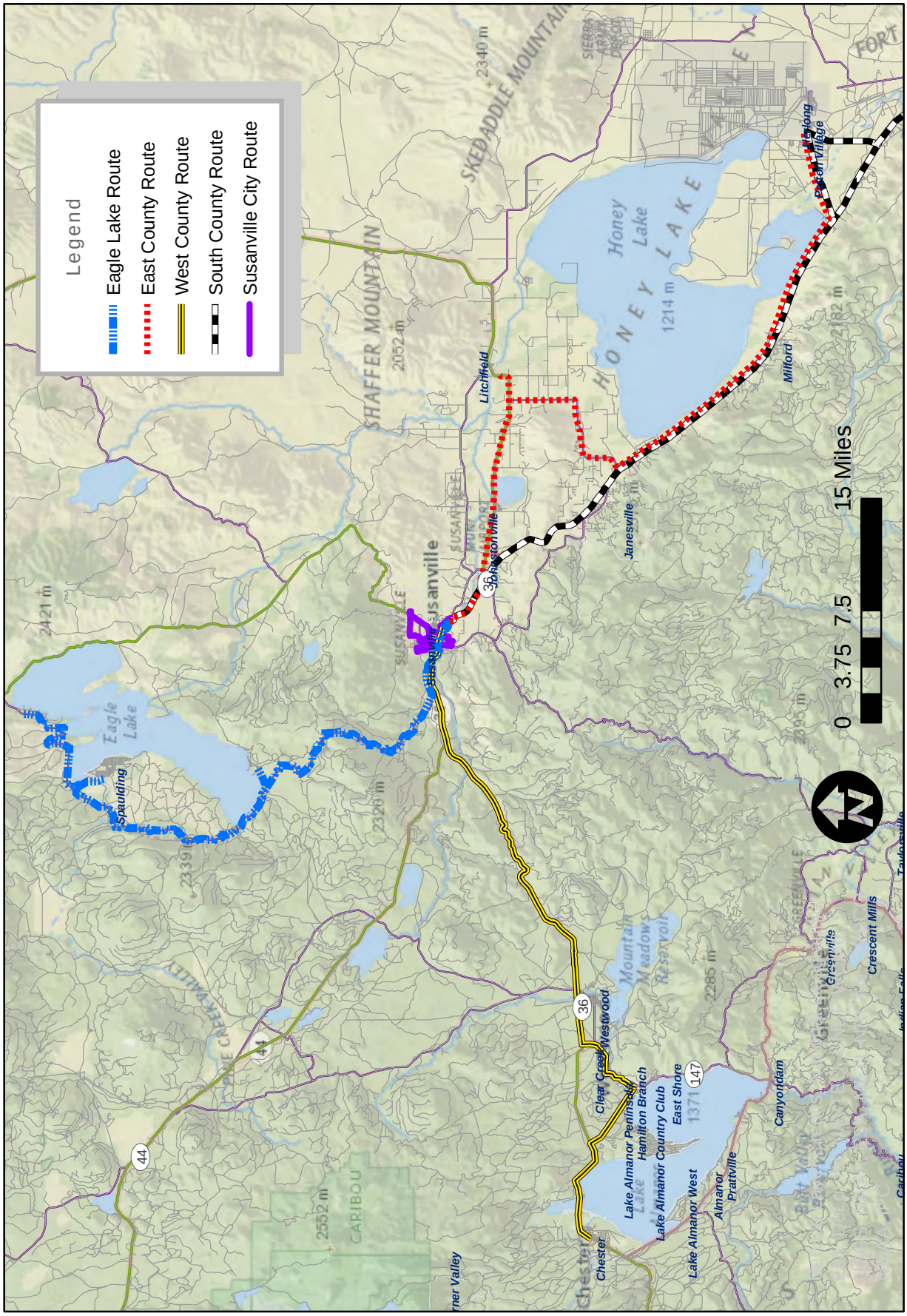


Figure 10
Susanville City Route

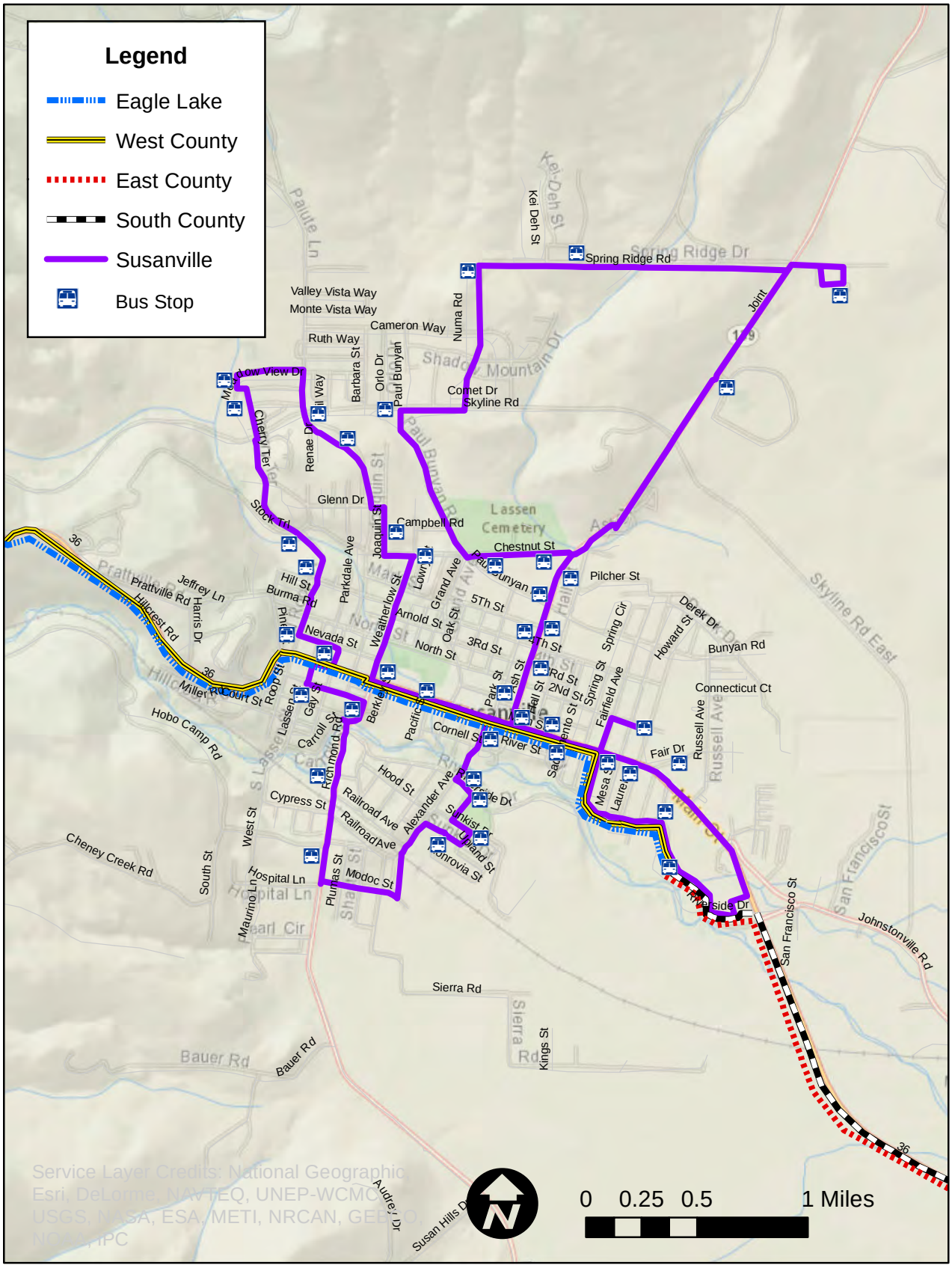


Figure 11
West County Route

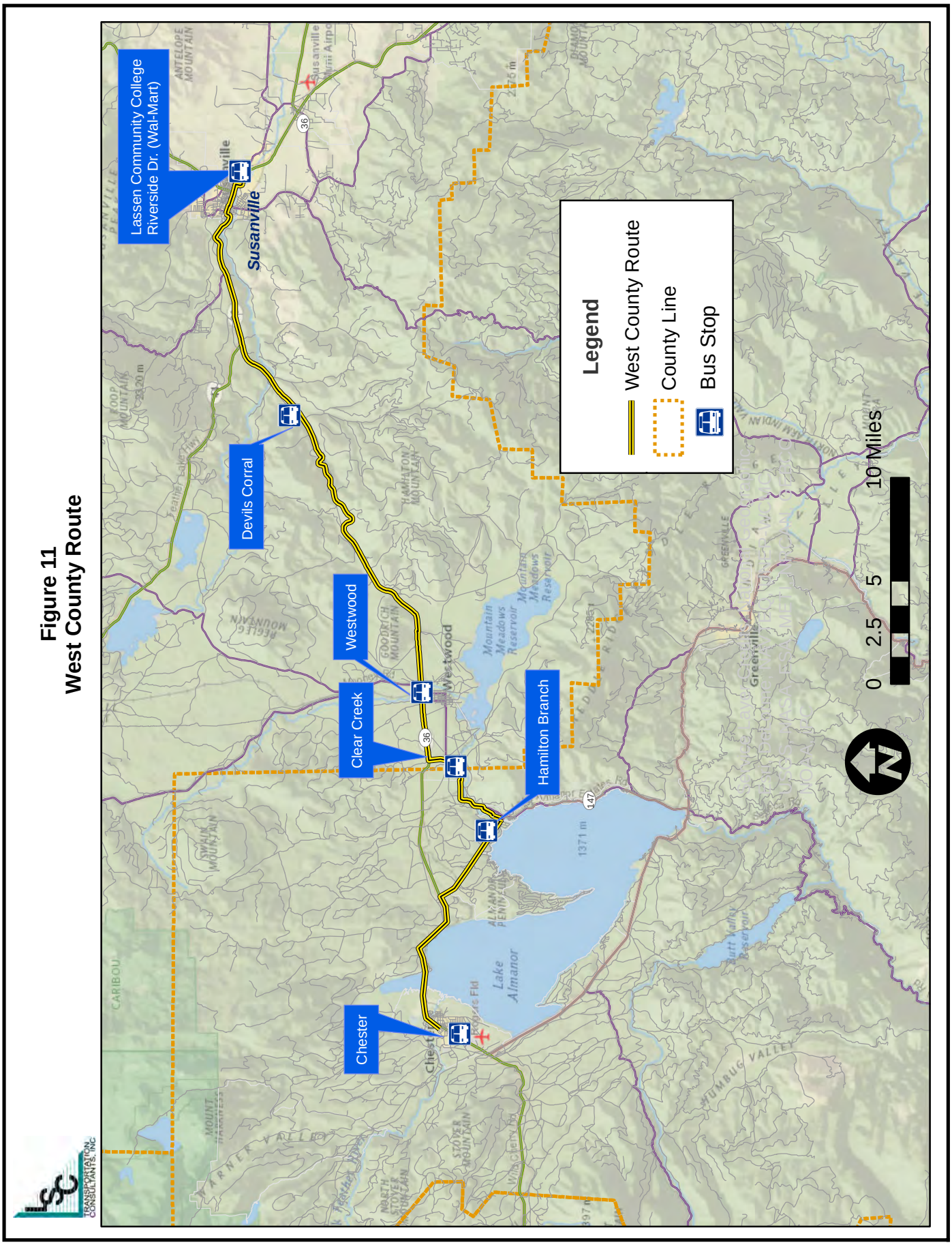
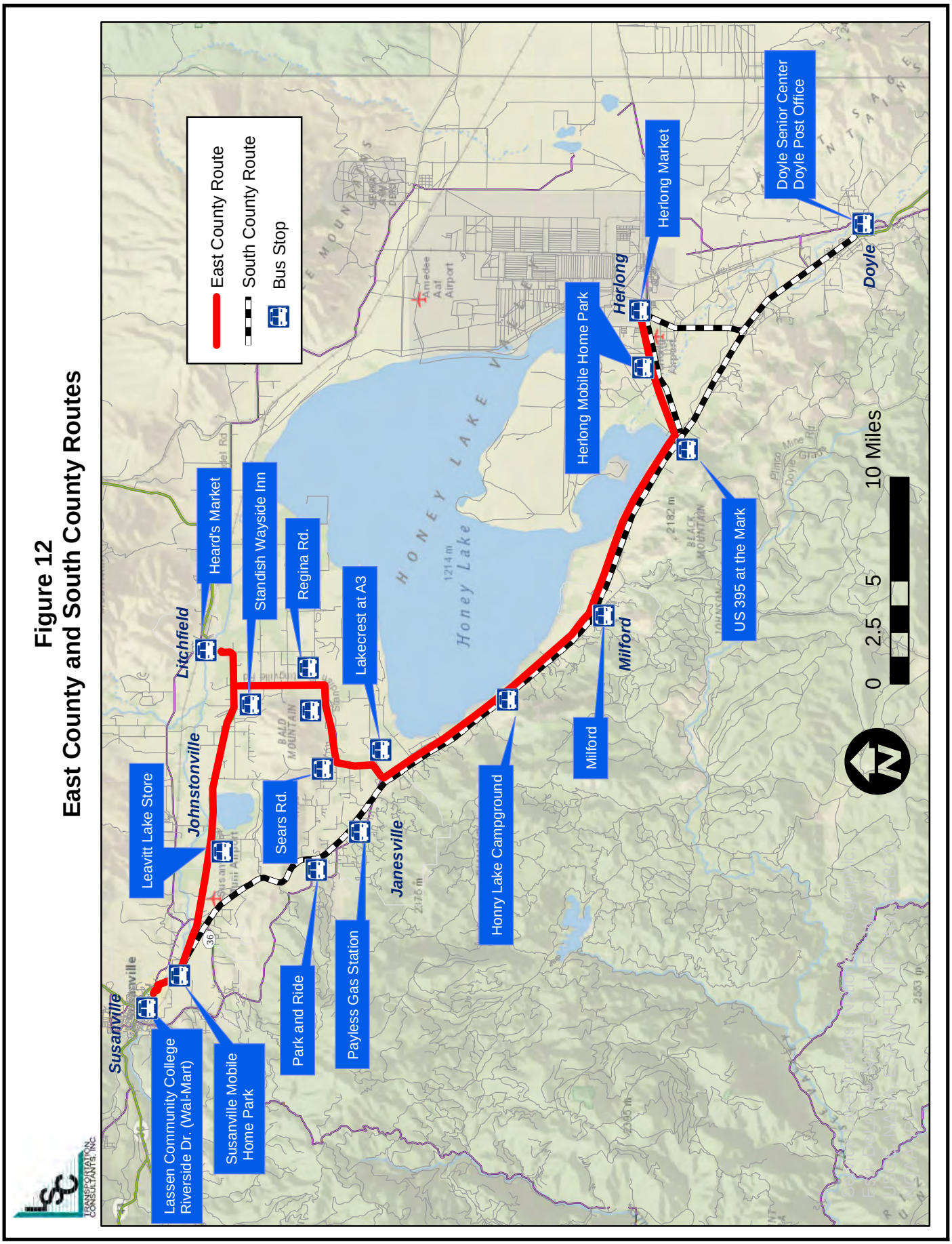


Figure 12
East County and South County Routes



The bus returns in the morning from Herlong to Susanville as a deviated fixed route serving the communities of Herlong, Doyle, Milford and Janesville in the mornings. The route may deviate up to ¾ of a mile off the regular route. The bus departs Herlong at 6:35 AM and arrives at Walmart at 7:54, and continues to Lassen Community College and Banner Hospital. The afternoon trip prior to serving the commuter route departs Susanville from the Northeastern Rural Health clinic at 3:05 PM and Walmart at 3:15 PM, arriving in Herlong at 4:35 PM.

East County Deviated Route

This deviated fixed route, also shown in Figure 12, provides service from Herlong to Susanville in the mornings (stopping at Standish, Litchfield, Leavitt Lake, Johnstonville) and from Susanville to Herlong in the afternoon. The bus departs Herlong at 6:35 AM, arriving at Lassen Community College at 7:55 AM, and departs Susanville at 3:15 PM, arriving at the Herlong Market at 4:35 PM Monday through Thursday. Friday morning departures from Walmart are at 8:20 AM, with the return trip departing Lassen Community College at 1:01 PM. The Friday schedule accommodates Lassen Life Skills clients traveling to Herlong for bowling.

Eagle Lake Route

The Eagle Lake Route is a seasonal route offered on Saturdays along the west side of Eagle Lake starting and ending in Susanville. Service begins Saturday of the Memorial Day weekend, and ends on Labor Day weekend, or, weather permitting, the final Saturday of September. Service is by appointment only. Just a single passenger may request the trip and service will be provided. Passengers must call by 5:00 PM the Wednesday before their planned trip. The morning route departs Susanville at 10:00 AM, arriving at the Mariner's Resort at Stone's Landing at 11:31 AM, departing at 11:35 AM to return to Susanville by 1:10 PM. The late afternoon route departs Walmart at 3:00 PM, arriving at Stone's Landing at 4:31 PM, and returning to Susanville by 6:05 PM.

Dial-A-Ride

Dial-a-Ride (DAR) is door-to-door, demand response service provided as complementary service to the Susanville City Route. To use the service, customers must be identified as seniors aged 60 years and over, or as disabled. The DAR service requires a one day advance reservation.

Reno Bus Service

LTSA has partnered with the Modoc Transit Agency to help fund bus service to Reno, Nevada on Mondays, Wednesdays, and Fridays. The service is provided by the Modoc Sage Stage and requires a reservation, although several walk-on stops are available on the route on a space-available basis. The bus departs Alturas at 7:30 AM, stops in Likely at 7:50 AM, Madeline at 8:05 AM, Susanville at 9:30 AM, arriving at the Reno Airport at 11:15 AM. The return trip departs Reno at 1:30 PM, arriving in Susanville at 3:30 PM and Alturas at 5:30 PM.

Charter Bus Service

The LRB fleet and drivers are available for hire to groups with special needs. Service is available to for-profit agencies at a rate of $95.00 per vehicle service-hour, and $110 for overtime, plus an administrative fee of $43.58. A two hour minimum is required. Additionally, the LTSA has adopted a community event list by resolution that provides direct cost rates to QHSO and Nonprofit organizations. Events not adopted on the annual community events resolution must abide by the FTA charter rules before the LTSA will consider providing the service.

Updates Since 2012 TDP

The last TDP was published in June of 2012. The core services remain much the same. The biggest changes since the plan was produced include the following:

- The Subsidized Taxi Program, which had been in effect for more than a decade, was discontinued when the taxi operator went out of business. An RFP for a replacement was released, but no one responded. Dial-a-Ride service was expanded in evenings to accommodate expected ridership from the loss of service, but the ridership never materialized and the evening DAR was discontinued.

- Eagle Lake service was changed from a scheduled service to a minimum-reservation service. The minimum reservation is one person.

- Leavitt Lake service was discontinued due to low ridership.

- The night commuter service to Herlong was discontinued at the Army Depot's request.

- The Veteran's Administration Clinic was served for six months, but service was discontinued due to a lack of ridership.

- ETA SPOT was implemented, allowing passengers to track bus location and access information online. This program has significantly decreased customer calls to dispatch.

- The West County Route has been extended to Chester, rather than terminating at Hamilton Branch. This does create some redundancy in service with Plumas Transit, but provides more convenient service for passengers on the route.

Fare Structure

<u>Susanville City Route</u>

On the Susanville City Route, general rider fares are $1.00 per ride, with daily passes available for $3.00, and monthly passes for $40.00. Half-priced fares are available for all three pass types, and apply to students, seniors over the age of 60, children under the age of 6, and disabled riders. The Dial-A-Ride fare is $1.75 for all one-way passenger trips.

Rural and Commuter Routes

Fares on the majority of the rural county routes range from $2.00 to $4.00 per one way trip, with the exception of the Eagle Lake Route, which requires fares of $1.00 to $3.00 per trip. Passes are available for these routes are $90.00 per month, or $5.00 per day, and both have a half-price discount available to the aforementioned qualifying riders. The South County Commuter route fares are the same as the rural routes, but no discounts are available as these are built into the one-way fare. Access to the base requires an additional $0.50 daily or $15.00 monthly.

Student and Youth Passes

Lassen College has an agreement with Lassen Rural Bus in which college students can ride all services free of charge, for an annual sum of $20,000 paid by the college. This contract was initiated in 1998 and has been renewed annually without any changes.

In addition, a "Kool Kid" pass is available for $15.00 to children ages 6 through 17 for unlimited ridership from Memorial Day through Labor Day.

Reno Bus Service

LTSA provides support for the Reno Service operating between Alturas and Reno, with stops in Likely, Ravendale, Madeline and Susanville. Single-ride fares are offered to the general public, and discounted single-ride fares are offered for children ages 12 and under, seniors aged 60 and ADA-qualified individuals with disabilities. The fare between Alturas and Susanville is $18.00 for general passengers, and $13.50 discounted; from Susanville to Reno is $22.00, discounted to $16.50; and from Likely or Ravendale to Susanville is $15.00, discounted to $11.00.

LASSEN RURAL BUS OPERATING CHARACTERISTICS

Historical Ridership and Service Levels

Historical ridership and service levels (in terms of vehicle service hours) from FY 2011-12 to FY 2015-16 are presented in Table 5. As shown in Table 5 and Figure 13, the number of systemwide annual one-way passenger-trips went down 5.5 percent between FY 2012 and FY 2016. Since FY 2011-12, ridership has increased on the Dial-A-Ride (by 19.0 percent), East County route (by a significant 52.2 percent), Eagle Lake route (by 39.7 percent) and Charters (by 20.5 percent). During the same period, routes with the largest percentage decrease in ridership were South County to Susanville (-53.8 percent) and West Commuter (-40.5 percent). In terms of the actual change in the number of one-way passenger-trips, Dial-A-Ride had the largest increase in one-way passenger-trips over the five-year period (2,731). The West Commuter route and City Route saw the greatest decrease in one-way passenger-trips (-4,160 and -2,393, respectively) over the period.

Service levels, or the number of hours that transit vehicles are in service and available to transport passengers, also decreased between FY 2011-12 and FY 2015-16, as illustrated in

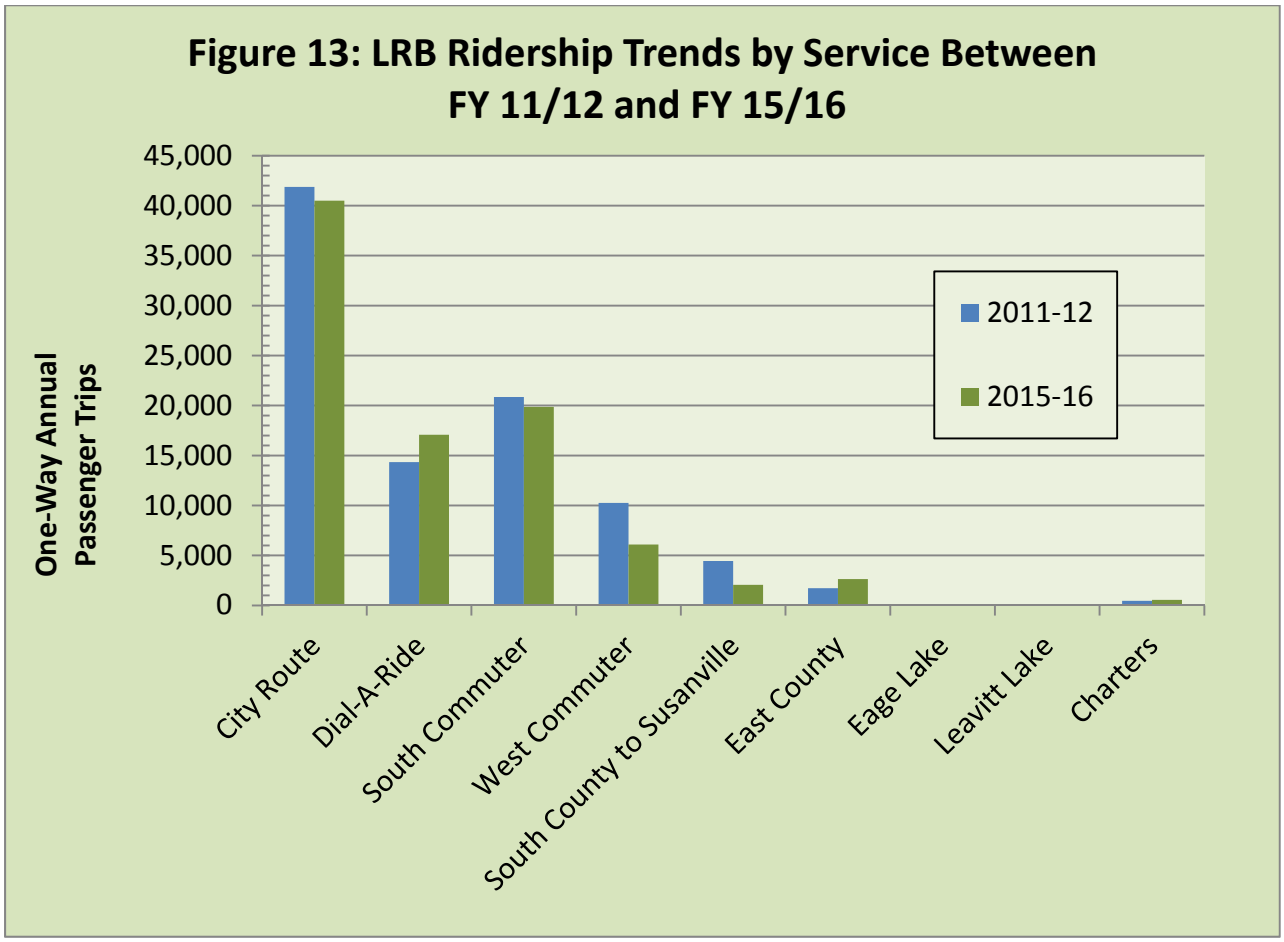
Table 5. Overall service levels have decreased by a total of 11.7 percent, and every route, except for the East Route County, has seen a decrease in service hours. Notably, the South County Commuter has seen the largest percentage decrease in vehicle service hours; its service levels fell by 50.3 percent, though its ridership only fell by 4.8 percent. The Eagle Lake route has had a 34.5 percent decrease in vehicle service hours, but a 39.7 percent increase in ridership, but given the low annual ridership, this is not significant. Looking at number of vehicle service hours, the South County Commuter has decreased by 1,437 annual hours, accounting for the largest numerical drop in service levels.

Table 5: LRB Historical Ridership and Vehicle Service Hours by Service

	Ridership					Change in Ridership FY 2012 - FY 2016	
Route/Service	2011-12	2012-13	2013-14	2014-15	2015-16	#	%
City Route	41,870	51,222	39,400	44,950	40,498	-1,372	-3.3%
Dial-A-Ride	14,339	14,692	12,696	15,307	17,070	2,731	19.0%
South County Commuter	20,849	23,283	13,568	20,143	19,858	-991	-4.8%
West County	10,263	9,553	5,979	7,443	6,103	-4,160	-40.5%
South County to Susanville	4,451	3,889	2,822	3,456	2,058	-2,393	-53.8%
East County	1,729	2,086	1,929	2,445	2,631	902	52.2%
Eagle Lake	63	135	115	112	88	25	39.7%
Leavitt Lake	--	110	73	46	8	8	--
Charters	469	442	461	341	565	96	20.5%
Total Systemwide	94,033	105,412	77,043	94,243	88,879	-5,154	-5.5%
	Vehicle Service Hours					Change in Vehicle Service Hours FY 2012 -	
Route/Service	2011-12	2012-13	2013-14	2014-15	2015-16	#	%
City Route	3,424	3,385	2,517	3,421	3,404	-20	-0.6%
Dial-A-Ride	3,424	3,373	2,430	3,710	3,446	22	0.6%
South County Commuter	2,858	3,163	1,301	1,773	1,421	-1,437	-50.3%
West County	2,280	2,212	1,524	1,985	2,024	-256	-11.2%
South County to Susanville	812	781	563	771	808	-4	-0.4%
East County	798	769	589	851	858	60	7.6%
Eagle Lake	129	217	120	124	85	-45	-34.5%
Leavitt Lake	--	23	104	153	89	89	--
Charters	102	68	47	56	76	-26	-25.7%
Total Systemwide	13,827	13,991	9,195	12,844	12,211	-1,616	-11.7%

Source: LRB Annual Routes Data

It should be noted that with the decrease in gas prices in the past few years, many transit systems, particularly rural systems, have also experienced declines in ridership.



