SHASTA INTERCITY TRANSPORTATION TO SACRAMENTO AND BAY AREA FEASIBILITY STUDY AND ACTION PLAN



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Acronyms and Abbreviations

AB 2766	Assembly Bill 2766
ACS	American Community Survey
AHSC	Affordable Housing and Sustainable Communities
AQIP	Low Carbon Transportation Investments and Air Quality Improvement
ARFVTP	Alternative and Renewable Fuel and Vehicle Technology Program
BART	Bay Area Rapid Transit
Bay Area	San Francisco Bay Area
CalEPA	California Environmental Protection Agency
CalEnviroScreen	California Communities Environmental Health Screening Tool
CBPR	Center for Business and Policy Research
CLEEN	California Lending for Energy and Environmental Needs
CMAQ	Congestion Mitigation and Air Quality Improvement Program
Downtown Transit Center	Redding Downtown Transit Center at 1530 Yuba Street, Redding
FAA	Federal Aviation Administration
FAST Act	Fixing America's Surface Transportation Act
FTA	Federal Transit Administration
GHG	Greenhouse Gas
ISRF	Infrastructure State Revolving Fund
LCTOP	Low Carbon Transit Operations Program
LTF	Local Transportation Fund
NEMT	Non-Emergency Medical Transportation
RABA	Redding Area Bus Authority
RTPA	Regional Transportation Planning Agency
SAC	Sacramento Amtrak Station
SacRT	Sacramento Regional Transit District
Section 5310	Federal Transit Administration program for enhanced mobility of seniors and individuals with disabilities
Section 5311(f)	Federal Transit Administration program for rural intercity bus service
SFO	San Francisco International Airport
SIR	Susanville Indian Rancheria
SMF	Sacramento International Airport
SRTA	Shasta Regional Transportation Agency
SSTAC	Social Services Transportation Advisory Council
STA	State Transit Assistance Fund
STAGE	Siskiyou Transit and General Express
STIP	State Transportation Improvement Program
SWOT	Strengths Weaknesses Opportunities Threats
TCRP	Transportation Cooperative Research Program
TDA	Transportation Development Act
TIRCP	Transit and Intercity Rail Capital Program
Toolkit B-37	Model for the estimation of demand for rural intercity bus service
TRAX	Tehama Rural Area eXpress
TRB	Transportation Research Board
Turtle Bay	Turtle Bay Exploration Park in Redding
UC	University of California

1.Introduction

This report is a feasibility study and action plan for an intercity bus service between the city of Redding in Shasta County, California, and national transportation network facilities in Sacramento and the San Francisco Bay Area (Bay Area). This report contains important resources for both the planning of new intercity bus service as well as the streamlining and coordination of existing services. Major elements of this report include:

- An inventory of existing intercity transportation resources
- A forecast of the market area
- An analysis of route alternatives
- An action plan for implementing the intercity bus service

This report is structured as follows:

- Section 1 discusses the purpose of the study and the approach taken for this report, as well as the outreach methods used to obtain public input in the planning of the intercity bus service. This section concludes with a summary of the benefits of intercity bus service.
- Section 2 presents a summary review of existing services available to Shasta County residents and their limitations (an expanded review is available in Appendix A – Existing Services).
- Section 3 analyzes intercity market demand, presents survey results, and describes the forecasting model used to predict demand.
- Section 4 researches viable connections to other regional transit providers and presents a number of potential route alternatives.
- Section 5 identifies the preferred alternative and creates an action plan which includes potential funding sources and an implementation plan for the intercity bus service.

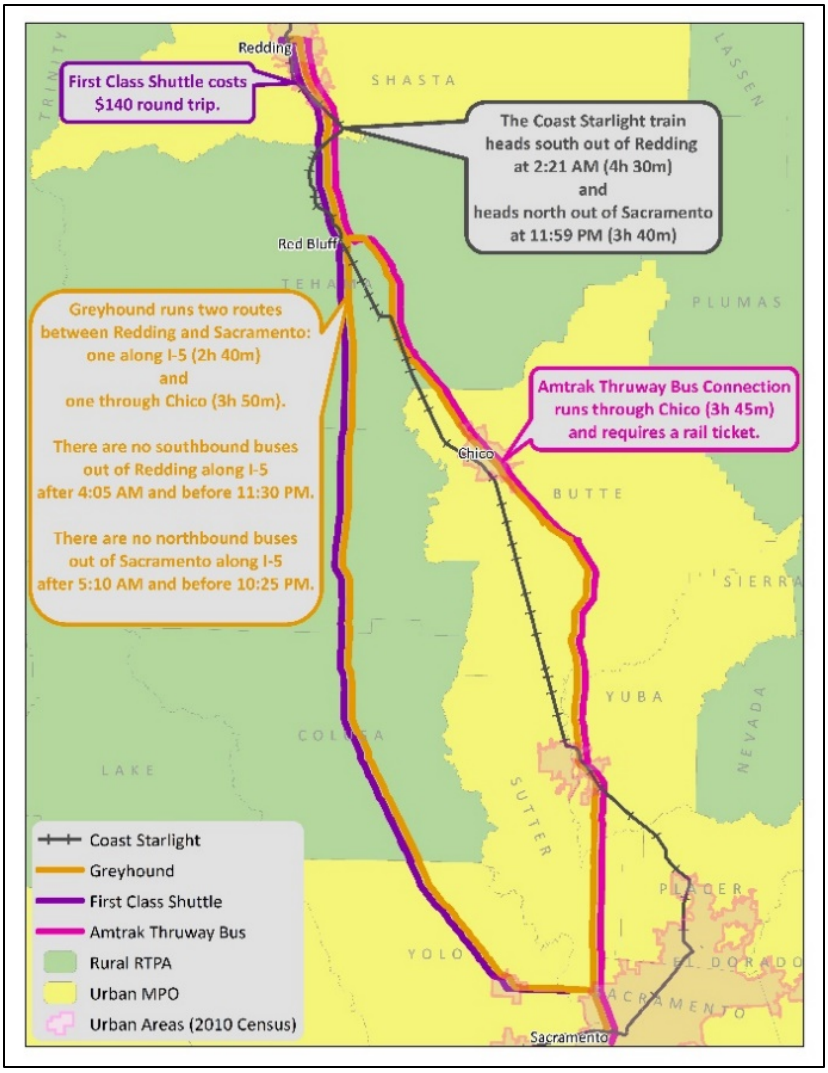


Figure 1: Existing Transportation Services to Sacramento

1.1.Purpose of the Study

The purpose of this study is to evaluate the feasibility of enhanced intercity bus options between the city of Redding and the urban areas of Sacramento and the Bay Area. Far northern California is significantly restricted in its transportation connections. Existing intercity connections have limitations, including:

- Limited destinations
- Inconvenient schedules
- Frequent stops
- Indirect routes
- Need for transfers
- Prohibitive cost

While the primary focus of an enhanced service will be transporting passengers from Shasta County and other far northern California counties to large urban airports and passenger rail and bus facilities to the south, this service has the potential to also provide access to other rural and urban destinations between Redding and Sacramento, or Redding and the Bay Area (e.g. Red Bluff and Orland).

The need for intercity bus service stems partially from the discontinuation of services that used to connect Redding with a greater number of large, urban destinations through the Redding Municipal Airport. These destinations included Las Vegas and Los Angeles, among others. The proposed intercity bus service would help mitigate this reduction in travel options for Shasta County residents.

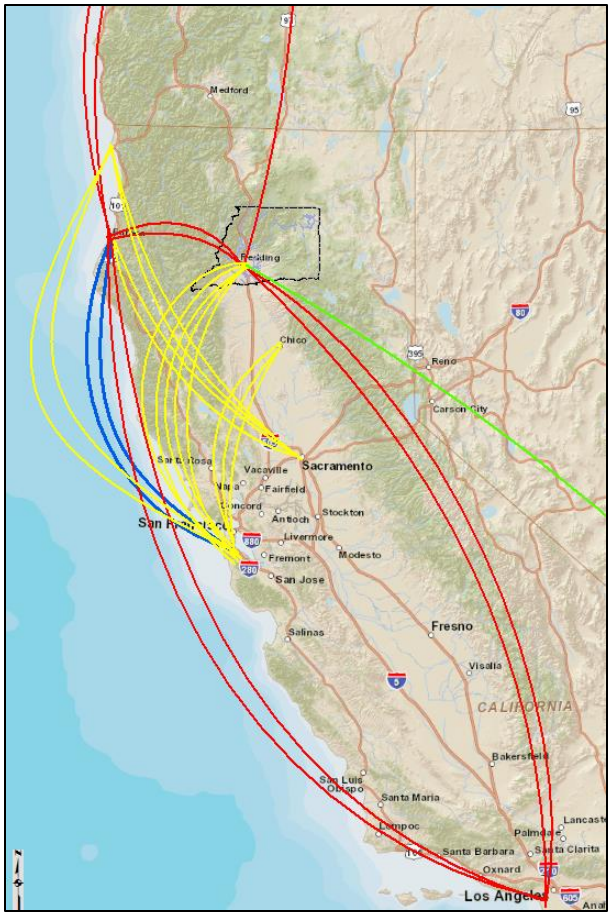


Figure 2: Historical Air Service – North State

Intercity bus service, as defined by the Federal Transit Administration (FTA), is regularly scheduled bus service open to the public that operates with limited stops over fixed routes connecting two or more urban areas not in close proximity. The service also must make significant connections with scheduled intercity bus service to more distant points, if such service is available. Intercity bus service is essential, especially in small urban and rural areas where larger metropolitan area services and amenities are not always readily available.

Much of the funding for rural intercity bus services nationwide comes from the FTA Section 5311(f) program, which was reauthorized by the U.S. Congress in December 2015.[1] More information on Section 5311(f) funds, as well as other potential funding sources available for use by the proposed intercity bus service can be found in Section 5.3 – Funding Strategy, and in Appendix G – Funding Matrix.

[1] Details on how funding is awarded can be found here: http://dot.ca.gov/hq/MassTrans/5311.html

Caltrans, as the designated recipient of FTA Section 5311(f) funds for the state of California, can set requirements for the use of funds awarded to local agencies. The following are the objectives of the 5311(f) program according to the most recent Caltrans FTA Section 5311 Handbook, updated in 2012.[2]

Objective 1: To support the connection between non-urbanized areas and the larger regional or national system of intercity bus service.

Objective 2: To support services to meet the intercity travel needs of residents in non-urbanized areas.

Objective 3: To support the infrastructure of the intercity bus network through planning and marketing assistance and capital investment in facilities.

The intercity bus service studied in this report directly relates to objectives 1 and 2 above. This feasibility study and action plan directly relates to objective 3 and is funded through Section 5311(f).

