YOSEMITE AREA REGIONAL TRANSPORTATION SYSTEM

Short Range Transit Plan

Draft

Prepared for the

Yosemite Area Regional Transportation System

Prepared by

LSC TRANSPORTATION CONSULTANTS, INC.

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Yosemite Area Regional Transportation System
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December 3, 2018

TABLE OF CONTENTS

LIST OF TABLES

TABLE *PAGE*

LIST OF FIGURES

FIGURE *PAGE*

Chapter 1

Introduction

The Yosemite Area Regional Transportation System (YARTS) provides public fixed route transit service into Yosemite Valley in Yosemite National Park. Since its initial services began in May, 2000, YARTS has grown into a vibrant and extensive public transit program. Ridership in busy summer and winter months have grown by approximately 50 percent over the last 14 years. While much of the ridership in the initial years consisted of employees, YARTS has proven successful in attracting an increasing proportion of ridership from visitors. This has come from the diligent efforts of many regional partners, as well as the high quality of service.

YARTS plays a variety of important roles in the greater Yosemite / Central Sierra Region. Regional public transit services are an important element of the National Park's overall planning strategies, as evidenced by the Yosemite General Management Plan. Put simply, transit service can help to address the growth in visitation levels while also helping to address the severe traffic congestion and parking issues on peak days. Public transit also helps to increase access by socioeconomic groups without ready access to a private vehicle.

The transit service is important to the various "Gateway Communities" in the adjacent counties, as far away as Sonora, Merced, Fresno and Mammoth Lakes (and potentially beyond). Economically, YARTS helps these communities to be "base camps" for visitation to the national park, thereby spreading the economic benefit of the park around the region. YARTS also serves as a commute alternative for regional employees, thereby saving money and reducing the stress of commuting long distances on rural roadways. By easing congestion problems, YARTS also encourages visitation, thereby benefiting the regional economy. However, considering that 9 percent of visitors enter the park by bus, and just 2 percent by public transit, the role of transit and opportunities for drawing more people to this travel mode should be explored.

Now that the system is well established, this Short Range Transit Plan (SRTP) provides an opportunity to identify and implement expansions and improvements to the service, to define strategies to best meet the overall goals for the program and to maximize the benefits provided to the region as a whole. While the focus of the study is on the coming five years, it will be important for certain plan elements (most notably capital improvements, financial plans and institutional strategies) to address a longer-term time frame. In particular, it is important that the plan result in a transit program in 2023 that is financially sustainable, has a strong fleet replacement plan, and has strong support among all elements of this diverse region.

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Chapter 2

Regional Setting, Trends and Future Ridership Demands

This chapter reviews the regional setting and trends of YARTS service. First, a review of the geographic, demographic and economic aspects (including tourism) of the region is presented. This is followed by a review of Yosemite National Park (YNP) visitor statistics and factors expected to impact future visitation. Finally, conclusions are drawn regarding the various potential markets for transit service to Yosemite Valley.

THE YOSEMITE REGION AND STUDY AREA

Located in the central Sierra Nevada in California, Yosemite National Park covers an area of 1,168 square miles. Almost 95 percent of the park is designated wilderness. The Park lies within the counties of Mariposa, Tuolumne and Madera, though Merced, Fresno and Mono Counties serve as gateways to the park as well. The Joint Powers Authority (JPA) forming YARTS includes Merced, Mariposa and Mono counties. A map of the Yosemite Region and focus of this study is depicted in Figure 1.

Resident Population in the Yosemite Region

Each of the counties participating in the JPA and the gateway communities play a particular role in relation to YARTS. To better understand the region, the demographics of these six counties are reviewed below.

Population History and Trends

Table 1 presents a summary of population by county, showing historic 2000 and 2010 population, estimated 2018 population, and forecast population for 2020, 2025 and 2030. Figures are also provided for the incorporated places along the YARTS routes. 2000 and 2010 figures are from US Census sources, while the existing estimate and forecasts are provided by the California Department of Finance Demographic Research Unit. The total estimated current population for the six-county region is 1,532,791. This is an increase of 315,234 (or 20.6 percent) from the population in 2000. Forecasts indicate that this regional population will increase by 123,528 (8.1 percent) by 2025 and by 214,625 (14.0 percent) by 2030. These figures are also depicted in Figure 2.

Fresno County residents make up just under two-thirds of the total population of the region, followed by 18.2 percent in Merced County, 10.4 percent in Madera County, 3.6 percent in Tuolumne County, 1.2 percent in Mariposa County and 0.9 percent in Mono County. Fresno County also generated about two-thirds of the population growth since 2000, as well as two-

Figure 1
Yosemite Region

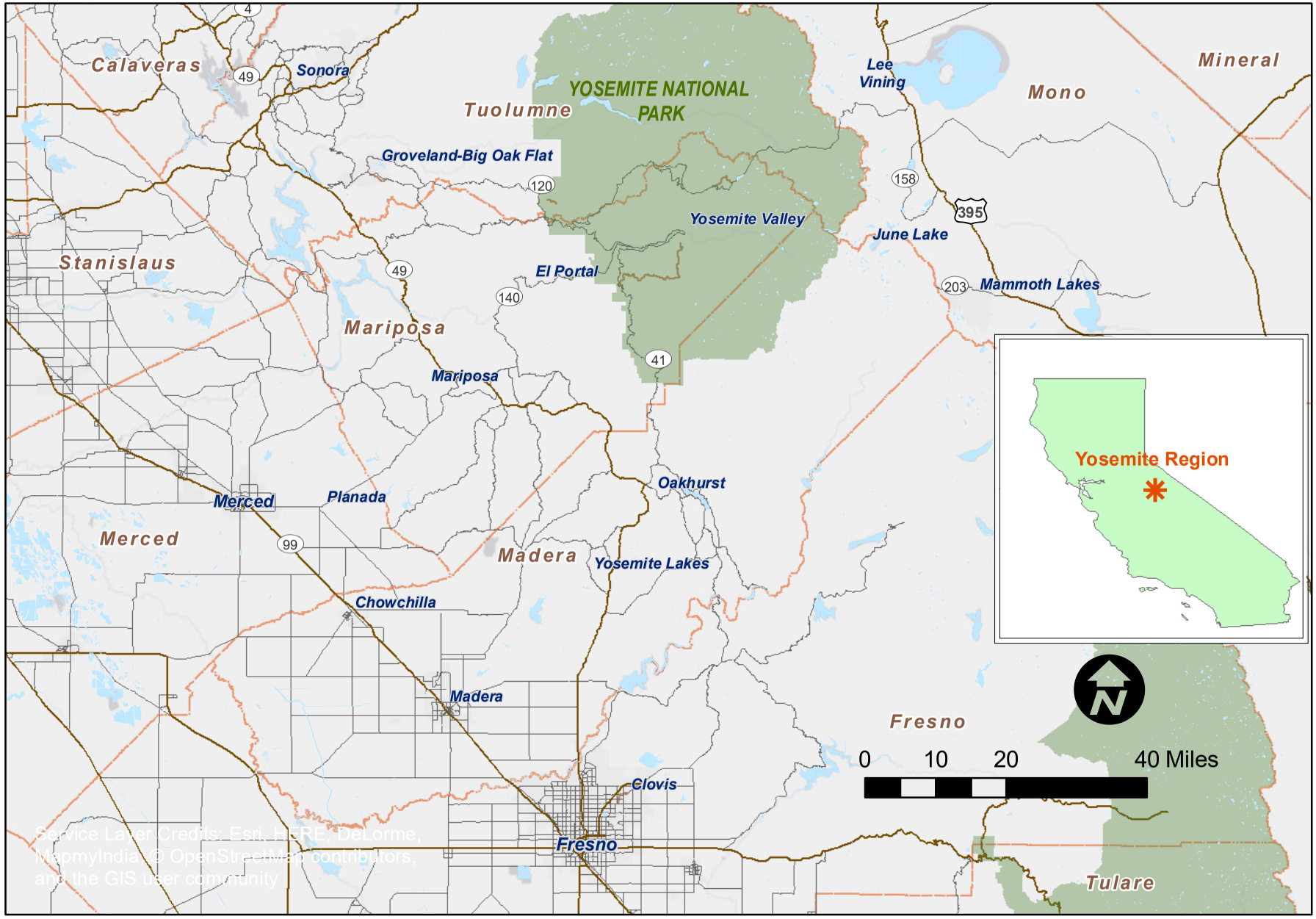


Table 1: YARTS Region Population History and Forecasts

County/City	**2000**	**2010**	**2018**	**2020**	**2025**	**2030**
State of California	*33,871,653*	*37,253,956*	*39,809,693*	*40,639,392*	*42,326,397*	*43,939,250*
Fresno	799,407	930,450	1,007,229	1,033,095	1,088,990	1,145,673
City of Fresno	427,652	494,665	538,330	--	--	--
Madera	123,109	150,865	158,894	162,990	174,332	186,937
Mariposa	17,130	18,251	18,129	18,031	18,181	18,419
Merced	210,554	255,793	279,977	286,746	306,143	326,923
City of Merced	63,893	78,958	86,750	--	--	--
Mono	12,853	14,202	13,822	13,986	14,360	14,663
Mammoth Lakes	7,093	8,234	8,316	--	--	--
Tuolumne	54,504	55,365	54,740	53,976	54,313	54,801
Sonora	4,423	4,903	4,890	--	--	--
TOTAL YARTS REGION	1,217,557	1,424,926	1,532,791	1,568,824	1,656,319	1,747,416

Annual % Change

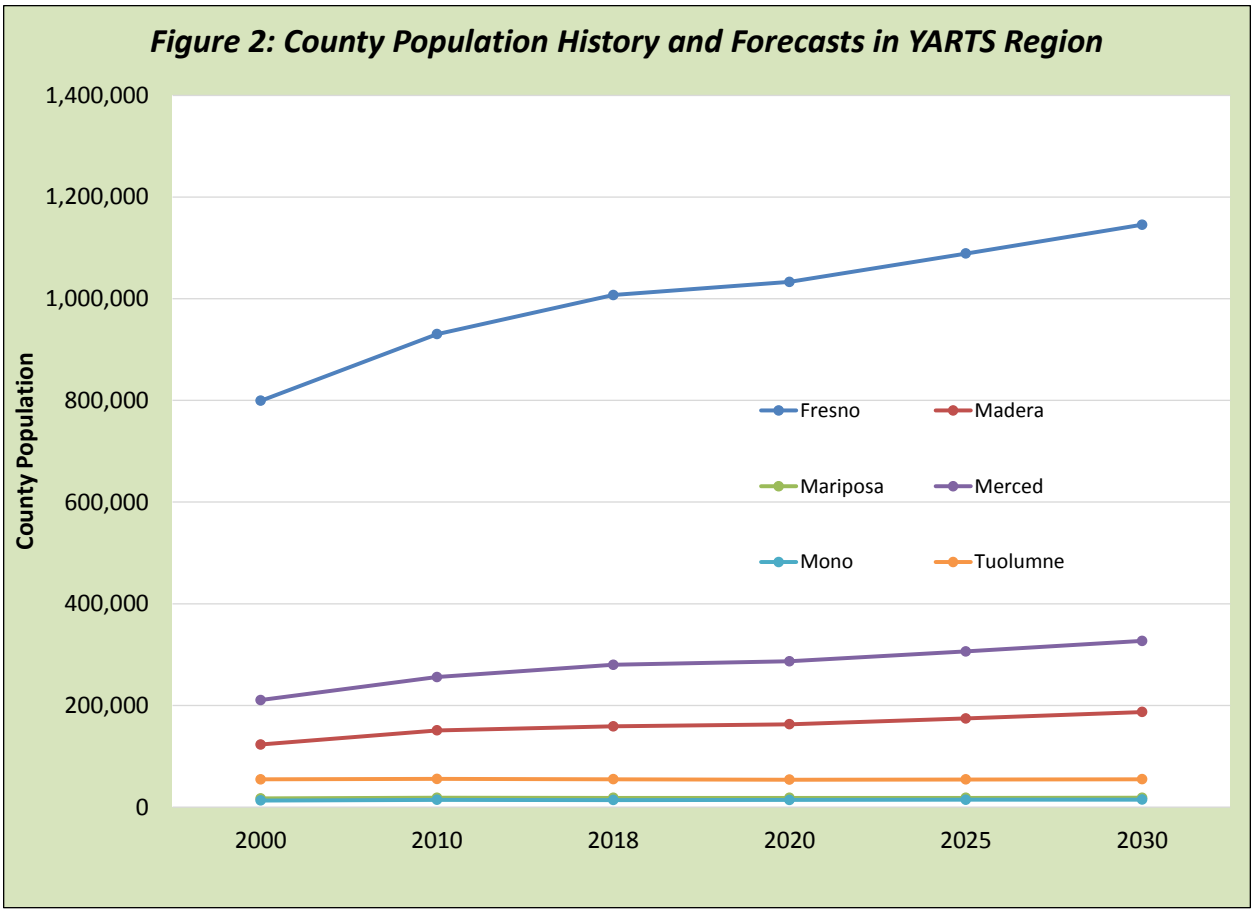
State of California	*1.0%*	*0.8%*	*1.0%*	*0.8%*	*0.8%*
Fresno	1.5%	1.0%	1.3%	1.1%	1.0%
Fresno	1.5%	1.1%	--	--	--
Madera	2.1%	0.7%	1.3%	1.4%	1.4%
Mariposa	0.6%	-0.1%	-0.3%	0.2%	0.3%
Merced	2.0%	1.1%	1.2%	1.3%	1.3%
Merced	2.1%	1.2%	--	--	--
Mono	1.0%	-0.3%	0.6%	0.5%	0.4%
Mammoth Lakes	1.5%	0.1%	--	--	--
Tuolumne	0.2%	-0.1%	-0.7%	0.1%	0.2%
Sonora	1.0%	0.0%	--	--	--
TOTAL YARTS REGION	1.6%	0.9%	1.2%	1.1%	1.1%

Total Change	**2010 to 2018**	**2015 to 2018**	**2018 to 2020**	**2018 to 2025**	**2018 to 2030**
State of California	*5,938,040*	*2,555,737*	*829,699*	*2,516,704*	*4,129,557*
Fresno	*207,822*	*76,779*	*25,866*	*81,761*	*138,444*
Madera	*35,785*	*8,029*	*4,096*	*15,438*	*28,043*
Mariposa	*999*	*-122*	*-98*	*52*	*290*
Merced	*69,423*	*24,184*	*6,769*	*26,166*	*46,946*
Mono	*969*	*-380*	*164*	*538*	*841*
Tuolumne	*236*	*-625*	*-764*	*-427*	*61*
TOTAL YARTS REGION	*315,234*	*107,865*	*36,033*	*123,528*	*214,625*

Total % Change

State of California	*14.9%*	*6.4%*	*2.1%*	*6.3%*	*10.4%*
Fresno	*20.6%*	*7.6%*	2.6%	8.1%	13.7%
Madera	22.5%	5.1%	2.6%	9.7%	17.6%
Mariposa	5.5%	-0.7%	-0.5%	0.3%	1.6%
Merced	24.8%	8.6%	2.4%	9.3%	16.8%
Mono	7.0%	-2.7%	1.2%	3.9%	6.1%
Tuolumne	0.4%	-1.1%	-1.4%	-0.8%	0.1%
TOTAL YARTS REGION	20.6%	7.0%	2.4%	8.1%	14.0%

Source: California Demographic Research Unit



thirds of the forecast population growth to 2030. Other pertinent findings from this review are as follows:

- While the average population increase in the regional population has been relatively low between 2010 and 2018 (0.9 percent per year), this is expected to increase slightly to 1.1 percent in the future.

- Population growth in the Yosemite Region has outpaced the statewide average since 2000, and is expected to continue to outpace statewide population growth through 2030.

- Over the past eight years since 2010, population in the "mountain" counties has fallen slightly: by 0.7 percent in Mariposa County, 2.2 percent in Tuolumne County and 2.7 percent in Mono County. The counties that extend into the San Joaquin Valley, however, grew by 8.6 percent (Merced County), 7.6 percent (Fresno County) and 5.1 percent (Madera County).

- Looking forward over the next seven years to 2025, all counties are forecast by the State Demographic Research Unit to have a growing population, with the exception of a small

(0.8 percent) decline in Tuolumne County. The fastest growth over this period is expected in Madera County (9.7 percent) followed by Merced County (9.3 percent).

Population by Age Category

The State's Demographic Research Unit also maintains historical data and forecasts of population by age, on the countywide level (but not for smaller geographic units). These figures for 2010 through 2030 are shown in Table 2, in the following categories: young children (0 to 9 years of age), older children (10 to 19), working age (20 to 64), young retirees (65 to 74) and older retirees (75 and above). A review of this data (also shown in Figure 3) indicates the following:

- Overall population growth in the region between 2018 and 2025 will largely consist of adults. Working age adults will constitute 44 percent of the population growth, older retirees will constitute 25 percent, younger retirees 21 percent, older children 8 percent and younger children only 1 percent.

- Within each age category, population growth will be markedly higher in the older age categories. Between 2018 and 2025, the percent growth by age category for the region as a whole is forecast to be as follows:

    - Older retirees – 36 percent
    - Younger retirees – 22 percent
    - Working age adults – 6 percent
    - Older children – 4 percent
    - Younger children – 0 percent

- The proportionate growth in older retirees in some counties will be substantial. Between 2018 and 2025, the number of older retirees in Mono County is forecast to increase by 132 percent (from a current figure of 494 to a 2025 forecast figure of 1,147). This is followed by 36 percent in Mariposa County and Fresno County, 34 percent in Madera County and Tuolumne County, and 23 percent in Merced County.

This growth in older residents will increase the need for mobility services for those not able to drive.

Population Forecasts for Key YARTS Market Regions in California

As much of YARTS' visitor ridership is generated by residents of the major residential regions of California, it is worth reviewing recent population growth trends in the Bay Area, Sacramento Region, San Joaquin Region, and Southern California (Los Angeles to San Diego) Region, as well as near-term population forecasts. As shown in Table 3, over the last five years the fastest

Table 2: Population by Age Group of Counties in the Yosemite Region

County	Age (Years)	Total Population 2010	2015	2018	2020	2025	2030
Fresno	0-9	154,325	158,948	157,581	157,991	157,342	162,435
	10-19	156,855	157,047	160,930	162,705	170,281	170,119
	20-64	527,273	552,370	567,427	576,991	599,953	627,135
	65-74	49,956	64,206	72,898	79,097	90,368	97,031
	75 and older	44,092	47,065	52,063	56,311	71,046	88,953
Madera	0-9	23,743	23,603	22,990	22,794	22,919	24,290
	10-19	23,872	23,744	24,079	24,187	24,321	23,778
	20-64	85,226	86,744	89,135	91,478	98,629	107,250
	65-74	9,873	11,930	13,150	13,929	15,361	15,754
	75 and older	7,431	8,732	9,814	10,602	13,102	15,865
Mariposa	0-9	1,580	1,524	1,556	1,561	1,590	1,669
	10-19	2,019	1,830	1,656	1,607	1,609	1,675
	20-64	10,789	10,007	9,663	9,388	8,694	8,341
	65-74	2,271	2,727	2,836	2,971	3,169	3,041
	75 and older	1,586	2,000	2,287	2,504	3,119	3,693
Merced	0-9	44,553	43,657	42,638	42,757	44,107	46,947
	10-19	46,608	47,158	48,368	48,830	49,271	48,695
	20-64	141,578	150,595	157,009	161,159	172,214	183,647
	65-74	13,286	16,676	18,541	19,869	22,870	25,615
	75 and older	10,785	11,784	13,014	14,131	17,681	22,019
Mono	0-9	1,702	1,575	1,447	1,379	1,302	1,208
	10-19	1,551	1,577	1,672	1,729	1,620	1,446
	20-64	9,429	9,072	8,703	8,546	8,172	7,960
	65-74	918	1,269	1,532	1,700	2,119	2,256
	75 and older	407	348	494	632	1,147	1,793
Tuolumne	0-9	4,845	4,706	4,529	4,516	4,543	4,673
	10-19	6,115	5,506	5,123	5,007	4,905	4,781
	20-64	32,994	30,662	29,575	28,916	27,458	27,091
	65-74	6,252	7,763	8,395	8,688	8,877	8,118
	75 and older	5,144	5,892	6,358	6,849	8,530	10,138
Yosemite Region	0-9	230,748	234,013	230,741	230,998	231,803	241,222
	10-19	237,020	236,862	241,828	244,065	252,007	250,494
	20-64	807,289	839,450	861,512	876,478	915,120	961,424
	65-74	82,556	104,571	117,352	126,254	142,764	151,815
	75 and older	69,445	75,821	84,030	91,029	114,625	142,461

proportionate growth has occurred in the Sacramento Region (5.6 percent growth over the five year period). This rate is expected to increase over the next five and ten years, but is also expected to be passed by the proportionate growth in the San Joaquin Region (San Joaquin to Kern Counties), with 6.2 percent growth over each five-year period. In comparison, the Bay Area will grow at a slightly lower rate and the Southern California Region at a substantially lower rate (though on larger numerical base figures).

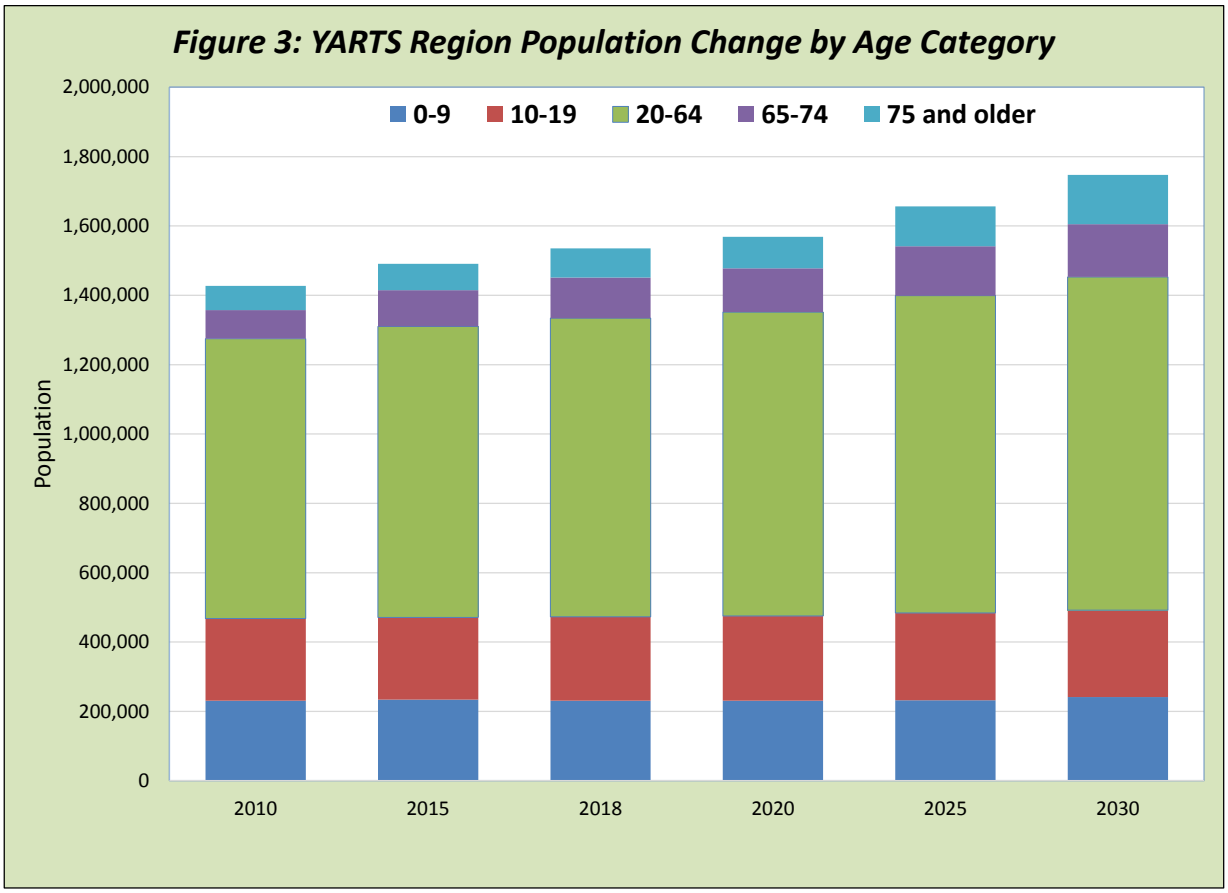


Table 3: Population Growth in Major YARTS California Visitor Markets

Region	2013	2018	2023	2028
Total Population				
Bay Area	6,944,731	7,304,250	7,674,812	8,028,490
Sacramento Region	2,209,936	2,333,872	2,474,547	2,620,692
San Joaquin Region	4,084,459	4,306,260	4,574,602	4,857,464
Southern California Region	20,923,113	21,696,563	22,490,714	23,218,779
Population Growth in 5-Year Period				
Bay Area	--	359,519	370,562	353,678
Sacramento Region	--	123,936	140,675	146,145
San Joaquin Region	--	221,801	268,342	282,862
Southern California Region	--	773,450	794,151	728,065
% Population Growth in 5-Year Period				
Bay Area	--	5.2%	5.1%	4.6%
Sacramento Region	--	5.6%	6.0%	5.9%
San Joaquin Region	--	5.4%	6.2%	6.2%
Southern California Region	--	3.7%	3.7%	3.2%

Source: California Dept. of Finance Demographic Research Unit

Gateway Corridors

Much of the activity in the Park takes place in Yosemite Valley. The focus of this study is access to the Valley, which occurs along four corridors.

- Big Oak Flat Entrance Corridor – This entrance station is on the northwest side of the park along State Route 120. The entrance station is 24 miles east of the town of Groveland in Tuolumne County. Stockton is 97 miles west of the entrance station and Modesto is 85 miles west. This entrance station includes a kiosk and the Big Oak Flat Information Station (open May through October). The Big Oak Flat entrance is open year-round. The distance from the kiosk to the Yosemite Valley Visitor Center is 24 miles.

- Arch Rock Entrance Corridor – Arch Rock Entrance Station is accessed from the west via State Route 140 in Mariposa County. The route travels east from Merced (53 miles from the entrance kiosk), through Mariposa (29 miles), Midpines, and El Portal (3.5 miles from the entrance kiosk). El Portal is home to National Park Service employee housing, administrative offices and two nonprofits: Naturebridge and Yosemite Conservancy. This is generally the second most popular entrance. The distance from the kiosk to the Yosemite Valley Visitor Center is 15 miles. This is the only access point with year-round YARTS service.

- South Entrance – This entrance just north of Fish Camp on State Route 41 is the most popular access point. State Route 41 travels through Oakhurst 16 miles to the south, and the City of Fresno 62 miles southeast. The route is mostly in Madera County, but the entrance station is in Mariposa County. The distance from the kiosk to the Yosemite Valley Visitor Center is 31 miles.

- Tioga Pass Entrance – The entrance station at Tioga Pass in Tuolumne County provides access from the east side of YNP via State Route 120. This State Route connects to north/south US 395 in the town of Lee Vining in Mono County. Lee Vining is 13 miles to the east. Tioga Pass sits at an elevation of 9,943 feet and is therefore open typically from mid-June to late September. Due in part to the shortened season, this access point has the lowest use annually. The distance from the kiosk to the Yosemite Valley Visitor Center is 63 miles.

The corridors to Yosemite National Park offer different experiences in terms of driving experience (travel time, traffic congestion, driving comfort and safety), and visitor experience (views, trailhead access, campgrounds and lodging, and visitor centers). Furthermore, the travel corridors are regularly affected by delays from construction activity or natural disasters such as rock falls and wildfires, as well as by inclement weather.

Traffic Volumes

Traffic volumes in the gateway corridors are presented in Table 4. The data is available through Caltrans and shows peak summer, average daily, two-way traffic in 2016. As would be expected, roadways within or near towns have higher volumes, while lighter traffic on rural roadways represent distance travelers.

Table 4: Average Daily Traffic on YARTS Routes

Locations	Average Daily Traffic [1]
Highway 140 Corridor	
East of Merced (Planada Rd)	8,500
Catheys Valley	3,450
Mariposa (Sixth Street)	9,300
Briceburg Station	2,500
El Portal/Arch Rock	2,900
Highway 41 Corridor	
Fresno/Madera County Line	47,500
Coarsegold	11,200
Oakhurst (Jct of Hwys 41 & 49)	16,500
Fish Camp/Entrance to Yosemite	2,750
Highway 120/395 Corridor	
Mammoth Lakes	9,450
June Lake	4,300
Lee Vining	4,900
Big Bend Gate/Tuolumne Meadows	2,450
Highway 120 Corridor	
Sonora (East of Hwy 49/108)	21,300
Jamestown	15,600
Chinese Camp	3,000
Big Oak Flat	5,200
Groveland	8,600
Bucks Meadow	2,800
Yosmite NP Gate	3,900

Note 1: Average Daily Two-Way Traffic during peak summer.
Source: Caltrans, 2016

Yosemite National Park

Yosemite National Park draws visitors from around the globe, but most especially from California. Below is a review of visitor statistics.

Annual and Seasonal Visitation at Yosemite National Park

Over the past two decades, the number of visitors to Yosemite National Park has averaged 3.7 million per year, as shown in Table 5 and Figure 4. Since 2015, annual visitation has exceeded 4.0 million people, reaching a peak of 5,028,868 visitors in 2016. In recent years, rock falls and wildfires have closed portions of the park, yet visitation continues to increase.

Table 5 and Figure 5 also show the number of visitors by month for the past two decades. This data provides some insight into the annual increases in visitation. While summer remains the most popular time to visit and visitation has increased across the months, the largest increase has been in spring (March to May).

Visitation by Gateway to Yosemite National Park

As mentioned previously, there are four key corridors serving Yosemite Valley. As shown in Table 6 and Figure 6, the South Entrance (via State Route 41) usually receives the highest number of vehicles (32 percent on average), although in 2017 more entered via Arch Rock (34 percent of total vehicles) in large part due to wildfires affecting the South Entrance. Arch Rock typically receives approximately 27 percent of vehicles, and Tioga Pass, which is closed during winter months, receives 15 percent.

The number and types of visitors are also tracked at each entrance kiosk, as well as the mode of transportation. Over the past four years at each of the entrances, 97 percent of visitors were recreational visitors, and just 3 percent were non-recreational (employees, etc.), as shown in Table 7. In terms of non-recreational visitors, 42 percent enter through the South Gate entrance, and just 9 percent enter through Tioga Pass.

The observation of visitors by entrance station, by month, is shown in Table 8 for 2017. This data reflects the strong seasonality of visitors in the park. The Tioga entrance is open only from June to early October (depending on snow fall), and among all entrances, approximately 42 percent of visitors enter in summer (June, July and August) compared to 8 percent in winter (December, January, February). This trend is changing, however. Table 9 shows the average annual change by month between 2014 and 2017. The higher numbers in red represent the greatest change, and the green the least change. The data indicates that the shoulder seasons (March, April, September, and October at Arch Rock, for example) are receiving many more visitors than previously, while winter months remain largely unchanged. In summer months, June visitation is generally increased and August is decreased.

Table 5: Monthly Visitor Count (1998-2017)

Year	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	**Total**
2017	120,025	119,421	166,793	302,553	471,844	565,702	633,351	615,892	566,279	429,827	217,927	127,276	**4,336,890**
2016	139,780	201,601	286,990	305,092	457,309	703,614	780,728	692,450	598,428	483,232	218,998	160,646	**5,028,868**
2015	128,318	135,316	194,667	281,328	408,121	545,231	626,009	636,936	527,402	357,223	169,425	140,241	**4,150,217**
2014	112,133	113,403	146,750	242,722	333,308	496,363	623,663	654,157	467,205	354,769	203,678	134,491	**3,882,642**
2013	103,910	114,440	165,409	231,178	370,422	508,941	611,538	552,137	460,855	279,526	161,356	131,479	**3,691,191**
2012	120,496	113,341	136,687	243,102	356,500	528,186	623,101	660,118	482,004	322,687	141,868	125,314	**3,853,404**
2011	100,718	93,588	100,433	231,372	356,588	503,741	704,553	699,749	533,502	360,449	139,079	127,621	**3,951,393**
2010	96,089	100,379	149,651	224,461	382,414	521,059	643,566	659,857	520,210	356,370	148,459	98,893	**3,901,408**
2009	101,984	78,795	132,711	230,828	399,683	483,382	586,591	643,300	471,530	346,826	151,297	110,545	**3,737,472**
2008	95,124	107,729	153,735	199,592	361,193	473,186	539,874	543,799	416,918	295,547	146,838	97,979	**3,431,514**
2007	99,892	100,941	135,925	219,854	374,184	466,054	543,235	550,172	417,882	298,122	178,846	118,321	**3,503,428**
2006	104,591	101,194	125,556	189,472	309,387	382,972	510,932	528,254	421,502	298,771	165,499	104,514	**3,242,644**
2005	91,238	103,756	143,335	195,385	304,552	413,124	554,567	485,643	430,134	318,508	152,671	111,231	**3,304,144**
2004	100,020	106,258	146,876	228,212	326,017	449,566	531,864	508,094	393,437	272,200	121,622	96,745	**3,280,911**
2003	116,984	111,506	137,550	174,337	280,335	445,887	536,683	604,093	405,605	316,366	136,390	112,928	**3,378,664**
2002	108,906	113,695	141,766	186,682	295,511	436,862	513,789	570,914	426,684	300,919	149,828	116,311	**3,361,867**
2001	102,455	101,897	142,141	192,936	315,897	434,014	528,849	591,196	448,519	264,465	137,876	108,486	**3,368,731**
2000	93,633	103,444	136,523	216,087	317,009	454,638	548,440	546,981	388,707	324,484	144,958	125,999	**3,400,903**
1999	100,857	102,345	136,795	169,517	335,374	448,560	558,114	625,405	433,178	330,334	150,843	102,285	**3,493,607**
1998	114,143	109,163	157,257	231,495	307,331	345,916	603,790	672,966	480,941	384,428	142,002	107,700	**3,657,132**
Average	107,565	111,611	151,878	224,810	353,149	480,350	590,162	602,106	464,546	334,753	158,973	117,950	3,697,852

Source: https://irma.nps.gov/Stats/SSRSReports

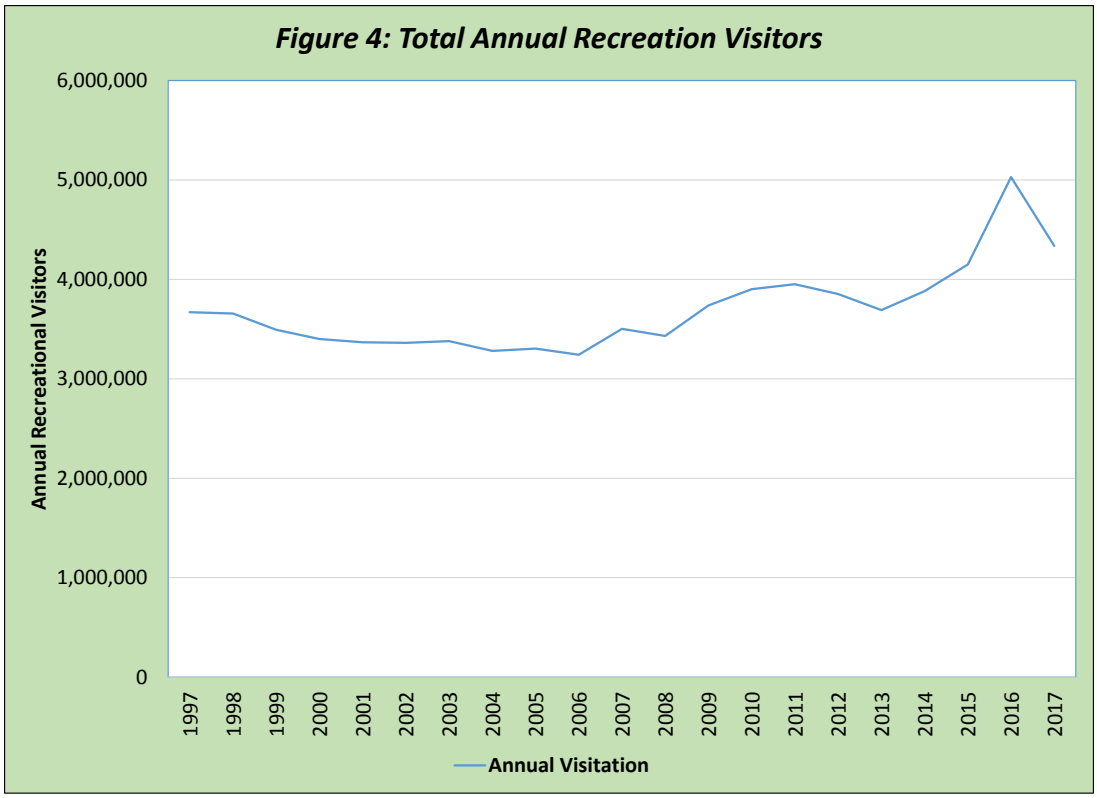


Figure 4: Total Annual Recreation Visitors
Annual Recreational Visitors
6,000,000
5,000,000
4,000,000
3,000,000
2,000,000
1,000,000
0
1997
1998
1999
2000
2001
2002
2003
2004
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
Annual Visitation

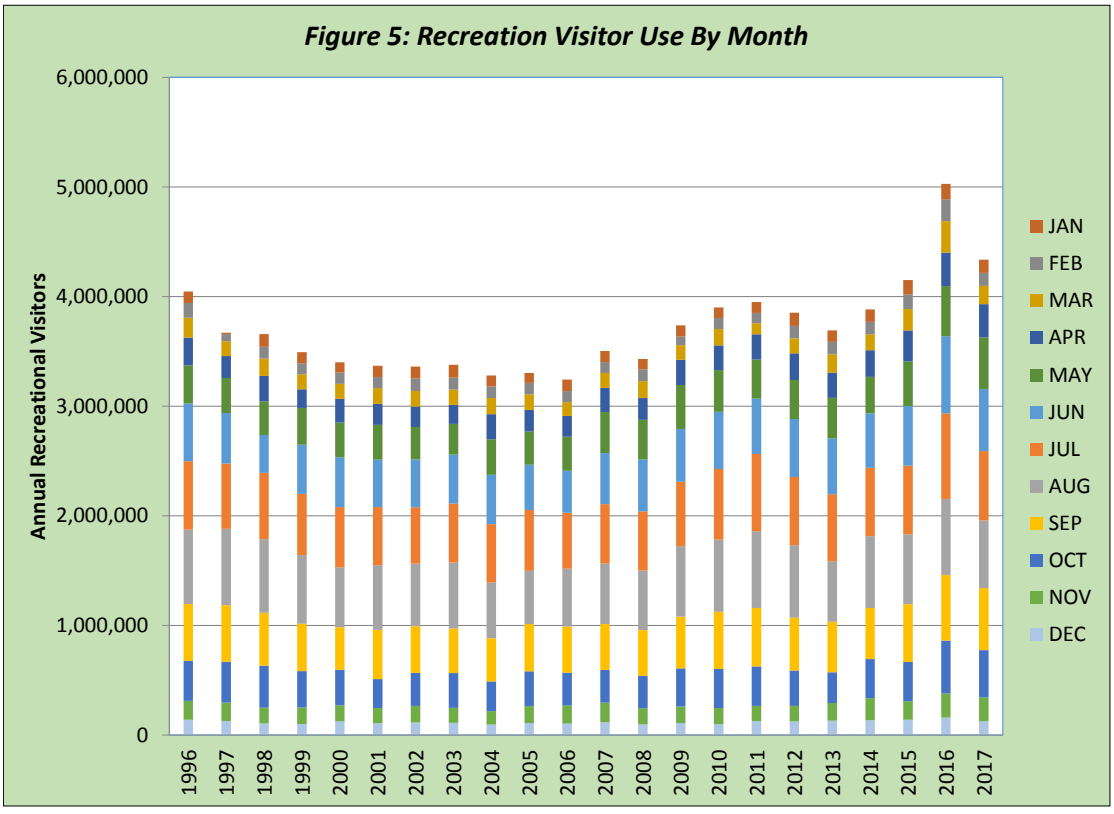


Figure 5: Recreation Visitor Use By Month
Annual Recreational Visitors
6,000,000
5,000,000
4,000,000
3,000,000
2,000,000
1,000,000
0
1996
1997
1998
1999
2000
2001
2002
2003
2004
2005
2006
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2008
2009
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2011
2012
2013
2014
2015
2016
2017
JAN
FEB
MAR
APR
MAY
JUN
JUL
AUG
SEP
OCT
NOV
DEC

Table 6: Annual Vehicle Count by Park Entrance (1998-2017)

Year	Arch Rock	South Entrance	Big Oak Flat	Tioga Pass	**Total**
2017	562,150	488,373	412,740	181,377	**1,644,640**
2016	494,331	575,399	546,804	264,245	**1,880,779**
2015	424,316	497,056	408,943	204,882	**1,535,197**
2014	399,544	479,824	344,345	218,950	**1,442,663**
2013	389,005	450,725	318,088	207,250	**1,365,068**
2012	391,468	446,456	354,446	227,150	**1,419,520**
2011	422,988	445,426	395,178	201,150	**1,464,742**
2010	413,561	455,531	371,634	211,993	**1,452,719**
2009	387,502	442,679	347,999	227,490	**1,405,670**
2008	350,771	423,689	327,177	177,695	**1,279,332**
2007	348,570	451,045	319,034	189,450	**1,308,099**
2006	217,742	452,546	349,106	159,933	**1,179,327**
2005	398,723	384,783	317,504	181,463	**1,282,473**
2004	351,588	385,167	293,620	181,925	**1,212,300**
2003	345,097	400,800	291,748	214,023	**1,251,668**
2002	345,476	384,858	297,869	218,950	**1,247,153**
2001	350,007	375,261	306,554	218,950	**1,250,772**
2000	315,250	392,603	328,910	182,732	**1,219,495**
1999	268,185	440,678	354,920	213,520	**1,277,303**
1998	352,211	444,353	318,665	174,746	**1,289,975**

Source: https://irma.nps.gov/Stats/SSRSReports/Park%20Specific%20Reports/Park%20YTD%20Version%201

Figure 6: Vehicle Count by Park Entrance

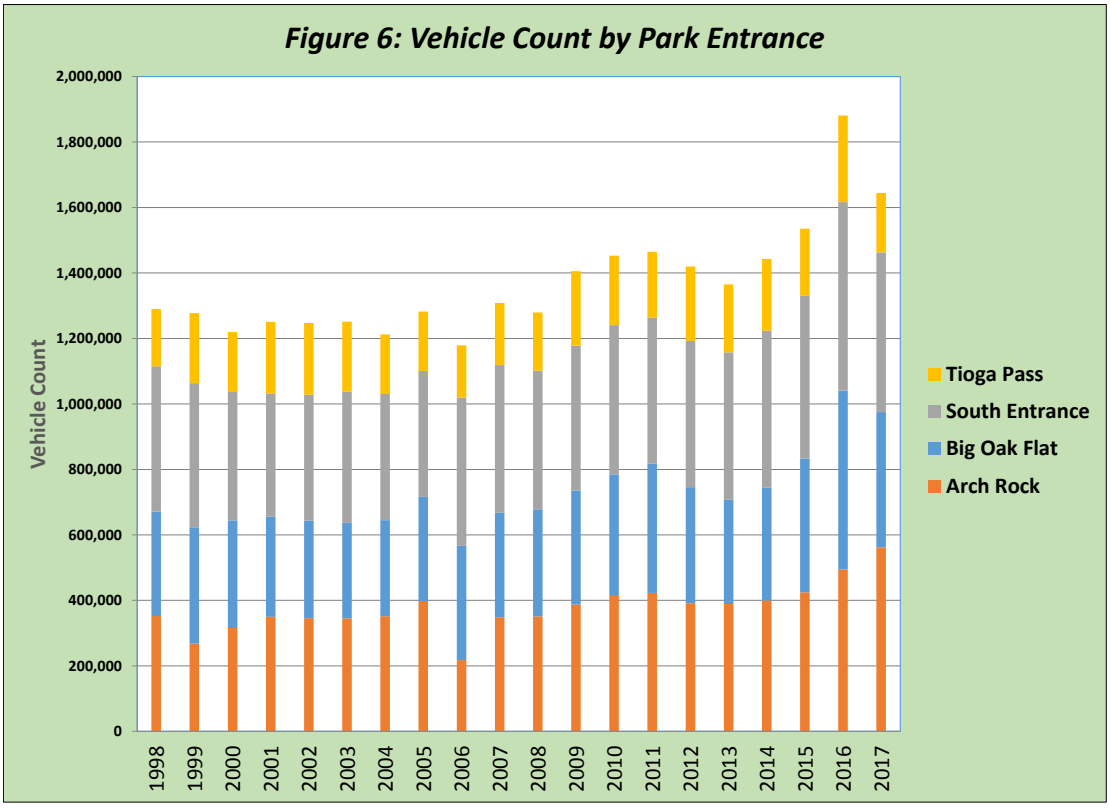


Table 7: Annual Visitation by Major Entrance Station

	2014	2015	2016	2017	Change 2014-17 #	Change 2014-17 %	2017 % of All Visitors By Type
Arch Rock							
Total Recreation Visitors	977,441	1,050,610	1,169,124	1,317,788	340,347	35%	31%
Total Non-Rec Visitors	31,964	33,945	39,150	44,234	12,271	38%	28%
Total Visitors	1,009,404	1,084,555	1,208,274	1,362,022	352,617	35%	31%
South Entrance							
Total Recreation Visitors	1,267,680	1,321,296	1,538,459	1,259,512	-8,168	-1%	30%
Total Non-Rec Visitors	67,175	69,588	81,750	66,998	-177	0%	42%
Total Visitors	1,334,855	1,390,884	1,620,209	1,326,510	-8,345	-1%	30%
Big Oak Flat							
Total Recreation Visitors	961,870	1,141,535	1,491,873	1,141,652	179,782	19%	27%
Total Non-Rec Visitors	27,548	32,715	43,031	32,736	5,188	19%	21%
Total Visitors	989,418	1,174,250	1,534,903	1,174,388	184,970	19%	27%
Tioga Pass							
Total Recreation Visitors	635,970	592,171	754,819	518,879	-117,091	-18%	12%
Total Non-Rec Visitors	17,516	16,391	21,140	14,510	-3,006	-17%	9%
Total Visitors	653,486	608,562	775,959	533,389	-120,096	-18%	12%
TOTAL							
Total Recreation Visitors	3,842,961	4,105,613	4,954,275	4,237,831	394,870	10%	100%
Total Non-Rec Visitors	144,202	152,639	185,070	158,478	14,276	10%	100%
Total Visitors	3,987,163	4,258,252	5,139,346	4,396,309	409,146	10%	100%

Percent Recreational Visitors				
Arch Rock	97%	97%	97%	97%
South Entrance	95%	95%	95%	95%
Big Oak Flat	97%	97%	97%	97%
Tioga Pass	97%	97%	97%	97%

Source: NPS Monthly Year-to-Date tables. Hetch Hetchy entrance data not included.

Visitors Arriving by Bus to Yosemite National Park

Visitors arriving by bus are tracked at each entrance station. As shown in Table 10, between 3 and 6 percent of visitors arrived by bus at the South Entrance, Big Oak Flat Entrance and Tioga Entrance over the past four years, while between 14 to 17 percent of visitors arrived at Arch Rock by bus during the same period. This includes both charter buses and public transit buses. The table also shows that while the total number of buses has increased by 3 percent over the last four years, the number of visitors arriving by bus has decreased by 1 percent.

Overnight Visitors to Yosemite National Park

Overnight visitors are classified into category: concessioner lodgers, tent campers, RV campers, backcountry campers, and miscellaneous overnight stays. Data for overnight visitors is presented in Table 11 and Figure 7. Overnight stays ranged between 1.6 million to 1.7 million visitors from 2008 to 2014 and 2017, but peaked in 2015 with 2.1 million overnight visitors. The

Table 8: 2017 Monthly Visitation by Major Entrance Station

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Arch Rock												
Total Recreation Visitors	48,255	57,103	106,999	155,658	162,308	134,130	134,472	133,630	150,044	118,696	68,075	48,420
Total Non-Rec Visitors	1,615	1,936	3,689	5,320	5,403	4,634	4,604	4,589	5,051	3,859	1,982	1,552
Total Visitors	49,869	59,039	110,688	160,977	167,711	138,764	139,076	138,220	155,095	122,555	70,056	49,972
South Entrance												
Total Recreation Visitors	44,931	36,534	46,430	122,378	168,699	214,732	178,433	102,226	116,782	115,706	62,299	50,361
Total Non-Rec Visitors	2,485	1,987	2,569	6,558	9,470	11,268	9,502	5,310	6,072	5,815	3,328	2,635
Total Visitors	47,416	38,521	48,999	128,936	178,169	226,000	187,934	107,536	122,854	121,522	65,627	52,996
Big Oak Flat												
Total Recreation Visitors	26,292	24,416	10,375	24,517	140,836	196,574	174,576	200,786	154,943	123,719	37,435	27,183
Total Non-Rec Visitors	770	707	305	723	4,029	5,648	4,960	5,771	4,446	3,552	1,080	745
Total Visitors	27,062	25,123	10,679	25,241	144,865	202,223	179,536	206,557	159,389	127,271	38,515	27,928
Tioga Pass												
Total Recreation Visitors	0	0	0	0	0	6,258	136,390	171,912	137,731	66,588	0	0
Total Non-Rec Visitors	0	0	0	0	0	176	3,844	4,790	3,840	1,860	0	0
Total Visitors	0	0	0	0	0	6,434	140,234	176,702	141,571	68,448	0	0
TOTAL												
Total Recreation Visitors	119,478	118,053	163,804	302,553	471,844	551,694	623,871	608,554	559,500	424,709	167,808	125,963
Total Non-Rec Visitors	4,869	4,630	6,563	12,601	18,901	21,726	22,909	20,460	19,409	15,087	6,390	4,932
Total Visitors	124,348	122,683	170,366	315,154	490,745	573,420	646,780	629,015	578,909	439,795	174,198	130,896
Percent of Total												
Recreation Visitors	*96%*	*96%*	*96%*	*96%*	*96%*	*96%*	*96%*	*97%*	*97%*	*97%*	*96%*	*96%*
Non-Recreation Visitors	*4%*	*4%*	*4%*	*4%*	*4%*	*4%*	*4%*	*3%*	*3%*	*3%*	*4%*	*4%*

Source: NPS Monthly Year-to-Date tables. Hetch Hetchy entrance data not included.

Table 9: Change in Monthly Visitation by Entrance Station -- 2014 to 2017

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Arch Rock												
Total Recreation Visitors	8,093	16,567	61,577	72,544	47,166	17,239	16,803	7,871	43,668	42,649	8,766	-2,597
Total Non-Rec Visitors	261	583	1,949	2,718	1,807	1,034	95	632	1,813	1,512	73	-206
Total Visitors	8,354	17,150	63,525	75,263	48,972	18,273	16,899	8,503	45,481	44,161	8,839	-2,803
South Entrance												
Total Recreation Visitors	-704	-11,772	-7,690	30,947	56,573	66,468	-13,058	-66,674	-11,965	-3,906	-41,443	-4,945
Total Non-Rec Visitors	-11	-659	-469	1,833	3,177	3,498	-597	-3,496	-445	-285	-2,321	-403
Total Visitors	-715	-12,431	-8,159	32,780	59,750	69,966	-13,655	-70,171	-12,409	-4,191	-43,764	-5,348
Big Oak Flat												
Total Recreation Visitors	1,235	1,002	-34,569	-46,431	49,304	67,181	3,505	36,901	65,957	35,325	-498	871
Total Non-Rec Visitors	56	35	-997	-1,317	1,425	1,928	0	1,059	1,926	1,072	0	1
Total Visitors	1,292	1,037	-35,567	-47,748	50,729	69,109	3,505	37,960	67,883	36,397	-498	872
Tioga Pass												
Total Recreation Visitors	0	0	0	0	-7,637	-89,149	-992	-17,699	-1,273	-342	0	0
Total Non-Rec Visitors	0	0	0	0	0	-2,464	0	-542	0	0	0	0
Total Visitors	0	0	0	0	-7,637	-91,613	-992	-18,241	-1,273	-342	0	0

increase in 2015 was largely due to increases of concessioner lodgers and tent campers. The number of RV campers peaked in 2016, while the number of backcountry campers decreased in 2017 to the lowest number in six years (likely due to deep snow and high waters which reduced access to the high country).

Table 10: Annual Visitation by Major Entrance Station by Bus

	2014	2015	2016	2017	Change 2014-17 #	Change 2014-17 %
Arch Rock						
Visitors by Bus	157,986	181,528	186,016	180,832	22,846	14%
Total Visitors	977,441	1,050,610	1,169,124	1,317,788	340,347	35%
Percent by Bus	16%	17%	16%	14%	--	-2%
Total Buses	5,101	5,824	6,712	6,053	952	19%
South Entrance						
Visitors by Bus	81,172	91,203	92,517	74,346	-6,826	-8%
Total Visitors	1,267,680	1,321,296	1,538,459	1,259,512	-8,168	-1%
Percent by Bus	6%	7%	6%	6%	--	-1%
Total Buses	3,508	3,298	3,580	2,882	-626	-18%
Big Oak Flat						
Visitors by Bus	39,021	44,975	48,116	44,791	5,770	15%
Total Visitors	961,870	1,141,535	1,491,873	1,141,652	179,782	19%
Percent by Bus	4%	4%	3%	4%	--	0%
Total Buses	2,017	2,193	2,384	2,328	311	15%
Tioga Pass						
Visitors by Bus	29,168	24,680	21,925	16,034	-13,134	-45%
Total Visitors	635,970	592,171	754,819	518,879	-117,091	-18%
Percent by Bus	5%	4%	3%	3%	--	-1%
Total Buses	1,026	1,066	979	727	-299	-29%
TOTAL						
Visitors by Bus	307,347	342,386	348,574	316,003	8,656	3%
Total Visitors	3,842,961	4,105,613	4,954,275	4,237,831	394,870	10%
Percent by Bus	8%	8%	7%	7%	--	-1%
Total Buses	11,652	12,381	20,288	11,990	338	3%

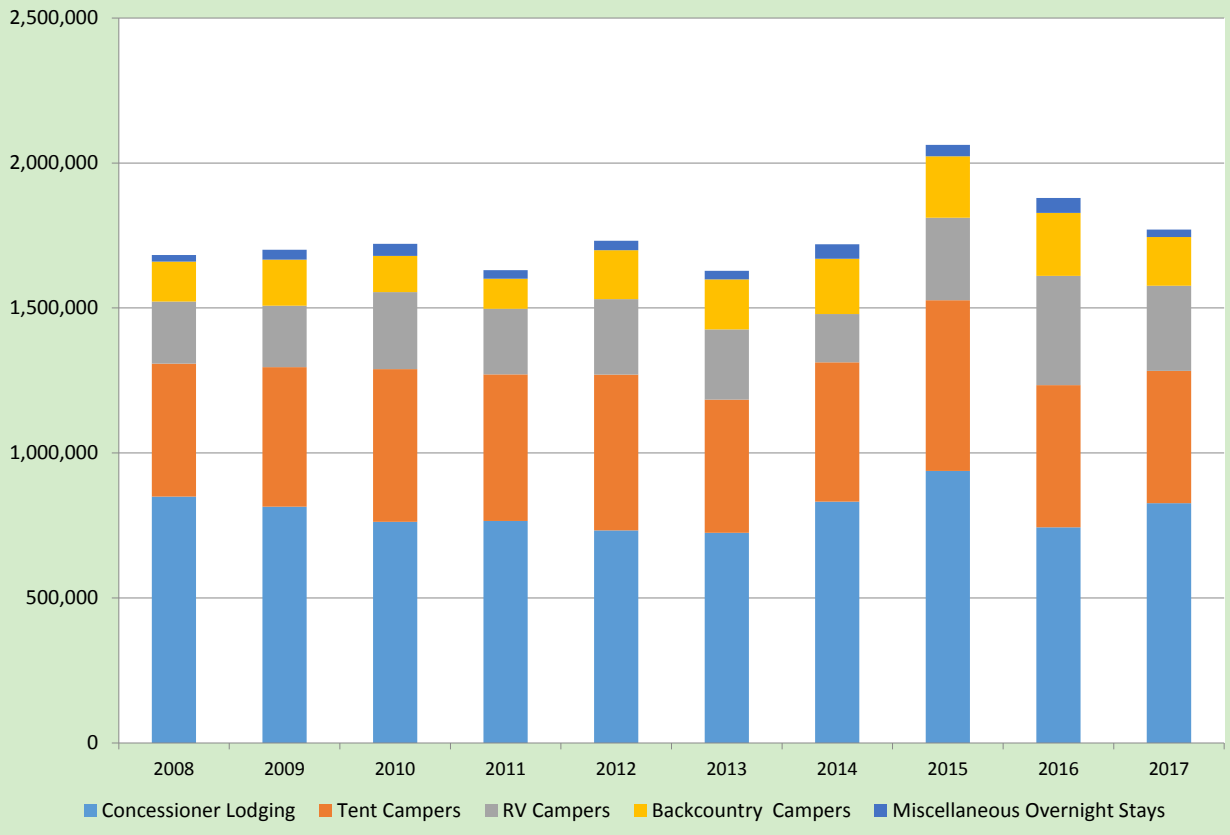
Source: NPS Monthly Year-to-Date tables. Hetch Hetchy entrance data not included.

Table 11: Annual Overnight Stays by Type -- 2008 to 2017

Year	Type of Overnight Stays: Concessioner Lodging	Tent Campers	RV Campers	Backcountry Campers	Overnight Stays	Total Overnight Visitors
2017	826,725	456,476	293,844	167,507	26,166	1,770,718
2016	743,546	490,431	376,744	216,989	51,542	1,879,252
2015	938,418	588,701	284,372	211,966	39,214	2,062,671
2014	832,378	480,094	166,744	190,339	50,545	1,720,100
2013	724,866	459,565	241,656	172,353	29,668	1,628,108
2012	732,843	537,451	260,136	168,783	32,708	1,731,921
2011	765,823	505,390	226,304	103,420	29,673	1,630,610
2010	762,895	526,026	265,920	125,136	40,932	1,720,909
2009	814,521	481,492	212,244	158,233	34,379	1,700,869
2008	849,678	458,265	214,360	137,330	22,982	1,682,615

Source: https://irma.nps.gov/Stats/SSRSReports/National%20Reports/Overnight%20Stays%20(1979%20-%20Last%20Calendar%20Year

Figure 7: Annual Overnight Stays by Type -- 2008 to 2017



Lodging and Camping in Yosemite National Park and Gateway Communities

Lodging and camping facilities in the Valley are increasingly full, pushing more visitors to seek overnight opportunities in the gateway communities. A list of major lodging in Yosemite Valley and the gateway communities is presented in Table 12. In addition to the larger and more traditional lodging facilities in the table, sites such as "AirBnB.com" and "VRBO.com" have increased the inventory of overnight lodging. At the same time, as houses and cabins are put into service as vacation rentals, this further exacerbates the shortage of rental housing available to employees in the region.

Camping facilities are listed in Table 13 (within Yosemite National Park) and Table 14 (in gateway communities). Approximately 1,400 campsites are in the Park and 650 or more in the gateway communities. This does not include dispersed camping.

Table 12: Major Lodging in Yosemite Valley and Gateway Communities

Highway 140 Corridor
- Yosemite Redbud Lodge (El Portal)
- Yosemite Cedar Lodge (El Portal)
- Yosemite Bug Rustic Mountain Resort
- Yosemite Inn (Mariposa)
- Miners Inn (Mariposa)
- The Monarch (Mariposa)
- America's Best Value Inn - Mariposa Lodge
- Mother Lode Inn (Mariposa)
- River Rock Inn (Mariposa)
- Mariposa Hotel Inn
- Quality Inn Yosemite Valley Gateway (Mariposa)
- Best Western Plus Yosemite Way Station (Mariposa)

Highway 41 Corridor
- Big Trees Lodge (formerly Wawona Hotel)
- Tenaya Lodge at Yosemite (Fish Camp)
- Yosemite Sierra Inn (Oakhurst)
- Best Western Plus Yosemite Gateway (Oakhurst)
- Holiday Inn Express & Suites Oakhurst
- Yosemite Southgate Hotel and Suites
- Comfort Inn Yosemite Area (Oakhurst)
- Oakhurst Lodge

Highway 120 West Corridor
- Sunset Inn, Yosemite Cabins (Groveland)
- Lillaskog Lodge (Groveland)
- Yosemite Ridge Resort (Groveland)
- Blackberry Inn B&B (Groveland)
- Groveland Motel
- Groveland Hotel
- Hotel Charlotte
- All Seasons Groveland Inn
- Yosemite International Hostel
- Sugar Pine Ranch

Highway 120 East Corridor
- Tuolumne Meadows Lodge
- High Sierra Camps
- White Wolf Lodge

Yosemite Valley
- The Majestic Yosemite Hotel (formerly The Ahwahnee)
- Yosemite Valley Lodge (formerly Yosemite
- Half Dome Village (formerly Curry Village)
- Housekeeping Camp

Source: LSC Transportation Consultants, Inc.

Table 13: Camping Facilities in Yosemite National Park

Campground	Open	Reservations	No. of Sites
Yosemite Valley			
Upper Pines	All year	All year	238
North Pines	Mar 26–Nov 5	Yes	81
Camp 4	All year	First-come, first-served	35
South of Yosemite Valley			
Wawona	All year	Apr 9–Oct 15	93
Bridalveil Creek	Jul 1?–Sep 17	First-come, first-served	110
North of Yosemite Valley			
Hodgdon Meadow	All year	Apr 9–Oct 15	105
Crane Flat	May 25– Oct 15	Yes	166
Tamarack Flat	June 2– Oct 15	First-come, first-served	52
White Wolf	July– Oct 1	First-come, first-served	74
Yosemite Creek	Jul 1?– Sept 4	First-come, first-served	75
Porcupine Flat	Jul 6?–Oct 15	First-come, first-served	52
Tuolumne Meadows	Jun 14–Sept 24	Half reserved	304

Source: https://www.nps.gov/yose/planyourvisit/campgrounds.htm

Table 14: Camping Facilities in Yosemite Gateway Areas

Gateway / Facilities	No. of Sites
Highway 120 West Corridor	
Yosemite Lake RV Resort	254
Yosemite Lakes Park Campground	130
Yosemite Ridge Resort (Groveland)	13
Yosemite Pines RV Resort (Groveland)	200
Highway 140 Corridor	
Indian Flat Campground	50
Highway 41 Corridor	
High Sierra RV Park and Campground (Oakhurst)	NA

Employment in Yosemite National Park and Gateway Communities

According to the National Park Services' published statistics online, in 2017, there were an estimated 1,200 summer employees and 800 winter employees working for the National Park

Service in Yosemite. Additionally, there were 1,700 summer and 800 winter Yosemite Hospitality Employees. The Yosemite Conservation Foundation employs approximately 50 summer employees and 35 winter employees. There are also many volunteers and researchers who spend time working and studying in the Park. The transportation needs of employees are an important consideration in this Short Range Transit Plan, particularly in light of the housing shortage in the Valley and gateway communities.

RELEVANT PLANS AND REPORTS

The Yosemite region and its transit systems are guided by numerous organizations and agencies. Below is a summary of the most relevant recent or current studies which are to be taken into consideration during the planning process for this current SRTP.

YARTS 2011 Short Range Transit Plan (SRTP)

The YARTS SRTP, completed in March of 2011 by Transit Resource Center with Transit Marketing LLC, was written to guide the evolution of YARTS for five years, from 2011 until 2016. The plan elements included:

- Public input in all areas of Merced, Mariposa, and Mono County.
- Extensive market research used to guide the recommendations of the SRTP.
- Goals and performance measures.
- Marketing plan.
- Institutional options for governance.
- Fare analysis.
- Service plan recommendations.
- Detailed five-year operating and capital financial plans.

At the time this SRTP was written, YARTS had been operating for 12 years and was grappling with how to balance services needs with financial constraints. To that end, the YARTS SRTP established the following goals:

1. Continue to provide existing services along State Route 120 and 140 corridors safely, conveniently, and cost effectively.
2. Ensure high quality of services.
3. Provide effective service for demonstrated community and visitor needs.
4. Provide financially sustainable services within existing funding streams that are cost efficient.
5. Develop YARTS into a regional Yosemite gateway transportation provider without adversely affecting existing services.

The SRTP also explores in detail the service options to be considered for 2012-2016, including: possible reductions or eliminations for underperforming trips and service periods; service

enhancements and increases for peak periods, when passengers are left behind; and creation of possible new routes to Fresno and Sonora. Moreover, the SRTP explores options for management, board of directors' size and representation (at the time, there were three board members, one from each county in the JPA), and fare options.

Included in the YARTS 2011 SRTP was a complete marketing plan, and associated market research, which set in motion a complete rebranding with new bus branding, marketing collateral, and a more targeted customer attraction approach.

Merced County The Bus Short Range Transit Plan (SRTP)

Completed in June of 2017 by LSC for the Merced County Association of Governments, the Merced SRTP defines service adjustments, capital improvements, marketing efforts, financial needs, management needs, and an implementation plan for the fiscal years 2017-18 through 2021-22. References to YARTS in this plan include:

- A statement that "most believe The Bus coordinates well with YARTS" (page 24) with convenient and well-timed transfers between transit systems.
- An overview of YARTS service, as part of a review of other transportation services, that includes service details for the 140 route and ridership history of three years.
- Inclusion of YARTS in a discussion about how a possible redesign of the Merced Transpo transit center could benefit regional carriers like YARTS by adding bus loading space.

Eastern Sierra Transit Authority (ESTA) 2015 Short Range Transit Plan (SRTP)

Completed by LSC in April of 2016, the ESTA SRTP study was conducted to assess transit and related transportation issues in Inyo and Mono counties and to provide a "road map" for improvements to the public transit program over the upcoming five years.

The ESTA SRTP incorporates an overview of YARTS Mammoth to Yosemite service in both low and peak seasons and identifies an opportunity for sharing vehicle maintenance resources for YARTS repairs on the eastern side of the Sierras. As for ESTA and YARTS service coordination, the SRTP states that ESTA staff believe current YARTS connections are adequate: a detailed LSC analysis of meaningful connections (within a 30-minute transfer window) made between ESTA and YARTS revealed that there are eight different possible transfer points that each have from 1-4 different possible peak daily transfer times.

Pertinent to the YARTS service, this plan calls for the expansion of the 395 routes connecting Mono County with Reno and Lancaster to consistent service on all weekdays throughout the year, as well as Saturday service during the summer. Consistent weekday service has already been implemented, while Saturday service has not. Lastly, YARTS is mentioned as a beneficiary of a potential Mammoth Lakes Transit Hub that would help facilitate better direct connections with other transit services, such as YARTS.

Tuolumne County 2016 Final Regional Transportation Plan (RTP)

Completed in February 2017 by the Tuolumne County Transportation Council (TCTC), this RTP is a vision, policy, action, and financial plan for the next 25 years of transportation needs in Tuolumne County. The plan focuses on developing a coordinated and balanced multimodal transportation system within financial constraints. The RTP includes YARTS under "Transit Services and Programs" and describes the YARTS Sonora 120 Route as "a collaborative effort between TCTC, Yosemite National Park, YARTS, and Yosemite State Route 120 Chamber of Commerce, and Tuolumne County Visitors Bureau…" that was started in 2012 in Tuolumne County. In a discussion of a proposed Northern Yosemite Regional Transit Access Center, the RTP notes that YARTS would benefit from this project with improved connectivity and access. Most notable in this RTP is the inclusion of increased YARTS service with additional runs in Tuolumne County as a Tier 1a transportation priority, which is the highest priority. This project is estimated to cost $50,000 and is listed in service year 2018. The National Park Service is identified as the funding source for this service expansion.

City of Fresno 2015 Short Range Transportation Plan (SRTP)

Adopted in June of 2015, the City of Fresno SRTP plans for Fresno Area Express transit service development for 2016-2020. This SRTP has only one mention of YARTS under "Recent Planning Activities," where a Fehr and Peers study is summarized from 2011 called the *Yosemite, Sequoia and Kings Canyon National Park Transit Market Assessment and Feasibility Study*. The feasibility of a route between the City of Fresno and Yosemite was assessed in this study and concluded that substantial demand exists for this route.

Madera County 2017 Short Range Transit Development Plan (SRTDP)

Adopted in March of 2017 by the Madera County Transportation Commission, the SRTDP serves as a guide for improving transit within Madera County for FY2017-18 – 2021-22. A brief summary of YARTS service is included in this plan, under "Other Transportation Providers," but there are no other mentions of YARTS in this plan. However, there is an existing route from Madera to Oakhurst, operated as the Madera County Connection (MCC) Eastern Madera Route. The Eastern Madera route serves the communities of North Fork, Oakhurst, and Coarsegold. This Eastern Madera Route operates three roundtrips per weekday – only one of these trips connects well with YARTS: the MCC Eastern Madera Route arrives at Coarsegold at 7:05 AM and YARTS arrives at Coarsegold heading to Yosemite at 7:15 AM. Better coordination between YARTS and this route could yield at least one additional meaningful connection. The Madera SRTP mentions that the current MCC routes may not meet the 10 percent farebox recovery requirement, so fares may need to be raised. The Madera SRTP doesn't plan any expansions of the MCC service, only to maintain it over time and evaluate ways to make it more cost efficient.

Mariposa County 2011 Short Range Transit Development Plan (SRTP)

Completed in 2011 by Nelson/Nygaard, the Mariposa SRTP includes numerous references to YARTS services. The SRTP notes that YARTS, and the YARTS 140 Route, is an important part of the Mariposa transit system, as it provides commuter transportation for residents and employees. The SRTP states that Mariposa County pays $136,360 annually to support YARTS, and the plan includes keeping this funding constant in each year of the plan (FY2011/12 through FY2015/16). The plan notes that additional YARTS funding would be required to increase service. Public comments, as part of the SRTP outreach, including the need for better marketing of YARTS, the need for wheelchair accessible vehicles on all YARTS runs, and additional YARTS bus stops needed.

The Mariposa SRTP highlights YARTS as part of a one-call system, where users can be directed to YARTS by calling the public transit information line. The YARTS onboard survey results from the YARTS' 2011 SRTP are included in the Mariposa SRTP for background and reference. SRTP goals, relative to YARTS, included continued coordination with YARTS and Mariposa dial-a-ride service connection to YART stops.

National Park Service (NPS) and Yosemite National Park (YNP) Plans Related to YARTS

A key guiding document to future changes and management strategies in the Yosemite Valley is the *Merced Wild and Scenic River Final Comprehensive Management Plan*, completed in February 2014. Reflecting the seriousness of traffic and parking issues, transportation strategies are central to this plan. Elements that particularly impact YARTS consist of the following:

- Define user capacity figures for the Valley of 18,710 persons at one time, with peak visitation of approximately 20,100 per day. Of the 18,710 figure, 684 are identified as arriving via regional transit[1].

- Provide an El Portal Remote Parking Area of 300 (with reduction of parking within the Valley) and provision of shuttle service between the remote lot and the Valley.

- Expand regional transit services as follows:
    - Highway 140 – 12 runs per day in peak season, with year-round service
    - Highway 41 – 12 runs per day in peak season, with year-round service
    - Highway 120 West – 4 runs per day, summer only
    - Highway 120 East – 2 runs per day, summer only

- The concessionaire-operated shuttle service between Wawona and the Valley would be eliminated and replaced by the expanded regional transit service along Highway 41.

[1] Table 6-4.

Beyond the *Merced Wild and Scenic River Final Comprehensive Management Plan*, the NPS clearly encourages use of YARTS throughout its printed and online materials. The NPS website states "You can avoid traffic and parking hassles in Yosemite Valley by taking YARTS to Yosemite. YARTS buses provide regularly-scheduled access to Yosemite from all gateway communities. The park entrance fee is covered by your bus fare."

From a review of current NPS planning efforts, the NPS is supporting YARTS with several projects including:

- *East Valley Shuttle Bus System Stops Improvements*: This project concerns safety improvements proposed to five existing shuttle stops in east Yosemite Valley, including two in Half Dome Village and three on the Happy Isles loop road. NPS primary objectives are to provide safe pedestrian waiting refuge areas with accessible connections to pathways and park facilities, reduce automobile and transit bus conflict, alleviate local traffic congestion, and to preserve pavement on roadways by building bus braking pads in new turn-outs or in roadways. The NPS states that these improvements will also enhance visitor use and enjoyment, encourage shuttle system use by making the stops more visible, allow more efficient use of the shuttle system, and provide for limited restoration of problem areas in Half Dome Village.

- *Fee structure:* In June, 2018, the NPS increased fees at highly visited national parks during peak visitor seasons. The NPS states that proposed peak season entrance fees and revised fees for road-based commercial tours will generate badly needed revenue for improvements to the aging infrastructure of national parks. Under the proposal, peak season entrance fees were established at 17 national parks, including YNP, with an increases entrance fee of $35 per vehicle, $30 per motorcycle, and $20 per person and would be valid for a period of seven days. All funds would be used to improve facilities, infrastructure, and visitor services, with an emphasis on deferred maintenance projects.

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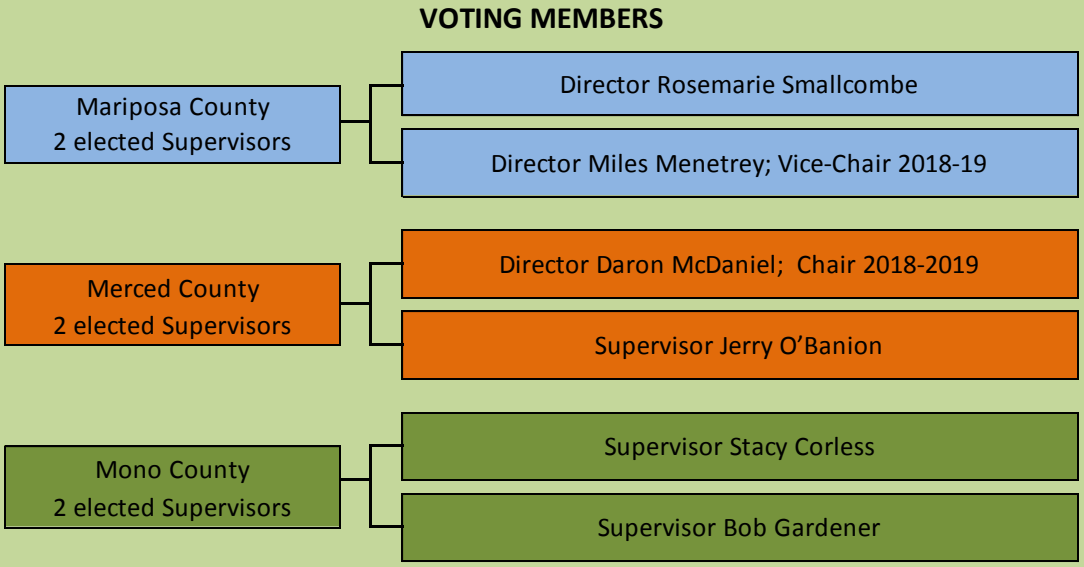
Chapter 3

Profile of Existing YARTS System

INSTITUTIONAL STRUCTURE

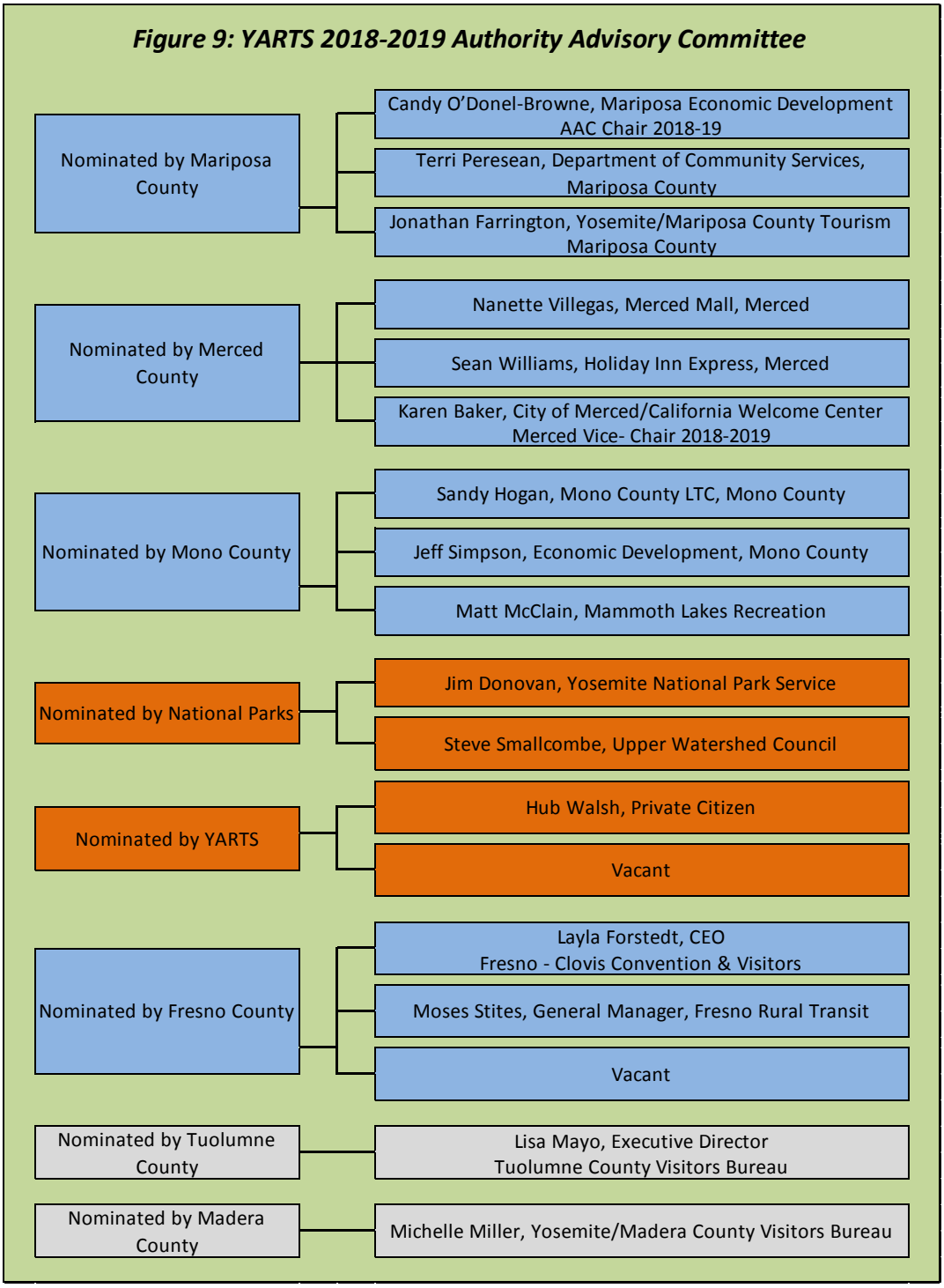
The Yosemite Area Regional Transportation System (YARTS) is a Joint Powers Authority (JPA) whose members are Merced, Mariposa and Mono Counties. YARTS is overseen by a six-member Board of Directors which includes two elected Supervisors from each of the three member-counties and four additional non-voting members, which include one elected official from Madera County, one elected official from Tuolumne County, and two elected officials from Fresno County. The makeup of the YARTS Board is depicted in Figure 8.