Recent Ridership and Service Levels

Table 6, Figure 14 and 15 show the ridership and service levels by route for FY 2015-16. As shown, the Susanville City Route generated the largest proportion of systemwide ridership, accounting for 45.6 percent of the 88,879 annual passenger-trips. Other routes with relatively high ridership were the South Commuter (22.3 percent of total ridership) and the Dial-A-Ride (19.2 percent of ridership). Several services had less than 5 percent of total ridership, including: South County to Susanville, East County, Eagle Lake, Leavitt Lake, and Charters.

In terms of the proportion of vehicle service hours by route, Dial-A-Ride operated the greatest percentage of hours (28.2 percent) followed by the City Route (27.9 percent). It is important to note that, while the West County route only accounted for 6.8 percent of total ridership, it required 16.6 percent of total vehicle service hours. In addition, the South County to Susanville route accounted for 6.6 percent of total hours, while only provided 2.3 percent of total passenger-trips.

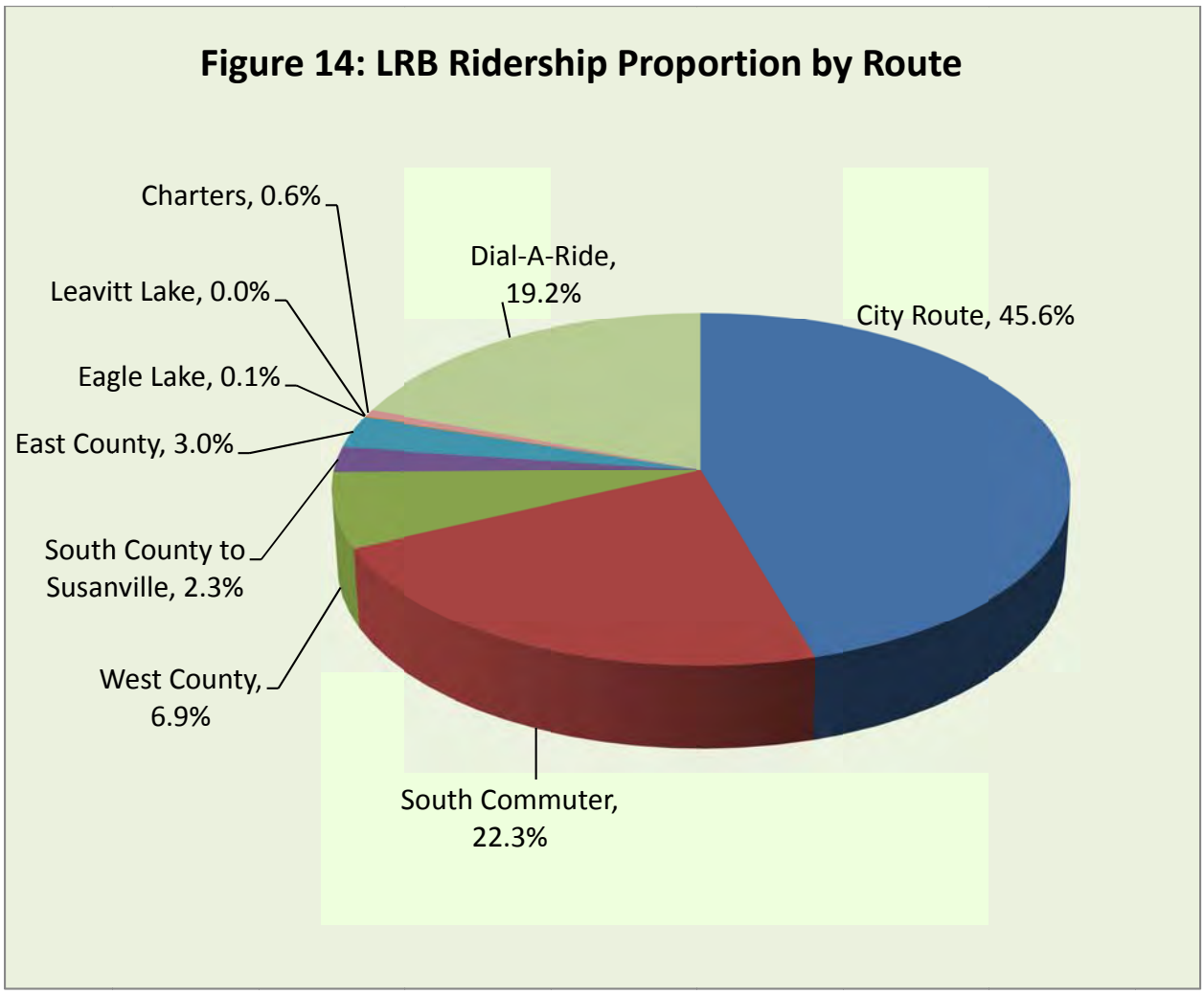
Table 6: LRB Ridership and Service Levels by Route

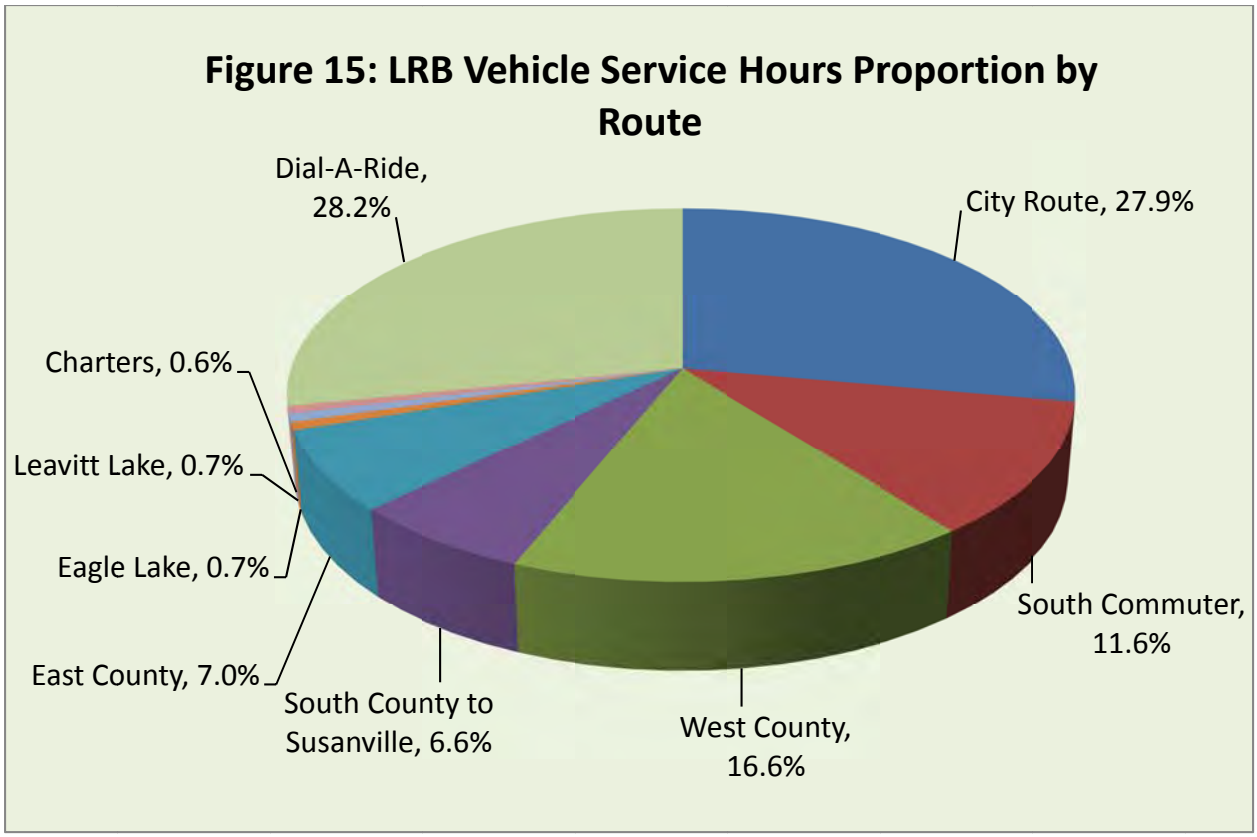
FY 2015-16

Route/Service	Ridership	% Total Ridership	VSH	% VSH
City Route	40,498	45.6%	3,404	27.9%
South Commuter	19,858	22.3%	1,421	11.6%
West County	6,103	6.9%	2,024	16.6%
South County to Susanville	2,058	2.3%	808	6.6%
East County	2,631	3.0%	858	7.0%
Eagle Lake	88	0.1%	85	0.7%
Leavitt Lake	8	0.0%	89	0.7%
Charters	565	0.6%	76	0.6%
Dial-A-Ride	17,070	19.2%	3,446	28.2%
Total Systemwide	88,879	100.0%	12,211	100.0%

Source: LRB Monthly & Annual Operation Reports

Figure 14: LRB Ridership Proportion by Route





Monthly Ridership by Route and Type

Table 7 and Figure 16 illustrate the seasonal ridership trends for LRB annual routes during FY 2015-16. As shown, October, September and March generated the highest systemwide ridership levels, whereas November through January and June saw the lowest number of passenger-trips. On all routes, ridership was relatively consistent throughout the year. The City Route, West County Route, and East County Route all experienced the highest ridership levels in October. Ridership on the South County Commuter was highest in September. The South County to Susanville Route had the highest ridership in May. Dial-A-Ride experienced the highest ridership in March and April.

Ridership by Passenger Type

Table 8 and Figure 17 display the FY 2015-16 monthly systemwide LRB ridership by type of passenger (general public, senior, youth, etc.). Notably, passes (including day passes and monthly passes) and transfers make up the largest percentage of ridership, accounting for 46.8 percent of total riders. Far Northern Regional Center passengers follow, accounting for 19.3 percent of the annual ridership.

Senior and disabled riders (combined) make up 11.3 percent of the annual ridership profile. Lassen College passengers account for another 9.9 percent of the total annual ridership. Notably, only 6.7 percent of the ridership profile is made up of the general public. Attendants and free riders make up 2.9 and 2.3 percent of ridership, respectively. Charter and coupon riders make up less than 1.0 percent of total ridership.

Table 7: Lassen Rural Bus Monthly Ridership by Route

	City Route	South County Commuter	S.C. to Susanville	West County	East County	Dial-A-Ride	Eagle Lake	Leavitt Lake	Special	Total	% of Total
July	3,448	1,667	189	535	266	1,461	14	4	190	7,774	8.7%
August	3,444	1,714	208	546	192	1,415	33	2	24	7,578	8.5%
September	3,615	1,822	196	518	333	1,486	12	--	22	8,004	9.0%
October	4,034	1,717	155	575	351	1,360	--	1	169	8,362	9.4%
November	3,176	1,722	137	444	213	1,124	--	--	--	6,816	7.7%
December	2,678	1,667	134	538	231	1,245	--	1	132	6,626	7.5%
January	2,875	1,733	128	567	90	1,196	--	--	--	6,589	7.4%
February	3,401	1,487	143	513	190	1,404	--	--	--	7,138	8.0%
March	3,667	1,683	153	476	229	1,739	--	--	28	7,975	9.0%
April	3,564	1,468	196	500	325	1,682	--	--	--	7,735	8.7%
May	3,584	1,658	215	462	167	1,371	--	--	--	7,457	8.4%
June	3,012	1,520	204	429	44	1,587	29	--	--	6,825	7.7%
Total	40,498	19,858	2,058	6,103	2,631	17,070	88	8	565	88,879	100.0%
% of Total	45.6%	22.3%	2.3%	6.9%	3.0%	19.2%	0.1%	0.0%	0.6%	100.0%	

Source: LRB Annual Routes Data for Fiscal Year 2015-16

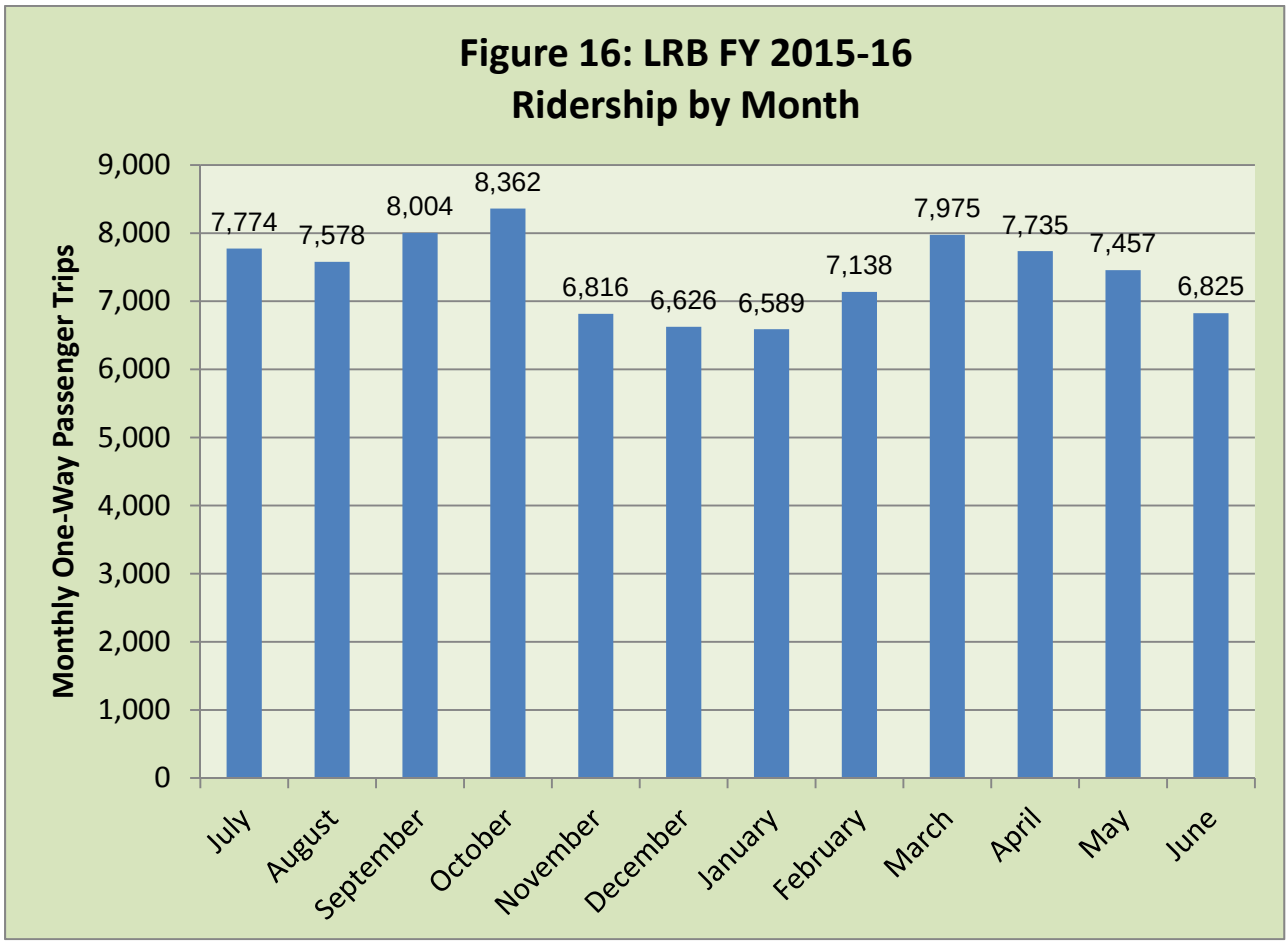


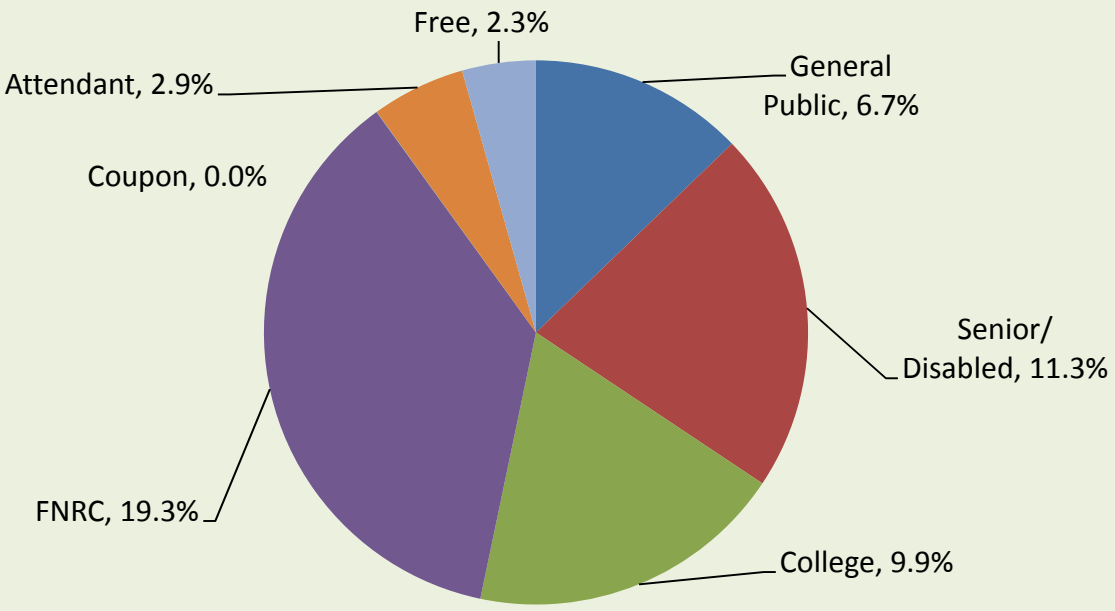
Table 8: Monthly Boardings by Type for All LRB Routes

FY 2015-16	General Public	Senior/ Disabled	College	FNRC	Coupon	Attendant	Free	Transfers	Charters	Total
July	594	1,018	226	1,536	0	220	159	3,831	190	7,774
August	589	852	651	1,429	4	217	153	3,659	24	7,578
September	501	738	1,073	1,518	0	230	200	3,722	22	8,004
October	487	899	885	1,495	0	210	250	3,967	169	8,362
November	366	763	725	1,160	0	162	138	3,502	0	6,816
December	520	763	510	1,295	3	178	107	3,118	132	6,626
January	539	778	588	1,178	2	161	131	3,212	0	6,589
February	515	796	977	1,387	0	194	150	3,119	0	7,138
March	515	831	1,037	1,680	0	250	187	3,447	28	7,975
April	470	935	1,054	1,660	0	321	170	3,125	0	7,735
May	409	841	970	1,341	0	211	192	3,493	0	7,457
June	475	863	147	1,491	0	247	212	3,390	0	6,825
Total	5,980	10,077	8,843	17,170	9	2,601	2,049	41,585	565	88,879
% of Total	6.7%	11.3%	9.9%	19.3%	0.0%	2.9%	2.3%	46.8%	0.6%	100.0%
% of Total Excluding Transfers & Charters	12.8%	21.6%	18.9%	36.7%	0.0%	5.6%	4.4%	--	--	

Source: LRB Passenger Type Stats Reports

Figure 17: FY 2015-16 LRB Ridership by Type of Passenger

(Excluding Transfers and Charters)



Dial-A-Ride Ridership

Table 9 illustrates average monthly ridership by passenger type on Dial-A-Ride. As noted in the table, this analysis is based on DAR ridership data from March through May of 2016. Per Table 9, the majority of DAR ridership (80.2 percent of the total monthly ridership) is generated by the Far Northern Regional Center.

Attendants make up the next-largest portion of DAR riders (16.3 percent), followed by non-program Senior/Disabled riders (only 3.3 percent) and free riders (0.2 percent).

Table 9: Dial-A-Ride Boardings by Type

Fare Type	Average Monthly Riders[(1)]	% Total
Senior/Disabled	53	3.3%
Far Northern Regional Center	1,281	80.2%
Attendant	261	16.3%
Free	3	0.2%
Total	1,597	100.0%

Note 1: DAR monthly data collected during March, April, and May of 2016

Source: LRB Monthly Ridership and Operations Data

Ridership by Day of Week

Table 10 illustrates the average ridership by day of the week on the regular year-round LRB routes (which excludes Eagle Lake, Leavitt Lake, and charters). This averaged data is based on daily ridership figures collected during the months of April, May, and June of 2016. As shown in the table, Tuesday is the busiest day system wide, with an average of 61.8 passenger-trips. In contrast, Saturday has the lowest system wide ridership, with an average of 14.4 daily trips, which reflects the reduced hours and limited service.

Also shown in Table 10, Friday is the busiest day of the week on the Susanville City Route and East County route, with an average of 148.8 and 30.0 daily riders, respectively. Note that the East County's average Friday ridership of 30.0 passengers far surpasses that of any other day of the week, with Monday following at 3.4 daily riders. This spike in ridership is likely due to the fact that the East County route operates a modified route which serves the South County on Fridays because the South County route does not operate on Fridays. Tuesday is the busiest day of the week for the South County Commuter routes and Dial-A-Ride, each with respectively 100.5 and 92.1 average daily Tuesday trips. The South County to Susanville and West County

routes are busiest on Wednesdays, with an average of 10.3 and 21.5 daily passenger-trips, respectively.

Table 10: Average Ridership by Day of Week by Route on Year-Round Routes

	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Average Weekday
City Route	140.3	145.8	141.5	140.8	148.8	75.8	143.5
S.C. Commuter	92.5	100.5	95.6	75.2	7.8	--	74.3
S.C. to Susanville	10.1	9.0	10.3	9.5	8.4	--	9.5
West County	16.4	20.8	21.5	18.5	19.8	10.2	19.4
East County	3.4	2.4	2.4	3.1	30.0	--	8.2
Dial-A-Ride	75.6	92.1	71.8	80.9	36.8	0.2	71.4
Systemwide	338.3	370.6	343.1	328.1	251.7	86.3	326.4

Note 1: Monthly data collected during April, May, and June of 2016

Source: LRB Monthly Ridership and Operations Data

Lassen Rural Bus Performance

In Fiscal Year 2015-16, Lassen Rural Bus operated a total of 12,211 vehicle service hours (VSH) and 250,318 vehicle service miles (VSM). As shown in Table 11, the greatest number of hours were associated with Dial-A-Ride (3,446 VSH), City Route (3,404 VSH), and West County (2,024). The greatest number of miles were associated with West County (70,651 VSM), South County Commuter (52,801 VSM), and City Route (50,653 VSM).

The service quantities, costs, and ridership for each service can be used to evaluate a variety of marginal transit service performance measures:

- Figure 18 graphically illustrates the service effectiveness of the LRB system in providing **passenger-trips per service mile**. As shown, DAR provided the greatest number of passenger-trips per service mile (1.61), followed by the City Route (0.80), the Special Routes/Events/Charters (0.52), and the South County Commuter (0.38). The West County and East County Routes averaged 0.09 passengers per mile, while the South County to Susanville route had 0.07 passengers per mile. The Eagle Lake and Leavitt Lake routes had the lowest averages of passengers per mile (respectively 0.03 and 0.00).

- Shown in Figure 19, the South County Commuter had the highest productivity in terms of **passenger-trips per service hour**, with 14.0 passengers per hour. The City Route and Special/Charter routes were also relatively productive with 11.9 and 7.5 passengers per vehicle hour, respectively. The least productive routes were Eagle Lake (1.0 passenger-trips per hour) and Leavitt Lake (0.1 passenger-trips per hour).