1.2.Approach

The Center for Business and Policy Research (CBPR), consultant to the Shasta Regional Transportation Agency (SRTA), developed this intercity bus service feasibility study and action plan. Development of this report consisted of the following tasks:

- Reviewing relevant planning documents and reports (e.g. 2014 Redding Area Bus Authority (RABA) Short Range Transit Development Plan)
- Reviewing existing intercity transportation providers in Shasta County (obtained through the National Establishment Time-Series database[3])
- Preparing a transportation demand model for the proposed intercity bus service
- Researching regional connections
- Conducting outreach (more information available in Section 1.3 – Outreach Process and in Appendix D – Outreach)
- Identifying the preferred route alternative
- Developing the action plan

1.3.Outreach Process

The purpose of the intercity bus service is to link the residents of Shasta County to the larger state and national transportation systems through connections to bus, train, and air transportation networks. For this service to be successful, it is important for these connections to benefit as many potential passengers as possible. Therefore, public outreach and input is critical to the planning and success of the proposed intercity bus service.

This feasibility study employed multiple methods to ensure participation by potential riders and community stakeholders. Key tools and strategies to solicit information and feedback from these sources included:

- *Shasta Stakeholder Inventory Survey*: An online survey was created and a link to the survey was sent through an email to all intercity transportation providers in Shasta County.[4]

[2] http://dot.ca.gov/hq/MassTrans/Docs-Pdfs/5311/2013/handbook.061913.pdf
[3] National Establishment Time-Series (NETS) Database. 2011. Walls & Associates.

- *Other Stakeholders:* In addition to stakeholders within Shasta County, other relevant transportation stakeholders from outside of Shasta County were also contacted. These stakeholders included Caltrans, the Susanville Indian Rancheria, Amtrak, Greyhound, and Sacramento Regional Transit, among others.

- *Public Survey*: A postcard was sent to a random sample of 1,300 Redding urbanized area residents requesting their input through a survey. Those invited to participate in the survey could complete the survey over the phone with a project team member or directly access the survey online through a link that was included on the postcard.

Details on response rates, a copy of the postcard, and a copy of the survey responses for both the stakeholder and public surveys are presented in Appendix D – Outreach.

1.4.Summary of Benefits

There are many benefits to an integrated public transit and intercity bus service. Potential impacts include the following:

- *Greenhouse gas (GHG) emission reduction:* Intercity transit can reduce GHG emissions in multiple ways. First, intercity bus service removes vehicles from the road by transporting more people per vehicle which reduces congestion. Second, if fuel efficient or battery electric vehicles are used for the proposed intercity bus service, transportation-related GHG emissions should be diminished further.[5]

	CO2 (g/mi)	NOX (g/mi)	HC (g/mi)	PM (g/mi)
Diesel	2,417	2.04	0.028	0.014
Compressed Natural Gas (CNG)	2,305	0.65	3.12	0.001
Fuel Cell	0	0	0	0
Electric Vehicle Bus (EV)	0	0	0	0

Figure 3: Annual Tailpipe emissions from urban buses

- *Economic development opportunities:* Intercity transit can help stimulate economic activity along the service route as it provides increased access to smaller communities. The American Public Transportation Association estimates that for every $1 invested in transit capital, and operations, an additional $2 and $2.20 is generated in local business sales, respectively.[6]

- *Educational opportunities:* Intercity transit can increase access to higher educational institutions, thus increasing educational attainment and training opportunities. For example, residents of

[4] The list of intercity transportation providers in Shasta County was obtained from the NETS Database and augmented with local information from SRTA. The list of intercity transportation providers is presented in Appendix A.

[5] Source: U.S. Department of Transportation

[6] "The Benefits of Public Transportation: Wherever Life Takes You". American Public Transportation Association, 2008.

Burney may have the opportunity to attend Shasta College because of the Burney Express intercity bus service.

- *Access to medical resources:* Health benefits of intercity transit are twofold. First, increased access to specialized medical care available in a large urban area can keep communities healthier for longer. Second, people that use public and intercity transit are forced to maintain a more active lifestyle, which in turn keeps people mobile and healthier.

- *Employment opportunities*: Easier access to population centers where employment development resources and opportunities are available can make employment easier for residents of disadvantaged communities.

- *Occasional business travel efficiency:* Intercity transit allows those who need to travel occasionally for business the ability to travel in comfort by not having to drive or worry about parking. Other benefits include affordable fares in comparison to private service providers and reducing congestion in the destination city.

The benefits of intercity bus service are wide ranging. More details on the benefits of public transit and intercity bus service are presented in Appendix F – Community Benefits Analysis.

2.Review of Existing Intercity Service

This section summarizes the small urban and rural transportation providers relevant to this study. The summary is divided into two parts:

- Intercity transportation providers that depart from the Redding urbanized area
- Feeder services made up of existing rural transportation providers that could feed into the proposed intercity bus service

These providers connect – or have the potential to connect – people to the broader national transportation system (e.g. the Sacramento International Airport, Greyhound and Amtrak), which is defined as a single service that can transport people between states (without the need to transfer). Appendix A – Existing Services examines all current intercity transportation providers operating out of Shasta County and the Redding urbanized area.

2.1.Shasta County Intercity Transportation Providers

This section focuses on intercity transportation providers that depart from the Redding urbanized area. Table 1 lists select characteristics of the larger intercity transportation providers in the county as identified through an extensive review by SRTA and CBPR staff.

The existing intercity options combined have inconvenient hours, long travel times, poor on-time service, lack of service to airport, lack of station services, safety concerns, indirect routes, and are cost prohibitive.

2.1.1.Redding Area Bus Authority (RABA)

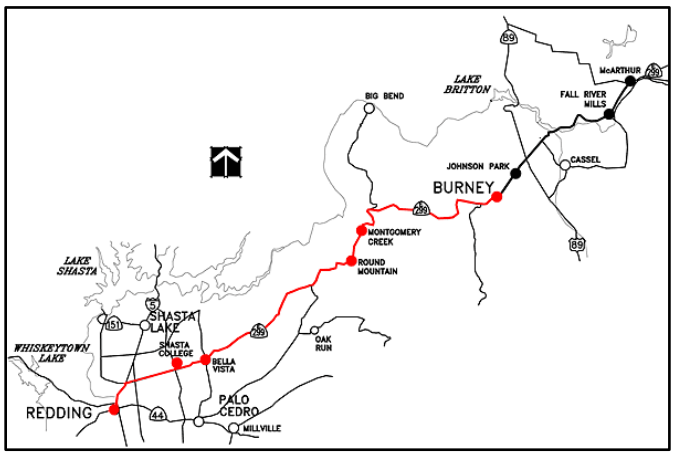


Figure 4: Burney Express Service Map

RABA is the primary public transit operator in Shasta County. RABA operates local fixed route and complementary paratransit bus service in the Redding urbanized area. Pertaining to intercity service, RABA serves the Redding Municipal Airport, as well as the small eastern intermountain community of Burney. Service to the Redding Municipal Airport departs the Canby Transfer Station eight times per day Monday through Friday, and five times per day on Saturday. The Burney Express makes three round trips per day Monday through Friday with no weekend service.

2.1.2.Amtrak

Redding is served by both the Amtrak Coast Starlight rail route and Thruway Bus connecting services to/from Sacramento. The Coast Starlight route provides service to both Sacramento to the south, and Eugene, OR to the north, while Thruway Bus service is available to Sacramento only. The Amtrak station is located adjacent to Redding's Downtown Transit Center. In Sacramento, Amtrak rail and bus passengers can transfer to three other Amtrak routes:

- *California Zephyr*
- *San Joaquins*
- *Capitol Corridor*

Figure 5: Amtrak Service Map

The Coast Starlight trains run between Seattle and Los Angeles[7]. Between Redding and Sacramento the trains make one intermediate stop in Chico. Inconvenient hours, poor on-time service, lack of service to Sacramento International Airport, lack of station services in Redding, and safety concerns discourage ridership.

- The service occurs once daily southbound departing Redding at 2:21 A.M. and once daily northbound arriving in Redding at 3:06 A.M.
- The southbound train travel time is 4 hours, 14 minutes; an automobile trip between the Redding and Sacramento Amtrak stations takes 2 hours, 26 minutes along the Interstate 5 corridor.
- On time performance for the Coast Starlight ranges between 72-84%.

[7] For a list of stops, see: https://www.amtrak.com/ccurl/800/746/Coast-Starlight-Schedule-011116,0.pdf

Amtrak's Thruway Bus service, per California law, must be paired with Amtrak train service.[8] This precludes the possibility of purchasing a Thruway Bus ticket solely for the purpose of traveling from Redding to Sacramento. There are some notable exceptions to this law which are examined in Appendix A – Existing Services. Route 3 from Redding to Sacramento and Stockton routinely transports passengers four times daily both south and northbound during daylight hours, but tickets are only available as part of a rail trip and the travel time is long. Other limitations include:

- The thruway bus service follows the train route through Chico, and southbound travel time is 3 hours, 45 minutes.
- The thruway bus does not serve the Sacramento International Airport.

2.1.3.Greyhound

Redding is served by Greyhound Route 600 which runs north/south from Portland to Sacramento four times daily.[9] In Sacramento, passengers can transfer to southbound routes which continue to Los Angeles and San Diego, or transfer to west/east routes to reach destinations such as the Bay Area or the eastern United States. Similar west/east connections can also be made in Portland and Los Angeles. Fares vary by destination and time of departure with departures four times daily. The Greyhound station is located at the Downtown Transit Center.

Figure 6: Greyhound Gate at Downtown Transit Center

Frequent stops, indirect routes, and bus transfers limit ridership.

- Two of the south and northbound Greyhound buses pass through Chico between Redding and Sacramento with a travel time of 3 hours, 50 minutes.
- There are no southbound buses out of Redding along Interstate 5 after 4:05 AM and before 11:30 PM.
- There are no northbound buses out of Sacramento along Interstate 5 after 5:10 AM and before 10:25 PM.

[8] California Government Code 14035.55(c)(2)
[9] http://extranet.greyhound.com/revsup/schedules/sa-50.pdf

2.1.4.First Class Shuttle

First Class Shuttle is a locally owned and operated transportation service that provides three regular trips to the Sacramento International Airport Monday through Friday and two trips on the weekends. Service is also available to the San Francisco International Airport via a transfer to the Davis Airporter. The route to the Sacramento International Airport begins at Oxford Suites in Redding. The base price to Sacramento for one person is $75.00 for a one-way trip with discounts available for multiple passengers. The Davis Airporter costs an additional $105.00 for a one-way trip to the San Francisco International Airport.

Figure 7: First Class Shuttle Van

2.1.5.Redding Municipal Airport

The Redding Municipal Airport is a commercial airport located in Redding that is serviced by United Express with three daily flights to San Francisco and twice daily service to Portland via PenAir. One of the Portland flights also stops in Arcata providing direct air service to the North Coast. Both long term and short term parking is available for those wishing to drive to the airport. However, RABA has an express service that departs the Canby Transfer Center eight times per day Monday through Friday, and five times per day on Saturdays for those wishing to use public transit to reach the airport.