Figure 8: YARTS 2018-19 Board of Directors



An 18-member Authority Advisory Committee (AAC) assists the YARTS Board by studying issues and making recommendations to YARTS on policy matters and projects. Three members of the AAC are nominated by each member county of the JPA Board, two by the National Park Service, two by the YARTS Executive Director, and one each from Madera and Tuolumne Counties, and three from Fresno County. The makeup of the AAC is depicted in Figure 9.

Figure 9: YARTS 2018-2019 Authority Advisory Committee



In addition to the JPA, YARTS has a number of agreements with additional entities, as described below.

YARTS AGREEMENTS

YARTS is a party to many agreements that define YARTS service and funding arrangements. In some cases, YARTS is the contracting agency and in others it is the contractor. The following summary of contractual agreements is all related to financial transactions with YARTS.

Agreement: YARTS and VIA Agreement for Daily Operations
Contracting agency: YARTS / Contractor: VIA Adventures, Inc.
Agreement Term: Original 10/1/12 – 10/31/17. Renewed contract term: 11/01/18-10/31/20, with two one-year extensions allowed after 10/31/20.

- Purpose: To define contracted route operation services for State Route 140 and State Route 120 Routes to be operated by VIA for YARTS.

- YARTS requirements of note: To pay $83.65 per service for YARTS owned buses and $118.65 per hour for non-YARTS buses plus an annual CPI adjustment; reimburse VIA for fuel used on a monthly basis; provide majority of buses for VIA to operate; administer the agreement.

- VIA requirements of note: To supply drivers, customer service reps, supervisors, driver safety training, dispatching and communications, bus maintenance (including cleaning) and repair necessary to support route operations; comply with applicable federal and state regulations, rules, and statutes; collect fares and supply reports; track ridership in detail by month and supply reports; retain significant liability insurance; run high quality services or pay non-performance penalties for missing runs, running less than 98% on-time, not having trained drivers, and/or not keeping buses clean.

Agreement: YARTS and Mariposa County Agreement for Services
Contractor: YARTS / Contracting agency: Mariposa County
Agreement Term: 7/1/17 – 6/30/18. Can be extended annually through June 30, 2019.

- Purpose: To define Mariposa County annual funding contribution to YARTS for operation of public transportation services that connect Mariposa with Yosemite on the Hwy 140 Route.

- YARTS requirements: To provide Route 140 services; maintain appropriate insurance requirements.

- Mariposa requirements: To pay YARTS $191,000, as an annual service contribution.

Agreement: YARTS and Merced County Association of Governments/Management Services
Contractor: YARTS / Contracting agency: Merced County Association of Governments (MCAG)
Agreement Term: 7/1/17 – 6/30/18. Can be extended annually through June 30, 2019.

- Purpose: To define contract for transit service management and marketing, financial and grant administration, and transportation planning services to be performed by MCAG for YARTS.

- YARTS requirements: To pay $410,000 annually to MCAG for services provided.

- MCAG requirements: Perform all management, planning, and administrative services for YARTS, including oversight of all day-to-day operations. For 2017-2018, MCAG must update the YARTS Short Range Transit Plan.

Agreement: YARTS and National Railroad Passenger Corp (Amtrak) Procurement
Contractor: YARTS / Contracting Agency: Amtrak
Agreement Term: 7/1/17 – 6/30/20. Original agreement was renewed by amendment. No option to extend beyond 6/30/20.

- Purpose: To define Amtrak contribution to YARTS for Thruway bus service provided by YARTS on the Merced State Route 140 Route and the Fresno State Route 41 Route. The contract specifies daily rate of $987.84 for Merced and YARTS is to maintain this rate for the first year of the contract and increase by 3% each of the final two years of an extension of the contract. The Fresno/Mammoth Lakes rates are based on a fee per rider basis, dependent on the final destination of the passenger.

- YARTS requirements: To provide service on specified routes, according to YARTS Merced and Fresno and Mammoth Lakes schedules, as well as meeting larger Amtrak group needs with additional buses.

- Amtrak requirements: To make payments to YARTS for service, according to contract rates.

Agreement: YARTS and U.S. Department of the Interior National Park Service Cooperative Agreement for Sharing Cost of Alternative Transportation for Yosemite
Contractor: YARTS / Contracting Agency: US Department of Interior National Park Service
Term Agreement: 7/1/17 – 6/30/18, with option to extend.

- Purpose: To define US DOI NPS contribution to YARTS for operating ongoing service on YARTS State Route 140 Route and seasonal service on the YARTS State Route 41 Route, as well as enhanced and seasonal service on Routes 120 East, 120 West, and 140. For the term of this agreement amendment, US DOI NPS agrees to pay a total of $1,301,000 to YARTS to support these routes that serve Yosemite.

- YARTS requirements: To operate all services year-round and seasonal services connecting to Yosemite – Attachment J of this agreement summarizes the YARTS year-round and seasonal services, as well as seasonal enhancements to service.

- US DOI NPS requirements: To make payments to YARTS for service with $690,000 for annual services and $611,000 for seasonal and enhanced services.

Agreement: YARTS and Fresno Council of Governments (FCOG) – Amendment #2
Contractor: YARTS / Contracting Agency: FCOG
Term Agreement: 7/1/18 – 6/30/19, may be extended.

- Purpose: To extend, through Amendment #2, the agreement that defines FCOG annual funding for YARTS operations of public transportation services that connects Fresno with Yosemite on the Hwy 41 Route.

- YARTS requirements: To provide Route 41 services per presented schedule; make all documents and information available; maintain appropriate insurance requirements.

- FCOG requirements: To pay YARTS an amount not to exceed $890,000, less applicable receipts of any credit revenues (fares, other route service contributions), as annual service contribution for YARTS services operated from May 2018 through September 2018.

Joint Powers Agreement (JPA)

The original YARTS JPA was entered into on September 21, 1999 between the Counties of Merced, Mariposa, and Mono (JPA parties) for the purpose of planning, operating, managing, and evaluating transportation improvements within and among the respective JPA parties' jurisdictions around Yosemite National Park. The JPA was borne out of a common desire, not only among the JPA parties but also the National Park Service and Yosemite Regional Strategic Board, to address the transportation impacts of continued growth in Yosemite visitation and the need for transportation alternatives that helped protect the visitor experience and natural resources of the area.

The JPA established YARTS as a separate public entity with the established statement of purpose to start an initial two-year passenger bus demonstration project to serve the geographic jurisdictions of the JPA parties and Yosemite. Recognizing that a close relationship with the National Park Service (NPS) was critical, the JPA required that YARTS immediately enter into a written agreement with the NPS upon establishment of the authority, otherwise the authority would be dissolved.

Per the JPA, the Board is to be comprised on one voting member from each JPA party. The JPA defines that the Board has the power to hire an Executive Director, enter into contracts, acquire and hold property, incur debt, accept funding, invest, have an unpaid Board, and other necessary acts in the provision of passenger bus service.

The JPA established YARTS fiscal year (FY) as October 1st through September 30th. Moreover, the JPA defines a process for creating and adopting a budget, making contributions of funds or in-kind support, appointing a treasurer and controller, and distributing assets if dissolved.

YARTS JPA Bylaws, Revised 6-10-13

The YARTS bylaws were adopted by the YARTS Board of Commissioners on June 10, 2013 and, in many ways, reinforced and further defined pieces contained in the JPA. The bylaws establish the objectives of the Authority as:

- Preservation of the natural environment of the Yosemite Region
- Coordination and communication with Yosemite National Park
- Accommodation of increasing visitation to Yosemite and surrounding region, of transportation options
- Coordinate of local policy and planning of regional transit service and financial resources

The bylaws define the Board of Commissioners as consisting of six voting members, two each from the counties of Mariposa, Merced, and Mono, who each have one vote. Ex-officio membership is also allowed. Board officers are established as a Chairperson and Vice-Chairperson – the Chairperson is required to have at least one year's experience as a Commissioner.

The powers and functions of the authority are defined in these bylaws as the ability of the Board to:

- Plan, establish, manage, and evaluate passenger bus service
- Employ an Executive Director
- Employ agents and employees and contract for services
- Make and enter into contracts and agreements
- Acquire, hold, and convey property

- Incur debt, obligations, and liabilities
- Accept funding
- Have members of the Board serve without compensation
- Establish committees
- Exercise any and all other powers provided by California Code section 6547

The bylaws state that authority meetings must be held at least quarterly with proper noticing and agenda posting. Furthermore, the bylaws state that the Board will appoint an Executive Director to manage and administer the transit service plan and budget, in addition to serving as the secretary of the board.

YARTS Authority Advisory Committee (AAC) Bylaws

The AAC was established to advise the YARTS JPA on issues and make recommendations on policy matters and projects. The AAC bylaws define how the AAC operates.

The bylaws define membership of the AAC as 13 voting members with:

- Three members nominated by one or both of the two voting members of the YARTS JPA from each member county (3 x 3 = 9)
- Two members nominated by the YARTS Executive Director
- Two members nominated by the NPS-Yosemite

The YARTS JPA board has the final approval of all AAC nominees – AAC members serve term of two years, with a maximum of four terms on the AAC. Each AAC member has one vote and a quorum of members is required to pass, accept, or approve motions; however, votes taken by the AAC are advisory only and not binding on the YARTS JPA board.

The AAC bylaws require the selection of a Chairman and Vice-Chairman at the first meeting of the AAC fiscal year with these positions rotating between the represented jurisdictions. These positions are for one year and require that the Chairman have at least one year experience as an AAC member. The Secretary is defined as the Executive Director.

Meetings of the AAC are required to be no less than one every quarter.

GOALS, OBJECTIVES AND PERFORMANCE MEASURES

The YARTS Mission Statement as approved by the YARTS Board on January 24, 2011 states:

> *"YARTS will provide a safe and convenient public transit alternative for access to Yosemite National Park and the communities along its service corridors in the Yosemite region, serving visitors, employees and residents in a cost-effective*

manner. YARTS will achieve high customer satisfaction with reliable service. YARTS will provide good connectivity to regional transportation providers in order to guarantee convenient public transportation access in the gateway corridors to Yosemite National Park. YARTS service is not intended to replace auto access or trans-Sierra travel, but is intended to provide a viable alternative that offers a positive experience, emphasizing comfort and convenience for riders while guaranteeing access to the Park."

Furthermore, the 2011 SRTP recommended goals and performance standards for YARTS. The goals are listed below, and the performance standards will be evaluated as a later task for this SRTP.

Goal#1 Safe and Accessible Goal: Continue to provide safe and convenient public transportation services to the residents and visitors to Merced, Mariposa and Mono Counties, along the State Route 120 and 140 corridors to Yosemite Valley, for employment, recreation, shopping, education and social service trips, so long as service can be provided in a cost-effective manner.

Goal#2 Service Quality Goal: Ensure that all transit programs can be provided at a high quality of service. Quality of service is more important than expansion of service.

Goal#3 Service Effectiveness Goal: Provide an effective level of service in response to demonstrated community and visitor market needs.

Goal#4 Service Cost-Efficiency Goal: Provide YARTS services that are financially sustainable within existing local, state and federal funding programs and regulations in a cost-efficient manner.

Goal#5: YARTS should continue to develop into a regional Yosemite gateway corridor public transit provider if expansion to other gateway corridors can be accomplished without adversely affecting existing YARTS services.

CURRENT YARTS SERVICES

YARTS operates one year-round route (State Route 140 Route between Merced and Yosemite) and three seasonal routes, typically from May to September (Routes State Route 41 from Fresno, State Route 120 from Sonora, and State Route 120/395 from Mammoth Lakes). A summary of services is presented in Table 15, and a route map is presented as Figure 10.

State Route 140 Route

Operated 365 days per year, this route provides service between Merced and Yosemite Valley. In peak season, eight eastbound trips are operated (six from Merced, one from Catheys Valley, and one from Mariposa) and nine westbound trips are operated (six from Yosemite to Merced,

Table 15: Summary of Existing YARTS Service

					Route			
					120	120/395	140	41
Originating Community					**Sonora**	**Mammoth Lakes**	**Merced**	**Fresno**
1-Way Running Time (Hr:Mn)					3:15	4:05	3:07	4:06
1-Way Route Length (Miles)					68	121	83	98
Full Round Trip Fare					$25.00	$36.00	$25.00	$30.00
				Days/Wk				
Runs per Day	Peak Season	May 28 - Sept 3	Round Trips	7	3			
		July & August	Round Trips	7		2		
		May 14 - Sept 30	Eastbound	7			8 [1]	
			Westbound	7			9 [2]	
		May 14 - Sept 14	Round Trips	7				5 [4]
	Offpeak Season	May 14-27, Sept 4-30	Round Trips	7	1			
		June Sept Weekends	Round Trips	2		1		
		Oct 1 - May 13	Round Trips	7			6 [3]	

Note 1: 6 eastbound trips from Merced (1 of which does not run on weekends and holidays), 1 from Cathey's Valley and 1 from Mariposa.
Note 2: 6 westbound trips from Yosemite to Merced, 1 from Yosemite to Mariposa, 1 from Yosemite to Cathey's Valley, and 1 from Midpines to Merced (which does not run on weekends and holidays).
Note 3: 4 eastbound trips from Merced and 2 from Cathey's Valley (1 of which does not run on weekends and holidays). 5 westbound trips to Merced (1 of which does not run on weekends and holidays) and 1 from Midpines to Merced (which does not run on weekends and holidays.)
Note 4: 4 round-trips to/from Fresno, 1 to/from Oakhurst

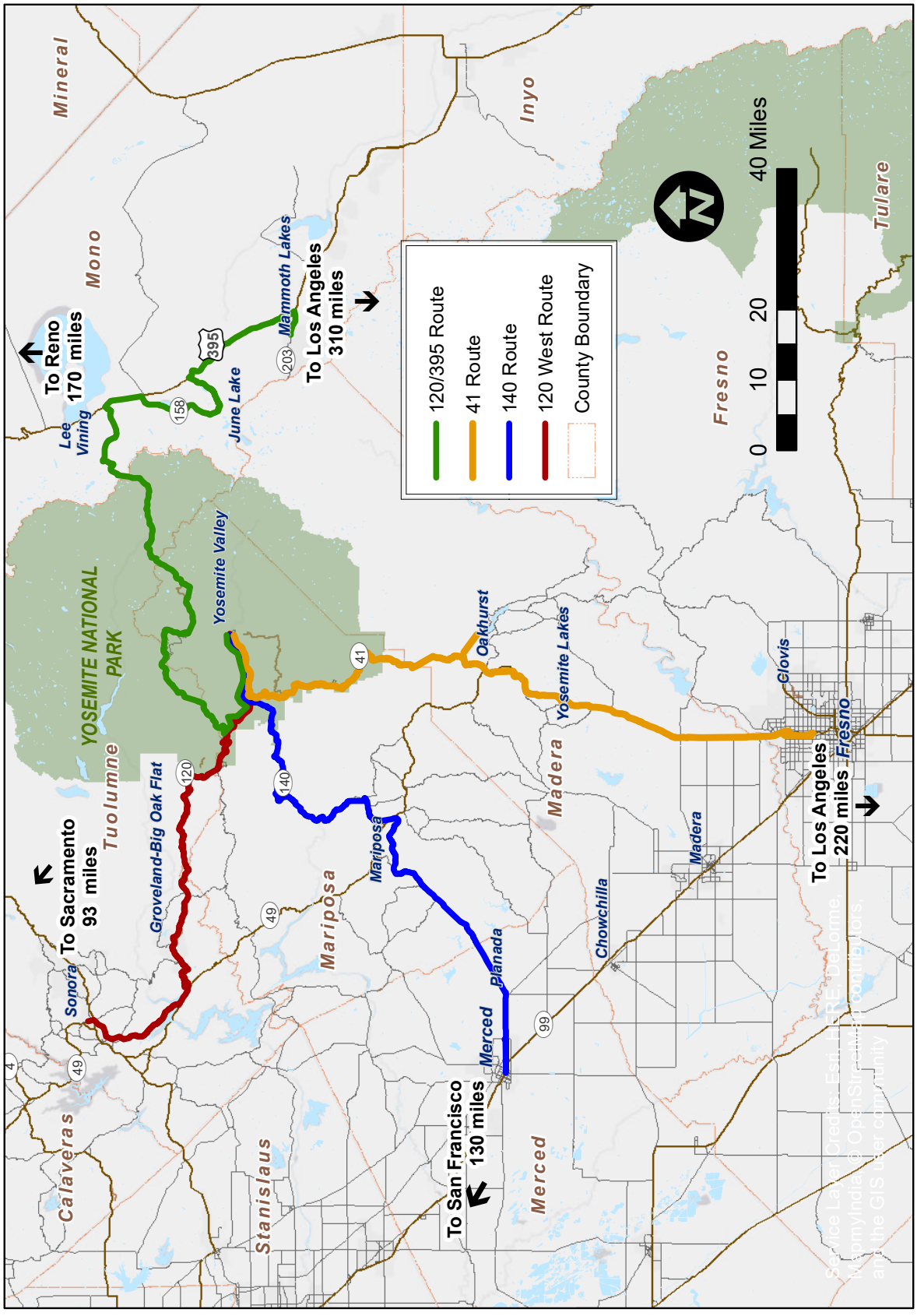
one from Yosemite to Mariposa, one from Yosemite to Catheys Valley, and one from Midpines to Merced). Service is reduced by one trip each direction on weekends and holidays. The 140 Route operates reduced service (Runs 1 and 7 are not operated) on weekends and the following holidays: President's Day, Memorial Day, Independence Day, Veteran's Day, Thanksgiving Day, Christmas Day, New Year's Day.

State Route 140 Route

Operated 365 days per year, this route provides service between Merced and Yosemite Valley. In peak season, eight eastbound trips are operated (six from Merced, one from Catheys Valley, and one from Mariposa) and nine westbound trips are operated (six from Yosemite to Merced, one from Yosemite to Mariposa, one from Yosemite to Catheys Valley, and one from Midpines

Figure 10

Yosemite Area Regional Transportation System



to Merced). Service is reduced by one trip each direction on weekends and holidays. The 140 Route operates reduced service (Runs 1 and 7 are not operated) on weekends and the following holidays: President's Day, Memorial Day, Independence Day, Veteran's Day, Thanksgiving Day, Christmas Day, New Year's Day.

State Route 120 Route

In summer, three eastbound trips are operated each day between Sonora/Jamestown and Yosemite Valley in the morning, with three westbound trips in the afternoon. Between May 14 and May 28 and in September after Labor Day, one trip in each direction is operated daily.

State Route 120/395 Route

Dependent on when Tioga Pass is cleared of snow (at the discretion of the National Park Service), service is provided between Yosemite Valley and Mammoth Lakes (via Lee Vining and June Lake) seven days a week from July 1 through Labor Day, and on weekends in June and September. In previous years, one morning run into Yosemite Valley was operated along with an afternoon return run, with a second bus making trips between Mammoth Lakes and Tuolumne Meadows. In 2018, service will instead consist of two round trips per day between Mammoth Lakes and Yosemite Valley. This is the longest route in the YARTS system, stretching a total of 121 miles.

State Route 41 Route

This service consists of five round-trips per day seven days a week, from mid-May through mid-September. While in previous years one of the round-trips only operated between Fresno and Oakhurst, in 2018 four will operate the full route between Fresno and Yosemite Valley via Oakhurst while the fifth will connect Oakhurst with Yosemite Valley. All Fresno runs originate at the Fresno Yosemite International Airport, and terminate at the airport if passengers request.

Summary of YARTS Service Quantities

Table 16 presents a summary of the vehicle-miles and vehicle-hours by route and by month over 2017. This indicates that the 140 Route comprises roughly 2/3 of all YARTS service – 65 percent by mileage and 68 percent by vehicle-hours. It also indicates how over 50 percent of annual service (52 percent, by vehicle-hours) is operated in June, July or August.

Existing Fares

Reflecting the length of the various routes, YARTS has established individual fares for each route and for each trip origin/destination. These fares are presented in Tables 17 through 20 for each of the individual routes. Full fares are roughly equal to 18 cents per mile on the full length of the 120 Route and 15 cents per mile on the other three routes. Round trip fares are offered

at generally twice the one-way fare (no discount). Discounted fares are offered for persons age 62 and above, children age 12 and under, and persons with disabilities. This discount is 18 percent on the 140 and 120 Routes, 33 percent on the 41 Route, but only 17 percent on the 120 East/395 Route.

Table 16: YARTS 2017 Service Quantities by Route and Month

	Revenue Miles by Route						Revenue Hours by Route					
Month	140	120 West	41	120/395	TOTAL	% of Total	140	120 West	41	120/395	TOTAL	% of Total
January	26,026	0	0	0	26,026	5%	992	0	0	0	992	5%
February	24,224	0	0	0	24,224	4%	922	0	0	0	922	4%
March	26,975	0	0	0	26,975	5%	1,027	0	0	0	1,027	5%
April	26,148	0	0	0	26,148	5%	995	0	0	0	995	5%
May	33,799	4,536	19,789	0	58,124	10%	1,287	159	679.2	0	2,125	10%
June	35,498	15,120	35,011	0	85,629	15%	1,356	531	1,202	0	3,089	15%
July	33,681	15,624	37,888	13,826	101,019	18%	1,393	549	1,314	515	3,770	18%
August	39,506	15,624	35,619	13,826	104,575	19%	1,636	549	1,222	515	3,922	19%
September	37,704	6,216	14,377	2,250	60,547	11%	1,557	218	491	72	2,338	11%
October	27,565	0	0	0	27,565	5%	1,048	0	0	0	1,048	5%
November	27,430	0	0	0	27,430	5%	1,038	0	0	0	1,038	5%
December	27,215	0	0	0	27,215	5%	1,035	0	0	0	1,035	5%
Total	365,771	57,120	108,518	29,902	561,311	100%	14,286	2,006	3,738	1,101	21,130	100%
% of Total	65%	10%	19%	5%	100%		68%	9%	18%	5%	100%	

Note 1: At the 2017 cost per vehicle-hour of $97.71 for YARTS-owned buses and $135.74 for VIA bus. YARTS buses operated all services except all of 41 Route service and 3 of 8 140 Route buses from mid-May through September.

Table 17: YARTS Fare Structure - Highway 120 Sonora to Yosemite

	TO									
	Sonora/ Jamestown		**Groveland**		**Buck Meadows / Yosemite Lakes**		**Big Oak Flat Gate/Crane Flat**		**Yosemite Valley**	
FROM	Regular	Dis-counted	Regular	Dis-counted	Regular	Dis-counted	Regular	Dis-counted	Regular	Dis-counted
Sonora/Jamestown										
Round-trip	—	—	$10	$7	$15	$10	$18	$12	$25	$18
One-way	—	—	$5	$4	$8	$5	$9	$6	$13	$9
Groveland/Yosemite Pines										
Round-trip	$10	$7	—	—	$5	$3	$8	$5	$15	$10
One-way	$5	$4	—	—	$3	$2	$4	$3	$8	$5
Buck Meadows/Yosemite Lakes										
Round-trip	$15	$10	$5	$3	—	—	$4	$3	$10	$7
One-way	$8	$5	$3	$2	—	—	$2	$1	$5	$4
Big Oak Flat Gate/Crane Flat										
Round-trip	$18	$12	$8	$5	$4	$3	—	—	$6	$4
One-way	$9	$6	$4	$3	$2	$1	—	—	$3	$2
Yosemite Valley										
Round-trip	$25	$18	$15	$10	$10	$7	$6	$4	—	—
One-way	$13	$9	$8	$5	$5	$4	$3	$2	—	—

YARTS bus fares includes free admission to Yosemite National Park, as well as one free child ride (12 and under) per adult ticket purchased. Reduced fares are for seniors (62+), children (12 and under without an adult paid fare), and persons with disabilities.

Source: https://yarts.com/tickets-and-fares/#sonora-hwy-120

Table 18: YARTS Fare Structure - Highway 140 Merced to Yosemite

	TO											
	Merced		**Catheys Valley**		**Mariposa**		**Midpines**		**El Portal**		**Yosemite Valley**	
FROM	Regular	Dis-counted	Regular	Dis-counted	Regular	Dis-counted	Regular	Dis-counted	Regular	Dis-counted	Regular	Dis-counted
Merced												
Round-trip	—	—	$6	$4	$12	$8	$12	$8	$18	$13	$25	$18
One-way	—	—	$3	$2	$6	$4	$6	$4	$9	$7	$13	$9
Catheys Valley												
Round-trip	$6	$4	—	—	$6	$4	$6	$4	$12	$8	$18	$13
One-way	$3	$2	—	—	$3	$2	$3	$2	$6	$4	$9	$7
Mariposa												
Round-trip	$12	$8	$6	$4	—	—	$2	$2	$6	$4	$12	$8
One-way	$6	$4	$3	$2	—	—	$1	$1	$3	$2	$6	$4
Midpines												
Round-trip	$12	$8	$6	$4	$2	$2	—	—	$6	$4	$12	$8
One-way	$6	$4	$3	$2	$1	$1	—	—	$3	$2	$6	$4
El Portal												
Round-trip	$18	$13	$12	$8	$6	$4	$6	$4	—	—	$7	$5
One-way	$9	$7	$6	$4	$3	$2	$3	$2	—	—	$4	$3
Yosemite Valley												
Round-trip	$25	$18	$18	$13	$12	$8	$12	$8	$7	$5	—	—
One-way	$13	$9	$9	$7	$6	$4	$6	$4	$4	$3	—	—

YARTS bus fares includes free admission to Yosemite National Park, as well as one free child ride (12 and under) per adult ticket purchased.

Reduced fares are for seniors (62+), children (12 and under without an adult paid fare), and persons with disabilities.

Source: https://yarts.com/tickets-and-fares/#merced-hwy-140

Table 19: YARTS Fare Structure - Highway 41 Fresno to Yosemite

	TO									
	Fresno		**Madera Co. P & R Hwys 145/41**		**Coarsegold/ Oakhurst**		**Tenaya Lodge/Wawona Hotel**		**Yosemite Valley**	
FROM	Regular	Dis-counted	Regular	Dis-counted	Regular	Dis-counted	Regular	Dis-counted	Regular	Dis-counted
Fresno										
Round-trip	—	—	$6	$4	$15	$10	$20	$14	$30	$20
One-way	—	—	$3	$2	$8	$5	$10	$7	$15	$10
Madera Co. P & R Hwys 145/41										
Round-trip	$6	$4	—	—	$12	$8	$15	$10	$25	$17
One-way	$3	$2	—	—	$6	$4	$8	$5	$13	$9
Coarsegold/Oakhurst										
Round-trip	$15	$10	$12	$8	—	—	$7	$5	$20	$13
One-way	$8	$5	$6	$4	—	—	$4	$3	$10	$7
Tenaya Lodge/Wawona Hotel										
Round-trip	$20	$14	$15	$10	$7	$5	—	—	$13	$9
One-way	$10	$7	$8	$5	$4	$3	—	—	$7	$5
Yosemite Valley										
Round-trip	$30	$20	$25	$17	$20	$13	$13	$9	—	—
One-way	$15	$10	$13	$9	$10	$7	$7	$5	—	—

YARTS bus fares includes free admission to Yosemite National Park, as well as one free child ride (12 and under) per adult ticket purchased.

Reduced fares are for seniors (62+), children (12 and under without an adult paid fare), and persons with disabilities.

Source: https://yarts.com/tickets-and-fares/#fresno-hwy-41

Table 20: YARTS Fare Structure - Highway 120/395 Mammoth Lakes to Yosemite

	TO													
	Mammoth Lake		**June Lake**		**Lee Vining**		**Tuolumne Meadows**		**White Wolf**		**Crane Flat**		**Yosemite Valley**	
FROM	Regular	Dis-counted	Regular	Dis-counted	Regular	Dis-counted	Regular	Dis-counted	Regular	Dis-counted	Regular	Dis-counted	Regular	Dis-counted
Mammoth Lakes														
Round-trip	—	—	$8	$6	$12	$10	$18	$15	$26	$22	$32	$26	$36	$30
One-way	—	—	$4	$3	$6	$5	$9	$7	$13	$10	$16	$13	$18	$15
June Lake														
Round-trip	$8	$6	—	—	$6	$4	$12	$10	$18	$15	$24	$20	$30	$24
One-way	$4	$3	—	—	$3	$2	$6	$5	$9	$7	$12	$10	$15	$12
Lee Vining														
Round-trip	$12	$10	$6	$4	—	—	$6	$4	$12	$10	$18	$15	$26	$22
One-way	$6	$5	$3	$2	—	—	$3	$2	$6	$5	$9	$7	$13	$10
Tuolumne Meadows														
Round-trip	$18	$15	$12	$10	$6	$4	—	—	$6	$4	$12	$10	$18	$15
One-way	$9	$7	$6	$5	$3	$2	—	—	$3	$2	$6	$5	$9	$7
White Wolf														
Round-trip	$26	$22	$18	$15	$12	$10	$6	$4	—	—	$6	$4	$12	$10
One-way	$13	$10	$9	$7	$6	$5	$3	$2	—	—	$3	$2	$6	$5
Crane Flat														
Round-trip	$32	$26	$24	$20	$18	$15	$12	$10	$6	$4	—	—	$6	$4
One-way	$16	$13	$12	$10	$9	$7	$6	$5	$3	$2	—	—	$3	$2
Yosemite Valley														
Round-trip	$36	$30	$30	$24	$26	$22	$18	$15	$12	$10	$6	$4	—	—
One-way	$18	$15	$15	$12	$13	$10	$9	$7	$6	$5	$3	$2	—	—

YARTS bus fares includes free admission to Yosemite National Park, as well as one free child ride (12 and under) per adult ticket purchased.

Reduced fares are for seniors (62+), children (12 and under without an adult paid fare), and persons with disabilities.

Source: https://yarts.com/tickets-and-fares/#sonora-hwy-120

In addition, commuter passes are offered on the 140 Route and the 41 Route. Monthly passes, 20-ride passes and 10-ride passes are all offered. As shown in Table 21, the monthly pass and 20-ride passes are priced identically, while the 10-ride pass is half the price. These passes provide a 56 percent reduction in the full fare for the 140 Route, and a 58 percent reduction for the 41 Route.

Existing YARTS Ridership and Ridership History

Table 22 presents the ridership history of YARTS from its inception in 2000 through calendar year 2017. As shown, in 2017 YARTS boarded a total of 117,381 passengers … an all-time high. By route, the 140 Route generates 68 percent of the annual ridership, as reflected in Figure 11, followed by 14 percent on the 120 West Route, 13 percent on the 41 Route, and 5 percent on the 120/395 Route.

To allow analysis of ridership trends by season, YARTS ridership data was grouped into three operating "seasons": Summer (June, July, August), Shoulder (May, September) and Winter (remainder of the year). In 2017, 52 percent of the annual ridership was carried in the three summer months, 18 percent in the shoulder season, and 30 percent in winter. Comparing the ridership of the routes in the summer season, Figure 12 indicates that 47 percent of passengers board the 140 Route, 22 percent board the 120 West Route, 21 percent board the 41 Route and the remaining 10 percent board the 120/395 Route.

The overall history of YARTS ridership is depicted in Figure 13. This reflects the impact of the additional routes to the initial 140 Route, as well as the impact of economic changes, roadway closures, and other factors. The overall trend has been positive, particularly over the last five to ten years:

- Over the last ten years (2007 to 2017), ridership has more than doubled (102 percent increase), consisting of a 43 percent increase on the 140 Route and a 174 percent increase on the 120/395 Route. By season, summer ridership grew by 191 percent, shoulder ridership by 106 percent, and winter ridership by 31 percent. Historical ridership by season is also depicted in Figure 14.

- Focusing on the last five years from 2012 to 2017, overall ridership has increased by 37 percent. Ridership grew by 338 percent on the 120 West Route and 28 percent on the 120/395 Route, and by 3 percent on the 140 Route (the 41 Route was not in operation in 2012). By season, summer ridership over the last five years grew by 76 percent and shoulder season ridership by 43 percent, with a 4 percent decline in winter ridership.

Figure 15 presents the historical ridership per season for the 140 Route. This reflects that winter ridership was highest in 2012, but growth in the shoulder season ridership has helped to keep overall ridership up. A similar figure for the 120 West Route, shown as Figure 16, reflects

Table 21: YARTS Commuter Pass Prices

Highway 140

From	To: Merced	Catheys Valley	Mariposa	Midpines	El Portal	Yosemite Valley
MERCED						
Monthly Pass or 20 round trips	--	$47	$94	$120	$173	$220
10 round-trips		$24	$47	$60	$87	$110
Cathey's Valley						
Monthly Pass or 20 round trips	$47	--	$47	$74	$128	$173
10 round-trips	$24		$24	$37	$64	$87
Mariposa						
Monthly Pass or 20 round trips	$94	$47	--	$26	$80	$100
10 round-trips	$47	$24		$13	$40	$50
Midpines						
Monthly Pass or 20 round trips	$120	$74	$26	--	$53	$100
10 round-trips	$60	$37	$13		$27	$50
El Portal						
Monthly Pass or 20 round trips	$173	$128	$80	$53	--	$47
10 round-trips	$87	$64	$40	$27		$24
Yosemite Valley						
Monthly Pass or 20 round trips	$220	$173	$100	$100	$47	--
10 round-trips	$110	$87	$50	$50	$24	

Highway 41

From	To: Fresno	Hwy 41/145 Park & Ride	Coarsegold/ Oakhurst	Tenaya Lodge/ Wawona	Yosemite Valley
Fresno					
Monthly Pass or 20 round trips	--	$42	$126	$168	$252
10 round-trips		$21	$63	$84	$126
Hwy 41/145 Park & Ride					
Monthly Pass or 20 round trips	$42	--	$100	$126	$210
10 round-trips	$21		$50	$63	$105
Coarsegold/Oakhurst					
Monthly Pass or 20 round trips	$126	$100	$33	$59	$126
10 round-trips	$63	$50	$17	$30	$63
Tenaya Lodge/Wawona					
Monthly Pass or 20 round trips	$168	$126	$59	$17	$84
10 round-trips	$84	$63	$30	$9	$42
Yosemite Valley					
Monthly Pass or 20 round trips	$252	$210	$126	$84	--
10 round-trips	$126	$105	$63	$42	

Passes can be purchased directly from the bus driver. YARTS Commuter Passes are non-refundable and non-transferrable.
A $10 discount for students applies to all commuter passes. Students must show a valid student ID from an area school to receive the discount when purchasing the pass. No other discounts apply.
Monthly passes are valid for the month in which they are purchased.
10- and 20 Round-trip passes expire after 90 days.
Source: http://yarts.com/wp-content/uploads/2015/07/Hwy-140-Commuter-Pass-Price-Schedule.pdf

Table 22: YARTS Ridership History by Route

	140 Route				120 West Route			120/395 Route			41 Route				Total YARTS			
Year	Summer	Shoulder	Winter	Total	Summer	Shoulder	Total	Summer	Shoulder	Total	Summer	Shoulder	Winter	Total	Summer	Shoulder	Winter	Total
2000	22,418	8,090	11,849	42,357	0	0	0	0	0	0	0	0	0	0	22,418	8,090	11,849	42,357
2001	20,680	10,303	26,586	57,569	0	0	0	0	0	0	0	0	0	0	20,680	10,303	26,586	57,569
2002	19,046	10,690	26,956	56,692	0	0	0	0	0	0	0	0	0	0	19,046	10,690	26,956	56,692
2003	18,012	10,156	26,594	54,762	0	0	0	1,788	161	1,949	0	0	0	0	19,800	10,317	26,594	56,711
2004	19,695	11,270	26,915	57,880	0	0	0	1,629	156	1,785	0	0	0	0	21,324	11,426	26,915	59,665
2005	22,533	11,833	28,380	62,746	0	0	0	1,540	394	1,934	0	0	0	0	24,073	12,227	28,380	64,680
2006	10,991	7,816	28,807	47,614	0	0	0	1,848	462	2,310	0	0	0	0	12,839	8,278	28,807	49,924
2007	18,720	10,205	26,898	55,823	0	0	0	2,150	223	2,373	0	0	0	0	20,870	10,428	26,898	58,196
2008	24,662	12,494	29,913	67,069	0	0	0	3,306	304	3,610	0	0	0	0	27,968	12,798	29,913	70,679
2009	21,921	11,949	29,938	63,808	0	0	0	3,073	228	3,301	0	0	0	0	24,994	12,177	29,938	67,109
2010	24,361	13,291	33,644	71,296	0	0	0	3,447	318	3,765	0	0	0	0	27,808	13,609	33,644	75,061
2011	26,453	13,981	32,468	72,902	0	0	0	3,783	596	4,379	0	0	0	0	30,236	14,577	32,468	77,281
2012	26,613	14,078	36,504	77,195	3,266	431	3,697	4,640	436	5,076	0	0	0	0	34,519	14,945	36,504	85,968
2013	25,277	14,809	33,313	73,399	3,844	557	4,401	4,837	191	5,028	0	0	0	0	33,958	15,557	33,313	82,828
2014	24,158	13,090	32,664	69,912	4,023	869	4,892	4,898	313	5,211	0	0	0	0	33,079	14,272	32,664	80,015
2015	22,634	12,173	34,524	69,331	4,487	985	5,472	4,380	341	4,721	5,512	1,727	4,920	12,159	37,013	15,226	39,444	91,683
2016	26,716	14,729	35,009	76,454	8,185	1,577	9,762	6,046	631	6,677	9,809	4,571	7,116	21,496	50,756	21,508	42,125	114,389
2017	28,746	15,892	35,143	79,781	13,442	2,745	16,187	5,901	602	6,503	12,711	2,199	0	14,910	60,800	21,438	35,143	117,381
Percent Change From Previous Year																		
2007	70%	31%	-7%	17%	--	--	--	16%	-52%	3%	--	--	--	--	63%	26%	-7%	17%
2008	32%	22%	11%	20%	--	--	--	54%	36%	52%	--	--	--	--	34%	23%	11%	21%
2009	-11%	-4%	0%	-5%	--	--	--	-7%	-25%	-9%	--	--	--	--	-11%	-5%	0%	-5%
2010	11%	11%	12%	12%	--	--	--	12%	39%	14%	--	--	--	--	11%	12%	12%	12%
2011	9%	5%	-3%	2%	--	--	--	10%	87%	16%	--	--	--	--	9%	7%	-3%	3%
2012	1%	1%	12%	6%	--	--	--	23%	-27%	16%	--	--	--	--	14%	3%	12%	11%
2013	-5%	5%	-9%	-5%	18%	29%	19%	4%	-56%	-1%	--	--	--	--	-2%	4%	-9%	-4%
2014	-4%	-12%	-2%	-5%	5%	56%	11%	1%	64%	4%	--	--	--	--	-3%	-8%	-2%	-3%
2015	-6%	-7%	6%	-1%	12%	13%	12%	-11%	9%	-9%	--	--	--	--	12%	7%	21%	15%
2016	18%	21%	1%	10%	82%	60%	78%	38%	85%	41%	78%	165%	45%	77%	37%	41%	7%	25%
2017	8%	8%	0%	4%	64%	74%	66%	-2%	-5%	-3%	30%	-52%	-100%	-31%	20%	0%	-17%	3%
Percent Change over Last 10 and 5 Years																		
2007-17	54%	56%	31%	43%	--	--	--	174%	170%	174%	--	--	--	--	191%	106%	31%	102%
2012-17	8%	13%	-4%	3%	312%	537%	338%	27%	38%	28%	--	--	--	--	76%	43%	-4%	37%

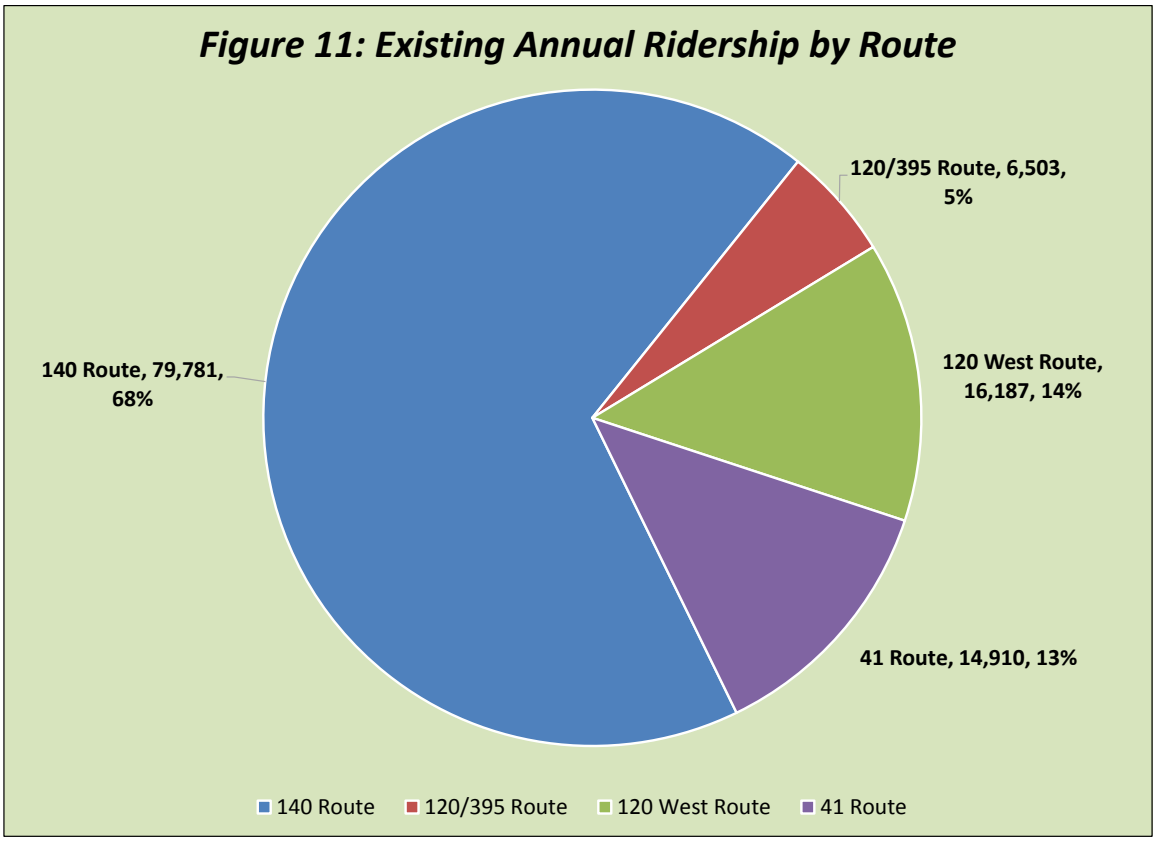


Figure 11: Existing Annual Ridership by Route
120/395 Route, 6,503, 5%
120 West Route, 16,187, 14%
140 Route, 79,781, 68%
41 Route, 14,910, 13%
140 Route
120/395 Route
120 West Route
41 Route

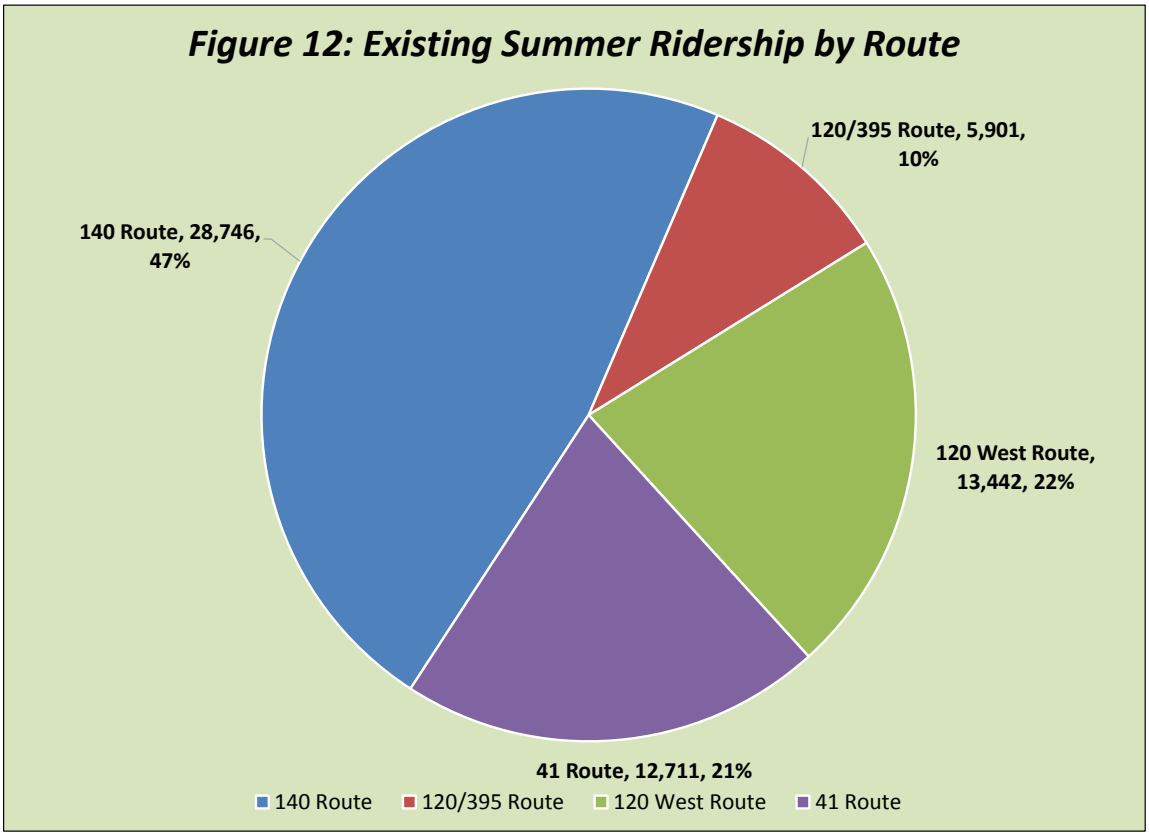


Figure 12: Existing Summer Ridership by Route
120/395 Route, 5,901, 10%
140 Route, 28,746, 47%
120 West Route, 13,442, 22%
41 Route, 12,711, 21%
140 Route
120/395 Route
120 West Route
41 Route

Figure 13: Annual Ridership History

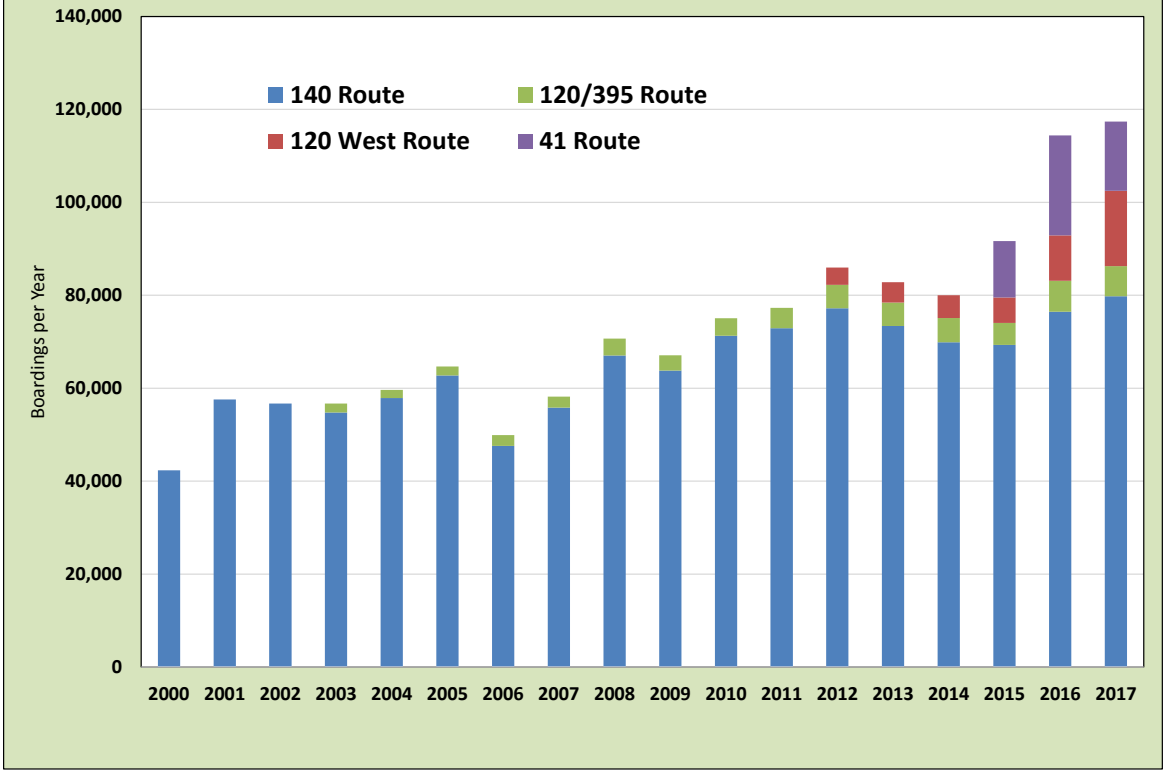
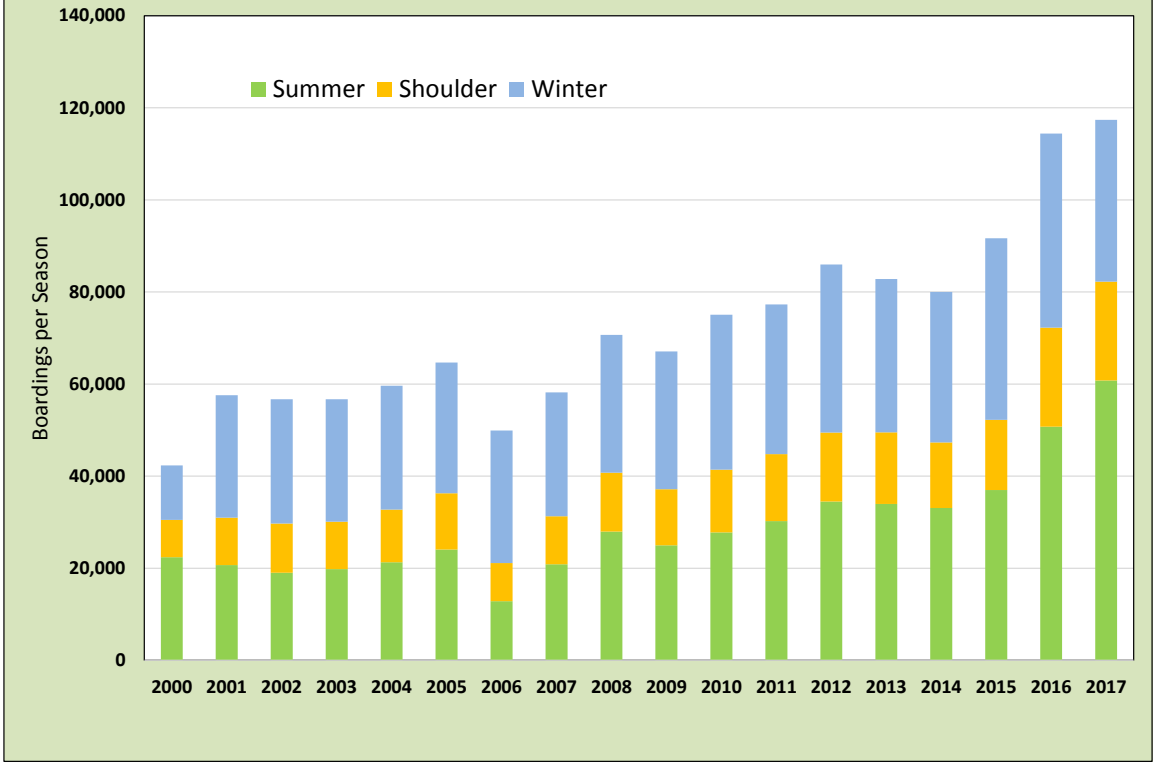


Figure 14: YARTS Ridership History by Season



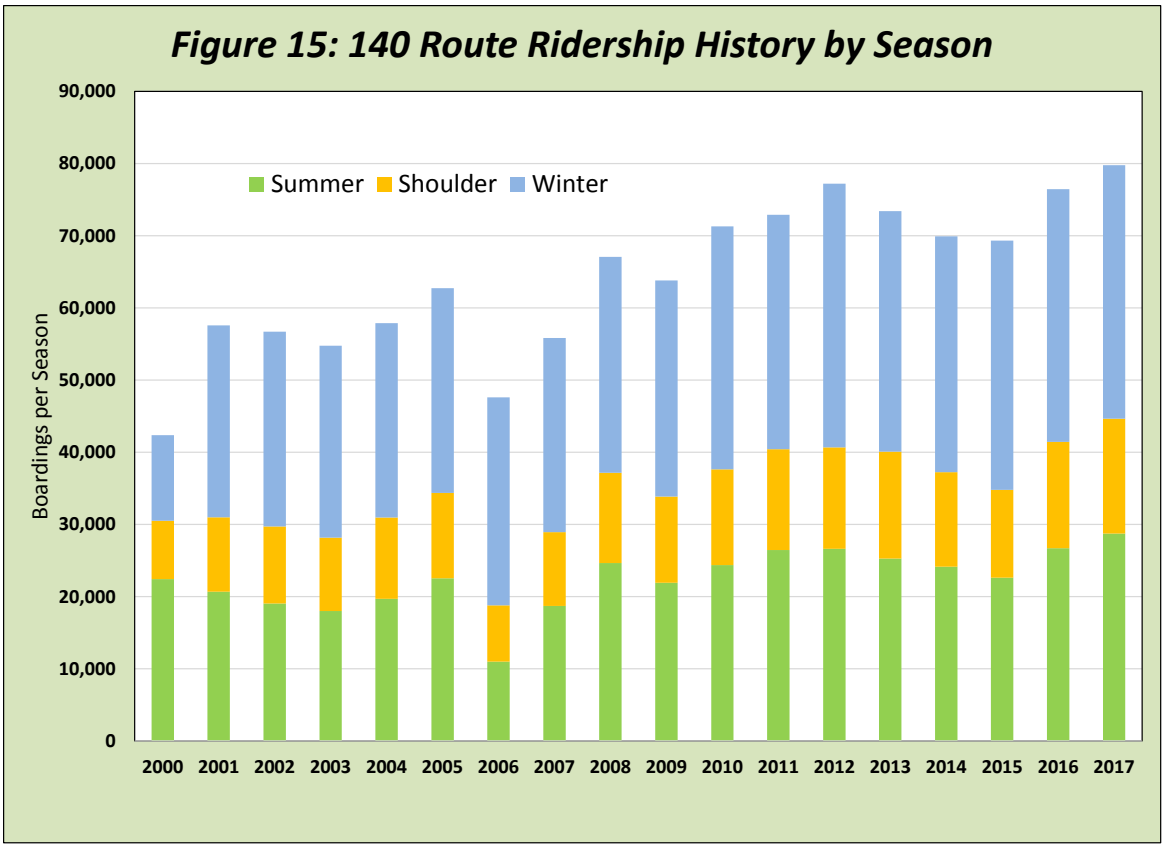


Figure 15: 140 Route Ridership History by Season
Boardings per Season
90,000
80,000
70,000
60,000
50,000
40,000
30,000
20,000
10,000
0
Summer
Shoulder
Winter
2000
2001
2002
2003
2004
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017

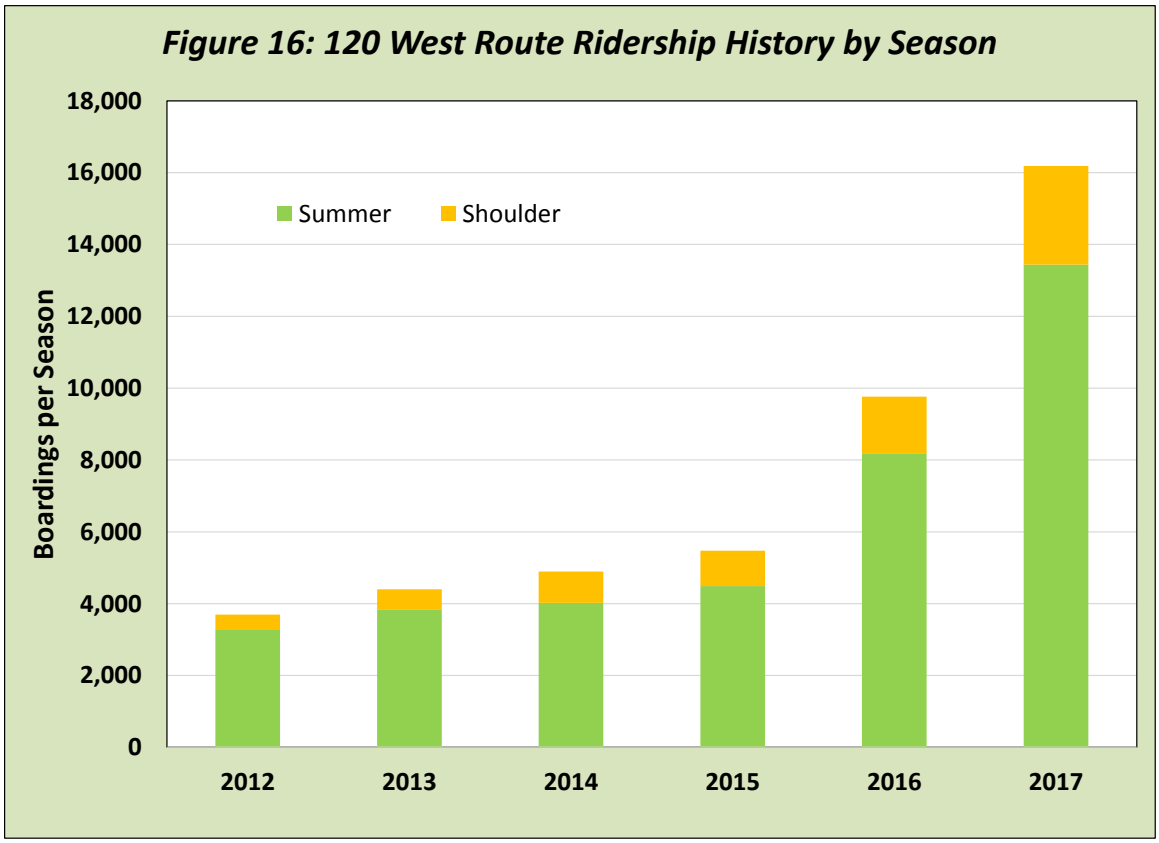


Figure 16: 120 West Route Ridership History by Season
Boardings per Season
18,000
16,000
14,000
12,000
10,000
8,000
6,000
4,000
2,000
0
Summer
Shoulder
2012
2013
2014
2015
2016
2017

the dramatic growth in ridership on this route over the last three years, in both summer and offseason. Figure 17, showing seasonal ridership on the 120/395 Route, indicates the overall positive trend in ridership, particularly in summer. Finally, the seasonal ridership history for Route 41 shown in Figure 18 shows the strong growth in summer ridership along with the dropping of winter service.

Ridership by Passenger Type

Detailed ridership data for Route 140 is tracked for employee (NPS and concessionaire) versus visitor/other ridership. In addition, starting with the 2007 YARTS/Amtrak agreement, ridership generated by through Amtrak ticketing has also been tracked. This data is provided in Table 23 and shown in Figure 19. A review of this data indicates the following:

- At the outset of the YARTS program, employees comprised roughly half of the overall ridership.

- As visitor ridership grew, the proportion of ridership generated by employees declined, but in absolute numbers remained relatively constant until 2012.

- Since 2012, employee ridership has declined dramatically – a 72 percent decline from 22,885 to 6,410 in 2017. This decline has occurred over all seasons (indicating that this is not a result solely of seasonal employee commute patterns).

The fact that overall 140 Route ridership has increased over the last few years in spite of the employee ridership decline reflects the strong growth in visitor ridership.

This data also provide trends in Amtrak ridership. Overall, Amtrak riders peaked in 2012 at 14,446 and have since declined by 33 percent to a 2017 figure of 9,674. This decline has largely occurred in the summer (a 59 percent decline), while offseason and winter Amtrak ridership has dropped by only 8 percent and 11 percent, respectively.

Ridership by Route by Month

2017 ridership data was also summarized by month, as shown in Table 24 and depicted in Figure 20. The peak month was July with 21,708, barely edging out August with 21,633, while the lowest ridership was 4,800 in February. Note that the 120/395 ridership figures were impacted by the late opening of Tioga Pass after the heavy snowfall of the 2016/17 winter.

Ridership by Route by Day of Week

Ridership for 2017 was also analyzed by month and by day of week, to provide a finer level of detail. The average daily ridership by day of week for each month and for each route is shown

Figure 17: 120/395 Route Ridership History by Season

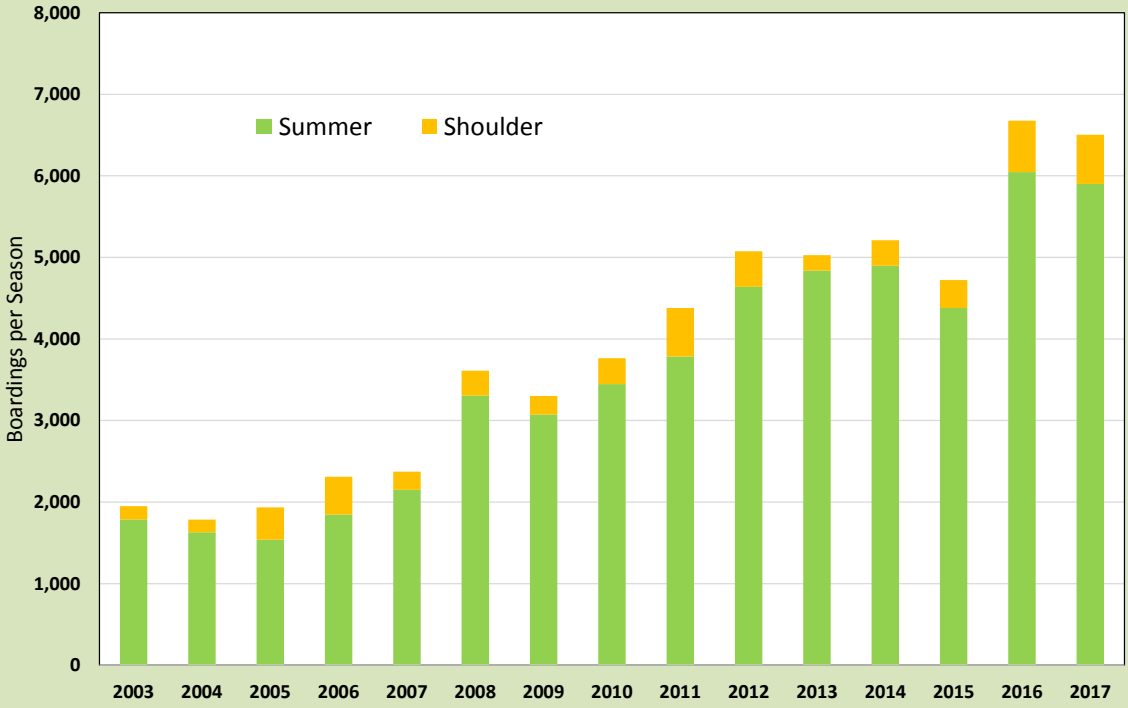


Figure 18: 41 Route Ridership History by Season

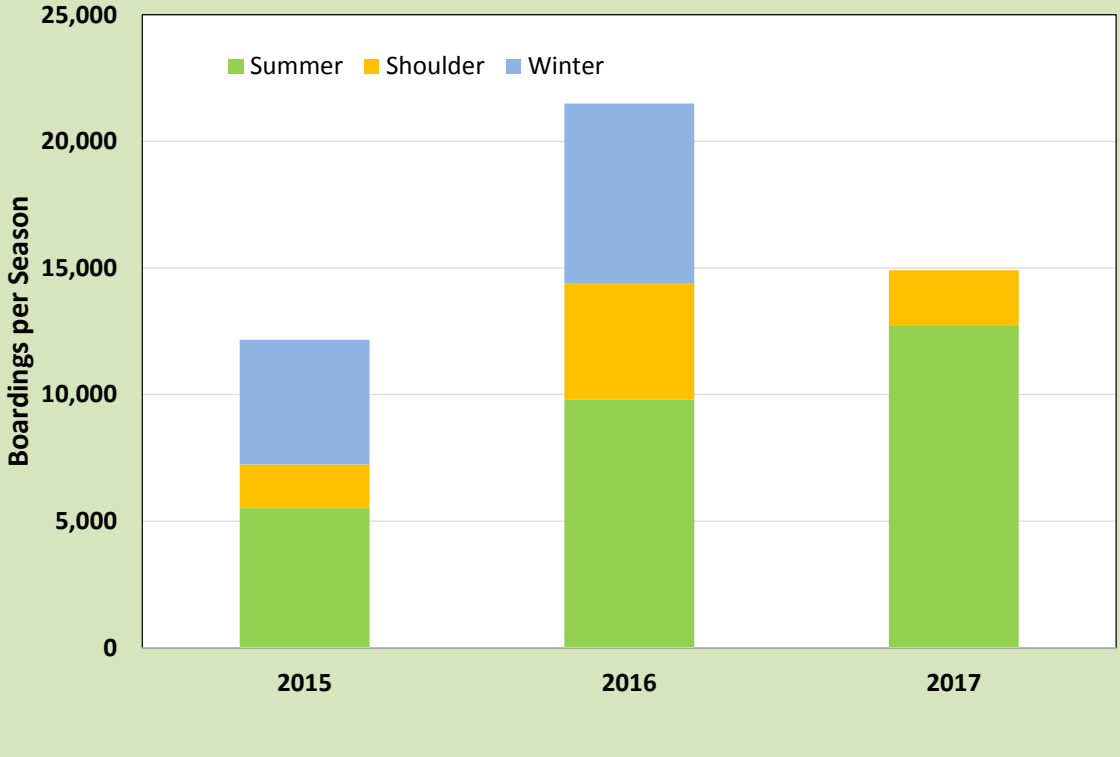


Table 23: Route 140 Ridership History by Type

	Visitor/Other - Non-Amtrak				Visitor - Amtrak				Employees				Total Route 140			
	Summer	Shoulder	Winter	Total	Summer	Shoulder	Winter	Total	Summer	Shoulder	Winter	Total	Summer	Shoulder	Winter	Total
2000	11,856	4,334	4,645	20,835	--	--	--	--	10,562	3,756	7,204	21,522	22,418	8,090	11,849	42,357
2001	10,741	5,365	12,239	28,345	--	--	--	--	9,939	4,938	14,347	29,224	20,680	10,303	26,586	57,569
2002	13,484	7,178	15,230	35,892	--	--	--	--	5,562	3,512	11,726	20,800	19,046	10,690	26,956	56,692
2003	12,755	6,567	15,474	34,796	--	--	--	--	5,257	3,589	11,120	19,966	18,012	10,156	26,594	54,762
2004	13,386	7,634	14,836	35,856	--	--	--	--	6,309	3,636	12,079	22,024	19,695	11,270	26,915	57,880
2005	14,927	7,849	15,590	38,366	--	--	--	--	7,606	3,984	12,790	24,380	22,533	11,833	28,380	62,746
2006	9,035	5,836	16,064	30,935	--	--	--	--	1,956	1,980	12,743	16,679	10,991	7,816	28,807	47,614
2007	13,390	6,929	15,615	35,934	2,601	821	2,307	5,729	5,330	3,276	11,283	19,889	21,321	11,026	29,205	61,552
2008	17,008	8,532	17,889	43,429	3,735	2,606	6,961	13,302	7,654	3,962	12,024	23,640	28,397	15,100	36,874	80,371
2009	14,876	8,120	17,081	40,077	3,152	2,343	5,567	11,062	7,045	3,829	12,857	23,731	25,073	14,292	35,505	74,870
2010	16,795	9,094	20,740	46,629	3,376	2,541	6,391	12,308	7,566	4,197	12,904	24,667	27,737	15,832	40,035	83,604
2011	19,958	9,932	19,728	49,618	3,685	2,284	5,090	11,059	6,495	4,049	12,740	23,284	30,138	16,265	37,558	83,961
2012	20,562	10,202	23,546	54,310	6,788	2,372	5,306	14,466	6,051	3,876	12,958	22,885	33,401	16,450	41,810	91,661
2013	19,176	11,255	23,376	53,807	3,586	1,880	4,703	10,169	6,101	3,554	9,937	19,592	28,863	16,689	38,016	83,568
2014	20,512	10,661	24,857	56,030	3,851	2,272	5,686	11,809	3,646	2,429	7,807	13,882	28,009	15,362	38,350	81,721
2015	19,286	10,276	27,880	57,442	3,341	2,253	6,246	11,840	3,348	1,897	6,644	11,889	25,975	14,426	40,770	81,171
2016	23,861	13,155	30,168	67,184	2,952	2,151	5,425	10,528	2,855	1,574	4,841	9,270	29,668	16,880	40,434	86,982
2017	27,022	14,982	31,367	73,371	2,791	2,184	4,699	9,674	1,724	910	3,776	6,410	31,537	18,076	39,842	89,455
Percent of Total																
2007	63%	63%	53%	58%	12%	7%	8%	9%	25%	30%	39%	32%				
2008	60%	57%	49%	54%	13%	17%	19%	17%	27%	26%	33%	29%				
2009	59%	57%	48%	54%	13%	16%	16%	15%	28%	27%	36%	32%				
2010	61%	57%	52%	56%	12%	16%	16%	15%	27%	27%	32%	30%				
2011	66%	61%	53%	59%	12%	14%	14%	13%	22%	25%	34%	28%				
2012	62%	62%	56%	59%	20%	14%	13%	16%	18%	24%	31%	25%				
2013	66%	67%	61%	64%	12%	11%	12%	12%	21%	21%	26%	23%				
2014	73%	69%	65%	69%	14%	15%	15%	14%	13%	16%	20%	17%				
2015	74%	71%	68%	71%	13%	16%	15%	15%	13%	13%	16%	15%				
2016	80%	78%	75%	77%	10%	13%	13%	12%	10%	9%	12%	11%				
2017	86%	83%	79%	82%	9%	12%	12%	11%	5%	5%	9%	7%				
Percent Change over Last 10 and 5 Years																
2007-17	102%	116%	101%	104%	7%	166%	104%	69%	-68%	-72%	-67%	-68%	48%	64%	36%	45%
2012-17	31%	47%	33%	35%	-59%	-8%	-11%	-33%	-72%	-77%	-71%	-72%	-6%	10%	-5%	-2%

Figure 19: 140 Route Ridership by Type

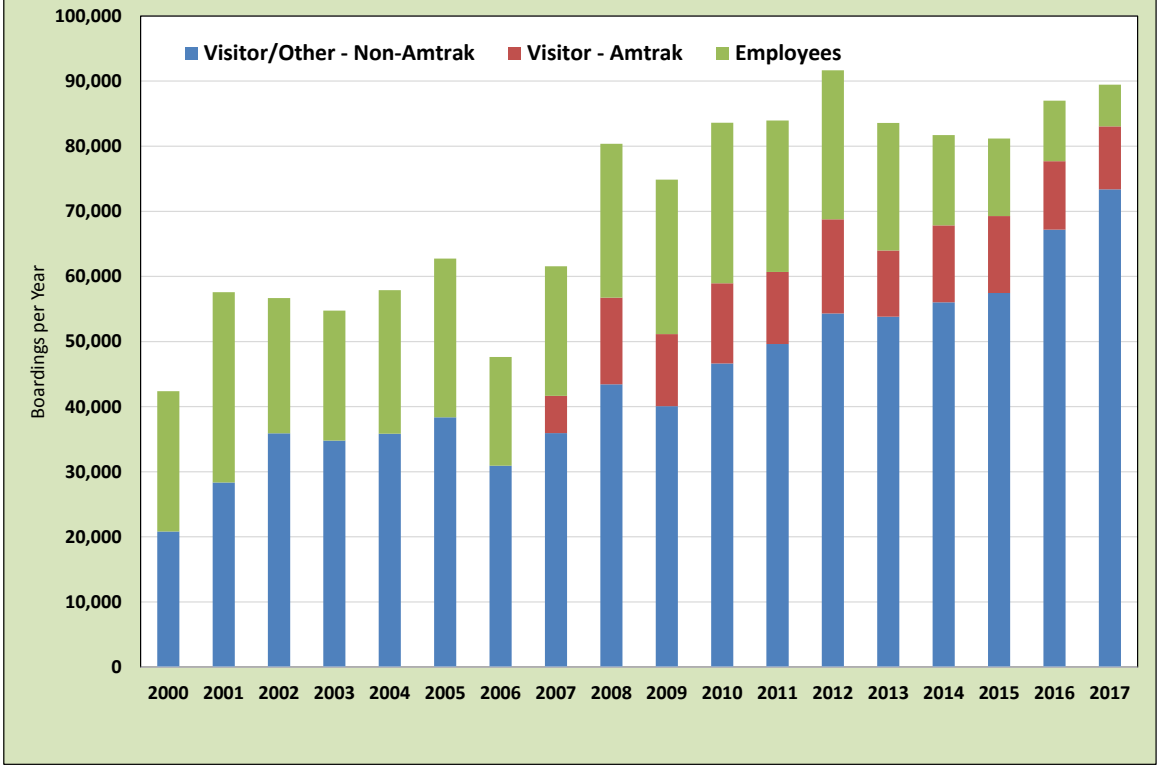
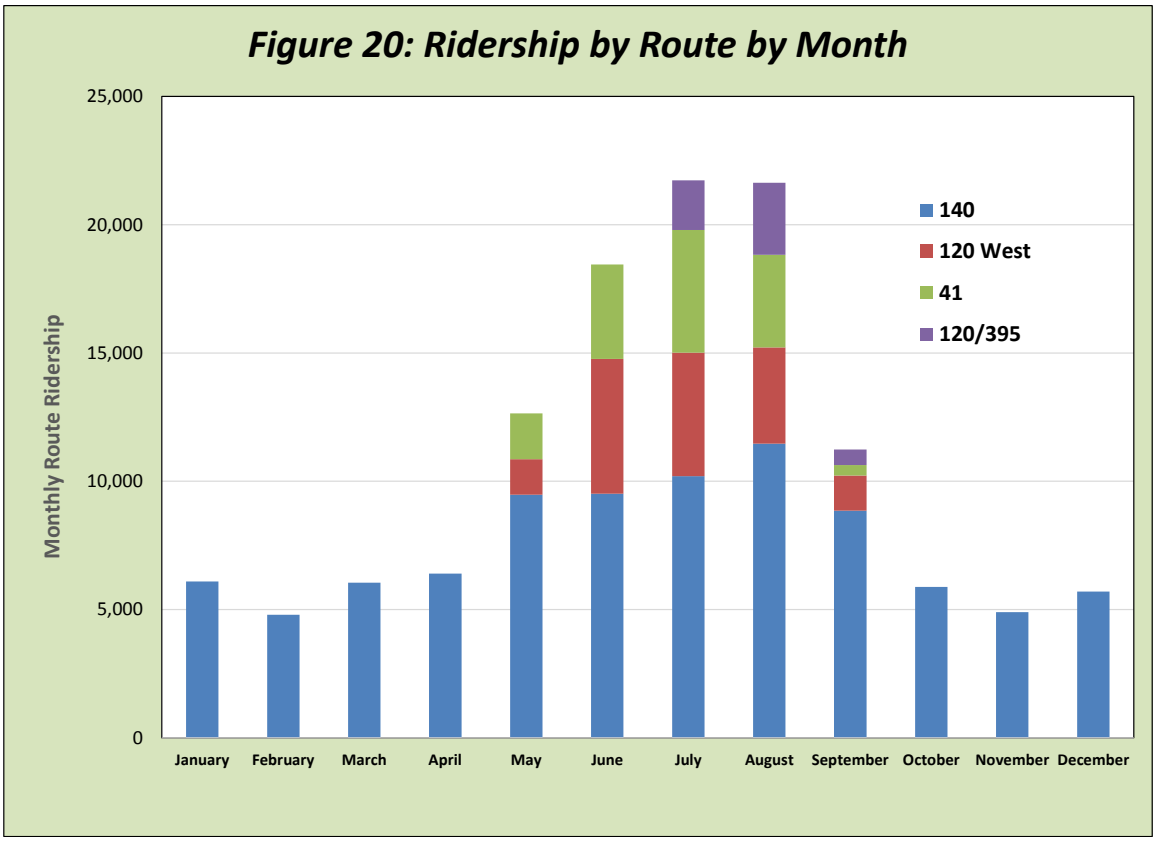


Table 24: Passenger Boardings by Route by Month

	Route				
Month	140	120 West	41	120/395	TOTAL
January	6,097	0	0	0	6,097
February	4,800	0	0	0	4,800
March	6,044	0	0	0	6,044
April	6,405	0	0	0	6,405
May	9,480	1,378	1,789	0	12,647
June	9,514	5,260	3,678	0	18,452
July	10,200	4,813	4,787	1,934	21,734
August	11,469	3,746	3,610	2,808	21,633
September	8,856	1,367	410	604	11,237
October	5,879	0	0	0	5,879
November	4,899	0	0	0	4,899
December	5,704	0	0	0	5,704
Total	89,347	16,564	14,274	5,346	125,531

Source: VIA Monthly Reports



in Table 25. To depict overall patterns in the data, "heat map" shading is applied, showing the lowest values in green shading to the highest values in red. This data indicates the following:

- In peak summer (August), the busiest day of the week is Monday, when ridership is 12 percent over the weekly average. The lowest ridership occurs on Sunday, when ridership is 11 percent below the average.

- In September, overall ridership is highest on Saturday (25 percent higher than average) and lowest on Tuesday (26 lower than average).

- In the busiest winter month (January) ridership is highest on Wednesday (29 percent above average) and lowest on Sunday (29 percent below average).