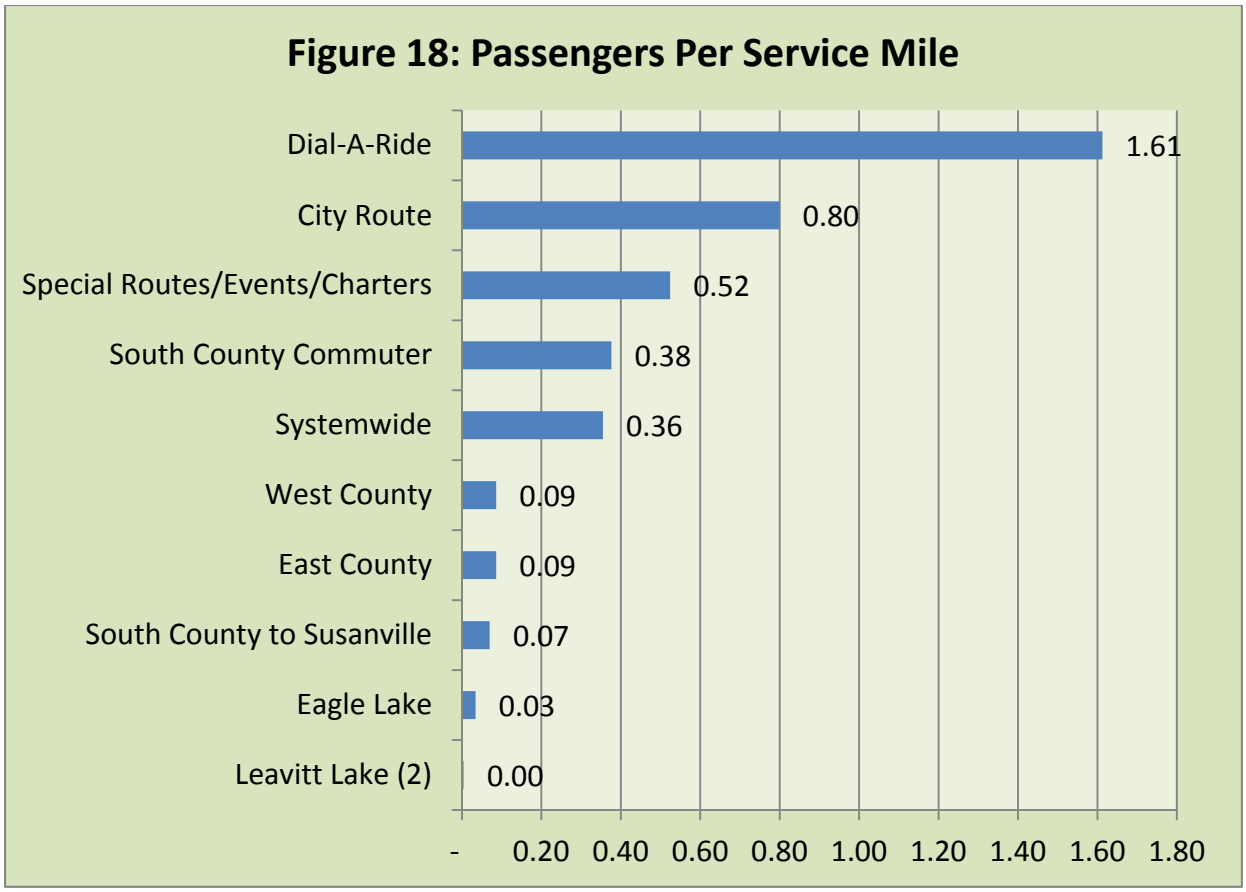


Figure 18: Passengers Per Service Mile
Dial-A-Ride
City Route
Special Routes/Events/Charters
South County Commuter
Systemwide
West County
East County
South County to Susanville
Eagle Lake
Leavitt Lake (2)
1.61
0.80
0.52
0.38
0.36
0.09
0.09
0.07
0.03
0.00
-
0.20
0.40
0.60
0.80
1.00
1.20
1.40
1.60
1.80

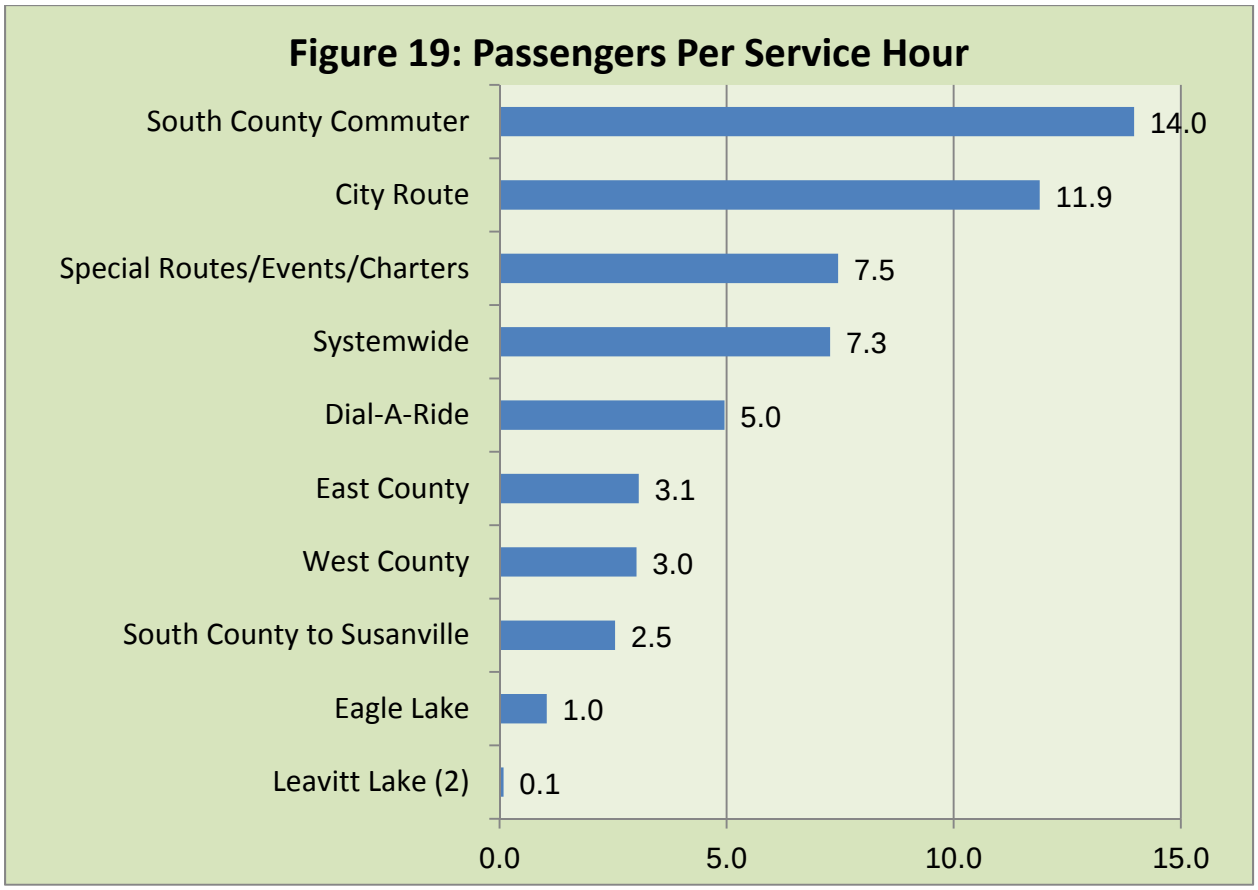


Figure 19: Passengers Per Service Hour
South County Commuter
City Route
Special Routes/Events/Charters
Systemwide
Dial-A-Ride
East County
West County
South County to Susanville
Eagle Lake
Leavitt Lake (2)
14.0
11.9
7.5
7.3
5.0
3.1
3.0
2.5
1.0
0.1
0.0
5.0
10.0
15.0

- Dividing the allocated cost by the number of passenger-trips served on each route yields the **cost per passenger-trip**. As shown in Table 11, the highest cost per passenger-trip was on the Eagle Lake route ($34.12 per trip). The City Route had the lowest per passenger cost ($2.58), followed by the South County Commuter ($2.69), the Special/Charter routes ($4.09), and DAR ($5.45).

Table 11: LRB Route Operating, Financial and Performance Characteristics by Route

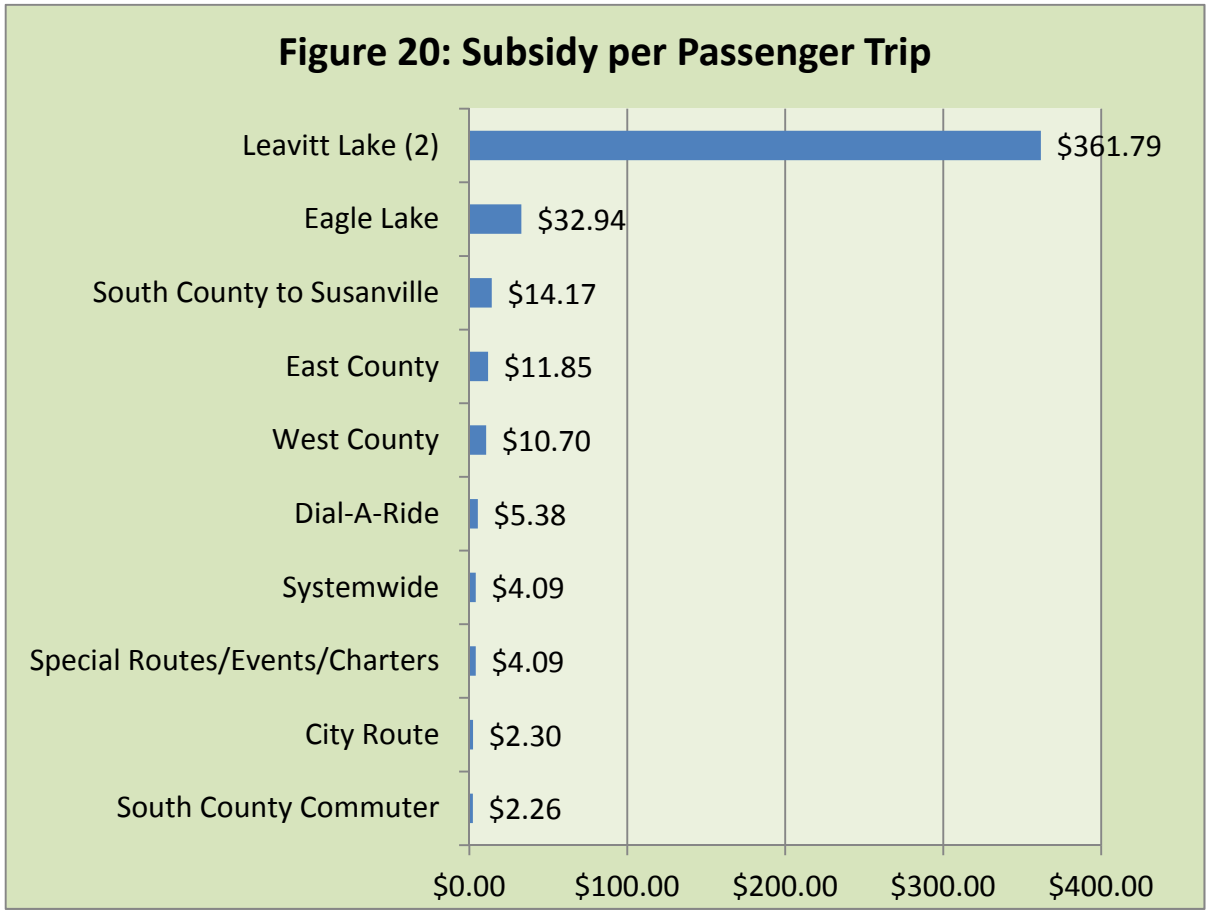
	Annual Operating Data *FY 2015-16*				
Routes	One-Way Passenger-Trips	Vehicle Service Hours	Vehicle Service Miles	Total Marginal Op. Cost [1]	Marginal Farebox Revenue
City Route	40,498	3,404	50,653	$104,421	$11,089
Dial-A-Ride	17,070	3,446	10,585	$93,018	$1,106
South County Commuter	19,858	1,421	52,801	$53,452	$8,557
West County	6,103	2,024	70,651	$74,707	9,393
South County to Susanville	2,058	808	29,497	$30,236	$1,079
East County	2,631	858	30,584	$31,876	$712
Eagle Lake	88	85	2,575	$3,002	$104
Leavitt Lake (2)	8	89	1,894	$2,894	$0
Special Routes/Events/Charters	565	76	1,078	$2,309	$0
Systemwide	**88,879**	**12,211**	**250,318**	**$395,917**	**$32,039**

	Performance Indicators *FY 2015-16*					
Routes	Marginal Operating Cost per Trip	Marginal Operating Cost per Hour	Psgrs per Veh Serv Hour	Psgrs per Service Mile	Marginal Subsidy per Passenger Trip	Marginal Farebox Ratio[3]
City Route	$2.58	$30.67	11.9	0.80	$2.30	10.6%
Dial-A-Ride	$5.45	$26.99	5.0	1.61	$5.38	1.2%
South County Commuter	$2.69	$37.61	14.0	0.38	$2.26	16.0%
West County	$12.24	$36.91	3.0	0.09	$10.70	12.6%
South County to Susanville	$14.69	$37.41	2.5	0.07	$14.17	3.6%
East County	$12.12	$37.14	3.1	0.09	$11.85	2.2%
Eagle Lake	$34.12	$35.53	1.0	0.03	$32.94	3.4%
Leavitt Lake (2)	$361.79	$32.70	0.1	0.00	$361.79	0.0%
Special Routes/Events/Charters	$4.09	$30.47	7.5	0.52	$4.09	0.0%
Systemwide	**$4.45**	**$32.42**	**7.3**	**0.36**	**$4.09**	**8.1%**

Note 1: Based on contract cost of $26.04 per vehicle service hour, plus $0.31 per mile fuel costs. Does not include fixed costs.
Note 2: This service has since been discontinued.
Note 3: Considers revenues collected through the farebox only.
Source: LRB Annual Reports

- The **subsidy per passenger-trip** was calculated by subtracting fare revenues from the costs of each route, divided by the number of passenger trips. This is a particularly useful performance measure, as it directly relates the key public input to a public transit program (subsidy funding) with the key "output" (passenger-trips). As shown in Figure 20, the most effective services were the South County Commuter and the City Route,

which required respectively $2.18 and $2.30 in operating subsidy for every passenger-trip (the system average subsidy being $4.06). On the other extreme, the Eagle Lake service required $32.94.



- The **farebox ratio** is the passenger revenues divided by the operating costs. As also shown in Table 11, the South County Commuter, West County route, and City route provided substantially higher farebox ratios (respectively 16.0 percent, 12.6 percent, and 10.6 percent) than the other services. Aside from the Special/Charter routes, which have zero farebox revenue, the lowest farebox ratio was 1.2 percent on the DAR. Other services with relatively low farebox ratios were the East County route (2.2 percent), Eagle Lake route (3.4 percent), and South County to Susanville route (3.6 percent).

The performance measures are based on contract costs and do not include the fully allocated costs, thus they are considered "marginal" and represent a comparative value rather than complete value. Still, the performance indicators show the relative strength and weakness of the various services.

LASSEN RURAL BUS CAPITAL ASSETS

LRB's capital equipment and infrastructure supports Lassen Rural Bus' Fixed Route and Dial-A-Ride services, as well as Lassen Senior Services.

Facilities

The maintenance and operations facility for Lassen Rural Bus is located at Johnstonville Road just south of Skyline Road in Susanville. The facility provides administrative space, a driver break room, two maintenance bays and a bus wash. The second maintenance bay was recently added and includes enough space (height and length) for larger vehicles to be worked on on-site. An exhaust/mobility lift will be added soon, as well as LED security lighting.

Storage for equipment is limited. The property is mostly paved, providing uncovered parking for approximately nine buses. The property is also fenced with electronically activated gates, but no security cameras. Bus parking is at capacity on the site. It may be appropriate to consider purchasing nearby lands for expansion.

Vehicle Fleet

As shown in Table 12, Lassen Rural Bus' vehicle fleet consists of a total of 11 buses. Of these buses, three large 39-41 passenger over-the-road commuter buses and the remainder are smaller buses, with passenger capacities of 19-30. The average age of the vehicles is 6.9 years. Four of the vehicles will expire within the planning period of this TDP. In addition to the vehicles listed in the table, there is one support vehicle, which was manufactured in 1992 and has seating for 5 passengers, and two buses were recently surplused.

Table 12: LRB Fleet Inventory

Make/Model	Year	Mileage	Seating		Funding Source	Estimated Relacement
			Ambulatory	WC		
Bluebird	2000	543,305	41	2	Prop 116	2018
GMC	2007	204,051	28	2	LTF	2019
GMC	2009	174,078	28	2	ARRA	2019
GMC	2014	204,342	28	2	ARRA	2019
GMC/ARBOC	2014	17,364	19	2	Prop 1B	2025
GMC/ARBOC	2014	16,940	19	2	Prop 1B	2025
GMC/ARBOC	2014	15,711	19	2	Prop 1B	2025
Gillig	2010	180,887	39	2	STIP	2023
Gillig	2012	102,609	39	2	STIP	2025
Glaval/Legacy	2016	--	20	2	Prop 1B	2026
Glaval/Legacy	2016	--	20	2	Prop 1B	2026

Note: All vehicles are ADA accessible with 1-2 wheelchair positions

Source: LRB November 2016

Technology

Lassen Rural Bus has implemented an Automatic Vehicle Locator (AVL) passenger access system using GPS to transmit vehicle location. Passengers have the ability to track bus locations on the internet through the mobile application ETA SPOT.

LTSA FINANCIAL ANALYSIS

The Lassen Transit Service Agency budget is presented in Table 13 for fiscal year 2015-16. As indicated, all non-capital expenditures totaled $1,210,795. Of this, $391,413 was used for Non-Contractor fixed costs. Out of the $819,382 paid to the contractor (Paratransit Services or PS), $317,927 went towards variable costs, $401,570 was allocated towards contractor fixed costs, $21,896 was paid towards utilities, and $77,990 paid for the fuel throughout the year. Per the 2016 Paratransit Services contract, contractor payments are estimated to total $726,700 in FY 16-17, including a base monthly rate of $33,806 and a fixed hourly rate of $25.08.

Table 14 and Figure 21 show transit service revenues fiscal year 15-16. As indicated, LTF (Local Transportation Fund, generated from a one-quarter cent sales tax) is the largest revenue source, accounting for 48.2 percent of annual funding with $946,701 in FY 15-16. Funds from the PTMISEA (Public Transportation Modernization, Improvement, and Service Enhancement Account Program) make up an additional 29.8 percent of LRB FY 15-16 revenues, amounting to $586,293 annually. The Federal Transit Administration 5311 Formula Grants for Rural Areas provides the next largest revenue source, with $196,394 during the year.

Table 13: LTSA FY 15/16 Operating Costs and Cost Model

		Cost Model Variable		
Cost Items	Total	Fixed	Vehicle Service Hour	Vehicle Service Mile
Non-Contractor Fixed Costs	$391,413	$391,413	--	--
Contractor Variable Direct Costs [1]	$317,927	--	$317,927	--
Contractor Fixed Costs (Admin)	$401,570	$401,570	--	--
Utilities (Contractor Pass-Through)	$21,896	$21,896	--	--
Fuel	$77,990	-	--	$77,990
TOTAL	$1,210,795	$814,878	$317,927	$77,990
FY 2015/16 Service Quantities		--	12,211	250,318
Cost Model: FY 2015/16 Operating Cost =		$814,878 +	$26.04 +	$0.31

Note 1: Drivers, Vehicle Maintenance.

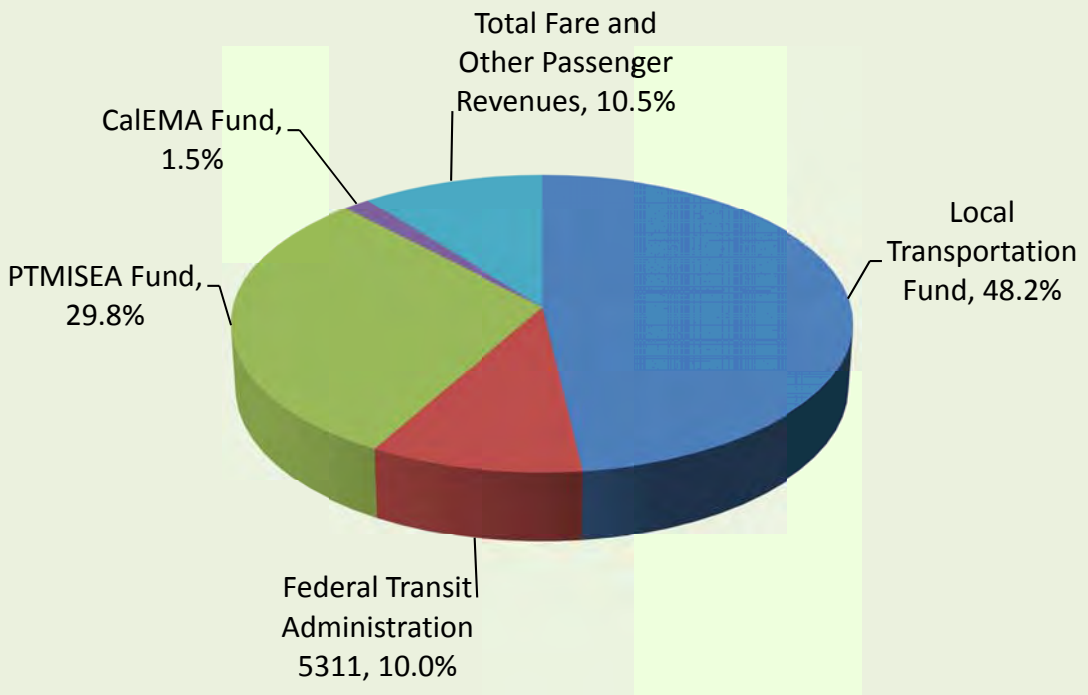
Source: Total cost from LTSA FY 2015/16 Estimated Budget Request, contractor costs from PTS Invoice June 2016.xls.

TABLE 14: LRB Transit Revenues

Source	*Fiscal Year 2015-16 Actual* Revenue	% of Total
Federal and State Funding		
Local Transportation Fund	$946,701	48.2%
Federal Transit Administration 5311	$196,394	10.0%
PTMISEA Fund	$586,293	29.8%
CalEMA Fund	$30,156	1.5%
Subtotal	*$1,759,544*	*89.5%*
Other Funds		
Passenger Fares	$32,618	
Other Revenue (Lassen College, FNRC, etc)	$173,468	
Total Fare and Other Passenger Revenues	$206,086	10.5%
Total Revenue	$1,965,630	100.0%

Source: LRB FY 2015/16 Actual Budget

Figure 21: Annual LRB Operating and Capital Revenues



Fare revenue, which is made up of $32,618 in passenger fares and $173,468 in program (Lassen College and FNRC) revenue, accounts for 10.0 percent of the annual funding. Finally, CalEMA (California Emergency Management Agency) funds make up the remainder of funds ($30,156) for the year.

Cost Allocation Model

When developing and evaluating service alternatives, it is useful to have a cost model that can accurately show the financial impact of any proposed change. Typically a cost allocation model for public transit services allocates the total costs by service quantity (fixed, hours, and miles). Systemwide cost factors (cost per hour, cost per mile, and fixed costs) are then applied to the actual or proposed miles and hours for each route/service to estimate the operating cost of each service. Table 13 presents the cost allocation model for Lassen County Transportation Commission based on actual FY 2015-16 costs. As aforementioned, out of the total transit Figure 21 services fund operating expenses, $814,878 were considered fixed costs (which account for administrative costs within LTSA and Paratransit Services). Another $317,927 was attributed to expenses such as driver salaries/benefits, insurance, and maintenance, which increase or decrease depending on the level of vehicle service hours provided. Lastly, the only vehicle service mile dependent cost was fuel, which totaled $77,990 in FY 15-16.

The next step is to divide the allocated expenses by vehicle service hours and miles from FY 2015-16. This equates to the following cost model equation:

FY 2015-16 total operating expenses = $26.04 per vehicle service hour +
$0.31 per vehicle service mile +
$814,878 in fixed costs

LASSEN RURAL BUS MARKETING EFFORTS

Lassen Rural Bus currently engages in a number of marketing efforts and has undertaken several marketing strategies to provide information, encourage ridership, and educate the public about services, as described below.

Internet Marketing

<u>Website</u>

Searching a browser for “Lassen Rural Bus” brings the searcher to a number of options, including links to the Lassen County Transportation Commission web page (www.lassentransportation.com), Lassen Transportation website, and a Lassen Rural Bus Facebook page.

When accessed through Googling “Lassen Rural Bus,” the Lassen County Transportation Commission link brings users to the main Lassen Rural Bus website, which includes the following:

- A downloadable brochure with detailed bus route information
- Contact information for LRB
- Downloadable route pages (which include route maps and fare/pass information) for each fixed route
- Information for purchasing bus passes

While most routes have links to a route schedule, the link to the "City Route Schedule" brings users to the route map that is already shown on the site. Currently, the only online mechanism for finding out the City Route schedule is downloading the extensive detailed bus route information brochure. In addition, the Eagle Lake Route is still shown on the site, though when the map is clicked on, the page reads "404 Whoa there! Wrong turn."

The information is relatively easy to find and is clearly presented with simple maps, and easy to read schedules and fare tables. Color schematics are consistent and adequately attractive. The website access could be improved for simplified in the following ways:

- Present the LRB logo on all downloadable maps, routes, and schedules
- Clearly state the days and times of operation, either next to each route or at the top of the page
- Include a link and/or reference to Dial-A-Ride information, which is located on a separate page
- Within the DAR page, provide more detailed information on service area
- Update the City Route schedule link
- Construct a webpage solely for Lassen Rural Bus, as it is relatively difficult to find within the LCTC website unless one follows the Google link

Social Media

Lassen Rural Bus maintains a Facebook page, which has been updated every 1-2 months through the year of 2016. The postings were reviewed on October 27, 2016, and showed 16 postings in 2016 and 47 postings in 2015. While 2016 posts only included service announcements, the post in 2015 included a mixture of service announcements, community updates, photos, and events. A total of 195 individuals had "liked" the pages, allowing them to receive notifications from the site. In addition, the lack of 2016 posts resulted in less overall activity, and there were no comments in 2016 to-date. As of October, 2016, both the profile picture and cover picture showed photos of buses. The cover photo was taken on an overcast day, leading to the picture looking bleak.

Rider's Guides

The 2016 Rider's Guide is a six page, multi-color quad-fold brochure. The guide has narrative information on bus regulations, how to ride the bus, fares, contact information, instructions for service interruptions, guidance for using a bike with transit (plus illustrations to do so). The information is thorough and clearly states that it is valid for 2016. Also included in the guide are maps of each route with key stops, and schedules which list each bus stop and the time served (for Susanville, time points are only shown for time check stops, which is appropriate). The Rider's Guides are attractive and easy to read, but full of information.

ETA SPOT

In 2015, LRB began using ETA SPOT (aka "SPOT") which is a bus-tracking application. By downloading the application on one's phone or going to the SPOT website, riders can track the movement of buses on all routes, and check the estimated time of arrival for the bus at specific stops. This type of application is gaining popularity for transit systems, but has not been adopted in many rural areas. It is a significant benefit for riders who are willing to take a few minutes to learn how to use the application.

OTHER TRANSIT / TRANSPORTATION PROVIDERS

Within Lassen County, there are no other forms of public transportation available. However there are connections to other public transit services, rail service and social service / non-profit specialized transportation programs.

Subsidized Vehicle for Hire Program / Sierra Express Taxi Service

A subsidized taxi program was operated in Susanville for many years. However, the taxi operator, Sierra Express Taxi Service, went out of business in the summer of 2014. The LTSA released an RFP seeking a new provider, but no eligible contractors were available or interested, and the program was discontinued. LTSA increased DAR hours of service in the evening in anticipation of an increased demand, but the demand never materialized. After more than a full year of expanded night service, the increased hours were eliminated.

Lassen Senior Services

As previously discussed, in addition to a gamut of other services, Lassen Senior Services (LSS) provides transportation for seniors to and from lunch meal sites (located in Susanville, Westwood, and Doyle), medical appointments, shopping, banking, the post office, and Reno (on alternating Tuesdays and Thursdays). For these transportation services, donations of $1.00 are suggested for local rides, and contributions of $25.00 (or $40.00 per couple) are suggested for Reno trips.

As set forth in July, 2012, the LTSA, LSS, and Paratransit Services have an agreement in place for Paratransit to perform all necessary maintenance of the LSS vehicles, in addition to providing other services, such as consultation and technical assistance. The contract between the LTSA

and LSS also includes an annual LTSA payment of $86,000 (with $5,000 set aside for vehicle maintenance) for the services provided by LSS.

Modoc Sage Stage

The Modoc Transportation Authority operates the "Sage Stage" transit program, which includes an intercity route between Alturas and Reno operated on Monday, Wednesday, and Friday each week. The LTSA has a contract with Modoc Transportation Authority to serve a stop in Susanville, providing Lassen County passengers intercity transit service to Reno and Alturas. This route serves downtown Reno (providing connections to Greyhound and Amtrak), the Reno/Tahoe International Airport, as well as medical facilities. The route departs Susanville (on Riverside Drive near Walmart) at 9:30 AM, arrives in Reno at 11:15 AM, and departs Reno for Susanville at 1:45 PM, eventually arriving at 3:30 PM. Fares are $22.00 per one-way trip between Susanville and Reno for the general public, and $16.50 for seniors, children, and persons with disabilities.

In FY 15-16, LTSA paid the Modoc Transportation Agency half of the 5311(f) local match requirement, amounting to $27,977, for this service. In FY 15-16, Lassen County passengers accounted for 61.3 percent of the ridership (or 937 total passenger-trips) on the Alturas to Reno Route. Among the Lassen County riders, an average of 25.5 boarded the route on Mondays, 28.5 boarded on Wednesdays, and 31 boarded on Fridays.

Susanville Indian Rancheria Public Transportation Program

The Susanville Indian Rancheria Public Transportation Program provides public intercity bus service from Susanville Rancheria to Red Bluff and Redding Monday through Saturday and to Reno on Thursday, Saturday and Sunday. Discounted fares are available youth (ages 0 to 12), students (traveling to/from school or daycare), seniors (55 years or older) and individuals with disabilities.

The bus departs for Red Bluff and Redding from the Susanville Indian Rancheria gym at 7:30 AM, returning by approximately 5:40 PM. Regular bus fares for one-way trips range from $3 to $20 according to distance traveled.

The bus for Reno departs from the Diamond Mountain Casino at 8:00 AM and returns at approximately 4:00 PM. The route includes stops in Herlong and Hallelujah Junction. General fares range from $5.00 to $15.00, depending on distance traveled.

Lassen County Veteran's Services Office

Once or twice per week, the Lassen County VSO transports veterans from Susanville to the Veteran's Medical Center in Reno. It also provides more frequent transportation between Alturas and Reno.

Lassen County Health and Human Services

The Lassen County Health and Human Services (HHS) provides transportation for social-service needs, which must be arranged by a caseworker.

Crossroads Ministries

Crossroads Ministries is a church-affiliated non-profit organization that provides services to needy individuals who request it, including transportation. With two six-passenger vans, Crossroads serves approximately 40 to 50 passenger-trips each week, and the majority is for medical purposes.