Figure 8: Redding Municipal Airport

Table 1: Shasta County Intercity Transportation Provider

Provider	Area Directly Served	Airport Served?	Cost	Distance	Travel Time	Daily Ridership	Hours of Operation	Departs From
RABA Airport Express	Redding Urbanized Area	Yes Redding Municipal	$1.50 each way	8.2 Miles	35 Minutes	214 people	First departure: 5:50 AM; last departure 5:50 PM	Canby Transfer Center
RABA Burney Express	Burney	No	$5.00 each way	54 Miles	1 Hour 45 Minutes	20 people	First departure (from Burney): 6:00 AM; last departure 3:50 PM	Downtown Transit Center
Amtrak Train	North: Portland, Seattle; South: Sacramento, Oakland, Los Angeles	Yes Oakland International	$21.00 each way to Sacramento; $34.00 each way to Oakland	161 Miles to Sacramento, 249 Miles to Oakland	4 Hours 14 Minutes to Sacramento; 6 Hours 14 Minutes to Oakland	33 people total to all destinations on the Coastal Starlight route[10]	Only 1 departure north: 3:06 AM; only 1 departure south: 2:21 AM	Downtown Transit Center
Amtrak Thruway Bus	Sacramento	No	Must book with a train, therefore, cost of the train	161 Miles	3 Hours 45 Minutes	15 people	First departure: 5:55 AM; last departure: 2:30 PM	Downtown Transit Center
Greyhound Route 600	North: Portland, South: Sacramento	No	$28.00 each way	160 Miles	2 Hours 20 Minutes	unknown	First departure: 4:05 AM; last departure: 11:30 PM (to Sacramento)	Downtown Transit Center
First Class Shuttle	Sacramento	Yes Sacramento International	$75.00 each way	153 Miles	2 Hours 30 Minutes	5 people	First departure: 4:45 AM; last departure: 5:00 PM	Oxford Suites
Redding Municipal Airport	North: Arcata, Portland; South: San Francisco	Yes	Flights from $102.10 each way	220 Miles	1 Hour 3 Minutes	84 people	First departure: 5:45 AM, last departure: 4:25 PM	Redding Municipal Airport

[10] Note: Ridership means both arrivals and departures from the Redding station

Figure 9 shows all of the locations directly served by intercity transportation providers that depart from Redding. That is, all of the locations shown on the map are places where Shasta County residents can travel without needing to transfer to another service route, or another transportation provider. Maps and further detail for the individual transportation services can be found in Appendix A – Existing Services.

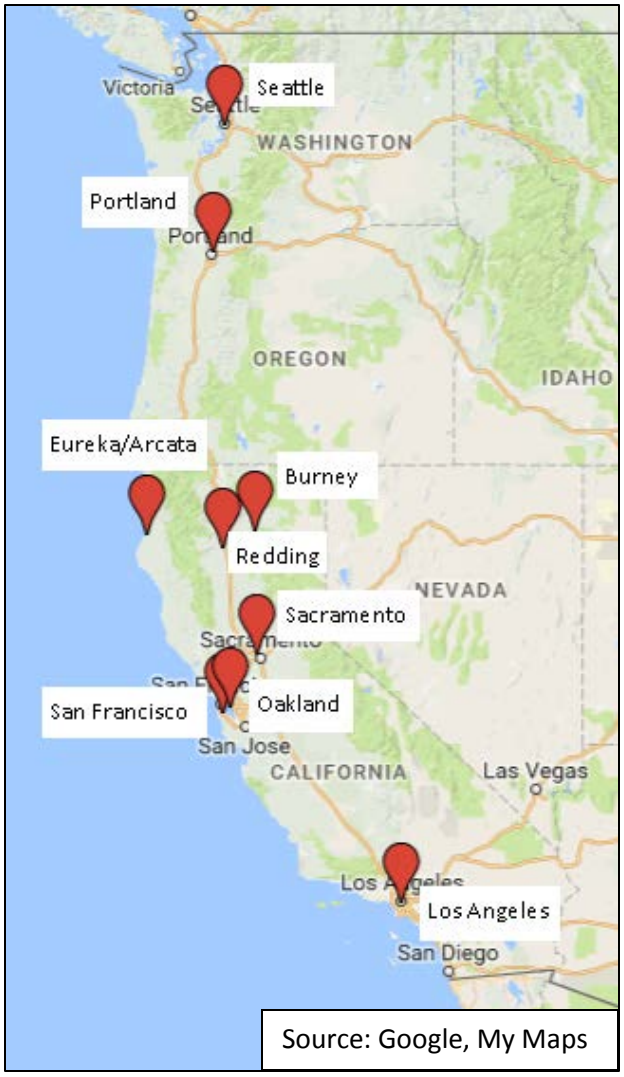


Figure 9: Shasta County Intercity Service Provider Destinations

2.2.Feeder Services

This section focuses on feeder services. Feeder services are existing rural transportation providers that could potentially feed into the proposed intercity bus service. Feeder services are instrumental to successful intercity transportation systems because they increase the potential ridership of the intercity system. Table 2 provides a summary of potential feeder services for the proposed intercity bus service. The "Distance from Hub City to Intercity Service" column shows the distance from the hub city of that feeder service to the potential connection to the proposed intercity bus service. The connection location for TRAX, Glenn Ride and Colusa County Transit are their respective cities of operation (i.e. Red Bluff, Orland, and Williams). Therefore, the distances those feeder services would need to travel to connection locations are shorter than the distances for Sage Stage and Lake County Transit that would connect in Redding and Williams, respectively.

Currently, there are three significant intercity feeder services that connect to Redding: Sage Stage out of Modoc County, Trinity Transit, and the Susanville Indian Rancheria service. The Siskiyou Transit and General Express (STAGE) is also looking at implementing service from Yreka to Redding. These services feed into Shasta County and connect with RABA in Redding. Summaries of these feeder services are presented in Table 2, with more information available in Appendix A – Existing Services. The remainder of the feeder services would connect to the proposed intercity bus service at various locations along I-5 south of Redding. Additional information on potential feeder services are available in Appendix B – Sacramento Route and Meaningful Connections and Appendix C – Bay Area Route and Meaningful Connections.

Table 2: Shasta County Feeder Services

Provider	Hub County	Number of Trips to the Intercity Service	Daily Ridership	Distance from Hub City to Intercity Service	Where the Connection Takes Place	Travel Time to Intercity Service	Hours of Operation
Sage Stage	Modoc	1 trip Monday and Friday	5 people	144 miles	Redding	2 Hours 38 Minutes	1 trip departs at 7:00 AM
Trinity Transit	Trinity	2 daily trips Monday through Friday and 1st and 3rd Saturday	47 people	44 miles	Redding	1 Hour	First departure: 6:30 AM; last departure: 11:40 AM
Siskiyou Transit and General Express (STAGE)	Siskiyou	Proposed future service	375 people (total system ridership)	100 miles	Redding	1 Hour 35 Minutes	First departure: 6:25 AM; last departure: 4:32 PM
Susanville Indian Rancheria	Lassen	1 Trip Monday through Saturday	11 people	112 miles	Redding, Red Bluff	2 Hours 26 Minutes	1 trip departs at 7:30 AM
Tehama Rural Area eXpress (TRAX)	Tehama	11 daily trips Monday through Friday	463 people (total system ridership)	0.8 miles	Red Bluff, Corning	4 Minutes	First departure: 7:00 AM; last departure: 5:30 PM
Glenn Ride	Glenn	7 trips Monday through Friday; 3 trips Saturday	211 people (total system ridership)	1.6 miles	Orland	5 Minutes	First departure: 5:15 AM; last departure: 5:00 PM
Colusa County Transit	Colusa	5 daily trips	135 people (total system ridership)	0.3 miles	Williams	2 Minutes	First departure: 7:30 AM; last departure: 6:00 PM
Lake County Transit	Lake	Proposed future service	1,071 people (total system ridership)	66 miles	Williams	1 Hour 17 Minutes	First departure: 7:00 AM; last departure: 6:00 PM

2.2.1.Sage Stage

Figure 10: Sage Stage Bus

Sage Stage is the public transit provider in Modoc County. Because of the distance and cost involved, Sage Stage's Redding route only operates one round-trip per day Mondays and Friday, beginning and ending in Alturas. The fare from Alturas to Redding is $26.00 for general passengers and $19.50 for those that qualify for a discount.

2.2.2.Trinity Transit

Trinity Transit is the public transit provider in Trinity County. Residents of Trinity County can travel to Redding twice daily Monday through Friday and the first and third Saturday of each month on a route that begins in Weaverville. Fares from Weaverville to Redding (and from Redding to Weaverville) are $10.00 each way for regular passengers and $7.50 for reduced fare passengers.

Figure 11: Trinity Transit Bus

2.2.3.Siskiyou Transit and General Express (STAGE)

Figure 12: STAGE Bus

STAGE is the public transit provider in Siskiyou County. While STAGE currently does not provide service to the Redding urbanized area, there is interest from both Siskiyou and Shasta counties for this type of service to be implemented. Intra-county STAGE service is successful with over 375 daily passengers, and implementing service out of the county – especially to Redding – is a desire of Siskiyou County residents according to Siskiyou County's last Coordinated Public Transit-Human Services Transportation Plan. This is important to note for the intercity study as it can potentially increase demand for the intercity bus service if implemented.

2.2.4.Susanville Indian Rancheria (SIR) Public Transportation Program

The SIR bus is a public transit service operated by the Susanville Indian Rancheria. While the bus is operated for the benefit of SIR tribes, it is open to the general public. The route originates in Susanville in Lassen County before traveling to Red Bluff and continuing on to Redding. The bus then makes three trips back and forth between Redding and Red Bluff, exclusively, before returning to Susanville. Fares from Susanville to Redding are $20.00 each way for the general public and $15.00 for discounted fare passengers.

Figure 13: SIR Bus

2.2.5.Tehama Rural Area eXpress (TRAX)

TRAX is the public transit provider in Tehama County. In terms of ridership, TRAX is one of the larger public transit systems in far northern California with approximately 463 daily passengers. TRAX operates Monday through Friday, from 6:00 AM to 6:50 PM. Fares are $1.00 for city routes, and $2.50 for regional routes (e.g. from Red Bluff to Corning). TRAX has expressed interest in implementing service from Red Bluff to Redding.

Figure 14: TRAX Bus Stop

2.2.6.Glenn Ride

Glenn Ride is the public transit provider in Glenn County. Glenn Ride provides public transit services for residents of both Glenn County and Butte County via a route from Orland to Chico. Because of this route, Glenn Ride could transport both Glenn and Butte County residents to a potential intercity bus service stop located in Glenn County. Glenn Ride operates seven trips per day Monday through Friday, and three trips per day on Saturdays. Fares are $1.50 for trips within the County, and $2.50 to/from Chico.

Figure 15: Glenn Ride Bus

2.2.7.Colusa County Transit

Figure 16: Colusa County Transit Bus

Colusa County Transit is the public transit provider in Colusa County. Colusa County Transit operates five trips a day Monday through Friday on a "flex route" schedule. This means the driver will deviate throughout a given service corridor instead of stopping at specific stops at specific times, although there are set departure times for each of the routes. This can increase the number of potential Colusa County residents that have access to Colusa County Transit for transportation to the intercity bus service's connecting stop. Fares are $1.50 for city routes, and $2.00 for county routes.