Boarding by Stop

The YARTS contractor records passenger boardings by stop on an ongoing basis, which provides a useful indicator of overall activity. Tables 26 to 29 present this data by month for each of the four routes. A review of this data indicates the following:

- Overall annual passenger activity on the **140 Route** is concentrated at the Yosemite Visitor Center (19.3 percent) and the TRANSPO Center (including Amtrak ridership) in

Table 25: YARTS Average Daily Ridership by Day of the Week by Month, 2017

Shading Indicates Relative Ridership From Low (Green) To High (Red)

	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
Route 140 Merced							
January	194	229	255	195	225	145	140
February	171	184	191	183	183	158	131
March	255	241	212	181	170	141	172
April	225	272	275	211	202	130	135
May	315	318	340	346	277	278	252
June	400	332	350	251	284	252	236
July	385	360	328	325	313	355	387
August	452	389	381	386	324	332	314
September	348	234	238	235	365	348	270
October	213	219	212	200	167	146	165
November	157	166	147	136	122	259	168
December	160	203	198	211	210	179	135
Route 120 Sonora							
May	33	65	62	89	47	164	150
June	165	197	225	194	117	178	161
July	168	152	155	170	169	144	134
August	100	93	92	85	137	138	115
September	33	39	31	46	44	53	86
Route 41 Fresno							
May	105	102	105	124	75	75	124
June	100	120	153	116	138	121	109
July	181	150	168	149	119	133	138
August	101	111	115	108	146	129	110
September	28	23	27	33	31	15	33
Route 120/395 Mammoth							
July	58	60	71	72	57	58	63
August	92	87	90	99	85	90	89
September	46	--	--	--	--	69	71
TOTAL							
May	420	420	445	470	352	353	376
June	500	452	502	366	422	373	345
July	624	571	567	546	489	546	588
August	645	587	587	593	555	550	513
September	422	257	264	268	396	432	374

Source: VIA Monthly Reports, summarized by LSC Transportation Consultants, Inc.

Table 26: YARTS Route 140 Boardings by Stop by Month, 2017

Pick-up Stop	Location	Boardings by Month												Total	% By Stop		
		Jan	Feb	Mar	April	May	June	July	Aug	Sept	Oct	Nov	Dec		Jan	Aug	Annual
Airport	Merced	26	29	23	20	16	38	31	52	17	21	33	35	341	0.4%	0.5%	0.4%
UC Merced	Merced	20	23	27	3	15	20	2	15	29	22	13	14	203	0.3%	0.1%	0.2%
Merced College	Merced	30	36	49	47	26	19	35	29	30	32	18	8	359	0.5%	0.3%	0.4%
Merced Mall/Target	Merced	40	28	42	55	63	87	38	69	77	59	22	17	597	0.7%	0.6%	0.7%
Downtown (Courthouse)	Merced	--	4	14	4	6	--	--	5	--	--	5	--	38	--	0.0%	0.0%
Transpo	Merced	216	181	229	265	279	245	278	365	309	272	409	267	3,315	3.5%	3.2%	3.7%
Amtrak	Merced	622	618	802	789	1,019	736	939	1,442	1,097	979	790	959	10,792	10.2%	12.6%	12.1%
Catheys Valley	Catheys Valley	57	50	112	51	62	80	69	107	48	44	28	26	734	0.9%	0.9%	0.8%
Mariposa Midtown	Mariposa	218	2	13	4	3	219	235	403	298	--	--	196	1,591	3.6%	3.5%	1.8%
Roadside Rest	Mariposa	500	410	427	359	445	407	415	412	512	387	412	365	5,051	8.2%	3.6%	5.7%
Mariposa Park & Ride	Mariposa	637	370	389	327	424	464	498	500	368	247	174	497	4,895	10.4%	4.4%	5.5%
Yaqui Gulch	Mariposa	11	--	--	--	--	--	--	--	--	--	--	--	11	0.2%	--	0.0%
KOA	Midpines	37	26	76	225	465	389	594	729	347	105	16	38	3,047	0.6%	6.4%	3.4%
Midpines P&R	Midpines	231	358	358	450	486	380	352	304	207	279	347	194	3,946	3.8%	2.7%	4.4%
Midpines Post Office	Midpines	153	143	120	141	166	180	229	227	167	--	--	65	1,591	2.5%	2.0%	1.8%
Bug Hostel	Midpines	206	185	249	298	478	322	288	447	371	292	208	343	3,687	3.4%	3.9%	4.1%
Cedar Lodge	El Portal	184	82	185	235	507	422	569	602	397	191	92	144	3,610	3.0%	5.2%	4.0%
NPS Maintenance	El Portal	141	157	204	143	177	226	191	175	95	143	84	98	1,834	2.3%	1.5%	2.1%
Barium Mine Rd	El Portal	70	46	42	70	64	30	36	69	40	28	37	19	551	1.1%	0.6%	0.6%
El Portal PO	El Portal	105	91	124	97	120	122	159	135	95	57	40	75	1,220	1.7%	1.2%	1.4%
Yosemite View Lodge	El Portal	479	725	909	819	1,446	2,169	1,777	1,912	1,651	618	375	376	13,256	7.9%	16.7%	14.8%
Other	Miscellaneous	6	20	19	7	13	35	82	29	10	--	--		221	0.1%	0.3%	0.2%
Mall (PG&E)		2	--	7	9	--	28	16	8	8	4	2	37	121	0.0%	0.1%	0.1%
Subtotal (Outside YNP)		*3,991*	*3,584*	*4,420*	*4,418*	*6,280*	*6,618*	*6,833*	*8,036*	*6,173*	*3,780*	*3,105*	*3,773*	*61,011*	65.5%	70.1%	68.3%
Half Dome Village	Yosemite Valley	352	257	304	506	802	575	690	841	808	329	569	390	6,423	5.8%	7.3%	7.2%
The Majestic Hotel	Yosemite Valley	297	227	188	196	311	253	256	375	235	168	112	181	2,799	4.9%	3.3%	3.1%
Yosemite Visitor Center	Yosemite Valley	940	732	1,078	1,285	2,087	2,068	2,196	1,970	1,529	1,350	1,113	925	17,273	15.4%	17.2%	19.3%
Yosemite Valley Lodge	Yosemite Valley	517	--	68	--	--	--	225	247	111	252	--	435	1,855	8.5%	2.2%	2.1%
Subtotal (Inside YNP)		*2,106*	*1,216*	*1,638*	*1,987*	*3,200*	*2,896*	*3,367*	*3,433*	*2,683*	*2,099*	*1,794*	*1,931*	*28,350*	34.5%	29.9%	31.7%
Total		**6,097**	**4,800**	**6,058**	**6,405**	**9,480**	**9,514**	**10,200**	**11,469**	**8,856**	**5,879**	**4,899**	**5,704**	**89,361**	100.0%	100.0%	100.0%

Source: VIA Monthly Reports

Table 27: Boarding Locations by Month in 2017, YARTS Route 120 Sonora to Yosemite

Pick-up Stop	Location	May	June	July	Aug	Sept	Total	% by Stop July	% by Stop Annual
Old Yosemite Road/Yosemite		8	--	--	--	--	8	--	0.0%
Thousand Trails Y		4	--	--	--	--	4	--	0.0%
Rush Creek Lodge	Rush Creek	24	100	77	97	40	338	1.6%	2.0%
Sonora Best Western	Sonora	35	139	86	97	16	373	1.8%	2.3%
Cal Inns, Washington St	Sonora	9	43	84	33	14	183	1.7%	1.1%
Jamestown Main/Rocca Park	Jamestown	4	67	73	39	14	197	1.5%	1.2%
Mary Laveroni Park	Groveland	64	288	287	188	81	908	6.0%	5.5%
Yosemite Pines RV Park	E. of Groveland	196	859	840	631	165	2,691	17.5%	16.2%
Buck Meadows Restaurant	Buck Meadows	36	161	236	83	26	542	4.9%	3.3%
Yosemite Lakes Campground	Yosemite Lakes	132	389	485	377	273	1,656	10.1%	10.0%
Black Oak Hotel	Sonora	25	32	21	16	9	103	0.4%	0.6%
Subtotal (Outside YNP)		*537*	*2,078*	*2,189*	*1,561*	*638*	*7,003*	45.5%	42.3%
Big Oak Flat Park Entrance	Yosemite NP	14	65	53	63	24	219	1.1%	1.3%
Crane Flat Gas Station	Yosemite NP	8	13	110	174	19	324	2.3%	2.0%
Yosemite Visitor Center	Yosemite NP	819	3,104	2,461	1,948	686	9,018	51.1%	54.4%
Subtotal (Inside YNP)		*841*	*3,182*	*2,624*	*2,185*	*729*	*9,561*	54.5%	57.7%
Total		**1,378**	**5,260**	**4,813**	**3,746**	**1,367**	**16,564**	100.0%	100.0%

Source: VIA Monthly Reports

Table 28: Route 120/395 Boardings by Stop by Month, 2017

Pick-up Stop	Boardings by Month July	Aug	Sept	Total	% Boardings Aug	Total
Mammoth Mountain Inn	163	335	113	611	11.9%	11.4%
The Village	135	124	41	300	4.4%	5.6%
Juniper Springs	24	59	16	99	2.1%	1.9%
Mammoth Lakes P&R	60	--	--	60	--	1.1%
Hwy 203, Shilo Inn	92	136	33	261	4.8%	4.9%
June Mountain Ski	--	2	--	2	0.1%	0.0%
Rush Creek Trailhead	25	53	1	79	1.9%	1.5%
Mono Basin Visitors Center	50	29	--	79	1.0%	1.5%
Lake View Lodge	134	100	8	242	3.6%	4.5%
Tioga Mobile Gas	96	50	--	146	1.8%	2.7%
Subtotal (Outside of Yosemite NP)	***779***	***888***	***212***	***1,879***	31.6%	35.1%
Tuolumne Meadows	260	485	92	837	17.3%	15.7%
White Wolf Lodge	--	4	11	15	0.1%	0.3%
Crane Flat Gas Station	8	4	--	12	0.1%	0.2%
Yosemite Visitor Center	887	1,427	289	2,603	50.8%	48.7%
Subtotal (Inside Yosemite NP)	***1,155***	***1,920***	***392***	***3,467***	68.4%	64.9%
Total	**1,934**	**2,808**	**604**	**5,346**	100.0%	100.0%

Source: VIA Monthly Reports

Table 29: Route 41 Boardings by Stop by Month, 2017

	Boardings by Month						% of Boardings	
Pick-up Stop	May	June	July	Aug	Sept	Total	July	Total
Fresno Airport	85	239	237	224	44	829	4.9%	5.8%
Amtrak/Greyhound	166	291	311	291	57	1,116	6.5%	7.8%
CSU Fresno	1	--	--	--	--	1	--	0.0%
North Fresno	77	123	142	127	20	489	3.0%	3.4%
Chucksani Gold	64	133	126	68	41	432	2.6%	3.0%
Coarsegold	37	77	100	72	4	290	2.1%	2.0%
Oakhurst Best Western	237	398	472	330	56	1,493	9.8%	10.5%
Pines & Bass Lake	32	162	97	149	15	455	2.0%	3.2%
Tenaya Lodge	100	179	402	244	9	934	8.4%	6.5%
Subtotal (Outside YNP)	*799*	*1,602*	*1,887*	*1,505*	*246*	*6,039*	39.4%	42.3%
Big Trees Lodge / Mariposa Grove	89	188	227	184	18	706	4.7%	4.9%
Wawona Store	67	218	186	123	6	600	3.9%	4.2%
Yosemite Lodge	327	600	1,119	636	33	2,715	23.3%	19.0%
Yosemite Visitor Center	270	542	712	685	50	2,259	14.8%	15.8%
Other	--	--	3	--	--	3	0.1%	0.0%
Majestic Yosemite Lodge	78	117	138	118	13	464	2.9%	3.2%
Half Dome Village	159	411	523	359	44	1,496	10.9%	10.5%
Subtotal (Inside YNP)	*990*	*2,076*	*2,908*	*2,105*	*164*	*8,243*	60.6%	57.7%
Total	**1,789**	**3,678**	**4,795**	**3,610**	**410**	**14,282**	100.0%	100.0%

Source: VIA Monthly Reports

Merced (15.8 percent). Annual boardings by community outside of the Park are highest in El Portal (33.6 percent) followed by Merced (25.6 percent), Midpines (20.1 percent) and Mariposa (18.9 percent). Only low ridership (less than 2 boardings per day) were served at the Merced stops other than TRANSPO, as well as at Barium Mine Road, Yaqui Gulch and the Mall (PG&E). The bulk (61 percent) of annual boardings within Yosemite occurred at the Visitors Center. Ridership boarding patterns during the peak summer were similar to the overall annual pattern. However, winter ridership was more concentrated in Mariposa (22.5 percent, with less ridership generated in Merced (15.6 percent), El Portal (16.1 percent) and Midpines (10.3 percent).

- Ridership on the **120 West** route outside the Park is highest at the Yosemite Pines RV Park (38.4 percent of all ridership and the Yosemite Lakes Campground (23.6 percent). Overall ridership in Sonora generates 9.3 percent of total boardings, along with 13.0 percent in Groveland. Within the Park, the large proportion occur at the Visitors Center (94 percent).

- The **120/395 Route** boardings outside of the park are concentrated at Mammoth Mountain Inn (32.5 percent of total boardings), followed by the Village stop (16 percent), Shilo Inn (13.9 percent) and Lake View Lodge (12.9 percent). Within the Park, 75 percent of boardings occur at the Yosemite Visitors Center, with 24 percent at Tuolumne Meadows.

- The busiest individual stop on the **41 Route** outside the Park is the Oakhurst Best Western, with 24.7 percent of the external boardings. As a whole, the Fresno stops generate 32.2 percent of the external boarding, with slightly more at the Amtrak/Greyhound stop (18.5 percent) than the airport (13.7 percent). This route serves a broader range of stops within the Park than the other routes. Of the boardings within the park, 32.9 percent are at the Yosemite Lodge, 27.4 percent at the Visitor Center, 18.1 percent at Half Dome Village, 4.9 percent at Mariposa Grove, 4.2 percent at Wawona Store and 3.2 percent at the Majestic Yosemite Lodge.

Boarding by Fare Type

The detailed records of passenger boardings by fare type provide a good indication of the type of passenger and trip purpose on the various routes. This data, shown in Tables 30 to 33, indicates the following:

- Adult full-fare passengers generate the largest (48.9 percent) proportion of boardings on the **140 Route**. An additional 10.7 percent paid fares through the Amtrak arrangement. NPS and concessionaire employees generate 6.7 percent of boardings, while 12.0 percent are other commuters.

- Full adult fares were used for 70.6 percent of the boardings on the **120 West** route, along with 7.4 percent of full Senior/Child fares and 10.0 percent of free Child boardings. Commuters generated 10.3 percent of boardings.

- The **120/395 Route** boardings were also concentrated among the Adult Paid category (71.2 percent), Senior/Child Paid category (7.2 percent) and free Child category (9.5 percent). The Commuter Fare category generated 10.6 percent of boardings.

- **Route 41** boardings have the highest proportion of full Adult Fares, with 82.7 percent. Commuters and employees generate a relatively low proportion of ridership on this route (only 2.7 percent in total). This route also has a small proportion of ridership paid through the Amtrak agreement (2.9 percent), though overall 96 percent of all Amtrak/YARTS passengers use the 140 Route.

Route 140 Survey Data of Trip Origin/Destination Patterns

The passenger surveys conducted in March 2017 for the 140 Route provide additional detail regarding passenger trip patterns. (Much more detail regarding these surveys are presented in the separate Survey Technical Memorandum.) As shown in Table 34, these surveys indicated that the proportion of passengers identifying themselves as residents of the Yosemite region vs visitors to the region varies significantly by run. The runs serving the “commute times” to/from the park (arriving around 8 AM and departing around 5 PM) as well as the morning westbound run to Merced serve a high proportion of residents, while the mid-morning runs into the Park

Table 30: 2017 Route 140 Boardings by Fare Type

Month	Armrk Emp	NPS Employees	Other	Total Employees	Adult Paid	Sr/Child (Paid)	Commuter Paid	Paid Fare	Child Free	Amtrak (Paid)	Total	Total Paid
January	52	395	40	487	3,693	200	935		217	565	6,097	5,393
February	79	515	32	626	2,688	107	705		111	563	4,800	4,063
March	114	664	48	812	3,243	199	1,004		69	717	6,044	5,163
April	62	446	76	584	3,598	334	861		178	850	6,405	5,643
May	82	501	115	698	5,405	631	1,410		206	1,130	9,480	8,576
June	52	368	135	555	5,875	529	1,597		275	683	9,514	8,684
July	103	348	240	691	6,665	279	1,291		595	679	10,200	8,914
August	89	525	37	651	6,856	381	1,639		574	1,368	11,469	10,244
September	81	212	16	309	5,634	432	1,307		130	1,044	8,856	8,417
October		556						4,672	45	606	5,879	5,834
November		338						4,083	57	421	4,899	4,842
December		359						4,190	178	977	5,704	5,526
Total	714	5,227	739	5,413	43,657	3,092	10,749		2,635	9,603	89,347	81,299
Percent	*0.8%*	*5.9%*	*0.8%*	*6.1%*	*48.9%*	*3.5%*	*12.0%*		*2.9%*	*10.7%*	*100.0%*	*91.0%*

Note: Passenger fare categories changed in October 2017

Source: VIA Monthly Reports, 2017

Table 31: 2017 Route 120 West Boardings by Fare Type

Month	Armrk Emp	NPS Employee	Other	Total Employee	Adult Paid	Sr/Child (Paid)	Commuter Paid	Child Free	Amtrak (Paid)	Total	Total Paid
May	0	0	111	111	952	224	12	79	0	1,378	1,188
June	49	0	115	164	3,749	485	387	475	0	5,260	4,621
July	0	0	8	8	3,307	196	688	614	0	4,813	4,191
August	0	0	17	17	2,659	216	485	369	0	3,746	3,360
September	0	0	5	5	1,022	98	127	115	0	1,367	1,247
Total	49	0	256	305	11,689	1,219	1,699	1,652	0	16,564	14,607
% Total	0.3%	0.0%	1.5%	1.8%	70.6%	7.4%	10.3%	10.0%	0.0%	100.0%	88.2%

Table 32: 2017 Route 120/395 Boardings by Fare Type

Month	Armrk Emp	NPS Employee	Other	Total Employee	Adult Paid	Sr/Child (Paid)	Commute r Paid	Child Free	Amtrak (Paid)	Total	Total Paid
May	0	0	8	8	1,347	220	115	33	66	1,789	1,748
June	49	0	115	164	3,749	485	387	475	0	5,260	4,621
July	0	0	8	8	3,307	196	688	614	0	4,813	4,191
August	0	0	17	17	2,659	216	485	369	0	3,746	3,360
September	0	0	5	5	1,022	98	127	115	0	1,367	1,247
Total	49	0	153	202	12,084	1,215	1,802	1,606	66	16,975	15,167
	0.3%	0.0%	0.9%	1.2%	71.2%	7.2%	10.6%	9.5%	0.4%	100.0%	89.3%

Table 33: 2017 Route 41 Boardings by Fare Type

	Armrk Emp	Other	Total Employees	Adult Paid	Sr/Child (Paid)	Commuter Paid	Child Free	Amtrak (Paid)	Total	Total Paid
May	0	8	8	1,347	220	115	33	66	1,789	1,748
June	4	28	32	2,954	370	71	156	95	3,678	3,490
July	0	35	35	4,037	278	51	269	122	4,787	4,488
August	1	5	6	3,120	178	54	133	119	3,610	3,471
September	1	1	2	340	48	9	3	8	410	405
Total	6	77	83	11,798	1,094	300	594	410	14,274	13,602
% Total	0.0%	0.5%	0.6%	82.7%	7.7%	2.1%	4.2%	2.9%	100.0%	95.3%

and the mid-afternoon and evening westbound runs out of the Park have a high proportion of visitors.

The specific trip origin/destination of individual travel trips were also evaluated to identify the trip passengers for both residents and visitors, as shown in Table 35. This reflects that the Route 140 YARTS service serves more than simply trips to and from Yosemite National Park, particularly among residents. In total, 49 percent of resident trips were completely outside of

Table 34: Visitors and Residents by Run

Route 140 -- Total of Weekday and Weekend Surveys

	Percent of Surveyed Passengers	
	Residents	Visitors
Eastbound		
Run 1 (4:54 AM)	86%	14%
Run 2 (5:58 AM)	80%	20%
Run 3 (6:45 AM)	40%	60%
Run 4 (10:20 AM	12%	88%
Run 5 (1:35 PM)	36%	64%
Run 6 (4:30 PM)	43%	57%
Westbound		
Run 7 (6:20 AM)	75%	25%
Run 8 (9:32 AM)	39%	61%
Run 9 (3:40 PM)	47%	53%
Run 10 (4:15 PM)	33%	67%
Run 11 (5:05 PM)	58%	42%
Run 12 (5:45 PM)	0%	100%

Table 35: Route 140 Passenger Origin/Destination by Community

		FROM:					
		Merced	Catheys Valley	Mariposa	Midpines	El Portal	Yosemite Valley
Residents (59 Valid Responses)							
TO:	Merced	0%	0%	7%	2%	0%	3%
	Catheys Valley	2%	0%	0%	0%	0%	0%
	Mariposa	3%	0%	0%	2%	5%	2%
	Midpines	0%	0%	2%	0%	0%	0%
	El Portal	3%	0%	19%	3%	0%	0%
	Yosemite Valley	14%	0%	15%	8%	8%	0%
	Other	0%	0%	2%	0%	0%	0%
Visitors (69 Valid Responses)							
TO:	Merced	0%	0%	1%	1%	0%	19%
	Catheys Valley	0%	0%	1%	0%	0%	0%
	Mariposa	0%	0%	0%	0%	0%	4%
	Midpines	3%	0%	0%	0%	0%	0%
	El Portal	3%	0%	0%	0%	0%	0%
	Yosemite Valley	33%	0%	28%	4%	0%	0%
	Other	0%	0%	0%	0%	1%	0%

the Park (with neither origin nor destination in the Park), with many of these trips consisting of travel between Mariposa and El Portal (24 percent) or trips between Merced and the other communities outside the park (17 percent). Visitors were much more likely to travel to or from the Park (88 percent), with the remainder largely consisting of travel between Merced and the gateway communities (presumably to access lodging).

YARTS PERFORMANCE ANALYSIS

Performance Analysis by Route and by Month

A "performance analysis" provides useful insights regarding the elements of a transit program that are relatively effective or ineffective. A higher-level performance analysis was conducted for each YARTS route and month of service over 2017, as presented in Table 36:

- Service quantities by route and month were drawn from Table 16. The vehicle-hours were multiplied by the current VIA contract rates ($97.71 per vehicle-hour for service operated with YARTS-owned buses, and $135.74 per vehicle-hour for service operated using VIA-provided buses, to estimate the marginal contractor costs for each route and month.

- Ridership by route and month from Table 24, multiplied by average fare revenue per passenger-boarding for the various routes, in order to estimate the farebox revenue per route and month.

- Subtracting the fare revenues from the operating costs yields the marginal operating subsidy per route and month.

- Dividing the passenger boarding figures by the vehicle-hours yields the **passenger boardings per vehicle-hour**, also known as the "productivity" of a transit service. As indicating, this figure reaches a high of 9.9 (Route 120 West in June) and a low of 0.8 (Route 41 in September). Overall, Route 120 West is the most productive of the routes, with an overall figure of 8.3, followed by Route 140 at 6.3, 120/395 at 4.9, and Route 41 at 3.8. Systemwide productivity is actually higher in April and January (when only Route 140 is in operation). Overall, however, productivity remains relatively constant across the months of the year.

- The **operating subsidy per passenger boarding** is a key measure of the cost effectiveness of a transit service, as it relates the key public "input" – public subsidy funding – with the key "output" – passenger boardings. A lower figure reflects a more cost-effective service. As shown, the lowest subsidy per passenger-trips by overall routes is for Route 120 West, requiring $4.24 per passenger-trip. This figure ranges up to $42.14 for Route 41. Subsidy per passenger-trip by month is highest in September ($16.47) and lowest in April ($7.59).

Table 36: YARTS 2017 Performance Analysis by Route and Month

Month	Route 140	120 West	41	120/395	TOTAL	Route 140	120 West	41	120/395	TOTAL
	Contractor Operating Cost					**Passenger Fare Revenue**				
January	$96,900	$0	$0	$0	$96,900	$46,300	$0	$0	$0	$46,300
February	$90,100	$0	$0	$0	$90,100	$36,400	$0	$0	$0	$36,400
March	$100,300	$0	$0	$0	$100,300	$45,900	$0	$0	$0	$45,900
April	$97,200	$0	$0	$0	$97,200	$48,600	$0	$0	$0	$48,600
May	$134,900	$15,600	$92,200	$0	$242,700	$72,000	$10,500	$8,100	$0	$90,600
June	$151,800	$51,900	$163,200	$0	$366,900	$72,200	$39,900	$16,700	$0	$128,800
July	$156,000	$53,600	$178,300	$50,300	$438,200	$77,400	$36,500	$21,700	$14,700	$150,300
August	$183,200	$53,600	$165,900	$50,300	$453,000	$87,000	$28,400	$16,400	$21,300	$153,100
September	$174,300	$21,300	$66,600	$7,000	$269,200	$67,200	$10,400	$1,900	$4,600	$84,100
October	$102,400	$0	$0	$0	$102,400	$44,600	$0	$0	$0	$44,600
November	$101,400	$0	$0	$0	$101,400	$37,200	$0	$0	$0	$37,200
December	$101,100	$0	$0	$0	$101,100	$43,300	$0	$0	$0	$43,300
Total	$1,489,600	$196,000	$666,200	$107,600	$2,459,400	$678,100	$125,700	$64,800	$40,600	$909,200
	Marginal Operating Subsidy					**Passenger Boardings per Vehicle Hour**				
January	$50,600	$0	$0	$0	$50,600	6.1				6.1
February	$53,700	$0	$0	$0	$53,700	5.2				5.2
March	$54,400	$0	$0	$0	$54,400	5.9				5.9
April	$48,600	$0	$0	$0	$48,600	6.4				6.4
May	$62,900	$5,100	$84,100	$0	$152,100	7.4	8.7	2.6		6.0
June	$79,600	$12,000	$146,500	$0	$238,100	7.0	9.9	3.1		6.0
July	$78,600	$17,100	$156,600	$35,600	$287,900	7.3	8.8	3.6	3.8	5.8
August	$96,200	$25,200	$149,500	$29,000	$299,900	7.0	6.8	3.0	5.5	5.5
September	$107,100	$10,900	$64,700	$2,400	$185,100	5.7	6.3	0.8	8.4	4.8
October	$57,800	$0	$0	$0	$57,800	5.6				5.6
November	$64,200	$0	$0	$0	$64,200	4.7				4.7
December	$57,800	$0	$0	$0	$57,800	5.5				5.5
Total	$811,500	$70,300	$601,400	$67,000	$1,550,200	6.3	8.3	3.8	4.9	5.9
	Operating Subsidy Per Passenger Boarding					**Marginal Farebox Ratio**				
January	$8.30				$8.30	48%				48%
February	$11.19				$11.19	40%				40%
March	$9.00				$9.00	46%				46%
April	$7.59				$7.59	50%				50%
May	$6.64	$3.70	$47.01		$12.03	53%	67%	9%		37%
June	$8.37	$2.28	$39.83		$12.90	48%	77%	10%		35%
July	$7.71	$3.55	$32.71	$18.41	$13.25	50%	68%	12%	29%	34%
August	$8.39	$6.73	$41.41	$10.33	$13.86	47%	53%	10%	42%	34%
September	$12.09	$7.97	$157.80	$3.97	$16.47	39%	49%	3%	66%	31%
October	$9.83				$9.83	44%				44%
November	$13.10				$13.10	37%				37%
December	$10.13				$10.13	43%				43%
Total	$9.08	$4.24	$42.13	$12.53	$12.35	46%	64%	10%	38%	37%

Note 1: At the 2017 cost per vehicle-hour of $97.71 for YARTS-owned buses and $135.74 for VIA bus. YARTS buses operated all services except all of 41 Route service and 3 of 8 140 Route buses from mid-May through September.

- Another important measure is the "**farebox ratio**" – the ratio of passenger revenues to marginal contractor operating costs. A "better" measure is reflected by a higher figure,

by this measure. The best service by this measure is Route 120 West in June, which covers 77 percent of the contractor costs with fare revenues. Again, Route 120 West is "best" overall by this measure (64 percent) followed by the 140 Route (46 percent), 120/395 Route (38 percent) and the 41 Route (10 percent).

Ridership and Performance Analysis by Run

A detailed analysis was conducted of the average daily ridership and performance analysis for the individual runs on all YARTS routes. To reflect peak summer, shoulder season and winter conditions, this analysis was conducted for July 2017, September 2017 and January 2018, respectively. The analysis included the following elements:

- Monthly ridership per run was identified from the monthly Contractor Monthly Reports, and divided by the runs per month to result in the average daily ridership by run. Note that the ridership and runs conducted on the free-fare day in January were excluded.

- Service revenue miles and revenue hours per day were also drawn from the Monthly Reports.

- Marginal operating cost per run was estimated based on the cost of $97.71 per revenue hour for the operation of a YARTS-owned bus. Note that some runs are currently operated by contractor-owned buses, at a cost per revenue-hour of $135.74 (39 percent higher). Specifically, the contractor-owned buses are operated as follows from mid-May through September (but not in winter):

    - Highway 41 Service – All runs
    - Highway 140 Service – 3 of the daily 8 peak buses in operation. The contractor buses are rotated through the various runs.

    The lower YART-owned rates were applied to all runs, in order to provide an apples-to-apples comparison of the various runs, and to reflect that procurement of additional buses could yield the lower rate on all runs in the future.

- Farebox revenues by run were calculated based on the average fare revenue by route times the ridership.

- Subtracting the fare revenue per run from the marginal operating cost per run yielded the marginal operating subsidy per run.

- A series of performance measures were then calculated for each run:

    - Boardings per revenue mile
    - Boardings per revenue hour ("productivity")

- Cost per Passenger Boarding
- Subsidy per Passenger Boarding
- Farebox Ratio (ratio of passenger fares to marginal operating cost)

The resulting summaries are presented in Tables 37 through 40 (for the average July day), Tables 41 through 44 (for the average September day) and Table 45 (for Route 140 on the average January day). Appendix A presents a series of charts depicting the ridership per runs, productivity per run and subsidy per passenger-trip per run for each route and season.

Table 46 presents a summary of the ridership per run for all runs and seasons. A review of this indicates the following:

- The busiest July weekday Route 140 run was the 5:58 AM departure from Catheys Valley (34.8 passengers, on average, arriving in Yosemite Valley around 8 AM), followed by the 3:15 PM departures from Yosemite Valley. The lowest ridership runs (mid-day runs into Yosemite Valley, and evening service from Madera to Merced) are not in the planned 2018 summer schedule. While the later evening (8:06 PM departure from Yosemite Valley) has relatively low ridership, at 16.6 it was still serving a significant numbers of passengers. Weekend/holiday ridership was greater in the later AM runs (particularly the eastbound departures at 6:45 AM, 8:45 AM and 10:29 AM).

- The busiest weekday Route 140 run in September was the 9:32 PM departure from Yosemite Valley (28.4 passengers). The later evening run (8:07 PM westbound departure) had a relatively low ridership of 4.5 passengers on average on weekdays. Overall, weekend/holiday ridership on Route 140 in September was very close to the July ridership (only 1 percent lower).

- Winter (January) ridership was strong on many runs, reaching as high as 31.4 passengers per run for the 3:40 PM westbound run on weekend/holiday and 28.7 on weekdays. Other high ridership runs were the 6:45 AM and the 9:32 AM eastbound departures. The data indicates that an additional early to mid-afternoon run may be effective.

- Route 120 (west) ridership by run data indicates a preference by Tuolumne County visitors to get up early to visit Yosemite, as reflected by 36.6 and 32.5 passengers per run on the summer 6:40 AM departure in July and September, respectively. They also want to stay late on weekdays (the last return trip is the most popular), but want to leave early (the first return trip is the most popular) – perhaps reflecting the desire on weekends to make the trip home on the same day. Strong ridership on all runs in June indicates the potential effectiveness of service expansion in summer.

- The weekend/holiday ridership on Route 120 was only 14 percent lower in September than in July, with all runs serving at least 11.7 passengers on average. While only one

Table 37: Run Analysis -- 140 Route July

			Average Daily						Performance Analysis				
Run	Start / End	Starting Time	Revenue Miles	Revenue Hours	Operating Cost	Passenger Boardings	Estimated Fare Revenue	Operating Subsidy	Boardings per Revenue Mile	Boardings per Revenue Hour	Cost per Passenger Boarding	Subsidy per Passenger Boarding	Farebox Ratio
Weekdays													
01	Catheys Vly-Valley	5:28 AM	69	2.30	$224.73	20.1	$152.25	$72.49	0.29	8.7	$11.20	$3.61	68%
02	Catheys Vly-Valley	5:58 AM	69	2.30	$224.73	34.8	$264.31	-$39.58	0.50	15.1	$6.45	-$1.14	118%
2A	Merced-Valley	6:00 AM	87	3.00	$293.13	26.8	$203.59	$89.54	0.31	8.9	$10.93	$3.34	69%
07	Mariposa-Merced	6:20 AM	51	2.20	$214.96	21.8	$165.64	$49.32	0.43	9.9	$9.85	$2.26	77%
03	Merced-Valley	6:45 AM	87	3.20	$312.67	18.4	$139.75	$172.93	0.21	5.8	$16.98	$9.39	45%
04	Merced-Valley	8:45 AM	87	3.20	$312.67	23.9	$181.71	$130.96	0.28	7.5	$13.06	$5.47	58%
3A	Mariposa-Valley	9:00 AM	55	2.00	$195.42	19.5	$147.78	$47.64	0.35	9.7	$10.04	$2.45	76%
08	Valley-Merced	9:32 AM	87	4.00	$390.84	24.8	$187.96	$202.88	0.28	6.2	$15.78	$8.19	48%
05	Merced-Valley	10:20 AM	87	3.50	$341.99	27.2	$206.27	$135.72	0.31	7.8	$12.58	$4.99	60%
01	El Portal-Valley	12:00 PM	30	1.00	$97.71	8.3	$63.25	$34.46	0.28	8.3	$11.73	$4.14	65%
02	El Portal-Valley	1:00 PM	30	1.00	$97.71	8.3	$63.25	$34.46	0.28	8.3	$11.73	$4.14	65%
8A	Valley-Mariposa	3:15 PM	55	3.00	$293.13	31.8	$241.54	$51.59	0.58	10.6	$9.21	$1.62	82%
09	Valley-Merced	3:40 PM	87	4.55	$444.58	26.1	$197.79	$246.79	0.30	5.7	$17.06	$9.47	44%
10	Valley-Merced	4:15 PM	87	3.20	$312.67	24.4	$185.29	$127.39	0.28	7.6	$12.81	$5.22	59%
06	Merced-Valley	4:30 PM	87	3.90	$381.07	22.5	$170.78	$210.29	0.26	5.8	$16.94	$9.35	45%
11	Valley-Mariposa	4:35 PM	87	3.91	$382.05	23.7	$179.93	$202.12	0.27	6.1	$16.12	$8.53	47%
11A	Valley-Merced	5:15 PM	55	3.00	$293.13	17.6	$133.94	$159.19	0.32	5.9	$16.61	$9.02	46%
12	Valley-Merced	5:45 PM	87	3.95	$385.95	20.4	$155.12	$230.83	0.23	5.2	$18.88	$11.29	40%
01	Madera-Merced	6:30 PM	87	4.00	$390.84	8.3	$63.25	$327.59	0.10	2.1	$46.90	$39.31	16%
02	Madera-Merced	7:30 PM	87	4.00	$390.84	10.0	$75.90	$314.94	0.11	2.5	$39.08	$31.49	19%
14	Valley-Merced	8:07 PM	87	2.90	$283.36	16.6	$125.71	$157.65	0.19	5.7	$17.11	$9.52	44%
Total			1,545	64.11	$6,264.19	435.4	$3,305.00	$2,959.19	0.28	6.8	$14.39	$6.80	53%
Weekends/Holidays													
02	Cathey's Vly-Valley	5:58 AM	69	2.30	$224.73	26.6	$201.56	$23.18	0.38	11.5	$8.46	$0.87	90%
2A	Merced-Valley	6:00 AM	87	3.00	$293.13	21.4	$162.76	$130.37	0.25	7.1	$13.67	$6.08	56%
03	Merced-Valley	6:45 AM	87	3.20	$312.67	34.7	$263.12	$49.55	0.40	10.8	$9.02	$1.43	84%
04	Merced-Valley	8:45 AM	87	3.20	$312.67	32.0	$242.88	$69.79	0.37	10.0	$9.77	$2.18	78%
3A	Mariposa-Valley	9:00 AM	55	2.00	$195.42	18.7	$141.68	$53.74	0.34	9.3	$10.47	$2.88	73%
08	Valley-Merced	9:32 AM	87	4.00	$390.84	22.3	$169.51	$221.33	0.26	5.6	$17.50	$9.91	43%
05	Merced-Valley	10:20 AM	87	3.50	$341.99	33.8	$256.37	$85.61	0.39	9.7	$10.12	$2.53	75%
01	El Portal-Valley	12:00 PM	30	1.00	$97.71	10.0	$75.90	$21.81	0.33	10.0	$9.77	$2.18	78%
8A	Valley-Mariposa	3:15 PM	55	3.00	$293.13	30.1	$228.54	$64.59	0.55	10.0	$9.73	$2.14	78%
09	Valley-Merced	3:40 PM	87	4.55	$444.58	24.8	$188.06	$256.52	0.28	5.4	$17.94	$10.35	42%
10	Valley-Merced	4:15 PM	87	3.20	$312.67	19.9	$150.96	$161.72	0.23	6.2	$15.72	$8.13	48%
06	Merced-Valley	4:30 PM	87	3.90	$381.07	18.6	$140.84	$240.23	0.21	4.8	$20.54	$12.95	37%
11	Valley-Mariposa	4:35 PM	87	3.62	$353.38	20.0	$151.80	$201.58	0.23	5.5	$17.67	$10.08	43%
11A	Valley-Merced	5:15 PM	55	3.00	$293.13	24.8	$188.06	$105.07	0.45	8.3	$11.83	$4.24	64%
12	Valley-Merced	5:45 PM	87	3.95	$385.95	25.2	$191.44	$194.52	0.29	6.4	$15.30	$7.71	50%
02	Madera-Merced	7:30 PM	87	4.00	$390.84	7.5	$56.93	$333.92	0.09	1.9	$52.11	$44.52	15%
14	Valley-Merced	8:07 PM	87	2.90	$283.36	15.2	$115.54	$167.82	0.17	5.2	$18.61	$11.02	41%
Total			1,308	54.32	$5,307.28	385.5	$2,925.95	$2,381.34	0.29	7.1	$13.77	$6.18	55%

Note 1: Cost based on the $97.71 per revenue hour for use of a YARTS-owned bus.

Table 38: Run Analysis -- 120 Route July

			Average Daily						Performance Analysis				
Run	Starting Point	Starting Time	Revenue Miles	Revenue Hours	Operating Cost	Passenger Boardings	Estimated Fare Revenue	Operating Subsidy	Boardings per Revenue Mile	Boardings per Revenue Hour	Cost per Passenger Boarding	Subsidy per Passenger Boarding	Farebox Ratio
Weekdays													
S1C	Tuolumne-Valley	6:40 AM	84	2.70	$263.82	36.6	$277.79	-$13.98	0.44	13.6	$7.21	-$0.38	105%
S2C	Tuolumne-Valley	7:40 AM	84	2.70	$263.82	30.8	$233.77	$30.05	0.37	11.4	$8.57	$0.98	89%
S3C	Tuolumne-Valley	8:40 AM	84	2.70	$263.82	16.7	$126.37	$137.44	0.20	6.2	$15.84	$8.25	48%
02B	Valley-Tuolumne	4:00 PM	84	3.20	$312.67	26.2	$198.86	$113.81	0.31	8.2	$11.93	$4.34	64%
S1D	Valley-Tuolumne	4:30 PM	84	3.20	$312.67	25.3	$192.03	$120.65	0.30	7.9	$12.36	$4.77	61%
S2D	Valley-Tuolumne	5:35 PM	84	3.20	$312.67	29.7	$225.42	$87.25	0.35	9.3	$10.53	$2.94	72%
Total			504	17.70	$1,729.47	165.3	$1,254.25	$475.22	0.33	9.3	$10.47	$2.88	73%
Weekends/Holidays													
S1C	Tuolumne-Valley	6:40 AM	84	2.70	$263.82	32.5	$246.33	$17.49	0.39	12.0	$8.13	$0.54	93%
S2C	Tuolumne-Valley	7:40 AM	84	2.70	$263.82	19.7	$149.73	$114.09	0.23	7.3	$13.37	$5.78	57%
S3C	Tuolumne-Valley	8:40 AM	84	2.70	$263.82	16.9	$128.34	$135.48	0.20	6.3	$15.60	$8.01	49%
02B	Valley-Tuolumne	4:00 PM	84	3.20	$312.67	30.9	$234.60	$78.07	0.37	9.7	$10.12	$2.53	75%
S1D	Valley-Tuolumne	4:30 PM	84	3.20	$312.67	17.0	$129.03	$183.64	0.20	5.3	$18.39	$10.80	41%
S2D	Valley-Tuolumne	5:35 PM	84	3.20	$312.67	20.1	$152.49	$160.18	0.24	6.3	$15.56	$7.97	49%
Total			504	17.70	$1,729.47	137.1	$1,040.52	$688.95	0.27	7.7	$12.62	$5.03	60%

Note 1: Cost based on the $97.71 per revenue hour for use of a YARTS-owned bus.

Table 39: Run Analysis -- 41 Route July

			Average Daily						Performance Analysis				
Run	Starting Point	Starting Time	Revenue Miles	Revenue Hours	Operating Cost	Passenger Boardings	Estimated Fare Revenue	Operating Subsidy	Boardings per Revenue Mile	Boardings per Revenue Hour	Cost per Passenger Boarding	Subsidy per Passenger Boarding	Farebox Ratio
Weekdays													
20	Fresno(FAT)-Valley	3:40 AM	103	3.80	$371.30	9.7	$43.94	$327.36	0.09	2.6	$38.28	$33.75	12%
21	Oakhurst-Fresno	6:00 AM	56	1.70	$166.11	2.3	$10.19	$155.91	0.04	1.3	$73.83	$69.30	6%
22	Fresno-Valley	5:37 AM	118	4.00	$390.84	21.5	$97.17	$293.67	0.18	5.4	$18.22	$13.69	25%
25	Valley-Fresno	3:26 PM	119	4.00	$390.84	12.4	$55.95	$334.89	0.10	3.1	$31.65	$27.12	14%
26	Fresno-Valley	9:30 AM	118	4.00	$390.84	11.0	$49.60	$341.24	0.09	2.7	$35.69	$31.16	13%
28	Fresno-Valley	12:45 PM	118	4.20	$410.38	13.9	$62.74	$347.64	0.12	3.3	$29.63	$25.10	15%
30	Fresno-Oakhurst	5:45 PM	55	2.30	$224.73	14.9	$67.27	$157.46	0.27	6.5	$15.13	$10.60	30%
23	Valley-Fresno	9:23 AM	119	4.00	$390.84	14.7	$66.36	$324.48	0.12	3.7	$26.68	$22.15	17%
24	Fresno-Valley	7:23 AM	119	4.00	$390.84	15.6	$70.67	$320.17	0.13	3.9	$25.05	$20.52	18%
27	Valley-Fresno	4:03 PM	119	4.00	$390.84	12.9	$58.44	$332.40	0.11	3.2	$30.30	$25.77	15%
29	Valley-Fresno	5:32 PM	119	4.00	$390.84	15.5	$69.99	$320.85	0.13	3.9	$25.30	$20.77	18%
31	Valley-Fresno	6:32 PM	119	4.20	$410.38	7.4	$33.30	$377.09	0.06	1.8	$55.83	$51.30	8%
Total			1282	44.20	$4,318.78	151.4	$685.62	$3,633.17	0.12	3.4	$28.54	$24.01	16%
Weekends/Holidays													
20	Fresno(FAT)-Valley	3:40 AM	103	3.80	$371.30	9.9	$44.89	$326.41	0.10	2.6	$37.47	$32.94	12%
22	Fresno-Valley	5:37 AM	118	4.00	$390.84	18.6	$84.26	$306.58	0.16	4.7	$21.01	$16.48	22%
25	Valley-Fresno	3:26 PM	119	4.00	$390.84	11.7	$53.12	$337.72	0.10	2.9	$33.33	$28.80	14%
26	Fresno-Valley	9:30 AM	118	4.00	$390.84	11.3	$51.07	$339.77	0.10	2.8	$34.67	$30.14	13%
28	Fresno-Valley	12:45 PM	118	4.20	$410.38	12.9	$58.48	$351.90	0.11	3.1	$31.79	$27.26	14%
30	Fresno-Oakhurst	5:45 PM	55	2.30	$224.73	16.1	$72.89	$151.84	0.29	7.0	$13.97	$9.44	32%
23	Valley-Fresno	9:23 AM	119	4.00	$390.84	14.8	$67.13	$323.71	0.12	3.7	$26.38	$21.85	17%
24	Fresno-Valley	7:23 AM	119	4.00	$390.84	16.7	$75.77	$315.07	0.14	4.2	$23.37	$18.84	19%
27	Valley-Fresno	4:03 PM	119	4.00	$390.84	9.5	$43.24	$347.60	0.08	2.4	$40.95	$36.42	11%
29	Valley-Fresno	5:32 PM	119	4.00	$390.84	20.8	$94.31	$296.53	0.17	5.2	$18.77	$14.24	24%
31	Valley-Fresno	6:32 PM	119	4.20	$410.38	10.4	$46.95	$363.43	0.09	2.5	$39.60	$35.07	11%
Total			1226	42.50	$4,152.68	152.8	$692.10	$3,460.57	0.12	3.6	$27.18	$22.65	17%

Note 1: Cost based on the $97.71 per revenue hour for use of a YARTS-owned bus. If a contractor-owned bus is used on a specific run, operating costs are 39 percent higher than those shown.

Table 40: Run Analysis -- 120/395 Route July

			Average Daily						Performance Analysis				
Run	Start / End	Starting Time	Revenue Miles	Revenue Hours	Operating Cost	Passenger Boardings	Estimated Fare Revenue	Operating Subsidy	Boardings per Revenue Mile	Boardings per Revenue Hour	Cost per Passenger Boarding	Subsidy per Passenger Boarding	Farebox Ratio
Weekdays													
01	Mammoth-Valley	8:00 AM	125	4.10	$400.61	18.0	$136.24	$264.37	0.14	4.4	$22.32	$14.73	34%
03	Mammoth-Tuol Mdws	6:00 AM	49	2.20	$214.96	3.9	$29.22	$185.74	0.08	1.8	$55.83	$48.24	14%
05	Mammoth-Tuol Mdws	11:15 AM	49	2.20	$214.96	4.0	$29.98	$184.98	0.08	1.8	$54.42	$46.83	14%
04	Tuol Mdws-Mammoth	8:15 AM	49	2.10	$205.19	4.2	$31.50	$173.69	0.08	2.0	$49.44	$41.85	15%
06	Tuol Mdws-Mammoth	4:10 PM	49	2.10	$205.19	3.9	$29.22	$175.97	0.08	1.8	$53.30	$45.71	14%
02	Valley-Mammoth	5:00 PM	125	3.90	$381.07	30.8	$233.77	$147.30	0.25	7.9	$12.37	$4.78	61%
Total			446	16.60	$1,621.99	64.6	$489.93	$1,132.05	0.14	3.9	$25.13	$17.54	30%
Weekends/Holidays													
01	Mammoth-Valley	8:00 AM	125	4.10	$400.61	18.9	$143.52	$257.09	0.15	4.6	$21.19	$13.60	36%
03	Mammoth-Tuol Mdws	6:00 AM	49	2.20	$214.96	3.1	$23.46	$191.50	0.06	1.4	$69.55	$61.96	11%
05	Mammoth-Tuol Mdws	11:15 AM	49	2.20	$214.96	3.9	$29.67	$185.29	0.08	1.8	$54.99	$47.40	14%
04	Tuol Mdws-Mammoth	8:15 AM	49	2.10	$205.19	2.9	$22.08	$183.11	0.06	1.4	$70.53	$62.94	11%
06	Tuol Mdws-Mammoth	4:10 PM	49	2.10	$205.19	3.2	$24.15	$181.04	0.06	1.5	$64.49	$56.90	12%
02	Valley-Mammoth	5:00 PM	125	3.90	$381.07	26.5	$200.79	$180.28	0.21	6.8	$14.40	$6.81	53%
Total			446	16.60	$1,621.99	58.5	$443.67	$1,178.32	0.13	3.5	$27.75	$20.16	27%

Note 1: Cost based on the $97.71 per revenue hour for use of a YARTS-owned bus.

Table 41: Run Analysis -- 140 Route September

			Average Daily						Performance Analysis				
Run	Start / End	Starting Time	Revenue Miles	Revenue Hours	Operating Cost	Passenger Boardings	Estimated Fare Revenue	Operating Subsidy	Boardings per Revenue Mile	Boardings per Revenue Hour	Cost per Passenger Boarding	Subsidy per Passenger Boarding	Farebox Ratio
Weekdays													
01	Cathey's Vly-Valley	5:28 AM	69	2.30	$224.73	18.4	$139.66	$85.08	0.27	8.0	$12.21	$4.62	62%
02	Cathey's Vly-Valley	5:58 AM	69	2.30	$224.73	18.2	$137.76	$86.97	0.26	7.9	$12.38	$4.79	61%
2A	Merced-Valley	6:00 AM	87	3.00	$293.13	15.8	$119.92	$173.21	0.18	5.3	$18.55	$10.96	41%
07	Mariposa-Merced	6:20 AM	51	2.20	$214.96	9.6	$72.48	$142.48	0.19	4.3	$22.51	$14.92	34%
03	Merced-Valley	6:45 AM	87	3.20	$312.67	22.2	$168.12	$144.55	0.25	6.9	$14.12	$6.53	54%
04	Merced-Valley	8:45 AM	87	3.20	$312.67	17.7	$133.96	$178.71	0.20	5.5	$17.72	$10.13	43%
3A	Mariposa-Valley	9:00 AM	55	2.00	$195.42	13.4	$101.33	$94.09	0.24	6.7	$14.64	$7.05	52%
08	Valley-Merced	9:32 AM	87	4.00	$390.84	28.4	$215.56	$175.28	0.33	7.1	$13.76	$6.17	55%
05	Merced-Valley	10:20 AM	87	3.50	$341.99	21.8	$165.46	$176.52	0.25	6.2	$15.69	$8.10	48%
8A	Valley-Mariposa	3:15 PM	55	3.00	$293.13	18.8	$142.69	$150.44	0.34	6.3	$15.59	$8.00	49%
09	Valley-Merced	3:40 PM	87	4.55	$444.58	24.3	$184.06	$260.52	0.28	5.3	$18.33	$10.74	41%
10	Valley-Merced	4:15 PM	87	3.20	$312.67	14.2	$107.40	$205.27	0.16	4.4	$22.10	$14.51	34%
06	Merced-Valley	4:30 PM	87	3.90	$381.07	25.7	$195.06	$186.01	0.30	6.6	$14.83	$7.24	51%
11	Valley-Mariposa	4:35 PM	87	3.91	$382.05	12.7	$96.39	$285.65	0.15	3.2	$30.08	$22.49	25%
11A	Valley-Merced	5:15 PM	55	3.00	$293.13	17.3	$130.93	$162.20	0.31	5.8	$16.99	$9.40	45%
12	Valley-Merced	5:45 PM	87	3.95	$385.95	17.1	$129.41	$256.55	0.20	4.3	$22.64	$15.05	34%
14	Valley-Merced	8:07 PM	87	2.90	$283.36	4.5	$33.78	$249.58	0.05	1.5	$63.68	$56.09	12%
Total			1311	54.11	$5,287.09	299.6	$2,273.96	$3,013.12	0.23	5.5	$17.65	$10.06	43%
Weekends/Holidays													
02	Cathey's Vly-Valley	5:58 AM	69	2.30	$224.73	20.3	$154.08	$70.66	0.29	8.8	$11.07	$3.48	69%
2A	Merced-Valley	6:00 AM	87	3.00	$293.13	19.2	$145.90	$147.23	0.22	6.4	$15.25	$7.66	50%
03	Merced-Valley	6:45 AM	87	3.20	$312.67	21.4	$162.43	$150.25	0.25	6.7	$14.61	$7.02	52%
04	Merced-Valley	8:45 AM	87	3.20	$312.67	27.6	$209.48	$103.19	0.32	8.6	$11.33	$3.74	67%
3A	Mariposa-Valley	9:00 AM	55	2.00	$195.42	19.0	$144.21	$51.21	0.35	9.5	$10.29	$2.70	74%
08	Valley-Merced	9:32 AM	87	4.00	$390.84	21.7	$164.70	$226.14	0.25	5.4	$18.01	$10.42	42%
05	Merced-Valley	10:20 AM	87	3.50	$341.99	28.0	$212.52	$129.47	0.32	8.0	$12.21	$4.62	62%
8A	Valley-Mariposa	3:15 PM	55	3.00	$293.13	20.7	$156.86	$136.27	0.38	6.9	$14.18	$6.59	54%
09	Valley-Merced	3:40 PM	87	4.55	$444.58	25.1	$190.51	$254.07	0.29	5.5	$17.71	$10.12	43%
10	Valley-Merced	4:15 PM	87	3.20	$312.67	14.7	$111.32	$201.35	0.17	4.6	$21.32	$13.73	36%
06	Merced-Valley	4:30 PM	87	3.90	$381.07	13.6	$103.22	$277.85	0.16	3.5	$28.02	$20.43	27%
11	Valley-Mariposa	4:35 PM	87	3.62	$353.38	10.4	$78.94	$274.45	0.12	2.9	$33.98	$26.39	22%
11A	Valley-Merced	5:15 PM	55	3.00	$293.13	17.2	$130.72	$162.41	0.31	5.7	$17.02	$9.43	45%
12	Valley-Merced	5:45 PM	87	3.95	$385.95	24.2	$183.68	$202.28	0.28	6.1	$15.95	$8.36	48%
14	Valley-Merced	8:07 PM	87	2.90	$283.36	13.8	$104.57	$178.79	0.16	4.8	$20.57	$12.98	37%
Total			1191	49.32	$4,818.73	296.9	$2,253.13	$2,565.60	0.25	6.0	$16.23	$8.64	47%

Note 1: Cost based on the $97.71 per revenue hour for use of a YARTS-owned bus.

Table 42: Run Analysis -- 120 West Route September

			Average Daily						Performance Analysis				
Run	Start / End	Starting Time	Revenue Miles	Revenue Hours	Operating Cost (1)	Passenger Boardings	Estimated Fare Revenue	Operating Subsidy	Boardings per Revenue Mile	Boardings per Revenue Hour	Cost per Passenger Boarding	Subsidy per Passenger Boarding	Farebox Ratio
Weekdays (2)													
S2C	Tuolumne-Valley	7:40 AM	84	2.70	$263.82	16.3	$123.34	$140.48	0.19	6.0	$16.23	$8.64	47%
S2D	Valley-Tuolumne	5:35 PM	84	3.20	$312.67	18.7	$141.55	$171.12	0.22	5.8	$16.77	$9.18	45%
Total			168	5.90	$576.49	34.9	$264.89	$311.60	0.21	5.9	$16.52	$8.93	46%
Weekends/Holidays													
S1C	Tuolumne-Valley	6:40 AM	84	2.70	$263.82	25.7	$194.81	$69.01	0.31	9.5	$10.28	$2.69	74%
S2C	Tuolumne-Valley	7:40 AM	84	2.70	$263.82	24.7	$187.22	$76.60	0.29	9.1	$10.70	$3.11	71%
S3C	Tuolumne-Valley	8:40 AM	84	2.70	$263.82	11.7	$88.55	$175.27	0.14	4.3	$22.61	$15.02	34%
02B	Valley-Tuolumne	4:00 PM	84	3.20	$312.67	14.7	$111.32	$201.35	0.17	4.6	$21.32	$13.73	36%
S1D	Valley-Tuolumne	4:30 PM	84	3.20	$312.67	24.3	$184.69	$127.98	0.29	7.6	$12.85	$5.26	59%
S2D	Valley-Tuolumne	5:35 PM	84	3.20	$312.67	16.9	$128.19	$184.49	0.20	5.3	$18.51	$10.92	41%
Total			504	17.70	$1,729.47	117.9	$894.78	$834.69	0.23	6.7	$14.67	$7.08	52%

Note 1: Cost based on the $97.71 per revenue hour for use of a YARTS Note 2: Excludes runs only operated on one day.

Table 43: Run Analysis -- 41 Route September

			Average Daily						Performance Analysis				
Run	Start / End	Starting Time	Revenue Miles	Revenue Hours	Operating Cost	Passenger Boardings	Estimated Fare Revenue	Operating Subsidy	Boardings per Revenue Mile	Boardings per Revenue Hour	Cost per Passenger Boarding	Subsidy per Passenger Boarding	Farebox Ratio
Weekdays													
20	Fresno(FAT)-Valley	3:40 AM	103	3.80	$371.30	2.8	$12.68	$358.61	0.03	0.7	$132.61	$128.08	3%
22	Fresno-Valley	5:37 AM	118	4.00	$390.84	3.6	$16.31	$374.53	0.03	0.9	$108.57	$104.04	4%
25	Valley-Fresno	3:26 PM	119	4.00	$390.84	10.6	$48.02	$342.82	0.09	2.7	$36.87	$32.34	12%
26	Fresno-Valley	9:30 AM	118	4.00	$390.84	1.7	$7.70	$383.14	0.01	0.4	$229.91	$225.38	2%
28	Fresno-Valley	12:45 PM	118	4.20	$410.38	3.5	$15.86	$394.53	0.03	0.8	$117.25	$112.72	4%
23	Valley-Fresno	9:23 AM	119	4.00	$390.84	4.1	$18.57	$372.27	0.03	1.0	$95.33	$90.80	5%
24	Fresno-Valley	7:23 AM	119	4.00	$390.84	4.9	$22.20	$368.64	0.04	1.2	$79.76	$75.23	6%
27	Valley-Fresno	4:03 PM	119	4.00	$390.84	3.5	$15.86	$374.99	0.03	0.9	$111.67	$107.14	4%
29	Valley-Fresno	5:32 PM	119	4.00	$390.84	1.8	$8.15	$382.69	0.02	0.5	$217.13	$212.60	2%
31	Valley-Fresno	6:32 PM	119	4.20	$410.38	1.8	$8.15	$402.23	0.02	0.4	$227.99	$223.46	2%
Total		7:51 PM	1171	40.20	$3,927.94	38.3	$173.50	$3,754.44	0.03	1.0	$102.56	$98.03	4%
Weekends/Holidays													
22	Fresno-Valley	5:37 AM	118	4.00	$390.84	1.5	$6.80	$384.05	0.01	0.4	$260.56	$256.03	2%
26	Fresno-Valley	9:30 AM	118	4.00	$390.84	3.5	$15.86	$374.99	0.03	0.9	$111.67	$107.14	4%
28	Fresno-Valley	12:45 PM	118	4.20	$410.38	6.5	$29.45	$380.94	0.06	1.5	$63.14	$58.61	7%
23	Valley-Fresno	9:23 AM	119	4.00	$390.84	4.8	$21.52	$369.32	0.04	1.2	$82.28	$77.75	6%
24	Fresno-Valley	7:23 AM	119	4.00	$390.84	3.8	$16.99	$373.85	0.03	0.9	$104.22	$99.69	4%
27	Valley-Fresno	4:03 PM	119	4.00	$390.84	1.8	$7.93	$382.91	0.01	0.4	$223.34	$218.81	2%
29	Valley-Fresno	5:32 PM	119	4.00	$390.84	2.7	$12.08	$378.76	0.02	0.7	$146.57	$142.04	3%
Total		6:13 AM	830	28.20	$2,755.42	24.4	$110.61	$2,644.81	0.03	0.9	$112.85	$108.32	4%

Note 1: Cost based on the $97.71 per revenue hour for use of a YARTS-owned bus.

Table 44: Run Analysis -- 120/395 Route September

			Average Daily						Performance Analysis				
Run	Start / End	Starting Time	Revenue Miles	Revenue Hours	Operating Cost	Passenger Boardings	Estimated Fare Revenue	Operating Subsidy	Boardings per Revenue Mile	Boardings per Revenue Hour	Cost per Passenger Boarding	Subsidy per Passenger Boarding	Farebox Ratio
Weekends/Holidays													
01	Mammoth-Valley	8:00 AM	125	4.10	$400.61	42.6	$323.52	$77.09	0.34	10.4	$9.40	$1.81	81%
02	Valley-Mammoth	5:00 PM	125	3.90	$381.07	32.9	$249.52	$131.55	0.26	8.4	$11.59	$4.00	65%
Total			250	8.00	$781.68	75.5	$573.05	$208.64	0.30	9.4	$10.35	$2.76	73%

Note 1: Cost based on the $97.71 per revenue hour for use of a YARTS-owned bus.

Table 45: Run Analysis -- 140 Route January

			Average Daily						Performance Analysis				
Run	Start / End	Starting Time	Revenue Miles	Revenue Hours	Operating Cost (1)	Passenger Boardings	Estimated Fare Revenue	Operating Subsidy	Boardings per Revenue Mile	Boardings per Revenue Hour	Cost per Passenger Boarding	Subsidy per Passenger Boarding	Farebox Ratio
Weekdays													
01	Cathey's Vly-Valley	5:28 AM	69	2.30	$224.73	13.5	$102.09	$122.65	0.19	5.8	$16.71	$9.12	45%
02	Cathey's Vly-Valley	5:58 AM	69	2.30	$224.73	15.1	$114.23	$110.50	0.22	6.5	$14.93	$7.34	51%
07	Midpines-Merced	6:20 AM	51	2.20	$214.96	4.9	$37.15	$177.81	0.10	2.2	$43.92	$36.33	17%
03	Merced-Valley	6:45 AM	87	3.20	$312.67	23.0	$174.19	$138.48	0.26	7.2	$13.62	$6.03	56%
04	Merced-Valley	10:20 AM	87	3.20	$312.67	18.0	$136.62	$176.05	0.21	5.6	$17.37	$9.78	44%
08	Valley-Merced	9:32 AM	87	4.00	$390.84	25.3	$192.03	$198.81	0.29	6.3	$15.45	$7.86	49%
05	Merced-Valley	1:20 PM	87	3.50	$341.99	15.3	$116.13	$225.86	0.18	4.4	$22.35	$14.76	34%
09	Valley-Merced	3:40 PM	87	4.55	$444.58	28.7	$217.45	$227.13	0.33	6.3	$15.52	$7.93	49%
10	Valley-Merced	4:15 PM	87	3.20	$312.67	11.0	$83.11	$229.56	0.13	3.4	$28.55	$20.96	27%
06	Merced-Valley	4:30 PM	87	3.90	$381.07	13.6	$103.22	$277.85	0.16	3.5	$28.02	$20.43	27%
11	Valley-Mariposa	4:35 PM	87	3.91	$382.05	9.6	$72.86	$309.18	0.11	2.5	$39.80	$32.21	19%
12	Valley-Merced	5:45 PM	87	3.95	$385.95	5.3	$39.85	$346.11	0.06	1.3	$73.52	$65.93	10%
Total			972	40.21	$3,928.92	183.0	$1,388.93	$2,539.99	0.19	4.6	$21.47	$13.88	35%
Weekends/Holidays (2)													
02	Cathey's Vly-Valley	5:58 AM	69	2.30	$224.73	7.5	$56.93	$167.81	0.11	3.3	$29.96	$22.37	25%
03	Merced-Valley	6:45 AM	87	3.20	$312.67	18.6	$140.96	$171.71	0.21	5.8	$16.84	$9.25	45%
04	Merced-Valley	10:20 AM	87	3.20	$312.67	20.8	$157.49	$155.18	0.24	6.5	$15.07	$7.48	50%
08	Valley-Merced	9:32 AM	87	4.00	$390.84	20.9	$158.44	$232.40	0.24	5.2	$18.72	$11.13	41%
05	Merced-Valley	1:20 PM	87	3.50	$341.99	11.9	$90.13	$251.85	0.14	3.4	$28.80	$21.21	26%
09	Valley-Merced	3:40 PM	87	4.55	$444.58	31.4	$238.14	$206.44	0.36	6.9	$14.17	$6.58	54%
06	Merced-Valley	4:30 PM	87	3.90	$381.07	8.4	$63.57	$317.50	0.10	2.1	$45.50	$37.91	17%
11	Valley-Mariposa	4:35 PM	87	3.62	$353.38	11.8	$89.18	$264.20	0.14	3.2	$30.08	$22.49	25%
12	Valley-Merced	5:45 PM	87	3.95	$385.95	6.0	$45.54	$340.41	0.07	1.5	$64.33	$56.74	12%
Total			765	32.22	$3,147.89	137.1	$1,040.37	$2,107.52	0.18	4.3	$22.97	$15.38	33%

Note 1: Cost based on the $97.71 per revenue hour for use of a YARTS-owned bus.

Note 2: Runs only operated on 1 or 2 days (such as on free fare days) not included.

Table 46: Summary of Ridership by Run

Run	Start / End	Starting Time	Weekday			Weekend/Holiday			Notes
			July	Sept	Jan	July	Sept	Jan	
Route 140									
1	Catheys Vly-Valley	5:28 AM	20.1	18.4	13.5				
2	Catheys Vly-Valley	5:58 AM	34.8	18.2	15.1	26.6	20.3	7.5	
2A	Merced-Valley	6:00 AM	26.8	15.8		21.4	19.2		
7	Mariposa-Merced	6:20 AM	21.8	9.6	4.9				
3	Merced-Valley	6:45 AM	18.4	22.2	23.0	34.7	21.4	18.6	
4	Merced-Valley	8:45 AM	23.9	17.7	18.0	32.0	27.6	20.8	Jan Start at 10:20 AM
3A	Mariposa-Valley	9:00 AM	19.5	13.4		18.7	19.0		
8	Valley-Merced	9:32 AM	24.8	28.4	25.3	22.3	21.7	20.9	
5	Merced-Valley	10:20 AM	27.2	21.8	15.3	33.8	28.0	11.9	Jan Start at 1:20 PM
1	El Portal-Valley	12:00 PM	8.3			10.0			
2	El Portal-Valley	1:00 PM	8.3						
8A	Valley-Mariposa	3:15 PM	31.8	18.8		30.1	20.7		
9	Valley-Merced	3:40 PM	26.1	24.3	28.7	24.8	25.1	31.4	
10	Valley-Merced	4:15 PM	24.4	14.2	11.0	19.9	14.7		
6	Merced-Valley	4:30 PM	22.5	25.7	13.6	18.6	13.6	8.4	
11	Valley-Mariposa	4:35 PM	23.7	12.7	9.6	20.0	10.4	11.8	
11A	Valley-Merced	5:15 PM	17.6	17.3		24.8	17.2		
12	Valley-Merced	5:45 PM	20.4	17.1	5.3	25.2	24.2	6.0	
1	Madera-Merced	6:30 PM	8.3						
2	Madera-Merced	7:30 PM	10.0			7.5			
14	Valley-Merced	8:07 PM	16.6	4.5		15.2	13.8		
Total			435.4	299.6	183.0	385.5	296.9	137.1	
Route 120 West									
S1C	Tuolumne-Valley	6:40 AM	36.6			32.5	25.7		
S2C	Tuolumne-Valley	7:40 AM	30.8	16.3		19.7	24.7		
S3C	Tuolumne-Valley	8:40 AM	16.7			16.9	11.7		
02B	Valley-Tuolumne	4:00 PM	26.2			30.9	14.7		
S1D	Valley-Tuolumne	4:30 PM	25.3			17.0	24.3		
S2D	Valley-Tuolumne	5:35 PM	29.7	18.7		20.1	16.9		
Total			165.3	34.9		137.1	117.9		
Route 41									
20	Fresno(FAT)-Valley	3:40 AM	9.7	2.8		9.9			
21	Oakhurst-Fresno	6:00 AM	2.3						
22	Fresno-Valley	5:37 AM	21.5	3.6		18.6	1.5		
25	Valley-Fresno	3:26 PM	12.4	10.6		11.7			
26	Fresno-Valley	9:30 AM	11.0	1.7		11.3	3.5		
28	Fresno-Valley	12:45 PM	13.9	3.5		12.9	6.5		
30	Fresno-Oakhurst	5:45 PM	14.9			16.1			
23	Valley-Fresno	9:23 AM	14.7	4.1		14.8	4.8		
24	Fresno-Valley	7:23 AM	15.6	4.9		16.7	3.8		
27	Valley-Fresno	4:03 PM	12.9	3.5		9.5	1.8		
29	Valley-Fresno	5:32 PM	15.5	1.8		20.8	2.7		
31	Valley-Fresno	6:32 PM	7.4	1.8		10.4			
Total			151.4	38.3		152.8	24.4		
Route 120/395									
1	Mammoth-Valley	8:00 AM	18.0			18.9	42.6		
3	Mammoth-Tuol Mdws	6:00 AM	3.9			3.1			
5	Mammoth-Tuol Mdws	11:15 AM	4.0			3.9			
4	Tuol Mdws-Mammoth	8:15 AM	4.2			2.9			
6	Tuol Mdws-Mammoth	4:10 PM	3.9			3.2			
2	Valley-Mammoth	5:00 PM	30.8			26.5	32.9		
Total			64.6			58.5	75.5		

run was operated after Labor Day on seven days per week, ridership was moderate (16.3 eastbound and 18.7 westbound).

- The most popular run on Route 41 in July was the 5:37 AM northbound departure, with 21.5 and 18.6 passengers on average on weekdays and weekends/holidays, respectively. Weekend ridership is also high on the 5:32 PM southbound departure, with 20.8 passengers. The southbound 6:00 AM run starting in Oakhurst (which as subsequently been dropped from the schedule) carried only 2.3 passengers per trip on average. In addition, the early morning run (3:40 AM departure, which has also subsequently been dropped from the schedule) carried a relatively low 9.7 weekday ridership (9.9 weekend/holiday). The last evening run (6:32 PM southbound departure) also carried relatively modest ridership (7.4/10.4). The remainder of runs carried moderate ridership levels.

- The 120 East/395 runs providing direct service to/from Yosemite Valley were by far the most popular runs. Ridership on these longer runs in July ranged between 18.0 boardings (the westbound 8:00 AM run on weekdays) and 30.8 (the eastbound 5:00 PM run on weekdays), while the shorter runs between Mammoth Lakes and Tuolumne Meadows only reached as high as 4.2 passengers per run. Note that the 2018 summer schedule has been revised to eliminate the shorter runs, and instead provide two full runs to/from Yosemite Valley.

- The single daily round-trip operated after Labor Day on weekends only on the 120 East/395 Route was very popular, averaging 42.6 passengers in the westbound direction and 32.9 in the eastbound direction. This indicates a strong potential for additional service, both on weekends and on weekdays, in the shoulder seasons.

Table 47 present the productivity (passenger boardings per revenue-hour) for each run and season. This is a key measure of the effectiveness of a transit service, as the costs are related to the revenue hours. It differs from the boardings by run in that it also reflects the difference in length of time for the various runs. A review indicates the following:

- The highest productivity of any individual run was 15.1 passenger-trips per revenue-hour on the 5:58 eastbound departure from Catheys Valley to Yosemite Valley during the July weekdays. Other relatively high productivity runs are the first eastbound run on the 120 Route (13.6 on weekdays and 12.0 on weekends/holidays) as well as the second eastbound run on the 120 Route on weekdays (11.4). Poor productivity runs are concentrated in the "short" runs to/from Tuolumne Meadows on the 120 east/395 Route, the shoulder season runs on the 41 Route, the Madera-Merced runs, and the later afternoon 140 Route runs in the winter.

Table 47: Summary of Boardings per Vehicle-Hour by Run

Run	Start / End	Starting Time	Weekday			Weekend/Holiday		
			July	Sept	Jan	July	Sept	Jan
Route 140								
1	Catheys Vly-Valley	5:28 AM	8.7	8.0	5.8			
2	Catheys Vly-Valley	5:58 AM	15.1	7.9	6.5	11.5	8.8	3.3
2A	Merced-Valley	6:00 AM	8.9	5.3		7.1	6.4	
7	Mariposa-Merced	6:20 AM	9.9	4.3	2.2			
3	Merced-Valley	6:45 AM	5.8	6.9	7.2	10.8	6.7	5.8
4	Merced-Valley [1]	8:45 AM	7.5	5.5	5.6	10.0	8.6	6.5
3A	Mariposa-Valley	9:00 AM	9.7	6.7		9.3	9.5	
8	Valley-Merced	9:32 AM	6.2	7.1	6.3	5.6	5.4	5.2
5	Merced-Valley [2]	10:20 AM	7.8	6.2	4.4	9.7	8.0	3.4
1	El Portal-Valley	12:00 PM	8.3			10.0		
2	El Portal-Valley	1:00 PM	8.3					
8A	Valley-Mariposa	3:15 PM	10.6	6.3		10.0	6.9	
9	Valley-Merced	3:40 PM	5.7	5.3	6.3	5.4	5.5	6.9
10	Valley-Merced	4:15 PM	7.6	4.4	3.4	6.2	4.6	
6	Merced-Valley	4:30 PM	5.8	6.6	3.5	4.8	3.5	2.1
11	Valley-Mariposa	4:35 PM	6.1	3.2	2.5	5.5	2.9	3.2
11A	Valley-Merced	5:15 PM	5.9	5.8		8.3	5.7	
12	Valley-Merced	5:45 PM	5.2	4.3	1.3	6.4	6.1	1.5
1	Madera-Merced	6:30 PM	2.1					
2	Madera-Merced	7:30 PM	2.5			1.9		
14	Valley-Merced	8:07 PM	5.7	1.5		5.2	4.8	
Total			6.8	5.5	4.6	7.1	6.0	4.3
Route 120 West								
S1C	Tuolumne-Valley	6:40 AM	13.6			12.0	9.5	
S2C	Tuolumne-Valley	7:40 AM	11.4	6.0		7.3	9.1	
S3C	Tuolumne-Valley	8:40 AM	6.2			6.3	4.3	
02B	Valley-Tuolumne	4:00 PM	8.2			9.7	4.6	
S1D	Valley-Tuolumne	4:30 PM	7.9			5.3	7.6	
S2D	Valley-Tuolumne	5:35 PM	9.3	5.8		6.3	5.3	
Total			9.3	5.9		7.7	6.7	
Route 41								
20	Fresno(FAT)-Valley	3:40 AM	2.6	0.7		2.6		
21	Oakhurst-Fresno	6:00 AM	1.3					
22	Fresno-Valley	5:37 AM	5.4	0.9		4.7	0.4	
25	Valley-Fresno	3:26 PM	3.1	2.7		2.9		
26	Fresno-Valley	9:30 AM	2.7	0.4		2.8	0.9	
28	Fresno-Valley	12:45 PM	3.3	0.8		3.1	1.5	
30	Fresno-Oakhurst	5:45 PM	6.5			7.0		
23	Valley-Fresno	9:23 AM	3.7	1.0		3.7	1.2	
24	Fresno-Valley	7:23 AM	3.9	1.2		4.2	0.9	
27	Valley-Fresno	4:03 PM	3.2	0.9		2.4	0.4	
29	Valley-Fresno	5:32 PM	3.9	0.5		5.2	0.7	
31	Valley-Fresno	6:32 PM	1.8	0.4		2.5		
Total			3.4	1.0		3.6	0.9	
Route 120/395								
1	Mammoth-Valley	8:00 AM	4.4			4.6	10.4	
3	Mammoth-Tuol Mdws	6:00 AM	1.8			1.4		
5	Mammoth-Tuol Mdws	11:15 AM	1.8			1.8		
4	Tuol Mdws-Mammoth	8:15 AM	2.0			1.4		
6	Tuol Mdws-Mammoth	4:10 PM	1.8			1.5		
2	Valley-Mammoth	5:00 PM	7.9			6.8	8.4	
Total			3.9			3.5	9.4	

Note 1: Jan Start at 10:20 AM

Note 2: Jan Start at 1:20 PM

- Overall, the 120 West Route had the highest productivity of any of the routes in July, with 9.3 passengers per revenue hour on weekdays and 7.7 on weekends/holidays. The lowest productivity for an overall route was for the 41 Route, with 3.5 passengers per revenue-hour on weekdays and 3.6 on weekends/holidays.

- In September, the highest productivity was the 120 East/395 Route at 9.4 passengers per revenue-hour, again indicating a high potential for expansion.

The operating subsidy per passenger is summarized in Table 48. This shows that there are actually two runs (Route 140 Route 1 and Route 120 West Run S1C) that have estimated fare revenues in July exceeding marginal operating costs, resulting in a negative subsidy per passenger. Other key findings from this data are:

- In July, the overall lowest subsidy per passenger was generated by Route 120 West, requiring $2.88 per passenger-trip on weekdays and $5.03 on weekends/holidays. The next most cost-efficient was Route 140 ($6.80 and $6.18, respectively), followed by Route 120/395 ($17.54 and $20.16), and Route 41 ($24.01 and $22.65). It is interesting to note that Routes 120 West and Route 120/395 perform better on weekdays rather than weekends, while weekends perform better on Routes 140 and 41.

- In September, Route 120/395 is the most efficient, requiring only $2.76 in subsidy for every passenger served on the daily weekend-only round-trip. Route 120 West is also relatively efficient ($8.93 on weekdays and $7.08 on weekends), followed by Route 140 ($10.06 and $8.64, respectively). Route 41 performance by this measure is particularly poor in September, requiring $98.03 in subsidy per passenger on weekdays and $108.32 on weekends.

- January runs on Route 140 require less subsidy per passenger on weekdays ($13.88) than on weekends/holidays ($15.38).