Crossroads also provides clients with LRB passes and Greyhound vouchers on occasion.

Far Northern Regional Center/North Valley Services/Lassen Life Skills

Far Northern Regional Center (FNRC) provides transportation for persons with developmental disabilities through contracted service with LRB, and through two vehicles owned by North Valley Services. Clients of North Valley Services and Lassen Life Skills receive unlimited trips on both the fixed-route and Dial-A-Ride for a set fee of $60 per client per month. As shown in Table 8, above, FNRC riders made up 19.3 percent of LRB ridership in FY 15-16.

Mt. Lassen Motor Transit – also known as "The Mail Truck"

Mt. Lassen Motor Transit, based in Red Bluff, provides charter bus and tour services throughout the nation. Services are based out of Redding and Red Bluff. Three days per week, The Mail Truck provides transportation between Red Bluff and Susanville for $25.00.

Big Valley 50 Plus

Big Valley 50 Plus (BV50Plus) provides public transportation services to people of all ages in Lassen County. Two roundtrips are operated throughout Bieber on Tuesdays, Wednesdays, and Thursdays of each week. Additionally, trips are provided to Redding on the first and third Monday, Klamath Falls on the second Monday, and Susanville on the fourth Monday of each month. General fares are $3.00 for local trips and $20.00-$25.00 for regional trips. Reduced fares are available to children and disabled riders, and passengers 60 years and over can ride for free.

LTSA and Big Valley 50 Plus have an agreement wherein BV50Plus acts as an independent contractor providing senior transportation services. In FY 15-16, LTSA paid BV50Plus $44,300 for their transportation services, of which $5,000 was set aside for vehicle maintenance. BV50Plus operates two nine-passenger vehicles, one of which it owns, and the other is owned by Lassen County.

ONBOARD SURVEY RESULTS

An on-board survey was conducted on LRB fixed routes in an effort to better understand passenger activity, ridership patterns and overall perception of the system. In October, 2016, on-board surveys were conducted for five weekdays, and, throughout the month, self-administered surveys were available. Surveys were double-sided, with English on one side and Spanish on the other side.

In total, 150 surveys were received, with 147 completed in English and 3 in Spanish. The survey results are as follows:

- On-board surveys were performed on the busiest routes, which are the Susanville City Route, West County Route, and South County Commuter Route. When asked which route they were on, 68.5 percent of the respondents were on the Susanville City Route, 26.0 percent were on the South County Commuter Route, and 5.5 percent were on the West County Route.

- When asked how they got to the bus, the majority of respondents (73.6 percent) walked, followed by 14.9 percent who drove a car, and 5.8 percent who got a ride in a car. Out of the three respondents who transferred from another route, two transferred from the City Route and one transferred from the East County route. Three of the respondents rode their bicycle to the bus.

- When asked how they'll get to their destination from the bus, most of the respondents (76.9 percent) planned to walk, followed by 12.1 percent who were going to drive, and 5.1 percent who planned to get a ride in a car. Additionally, three respondents planned to transfer to another bus and three planned to bicycle to their destination.

- A majority (67.6 percent) of respondents were traveling roundtrip.

- Most of the riders (77.1 percent) did not have a car available for the trip.

- Many of the respondents were taking the bus to get to and from workplaces, schools, or errands/appointments. Specifically, when asked what the main purpose of their trip was, the most common response was school/college (26.2 percent), followed by work (25.5 percent), medical/dental appointments (11.3 percent), shopping (10.6 percent), and multiple purposes (10.6 percent). Those riding the bus for personal business or recreational purposes (such as recreation, social activities, and outdoor activities) each made up roughly six percent of total respondents.

- As a whole, survey respondents were relatively frequent riders on Lassen Rural Bus. Out of the respondents, 27.6 percent ride the bus 3-4 days per week, 26.2 percent ride

5 days per week and 24.1 percent ride 2-3 days per week. Only 3.4 percent were first-time riders.

- When asked how long they'd been riding Lassen Rural Bus, most of the respondents (79.0 percent) had been using the service for over a year. Many (31.2 percent) had been riding for 1-2 years, followed by 29.0 percent who had been using the bus for over 5 years and 18.8 percent who had been riding for 3-4 years. A total of 29 respondents (or 21.0 percent of total respondents) had been riding LRB for less than a year.

- In terms of LRB marketing, the Lassen Rural Bus website is the primary source of information for 39.6 percent of respondents. Other common bus information resources include the newspaper (29.7 percent), other (29.7 percent), Facebook (26.7 percent), Radio (24.8 percent), and promotions prior to movie showings at the theater (11.9 percent).

- Passengers were asked to rank various bus services and attributes on a scale of 1 (poor) to 5 (excellent). As shown in Figure 22, the highest-rated service category is "Value Received for Fare," receiving an average ranking of 4.38. Both "Service Information" and "Safety Performance" follow, with average rankings of 4.31 and 4.30, respectively. Other categories with average rankings above four are "Driver Courtesy," "Overall Service," and "Vehicle Cleanliness." The lowest average ranking went towards "On-Time Performance," which received a 3.53 overall, with slightly more than half of all respondents indicating a relatively low score of 1 to 3. However, it should be noted that 78 percent gave an "Overall Service" score of 4 ("Good") or 5 ("Very Good"). This indicates that overall LRB passengers are happy with the service.

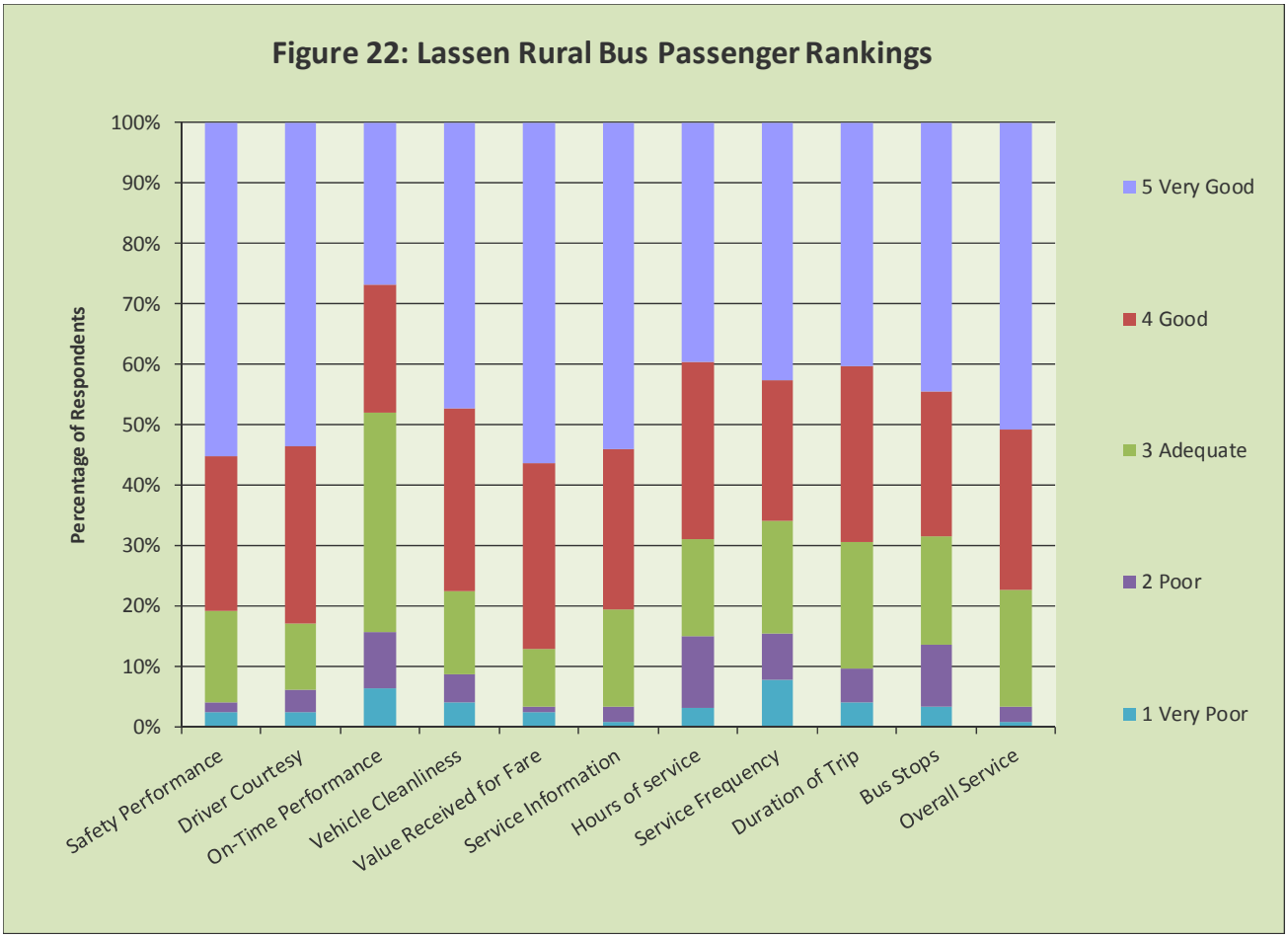
- About half (52.2 percent) of the respondents have a driver's license.

- When asked about their occupation, 27.0 percent of respondents work full-time, another 27.0 percent are college students, and 20.4 percent are retired. Other notable occupations include unemployed (6.6 percent), work part-time (5.8 percent), K-12 student (5.1 percent) and other (5.1 percent).

- Only 10.0 percent of respondents stated that they have a disability that limits their mobility to use the fixed route bus, though 21.4 percent of respondents use a mobility device.

- Most of the respondents are ages 19 through 72. The most common age group among respondents is 45-59 (25.2 percent of respondents), followed by 25-44 (22.9 percent), 60-72 (20.6 percent), and 19-24 (19.8 percent). None of the respondents are under the age of 12. Only 3.8 percent of respondents are 73 years old or above.

- When asked about what fare increases respondents would support to make their suggested improvements, 31.5 percent said 25 cents or more, 27.9 percent said 50 cents or more, 13.5 percent said 75 cents or more, and 27.0 percent would not support a fare increase.



- Conducting a cross-tabulation of origins and destinations among surveys grants insight into common trip patterns among these routes. The following origin and destination patterns were observed:

  - Susanville was the trip origin for 92.4 percent of respondents and the trip destination for 71.7 percent of respondents

  - 69.7 percent of respondents were traveling within the City of Susanville

  - 11.0 percent of respondents traveled between Susanville and Herlong

  - 3.4 percent of trips were from Susanville to Westwood

  - Other (less prevalent) trips were within Herlong, within Doyle, and between: Janesville and Herlong, Susanville and Chester, Susanville and Clear Creek, Susanville and Doyle, and Herlong and Standish.

- Among the 67 respondents on the Susanville City Route who marked their starting location, the largest percentage began their trip at Walmart (31.3 percent), followed by Lassen College (20.9 percent), and the Casino (7.5 percent). The most common trip generators on the City Route were Walmart (23.2 percent of respondents), Lassen

College (17.4 percent), Safeway (7.2 percent), the Casino (7.2 percent), and the Dollar General Store (7.2 percent).

- The survey asked respondents which transit improvements they would most like to see, which resulted in the following:

  - The most common request (written on 36 surveys) was for more hours of operation. Out of these surveys, 19 requested later hours, 12 requested increased Saturday hours, and 5 requested earlier hours.

  - A large portion of respondents (16 in total) asked for more frequent service, with 10 of those surveys specifically requesting more service on the Susanville City Route.

  - Improved bus stops (including the addition of benches, shelters, and/or lighting) were requested by 11 respondents.

  - There were 11 requests for service or increased service to outlying locations, specifically Herlong, Eagle Lake, West County, and South County.

  - The addition of Sunday service was requested by 8 of the respondents, with some commenting that it would help them to travel to church.

  - Many (specifically 7) requested improved buses, with several noting that the buses lacked proper heating.

  - On-time performance was an issue for 5 of the respondents.

  - Several people (3) requested "No Smoking" signs at bus stops.

  - Another request (by 3 people) was for more bus stop signage.

  - Another 3 people requested better information on the transit system.

Complete results of the onboard survey are included in Appendix A.

COMMUNITY SURVEY RESULTS

During the month of October, 2016, a Community Survey was open on Survey Monkey to gather input from community members regarding local transit. Survey links and flyers were distributed to the following entities:

- Lassen Community College General Campus

- Far Northern Regional Center

- Lassen Community College Special Needs
- Walmart
- Big Valley 50 Plus
- Susanville IGA Supermarket
- Lassen Senior Services

While surveys were available in English and Spanish, no Spanish Community Surveys were completed. In addition, despite efforts, there were only 13 total Community Surveys filled out. The results of the community surveys are as follows:

- Just over half (8 respondents) knew what their local transportation system was called.
- When asked whether they had seen transit advertising, the majority (7) had not, 4 had, and 2 did not know.
- Out of 3 respondents who had seen LRB advertising *and* could identify where, one had seen it on Facebook, one on the LRB website, and another in the newspaper.
- Six respondents have someone in their household who rides the LRB and another six do not.
- The majority who responded (8 of 15) had used LRB services at some point.
- When asked about the frequency of their ridership in the last year, 3 individuals said they used LRB 5 or more days per week, another 3 used it 2-4 days per week, one used it 1 day per week, and another used it 1-4 days per month.
- Only one in twelve respondents had used LRB Dial-A-Ride service in the past, and none had used it in the past year.
- The Community Survey asked respondents to rank various transit service attributes from a scale of 1 (very poor) to 5 (excellent). The categories with the highest-ranking averages were Safety Performance (4.0) and Value Received for Fare (3.8). The categories with the lowest averages were Hours of Operation (2.8) and Bus Stops (3.0).

PUBLIC INFORMATION TABLING EVENTS

Several information booths were fielded for this study in an effort to reach residents who do not use transit or who use it only occasionally. The information booths were held to maximize exposure to the public by attending a large community event (Rails-to-Trails Festival), positioning in front of a major commercial center (Walmart) and intercepting high-potential users (Lassen College and the Lassen Senior Center).

At each tabling event, LSC staged an information booth which included a poster inviting public input, as well as a poster of the existing Susanville City Route. The information booth also provided riders' guides, comment cards, and giveaways (LRB lanyards and granola bars). The planner at the booth intercepted passers-by to ask if they had an interest in transit and if they had suggestions for improving transit.

A summary of feedback is provided below.

Lassen Rails to Trails Festival – October 8, 2016

- Several people were residents of outlying areas (such as Lake Forest and Janesville) and there was no bus stop within 5 miles of their homes, necessitating car travel.

- A couple of residents (of various areas, such as Susanville and Chester) were meaning to take the bus but had yet to try it out.

- Transportation to the Bizz Johnson trail was an attraction for a Susanville resident who primarily biked and numerous people who were visiting the area.

- Several people expressed a desire for later service, including a visitor who wanted to ride to dinner and a Susanville resident who wanted late-night transportation from the Casino.

- A disabled rider complained that a Saturday bus did not arrive during the scheduled time, SPOT did not work, and there was no Saturday dispatch to call for information.

- Residents expressed the desire for more frequent service to and from Reno, particularly for transportation to the Reno/Tahoe International Airport.

- A resident had wanted to use the service, but the lack of stop signage throughout town caused confusion.

- Since business pay a fee for improvements, there might be a need for more comprehensive service to the uptown areas

Lassen Community College – October 31, 2016

- Many of the Lassen College students did not use LRB services because they had a car available.

- When asked what it would take to make services more appealing, several mentioned a desire for more frequent service and later service throughout Susanville.

- Out of the few students who did utilize LRB services, one complained that the last run didn't allow him any time for post-class activities, and another complained of frequent tardiness on the City Route.

Lassen Senior Services – October 31 & November 1, 2016

- Most of the seniors were uninterested in using transit because they could still drive or receive transportation through a family member or Lassen Senior Services.

- A couple of the seniors had a desire to use fixed route services but were too intimidated by the schedule. Though they were given a schedule brochure and bus instructions, they thought it would also be useful for LRB to hold an information session about the routes and services.

- The cost of DAR services was prohibitive to all of the seniors who were interested in using it or needed it.

- A couple of seniors requested the taxi voucher system to be reinstated.

- One senior complained that they had tried to take a bus from the casino but it never came (she assumed it went by the stop early).

- A Janesville resident said that if service when to her house (at Honey Lake Estates) she would use the bus and pay whatever it cost.

- A stop was requested at Minkler & Hood.

Walmart – November 1, 2016

- A disabled resident owns a car, but would use DAR to get to and from the Casino.

- Several residents had no interest in using the bus so long as they had private vehicles.

- A person who lives in Doyle and goes to Lassen College requested more Doyle service in the morning and afternoon (particularly around 1:00 PM to Doyle).

- Several people complained that the City Route was not frequent enough and was often late.

STAKEHOLDER INTERVIEWS

In October of 2016, key person interviews were conducted to gain perspective from education providers, other transportation agencies, nonprofit agencies, and others who have an interest or represent those with an interest in transportation in the study area. A list of potential stakeholders was developed at the study kick-off meeting, and eleven individuals were contacted to participate (up to three times). Ultimately, nine individuals participated in the interviews, consisting of the following:

- Carrie Nyman, Special Needs Instructor, Lassen Community College
- Tom Barker, Healthcare Specialist, North Eastern Rural Health
- Jessie Diermier, Event Coordinator, Lassen Land & Trails Trust
- Nikki Witherspoon, Systems Coordinator, Modoc Transportation/Sage Stage
- Lori MacDonald, Public Affairs Officer, Sierra Army Depot
- Debra Van Brunt, Big Valley 50 Plus
- Dr. Marlon Hall, President, Lassen Community College
- Jim Mackay, Tribal Administrator, Susanville Indian Rancheria
- Tamara Rich, Caltrans District 2

Major Transportation Issues

Throughout the process, stakeholders reiterated the following major transportation issues faced by Lassen County both currently and in the near future:

- *Lack of System Understanding* - Many of the Lassen County citizens have difficulty understanding the transit routes and schedules. This is particularly pressing for the intellectually disabled population, many of who are unable to read the maps and/or clocks, and therefore cannot utilize fixed routes. A lack of understanding also leads to low utilization, which is the case for the Kool Kids pass and Eagle Lake route.
- *Transit Dependent Population* – The transit system provides one of the only mobility options for those who cannot transport themselves, making it even more important to provide a comprehensive service schedule and area. Particular examples of those in need include Lassen College students, who need rides after evening classes, and disabled residents, who need weekend transportation.
- *Lack of In-County Resources* – There is a need for Lassen County residents to have access to resources that are only available in outside areas, such as Reno.
- *Rural Areas* – Lassen County is one of the least populated, largest counties in California. With a spread out population, it is hard to provide access to everyone. In many cases, it is difficult for residents to get to bus stops.

- *Funding* – Funding limitations are a barrier to providing comprehensive service throughout Lassen County. Due to funding, needs like bus shelters and more service in Susanville are not met. Reduced 5311 funding could greatly impact those in outlying areas who need access into resources available in town.

- *Changing Demographics* – Transit dependent populations, particularly seniors, are expected to increase, which will impact the demand for transit options. An overall growth in population (if more businesses relocate to Lassen County) could put a greater demand on transit overall.

- *Cost of Service* – Many Lassen County residents, particularly those who are transit dependent, aren't able to afford services (especially DAR).

- *Infrastructure* – A two-lane highway plays a large factor in causing transit and transportation delays.

Underserved Communities and Populations

When asked whether communities and populations were served well, many stakeholders believe LRB does a good job of accessing the various communities. However, in rural areas, such as Chester, Westwood, Herlong and Lake Almanor, many cannot walk to bus stops, and are therefore unable to use LRB services. A stakeholder pointed out the fact that school children in Ravendale may not have access to transit services.

Coordination with other regional service

Among the stakeholders who had input regarding coordination of Lassen Rural Bus with other regional agencies, most believe that LRB coordinates well with other agencies. In particular, a couple of stakeholders mentioned LRB's transportation support in times of regional need, such as a senior evacuation and bus issues. In addition, other agencies have found it easy to refer riders to LRB and communicate with LRB staff about routes and scheduling. It would be useful to create a streamlined communication method to ensure that LRB, Susanville Indian Rancheria, and Sage Stage always update each other with service changes. In addition, more coordination between agencies will be needed to adequately provide intercity services.

Capital Equipment

According to stakeholders, Lassen Rural Bus could improve its capital equipment in the following ways:

- Bus shelters -- Stakeholders pointed out the need for more bus shelters, particularly because of severe weather throughout Lassen County. The bus stop at Lassen College is long overdue for an overhaul.

- Park and Rides – Park and Ride facilities should be expanded to make them more useful and safe.

Other Comments

In addition to the above, stakeholders included miscellaneous comments about the overall Lassen Rural Bus transit system. For the most part, the stakeholders are very happy with the service and several pointed out the dedication of the LRB staff.

Other areas in which the bus could improve are:

- Streamline online bus information and improve the website to make it more user-friendly

- Establish stop in front of Lassen Life Skills (currently, clients have to cross the US 395 to get to the nearest bus stop)

- LRB needs to look into alternate sources of funding (such as 5310 for mobility management)

UNMET TRANSIT NEEDS

The California TDA requires annual unmet transit needs hearings if a jurisdiction proposes to spend some Local Transportation Fund resources on streets and roads. Oftentimes in Lassen County, excess TDA funds are used towards road infrastructure. Therefore, SSTAC holds an official public needs hearing each year to receive public input on transit needs in the region. Unmet needs are defined as any deficiency within any transit service under the jurisdiction of the LCTC. Requests serving a small group of individuals, or that would duplicated current service, are not considered unmet needs. Once an unmet need is identified, it must be deemed "Reasonable to Meet," which takes into account factors such as potential farebox ratio, transit use, and paratransit compatibility.

The following is a summary of the unmet transit needs for the last two years.

Fiscal Year 2014-15

For unmet needs in the western portion of the county, the SSTAC held a meeting on March 9, 2015 and received the following input regarding services for Lassen County:

- There is a need to reconsider service expansion to Hospital Lane in order to adequately service individuals in need of health care. This request only reflects the needs of a small group of individuals. In addition, other factors, such as a steep incline to the hospital (calling into question safe passage) and the large funding requirement, make this request an unmet need that is not reasonable to meet.

Fiscal Year 2015-16

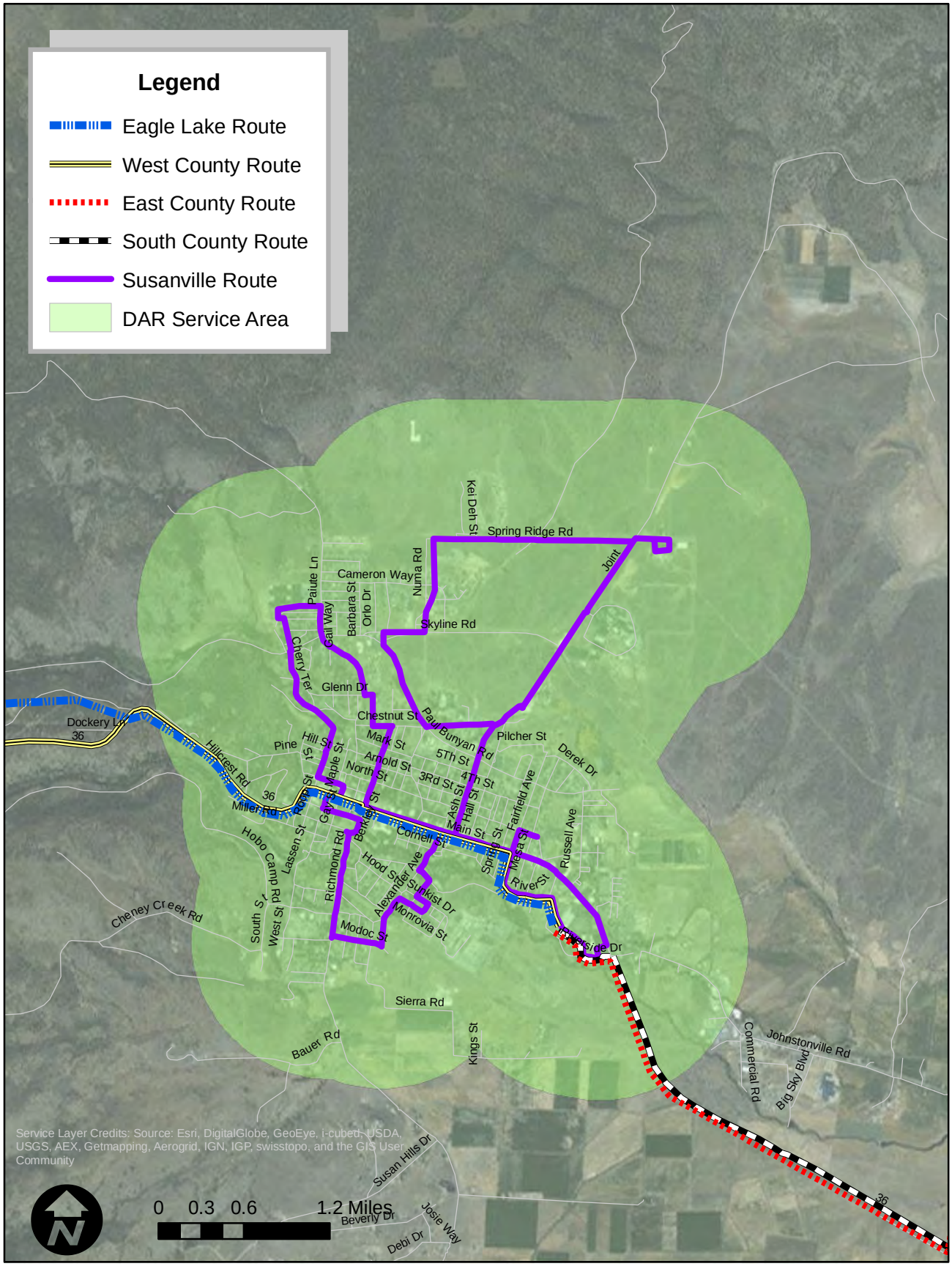
For Lassen County, a public hearing was held on March 14, 2016. No one from the public attended the hearing, and no public requests were made. Council members identified the following transit issues:

- The Westwood grocery mart would be shutting down, which would increase the need for the Westwood transit-dependent population to receive transportation into Susanville. It was noted that this increase in demand would be covered by the current service levels.

OUTLYING AREAS

Figure 23 displays the Dial-A-Ride service area in Susanville, showing the ¾ mile deviation from the fixed route. As shown graphically, the area southeast of Susanville, bordered by Johnstonville Rd, Big Sky Blvd, and Commercial Rd, is not within the current service area.

Figure 23
Susanville Dial-A-Ride Service Area



INTRODUCTION

This chapter presents the analysis of a wide range of potential service alternatives for the Lassen Rural Bus system in response to analyses provided in earlier chapters. These alternatives are discussed for both the Susanville City Route, as well as Regional Routes.

Susanville City Route Alternatives

Operate Second Bus on Existing City Route during Weekdays

Operating a second bus would both improve service frequency, as well as help the service to operate on schedule. At present, the Susanville City Route is operated using one bus on hourly headways Monday through Saturday. Throughout the public input processes, Lassen County residents pointed out issues with the current City Route schedule and operation, particularly in regards to on-time performance and frequency. As described in Chapter 4, "On-Time Performance" received the lowest average ranking among all on-board survey respondents, and several residents complained of frequent bus tardiness throughout the tabling exercises. Additionally, increased service frequency was specifically requested by 16 on-board survey respondents as well as throughout the onsite public input process.