2.2.8.Lake County Transit

Figure 17: Lake County Transit Bus

Lake County Transit is the public transit provider in Lake County. Most population centers in Lake County are some distance from I-5; however, Lake County is developing a route that may connect the Clearlake area with the I-5 corridor via Highway 20. This would allow access to the intercity bus service for a majority of Lake County residents. In terms of ridership, Lake County Transit is also one of the larger public transit providers north of Sacramento, with 1,071 daily passengers. It is unclear at this time how often this proposed service will operate, or what its fare structure will be.

3.Analysis of Intercity Service Market Demand

This section presents information on the market demand for the proposed intercity bus service. Estimating demand is an integral part of determining if a proposed bus service is viable or not. A proposed bus service will not be sustainable if there is not sufficient demand. Best practices of the Transportation Cooperative Research Program (TCRP) assume that demand is made up of two components:

- Characteristics of the catchment area (defined as the geography from which demand is drawn), such as the size of the population; and
- Characteristics of the selected route, such as the number of stops, what locations are served by the route, and who operates the service.

A summary of the populations of the counties that make up the catchment area and how the characteristics of the catchment area and selected route affect forecasted demand is presented below. The demand forecast for the preferred service route alternative is presented in Section 5 – Preferred Alternative.

The remainder of this section is structured as follows:

- Section 3.1 presents a forecast of the population of the catchment area, which acts as a representation of market demand given the strong correlation between population growth and transit demand. Population growth can provide an approximation for demand growth.
- Section 3.2 discusses existing travel patterns, including business and recreational travel. Results from SRTA's 2016-2017 Transit Priorities Survey, as well as CBPR's intercity bus service public survey are also discussed.
- Section 3.3 details the methodology used to estimate actual demand for the preferred route alternative.

3.1.Market Demand

Market demand is influenced heavily by how the catchment area is defined. For the proposed intercity bus service, the catchment area can be reasonably defined as the counties surrounding Shasta that provide feeder service to the Redding urbanized area, as well as the counties that could connect with the proposed intercity bus service (the intercity bus service's feeder services). While not itself an estimation of demand, knowledge of the population and population growth rates can inform how future demand will grow, given appropriate marketing and outreach efforts. Table 3 contains the list of counties in the catchment area, as well as their current, and forecasted populations. The populations presented in this table should not be mistaken for an actual demand forecast, which is explained in Section 3.3 – Rural Transit Demand Model, and presented in Section 5.1 – Preferred Alternative.

The Shasta County population forecast was produced by CBPR while the other counties' population forecasts were obtained from the California Department of Finance's, Demographic Research Unit[11]. Population growth in the catchment area is projected to be relatively slow, and is expected to grow at approximately half the pace of the state as a whole. Knowing which counties in the catchment area are

[11] http://www.dof.ca.gov/Forecasting/Demographics/Projections/

growing the fastest and slowest can help inform the decision of where the intercity bus service should make its limited possible connections. Overall the catchment area is expected to:

- Grow by almost 23% by 2060, or 0.46% per year.
- Colusa County is projected to have the fastest percentage growth, 45% between 2015 and 2060.
- Butte County has the largest population, and will see the largest growth in population, increasing by 60,004, or 26.5%.
- Modoc, Siskiyou and Trinity Counties are all expected to see their populations decline between 2015 and 2060 by 5.7%, 2.8%, and 5.2%, respectively.
- Shasta County is expected to add 38,000 residents by 2060, 21% more than its current population. The projected annual growth rate is 0.43%, slightly below the growth rate of the catchment area as a whole.

Table 3: Current and Forecasted Catchment Area Population

County	2015	2020	2025	2030	2035	2040	2045	2050	2055	2060
Shasta	179,747	183,087	187,696	192,158	195,734	198,922	202,507	206,875	212,035	217,849
Modoc	9,410	9,691	9,866	9,852	9,812	9,770	9,632	9,343	9,113	8,875
Siskiyou	45,400	46,217	46,784	47,013	46,976	46,445	45,615	44,920	44,424	44,148
Trinity	13,821	14,234	14,510	14,570	14,484	14,267	13,925	13,593	13,303	13,102
Lassen	25,647	26,801	27,577	28,111	28,455	28,656	28,923	29,162	29,540	29,890
Tehama	65,193	67,336	69,326	71,118	72,504	73,196	73,553	73,975	74,599	75,460
Glenn	29,132	30,466	31,761	32,945	34,013	34,959	35,830	36,729	37,634	38,648
Butte	226,656	236,936	247,378	254,725	264,150	267,852	272,094	276,117	280,820	286,660
Colusa	22,555	24,291	25,821	27,258	28,558	29,688	30,578	31,327	31,983	32,581
Lake	66,219	70,690	75,426	79,577	83,532	86,635	88,950	90,549	91,951	93,421
Total	**683,780**	**709,749**	**736,145**	**757,327**	**778,218**	**790,390**	**801,607**	**812,590**	**825,402**	**840,634**

Lassen County's population excludes group quarter population to account for individuals incarcerated at three prisons: High Desert State Prison; California Correction Center; and Federal Correctional Institution, Herlong.

The catchment area population forecast shows that there is anticipated growth in the area in which the proposed intercity bus service will operate. With proper marketing and outreach the intercity service could see steady increases in demand as the population of the catchment area continues to grow.

3.2.Existing Travel Patterns

While knowledge of which counties will see the highest growth in forecasted demand is beneficial, equally important is knowledge of existing demand. In other words, where are people traveling today and where do they want to travel in the future. This section provides a summary of existing travel patterns of Shasta County residents as well as desired destinations in the context of intercity transportation.

3.2.1.Business Travel Patterns

The proposed intercity bus service could be a valuable resource for occasional business travel from far northern California to the larger urban destinations of Sacramento and the Bay Area. Business travel

patterns can influence the development of route alternatives by showing which parts of far northern California see residents travel the most interregionally for business purposes.

According to data from the U.S. Census Bureau[12], the destination for the largest number of Shasta County business travelers outside of Shasta County is Tehama County. Likewise, Shasta County is the destination for the most business travelers from Tehama County. Therefore, it would be reasonable to include a stop in Tehama County to facilitate this connection.

Of the two possible destinations for the proposed intercity bus service, the Greater Sacramento Area [13] is significantly more connected with Shasta County than the Bay Area in terms of business travel patterns. This makes sense as Sacramento is approximately 50 miles closer to Redding than San Francisco. According to the Longitudinal Employer-Household Dynamics Survey, there were 5,046 daily business trips between Shasta and the Greater Sacramento Area in 2014, compared to 3,955 between Redding and the Bay Area. Although both destinations are important for business travelers, it would be reasonable to make Sacramento the final destination of the proposed intercity bus service. Once in Sacramento, there are many connection options to the Bay Area including the Capital Corridor trains.

3.2.2.Intercity Transit Survey Results

One of the most important determinants of demand for the proposed intercity bus service is whether or not the route includes stops at locations where people want to go. SRTA's 2016-17 Shasta Transit Priorities Survey show that 42% of respondents want to see service to Sacramento and 23% of respondents want to see service to Chico. In one question, respondents were asked to list their top five (5) desired transit service improvements. Service to Sacramento was the fourth most popular service request overall, and it was the most popular transit service request outside of Shasta County. Service to Sacramento would certainly be available to Shasta County residents if the proposed intercity bus service were implemented to Sacramento, and service to Chico could potentially be available to Shasta County residents through a transfer to Glenn Ride if the proposed intercity bus service made a stop in Glenn County.

In addition to the 2016-17 Shasta Transit Priorities Survey administered by SRTA, CBPR distributed a separate survey asking about Redding urbanized area residents' specific interests in an intercity bus service. A majority of survey respondents, 83%, traveled outside of Shasta County. A majority of these out-of-county trips were for recreational purposes, while approximately 25% of them were to visit family. Other purposes included business trips, school attendance, shopping and medical appointments. This shows a need for additional intercity bus service. Over half of respondents reported traveling outside of the county

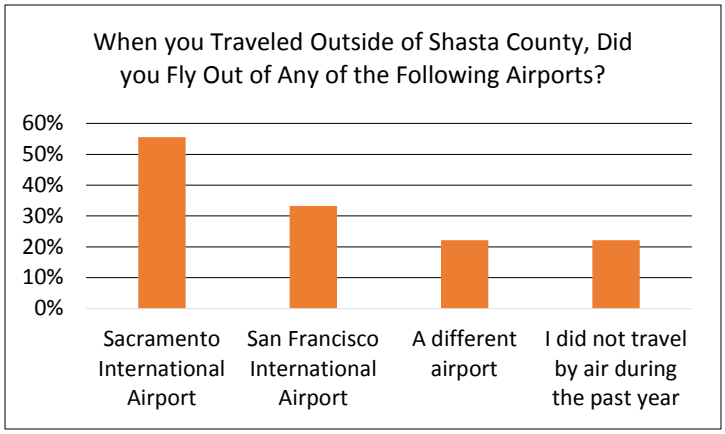


Figure 18: CBPR Select Survey Result - Airport Used

[12] American Community Survey 2013 5 Year Estimates, and Longitudinal Employer-Household Dynamics 2014
[13] The six-county definition of the Sacramento Metropolitan Chamber of Commerce which is El Dorado, Placer, Sacramento, Sutter, Yolo, and Yuba Counties

only a few times in the past year, while 14% reported traveling outside of the county four or more times a week during the past year.

Sacramento and the Bay Area are both important destinations for Shasta County residents. Of those that responded to the survey, 55% say they travel to Sacramento, and 77% say they travel to the Bay Area. However, while Sacramento and the Bay Area are both popular destinations, Redding urbanized area residents fly out of the Sacramento International Airport more often than they fly out of the San Francisco International Airport.

3.3.Rural Transit Demand Model

Forecasted demand for the intercity bus service is estimated using a model created by the TCRP. TCRP is a cooperative effort of three organizations: FTA; the National Academies, acting through the Transportation Research Board; and the Transit Development Corporation.[14] TCRP provides access to applied transportation research to assist with solving transit-related problems nationwide.