YARTS Income and Expenses

Table 49 presents the FY 2017/18 YARTS budget for both expenses and revenues. As indicated, the total budget is on the order of $4.2 Million per year. Revenues come from a wide range of sources. As a whole, National Park Service sources generate 30.3 percent of the funding. This is followed by 24.0 percent generated by Mariposa, Merced and Mono Counties along with the Fresno Council of Governments (excluding one-time contributions for SRTP funding). Farebox

Table 48: Summary of Subsidy per Passenger by Run

Run	Start / End	Starting Time	Weekday			Weekend/Holiday		
			July	Sept	Jan	July	Sept	Jan
Route 140								
1	Catheys Vly-Valley	5:28 AM	$3.61	$4.62	$9.12			
2	Catheys Vly-Valley	5:58 AM	-$1.14	$4.79	$7.34	$0.87	$3.48	$22.37
2A	Merced-Valley	6:00 AM	$3.34	$10.96		$6.08	$7.66	
7	Mariposa-Merced	6:20 AM	$2.26	$14.92	$36.33			
3	Merced-Valley	6:45 AM	$9.39	$6.53	$6.03	$1.43	$7.02	$9.25
4	Merced-Valley [1]	8:45 AM	$5.47	$10.13	$9.78	$2.18	$3.74	$7.48
3A	Mariposa-Valley	9:00 AM	$2.45	$7.05		$2.88	$2.70	
8	Valley-Merced	9:32 AM	$8.19	$6.17	$7.86	$9.91	$10.42	$11.13
5	Merced-Valley [2]	10:20 AM	$4.99	$8.10	$14.76	$2.53	$4.62	$21.21
1	El Portal-Valley	12:00 PM	$4.14			$2.18		
2	El Portal-Valley	1:00 PM	$4.14					
8A	Valley-Mariposa	3:15 PM	$1.62	$8.00		$2.14	$6.59	
9	Valley-Merced	3:40 PM	$9.47	$10.74	$7.93	$10.35	$10.12	$6.58
10	Valley-Merced	4:15 PM	$5.22	$14.51	$20.96	$8.13	$13.73	
6	Merced-Valley	4:30 PM	$9.35	$7.24	$20.43	$12.95	$20.43	$37.91
11	Valley-Mariposa	4:35 PM	$8.53	$22.49	$32.21	$10.08	$26.39	$22.49
11A	Valley-Merced	5:15 PM	$9.02	$9.40		$4.24	$9.43	
12	Valley-Merced	5:45 PM	$11.29	$15.05	$65.93	$7.71	$8.36	$56.74
1	Madera-Merced	6:30 PM	$39.31					
2	Madera-Merced	7:30 PM	$31.49			$44.52		
14	Valley-Merced	8:07 PM	$9.52	$56.09		$11.02	$12.98	
Total			$6.80	$10.06	$13.88	$6.18	$8.64	$15.38
Route 120 West								
S1C	Tuolumne-Valley	6:40 AM	-$0.38			$0.54	$2.69	
S2C	Tuolumne-Valley	7:40 AM	$0.98	$8.64		$5.78	$3.11	
S3C	Tuolumne-Valley	8:40 AM	$8.25			$8.01	$15.02	
02B	Valley-Tuolumne	4:00 PM	$4.34			$2.53	$13.73	
S1D	Valley-Tuolumne	4:30 PM	$4.77			$10.80	$5.26	
S2D	Valley-Tuolumne	5:35 PM	$2.94	$9.18		$7.97	$10.92	
Total			$2.88	$8.93		$5.03	$7.08	
Route 41								
20	Fresno(FAT)-Valley	3:40 AM	$33.75	$128.08		$32.94		
21	Oakhurst-Fresno	6:00 AM	$69.30					
22	Fresno-Valley	5:37 AM	$13.69	$104.04		$16.48	$256.03	
25	Valley-Fresno	3:26 PM	$27.12	$32.34		$28.80		
26	Fresno-Valley	9:30 AM	$31.16	$225.38		$30.14	$107.14	
28	Fresno-Valley	12:45 PM	$25.10	$112.72		$27.26	$58.61	
30	Fresno-Oakhurst	5:45 PM	$10.60			$9.44		
23	Valley-Fresno	9:23 AM	$22.15	$90.80		$21.85	$77.75	
24	Fresno-Valley	7:23 AM	$20.52	$75.23		$18.84	$99.69	
27	Valley-Fresno	4:03 PM	$25.77	$107.14		$36.42	$218.81	
29	Valley-Fresno	5:32 PM	$20.77	$212.60		$14.24	$142.04	
31	Valley-Fresno	6:32 PM	$51.30	$223.46		$35.07		
Total			$24.01	$98.03		$22.65	$108.32	
Route 120/395								
1	Mammoth-Valley	8:00 AM	$14.73			$13.60	$1.81	
3	Mammoth-Tuol Mdws	6:00 AM	$48.24			$61.96		
5	Mammoth-Tuol Mdws	11:15 AM	$46.83			$47.40		
4	Tuol Mdws-Mammoth	8:15 AM	$41.85			$62.94		
6	Tuol Mdws-Mammoth	4:10 PM	$45.71			$56.90		
2	Valley-Mammoth	5:00 PM	$4.78			$6.81	$4.00	
Total			$17.54			$20.16	$2.76	

Note 1: Jan Start at 10:20 AM

Note 2: Jan Start at 1:20 PM

Table 49: Summary of 2017/18 YARTS Budget

	140, 120, 120/395 Service	41 Service	Total	% of Total
Income				
Farebox	$480,000	$59,629	$539,629	12.9%
Mariposa County	$190,000	$0	$190,000	4.5%
Merced County	$300,000	$0	$300,000	7.2%
Mono County	$35,000	$0	$35,000	0.8%
Amtrak	$363,000	$4,500	$367,500	8.8%
Greyhound	$1,000	$500	$1,500	0.0%
National Park Service	$345,000	$345,000	$690,000	16.4%
National Park Service Special Project	$565,000	$0	$565,000	13.5%
5311(f) for Operating	$222,000	$0	$222,000	5.3%
5311(f) for Planning (SRTP)	$100,000	$0	$100,000	2.4%
Fresno COG	$0	$480,371	$480,371	11.5%
NPS Special Project -Mktg management	$16,000	$0	$16,000	0.4%
CMAQ	$133,000	$0	$133,000	3.2%
CMAQ-Fresno Management	$57,500	$0	$57,500	1.4%
Interest Income -General Ops	$5,000	$0	$5,000	0.1%
SRTP Contribution	$20,000	$0	$20,000	0.5%
Tuolumne County SRTP Contribution	$20,000	$0	$20,000	0.5%
Madera County SRTP Contribution	$40,000	$0	$40,000	1.0%
CA FLAP	$50,130	$0	$50,130	1.2%
FEMA	$339,297	$0	$339,297	8.1%
State Transit Assistance	$23,000	$0	$23,000	0.5%
Total Income	$3,304,927	$890,000	$4,194,927	100.0%
Expenses				
Professional Service-Contracts	$1,996,040	$800,000	$2,796,040	66.9%
Prof Service-MCAG Administration	$427,000	$40,000	$467,000	11.2%
Prof Service-MCAG Administration-Branding, media	$0	$50,000	$50,000	1.2%
Prof Svc. Other	$40,560	$0	$40,560	1.0%
Materials and Supplies 622-625	$133,000	$0	$133,000	3.2%
NPS Special Project	$16,000	$0	$16,000	0.4%
Utilities	$7,000	$0	$7,000	0.2%
Insurance - General Liability	$13,500	$0	$13,500	0.3%
Membership	$900	$0	$900	0.0%
Trans & Travel / Admin	$4,000	$0	$4,000	0.1%
Office Expense / Admin	$4,500	$0	$4,500	0.1%
Rent & Lease-Equipment	$10,000	$0	$10,000	0.2%
Rent & Lease-Structure/Transpo Rent & Maint	$5,500	$0	$5,500	0.1%
YARTS-Maint. Mariposa Park & Ride	$24,500	$0	$24,500	0.6%
Short Range Transit Plan	$185,000	$0	$185,000	4.4%
Working Reserve	$23,558	$0	$23,558	0.6%
CA FLAP Program	$44,572	$0	$44,572	1.1%
Fixed Asset-FEMA/EOS	$354,297	$0	$354,297	8.5%
Total Expenses	$3,289,927	$890,000	$4,179,927	100.0%

Note: Route 41 allocated based on fare data provided by YARTS.
Source: YARTS

revenues generate 12.9 percent of total revenues. Funding programs through the Federal Transit Administration (CMAQ – Congestion Management/Air Quality – and 5311(f) Intercity Transit programs) total 9.0 percent of revenues. 8.2 percent of the current budget is also generated by the Federal Emergency Management Agency.

Just over two-thirds (66.9 percent) of funds go towards the Professional Service contract for the operation of YARTS buses (including the provision of a portion of the fleet). MCAG management costs (including for marketing) make up 12.4 percent, while 8.4 percent is going towards repairs to the Mariposa Park-and-Ride.

Chapter 4

Other Transportation Services and Options in the Area

EXISTING INTERCITY TRANSPORTATION SERVICES

Connecting intercity services are a very important element to YARTS ridership. As shown in Figure 21, YARTS currently connects with Greyhound bus service and the Amtrak *San Joaquins* rail service in both Merced and Fresno, as well as the ESTA 395 service in Mammoth Lakes and Lee Vining. A summary table of existing service times is provided as Table 50, and the individual services are discussed below.

Greyhound

Greyhound operates intercity bus service along SR 99 into Merced, where 4-6 northbound and 4-6 southbound trips depart daily. Northbound Greyhound buses from Merced are destined for Sacramento or San Francisco and southbound buses are bound for Los Angeles. Typical one-way

- Merced – Bay Area: 3 hours, $26 to $41
- Merced – Sacramento: 2.5 hours, $28 to $55
- Merced – Los Angeles: 6 hours, $40-$91
- Fresno – Bay Area: 4.5 hours, $16 to $54
- Fresno – Sacramento – 3.2 hours, $11 to $44
- Fresno – Los Angeles – 4.5 hours, $19 to $57

Nationwide connectivity is possible through the extensive Greyhound network.

YARTS is a Greyhound Interline provider and connects with Greyhound at the Transpo station in Merced up to four times per day. As an example, a fare estimated through the Greyhound website was $39 one-way from San Francisco to the Yosemite Visitor's Center, which is the combination of Greyhound and YARTS fares through Interline ticketing. It is also possible to connect with YARTS from Visalia and Bakersfield to Greyhound in Fresno.

Amtrak San Joaquin

The Amtrak *San Joaquin* operates between the southern terminus of Bakersfield and northern termini of Sacramento and San Francisco. The *San Joaquin* stops in Merced and Fresno, where connection to YARTS can be made to Yosemite. YARTS is an Amtrak Thruway connector, which allows seamless connectivity for riders through a combination of train and bus service to Yosemite Valley. From the Amtrak website*:*

Figure 21

Intercity Transportation Connecting with YARTS

Table 50: YARTS Intercity Bus and Rail Connections

Shaded Times Require Train/Bus Transfer in Stockton or Bakersfield

		Merced			Fresno			Mammoth Lakes	
		Bay Area	Sacramento	Los Angeles	Bay Area	Sacramento	Los Angeles	Reno(1)	Southern California
Outbound Trips	**ESTA**							8:20 AM	7:50 AM
	Amtrak San Joaquins		5:20 AM			4:25 AM	6:00 AM		
			6:10 AM	8:40 AM		5:15 AM	9:43 AM		
		7:13 AM	7:13 AM	10:42 AM	6:13 AM	6:13 AM	11:39 AM		
			8:56 AM	12:39 PM		7:53 AM	1:40 PM		
		12:05 PM	12:05 PM	2:53 PM	11:04 AM	11:04 AM	3:53 PM		
		3:05 PM	3:05 PM	5:35 PM	2:02 PM	2:02 PM	6:45 PM		
		6:00 PM	6:00 PM	7:36 PM	5:01 PM	5:01 PM	8:40 PM		
		8:15 PM	8:15 PM	8:51 PM	7:10 PM	7:10 PM	10:10 PM		
	Greyhound	4:45 AM	4:45 AM	1:00 AM	3:35 AM	3:35 AM	2:25 AM		
		7:50 AM	8:55 AM	6:05 AM	6:35 AM	7:40 AM	5:00 AM		
		8:55 AM	10:40 AM	10:40 AM	7:40 AM	2:35 AM	7:45 AM		
		10:40 AM	2:50 PM	2:50 PM	11:00 AM	6:10 PM	12:15 PM		
		9:55 PM	7:35 PM	5:20 PM	3:15 PM	6:20 PM	12:35 PM		
			9:55 AM	9:35 PM	6:10 PM	8:40 PM	3:00 PM		
					10:35 PM	10:35 PM	4:35 PM		
							6:45 PM		
							9:25 PM		
							11:00 PM		
Inbound Trips	**ESTA**							5:15 PM	7:00 PM
	Amtrak San Joaquins	8:40 AM	8:40 AM	5:20 AM	9:43 AM	9:43 AM	4:05 AM		
		10:42 AM	10:42 AM	6:10 AM	11:39 AM	11:39 AM	4:55 AM		
		12:39 PM	12:39 PM	7:13 AM	1:40 PM	1:40 PM	6:13 AM		
			2:53 PM	8:56 AM		3:53 PM	7:53 AM		
		5:35 PM	5:35 PM	12:05 PM	6:45 PM	6:45 PM	11:04 AM		
			7:36 PM	3:05 PM		8:40 PM	2:02 PM		
		8:51 PM	8:51 PM	6:00 PM	10:10 PM	10:10 PM	5:01 PM		
				8:15 PM			7:10 PM		
							8:45 PM		
	Greyhound	12:55 AM	12:55 AM	4:45 AM	12:05 AM	7:15 AM	1:30 AM		
		6:00 AM	6:00 AM	7:45 AM	4:00 PM	11:50 AM	3:20 AM		
		2:45 PM	10:30 AM	8:50 AM	9:10 PM	2:30 PM	5:35 AM		
		9:35 PM	5:15 PM	7:30 PM		6:25 PM	6:05 AM		
			9:35 PM	9:50 PM		10:45 PM	7:10 AM		
						2:05 AM	10:30 AM		
							2:20 PM		
							5:50 PM		
							8:05 PM		
							8:30 PM		
							10:20 PM		

Note 1: Lee Vining stop served 1/2 hour earlier inbound and 1/2 hour later outbound.

"Take the San Joaquin to the Merced, CA Station (MCD). Once you arrive at the station, you'll to transfer to Amtrak Thruway Bus (Route 15), which takes you directly to Yosemite Valley. This bus route is serviced by the Yosemite Area Regional Transportation System (YARTS), which operates both shuttle vans and luxury motor coaches. Best of all — when purchasing Amtrak tickets to Yosemite, the (shuttle) bus ride and admission to the park are included."

As of May 7, 2018, the Amtrak schedule will be: five daily southbound trains from San Francisco and seven daily southbound trains from Sacramento; seven daily northbound trains from Los Angeles plus one additional train Monday through Friday and one additional train Saturday and Sunday.

Typical one-way travel times and fares are as follows:

- Merced – Bay Area: 3 hours, $26
- Merced – Sacramento: 3.5 hours, $23
- Merced – Los Angeles: 6 hours, $43
- Fresno – Bay Area: 4.5 hours, $33
- Fresno – Sacramento – 3.5 hours, $27
- Fresno – Los Angeles – 5.5 hours, $35

The runs shaded in Table 50 require a transfer to/from a connecting Amtrak Thruway bus service in Stockton (for Sacramento travel) or Bakersfield (for Los Angeles travel).

The *San Joaquin Joint Powers Authority 2018 Business Plan Update Public Review Draft* indicates that a ninth daily round trip (that would serve Sacramento) is planned for implementation within the next few years, though specific schedules have yet to be set.

Eastern Sierra Transit Authority (ESTA) State Route 395 Routes

The State Route 395 fixed routes comprise the farthest reaching ESTA services. The 395 routes connect Reno, Nevada with Lancaster, California, on weekdays (not on weekends). The 395 North route connects Mammoth Lakes with Reno (including a direct stop at the Reno Tahoe International Airport), with transfers opportunities with YARTS in Lee Vining, June Lakes and Mammoth Lakes. This route requires a travel time of 3 hours 40 minutes (from Mammoth Lakes), and a fare of $46. The 395 South route connects Mammoth Lakes with Lancaster, where the Metrolink system operated 9 daily rail trips to/from Los Angeles Union Station. It is a 5 hour trip to Lancaster (and an additional 2.3 hours to Union Station), with an ESTA fare of $39 and a Metrolink fare of $11.50.

PLANNED FUTURE INTERCITY SERVICES

Altamont Commuter Express (ACE) Extension to Merced

ACE currently runs four westbound trains in the morning from Stockton to San Jose and four return eastbound trains in the afternoon, Monday-Friday. ACE is in the midst of evaluating an extension to Ceres and Merced. The San Joaquin Regional Rail Commission intends to prepare an environmental impact report for the ACE Extension Lathrop to Ceres/Merced Project. The ACE Extension Lathrop to Ceres/Merced Project would include Phase I and Phase II improvements. Phase I improvements would support the ACE service extension to Ceres, and Phase II would extend ACE service to Merced. It is anticipated that ACE service will extend to Ceres by 2023 with Merced following at a date to be determined. The funded extension to Ceres would include new stations in Ripon, Modesto, and Ceres as well as a bus bridge to Turlock, Livingston, and Merced until such time that Phase II to Merced is completed.

California High Speed Rail (HSR)

The California HSR is planned to be the first high-speed rail in the nation. The California High-Speed Rail Authority (Authority) is responsible for planning, designing, building and operating HSR. The first segment to be constructed will be the 119 mile section from Silicon Valley to the Central Valley (San Francisco to Bakersfield, with stops in San Jose, Gilroy, Merced, Madera, Fresno and Tulare). The segment from Madera to Bakersfield (Central Valley segment) will be the first to be constructed, and indeed, many large-scale projects are already underway in this region. According to the business plan, the two lines serving the Silicon Valley to Central Valley could be ready for service as early as 2027.

The City of Fresno has created the Fresno Station District, which is overseeing development in a quarter mile radius of the planned Fresno HSR Station. Close to a dozen infrastructure projects are underway in Madera, Merced and Fresno Counties in preparation for HSR. While the project faces continued delays and funding uncertainties, the project potentially will play a large role in bringing visitors to Yosemite, and planning for YARTS should be done with this in consideration.

PASSENGER AIR SERVICE AND TRANSIT CONNECTIONS

A number of airports serve the Yosemite region, and in addition to the option of renting automobiles, each has public transit options for getting to Yosemite National Park, as described below.

Merced Regional Airport/Macready Field (MCE)

The Merced Regional Airport (airport code MCE) is a small, regional airport with only one commercial airline, Boutique Air, which provides affordable daily flights to Oakland and Los Angeles utilizing smaller planes with eight passenger seats. Depending on the day of the week,

up to three daily round-trips are provided between Merced and Los Angeles (LAX) along with two between Merced and Oakland (OAK).

YARTS serves MCE directly with service, as of April 2018, operating daily from the airport to Yosemite with three departures per day and potentially four trips daily from Yosemite to MCE, with drop-off to the airport on passenger request. Current YARTS departure times from MCE to Yosemite are: 6:45 A.M., 10:20 A.M., and 4:30 P.M. Current YARTS departure times from Yosemite towards MCE are 9:32 A.M., 3:40 P.M., 5:05 P.M., and 5:45 P.M. Additional YARTS trips are available from the Merced Transpo, with local ground transportation services like The Bus connecting between MCE and the Transpo. The YARTS bus stop is located directly outside the airport terminal.

Fresno Yosemite International Airport (FAT)

Fresno Yosemite International Airport is owned and operated by the City of Fresno and serves as the closest, primary commercial airport for the San Joaquin Valley and three national parks, including Yosemite. Five domestic and two international airlines serve FAT with connections to eight domestic gateway hubs and one foreign hub including Portland, Chicago, Dallas, Denver, San Diego, Salt Lake City, Seattle, Las Vegas, Los Angeles, Phoenix, and Guadalajara, Mexico. A total of approximately 40 inbound and outbound flights are accommodated each day. Ridership levels at FAT have recently been growing by roughly 10 percent per year, and currently exceed 800,000 passenger boardings per year.

YARTS serves FAT directly with four trips daily, when the State Route 41 route is in operational, from the airport to Yosemite and four trips daily from Yosemite to FAT, with drop-off to the airport on passenger request. Current YARTS departure times from FAT to Yosemite are: 5:57 A.M., 7:50 A.M., 10:00 A.M., and 12:40 P.M. Current YARTS departure times from Yosemite towards FAT are 9:33 A.M., 3:36 P.M., 4:13 P.M., and 5:42 P.M. The YARTS bus stop at the airport is located directly outside the main terminal.

Mammoth Lakes Airport (MMH)

Mammoth Lakes Airport has direct flights from Denver, San Francisco, Las Vegas, Los Angeles, and San Diego available, with service varying by season. Winter service has the most flights with limited flights in the spring and fall. Alaska Airlines offers flights from Los Angeles to Mammoth Lakes year-round. Daily flights are available in summer and winter months, with additional flights during peak holiday times. Alaska Airlines also offers seasonal winter (Dec. 15, 2017 – Apr. 16, 2018) flights from San Diego to Mammoth Lakes. United Airlines offers winter (Dec. 20, 2017 – Apr. 2, 2018) season flights from San Francisco to Mammoth Lakes. Approximately 22,000 passengers board commercial services each year.

YARTS does not serve the MMH directly but gets within eight miles of the airport. Ground transportation options are limited between the airport and the YARTS route but may be

possible through a connection with Eastern Sierra Transit Authority routes or a local taxi service.

EXISTING PUBLIC TRANSIT SERVICES IN THE YOSEMITE REGION

In addition to YARTS, there are numerous public transit services which work in concert to move people throughout the region, as described below.

Eastern Sierra Transit Authority (ESTA)

The Eastern Sierra Transit Authority (ESTA), established as a Joint Powers Authority between the Counties of Inyo and Mono, the City of Bishop, and the Town of Mammoth Lakes, offers a variety of transit services for the Eastern Sierra region including: deviated fixed routes, resort fixed routes, local in-town dial-a-ride, and multiple town-to-town regional routes. Year-round bus service operates along State Route 14 and 395 into Mammoth Lakes from Lancaster via Bishop. Within Mammoth Lakes, ESTA operates seasonal resort-area service – winter routes include six daytime routes and two evening routes; summer service includes two trolley bus routes, two routes connecting to recreational lands, and two regular routes within Mammoth. Winter service hours on Mammoth routes are 7:30 AM until 5:30 PM with additional evening routes.

Merced The Bus

"The Bus" is the single public transportation service provider for all of Merced County, administered and governed by the Transit Joint Powers Authority for Merced County. The Bus operates 16 fixed routes plus paratransit service and carries approximately 1,000,000 passengers per year. The Bus one-way fare is $1.50. Most services run on frequent headways (30-minute peak) and operate seven days per week, with hours of service of 6:00 AM until 8:00 PM Monday through Friday and 8:00 AM until 6:00 PM Saturday and Sunday. The Bus system provides frequent connections to YARTS, which leaves from the Merced Transportation Hub four times daily and returns five times daily.

Tuolumne County Transit

Tuolumne County Transit (TCT) operates five fixed routes, Monday through Friday, plus a general public demand response zone that was previously served by fixed route service. Service levels are relatively low with headways of between 1-3 hours on most routes. Hours of service for fixed route are generally 6:30 AM – 8:00 PM but vary by route and day of week. TCT connects with YARTS in Sonora, Jamestown or Tuolumne City, where trips depart for Yosemite once a day from May to September, and three times a day during the summer peak season. Information on YARTS is featured on the TCT website. TCT recently opened a new $2 million transit hub.

Mari-Go (Mariposa Public Transit)

Mari-Go, Mariposa County Transit, is a General Public Dial-a-Ride, curb-to-curb service with designated route areas. Vehicle operation hours are Monday through Friday, 8:30 AM to 4:00 PM, and fares vary from $1-$4. Mari-Go also operates a curb-to-curb non-emergency medical transportation service, Medi-Trans, to seniors (60 years of age and older) for scheduled medical appointments. Mari-Go connects with three YARTS stops.

Madera County Connection

The Madera County Connection (MCC) is a commuter fixed route system administered by the Madera County Department of Public Works. MCC operates four routes, three of which operate Monday through Friday and one only on Wednesday and Friday. Fares are $2 and service is limited with 2-5 roundtrips per day. The MCC website shows a connection to YARTS under regional connections but doesn't give any service details.

Madera Area Express (MAX)

MAX is operated by the City of Madera and is the fixed route and demand response provider within Madera. The MAX system consists of two fixed routes and has a fare of $0.75. MAX service operates weekdays from 7:00 AM until 6:00 PM and on Saturdays from 9:00 AM until 4:00 PM with no Sunday service. MAX doesn't connect directly with YARTS.

Fresno Area Express (FAX)

FAX is operated by the City of Fresno's with 16 fixed routes in its system, including one BRT line, and Handy Ride, FAX's paratransit service. FAX has a fleet of over 100 buses and is the largest mass public transportation provider in the San Joaquin Valley, with nearly 10 million fixed-route and 200,000 Handy Ride passenger trips provided in FY2017. FAX service hours are Monday - Friday from 5:30 AM to 10:00 PM, and weekends from 6:30 AM to 7:00 PM. FAX connects to all YARTS stops in the City of Fresno.

Yosemite Valley Shuttle

The free National Park Service Yosemite Valley shuttle bus system provides access around Yosemite Valley.

- Yosemite Valley shuttle
    - This bus provides service around eastern Yosemite Valley with stops near all overnight accommodations, stores, and major vistas. This shuttle operates all year from 7:00 AM to 10:00 PM.

- El Capitan shuttle
    - This bus stops at El Capitan, Four Mile trailhead, and the Valley Visitor Center. This shuttle operates from mid-June through early October from 9:00 AM to 7:00 PM.

- Mariposa Grove Shuttle
    - Beginning June 15, 2018, this free shuttle will provide service from the Mariposa Grove Welcome Plaza to the Mariposa Grove.

- Tuolumne Meadows
    - This shuttle provides service between Tuolumne Meadows and Olmsted Point every half hour between 7:00 AM and 7:00 PM and operates from June through mid-September, with actual dates varying from year to year.

Yosemite Ski & Snowboard Area Shuttle Bus

The Yosemite Ski & Snowboard Area provides a free shuttle bus service from multiple locations in Yosemite Valley to Yosemite Ski & Snowboard Area during the winter season. Two round-trips per day are provided.

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Chapter 5

Mission Statement, Goals and Standards

INTRODUCTION

Developing a comprehensive mission statement is an important step in guiding and understanding the direction and purpose of an entity such as YARTS. Once developed, goals and standards can be identified to support the goal. Periodically, the mission statement, goals and standards should be reviewed to ensure they continue to reflect the purpose and policies of YARTS. This Chapter first evaluates peer transit systems to identify their approach to developing performance standards, and then reviews and clarifies the YARTS mission statement, goals and standards.

Peer Review

As a basis against which to consider YARTS performance standards, it is worthwhile to review "peer" transit system performance. As a long-distance public transit service focused on serving a major national park, YARTS in reality can be considered to be a unique transit program. However, it is still worthwhile to compare performance against other California public transit programs that provide long-distance trips between communities. The intercity services provided by the following four systems were including in this peer analysis:

- **Eastern Sierra Transit Authority (ESTA)** – Regional routes connecting Bishop with Reno, Nevada, Bishop with Lancaster, Bishop with Lone Pine and Bishop with Mammoth Lakes

- **Sage Stage** – Service provided by Modoc County Transit that connects Alturas with Reno, Nevada, Klamath Falls, Oregon and Redding

- **Redwood Coast Transit** – Service connecting Crescent City with Arcata on the North Coast

- **Tahoe Transportation District** – Service connecting South Lake Tahoe with Minden, Nevada and Carson City, Nevada

Table 51 presents the most recent available data for the peer systems, as well as a comparison with YARTS data. This data reflects the Fiscal Year 2016-17 period. Note that YARTS is substantially larger than any of the peer systems, both in terms of ridership and service level. A review of this data indicates the following:

- **Passenger-Trips per Vehicle-Hour** – At 6.01, YARTS is much more productive than any of the peer systems, and carries 66 percent more riders per vehicle-hour than the average of the peers.

- **Passenger-Trips per Vehicle-Mile** – YARTS is also more effective on a per-mile basis, serving 0.23 passengers per vehicle-mile operated compared with peer average of 0.12.

- **Farebox Ratio** – The ratio of passenger fares to total operating costs on YARTS (25 percent) is substantially above the average of the peer systems (18 percent) and higher than any of the individual peers.

- **Operating/Administrative Cost per Vehicle Revenue-Hour** – The highest of the peer systems (Tahoe Transportation District) is $145.75, while YARTS is $152.96. Overall, YARTS costs per vehicle-hour are 54 percent above the peer average. It is important to note that YARTS costs reflect in part the long driver layovers required by the schedule as well as the fact that some of the operating costs incurred through the contractor are actually vehicle lease costs for the vehicles provided by the contractor.

- **Operating Subsidy per Passenger-Trip** – YARTS service required $18.51 per passenger in FY 2016-17, which is 28 percent below the peer average of $25.72. YARTS is the best of the peer systems by this measure.

Table 51: YARTS Peer Review

	Peer System					
	Redwood Coast Transit	Sage Stage	Tahoe Transportation District	Eastern Sierra Transit Authority	Peer Average	YARTS
Routes	Crescent City - Arcata	Alturas-Klamath Falls, Redding, Reno	S. Lake Tahoe - Minden,Carson City	Bishop-Reno, Mammoth Lakes, Lone Pine, Lancaster		All
Operating Data						
Ridership	19,677	11,778	46,813	11,404	22,418	117,381
Vehicle Service Hours	5,937	3,173	11,081	3,557	5,937	21,130
Vehicle Service Miles	184,184	110,801	267,245	140,249	175,620	561,311
Performance Indicator						
Passenger-trips per Vehicle Hour	3.31	3.71	4.22	3.21	3.61	5.56
Passenger-trips per Vehicle Mile	0.11	0.11	0.18	0.08	0.12	0.21
Farebox Ratio	17%	21%	13%	22%	18%	25%
Cost per Vehicle Revenue Hour	$61.48	$92.14	$145.75	$97.70	$99.27	$152.96
Operating Subsidy per Pax Trip	$22.75	$19.62	$30.02	$30.47	$25.72	$18.51

Source: National Transit Database (Sage Stage, Tahoe Transportation District, ESTA, Redwood Coast Transit)

YARTS MISSION STATEMENT

The following discusses the existing mission statement, goals and performance standards, as well as recommended modifications.

The current **mission statement** was approved by the YARTS JPA Board on January 24, 2011:

"YARTS will provide a safe and convenient public transit alternative for access to Yosemite National Park and communities along its service corridors in the Yosemite region, serving visitors, employees and residents in a cost-effective manner. YARTS will achieve high customer satisfaction with reliable service. YARTS will provide good connectivity to regional transportation providers in order to guarantee convenient public transportation access in the gateway corridors to Yosemite National Park. YARTS service is not intended to replace auto access or trans-Sierra travel, but is intended to provide a viable alternative that offers a positive experience, emphasizing comfort and convenience for riders while guaranteeing access to the Park."

This mission statement remains consistent with YARTS overall role in the region. No changes are recommended. However, the Board could consider eliminating the final sentence, which was originally included to address previous concerns that auto access to the Park would be eliminated, and may not remain necessary.

GOALS AND STANDARDS

Tables 52 and 53 present a summary of existing and proposed standards, as well as current status with regards to existing goals.

Existing **Goal #1** is as follows: "*Continue to provide safe and convenient public transportation services to the residents and visitors to Merced, Mariposa and Mono counties, along the Highway 120 and 140 corridors to Yosemite Valley, for employment, recreation, shopping, education and social service trips, so long as service can be provided in a cost-effective manner.* (Safe and accessible goal)"

This goal does not reflect that YARTS now also serves the Highway 120 West corridor to Sonora as well as the Highway 41 corridor to Fresno. The following new language is recommended (pending the overall outcome of this SRTP study): "*Continue to provide safe and convenient public transportation services to the residents and visitors to the Yosemite Region along the Highway 41, 120, 140 corridors to Yosemite Valley, for employment, recreation, shopping, education and social service trips, so long as service can be provided in a cost-effective manner.*"

Table 52: Current and Proposed YARTS Performance Standards -- Goals 1 and 2

Shading Indicates Does Not Meet Minimum Standard
Shading Indicates Meets Minimum Standard But Not Target Objective
Shading Indicates Meets Target Objective

	2011 Standards		Current Status	Proposed Standards	
Service	Minimum	Target		Minimum	Target
GOAL #1: SAFE AND ACCESSIBLE GOAL					
Accessibilty and Convenience Standards					
Route 140	4 Round Trips	6-7 Round Trips	8 Sum / 6 Win	5 Year-Round	8 Year-Round
Route 120/395	1 Round Trip		2 Sum	2 Summer	3 Summer
Route 120 West	3 Round Trips		3 Sum	3 Summer	5 Sum / 3 Win
Route 41	3 Round Trips		4 Sum	3 Summer	5 Sum / 3 Win
Regional Connectivity Standards [1]					
Yosemite to Amtrak & Greyhound	2 In and 2 Out	3 In and 2 Out	3 In and 3 Out	140: 3 Year-Round 41: 2 Summer	140: 4 Year-Round 41: 3 Sum / 2 Win
Yosemite to Airport[1]	--	--	2	1	2
Total Accidents Standards					
Systemwide	100,000 Miles Between Accidents	500,000 Miles Between Accidents	112,262	100,000 Miles Between Accidents	500,000 Miles Between Accidents
Training and Safety Plan Standards					
Systemwide	100% compliance with employee selection, drug testing, & training requirements in the operator contract.		Met	100% compliance with employee selection, drug testing, & training requirements in the operator contract.	
GOAL #2: SERVICE QUALITY GOAL					
On-Time Performance [2]					
Systemwide	No more than 0.5% trips early and 95% no more than 10 minutes late.	With 7 buses in service, 0% early and 95% of trips no later than 5 minutes late.	99.1%	No more than 0.5% trips early and 95% no more than 10 minutes late.	0% early and 95% of trips no later than 10 minutes late.
Road Calls					
Systemwide	At Least 15,000 Miles Between Road Calls, for All Buses Within Normal Useful Life	At Least 30,000 Miles Between Road Calls, for All Buses Within Normal Useful Life	20,800	At Least 15,000 Miles Between Road Calls, for All Buses Within Normal Useful Life	At Least 30,000 Miles Between Road Calls, for All Buses Within Normal Useful Life
Missed Trips [3]					
Systemwide	No more than 12 per year	Zero per year.	34 per year	No more than 12 per year	Zero per year.
Customer Satisfaction					
Systemwide	Conduct survey annually.		Conducted. Avg Score = 6.2 on 140, 6.3 on 120 West, 6.0 on 120/395 and 4.6 on 41	Avg. Score of 5 (of 7) on All Routes	Avg. Score of 6 (of 7) on All Routes

Note 1: Airports served by regularly scheduled commercial carriers only.

Note 2: On average for a particular run, on days without unusual weather or a traffic incident beyond the control of the contractor. Driver and bus mechanical issues are within control of the contractor. Abnormal delays due to temporary construction, waiting more than one signal cycle at the rockslide bridge, traffic accidents, abnormal traffic during the top 5% of Yosmeite visitation days, and late Amtrak trains are beyond the control of the contractor. When a minimum of seven YARTS buses are in service, the target objective is zero percent of trips that are not early and 95% of trips that are no more than 5 minutes late. At that time the service delay report should include trips with service delays of five minutes or more.

Note 3: The contract with VIA states "any run that operates more than 15 minutes late shall be considered a missed run. Mechanical failure resulting in delays of 15 minutes or greater shall be considered a missed run."

Source: YARTS 2011 SRTP, and current review of YARTS operations.

Table 53: Current and Proposed YARTS Performance Standards-- Goals 3 and 4

Shading Indicates Does Not Meet Minimum Standard
Shading Indicates Meets Minimum Standard But Not Target Objective
Shading Indicates Meets Target Objective

Service	2011 Standards		Current Status	Proposed Standards	
	Minimum	Target		Minimum	Target
GOAL #3: SERVICE EFFECTIVENESS GOAL					
On-Time Performance					
Systemwide	0.5% not early and 95% of trips no later than 10 minutes late.	With 7 buses in service, 0% early and 95% of trips no later than 5 minutes late.	99.1%	No more than 0.5% early and 98% no more than 15 minutes late	0% early and 98% no more than 10 minutes late
Service Productivity -- Passengers Per Hour					
Summer/Fall Route 140	8.0	10.0	6.8	8.0	10.0
Winter/Spring Route 140	7.0	8.5	5.9	6.0	8.0
Summer Route 120/395	6.5	7.5	4.9	6.0	7.0
Summer Route 120 West	--	--	8.3	8.0	10.0
Summer Route 41	--	--	3.8	4.0	6.0
All Individual Runs	4.0	--	5.9	4.0	--
Load Factor [1]					
Spring/Fall Route 140	45%	60%	38%	40%	50%
Winter/Spring Route 140	35%	45%	34%	35%	40%
Summer Route 120/395	45%	60%	29%	40%	50%
Summer Route 120 West	--	--	44%	40%	50%
Summer Route 41	--	--	19%	30%	40%
Passengers Left Behind					
Systemwide	25 per FY	0 per FY	20		
GOAL #4: SERVICE COST EFFECTIVENESS GOAL					
Marginal Farebox Return Ratio					
Systemwide	20%	30%	25%	20%	30%
Cost per Vehicle Revenue Hour					
Systemwide	Not to exceed the CPI adjusted for increased fuel costs	Below $130 / hour, adjusted for inflation	$170	Not to exceed the CPI adjusted for increased fuel & personnel costs	Below $170 / hour, adjusted for inflation
Subsidy per Passenger Trip					
Systemwide	$14 / psgr trip	$10 / psgr trip	$22.87	$20 / psgr trip	$15 / psgr trip
Percentage of Administrative Cost to Operating Cost [2]					
Systemwide	Admin not to exceed 15% of total operating costs.	Admin not to exceed 12% of total operating costs.	15%	Admin not to exceed 15% of total operating costs.	Admin not to exceed 12% of total operating costs.

Note 1: Although the load factor on average is below 50% for the Summer/Fall Schedule, some runs exceed the seated capacity on a few runs during the peak season.
Note 2: Administrative costs are MCAG staff and overhead costs to manage YARTS. These include 1) Management accounting, planning and service monitoring, 2) Audit and insurance, 3) Transpo Station Lease, 4) Marketing Administration (MCAG staff time)

Source: YARTS 2011 SRTP, and current review of YARTS operations.

Accessibility and Convenience

The current minimum standard is to provide a minimum of four round- trips on Highway 140 and one round-trip on Highway 120 (to Mammoth Lakes). The current target objective is to meet consumer demand in all seasons with six to seven round-trips daily as demand warrants. Given current ridership and service levels, the following is recommended "*A minimum of five round-trips (year-round) on Highway 140, three round-trips (summer) on Highway 120 West and Highway 41 and two round-trips (summer) on Highway 120/395. A target objective of eight round-trips (year-round) on Highway 140, five round-trips (summer) and three round-trips*

(winter) on Highway 120 West and Highway 41, and three round-trips (summer) on Highway 120/395."

Regional Connectivity

The current minimum standard is to provide connection on two trips inbound to Yosemite and two trips outbound from Yosemite daily to both Amtrak and Greyhound, while the current target standard is to provide connections on three trips inbound to Yosemite and two trips outbound from Yosemite daily to both Amtrak and Greyhound. As these were identified prior to the Highway 41 service, they pertain to the Highway 140 service only. Currently, three reasonable connections are provided year-round in Merced (Highway 140 corridor). In Fresno, three inbound connections and two outbound connections are shown in the schedules, though many of these do not have convenient connection times. In addition, passengers boarding at airports with regularly scheduled passenger air service have been growing and can be expected to continue to do so. The recommended standard is a "*The minimum standard to provide rail/intercity bus connections on three trips in each direction on the Highway 140 corridor (year round) and two trips in each direction on the Highway 41 corridor (summer), with a target objective of four trips in each direction on the Highway 140 corridor, and three on the Highway 41 corridor (summer) and two (non-summer). In addition, a minimum standard is to serve at least one airport with regularly scheduled air service year-round, with a target of serving two airports."*

Total Accidents

The current minimum standard is 100,000 miles between preventable accidents with a target objective of 500,000 between all accidents. Over Fiscal Year 2017/18, the preventable accident rate was 1 per 112,300 vehicle-miles, achieving the minimum standard. No changes are recommended in the standard.

Training and Safety Plan

The minimum standard and target objective is in 100% compliance with the employee selection, drug testing, and training requirements included in the operator contract. A summary of training and safety compliance should be included in the operator contract and validated by YARTS staff. The contractor is currently achieving this standard, and no change is recommended.

Goal #2 (the service quality goal) currently states "*Ensure that all transit programs can be provided at a high quality of service. Quality of service is more important than expansion of service."* This statement remains appropriate and the Consultant agrees with the order of importance. No changes are recommended.

On-Time Performance

The current minimum standard is no more than 0.5% percent of trips early and 95% percent of trips that are no more than 10 minutes late, absent conditions outside of the contractor's control such as unusual weather, a traffic incident beyond the control of the contractor, construction, congestion during peak Yosemite visitation days, and late Amtrak trains. The target objective (when a minimum of seven YARTS buses are in service) is zero percent of trips that are early and 95% percent of trips that are no more than five minutes late. The current YARTS-VIA contract also includes a penalty for runs that fall below 98 percent on-time performance level, applying a 15-minute definition of on-time performance.

Overall, the YARTS contractor is achieving a 99.11 percent on-time rate, using a 15-minute definition of "on-time". It would be beneficial to apply the same definition in both the standards and the contract. Given the various factors that can impact travel times over the long YARTS routes, a 15 minute definition is appropriate as a minimum standard, though a 10 minute definition would be preferable. Furthermore, there is no appreciable difference in the current on-time performance between summer/fall service and winter/spring service, indicating that the existing difference in the target objective by season is no longer necessary. Accordingly, it is recommended that the minimum standard be modified to *no more than 0.5 percent early and a minimum of 98 percent no more than 15 minutes late* and the target standard be modified to *no early runs and a minimum of 98 percent no more than 10 minutes late*.

Road Calls

The current minimum standard is 15,000 miles between road calls for all buses in the fleet that are within their normal useful life, with a target objective of 30,000 miles. In FY 2016/17, this figure was 20,800. Given this, the current standards are appropriate and no changes are recommended.

Missed Trips

The current minimum standard is no more than 12 missed trips per year, with a target standard of zero missed trips. In FY 2016/10, there were a total of 34 missed trips, reported by the contractor. The contract with VIA defines a missed run as any run that operates more than 15 minutes late and excludes circumstances of weather, road hazards/closures or traffic conditions. The contract further stipulates damages if more than three runs are missed per month due to mechanical issues. This occurred on two months in FY 2016/17 (early in the year).

Missing trips has a significant impact on the overall quality of service and reputation of a transit service, and is particularly important given the limited number of runs and long distances.

Though the current standards are not currently met, they remain appropriate. No changes are therefore recommended.

Customer Satisfaction

The standard for this measure is that a random customer satisfaction survey should be conducted annually. This has been occurring over recent years. However, the current standard is not sufficient in that it does not specify a minimum level of customer satisfaction. As documented in the YARTS On-Board Survey results in Appendix B prepared as part of this SRTP, the recent surveys have asked passengers (by route) to rate YARTS on a scale 1 (poor) to 7 (excellent) for a total of 11 various service factors. These survey questions can be continued in the future to gauge customer satisfaction. A recommended minimum standard is to achieve an average score of 5 for all categories for all routes, with a target standard of achieving an average score of 6 for all categories by route. Based upon this standard, all routes are meeting the minimum with the exception of Route 120/395 for "How well does the bus schedule meet your needs" (score of 4.5). The target standard is achieved with the following exceptions:

- Printed Information (Route 140, Route 120/395)
- Website (Route 140, Route 120/395, Route 41)
- Quality of the Bus Stop (Route 140)
- How Well the Schedule Meets your Needs (Route 140, Route 120/395, Route 41)

The lowest average score was "How Well the Schedule Meets your Needs" on Route 41, which received an average score of 4.0.

The current **Goal #3** states: *Provide an effective level of service in response to demonstrated community and visitor market needs.* (Service effectiveness goal). This remains a concise and appropriate goal, and no modifications are recommended.

Service Productivity

The target objectives and minimum standards for productivity as measured in passengers per vehicle service hour are currently as follows:

Minimum Standard Average Passengers per Vehicle Service Hour
Summer/Fall Schedule Route 140: 8.0
Winter/Spring Schedule Route 140: 7.0
Summer Route 120/395: 6.5

Target Objective Average Passengers per Vehicle Service Hour
Summer/Fall Schedule Route 140: 10.0
Winter/Spring Schedule Route 140: 8.5
Summer Route 120/395: 7.5

Minimum Standard Average per Run
4.0 passengers per vehicle service hour. All runs falling below the average minimum standard for a season shall be reviewed and mitigation steps considered.

FY 2016/17 Actual Performance
Summer/Fall Schedule Route 140: 6.8
Winter/Spring Schedule Route 140: 5.9
Summer Route 120/395: 4.9
Summer Route 120 West: 8.3
Summer Route 41: 3.8

The existing standards were written prior to Route 120 West or Route 41 service. Route 140 service does not currently attain the overall route productivity minimum standard either in Summer/Fall (6.8 vs. 8.0) or Winter/Spring (5.9 vs. 7.0), while the Route 120/395 does not attain the minimum standard (4.9 vs. 6.5). Route 120 West does attain the Route 140 summer standard, however Route 41 does not attain any of the existing standards.

Table 47 in Chapter 3 presents a review of how well the individual runs attain the minimum run-specific standard of at least 4.0 passenger-trips per vehicle-hour:

- All of the summer (July data) Route 140 runs attain this standard as well as most runs in September, but the winter service (January data) does not attain this standard on 38 percent of weekday runs and 50 percent of weekend runs.

- All of the Route 120 West runs attain the standard in both summer and fall, for both weekdays and weekends.

- Only a few of the Route 41 runs attain the standard in the summer (2 of 12 runs on weekdays and 3 of 11 runs on weekends), while no runs attain the standard in the limited days operated in September.

- The Route 120/395 runs that extend from Mammoth Lakes to Yosemite Valley attain the standard and all times, while none of the runs between Mammoth Lakes and Tuolumne Meadows attain the standard. The 2018 summer schedule eliminated these shorter runs in favor of full runs, which should allow all runs to attain this standard.

It is also worthwhile to note the productivity of the peer long-distance rural services, as shown in Table 51, above. The highest of these figures (for TTD regional services) is only 4.6 passenger-trips per vehicle-hour, lower than the YARTS standards.

The most troubling of the existing performance figures are for Route 41. At 3.8 boardings per vehicle-hour, this route is far below even the lower standard of 6.5 currently applied to the

120/395 route, and strict application of this standard would require a very substantial reduction in the Route 41 service down to only a few runs per day. A lower standard is appropriate given the length of the route and the relative visitor access through Fresno vs. through Merced and Sonora. A lower standard is also appropriate on the 120/395 Route given the very long travel distance and limited availability of intermediate lodging/housing areas.

Considering all factors, the following new standards are recommended:

Minimum Standard Average Passengers per Vehicle Service Hour
Summer/Fall Schedule Route 140: 8.0
Winter/Spring Schedule Route 140: 6.0
Summer Route 120/395: 6.0
Summer Route 120 West: 8.0
Summer Route 41: 4.0

Target Objective Average Passengers per Vehicle Service Hour
Summer/Fall Schedule Route 140: 10.0
Winter/Spring Schedule Route 140: 8.0
Summer Route 120/395: 7.0
Summer Route 120 West: 10.0
Summer Route 41: 6.0

Minimum Standard Average per Run
4.0 passengers per vehicle service hour. All runs falling below the average minimum standard for a season shall be reviewed and mitigation steps considered.

Load Factor:

Load factor is the percentage of seats occupied by passengers. The percentage is calculated by dividing the number of passengers by the number of seats available and multiplying by 100%. The current standards are as follows:

Minimum Standard Load Factor
Summer/Fall Schedule Route 140: 45%
Winter/Spring Schedule Route 140: 35%
Summer Route 120/395: 45%

Target Objective Load Factor
Summer/Fall Schedule Route 140: 60%
Winter/Spring Schedule Route 140: 45%
Summer Route 120/395: 60%

FY 2016/17 Average Actual Performance
Summer/Fall Schedule Route 140: 38%
Winter/Spring Schedule Route 140: 35%
Summer Route 120/395: 30%
Summer Route 120 West: 44%
Summer Route 41: 19%

It should be noted that the load factor on the 120/395 Route reflects the previous operating plan with one bus serving trips between Mammoth Lakes and Tuolumne Meadows only (which had a low load factor). With the revised route structure serving only full runs to/from Yosemite Valley, the load factor will be substantially higher.

Load factor is a function of the seating capacity of a bus. The appropriate seating capacity is function of the peak expected loads, the desire to not leave passengers at the curb on peak days, as well as the vehicle options available on the market. In addition, the better ride quality provided by a larger over-the-road coach may be desirable, even if all the seating is seldom used. The cost of providing a transit service is only impacted in a small way by the size of the transit vehicle operated (as much of the actual costs are for the driver salary/benefits, and as maintenance/fuel costs vary less than typically expected with vehicle size). As a result, the load factor should be considered less important than other performance measures.

As shown in Table 53, none of the routes/services with existing standards are currently meeting the standard (though the Route 120/395 comes close). Considering current performance, the limitations on vehicle options, the benefits of providing over-the-road coaches and the need to accommodate peak passenger demands (which can be expected to grow in the future), the following revised standards are recommended.

Minimum Standard Load Factor
Summer/Fall Schedule Route 140: 40%
Winter/Spring Schedule Route 140: 35%
Summer Route 120/395: 40%
Summer Route 120 West: 40%
Summer Route 31: 30%

Target Objective Load Factor
Summer/Fall Schedule Route 140: 50%
Winter/Spring Schedule Route 140: 40%
Summer Route 120/395: 50%
Summer Route 120 West: 50%
Summer Route 31: 40%

Passengers Left Behind

VIA tracks the number of passengers left behind due to full buses. In FY 2016/17, a total of 20 passengers were left behind. The current minimum standard is that no more than 25 passengers are left behind in a fiscal year, while the target objective is that no passengers are left behind. These remain appropriate standards.

Goal #4 (the Service Cost-Efficiency Goal) currently states*: Provide YARTS services that are financially sustainable within existing local, state and federal funding programs and regulations in a cost-efficient manner.* This goal remains appropriate and no changes are recommended.

Farebox Recovery:

The ratio of farebox revenues to total administrative/operating costs is currently 25 percent, systemwide. The current minimum standard is 20 percent while the target objective is 30%. These standards remain appropriate.

Cost per Vehicle Revenue Hour:

The cost per vehicle service hour is currently (Fiscal Year 2017-18) estimated to be $170. This is difficult to compare to other transit systems because YARTS costs include the lease costs associated with VIA-supplied buses. In addition, unique costs associated with drivers laying over for long periods and housing costs in outlying communities are included in the contractor costs.

Current standards (set in 2011) identify that "*the minimum standard should be that the costs per vehicle service hour not exceed the consumer price index adjusted for increased fuel costs*" and that the "*target standard is to have the cost per vehicle service hour be below $130 per hour, adjusted for inflation."* Since 2011, overall consumer price index has increased by 14 percent, while California diesel average costs have increased by 11 percent. Based on the CPI increase, the 2018 value would be $149 per hour. However, the improving economy has increased the wage rates needed to attract qualified transit drivers (and other staff), and the proportion of vehicle-hours operated using contractor-provided vehicles has also increased. Realistically, this value can only be expected to decrease if additional YARTS-owned vehicles are available, or perhaps if service is reduced. Given this, it is recommended that the minimum standard be that *"costs per vehicle service hour not exceed the consumer price index adjusted for increased fuel and personnel costs*" and that the "*target standard is to have the cost per vehicle service hour be below $170 per hour, adjusted for inflation."*

Subsidy per Passenger Trip:

The subsidy per passenger trip is calculated by subtracting fare revenues from operating expenses and dividing the resulting sum by the total number of passengers. The current

minimum standard is to be below $14 per passenger trip, while the current target objective is to be under $10 per trip. For FY 2017/18, YARTS value is estimated to be $21.12.

The current standards are unrealistic given recent fuel and personnel cost increases, and the need to use contractor-supplied buses. If YARTS is successful in obtaining a fleet sufficient to eliminate the need for contractor-supplied buses, the subsidy per passenger would be reduced to $18.92 … still substantially above the current standards. A realistic current standard would be a minimum of no more than $20, and a target of no more than $15.

Percentage of Administrative Costs to Operating Costs:

Administrative costs are a subset of operating costs. Administrative costs are the MCAG staff and overhead costs to manage YARTS. These include the current budget line items in the budget of:

- MCAG professional service (including marketing)
- Other professional services
- Professional memberships
- Travel
- Office expenses

The current standard is for these costs to not exceed 15 percent of the total operating costs (at a minimum), with a target of not exceeding 12 percent. Administrative costs in FY 2016/17 were 15 percent of the total operating costs. Given this, the existing standards are appropriate and no changes are recommended.

***Goal #5**: YARTS should continue to develop into a regional Yosemite gateway corridor public transit provider if expansion to other gateway corridors can be accomplished without adversely affecting existing YARTS services.*

As YARTS services now serves all gateway corridors into the Park, this specific wording is outdated. Nevertheless, it is appropriate that any future expansion of service (such as additional runs or seasons of operations or extension of existing routes) be funded so as to not negatively impact the financial sustainability of existing services. Recommended new language is as follows: *YARTS should continue to expand public transit services for the Yosemite Region so long as expansions can be accomplished without adversely affecting existing YARTS services.*

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Chapter 6

Route 140, Route 120/395 and New Route Service Alternatives

INTRODUCTION

Previous chapters of this report provide an understanding of the current environment in which YARTS services are provided, as well as providing a thorough understanding of the operating characteristics of YARTS services. The earlier chapters were presented to the YARTS AAC, YARTS staff and the public through various events and media. Based on the area review, service evaluation, and feedback received, a wide array of alternatives were evaluated, including service alternatives, capital (bus, facilities, etc.) alternatives, financial alternatives, marketing alternatives and institutional alternatives. The alternatives analyses are presented in Chapters 6 through 12, and are the basis for development of the final plan, presented in Chapter 13.

Service alternatives are presented in Chapters 6 through 8, organized by service corridor and jurisdiction. Chapter 6 presents the development of alternatives for Merced, Mariposa and Mono Counties (the existing members of the JPA) along existing Route 140 and Route 120/395. Chapter 6 also presents potential new services within and into these corridors. Chapter 7 presents service alternatives for Tuolumne County (Route 120 West), and Chapter 8 presents service alternatives for the Fresno corridor (Route 41) and the Madera area.

HIGHWAY 140 CORRIDOR SERVICE ALTERNATIVES

This chapter focuses on services alternatives for the routes operated in the full JPA member counties (Merced, Mariposa and Mono), specifically Route 140 and Route 120/395. In addition, potential new routes serving the Bay Area, Sacramento and along State Route 49 are discussed. Separate discussions of service alternatives for the Route 120 West service in Tuolumne County and the Route 41 service in Madera and Fresno Counties are provided in following chapters.

Additional Route 140 Runs

Summer

Later Westbound Evening Run with Additional Mid-Day Eastbound Run

The last westbound departure is currently at 8:07 PM. There have been public requests for later service, including both employees as well as visitors. A 9:15 PM departure could allow summer visitors to watch the sunset in the Valley, and also serve employees on the evening shift. This run would serve drop-offs in the Mariposa area around 10:43 PM. If it were to

continue on to Merced, it would arrive around 11:38 PM. However, given the low ridership that would be generated for late night arrivals in Merced, it would make more sense to combine this run with existing Run 7 (departing westbound from Yosemite Bug Resort at 5:54 AM and arriving at Merced Transpo at 7:10 AM), with the driver staying overnight in the Mariposa area. This would reduce the direct cost to YARTS of the additional run, and would also save mileage on the buses.

An additional westbound departure would also require a bus to operate eastbound. In reviewing the existing schedule and Amtrak/YARTS connections, one consideration is that the current schedule does not conveniently serve northbound travel between LA and Yosemite. Train travel between Fresno and Merced combined with YARTS Route 140 service can provide an overall shorter travel time than YARTS Route 41 service.

Rail service between Fresno and Merced takes 1 hour. As Route 41 travel time from Fresno to Yosemite is 3 hours 46 minutes compared with 2 hours 5 minutes from Merced to Yosemite on Route 140, with careful scheduling, a traveler from Southern California can reach the Park faster by staying on Amtrak through the Fresno station and connecting with YARTS in Merced.

The best example is the northbound Train 713. With connecting bus service departing LA Union Station at 6:15 AM, Train 713 currently arrives in Fresno at 11:04 AM. The next YARTS bus (Run 28) departs at 12:40 PM, arriving at the Yosemite National Park Visitors Center at 4:46 PM – 10 hours 31 minutes from the LA departure. This same Train 713 arrives in Merced at 12:05 PM. If there were a 12:20 PM eastbound YARTS departure, the Southern California traveler could arrive at the Visitors Center at 3:02 PM – 1 hour 44 minutes sooner than the current schedule allows. Overall, this strategy of focusing the Amtrak connection in Merced would improve regional bus/rail access to Yosemite. However, it is still useful to provide a good YARTS Amtrak connection in Fresno for those coming up to Oakhurst for the evening, entering the park the next day.

There is also a southbound *San Joaquin* (Train 714) arriving in Merced at 12:39 PM, which provides a convenient 9:05 AM departure from San Francisco and 9:35 AM departure from Oakland. A 12:50 PM eastbound Route 140 YARTS departure from TRANSPO (1:00 PM at the Amtrak station) could serve both Trains 713 and 714, providing a new arrival time around 3:38 PM. This new schedule would not increase the peak number of buses needed to operate the Route 140 service. The existing Route 8 bus (arriving westbound into Merced TRANSPO at 11:56 AM) could be used to operate the new runs.

The cost of this option can be estimated by calculating the number of vehicle-hours in operation and multiplying by the 2019 contract cost per vehicle-service-hour for operation of a bus. These rates are $107.38 for a bus in the YARTS fleet and $153.50 for a bus provided by VIA. Assuming no change in the available fleet, five of the eight buses needed to operate the Route 140 service are in the YARTS fleet and three are provided by VIA. Buses are rotated through all the various runs, indicating that the average cost per vehicle-hour (based on the proportion of

buses) is $124.68. Applying this rate, the total cost of providing these additional runs is $78,500, in 2019 dollars as shown in Table 54.

Table 54: YARTS Route 140 and Route 120/395 Service Alternatives Cost Analysis

	Run Parameters	Daily Service			Annual	Annual	Change in
	Hours/Day	Runs	Days/Yr	Hours	Hours	Cost	Peak Buses
ROUTE 140							
Extend Run 8A to Merced from Catheys Valley	0.66	1	140	0.7	98	$12,200	0
Additional Peak Season Round Trip - Mid-Day EB, Evening WB to Mariposa							
Eastbound	2.97	1	140	3	420	$52,400	
Westbound	1.47	1	140	1.5	210	$26,200	
Total					630	$78,500	0
Eliminate Early AM Mariposa-Merced Run							
Peak Season	2.20	-1	98	-2.2	-215.6	-$26,900	0
Offpeak Season	2.20	-1	156	-2.2	-343.2	-$42,800	0
Total					-558.8	-$69,700	
Serve Mariposa Fairgrounds 2x/day Peak Season	0.25	2	98	0.5	49	$6,100	0
ROUTE 120/395							
Additional Round Trip in July and August	8.00	1	72	8	576	$88,400	1
September Weekday Service	8.00	1	21	8	168	$18,000	0
October Weekend Service	8.00	1	9	8	72	$7,700	0
June Weekday Service	8.00	1	21	8	168	$18,000	0
Eliminate June Lake Loop	-0.33	4	72	-1.3	-93.6	-$10,100	0

Ridership is estimated for a busy peak summer month, based on observed ridership activity, the attractiveness of the new connection times in Merced and employment patterns to be 15 passenger boardings per run on the new mid-day eastbound run and 12 passenger boardings per run on the new late evening run. Over the course of the peak season (mid-May through the end of September), this would total 2,100 additional boardings eastbound plus 1,800 westbound, for a total of 3,900 per day. At the existing average fare per boarding on Route 140 of $7.59, this would generate an increase in farebox revenues of $29,600[2]. Overall operating subsidy would be increased by $48,900 per year, as shown in Table 55.

Offseason Additional Run

The current offseason schedule already provides a 12:50 PM eastbound departure from the Merced Amtrak station, serving Trains 713 and 714. In addition, the existing last westbound departure of the day (5:20 PM departure from Half Dome Village) carries a relatively low 5.3 passengers per run, indicating that later runs would generate poor ridership numbers.

[2] While the additional Amtrak passengers would not generate new fare revenues to YARTS in the short run (as these payments from Amtrak are on a per run basis), in the longer term additional ridership would be reflected in the agreement.

Table 55: YARTS 140 Route and 120/395 Route Service Alternatives Summary

Alternative	Change In Annual Service: Service Hours	Operating Cost	Ridership	Fare Revenues	Operating Subsidy	Change in Peak Buses
Route 140						
Extend Run 8A to Merced from Catheys Valley	98	$12,200	900	$6,800	$5,400	0
Additional Peak Season Round Trip - Mid-Day EB, Evening WB to Mariposa	630	$78,500	3,900	$29,600	$48,900	0
Eliminate Early AM Mariposa-Merced Run						
Peak Season	-216	-$26,900	-1,500	-$5,500	-$21,400	0
Offpeak Season	-343	-$42,800	-1,800	-$6,600	-$36,200	0
Total	-559	-$69,700	-3,300	-$12,100	-$57,600	0
Serve Mariposa Fairgrounds 2x/day Peak Season	49	$6,100	470	$1,700	$4,400	0
Route 120/395						
Additional Round Trip in July and August	576	$88,400	2,900	$32,400	$56,000	1
September Weekday Service	168	$18,000	1,100	$12,300	$5,700	0
October Weekend Service	72	$7,700	540	$6,000	$1,700	0
June Weekday Service	168	$18,000	1,400	$15,700	$2,300	0
Eliminate June Lake Loop	-94	-$10,100	120	$1,300	-$11,400	0

Eliminate Poor Productivity Route 140 Runs

A review of Route 140 ridership by run data for summer indicates that all existing runs are carrying significant ridership (at least 16.6 passenger boardings per run) and all runs meet the standard of 4.0 passenger-trips per vehicle-hour of service (minimum of 5.2). No reductions in peak season service were therefore considered.

In the off-peak season, however, there are five weekday one-way runs that do not achieve 4.0 passenger-trips per vehicle-hour:

- The early morning westbound run from Mariposa to Merced (weekdays only, planned for a 5:54 AM departure from Yosemite Bug Resort in the Winter 2018 schedule) – 2.2
- The late afternoon 4:15 PM westbound Run 10 from the Valley to Merced (weekdays only – 3.4
- The late afternoon westbound Run 11 from the Valley to Mariposa (4:35 PM departure in 2017, planned for 5:05 PM departure in Winter 2018) – 2.5
- The late afternoon 5:45 westbound Run 12 (5:45 PM departure in 2017, planned for 5:20 PM departure in 2018) – 1.3
- The late afternoon Run 6 departure from Merced to the Valley (4:30 PM departure in 2017, planned for 5:05 PM departure in 2018) – 2.1.

This data indicates that YARTS is providing more service than passenger demand warrants in the late afternoon on weekdays in the westbound direction. Runs 11 and 12, which depart within 15 minutes of each other (planned 2018 schedule) together carry an average total of 16 passengers, which could be more than adequately accommodated on a single bus. However, all of the eastbound runs earlier in the day achieve the productivity standard. The only eastbound run not making the productivity standard is the Run 6 departure, but this run should not be cut as it is needed to serve Amtrak Train 716.

On weekends/holidays, the following runs do not meet productivity standards:

- The eastbound Run 2 departure from Catheys Valley to Yosemite (5:58 AM departure in 2017, planned for 5:48 AM departure in 2018) – 3.3

- The eastbound Run 5 departure from Merced (10:20 AM departure in 2017, shifted to 12:25 PM in 2018) – 3.4. This shift will better align with Amtrak schedules, which should improve performance on this run.

- The late afternoon Run 6 eastbound departure from Merced (4:30 PM in 2017, shifting to 5:25 PM in 2018. This shift should improve performance by better aligning with Amtrak Train 716 schedule.

- The late afternoon westbound Run 11 from Yosemite to Mariposa (4:35 PM in 2017 and 5:05 PM in 2018) – 3.2

- The late afternoon westbound Run 12 from Yosemite to Merced (5:45 PM in 2017 and 5:20 PM in 2018) – 1.5

As with the weekday results, this indicates that too much service is being provided in the late afternoon (Runs 11 and 12), which together generate an average of 18 passenger boardings per day. Combining these runs could eliminate one westbound bus per day. This would necessitate eliminating one eastbound run (or operate an inefficient deadhead run the entire length of the route). As the other off-season weekend/holiday eastbound runs are either needed for Amtrak connections or are meeting performance standards, the only potential eastbound run for elimination is Run 2. This run however, is the sole route serving commuters to the Park working a standard workday – without Run 2, the first eastbound arrival into the Park would be at 11:57 AM. Eliminating weekend/holiday commuter options along the 140 corridor is not in keeping with overall goals for regional connectivity.

In sum, no reductions in existing runs into and out of the Park appear warranted. However, it is worth considering the elimination of the westbound early morning run from Midpines to Merced (the “College Run”). In 2018, this consists of Run 7 in the peak season and Run 1 in the off-peak season (both leaving Yosemite Bug Resort at 5:54 AM and arriving at Transpo at 7:10 AM). These runs require a driver to deadhead from Merced to start the run. Over the off-

season between October 1, 2017 and May 14, 2018, this run carried a total of 1,002 passenger-trips and averaged 6.4 per day or 2.9 per vehicle service-hour. In the peak season, this run served a total of 1,015 passenger trips, averaging 10.4 per day or 4.7 per hour.

Eliminating this service would reduce annual costs by $26,900 per year in the peak season and $42,800 in the off-peak season, or a total of $69,700 year-round. It would not reduce the peak number of buses needed to operate the Route 140 service. While the cost savings is the key benefit of this option, this would significantly reduce the usefulness of YARTS service for residents in the Mariposa/Midpines/Catheys Valley area with regards to access to Merced (for all sorts of purposes including higher education, shopping, medical trips, employment and access to intercity transportation). It would also reduce options for visitors that desire to leave after staying overnight in Mariposa County. Without these runs, the first eastbound run would depart Midpines at 10:26 AM and arrive in Merced at 11:56 AM in the peak season, and depart Midpines at 10:04 AM and arrive in Merced at 11:05 PM in the offseason. Combined with late afternoon/early evening eastbound runs from Merced, this would still provide Mariposa residents with the opportunity for afternoon half-day trips to/from Merced, but would preclude morning half-day or all-day trips.

Some of the existing ridership on this run would shift to other runs. However, the loss of the ability to travel to Merced in the early morning would also reduce return ridership eastbound in the afternoon. Overall, this option is expected to reduce total ridership by 1,800 in the off-season and 1,500 in the peak season.

Service to Mariposa Airport

The idea of service to the Mariposa-Yosemite airport was brought up in stakeholder interviews. The Mariposa-Yosemite Airport is located four miles northwest of downtown Mariposa, and 3/4 of a mile from SR 49. The airport continues to grow and now offers parachuting, flying lessons, and expanded rental car offerings. However, these activities on their own are not likely to generate demand for transit service that would offset the loss of ridership among through passengers due to the increased travel time. If a SR 49 route is deemed beneficial (as evaluated below under “Potential New Services”), the Mariposa-Yosemite Airport could be served as an on-demand stop.

Service to Mariposa County Fairgrounds

Another area for which stakeholders expressed interest in transit service is the Mariposa County Fairgrounds located two miles south of downtown Mariposa. The Fairgrounds and surrounding area host overnight stays for recreational vehicles and campers. If the area were served by transit, it would allow campers to leave their (often large) vehicles to go into the Park. While there are 140 RV sites, at peak times there are generally only 30-40 in use with an average of 2 to 4 people, according to the site manager. Those who arrive from California

typically bring a smaller vehicle for trips to town or day excursions, while international travelers often arrive without such support vehicles.

The YARTS stop nearest to the Fairgrounds is 2.0 miles away at 7th Street and Main in the downtown. Adding service to the Fairgrounds in the morning and afternoon would allow campers to spend half a day to a full day in Yosemite. For example, the 3a route already starts in Mariposa, so adding service at the beginning of the route would not impact passengers coming from Merced. Likewise, the 11a route ends in Mariposa, unless passengers specifically request service to Merced, so this also would not have a large impact on existing ridership. Serving Mariposa Fairgrounds would add an estimated 15 minutes of running time and 4 miles four times per day during the peak season, at an estimated cost of $6,100 annually, as shown in Table 54.

The ridership would be generated primarily by campers, particularly those without smaller vehicles. No specific data is provided on where travelers are from, but assuming 40 percent are without a support vehicle and would use the bus at a higher rate, it is estimated that between four and five people would make a round trip daily, or 470 in peak season, as shown in Table 55.

ROUTE 120/395 SERVICE ALTERNATIVES

Third Route 120/395 Run to Yosemite Valley in Summer

The current Route 120/395 service plan during the summer consists of two daily round-trips between Mammoth Lakes and Yosemite Valley, with westbound departures at 6:45 AM and 8:00 AM, and eastbound departures at 4:05 PM and 5:00 PM. While 2018 is the first summer that two full runs have been provided (rather than one full run and two other round-trips between Mammoth Lakes and Tuolumne Meadows), in summer 2017 the round-trip generated 6.5 passenger-trips per day and in June 2018 it generated 8.0 passenger-trips per day. Also of note, the eastbound departure reached the maximum allowed reservation capacity on 6 days in August of 2017 and 3 days in September of 2017.

Operating a third daily round trip would require provision of an additional bus. As this is not available from the YARTS-owned fleet, it would need to be provided through VIA. The cost of this service over a total of 62 days would be $88,400, at least in the short run until additional YARTS vehicles can be obtained.

This option would provide the opportunity to shift the schedule, in order to provide greater options to passengers. As an example, westbound departures could be provided at 6:00 AM, 7:00 AM and 8:00 AM, with return trips departing eastbound at 2:00 PM, 4:00 PM and 6:00 PM. This would help address the existing complaint that the earliest arrival currently is not until 10:50 AM, as well as the complaint that the earliest arrival back into Mammoth Lakes is not until 7:30 PM. The opportunity for a trip to Yosemite Valley for persons staying in Mammoth

Lakes that does not require an 11.5-hour-long travel day would be particularly attractive to seniors. Estimated ridership on this new round trip would be 47 passenger-trips per day or 2,900 over the course of the season.

Route 120/395 Service Later into the Fall

Fall is becoming an increasingly popular time for recreational travel. The growth of the population that is not tied to the traditional school year schedule can be expected to further increase fall visitation levels. SR 120 over Tioga Pass is typically open into November. A review of closing dates over the past 20 years indicate an earliest closing date of October 17th (in 2004) and a latest date of January 17th of the following year (2005). Since 2004, the earliest closing date has been October 30th. A reasonable option would therefore be to extend the SR 120/395 service. Two options were considered, as discussed below.

Weekday Service in September

At present, 120/395 Route service in September is provided on weekends only. Under this option, service in September would be expanded to one daily round-trip operated seven days a week. This would increase annual operating costs by $18,000, though an additional bus would not be required.

An estimate of weekday ridership can be made by reviewing the relative weekday vs. weekend ridership on the 120 West Route and using this to factor the 120/395 Route weekend ridership. This indicates that total ridership would be approximately 52 passengers per day, or 1,100 passenger boardings.

Weekend Service in October

Weekday ridership on the 140 route in October is 89 percent of the ridership in September. Applying this factor, ridership would be an estimated 67 boardings per day, or 540 over the course of eight weekend days.

Route 120/395 Weekday Service in June

Another expansion option would be to expand the current weekend-only service in June to also provide weekday service. In assessing this option, it is worth noting that average productivity on the Route 120 West is higher on weekdays (10.0 per vehicle-hour) than on weekends (9.6 per hour). Applying the ratio of these figures to the existing 120/395 Route weekend June ridership indicates a ridership of 67 passengers per weekday, or 1,400 over the course of the month. This additional service would increase annual operating costs by $18,000 per year.

Eliminate Route 120/395 Service on the June Lake Loop

The June Lake Loop on SR 158 adds approximately 10 miles and 20 minutes of running time compared to keeping Route 120/395 on SR 395 from Mammoth to Lee Vining. A review of the ridership from 2017 and in June 2018 shows that less than 3 percent of boardings in the Eastern Slope occur in this loop (82 of 2,493 boardings, or an average of less than 2 passenger-trips per day). Keeping the route on SR 395 would reduce service by an estimated 94 hours annually at a cost savings of $10,100, as shown in Table 54.

If the route is shifted, most of the riders would drive to the nearby stop on US 395 at the south end of the loop, resulting in a loss of an estimated 50 one-way passenger-trips per year. However, this change would benefit the much greater number of riders traveling to and from Mammoth Lakes, as it would save 20 minutes in each direction (40 minutes in total for route-trip riders), thereby encouraging additional ridership. Through an elasticity analysis, it is estimated ridership would increase by approximately the same number (170 passenger-trips) due to the increased convenience of the shorter travel time. The overall ridership impact would be an increase of 120 per year, as shown in Table 55. With the additional fare revenues, the overall subsidy requirement would be reduced by $11,400 per year.

Adjust Schedule for Improved ESTA Connections

The Eastern Sierra Transit Authority routes travel as far north as Reno and as far south as Lancaster. ESTA routes and YARTS both serve Mammoth and Lee Vining, so schedules were reviewed to determine potential connections between the two services. The schedules for both services are fairly limited. The existing connections or potential connections (with minor schedule adjustments) include the following:

- Bishop to Yosemite – Passengers can board the ESTA bus in Bishop at 6:50 AM and arrive in Mammoth at 7:40 AM. YARTS departs Mammoth for Yosemite at 8:00 AM, arriving in the Valley at 12:05 PM.

- Yosemite to Bishop – Passengers can board YARTS in Yosemite at 4:05 PM and arrive at Mammoth 7:02 PM. The ESTA bus departs at 7:00 PM for Bishop. Adjusting either schedule by 5 to 10 minutes would allow a transfer.

- Lone Pine to Yosemite – Passengers can board YARTS in Lone Pine at 6:15 AM and arrive at Lee Vining at 8:50 AM. The YARTS bus departs Lee Vining at 9:30 AM, arriving in Yosemite at 12:05 PM (a 40 minute wait would deter some potential passengers). However, the YARTS return trip misses the ESTA southbound trip back to Lone Pine by nearly two hours, so this would only serve overnight visitors to Yosemite.

- Lone Pine to Reno - The ESTA service to Reno is primarily intended to get passengers north for connections to the Reno airport or Greyhound. The bus departs Lone Pine at

6:15 AM, stopping in Mammoth at 8:20 AM and in Lee Vining at 8:50 AM, and arriving in Reno at noon. The return departs at 1:10 PM, stops in Lee Vining at 4:25 PM and Mammoth at 5:15 PM and arrives in Lone Pine at 7:40 PM. The ESTA schedule is not compatible with the YARTS schedule for day trips to Yosemite, although passengers can combine the services for overnight stays in Mammoth or Lee Vining before going to Yosemite.

If a third round trip is added to Mammoth (as discussed above), the timing should consider ESTA departures in either Mammoth or Lee Vining to improve regional travel.

PERFORMANCE ANALYSIS OF ROUTE 140 AND ROUTE 120/395 SERVICE ALTERNATIVES

The operating, ridership and cost impacts of the various alternatives for Route 140 and Route 120/395 service are summarized in Table 55. Using these figures, a performance analysis was conducted of the various service options. The results are presented in Table 56, and summarized graphically in Figure 22. These figures can also be compared against the performance standards presented in Chapter 5 to identify those alternatives that attain the pertinent standards. This analysis indicates the following:

- The greatest potential to increase ridership is through providing of an additional peak season trip on Route 140 (3,900 passenger-trips), followed by an additional peak season round trip on Route 120/395 (2,900). This is equivalent to a 4 percent increase in Route 140 ridership and a 54 percent increase in Route 120/395 ridership. At the other extreme, eliminating the early AM Mariposa-Merced Route 140 run over the whole year would reduce ridership by 3,300 per year (a 4 percent reduction).

- Operating subsidy requirements would be increased the most by the additional Route 120/395 peak season run ($56,000, or 80 percent of existing Route 120/395 operating subsidy) followed by the additional Route 140 peak season round trip ($50,700, or 6 percent of Route 140 operating subsidy). On the other hand, eliminating the early AM Mariposa-Merced run year-round reduces subsidy by $57,600 per year, or 7 percent.

- The "productivity" of the service alternatives is measured in the change in passenger-trips per vehicle-hour of service. The alternatives are best considered in the following two categories:

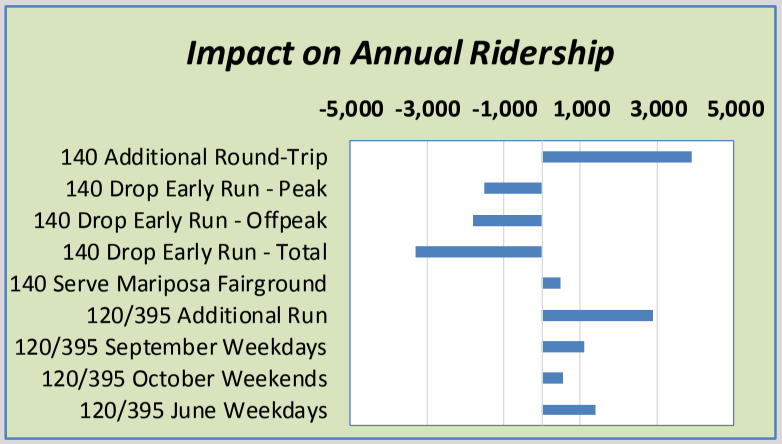
    - Regarding those alternatives that increase both ridership and vehicle-hours, the goal is to maximize the productivity value and particularly to attain the minimum desired standard (8.0 for peak season service on Route 140, and 6.0 for Route 120/395 service and for 140 service in the off-seasons. Four alternatives were found to attain the standards: extension of Route 140 Run 8A to Merced, September weekday service on Route 120/395, October Weekend service on

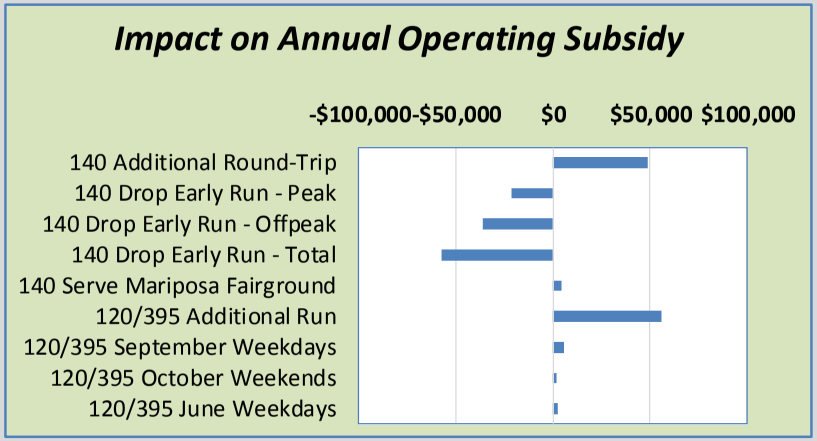
Table 56: YARTS Route 140 and Route 120/395 Service Alternatives Performance Analysis

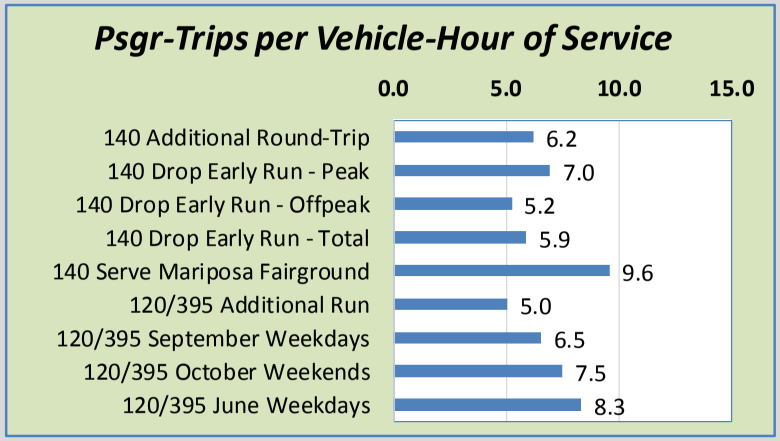
	Net Annual Ridership	Net Annual Operating Subsidy	Values Achieving Recommended Performance Standards Shaded Change From Existing Service Psgr-Trips per Service-Hour	Cost per Psgr-Trip	Subsidy per Psgr-Trip	Farebox Ratio[1]
Route 140						
Minimum Performance Standard -- Peak Season			*8.00*	*No Standard*	*< $20.00*	*20%*
Minimum Performance Standard -- Offpeak Season			*6.00*	*No Standard*	*< $20.00*	*20%*
Addl Peak Season Round Trip - Mid-Day EB, Evening WB to Mariposa	3,900	$48,900	6.2	$20.13	$12.54	38%
Eliminate Early AM Mariposa-Merced Run - Peak Season	-1,500	-$21,400	7.0	$17.93	$14.27	20%
Eliminate Early AM Mariposa-Merced Run - Offpeak	-1,800	-$36,200	5.2	$23.78	$20.11	15%
Eliminate Early AM Mariposa-Merced Run - Total	-3,300	-$57,600	5.9	$21.12	$17.45	17%
Serve Mariposa Fairgrounds 2x/day Peak Season	470	$4,400	9.6	$12.98	$9.36	28%
Route 120/395						
Minimum Performance Standard -- Peak Season			*6.00*	*No Standard*	*< $20.00*	*20%*
Additional Round Trip in July and August	2,900	$56,000	5.0	$30.48	$19.31	37%
September Weekday Service	1,100	$5,700	6.5	$16.36	$5.18	68%
October Weekend Service	540	$1,700	7.5	$14.26	$3.15	78%
June Weekday Service	1,400	$2,300	8.3	$12.86	$1.64	87%
Eliminate June Lake Loop	120	-$10,100	-1.3	NA	NA	-13%

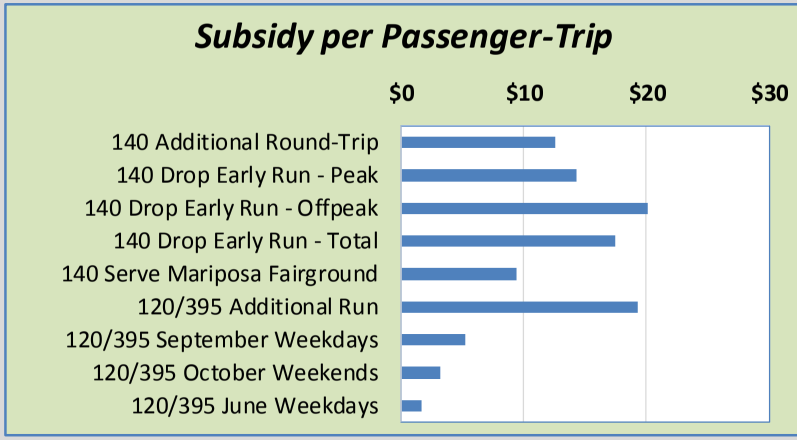
Note 1: Marginal fare revenues divided by marginal operating cost.
Note 2: Standards have not been defined for new routes. Route 140 offpeak standards assumed.