A straightforward way to address the on-time and scheduling issues on the City Route would be to operate a second bus during the weekdays. This would enable the City Route to run on half-hourly headway while also mitigating on-time issues that arise from slow passenger loading (as passenger loading delays would be split between the two buses). As shown in Table 15, this alternative would increase service levels by 2,700 vehicle-hours and 39,400 vehicle-miles of service per year. The impacts on the marginal operating cost in Fiscal Year 2017/18 can be estimated using the cost model described in Chapter 3, which is based upon the FY 2015/16 contractor's hourly costs ($26.04 per vehicle-hour) and the cost for fuel ($77,990) divided by the annual in-service vehicle-miles (250,318):

Marginal Operating Cost = $26.04 X vehicle-hours of service + $0.31 X vehicle-miles of service

Applying this formula to the quantities presented above, the impact of this alternative would be to increase annual operating costs by an estimated $81,300 per year. Ridership was estimated using an elasticity analysis[1] to measure the impact of frequency change and assuming a ten percent increase in ridership due to enhanced system reliability (drawn from the Transportation Cooperative Research Project Report 95). As shown in Table 15, this service alternative would increase ridership by an estimated 20,400 passenger-trips per year. The resulting $5,600 gain in marginal fare revenues would yield a net required annual subsidy of $75,700.

[1] Elasticity analysis is the standard means of evaluating ridership impacts associated with a change in service quality (such as frequency). It is based on the observed ridership change that accompanied numerous similar previous changes in service quality in similar settings.

Table 15: Lassen Rural Bus Bus Service Alternatives Summary

		Service Alternative	Change In Annual Service: Service Hours	Service Miles	Operating Cost	Ridership	Fare Revenues	Operating Subsidy	Change in Peak # of Buses
Susanville City Route	1	Operate Second Bus During Weekdays	2,700	39,400	$81,300	20,400	$5,600	$75,700	1
	2	Operate Tripper Bus During Peak Times on Weekdays	1,000	15,200	$31,300	4,000	$1,100	$30,200	1
	3	Operate Tripper Bus During the 1st Week of Month	300	900	$8,100	4,000	$1,100	$7,000	1
	4	Implement On-Demand Stops	0	200	$100	2,900	$800	-$700	0
	5	Implement Susanville Crosstown Route	0	-2,200	-$500	2,200	$600	-$1,100	0
	6a	Implement Susanville 2-Loop Route - One Bus	0	-3,200	-$800	2,800	$800	-$1,600	0
	6b	Implement Susanville 2-Loop Route - Two Buses	3,100	36,800	$91,300	22,000	$6,000	$85,300	1
	7	Extend Weekday Evening Hours Until 9 PM On the City Route	500	7,600	$15,600	2,200	$600	$15,000	0
Other Routes	8	Require A Minimum of Three Passengers to Run the Eagle Lake Service	-20	-600	-$700	-5	-$6	-$700	0
	9	Eliminate Eagle Lake Route	-100	-2,600	-$3,000	-100	-$100	-$2,900	0
	10	Eliminate East County Route	-100	-5,100	-$4,900	-300	-$100	-$4,800	0
	11	Eliminate West County Midday Run	-600	-25,200	-$23,900	-1,300	-$2,000	-$21,900	0
	12	Only Operate West County Midday Run 1 Day per Week	-500	-20,100	-$19,100	-1,100	-$1,700	-$17,400	0
	13	Discontinue West County Route to Chester	-500	-20,200	-$19,100	-1,400	-$2,200	-$16,900	0

<u>Operate an Additional Bus in Peak Periods Only</u>

The more cost-efficient options to address the City Route's problems with on-time performance involve operating a second bus during peak periods, as a "tripper" bus. A tripper bus is not identified in the schedule, but is put in service when the scheduled bus typically operates behind schedule (or when additional capacity is needed). While these methods do not improve service frequency, they can increase reliability of the bus schedule and can steadily improve public perceptions around utilizing the City Route, subsequently increasing ridership.

Operate a Tripper Bus on Existing City Route during Peak Times on Weekdays

The first option is to provide a tripper bus during the peak hours of ridership on the City Route during all weekdays. An analysis of average boarding by time of day for March through May of 2016 showed that the most popular boarding times throughout the month are 9 AM – 11 AM and 2 PM – 4 PM. Accounting for a second weekday bus during these times amounts to an additional 1,000 vehicle-hours and 15,200 vehicle-miles per year, requiring $31,300 in added operating costs. Applying a 10 percent increase in ridership (to be reached once Lassen County residents have recognized the increase in schedule reliability, which could take several years)

leads to an increase of 4,000 passenger-trips per year. Accounting for the additional $1,100 in fare revenue, this alternative would require $30,200 in annual operating subsidy.

Operate a Tripper Bus during the 1st Week of Month to Improve Schedule Performance

Through study review meetings and the input of Lassen Rural Bus personnel, the first week of each month was identified as particularly problematic in terms of on-time performance. As such, providing a tripper bus during the busy hours in the first week (not including Saturday) of each month provides a viable alternative to enhancing on-time performance in a cost-efficient manner. As shown in Table 15, providing this service would require an additional 300 vehicle-hours and 900 vehicle-miles per year, amounting to $8,100 in operating costs. It is estimated that this additional service would also increase reliability and improve user attitudes, eventually resulting in a ridership increase of 10 percent, or 4,000 passenger-trips per year. Accounting for the additional $1,100 in fare revenue, this alternative would require $7,000 in annual operating subsidy.

Alternatives to Reconfigure the Susanville City Route

The current City Route consists of one bus serving an hour-long, one-directional loop. This service plan provides only one bus an hour for many of Susanville's key transit generators, and also results in long travel times for many individual trips. On the other hand, it provides continuous service between many origins and destinations, without the need to transfer.

Table 16 presents a summary of travel time (in minutes) between six key activity centers on the City Route. A review of this table indicates that, while some weekday travel times are modest, there are specific trip origin/destination pairs for which a long travel time is required. The longest weekday travel time between these key points is 55 minutes (from Mid-Town to Lassen Social Services and from Lassen Social Services to Meadowbrook Apartments), followed by 54 minutes (from the Community College to Mid-Town).

Using boarding and alighting data, as well as information from the on-board surveys, the six key activity centers were given a factor relative to the proportion of riders making the specific trip. This information, combined with average travel time through a matrix system, is used to estimate the average travel time for all passengers using the Susanville City Route. At present, the estimated average in-vehicle travel time for one passenger-trip on the City Route is 27.2 minutes.

With the present level of service, it is useful to look at alternative route options and configurations to assess whether there is a route that could bring riders to and from key locations in a more direct manner. To test this concept, three route alternatives were developed, as discussed below.

Implement On-Demand Stops on the Current City Route

At present, there are several City Route stops that frequently have little-to-no passenger activity, though they require time and mileage to serve. These stops include:

Table 16: Susanville City Route Existing Travel Time Matrix

Travel Time in Minutes

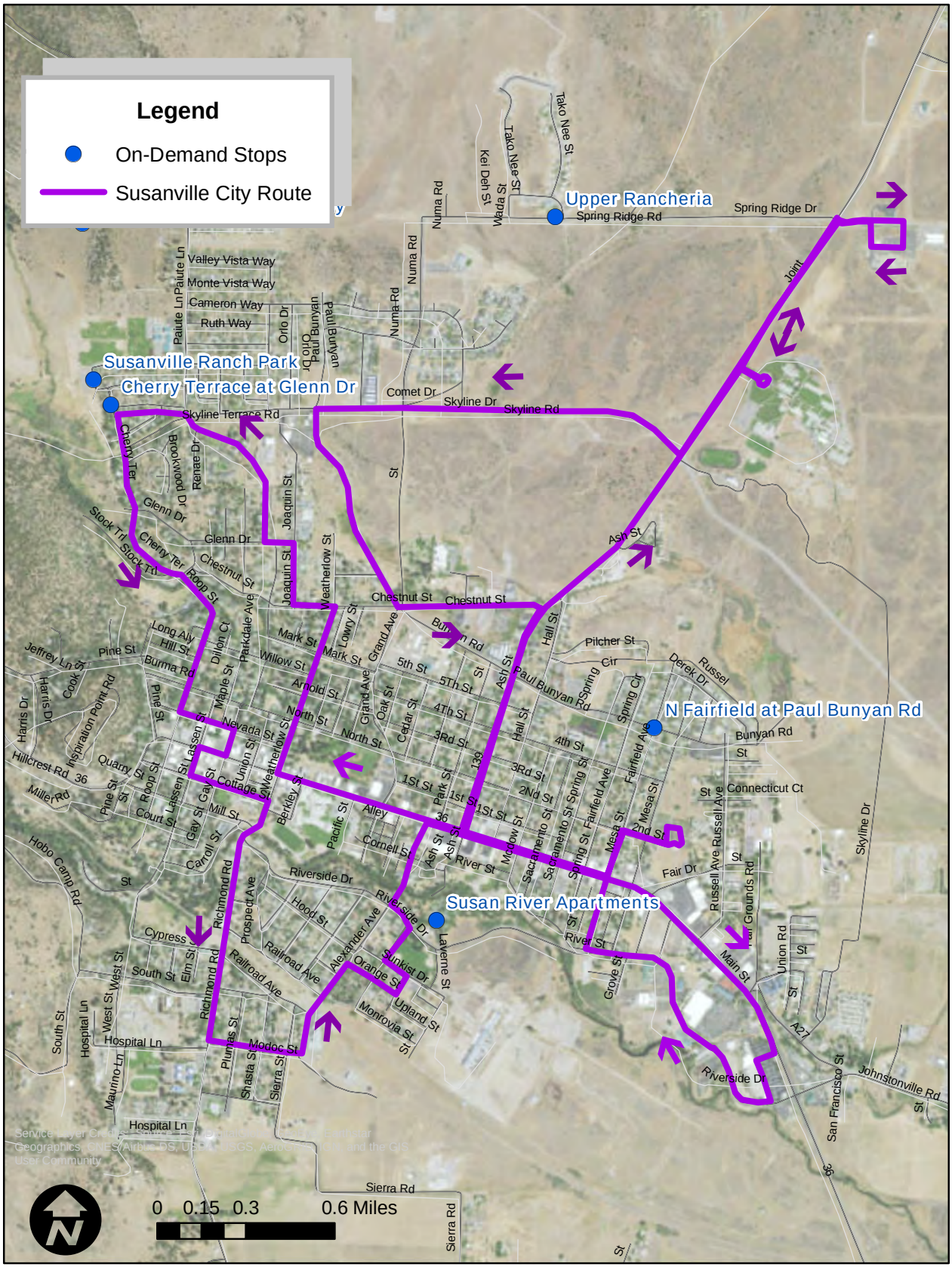
FROM	TO: Community College	Casino	Lassen Social Services	Mid-Town	Meadowbrook Apts	Riverside Drive/Walmart
Community College		10	49	54	44	20
Casino	50		39	44	34	10
Lassen Social Services	11	21		5	55	31
Mid-Town	6	16	55		49	26
Meadowbrook Apts	16	26	5	10		36
Riverside Drive/Walmart	32	42	21	19	16	

- Susanville Ranch Park – 0.4 daily boardings and alightings
- Cherry Terrace – 0.4 daily boardings and alightings
- Numa Rd & Cameron Rd – 6.6 da
- ily boardings and alightings
- Upper Rancheria – 2.2 daily boardings and alightings
- Susan River Apartments - 2.2 daily boardings and alightings

Making these stops "on-demand" provides an efficient way to serve these areas of relative low-demand and mileage deviation, which can help to enhance the City Route's on-time performance, reduce passenger in-vehicle travel time, lessen annual costs, and enable service to new areas. In an on-demand strategy, passengers wishing to be dropped off at an on-demand stop can simply tell the driver as they board the bus. For pickups, passengers would need to call in advance (such as 60 minutes in advance of the scheduled time). If a regular pattern of requests emerges (such as requests at least half of the time between 9 AM and 1 PM on Mondays and/or Thursdays), these times could be included in the fixed schedule.

The running time freed up by eliminating the scheduled service to these stops could also expand opportunities to serve other portions of Susanville. A review of areas not currently within a convenient walk distance (quarter-mile) of an existing bus route identified the area north of 4th Street and east of Hall Street. As shown in Figure 24, this relatively dense

Figure 24
Current Susanville City Route with On-Demand Stops



residential area could be served with an on-demand stop at the corner of North Fairfield Ave and Paul Bunyan Road, which would be served from the current Eskaton Lassen Manor Apartments stop. This new stop would service approximately 210 new housing units. At observed trip rates, this would increase ridership by an estimated 1,500 boardings per year.

Transitioning to an on-demand system for the five current stops and implementing an on-demand stop in the new service area would result in a fixed route of 14.1 miles in length. Based on boarding and alighting data and estimated ridership, the on-demand stops will require approximately 0.87 additional miles to serve per day (amounting to 4.1 daily minutes). In total, this route should still be able to operate on an hourly schedule.

Table 17 displays the in-vehicle travel time between key activity centers in this on-demand system. Using the matrix analysis described above, this route is estimated to decrease average in-vehicle travel time from 27.2 to 24.9 minutes per passenger-trip. The ridership effect of decreased in-vehicle travel time can be calculated by using an elasticity formula. In total, while some ridership will be lost for transitioning current fixed route stops to on-demand stops, overall City Route ridership would increase by 2,900 boardings per year (a result of minimizing travel time and serving a new area). The net impact would be an increase of 200 vehicle-miles of service per year, increasing costs by $100 annually. Subtracting the increase in farebox revenues of $800, the net impact on subsidy needs would be a decrease of $700 annually.

Table 17: Susanville City Route On-Demand Travel Time Matrix

Travel Time in Minutes

		TO					
		Community College	Casino	Lassen Social Services	Mid-Town	Meadowbrook Apts	Riverside Drive/Walmart
FROM	Community College		9	42	46	37	15
	Casino	48		33	37	37	6
	Lassen Social Services	10	20		4	52	30
	Mid-Town	6	15	53		48	26
	Meadowbrook Apts	15	25	5	10		35
	Riverside Drive/Walmart	29	39	19	24	14	

Crosstown Route

The Crosstown Route, shown in Figure 25, provides more direct service from Riverside Drive to the southwest corner of Susanville (where Lassen Social Services and Susan River Apartments are located). This route travels from Mid-Town to Lassen College, Banner Memorial Hospital,

Diamond Mountain Casino, Meadowbrook Apartments, Riverside Drive, Lassen Social Services, and back to Mid-Town. As shown, this route includes the on-demand system described above.

Travel time between the key activity centers was calculated for the Crosstown Route, and is shown in Table 18. Using the matrix analysis described above, this route is estimated to decrease average in-vehicle travel time to 25.6 minutes per passenger-trip (or by 1.6 minutes per trip). As shown in Table 15, while this route option will not have an impact on vehicle-hours, it decreases vehicle-miles by 2,200 per year, saving an estimated $500 annually. In addition to cost-savings, the reduction in average travel time, as well as new service area, amounts to an estimated 2,200 additional passenger-trips per year. The additional $600 in fares from this added ridership culminates in a total cost reduction of $1,100 per year.

2-Loop Route

The other route alternative is a 2-Loop Route, shown in Figure 26. As shown, this route travels from Mid-Town to Lassen Senior Services, Riverside Drive, Lassen College, Banner Memorial Hospital, Meadowbrook Apartments, and back to Mid-Town. Also shown in Figure 26, while this route includes most of the aforementioned on-demand stops, it services Numa Road at Cameron Road and Susanville Indian Rancheria as permanent, fixed route stops. This route eliminates travel on streets that do not have stops, and it provides more direct travel from the Riverside Drive area to Lassen College and Banner Memorial Hospital. This route also requires the relatively far relocation of the Susanville Garden Apartments and Casino stops, requiring a longer walk to the stops, and leading to a slight loss in ridership. In addition, this alternative route requires new stops (on the opposing side of the road) at the Meadowbrook Apartments, Walmart, and the Rancheria Services Complex.

<u>One Bus</u>

This 2-Loop Route could be operated using one bus (providing service once an hour) or two buses (providing service every half-hour, with buses meeting in the mid-town area to transfer passengers). As illustrated in Table 19, travel time between the key activity centers was calculated for the 2-Loop Route with a single bus. Matrix analysis estimates that this route will decrease average in-vehicle travel time by 3.2 minutes, to 24.0 minutes per passenger-trip. As shown in Table 15, this route option will decrease annual vehicle-miles by 3,200 per year, saving an estimated $800 annually. In addition to cost-savings, the slight reduction in average travel time and new service area will increase ridership by an estimated 2,800 passenger-trips per year (which includes the ridership loss from making some stops on-demand and relocating some stops). Accounting for the added $800 in fare revenues, this alternative would decrease annual operating subsidy by an estimated $1,600.

Figure 25
Susanville Crosstown Route Alternative

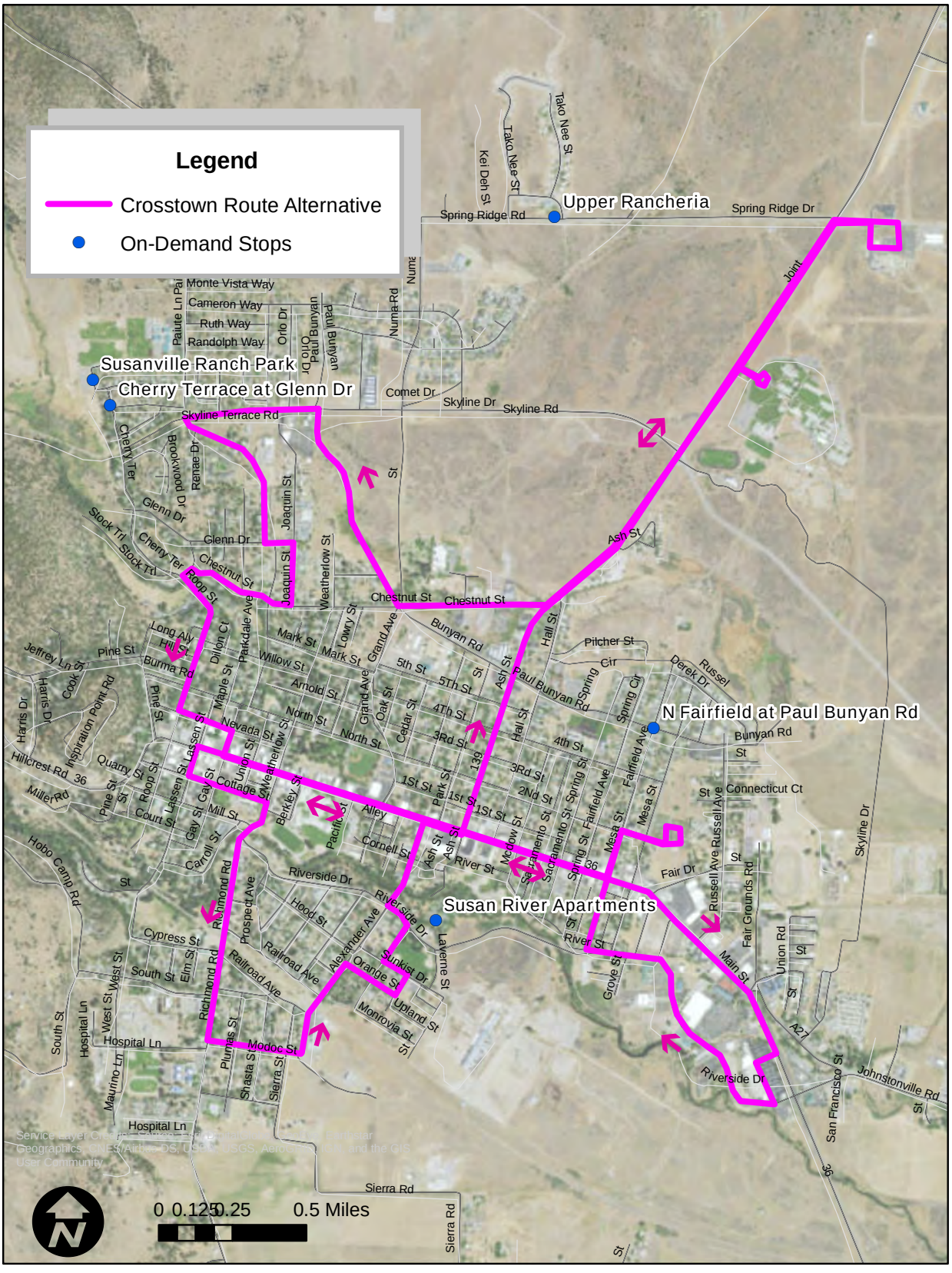


Figure 26
Susanville Two Loop Route Alternative

Table 18: Susanville City Route Crosstown Travel Time Matrix

Travel Time in Minutes

		TO					
		Community College	Casino	Lassen Social Services	Mid-Town	Meadowbrook Apts	Riverside Drive/Walmart
FROM	Community College		6	34	35	11	20
	Casino	43		23	27	5	14
	Lassen Social Services	20	31		4	36	45
	Mid-Town	6	17	42		21	30
	Meadowbrook Apts	41	52	21	25		9
	Riverside Drive/Walmart	32	43	11	16	47	

Table 19: Susanville City Route 2-Loop Travel Time Matrix -- One Bus

Travel Time in Minutes

		TO					
		Community College	Casino	Lassen Social Services	Mid-Town	Meadowbrook Apts	Riverside Drive/Walmart
FROM	Community College		10	34	22	13	41
	Casino	42		22	10	3	30
	Lassen Social Services	25	34		14	37	6
	Mid-Town	6	16	7		19	13
	Meadowbrook Apts	39	49	19	7		24
	Riverside Drive/Walmart	18	28	46	8	32	

Two Buses

The 2-Loop Route was also evaluated using a system of two buses with half-hourly headways. In this alternative, each bus would depart a joint stop in the mid-town area, and travel either the north or south loop. After completing each 30-minute loop, each bus would then meet to transfer passengers and then travel the opposite loop, completing both loops every hour. With this route system, passengers could transfer at Mid-Town to expedite certain trips located on the same loop (for example, from Meadowbrook Apartments to Lassen College or from Riverside Drive to Lassen Social Services). Due to the relatively low weekend ridership, the second bus would only operate during weekdays, while the above one bus, 2-Loop Route would operate on Saturdays as well.

In-vehicle travel times for the two bus, 2-Loop route are displayed in Table 20. For origin and destination pairs that require a transfer, a T is listed in the table and a ten minute transfer penalty was applied (reflecting the inconvenience of the need to transfer). In total, this option reduces the average in-vehicle travel time to 22.8 minutes, which is 4.4 minutes lower than the current average.

Table 20: Susanville City Route 2-Loop Travel Time Matrix -- Two Buses

Travel Time in Minutes on Weekdays

		TO					
		Community College	Casino	Lassen Social Services	Mid-Town	Meadowbrook Apts	Riverside Drive/Walmart
FROM	Community College		10	34	22	13	41
	Casino	21T		22	10	3	30
	Lassen Social Services	25	34		14	37	6
	Mid-Town	6	16	7		19	13
	Meadowbrook Apts	32T	27T	19	7		24
	Riverside Drive/Walmart	18	28	20T	8	32	

The relatively large reduction in travel time, as well as the impact from serving a new area, doubling the schedule frequency, and assuming a ten percent increase in ridership due to enhanced system reliability (drawn from the *Transit Cooperative Research Project Report 95*, prepared by the Transportation Research Board) results in an estimated 22,000 additional

passenger-trips per year. As shown in Table 15, this option requires an additional 3,100 vehicle-hours and 36,800 vehicle-miles each year, raising annual operating costs by $91,300. Subtracting the additional fare revenues of $6,000, the required annual operating subsidy would be $85,300.

Extend Weekday Evening Hours until 9 PM

During the public input process, another common request was for expanded service hours. The most common written-in request during the on-board surveys was for more hours of operation, with 19 requesting later hours, and later service was requested during the Rails to Trails and Lassen College on-site outreach events. Extending operations by two hours (to run until 9 PM) on weekdays could help provide transportation to evening activities (after-school activities, dining, evening events). Ridership was estimated by looking at the percentage of ridership by hour within peer transit agencies that provide evening service. As shown in Table 15, this service extension is estimated to result in 2,200 additional passenger-trips per year. The additional 500 vehicle-hours and 7,600 vehicle-miles of operation require $15,600 in annual operating costs. Accounting for the $600 in estimated fare revenues, providing this service will require $15,000 in additional operating subsidy.

Other Route Alternatives

Eagle Lake Route Alternatives

The route performance analysis (in Table 11 of Chapter 3) showed particularly poor performance on the Eagle Lake Route. To reiterate, the average marginal subsidy per Eagle Lake passenger-trip in FY 2015-16 was $32.94, requiring, on average, $65.88 to serve one passenger round-trip.

Eliminate Eagle Lake Route

While the Eagle Lake Route does provide valuable recreational opportunities, it is not an essential lifeline service. One option to address this inefficiency would be to eliminate the Eagle Lake route, which would reduce ridership by approximately 100 passenger-trips per year. Eliminating the route would decrease total system vehicle-hours by 100 per year, and vehicles-miles by 2,600 per year. Accounting for the $100 loss of fares, ridding of this service would save approximately $2,900 in annual operating subsidy.

Require a Minimum of Three Passengers to Run the Eagle Lake Service

At present, Lassen Rural Bus only requires a single trip reservation to operate the route. As serving a single passenger making a round-trip incurs a cost of $214, this can greatly reduce the cost-efficiency of this route. An analysis of Eagle Lake trips conducted in June, July, and September of 2015, as well as June of 2016, showed that 23 percent of Eagle Lake trips carried less than three passengers. Implementing a three-passenger minimum to run the route could help to increase cost-efficiency, while enabling the route to stay available. According to passenger counts during the months sampled, creating this three passenger minimum would only eliminate five percent of current ridership. In total, as shown in Table 15, roughly 5

passenger-trips would be lost per year. The accompanying reduction in Eagle Lake trips would amount to a decrease of 20 vehicle-hours and 600 service miles, cutting operating costs by $700.

Eliminate East County Route

Currently, in order to operate the South County Commuter, South County to Susanville, and East County Route on Mondays through Thursdays, the following takes place:

- Two buses depart as the South County Commuter and travel from Riverside Drive to SIAD between 5:13 AM and 6:25 AM

- One bus then is used to operate the South County to Susanville Route, traveling from Herlong to Doyle, Janesville, and Susanville between 6:35 AM and 8:04 AM

- The second morning bus transitions to serve the East County Route, traveling from Herlong to Standish, Litchfield, and Susanville between 6:35 AM and 7:55 AM

A similar system operates in the afternoon. On Fridays, the East County Route services Susanville, East County, and South County locations. While the East County Route has relatively high ridership overall, review of its average ridership by day of the week (during March, 2015 - June, 2015) shows that the majority of East County passenger-trips (90.8 percent) are taking place on Friday, when the South County Commuter isn't available. This fact, along with the fact that the Monday through Thursday average daily ridership on the East County is only 3 passenger-trips, warrants a review of the costs and benefits of eliminating the East County Route and extending South County service into Friday.

The necessity of operating two vehicles on the South County Commuter (to provide adequate capacity) complicates the potential elimination of the East County Route. As such, for this alternative, two buses would travel on the South County Commuter, one bus would operate the South County route to Susanville, and one would travel "deadhead" back to Susanville. This system would operate Monday through Thursday. On Friday, one bus would operate on the South County Commuter/South County to Susanville routes. Since two buses are still required Monday through Thursday, eliminating the East County Route only eliminates the extra time and miles required to serve the Standish and Litchfield area. Thus, as shown in Table 15, discontinuing the East County Route results in a reduction of 100 vehicle-hours and 5,100 vehicle-miles each year, curtailing annual operating costs by $4,900. Per the ridership by day analysis described above, and assuming that three of the Friday trips are attributed to East County service areas, eliminating the East County Route will decrease ridership by 10.2 percent, or roughly 300 annual passenger-trips. Accounting for the associated $100 loss in fares, discontinuing the East County Route, while adding Friday service on the South County Commuter, would decrease the total annual operating subsidy by $4,800.