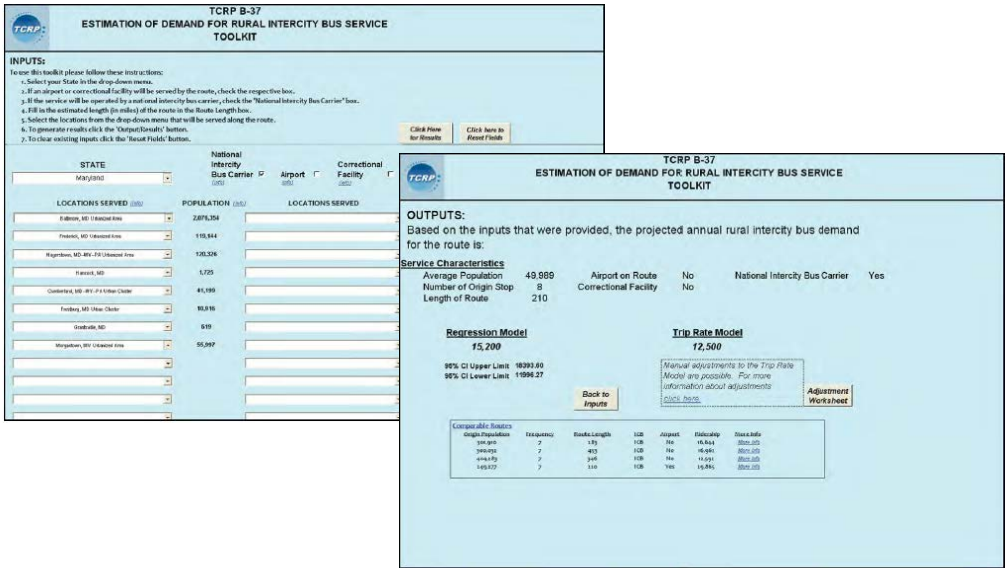


Figure 19: Toolkit B-37 - Estimation of Demand for Rural Intercity Bus Service

Through research into rural intercity transportation, TCRP developed a toolkit: B-37 "*Estimation of Demand for Rural Intercity Bus Service*." This toolkit was created by surveying existing intercity transportation providers and recording service characteristics, points served, connectivity, ridership, and other key variables. A model estimating demand for intercity service was then created from the survey data.[15]

Demand for rural intercity bus service can be estimated from the toolkit in two ways:

- Trip rate method
- Regression method

[14] http://www.tcrponline.org/SitePages/aboutTCRP.aspx

[15] More information on the development of the estimation tool is available in *TCRP Report 147*: http://onlinepubs.trb.org/onlinepubs/tcrp/tcrp_rpt_147.pdf

The toolkit contains Microsoft Excel spreadsheets with models for both methods preloaded. This study forecasts demand for the preferred alternative of the proposed intercity bus service using both the trip rate and regression methods. In the future SRTA can use the toolkit spreadsheets to analyze any future changes in the preferred alternative through these models.

TCRP demonstrates that the regression method is slightly more accurate than the adjusted trip rate method. However, the two models use different approaches and different data. Therefore comparing the results of both (shown in Table 4) is beneficial.

Table 4: Estimated Demand on the Preferred Route Alternative

Model Method	Current Demand	2020 Demand	2060 Demand
Trip Rate Method	23,868	24,766	29,315
Regression Method	36,461	37,713	43,849

The estimated demand is discussed further in Section 5.1 – Preferred Alternative. More information on both the trip rate and regression methods is available in Appendix H – Rural Intercity Bus Service Demand Model.

4.Alternatives Analysis

This section discusses alternative intercity bus routes from Redding to Sacramento and/or the Bay Area. Because the focus is on providing an express intercity bus service, the core service route and its stops attempt to:

- Minimize total travel time
- Maximize potential ridership
- Provide connectivity to other transportation networks

4.1.Core Service Route

The core service routes are the most direct routes from Redding to Sacramento and the Bay Area that connect residents of the Redding urbanized area and far northern California with the broader state and national transportation networks. Table 5 compares key factors for both of these possible destinations.

Table 5: Core Service Routes

Route	Total Stops After Departing Redding	Trip Length	Connections
Redding to Sacramento	3	2 Hours 50 Minutes	Airlines through the Sacramento International Airport, Amtrak through the Sacramento Amtrak Station, Sacramento Regional Transit through a downtown connection
Redding to San Francisco Bay Area	1	3 Hours	Connection to the BART system, Amtrak, AC Transit, and Golden Gate Transit through the Richmond Amtrak Station

The Redding to Sacramento route contains more stops than the Bay Area route because it includes the Sacramento International Airport and Sacramento Amtrak Station on the way to its final destination in Downtown Sacramento. In contrast, there are no potential intermodal stops along the Bay Area route before its destination at the Richmond BART/Amtrak Station.

Following consultation with SRTA staff and an extensive review of routes and possible connections with surrounding transit agencies, the Sacramento Route was identified as the preferred core service route for multiple reasons. First, the trip length is shorter while still making stops at more intermodal terminals than the route to the Bay Area. Second, recent (April 2016) increases in flights to the San Francisco International Airport, the Eureka/Arcata Airport and Portland International Airport from the Redding Municipal Airport greatly reduce the need for a Redding to the Bay Area intercity bus service. Lastly, as discussed in Section 3.2, Shasta County residents prefer service to Sacramento over service to the Bay Area. Therefore, the remainder of this section examines the core service route between Redding and Sacramento as well as alternative intermediate stops which augment that route. Further details and an initial analysis of a possible future Redding to the Bay Area intercity bus service can be found in Appendix C – Bay Area Route and Meaningful Connections.

Figure 20: Historical Air Service – North State

Figure 21: Current Air Service –North State

The proposed core service route between Redding and Sacramento would depart from the Downtown Transit Center in Redding and finish at the enhanced bus stop in Downtown Sacramento located at 7th & Capitol Streets[16]. Other key features of the route include:

- Stops at the Sacramento International Airport (SMF) and the Sacramento Amtrak Station (SAC)
- A southbound one-way trip on this route would take about 2 hours and 50 minutes, with the northbound trip taking approximately the same amount of time.
- If, as desired, the proposed intercity bus service is implemented with battery electric buses, then a round trip would require multiple vehicles due to the range constraints of the batteries which generally vary from 85 miles to 350[17] miles. Redding to Sacramento is approximately 170 miles.
- Four southbound departures are proposed: 5:00 AM, 10:10 AM, 2:00 PM, and 5:05 PM.[18] Additional details on the schedule are available in Appendix B – Sacramento Route and Meaningful Connections.
- Four northbound departures are proposed: 8:00 AM, 1:10 PM, 5:00 PM, and 8:00 PM. Additional details on the schedule are available in Appendix B – Sacramento Route and Meaningful Connections.
- A uniform, seven-day a week schedule is recommended.

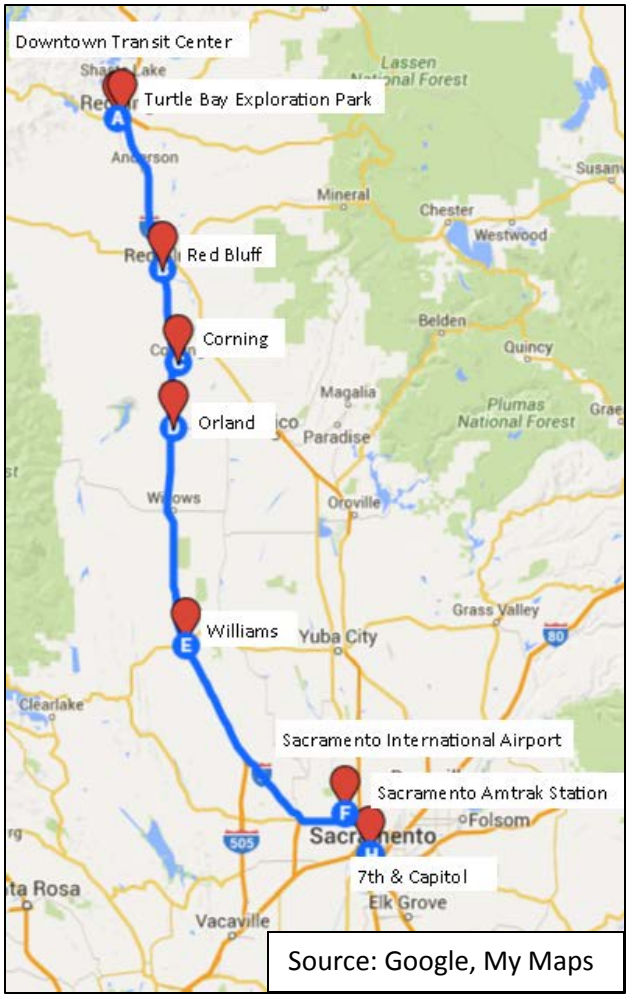


Figure 22: Route Alternatives Map

Other selection criteria and details regarding the proposed departure times can be found in Appendix B – Sacramento Route and Meaningful Connections.

[16] This stop was recommended by SacRT

[17] Proterra introduced the E2 with a range of 350 miles on September 12, 2016.

[18] Because of the different number of stops in the core service route and the preferred route alternative presented in Section 5.1, the departure times presented this section and Appendix B do not match the departure times presented in Table 7.

4.2.Alternative Intermediate Stops

This section presents a summary of possible intermediate stops between Redding and Sacramento. Given that the FTA Section 5311(f) program is a potential funding source, it is important to note that a 5311(f) funded intercity bus service may only stop at three (3) locations which are not considered intermodal.[19] Because the core service route to Sacramento already stops at one non-intermodal terminal, the enhanced bus stop at 7th & Capitol, only two additional non-intermodal stops can be added to the preferred route. However, it is important to explore all possible beneficial options. More information on these stops, including route schedules, a Strengths, Weaknesses, Opportunities, and Threats (SWOT) analysis for each stop, and additional pictures of the stops can be found in Appendix B – Sacramento Route and Meaningful Connections.

The intermediate stops discussed in this section will operate on a reservation system. This means potential riders at intermediate stops such as Red Bluff and Orland will have to request the intercity bus service stop at these locations prior to the bus reaching them. If no reservation exists the bus will only stop if an on-board passenger requests a stop at that location. Many of the feeder services have more limited operating hours than the proposed intercity bus service. However, the intercity bus service reservation system will still operate normally even while these feeder services are not in operation.

The following review focuses on individual stops and does not consider combinations of stops. However, the synergies from combinations of stops were considered in the selection of the preferred alternative in Section 5.1. An important determinant of any stops' viability is its ability to:

1) Facilitate intermodal transfers, be they from other bus services, cars, or other modes of transportation, and

2) Provide secure, ample parking for potential passengers.

To this end, continued coordination with local authorities is important for development of the proposed intercity bus service.

4.2.1.Beginning the Route at Turtle Bay

Turtle Bay Exploration Park is a non-profit, 300-acre park located in Redding. It features the famous Sundial Bridge, a museum, a forestry and wildlife center, an arboretum, and botanical gardens. Additionally, construction is underway on a 4-star Sheraton Hotel with an estimated completion date of May 2017. Starting the southbound leg of the intercity bus service route (and subsequently ending the northbound leg) at Turtle Bay is considered for two reasons:

Figure 23: Turtle Bay, Sundial Bridge

1. The draw of Turtle Bay as a tourist destination adds to the desirability of the intercity service for use by Sacramento residents looking to travel north for recreational purposes.

[19] Defined by Caltrans as a location where one or more modes of transportation meet with supporting services (i.e. ability to purchase tickets, restrooms, food/drink vendors): http://dot.ca.gov/hq/MassTrans/Docs-Pdfs/5311/2015%20-%205311(f)%20process/5311(f)intercitybusprogram_guidelines.pdf

2. Interest from Turtle Bay management could lead to easy and more secure parking for intercity passengers; battery electric bus charging stations, overnight bus storage at the departure point; and prioritizing access to the intercity service in subsequent Turtle Bay improvements.