Figure 22: Summary of Route 140 & Route 120/395 Alternative Performance Analysis









- Route 120/395, and June weekday service on Route 120/395. The best of these (at 9.6 passenger-trips per vehicle hour) is for serving the Fairgrounds in Mariposa, followed by the extension of Route 140 Run 8A to Merced (at 9.2 passenger-trips per vehicle-hour).

- Those alternatives that reduce both ridership and vehicle-hours also yield a positive value for this performance measure, generated by the reduction in ridership over the reduction in vehicle-hours. Those alternatives that fall below the standard indicate alternatives that are consistent with the standard, in that the service eliminated does not meet the standard. By this measure, the elimination of the early AM Mariposa-Merced Route 140 run is consistent with this standard for both the peak and off-peak seasons.

- Finally, eliminating the June Lake loop increases ridership while reducing costs, yielding a negative value (which is a positive result).

- The operating cost per passenger-trip for those services increasing ridership ranges from a negative value of $84.17 (reflecting a reduction of cost) to $12.98 (adding the Fairgrounds) to $13.56 (extension of Route 140 Run 8A to Merced) and up to $30.48 (additional Route 120/395 peak season round-trip). Note that no standard is defined for this performance measure. The elimination of the early AM Route 140 run would save between $17.93 and $23.78 in operating cost per passenger-trip eliminated.

- The operating subsidy per passenger-trip is a useful performance measure, in that it relates the key public "input" to a transit service (public subsidy funding) with the key desired "output" (ridership). The "best" of the alternatives that increase ridership is the elimination of the June Lake Loop, which reduces subsidy by $95 for every new passenger served. This is followed by June weekday service on Route 120/395, which requires only $1.64 in additional subsidy per passenger-trip. At the other extreme, an additional Route 120/395 run in the peak season would require $19.31 per passenger-trip. All of the options increasing ridership are consistent with the standard of not exceeding $20.00 per passenger-trip. Of the options reducing ridership (eliminating the AM Route 140 run), dropping this service in the off-peak season is consistent with the standard, but dropping it during the peak season (or altogether) is not.

- The final performance measure is the "farebox ratio" – the change in farebox revenue divided by the change in operating costs. For those alternatives increasing ridership (and farebox revenue), the "best" alternative are reflected by a higher value, as this indicates that a higher proportion of the operating costs are paid by the passenger. As shown, the best of these is the June weekday Route 120/395 service, with a farebox ratio of 87 percent, followed closely by the other alternatives that would expand the season of Route 120/395 service. All of the expansion alternatives exceed the standard.

Eliminating the early AM Mariposa-Merced run also is consistent with this standard, as the service eliminated only generates a 15 percent farebox ratio.

In sum, the following service alternatives attain all three of the pertinent standards:

- Extend Route 140 Run 8A to Merced
- Serve the Mariposa Fairgrounds
- Eliminate the early AM Mariposa-Merced run on Route 140 in the off-seasons
- Eliminate June Lake loop from 120/395
- Expand Route 120/395 service to weekdays in September
- Expand Route 120/395 service to weekends in October
- Expand Route 120/395 service to weekdays in June

Two standards (but not the third) are attained by the following:

- Additional Route 140 round-trip, providing a mid-day eastbound run and evening westbound run

- Additional Route 120/395 round-trip in the peak seasons

The elimination of the early AM Route 140 run only attains one of the standards.

Based on this review, the Consultants draw the following conclusions:

- Expansion of Route 120/395 service should focus on expanding services in the spring and fall, rather than on providing additional service in the peak season (at least in the short term), as this is much more cost-effective. Focusing on the shoulder seasons also avoids the need for additional vehicles and would have a greater impact on overall annual visitor activity in Mono County.

- Route 140 Run 8A should be operated open for passengers between Catheys Valley and Merced.

- An additional Route 140 round-trip in the peak season would provide some benefits regarding connectivity to intercity service and an attractive evening westbound departure. However, it would be less cost-effective than current services.

- Shifting Route 120/395 from the June Lake Loop onto US 395 between the two ends of the loop both increases ridership (by reducing travel times) and reduces operating costs, and is recommended.

- Serving the Mariposa County Fairgrounds with one AM and one PM run that start/end in Mariposa is a beneficial improvement. Adding additional runs (through runs) would not be a net benefit, however, as it would increase travel times for through passengers.

- The provision of the westbound early AM Route 140 run from Mariposa to Merced depends on the importance of this service to Mariposa residents accessing urban services in Merced. From a strictly cost efficiency viewpoint, this is not a warranted service, particularly outside of the peak season.

POTENTIAL NEW SERVICE CORRIDORS

Based upon the public input generated by this SRTP and stakeholder interviews, a variety of potential new YARTS service corridors were evaluated:

- New services along State Route 49 connecting Oakhurst with Mariposa and/or Sonora.
- New services to the Bay Area
- New services to Sacramento and possibly Stockton

The operational requirements of these new services are shown in Table 57, while Figure 23 depicts that various potential new routes.

Table 57: YARTS New Routes Service Alternatives Cost Analysis

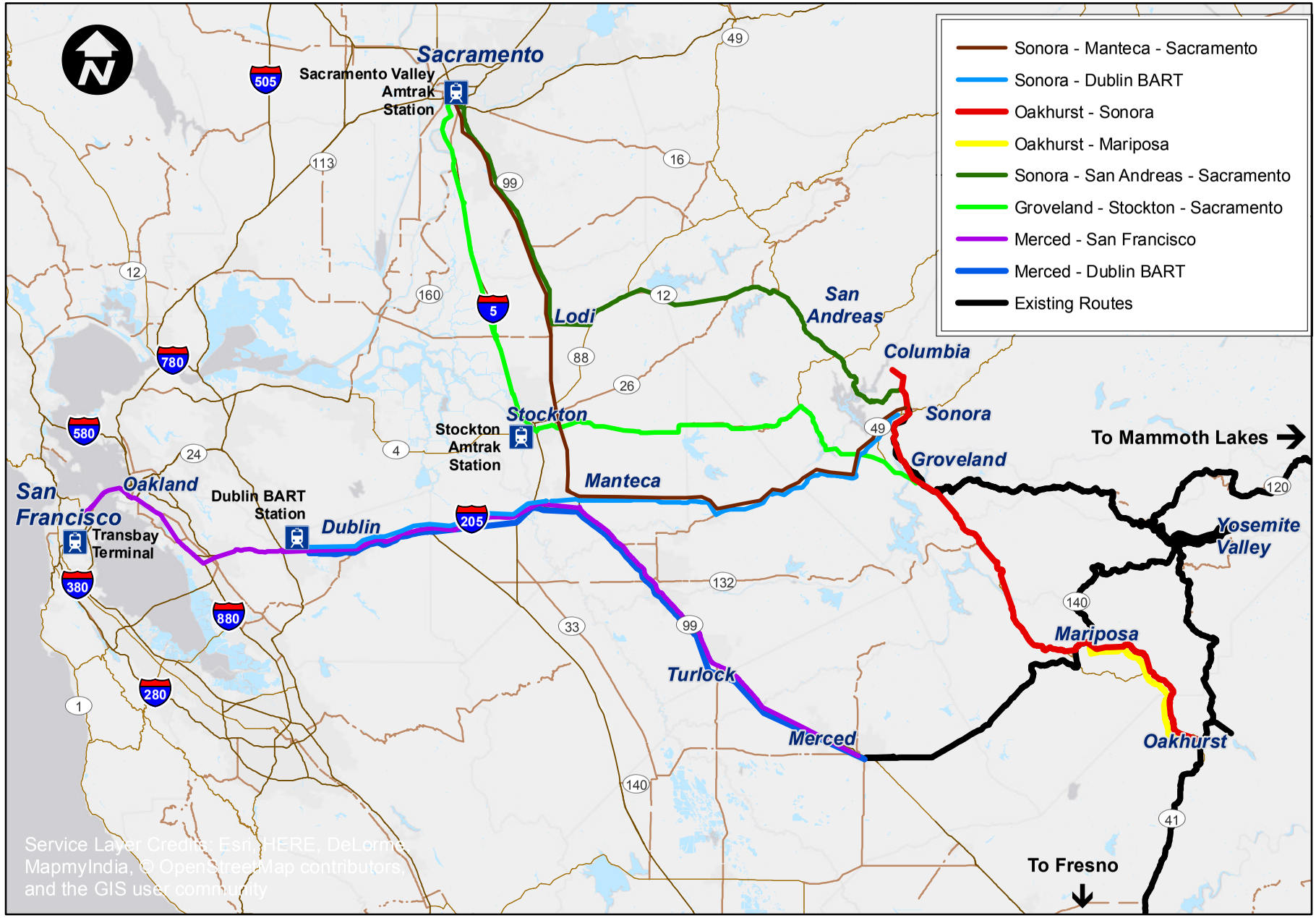
	Run Parameters	Daily Service			Annual	Annual	Change in
	Hours/Day	Runs	Days/Yr	Hours	Hours	Cost	Peak Buses
NEW ROUTES							
Highway 49 Route	3.00	4	98	12	1176	$126,300	1
Mariposa-Oakhurst Route	1.00	12	98	12	1176	$126,300	1
Bay Area -- Downtown SF via Merced	3.48	2	365	7	2555	$274,400	1
Bay Area -- Dublin BART via Merced	2.21	2	365	4.4	1606	$172,500	1
Bay Area -- Dublin BART via Sonora	2.46	2	365	4.9	1788.5	$192,000	1
Sacramento via Stockton and Groveland	1.54	2	98	3.1	303.8	$32,600	0
Sacramento via San Andreas and Sonora	1.92	2	98	3.8	372.4	$40,000	0
Sacramento via Manteca and Sonora	2.33	2	98	4.7	460.6	$49,500	0

Sonora – Mariposa – Oakhurst Service

One potential new "market" that YARTS could serve would be a SR 49 Route connecting Sonora with Mariposa and Oakhurst. The concept would be to build on the long-standing SR 49 "Golden Chain" marketing effort to encourage additional visitation to the region by providing a convenient transit option connecting the communities and visitor sites. In particular, this

Figure 23

New YARTS Routes Evaluated



service could entice visitors staying in the gateway communities to stay an additional day after their visit to Yosemite. This also could provide transit access for other resident trip purposes.

A reasonable operating strategy would consist of a single vehicle operating over the summer season, between Oakhurst on the south and Columbia State Park on the north. This route is 87 miles in length. Given the convoluted roadway alignment, time needed to serve stops as well as time for a driver break, this route would require 3 hours per one-way trip to operate. An example schedule (assuming service starts and ends in Oakhurst) is shown in Table 58. This would consist of a morning round trip and an afternoon round-trip, with the service day extending from 7:00 AM to 7:15 PM (including a half-hour driver lunch break). As also indicted in Table 58, this service would largely connect lodging properties with the many state park and historical sites along the route. It would provide a variety of options with regards to destinations and length of stay. Visitors to the Sonora area from the south would be provided with a 7.5 hour stay. Visitors to Mariposa from the north would be provided with a 2 hour 25 minute stay over the mid-day, while visitors to Mariposa from Oakhurst could make either a morning or afternoon trip of approximately 4 hours in length, or a full-day stay of 9.5 hours.

Table 58: Highway 49 Route Example Schedule

Northbound

Oakhurst	Lodging, Historical Park	7:00 AM	1:30 PM
Mariposa	Downtown, Museum, Airport, Lodging,	7:50 AM	2:20 PM
Coulterville	Lodging, History Center	8:35 AM	3:05 PM
Jamestown	Rail Park, Downtown, Lodging	9:15 AM	3:45 PM
Sonora	Downtown	9:30 AM	4:00 PM
Columbia	State Park	9:45 AM	4:15 PM

Southbound

Columbia	State Park	10:00 AM	4:30 PM
Sonora	Downtown	10:15 AM	4:45 PM
Jamestown	Rail Park, Downtown, Lodging	10:30 AM	5:00 PM
Coulterville	Lodging, History Center	11:10 AM	5:40 PM
Mariposa	Downtown, Museum, Airport, Lodging,	11:55 AM	6:25 PM
Oakhurst	Lodging, Historical Park	12:45 PM	7:15 PM

Visitors to Oakhurst under this schedule would only have a relatively short stay during the driver lunch break.

An additional vehicle would be needed for this service. Given the configuration of SR 49 between Moccasin and Bear Valley, a smaller (25-foot to 30-foot) bus would be desirable. If operated over the 98 days of the existing 120 West Route summer season (May 28-September 3) using a YARTS vehicle, this service would cost an estimate $126,300 per year.

- An indication of visitor transit demand along the Golden Chain Highway can be found by reviewing the ridership generated to/from Columbia State Park by the Calaveras Transit service. Route 4 provides 5 trips per day between Angels Camp (and beyond) and the State Park. The most recent Calaveras Transit Short Range Transit Plan Update (2016) indicates that Columbia generates 3 to 4 daily one-way recreational trips.

- Another indication is the current traffic levels along the corridor. Current Caltrans traffic counts during the peak month between various communities along the corridor (the lowest volume in each section) is as follows:

    - Oakhurst to Mariposa -- 3,800
    - Mariposa to Coulterville -- 510
    - Coulterville to Jamestown -- 1,050
    - Jamestown to Sonora -- 18,500

    The fact that in the peak month only 510 drivers per day choose to drive between Mariposa and Coulterville argues that the demand for a public transit service would be very low.

Given these figures, a reasonable estimate for daily ridership on a SR 49 service would be approximately 30 passenger boardings per day. This would equate to approximately 2,900 over the course of the summer season.

To be consistent with other routes, fares based on $0.15 per mile would be appropriate, with a roughly 30 percent discount for seniors, children, persons with disabilities and veterans. This results in the following fares:

Between	And	Full Fare	Discount Fare
Oakhurst	Mariposa	$4.00	$2.50
Oakhurst	Coulterville	$8.00	$5.50
Oakhurst	Sonora Area	$12.00	$8.00
Mariposa	Coulterville	$4.00	$2.50
Mariposa	Sonora Area	$8.00	$5.50
Coulterville	Sonora Area	$4.00	$2.50

Considering the long travel times, it is expected that much of the travel would be relatively short trips (such as between Mariposa and Oakhurst). Considering this and the expected proportion of full vs. discount fares, an average fare of $5.00 is estimated.

Mariposa – Oakhurst Service

A YARTS route connecting Oakhurst and Mariposa could fill a number of purposes:

- Allow visitors staying in one community to visit destinations along the corridor.
- Provide transit access to the California State Mining and Mineral Museum.
- Serve RVers and campers staying at the Mariposa County Fairgrounds
- Serve lodging properties along the corridor, such as the Apple Blossom Inn, Sierra Mountain Inn and Little Valley Inn, as well as the many bed-and-breakfasts.
- Provide connections to the Route 41 service in Oakhurst and the Route 140 service in Mariposa.

A reasonable operating plan would consist of a single vehicle operating along a route between the northern end of Oakhurst and the Mariposa Park-and-Ride. This route would be operated on a schedule, with scheduled stops at key locations. In addition, time would be available to accommodate on-request stops to other nearby locations, such as the Fresno Flats Historical Park and directly to lodging properties off of SR 49 in the Ahwahnee and Nipinnawasee areas. Including driver layover time at both ends, this route could be operated on an hourly schedule each way. A reasonable example schedule is shown in Table 59, indicating service from 8:00 AM to 8:15 PM. A 30-minute driver lunch break would be provided. Key connection times providing convenient transfers to Route 140 and Route 41 service to/from Yosemite are shown, shaded.

Given the expected passenger loads and the benefits of providing direct service to smaller properties, a smaller 15- to 20-passenger vehicle would be appropriate. At the YARTS-owned existing contractor rate, this service over a 98-day peak summer service (May 28 to September 3) would incur a cost of $126,300 per year.

Ridership would depend greatly on the extent of marketing efforts on the part of the local lodging properties, chambers of commerce and YARTS to promote the new connections between the communities as well as connections to the mainline YARTS routes. Considering the amount of lodging along the corridor, population and typical rural transit demand rates, an estimated 4,000 passenger-trips per year are estimated.

A recommended fare, considering the existing fare per mile on existing services, would be $4.00 per one-way trip for full-fare passengers and $2.50 for seniors, persons with disabilities,

children and veterans. In addition, a 10-ride pass (priced at half the one-way trip fare for both categories) could provide a lower fare for area residents while generating fare revenues from visitors paying the one-way fares.

One option would be for YARTS to bid this service separately from the existing service contract. This could potentially reduce costs by identifying a transportation company in the Mariposa or Oakhurst area to operate the service, avoiding the costs incurred from deadhead travel from Fresno or Merced. However, as YARTS uses a variety of public funding sources, any contractor would need to comply with a strict list of state and federal regulations, including:

- Drug and alcohol testing requirements
- Americans with Disabilities Act training
- Driver training requirements
- Minimum driver qualifications
- Fare handling and accounting standards

A new contractor would also need to comply with YARTS reporting requirements. This option could potentially reduce the operating costs substantially. However, a full RFP process would be needed to identify the appropriate contractor (and associated costs).

Table 59: Oakhurst-Mariposa Route Example Schedule

Key Connection Times with 140 Service to/from Yosemite

Key Connection Times with 41 Service to/from Yosemite

Northbound						
North Oakhurst	8:00 AM	10:00 AM	12:00 PM	2:30 PM	4:30 PM	**6:30 PM**
Central Oakhurst	8:03 AM	10:03 AM	12:03 PM	2:33 PM	4:33 PM	6:33 PM
Old Mill Village	8:09 AM	10:09 AM	12:09 PM	2:39 PM	4:39 PM	6:39 PM
Ahwahnee	8:15 AM	10:15 AM	12:15 PM	2:45 PM	4:45 PM	6:45 PM
Nipinnawasee	8:18 AM	10:18 AM	12:18 PM	2:48 PM	4:48 PM	6:48 PM
Bootjack	8:33 AM	10:33 AM	12:33 PM	3:03 PM	5:03 PM	7:03 PM
Fairgrounds	8:38 AM	10:38 AM	12:38 PM	3:08 PM	5:08 PM	7:08 PM
Midtown Mariposa	8:42 AM	10:42 AM	12:42 PM	3:12 PM	5:12 PM	7:12 PM
Mariposa Park-and-Ride	**8:45 AM**	10:45 AM	12:45 PM	3:15 PM	5:15 PM	7:15 PM
Southbound						
Mariposa Park-and-Ride	9:00 AM	11:00 AM	1:30 PM	3:30 PM	**5:30 PM**	**7:30 PM**
Midtown Mariposa	9:03 AM	11:03 AM	1:33 PM	3:33 PM	5:33 PM	7:33 PM
Fairgrounds	9:07 AM	11:07 AM	1:37 PM	3:37 PM	5:37 PM	7:37 PM
Bootjack	9:12 AM	11:12 AM	1:42 PM	3:42 PM	5:42 PM	7:42 PM
Nipinnawasee	9:27 AM	11:27 AM	1:57 PM	3:57 PM	5:57 PM	7:57 PM
Ahwahnee	9:30 AM	11:30 AM	2:00 PM	4:00 PM	6:00 PM	8:00 PM
Old Mill Village	9:36 AM	11:36 AM	2:06 PM	4:06 PM	6:06 PM	8:06 PM
Central Oakhurst	**9:42 AM**	11:42 AM	2:12 PM	4:12 PM	6:12 PM	8:12 PM
North Oakhurst	9:45 AM	11:45 AM	2:15 PM	4:15 PM	6:15 PM	8:15 PM

Bay Area YARTS Service

A substantial proportion of YARTS riders consist of Bay Area residents, or visitors that arrive in the region through Bay Area airports. At present, these riders drive to the Yosemite Region to board YARTS, use the *San Joaquins* rail service from the Bay Area, or (to a much lesser extent) use other options such as Greyhound service. Given these factors, it is worthwhile to consider extension of YARTS service to provide direct same-seat service from the Bay Area to Yosemite Valley. As discussed below, two options were considered for how to serve the Bay Area: service to San Francisco or service to the nearest end of the BART system in Dublin.

Service to San Francisco

Existing Amtrak rail service from Merced ends in Oakland, with connecting bus service from Emeryville to downtown San Francisco. YARTS could replicate this service by extending existing SR 140 runs west to the new Salesforce Transbay Terminal in downtown San Francisco.
Travel time between Manteca and Yosemite Valley via 120 and via SR 99/140 are very similar (within 10 minutes of each other). However, the 140 route through Merced is more easily negotiated by a large bus, and is more consistently open year-round. The route considered for this alternative would depart downtown San Francisco (the new Transbay Terminal) and travel eastbound on I-80, I-880, I-580, I-205, SR 120, SR 99 to Manteca, and then follow the existing 140 Route to Yosemite Valley. Other than one stop at the Dublin BART station, this would be an express run in both directions.

Travel times in the Bay Area can vary widely due to traffic congestion, particularly over the Bay Bridge and Altamont Pass. A reasonable strategy given the long travel distances and typical visitor patterns would be to operate one eastbound run departing San Francisco in the morning and a return westbound trip departing Yosemite Valley in the late afternoon. These runs would be extension of existing 140 Route runs, as follows:

<u>Eastbound</u>	
Depart San Francisco	7:30 AM
Serve Dublin BART	8:20 AM
Arrive Merced Transpo	10:40 AM
Depart Merced Transpo (140 Run 5)[3]	10:45 AM
Arrive Yosemite Valley (140 Run 5)	1:18 PM
<u>Westbound</u>	
Depart Yosemite Valley (140 Run 11)	4:35 PM
Arrive Merced Transpo (140 Run 11)	7:18 PM
Depart Merced Transpo	7:30 PM
Arrive Dublin BART	9:20 PM
Arrive San Francisco	10:00 PM

[3] A driver exchange could potentially occur in Merced. Drivers would need to be lodged overnight in the Bay Area.

This would require an additional bus. It is assumed for purposes of this analysis that this extension would be operated year-round, as it would be difficult to market it as a seasonal service only. At the current contractor rate for a YARTS-owned bus, this service would cost a total of $274,400.

The best means of assessing potential ridership on this service is to consider the current Amtrak ridership on the runs that would be extended, along with the change in service quality that would be provided. These two runs carry a total of approximately 1,730 Amtrak passengers per year. In comparison with the Amtrak service, a direct YARTS service would:

- Provide a single seat from San Francisco to Yosemite Valley, rather than requiring bus/rail transfers in Emeryville and Merced. This simplicity is particularly attractive to discretionary riders.

- Provide shorter travel times. In the morning, YARTS bus service would depart 25 minutes later than the Amtrak Thruway bus, arriving in the Valley at the same time. In the afternoon, Amtrak passengers face a long 57 minute wait in Merced for the next available train, arriving in San Francisco at 11:40 PM – 1 hour 40 minutes later than could be provided by a direct YARTS run.

- Provide better service to the East Bay and South Bay. A stop at the Dublin BART station would provide more convenient access from much of the East Bay and the San Jose area than does the existing Amtrak route.

- At the average fare of $0.15 per mile, YARTS fares would be approximately $20 between Merced and San Francisco, or $6.00 less than Amtrak fares. Total fares to the Valley would be $30 for full fares and $21 for discount fares.

- Amtrak service has the advantage of providing five direct schedule options per day in each direction (along with other options through Sacramento). This provides a modest benefit in that passengers have options in case travel plans change or are interrupted.

Overall, this new route would serve an estimated 4,500 passenger boardings per year. Of these, approximately 1,600 would be existing Amtrak passengers that would shift to the new bus route, and the remaining 2,900 would be new passengers to the service.

One institutional issue with this option is that it would essentially result in YARTS competing with the Amtrak *San Joaquins* in serving the same Bay Area – Yosemite travel market. The San Joaquin Joint Powers Authority may well question why they should continue to support YARTS through the joint fare agreement when YARTS is providing service directly paralleling the rail service. Given that 11 percent of Route 140 ridership is generated through the agreement with Amtrak, this could be a key issue.

Service to Dublin BART – Via Merced

Another option would be to provide service only as far west as the Dublin/Pleasanton BART station. This reduces scheduled operating time by approximately 45 minutes in each direction, and eliminates two areas of recurring traffic congestion (I-580 in Hayward and I-80 over the Bay Bridge). BART provides direct service every 15 to 20 minutes to Oakland (including the Oakland Airport, with a short shuttle) and San Francisco, with transfers available to the remainder of the extensive BART system, and is in service at both of the potential YARTS service times.

This option would still require the provision of an additional bus. Operating costs would be $172,500 per year, or $101,900 less than service into San Francisco. Much of the benefits of service into San Francisco with regards to service quality would still be provided, except that the convenience of a single seat trip would not be provided (though the number of transfers needed would be reduced from two to one). This option is forecast to serve 3,300 passenger boardings per year, of which 1,400 would be existing Amtrak riders and 1,900 would be new YARTS passengers. Fares would be $26 for full fares and $18 for discount fares.

Service to Dublin BART – Via Sonora and Manteca

Another option would be service to Dublin BART via Sonora and Manteca. This route is 2 miles shorter than via Merced, but typically takes 20 additional minutes per one-way trip (as more of the trip is via slower 2-lane roadways), and also would be more challenging to operate in winter.

Providing YARTS service through Manteca raises the question of new rail connections. The Altamont Commuter Express (ACE) rail program currently provides four westbound trains per weekday from Stockton to San Jose during the AM commute periods, with four returning eastbound runs in the PM commute period. The "ACE Forward" plan currently under consideration would expand service. In the short term (potentially as early as 2020), the "near term" plan identified in the *Draft Environmental Impact Report* (May 2017) would expand service to six round-trips per weekday, envisioned to occur in 2023 (near the end of this SRTP planning period). Two of these daily round-trips would extend to new stations in Manteca, Ripon and Modesto. The prototypical schedule presented for 2020 service in the DEIR identifies westbound departures from Modesto at 4:57 AM and 5:57 AM, and from Manteca at 5:16 AM and 6:16 AM. Returning eastbound arrivals would be provided to Manteca at 6:09 PM and 7:29 PM and to Modesto at 6:28 PM and 7:48 PM. Focusing on potential connections to YARTS service, it would be reasonable to consider connecting YARTS service from the Manteca station to Sonora meeting the 6:28 PM train. However, a westbound connection to ACE service in Manteca would need to depart Sonora around 4:30 AM, which would not be attractive to potential ridership. Within the SRTP planning period, expansion of ACE service does not currently appear to provide new YARTS service possibilities.

"Longer term" improvements would expand service to ten round-trips per day, and are forecast to occur by 2027 (beyond the SRTP planning period). All trips would still operate westbound only in the AM period and eastbound only in the PM period. However, the span of service would include later morning westbound runs, identified in a prototypical schedule to depart Manteca at 10:16 AM and 11:46 AM. Similarly, earlier afternoon eastbound runs would arrive in Manteca as early as 2:23 PM. These additional runs could provide new opportunities for connecting YARTS service that could deliver Yosemite visitors to Sonora, Jamestown and Groveland in the late afternoon for a visit to Yosemite on the next day, as well as morning westbound runs connecting Valley and gateway community lodging with westbound ACE service. While it is well worth local jurisdictions to monitor expansion of ACE service with an eye towards potential future YARTS connections, these are not currently looking like opportunities that will occur within the SRTP planning horizon.

Prior to new ridership generated by expanded ACE rail connections, in the short term this alternative would have the benefit of providing new intercity public transit connections for Sonora/Jamestown/Groveland residents wishing to travel to/from the Central Valley and Bay Area. Similar to the previous alternatives, this would provide a westbound run in the late afternoon and an eastbound run in the morning. Applying typical observed rural intercity transit demand rates, serving this area would increase annual ridership by an estimated 3,300 passenger-trips per year over that of the similar alternative from Merced. Overall fare revenue would be $98,100, yielding a net operating subsidy requirement of $125,400 per year.

Sacramento Service

Three options were considered regarding Sacramento service. All of these would extend one of the existing three daily round-trips, dropping some of the westernmost stops from the existing runs. As discussed in Chapter 3, the large bulk of the ridership on the 120 West Route is generated between Groveland and the Park. One option would be to extend the run west and north from Groveland, while the other would be to extend the route north from downtown Sonora.

As an aside, provision of a full additional round-trip to Yosemite Valley was considered, but found to be significantly less productive or cost-effective than modifying one of the three existing Route 120 West runs.

Yosemite – Groveland – Stockton – Sacramento Service

Under this route option, service would start at the Sacramento Valley Station in downtown Sacramento[4]. It would use I-5[5] to serve the downtown Stockton Amtrak station, then head east

[4] Given the schedule times, extending the route to serve the Sacramento International Airport would not be effective, as there would be very few possible connecting flights.
[5] Service to a park-and-ride site in the Elk Grove area may also be considered.

on SR 4 and O'Byrne's Ferry Road to SR 120. In Groveland, it would tie into the existing 120 West schedule.

In considering a potential schedule for Sacramento service, the primary options are to (1) serve day visitors to the Valley or (2) serve overnight visitors to the Valley. Given the population of the Sacramento area and the relatively low proportion of overnight Park visitors accessing the region through Sacramento, the higher potential option is to serve the day visitor by providing a morning run to Yosemite Valley and a late afternoon return trip. An example schedule is as follows:

<u>Southbound</u>	
Depart Sacramento Valley Station	7:00 AM
Depart Downtown Stockton	8:10 AM
Arrive Groveland	9:55 AM
Depart Groveland (120 West Run 3)	10:06 AM
Arrive Yosemite Valley (120 West Run 3)	11:50 PM
<u>Westbound</u>	
Depart Yosemite Valley (120 West Run 2)	4:30 PM
Arrive Groveland (120 West Run 2)	6:18 PM
Depart Groveland	6:30 PM
Depart Downtown Stockton	8:15 PM
Arrive Sacramento Valley Station	9:15 PM

This extension of service over a 98-day summer season (May 28 to September 3) would increase annual operating costs by $32,600 per year, but would not require an additional bus. A driver would need to stay overnight in the Sacramento area (rather than in Sonora). Fares would be $24 for full fare and $17 for discount fare.

Ridership on this route can be estimated by factoring the Bay Area service ridership (as discussed above) by the relative population and visitor access levels of the Sacramento/Stockton area versus the Bay Area. In addition, existing ridership survey data was considered: in surveys conducted of Route 140 visitor riders, five times as many indicated that they live in the Bay Area as live in the Sacramento area. On the 120 West Route, no visitor riders indicated they live in the Sacramento area, while seven indicated they live in the Bay area. Overall ridership is forecast to be 1,000 boardings over the course of the summer. The net impact of the reduction of service times at existing stops would be a loss of 200 existing passengers. In total, this additional service would increase ridership by an estimated 800 boardings per year.

This route option has the advantage of serving the residents of Stockton and Stanislaus County, as well as the Sacramento area[6]. The disadvantage is that it would reduce the runs serving Sonora/Jamestown from three round-trips per day to two, and would also not provide service between Sonora (and Calaveras County) and Sacramento.

Yosemite – Sonora – San Andreas – Sacramento Service

Another option considered would serve downtown Sonora, and then continue north via SR 49 through Angels Camp and San Andreas, travel west on SR 12 to Lodi, and north to Sacramento.

Southbound	
Depart Sacramento Valley Station	6:40 AM
Arrive Downtown Sonora	9:00 AM
Depart Downtown Sonora (120 West Run 3)	9:15 AM
Arrive Yosemite Valley (120 West Run 3)	11:50 PM

Westbound	
Depart Yosemite Valley (120 West Run 2)	4:30 PM
Arrive Downtown Sonora (120 West Run 2)	7:10 PM
Depart Downtown Sonora	7:20 PM
Arrive Sacramento Valley Station	9:40 PM

These runs would no longer provide service to the Sonora Best Western or Black Oak Hotel and Resort (which would still be served by two runs in each direction per day), but would serve Jamestown and downtown Sonora. Additional stops could potentially be served in Angels Camp and/or San Andreas. An additional bus would not be required, but annual operating costs would be increased by $40,000 per year.

Ridership on this option would be lower, as the substantial population of the Stockton area would not be served. The long travel times (over 5 hours) is also a disincentive to using the transit service. Though a modest level of ridership would be served in Sonora, overall this option would serve 700 passenger-trips per year. Subtracting 100 passenger-trips eliminated due to the reduced schedule to existing stops, this option would yield a net increase of 600 passenger boardings annually.

Yosemite – Sonora – Manteca – Sacramento Service

Another route option providing service to Sacramento would extend a 120 West run from Sonora westward on SR 120 to Manteca and then north via SR 99 through Stockton and Lodi to Sacramento. With the provision of additional stops, running time would be approximately 25

[6] It would also serve the terminus of the Altamont Commuter Express (ACE) rail service to San Jose. However, as ACE only provides westbound runs in the morning and eastbound runs in the evening, it would not provide an effective connection to this new YARTS run.

minutes longer in each direction. In comparison with the previous alternative, this option would not generate ridership to/from Calaveras County. However, it would provide more travel options in the Central Valley than the previous alternative, with stops in Manteca and Stockton (as well as Lodi). It would also provide connections to Stanislaus Regional Transit (STaRT) in Oakdale for service to/from Modesto. It would also serve passengers in the Sonora/Jamestown area. Overall, this option would have a relatively high ridership for the summer-only service of an additional 1,400 passenger trips. Subtracting the $27,100 in fares generated, the net subsidy per year would be $22,400.

PERFORMANCE ANALYSIS OF NEW CORRIDOR SERVICE ALTERNATIVES

A summary of the cost and ridership impacts of services in new corridors is shown in Table 60. Table 61 and Figure 24 present the performance analysis of these alternatives. Note that as performance standards for new routes have not been defined, the more lenient standard for the existing routes is assumed to apply. This analysis indicates the following:

- The greatest potential to increase ridership is the service to Dublin BART via Sonora (5,200 passenger-trips per year) followed by the Mariposa-Oakhurst Route (4,000 passenger-trips per year). All of the potential ridership increases are relatively modest compared with current YARTS ridership levels.

- Operating subsidy requirements range from a low of $14,200 for Groveland-Stockton-Sacramento service to a high of $191,300 for Merced-San Francisco service. The Sacramento alternatives have relatively low subsidy requirements due to the fact that they in part would reduce existing Route 120 West subsidies.

- The passenger-trips per vehicle-hour of service (productivity) ranges from 1.1 (for San Francisco service) to 3.4 (for Mariposa-Oakhurst service). None of the alternatives would achieve the minimum standard of 6.0.

- The operating cost per passenger-trip ranges from $31.58 (Mariposa-Oakhurst service) up to $94.62 (San Francisco service).

- The operating subsidy per passenger-trip ranges from a low of $16.00 (Sacramento via Manteca and Sonora) up to $66.00 (Merced-Dublin BART Route). Three options (Dublin BART via Sonora, Sacramento via Groveland and Stockton, and Sacrament via Sonora and Manteca) achieve the standard of no more than $20.00.

- The farebox ratio performance measure tells a different story – the Bay Area or Sacramento services all have relatively high values achieving the 20 percent standard (due to high passenger fares) while the two route options along SR 49 do not.

Table 60: YARTS New Route Service Alternatives Summary

Alternative	Change In Annual Service: Service Hours	Operating Cost	Ridership	Fare Revenues	Operating Subsidy	Change in Peak Buses
Highway 49 Route (Sonora-Oakhurst)	1,176	$126,300	2,900	$14,500	$111,800	1
Mariposa-Oakhurst Route	1,176	$126,300	4,000	$15,100	$111,200	1
Bay Area -- Downtown SF via Merced	2,555	$274,400	2,900	$83,100	$191,300	1
Bay Area -- Dublin BART via Merced	1,606	$172,500	1,900	$47,100	$125,400	1
Bay Area -- Dublin BART via Sonora	1,789	$192,000	5,200	$98,100	$93,900	1
Sacramento via Stockton and Groveland	304	$32,600	800	$18,400	$14,200	0
Sacramento via San Andreas and Sonora	372	$40,000	600	$13,800	$26,200	0
Sacramento via Manteca and Sonora	461	$49,500	1,400	$27,100	$22,400	0

Table 61: YARTS New Routes Service Alternatives Performance Analysis

	Net Annual Ridership	Net Annual Operating Subsidy	Values Achieving Recommended Performance Standards Shaded — *Change From Existing Service*: Psgr-Trips per Service-Hour	Cost per Psgr-Trip	Subsidy per Psgr-Trip	Farebox Ratio[1]
Minimum Performance Standard[2]			6.0	No Standard	< $20.00	20%
Highway 49 Route (Sonora-Oakhurst)	2,900	$111,800	2.5	$43.55	$38.55	11%
Mariposa-Oakhurst Route	4,000	$111,200	3.4	$31.58	$27.80	12%
Bay Area -- Downtown SF via Merced	2,900	$191,300	1.1	$94.62	$65.97	30%
Bay Area -- Dublin BART via Merced	1,900	$125,400	1.2	$90.79	$66.00	27%
Bay Area -- Dublin BART via Sonora	5,200	$93,900	2.9	$36.92	$18.06	51%
Sacramento via Stockton and Groveland	800	$14,200	2.6	$40.75	$17.75	56%
Sacramento via San Andreas and Sonora	600	$26,200	1.6	$66.67	$43.67	35%
Sacramento via Manteca and Sonora	1,400	$22,400	3.0	$35.36	$16.00	55%

Note 1: Marginal fare revenues divided by marginal operating cost.
Note 2: Standards have not been defined for new routes. Route 140 offpeak standards assumed.

Based on this review, the Consultants draw the following conclusions:

- YARTS service to the Bay Area via Merced would be very cost-inefficient (more than $65 in subsidy per passenger-trip) and would largely duplicate existing Amtrak service. This is therefore not recommended. Service to the Bay Area (Dublin BART) via Sonora has the advantage of also providing new intercity service between Tuolumne County and the Bay Area/Central Valley. It would meet some standards, but would require substantial new funding ($93,900 per year).

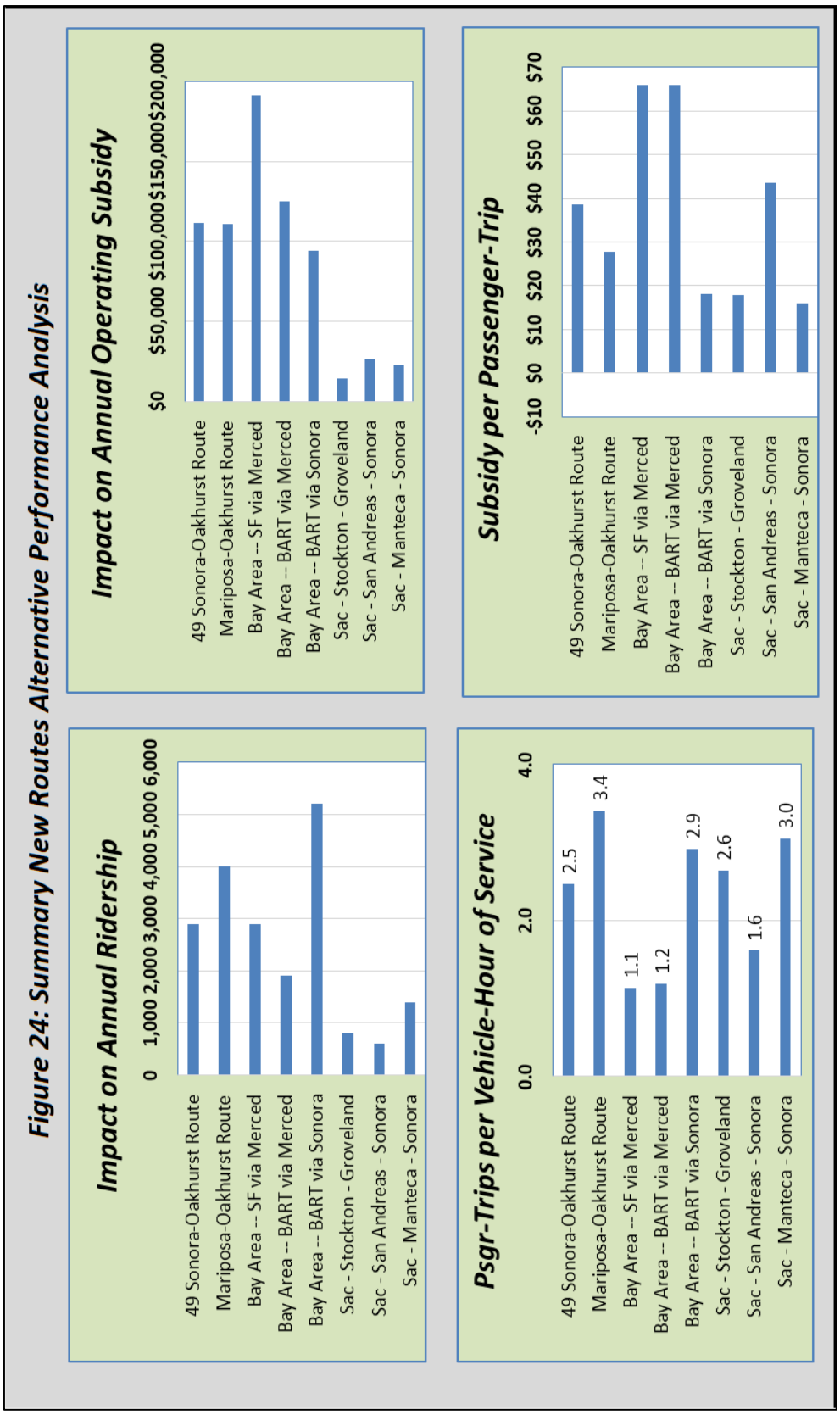


Figure 24: Summary New Routes Alternative Performance Analysis
Impact on Annual Ridership
0
1,000
2,000
3,000
4,000
5,000
6,000
49 Sonora-Oakhurst Route
Mariposa-Oakhurst Route
Bay Area -- SF via Merced
Bay Area -- BART via Merced
Bay Area -- BART via Sonora
Sac - Stockton - Groveland
Sac - San Andreas - Sonora
Sac - Manteca - Sonora
Impact on Annual Operating Subsidy
$0
$50,000
$100,000
$150,000
$200,000
49 Sonora-Oakhurst Route
Mariposa-Oakhurst Route
Bay Area -- SF via Merced
Bay Area -- BART via Merced
Bay Area -- BART via Sonora
Sac - Stockton - Groveland
Sac - San Andreas - Sonora
Sac - Manteca - Sonora
Psgr-Trips per Vehicle-Hour of Service
0.0
2.0
4.0
2.5
3.4
1.1
1.2
2.9
2.6
1.6
3.0
49 Sonora-Oakhurst Route
Mariposa-Oakhurst Route
Bay Area -- SF via Merced
Bay Area -- BART via Merced
Bay Area -- BART via Sonora
Sac - Stockton - Groveland
Sac - San Andreas - Sonora
Sac - Manteca - Sonora
Subsidy per Passenger-Trip
-$10
$0
$10
$20
$30
$40
$50
$60
$70
49 Sonora-Oakhurst Route
Mariposa-Oakhurst Route
Bay Area -- SF via Merced
Bay Area -- BART via Merced
Bay Area -- BART via Sonora
Sac - Stockton - Groveland
Sac - San Andreas - Sonora
Sac - Manteca - Sonora

- New service to Sacramento (summer only) is more effective and would require a relatively modest investment into additional operating costs (particularly as it could in part use resources currently used for Route 120 West service west of Groveland). While the ridership potential is probably limited, this may warrant an experimental service as a lower priority. Of these, the best alternative is via Sonora and Manteca.

- Service along the SR 49 corridor would be cost-inefficient (requiring subsidies exceeding $25 per passenger-trip) and would require an additional vehicle. Regular YARTS service is not recommended under current conditions. More limited service, such as shuttle service between Oakhurst and Mariposa during the County Fair, could be considered.

OTHER SERVICE CONSIDERATIONS

Agreement with Private Shuttle Services to Jointly Address Passenger Service Issues

YARTS passengers sometimes can miss the last outbound bus of the day. In addition, the long travel corridors and service interruption issues can sometimes leave YARTS unable to serve passengers. At the same time, there are numerous private shuttle services that also travel along the key gateway corridors. It may be possible to develop a "mutual aid" agreement by which private providers can be reimbursed for serving YARTS passengers (or their left luggage). For instance, if a passenger misses their last run on the Route 140 corridor, YARTS staffers could contact a private service operating a later bus and agree to pay a pre-determined amount to complete the trip. This option could also work in the opposite direction, with YARTS serving private shuttle passengers (or their luggage) that miss their trip.

To implement this strategy, the following steps would be recommended:

- An initial meeting of YARTS staff and private providers to discuss potential benefits and procedures for working together.
- A detailed review of existing routes and schedules of all providers.
- Establishment of a contact protocol to request services in real time, along with a tracking procedure.
- Definition of a monthly or quarterly accounting procedure to identify the necessary exchange of funds.

Layover Location in Yosemite Valley

A total of 17 YARTS runs are operated into Yosemite Valley on summer days, with up to 14 vehicles laying over for a period of time, as depicted in Table 62. The Yosemite Lodge parking lot was built to accommodate 24 parked buses, including public and charter buses. YARTS vehicles are currently parked at an "overflow" lot which was formerly a skating rink. The Yosemite Lodge lot is often at maximum capacity and by the end of the summer of 2019 the overflow lot will be under development to increase housing, and will no longer be available to

Table 62: YARTS and VIA Vehicle Utilization by Time of Day

	Merced 140 Routes								Sonora			Mammoth		Fresno						
Bus #	501	556	510	138	558	508	557	557	509	509	505	507	503	554	553	128	127	552		
Service Intervals	2A, 8A	2, 9	3, 10	3a, 11a	4, 11	5, 12	8	6, 14	S1	S2	S3	M2	M1	F20, F21	F22, F23	F24, F25	F26, F27	F28, F29	Layover in Valley	Peak Buses
3:45 AM														1					0	1
4:00 AM														1					0	1
4:15 AM														1					0	1
4:30 AM														1					0	1
4:45 AM		1												1					0	2
5:00 AM		1												1	1				0	3
5:15 AM	1	1								1			1	1	1				0	6
5:30 AM	1	1								1			1	1	1				0	6
5:45 AM	1	1								1			1	1	1				0	6
6:00 AM	1	1					1		1	1			1	1	1				0	8
6:15 AM	1	1	1				1		1	1	1		1	1	1				0	10
6:30 AM	1	1	1				1		1	1	1		1	1	1				0	10
6:45 AM	1	1	1				1		1	1	1		1	1	1				0	10
7:00 AM	1	1	1				1		1	1	1		1	1	1				0	10
7:15 AM	1	1	1				1		1	1	1	1	1	1	1	1			0	12
7:30 AM	1	1	1	1			1		1	1	1	1	1	1	1	1			0	13
7:45 AM	1	1	1	1			1		1	1	1	1	1	1	1	1			0	13
8:00 AM	1	1	1	1			1		1	1	1	1	1	L	1	1			1	13
8:15 AM	1	L	1	1	1		1		1	1	1	1	1	L	1	1			2	14
8:30 AM	1	L	1	1	1		1		1	1	1	1	1	L	1	1			2	14
8:45 AM	1	L	1	1	1		1		1	1	1	1	1	L	1	1			2	14
9:00 AM	L	L	1	1	1		1		1	1	1	1	1	L	1	1			3	14
9:15 AM	L	L	L	1	1		1		1	1	1	1	1	L	1	1	1		4	15
9:30 AM	L	L	L	1	1		1		1	1	1	1	1	1	1	1	1		3	15
9:45 AM	L	L	L	1	1	1	1		1	1	1	1	1	1	1	1	1		3	16
10:00 AM	L	L	L	1	1	1	1		L	1	1	1	1	1	L	1	1		5	16
10:15 AM	L	L	L	1	1	1	1		L	1	1	1	1	1	L	1	1		5	16
10:30 AM	L	L	L	1	1	1	1		L	1	1	1	1	1	L	1	1		5	16
10:45 AM	L	L	L	1	1	1	1		L	1	1	1	1	1	L	1	1		5	16
11:00 AM	L	L	L	L	1	1	1		L	L	1	1	L	1	L	1	1		8	16
11:15 AM	L	L	L	L	1	1	1		L	L	1	1	L	1	L	1	1		8	16
11:30 AM	L	L	L	L	1	1	1		L	L	1	1	L	1	L	1	1		8	16
11:45 AM	L	L	L	L	1	1	1		L	L	1	1	L	1	L	1	1		8	16
12:00 PM	L	L	L	L	L	1	1		L	L	L	1	L	1	L	1	1	1	10	17
12:15 PM	L	L	L	L	L	1	1		L	L	L	L	L	1	L	L	1	1	12	17
12:30 PM	L	L	L	L	L	1	1		L	L	L	L	L	1	L	L	1	1	12	17
12:45 PM	L	L	L	L	L	1			L	L	L	L	L	1	L	L	1	1	12	16
1:00 PM	L	L	L	L	L	1			L	L	L	L	L	1	L	L	1	1	12	16
1:15 PM	L	L	L	L	L	1			L	L	L	L	L	1	L	L	1	1	12	16
1:30 PM	L	L	L	L	L	1			L	L	L	L	L	1	L	L	1	1	12	16
1:45 PM	L	L	L	L	L	L			L	L	L	L	L	1	L	L	1	1	13	16
2:00 PM	L	L	L	L	L	L			L	L	L	L	L	1	L	L	1	1	13	16
2:15 PM	L	L	L	L	L	L			L	L	L	L	L		L	L	1	1	13	15
2:30 PM	L	L	L	L	L	L			L	L	L	L	L		L	L	L	1	14	15
2:45 PM	L	L	L	L	L	L			L	L	L	L	L		L	L	L	1	14	15
3:00 PM	L	L	L	L	L	L			L	L	L	L	L		L	L	L	1	14	15
3:15 PM	1	L	L	L	L	L			L	L	L	L	L		L	L	L	1	13	15
3:30 PM	1	L	L	L	L	L			L	L	L	L	L		1	L	L	1	12	15
3:45 PM	1	1	L	L	L	L			L	L	L	L	L		1	L	L	1	11	15
4:00 PM	1	1	L	L	L	L			1	L	L	L	L		1	L	L	1	10	15
4:15 PM	1	1	1	L	L	L			1	L	L	L	L		1	1	L	1	8	15
4:30 PM	1	1	1	L	1	L			1	1	L	L	1		1	1	L	1	5	15
4:45 PM	1	1	1	L	1	L		1	1	1	L	L	1		1	1	L	1	5	16
5:00 PM	1	1	1	1	1	L		1	1	1	L	1	1		1	1	L	L	4	16
5:15 PM	1	1	1	1	1	L		1	1	1	L	1	1		1	1	L	L	4	16
5:30 PM	1	1	1	1	1	L		1	1	1	1	1	1		1	1	L	L	3	16
5:45 PM	1	1	1	1	1	L		1	1	1	1	1	1		1	1	1	L	2	16
6:00 PM	1	1	1	1	1	1		1	1	1	1	1	1		1	1	1	L	1	16
6:15 PM	1	1	1	1	1	1		1	1	1	1	1	1		1	1	1	L	1	16
6:30 PM		1	1	1	1	1		1	1	1	1	1	1		1	1	1	L	1	15
6:45 PM		1	1	1	1	1		1	1	1	1	1	1		1	1	1	L	1	15
7:00 PM		1	1	1	1	1		1	1	1	1	1	1		1	1	1	1	0	15
7:15 PM		1	1	1	1	1		1	1	1	1	1	1		1	1	1	1	0	15
7:30 PM			1	1	1	1		1	1	1	1	1	1		1	1	1	1	0	14
7:45 PM				1	1	1		1	1	1	1	1	1		1	1	1	1	0	13
8:00 PM				1	1	1		1	1		1	1	1			1	1	1	0	11
8:15 PM				1		1		1	1		1	1				1	1	1	0	9
8:30 PM						1		1			1	1					1	1	0	6
8:45 PM						1		1			1	1					1	1	0	6
9:00 PM						1		1			1	1					1	1	0	6
9:15 PM						1		1			1	1					1	1	0	6
9:30 PM						1		1			1						1	1	0	5
9:45 PM								1			1						1	1	0	4
10:00 PM								1			1						1	1	0	4
10:15 PM								1			1							1	0	3
10:30 PM								1			1							1	0	3
10:45 PM								1			1								0	2
11:00 PM								1											0	1
11:15 PM								1											0	1
11:30 PM								1											0	1
11:45 PM								1											0	1
12:00 AM								1											0	1
in service	7	7.25	6.5	7	7.5	7.75	6.75	7.5	8.5	9.25	11.25	9.5	9.5	0	9	9.5	9.25	9.75	8.75		152
layover	6.25	7.5	7	6	4.5	4.25	0	0	6	5.5	5.5	4.75	5.5	0	1.5	5.5	4	3.25	2		79
total	13.25	14.75	13.5	13	12	12	6.75	7.5	14.5	14.75	16.75	14.25	15	0	10.5	15	13.25	13	10.75		231

Source: YARTS Work Tickets July 1 and 2, 2018.

Note 1: Special service vehicle utilzation can vary by day. Data shown is for a typical day.

YARTS for parking buses. Furthermore, the potential benefit of using these buses in service during the midday to serve gateway communities should be considered. Various options for addressing bus parking are considered below, although ultimately, it is the National Park Service's decision to address where buses can and should be parked.

Move Vehicles to the Yosemite Ski and Snowboard Area During Mid-Day

One option to alleviate parking in Yosemite Valley would be to move vehicles with the longest layovers to the Yosemite Ski and Snowboard Area (old Badger Pass) parking lot, which has ample parking in summer with 600 parking spaces. This would add 1.5 hours of driving time and 41 miles for each vehicle moved per day, at a cost of $15,800 per bus per summer season. This increase in mileage would also reduce the useful life of the vehicles. Additionally, this location has many fewer amenities for drivers during their layover period.

Chapter 7

Tuolumne County Service Alternatives

This chapter focuses on services alternatives for the routes operated in the Route 120 West corridor. Note that Chapter 6 also includes a discussion of new service from Sacramento to Yosemite Valley through Sonora.

ROUTE 120 WEST SERVICE ALTERNATIVES

Additional Runs

The current service consists of three daily round-trips from the end of May (May 28, in 2018) through Labor Day, and one daily round-trip in the last two weeks of May and after Labor Day until the end of September. As discussed below, a variety of options to operate additional runs were considered.

Summer

Additional Full Runs

One option considered was to add a fourth run during the summer. Based on observed ridership patterns, this would best consist of an earlier 5:40 AM departure (serving the Groveland area around 7:05 AM, along with a later westbound departure (such as 6:30 PM). As shown in Table 63, this additional run would add $68,400 to the annual operating cost, and would require an additional bus.

Table 63: YARTS Route 120 West Service Alternatives Cost Analysis

	Run Parameters	Daily Service			Annual	Annual Cost	Change in Peak Buses
	Hours/Day	Runs	Days/Yr	Hours	Hours		
4th Summer Run	3.25	2	98	6.5	637	$68,400	1
Convert Existing Run into 2 Short Runs							
Eliminate Existing Run	3.25	-2	98	-6.5	-637	-$68,400	1
2 Groveland-Valley Runs	1.75	6	98	10.5	1029	$110,500	1
Net Impact					392	$42,100	0
Early May Service	3.25	2	13	6.5	84.5	$9,100	0
3 Runs in Late May	3.25	4	14	13	182	$19,500	0
October Service	3.25	2	31	6.5	201.5	$21,600	0
3 Runs in September	3.25	4	27	13	351	$37,700	0
Year-Round Service	3.25	2	225	6.5	1462.5	$157,000	0

The additional schedule opportunities could increase the potential market for the service. However, the existing ridership levels do not indicate a high level of existing unmet demand. In the busiest month of service in 2017 (July), overall load factor was 56 percent on weekdays and 47 percent on weekends. The busiest weekday runs were the inbound run departing at 6:40 AM (75 percent load factor), while the busiest outbound run was the 4:00 departure (61 percent load factor). Only one run had reservations reaching the maximum allowed reservation (Run 1 on Labor Day). Overall, these figures indicate that there is no strong need for additional capacity. Overall, the ridership generation of the additional runs would be 40 percent lower than the average for the existing runs. This indicates an average of 31 additional boardings per day on average, or 3,100 over the course of the summer.

Convert One Existing Run into Two Short Runs (Groveland -- Valley)

The majority of ridership on the 120 West Route is generated between Groveland and the Park, rather than in Sonora or Jamestown. Over the 2017 operating season, only 12 percent of trips into Yosemite National Park on Route 120 West originated west of Groveland. In the summer months of June through August when three runs per day are in operation, the average daily boardings at the stops west of Groveland are as follows:

- Black Oak Hotel/Resort – 0.1 boardings per day
- Sonora Best Western – 3.5 boardings per day
- Inns of California (Downtown Sonora) – 1.7 boardings per day
- Rocca Park (Jamestown) – 1.9 boardings per day

Instead, the major stops are as follows:

- Yosemite Pines RV Park – 25.3 boardings per day
- Yosemite Lakes Campground – 13.6 boardings per day
- Mary Laveroni Park (Groveland) – 8.3 boardings per day
- Buck Meadows Restaurant – 5.2 boardings per day
- Rush Creek Lodge – 3.0 boardings per day

This ridership pattern indicates that Tuolumne County visitors are largely choosing to stay overnight closer to the park (reducing their transit travel time/cost). Given this, a reasonable potential alternative would be to reduce the number of buses operating to/from Sonora to two (two AM departures and two PM arrivals) and use the third bus to provide runs between Groveland and the Park only. Based on the ridership patterns, the first two Sonora AM runs (departing Black Oak Hotel at 6:40 AM and 7:40 AM) would be operated, but the existing 8:40 AM bus would be dropped from the schedule (as it has the lowest ridership). This bus would be used to operate a 7:06 AM eastbound departure from Groveland, in order to provide an earlier arrival into the Visitor Center at 8:50 AM (rather than the existing first arrival at 9:50 AM). This bus could then depart westbound at 9:00 AM to return to Mary Laveroni Park at 10:48 AM, in

time to provide an 11:06 AM eastbound departure back to the Park. An example schedule is shown in Table 64.

Table 64: Route 120 West Summer Schedule With 2 Short Runs Replacing 1 Long Run

TO YOSEMITE					
Black Oak Hotel and Resort	--	6:40 AM	7:40 AM	--	--
Sonora Best Western	--	7:00 AM	8:00 AM	--	--
Inns of Ca/Downtown Sonora	--	7:15 AM	8:15 AM	--	--
Rocca Park/Jamestown	--	7:25 AM	8:25 AM	--	--
Mary Laveroni Park/Groveland	7:06 AM	8:06 AM	9:06 AM	11:06 AM	5:00 PM
Yosemite Pines RV Park	7:16 AM	8:16 AM	9:16 AM	11:16 AM	5:10 PM
Buck Meadows Restaurant	7:30 AM	8:30 AM	9:30 AM	11:30 AM	5:24 PM
Yosemite Lakes Campgrounds	7:47 AM	8:47 AM	9:47 AM	11:47 AM	5:41 PM
Rush Creek Lodge	7:52 AM	8:52 AM	9:52 AM	11:52 AM	5:46 PM
Big Oak Flat/Park Entrance Gate	8:05 AM	9:05 AM	10:05 AM	12:05 PM	5:59 PM
Crane Flat Gas Station	8:15 AM	9:15 AM	10:15 AM	12:15 PM	6:09 PM
Yosemite Valley Visitors Center	8:50 AM	9:50 AM	10:50 AM	12:50 PM	6:44 PM
FROM YOSEMITE					
Yosemite Valley Visitors Center	9:00 AM	3:00 PM	4:00 PM	5:35 PM	7:00 PM
Crane Flat Gas Station	9:35 AM	3:35 PM	4:35 PM	6:05 PM	7:30 PM
Big Oak Flat/Park Entrance Gate	9:49 AM	3:49 PM	4:49 PM	6:19 PM	7:44 PM
Rush Creek Lodge	9:54 AM	3:54 PM	4:54 PM	6:24 PM	7:49 PM
Yosemite Lakes Campgrounds	9:59 AM	3:59 PM	4:59 PM	6:29 PM	7:54 PM
Buck Meadows Restaurant	10:26 AM	4:26 PM	5:26 PM	6:56 PM	8:21 PM
Yosemite Pines RV Park	10:31 AM	4:31 PM	5:31 PM	7:01 PM	8:26 PM
Mary Laveroni Park/Groveland	10:48 AM	4:48 PM	5:48 PM	7:18 PM	8:43 PM
Rocca Park/Jamestown	--	--	Req	Req	--
Inns of Ca/Downtown Sonora	--	--	Req	Req	--
Sonora Best Western	--	--	Req	Req	--
Black Oak Hotel and Resort	--	--	7:15 PM	8:45 PM	--

In the evening, the 4:30 PM departure from the Valley would be dropped, still providing departures for Sonora at 4:00 PM and 5:35 PM. The third bus could operate a 3:00 PM westbound departure that would arrive in Groveland at 4:48 PM, depart eastbound at 5:00 PM for an arrival in the Valley at 6:44 PM, and then operate a 7:00 PM westbound departure to Groveland, arriving at 8:48 PM.

Overall, this change would substantially increase the travel options for Tuolumne County visitors making day-trips into the park:

- An earlier AM arrival time in the Valley.

- A mid-day eastbound run, providing the option of afternoon half-day trips into the Valley.

- A later evening westbound run, to allow longer stays in the Valley.

Based on the additional service time options and the shift in service, an additional 42 passengers per day would be added between Groveland and the park, while 6 passenger-trips per day between Sonora and the park (or 3 persons making round-trips) would be eliminated. Overall, ridership would increase by 36 passengers per day, or 4,700 over the course of the summer season.

Spring

Overall visitation to Yosemite is growing dramatically in the spring, probably driven by an increase in awareness that a visit in spring is a less crowded experience than a visit in peak summer as well as by overall growth in tourism. Between 2014 and 2017, visitors entering the Park through Big Oak Flat increased by a full 54 percent in May (50,729 additional visitors) and 52 percent in June (69,109 additional visitors). However, visitor entrances on this corridor in April saw a drop over the same period. Given this pattern, it is worth considering expansion of 140 West service in May. Two options were considered, as discussed below.

One-Bus Service May 1 Through May 13th

The start date for 120 West service could be moved up to May 1st. This would increase overall operating costs by $9,100. Ridership can be estimated by considering the relative ridership on 140 service in early May versus late May, and applying this factor to the existing Route 120 West ridership. This indicates a ridership of 33 passengers per day on 120 West in early May, or a total of 430 over 13 days.

Three-Bus Service May 14th through 27th

The existing one bus operated on the 120 West Route in late May is at or close to capacity on several days. In May 2018, daily ridership was as high as 89 passengers (44.5 per run), with boardings exceeding 60 on a total of six days. Considering the Route 120 West ridership in early June (when 3 runs are in operation), it is estimated that the additional two runs in late May would increase ridership by an estimate 620 passenger boardings. The incremental cost of this service would be $19,500 per year.

Fall

Fall visitation to the Park through the Big Oak Flat entrance has grown very significantly in recent years. The number of visitors entering in September increased by a full 74 percent from 2014 through 2017 (67,883 visitors) and by 40 percent (36, 397) in October (though it stayed essentially flat in November). Paralleling the options considered for spring service expansion, the following two fall expansion options were assessed.

One Run a Day Service in October

One run could be operated daily throughout October. This increase in service would increase annual operating costs by $21,600 per year. Ridership in October can be estimated by considering the ridership on the 120 West Route in September (after Labor Day), and factoring by the relative visitor entrances through Big Oak Flat in October versus September. This yields an average daily ridership of 12 passengers, or 370 over the month.

Three Runs a Day Service in September

The existing three-round-trip service plan could be extended past the existing end at Labor Day to instead end at the end of September. The incremental operating cost for this option would be $37,700. The net increase in ridership can be estimated by considering the existing August 120 West Route ridership by the ratio of September to August visitors entering through Big Oak Flat. This indicates an incremental increase of 71 passenger-trips per day, or 1,860 passenger-trips between Labor Day and the end of the month.

Year-Round 120 West Service

The final service option evaluated for the 120 West Route was to expand service to year-round operation. In evaluating the potential ridership, it is important to consider that it is not likely that this corridor would serve any significant level of commuter ridership. The travel time between Yosemite Valley and the nearest significant housing area outside the park along SR 120 (Groveland) is 1 hour 44 minutes, which would require an employee to spend roughly 3.5 hours per day commuting. In comparison, travel time between Midpines and the Valley is one hour (or two hours per day). A morning run on the 120 West Route to meet an 8 AM start time, moreover, would depart Sonora around 5 AM and Groveland around 6:10 AM. As this is too early to serve visitors and as employee ridership would be low, a run meeting work shifts would never be cost-efficient. Ridership would therefore be limited to Park visitors (and perhaps a few workers commuting between communities outside the Park).

Potential visitor ridership in the remainder of the year can be evaluated by reviewing the relative visitor entrance activity at Big Oak Flat in the remainder of the year (November through April) compared with that in May through September, as shown in Table 8 of Technical Memorandum One. This ratio is a sobering low 15.2 percent. Applied to the ridership on the

120 West Route (adjusted for the additional spring and fall service, as discussed above), this indicates a total ridership generation of 2,630 passengers (or 13 passengers per day)[7]. This service would not increase the peak fleet requirements (though it would add more mileage per year to the existing fleet). It would increase annual vehicle-hours of service by 1,462, increasing operating cost by $157,000.

PERFORMANCE ANALYSIS OF 120 WEST ROUTE SERVICE ALTERNATIVES

Cost and ridership impacts of service alternatives for the 120 West Route are shown in Table 65. The performance analysis for these alternatives is presented in Table 66 and Figure 25. This analysis indicates the following:

- The greatest potential to increase ridership is the conversion of a peak season run to two short runs in each direction (4,700 passenger-trips per year), followed by year-round service (3,400). These are equal to a 33 percent and 24 percent increase in Route 120 West ridership, respectively.

- Operating subsidy requirements range from a low of $5,800 for early May service up to $136,300 for year-round service (an 8 percent and 194 percent increase, respectively.

- The passenger-trips per vehicle-hour of service (productivity) ranges from 1.8 for October service up to 12.0 for the conversion of one full run into two short runs. Only this last figure achieves the minimum performance standard of 8.0 passenger-trips per vehicle-hour of service.

- The range of operating cost per passenger-trip for those services increasing ridership ranges from $8.96 for the conversion from long to short runs up to a maximum of $58.38 for service in October.

- There is also a wide range in the required subsidy per passenger-trip. The most cost-effective is the conversion of long runs into short runs ($3.79 per passenger-trip) while the least cost-effective is October service ($50.81). Beyond the conversion to short runs, the other alternatives that achieve the $20.00 performance standard are the additional summer round-trip, early May service, and providing three runs in September.

- Most of the alternatives achieve the minimum farebox ratio of 20 percent. Only service in October and year-round service do not meet this level, both achieving only 13 percent.

[7] There may be some additional ridership benefit generated by the convenience of providing consistent service throughout the year, but this is not possible to quantify and would probably be low.

Table 65: YARTS 120 West Route Service Alternatives Summary

Alternative	Change In Annual Service: Service Hours	Operating Cost	Ridership	Fare Revenues	Operating Subsidy	Change in Peak Buses
Additional Round Trip in Summer	637	$68,400	3,100	*$23,500*	*$44,900*	1
Convert Existing Run into 2 Short Runs	392	$42,100	4,700	*$24,300*	*$17,800*	0
Early May Service	85	$9,100	430	*$3,300*	*$5,800*	0
3 Runs in Late May	182	$19,500	620	*$4,700*	*$14,800*	0
October Service	202	$21,600	370	*$2,800*	*$18,800*	0
3 Runs in September	351	$37,700	1,860	*$14,100*	*$23,600*	0
Year-Round Service[1]	1,463	$157,000	3,400	*$20,600*	*$136,400*	0

Note 1: Includes early May and October service.

Table 66: YARTS Route 120 West Service Alternatives Performance Analysis

			Values Achieving Recommended Performance Standards Shaded			
			Change From Existing Service			
	Net Annual Ridership	Net Annual Operating	Psgr-Trips per Service-Hour	Cost per Psgr-Trip	Subsidy per Psgr-Trip	Farebox Ratio[1]
Minimum Performance Standard			*8.00*	*No Standard*	*< $20.00*	*20%*
Additional Round Trip in Summer	3,100	$44,900	4.9	$22.06	$14.48	34%
Convert Existing Run into 2 Short Runs	4,700	$17,800	12.0	$8.96	$3.79	58%
Early May Service	430	$5,800	5.1	$21.16	$13.49	36%
3 Runs in Late May	620	$14,800	3.4	$31.45	$23.87	24%
October Service	370	$18,800	1.8	$58.38	$50.81	13%
3 Runs in September	1,860	$23,600	5.3	$20.27	$12.69	37%
Year-Round Service	3,400	$136,400	2.3	$46.18	$40.12	13%

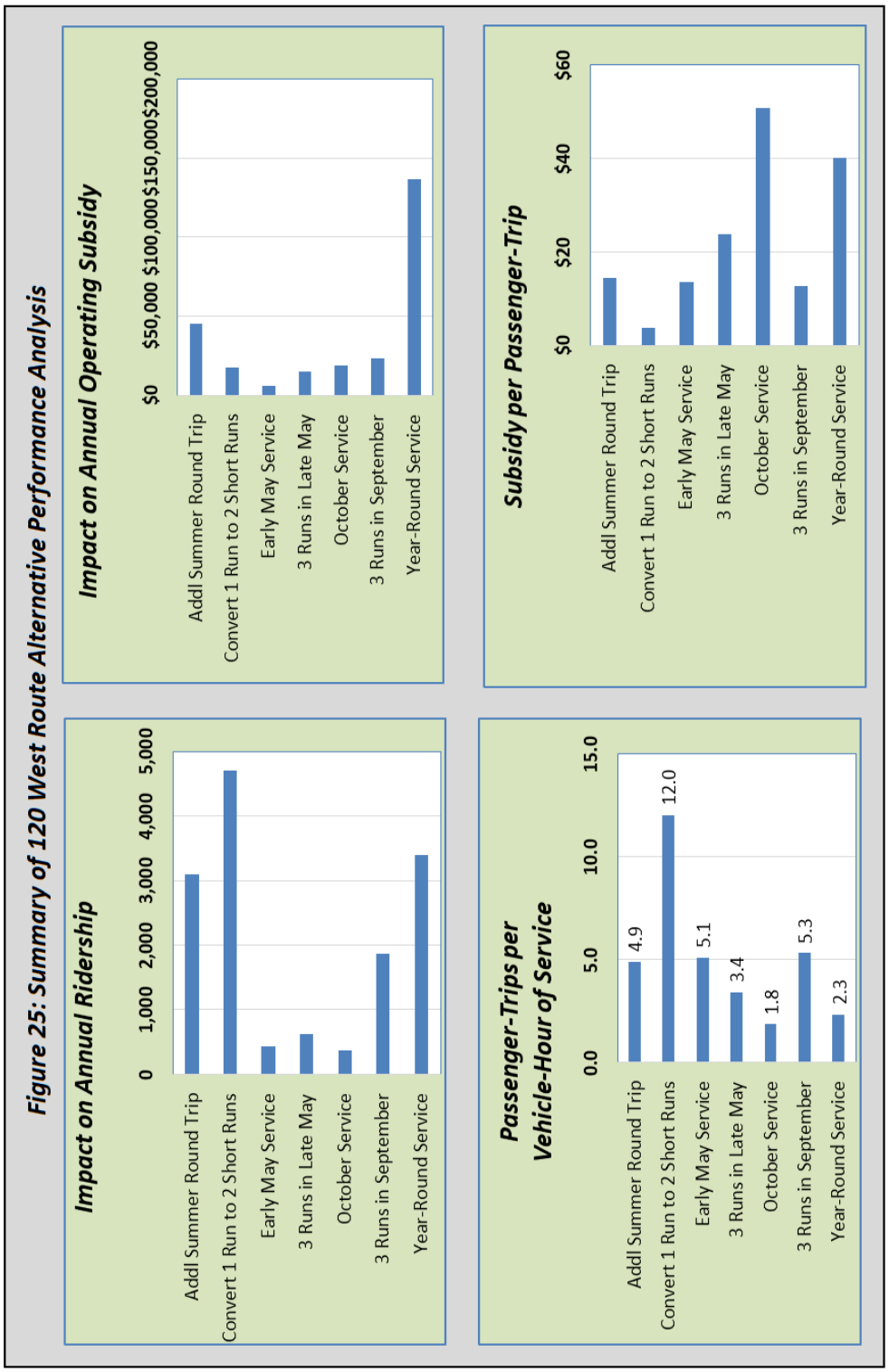
Note 1: Marginal fare revenues divided by marginal operating cost.

Based on this review, the Consultants draw the following conclusions:

- Converting one of the existing three peak-season daily round-trips into two shorter (Valley to Groveland) runs is recommended, as it would substantially increase ridership and improve cost-effectiveness, while still providing a good level of service (two runs per day) to Sonora and Jamestown.

- Year-round service on this corridor (as well as service in October) is not recommended, as it would serve only low ridership levels in the non-summer seasons.

- Expanding service levels in early May and in September achieves some but not all of the performance standards. This service expansion could be warranted, considering the additional increment in visitor activity in Tuolumne County that would be generated.



Chapter 8

Fresno/Madera County Service Alternatives

YARTS service along the Route 41 corridor between Fresno and Yosemite Valley was initiated in 2015, using a range of Federal, state and local funds. This service has varied over the intervening years in efforts to make the use of limited funds and to focus on the more productive service elements. A wide range of service alternatives were developed and evaluated for the Route 41 corridor, as discussed below. Note that Chapter 6 also includes a discussion of new service between Madera and Mariposa County.

ROUTE 41 SERVICE ALTERNATIVES

Improve YARTS-Amtrak Connections in Fresno

The current Route 41 schedules do not provide convenient connections between the *San Joaquins* trains and YARTS buses in Fresno for travel between Yosemite and southern California. Current connections are as follows:

Inbound to Yosemite National Park

Train 711 Arrives at 6:13 AM, YARTS Run 24 departs at 8:10 AM -- 1 hour 57 minute layover
Train 703 arrives at 7:53 AM, YARTS Run 24 departs at 8:10 AM – 17 minute layover
Train 713 arrives at 11:04 AM, YARTS Run 28 departs at 1:00 PM – 1 hour 56 minute layover

As the first two inbound connections requires a Los Angeles resident to depart LA at 1:10 AM and 2:55 AM, they are probably not a useful connections in any case.

Outbound from Yosemite National Park

YARTS Run 21 arrives at 1:16 PM, Train 714 departs at 1:40 PM – 34 minute layover
YARTS Run 23 arrives at 7:19 PM, Train 704 departs at 8:40 PM -- 1 hour 19 minute layover
YARTS Run 25 arrives at 7:57 PM, Train 704 departs at 8:40 PM – 43 minute layover

As the last two connections to Train 704 do not arrive into Union Station until 1:05 AM, the only attractive option for a one-trip trip from Yosemite to Southern California is Run 21/Train 714, arriving in Los Angeles at 6:15 PM.

In particular, a later northbound departure from Fresno is needed. At present, the only departure from LA Union Station that provides for a full one-way trip from LA to Yosemite National Park in a single day departs at 6:25 AM, for arrival at the park at 4:46 PM. Shifting Run 28 1 hour 20 minutes later would provide a 2:20 PM northbound YARTS departure from the

Fresno Amtrak station, allowing an 18 minute transfer from northbound Train 715 (which arrives in Fresno at 2:02 PM). Overall this would provide a 9:25 AM departure from Los Angeles and a 6:06 PM arrival in Yosemite Valley, and would also provide a 4:00 PM arrival in the Oakhurst area (convenient for persons traveling into the area on one day for a visit to Yosemite on the next). This would require Run 27, which currently departs from the Visitors Center at 5:42 PM to shift later (to approximately 6:20 PM). On balance, this is expected to yield a modest increase in ridership on these runs totaling 300 passenger-trips per year. No change in operating cost would be required.