Eliminate West County Commuter Midday Run

During weekdays, the West County Route operates three roundtrips per day, departing Riverside Drive at 5:21 AM, 12:10 PM, and 5:15 PM. There is no West County Commuter midday run on Saturdays. Because the morning and evening runs offer adequate commuter service, as well as two options for non-commuter transportation throughout the day, it is relevant to consider whether the midday run should continue to be operated. This run requires 2.4 vehicle-hours and 98.8 vehicle-miles per weekday. A review of average midday run boardings on the West County Commuter over the course of five months (between September 1, 2016 and January 31, 2016) grants insight into the relative ridership by time of day. Per the analysis, on average, midday ridership accounts for 31 percent of total weekday ridership on the West County Route. In turn, eliminating the midday run would result in a loss of roughly 1,300 annual passenger-trips (assuming 1/3 of the current midday boardings would transfer to either the morning or evening rvun). This ridership loss would be accompanied by an annual reduction of 600 vehicle-hours and 25,200 service miles, lowering operating costs by $23,900. Accounting for the $2,000 loss of fare revenue, this alternative would decrease annual operating subsidy needs by $21,900.

Only Operate West County Commuter Midday Runs 1 Day per Week

A separate option would be to continue operating the midday run on one day per week. This would allow passengers who use the service for half-day trips (such as for shopping or medical appointments) to schedule their trips on the day of service, avoiding the need for a full day stay in Susanville. This alternative would decrease annual vehicle-hours by 500 and service miles by 20,100, resulting in a reduction of $19,100 in annual operating costs. With a smaller loss in ridership (1,100 passenger-trips per year), this option results in a $1,700 loss in fare revenues, and reduces the total annual operating subsidy by $17,400.

Discontinue West County Route to Chester

Each run, the West County Commuter must travel 23.2 miles in order to serve the Hamilton Branch and Chester stops. Service to this area is arguably not essential, as Chester has many lifeline resources (for example, a supermarket and post office), and this region is already served by the Plumas Transit System. As such, eliminating the service to Hamilton Branch and Chester could help alleviate costs and improve efficiency on the West County Commuter. Per Table 15, cutting this service area would decrease annual vehicle-hours by 500, vehicle-miles by 20,200, and operating costs by $19,100.

Per the boarding and alighting data retrieved during August, 2015, 23 percent of West County Route activity takes place at the Hamilton Branch and Chester stops. Thus, this alternative is expected to result in a loss of roughly 1,400 annual passenger-trips. Accounting for the associated $2,200 reduction in fare revenues, eliminating these stops would decrease the annual operating subsidy by an estimated $16,900. It is important to note that this connection increases regional access which better serves the region as a whole, and better positions LRB

for FTA(f) Intercity grant opportunities. This funding source might not be available if this connection were to be eliminated.

Improving Senior and Non-Emergency Medical Transportation Options

It is imperative that elderly and transit-dependent populations are afforded opportunities to access regional medical providers, as well as other quality health resources in the area. While there currently exists some regional transportation options (through Lassen Senior Services, Modoc County's Sage Stage, and Susanville Indian Rancheria), it is useful to examine other opportunities for increased service options.

Senior Shuttle Service

An example of a successful program that could help guide a similar program in Lassen County is the North Tahoe/Truckee Transport Program, operated by the Tahoe Transportation District and the Town of Truckee. This service offers ADA-accessible transportation to seniors over the age of 60 years in the North Lake Tahoe and Truckee region. With a reservation, and for a suggested donation, seniors have the option to travel to several regional locations (including Grass Valley, Nevada City, Auburn, Roseville, Truckee, Reno, Sacramento, Quincy, and North and South Lake Tahoe) at five set times each month. Residents under the age of 60 years old can use the service for a set price if there is seating available. Funding for the program is partially provided by the Agency on Aging Area 4.

Volunteer Driver Service

Several transit agencies support volunteer driver programs, where volunteers transport seniors to-and-from non-emergency medical destinations. In these programs, volunteers typically use their own vehicles and insurance, and they are reimbursed for mileage. Volunteer driver programs can greatly enhance opportunities to transport residents to medical services, but they require a great deal of administrative time, a constant recruiting effort, and most importantly, a strong advocate to establish the program. Based on similar programs in peer agencies, the cost is generally around $10 per passenger trip.

The Tuolumne Trip Program, which began in 2013, is an example of a successful volunteer driver program. This program was born out of a need to provide ADA transportation in Groveland and Sonora, California in the place of Dial-A-Ride due to limited funding. With the help of five local agencies, within one year of implementation the Tuolumne Trip Program provided more trips than the previous DAR service at around one fourth of the cost.

Opportunities for Increased Coordination

Expanded Regional Services

At present, service from Susanville to Reno is available through Modoc County's Sage Stage on Mondays, Wednesdays, and Fridays and through Susanville Indian Rancheria on Thursdays, Saturdays, and Sundays. Negotiating with either service to provide Reno transportation on

Tuesdays could help improve schedule consistency and more thorough regional transportation to Lassen County residents.

COMPARISON OF ALTERNATIVES AND PERFORMANCE ANALYSIS

A review of Table 15 reflects the wide variation in the impacts of the various alternatives on LRB annual ridership. As also shown in Figure 27, these range from an increase of 23,000 passenger-trips (for the two bus 2-Loop Route) and 20,400 passenger-trips (for a second bus on the City Route) to a reduction of 1,400 passenger-trips (for discontinuation of the West County Route to Chester). Other alternatives with relatively high potential to increase ridership are operating a second tripper bus on the City Route during peak times or the first week of the month (4,000 passenger-trips each) and implementing on-demand stops on the Susanville City Route (2,900 passenger-trips).

The operating cost and subsidy impacts also vary widely, as shown in Figure 28. The most costly options would be operating the 2-Loop Route with two buses (increasing annual subsidies by $85,300) followed by a second bus on weekdays on the existing City Route (up by $75,700). On the other hand, eliminating the West County midday run would decrease operating subsidies by $21,900.

Alternatives Performance Analysis

An analysis of the performance of the service alternatives is presented in Table 21. This considers the key transit service performance measures discussed below.

Passenger-Trips per Vehicle-Hour

The marginal passenger-trips per vehicle-hour (in other words, the increase or decrease of ridership per hour over existing ridership) is a key measure of the productivity of a transit service. Note that some alternatives do not result in a change in vehicle-hours, making this measure inapplicable. As shown in Table 21 and Figure 29, many of the alternatives increase ridership, while increasing service levels. Of these, the options with the higher value indicate a better alternative, as they reflect more passengers served for every additional hour of service. In this category, operating a second bus on the City Route during the first week of the month is shown to be a relatively good alternative, as it generates 13.3 new passenger-trips for every additional hour of service. Other relatively good alternatives are running a second bus on the City Route during weekdays, with 7.6 passenger-trips per additional vehicle-hour, and operating the two bus 2-Loop Route (7.1 passengers per additional vehicle-hour).

Of the alternatives that reduce ridership, the “better” options by this measure are those with relatively low numbers, indicating a smaller loss of ridership per hour of service eliminated. The best option in this category is requiring a minimum of three passengers to run the Eagle Lake Route, which loses only 0.2 passenger-trips for every hour of service reduction.
Elimination of the Eagle Lake Route also scores relatively well by this measure, with 1.0 passenger-trips lost for every hour of service reduction. At the opposite extreme, 3.0 passenger-trips are lost for every hour eliminated by discontinuing the East County Route.

Figure 27: Impact of Alternatives on Annual Ridership

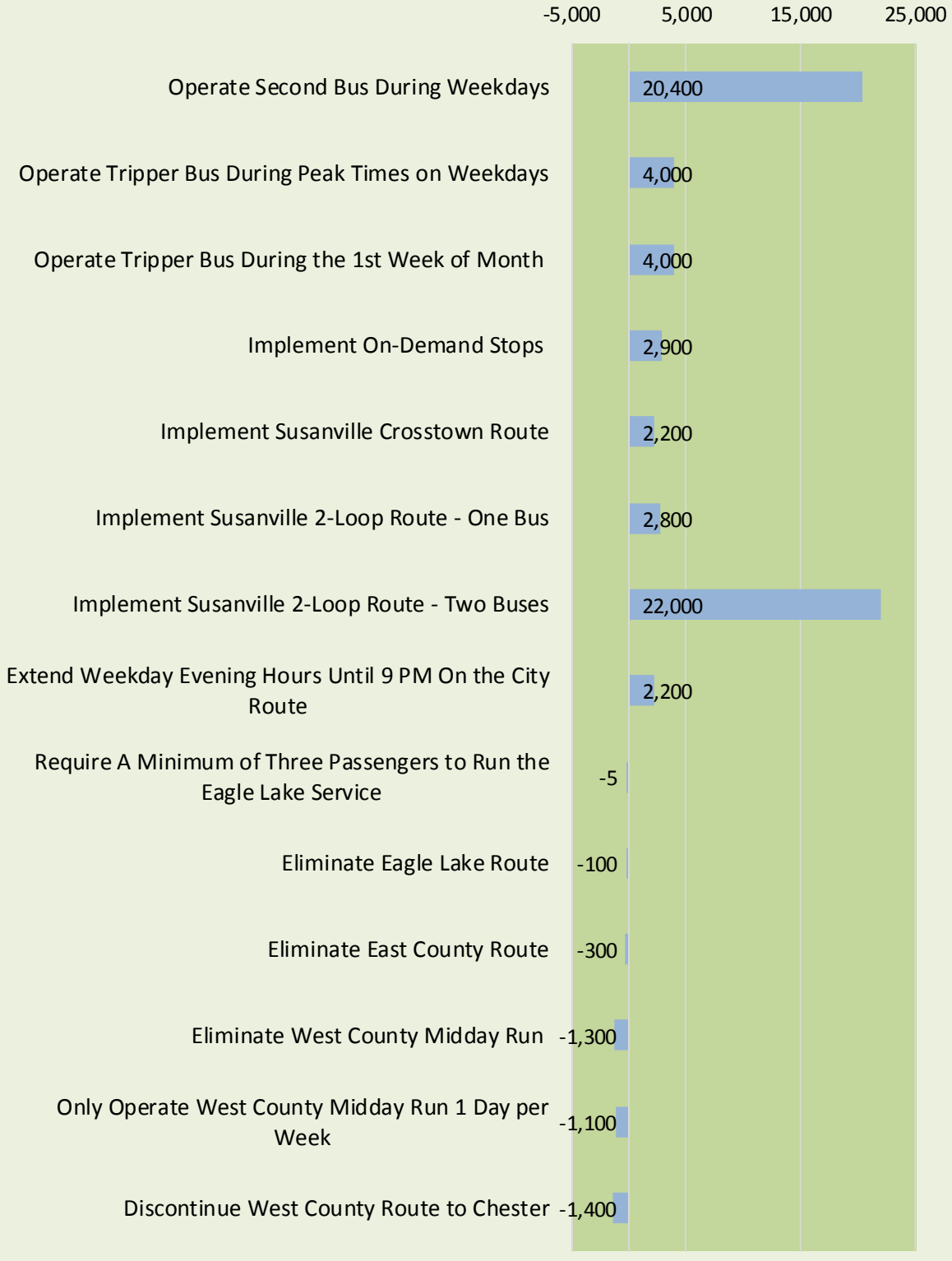


Figure 28: Impact of Alternatives on Annual Operating Subsidy

Figure 29: Impact of Alternatives on Annual Passengers per Vehicle Service Hour

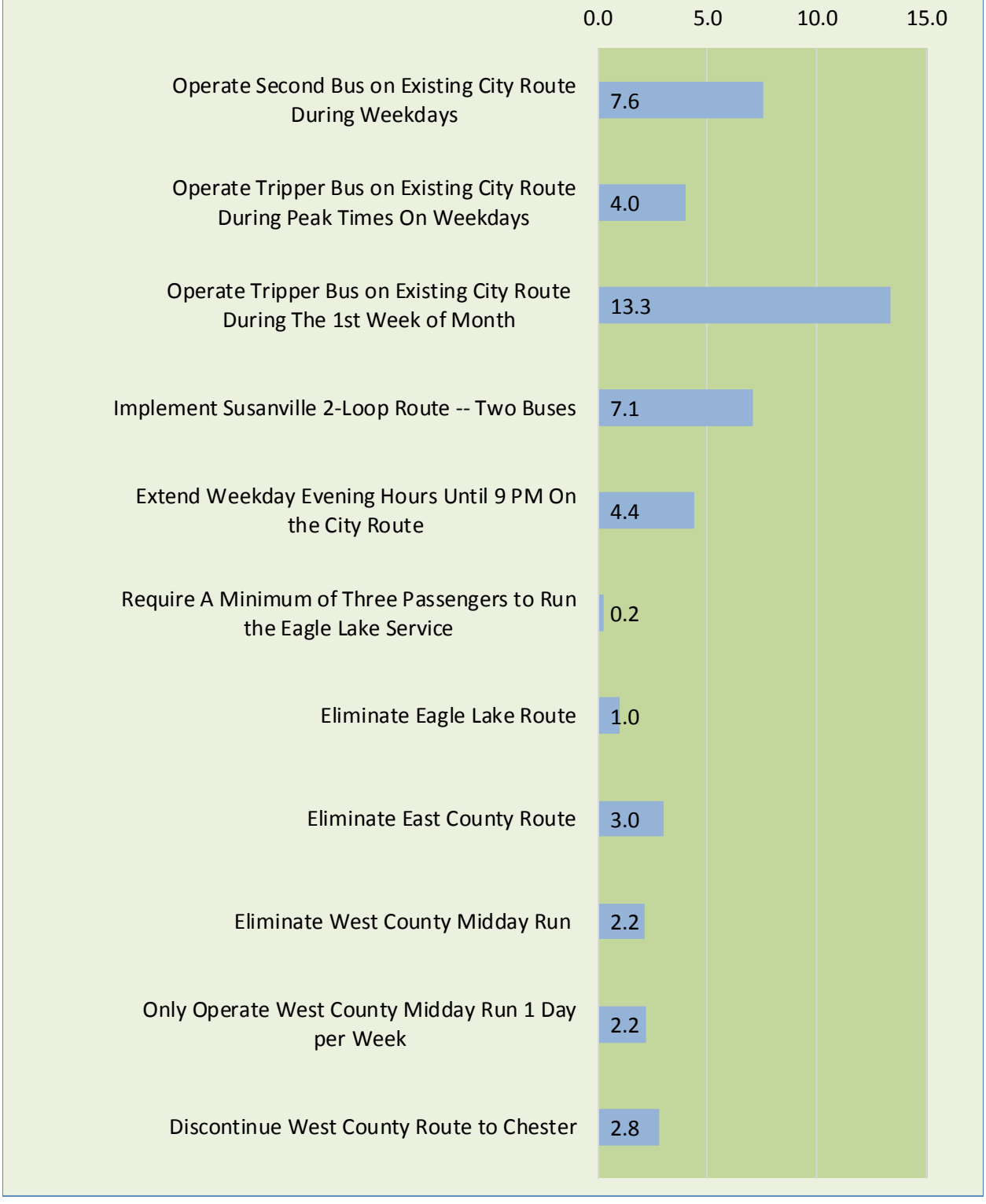


Table 21: Transit Service Alternatives Performance Analysis

Service Alternatives	Performance Measure: Psgr-Trips per Service-Hour	Psgr-Trips per Service-Mile	Cost per Psgr-Trip	Subsidy per Psgr-Trip	Farebox Ratio
Alternatives That Increase Ridership					
Operate Second Bus on Existing City Route During Weekdays	7.6	0.52	$3.99	$3.71	6.9%
Operate Tripper Bus on Existing City Route During Peak Times On Weekdays	4.0	0.26	$7.83	$7.55	3.5%
Operate Tripper Bus on Existing City Route During The 1st Week of Month	13.3	4.44	$2.03	$1.75	13.6%
Implement On-Demand Stops On Existing City Route	--	14.50	$0.03	-$0.24	800.0%
Implement Susanville Crosstown Route	--	-1.00	-$0.23	-$0.50	-120.0%
Implement Susanville 2-Loop Route -- One Bus	--	-0.88	-$0.29	-$0.57	-100.0%
Implement Susanville 2-Loop Route -- Two Buses	7.1	0.60	$4.15	$3.88	6.6%
Extend Weekday Evening Hours Until 9 PM On the City Route	4.4	0.29	$7.09	$6.82	3.8%
Alternatives That Decrease Ridership					
Require A Minimum of Three Passengers to Run the Eagle Lake Service	0.2	0.01	$147.16	$147.16	0.8%
Eliminate Eagle Lake Route	1.0	0.04	$30.00	$29.00	3.3%
Eliminate East County Route	3.0	0.06	$16.33	$16.00	2.0%
Eliminate West County Midday Run	2.2	0.05	$18.38	$16.85	8.4%
Only Operate West County Midday Run 1 Day per Week	2.2	0.05	$17.36	$15.82	8.9%
Discontinue West County Route to Chester	2.8	0.07	$13.64	$12.07	11.5%

Passenger-Trips per Vehicle-Mile of Service

In measuring passenger-trips per vehicle-mile of service, there are several alternatives that result in a change in vehicle-miles without changing vehicle-hours, and thus yield a value for this measure. Two of these (implementing the Susanville Crosstown Route and implementing the Susanville 2-Loop Route with one bus) increase ridership while reducing vehicle-miles, making them the most effective means of increasing ridership by this measure. Of those increasing both ridership and vehicle-miles, the most effective are implementing on-demand stops on the current City Route and operating a second tripper bus during the first week of the month. Of those alternatives reducing service and ridership, the "best" (in that it minimizes the reduction in ridership) is establishing a required minimum of three passengers to run the Eagle Lake Route.

Cost Per Passenger-Trip

By this measure, two alternatives yield negative numbers, which is a beneficial outcome as it results from an increase in ridership and a reduction in cost (implementing the Susanville Crosstown Route and implementing the Susanville 2-Loop Route with one bus).

Of those alternatives that increase ridership and costs, the most effective alternative is implementing on-demand stops on the current City Route, which requires only $0.03 in cost per additional passenger-trip. Of those that reduce ridership along with costs, the best alternative (in that is saves the most cost per passenger-trip eliminated) is requiring a minimum of three passengers to run the Eagle Lake service (calculated to save $147 for every passenger-trip eliminated), followed by eliminating the Eagle Lake Route.

Subsidy per Passenger-Trip

This measure directly relates the key public input (funding) to the key desired output (ridership). The results, as shown in Figure 30, show that three alternatives exhibit the best outcome (an increase in ridership and decrease in subsidy needs), resulting in a negative figure: implementing on-demand stops on the existing City Route, implementing the Susanville Crosstown Route, and implementing the Susanville 2-Loop Route with one bus. Some of the alternatives indicate a positive figure resulting from an increase in subsidy and an increase in ridership. Of these, a lower value reflects a "better" alternative, in that less public funding is needed per additional rider. Operating a second City Route bus the first week of the month is relatively good (in that only $1.75 in subsidy is required per new rider) while the City Route peak period tripper bus is relatively poor, requiring $7.55 per new rider. A positive value can also result from a reduction in subsidy over a reduction in ridership, whereby a larger figure is "better" (more funding saved per passenger lost). At $147, establishing a 3-passenger minimum for Eagle Lake service is a very good alternative by this measure.

Marginal Farebox Return Ratio

This is the ratio of marginal passenger-fares to marginal operating costs. Again, a negative value reflects a positive condition, in that fares increase while operating costs decrease (such as the alternatives to implement the Susanville Crosstown Route and implement the Susanville 2-Loop Route with one bus). Of those alternatives increasing ridership as well as costs, the better alternatives, as reflected by a higher farebox ratio, are implementing on-demand stops on the existing City Route (800 percent) and operating a second bus on the City Route during the first week of the month (13.6 percent).

Comparison of Susanville City Route Alternatives

Table 22 presents a summary of the three one-bus Susanville City Route alternatives, including: implementing on-demand stops on the current City Route, implementing the Crosstown Route, and implementing the 2-Loop Route. As shown in the table, while all three alternatives increase ridership, implementing on-demand stops on the existing route increases it the most (2,900 passenger-trips), followed by the 2-Loop Route (2,800), and the Crosstown Route (2,100).

While implementing on-demand stops on the existing route increases annual service-miles by 200, the other alternatives decrease annual service miles (by 3,200 on the 2-Loop Route and 2,200 on the Crosstown Route). Similarly, the 2-Loop Route and Crosstown Route decrease the annual operating costs (by $800 and $500, respectively), while adding on-demand stops to the current system keeps operating costs the same. Taking into account expected fare revenues, the 2-Loop Route results in the largest decrease in required operating subsidy (-$1,600),

followed by the Crosstown Route (-$1,100), and the existing route with on-demand stops (-$700).

Figure 30: Impact of Alternatives on Operating Subsidy per Passenger

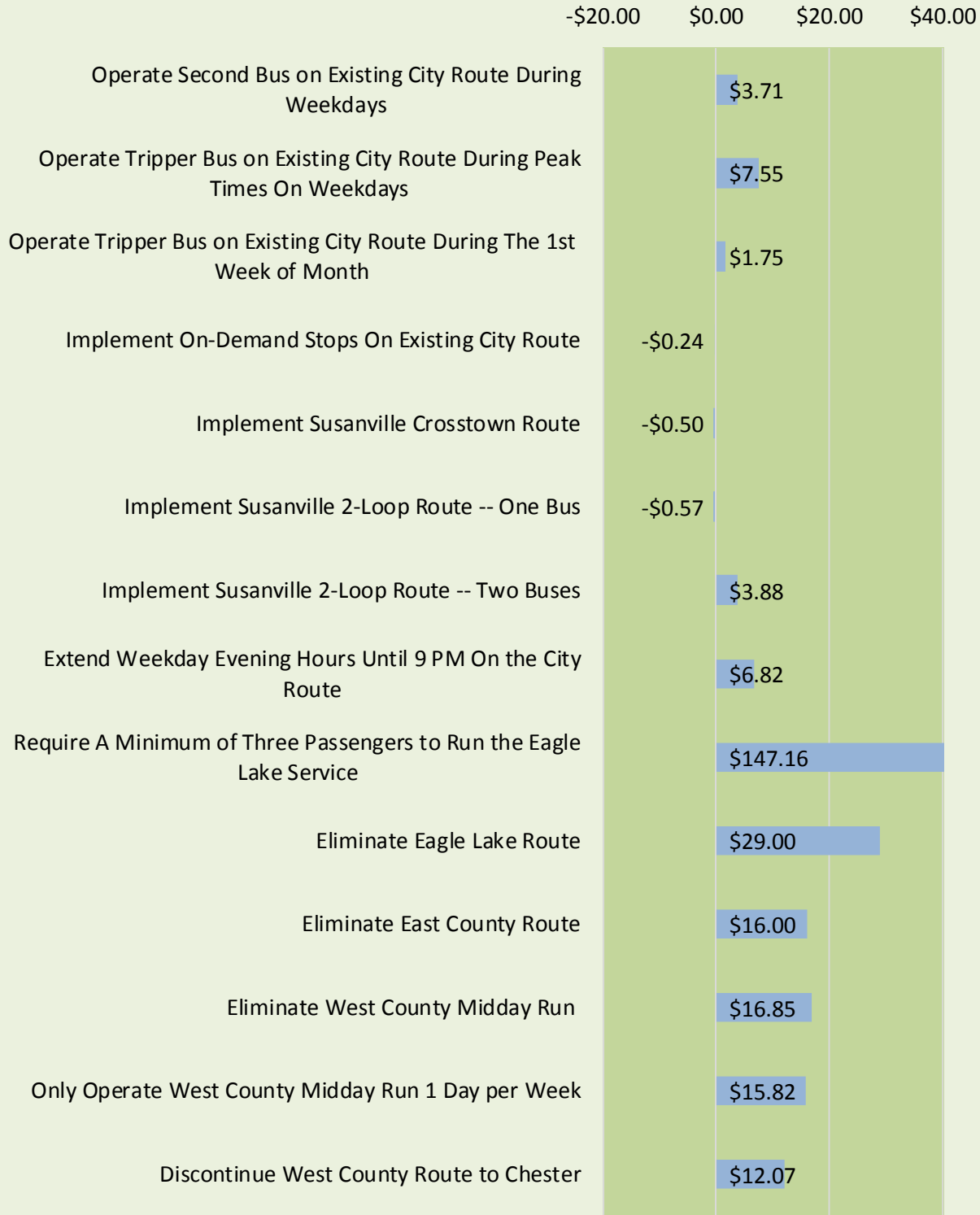


Table 22: Summary of Susanville City Route 1-Bus Alternatives					
Alternative	Service Hours	Service Miles	Ridership	Operating Cost	Operating Subsidy
Existing	3,500	51,800	40,500	$106,500	$95,400
Existing With On-Demand	3,500	52,000	43,400	$106,500	$94,700
2-Loop Route (One Bus)	3,500	48,600	43,300	$105,700	$93,800
Crosstown Route	3,500	49,600	42,700	$106,000	$94,300
Change from Existing					
Existing With On-Demand	0	200	2,900	$0	-$700
2-Loop Route (One Bus)	0	-3,200	2,800	-$800	-$1,600
Crosstown Route	0	-2,200	2,200	-$500	-$1,100
Percent Change from Existing					
Existing With On-Demand	0%	0%	7%	0%	-1%
2-Loop Route (One Bus)	0%	-6%	7%	-1%	-2%
Crosstown Route	0%	-4%	5%	0%	-1%

Though the variations in route structure do offer *slight* reductions in operating miles and costs, they do not provide net ridership benefit compared to implementing on-demand stops on the current route. In addition, a route restructuring would require the implementation and/or relocation of several current stops and would force current passengers to relearn travel patterns, posing numerous impacts on existing stops and passengers. In contrast, implementing on-demand stops on the current route allows for a net reduction in operating subsidy, as well as the largest growth in ridership. In addition, it does not require major infrastructure updates or schedule changes and provides greater flexibility in locating or relocating future stops. In total, these factors make it the most attractive Susanville City Route alternative.

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This chapter discusses the key capital elements of the transit program serving Lassen County. First, fleet improvements are presented. This is followed by an assessment of changes to bus stops. In addition, a transit center, improvements to safety and security, and software upgrades are evaluated.

CAPITAL IMPROVEMENTS

Replacement Vehicles

As shown in Table 23, between FY 2017/18 and FY 2021/22, a total of four existing transit vehicles in the LRB fleet will warrant replacement. In the following five years (between FY 2023 and 2028) the remaining seven LRB fleet vehicles (as well as LRB's support vehicle) will require replacement. Assuming vehicles are replaced with similar type gasoline-fueled vehicles, between now and FY 2022, the total transit vehicle replacement costs will culminate in an estimated $531,900 (which will require a 20 percent local match of funds).

Table 23: Lassen Rural Bus Vehicle Needs

Vehicle		Planned Replacement Year					5-Year	Vehicle Needs 6-10 Years
Type	Seating	FY 17-18	FY 18-19	FY 19-20	FY 20-21	FY 21-22	Total	FY 23-28
Bluebird	41+2 WC	1	0	0	0	0	1	0
GMC	28+2 WC	0	2	1	0	0	3	0
GMC	19+3 WC	0	0	0	0	0	0	3
Gillig	39+2 WC	0	0	0	0	0	0	2
Glaval	20+2 WC	0	0	0	0	0	0	2
Total Number of Transit Vehicles		**1**	**2**	**1**	**0**	**0**	**4**	**7**
Number of Staff Vehicles Needed		0	1	0	0	0	0	0

However, below is a discussion of the pros and cons of other types of vehicles which may be options for vehicle replacements.