4.2.2.Implementing a Stop in Red Bluff

Figure 24: Red Bluff Bus & Ride at Rio & Walnut Streets

Stopping in Red Bluff would link the intercity bus service to Tehama County, which is the most interconnected with Shasta County in terms of daily business travelers. Additional appeal for a Red Bluff stop includes its status as an important population center in the area (hosting 22% of Tehama County's population) as well as being the central hub for the Tehama Rural Area eXpress (TRAX), which has 120,000 riders a year. Red Bluff has a multitude of suitable bus stops close to the freeway making a stop in Red Bluff possible without adding much time to the overall trip length. The Bus & Ride at Rio & Walnut Streets appears to be the most appropriate stop in Red Bluff. This is because it serves as the starting and ending point for all TRAX routes and the Amtrak Thruway Bus service[20]. It also has a dedicated parking lot with abundant street parking available. Another alternative stop in Red Bluff would be the Greyhound Bus stop on Antelope Boulevard. The Bus & Ride was considered a better location due to its connectivity with the TRAX system, and its central location in downtown Red Bluff.

4.2.3.Implementing a Stop in Corning

Figure 25: Corning Transportation Center

A stop in Corning would link Shasta and Tehama Counties. Although Red Bluff is a larger city with 22% of the county's population compared with 12% of the county's population in Corning, Corning hosts two major regional visitor attractions: the Rolling Hills Casino and the Olive Pit. The Corning Transportation Center at 3rd and Solano Streets appears to be the most appropriate stop in Corning. This is because of its central location in downtown as well as its connectivity to the TRAX system. Another alternative stop in Corning would be the Rolling Hills Casino located just south of Corning along I-5.[21] The Corning Transportation Center was considered the better location due to its connectivity with the rest of Tehama County.

[20] Except the Corning Local route

[21] If the Rolling Hills Casino is chosen as an intermediate stop location, outreach to Rolling Hills would need to occur to determine if Rolling Hills would be willing to allow a stop there.

The California Environmental Protection Agency (CalEPA) was tasked by Senate Bill 535 – California Global Warming Solutions Act of 2006: Greenhouse Gas Reduction Fund – to develop a definition for disadvantaged communities. A stop in either Red Bluff or Corning would provide direct benefits to a SB535 designated disadvantaged community (as shown in the following figure). Further information about disadvantaged community benefits is discussed in section 5.2.1.

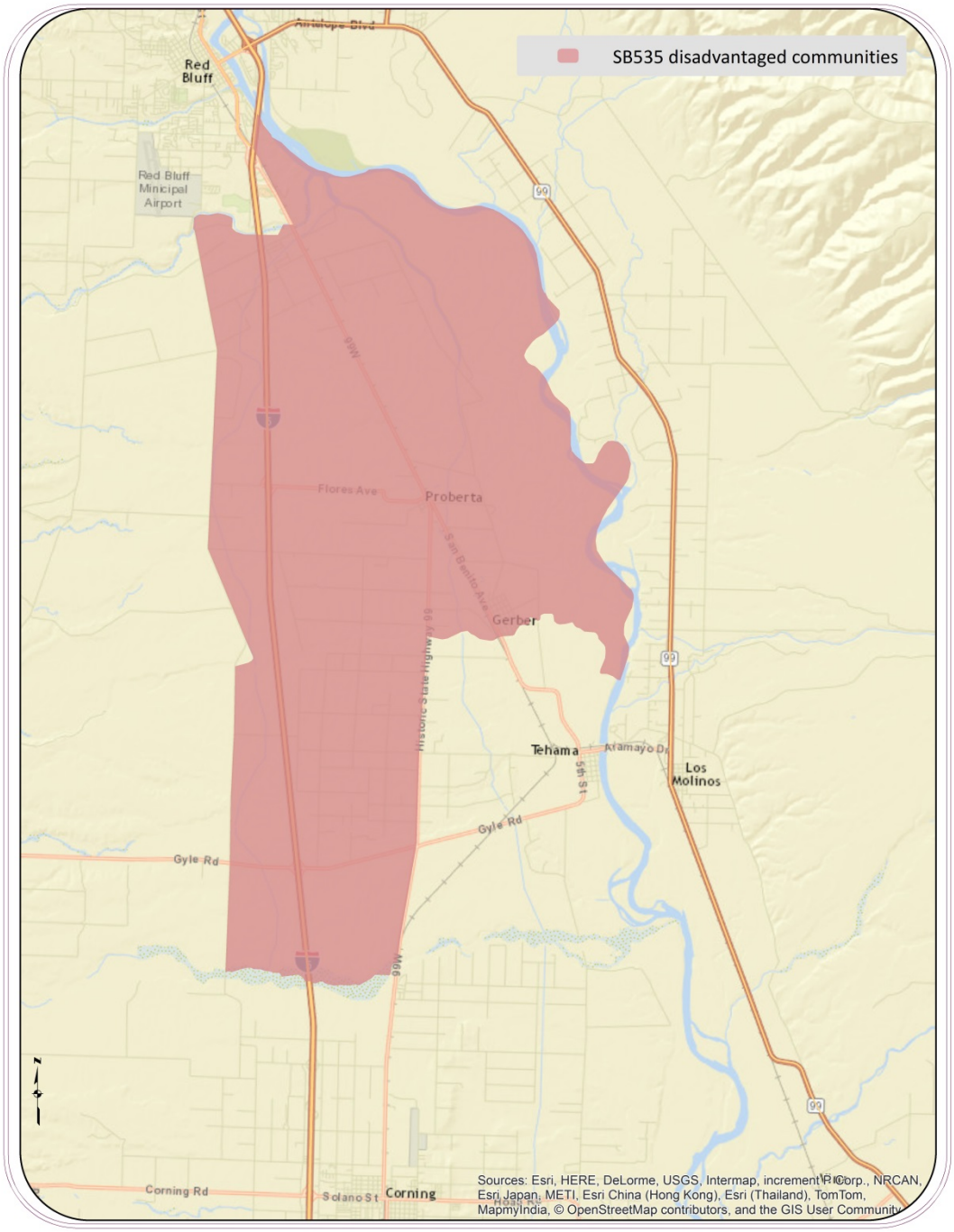


Figure 26: SB535 Disadvantaged Community in Tehama County

4.2.4.Implementing a Stop in Orland

A stop in Orland would link the intercity bus service to both Glenn and Butte Counties via Glenn Ride's service to Chico. Orland is chosen as a potential stop in Glenn County instead of Willows because of its close proximity to both I-5 and Chico, making the journey to reach the intercity bus service shorter for Chico residents. Stopping in Orland would connect the intercity bus service to the 66,000 annual Glenn Ride passengers as well as the 10,000 annual passengers in Butte County. The Glenn County Fairgrounds appears to be the most appropriate stop in Orland due to its abundant parking and ample room to allow a full sized bus access to load/unload passengers. Another alternative stop in Orland would be the Glenn County Senior Center on East Walker Street. The Glenn County Fairgrounds was considered a better location due to the amount of parking available for passengers of the intercity bus service.

Figure 27: Glenn County Fairgrounds

4.2.5.Implementing a Stop in Williams

Figure 28: Granzella's

A stop in Williams would link the intercity bus service to both Colusa and Lake Counties via a bus route connecting Lake County with I-5. Since it is likely the proposed intercity bus service will be implemented before a proposed Lake County Transit route to the I-5 corridor is complete, efforts would need to be made to coordinate the connection of those two routes in Williams. Stopping in Williams would also connect the intercity bus service to the 50,000 annual Colusa County passengers and the 335,000 annual passengers on Lake County Transit. Granzella's appears to be the most appropriate stop in Williams. This is because of the availability of parking at Granzella's restaurant and hotel, as well as the draw of Granzella's itself as a regional visitor attraction. Another alternative stop in Williams would be an empty lot near Granzella's that the city owns and which could be turned into a dedicated parking lot. However, Granzella's was considered a better location because there is already an existing parking lot so no infrastructure construction is needed.

The five alternative intermediate stops are summarized below. The final preferred alternative was chosen from a combination of the core service route and alternative intermediate stops. This preferred alternative is presented in Section 5.1 – Preferred Alternative. The preferred alternative was selected by SRTA and CBPR staff after a careful and thorough review of the core service route and all of the alternative intermediate stops.

Table 6: Redding to Sacramento Route Alternative Intermediate Stops

Alternative Stop	Number of Stops After Departing Redding	Primary Bus Stop Location	Secondary Bus Stop Location	Time from Redding to Sacramento	Connections
Starting at Turtle Bay	Three: The Sacramento International Airport (SMF), The Sacramento Amtrak Station (SAC), Stop at 7th & Capitol in Downtown Sacramento	Turtle Bay Exploration Park	N/A	2 Hours 50 Minutes	Airlines at SMF, Amtrak at SAC
Red Bluff	Four: Red Bluff, SMF, SAC, Stop at 7th & Capitol in Downtown Sacramento	Bus & Ride at Walnut & Rio Streets	Greyhound Bus Stop – Sunshine Food & Gas	2 Hours 55 Minutes (adds 5 minutes to route)	TRAX in Red Bluff, Airlines at SMF, Amtrak at SAC
Corning	Four: Corning, SMF, SAC, Stop at 7th & Capitol in Downtown Sacramento	Corning Transportation Center	Rolling Hills Casino	3 Hours (adds 10 minutes to route)	TRAX in Red Bluff, Airlines at SMF, Amtrak at SAC
Orland	Four: Orland, SMF, SAC, Stop at 7th & Capitol in Downtown Sacramento	Glenn County Fairgrounds (Park & Ride)	Glenn County Senior Center	3 Hours (adds 10 minutes to route)	Glenn Ride in Orland, Airlines at SMF, Amtrak at SAC
Williams	Four: Williams, SMF, SAC, Stop at 7th & Capitol in Downtown Sacramento	Granzella's	Vacant City Owned Lot on 5th Near Granzella's	2 Hours 55 Minutes (adds 5 minutes to route)	Colusa County Transit in Williams, Lake County Transit in Williams, Airlines at SMF, Amtrak at SAC

To improve performance of the preferred alternative, technology applications for demand pricing and trip-chaining are recommended. For example, certain stop locations should be identified as on-demand stops, i.e. the intercity bus would only stop at those locations if a rider is already ticketed to embark or disembark. Similarly demand ticketing could be developed to have a sliding fair that first has higher cost fare for shorter trips and then is discounted for the shorter trips to fill in.

4.3.Charging Stations and Bus Storage

At the time of this report and because of the distance from Redding to Sacramento and the option to use battery electric buses, a recharge will be required after a single one-way trip[22]. Two buses are necessary for each one-way trip: one to make the southbound trip and one to make the northbound trip. In Redding, Turtle Bay has expressed interest in installing charging stations for battery electric vehicles. In Sacramento, the Sacramento Regional Transit District (SacRT) has bus storage lots beneath the Capital City Freeway. SRTA staff has discussed with SacRT staff storage of buses used for the intercity bus service beneath the Capital City Freeway. SRTA should further research installing charging stations at these locations to allow buses to charge after a one-way trip and overnight. Note that after the initial trip each day, the bus that made the first southbound trip can then make the second northbound trip. Similarly, the bus that makes the second southbound trip can make the third northbound trip and so on.