Reduce Summer Service – Drop Oakhurst Short Runs

The existing Route 41 schedule includes two short runs between Oakhurst (Best Western stop) and Yosemite Valley at the beginning and end of the operating day. These are relatively low ridership runs, carrying an average of only 5.7 passengers per day (total in both directions) in June, 2018. These runs incur an operating cost of $58,600 per year, as shown in Table 67. Eliminating these runs would also reduce the required number of buses (with a slight shift in the Run 21 and Run 22 schedules.) Considering that some ridership on these runs would shift to another run (though full-time employee use of YARTS along this corridor would essentially be eliminated), the net impact of this option would be to reduce ridership by an estimated 4 passenger-trips per day, or 500 per year.

Table 67: YARTS Route 41 West Service Alternatives Cost Analysis

	Run Parameters	Daily Service			Annual	Annual Cost	Change in Peak Buses
	Hours/Day	Runs	Days/Yr	Hours	Hours		
Eliminate 2 Short Runs	2.2	-2	124	-4.4	-546	-$58,600	0
Replace 2 Long Runs with 4 Short Runs							
Eliminate 2 Long Runs	4.1	-2	124	-8.2	-1017	-$109,200	-1
Add 4 Short Runs Mid-day	*2.2*	*4*	*124*	*8.8*	*1091*	*$117,200*	*1*
Total: Replace 2 Long Runs with 4 Short Runs					74	$8,000	0
Start Spring Service in Mid-April	4.1	4	28	16.4	459	$49,300	0
Eliminate September Service	--	--	15	-40	-600	-$64,400	0
Reduce Sept. Service to 2 Runs Each Direction	--	--	14	-24	-336	-$36,100	0
Year-Round Service	4	4	241	16	3856	$414,100	0

Reduce Summer Service – Drop 1 Full Run in Each Direction

Reviewing the productivity of the existing runs, the following reduction would have the least impact on overall ridership:

- Eliminate Run 26 (the 10:00 AM departure from Fresno, arriving in the Valley at 2:06 PM). This run carried only 11.1 passenger-trips per run in July 2017 and 7.9 in June 2018. Even in the busier month, it carried only 2.7 passenger-trips per vehicle-hour.

- Combine existing Runs 23 and 25. These southbound full runs depart at 3:36 PM and 4:13 PM – only 37 minutes apart – and carry an average of 25.3 passengers in total. A single run departing around 4:00 PM could accommodate the ridership.

Eliminating these runs would reduce the number of buses required for the Route 41 service by one, and would save $109,200 per year in operating costs. The majority of the existing ridership on Run 26 would be eliminated (as this run provides the opportunity for an afternoon half-day trip into the Park that is otherwise not available), but the large majority of riders on Runs 23 and 25 would simply use the remaining run. Considering that loss on these runs would also eliminate passenger's return trips on other runs, the overall impact would be a reduction in passenger boards of 2,200 per year, or 17 per day.

Additional Four "Short" Runs Between Oakhurst and Yosemite National Park and Drop Two Full Runs in Each Direction

Much of the ridership boarding activity on Route 41 is generated by the stops close to but outside of the park (Oakhurst Best Western, The Pines at Bass Lake and Tenaya Lodge), which together generate 48 percent of the total route boardings[8]. While some of these boardings are passengers heading to Fresno, the majority are heading to Yosemite. Based on a review of driver run sheets, a total of 32 percent of all boardings are estimated to consist of visitors/residents in the Oakhurst area heading to/from the Park.

Given this, it is worthwhile to consider using the funds currently used for full runs to instead run two "short" runs between the Oakhurst Best Western and Yosemite Valley. An example schedule is shown in Table 68. Overall, this would increase the daily runs between Oakhurst and the Valley from five to six in each direction. It would also spread the service times more consistently over the day. In the northbound direction, a new departure time from Oakhurst around 8:15 AM would be provided, between the current departures at 7:33 AM and 9:46 AM. In the southbound direction, the long 6 hour 3 minute gap in the schedule (between 9:33 AM and 3:36 PM departure times) would be reduced, with a new 10:40 AM southbound departure from the Valley to Oakhurst (though there would still be a 5 hour gap to the next departure time). The new 3:40 PM departure time would benefit some riders, though this is close to the 4:00 PM southbound departure of a run to Fresno (under this scenario). Finally, the new 1:06 PM northbound run from Oakhurst would effectively replace this portion of the eliminated Run 26. Overall, these additional runs are estimated to generate 2,300 passenger boardings per year, slightly exceeding the 2,200 passengers eliminated by dropping the long runs and yielding a net increase of 100 passenger-trips. The annual operating hours for the four short runs would

[8] Though this pattern is not nearly as pronounced as on the 120 West Route.

slightly exceed the hours eliminated on the two long runs, resulting in an increase of 74.4 vehicle-hours and an increase in annual operating costs of $8,000.

Table 68: Route 41 Summer Schedule With 4 Short Runs Replacing 2 Long Runs

TO YOSEMITE						
Fresno Airport	--	5:37 AM	--	7:50 AM	--	12:40 PM
Amtrak/Greyhound	--	5:57 AM	--	8:10 AM	--	1:00 PM
North Fresno	--	6:12 AM	--	8:25 AM	--	1:15 PM
Chukchansi Gold Casino & Resort	--	6:42 AM	--	8:55 AM	--	1:45 PM
Coarsegold	--	7:15 AM	--	9:28 AM	--	2:18 PM
Oakhurst Best Western	5:36 AM	7:33 AM	8:15 AM	9:46 AM	1:06 PM	2:36 PM
The Pines at Bass Lake	5:56 AM	7:53 AM	8:35 AM	10:06 AM	1:26 PM	2:56 PM
Tenaya Lodge	6:16 AM	8:13 AM	8:55 AM	10:26 AM	1:46 PM	3:16 PM
Mariposa Grove	6:36 AM	8:33 AM	9:15 AM	10:46 AM	2:06 PM	3:36 PM
Wawona Store	6:56 AM	8:53 AM	9:35 AM	11:06 AM	2:26 PM	3:56 PM
Yosemite Valley Visitors Center	7:46 AM	9:43 AM	10:25 AM	11:56 AM	3:16 PM	4:46 PM
FROM YOSEMITE						
Yosemite Valley Visitors Center	9:33 AM	10:40 AM	3:40 PM	4:00 PM	5:42 PM	6:57 PM
Wawona Store	10:23 AM	11:30 AM	4:30 PM	4:50 PM	6:32 PM	7:47 PM
Mariposa Grove	10:43 AM	11:50 AM	4:50 PM	5:10 PM	7:06 PM	8:07 PM
Tenaya Lodge	11:03 AM	12:10 PM	5:10 PM	5:30 PM	7:26 PM	8:27 PM
The Pines at Bass Lake	11:23 AM	12:30 PM	5:30 PM	5:50 PM	7:46 PM	8:47 PM
Oakhurst Best Western	11:43 AM	12:50 PM	5:50 PM	6:10 PM	8:06 PM	9:07 PM
Coarsegold	12:16 PM	--	--	6:43 PM	8:24 PM	--
Chukchansi Gold Casino & Resort	12:31 PM	--	--	6:58 PM	8:44 PM	--
North Fresno	Req	--	--	Req	Req	--
Amtrak/Greyhound	1:16 PM	--	--	7:43 PM	Req	--
Fresno Airport	Req	--	--	Req	Req	--

Start Spring Service in Mid-April

Between 2014 and 2017, monthly recreation visitors through the South Entrance grew by 34 percent in April and 50 percent in May (though it declined in all months between July and March). A reasonable option would be to provide two round trips starting around April 15th until the existing start of full five-round-trip service in mid-May. This would consist of Runs 22, 23, 26 and 27. This additional service would increase operating costs by $49,300 per year. Ridership generated by this expansion of service can be estimated by considering the ratio of non-employee ridership on Route 140 during late April and early May to the ridership on the four Route 41 runs in late May. This indicates a total additional ridership of approximately 1,040 (excluding any effect of the free-fare day in April).

Reduce or Eliminate September Service

Ridership in September on the 41 Route has been relatively low, carrying only 410 passengers over 15 days of service in 2017. In addition, recreation visitor entrances through the South Entrance dropped by 9 percent from 2014 to 2017. None of the runs achieve the minimum standard level of 4.0 passenger-trips per vehicle-hour; the highest (the mid-afternoon southbound departure from Yosemite Valley) only generates 2.5. Given this, two options were considered for September service:

- September service could simply be eliminated. This would reduce annual operating costs by $64,400 per year. Assuming no riders would shift to the 140 service, all 410 passenger-trips would be eliminated.

- Service could be reduced to four one-way trips per day. Considering the ridership by run in September, this would consist of Runs 23, 24, 25 and 28. Annual operating costs would be reduced by $36,100 per year. Ridership would be reduced by an estimated 120 passenger-trips.

Year-Round Service on SR 41

The Route 41 service was originally planned and initiated as a year-round service. Service was provided over the first winter (between mid-September 2015 and mid-May 2016), consisting of a total of 10 one-way bus runs on weekdays and 9 on weekends. However, ridership was poor, with 13,104 passengers boarding over 241 days, or an average of 54.4 per day. This equates to only 5.6 passengers per run, on average. Due to this poor productivity and the desire to stretch the available initial funding over an additional summer season, ridership was reduced to mid-May to mid-September starting in September 2016.

To a degree, the poor ridership is due to the inherently low ridership of a new service. Transit services typically do not achieve their full potential ridership until the third year of operation, as it takes time for marketing efforts to be implemented, for regular passengers to get used to the availability of a transit service, and for "word of mouth" to spread about the service. Indeed, this factor can be seen in the ridership pattern for the summer Route 41 service, which increased by a full 119 percent between 2015 (the first summer of service) and 2017.

Table 69 presents an analysis of the ridership and productivity (passenger boardings per vehicle-hour of service) for a three-month period in the winter of 2016 when Route 41 service was in operation. As shown, none of the runs came close to meeting the standard of 4.0 passenger-trips per vehicle hour. However, Runs 22, 24, 25 and 29 (as they were numbered in 2016) performed well compared with the other runs, all generating an average of between 7.4 and 10.4 boardings per day. Moreover, if the proportionate growth in summer ridership is applied (reflecting the long-term potential for these runs after the initial "learning curve" is passed), all of these runs would meet the 4.0 passenger-trips per vehicle-hour standard.

Table 69: Evaluation of 41 Route Winter Ridership by Run

Jan, Feb, Mar 2016 Ridership

Run		Passenger Boardings Jan	Feb	Mar	Total	Riders per Day	Total Vehicle-Hours of Service	Passengers per Vehicle-Hr of Service 2016	Long Term[1]
20	NB 4:00 AM	93	47	91	231	2.5	342	0.7	1.5
21	SB Oakhurst to Fresno 6 AM	41	47	59	147	1.6	100.8	1.5	3.2
22	NB 5:37 AM	420	237	289	946	10.4	360	2.6	5.7
23	SB 9:03 AM	227	152	197	576	6.3	360	1.6	3.5
24	NB 10:37 AM	320	227	228	775	8.5	348	2.2	4.9
25	SB 2:21 PM	258	197	216	671	7.4	360	1.9	4.1
26	NB 12:46 PM	198	129	182	509	5.6	360	1.4	3.1
27	SB 3:26 PM	234	154	183	571	6.3	360	1.6	3.5
29	SB 5:30 PM	302	202	250	754	8.3	360	2.1	4.6
30	NB to Tenaya Lodge 5:44 PM	69	81	97	247	2.7	207	1.2	2.6
		2162	1473	1792	5427	59.6	3157.8	1.7	3.8

Source: VIA Monthly Reports

Given this, the marketing benefits of a consistent year-round program, and the potential to serve other resident trips in the non-summer seasons, a reasonable operating plan would be to operate these four runs year round. Specifically, this would provide the following, using the current numbering system:

- An early morning northbound run (Run 22) from Fresno Yosemite International Airport departing at 5:37 AM, serving Oakhurst at 7:33 AM and arriving in the Valley at 9:43 AM. This run would be attractive for visitors staying in the Oakhurst/Coarsegold/Bass Lake area.

- A later morning northbound run (Run 26) departing Fresno Yosemite International Airport at 7:50 AM, serving Oakhurst at 9:46 AM for an 11:56 AM arrival in the Valley. This runs would service visitors and residents in the Fresno area, as well as along the remainder of the route into the Park.

- A 3:36 PM southbound run (Run 23) from Yosemite Valley serving Oakhurst at 5:46 PM and Fresno at 7:19 PM. This would serve early returnees to the communities just outside the park, as well as persons staying in Fresno or catching evening flights or other intercity services in Fresno.

- A final southbound departure at 5:42 PM (Run 27), with stops in Oakhurst at 8:06 PM and Fresno at 9:50 PM. This run would serve those staying all day in the park, returning to all points south.

This schedule would not provide a direct Southern California – Yosemite trip within one day via a train/bus transfer in Fresno. However, as discussed in detail below, this trip is better accomplished through a transfer in Merced.

It would be possible to operate this service using YARTS-owned buses, given the current fleet and the Route 140 bus requirements. At the appropriate (lower) hourly rate, this service would cost an estimated $414,100 per year. Ridership can be estimated based on the observed ridership on the potential runs, the expected growth in ridership as the service becomes better established, as well as the potential for ridership on the other previous runs to shift to the available runs. On average, this service would carry 29 passenger-trips per day, or 6,900 over the course of the non-summer year.

Coordinate Madera County Connection Eastern County Connection and YARTS Route 41

Madera County Connection (MCC) operates the Eastern County Connection route from the town of Madera to the Chuckchansi Casino, Oakhurst, Coarsegold, and Bass Lake. As YARTS Route 41 also serves these locations, the schedules were reviewed to determine if there is an opportunity to make connections between the two services. However, there are two major obstacles to coordination. First, the MCC service is only operated on weekdays, and with just three daily round trips (one morning, midday and evening). Secondly, the YARTS Route 41 is only operated in summer. The earliest MCC eastbound route schedule does allow transfers to YARTS Route 41 at Coarsegold, Oakhurst and Bass Lake with just a 5 to 10 minute wait, but the midday trip misses the YARTS run to Yosemite by 10 to 20 minutes. The westbound MCC trip misses the YARTS return by 30 to 40 minutes, or requires a two-hour wait, as shown in Table 70.

At this time, it does not appear that schedule changes are warranted. However, if MCC determined that Saturday or weekend service was appropriate, adjusting the two schedules to create connections would be worth further exploration. A review of the MCC unmet hearings comments and onboard surveys does indicate an interest in weekend service, as more than half of survey respondents on the MCC Eastern Route cited weekend service as their top desired improvement.

Coordination of Clovis Stageline and YARTS Route 41

The City of Clovis operates a local route system called Stageline. Service is operated weekdays from 6:15 AM to 6:15 PM, and approximately 7:30 AM to 3:45 PM on Saturdays. Currently, the closest stops between the two systems are 2.2 miles apart (YARTS SR 41 North Fresno Stop and Stageline Route 10 East Nees and North Cedar Avenue stop). The Stageline serves the E. Nees/N. Cedar Avenue stop every half hour at 0:35 and 0:05 after the hour. YARTS serves North Fresno at 6:12 AM, 8:25 AM, 10:35 AM and 1:15 PM to Yosemite and by request (approximately 1:00 PM and 6:45 PM) from Yosemite. This would provide three Yosemite-bound and two Fresno-bound weekday connections, and one less Fresno-bound connection on Saturdays—if either YARTS or Stageline extended their route by 4.4 miles.

Table 70: Potential MCC and YARTS Connections

Potential Transfers from Madera to Yosemite Valley

Location	MCC	YARTS	Transfer Options
Chukchansi Gold Resort	6:52AM	6:42 AM	misses by 10 min
	--	8:55AM	
	11:47AM	11:05 AM	misses by 42 min
	--	1:45 PM	2 hr wait
	5:34PM	--	
Coarsegold - Historic Village Northbound or Coarsegold Hwy 41 & Coarsegold Market)	7:05AM	7:15 AM	10 min wait
	--	9:28 AM	
	12:01PM	11:38 AM	Misses by 20 min
	--	2:18 PM	
	5:47PM	--	
Oakhurst - Best Western	--	5:36 AM	
	7:27AM	7:33 AM	5 min wait
	--	9:46 AM	
	12:23PM	11:56 AM	misses by 27 min
	--	2:36 PM	2 hr wait
	6:09PM	--	
Bass Lake - Pines Resort	--	5:56 AM	
	7:43AM	7:53 AM	10 min wait
	--	10:06 AM	
	12:49PM	12:16 PM	misses by 33 min.
	--	2:56 PM	2 hr wait
	6:35PM	--	

Potential Transfers from Yosemite Valley to Madera

Location	YARTS	MCC	Transfer Options
Bass Lake - Pines Resort	--	8:22AM	
	11:23 AM	1:18PM	2 hr wait
	5:26 PM	--	
	6:03 PM	7:14PM	1 hr 15 min wait
	7:46 PM	--	misses by 32 minutes
	8:47 PM	--	
Oakhurst - Best Western	--	8:36AM	
	11:43 AM	1:32PM	1.75 hr wait
	5:46 PM	--	
	6:23 PM	7:28PM	1 hour wait
	8:06 PM	--	misses by 38 minutes
	9:07 PM	--	
Coarsegold - Historic Village Southbound	--	9:05AM	
	12:16 PM	2:12PM	2 hr wait
	6:19 PM	--	
	6:56 PM	7:55PM	1 hour wait
	8:24 PM	--	misses by 29 minutes
Chukchansi Gold Resort	--	9:18AM	
	12:31 PM	2:25PM	2 hr wait
	6:34 PM	--	
	7:11 PM	8:13PM	1 hour wait
	9:04 PM	--	misses by 51 minutes

= Viable Connection

= Potential Connection with schedule change

Given the limited weekend service of Stageline, the distance between the two routes, and the limited schedule of YARTS, particularly on the return from Yosemite, making a direct connection between the two services is not practical. Instead, Clovis residents can transfer to the Fresno Area Express (FAX), and then to YARTS (see below).

Coordination of FAX and YARTS Route 41

The Fresno Area Express (FAX) operates 16 routes, with service available Monday through Friday 5:30 AM to 10:00 PM and weekends from 6:30 AM to 7:00 PM. FAX and YARTS both serve the Amtrak/Greyhound station downtown, the Fresno Airport, and North Fresno (including bus rapid transit at Woodward Station). FAX service frequency is sufficient that passengers can use the service to access all YARTS arrivals and departures on weekdays, but passengers traveling from Yosemite to Fresno on weekends can only connect to FAX if they

depart on the morning run, as all other weekend departures arrive in Fresno after FAX has ceased evening service.

The YARTS Route 41 3:36 PM Yosemite departure arrives at Fresno Amtrak/Greyhound at 7:19 PM. Shifting this run to depart approximately 40 minutes earlier would allow passengers to arrive at Amtrak/Greyhound by 6:40 PM, which would allow for some options to transfer to FAX's last evening runs. However, if YARTS were to be delayed, transferring passengers could be stranded and might have to rely on a TNC or taxi to continue their trips. As many of the existing and potential passengers traveling on Route 41 are tourists, and YARTS connects directly to Amtrak, Greyhound and FAT, it is likely only a small percentage of them would wish to transfer to local FAX service, so shifting the 3:36 PM run would have limited ridership potential. Nonetheless, the Fresno COG should survey FAX passengers to determine their interest in weekend service to Yosemite.

Make The Pines Resort a Request Stop

The Pines Resort stop (which also serves other nearby areas around Bass Lake) generates a modest level of ridership, averaging 2 boardings per day in May, 5 in June, 3 in July, 5 in August and 1 in September. Even in the busiest months, at least half of the runs do not serve any passengers. Serving this stop, however, adds 12 mile to the total route length on each run, and approximately 16 minutes of running time. In addition to the increased operating cost, serving this stop makes an already long trip between Fresno and the Park 16 minutes longer. Given the existing schedule of ten service times per day, this indicates that most of the runs to/from The Pines Resort do not serve any passengers. Two options should be considered:

- Making The Pines Resort an "on request" stop for all runs.

- Making The Pines Resort an "on request" stop on southbound runs only.

As time to accommodate requests would need to be included in the schedule, this would not reduce operating costs. It would, however, reduce unnecessary mileage on the buses. More importantly, it would reduce travel times and improve overall service quality for the passengers traveling through the area on the bus.

PERFORMANCE ANALYSIS OF 41 ROUTE SERVICE ALTERNATIVES

A summary of the cost and ridership impacts of Route 41 service alternatives are shown in Table 71. The performance analysis for these alternatives is presented in Table 72 and Figure 26. This analysis indicates the following:

- The greatest potential to increase ridership is year-round service, which would add 6,900 passenger-trips per year (48 percent increase over existing Route 41 ridership). In

the opposite direction, eliminating one full run would reduce ridership by 2,200 per year (a 15 percent drop).

- Operating subsidy requirements range from a savings of $99,200 per year for the elimination of one full run (a 16 percent reduction), up to an increase of $382,800 (48 percent) for year-round service.

Table 71: YARTS 41 Route Service Alternatives Summary

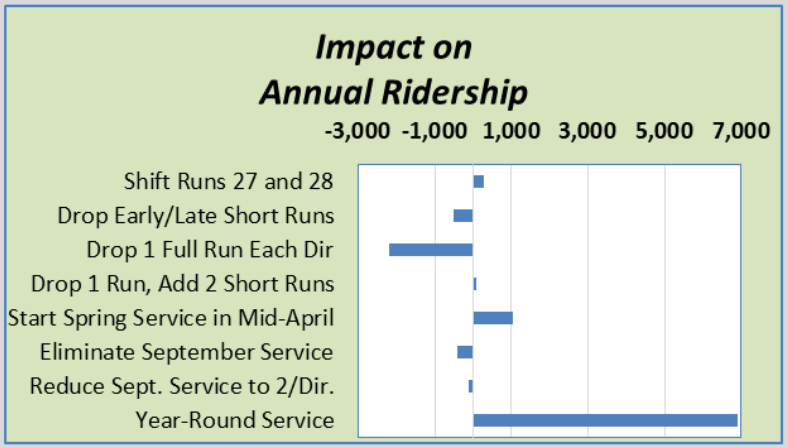
Alternative	Change In Annual Service: Service Hours	Operating Cost	Ridership	Fare Revenues	Operating Subsidy	Change in Peak Buses
Shift Runs 27 and 28 to Better Serve Amtrak	0	$0	300	*$1,600*	*-$1,600*	0
Eliminate Early/Late Oakhurst-YNP Runs	-546	-$58,600	-500	*-$1,800*	*-$56,800*	0
Eliminate 1 Full Run in Each Direction	-1,017	-$109,200	-2,200	*-$10,000*	*-$99,200*	-1
Eliminate 1 Full Run, Add 2 Short Runs	74	$8,000	100	*-$1,700*	*$9,700*	0
Start Spring Service in Mid-April	459	$49,300	1,040	*$4,700*	*$44,600*	0
Eliminate September Service	-600	-$64,400	-410	*-$1,900*	*-$62,500*	0
Reduce Sept. Service to 2 Trips Each Dir.	-336	-$36,100	-120	*-$500*	*-$35,600*	0
Year-Round Service	3,856	$414,100	6,900	*$31,300*	*$382,800*	0

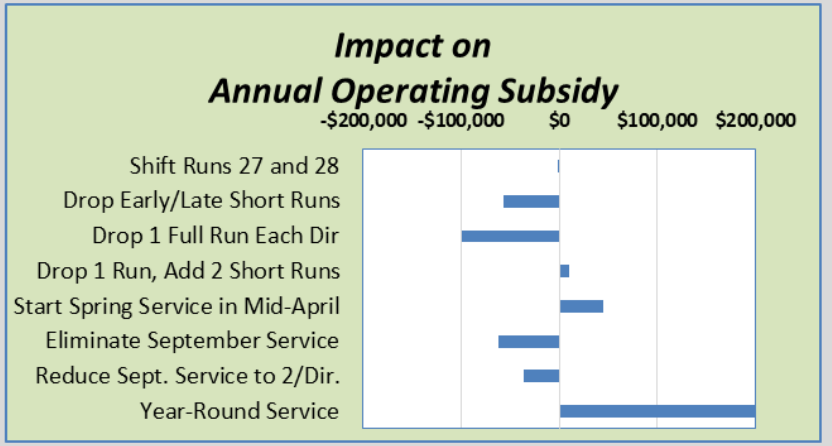
Table 72: YARTS Route 41 Service Alternatives Performance Analysis

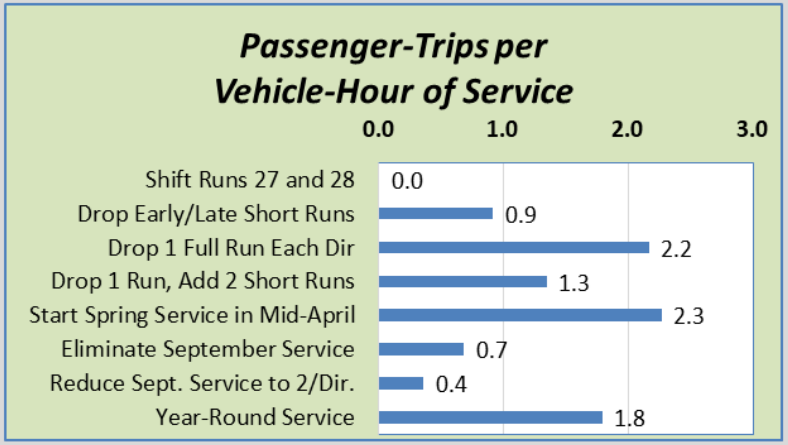
			Values Achieving Recommended Performance Standards Shaded			
			Change From Existing Service			
	Net Annual Ridership	Net Annual Operating Subsidy	Psgr-Trips per Service-Hour	Cost per Psgr-Trip	Subsidy per Psgr-Trip	Farebox Ratio[1]
Minimum Performance Standard			*4.00*	*No Standard*	*< $20.00*	*20%*
Shift Runs 27 and 28 to Better Serve Amtrak	300	-$1,600	--	$0.00	-$5.33	--
Eliminate Early/Late Oakhurst-YNP Runs	-500	-$56,800	0.9	$117.20	$113.60	3%
Eliminate 1 Full Run in Each Direction	-2,200	-$99,200	2.2	$49.64	$45.09	9%
Eliminate 1 Full Run, Add 2 Short Runs	100	$9,700	1.3	$80.00	$97.00	-21%
Start Spring Service in Mid-April	1,040	$44,600	2.3	$47.40	$42.88	10%
Eliminate September Service	-410	-$62,500	0.7	$157.07	$152.44	3%
Reduce Sept. Service to 2 Trips Each Dir.	-120	-$35,600	0.4	$300.83	$296.67	1%
Year-Round Service	6,900	$382,800	1.8	$60.01	$55.48	8%

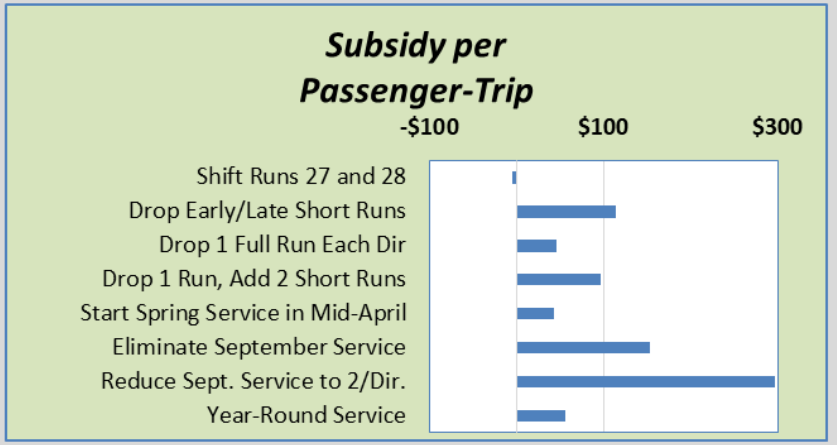
Note 1: Marginal fare revenues divided by marginal operating cost.

Figure 26: Summary of Route 41 Service Alternative Performance Analysis









- Of those alternatives that add ridership, the passenger-trips per vehicle-hour of service (productivity) ranges from 1.3 for replacing one full run with two short runs up to 2.3 for starting spring service in mid-April. Not that shifting existing runs to better serve Amtrak train times cannot be evaluated by this measure, as there would be no change in vehicle-hours of service. Of those options that reduce ridership, the "best" is the reduction in September service to two round-trips, which only eliminates 0.4 passenger-trips for every vehicle-hour eliminated.

- The range of operating cost per passenger-trip for those services increasing ridership ranges from $0.00 for the schedule adjustment up to $60.01 for year-round service. Of those reducing ridership, reducing September service, eliminating September service and eliminating the short Oakhurst-National Park runs would all save more than $100 per passenger-trip eliminated.

- The evaluation of the subsidy per passenger-trip yields the following results:

    - The options that would reduce ridership all are consist with the standard of not exceeding $20.00, as the value ranges from $45.09 for the elimination of a full round-trip run up to $297 for the reduction of September service to two round trips.
    - Shifting the schedule to better align with Amtrak schedules reduces the subsidy per passenger trip by reducing subsidy (by increasing farebox revenues) while increasing ridership.
    - None of the other options that increase ridership would attain the standard, as the subsidy per passenger-trip ranges from $47 (mid-April service) up to $97 (replacing one full run with two half-runs).

- All of the alternatives that reduce ridership are consistent with the minimum 20 percent farebox ratio, in that the services that would be eliminated do not achieve this standard. None of the service expansions achieve the standard. The replacement of one full run with two short runs results in a negative farebox ratio, because this option would reduce high-fare-generating long trips with lower-fare-generating short trips that yields a reduction in farebox revenues with an increase in operating costs.

The Consultants draw the following conclusions based on this evaluation:

- The strategy of reducing full runs and adding shorter runs between the Park and the gateway communities would not be effective on the Route 41 corridor.

- Year-round service on this corridor (as well as service in October) is not recommended under current conditions, as it would serve only low ridership levels in the non-summer seasons.

- The existing short runs between Oakhurst and the Park early and late in the service day should be eliminated as they are very un-productive.

- Service after Labor Day should be eliminated, given the low productivity and cost-effectiveness.

- Further reductions in service during the summer should be considered if marketing strategies do not increase ridership.

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Chapter 9

Capital Alternatives

The YARTS vehicle fleet represents a substantial investment for the transit program, and it is important to maintain and replace these assets to continue safe, reliable transportation. This chapter evaluates the need for replacing vehicles as well as the potential to expand the fleet. The analysis takes into consideration types of vehicles, fueling options, and leasing versus purchasing. Additionally, the maintenance of the fleet is reviewed to determine if changes are appropriate to enhance the maintenance program.

This chapter also reviews the existing passenger amenities (by corridor) and suggests prioritized bus stop improvements.

FLEET IMPROVEMENTS

Replacement Vehicles

The sustainability of YARTS service is threatened by the need to replace (and preferably expand) the YARTS-owned vehicle fleet. YARTS currently owns a total of 10 coaches, as shown in Table 73.

Federal Transit Administration standards call for the replacement of coach vehicles at 12 years or 500,000 miles (whichever comes first). Given the existing mileage on these vehicles (currently ranging from approximately 330,000 to 415,000 miles) and the average mileage incurred per YARTS bus (38,700 per year), replacement will be warranted based on mileage, not age. One bus will expire in 2020 and seven additional buses will expire in 2022.

While there are several state and Federal assistance programs that can help fund the purchase of buses, these programs typically require a 20 percent “local match” that must be raised from farebox revenues and/or local sources. YARTS buses currently cost on the order of $625,000, with a local share of $125,000. There is also a total of approximately $17,500 in costs for each bus related to automatic chains, fareboxes and bus wraps, which are not typically covered by the outside funding program. The total local cost per bus is thus approximately $142,500. For eight buses, this totals a sobering $1,140,000 in local funds. With four years until the bulk of these funds are needed, on average YARTS needs to generate approximately $285,000 per year in capital reserve funds in order to ensure that current service levels can continue (without the need for additional leased vehicles).

Table 73: YARTS Vehicle Fleet - Replacement Needs

Description[1]				Life Expectancy[3]		
Bus ID	Make / Model	Year	Mileage[2]	Date in Service	By Date[3]	By Mileage [4]
501	D4500 Commuter Coach	2010	405,057	4/23/2010	4/20/2022	8/10/2020
502	MCI Intercity Coach	2012	324,117	10/24/2011	10/21/2023	9/13/2022
503	MCI Intercity Coach	2012	342,409	10/24/2011	10/21/2023	3/24/2022
504	MCI Intercity Coach	2012	319,286	10/24/2011	10/21/2023	10/28/2022
505	MCI D400 Intercity	2012	329,624	5/23/2012	5/20/2024	7/23/2022
506	MCI D400 Intercity	2012	331,954	5/23/2012	5/20/2024	7/1/2022
507	MCI D400 Intercity	2012	340,250	5/23/2012	5/20/2024	4/14/2022
508	MCI D400 Intercity	2012	320,811	5/23/2012	5/20/2024	10/14/2022
509	MCI D4500 Bus	2015	173,302	1/26/2015	1/23/2027	8/7/2026
510	MCI D4500 Bus	2015	184,874	1/21/2015	1/18/2027	4/19/2026

Note 1: Each bus is equipped with: diesel; 49 seats and 2 wheelchair tie-down positions; no bicycle racks; under-bus storage (luggage and large items), plus over-seat storage for carryons; restroom.

Note 2: Mileage as of late February, 2018.

Note 3: Life expectancy is 12 years, or 500,000 miles, whichever comes first.

Note 4: At an average of approximately 38,700 miles in use annually per vehicle (recent trends), the lifespan is expected to expire based on mileage rather than date. Managing the route assignments for each vehicle can shift replacement dates for individual vehicles.

Source: YARTS

Leasing Versus Purchasing Fleet Vehicles

The YARTS fleet of 10 buses is insufficient to operate current services, so the fleet is a mix of YARTS-owned buses and those leased through VIA. Leased vehicles are operated at a cost of $153 per hour, compared to $107 per YARTS-owned vehicle. This cost differential can quickly escalate the operating cost for YARTS. However, having leased vehicles allows a transit system to reduce its fleet without the need to sell or lose assets. Ultimately, however, the cost benefit of owning outweighs leasing buses for the level of service provided by YARTS. This suggests YARTS should expand its fleet, though the issue is coming up with local-share funding to purchase vehicles (as discussed above). Given the urgent need to grow a capital reserve for replacement vehicles, expanding the YARTS fleet is a long-term goal, and YARTS should strive to develop a capital reserve which allows it to purchase rather than lease vehicles.

Vehicle Type

YARTS buses currently are a high quality of standard over-the-road coach. These vehicles do not take full advantage of the stunning scenery along the routes. The provision of glass ceiling ("vistadome") coaches would provide passengers with a more enjoyable and unique trip,

particularly within Yosemite Valley. However, there are substantial regulatory and financial hurdles that limit YARTS' ability to operate non-standard coaches.

YARTS relies on a combination of state and Federal funding sources to finance the high costs of purchasing buses. These funds come along with restrictions on the type of vehicles that can be purchased. Specifically, in 2016 the Federal Transit Administration enacted 49 CFR Part 665 *Bus Testing: Establishment of Performance Standards, a Bus Model Scoring System, a Pass/Fail Standard and Other Program Updates*. This regulation requires all buses purchased using Federal funds to be tested at a facility in Altoona, Pennsylvania for safety features such as ability to withstand a rollover accident. At present, no "Altoona tested" vehicles have glass roofs. Moreover, getting a new vehicle type approved through this program is a very extensive, multi-year program. As 80 percent of YARTS vehicle funds come from sources impacted by this regulation, the cost to YARTS of going outside of these funding sources would be on the order of $8,000,000 for every bus replacement cycle. This is clearly not a strategy that can be implemented in the short term.

In the long term, YARTS could be part of a consortium that encourages the consideration of new and more visitor-friendly vehicle types of transit buses. Transit strategies are increasingly common in National Parks and other recreation destinations, and the potential to expand transit ridership to busy recreation destinations is found across the country. A consortium of transit organizations serving recreation destinations could potentially develop new specification for vehicles designed for National Park-type settings and, as a group, work for manufacture and testing of new vehicle types.

Zero Emission Bus Technology

The YARTS fleet currently consists of diesel fueled vehicles. Given evolving air quality regulations and the desire for clean air in Yosemite Valley, ultimately YARTS will likely have all Zero Emission Bus (ZEB) vehicles. ZEB technologies consist of Battery Electric Buses (BEBs) and hydrogen fuel cell buses. Of the two ZEB technologies, by far the more prevalent option is Battery Electric Buses.

Battery-Electric Transit Vehicles

Technology and experience for battery-electric transit vehicles are still fairly new, even more so for over-the-road coaches than for urban buses. Some larger transit systems and mid-sized system have purchased battery-electric buses, with many more on order. This includes mountain transit systems: Park City Transit operates five BEBs, and South Lake Tahoe just got a grant to purchase three (though these systems do not serve grades or distances comparable to the YARTS routes). The closest existing BEB fleet to YARTS is the 17 buses at the San Joaquin RTD system in Stockton.

The vehicles are expensive. Typical urban transit BEB buses are running $800,000 per copy, and it is estimated an over-the-road BEB coach would cost in the range of $1,000,000. It should be

noted that there are air quality grants from the California Air Resources Board (CARB) which can help to offset the higher cost of ZEBs.

Beyond the issue of cost, a key factor regarding battery electric buses is the potential range between charges. One manufacturer (BYD) claims a 124 mile range for its BEBs, which is enough for a 1-way trip on any of the YARTS routes, but not enough for a round trip. Thus, such buses would need to charge in the Park.

Recharging BEB's can either occur at the fleet operations facility (generally overnight using a slow charging station), or along the route at stops where at least 10 minutes of time are available (using an overhead fast-charging technology).

Transit systems are often finding that the local electrical system is not sufficient to support charging. Yosemite Valley has a 12,000 volt distribution system that is managed by the NPS facilities staff. The lodges all have 440-volt service, and the site near Yosemite Lodge has two high-voltage transformers that are no longer in use. (They used to serve employee housing development that is no longer there.) The NPS has recently purchased two Proterra electric buses as well as charging stations which will accommodate these vehicles. The installation site of the charging stations is currently being evaluated. The NPS is also conducting a study to determine whether there is a need to make changes in the electrical system in the event they want to buy more electric buses. This study could help determine a ZEB strategy for YARTS as well. Additional information which will be important to YARTS includes the following:

- Determine the cost, facility and operational impacts of BEB for YARTS, including full life cycle costs given local electricity costs (in Merced and in the Valley).
- Review existing and planned services and schedules to identify the potential for on-route charging.
- Evaluate the transit centers, layover area and bus maintenance facility to identify the physical capacity to accommodate charging equipment and power supply.
- Assess impacts on maintenance staff and facilities as well as on-the-road service reliability.

The overall results of this study should be a ZEB implementation plan that minimizes costs to the local jurisdictions, maintains a good quality of service to the passengers and achieves the environmental benefits of ZEB technology as it matures.

VEHICLE MAINTENANCE

Vehicle maintenance is important to YARTS, given the large investment the organization has in vehicles. The vehicles must be well maintained to ensure they last as long as possible and are reliable while in service. The YARTS maintenance procedures were reviewed and compared to peer transit systems to determine best practices for maintaining a reliable fleet.

Maintenance Schedule

The following is the list of preventive maintenance inspections and the intervals which they are performed on all YARTS Vehicles:

1. A/C Systems – Annual PM inspection
2. Air Bags – 5 year replacement schedule
3. Air Drier - 60,000 mile service
4. Air filter- 45 day cleaning – annual replacement
5. A-service - 45 day, 4,000 mile (Safety Inspection)
6. B-service – 15,000 mile (Engine Oil, Filter and lubrication)
7. C-service – 75,000 mile (Transmission service)
8. Crankcase Filter – Bi-annual replacement
9. Battery – 45 day service- 4yr replacement
10. D-service – 75,000 mile (Differential service)
11. Diesel Exhaust Filter – 50,000 mile service
12. Diesel Particulate Filter – 250,000 mile service
13. Fire Suppression System – Bi-annual service
14. Fuel Filter Service – 36,000 mile service
15. Power Steering Service – 36,000 mile service
16. Wheel Bearing – 100,000 mile service
17. Wheel Chair Lift – 45 day inspection – Annual service
18. Smoke Opacity – Annual Test
19. Spare Tire – Annual Replacement

All preventive maintenance is carefully tracked and scheduled using the contractor's Fleet Maintenance Software, *Dossier*. This maintenance schedule follows the manufacturers' suggested maintenance schedule. The Consultant Team reviewed maintenance logs for vehicles, and each log shows when scheduled maintenance has been performed, as well as any additional maintenance that has been performed on the vehicle. Furthermore, the contractor annually evaluates all systems to evaluate the "State of Good Repair" and scores the vehicle on a rating of 0 (unacceptable/unusable) to 1-3 (poor) to 4-6 (moderate) to 7-9 (good) to 10 (excellent). Most vehicles score from 8 to 10 in all categories, though a few of the buses score 7 for cracks, dents and rust on the body exterior. None score below 7.

Best Practices

Bus manufacturers provide detailed lists of recommended services which should be performed on the vehicles, including the interval for such services. Following the manufacturers' recommendations is the best way to ensure vehicles are appropriately maintained. This is what transit peers (San Luis Obispo Regional Transit Authority, Yuba-Sutter Transit and others) have reported as standard procedure as well.

Frequent visual inspections (such as is done for pre-trip) and notification of any extraordinary or exceptional service issues (as reported by drivers or customers), with follow up service to address such issues, also ensures the vehicles are maintained appropriately. Per VIA's records, the contractor appears to be following an appropriate protocol to ensure vehicles are well maintained.

PASSENGER AMENITIES

Passenger amenities play an important role in enhancing transit services. First and foremost, they provide comfort to waiting passengers. Additionally, they play an important role in communicating the image of a transit system.

Bus Stop Improvements

Nearly all YARTS bus stops are signed with the YARTS logo. Many also have benches, and some have shelters. Typically for rural transit systems a bus stop with more than 5 passenger boardings per day warrants a bench, and one with more than 10 passengers per day warrants a shelter. This guideline can be affected by location, average waiting time and other factors. For example, a high-passenger stop where passengers wait a short time may not warrant a shelter, whereas a lower capacity stop exposed to the elements or where passengers may wait a long period for a bus may warrant a shelter. Tables 74 through 77 list the existing stops by route, including amenities, and make suggestions for improvements. As stops with the highest boardings already have passenger amenities, needed improvements are not very extensive. The highest priorities for the planning period include:

- Stop 153/Main Street north of 7th Avenue in Mariposa: a shelter would be desirable in the long term.

- Stop 309/Yosemite Pines RV lot: provide a paved wheelchair pad, sign and bench.

- Stop 313/Yosemite Lakes Campground: the bus currently pulls over at the edge of the parking lot near the reservations office for Yosemite Trails. This stop is fairly popular, and YARTS should work with the land owner to determine if a bench and shelter could be installed.

- Stop 209/June Lakes Parking Lot: the entrance to the parking lot is blocked off most of season and so the bus stops on the road. A sign is needed. Due to the seasonal nature, it might be appropriate to use a movable sign. Note that if service along the June Lake Loop is shifted to US 395, this is no longer an issue.

- Stop 213/Mono Basin Visitor Center: make sign visible, either with landscaping, a larger sign or a bench, or a combination.

Table 74: YARTS Inventory of Bus Stops and Amenities - 140 Route

Bus Stops		Boardings [1]				Amenities						
Stop ID #	Location	Weekday Inbound	Weekday Outbound	Weekend Inbound	Weekend Outbound	Sign	Bench	Shelter	Pullout	Owner	Cost	Recommended Improvements
101	Merced Airport - Terminal	0	0	3	0	Yes	No	Building	NA	Airport		None
111	Merced Transpo	10	0	9	0	Yes	Yes	Building	Yes	Merced		None
113	Merced Amtrak	17	0	49	0	Yes	Yes	No	Yes	Merced		None
155	Catheys Valley	0	--	0	--	Yes	Yes	Yes	Shoulder	YARTS	$10,050	None
117	Catheys Valley - The Oasis	--	0	--	0	Yes	No	No	Shoulder			None
119	Midtown Mariposa	--	5	--	0	Yes	Yes	No	Yes			None
153	Midtown Mariposa	14	--	11	--	Yes	Yes	No	Yes			Possibly shelter
121	Mariposa Roadside Rest Stop	13	0	9	0	Yes	Yes	Yes	NA	YARTS	$10,050	None
123	Mariposa Park & Ride	19	1	10	1	Yes	Yes	Yes	NA	YARTS	$10,050	None
125	Autocamp [2]	1	0	1	0	Yes	Yes	Yes	Yes	YARTS	$10,050	None
127	Midpines Park & Ride	7	0	3	0	Yes	Yes	Yes	Yes			None
129	Midpines Post Office	1	--	4	--	Yes	Yes	Yes	Yes	YARTS	$10,050	None
151	Midpines Post Office	--	4	--	0	Yes	No	No	Yes			None
131	Yosemite Bug Resort	3	13	3	6	Yes	Yes	Yes	Yes			None
133	Cedar Lodge	0	6	0	1	Yes	Yes	Yes	Yes			None
135	NPS Maintenance	0	0	0	0	Yes	Yes	Yes	No	YARTS	$10,050	None
137	Barium Mine Road	0	3	0	0	Yes	No	No	No			
139	El Portal Post Office	2	2	4	0	Yes	Yes	Yes	Yes	NPS?		
140	Yosemite View Lodge (Hwy 140)	33	2	2	6	Yes	Yes	Yes	Yes	YARTS	$10,050	None
	Yosemite Valley Visitor Center	0	26	0	15	Yes	Yes	Yes	Yes	NPS	--	None
	Yosemite Valley Lodge /Laurel Cottage	0	49	0	18	Yes	No	No	Yes	NPS	--	None
	Half Dome Village	0	4	0	29	Yes	Yes	Yes	Yes	NPS	--	None

Note 1: Inbound to Yosemite; Outbound from Yosemite

Note 2: Formerly KOA Campground

Table 75: YARTS Inventory of Bus Stops and Amenities - 120 West Route

Bus Stops		Boardings [1]							
		5/26/2016		Amenities					Recommended
Stop ID #	Location	Inbound	Outbound	Sign	Bench	Shelter	Pullout	Owner	Improvements
300	Black Oak Hotel Resort	1	0	No	No	Yes	NA	Black Oak	None
301	Sonora Best Western	2	0	Yes	No	Yes	NA	Best West.	None
303	Inns of California Downtown Sonora	5	0	Yes	No	No	No	Inns of Ca	None
305	Rocca Park Jamestown Main St.	0	0	Yes	Yes	No	No		None
307	Mary Laveroni Park	6	0	Yes	Yes	No	NA		None
309	Yosemite Pines RV Park	11	0	No	No	No	Dirt		Paved pad, sign, bench
311	Buck Meadows Restaurant	0	0	Yes	Yes	Yes	NA		None
313	Yosemite Lakes Campground	14	0	Yes	No	No	NA		Bench, shelter
211	Rush Creek Lodge	0	0	Yes	Yes	No	NA		None
315	Big Oak Flat Park Entrance Gate	0	0	No	No	No	Yes	NPS	None
225	Crane Flat Gas Station	0	0	Yes	No	No	NA		None
	Yosemite Valley Visitor Center	0	34	Yes	Yes	Yes	Yes	NPS	None

Note 1: Inbound to Yosemite; Outbound from Yosemite

Table 76: YARTS Inventory of Bus Stops and Amenities - 120/395 Route

Bus Stops		Boardings [1]								
		2-Jun	3-Jun	Amenities						Recommended
Stop ID #	Location	Inbound	Outbound	Sign	Bench	Shelter	Pullout	Owner	Cost	Improvements
201	Mammoth Mountain Inn	0	0	Yes	No	No	Yes	MM		None
202	The Village	0	0	Yes	No	No	No			None
203	Juniper Springs Summit	4	0	Yes	No	No	By Portico			None
205	Mammoth Lakes P&R	4	0	Yes	Yes	Yes	No			None
207	Shiloh Inn/EB Main Street	0	0	Yes	No	No	No			None
209	June Mountain Ski Area Parking Lot	0	0	No	No	No	NA			Sign (movable)
211	Rush Creek Trailhead Parking Lot	0	0	Yes	No	No	NA			None
213	Mono Basin Visitor Center	0	0	Yes	No	No	NA	NPS		Make sign more visible
215	Lake View Lodge	1	0	Yes	Yes	Yes	Yes			None
217	Tioga Mobil Mart	0	0	Yes	Yes	Yes	NA	YARTS	$10,050	None
219	Tuolumne Meadows Store	0	0	Yes	No	No	No			None
221	Tuolumne Meadows Visitor Center	0	0	Yes	No	No	No			None
223	White Wolf Lodge	0	0	Yes	No	Covered Porch	No			None
225	Crane Flat Gas Station	2	0	Yes	No	No	No			None
	Yosemite Valley Visitor Center	0	31	Yes	Yes	Yes	Yes	NPS		None

Note 1: Inbound to Yosemite; Outbound from Yosemite

Table 77: YARTS Inventory of Bus Stops and Amenities - 41 Route

Bus Stops		Boardings								
Stop ID #	Location	5/28/2018 Inbound	5/28/2018 Outbound	Amenities Sign	Bench	Shelter	Pullout	Owner	Cost	Recommended Improvements
407	FAT (Fresno Airport)	11	0	Yes	No	No	Yes	FAT		None
401	Amtrak/Greyhound	0	0	Yes	Yes	Yes	Yes			None
413	North Fresno	0	0	Yes	Yes	Yes	Yes	Fresno		None
418	Chukchansi Gold Resort and Casino	0	2	No	Yes	Yes	NA	Chukchansi		None
419	Coarsegold Market	0	--	Yes	Yes	Yes	Yes			None
419	Coarsegold (Historic Village & Hwy 41)	--	0	Yes	Yes	Yes	Yes			None
425	Oakhurst Best Western	3	0	No	No	No	No			Sign
	The Pines at Bass Lake	0	0	Yes	No	No	Yes			None
428	Tenaya Lodge	0	4	No	No	No	No			Sign
	The Mariposa Grove	0	--	Yes	No	No	Yes	NPS		None
434	Wawona Store	2	3	Yes	Yes	Yes	Yes			None
	Yosemite Valley Visitor Center	0	30	Yes	Yes	Yes	Yes	NPS		None

Note 1: IB = Inbound to Yosemite; OB = Outbound from Yosemite

Bike Racks

Several stakeholders brought up the issue of bike racks and bike carrying capacity on the buses. Yosemite Valley is an ideal and popular location for biking. Currently, YARTS passengers wishing to bring bikes must transport them in the luggage area of the vehicles, which means storing bikes laying down, surrounded by luggage. This creates the potential for bikes and luggage to get damaged, and owners of high-end bikes in particular do not wish to transport bikes in this manner. The existing buses cannot include bike racks on the outside because they would increase the bus length in excess of what the narrow, curved highways can accommodate. However, there are thousands of bikes available for rent in the Valley through the Concessionaire, making the issue of transporting bikes a low priority for YARTS.

Yosemite National Park ACCESS IMPROVEMENTS

The traffic delays at the various entrance gates to Yosemite National Park impact YARTS operates as well as general traffic. Delays at the Tioga Pass entrance have been reported to exceed 30 minutes. A common topic mentioned in stakeholder interviews was interest in having by-pass lanes at the various entrances to Yosemite National Park. The desire is to have quicker access for high occupancy vehicles, and YARTS vehicles in particular. Below is a brief discussion of the access at each of the main entrances to the Park.

Tioga Pass Entrance Station

Mono County would like to see a bypass lane which would allow high occupancy vehicles and pass holders to enter more quickly, potentially speeding up access for a large number of people. Currently, the Tioga Pass entrance is on a two-lane stretch of SR 120. Parallel to the kiosk on the southeast side, there is a gravel parking lot, and on the northeast side is a small stone visitor center. There are stone pillars on each side of the road which house the iron gate used to close the highway in winter. Both east and west of the entrance kiosk, there are parking lots. The road is parallel to a lightly wooded area on the north side of the highway and a meadow on the south side. Removing the stone pillars would provide room to add paved lanes to create a bypass into the park. However, the construction would require environmental and engineering review. Nonetheless, providing a bypass lane at this location could allow YARTS buses (and possibly pass holders) to more quickly access the park. There is sufficient existing pavement width to stripe a westbound Bus Only Lane from a point approximately 850 feet east of the entrance kiosk to 70 feet east of the kiosk[9]. Parking would still be available behind (north of) this Bus Only Lane for much of its length. At an average of 40 feet of roadway length per queued entering vehicle, this 780-foot lane would allow a bus to bypass a queue of up to roughly 19 vehicles. This Bus Only Lane would require pavement markings, signage and temporary coning, and probably would require staff to hold traffic at the merge point to allow buses to enter the entrance queue just prior to the station.

[9] Whether this pavement off of the existing travel lane is of sufficient strength to support the passage of buses without long-term damage to the roadway would need to be determined.

It would be physically possible to extend this bus lane length to the east. The challenge comes from the fact that the entrance queues can extend for very long distances. For buses to bypass these queues, new travel lanes (resulting in a three-lane cross-section) would be needed for these long distances. Whether these large expanses of asphalt is desirable is a matter of debate. This option would require further review and would ultimately be a decision of the National Parks and Caltrans (as the widened area would extend outside the Park boundaries).

SR 140 – Arch Rock Entrance Station

The Arch Rock Entrance station is located on SR 140 3.5 miles northeast of El Portal. It is a narrow stretch of road with cliffs (prone to rock falls) on the north side and the Merced River on the south side. The road widens to four lanes for about 50 yards at the entrance station, and there is no additional room for further widening.

In May of 2017, the National Park Service experimented with holding outbound traffic from the park to allow higher volumes of inbound traffic to enter. Volunteer staff were used to redirect traffic through Foresta Road to increase capacity. While this temporarily increased capacity, it required a high level of staff from the National Parks, Caltrans, and the California Highway Patrol to ensure it was done safely. Then National Parks paid for the additional staffing and, while the National Park staff volunteered for the effort, a long term strategy would require paid staff with a law enforcement background. This approach is probably not financially feasible and raises safety concerns. Furthermore, creating a bypass via Foresta Road is a National Park policy decision, rather than an option to be determined in a SRTP process.

SR 41 – South Entrance

The South Entrance is located on State Route 41 just north of Fish Camp. The two-lane highway is widened to four lanes approximately 150 feet south of the entrance station to provide three entry lanes and one exit lane. While this alleviates some of the queuing at this location, cars still back up for miles at the busiest times. Short of adding lanes to the highway (which is not realistically an option), there is no potential for expanding access.

SR 120 - Big Oak Flat Entrance

The Big Oak Flat similarly is on a two-lane highway which is widened to four lanes 140 feet north of the entrance station to provide three entry lanes and one exit lane. This allows more expedited processing than if only one kiosk was available, but does not address queuing issues beyond the 140 foot lane split. There is little potential or benefit to expanding the road width.

Summary

Offering a bypass lane at Tioga Pass has some potential to improve access into the park using existing roadway pavement, though it would require substantial additional engineering and

operational analysis to determine the overall feasibility. The remaining locations would require expansion of the road width, which would require consideration of the trade-offs between roadway widening and improved transit access.

TECHNOLOGICAL AND COMMUNICATION IMPROVEMENTS

Technology and communication apps are increasingly a part of transit systems. Passenger surveys and stakeholders have expressed a desire for improvements in this area. Being able to track vehicles real-time, or for drivers and dispatchers to communicate with one another as well as with passengers is an expectation for most transit systems. However, YARTS is in a unique operating environment in which the physical geography and rural nature of the area put it far behind most areas in ability to use technology. YARTS staff should continue to monitor infrastructure improvements in the area to determine if there is a potential to improve communications. Mono County, for example, is developing a 4G north-south line to improve mobile reception in the eastern Sierras. Nonetheless, the winding, hilly and mountainous areas of the remainder of the service area continue to be a barrier to mobile communications.

Chapter 10

Financial Alternatives

FINANCIAL STANDING OF YARTS

Operating Cost Increases

As has been common in recent years for many transit programs, the YARTS operating budget has been impacted by increases in wage rates, benefit rates, and fuel costs. YARTS and VIA recently negotiated a new five-year contract that reflects current costs. As a result, the contracted cost per vehicle-hour of service is increasing between 2017 and 2019 as follows:

- Cost per Vehicle-Hour of YARTS-provided buses: 9.9 percent cost increase
- Cost per Vehicle-Hour of VIA-provided buses staged in Merced: 37.1 percent increase
- Cost per Vehicle-Hour of VIA-provided buses staged in Fresno: 18.2 percent increase

Factored by the proportion of annual vehicle-hours operated by each vehicle type (69 percent, 10 percent and 21 percent, respectively), the overall increase in per vehicle-hour operating costs is 15 percent. Assuming no change in service levels, this factor results in an increase in annual operating costs of $309,300. There are other smaller changes in funding sources and costs that in total help to address a portion of this cost increase. Overall, however, the YARTS operating budget for 2019/20 is facing a shortfall of $220,600.

The financial alternatives presented in this chapter include options for addressing this shortfall, as well as unconstrained financial scenarios which presume new sources of funding.

FARE ALTERNATIVES

The fare structure of YARTS provides greater opportunities and flexibility than a typical public transit system due to the tourist nature of the ridership, which is less price sensitive. The ability of YARTS to include the price of the Yosemite National Park entrance fee for passengers also contributes to this flexibility in pricing. Below is a discussion of various fare alternatives, from increasing fares, to reducing fares and even offering free fares.

EXISTING AND PLANNED FARES

As discussed in detail in Chapter 3, YARTS currently charges fares based upon a complicated system of fares between individual origins/destinations by corridor, discounted fares (generally at 2/3 of full fares) for seniors, children and persons with disabilities, as well as commuter, monthly, 10-ride and 20-ride ticket fares. As this potential fare increase focuses on the full-fare

single ride fare, the remainder of this discussion is limited to the full-fare single rider. These one-way fares are as follows, depending on the length of trip between origin and destination:

- Route 140 -- $1 to $13
- Route 120/395 -- $2 to $13
- Route 140 West -- $3 to $18
- Route 41 -- $4 to $15

On each route, the average fare per mile (for the various trip lengths) is as follows:

- Route 140 -- $0.16 per mile
- Route 120/395 -- $0.15 per mile
- Route 140 West -- $0.19 per mile
- Route 41 -- $0.15 per mile

In August, 2018, the YARTS JPA Board took action to increase fares. All full fares on the 140 Routes, 120/395 Route and 120 West Route will be increased by 20 percent starting in January 2019, with an additional 15 percent increase starting in January, 2020. Discount fares (seniors, youth, disabled, Veterans), commuter fares, and fares on the 41 Routes were not changed. With these fare increases, the maximum full fare on the 140 and 120 West Routes will be $19.

COMPARISON WITH FARES ON PEER LONG-DISTANCE RURAL PUBLIC TRANSIT SYSTEMS

One point of comparison in evaluating fare changes is the fares charged by similar transit programs. While YARTS is arguably a unique public transit service, Table 78 presents the fares charged by other public transit services traveling along long routes in rural California areas. The full fares and mileage for a one-way trip are provided, and used to calculate the fare per mile. As shown, this figure averages $0.15 per mile over all peer systems. This figure varies widely, from a low of $0.06 per mile for the Kern Transit service between Bakersfield and Lancaster to a high of $0.24 per mile for Mendocino Transit service between Willits and Santa Rosa, followed by $0.22 for Eastern Sierra Transit Authority service between Reno and Bishop. Overall, this comparison indicates that the current YARTS fares are near the median for the peer systems, but that there is substantial “room” for fare increases without exceeding the higher of the peers.

POTENTIAL FARE INCREASES

While YARTS has recently decided to implement fare increases, given the near-term operating and capital funding shortfalls it may be necessary to consider other fare increases. A discussion of other fare increase options is presented below.

Table 78: Regional Route Fare Structure Peer Analysis

System	Route	Full 1-Way Fare	Miles	$/Mile
ESTA	Bishop - Mammoth	$7.00	41	$0.17
	Lone Pine - Bishop	$7.25	59	$0.12
	Reno - Bishop	$59.00	263	$0.22
	Lancaster - Bishop	$39.00	240	$0.16
Sequoia Shuttle	Visalia - Sequoia NP	$7.50	52	$0.14
Sage Stage	Alturas - Klamath Falls	$18.00	99	$0.18
	Alturas - Reno	$32.00	172	$0.19
	Alturas - Redding	$26.00	143	$0.18
Mendocino Transit	Santa Rosa - Willits	$20.00	82	$0.24
	Willits - Ukiah	$3.00	23	$0.13
	Pt. Arena - Santa Rosa	$8.25	81	$0.10
Kern Transit	Bakersfield - Lancaster	$5.00	87	$0.06
	Frazier Park - Bakersfield	$3.50	46	$0.08
Monterey-Salinas Transit	Monterey - Big Sur	$3.50	59	$0.06
Peer Average				**$0.15**
YARTS	**140 Route**	$13.00	83	$0.16
	120/395 Route	$18.00	121	$0.15
	120 West Route	$13.00	68	$0.19
	41 Route	$15.00	98	$0.15

Discussion of Ridership Response to Fare Increases

Just like with any other consumer choice, the decision of an individual to choose to purchase a transit trip can be impacted by the cost of that decision – the fare. As fares increase, the standard model of microeconomics indicates that the ridership demand would decrease. Transportation planners typically evaluate fare changes through an "elasticity analysis". In simple terms, an elasticity analysis applies an "elasticity factor" to compare the percentage change in ridership resulting from a percentage change in fare. As an example, many studies of the observed change in ridership resulting from an increase in fares indicates that the percentage reduction in ridership is 0.3 times the percentage increase in fares – indicating an elasticity factor of -0.3. This would indicate that a doubling of fares – a 100 percent increase – would result in a 30 percent loss in ridership.

It is important to consider ridership effects in assessing the revenue potential of fare increases, in order to avoid overestimating the revenue increase generated by a fare increase. In the example above, without considering ridership elasticity the future revenue would be expected to be 2.0 times the existing revenue. Considering the loss of ridership, however, the future revenue would be 2.0 X (1-0.3) = 2.0 X 0.7 = 1.4 times the existing revenue. In this instance,

ignoring ridership elasticity would overestimate the increase in revenues resulting from the fare increase by a full 60 percent (2.0 vs. 1.4).

The key issue in the case of a YARTS fare increase is the appropriate elasticity factor to apply to the analysis. Unfortunately, there is little academic research with regards to elasticity of ridership demand for rural recreational public transit programs – particularly those serving a major national park. In the absence of good previous research, it is useful to consider the costs associated with other travel options to/from Yosemite:

- As a premier national park with a worldwide reputation, the desire/demand to visit Yosemite is very high. Moreover, the growth in traffic/parking issues within Yosemite Valley over recent years has increased the attractiveness of transit access during peak times. Put simply, at the busiest times driving to the Park provides a chance that one might visit the Valley while a reservation on YARTS provides a certainty. These factors argue for a lower sensitivity (elasticity factor) of YARTS passengers to fare levels.

- As of June 2018, per vehicle entrance fees to enter the Park were increased from $30 to $35 – a 17 percent increase. (There was no change in costs for entrance by YARTS buses or passengers.) Given the strong demand to visit the park and that the private automobile is the key alternative to YARTS, this would argue that YARTS fares could be increased by 17 percent with essentially no impact on ridership.

- Another travel option is a private charter or tour company. There are a number of private firms offering 1-day tours between the Bay Area and Yosemite (some including Amtrak service to Merced), with rates generally around $170 per person. Discover Yosemite Tours offers daily round-trips from the Oakhurst area, starting at $144 per person for adults. Sierra Shuttle Service will provide a 1-way group trip to Yosemite Valley from Mammoth Lakes for $300. Given these relatively high costs, private tour operations do not impact the demand for YARTS at various fare levels.

- The key travel option for many potential YARTS passengers is to travel by private automobile, either owned by the driver (such as by California residents) or a rental car (such as a visitor from out of the state)[10]. It is therefore worthwhile to compare the cost of a YARTS round-trip to a car round-trip. Table 79 presents an evaluation of auto travel costs to Yosemite from various locations, as well as the size of travel group that would find auto use less expensive than YARTS:

[10] As evidence of the availability of autos as a travel option for YARTS passengers, 74 percent of Route 140 surveyed resident passengers indicate that if YARTS were not available they would have traveled by car along with 54 percent of surveyed visitor passengers. Furthermore, 33 percent of Route 140 riders arrived in the Yosemite Region by car (17 percent by personal car and 16 percent by rental car) and then shifted to YARTS to enter the Park.

Table 79: Comparsion of YARTS Fares with Marginal Auto Costs

Round Trip to Yosemite Valley

	Rental Car Costs (Visitors)		Personal Car Costs (Residents)				
	Fresno	Bay Area	Fresno	Bay Area	Merced	Sonora	Mammoth Lakes
Auto Trip Marginal Costs							
Auto Rental	$80.00	$110.00	--	--	--	--	--
Park Entrance Fee	$35.00	$35.00	$35.00	$35.00	$35.00	$35.00	$35.00
Tolls	$0.00	$6.00	$0.00	$6.00	$0.00	$0.00	$0.00
Fuel	$28.80	$57.60	$28.80	$57.60	$22.46	$21.02	$29.66
Total	$143.80	$208.60	$63.80	$98.60	$57.46	$56.02	$64.66
Cost per Passenger Based on Travel Group Size							
1 Traveler	$143.80	$208.60	$63.80	$98.60	$57.46	$56.02	$64.66
2 Travelers	$71.90	$104.30	$31.90	$49.30	$28.73	$28.01	$32.33
3 Travelers	$47.93	$69.53	$21.27	$32.87	$19.15	$18.67	$21.55
4 Travelers	$35.95	$52.15	$15.95	$24.65	$14.37	$14.01	$16.17
Current YARTS/Amtrak Full Round-Trip Fare							
	$30.00	$74.00	$30.00	$74.00	$25.00	$25.00	$36.00
Auto is Less Expensive For:	*5 or More*	*3 or More*	*3 or More*	*2 or More*	*3 or More*	*3 or More*	*2 or More*
YARTS/Amtrak Full Round-Trip Fare Assuming 20% Fare Increase							
	$36.00	$79.00	$36.00	$79.00	$30.00	$30.00	$43.00
Auto is Less Expensive For:	*4 or More*	*3 or More*	*2 or More*	*2 or More*	*2 or More*	*2 or More*	*2 or More*
Does Fare Increase Change Cost Balance?	***Yes***	*No*	***Yes***	*`No*	***Yes***	***Yes***	*`No*

Note: Rental car costs assume 1 day rental of mid-sized car from national chain with pickup the evening prior. All costs assume 25 mpg and average gas cost of $3.60 per gallon.

- For rental car costs, a one-day mid-sized car rental (with pick up the evening prior to the trip) was assumed, for visitors flying into the Bay Area or Fresno. Fuel, park entrance fee and toll costs were also included.

- For private auto use, only the marginal costs (fuel, entrance fees and tolls) were included, as travelers typically do not consider depreciation into their travel mode decision-making.

- The cost per traveler is calculated by dividing the total auto travel costs by the assumed number of travelers.

- The auto travel cost per person is then compared with the YARTS fare (or in the case of the Bay Area the YARTS plus Amtrak fare), to identify the number of persons at the travel group that would result in a lower cost for auto versus YARTS travel.

For the existing YARTS fares, renting a car is only less expensive for travel groups from Fresno of 5 or more, and travel groups from the Bay Area of 3 or more. For travelers with a personal car available, auto travel is less expensive than YARTS for groups of 3 or more from Fresno, Merced and Sonora, while groups of two travelers by auto would incur a lower marginal cost than using YARTS/Amtrak from the Bay Area and Mammoth Lakes.

Assuming a 20 percent increase in YARTS fares, the minimum size of travel group that would find auto travel less expensive than travel by YARTS would change as follows:

- A travel group of four flying into Fresno would find renting a car less expensive than YARTS (while YARTS would be less expensive at current fares).

- A travel group of two (such as a couple) with a private vehicle available would find auto travel less expensive from Fresno, Merced and Sonora.

In evaluating these results, it is important to note that the largest proportion of YARTS visitor passengers are traveling in a group of two on Route 140 (43 percent) and on Route 120 West (58 percent). (There were not sufficient survey responses on the other routes to draw meaningful conclusions.) This increases the potential that shifting the cost balance from YARTS to auto travel from Merced, Sonora and Fresno for two-person travel groups could result in a loss of ridership on YARTS.

On balance, the sensitivity of YARTS riders to fare increases can be considered to be relatively low compared with typical urban or rural-non-recreational riders … but it is not zero. The recent entrance fee increase of $5 per vehicle should also be considered. As shown in Table 79, a typical auto trip to Yosemite incurs a marginal cost on the order of $100, which indicates that the entrance fee increase equates to roughly a 5 percent increase in auto travel cost. Based on the overall discussion, it is recommended that the first 5 percent of a fare increase be calculated not to incur a reduction in ridership, while any increase in fare level over 5 percent should be calculated to incur an elasticity value of -0.25.

Impacts of Increased Fare Options

Using the recommended elasticity factor and existing ridership data, we can forecast the impact of a wide range of fare options on both ridership and farebox revenue generation. This was done for four options (developed by YARTS staff, as presented previously to the Board and AAC), as well as a fifth option developed by the Consultant.

Table 80 presents the annual forecasts by route for Option A, assuming no fare increase. Based on recent trends, a baseline growth in ridership of 3 percent per year is assumed. Compounded over seven years, this indicates a growth in ridership of 21 percent by 2025.

Table 80: Ridership and Revenue Analysis: Option A -- No Fare Increase

- Does Not Apply to Route 41

	140 Route	120/395 Route	120 West Route	Total
Estimated 2018 Ridership				
	58,300	12,500	12,000	82,800
Estimated Existing Average Full Fare				
	$7.72	$16.15	$8.62	
Annual Ridership				
2019	61,800	13,300	12,800	87,900
2020	63,700	13,700	13,200	90,600
2021	65,600	14,100	13,600	93,300
2022	67,600	14,500	14,000	96,100
2023	69,600	14,900	14,400	98,900
2024	71,700	15,300	14,800	101,800
2025	73,900	15,800	15,200	104,900
Annual Additional Fare Revenues (Over 2018 at Current Fares)				
2019	$13,900	$6,500	$3,400	$23,800
2020	$28,600	$12,900	$6,900	$48,400
2021	$43,200	$19,400	$10,300	$72,900
2022	$58,700	$25,800	$13,800	$98,300
2023	$74,100	$32,300	$17,200	$123,600
2024	$90,300	$38,800	$20,700	$149,800
2025	$107,300	$46,800	$24,100	$178,200

Note: All figures assume 3 percent background growth in ridership

An important factor with regards to the revenue generation potential of future ridership growth is that not all full-fare (and non-Amtrak) passengers travel the full length of the various routes (and thus pay the highest potential fare). As an example, the passenger surveys summarized in Appendix B indicate that fully 83 percent of the passengers on the 120 West Route board in the Groveland/Yosemite Pines/Yosemite Lakes area, and thus pay an $8 one-way fare rather than the $13 one-way fare from Sonora. Similarly, approximately 75 percent of the full-fare passengers on the 140 Route (excluding Amtrak passengers) travel from the Midpines-El Portal area. Considering the shift in Route 120/395 service (two full round-trips between Mammoth Lakes and Yosemite Valley rather than one full round-trip and other runs

Table 81: Ridership and Revenue Analysis: Option B -- 30% Increase in 2019 and 10% Annual Increase 2020 Through 2023

- Does Not Apply to Route 41

- Does not Apply to NPS or Aramark employees, commuters, seniors, disabled or Veterans

- Does not apply to Amtrak passengers on Route 140

	140 Route	120/395 Route	120 West Route	Total	Change from Option A #	Change from Option A %
Annual Ridership						
2019	59,100	12,700	12,200	84,000	-3,900	-4%
2020	60,000	12,900	12,400	85,300	-5,300	-6%
2021	60,900	13,100	12,600	86,600	-6,700	-7%
2022	61,900	13,300	12,800	88,000	-8,100	-8%
2023	63,000	13,500	13,000	89,500	-9,400	-10%
2024	64,900	13,800	13,400	92,100	-9,700	-10%
2025	66,900	14,300	13,800	95,000	-9,900	-9%
Annual Additional Fare Revenues (Over 2018 at Current Fares)					Funds Generated for	
2019	$136,800	$29,400	$28,200	$194,400	$0	
2020	$185,200	$39,800	$38,300	$263,300	$16,500	
2021	$235,000	$50,600	$48,600	$334,200	$130,100	
2022	$286,600	$61,600	$59,300	$407,500	$317,000	
2023	$340,400	$72,900	$70,200	$483,500	$579,900	
2024	$350,600	$74,600	$72,400	$497,600	$856,900	
2025	$361,400	$77,300	$74,600	$513,300	$1,149,600	

Note: All figures assume 3 percent background growth in ridership

only between Mammoth Lakes and Tuolumne Meadows), it is estimated that in the future 20 percent of riders on this route will pay the lower fares. Considering these trip patterns, the average fare per full-fare passenger shown in Table 81 were estimated. Multiplying by the increase in ridership from 2018 estimated ridership yields the additional fare revenues shown in the bottom portion of Table 81. As indicated, this increase, due solely to background ridership increases, will start out at $23,900, climbing to $178,900 by 2025.

Analyses including the evaluation of ridership (based on an elasticity analysis) and fare revenue generation for the other three previously-presented fare alternatives are shown in Tables 82 through 84. These analyses indicate the following:

- **Option B** consists of a 30 percent fare increase in 2019 followed by 10 percent increases each year from 2020 to 2023. This would result in a relatively modest 4 percent decrease in ridership (from 2018 levels) in 2019, rising to a 10 percent decline by 2024. The increase in farebox revenues would be $194,400 in 2019, rising to $513,300 in 2025.

- **Option C** would implement the same 30 percent increase in 2019, and then 10 percent increases every other year. This yields the same results in 2019 as under Option B. By 2025 the ridership loss would be 8 percent while the revenue increase would be $445,000.

Table 82: Ridership and Revenue Analysis: Option C -- 30% Increase in 2019 and 10% Increase in 2020, 2022, 2024

- Does Not Apply to Route 41
- Does not Apply to NPS or Aramark employees, commuters, seniors, disabled or Veterans
- Does not apply to Amtrak passengers on Route 140

	140 Route	120/395 Route	120 West Route	Total	Change from Option A #	Change from Option A %
Annual Ridership						
2019	59,100	12,700	12,200	84,000	-3,900	-4%
2020	60,000	12,900	12,400	85,300	-5,300	-6%
2021	61,800	13,300	12,800	87,900	-5,400	-6%
2022	62,800	13,500	13,000	89,300	-6,800	-7%
2023	64,600	13,800	13,400	91,800	-7,100	-7%
2024	65,700	14,000	13,600	93,300	-8,500	-8%
2025	67,700	14,500	13,900	96,100	-8,800	-8%
Annual Additional Fare Revenues (Over 2018 at Current Fares)					Funds Generated for Vehicle Replacement	
2019	$136,800	$29,400	$28,200	$194,400	$0	
2020	$185,200	$39,800	$38,300	$263,300	$16,500	
2021	$190,800	$41,100	$39,500	$271,400	$67,300	
2022	$242,300	$52,100	$50,200	$344,600	$191,300	
2023	$249,300	$53,300	$51,700	$354,300	$325,000	
2024	$304,200	$64,800	$63,000	$432,000	$536,400	
2025	$313,500	$67,100	$64,400	$445,000	$760,800	

Note: All figures assume 3 percent background growth in ridership

- **Option D** is a more aggressive strategy, with 50 percent increase in 2019 and a second 50 percent increase in 2023. This would result in a 7 percent reduction in ridership in 2019, rising to 13 percent by 2024. Revenue generation would start off at $314,900 in 2019, rising to $708,400 in 2025.

The annual funds generated for vehicle replacement (over and above the funds needed to address the increase in operating costs) is shown in the lower right portion of each of these tables. As indicated, none of these options would generate the $1,140,000 needed by 2023 to fund the key need to replace vehicles (though Option D comes closest).

Table 83: Ridership and Revenue Analysis: Option D -- 50% Increase in 2019 and 50% Increase in 2023

- Does Not Apply to Route 41
- Does not Apply to NPS or Aramark employees, commuters, seniors, disabled or Veterans
- Does not apply to Amtrak passengers on Route 140

	140 Route	120/395 Route	120 West Route	Total	Change from Option A #	Change from Option A %
Annual Ridership						
2019	57,400	12,300	11,900	81,600	-6,300	-7%
2020	59,100	12,700	12,300	84,100	-6,500	-7%
2021	60,900	13,100	12,600	86,600	-6,700	-7%
2022	61,900	13,300	12,800	88,000	-8,100	-8%
2023	60,900	13,000	12,600	86,500	-12,400	-13%
2024	62,700	13,400	12,900	89,000	-12,800	-13%
2025	64,700	13,800	13,300	91,800	-13,100	-12%
Annual Additional Fare Revenues (Over 2018 at Current Fares)					Funds Generated for Vehicle Replacement	
2019	$221,500	$47,500	$45,900	$314,900	$0	
2020	$228,100	$49,000	$47,500	$324,600	$198,300	
2021	$235,000	$50,600	$48,600	$334,200	$311,900	
2022	$286,600	$61,600	$59,300	$407,500	$498,800	
2023	$470,000	$100,300	$97,200	$667,500	$945,700	
2024	$483,900	$103,400	$99,600	$686,900	$1,412,000	
2025	$499,300	$106,500	$102,600	$708,400	$1,899,800	

Note: All figures assume 3 percent background growth in ridership

Table 84: Ridership and Revenue Analysis: Option E -- 30% Increases in 2019 and 2020 and 10% Increase in 2021

- Does Not Apply to Route 41

- Does not Apply to NPS or Aramark employees, commuters, seniors, disabled or Veterans

- Does not apply to Amtrak passengers on Route 140

	140 Route	120/395 Route	120 West Route	Total	Change from Option A #	Change from Option A %
Annual Ridership						
2019	59,100	12,700	12,200	84,000	-3,900	-4%
2020	58,400	12,600	12,100	83,100	-7,500	-8%
2021	59,000	12,700	12,200	83,900	-9,400	-10%
2022	59,800	12,800	12,400	85,000	-11,100	-12%
2023	61,500	13,200	12,700	87,400	-11,500	-12%
2024	63,400	13,500	13,100	90,000	-11,800	-12%
2025	65,300	14,000	13,400	92,700	-12,200	-12%
Annual Additional Fare Revenues (Over 2018 at Current Fares)					Funds Generated for Vehicle Replacement	
2019	$136,800	$29,400	$28,200	$194,400	$0	
2020	$270,400	$58,300	$56,000	$384,700	$137,900	
2021	$341,500	$73,500	$70,600	$485,600	$402,900	
2022	$415,400	$88,900	$86,100	$590,400	$772,700	
2023	$427,200	$91,700	$88,200	$607,100	$1,159,200	
2024	$440,400	$93,800	$91,000	$625,200	$1,563,800	
2025	$453,600	$97,200	$93,100	$643,900	$1,987,100	

Note: All figures assume 3 percent background growth in ridership

Conclusions

With respect to ridership, this analysis indicates that significant increases in farebox revenues can be generated without creating a large reduction in ridership. Regarding revenue generation, the resulting figures can be compared to the revenue needs as discussed above. The additional $441,600 per year identified above is not achieved until 2023 under Option B, 2024 under Option C and 2023 under Option D. This argues for a more aggressive series of fare increases in the next few years.