Hybrid Electric Vehicles

A vehicle technology gaining popularity among transit systems nationwide is hybrid electric propulsion. Under this arrangement, battery-powered electric motors drive the wheels; the

batteries are charged using a small internal combustion engine (diesel-, gasoline- or alternative-fueled) to power an electric generator. This arrangement provides dramatically lower emissions, as the engine operates within a very narrow and efficient operating range. Hybrid buses which use ultra-low sulfur diesel and particulate matter filters have 90 percent lower emissions than a conventional diesel bus, and tend to have less greenhouse gas emissions than both conventional diesel and CNG buses.

Agencies which have implemented hybrid technologies include New York City Transit, Sunline Transit in Thousand Palms (California), the Roaring Fork Transit Authority (Colorado), the Los Angeles County Metropolitan Transportation Authority, the Orange County Transportation Authority, Omnitrans in San Bernardino, TriMet in Portland (Oregon), King County Metro Transit in Seattle, the Southeastern Pennsylvania Transportation Authority in Philadelphia, and New Jersey Transit.

The National Renewable Energy Laboratory (NREL) has conducted several studies comparing fuel economy and maintenance cost per mile between hybrid electric and diesel transit vehicles for urban fleets. According to a NREL study for Long Beach Transit, fuel economy (miles per gallon) on a gasoline powered hybrid electric vehicles was 4.3 percent lower than on a diesel fueled vehicle. At the same time, maintenance per mile costs were 42 percent less on hybrid electric vehicles than on diesel fueled vehicles. Similar comparisons made for King County Metro Transit in Seattle show that fuel economy in miles per gallon was 27 percent greater on a diesel hybrid vehicle in comparison to an Ultra Low Sulfur Diesel (ULSD) vehicle. In this case study, total maintenance cost per mile was only 4 percent lower for the hybrid vehicles.

Operating costs for a hybrid electric system are typically lower in comparison to conventional diesel- or CNG powered arrangements due to greater fuel economy and reduced brake wear (the batteries are also charged through regenerative breaking, which tends to slow the vehicle while it recoups energy). In addition, hybrid electric buses provide better acceleration and quieter operation than conventional internal combustion engine propulsion systems. Another benefit of hybrid electric technologies is that it does not require the large infrastructure investment that is required for CNG technologies. However, the average price of a hybrid bus is substantial, costing roughly $700,000 for a 35-foot bus when compared to $280,000 for a conventional diesel bus (2011 APTA Public Transportation Vehicle Database). In addition, conventional sealed-gel lead acid battery systems typically last only two to three years, and replacement units cost on the order of $25,000. Better battery technology currently exists that could extend battery life (i.e., nickel metal hydride), but this technology currently costs $35,000 to $45,000 per bus.

Battery-Electric Transit Vehicles

Technology and experience for battery-electric transit vehicles are still fairly new. Some larger transit systems are beginning to purchase battery-electric buses, with incentives being provided by the FTA.

As an example of cost, Marin County recently purchased two battery-electric vehicles for $1.6 million. The cost includes purchase of the buses, GPS and fare collection equipment purchase

and vehicle inspections. The project will be funded with a grant from the Federal Transit Administration, local transportation sales tax revenues dedicated for transit capital projects, and a Bay Area Air Quality Management District grant for zero-emission vehicles. Additionally, through its Hybrid and Zero-Emission Truck and Bus Voucher Incentive Project, the state's air resources board will provide the manufacturer with an $111,000 voucher per vehicle, which reduces Marin Transit's vehicle purchase price.

The vehicles can be charged overnight at the operator's yards rather than requiring specialized fast-charge equipment at transit centers or along the route. Infrastructure improvements to charge buses will be paid for primarily with local vehicle license fee funds dedicated to support electric vehicles.

The two electric buses will supplement Marin Transit District's hybrid fleet of 18 diesel electric buses, along with 30 gasoline paratransit vehicles, 19 gasoline shuttle vehicles and 23 diesel buses. An additional 10 hybrids will be delivered in 2017. As illustrated by this example, adapting a fleet toward zero-emissions is an incremental process, but it is a strategy which Lassen County may consider as part of the vehicle replacement plan, particularly if grant incentives are available.

Beyond the issue of cost, a key factor regarding battery electric buses is the potential range between charges. While buses with a range of 120-150 miles have been available for several years, some manufacturers have recently announced new technology that can operate up to 350 miles between charges – much more than Lassen Rural Bus's daily mileage per bus. However, these claims do not reflect the requirements to also power onboard heating and cooling systems – an important consideration in Lassen County's cold winters and sometimes hot summers.

Charging Stations

Should the LCTC decide to purchase battery-electric vehicles, the vehicles will require charging stations. Depending on the type of vehicle and the battery technology, charging may be completed quickly at in-route charging stations, or overnight at the operations facility. One current issue is that the charging technology is proprietary to the manufacturer. Use of battery electric buses therefore requires the purchase of proprietary charging stations to support the buses, and tends to lock a transit system into a single manufacturer (currently, Proterra, Inc. is the only manufacturer of electric buses).

Gasoline Transit Vehicles

Much of LRB's existing fleet includes gasoline-fueled cutaway vehicles. These are relatively inexpensive and take no special equipment to re-fuel. Currently, LRB's gasoline-fueled vehicles are fueled at a local filling station. The CalACT vehicle purchasing cooperative indicates that a 16-passenger low-floor cutaway costs between $98,000 and $110,000 while the standard floor counterpart costs on the order of $80,000. In order to afford vehicles, gasoline-fueled vehicles will likely be a necessary part of the replacement fleet.

Clean Diesel Transit Vehicles

LRB's larger vehicles are fueled with clean-diesel, which are cheaper than either hybrid-electric or electric vehicles. A heavy-duty low-floor diesel bus costs in the range of $480,000 per vehicle.

Bus Stop Improvements

Table 24 presents an inventory of the assets at each LRB bus stop. As shown, LRB has a good start at providing improved bus stops, with shelters at 6 locations and benches at an additional 13 locations. However, additional improvements are warranted and would increase passenger convenience, the public perception of the transit program and ultimately ridership. Reasonable standards for determining which stops should receive amenities are as follows:

- Stops with more than 20 average passenger boardings per service day should receive a shelter with a bench and trash receptacle. Consideration should also be given in selecting bus shelter locations to serving passengers that are more affected by the weather, such as stops serving senior or medical facilities.

- Stops with more than 10 average passenger boardings per service day should receive a bench.

- All regularly scheduled stops should have a bus stop sign installed.

Given these standards, an estimated 8 stops need shelters; 14 stops need benches, and 26 stops need bus stop signs (illustrated in Table 25). Additionally, given that passenger amenities need regular replacing due to normal wear-and-tear and/or vandalism and use, it is reasonable to include a capital reserve fund dedicated to bus stop amenity purchases.

Sites which require a relatively straight-forward project of pouring a pad in existing right-of-way and installing a shelter have a unit cost of approximately $12,000. Benches are typically $2,400 to $2,600 installed. In total, roughly $131,000 is required in order to provide the comprehensive shelter and bench system described above (not including the sign replacements). The financial plan therefore includes $25,000 per year in funds (beginning in FY 18/19) to be allocated to a long-term stop improvement plan.

Bus Stop Sign Replacement Program

A comprehensive bus stop sign replacement program should be implemented. Bus stop signs are an important part of the overall marketing/public awareness strategy, as they are visible in neighborhoods around the region at all times. They also build confidence for riders (especially first-time riders) who recognize that they are using an established, identified stop. At present, a majority of the bus stops (26 out of 43) do not currently have signage. Bus stop signs average approximately $200 per stop, and an additional $400 if a pole needs to be installed as well. An additional $5,000 should be budgeted per stop if, in order to install signage, the location requires additional construction to become ADA accessible. The financial plan includes roughly

Table 24: Lassen Rural Bus Bus Stop Amenities and Needs

Bus Stop Location	Amenities				Notes
	Sign	Post	Bench	Shelter	
Walmart - Riverside Dr	♦	♦	♦	♦	
Walmart - Parking Lot		♦	♦		Post needs updated bracket
Social Security Office	♦	♦			
S Fairfield & Main St					
Lassen Manor Apts	♦				Shelter at Community Center
Susanville Police Station		♦			Post with "no parking" sign
Susanville Mkt					Riders requested bench
Lassen Historical Museum	♦	♦			
Weatherlow & Chestnut	♦	♦			
Glenn & Joaquin St			♦	♦	Mount sign on shelter
Susanville Garden Apts	♦	♦			Driver suggests bench
Woodside & Paiute Ln	♦	♦			Driver suggests moving closer to school
Susanville Ranch Park			♦	♦	Mount sign on shelter
Cherry Terrace	♦	♦			
Meadowbrook Apts	♦	♦	♦		
N Roops & Nevada St	♦	♦			
City & County Offices	♦	♦			
Gay & Main St			♦		
S Lassen & Cottage St					
Credence High School					
Railroad Depot					
Lassen Social Services					
Modoc St & Shasta St	♦	♦			
Orange & Limoneria					At stop sign
Senior Nutrition Center			♦		
Susan River Apts			♦	♦	Private property
Alexander & Riverside					
Burger King/Chevron Gas					
Main & Ash St	♦	♦			Move to corner of 1st street
4th & Ash St					
Bunyan & Ash St					
Millview Apts	♦	♦	♦		
Lassen College	♦		♦	♦	Private property
Banner Lassen Hospital					Private property
Upper Rancheria			♦	♦	Mount sign on shelter
Numa & Cameron					White post on corner
Casino					
Public Health Complex					
EDD/Alliance for WF Dev					
Ash & 1st St					
Main St & S McDow	♦	♦	♦		
Main St & S Mesa St					
Safeway	♦		♦		

$10,000 per year (starting in FY 18/19) to begin the process of implementing signage throughout the Susanville stops in Table 25 and at applicable regional stops during the plan period and beyond.

Table 25: Recommended LRB Susanville Bus Stop Improvements

Stop	Recommended Improvement		
	Sign	Bench	Shelter
Walmart - Parking Lot	♦	♦	♦
S Fairfield & Main St	♦	♦	
Susanville Police Station	♦		
Susanville Mkt	♦		
Lassen Historical Museum		♦	♦
Glenn & Joaquin St	♦		
Susanville Ranch Park	♦		
Meadowbrook Apts		♦	
City & County Offices		♦	
Gay & Main St	♦	♦	
S Lassen & Cottage St	♦		
Credence High School	♦		
Railroad Depot	♦	♦	
Lassen Social Services	♦		
Orange & Limoneria	♦	♦	
Senior Nutrition Center	♦		♦
Susan River Apts	♦		
Alexander & Riverside	♦	♦	
Burger King/Chevron Gas	♦	♦	♦
4th & Ash St	♦		
Bunyan & Ash St	▼		
Millview Apts			♦
Banner Lassen Hospital	♦	♦	♦
Upper Rancheria	♦		
Numa & Cameron	♦		
Casino	♦	♦	
Public Health Complex	♦		
EDD/Alliance for WF Dev	♦	♦	
Ash & 1st St	♦	♦	
Main St & S McDow			
Main St & S Mesa St	♦		♦
Safeway			♦
TOTAL	**26**	**14**	**8**

Central Transit Hub

There is currently no central transit hub serving Lassen Rural Bus. The provision of a central transit hub would benefit LRB in the following ways:

- It would improve the transfer process among LRB routes by providing a location for local and regional routes, as well as paratransit services, to converge and directly transfer passengers.

- It can provide direct connections with other transit services, such as Sage Stage, Susanville Indian Rancheria, and Lassen Senior Services.

- It would serve as a permanent and very visible transit "presence" within the community, raising the overall awareness of public transit.

As a long-term capital investment, it is important for a transit hub to be able to accommodate the needs of the transit program for at least the next twenty years. Recommended program elements, considering the long range service scenario, are as follows:

Bus Capacity -

- Susanville City Route – 2
- Regional Routes – 2
- Dial-A-Ride – 1
- Total – 5 transit vehicles at a time

Other Elements

Recommended other elements for a simple transit hub consist of the following:

- Outdoor shaded passenger waiting area with benches and two shelters
- Plaza area with additional seating
- One parking space for transit staff
- Bicycle parking
- Outdoor lighting
- Full ADA accessibility

A more extensive design would include a custom structure with unheated (but covered) passenger seating areas, restrooms available only for transit staff, and operational storage space. This type of facility is provided at the transit hubs in Placerville and Grass Valley. While it does not require the costs associated with onsite staffing, it would substantially increase the overall cost of the capital improvement.

It is important to consider whether or not the transit hub should incorporate "Park & Ride" spaces, whereby LRB passengers can park in a central area and easily connect to transit throughout the region. However, the Riverside Drive area already offers a similar opportunity, and experience in other areas indicates that drivers tend to use the "last" park-and-ride opportunity in a community before the transit route heads towards the employment site (thereby reducing their overall travel time). Given this, and the fact that a Park & Ride component would require significant spatial resources, this transit hub plan does not include arrangements for a Park & Ride.

Site Location Considerations

The following are key considerations in identifying the location of a transit center:

- Adequate size to accommodate the transit program, but not so large as to require excessive costs or complicated parcel subdivision and sale or lease to another use.
- Proximity to the center of the local transit service area, to minimize out-of-direction travel time and costs.
- Convenient access for regional transit routes that minimize out-of-direction travel
- Adequate access, avoiding excessive delays for transit routes
- Compatibility with nearby land uses. In particular, transit centers can have noise impacts on nearby residences.
- Convenience to major trip destinations. As the single location most accessible by public transit, it benefits the overall effectiveness of transit services if there is a concentration of transit trip generators (shopping, community facilities, public offices, etc.) within a convenient walk distance of the transit center.
- High visibility, enhancing the community's awareness of transit services
- Appropriate zoning and consistency with community plans
- Availability of adequate utilities
- Lack of known hazardous soils

At present, the vacant lot on the southeast corner of Grand Avenue and 1st Street (across from the Susanville IGA Market) seems a viable a transit hub site. This lot, which is roughly 0.5 acres, could accommodate the three large bus bays along the Grand Avenue side, as well as additional parking for smaller vehicles along 1st Street.

Transit Center Costs

Table 26 presents a planning-level estimate of capital costs associated with a new downtown transit center. As shown, total costs (site preparation, construction, engineering, permitting and construction management costs) are estimated to be on the order of $430,000. This figure does not include land acquisition costs or costs associated with remediation of hazardous wastes.

Table 26: Lassen Transit Hub - Summary of Probable Costs				
	Units		Unit Cost	Cost
Mobilization				$5,000
Staking				$3,000
Curb and Gutter	300	LF	$40	$12,000
Clearing and Grubbing	0.5	ACRE	$25,000	$12,500
Fine Grading	21780	SF	$1	$14,200
Striping				$400
Bus Bays/Concrete Pavement Circulation	2,580	SF	$20	$51,600
Retaining Wall	800	SF	$20	$16,000
Shelters	2	EA	$12,000	$24,000
Benches	4	EA	$2,600	$10,400
Platform/Pedestrian/Bicycle Space	3,000	SF	$15	$45,000
Lighting	4	EA	$8,000	$32,000
Signage				$5,000
Landscaping				$5,000
Subtotal				*$236,000*
Contingency			5%	$11,800
Subtotal				*$247,800*
Bond			1%	$2,500
General Conditions			8%	$19,800
Subtotal				*$270,100*
Overhead and Profit			15%	$40,500
Total Construction Costs				**$311,000**
Site Design & Engineering			25%	$77,800
Environmental				$30,000
Construction Management			3%	$9,300
Total Design, Engineering, Env., Mgmt. Costs				**$117,000**
TOTAL PROJECTED DESIGN, PERMITTING AND CONSTRUCTION COSTS				**$430,000**
Note: Does not include costs for land acquisition.				

Technological Enhancements

At present, Lassen Rural Bus vehicles are equipped with an Automatic Vehicle Tracking system, but the current system has only basic capabilities. While this technology is capable of measuring passenger-counts by type and boarding location, this function is not currently enabled on the LRB buses. In particular, it would benefit the LCTC if passengers could be counted by fare-type. Using this technology to further gauge year-round boarding patterns by type could help provide insight into how to improve current routes and schedules to better meet the needs of LRB riders.

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INTRODUCTION

Marketing is a crucial element of a successful public transit program. Unlike other public services, the usefulness of a transit organization in serving a community depends on the community's awareness of the service. A positive public image encourages greater ridership (which helps to support the program through fare revenues) and also provides greater support among non-riders. It is therefore essential that the service plan developed for Lassen County has a corresponding marketing strategy to ensure that the benefits and opportunities that arise from the transit system are conveyed to current and potential transit users.

This transit marketing plan includes the following elements:

- ✓ Identification of Target Markets
- ✓ Development of Marketing Objectives
- ✓ Market Analysis
- ✓ Development of Marketing Strategies

TARGET MARKETS

Target Populations

As shown in Table 8 in Chapter 3, the demographic profile of Lassen Rural Bus' current ridership largely reflects the transit-dependent populations within the region. Excluding transfers and charters, Far Northern Regional Center (FNRC) riders account for a substantial 36.7 percent of ridership, followed by senior/disabled riders (21.6 percent), and Lassen College students (18.9 percent). In addition, as presented in Table 1 of Chapter 2, 16.8 percent of study area residents live below the poverty line, and 19.7 percent of Susanville residents live below the poverty line.

Per the US Census and Department of Finance, the populations of these transit dependent groups are expected to increase (relative to California as a whole) by 2030, resulting in likely ridership growth and further demand for LRB services. In particular, California Department of Finance forecasts the following growth in the senior population between 2015 and 2020:

- Young Retirees (65-74) – 860 additional residents (31 percent growth)
- Mature Retirees (75-84) – 390 additional residents (33 percent growth)
- Seniors (85 or above) – 73 additional residents (13 percent growth)

Furthermore, the 33 percent growth in the "Mature Retiree" age category (which has a high propensity to use Dial-A-Ride) indicates a need for marketing to seniors. Overall, the relatively large proportion of transit-dependent riders and residents currently in the area, in addition to the expected growth, suggests that Lassen Rural Bus should continue to target these populations.

Other groups to focus on that provide untapped or further ridership potential include:

- Commuters (particularly to the major employment offices, detailed below) who would like to utilize transit for economic or environmental reasons, or a lack of vehicle.

- Secondary students who do not have a driver's license or vehicle and may require transportation to school or other recreational activities.

- Those participating in bicycle trips or walking trips who might benefit from transit assistance for a leg of each trip. Notably, there are opportunities for recreation which can potentially combine walking/biking with transit.

- Rural residents make up around 50 percent of Lassen County residents, and LRB can provide essential lifeline service and regional transportation to these populations. This is particularly important given the limited services in the smaller communities.

Target Service Areas

Overall LRB System

The on-board surveys conducted as part of this study and past boarding and alighting data can help provide insight into the most important service areas for the average LRB rider. Survey results were summarized in Chapter 4 and are detailed in Appendix A.

Per the 147 on-board surveys received, the most common trip origins and destinations are:

- Walmart
- Lassen College
- Diamond Mountain Casino
- Safeway
- Dollar General Store

Additionally, boarding and alighting data from August 27, 2015 to September 2, 2015 shows that the most commonly used stops on the *City Route* are:

- Walmart
- Lassen College
- Safeway
- Banner Lassen Hospital
- Lassen Manor
- Burger King/Chevron
- Main at Mesa St
- Millview Apartments

Similarly, boarding and alighting data from August 3, 2015 to August 15, 2015 shows that the most common destinations on the *regional routes* are:

- Holiday Market (Chester)
- Westwood Community Center
- Main Street & Gay Street
- Johnstonville Park & Ride
- SIAD Gate
- Janesville Park & Ride
- Doyle Post Office

Commuters

In gauging the target service areas for commuters, it is helpful to examine the major employers in Lassen County (based on California Employment Development Department data). The US Department of Defense is the single largest area employer, with over 1,500 employees. This is congruent with the relatively high commuter ridership on the South County Commuter route, and suggests that LRB should continue to target the Sierra Army Depot as a prominent service area. It should be noted, however, that employment fluctuates significantly at this location, which causes some uncertainty for the level of transit demand. Other relatively large regional employers (with at least 100 employees) include: Walmart, Safeway, Susanville Nursing and Rehab Center, Northeast Rural Health Clinic, Lassen Union High School, Lassen Community College, Lassen County, and Banner Lassen Medical Center. All of the major employers listed are currently served (within 0.3 miles) by the Susanville City Route.

Visitor Use

During the public input process, transportation to the Bizz Johnson trail stood out as an attractive service to area visitors and resident bicyclists. Transit currently provides access to the trail at the Depot in Susanville and at Devils Corral on Highway 36.

MARKETING OBJECTIVES

The Transit Marketing Plan establishes several marketing goals and objectives, as described below:

Service Identity and Branding

The Community Survey process suggested that a relatively large portion of Lassen County residents did not know the name of the local transit agency and/or had not seen LRB's logo. It is imperative that LRB utilizes its logo and branding on all buses, marketing materials, signs, and advertising in order to promote a uniform, recognizable agency within the region.

Goal: Ensure Stakeholders and the Public At-Large knows that Lassen Rural Bus is a valued member of Lassen County.

Objectives:

- Promote Lassen Rural Bus at public and community events as feasible, including town hall meetings, college fairs, festivals, county fair, Chamber events, and parades.
- Engage in select traditional and social media advertising with an emphasis on Lassen Rural Bus as a contributing member of the community. Promote any improvements in services, passenger amenities, purchase of new buses or any groundbreaking events.

Goal: Make the LRB logo easily recognizable to riders and non-riders alike.

Objectives:

- All vehicles should have the LRB logo and color scheme prominently displayed
- Bus signs located throughout the communities should be easy to recognize and should serve to increase awareness of the bus routes and service areas.
- Information materials (printed, electronic and otherwise) should maintain the LRB color scheme.

Enhanced Information and Accessibility

A common complaint during the public interest process (particularly during the information session at Lassen Senior Services) was confusion regarding LRB schedules and services. Marketing efforts should be taken to make the LRB system easy and clear to understand for the variety of transit-dependent (and other) groups in the region. This can be achieved through educational events (particularly to the Senior Center, Far Northern Regional Center, and Lassen Community College), simplified scheduling information, clear signage, increased contact between LRB and the public, and the strategic placement of marketing materials.

Goal: LRB information should be readily available and easy to understand.

Objectives:

- Providing clear, consistent schedules in print format and online, and ensure the information is up to date.
- Conduct outreach events to target markets.
- Provide high quality customer service in person and by phone (drivers, front desk staff and dispatchers).

Meet Needs of Community

As discussed above, LRB has done a good job of meeting the specific transportation needs in Lassen County (by providing transportation to the transit-dependent populations, rural populations, Lassen College students, and accommodating commuter needs, to name a few). It is imperative that LRB continue this practice to maintain the effectiveness of the transit program.

Goal: Provide a high quality public transit experience which meets the needs of the public.

Objectives:

- Continue to provide safe, reliable transportation to the residents and visitors of Lassen County.
- Continue to maximize the service coverage to the extent fiscally feasible.
- Continue to provide service frequency which promotes mobility for residents of the county to the extent fiscally feasible..
- Match school and employment schedules to the extent possible by continual contact with administrators and employers.

Potential Ridership Groups

As demographic groups and industries grow and change, it is essential that LRB continue to assess and target potential ridership markets in order to meet the needs of the various groups in the region and ensure on-going system growth.

MARKET ANALYSIS

Transit Need

Transit Cooperative Research Program (TCRP) *Report 161, Methods for Forecasting Demand and Quantifying Need for Rural Transportation* defines transit need as the number of people in a geographic area likely to require public transit service. The mobility gap methodology is one way to quantify transit need. The mobility gap for an area is defined as the difference between the number of trips made by persons who reside in households owning no personal vehicle and the number of trips that would likely be made by those persons if they had access to a personal vehicle. The greater the difference between the two indicates a greater transit need.

Data pertaining to trip rates per household is available through the 2009 National Household Travel Survey (NHTS). The mobility gap is calculated by subtracting the daily trip rate of zero-vehicle households from the daily trip rate of households with one vehicle.
According to the *2012 Transit Cooperative Research Program (TCRP) Document 58,* which relies on the 2009 NHTS data, the mobility gap for rural California is 1.1 trips per day.

To calculate transit need for each sub-area of the study area, the number of zero-vehicle households was multiplied by the mobility gap number (1.1). Table 27 shows this information for the Block Groups in the study area.

In general, this approach establishes a level of transit need. As shown, to make up for the gap in mobility, 730 daily one-way transit trips need to be provided in Lassen County, of which 542 need to be provided in Susanville. Assuming roughly 300 days per year of service the annual mobility gap is 219,000 for the study area and 162,600 for Susanville. This incredibly high number of transit trips reflects the need if an unlimited level of transit service were provided, which in reality is not feasible. Nonetheless, providing a relative level of need is instructive in determining where the greatest shortcomings may exist.

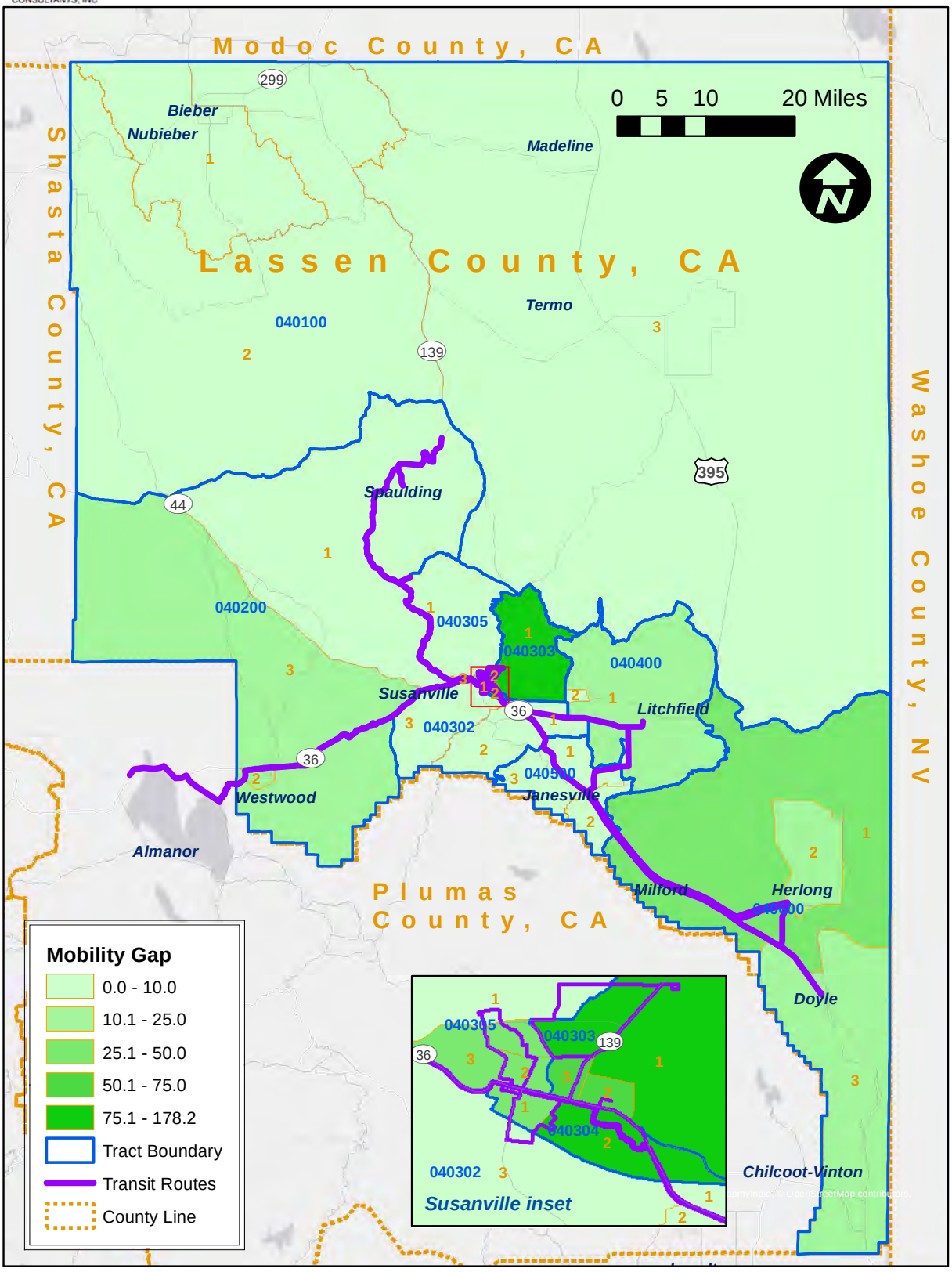
Table 27: Lassen TDP Transit Needs Analysis

Census Tract	Block Group	Description	Zero Vehicle Households	Mobility Gap	% Total Mobility Gap
401	1	Bieber/Nubieber	3	3	0%
401	2	Ash Creek Wildlife Area	7	8	1%
401	3	Madeline/Termo	1	1	0%
402	1	Spaulding	8	9	1%
402	2	Westwood	17	19	3%
402	3	Norville, Lasco, Coppervale	16	18	2%
403.02	1	Lake Leavitt	5	6	1%
403.02	2	South of Gold Run	3	3	0%
403.02	3	North of Gold Run	0	0	0%
403.03	1	Lassen CC, Outskirts	162	178	24%
403.03	2	E of Hall, N of Main	53	58	8%
403.03	3	W of Hall, E of Grand, N of Main	65	72	10%
403.04	1	Susanville HS Area	26	29	4%
403.04	2	E. of Alexander, S of Main	129	142	19%
403.05	1	Susanville Ranch Park to Eagle Lake	4	4	1%
403.05	2	E of Roop, N of Main	30	33	5%
403.05	3	W of Roop, N of Hwy 36	28	31	4%
404	1	Litchfield, Standish	19	21	3%
404	2	Correctional Facilities	0	0	0%
405	1	East of Hwy 395/Janesville	8	9	1%
405	2	South of Janesville	0	0	0%
405	3	Janesville	9	10	1%
406	1	Milford, Wendel, Honey Lake	42	46	6%
406	2	Herlong	16	18	2%
406	3	Doyle/S. County	13	14	2%
		Total Study Area	664	730	100%
		City of Susanville	493	542	74%

Source: LSC Transportation Consultants, Inc.