5.Action Plan

The Action Plan takes all of the information in Sections 1 through 4 and develops a framework whereby the intercity bus service can be implemented. This section is structured as follows:

- Section 5.1 presents the preferred alternative route for the intercity bus service and estimated demand.
- Section 5.2 presents an analysis of where the disadvantaged communities are located within the catchment area and how the intercity bus service can benefit the communities it may serve.
- Section 5.3 presents a list of possible funding sources.
- Section 5.4 presents the costs and proposed fare schedule for the intercity service based on estimated demand.

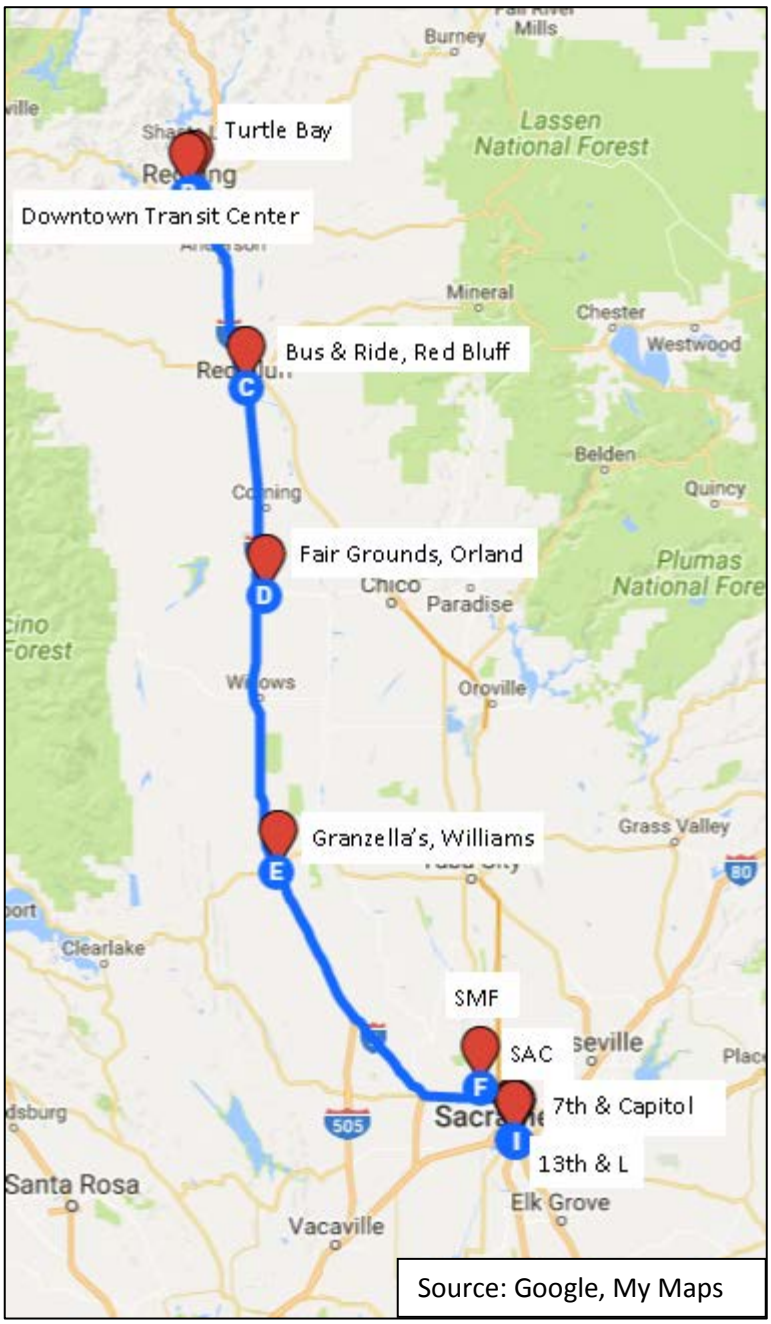


Figure 29: Preferred Route Alternative

[22] Though it should be noted that battery technology is changing and the best ranges are getting longer such that a round-trip could be made in the future.

5.1.Preferred Alternative

The preferred route alternative was developed in consultation with SRTA staff to maximize potential ridership and connections to the broader national bus, rail, and air transportation networks. The design of the preferred route alternative is based on the need to transport people from far northern California south to Sacramento and is not focused on transporting passengers short distances (e.g. from Redding to Red Bluff), however, that is an important secondary benefit that should not be ignored. Data on daily travel between the catchment area and Sacramento, as well as more information on the Red Bluff, and Orland stops can be found in Appendix E – Preferred Route Alternative.

The preferred route alternative begins at the Turtle Bay Exploration Park in Redding and travels south making stops in three cities along the I-5 corridor before making four stops in Sacramento. The total number of stops along the preferred route alternative after departing Turtle Bay is eight. These stops are:

- The Downtown Transit Center in Redding
- The TRAX Bus & Ride in Red Bluff[23]
- The Glenn County Fairgrounds in Orland[24]
- Granzella's Restaurant and Inn in Williams
- The Sacramento International Airport (SMF)
- The Sacramento Amtrak Station (SAC)
- The enhanced bus stop at 7th & Capitol in Sacramento
- 13th & L in Sacramento[25]

As shown in Table 7, the addition of more than one stop between Redding and Sacramento changes the schedule timing. Because of the need to have the fourth northbound trip leave the Sacramento International Airport at 8:30 PM so the bus arrives in Redding at a reasonable time, the bus must make its fourth southbound departure at 4:05 PM instead of 5:05 PM. This means that passengers on the second northbound trip must wait until the next day to return to Sacramento. Starting the intercity bus service at Turtle Bay will help mitigate this problem because of the hotel being constructed there.

[23] Stops in Red Bluff and Orland are included preliminarily. More information on the inclusion of these two stops can be found in Appendix D.
[24] See above footnote
[25] If possible, see Appendix D.

Table 7: Preferred Route Alternative

Stop	Trip 1	Trip 2	Trip 3	Trip 4
Southbound				
Turtle Bay Exploration Park	4:45 AM	10:10 AM	1:30 PM	4:05 PM
Downtown Transit Center, Redding	4:55 AM	10:20 AM	1:40 PM	4:15 PM
Bus & Ride, Red Bluff	5:30 AM	10:55 AM	2:15 PM	4:50 PM
Fair Grounds, Orland	6:05 AM	11:30 AM	2:50 PM	5:25 PM
Granzella's, Williams	6:50 AM	12:15 PM	3:35 PM	6:10 PM
Sacramento International Airport	7:30 AM	12:55 PM	4:15 PM	6:50 PM
Sacramento Amtrak Station	7:50 AM	1:15 PM	4:35 PM	7:10 PM
7th & Capitol Stop	8:05 AM	1:30 PM	4:50 PM	7:25 PM
13th & L Stop	8:15 AM	1:40 PM	5:00 PM	7:35 PM
Northbound				
13th & L Stop	8:25 AM	1:50 PM	5:10 PM	7:45 PM
7th & Capitol Stop	8:35 AM	2:00 PM	5:20 PM	7:55 PM
Sacramento Amtrak Station	8:50 AM	2:15 PM	5:35 PM	8:10 PM
Sacramento International Airport	9:10 AM	2:35 PM	5:55 PM	8:30 PM
Granzella's, Williams	9:50 AM	3:15 PM	6:35 PM	9:10 PM
Fair Grounds, Orland	10:35 AM	4:00 PM	7:20 PM	9:55 PM
Bus & Ride, Red Bluff	11:10 AM	4:35 PM	7:55 PM	10:30 PM
Downtown Transit Center, Redding	11:45 AM	5:10 PM	8:30 PM	11:05 PM
Turtle Bay Exploration Park	11:55 AM	5:20 PM	8:40 PM	11:15 PM

The final schedule should be finalized in coordination with existing intercity transportation providers (Amtrak, Greyhound, First Class Shuttle), SMF, and the San Joaquin Joint Powers Authority to better allow the intercity service to complement, as opposed to compete with, existing services.

Table 8 shows the estimated demand for the intercity bus service using both the trip rate and regression methods based on current catchment area and route characteristics, 2020 characteristics and 2060 characteristics. For further details on the model see Section 3.3 – Rural Transit Demand Model, and Appendix H – Rural Intercity Bus Service Demand Model.

Table 8: Estimated Demand on the Preferred Route Alternative

Model Method	Current Demand	2020 Demand	2060 Demand
Trip Rate Method	23,868	24,766	29,315
Regression Method	36,461	37,713	43,849

The regression method estimates higher demand than the trip rate method for two reasons. First, the trip rate method uses generalized trip rate data that is not specific to the proposed intercity bus service catchment area. It is likely that the data used was generated using regions with much lower trip rates. Second, the regression method considers both the number of stops and the destinations served. Given the importance of certain stops such as SMF, this consideration is important and leads to increased estimated demand. Notably though, neither method takes into account existing regional connections nor the desire of residents in the catchment area for service to Sacramento. Based on project surveys

and related transit needs assessments the actual demand likely will be higher than that predicted by these established national models.

5.2.Community Benefits Analysis

The California Environmental Protection Agency (CalEPA) was tasked by Senate Bill 535 – California Global Warming Solutions Act of 2006: Greenhouse Gas Reduction Fund – to develop a definition for disadvantaged communities. It is important to examine which communities in the catchment area are disadvantaged, according to this definition. However, because of the heavy reliance on environmental factors such as air quality, very few communities in far northern California meet this definition and the communities that do are limited to Butte, Sacramento, and Tehama Counties. Further details on the methodology and a map of the location of these disadvantaged communities are located in Appendix F – Community Benefits Analysis.

Because of the limits of the CalEPA definition of disadvantaged communities, this analysis expands that definition to include groups of persons who make up what is often called the transportation disadvantaged population. This category includes portions of the elderly population, as well as persons with disabilities, low income persons, and members of households with no available vehicles. There can be considerable overlap among these groups. For example, a senior may have disabilities and have low income.[26] This section provides an overview of the transportation disadvantaged population and discusses how the intercity service will benefit the communities it serves.

5.2.1.CalEPA Disadvantaged Communities

There are a total of 47 Census tracts that are considered disadvantaged communities in the proposed intercity bus service's catchment area. All but four of the Census tracts that meet the CalEPA definition of disadvantaged community are in Sacramento County. The remaining four Census tracts include one in Tehama County (between Red Bluff and Corning), and three in Butte County (south of Chico). The population of these Census tracts is 16,425.

5.2.2.Transportation Disadvantaged Population

This study assumes the transportation disadvantaged population consists of persons aged 65 and above, persons with any disability (as defined by the American Community Survey[27]), persons living below the federal poverty level, and members of households that do not own a vehicle. Table 9 presents an overview of these populations in the catchment area.

[26] Text from this section was paraphrased from the 2015 Colusa County Coordinated Transit-Human Services Transportation Plan.