On the other hand, in reality it is not possible to exactly know the impacts of a substantial fare increase on the variety of fares and trip types on the YARTS service. This argues for a more cautious strategy, including a first increase followed by a detailed review of the impacts. Finally, in general transit systems find that a gradual series of fare increases have a smaller impact on ridership patterns than larger but less frequent increases. This argues for a series of ongoing annual increases.

Based on these considerations, and assuming no other increases in revenues are available, the following schedule of fare increases was developed:

- A 30 percent fare increase in 2019, followed by a review of ridership and revenue impacts (in the fall of 2019)
- A 30 percent fare increase in 2020 (assuming no changes based upon the review)
- A 15 percent fare increase in 2021
- A 15 percent fare increase in 2022

The ridership and revenue impacts of this scenario are shown in Table 85. This is the minimum overall fare increase that can address both the increase in operating costs as well as generating the $1,140,000 in local capital funding needed by 2023.

As an aside, YARTS could also consider changing from the current policy of setting fares along a specific route based upon the mileage between boarding and alighting points. A large proportion of ridership on the 140 Route, 120 West Route and 41 Route boards in the communities just outside the park, rather than at the end points. While on the one hand it seems equitable to have fares proportionate to the miles travelled, in reality YARTS must incur the full cost of providing service from the start of the route (either directly as in-service hours or indirectly as deadhead time that is reflected in the overall contractor costs) in order to serve short trips from the immediate gateway communities into the park. Increasing the fares for shorter trips would allow the overall revenue generation goal to be met while reducing the scope of fare increases for the longer trips.

FARE REDUCTION OPTIONS

Despite the expected shortfall in YARTS revenues, a major benefit of YARTS service is the ability to reduce vehicle traffic into and out of the Park. Reduced fare and zero fare scenarios are being presented in order to evaluate the potential ridership benefits of lower fares, with an assumption that additional funding sources would be available.

Table 85: Summary of Impacts of Fare Reduction or Elimination

	Increase in Ridership	Change in Fare Revenue	Required Additional Daily Round Trips	Required Additional Buses	Additional Operating Cost	Increase in Operating Subsidy	Consistent With Standard: Subsidy per Passenger
Elimination of Fares							
140 Route	39,900	-$678,100	1 Offpeak, 2 Peak	2	$373,200	$1,051,300	$26.35
120/395 Route	3,300	-$40,600	1	1	$88,400	$129,000	$39.09
120 West Route	8,100	-$125,700	1	1	$68,400	$194,100	$23.96
41 Route	7,500	-$64,800	0	0	$0	$64,800	$8.64
Total YARTS	58,800	-$909,200	2	4	$530,000	$1,439,200	$24.48
Percent Change	50%	-100%				54%	
Reduce Fares by 50%							
140 Route	15,100	-$274,900	0	0	$0	$274,900	$18.21
120/395 Route	1,200	-$16,600	0	0	$0	$16,600	$13.83
120 West Route	3,100	-$50,800	0	0	$0	$50,800	$16.39
41 Route	2,800	-$26,300	0	0	$0	$26,300	$9.39
Total YARTS	22,200	-$368,600	0	0	$0	$368,600	$16.60
Percent Change	19%	-41%				14%	

Free Fares

Under this scenario, YARTS services would be provided at no fare, assuming that other (currently undefined) sources could replace the loss of existing revenues, as well as funding any additional service needed to accommodate the increase in ridership while maintaining service quality. Transit services that have shifted from fare systems to free-fare have generally seen ridership increases on the order of 40 to 50 percent:

- The Corvallis Transit System in Oregon saw a 38 percent increase in ridership in the first year after the elimination of fares in 2011.
- The Mountainline system in Missoula, Montana eliminated fares in January 2015, which generated a 43 percent increase in ridership over the first year.
- Glenwood Springs, Colorado saw a 125 percent increase in ridership after a few months.
- Asheville, North Carolina conducted a demonstration three-month fare-free program in 2006 that resulted in a 58 percent increase in ridership.

In addition, the downtown shuttle system in Santa Barbara imposed a 25-cent fare on their previously-fare-free system in the late 1990's, which resulted in a 45 percent loss in ridership.

Given the convenience of free-fare service and the benefit of free park entrance, a 50 percent ridership increase is reasonable to expect if fares were eliminated on YARTS. As shown in Table 85, this is equal to an additional 63,600 YARTS boardings per year.

Some existing YARTS runs do not have adequate available capacity to accommodate a 50 percent ridership increase. It is therefore important to identify the level of service increase that would be needed to serve the additional ridership, while still avoiding vehicle overloading or unserved passengers that are inconsistent with YARTS standards. To assess this factor, the following analyses were conducted:

- The day-to-day variation in ridership on the individual routes was reviewed. This reflects substantial swings in ridership, with peak (non-free-fare) days typically reaching 25 to 30 percent over average ridership. This indicates that an individual run with average monthly passenger loads exceeding 75 percent would generate a significant number of specific days where passenger loads would exceed 100 percent.

- Existing passenger loads by run were reviewed for various months of the year. Due to the impacts of the recent fires on 2015 ridership, summer analysis focused on 2014 data.

This analysis indicates that two additional daily round-trips would be required during the peak season on Route 140 (specifically to address overcrowding on Runs 5, 8 and 9) and one daily round-trip during the non-peak seasons (to address overcrowding on Run 9), if fares are eliminated. One additional daily round-trip would also be needed on the 120 West Route as well as on the 120/395 Route. Due to lower passenger loads, no additional service would be required on the 41 Route. The operating costs of these additional services are also shown in Table 85, and would require $551,700 in additional funding.

Including the loss of existing fare revenues, eliminating fares would require $1,460,900 in additional operating subsidy per year. This is equal to a 55 percent increase in operating subsidy funding. It would also require four additional buses in the YARTS fleet to operate the additional runs.

As shown in the right-most column of Table 85, for YARTS as a whole $22.97 in additional subsidy would be required for every new passenger generated by fare elimination. However, this figure varies significantly between the various routes. Specifically, only $8.64 would be required per new passenger on the 41 Route (as no additional service would be required to serve the ridership increase). At the opposite extreme, $39.09 would be required to serve the new ridership on the 120/395 Route. Using the YARTS standard of no more than $20 in subsidy per passenger-trip, eliminating fares on Route 41 would be consistent with the standard but free fares on the other routes would not be.

Reduce Fares by 50 Percent

Another, less impactful, option would be a substantial reduction in fares. As an example, the impacts of a 50 percent across-the-board fare reduction was evaluated. This would result in a

one-way full-length non-discounted fare of $6.50 on the 140 and 120 West Routes, $9.00 on the 120/395 Route, and $7.50 on the 41 Route.

The ridership impact of this fare change can be evaluated using elasticity analysis. As shown in the bottom portion of Table 85, this would increase overall ridership by an estimated 24,000 passenger boardings per year (19 percent). Considering both the additional ridership and the loss of existing fare revenues, the overall reduction in fare revenues would be a drop of $368,700.

A review of current passenger loads indicate that the 19 percent increase in ridership could be accommodated within the existing number of runs, avoiding the need for additional runs to provide capacity. The total impact on subsidy requirements would therefore be $368,700 (or a 14 percent increase over currently operating subsidy needs). Dividing by the passenger increase, the overall subsidy per new passenger-trip would be $15.36. This would range from a low of $9.39 on Route 41 to $16.39 on 120 West Route. Fare reductions on all routes would be consistent with the $20 maximum subsidy per passenger-trip standard.

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Chapter 11
Institutional Alternatives

Expanding the Joint Powers Authority to Include Tuolumne County

Full Voting Membership by Tuolumne County in YARTS

Since its initiation as a pilot project in 2012, the Route 120 West service to Sonora has become well-established, and now generates 13 percent of all YARTS ridership. While Tuolumne County benefits from the YARTS 120 West Route service, all of the operating costs are currently covered by NPS funding. Tuolumne County is not currently a voting member of the YARTS Board. Instead, Tuolumne County has a non-voting seat on the Board, as well as one representative on the Authority Advisory Committee. Particularly if services are expanded in Tuolumne County, full participation in YARTS by Tuolumne County would be appropriate and provide a greater say in the future of the overall system.

The Joint Powers Agreement (JPA) that forms the institutional basis for YARTS is a document signed by the Counties of Mariposa, Merced and Mono, dated September 21, 1999. The JPA allows for the addition of new voting members, as specified in Section 3.F:

> *"Addition of Voting Members. Voting members may be added to the Authority, subsequent to the establishment of the Authority, based on majority vote of the membership and an agreement to abide by the requirements of this Agreement, including participation in funding the administrative costs of the Authority and any other conditions that may be required by the Board."*

The JPA identifies that the member counties will strive to obtain "outside" funding, as stated in the recitals:

> *"WHEREAS, it is the expectation and hope of the Parties to this JPA that the administrative costs of operating the Yosemite Area Regional Transportation System Authority, a public agency created by this JPA, can be defrayed by utilizing Federal, State and other grant funds and that funding for administrative costs shall be sought from Parties to this JPA only as a last resort"*

In reality, this hope has largely been borne out, with local funds (specifically, Local Transportation Funds (LTF)) comprising only 18 percent of the total YARTS revenues. However, the existing JPA members currently contribute the following local funds:

Merced County	$300,000 (57.1 percent of local funding)
Mariposa County	$190,000 (36.2 percent of local funding)

Mono County	$ 35,000 (6.7 percent of local funding)
Total	$525,000

No local funds currently come from Tuolumne County. Notably, the JPA agreement does not specify how local funding requirements should be determined. Instead, these funding levels have evolved over time based on available funding. As a full voting member, it would be appropriate for Tuolumne County to also contribute a "fair share" towards the local operating subsidy.

In considering a fair share funding level from Tuolumne County, it is appropriate to focus on the relative proportion of total YARTS service by corridor (excluding the 41 Route). In particular, it is useful to focus on the annual revenue vehicle-hours of service operated in each corridor, as the operating costs (per the operator contract) are based on a per-revenue-vehicle-hour rate. Table 86 presents the proportion of existing local operating funding provided by corridor (combining the Merced and Mariposa funding into the 140 Route corridor), as well as the proportion of revenue vehicle-hours of service. As shown, the proportion of local funds and proportion of vehicle-hours between the 140 Route and the 120/395 Route are close to even, indicating a reasonably equitable split in the existing funding responsibilities. Overall, the existing JPA local jurisdictions invest $34.12 in local funds per vehicle-hour of service.

Table 86: Evaluation of Local Funding Requirement for Tuolumne County Full Participation in YARTS JPA

Corridor	County	Existing Local Funding $	Existing Local Funding %	Existing Annual Vehicle-Hours of Service #	Existing Annual Vehicle-Hours of Service %	Local Funding per Vehicle-Hour
140	Merced County	$300,000	57.1%	14,286	92.8%	$34.30
	Mariposa County	$190,000	36.2%			
	Subtotal	$490,000	93.3%			
120/395	Mono County	$35,000	6.7%	1,101	7.2%	$31.78
Total		$525,000	100.0%	15,387	100.0%	$34.12

120 West Tuolumne County Local Funding = $34.12 per vehicle-hour X
X 2,006 revenue vehicle-hours per year
$68,400 per year

This figure can then be multiplied by the annual vehicle-hours per year serving Tuolumne County (on the 120 West Route) of 2,006 to yield a fair-share local transit funding figure of $68,400 per year. Given the overall need for additional subsidy funding (particularly driven by the need for local match funding for vehicle replacement), these additional funds would

optimally be used to increase total funding, instead of allowing a reduction in LTF funding by the existing three JPA counties.

In sum, Tuolumne County could become a full voting member of the YARTS JPA. This would benefit Tuolumne County by providing a greater say in YARTS decision-making. It would also benefit the existing JPA members by broadening and expanding the financial basis for YARTS and providing a greater regional "voice" for federal and state funding opportunities. A reasonable level of financial participation by Tuolumne County would be $68,400 per year in local funding.

Establish a Time Limit on Demonstration Programs

As evidenced by the 120 West Route and 41 Route, YARTS has a long history of taking on new services on a demonstration basis, so long as they come along with adequate funding to cover the marginal cost of provision of service. This is commendable, as it helps to grow a regional transit solution to the region-wide access and traffic issues. Over time, this has allowed YARTS to expand its presence and associated marketing presence. Providing services that are in line with overall YARTS mission and goals on a demonstration basis should continue.

Long-term provision of demonstration programs, however, does not address other costs. Approximately 20 percent of all YARTS costs are for administration and management, not covered by marginal cost funding. It is therefore appropriate to limit the length of time that projects may be funded on a marginal, demonstration basis. Given that ridership on new transit systems typically requires up to three years to stabilize and reach full potential, setting a time limit of three years on demonstration projects (absent further commitments to fund a portion of administrative/management costs) is recommended. This time limit could be applied by the YARTS Board or other funding partners in considering funding agreements for programs extending beyond the three-year demonstration period.

Support the Role of the Authority Advisory Committee

The Authority Advisory Committee (AAC) is an important institutional resource to the overall YARTS program. The AAC members provide a good knowledge base regarding the private and public perspectives throughout the extensive YARTS service area. This is particularly important given the close interaction between the tourism/lodging sector in the Yosemite Region and the transit program. In addition, the many "hats" worn by the JPA Board members mean that they sometimes do not have the time necessary to keep up on YARTS issues – the AAC members can often devote more time to YARTS and serve as good resources to their respective Board members.

A review of the agenda and minutes over the last several years, along with discussions held with the consultant, indicates that the YARTS staff is doing a good job of providing the AAC with timely information regarding plans and proposals. There is, however, limited interaction

between the AAC and the Board. As a result, AAC discussions and recommendations are sometimes not provided as input to the Board in a timely fashion. As part of the JPA Board packet items, the recommendations of the AAC should be included as background information for each item. Board members are encouraged to consult with the AAC members in their jurisdiction and to rely on the AAC as a key input into Board decision-making.

Improve Format for Contractor's Monthly Report

The YARTS contractor (currently VIA) is required to submit a monthly statistical report on data, including ridership by fare type, Amtrak passengers, wheelchair users, missed trips, hour and miles of service, etcetera. The reports were reviewed by the Consultant, and changes are recommended. An example of an improved format is included as Appendix C of this SRTP. The improvements include:

- A one page summary with a brief overview of operations for the month. This summary includes a brief narrative of ridership, operations, and issues (or lack of issues), followed by a two-part table. The top table provides ridership by route by month, along with a comparison of the ridership-to-date in the previous year. The lower table shows the month's revenue hours and miles by route. This one-page format can be provided to board members or others who may be less interested in the detailed information provided to MCAG in the subsequent pages. It is intended to be included with the detailed data report, or as a stand-alone summary.

- The detailed data is organized by route, and each table is very clearly labeled. Current reports submitted by the Contractor are only labeled on the first page of multiple pages for each route (and are often mislabeled in the 2018 reports) making it difficult to find or reference data.

- Data with similar descriptors (such as run number, start and end location, date, etc.) are combined into singular tables, thereby reducing the number of tables for each route. This reduced the number of tables for the June 2018 report to 19 (from 76) and the number of pages to 18 (from 81). This makes the report much easier to read and makes it easier to find specific data.

- A footer identifying the report as a "VIA Monthly YARTS Report" along with the current month and year, and a page number are included on all pages, making it easier to reference the report.

The recommended format is provided in Appendix C, and the formatted tables will be provided to YARTS in Excel to implement the changes.

Chapter 12

Marketing Strategies

INTRODUCTION

Well-developed marketing and communication strategies are essential to the success of YARTS, but they are complicated as well. YARTS' stakeholders encompass park visitors, gateway residents and business owners, NPS employees and concessionaire personnel, international travelers, regional travelers, campers, hikers, backpackers, sightseers, and more. All have different backgrounds and varied interests in transit, but all are interested in Yosemite National Park.

This chapter reviews the historical marketing efforts to gain a sense of what has been done in the past, and identifies "Strengths-Weakness-Opportunities-Threats" (SWOT) so that marketing challenges and opportunities can be better understood. Next, the existing YARTS goals and objectives are reviewed in the context of marketing, and specific marketing goals are identified.

Marketing strategies presented in this Working Paper are presented for the overall YARTS program, and also by each unique travel corridor as each have separate, though often overlapping, marketing challenges and opportunities.

Finally, a Community Outreach Plan is included to establish regular means of communication and outreach which will continually strengthen YARTS as a community asset.

OVERVIEW OF HISTORICAL MARKETING EFFORTS

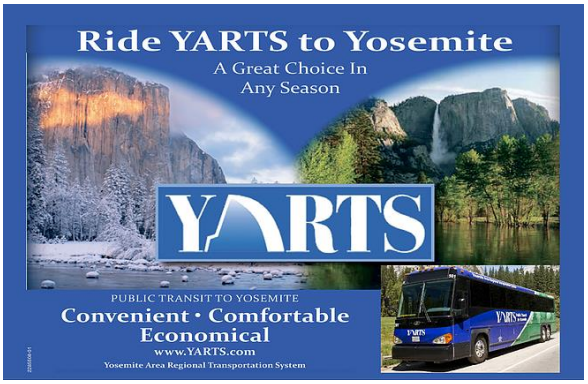
The historical marketing efforts of the Yosemite Area Regional Transportation System (YARTS) can be described in the following primary categories:

- Advertising
- Printed Collateral
- Digital Collateral
- Word-of-Mouth
- Partnerships

Despite having limited resources and funding set aside for marketing efforts, the team at YARTS has invested in and earned a great deal of brand recognition and presence in the Yosemite market and with national and international travel and tourism groups. While there is certainly room for improvement (including strategies that will be discussed in this working paper) YARTS has indeed come a long way from its inaugural branding and market penetration efforts when the agency was initially formed. The following paragraphs describe the historical efforts in each of these primary categories.

Advertising

YARTS has included print advertising in its marketing plans each year since inception, with some occasional radio and television advertisements. The print publications include the vacation and visitor planning guides for the Gateway Communities' tourism boards, Visit California's annual vacation planners, and several of the Gateway Communities' local brochures and tabloid publications.



Printed Collateral

YARTS designs, publishes and distributes its own promotional brochures and route guides/timetables. The brochures are professionally printed and intended to have a longer shelf-life than the route guides/timetables that can be printed on-demand and updated annually. YARTS printed pieces are designed at standard brochure sizes to encourage inclusion in hotel, lodging, restaurant, and tourist attraction brochure racks around the Yosemite Region. YARTS brochures have been observed in hotel lobbies in California displayed alongside other tourism brochures, but local entities (such as the Mariposa Chamber) have cited a lack of readily available printed materials.

In 2018, YARTS invested in a high-impact "video brochure" which is a printed piece that includes an embedded video screen that plays a loop of the YARTS promotional video when the brochure is opened. These pieces have a high per-unit cost, so the number produced was limited to 250 to maintain budget control, and distribution has been selective (i.e., key Yosemite area visitor locations, gateway community tourism bureaus, etc.).

Digital Collateral

The primary digital marketing tool for YARTS is the www.YARTS.com website. The website includes interactive route maps, and the ability to pre-purchase YARTS tickets. The website also includes the ability to use Google Translate to convert the text contents on the site to one of dozens of popular languages, an important feature given the increasing number of visitors who do not speak English as their primary language.

A growing digital marketing tool for YARTS has been the use of cost-effective social media, especially Facebook and Twitter. YARTS has earned a loyal following on both social media platforms (nearly 6,500 followers on Facebook and nearly 1,600 followers on Twitter), utilizing both to disseminate information and market the service, but relying more heavily on Twitter for real-time, up-to-the-minute news and alerts about anything that might be affecting the service.

Despite the quick accumulation of the respective social media followings, YARTS has employed little "boosting" of posts to ensure that followers see the agency's posts or, more importantly, to target individuals who might have a propensity to consider riding YARTS based on geo-targeting and demographic information available under these social media platforms.

YARTS staff have expressed a desire to rely more and more on digital media over the more traditional printed collateral, advertising, and mass media.

Word-of-Mouth

YARTS relies very heavily on earned market exposure based on positive word-of-mouth and sharing of stories among the communities that frequently use YARTS or would consider using YARTS. As a service intended to enhance the Yosemite experience for visitors or to make commuting to and from employment within the service area more cost-effective and convenient, positive referrals are critical to growth and success.

YARTS has supported these efforts in the past be supplying printed collateral, flyers/posters, and "tool-kits" to hotels, RV parks, campgrounds, hostels, restaurants, and other key attractions across the Yosemite Region.

Word-of-mouth also relies on the tourism boards of the various Gateway Communities including YARTS in their recommendations to visitors considering vacationing in and around the Region. Each of these boards is very supportive of YARTS and "spreads the word" at every opportunity.

YARTS also relies on the employers served by the routes, particularly the NPS and the concessionaire (Aramark), to promote use of the service among its employees.

Partnerships

YARTS has increasingly entered into marketing partnerships to jointly promote the YARTS service with other products or services. For example, YARTS has been partnering with the Quaker Oats Company to distribute new flavors of Quaker products (such as granola bars) to YARTS passengers as an added benefit for taking YARTS to YNP.

In addition, Alaska Airlines has offered its passengers flying into regional airports the opportunity to use their boarding passes as YARTS passes to coordinate the complete trip to YNP under one ticket. United Airlines is planning to conduct a similar program with YARTS in 2019.

One of the most effective partnerships for YARTS has been the free fare days to correspond with the National Park Service's free park entrance days (typically held on national holidays). Ridership demand on these days has been predictably quite high, with completely full coaches on a number of occasions. This partnership has been especially effective at introducing new riders to the YARTS service.

STRENGTH, WEAKNESS, OPPORTUNITY, THREAT (SWOT) ANALYSIS

In order to prepare the YARTS Marketing Plan and develop effective marketing strategies, it is necessary to first prepare a thorough assessment of the current conditions, documenting the strengths and weaknesses of YARTS, identifying the opportunities for YARTS' growth and success, as well as any threats that might result in additional challenges or even obstacles. This assessment is commonly referred to as a SWOT analysis.

Strengths

The following list includes descriptions of the current strengths of YARTS as observed by the consultant team:

- The organization has experienced steady growth since the inception of the service, both in the number of routes and overall passengers. The brand is recognizable amongst the regional media, local residents, and stakeholders in the success of YARTS.
- Customer referrals rates remain very high, in fact, as high as 99 percent of passengers would recommend YARTS according to recent surveys.[11]
- The YARTS buses themselves are excellent representations for the service, as moving "billboards" promoting the service. The brand is well incorporated, the bus graphic designs are attractive and blend in well with the Yosemite Region.

[11] YARTS passengers were surveyed on Route 140 in April, 2018; on Routes 41 and 120 West in May, 2018; and on Route 120/395 in June, 2018.

- The use of color coding for the individual routes (on the website and brochures, but not yet on bus destination signs) is an effective way to quickly identify which route a visitor or passenger is researching.
- Stakeholder support for the service continues to grow, even outside the member organizations. The Gateway Communities continue to promote the service in all of their marketing materials, including YARTS information whenever feasible and recommending use of the system to visitors, employees, and residents alike.
- The YARTS website (www.YARTS.com) has served as an effective and functional marketing tool, including the ability to use Google Translate for the online information to appeal to visitors who do not speak English, especially those seeking information from foreign countries.
- YARTS recently implemented the ability to pre-purchase tickets for service online, which has been received very favorably by passengers (both domestic and international), tourism boards, and other stakeholders. This also enhances data tracking to better target potential passengers.
- The recent free-fare promotional days on YARTS (to coincide primarily with NPS free entry dates on national holidays) have been very successful and popular with regional visitors to YNP. These promotional events have exposed a large number of passengers to the features and benefits of taking YARTS.
- YARTS has a solid base of social media followers on both Facebook and Twitter.

Weaknesses

Below are the observed weaknesses of YARTS at the time of the study:

- YARTS has a bit of an identity crisis, in that it functions much like a private/retail charter shuttle service (and is even perceived as being such by many who seek its services) but it is established, funded, and governed as a public transit agency. This results in confusion and additional hurdles to overcome, particularly regarding customer service expectations.
- Marketing collateral, including both printed materials and digital media, are perceived as being dated and not “on par” with those used by the Gateway Communities and their tourism partners. Much of this is due to the limited resources of a publicly funded transit agency.
- As YARTS has grown and expanded its service, the dissemination and promotion of its services has not been as effective as it could be in all areas. The agency relies heavily on the success of “word-of-mouth” and grassroots support for the promotion of its services. As a result, the marketing of the YARTS service tends toward more “passive” communication methods.
- YARTS also relies very heavily on its Gateway Community partners to “spread the word” about YARTS, and these partners willingly do so; however, their highest priorities are with their own individual missions, so the marketing and promotion of YARTS can take a backseat to the overall messaging of the individual community.

- With the growth in interest in YNP from foreign travel markets, it is a weakness that YARTS does not have more marketing materials targeted for and produced in multiple languages, especially Spanish, German, French, and Mandarin.
- During peak seasons/periods, there are circumstances where passengers must be left behind or forced to wait for the next available YARTS bus due to high demand. This can quickly give the transit system a negative reputation if not remedied.
- There are some timing issues regarding YARTS connections to local transit, particularly with ESTA buses in the Eastern Sierra region.
- Passengers who are seeking to use their bicycles while in the Park must stow their bicycles in the under-bus storage facilities and many of these bicyclists are concerned about potential damage to their bicycles while stowed. Adding bicycle racks to the front of the buses is also not operationally feasible due to vehicle length restrictions to access the routes to and through the Park.
- The lack of Wi-Fi on the vehicles is seen as a limitation for customer service, especially for those passengers who want to expeditiously share their Yosemite adventure on social media, or check or make changes to travel arrangements.
- The seasonality of some of the service can be confusing to potential passengers who are not familiar with the area and its climate. This may even discourage passengers from riding YARTS for fear that they will not be able to rely on the service, especially during the change of seasons.
- Referring to the individual YARTS routes by their major highways can be confusing, especially to visitors from outside the area and especially for the two routes (west and east) that both include State Route 120.
- The limitation of staff resources inhibits the reach that YARTS is able to achieve using cost-effective social media. This has improved significantly in the recent past, and the results are beginning show; but there will be many lost opportunities if additional resources can be secured or allocated.

Opportunities

Below is a list of potential opportunities for additional growth and success of YARTS:

- Population across the local and regional YARTS service area is expected to continue to grow through 2030.
- There appears to be demand for additional routes connecting some of the gateway cities, so if funding can be accomplished, YARTS may be able to expand its network with new service.
- National Park Service (NPS) and Yosemite National Park (YNP) plans related to YARTS include specific plans that foster growth of the service including remote parking in El Portal and support for additional YARTS frequency (see Working Paper #1 for details).
- The shoulder and off-peak seasons are continuing to grow in popularity for visitors, especially May and September.

- It is possible that the membership in the JPA could grow to include additional jurisdictions, which could result in additional financial and logistical support for YARTS. There are several RV parks and other campgrounds that are interested in having YARTS serve their locations directly.
- Interest in tourism in the Yosemite Region continues to grow, including the surrounding Gateway Communities, from both a domestic and international standpoint. This interest has led to record numbers of visitors and increasing demands on the roadways, resulting in the desire for more YARTS service.
- Though it has not been feasible to this point, there exists the technical ability to reserve specific seats on buses/routes (in much the same way as an airline or charter bus service sells tickets) and this could represent an opportunity for YARTS to further improve its customer service and eliminate the possibility that a passenger would get left behind. (Currently individuals can reserve up to 50% of the seats online. But YARTS has to leave 50% unreserved as a condition of being a federal funding recipient.)
- Video monitors have been purchased and installed on YARTS vehicles which can be used to enhance the visitor/passenger experience and to possibly serve as an advertising revenue source. These could also be paired with audio guides/headsets that could be available to those interested in learning more about the Park while travelling in and out, which could be a positive asset given the tourist nature of YARTS travelers.
- YNP is in the process of developing a mobile app, representing an opportunity for YARTS to be well represented as an alternative to driving to and from the Park.
- There is a good deal of interest from a variety of potential partners in joint marketing to promote use of YARTS. An example would be a recent Alaska Airlines promotion that included roundtrip YARTS tickets with a special airfare to and from FAT and the plan for United Airlines to follow suit.
- While private automobiles continue to be a convenient and affordable means of traveling to the Park, the increased roadway congestion and limited parking both en route and within the Park make YARTS a potentially attractive alternative.
- Individuals who care about the natural beauty of Yosemite may be persuaded to use YARTS as a sound environmental choice.

Threats

The following list includes external threats to the growth and success of YARTS service:

- The number of employees working in YNP has decreased significantly within the last 18-24 months, resulting in fewer “commuters” on the service.
- Mobile service and connectivity is inconsistent and even non-existent in many areas in and around YNP, limiting the feasibility of reliable mobile phone service and decreasing the value of an investment in onboard Wi-Fi.
- The nearest commercial service airports are located a good distance from YNP and its Gateway Communities (in Fresno, San Jose, Oakland, San Francisco, Reno-Tahoe, and Sacramento). There are some smaller general aviation and regional service airports

located in closer proximity, however air service to and from these airports is typically cost-prohibitive and quite limited by comparison.

- Accessing YNP by private automobile continues to be a cost-effective and convenient alternative for many visitors, despite the various efforts by the NPS to encourage use of available public transportation.
- There are no HOV or dedicated bus lanes when entering the Park, resulting in YARTS buses being forced to wait in the same lines as private automobiles, RVs, and other buses for entry into the Park.
- Wildfires and other natural disasters lead to road closures, and occasionally Park closure, that cannot be avoided, resulting in reduced service and reduced fare revenues. Damage from these events lingers for many years which can be even more detrimental to the demand for YARTS services.

MARKETING GOALS AND OBJECTIVES

The YARTS marketing goals and objectives presented below are based on the YARTS Mission Statement and the overall system goals and objectives recommended in Working Paper #2.

GOAL #1: SAFE AND ACCESSIBLE GOAL: *Continue to provide safe and convenient public transportation services to the residents and visitors to the Yosemite Region along the Highway 41, 120, 395, 140 corridors to Yosemite Valley, for employment, recreation, shopping, education and social service trips, so long as service can be provided in a cost-effective manner.*

Marketing Goal #1: Promote YARTS as Safe and Accessible Transportation

As with the operation itself, safety comes first, so YARTS needs to be marketed as a safe and easily accessible system. Messaging for each recommended marketing strategy should include the organization's safety approach and accomplishments, as appropriate, to instill utmost confidence in YARTS' ability to safely and conveniently transport passengers to and from YNP. All marketing activities should support the safe and accessible image of YARTS.

As YARTS achieves or exceeds its objectives for Accessibility and Convenience, Regional Connectivity, Safety, and Training, these accomplishments should be made public, and promoted as appropriate, especially if the achievement is additional frequency, better regional transportation connections, and improved customer service.

Marketing partnerships with other links in the transportation and travel chain should also be pursued to make the achievement of this goal even more likely.

GOAL #2: SERVICE QUALITY GOAL: *Ensure that all transit programs can be provided at a high quality of service. Quality of service is more important than expansion of service.*

Marketing Goal #2: Promote YARTS as a Convenient, Customer-Focused Alternative to Driving

YARTS has a remarkable record for on-time performance, vehicle reliability, and customer satisfaction and referral. Marketing activities should promote these accomplishments at every opportunity, to appeal to potential passengers who might have a propensity to add YARTS to their Yosemite travel itinerary and to the region's employees who must rely on YARTS to get to and from places of employment in the Yosemite Region.

GOAL #3: SERVICE EFFECTIVENESS GOAL: *Provide an effective level of service in response to demonstrated community and visitor market needs.*

Marketing Goal #3: Promote YARTS as Responsive to the Community's Needs for Transportation, as the "Perfect Antidote" for Roadway Congestion and Limited Parking in the Valley

Imagery and descriptions used in marketing efforts should reflect how enjoyable and rewarding taking YARTS can be, especially regarding traffic avoidance, reducing travel costs, enjoying the Yosemite scenery, and making better use of the YARTS traveler's time (i.e., not being frustrated by sitting in traffic or searching for a parking location).

Additionally, much like on-time performance and reliability, YARTS has a remarkable record when it comes to ensuring that passengers are not "left behind" due to overloaded vehicles, even during peak seasons. As feasible, marketing messaging should directly address the fact that passengers are always able to ride YARTS, even at peak times.

To be truly responsive and effective, YARTS should implement a well-defined community outreach program, to ensure that the needs of the region and visitors to Yosemite are being heard and understood. (Please refer to the "Community Outreach" section later in this Chapter for additional details and recommendations.)

GOAL #4: SERVICE COST EFFECTIVENESS GOAL: *Provide YARTS services that are financially sustainable within existing local, state and federal funding programs and regulations in a cost-efficient manner.*

Marketing Goal #4: Promote YARTS as Affordable and Financially Responsible

Surveys[12] indicate that YARTS customers are generally pleased with the costs to ride, and believe that the fares are appropriate. Marketing messaging should include, when appropriate, the idea that YARTS is cost-effective and results in overall reduced costs to travel to and from YNP. Marketing should also include the fact that YARTS bus tickets include FREE admission to YNP, as well as one free child ride (12 and under) per adult ticket purchased.

[12] Onboard surveys conducted on YARTS routes in Spring, 2018

While not as important as affordability to the consumer, the fact that YARTS is a responsible steward of public funds is also important. When appropriate, this message can be incorporated into marketing activities in much the same way CalTrans advertises that it is putting tax-payer funds to use at road construction sites.

GOAL #5: EXPANSION AND GROWTH GOAL: *YARTS should continue to expand public transit services for the Yosemite Region so long as expansions can be accomplished without adversely affecting existing YARTS services.*

Marketing Goal #5: Directly Impact the Growth of YARTS Ridership to Support the Expansion of the Transportation System

Marketing strategies should be carefully constructed to attract new ridership, especially on under-performing routes and during "slower" periods of the year. Special prioritization should be given to increase ridership on Route 41 to and from Fresno in the immediate term to determine that route's viability, and any new or expanded service as it is added, especially any increased frequency along the most popular routes.

Consumers are always attracted to "winners:" products and services that are innovative, sustainable, appealing, adventurous, convenient, and exciting. Travelers to Yosemite are certainly no exception. While the growth of YARTS service will be well planned and cost effective without adversely affecting existing service, as growth does occur, YARTS' marketing efforts should include coordinated and well-timed messages in its marketing activities to introduce the new features, educate the public, and promote the new and/or expanded services.

OVERALL SYSTEMWIDE MARKETING STRATEGIES

There are marketing strategies which are common to all services on YARTS, as well as those specific to travel corridors. This section offers an overview of strategies for YARTS to consider to enhance the marketing efforts for the overall system and to achieve the stated goals and objectives. Strategies developed for each corridor follow. Prioritized recommendations are included with each strategy or task.

Branding

As mentioned, the YARTS brand and the tagline "The Best Yosemite Experience STARTS on YARTS" are both easily recognizable, relatively well known in the region, and used regularly by stakeholders in the system's success. However, there are some limitations to the brand that were identified when researching the opinions of YARTS' stakeholders:

- Several stakeholders believe that the YARTS name and brand are dated and not easily identifiable to those who are not familiar with the Yosemite Region and YNP in

particular. Simply put, "YARTS" does not describe precisely what the service is and requires an additional descriptor (such as "Public Transportation to Yosemite").
- The use of an acronym such as YARTS to serve as the system's brand is not easily translatable into foreign languages and creates some difficulty for foreign visitors. In addition, the rhyming of "STARTS" and "YARTS" within the tagline also does not always translate well.
- Other opinions include the fact that the serif typeface in the brand does not have a contemporary feel, appears somewhat dated, and could use a facelift.

The color-coding of the YARTS routes on the website and maps is an effective tool to easily recognize a certain route and draw focus for the passenger and it should be extended to the signage and destination signs on the buses to more easily identify which bus is assigned to which route, especially in the Village; however, the naming of the routes to correspond to the individual highways used can be confusing, especially for visitors who are not familiar with the route numbers. YARTS should consider stronger naming of each route to reflect the direction or key destinations along the routes, with a more direct reliance on the color coding. For example, route names could include the counties and largest municipalities or destinations served, such as the "Tuolumne, Merced, Fresno, and Mammoth Lakes routes."

At a minimum, the following actions are recommended for the system's branding:

- Consider an update to the design of the brand (i.e., YARTS logo) to include a more contemporary typeface, and phase in its use cost effectively.
- Develop a new tagline for the service that will translate better. Include the word "Yosemite" in the name, as this is the primary draw.
- Develop brand standards and guidelines, including proper usage of the logo, tagline and definition of the logo colors, and publish them in an easy to reference guide.

Rebranding of YARTS will require a separate marketing effort, but YARTS staff and stakeholders should begin to consider and discuss options now. Given the creative local marketing talent in Yosemite and the Gateway communities, a collaborative effort or competition to come up with a name which reflects the transit system's goals and the area's attractions could be considered. The new name should be immediately more descriptive of the service, easily translatable, and memorable, and which can also create a catchy, recognizable acronym or abbreviation. Some examples of replacement names include:

- Yosemite Stages or Yosemite Stageline
- Yosemite Bus Lines or Yosemite Lines or The Yosemite Line
- Yosemite Link or YosemiteLink
- Yosemite Connection, Yosemite Connect, or Yosemite Connector
- Yosemite Transit or Yosemite Regional Transit
- Yosemite Trailways
- Yosemite Easy Ride

- Yosemite Express Service (YES)
- GoYosemite, Go-Yo-semite or Go-To-Yosemite
- EASY Bus – Easy Access Safely to Yosemite

While renaming/re-branding the system is a dramatic step to take, it can also be viewed as an opportunity to gain a boost in market exposure and as a morale boost for management and the operations team. Branding evolutions in public transit are quite common and can be cost-effectively implemented if well planned.

Branding Strategy or Task	Timing	Prioritization
System Re-Branding Study	2019	Immediate
Route Re-Naming Study	2019	Immediate
Brand and Tagline Update	2019	Important
Development of Brand Standards Guide	2019	Immediate

Digital Marketing Strategies

Website Improvements

As mentioned in the SWOT analysis, one of YARTS' weaknesses is that the design of the website is not perceived to be "on par" with the websites for the various Gateway Communities. This is important to recognize because a large percentage of visitors to the site are referred to it through the various Yosemite tourism sites, as well the Visit California and YNP websites, and connecting transit program's websites. Website visitors who are not as impressed with the YARTS web design as they are the other websites are not as likely to include YARTS in their travel itinerary.

The consultant team has the following recommendations for the YARTS website:

- Redesign www.YARTS.com to reflect the designs of the various tourism boards, leveraging bold imagery and professional photography of the YARTS vehicles in and around the Yosemite Region. (Note: If YARTS studies the feasibility of renaming the service, the website redesign should be timed accordingly, likely including the purchase and use of a new URL to reflect the new system name.)
- The website connections/links page should enhance how it shows connections to Amtrak, Greyhound, ESTA, the Bus, and other connecting public transit services.
- Navigation buttons and social media links should be immediately visible on the homepage, and not require additional scrolling, to encourage functionality and use of the social media platforms.
- Continued reliance on the interactive route map with enhanced trip suggestions for attractions in and around YNP. These enhancements could represent a revenue opportunity for YARTS for any private attractions that might want to promote their service on the map.

- Enhance the Gateway Community parking maps to be graphics or Google Maps developed specifically for YARTS website visitors (as opposed to the links to pre-existing pages on other websites).
- Enhance search engine optimization (SEO), including investment to ensure that the YARTS webpage appears high in key word searches.
- Employ the use of detailed website analytics and review key data points to ensure the accuracy of marketing activities involving the website and social media.

Social Media Improvements

YARTS should continue to leverage its social media momentum in the following ways:

- Because YNP and the Gateway Communities are so picturesque, YARTS should establish and promote an Instagram account. Instagram posts and stories should be regularly added, and YARTS' followers should be encouraged to tag YARTS in their posts (as a sort of digital "word-of-mouth" strategy).
- YARTS should plan and budget for select post boosts, especially on Facebook, to target specific demographics and geo-targets, ideally as part of larger campaigns and promotions.
- Video is proven to be more attractive to social media users than static, two-dimensional images or graphics. YARTS should invest in development of short video segments to use in its social media promotional strategies. These segments could even be edited together to develop longer videos for specific uses (i.e., to promote ridership along a certain route, etc.)
- As video materials become more readily available, YARTS should consider establishing a YouTube video channel specific to YARTS. The videos currently posted on YouTube featuring YARTS have received thousands of views thanks mostly to the Gateway Community partners that have shared and promoted them.
- YARTS should conduct social media promotions and contests to encourage additional followers and to interact with current followers in a fun, customer-service oriented way.
- YARTS' social media management approach should include equitable sharing and promotion of the social media posts and activities of its Gateway Community partners and other stakeholders.

YARTS Mobile App

The proliferation and use of mobile phones, by people of all ages, has been meteoric in recent years. YARTS should capitalize on this social phenomenon by considering the development of a mobile app for ticketing as well as for real-time vehicle tracking (assuming that the YARTS vehicles are equipped with, or can readily be equipped with, the required AVL technology). Even though cellular service within the YNP can be spotty or even non-existent, there is still great value to investing in an app to enhance customer service, encourage social media following, and promote the service to mobile device aficionados.

Other Digital Strategies

Google Maps: In addition to the digital marketing strategies listed previously, YARTS should ensure the accuracy of Google Maps pin drops for each stop along the YARTS routes, and consider adding images of the stops to further facilitate customer service.

Online Review Sites: Another area for action is proactive management of YARTS' profile and customer reviews on local and tourism review sites/apps, such as *Trip Advisor*, *Yelp*, and *Google My Business*. The YARTS team should investigate the possibility of working with these commonly used apps and websites to ensure that the service's profile is rated high by reviewers and that YARTS appears within the first several listings when searches are performed by travelers using the review sites as a guide when planning their Yosemite trips.

Digital Marketing Strategy or Task	Timing	Prioritization
Website Improvements	2018/2019	Immediate
Social Media Improvements	2018/2019	Immediate
YARTS Mobile App	2019/2020	Longer Term
Google Maps Update	2019	Immediate
Online Review Sites/Apps Management	2018/2019	Immediate

Printed Collateral/Materials

Because YARTS staff and other stakeholders have expressed a desire to focus more and more on strategies other than costly printed collateral, it is recommended that YARTS work to minimize printed collateral expenses over the next several years. However, YARTS will likely need to continue to produce printed brochures for mass distribution throughout the Yosemite Region. The design of these brochures can be enhanced to include a more professional look and feel than the current versions, especially on the inside panels. The design needs to be attractive enough to stand out amongst all the other travel and tourism brochures at the various locations, especially the Visit California location in Merced and the various chambers of commerce and tourism boards.

Likewise, YARTS should continue to update its route and timetable guides annually, with a design that is more complementary to the brochure design. On-demand printing has evolved to the point where these regularly updated pieces can look very much like they were mass produced by a professional printer, similar to the brochures.

As the technology becomes more cost effective, YARTS can expand its use of high-impact "video brochures" that combine traditional printed collateral with the technology of video on a mobile device, like the initial run of such brochures that were produced in 2018.

Printed Collateral Strategy or Task	Timing	Prioritization
YARTS Brochure Update	2019	Important (timing relative to branding decisions and /or need to update due to outdated information)
YARTS Routes and Time Tables	2019	Immediate (timing relative to route adjustment decisions and /or need to update due to outdated information)

Marketing Partnerships

Transportation Partners

Because YARTS is one link in the transportation chain to and from Yosemite, YARTS needs to continue to foster partnerships with the other modes of transportation. These partnerships for YARTS as a whole include:

- Amtrak and Amtrak *San Joaquins*
- Greyhound
- AAA and other auto clubs as appropriate
- Regional public transit services
- The commercial service airports and the airlines serving these airports (with a focus on capturing ridership from foreign visitors flying into California to visit YNP and the Gateway Communities)
- Aramark (operator of the in-park shuttles)
- Bicycling clubs and enthusiasts

These partnerships could range from formal cross-promotional opportunities to more informal agreements to promote each other's service offerings on social media and in printed collateral materials. The partnership between YARTS and Aramark is particularly important as most YARTS riders also take advantage of the Valley Shuttle system. Drivers from both systems should have a basic understanding of routes, schedules and transfer opportunities of the two systems, or at a minimum, should be able to direct passengers on where and how to find information. Drivers should be trained and encouraged to tout one another's systems to the benefit of both.

Yosemite Conservancy

YARTS can also consider partnering with the Yosemite Conservancy and its mission to achieve visitor enrichment by:

- Establishing a corps of volunteer naturalists who could greet passengers and address any questions they may have as they arrive YNP, especially during peak service days.
- Coordinating with the Conservancy on video and other promotional projects to align the missions of both organizations.

- Developing an Ambassador program for YARTS employees and operators to enhance the visitor experience and increase customer service quality.

Other Environmental Groups

In addition to the Conservancy, YARTS can develop marketing partnerships with the other environmental and conservation groups that focus on the Yosemite area (including the Yosemite Conservancy, NatureBridge, the National Parks Conservation Association – Pacific Region, Yosemite Stanislaus Solutions, and the Central Sierra Environmental Resource Center). These partnerships should at least include cross-referencing and links on organization websites, sharing of social media posts and messaging, and potentially discounted or promotional rates for members to ride YARTS.

Marketing Partnerships Strategy or Task	Timing	Prioritization
Transportation Partnerships	2018/2019	Immediate (high priority to increase ridership for 2019 season)
Other Transportation Partners	2019 and ongoing	Immediate and ongoing
Yosemite Conservancy – Volunteer Naturalist Greeters	2018/2019	Immediate and ongoing
Yosemite Conservancy – Video Promotional Project	2019	Optional
Yosemite Conservancy – Ambassador Training	2019	Important
Partnerships with Other Environmental Groups	2019	Optional

Public Relations and Earned Media

As YARTS service grows or expands, or decides to enhance the passenger experience with new technologies or equipment, the organization should make well-timed, strategic announcements to introduce the new service, educate the media and the public, and set the stage for success with the media and travel and tourism organizations.

As these announcements are made, efforts should be made to encourage print and broadcast media to publish stories about the subject matter for “earned media” exposure. Target media should be tailored for each effort as announced (for example, if the enhancement improves frequency or customer service to those arriving via commercial service airports in the Bay Area, YARTS should communicate directly with media contacts at each of the local news outlets in the Bay Area to increase the likelihood of coverage).

YARTS may want to consider naming an agency of record and putting that agency on retainer to assist in accomplishing these goals as opportunities arise.

Public Relations Strategy or Task	Timing	Prioritization
Strategic Announcements and Earned Media	Ongoing	Immediate (upon decision to grow, expand, or implement new features and benefits)

ROUTE 140 MARKETING STRATEGIES

Route 140 primarily serves Merced and Mariposa Counties and its largest municipalities, Merced, Catheys Valley, Mariposa, Midpines, and El Portal. Marketing strategies specific to this route include:

- Develop and provide a route-specific YARTS toolkit for the various hotels, resorts, RV parks, campgrounds, restaurants and other businesses along the Highway 140 corridor between Merced, Mariposa and Yosemite.
- While developing and/or distributing these toolkits, YARTS representatives should suggest key marketing partnerships with these organizations to cross-promote service offerings.
- Develop partnerships with the Yosemite Conservancy with area environmental and outdoor enthusiast groups in person and on social media to target their friends and followers with the marketing of the YARTS Highway 140 service.
- Promote the YARTS service to Merced County residents and The Bus users, especially during off-peak periods and the off-season.
- Contact Boutique Air, which serves Merced Regional Airport, to develop a joint marketing program targeting its passengers who arrive directly from Oakland and Los Angeles.
- Continue the marketing partnership with Amtrak *San Joaquins* to sell coordinated trips including Amtrak carriage, YARTS and YNP entry fee. Target Bay Area residents as a multimodal experience.
- Continue to promote YARTS service at the annual Merced County Fair in June of each year, and consider similar promotions at the Mariposa County Fair in August of each year.
- Consider advertising in the Yosemite-Mariposa Tourism Bureau's annual visitor planning guide and website.
- Establish and promote special travel packages and/or discounted fares for UC Merced and Merced College students, particularly targeting off-peak seasons.
- Establish special travel packages and/or discounted fares for seniors in the Merced and Mariposa areas, and work directly with Mariposa Senior Services and the Merced Senior Community Center to promote them to their members. Supportive tactics could include print advertising in local newspapers including the Merced Sun Star, Merced County Times, and Mariposa Gazette.

Route 140 Marketing Strategy or Task	Timing	Prioritization
Route 140 Toolkit; Marketing Partnership Considerations	2019	Important
Social Media Interest Group Targeting	2018 and ongoing	Immediate and ongoing
Promotion to The Bus Users	2019	Optional
Boutique Air Partnership at Merced Regional Airport	2019	Important
Amtrak *San Joaquins* Partnership	2018	Immediate and ongoing
Merced and Mariposa County Fairs	Summer 2019	Optional and ongoing
Yosemite-Mariposa Tourism Bureau Advertising	2018	Immediate
Merced College and UC Merced Promotions	2019	Optional
Senior Promotions in Merced and Mariposa	2019	Optional

ROUTE 120/395 MARKETING STRATEGIES

Route 120/395 serves the eastern slope of the Sierras in Mono and Tuolumne Counties, including Mammoth Lakes, June Lake, Lee Vining, White Wolf and Tuolumne Meadows. Marketing strategies specific to this route include:

- Develop and provide a route-specific YARTS toolkit for the various hotels, resorts, RV parks, campgrounds, restaurants and other businesses along the Route 120/395 corridors between Mammoth Lakes and Yosemite.
- While developing and/or distributing these toolkits, YARTS representatives should suggest key marketing partnerships with these organizations to cross-promote service offerings. Examples include Mammoth Mountain Inn, Westin Monache Resort Mammoth, The Village at Mammoth, Shilo Inn, June Mountain Ski Resort, and Lake View Lodge.
- Coordinate with the Mono County Economic Development, Tourism and Film Commission to enhance YARTS' presence in Mono County promotional materials, visitor guide, and maps. This is especially important of YARTS continues to place print advertising in the annual Visitor Guide, to better leverage that investment.
- Connect with area environmental and outdoor enthusiast groups in person and on social media to target their friends and followers with the marketing of the YARTS Highway 120/395 service.
- Promote the YARTS service to Mono County residents and Eastern Sierra Transit (ESTA) users, especially during off-peak periods.
- Reach out to the growing off-road bicycling community and attractions near Mammoth Lakes to jointly promote the YARTS service during the summer for those who might consider adding a trip to YNP to their Eastern Sierra vacation itinerary. (Leaving their bikes behind as they are not allowed on trails in YNP.)

- Consider adding hiking and climbing-specific marketing campaigns, such as targeting Pacific Crest Trail (PCT) & John Muir Trail (JMT) Facebook groups with organic and geo-targeted boosted campaigns.
- Contact United Airlines to establish a joint marketing partnership with their daily year-round non-stop flights from LAX to Mammoth Lakes (effective December 1, 2018).
- Work with Mammoth Lakes Tourism to have stronger representation on their www.visitmammoth.com tourism website, including enhanced information about connecting to YNP with ESTA. The messaging here should be youthful and adventurous, targeted at Millennials and "Generation Z" travelers/hikers/backpackers who are planning a visit to the Mammoth Lakes/Yosemite area for an outdoor adventure. A suggested theme is to recommend that these visitors include a day trip, or even an overnight trip, to YNP via YARTS since it is convenient, environmentally conscious, and cost effective. These efforts should be coupled with a specialized social media campaign targeting these same individuals, perhaps leveraging the social media following of the tourism board and select resorts and lodging.

Route 120/395 Marketing Strategy or Task	Timing	Prioritization
Route 120/395 Toolkit; Marketing Partnership Considerations	2019	Important
Mono County Economic Development, Tourism and Film Commission Coordination	2018/2019	Important
Promotion to ESTA Users, Mono Residents	2019	Optional
Mammoth Lakes Bicycling Community Outreach	2019	Optional
United Airlines Partnership at Mammoth Lakes	2018/2019	Immediate (for 2019 season)
Tri-County Fair	Summer 2019	Optional and ongoing
Mammoth Lakes Tourism Bureau Coordination; Targeted Messaging to Youthful, Environmentally Conscious Adventure Seekers	2018/2019	Immediate

ROUTE 120 WEST MARKETING STRATEGIES

Route 120 West primarily serves Tuolumne County and its largest municipalities, Sonora, Jamestown, Groveland and Buck Meadows. Marketing strategies specific to this route include:

- Develop and provide a route-specific YARTS toolkit for the various hotels, resorts, RV parks, campgrounds, restaurants and other businesses along the Highway 120 corridor between Sonora and Yosemite.
- While developing and/or distributing these toolkits, YARTS representatives should suggest key marketing partnerships with these organizations to cross-promote service offerings. Examples include the Rush Creek Lodge, Sonora Best Western, Inns of

California-Sonora, Yosemite Pines RV Park, Buck Meadows Restaurant, Yosemite Lakes Campground, and the Black Oak Hotel.

- Connect with area environmental and outdoor enthusiast groups in person and on social media to target their friends and followers with the marketing of the YARTS Highway 120 service.
- Leverage the nostalgic appeal of *The Golden Chain Highway* (current day Highway 49, a portion of which is co-located with Highway 120 in Tuolumne County) to appeal to visitors who might be interested in learning more about the importance of the region during the Gold Rush era.

    - This would be especially attractive if YARTS develops service along Highway 49 connecting Mariposa and Oakhurst to the south and possibly even Mariposa to Coulterville, Jamestown and Sonora.
    - Efforts could include marketing partnerships with the various Gold Rush museums and exhibits in the area to promote YARTS as the preferred way to add a trip to YNP to tour group itineraries.
    - In return, YARTS messaging for this route could also suggest to passengers who are interested in the natural beauty of Yosemite that they might also be interested in the cultural history of the Gold Rush gateway communities, especially by adding a visit to the historic towns of Jamestown, Sonora, and Columbia.
    - The Tuolumne County Visitors Bureau and the Gold Country Visitors Association could be instrumental partners in the success of these campaigns.
- Promote the YARTS service to Tuolumne County residents and Tuolumne County Transit users, especially during off-peak periods and the shoulder seasons in May and September. This could include coordination of timing with the seasonal Tuolumne Adventure Trolley that operates on Saturdays from July to September, connecting visitors to the historic Gold Rush towns of Sonora, Jamestown, and Columbia.

- Promote Route 120 at SFO, OAK, SJC, SMF and with the airlines service these airports as the most direct route to Yosemite, and with travel and tourism agencies when booking trips through these airports to encourage visitors to take YARTS to Yosemite.
- Participate in and/or sponsor the RV rally that occurs in June each year in Sonora to promote the service to RV enthusiasts who may want to visit YNP.
- Participate in and/or sponsor the annual Mother Lode Fair in Sonora in July.

Route 120 West Marketing Strategy or Task	Timing	Prioritization
Route 120 West Toolkit; Marketing Partnership Considerations	2019	Important
Golden Chain Highway Nostalgia Appeal/Messaging	2020	Long Term
Promotion to TCTC Users	2019	Optional
Commercial Service Airport/Airline Promotions	2019	Optional
Sonora RV Rally Participation	2019	Optional
Mother Lode Fair Participation	Summer 2019	Optional and ongoing

ROUTE 41 MARKETING STRATEGIES

Route 41 primarily serves Fresno and Madera Counties and its largest municipalities, Fresno, Clovis, Madera, Coarsegold, Oakhurst and Fish Camp. Marketing strategies specific to this route include:

- Develop and provide a route-specific YARTS toolkit for the various hotels, resorts, campgrounds, restaurants and other businesses along the Highway 41 corridor between Fresno/Clovis and Yosemite.
- While developing and/or distributing these toolkits, YARTS representatives should suggest key marketing partnerships with these organizations to cross-promote service offerings. Examples include Chukchansi Gold Resort (see specific strategies discussed below), Oakhurst Best Western, The Pines Resort on Bass Lake, and Tenaya Lodge.
- The Chukchansi Gold Resort and Casino (and the co-located Serenity Spa) may be interested in better promoting the joint promotional campaign and travel packages including both the resort and YARTS service to and from Yosemite:
  - Communications with the resort's Advertising Manager indicate that there may be interest in an enhanced joint marketing agreement once the SRTP is published (pending the recommendations and action items for the Route 41 service and frequency).[13]
  - If approved, YARTS should seek to achieve more prominent links on the resort's website to direct potential tourists to the YARTS site with the addition of a YARTS "landing page" specific to online visitors who connect through the casino and resort's page;
  - In return, YARTS should consider paid advertising at the resort and on the resort's bus line throughout the Central California area to promote a trip to YNP via YARTS to these visitors;

[13] Email conversation with Kathleen Selness, Resort Advertising Manager, May 2018

  - YARTS should also encourage the Resort, Casino and Spa to promote use of YARTS for any employees who would be able to use it for their commute to and from work.

- Connect with area environmental and outdoor enthusiast groups in person and on social media to target their friends and followers with the marketing of the YARTS Highway 41 service.
- Develop promotional pricing specific to students, faculty and staff at CSU Fresno, Fresno Pacific University, Fresno City College, Clovis Community College, and any other area colleges and universities.
- Meet with representatives of the Fresno and Clovis Chambers of Commerce to identify opportunities for marketing and advertising the YARTS service and to identify any other key organizations and stakeholders who may be interested in YARTS services.
- Consider joint promotions with hotels in the Fresno Yosemite International Airport (FAT) area to promote day trips into YNP.
- Partner with FAT to promote connectivity into YNP from the cost-effective parking lots at the airport ($8 per day), especially for visitors from Los Angeles and Southern California.
- Develop a toolkit and promotional talking points for then FAT customer service and marketing team, to assist them in addressing questions from travelers specific to accessing YNP.
- Improve YARTS presence and bus stop signage at FAT to reflect more of a tourism feel so that the system's image is more like that of a charter service than a link to public transit. Perhaps even consider stationing a volunteer ambassador at the Airport on peak travel days to promote the service and distribute printed materials or promotional items.

- Partner with Clear Channel Airports to explore the possibility of displaying PSA-type promotions of the service on in-airport advertising monitors between paid advertisements or on interior advertising racks.
- Partner with Amtrak to promote connectivity into YNP from the station, especially for visitors from Los Angeles and Southern California.
- Participate in The Big Fresno and Madera District Fairs conducted each fall.

Route 41 Marketing Strategy or Task	**Timing**	**Prioritization**
Route 41 Toolkit; Marketing Partnership Considerations	2018/2019	Immediate
Chukchansi Gold Resort and Casino Coordination and Marketing Partnership	2018/2019	Optional
College and University Promotions	2018/2019	Optional
Fresno and Clovis Chamber Coordination	2018	Immediate
FAT Airport Area Hotel Promotions	2019	Optional

FAT Airport Parking Promotion/Partnership	2018/2019	Immediate
FAT Customer Service Talking Points	2018	Immediate
Improved marketing presence at FAT/Clear Channel Outreach	2018/2019	Immediate
Amtrak Partnership	2018	Immediate and ongoing
The Big Fresno Fair and Madera District Fair	2019 (fall)	Optional and ongoing

COMMUNITY OUTREACH PLAN

One of the factors critical to the successful implementation of the SRTP is how well YARTS actively reaches out to and considers the opinions and needs of the communities served and the myriad stakeholders in the system. This Outreach Plan is meant to serve as solid starting point for involving the community, but it must be considered to be a "living" document in that the individuals and the organizations will change through the course of the study period. So, it will be necessary to revise and amend this Plan as necessary and as needs change.

Authority Advisory Committee

The first line of involvement includes encouraging active and regularly scheduled participation and dialogue amongst the stakeholder organizations and individuals who serve as members of the Authority Advisory Committee (AAC). This advisory body is particularly important to a system such as YARTS that has such a large and diverse service area.

Additional Stakeholder Involvement

The planning process for this SRTP took advantage of an in-depth stakeholder outreach effort. Stakeholders provide valuable insight into the needs of their constituents, and also provide valuable insight regarding what resources are available for spreading information. A detailed list of stakeholder participants is included in Appendix B of this report, but in general, the following are considered important stakeholders for future YARTS outreach efforts:

- District Supervisors
- Chamber of Commerce Staff
- Gateway Community Tourism Boards
- Transit Operators
- Transit Proponents and Supporters
- Regional Commercial Service Airport Staffs (FAT, SFO, OAK, SJC, SMF, RNO)
- Senior Citizen Representatives and Area Agencies on the Aging
- Regional Colleges and Universities
- Environmental and Conservation Groups (including the Yosemite Conservancy, NatureBridge, the National Parks Conservation Association – Pacific Region, Yosemite Stanislaus Solutions, and the Central Sierra Environmental Resource Center)

Social Media Outreach and Following

Significant efforts should be made to expand YARTS network of social media followers. Social media platforms, such as Facebook, Twitter, Nextdoor, and Instagram, are extremely cost-effective ways to reach large numbers of individuals in targeted geographies (both domestic and international) and other demographic categories. YARTS should include social media outreach as an element of every public outreach effort, using attention-grabbing graphics, visual slide shows and/or videos, posted events, and even short surveys and polls regarding specific topics of interest to YARTS.

It is important for YARTS to expeditiously respond to commentary and messages received via social media, and to manage content daily to ensure that the organization's social media presence is consistently positive and supportive. In a similar vein, YARTS staff need to frequently review and manage customer ratings and commentary on customer-service review sites such as Yelp, Trip Advisor, and Google. The age-old adage that "perception becomes reality" applies to social media and other digital networking done by those researching YARTS and its ability to provide safe and convenient transport to and from YNP.

Annual Passenger Satisfaction Surveys and Focus Groups

While use of social media can be convenient to share key messages, it is also very passive and relies on targeted individuals to "see" messages in their respective social media feeds. It is important for YARTS to also maintain more active and personal outreach methods with the general public and passengers.

To that end, the study team recommends conducting on-board passenger satisfaction surveys at least annually, using a similar mechanism each year to facilitate tracking of trends and areas for improvement. The surveys should be conducted along each route during both peak and off-peak seasons, where applicable. The construct of the surveys could mirror the surveys utilized in the development of this SRTP as included in the Survey Memorandum.

Focus Groups could also be conducted annually along each route, inviting key stakeholders and other community members with interest in the respective route. These meetings should be facilitated by a third party if feasible, with a pre-published and distributed agenda with clearly stated goals and objectives for each focus group meeting. These meetings would be particularly advantageous when considering significant changes to routes and frequency, or shortly after the implementation of such changes to gauge community response.

Consideration should also be given to polling and involving community members and Yosemite visitors who have chosen not to utilize YARTS in order to better understand the reasons for selecting a private car, private charter service, or some other method of transportation. This outreach could be achieved by having survey questions included in any visitor surveys conducted by YNP or the various Gateway Community tourism boards, for example.

Public Meetings and Hearings

As required by the various funding sources, YARTS will need to conduct public meetings and hearings when significant changes to the system or the routes are being considered. These meetings can serve as opportunities to solicit additional feedback on the system and to identify new or replacement stakeholders and focus group members.

Community Event Participation

As feasible, YARTS should continue to maintain or increase its involvement in key community events, such as county fairs, festivals, college and university events, parades, RV rallies, and any events sponsored by or important to the YNP. Many of these events can be coordinated with MCAG, ESTA, The Bus, and other YARTS partners to share costs and leverage resources.

Other National Park Transit Operators and Stakeholders

In the long term, YARTS could be part of a consortium that encourages the consideration of new and more visitor-friendly vehicle types of transit buses (such as glass-ceiling coaches that can pass Altoona testing, for example). Transit strategies are increasingly common in National Parks and other recreation destinations, and the potential to expand transit ridership to busy recreation destinations is found across the country. A consortium of transit organizations serving recreation destinations could potentially develop new specifications for vehicles designed for National Park-type settings and, as a group, work for manufacture and testing of new vehicle types.

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Chapter 13

YARTS Short Range Transit Plan

The first priority under this plan should be the long-term sustainability of the existing core services. This is threatened by the need to replace seven of the existing YARTS-owned buses by 2022. As discussed in more detail in the Capital Plan, below, at current cost for purchase and equipment this will require a total of approximately $4,498,000 in total funding of which a realistic requirement among the local YARTS jurisdictions is $900,000. If this issue is not addressed, a very significant reduction in YARTS service would be required. Fleet replacement therefore must take precedence over service enhancements.

Beyond this key issue, this chapter presents a Service Plan with recommended enhancements to existing YART services. This is followed by a Capital Plan detailing fleet requirements and facility improvements. A Marketing Plan is next presented, followed by Financial and Institutional Plans. This plan is built upon the review of current conditions and potential alternatives presented in previous chapters. As such, the reader is encouraged to refer to previous chapters (particularly Chapters 6 through 8) for greater detail regarding the various elements included in this plan.

Service Plan

The near-term Service Plan consists of the following plan elements. Figure 27 and Table 87 also present summaries of this Service Plan. In addition, this is followed by several lower-priority Service Plan elements.

Add One Daily Round Trip on 140 Route in Summer

An additional run should be operated between Merced and Yosemite National Park in the mid-day, departing from TRANPO at 12:50 PM. This would stop at the Amtrak station at 1:00 PM, providing new connections with Northbound *San Joaquin* Train 713 (arriving at 12:05 PM) and with southbound Train 714 (arriving at 12:39 PM). This new northbound train connection reduced the overall travel time between Los Angeles Union Station and Yosemite Valley by 1 hour 4 minutes (compared with making the train/bus connection in Fresno), and also serves a convenient new 9:05 AM departure from San Francisco and 9:35 PM departure from Oakland.

This bus should also operate a new 9:05 PM departure from Yosemite Valley, arriving in Mariposa around 10:30 PM and Merced at 11:35 PM. This would allow Yosemite visitors to stay in the Valley for an additional hour after the current last departure (a popular request among passengers) and also would serve employees on evening shifts.

Figure 27

YARTS Short Range Transit Plan

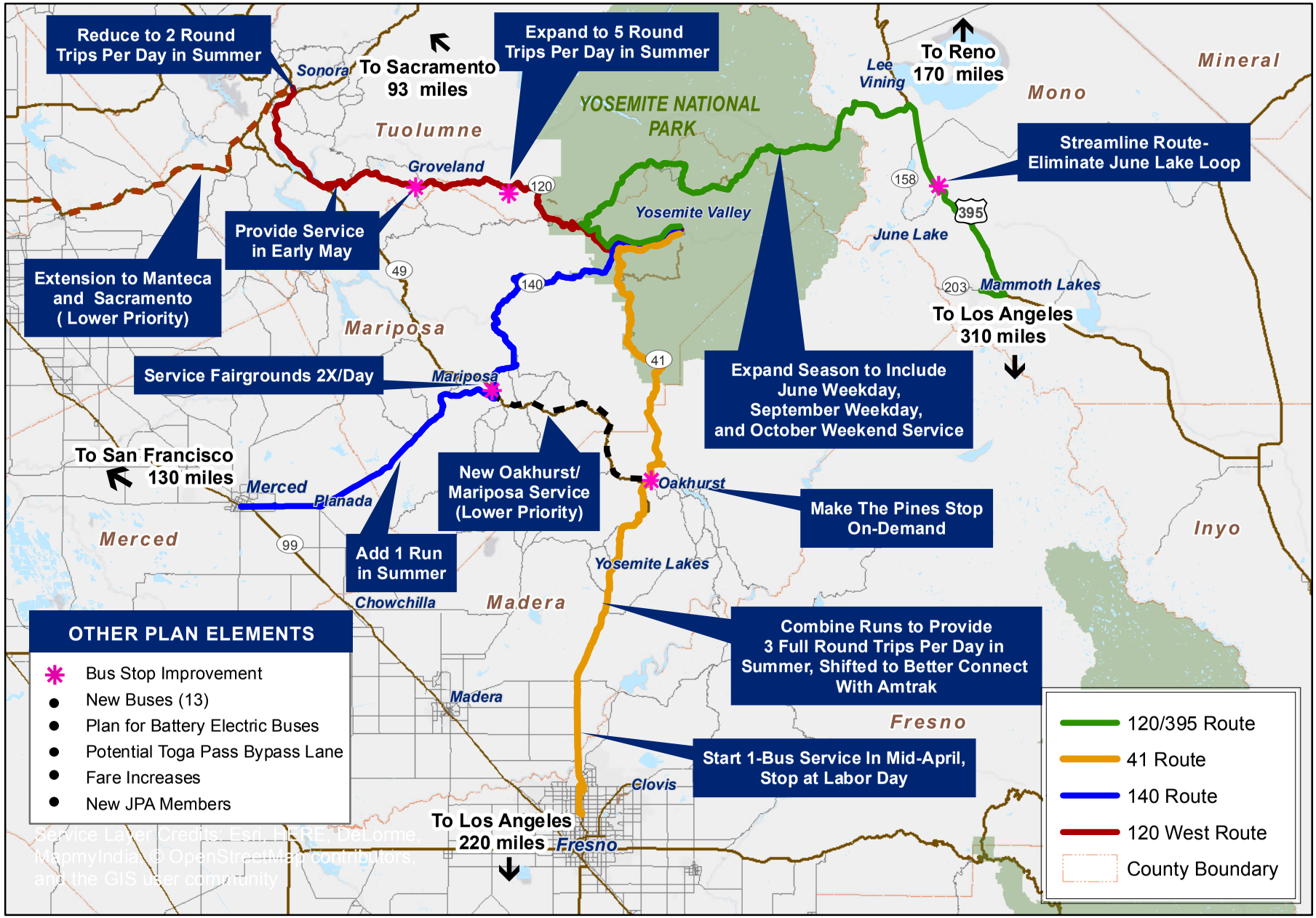

Table 87: YARTS Short Range Transit Plan

Plan Element	Annual Quantities -- Change From Existing: Passengers	Vehicle-Hours	Operating Cost	Farebox Revenue	Operating Subsidy	Peak Vehicles
140 Route						
Add One Daily Round Trip on 140 Route in Summer	3,900	630	$101,200	$29,600	$71,600	1
Serve Mariposa Fairground Twice a Day in Summer	470	49	$6,100	$1,700	$4,400	0
Subtotal	4,370	679	$107,300	$31,300	$76,000	1
Percent Change	5%	5%	7%	5%	9%	
120/395 Route						
September Weekday Service	1,100	168	$18,000	$12,300	$5,700	0
October Weekend Service	540	72	$7,700	$6,000	$1,700	0
June Weekday Service	1,400	168	$18,000	$15,700	$2,300	0
Eliminate June Lake Loop	120	-94	-$10,100	$1,300	-$11,400	0
Subtotal	3,160	314	$33,600	$35,300	-$1,700	0
Percent Change	49%	29%	31%	87%	-3%	
120 West Route						
Replace 1 Existing Round-Trip With 2 Short Round-Trips	4,700	392	$42,100	$24,300	$17,800	0
Early May Service	430	85	$9,100	$3,300	$5,800	0
Subtotal	5,130	477	$51,200	$27,600	$23,600	0
Percent Change	32%	24%	26%	22%	34%	
41 Route						
Eliminate the Short Route 41 Runs	-500	-546	-$58,600	-$1,800	-$56,800	-1
Combine Route 41 Runs and Reduce by One Run per Day	-2,200	-1,017	-$109,200	-$10,000	-$99,200	-1
Operate One Route 41 Run per Day in Mid-April	1,040	459	$49,300	$4,700	$44,600	0
Eliminate Route 41 Service After Labor Day	-410	-600	-$64,400	-$1,900	-$62,500	0
Shift Route 41 Runs 27 and 28 to Better Serve Amtrak	300	0	$0	$1,600	-$1,600	0
Subtotal	-1,770	-1,703	-$182,900	-$7,400	-$175,500	-2
Percent Change	-12%	-46%	-27%	-11%	-29%	
TOTAL	10,890	-233	$9,200	$86,800	-$77,600	-1
Total Percent Change	9%	-1%	0%	10%	-5%	

Serve Mariposa Fairground Twice a Day in Summer

The Mariposa Fairgrounds two miles south of SR 140 should be served by an 8:53 AM eastbound departure (Run 3a) and a 7:00 PM westbound arrival (Run 11a) during the summer. This will provide service to a camping/RV area with 140 sites, without delaying any significant number of existing passengers. The evening arrival should be served on-demand only (for persons on the bus as it arrives in downtown Mariposa). It is recommended that for at least the first summer the morning departure be operated on a schedule, with the potential to make this an on-demand stop if a steady pattern of ridership does not materialize. YARTS should work with the Fairgrounds Association and local community to promote this service.

Expand the Days of 120/395 Route Service by Adding June and September Weekday Service and October Weekend Service

This study has identified that there is a strong potential for expansion in Route 120/395 ridership through expansion of the days of service, given the popularity of the existing 120/395 runs to and from Yosemite Valley and the growth in visitor activity in the shoulder seasons. Service (with one full run per day) should be operated on weekdays in June and September as well as on October weekends. The annual number of days of service (depending on when Tioga Pass is open) will increase from the current 92 to 123 … a full 71 percent increase in the days of service. This will also enhance efforts in Mono County to expand business activity in the shoulder seasons. Depending on future ridership trends and funding availability, consideration should be given to operate a second daily round-trip on peak days.

Streamline the 120/395 Route

The 120/395 Route should be revised to stay on US 395 rather than serving the June Lake Loop. A new stop should be established at June Lake Junction (the south end of the loop). This change will reduce the one-way travel time from Mammoth Lakes to Yosemite Valley by 20 minutes (40 minutes for a round-trip), and is expected to increase ridership drawn by the faster service.

In addition, YARTS should consider further modifications to one or more 120/395 runs in each direction in order to speed travel times. Particularly if additional runs can be added in the future, an "express run" that does not travel north of SR 120 to serve Lee Vining should be considered, which would save an additional 20 minutes. The ridership at the five existing stops in Mammoth Lakes should also be monitored to determine if this number of stops can be reduced, recognizing that the large majority of potential passengers have a car to access a common park-and-ride location.

Replace One Existing 120 West Route Round-Trip With Two Short Round-Trips

The three buses currently used to operate three Sonora-Yosemite runs on the 120 West service should be used to instead operate five daily trips in each direction between Groveland and the Park along with two daily trips in each direction between Sonora and the Park. The two full runs[14] would be more than sufficient to serve the 12 percent of existing ridership that travels west of Groveland. This revised schedule is shown in Table 64 of Chapter 7. This new schedule provides the following new travel opportunities along this route: (1) a first arrival in the Valley a full hour prior to the current first arrival, (2) the ability to make half-day trips into Yosemite and (3) a later (7:00 PM) last departure from the Valley, rather than the existing 5:35 PM last departure, which is a common request among passengers. While this requires an increase in vehicle-hours and costs, it would generate a much greater increase in ridership and would not require an additional bus.

[14] Chosen as the most popular of the existing service times in Sonora/Jamestown.

Start 120 West Route Service on May 1st Rather Than May 15th

The start date for summer service (one run per day) on the 120 West Route should be moved up to May 1st from the current May 15th date. This reflects that visitors generated by the National Park are growing rapidly in the spring. This would also be a good test towards further expansion of Route 120 West service in the shoulder seasons.

Eliminate the Short 41 Route Runs

The partial runs (Run 20 and Run 29) between Yosemite National Park and Oakhurst should be eliminated, as they have proven to be very unproductive, averaging less than 3 riders per run. This will allow the number of buses operated on the 41 Route to be reduced by one.

Combine 41 Route Runs and Reduce by One Run per Day

The overall efficiency of Route 41 service should be improved by combining the existing Run 23 and Run 25 southbound schedules (which depart Yosemite National Park only 37 minutes apart) and dropping northbound Run 26 (which carries only 11 passenger-trips per hour, with a productivity that is 32 percent below the performance standard. Reducing runs would also allow the number of buses in service to be reduced by one.

Serve The Pines Resort Only On Demand

The large majority of diversions off of SR 41 to serve The Pines stop do not serve any passengers, but instead add 16 minutes of travel time to an already long trip between Fresno and Yosemite National Park. This should be served on demand only, in both directions. Passengers desiring a pick-up should call at least 30 minutes prior to the start of the run they want service on. Passengers desiring a drop-off should tell the drivers upon boarding the bus. Schedules should be adjusted to reduce scheduled running time by approximately 10 minutes. This strategy will increase the attractiveness of the Route 41 service to the large majority of passengers that will be provided with a shorter travel time.

Shift Route 41 Runs 27 and 28 to Better Serve Amtrak

Route 41 runs should be shifted to provide a new convenient connection with the northbound San Joaquin Train 715 arriving in Fresno at 2:02 PM. A 2:10 PM departure of Run 28 will provide an arrival into Oakhurst around 4:00 PM and Yosemite around 6:00 PM, allowing combined rail/bus trips from Southern California to Oakhurst lodging properties within a single travel day. This will result in Run 27 departing around 6:20 PM, for a 10:20 PM arrival into Fresno. This plan element will not change operating costs, but would generate a modest level of additional new ridership due to the more convenient access from Southern California.

Combined with the previous plan elements, under this plan the 41 Route service in summer will consist of three round-trips per day, with northbound departures from Fresno around 5:30 AM, 7:50 AM and 2:00 PM and southbound departures from Yosemite Valley around 10:00 AM, 4:00 PM and 6:20 PM.

Operate One 41 Route Run per Day Starting in Mid-April

Reflecting the strong growth over the last few years in visitors entering the South Entrance in April and May, the start date for Route 41 service should be moved up from mid-May to Mid-April. One daily round-trip should be operated initially, though additional runs could be added if demand warrants. This should consist of Run 22 in the northbound direction (a 5:37 departure from the Fresno Yosemite International Airport, 9:43 AM arrival in Yosemite Valley) and Run 27 in the southbound direction (5:42 PM departure from the Valley and arrival into Fresno around 9:45 PM).

Eliminate 41 Route Service After Labor Day

Route 41 service operated between the Labor Day weekend and the current end of service around September 15th has been very ineffective, carrying only 0.7 passengers per vehicle hour and requiring roughly $150 in subsidy per passenger trip. Options that would reduce but not fully eliminate this service were considered, but not found to be significantly more effective. Service over this period should be eliminated (at least until overall Route 41 service is seen to grow in the future) and the resources used in other services.