Figure 31 graphically displays this data at the block group level with an overlay of existing transit services. One important conclusion of this analysis is the location of the highest need. As shown in the table, the Lassen Community College area's trip need of 178 daily-trips accounts for 24 percent of the total study area trip need. The area east of Alexander/south of Main has the next highest trip need, at 142 daily-trips. The fact that the areas of highest need are currently served by the Susanville City Route suggests that, for the most part, LRB does a good job of addressing transit need in the region. Efforts should be taken to ensure that residents in these areas area educated about the City Route and paratransit resources available.

Figure 31
Mobility Gap by Block Group



MARKETING STRATEGIES

This section outlines a marketing plan to be used in reaching the target markets and working towards the objectives previously discussed. The strategies are based on marketing opportunities identified through the study process, particularly with regards to feedback gathered during the public input process. The strategies are grouped into the following three facets of the marketing presence:

- Public Outreach and Education
- Media Presence
- Branding

Public Outreach and Education

The following efforts should be pursued in order to ensure that the public is aware and educated about LRB services:

Senior Education – At least once per year, LRB staff should attend a Lassen Senior Services lunch event, or host a separate information event, to educate seniors about bus stops and routes near their homes and paratransit.

In addition to providing clarifying information, this will help strengthen the relationship between Lassen County senior citizens and LRB. An effective strategy would be to bring along a bus, and take seniors for a short ride, in which they use the SPOT app, "pay" for a fare, hand the fare to the driver, drive around the block, and request a stop on their return. Actually "using" the system is important for seniors who may have no prior experience with riding the bus, and who are more cautious about new experiences.

Herlong – On-going communication should take place between LRB and the Sierra Army Depot personnel to ensure that commuter needs are covered. If deemed warranted, LRB staff should hold a transit information session with Sierra Army Depot employees.
If possible, marketing materials, such as copies of the Rider Guide, should be distributed to the Sierra Army Depot offices.

Lassen College – Lassen College students make up a relatively large portion of LRB ridership (18.9 percent, excluding transfers and charters). In addition, due to the short-term nature of academic programs, there is constant turnover among the student body. LRB should take steps to ensure that there is consistent recurring outreach and education at Lassen College. At minimum, LRB should aim to staff an information table at the college once every semester.

Events – Transit service to special events can strengthen the perception of transit, but it can also be damaging if information is not readily available. In addition to advertising that transit can get you to special events, information about schedule and route changes needs to be well advertised for event attendees as well as to regular passengers for whom service might be interrupted or changed. Drivers should emphasize upcoming changes to their passengers just prior to and during special events.

Customer Service – Steps should be taken to ensure that there is adequate customer service via the dispatcher for potential and current LRB riders. This could involve the implementation of dispatcher hours on Saturday and increased customer service training for the dispatcher.

Bizz Johnson Trail Shuttle – The LRB West County Route provides a convenient means for visitors and residents to enjoy the Bizz Johnson National Recreation Trail. Bikers can leave a car in Susanville and taking the route to either Devil's Corral (for a 7.4 mile downhill ride) or to Westwood (for the full 31.8 mile ride, predominately downhill)

A page on the LRB site should be established that provides a simple summary of how best to use LRB to access the trail, such as the following:

> *Use the Lassen Rural Bus for a great day on the Bizz Johnson Trail! You can board the West County Route in Susanville (at Main & Gay Street) with your bike and ride the bus to either Devil's Corral (for a 7.4 mile downhill ride) or Westwood (for a 31.8 mile ride, largely downhill). On weekdays, westbound buses leave Susanville at 5:26 AM, 12:17 PM, or 5:22 PM). On Saturdays, you have the option of boarding the bus at 8:20 AM for a day ride or 4:00 PM for an evening ride. Once back in Susanville, it is only a 5 block ride back to your car at Main & Gay. One-way tickets are $2.00 to the Devil's Corral and $3.00 to Westwood.*
>
> *Additionally, you can board the bus at Westwood for transportation back to Susanville after a day on the Bizz Johnson Trail. Catch the eastbound bus at the 6:54 AM, 1:55 PM, or 7:00 PM on weekdays, and 10:03 AM or 5:42 PM on Saturdays. Tickets are $3.00 per return trip.*

Putting this information on the LRB site would allow the transit program to easily update it if schedules change. Links to this information should be created on other visitor-oriented sites, such as the Lassen County Chamber of Commerce and the Lassen Land and Trails Trust.

Media Presence

In order to grow LRB's media presence, the following steps should be pursued:

ETA SPOT – LRB has taken the progressive step of providing real-time information on bus locations via the internet, but awareness by the public appears to be low. SPOT should be promoted through the LRB and LCTC websites, as well as promotions through community events. Additionally, monitoring of use should be tracked and a cost-benefit analysis should be conducted to determine if it is worthwhile to renew the application.

Facebook – LRB currently is actively posting on Facebook. This year's posts have successfully engaged the community, with photos of new buses, holiday wishes, information on SPOT, information on drivers, and general greetings. Staying consistent with Facebook updates is a straightforward way to maintain dialogue and presence in the community. This could be further enhanced by adding service alerts to the site.

Printed Media – The LRB Rider's Guide provides a comprehensive source for information on all LRB services. Posting the version designed for printing on the website results in some pages that mix information for the various routes in a confusing manner – a version that more clearly provides information on the web should be developed and posted. In addition, the Rider's Guide could be improved and streamlined in the following ways:

- Rather than showing the fares between every major boarding and alighting location, indicate the fare zones on the map, and show the fares between each zone in a simplified fare table for each route. This reduces the complexity of the fare tables.

- The full list of "Bus Regulations" can be provided in a separate document and summarized on the Rider's Guide.

- The Susanville City Route schedule could be simplified by only listing the primary stops on the schedule and showing all of the stops on the map. However, this should not be implemented until the majority of stops have signs installed to identify their location.

- Due to the relatively small proportion of riders who utilize the bicycle rack, the "Bicycle Guide" can be provided in a separate document.

- It would be helpful to list the information on "Customer Service" and "Holidays" on the front page with the rest of the general rider information.

- The document should be reviewed for typos.

- Further details on SPOT app would be useful (at present, the only information on the app is provided by QR link to the app, and not all passengers use code readers).

Simple informational posters (such as 11" X 17" in size) are effective in ensuring that residents of rural communities are aware of their transit options. A poster describing the available services, the SPOT site, and the availability of additional information via the web page and by phone should be developed. This should be distributed to organizations and stores for posting if possible, including the following: Sierra Army Depot, IGA Market, Herlong Market, Captain Andys Mountain Market (Westwood), Leavitt Lake Store, Westwood Community Center, Johnstonville Store, Payless Gas (Janesville), Heard's Market, Doyle Senior Center, Old Milford Store, Lassen Senior Center, Lassen College, and any other community centers or markets frequented by potential or current LRB riders.

Website – As detailed in earlier chapters, there are several opportunities to improve the LRB website, including:

- Present the LRB logo on all downloadable maps, routes, and schedules

- Clearly state the days and times of operation, either next to each route or at the top of the page

- Include a link and/or reference to Dial-A-Ride information, which is located on a separate page

- Within the DAR page, provide more detailed information on service area

- Update the City Route schedule link to display the schedule instead of route map

- Construct a webpage solely for Lassen Rural Bus, as it is relatively difficult to find within the LCTC website unless one follows the Google link

Public Presence

The comprehensive long-range bus stop improvement plan outlined in Chapter 7 will eventually ensure that all LRB stops are marked with a sign, and major stops will also provide a shelter. This will eventually increase LRB's physical presence throughout Susanville.

Branding

The transit systems current branding (Lassen Rural Bus) and logo are relatively straightforward and not particularly engaging, in large part because the graphics are monochrome (a basic blue) which is somewhat lost on the white background, as shown in the images below. However, the current branding does clearly reflect the purpose of the organization and its services across Lassen County. As this branding is well-established in the community, and given the costs associated with developing new branding and creating new marketing materials, a re-branding effort would not be cost-effective at this time.

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The following plan presents service programs, capital improvements, and financial strategies to guide the improvement of public transit services in Lassen County over the coming five years. This chapter presents the individual plan elements in brief, based on the substantial discussions presented in previous chapters; the reader is encouraged to refer to previous chapters for additional background on the plan elements.

SERVICE PLAN

The appropriate service elements included in the overall plan reflect the relative balance between the desire for ridership growth and the financial realities of available operating funding. The service enhancements recommended are described below, followed by a discussion of several other plan elements to be implemented if there are changes in funding or system wide needs.

Susanville City Route

On-Demand Stops on Susanville City Route

As evaluated in Chapter 6, implementing on-demand stops along the Susanville City Route by converting five current stops to on-call stops and adding an additional stop at North Fairfield Ave and Paul Bunyan Road will improve overall on-time performance, provider shorter average travel times, slightly reduce costs, expand service to a new area, and increase system efficiency. In a special meeting of the LTSA board in March, 2017, a route adjustment to serve the new community pool on South Street was approved, as well as three on demand stops at the Upper Rancheria, Numa Road and Cameron Road, and Susan River Apartments. As shown in Table 28, this change will require $100 in annual operating costs per year. As shown in Table 29, by the end of the 5-year plan, this enhancement will produce 3,000 additional annual one-way passenger-trips, culminating in $800 in annual fare revenue (Table 30).

It should be noted that more extensive options to reconfigure the Susanville City Route discussed above (such as the 2-Loop Plan) are not recommended, as no ridership benefit was found over the provision of on-demand stops and as they would require establishment of new bus stop.

Provide a Tripper Bus during the First Week of Each Month

The addition of a second tripper bus during the first week of each month will help to alleviate the on-time and service reliability problems on the City Route (identified throughout the public input processes). By the end of five-year period, this plan element will increase annual operating costs by $8,900 (illustrated in Table 28).

Table 28: Lassen Rural Bus TDP Estimated Operating Cost

Plan Element	FY17-18	FY18-19	FY19-20	FY20-21	FY21-22	5-Year Plan Total
Base Case Operating Cost [1]	$1,248,100	$1,286,400	$1,305,700	$1,325,400	$1,345,400	$6,511,000
Service Plan Elements						
On-Demand Stops on Susanville City Route	$100	$100	$100	$100	$100	$500
Tripper Bus During 1st Week of Month	$8,300	$8,500	$8,600	$8,700	$8,900	$43,000
Min. 3 Psgrs for Eagle Lake Route	-$700	-$700	-$700	-$800	-$800	-$3,700
Subtotal: Service Plan Elements	*$7,700*	*$7,900*	*$8,000*	*$8,000*	*$8,200*	*$39,800*
Percent Change	*0.6%*	*0.6%*	*0.6%*	*0.6%*	*0.6%*	
Net Operating Cost [2]	$1,255,800	$1,294,300	$1,313,700	$1,333,400	$1,353,600	$6,550,800

Note 1: The FY 2017-18 costs are based on LRB 2015-16 costs and adjusted for inflation.
Note 2: This analysis assumes an annual inflation rate of 1.5 percent.
Note 3: Plan elements to be implemented in July 2017.
Source: LSC Transportation Consultants, Inc.

Table 29: Lassen Rural Bus TDP Estimated Ridership

Plan Element	FY17-18	FY18-19	FY19-20	FY20-21	FY21-22	5-Year Plan Total
Base Case Ridership [1]	41,100	41,400	41,600	41,900	42,200	249,000
Service Plan Elements						
On-Demand Stops on Susanville City Route	1,900	2,700	3,000	3,000	3,000	13,600
Tripper Bus During 1st Week of Month	0	2,700	3,100	3,700	4,200	13,700
Min. 3 Psgrs for Eagle Lake Route	-5	-5	-5	-5	-5	-24
Subtotal Plan Elements	*1,900*	*5,400*	*6,100*	*6,700*	*7,200*	*27,300*
Percent Change	*4.6%*	*13.0%*	*14.7%*	*16.0%*	*17.1%*	
Net Ridership	43,000	46,800	47,700	48,600	49,400	235,500

Note 1: Base case ridership on local fixed routes assumed to grow with population (0.7%); Eagle Lake base case ridership assumed to not change.
Source: LSC Transportation Consultants, Inc.

Table 30: Lassen Rural Bus Estimated Farebox Revenues

Plan Element	FY17-18	FY18-19	FY19-20	FY20-21	FY21-22	5-Year Plan Total
Base Case	$33,500	$33,700	$33,900	$34,100	$34,400	$169,600
Service Plan Elements[1]						
On-Demand Stops on Susanville City Route	$500	$700	$800	$800	$800	$3,600
Tripper Bus During 1st Week of Month	$0	$700	$900	$1,000	$1,200	$3,800
Min. 3 Psgrs for Eagle Lake Route	-$6	-$6	-$6	-$6	-$6	-$30
Subtotal Plan Elements	$500	$1,400	$1,700	$1,800	$2,000	$7,400
Percent Change	*1.5%*	*4.2%*	*5.0%*	*5.3%*	*5.8%*	
Net Farebox Revenues	$34,000	$35,100	$35,600	$35,900	$36,400	$177,000

Source: LSC Transportation Consultants, Inc.

At the same time, this system improvement will increase ridership by 4,200 passenger-trips per year as the improved service reliability will attract new riders. This in turn will result in an additional $1,200 in annual farebox revenues. This service should be implemented in the beginning of FY 2017-18.

Regional Routes

Require a Minimum of Three Passengers to Operate the Eagle Lake Route

The Eagle Lake Route represents the least efficient service offered by Lassen Rural Route. Ensuring that a minimum of three passengers are required to operate the 3-hour and 15-minute roundtrip will help to increase productivity on the route. As shown in Table 28, by FY 21-22, this plan element will reduce annual operating costs by $800. This change will result in a decrease of five annual passenger-trips (Table 29), reducing annual farebox revenues by a mere $6 (Table 30). This service should be implemented in FY 2016-17.

Other Potential Transit Service Changes

If the future needs of the system focus on expanding ridership and if available operating funding allows, the following alternatives have a particularly high potential:

- Operate second bus during weekdays on current City Route – While this alternative comes with the second-highest required operating subsidy requirement, it has the potential to increase ridership by a substantial 19,100 passenger-trips over the one-bus plan with on-demand stops. An initial step to implementing this increased level of service could be to first provide half-hourly service only between the hours of 9 AM and 5 PM on weekdays. This preliminary step would increase annual ridership by 16,800 passenger-trips with a required operating subsidy of $45,400 per year.

- Extend evening hours until 9 PM – Though it comes at an annual operating subsidy of $15,000, this alternative has the potential to increase ridership by 2,200 passenger-trips, and it can help to further meet the needs of Lassen College Students and other Lassen County residents who desire evening transportation options (as identified in the public interest process).

On the other hand, if future funding limitations require reductions in operating subsidies, the following alternatives have relatively high potential in that they reduce costs while minimizing impact on ridership levels:

- Eliminate West County midday run – Operating only two West County runs per day would result in a loss of only 1,300 annual passenger-trips, while reducing operating subsidies by a significant $21,900 per year.

- Discontinue West County Route to Hamilton Branch and Chester – The Hamilton Branch and Chester stops provide valuable transfer opportunities to Plumas County Transit and roughly 1,400 passenger-trips per year. However, serving these areas requires

significant extra mileage, necessitating $19,100 in annual operating costs. If, in the future, there is a need to cut costs, eliminating service to this area warrants further review, keeping in mind that it may impact grant funding opportunities.

CAPITAL IMPROVEMENTS

Transit services require ongoing capital investment in facilities and rolling stock. Capital investments in both vehicles and passenger facilities can also attract additional riders, while improving the quality of service and safety/security of existing riders.

Transit Fleet Improvements

Foremost, the ongoing replacement of the transit fleet is essential for the long-term sustainability of the LRB program. The following vehicles will require replacement over the coming years (shown in Table 31):

- FY 17/18: 1 Bluebird 41+2 WC Bus
- FY 18/19: 2 GMC 28+2 WC Buses, 1 Staff Vehicle
- FY 19/20: 1 GMC 28+2 WC Bus

As shown in Table 31, the vehicle costs for vehicles similar to what is currently in use will amount to roughly $531,900 by the end of the 5-year plan period. However, as discussed in Chapter 7, hybrid-electric or battery-electric vehicles may be a preferred option depending on grant opportunities. As technology and grant funding is in constant flux, it is important to review the best options nearer to the time of vehicle procurement.

Table 31: Lassen TDP Capital Plan

Plan Element	FY17-18	FY18-19	FY19-20	FY 20-21	FY21-22	5-Year Plan Total
Vehicles Needed [1]						
Number of Vehicles						
Bluebird - 48/2 WC	*1*	*0*	*0*	*0*	*0*	*1*
GMC - 28/2 WC	*0*	*2*	*1*	*0*	*0*	*3*
Staff Vehicle	*0*	*1*	*0*	*0*	*0*	*1*
Cost of Vehicles						
Bluebird - 48/2 WC	$350,000	$0	$0	$0	$0	$350,000
GMC - 28/2 WC	$0	$97,900	$49,000	$0	$0	$146,900
Staff Vehicle	$0	$35,000	$0	$0	$0	$35,000
Total Cost	$350,000	$132,900	$49,000	$0	$0	$531,900
Bus Stop Improvements						
Shelter and Bench Improvements	$0	$25,000	$25,000	$25,000	$25,000	$100,000
Sign and ADA Improvements	$0	$10,000	$10,000	$10,000	$10,000	$40,000
Total Cost	$0	$35,000	$35,000	$35,000	$35,000	$140,000
Total	$350,000	$167,900	$84,000	$35,000	$35,000	$671,900

Note 1: Base case ridership on local fixed routes assumed to grow with population (0.7%); Eagle Lake base case ridership assumed to not change.

Source: LSC Transportation Consultants, Inc.

Bus Stop Improvements

This plan includes a program to enhance passenger facilities at key bus stops in Susanville. As discussed in greater detail in Chapter 3, above, the following changes will be pursued, beginning in FY 2018/19:

- $25,000 allotted per year for bench and shelter updates, to eventually completely updated 8 shelters and 14 benches outlined in Table 25 and included in Table 31.

- $10,000 per year towards implementing the 26 bus signs identified in Table 25 and included in Table 31.

Other Potential Capital Improvements

Susanville Transit Center

A transit center in central Susanville would be a long-term benefit to public transportation services in Lassen County and northeastern California.

As evidenced by transit passenger facilities in similar communities such as Oroville, Yreka and Grass Valley, a transit center improves the operational effectiveness as well as the public perception of transit services. While developing a transit center must be secondary to ensuring timely replacement of transit vehicles (and while local staff resources available to the subject are limited), it is recommended that efforts to develop and construct a transit center occur over the short-range transit planning period. This should consist of the following:

- Apply for grant funding for an initial planning and site selection study, such as through the FTA 5304 program or the Community Transportation Association of America's Rural Passenger Transportation Technical Assistance Program.

- Using the site program discussed above as a starting point, develop a final site program, assess the site options, and identify a specific site and conceptual plan.

- Apply for grant funding for land acquisition, engineering, permitting and construction, such as through the CMAQ program or 5339 program.

- Prepare plans and environmental documents, and purchase the property.

- If necessary, retain construction management services.

- Construct and open the new facility.

As the schedule for this effort will be driven by grant availability, it is not included in the Financial Plan table (Table 32).

Table 32: Lassen TDP Financial Plan

	FY17-18	FY18-19	FY19-20	FY20-21	FY21-22	5-Year Plan Total
OPERATING PLAN						
Base Case Costs	*$1,248,100*	*$1,286,400*	*$1,305,700*	*$1,325,400*	*$1,345,400*	*$6,511,000*
Operating Plan Elements *(From Table 28)*	$7,700	$7,900	$8,000	$8,000	$8,200	$39,800
Total Operating Costs	$1,255,800	$1,294,300	$1,313,700	$1,333,400	$1,353,600	$6,550,800
Operating Revenues						
Annual FTA - 5311	$180,805	$175,381	$170,120	$165,016	$160,065	$851,387
Annual LTF	$738,419	$778,443	$798,713	$819,318	$839,963	$3,974,856
Annual STA	$140,900	$143,700	$146,600	$149,500	$152,500	$733,200
Fare Revenues	$195,676	$196,776	$198,268	$199,566	$201,072	$991,357
TOTAL OPERATING REVENUES	**$1,255,800**	**$1,294,300**	**$1,313,700**	**$1,333,400**	**$1,353,600**	**$6,550,800**
Capital Plan						
Capital Plan Element Costs *(From Table 31)*	$350,000	$167,900	$84,000	$35,000	$35,000	$671,900
Capital Revenues						
FTA 5310 Funds - Stop Improvements	$0	$35,000	$35,000	$35,000	$35,000	$140,000
FTA 5339 Funds - Vehicle Purchases	$0	$97,900	$49,000	$0	$0	$146,900
STIP - Vehicle Purchases	$350,000	$35,000	$0	$0	$0	
TOTAL	**$350,000**	**$167,900**	**$84,000**	**$35,000**	**$35,000**	**$671,900**

Source: LSC Transportation Consultants, Inc.

FINANCIAL PLAN

The service and capital improvements discussed above are planned to be funded through a combination of fare revenues, state/federal grants, and local funding. The following methodology was utilized in developing the Financial Plan:

- First, forecasts of annual operating and administrative costs were developed, as presented in Table 28 for FY 2018/19 through FY 2021/22. "Base case" operating and administrative cost forecasts were estimated based on the existing budget. A 1.5 percent average annual inflation rate (based on the inflation rate reflected in the contractor agreement) is applied to estimate base case costs in the absence of any change in service levels. Next, operating and administrative cost estimates were identified for each TDP element, based upon the analyses presented in Table 15. These costs were also factored to reflect the assumed rate of inflation. Operating and administrative costs by the fifth year of the Plan will total approximately $1,353,600, which is $8,200 (or 0.6 percent) over the FY 21-22 base-case cost of $1,345,400. It should be noted that these costs increases and operating hours do not exceed contract maximums and would not require a renegotiation of the existing or optional contracts through FY 20-21.

- Next, ridership for each TDP element was estimated, as presented in Table 29. The "base case" ridership reflects expected ridership with no changes in service. The

ridership impact of each plan element is then identified and summed. As new services do not immediately attain the full potential ridership, ridership on new services is factored to reflect gradual ridership change in the first years depending on the nature of the service element. In addition, ridership change is factored to reflect the 0.7 percent annual increase in the population forecast by the California State Demographer's office. By FY 2021/22, ridership is forecast to equal 49,400 one-way passenger-trips per year, which is 7,200 trips over the base case FY 2021/22 forecast of 42,200. This indicates that the Plan will result in a 17.1 percent increase in ridership by the end of the plan period.

- Based on the ridership figures presented in Table 29, the estimated farebox revenues are presented in Table 30. As presented, by the final year of the plan period, the service expansion elements will increase fare revenue throughout the five-year plan period by $2,000 per year. Including fare revenue generated by growth in ridership on existing services, annual fares are forecast to grow by $2,900 over current levels, equal to an 8.7 percent increase.

- The next element necessary in the development of the TDP is estimation of the capital cost for vehicles and bus stop improvements, as shown in Table 31 for each year of the TDP period. It should be noted that an annual inflation rate of 2.0 percent is reflected in several of these figures, where appropriate. Based on the Capital Plan, presented above, the capital costs total $671,900 over the five-year period.

The results of Tables 28 through 31 were used to develop the Financial Plan, as presented for each of the five years of the Transit Development Plan period in Table 32. In addition to passenger fare revenues, this Financial Plan incorporates the funding sources discussed below.

Operating Funding Sources

Funding sources for the operating plan are discussed in detail in the following paragraphs and illustrated in Table 32.

- FTA Section 5311 (Rural Program) funds are used for operations. These funds are based on the 2016/17 allocated amount provided by Caltrans. In recent years, these funds have been decreasing, and this trajectory is represented in the Financial Plan, with a three percent decrease each year.

- Annual STA (State Transit Assistance) funding is based on the 2016-17 apportioned amount and grown by 2.0 percent interest each year.

- Annual LTF (Local Transportation Fund) revenues are based on the estimated FY 15-16 budgeted amount and adjusted to cover the remaining operating expenses (ensuring they do not go beyond the total annual LTF funds available) after 5311 and STA funds are accounted for.

Capital Funding Sources

Capital funding sources are planned to consist of the below, as presented in the bottom portion of Table 32.

- FTA Section 5310 (Enhanced Mobility) funding for the annual stop improvement project
- FTA 5339 (Buses and Bus Facilities) funds will be used towards the vehicle purchases throughout FY 2018-19 and FY 2021-22
- STIP (State Transportation Improvement Program) grant funding for the purchase of a GMC bus in FY 2017-18 and staff support vehicle in FY 2018-19

IMPLEMENTATION PLAN

Fiscal Year 2017-18

- Implement on-demand stops on the Susanville City Route
- Implement a tripper bus on the Susanville City Route during the first week of the month
- Require a minimum of three passengers to operate the Eagle Lake Route
- Purchase one new bus

Fiscal Year 2018-19

- Purchase three buses
- Purchase one staff support vehicle
- Begin shelter and bench improvements
- Begin bus sign and ADA improvements

Fiscal Year 2019-20

- Purchase one bus
- Continue shelter and bench improvements
- Continue bus sign and ADA improvements

Fiscal Year 2020-21

- Continue shelter and bench improvements
- Continue bus sign and ADA improvements

Fiscal Year 2021-22

- Continue shelter and bench improvements
- Continue bus sign and ADA improvements