Coordinate with Private Shuttle Firms to Jointly Address Passenger Service Issues

YARTS should take the lead in developing "mutual aid" agreements with the many private shuttle firms serving Yosemite Valley. Given the long travel distances, long operating days, the high potential for roadway closures and the realities of dealing with the traveling public, there are many opportunities for passengers or their luggage to miss connections or have their trips interrupted. Establishing agreements by which YARTS can call on private firms (or vice versa) could help solve individual traveler's problems, such as through providing service or moving luggage on another service. Convenient means of coordinating on-the-fly strategies should be defined in advance, along with ways of tracking activity and compensating organizations for their efforts. Overall, this would help to improve traveler's quality of experience in the Yosemite Region and promote the use of non-auto travel alternatives.

Maximize Coordination with Other Public Transit Systems

YARTS services are part of a larger web of public transit services in the Yosemite Region. Beyond the intercity connections to Amtrak, Greyhound and airlines, YARTS services provide connections to local and regional transit services. The following are key coordination opportunities that should be maintained and strengthened:

- Route 120/395 schedules, once revised for the streamlining of the June Lake Loop, should be checked to ensure timely connections in both directions with ESTA Mammoth Express schedules.

- The revised Route 41 schedule provides the opportunity for a day trip from Madera to Yosemite Valley. A 5:51 AM departure from the Intermodal Center in downtown Madera on MCC provides a connection in Oakhurst to YARTS Route 41 to Yosemite Valley around 7:30 AM for arrival in Yosemite Valley around 9:30 AM. Departing on YARTS at 4:13 PM provides an arrival in Oakhurst around 6:00 PM and time for dinner before boarding the westbound MCC bus at 7:28 PM for arrival in Madera at 8:52 PM. Note that the Madera County Connection's Eastern Madera County Route operates only on weekdays.

- The Mari-Go South County transit program provides on-demand curb-to-curb service to various areas of southern Mariposa County on differing weekdays, as well as service to Merced on Tuesdays. As such, it is possible to schedule direct connections with YARTS 140 Route services in Mariposa on all weekdays (from various outlying areas) as well as in Catheys Valley on Monday and Midpines on Friday. YARTS should continually consider opportunities to coordinate passenger transportation between YARTS and Mari-Go (such as providing one-way trips to or from Merced when a passenger's schedule cannot be accommodated in both directions on Mari-Go, for passengers that do not need direct door-to-door transportation).

- YARTS also makes good connections with the larger urban FAX system in Fresno and "The Bus" service in Merced. Clovis Stageline passengers can also access YARTS through FAX connections. It is possible on both The Bus and FAX to connect with YARTS to make a one-day excursion trip to Yosemite on weekdays, though weekend service on both local programs ends too soon to make a connection with an afternoon YARTS run from the Park. There is not sufficient demand for connecting services to warrant expanding the hours of the local transit program.

The Marketing Plan also includes strategies to encourage joint use of YARTS services with these connecting services.

Summary of Near-Term Service Plan

In sum, this Service Plan will yield the following results:

- Overall ridership will increase by an estimated 10,890 passenger-trips per year – a full 9 percent increase over current levels.

- Annual vehicle-hours of service will drop slightly (1 percent). In addition, the number of buses required to operate the peak summer service will be reduced by one (thereby

reducing the number of buses requiring replacement, or allowing a shift to more service using YARTS-owned buses).

- Farebox revenue (even ignoring the impacts of a fare increase) will be increased by 10 percent. As a result, overall operating subsidy will be reduced by $83,400 per year.

- The operating effectiveness of the 41 Route will be substantially improved by sizing the number of runs to the ridership demand. The productivity (passenger-trips per vehicle-hour of service) will increase from the current 4.0 to 6.5 – a 62 percent improvement. Similarly, the operating subsidy per passenger-trip will decrease from $40.34 to $32.41 – a 20 percent drop.

- The overall productivity of the total YARTS system will also be improved, increasing from 5.6 passenger-trips per vehicle-hour today up to 6.1 – an 11 percent improvement. The cost-effectiveness of the overall program will also be improved by 13 percent, as the subsidy required per passenger-trip will drop from $13.21 to $11.48.

- The operating season will be expanded on all of the currently summer-only routes (120 West, 120/395 and 41). In addition to serving more passengers, this will have the economic benefit of expanding the length of season when YARTS-related lodging activity is generated in the gateway communities.

Longer-Term Operating Plan

Operate Sacramento – Manteca – Sonora – Yosemite Summer Service on a Demonstration Basis

As a lower priority, YARTS should implement a demonstration service that extends one of the existing summer Sonora-Yosemite runs westward on SR 140 to Manteca and northward on US 99 to Stockton and Sacramento. As an extension of an existing run, it does not require expansion of the operating fleet. The driver would spend the night in Sacramento. This would provide a direct connection to the Sacramento region, including connections to Sacramento International Airport and Amtrak *Coast Starlight* and *California Zephyr* rail service. It would also provide a new intercity bus connection for Tuolumne County residents. While the passengers per vehicle-hour performance measure does not attain standards, this plan element would achieve farebox ratio and subsidy per passenger standards, and will be a relatively low-cost way of expanding YARTS services.

Mariposa – Oakhurst Summer Service If Local Funding Provided

The provision of a single vehicle operating a shuttle route along the SR 49 corridor between Oakhurst and Mariposa in the summer has the potential to become a useful element in the YARTS network. While it is not expected to meet overall performance standards, it would

provide new connections to both the 140 Route and 41 Route. As a result, it would provide new travel opportunities for visitors arriving on one route to travel to locations on the other, as well as providing new connections for Mariposa/Merced County residents traveling to Madera/Fresno County and vice versa. It would also serve multiple small lodging properties and the Mariposa County Fairgrounds/Mining Museum along SR 49 and could encourage longer visitor stays in the region.

This service could be provided through a separate local contractor with an operating base in the Mariposa or Oakhurst area. The contractor would need to meet state and federal standards (such as for drug and alcohol testing requirements) as well as requirements of YARTS for quality of service, fare handling, monitoring, reporting, etcetera. It could make use of a smaller vehicle type (such as a 15-passenger cutaway van), so long as it meets state and federal standards and is branded consistent with the overall YARTS marketing image.

Monitor Valley Rail Improvements and Consider New YARTS Connections

There are several ongoing efforts to expand passenger rail services in the Central Valley and to/from the Bay Area and Sacramento that could open new connection opportunities with YARTS services. Even prior to the longer-term potential for high-speed rail, expansion of the Altamont Commuter Express (ACE) to serve Manteca would provide an additional travel option from the South Bay area. In particular, westbound ACE service from Manteca in the later morning period and eastbound service arriving in the early afternoon could be served by extension of the 120 West service to allow visitors staying in Tuolumne County or Yosemite Valley to depart in the morning and arrive in the afternoon. YARTS should monitor the planning processes for rail improvements and participate as needed to improve the potential for new coordinated services.

Capital Plan

Work Towards Purchasing Additional YARTS Vehicles

One existing YARTS-owned bus will require replacement by 2020, along with an additional seven in 2022. As the Service Plan will reduce the number of buses required by one, seven buses will be required to be replaced within this SRTP plan period. These buses currently cost $625,000 apiece, and require $17,500 in equipment. The total cost of these replacement vehicles ($4,498,000) could potentially be largely funded through federal or state programs (such as the Federal Transit Administration 5309 Program), but a 20 percent (or more) local match would be required (a minimum of $900,000).

In addition, the fact that the YARTS-owned fleet of 10 vehicles is presently insufficient to operate the summer service plan (which requires up to 17 vehicles) means that YARTS must pay the service contractor an additional $46 per vehicle-hour to provide vehicles on some of the runs. Over the course of a year, this adds approximately $267,000 to the cost of operating

YARTS services … dollars that could be used toward expanding service (or reducing fares) if all runs could be operated without the need to provide buses through the contractor. Increasing the YARTS-owned fleet to eliminate the need for contractor-provided buses would require an additional six buses (considering the reduction in bus requirements provided by the Service Plan). This would cost an estimated $3,855,000, but would reduce the operating costs by $228,000 per year (or 5 percent).

Optimally, a total of $8,353,000 in funding would be generated to purchase 13 buses for the YARTS fleet by 2022. Federal and state funding sources typically require a 20 percent local match, which would equal $1,670,000.

If the existing YARTS fleet cannot be replaced, service would increasingly be provided using contractor-provided buses. By 2022, this would increase annual operating costs by $705,000 per year, or 17 percent. Put simply, without additional capital funding for bus replacement, YARTS will face the need for a 17 percent cut in services by 2022.

Monitor and Plan For Battery Electric Buses

The California Air Resources Board is proposing new regulations that are intended to ultimately transition California's public transit fleets to Zero Emission Buses (ZEBs). The available technology options focus on Battery Electric Buses (BEBs). Current proposed regulations (dated November 9, 2018) would require small transit agencies (such as YARTS) to purchase BEBs for a minimum of 25 percent of new vehicles starting in 2026, and 100 percent starting in 2029 (so long as BEB models are available). These draft regulations would also require submission of a "ZEB Rollout Plan" by July, 2023. While YARTS will not be required to purchase BEB buses during this SRTP period, it is clear that planning for eventual conversion to BEB buses will need to occur during the SRTP period.

BEBs are increasingly being implemented in transit systems around California (including systems serving mountainous terrain), and have substantial benefits including lower maintenance costs, a quieter ride and better handing capabilities. In additional to the relatively high cost (on the order of $200,000 more per unit, at today's prices), range limitations present a particular challenge to YARTS. While current models provide a full-charge range sufficient for a one-way trip on YARTS routes, they would require recharging while laying over in Yosemite National Park. This will require collaboration between the Park Service and YARTS to site and develop facilities for charging that have sufficient electrical capacity to serve the YARTS fleet, and that do not unduly add to YARTS operating costs by requiring additional operator in-service time. Over the next few years, YARTS staff should work with NPS staff to define requirements and develop a charging plan that addresses the needs of YARTS as well as the Valley Shuttle transit services.

Consider Provision of YARTS Vehicles through Local Jurisdictions

One potential strategy for expanding the public fleet used for YARTS service would be to procure buses through local jurisdictions. While this would not open up new funding opportunities not available to YARTS, this could allow buses used in summer for YARTS to be used for other services in the remainder of the year. For example, a bus purchased by Tuolumne County Transit could be used in summer by YARTS for service between Yosemite, Sonora, Manteca and Sacramento and then used the remainder of the year by TCT for service connecting Sonora with Manteca or Stockton. This ability to jointly use the vehicle could generate more interest in the local jurisdictions to contribute local match funding.

Bus Stop Improvements

While YARTS bus stops generally have a high level of amenities, there are a total of seven stops that warrant improvements. As shown in Table 88, six are existing stops while one stop (at June Lake Junction) is a new stop. This new stop (with bench and sign) is needed as part of the service strategy of revising the 120/395 Route to stay on US 395 rather than serve the June Lake Loop. The most substantial improvement is needed at the Yosemite Pines RV Park (assuming agreement by the property owner), where a paved passenger loading pad is needed along with a bench and sign. New shelters are warranted at the Yosemite Pines stop and in mid-town Mariposa, along with some new signs at various locations. Overall, these improvements are estimated to cost a total of $35,200.

Advocate For Improved Cellular Service along YARTS Routes

Given the long rural distances traveled by YARTS routes, good communication is very important in the day-to-day operation of the service and in dealing with road closures and incidents. Current voice cellphone coverage for the major carriers, however, is limited, leaving substantial gaps in coverage on all four of the YARTS routes (and particularly on the 120/395 Route and 41 Route). YARTS should be part of regional efforts to advocate for improved cellphone coverage of the Yosemite Region, which would improve the efficiency and convenience of transit service while helping to ensure the safety of YARTS passengers and staff.

Work with Yosemite National Park To Address Bus Layover Location

Public transit is a key mobility strategy of both Yosemite National Park as well as the jurisdictions in the Yosemite Region. With the expansion of transit strategies in Yosemite National Park (both for shuttle services within the park as well as regional access services) comes the need for the infrastructure to support additional bus service, including bus storage/layover locations. This SRTP will slightly reduce the number of YARTS buses laying over mid-day in Yosemite Valley (from 14 to 12), but YARTS buses will still have a substantial "footprint" in a very sensitive areas. YARTS will need to be part of the conversation with regards to any relocation of the bus layover location, as it will be important to YARTS that any new

location not dramatically increase operating costs. This issue may well also need to consider the proximity of electrical power grid with sufficient capacity for BEB recharging.

Table 88: YARTS Bus Stop Improvement Plan

Route	Stop ID #	Direction [1]	Location	Recommended Improvements	Estimated Cost
140	153	Inbound	Midtown Mariposa	Shelter with bench	$10,400
120 West	309	Both	Yosemite Pines RV Park	Paved pad, sign, bench	$11,900
120 West	313	Both	Yosemite Lakes Campground	Shelter with bench	$10,400
120/395	213	Both	Mono Basin Visitor Center	Relocate Sign to More Visible Location	$300
120/395	New	Inbound	June Lake Junction	Bench, sign	$1,600
41	425	Outbound	Oakhurst Best Western	Sign	$300
41	428	Inbound	Tenaya Lodge	Sign	$300
				TOTAL	$35,200

Further Explore the Potential of a Bypass Entry Lane at Tioga Pass Using Existing Pavement

YARTS should participate in discussions with the National Park and Caltrans to investigate the potential to sign/stripe existing pavement at Tioga Pass to provide a bus or bus/staff bypass lane westbound to the entrance station. Key questions that will need to be addressed are the days/hours and length of delay time that could be reduced to transit buses, the staffing/operational costs, and what type of vehicles should be allowed to use the bypass lane.

Financial Plan

The Contractor's operating costs have recently increased by 10 percent for YARTS-owned buses, and up to 37 percent for buses provided by the Contractor. This will result in an operating shortfall of $220,600 per year. In addition, as discussed above a local match for vehicle replacement ($900,000) will be needed in-hand by 2022. This indicates the need for an annual $180,000 allocation to a capital fund.

As discussed above, the overall Service Plan at full implementation will require small ($9,200) increase in operating costs, but will be more than offset by an $86,800 increase in passenger revenues, yielding an overall reduction in operating subsidy of $77,600 per year. Given the allocation of funding by corridor, it is important to consider the impact of this plan on operating subsidy figures on a corridor-by-corridor basis. Once the full ridership potential has been achieved, the impact of the plan is as follows:

- 140 Route – Increase of $76,000 per year (+9 percent)

- 120/395 Route – Decrease of $1,700 per year (-3 percent)
- 120 West Route – Increase of $23,500 per year +(34 percent)
- 41 Route – Decrease of $175,600 per year (-29 percent)

Addressing this shift in subsidy requirements can be accomplished through a shift in National Park Service funding from the 41 Route towards the 140 Route and 120 West Route.

Clearly, the sobering bus fleet costs faced by YARTS will require financial resources beyond those available to local jurisdictions. Federal (Federal Transit Administration, Federal Lands Access Program, National Park Service sources) and/or State (such as SB1 funds) will be needed for the bulk of this funding.

The fare increase approved by the YARTS Board in August 2018 will increase the full fares on the 140 Route, 120 West Route and 120/395 Route by 20 percent in January 2019 with an additional 15 percent fare increase in January 2020. (Fares were not increased on the 41 Route, or for discount fare passengers.) This is estimated by LSC to generate an increase in fare revenue of $232,000 per year. Additional fare increases may well be necessary (such as on the 41 Route, and for passengers currently eligible for the discount fares.

Consider Future Fare Changes That Charge a Higher Fare per Mile for Shorter Trips

Current YARTS fares on each route between various origin/destination points are proportionate to the miles that a passenger travels. For instance, a passenger traveling from Yosemite Lakes to Yosemite Valley on the 120 West Route pays a fare that is 38 percent of that paid by a Sonora-Yosemite Valley passenger ($5 versus $13 for full fare), for a trip that is 40 percent the length from Sonora to Yosemite Valley. While this may seem equitable, in reality much of the overall cost of serving a trip (providing the vehicle, driver layover costs, etc.) is not dependent on the length of a trip. As ridership patterns have increasingly shifted to a high proportion of riders making trips from gateway lodging just outside the Park, this results in a high proportion of passenger paying relatively low fares. In developing future fare policies, YARTS should consider fares that have a set minimum fare for any trip (such as 1/2 of the full-length fare), with the remainder varying based on trip length. Under this scenario, the full fare for Yosemite Lakes – Yosemite Valley trip would be increased to $9. This could very substantially increase fare revenues without the need to increase the full-length fare.

Institutional Plan

Make Tuolumne County a Full Member of the JPA

To date, funding for the 120 West service has come from Yosemite National Park sources and has not included funding from Tuolumne County. While this is an appropriate strategy in the short term to initiate demonstration services, in the long term this means that the expanded

service area is relying on the JPA member jurisdictions (Merced, Mariposa and Mono Counties) to fund the administrative costs of the YARTS program. In the long term, this is not equitable to the JPA members. Public transit services typically require three years to reach their full ridership potential; this is a reasonable length of time for a new demonstration program to be determined successful, after which full membership in the JPA is appropriate.

As discussed in Table 86 of Chapter 11, above, the existing three JPA counties currently providing local funding equal to $34.12 per vehicle-hour of service provided on the 140 Route and 120/395 Route serving these counties. Applying this rate to the 2,483 annual vehicle-hours of service on the 120 West Route serving Tuolumne County (including the additional vehicle-hours associated with the Service Plan expansions), the appropriate level of local funding generated by Tuolumne County for full membership in the JPA is $84,700 per year.

In addition, full participation in the JPA should be considered by Madera and Fresno Counties within this SRTP planning period. As evidenced by the modifications called for in the Service Plan, the appropriate long-term service plan for this corridor is still a work in progress. Once a consistent effective service level is reached for three years, membership in the JPA would be appropriate. At the level of annual vehicle-hours of service that would be provided on the 41 Route under the Service Plan, $69,400 per year would be required from Madera/Fresno sources for JPA membership.

Make Full Use of the Authority Advisory Committee

The Authority Advisory Committee (AAC) should be used as an important input to YARTS decision-making. YARTS staff should ensure that the AAC input is forwarded to the YARTS Board (through inclusion in Board packets). In turn, Board members are encouraged to consult with the AAC members in their jurisdiction and to rely on the AAC as a key input into Board decision-making.

Improve Format for Contractor's Monthly Report

The Contactor's Monthly Report is an important management tool, particularly given the geographic spread of the Board and AAC members. A recommended streamlined format that provides the information in a more easily reviewable manner is included in Appendix C.

MARKETING PLAN

Chapter 12 presented a wide array of marketing strategies for each unique travel corridor, as well as for services overall—all of which can be considered for YARTS in the upcoming years. The recommendations presented below represent prioritized strategies to support YARTS' efforts to achieve the marketing goals and objectives. Where possible, estimated costs have been included for YARTS' planning and budgeting purposes. In addition, the Community

Outreach Plan (also detailed in Chapter 12) is recommended to establish regular means of communication and outreach which will continually strengthen YARTS as a community asset.

TARGET MARKETS

YARTS should consider the following to be its target markets for its marketing efforts. While it will not be possible to reach each market in every campaign or effort, it will be important for YARTS staff and any retained consultants to review and assess each effort against this list to ensure marketing resources are being accurately assigned and an acceptable Return on Marketing Investment (ROMI) is achieved.

Domestic Markets

California (West Coast) First Time Visitors to Yosemite: California and Western U.S. citizens who live within a comfortable drive of YNP should be considered high priority targets as they may more readily appreciate the opportunity to leave the driving to YARTS and relieve themselves of the challenge of finding parking in the Valley, especially during peak seasons.

Contacting these visitors will require continued partnership and coordination with the various Gateway Communities and their respective tourism boards as well as Visit California. Continued promotion of select "free fare" days will also be effective at attracting these first-time visitors, especially those who may have limited travel budgets to convince them that YARTS is a truly cost-effective way to enjoy YNP.

Frequent Yosemite Visitors (both YARTS and non-YARTS travelers): Frequent visitors could include repeat YARTS customers (some of the most cherished in every marketing effort), however it will also include those who may not have ever added YARTS to their travel itinerary. These park-loving, "first-time" passengers are important to capture as they could more readily be converted to regular YARTS users given their expressed affinity for YNP.

One way to convert frequent YNP visitors who do not currently use YARTS is to target these visitors with messaging regarding the free-fare days or to offer incentives to frequent visitors who choose to drive personal vehicles (for example, promoting the benefits of taking YARTS more heavily at the various Valley parking areas or on billboards surrounding the Valley).

Nationwide Nature Enthusiasts and National Park Visitors: Attendance at National Parks across the country continues to grow, and YARTS should attempt to tap into this trend by marketing directly to visitors of other National Parks across the country (i.e., by leveraging demographic data that the NPS may have available and to target certain social media users and followers of parks similar to YNP).

International

International travelers have truly embraced including YNP in their itineraries when visiting the U.S., and they tend to have a propensity to embrace public transportation (like YARTS) as a preferred means to get around while travelling. These international visitors represent a growing target market for YARTS.

YARTS has made recent investments to promote itself on the international travel scene, as have the various Gateway Communities. Attendance of YARTS marketing staff at the annual U.S. Travel Association's IPW (the next event is in Anaheim, CA, June 1-5, 2019 which is particularly convenient for YARTS) is encouraged, with a growth in presence to ensure the organization remains tapped into opportunities to be included on international travel itineraries. Costs are estimated to be about $12 to $15K each year, depending upon travel requirements.

Tasks for YARTS and its social media consultant should include identifying appropriate international travel organizations and incorporating cost-effective outreach and post boosting to reach their followers. Messaging should be specifically appealing to the organization's followers to promote including YARTS in their itineraries when visiting Yosemite and the entire region.

Any rebranding efforts need to incorporate the needs and language translation requirements of the international travel community as a priority, to ensure that the image and message are effectively received across the globe.

OVERALL SYSTEMWIDE MARKETING RECOMMENDATIONS

There are marketing strategies which are common to all services on YARTS, as well as those specific to travel corridors. Below are recommended strategies for YARTS to consider to enhance the marketing efforts for the overall system and to achieve the stated goals and objectives. Strategies developed for each corridor follow. Prioritized recommendations are included with each strategy or task.

Branding

The following actions are recommended for the system's branding:

- Consider an update to the design of the brand (i.e., YARTS logo) to include a more contemporary typeface, and phase in its use cost effectively.
- Develop a new tagline for the service that will translate better. Maintain the word "Yosemite" in the tagline as this is the main draw.
- Develop brand standards and guidelines, including proper usage of the logo, tagline and definition of the logo colors, and publish them in an easy to reference guide.
- Content creation campaign for YARTS and YARTS partner use.

Rebranding of YARTS will require a separate marketing effort (estimated at between $15K and $18K depending upon scope), but YARTS staff and stakeholders should begin to consider and discuss options now. Given the creative local marketing talent in Yosemite and the Gateway communities, a collaborative effort or competition to come up with a name which reflects the transit system's goals and the area's attractions could be considered. The new name should be immediately more descriptive of the service, easily translatable, and memorable, and which can also create a catchy, recognizable acronym or abbreviation. Some examples of replacement names are included in Chapter 12.

While renaming/re-branding the system is a dramatic step to take, it can also be viewed as an opportunity to gain a boost in market exposure and as a morale boost for management and the operations team. Branding evolutions in public transit are quite common and can be cost-effectively implemented if well planned.

Regardless of the branding or re-branding decision, YARTS should also hire a one-time "Content Creation" consultant to capture, collect and catalog preferred images, videos, graphics and other assets (estimated at approximately $1.5 to $2K). These assets can then be easily used in all YARTS marketing and promotions, and can also be distributed widely to YARTS partners, like the DMO gateways, for use on their own social media, digital marketing (such as websites), and in any printed collateral.

Digital Marketing Strategies

Website Improvements: The consultant team has the following recommendations for the YARTS website (estimated at $10 to $15K depending upon complexity):

- Redesign www.YARTS.com to reflect the designs of the various tourism boards, leveraging bold imagery and professional photography of the YARTS vehicles in and around the Yosemite Region. (Note: If YARTS studies the feasibility of renaming the service, the website redesign should be timed accordingly, likely including the purchase and use of a new URL to reflect the new system name.)
- The website connections/links page should enhance how it shows connections to Amtrak, Greyhound, ESTA, the Bus, and other connecting public transit services.
- Navigation buttons and social media links should be immediately visible on the homepage, and not require additional scrolling, to encourage functionality and use of the social media platforms.
- Continued reliance on the interactive route map with enhanced trip suggestions for attractions in and around YNP. These enhancements could represent a revenue opportunity for YARTS for any private attractions that might want to promote their service on the map.
- Enhance the Gateway Community parking maps to be graphics or Google Maps developed specifically for YARTS website visitors (as opposed to the links to pre-existing pages on other websites).

- Enhance search engine optimization (SEO), including investments to ensure that the YARTS webpage appears high in key word searches.
- Employ the use of detailed website analytics and review of key data points to ensure the efficiency of marketing activities involving the website and social media.

Social Media Improvements: The consultant team strongly recommends that YARTS retain the services of a third-party transportation marketing consultant (approximately $1K per month plus post-boosting costs) to manage daily organic posting, sharing of appropriate posts by other organizations and individuals, and to develop and manage a campaign of boosted social media posts. Specific social media goals for YARTS and the consultant are discussed in Chapter 12.

Other Digital Strategies - Google Maps: In addition to the digital marketing strategies listed previously, YARTS should ensure the accuracy of Google Maps pin drops for each stop along the YARTS routes, and consider adding images of the stops to further facilitate customer service.

Other Digital Strategies - Online Review Sites: Proactive management of YARTS' profile and customer reviews on local and tourism review sites/apps, such as *Trip Advisor*, *Yelp*, and *Google My Business* is critical, especially for new visitors and international travelers looking for recommendations. The YARTS team should investigate the possibility of working with these commonly used apps and websites to ensure that the service's profile is rated high by reviewers and that YARTS appears within the first several listings when searches are performed by travelers using the review sites as a guide when planning their Yosemite trips.

Printed Collateral/Materials

Because YARTS staff and other stakeholders have expressed a desire to focus more and more on strategies other than costly printed collateral, it is recommended that YARTS work to minimize printed collateral expenses over the next several years. However, YARTS will likely need to continue to produce printed brochures for mass distribution throughout the Yosemite Region. Likewise, YARTS should continue to update its route and timetable guides annually, with a design that is more complementary to the brochure design. Printing costs are estimated at approximately $15K per year, but could vary greatly depending upon the decision regarding rebranding or decisions to enhance the visual impact of any printed materials.

As the technology becomes more cost effective, YARTS can expand its use of high-impact "video brochures" that combine traditional printed collateral with the technology of video on a mobile device, like the initial run of such brochures that were produced in 2018.

Marketing Partnerships

Transportation Partners: Because YARTS is one link in the transportation chain to and from Yosemite, YARTS needs to continue to foster partnerships with the other modes of transportation (listed in Chapter 12). These partnerships could range from formal cross-

promotional opportunities to more informal agreements to promote each other's service offerings on social media and in printed collateral materials.

Yosemite Conservancy: YARTS can also consider partnering with the Yosemite Conservancy and its mission to achieve visitor enrichment by:

- Establishing a corps of volunteer naturalists who could greet passengers and address any questions they may have as they arrive to YNP, especially during peak service days.
- Coordinating with the Conservancy on video and other promotional projects to align the missions of both organizations.
- Developing an Ambassador program for YARTS employees and operators to enhance the visitor experience and increase customer service quality.

Public Relations and Earned Media

YARTS should consider naming an agency of record and putting that agency on retainer to assist in accomplishing the following goals (estimated to about $1.5K per month):

- As service grows, expands, or is enhanced, YARTS should make well-timed, strategic announcements to introduce the new service, educate the media and the public, and set the stage for success with the media and travel and tourism organizations.
- As these announcements are made, efforts should be made to encourage print and broadcast media to publish stories about the subject matter for "earned media" exposure.
- Respond to media inquiries on behalf of YARTS and manage crisis communications in close coordination with YARTS and MCAG staff.

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APPENDIX E:
YARTS RESERVATION SYSTEM CUSTOMER RESIDENTIAL LOCATION AND TRIP PATTERNS

YARTS management contracts with Betterez to provide the platform for the transit system's reservation system. Beyond providing a convenience for passengers, this system generates data regarding the customers and their travel patterns that is useful in understanding the utilization of the YARTS service as a whole, as well as the four individual service corridors. Specifically, this data can be used to identify the following:

- The residential location of the customer, based on country, state and zip code. Within California, residential location was categorized by county within the immediate YARTS service area (including Inyo County) and by region for areas beyond the service area. These areas were defined as follows:
    - Bay Area – San Francisco, San Mateo, San Jose, Santa Cruz, Alameda, Contra Costa, Marin, Sonoma, Napa and Solano Counties.
    - Central Coast – San Benito, Monterey, San Luis Obispo and Santa Barbara Counties.
    - Central Valley – From San Joaquin County on the north to Kern County on the south.
    - Sacramento Area – Sacramento, Yolo, Placer, El Dorado, Alpine, Amador and Calaveras Counties.
    - North State – All counties north of the Bay Area and Sacramento Area.
    - Southern California – All counties south of the other areas.
- The trip origin and destination of the travel group. Note that this identifies "origin" as outside of the Park and "destination" as within the Park.

Data was obtained and analyzed for all customers making reservations through the service from May 2017 through September 2018. Note that the figures represent individual customers, rather than individual trips. This information is thus best used to identify overall patterns, rather than total number of trips.

120 West Route

Records for a total of 892 reservation customers were evaluated. Analysis tables are presented in Tables 120W-1 through 120W-4, and summarized below.

Customer Residential Location

- Customers come from all over the world, from a total of 29 countries. 77.4 percent are from the U.S. Including Canada, 79.1 percent are from North America. This is followed by 17.4 percent of customers that live in Europe, the largest proportion from England followed by Germany.

- Focusing in on U.S. residents, customers come from 39 different states. Beyond California (43.2 percent of all Sonora Route customers), the highest proportions come from New York (3.5 percent), Florida (3.4 percent) and Texas (2.5 percent).

- The highest proportion of Sonora Route customers within California are Bay Area residents (16.9 percent of all customers, or 39.4 percent of California customers). This is followed by 12.6 percent that are Southern California residents. 4.9 percent of customers reported Tuolumne County residences.

Trip Pattern

The preponderance of customer trips on the Sonora Route are traveling to the Yosemite Valley Visitors Center (98.9 percent). Trip origins are concentrated at four locations outside of the park – Yosemite Pines RV Park (17.6 percent), Rush Creek Lodge (16.9 percent), Yosemite Lakes Campgrounds (15.0 percent) and Mary Laveroni Park (14.8 percent) – that together generate 64.3 percent of the round-trip origins.

TABLE 120W-1: 120 West Route Customers Country of Residence

Country	Region	Count	% of All Customers
Australia	Pacific	15	1.7%
Austria	Europe	1	0.1%
Belgium	Europe	3	0.3%
Brazil	South America	1	0.1%
Canada	North America	15	1.7%
China	Asia	1	0.1%
Czech Republic	Europe	2	0.2%
Denmark	Europe	5	0.6%
France	Europe	6	0.7%
Germany	Europe	42	4.9%
Ireland	Europe	4	0.5%
Israel	Middle East	2	0.2%
Italy	Europe	7	0.8%
Japan	Asia	1	0.1%
Kuwait	Middle East	1	0.1%
Malaysia	Asia	1	0.1%
Malta	Europe	1	0.1%
Netherlands	Europe	16	1.9%
New Zealand	Pacific	2	0.2%
Norway	Europe	2	0.2%
Singapore	Asia	1	0.1%
Slovakia	Europe	1	0.1%
Spain	Europe	2	0.2%
Sweden	Europe	1	0.1%
Switzerland	Europe	7	0.8%
Taiwan	Asia	3	0.3%
Thailand	Asia	2	0.2%
United Kingdom	Europe	50	5.8%
United States	North America	668	77.4%
Total by Region	Asia	9	1.0%
	Europe	150	17.4%
	Middle East	3	0.3%
	North America	683	79.1%
	Pacific	17	2.0%
	South America	1	0.1%

TABLE 120W-2: 120 West Route U.S. Customers State of Residence

State	Count	% of All Customers	State	Count	% of All Customers
Alabama	0	0.0%	Nebraska	2	0.2%
Alaska	0	0.0%	Nevada	6	0.7%
Arizona	18	2.1%	New Hampshire	3	0.3%
Arkansas	1	0.1%	New Jersey	5	0.6%
California	373	43.2%	New Mexico	2	0.2%
Colorado	8	0.9%	New York	30	3.5%
Connecticut	4	0.5%	North Carolina	7	0.8%
Delaware	0	0.0%	North Dakota	1	0.1%
Florida	29	3.4%	Ohio	13	1.5%
Georgia	2	0.2%	Oklahoma	2	0.2%
Hawaii	1	0.1%	Oregon	9	1.0%
Idaho	0	0.0%	Pennsylvania	11	1.3%
Illinois	11	1.3%	Puertto Rico	0	0.0%
Indiana	7	0.8%	Rhode Island	0	0.0%
Iowa	1	0.1%	South Carolina	5	0.6%
Kansas	0	0.0%	South Dakota	0	0.0%
Kentucky	5	0.6%	Tennessee	4	0.5%
Louisiana	1	0.1%	Texas	22	2.5%
Maine	2	0.2%	Utah	5	0.6%
Maryland	9	1.0%	Vermont	0	0.0%
Massachusetts	11	1.3%	Virginia	10	1.2%
Michigan	2	0.2%	Washington	14	1.6%
Minnesota	7	0.8%	Washington DC	0	0.0%
Mississippi	1	0.1%	West Virginia	0	0.0%
Missouri	9	1.0%	Wisconsin	7	0.8%
Montana	0	0.0%	Wyoming	0	0.0%

TABLE 120W-3: 120 West Route California Customers Region of Residence

Region	Count	% of All Customers	% of California Customers
Bay Area	146	16.9%	39.4%
Central Coast	9	1.0%	2.4%
Central Valley	17	2.0%	4.6%
YARTS Area	42	4.9%	11.3%
Fresno County	0	0.0%	0.0%
Inyo County	0	0.0%	0.0%
Madera County	0	0.0%	0.0%
Mariposa County	0	0.0%	0.0%
Merced County	0	0.0%	0.0%
Mono County	0	0.0%	0.0%
Tuolumne County	42	4.9%	11.3%
North State	1	0.1%	0.3%
Sacramento Area	47	5.4%	12.7%
Southern California	109	12.6%	29.4%

TABLE 120W-4: 120 West Route Trip Origin/Destination Round-Trip Pairs

Origin	Destination: Big Oak Flat Park Entrance	Buck Meadows Restaurant	Crane Flat Gas Station	Mary Laveroni Park	Yosemite Valley Visitor Center	Total
Yosemite Pines RV Park	2	0	1	0	154	157
Yosemite Lakes Campgrounds	3	0	0	0	131	134
Black Oak Resort & Casino	0	0	0	0	32	32
Inns of California Sonora	0	0	0	0	35	35
Mary Laveroni Park	0	0	0	0	132	132
Big Oak Flat Park Entrance	0	0	0	0	30	30
Buck Meadows Restaurant	0	0	0	0	78	78
Crane Flat Gas Station	0	0	0	0	35	35
Rush Creek Lodge	0	0	0	0	151	151
Sonora Best Western	0	1	1	1	67	70
Rocca Park Jamestown	0	0	0	1	37	38
Total	5	1	2	2	882	892

Percent All Trips

Yosemite Pines RV Park	0.2%	0.0%	0.1%	0.0%	17.3%	17.6%
Yosemite Lakes Campgrounds	0.3%	0.0%	0.0%	0.0%	14.7%	15.0%
Black Oak Resort & Casino	0.0%	0.0%	0.0%	0.0%	3.6%	3.6%
Inns of California Sonora	0.0%	0.0%	0.0%	0.0%	3.9%	3.9%
Mary Laveroni Park	0.0%	0.0%	0.0%	0.0%	14.8%	14.8%
Big Oak Flat Park Entrance	0.0%	0.0%	0.0%	0.0%	3.4%	3.4%
Buck Meadows Restaurant	0.0%	0.0%	0.0%	0.0%	8.7%	8.7%
Crane Flat Gas Station	0.0%	0.0%	0.0%	0.0%	3.9%	3.9%
Rush Creek Lodge	0.0%	0.0%	0.0%	0.0%	16.9%	16.9%
Sonora Best Western	0.0%	0.1%	0.1%	0.1%	7.5%	7.8%
Rocca Park Jamestown	0.0%	0.0%	0.0%	0.1%	4.1%	4.3%
Total	0.6%	0.1%	0.2%	0.2%	98.9%	100.0%

120/395 Route

Records for a total of 543 reservation customers were evaluated. Analysis tables are presented in Tables 120/395-1 through 120/395-4, and summarized below.

Customer Residential Location

- Customers come from a total of 22 countries or territories. 87.9 percent are from the U.S. and 91.1 percent are from North America. This is followed by 6.1 percent of customers that live in Europe, the largest proportions from England and Germany.

- Focusing in on U.S. residents, customers come from 41 different states and the District of Columbia. Beyond California (39.0 percent of all 120/395 Route customers), the highest proportions come from Texas (4.2 percent), followed by 3.5 percent each from Illinois and Washington.

- Of California residents, the highest proportion of 120/395 Route customers are from Southern California (19.9 percent of all customers or 51.0 percent of California customers). This is followed by Bay Area residents (11.2 percent of all customers, or 28.6 percent of California customers). 4.8 percent of customers reported Mono County residences.

Trip Pattern

The preponderance of customer trips on the 120/395 Route are traveling roughly equally to Yosemite Valley (47.3 percent) and to Tuolumne Meadows (47.7 percent), with the remainder consisting of trips to White Wolf Lodge, Crane Flat and the Rush Creek Trailhead. Most of the trips originate in Mammoth Lakes (72.7 percent in total), while the Lee Vining area stops in total generate 11.8 percent of trip origins. 12.7 percent of trips are within Yosemite National Park, largely between Tuolumne Meadows and Yosemite Valley.

TABLE 120/395-1: 120/395 Route Customers Country of Residence

Country	Region	Count	% of All Customers
Australia	Pacific	3	0.6%
Belgium	Europe	2	0.4%
Brazil	South America	2	0.4%
Canada	North America	17	3.2%
China	Asia	2	0.4%
Czech Republic	Europe	1	0.2%
France	Europe	3	0.6%
Germany	Europe	10	1.9%
Hong Kong	Asia	1	0.2%
Ireland	Europe	1	0.2%
Israel	Middle East	1	0.2%
Japan	Asia	2	0.4%
Netherlands	Europe	3	0.6%
Peru	South America	1	0.2%
Portugal	Europe	1	0.2%
Romania	Europe	1	0.2%
Singapore	Asia	1	0.2%
Sweden	Europe	1	0.2%
Taiwan	Asia	1	0.2%
United Kingdom	Europe	10	1.9%
United States	North America	473	87.9%
Uruguay	South America	1	0.2%
Total by Region	Asia	7	1.3%
	Europe	33	6.1%
	Middle East	1	0.2%
	North America	490	91.1%
	Pacific	3	0.6%
	South America	4	0.7%

TABLE 120/395-2: 120/395 Route U.S. Customers State of Residence

State	Count	% of All Customers	State	Count	% of All Customers
Alabama	2	0.4%	Nebraska	0	0.0%
Alaska	1	0.2%	Nevada	8	1.5%
Arizona	16	3.0%	New Hampshire	4	0.7%
Arkansas	0	0.0%	New Jersey	1	0.2%
California	210	39.0%	New Mexico	1	0.2%
Colorado	12	2.2%	New York	10	1.9%
Connecticut	2	0.4%	North Carolina	7	1.3%
Delaware	1	0.2%	North Dakota	0	0.0%
Florida	11	2.0%	Ohio	8	1.5%
Georgia	10	1.9%	Oklahoma	4	0.7%
Hawaii	3	0.6%	Oregon	17	3.2%
Idaho	4	0.7%	Pennsylvania	8	1.5%
Illinois	18	3.3%	Puerto Rico	0	0.0%
Indiana	5	0.9%	Rhode Island	0	0.0%
Iowa	5	0.9%	South Carolina	0	0.0%
Kansas	3	0.6%	South Dakota	1	0.2%
Kentucky	1	0.2%	Tennessee	8	1.5%
Louisiana	1	0.2%	Texas	22	4.1%
Maine	0	0.0%	Utah	2	0.4%
Maryland	6	1.1%	Vermont	2	0.4%
Massachusetts	9	1.7%	Virginia	6	1.1%
Michigan	10	1.9%	Washington	18	3.3%
Minnesota	2	0.4%	Washington DC	3	0.6%
Mississippi	0	0.0%	West Virginia	0	0.0%
Missouri	5	0.9%	Wisconsin	4	0.7%
Montana	1	0.2%	Wyoming	0	0.0%

TABLE 120/395-3: 120/395 Route California Customers Region of Residence

Region	Count	% of All Customers	% of California Customers
Bay Area	60	11.2%	28.6%
Central Coast	3	0.6%	1.4%
Central Valley	7	1.3%	3.3%
YARTS Area	14	2.6%	6.7%
Fresno County	0	0.0%	0.0%
Inyo County	0	0.0%	0.0%
Madera County	0	0.0%	0.0%
Mariposa County	1	0.2%	0.5%
Merced County	2	0.4%	1.0%
Mono County	10	1.9%	4.8%
Tuolumne County	1	0.2%	0.5%
North State	3	0.6%	1.4%
Sacramento Area	16	3.0%	7.6%
Southern California	107	19.9%	51.0%

TABLE 120/395-4: 120/395 Route Trip Origin/Destination Round-Trip Pairs

	Destination						
Origin	Rush Creek Trailhead	Tuolumne Meadows Store	Tuolumne Meadows Visitor Center	White Wolf Lodge	Crane Flat Gas Station	Yosemite Valley Visitor Center	Total
Mammoth Mountain Inn	3	25	27	0	0	37	92
The Village Mammoth Lakes	3	30	15	0	0	48	96
Juniper Springs Resort	1	5	4	0	0	12	22
Shilo Inn	1	39	18	0	1	42	101
Mammoth Lakes Park- Tavern Rd	1	23	27	0	0	33	84
June Mountain Ski Area	0	2	3	0	0	3	8
Rush Creek Trailhead	0	2	4	0	0	1	7
Lake View Lodge	0	15	13	0	0	16	44
Mono Basin Visitor Center	0	3	0	0	0	3	6
Tioga Mobil Gas Mart	0	2	2	0	0	10	14
Tuolumne Meadows Store	0	0	0	11	1	27	39
Tuolumne Meadows Visitor Center	0	0	0	5	0	22	27
White Wolf Lodge	0	0	0	0	0	1	1
Crane Flat Gas Station	0	0	0	0	0	2	2
Total	9	146	113	16	2	257	543
Percent All Trips							
Mammoth Mountain Inn	0.6%	4.6%	5.0%	0.0%	0.0%	6.8%	16.9%
The Village Mammoth Lakes	0.6%	5.5%	2.8%	0.0%	0.0%	8.8%	17.7%
Juniper Springs Resort	0.2%	0.9%	0.7%	0.0%	0.0%	2.2%	4.1%
Shilo Inn	0.2%	7.2%	3.3%	0.0%	0.2%	7.7%	18.6%
Mammoth Lakes Park- Tavern Rd	0.2%	4.2%	5.0%	0.0%	0.0%	6.1%	15.5%
June Mountain Ski Area	0.0%	0.4%	0.6%	0.0%	0.0%	0.6%	1.5%
Rush Creek Trailhead	0.0%	0.4%	0.7%	0.0%	0.0%	0.2%	1.3%
Lake View Lodge	0.0%	2.8%	2.4%	0.0%	0.0%	2.9%	8.1%
Mono Basin Visitor Center	0.0%	0.6%	0.0%	0.0%	0.0%	0.6%	1.1%
Tioga Mobil Gas Mart	0.0%	0.4%	0.4%	0.0%	0.0%	1.8%	2.6%
Tuolumne Meadows Store	0.0%	0.0%	0.0%	2.0%	0.2%	5.0%	7.2%
Tuolumne Meadows Visitor Center	0.0%	0.0%	0.0%	0.9%	0.0%	4.1%	5.0%
White Wolf Lodge	0.0%	0.0%	0.0%	0.0%	0.0%	0.2%	0.2%
Crane Flat Gas Station	0.0%	0.0%	0.0%	0.0%	0.0%	0.4%	0.4%
Total	1.7%	26.9%	20.8%	2.9%	0.4%	47.3%	100.0%

140 Route

This review encompassed a total of 977 reservation customers. The results are shown in Table 140-1 through 140-4, and summarized below.

Customer Residential Location

- Customers come from a total of 46 countries or territories, and from every part of the globe. A relatively low proportion of 60.1 percent are from the U.S., making up the largest proportion of the 63.0 percent that are from North America. Fully 23.0 percent of passengers are from Europe, particularly from the United Kingdom.

- Among U.S. residents, customers come from 40 different states. Beyond California (26.5 percent of all Sonora Route customers), the highest proportions come from Texas, Illinois and New York (between 2 percent and 4 percent apiece).

- The Bay Area generates the largest proportion of California residents using this route, at 41.6 percent. A relatively high (21.0 percent) proportion are residents of the YARTS service area, including 10.5 percent that are Merced County residents and 9.3 percent that are Mariposa County residents. The proportion of ridership on this route that live in Southern California (25.3 percent) is relatively high, despite the fact that the 41 Route provides a more direct route to Yosemite Valley.

Trip Pattern

The trip origin/destination pattern reflects this route's key role in providing regional access from connecting rail and transit services, with 47 percent of trips traveling from Merced (particularly the Amtrak station) and Yosemite Valley (particularly the Visitor's Center). There are also a substantial proportion of trips from the areas just outside the Park (Mariposa to the Park) heading to Yosemite Valley (31.5 percent) as well as 19.6 percent of trips in the "reverse" direction originating in Mariposa or points east and heading to Merced. Overall, this route serves a more diverse pattern of individual passenger trips.

TABLE 140-1: 140 Route Customers Country of Residence

Country	Region	Count	% of All Customers
Argentina	South America	2	0.2%
Australia	Pacific	36	3.7%
Austria	Europe	1	0.1%
Belgium	Europe	2	0.2%
Brazil	South America	1	0.1%
Canada	North America	23	2.4%
Chile	South America	1	0.1%
China	Asia	6	0.6%
Colombia	South America	1	0.1%
Costa Rica	North America	1	0.1%
Czech Republic	Europe	6	0.6%
Denmark	Europe	3	0.3%
Estonia	Europe	3	0.3%
Finland	Europe	5	0.5%
France	Europe	11	1.1%
Germany	Europe	25	2.6%
Hong Kong	Asia	7	0.7%
Hungary	Europe	2	0.2%
India	Asia	6	0.6%
Indonesia	Asia	1	0.1%
Ireland	Europe	12	1.2%
Israel	Middle East	2	0.2%
Italy	Europe	5	0.5%
Japan	Asia	23	2.4%
Malta	Europe	1	0.1%
Mexico	North America	3	0.3%
Malta	Europe	1	0.1%
Netherlands	Europe	7	0.7%
New Zealand	Pacific	16	1.6%
Norway	Europe	2	0.2%
Poland	Europe	3	0.3%
Romania	Europe	1	0.1%
Russia	Europe	4	0.4%
Saudi Arabia	Middle East	1	0.1%
Serbia	Europe	2	0.2%
Singapore	Asia	13	1.3%
South Africa	Africa	2	0.2%
South Korea	Asia	7	0.7%
Spain	Europe	12	1.2%
Sweden	Europe	1	0.1%
Switzerland	Europe	5	0.5%
Taiwan	Asia	11	1.1%
Thailand	Asia	2	0.2%
United Kingdom	Europe	110	11.3%
Turkey	Middle East	1	0.1%
United States	North America	587	60.1%
Total by Region	Asia	76	7.8%
	Africa	2	0.2%
	Europe	224	23.0%
	Middle East	4	0.4%
	North America	614	63.0%
	Pacific	52	5.3%
	South America	5	0.5%

TABLE 140-2: 140 Route U.S. Customers State of Residence

State	Count	% of All Customers	State	Count	% of All Customers
Alabama	1	0.1%	Montana	0	0.0%
Alaska	0	0.0%	Nebraska	0	0.0%
Arizona	6	0.6%	Nevada	2	0.2%
Arkansas	5	0.5%	New Hampshire	1	0.1%
California	259	26.5%	New Jersey	11	1.1%
Colorado	8	0.8%	New Mexico	0	0.0%
Connecticut	4	0.4%	New York	28	2.9%
Delaware	1	0.1%	North Carolina	14	1.4%
Florida	19	1.9%	North Dakota	1	0.1%
Georgia	11	1.1%	Ohio	17	1.7%
Hawaii	5	0.5%	Oklahoma	4	0.4%
Idaho	3	0.3%	Oregon	5	0.5%
Illinois	23	2.4%	Pennsylvania	16	1.6%
Indiana	8	0.8%	Rhode Island	1	0.1%
Iowa	2	0.2%	South Carolina	6	0.6%
Kansas	0	0.0%	South Dakota	0	0.0%
Kentucky	5	0.5%	Tennessee	6	0.6%
Louisiana	1	0.1%	Texas	35	3.6%
Maine	0	0.0%	Utah	4	0.4%
Maryland	9	0.9%	Vermont	0	0.0%
Massachusetts	15	1.5%	Virginia	13	1.3%
Michigan	7	0.7%	Washington	12	1.2%
Minnesota	8	0.8%	West Virginia	1	0.1%
Mississippi	0	0.0%	Wisconsin	3	0.3%
Missouri	0	0.0%	Wyoming	1	0.1%

TABLE 140-3: 140 Route California Customers Region of Residence

Region	Count	% of All Customers	% of California Customers
Bay Area	107	11.0%	41.6%
Central Coast	1	0.1%	0.4%
Central Valley	10	1.0%	3.9%
YARTS Area	**54**	**5.5%**	**21.0%**
Fresno County	*1*	*0.1%*	*0.4%*
Madera County	*2*	*0.2%*	*0.8%*
Mariposa County	*24*	*2.5%*	*9.3%*
Merced County	*27*	*2.8%*	*10.5%*
North State	3	0.3%	1.2%
Sacramento Area	17	1.7%	6.6%
Southern California	65	6.7%	25.3%

TABLE 140-4: 140 Route Trip Origin/Destination Round-Trip Pairs

Origin	Destination: Merced Airport	Merced Transpo	Merced AMTRAK	Midtown Mariposa	Mariposa Park and Ride	KOA Campground	Mariposa Park and Ride	Yosemite Bug Resort	Cedar Lodge	El Portal PO	Yosemite View Lodge	Yosemite Valley Visitor Center	Yosemite Valley Lodge-Laurel Cottage	Half Dome Village	Total
Half Dome Village	0	5	44	2	4	0	4	0	0	0	0	0	0	0	59
Majestic Yosemite Hotel	0	0	3	0	0	0	0	0	0	0	0	0	0	0	3
Yosemite Valley Visitor Center	0	4	48	0	1	0	1	0	0	0	1	0	0	2	57
Yosemite Valley Lodge	0	2	30	0	0	0	0	0	0	0	0	0	0	0	32
Yosemite View Lodge	0	0	3	0	0	0	0	0	0	0	0	40	17	8	68
El Portal PO	0	0	1	0	0	0	0	0	0	0	0	7	0	1	9
Cedar Lodge	0	0	3	0	0	0	0	0	0	0	0	24	6	5	38
Yosemite Bug Resort	2	4	19	0	0	0	0	0	0	0	3	35	1	4	68
Midpines PO	0	0	2	0	0	0	0	0	0	0	0	13	0	1	16
Midpines County Park	0	0	1	0	0	0	0	0	0	0	0	2	0	0	3
KOA Campground	1	1	0	0	0	0	0	0	0	0	0	2	0	1	5
Roadside Rest	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
Mariposa Park and Ride	1	1	11	0	0	0	0	0	0	1	0	92	19	5	130
Midtown Mariposa	1	2	5	0	0	0	0	0	0	0	0	25	0	4	37
Catheys Valley	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
Merced AMTRAK	0	0	0	6	3	1	3	15	2	1	22	191	15	81	340
Merced Transpo	0	0	0	2	3	0	3	3	2	0	4	64	7	21	109
Merced Airport	0	0	0	1	0	0	0	1	0	0	2	9	2	2	17
Total	5	20	170	11	11	1	11	19	4	2	32	504	67	136	993

Percent All Trips

Half Dome Village	0.0%	0.5%	4.4%	0.2%	0.4%	0.0%	0.4%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	5.9%
Majestic Yosemite Hotel	0.0%	0.0%	0.3%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.3%
Yosemite Valley Visitor Center	0.0%	0.4%	4.8%	0.0%	0.1%	0.0%	0.1%	0.0%	0.0%	0.0%	0.1%	0.0%	0.0%	0.2%	5.7%
Yosemite Valley Lodge	0.0%	0.2%	3.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	3.2%
Yosemite View Lodge	0.0%	0.0%	0.3%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	4.0%	1.7%	0.8%	6.8%
El Portal PO	0.0%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.7%	0.0%	0.1%	0.9%
Cedar Lodge	0.0%	0.0%	0.3%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	2.4%	0.6%	0.5%	3.8%
Yosemite Bug Resort	0.2%	0.4%	1.9%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.3%	3.5%	0.1%	0.4%	6.8%
Midpines PO	0.0%	0.0%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	1.3%	0.0%	0.1%	1.6%
Midpines County Park	0.0%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.2%	0.0%	0.0%	0.3%
KOA Campground	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.2%	0.0%	0.1%	0.5%
Roadside Rest	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%
Mariposa Park and Ride	0.1%	0.1%	1.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%	0.0%	9.3%	1.9%	0.5%	13.1%
Midtown Mariposa	0.1%	0.2%	0.5%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	2.5%	0.0%	0.4%	3.7%
Catheys Valley	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%	0.1%
Merced AMTRAK	0.0%	0.0%	0.0%	0.6%	0.3%	0.1%	0.3%	1.5%	0.2%	0.1%	2.2%	19.2%	1.5%	8.2%	34.2%
Merced Transpo	0.0%	0.0%	0.0%	0.2%	0.3%	0.0%	0.3%	0.3%	0.2%	0.0%	0.4%	6.4%	0.7%	2.1%	11.0%
Merced Airport	0.0%	0.0%	0.0%	0.1%	0.0%	0.0%	0.0%	0.1%	0.0%	0.0%	0.2%	0.9%	0.2%	0.2%	1.7%
Total	0.5%	2.0%	17.1%	1.1%	1.1%	0.1%	1.1%	1.9%	0.4%	0.2%	3.2%	50.8%	6.7%	13.7%	100.0%

41 Corridor

This review considered reservation records for a total of 764 customers, as shown in Tables 41-1 through 41-4. This review is summarized below.

Customer Residential Location

- Customers of this route are residents of 34 countries. A relatively high percent (83 percent) are from the U.S. The total from North American countries were 86 percent, followed by 9.4 percent from Europe and 2.4 percent from Pacific counties such as Australia.

- Focusing in on U.S. residents, customers come from 44 different states, Washington DC and Puerto Rico. In addition to Californians (31.2 percent of all customers), the highest proportions come from Washington (3.3 percent), New Jersey (2.7 percent) and Arizona (2.6 percent).

- Of the Californians using the 41 Route, the highest proportion (35.9 percent) are Southern Californians, followed by 23.2 percent that are Fresno County residents. Overall, 34.2 percent of customers live in the YARTS service area counties.

Trip Pattern

The largest proportion of trips, comprising 35.8 percent of the total, are from the Fresno-Yosemite international Airport to Yosemite Valley. Including other trip origins in the Fresno area, 56.4 percent of all trips are from Fresno into the Park. Another substantial proportion of trips are from areas just outside the Park (as far south as Oakhurst) into the Park, which generate 27.6 percent of all trips.

TABLE 41-1: 41 Route Customers Country of Residence

Country	Region	Count	% of All Customers
Australia	Pacific	14	1.8%
Belgium	Europe	1	0.1%
Canada	North America	17	2.2%
China	Asia	2	0.3%
Colombia	South America	1	0.1%
Costa Rica	North America	2	0.3%
Czech Republic	Europe	2	0.3%
Denmark	Europe	3	0.4%
Estonia	Europe	1	0.1%
France	Europe	4	0.5%
Germany	Europe	4	0.5%
Hong Kong	Asia	2	0.3%
Hungary	Europe	1	0.1%
India	Asia	1	0.1%
Ireland	Europe	2	0.3%
Italy	Europe	2	0.3%
Japan	Asia	4	0.5%
Korea	Asia	1	0.1%
Mexico	North America	4	0.5%
Netherlands	Europe	5	0.7%
New Zealand	Pacific	4	0.5%
Norway	Europe	1	0.1%
Philippines	Asia	1	0.1%
Poland	Europe	3	0.4%
Romania	Europe	1	0.1%
Russia	Europe	1	0.1%
Singapore	Asia	2	0.3%
Spain	Europe	6	0.8%
Taiwan	Asia	1	0.1%
Turkey	Middle East	1	0.1%
United Kingdom	Europe	35	4.6%
United States	North America	633	83.0%
Uruguay	South America	1	0.1%
Vietnam	Asia	1	0.1%
Total by Region	Asia	15	2.0%
	Europe	72	9.4%
	Middle East	1	0.1%
	North America	656	86.0%
	Pacific	18	2.4%
	South America	2	0.3%

TABLE 41-2: 41 Route U.S. Customers State of Residence

State	Count	% of All Customers	State	Count	% of All Customers
Alabama	3	0.4%	Nebraska	2	0.3%
Alaska	5	0.7%	Nevada	6	0.8%
Arizona	20	2.6%	New Hampshire	2	0.3%
Arkansas	1	0.1%	New Jersey	21	2.7%
California	238	31.2%	New Mexico	1	0.1%
Colorado	14	1.8%	New York	15	2.0%
Connecticut	3	0.4%	North Carolina	16	2.1%
Delaware	1	0.1%	North Dakota	0	0.0%
Florida	33	4.3%	Ohio	14	1.8%
Georgia	2	0.3%	Oklahoma	3	0.4%
Hawaii	3	0.4%	Oregon	6	0.8%
Idaho	2	0.3%	Pennsylvania	7	0.9%
Illinois	25	3.3%	Puerto Rico	1	0.1%
Indiana	8	1.0%	Rhode Island	0	0.0%
Iowa	2	0.3%	South Carolina	3	0.4%
Kansas	2	0.3%	South Dakota	0	0.0%
Kentucky	7	0.9%	Tennessee	4	0.5%
Louisiana	6	0.8%	Texas	41	5.4%
Maine	0	0.0%	Utah	2	0.3%
Maryland	10	1.3%	Vermont	1	0.1%
Massachusetts	13	1.7%	Virginia	11	1.4%
Michigan	13	1.7%	Washington	25	3.3%
Minnesota	12	1.6%	Washington DC	3	0.4%
Mississippi	2	0.3%	West Virginia	0	0.0%
Missouri	8	1.0%	Wisconsin	12	1.6%
Montana	1	0.1%	Wyoming	2	0.3%

TABLE 41-3: 41 Route California Customers Region of Residence

Region	Count	% of All Customers	% of California Customers
Bay Area	35	4.6%	14.8%
Central Coast	9	1.2%	3.8%
Central Valley	22	2.9%	9.3%
YARTS Area	**81**	**10.6%**	**34.2%**
Fresno County	*55*	*7.2%*	*23.2%*
Madera County	*16*	*2.1%*	*6.8%*
Mariposa County	*7*	*0.9%*	*3.0%*
Mono County	*2*	*0.3%*	*0.8%*
Tuolumne County	*1*	*0.1%*	*0.4%*
North State	2	0.3%	0.8%
Sacramento Area	3	0.4%	1.3%
Southern California	85	11.1%	35.9%

TABLE 41-4: 41 Route Trip Origin/Destination Round-Trip Pairs

Origin	Destination: Yosemite Valley Visitor Center	Yosemite Valley Lodge	Half Dome Village	Majestic Yosemite Hotel	Big Trees Lodge	Wawona Store	Mariposa Grove	Tenaya Lodge	The Pines at Bass Lake	Oakhurst Best Western	Coarsegold	Chukchansi Gold Resort and Casino	North Fresno	Fresno Amtrak-Greyhound	Fresno Airport	Total
Wawona Store	18	3	2	1	0	0	0	0	0	0	0	0	0	0	0	24
Big Trees Lodge	5	14	1	0	0	0	0	0	0	0	0	0	0	0	0	20
Mariposa Grove	6	0	0	0	0	1	0	0	0	0	0	0	0	0	0	7
Tenaya Lodge	39	14	2	2	0	1	0	0	0	0	0	0	0	0	0	58
The Pines at Bass Lake	28	3	0	1	0	0	1	0	0	0	0	0	0	0	0	33
Oakhurst Best Western	83	13	7	1	0	2	2	0	0	0	0	0	0	0	0	108
Coarsegold	14	1	3	0	0	0	0	0	0	0	0	0	0	0	0	18
Chukchansi Gold Resort and Casino	11	1	2	1	0	0	0	0	0	0	0	0	0	0	0	15
North Fresno	34	4	3	2	0	0	0	0	0	0	0	1	0	0	0	44
Fresno Amtrak-Greyhound	89	11	9	0	2	5	1	2	5	7	1	1	0	0	0	133
Fresno Airport	200	25	38	2	3	9	2	10	9	17	0	1	1	2	0	319
Total	527	89	67	10	5	18	6	12	14	24	1	3	1	2	0	779
Percent All Trips																
Wawona Store	2.3%	0.4%	0.3%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	3.1%
Big Trees Lodge	0.6%	1.8%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	2.6%
Mariposa Grove	0.8%	0.0%	0.0%	0.0%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.9%
Tenaya Lodge	5.0%	1.8%	0.3%	0.3%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	7.4%
The Pines at Bass Lake	3.6%	0.4%	0.0%	0.1%	0.0%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	4.2%
Oakhurst Best Western	10.7%	1.7%	0.9%	0.1%	0.0%	0.3%	0.3%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	13.9%
Coarsegold	1.8%	0.1%	0.4%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	2.3%
Chukchansi Gold Resort and Casino	1.4%	0.1%	0.3%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	1.9%
North Fresno	4.4%	0.5%	0.4%	0.3%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%	0.0%	0.0%	0.0%	5.6%
Fresno Amtrak-Greyhound	11.4%	1.4%	1.2%	0.0%	0.3%	0.6%	0.1%	0.3%	0.6%	0.9%	0.1%	0.1%	0.0%	0.0%	0.0%	17.1%
Fresno Airport	25.7%	3.2%	4.9%	0.3%	0.4%	1.2%	0.3%	1.3%	1.2%	2.2%	0.0%	0.1%	0.1%	0.3%	0.0%	40.9%
Total	67.7%	11.4%	8.6%	1.3%	0.6%	2.3%	0.8%	1.5%	1.8%	3.1%	0.1%	0.4%	0.1%	0.3%	0.0%	100.0%

Residential Location Data Over All Routes

The residential location data discussed for the individual routes can also be combined to consider YARTS as a whole. These data are shown in Tables T-1 through T-3, as well as Figures T-1 through T-3. A review of these tables indicates the following:

- Overall, customers over the data period came from 55 individual countries and territories. Beyond the U.S. (75.1 percent), countries that generated relatively high proportions of YARTS customers were the United Kingdom (6.5 percent), Germany (2.6 percent), Canada (2.3 percent) and Australia (2.2 percent).

- By continent and region, North America residents generated slightly more than ¾ of all customers (77.7 percent) followed by 15.3 percent from Europe and 3.4 percent from Asia. This is also depicted in Figure T-1.

- YARTS was used by residents of all 50 United States, as well as Washington DC and Puerto Rico. As shown in Figure T-2, relatively high proportions of YARTS ridership (beyond Californians) were generated by Texas, Florida, New York, Illinois and Washington, all of which generated at least 2 percent of YARTS ridership.

- The region of California generating total YARTS ridership is summarized in Table T-3, indicating a relatively close balance between Southern California residents (34 percent of Californian customers) and Bay Area residents (32.4 percent). The YARTS service area counties generate a substantial proportion of ridership (6.1 percent of total ridership). Other areas of California generate relatively low proportions of total ridership.

- Finally, Figure T-3 presents a summary comparison of the proportion of ridership by residents on each of the four routes. This reflects the differing markets that each of the routes serves. The 140 Route serves a relatively high proportion of international passengers. Passengers from other U.S. states are concentrated on the 120/395 Route and the 41 Route. Residents of Southern California also tend to use the 120/395 Route as well as the 41 Route, while Bay Area residents are a relatively high proportion of 120 West Route ridership.

TABLE T-1: All Routes Reservation Customers Country of Residence

Country	Region	Count of Reservation System Customers					% of All Customers
		140	120/395	120	41	Total	
Argentina	South America	2	0	0	0	2	0.1%
Australia	Pacific	36	3	15	14	68	2.2%
Austria	Europe	1	0	1	0	2	0.1%
Belgium	Europe	2	2	3	1	8	0.3%
Brazil	South America	1	2	1	0	4	0.1%
Canada	North America	23	17	15	17	72	2.3%
Chile	South America	1	0	0	0	1	0.0%
China	Asia	6	2	1	2	11	0.3%
Colombia	South America	1	0	0	1	2	0.1%
Costa Rica	North America	1	0	0	2	3	0.1%
Czech Republic	Europe	6	1	2	2	11	0.3%
Denmark	Europe	3	0	5	3	11	0.3%
Estonia	Europe	3	0	0	1	4	0.1%
Finland	Europe	5	0	0	0	5	0.2%
France	Europe	11	3	6	4	24	0.8%
Germany	Europe	25	10	42	4	81	2.6%
Hong Kong	Asia	7	1	0	2	10	0.3%
Hungary	Europe	2	0	0	1	3	0.1%
India	Asia	6	0	0	1	7	0.2%
Indonesia	Asia	1	0	0	0	1	0.0%
Ireland	Europe	12	1	4	2	19	0.6%
Israel	Middle East	2	1	2	0	5	0.2%
Italy	Europe	5	0	7	2	14	0.4%
Japan	Asia	23	2	1	4	30	1.0%
Korea	Asia	0	0	0	1	1	0.0%
Kuwait	Middle East	0	0	1	0	1	0.0%
Malta	Europe	1	0	1	0	2	0.1%
Mexico	North America	3	0	0	4	7	0.2%
Malaysia	Asia	0	0	1	0	1	0.0%
Malta	Europe	1	0	1	0	2	0.1%
Netherlands	Europe	7	3	16	5	31	1.0%
New Zealand	Pacific	16	0	2	4	22	0.7%
Norway	Europe	2	0	2	1	5	0.2%
Peru	South America	0	1	0	0	1	0.0%
Philippines	Asia	0	0	0	1	1	0.0%
Poland	Europe	3	0	0	3	6	0.2%
Portugal	Europe	0	1	0	0	1	0.0%
Romania	Europe	1	1	0	1	3	0.1%
Russia	Europe	4	0	0	1	5	0.2%
Saudi Arabia	Middle East	1	0	0	0	1	0.0%
Serbia	Europe	2	0	0	0	2	0.1%
Singapore	Asia	13	1	1	2	17	0.5%
Slovakia	Europe	0	0	1	0	1	0.0%
South Africa	Africa	2	0	0	0	2	0.1%
South Korea	Asia	7	0	0	0	7	0.2%
Spain	Europe	12	0	2	6	20	0.6%
Sweden	Europe	1	1	1	0	3	0.1%
Switzerland	Europe	5	0	7	0	12	0.4%
Taiwan	Asia	11	1	3	1	16	0.5%
Thailand	Asia	2	0	2	0	4	0.1%
Turkey	Middle East	1	0	0	1	2	0.1%
United Kingdom	Europe	110	10	50	35	205	6.5%
United States	North America	587	473	668	633	2361	75.1%
Uruguay	South America	0	1	0	1	2	0.1%
Vietnam	Asia	0	0	0	1	1	0.0%
Total by Region	Asia	76	7	9	14	106	3.4%
	Africa	2	0	0	0	2	0.1%
	Europe	224	33	151	72	480	15.3%
	Middle East	4	1	3	1	9	0.3%
	North America	614	490	683	656	2443	77.7%
	Pacific	52	3	17	18	90	2.9%
	South America	5	4	1	2	12	0.4%

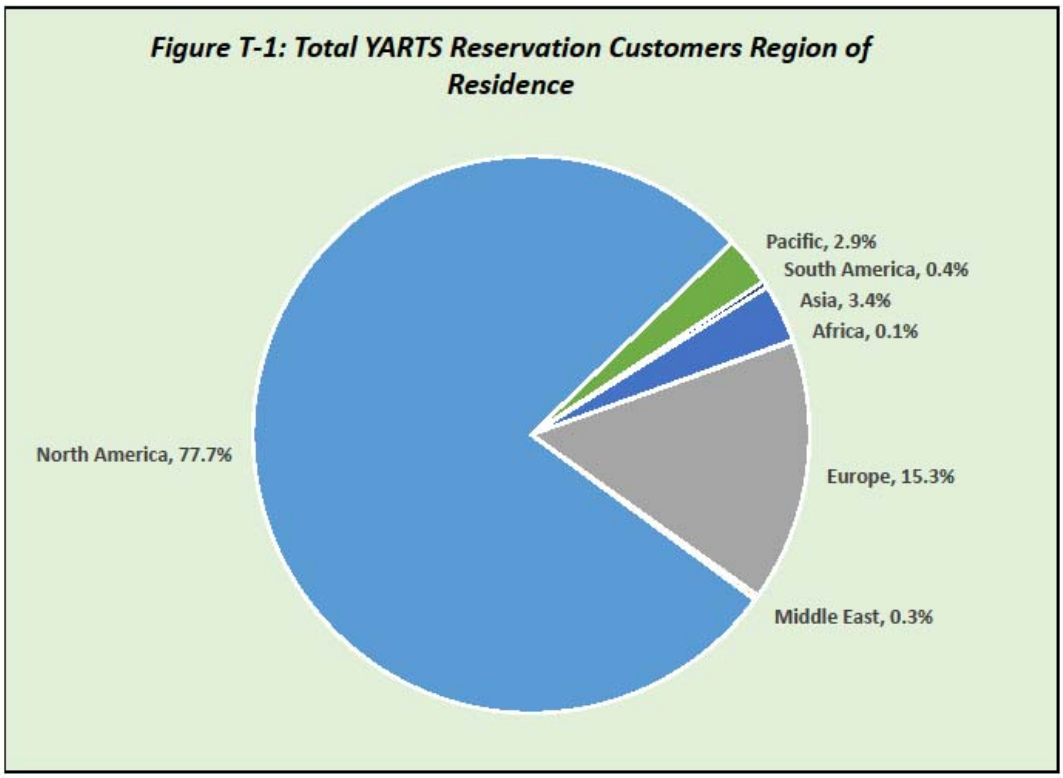
Figure T-1: Total YARTS Reservation Customers Region of Residence
Pacific, 2.9%
South America, 0.4%
Asia, 3.4%
Africa, 0.1%
North America, 77.7%
Europe, 15.3%
Middle East, 0.3%

TABLE T-2: All Routes U.S. Customers State of Residence

State	140	120/395	120 West	41	Total	% of All Customers	State	140	120/395	120 West	41	Total	% of All Customers
Alabama	1	2	0	3	6	0.2%	Nebraska	0	0	2	2	4	0.1%
Alaska	0	1	0	5	6	0.2%	Nevada	2	8	6	6	22	0.7%
Arizona	6	16	18	20	60	1.9%	New Hampshire	1	4	3	2	10	0.3%
Arkansas	5	0	1	1	7	0.2%	New Jersey	11	1	5	21	38	1.2%
California	259	210	373	238	1080	34.4%	New Mexico	0	1	2	1	4	0.1%
Colorado	8	12	8	14	42	1.3%	New York	28	10	30	15	83	2.6%
Connecticut	4	2	4	3	13	0.4%	North Carolina	14	7	7	16	44	1.4%
Delaware	1	1	0	1	3	0.1%	North Dakota	1	0	1	0	2	0.1%
Florida	19	11	29	33	92	2.9%	Ohio	17	8	13	14	52	1.7%
Georgia	11	10	2	2	25	0.8%	Oklahoma	4	4	2	3	13	0.4%
Hawaii	5	3	1	3	12	0.4%	Oregon	5	17	9	6	37	1.2%
Idaho	3	4	0	2	9	0.3%	Pennsylvania	16	8	11	7	42	1.3%
Illinois	23	18	11	25	77	2.5%	Puerto Rico	0	0	0	1	1	0.0%
Indiana	8	5	7	8	28	0.9%	Rhode Island	1	0	0	0	1	0.0%
Iowa	2	5	1	2	10	0.3%	South Carolina	6	0	5	3	14	0.4%
Kansas	0	3	0	2	5	0.2%	South Dakota	0	1	0	0	1	0.0%
Kentucky	5	1	5	7	18	0.6%	Tennessee	6	8	4	4	22	0.7%
Louisiana	1	1	1	6	9	0.3%	Texas	35	22	22	41	120	3.8%
Maine	0	0	2	0	2	0.1%	Utah	4	2	5	2	13	0.4%
Maryland	9	6	9	10	34	1.1%	Vermont	0	2	0	1	3	0.1%
Massachusetts	15	9	11	13	48	1.5%	Virginia	13	6	10	11	40	1.3%
Michigan	7	10	2	13	32	1.0%	Washington	12	18	14	25	69	2.2%
Minnesota	8	2	7	12	29	0.9%	Washington DC	3	3	0	3	9	0.3%
Mississippi	0	0	1	2	3	0.1%	West Virginia	1	0	0	12	13	0.4%
Missouri	0	5	9	8	22	0.7%	Wisconsin	3	4	7	2	16	0.5%
Montana	0	1	0	1	2	0.1%	Wyoming	1	0	0	3	4	0.1%

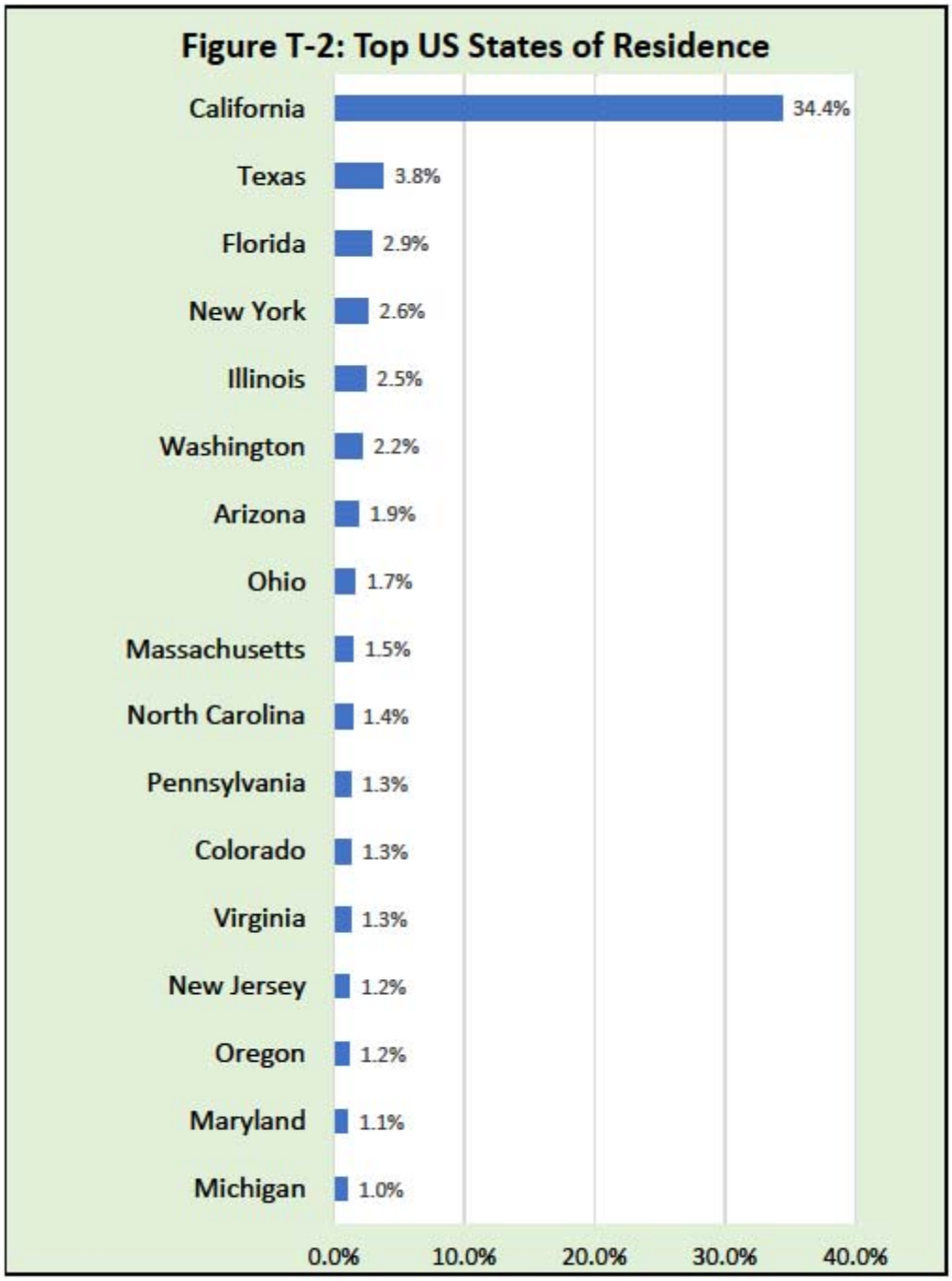
Figure T-2: Top US States of Residence
California
34.4%
Texas
3.8%
Florida
2.9%
New York
2.6%
Illinois
2.5%
Washington
2.2%
Arizona
1.9%
Ohio
1.7%
Massachusetts
1.5%
North Carolina
1.4%
Pennsylvania
1.3%
Colorado
1.3%
Virginia
1.3%
New Jersey
1.2%
Oregon
1.2%
Maryland
1.1%
Michigan
1.0%
0.0%
10.0%
20.0%
30.0%
40.0%

TABLE T-3: All Routes California Customers Region of Residence

Region	140	120/395	120 West	41	Total	% of All Customers	% of California Customers
Bay Area	107	60	146	35	348	11.1%	32.4%
Central Coast	1	3	9	9	22	0.7%	2.0%
Central Valley	10	7	17	22	56	1.8%	5.2%
YARTS Area	54	14	42	81	191	6.1%	17.8%
Fresno County	*1*	0	0	55	56	1.8%	5.2%
Inyo County	*0*	0	0	0	0	0.0%	0.0%
Madera County	*2*	0	0	16	18	0.6%	1.7%
Mariposa County	*24*	1	0	7	32	1.0%	3.0%
Merced County	*27*	2	0	0	29	0.9%	2.7%
Mono County	*0*	10	0	2	12	0.4%	1.1%
Tuolumne County	*0*	1	42	1	44	1.4%	4.1%
North State	3	3	1	2	9	0.3%	0.8%
Sacramento Area	17	16	47	3	83	2.6%	7.7%
Southern California	65	107	109	85	366	11.6%	34.0%