[27] "Disability" ACS Definition: https://www.census.gov/people/disability/methodology/acs.html

Table 9: Catchment Area Population Characteristics

Area	Total Population	% of State Population	% Persons Aged 65+	% Persons w/ Disability	% Poverty Level	% No Vehicle
United States	314,107,084	-------	13.7%	12.3%	15.6%	9.1%
California	38,066,920	-------	12.1%	10.3%	16.4%	7.8%
Shasta	178,520	0.46%	18.1%	18.2%	18.0%	7.1%
Modoc	9,335	0.025%	21.2%	19.1%	21.0%	5.6%
Siskiyou	44,261	0.12%	21.2%	19.8%	22.7%	8.0%
Trinity	13,515	0.036%	22.1%	22.9%	18.7%	2.2%
Lassen	22,558	0.059%	10.9%	17.8%	17.1%	6.8%
Tehama	63,284	0.17%	16.9%	18.9%	18.6%	5.4%
Glenn	28,019	0.074%	13.9%	17.2%	20.0%	7.3%
Butte	221,578	0.58%	16.1%	17.2%	21.5%	7.1%
Colusa	21,424	0.063%	12.5%	12.4%	14.5%	5.5%
Lake	64,209	0.17%	18.9%	20.5%	24.3%	7.3%

Source: U.S. Census Bureau: American Community Survey (ACS), 2014 5-Year Estimates

Trinity County has the largest percentage of its population aged 65 and above, although Butte County has the largest population aged 65 and above. All but two counties, Lassen and Colusa, have a higher percentage of the population aged 65 and above than both the United States and California as a whole.

Trinity County also has the highest percentage of the population with a disability. This makes sense as conditions such as hearing and vision impairment -- which the ACS counts as disabilities -- are much more common with advanced age. All of the counties in the catchment area have disability rates higher than both the United States and California as a whole.

Lake County has the highest percentage of the population living below the federal poverty level, while Colusa County is the only county in the catchment area to have a poverty rate below both the United States and California as a whole.

Unlike age, disability, and poverty, the percentage of households with no available vehicle is lower in all counties in the catchment area except for Siskiyou County. This is common in more rural counties with less established public transit systems and longer distances between destinations, and where a personal vehicle is more convenient, or even necessary for travel.

5.2.1.How the Intercity Service Will Benefit Communities

The benefits of public transit and intercity transportation services to communities, with an emphasis on disadvantaged communities are summarized in Section 1.4 – Summary of Benefits, and are further detailed in Appendix F – Community Benefits Analysis.

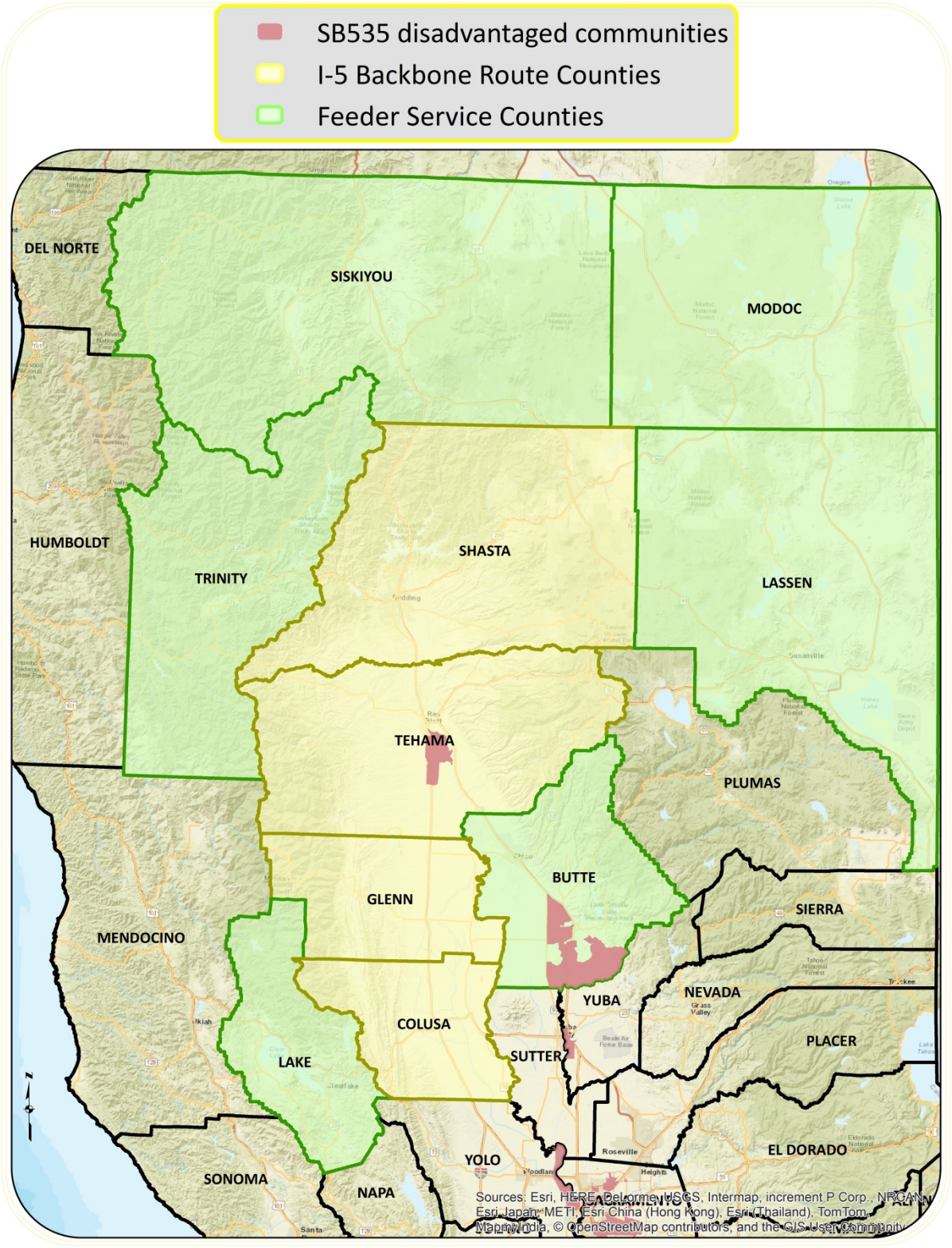


Figure 30: Rider-shed and SB535 Disadvantaged Communities

5.3.Funding Strategy

Funding for the intercity bus service can, and should come from many sources. This both decreases the burden of each funding source, and mitigates the risk of one or more funding sources becoming unavailable. Funding sources include greenhouse gas (GHG) reduction funding and other federal and state funding sources. This section provides a list and select summary information for each funding source. The list of funding sources is not meant to be comprehensive, although it does provide a good initial resource when navigating the current funding environment. More information on each of the funding sources can be found in the funding matrix in Appendix G – Funding Strategy.

5.3.1.Greenhouse Gas Funding

Greenhouse gas, or clean energy funding sources are a group of funding sources with the purpose of reducing GHG emissions in public transit by incentivizing the switch to clean energy vehicles. The following is a list of possible GHG emissions funding sources for use for the intercity bus service.

- Transit and Intercity Rail Capital Program (TIRCP): This is funding for which SRTA has already applied. It provides grants for capital and operational investments to reduce the GHG emissions of California's public transit systems.
- Low Carbon Transit Operations Program (LCTOP): This program seeks to expand bus and rail services. The Fiscal Year 2015/16 allocation for Shasta County was $187,529.[28]
- Affordable Housing and Sustainable Communities (AHSC) Program: This program seeks to reduce GHG emissions by improving mobility options. There are three possible programs to apply to, each with a $1 million minimum award.
- Low Carbon Transportation Investments and Air Quality Improvement Program (AQIP): This program provides vouchers to help transit providers purchase hybrid and zero emissions vehicles. Awards cover $110,000 of the cost of zero emissions vehicles, and $30,000 of the cost of hybrid vehicles.
- Alternative and Renewable Fuel and Vehicle Technology Program (ARFVTP): This program provides as much as $100 million in financial incentives to fleet owners to deploy alternative and renewable fuel technologies.
- Qualified Energy Conservation Bonds: Qualified energy conservation bonds are available through the California Treasury Department to pay for myriad eligible projects with the purpose of reducing energy consumption. Shasta County is eligible for 0.5% of the total program funding.
- California Lending for Energy and Environmental Needs (CLEEN) Center: The CLEEN Center supports state and local government agencies in reducing GHG emission levels to meet the state's long-term emissions reduction goals.
- The Infrastructure State Revolving Fund (ISRF) Loan Program: This program provides loans ranging from $50,000 to $25,000,000 for the purchase of hybrid, or zero emissions vehicles.
- The Clean Diesel Program: This program reduces the incremental cost of zero emissions vehicles. For example, if the difference between the cost of a diesel vehicle and a zero emissions vehicle is $50,000, the program will fund 25%*$50,000=$12,500.
- Congestion Mitigation and Air Quality Improvement (CMAQ) Program: This program provides operating funding for new transportation services.

[28] http://www.dot.ca.gov/hq/MassTrans/Docs-Pdfs/Cap&Trade/2015-2016.lctop.eligibility.list.pdf

5.3.2.FTA Section 5311(f) Funding

FTA Section 5311(f) funding is part of the broader Section 5311 Program reauthorized by the FAST Act in December 2015. The Section 5311 program provides capital, planning, and operating assistance to support public transportation in rural areas with populations less than 50,000.[29] All programs under Section 5311 are available for the year appropriated plus two additional years.

While the purpose of the Section 5311(f) program is to help connect rural areas to the broader national transportation network, recipients of Section 5311(f) grants are not limited by the 50,000 resident maximum. Section 5311(f) funds are not eligible to be used for commuter bus service.[30]

5.3.3.Other Potential Funding Sources

Besides GHG and Section 5311(f) funding sources there are myriad other sources of funding which can possibly be used to fund the proposed intercity bus service.

- FTA Section 5310 – Enhanced Mobility of Seniors and Individuals with Disabilities Program: This program provides funds for public transportation service to increase the mobility of seniors and persons with disabilities.
- Toll Credit Funds in Lieu of Non-Federal Match Funds: Toll credits can be used to satisfy the federal match requirement for most federal funding sources. RTPAs are the organizations eligible to apply for toll credits.
- Transportation Development Act (TDA): The Transportation Development Act has two funding sources – the Local Transportation Fund (LTF); and the State Transit Assistance Fund (STA). TDA funds may be allocated to the intercity bus service under Articles 4 and 8.
- Regional Transportation Improvement Program (RTIP): RTIP identifies regional projects for inclusion in the State Transportation Improvement Program (STIP), which can then receive funding to add capacity to a transportation system.
- AB 2766 Vehicle Air Pollution Fees: AB 2766 allows local air quality management districts to levy a $2 to $4 fee on vehicles registered in their district. These funds are used to implement programs to reduce air pollution of vehicles.
- Social Service Funding Sources: Various social services organizations have a vested interest in transportation and may be willing to provide some funding for the intercity bus service.
- Other Funding Sources: Other funding sources such as foundations, service clubs, fraternal organizations, advertising revenues, contract revenues, and in-kind contributions can provide small, but meaningful funding contributions for the intercity bus service.

5.4.Implementation Plan

This implementation plan is designed to act as a guide in the development of a business plan associated with the preferred route alternative of the intercity bus service. This implementation plan includes both cost estimates and a proposed fare schedule for the intercity bus service.

[29] http://www.dot.ca.gov/hq/MassTrans/Docs-Pdfs/CoordinatedPlng/Final%20Coordinated%20Plans%202015/colusa2015.pdf
[30] http://www.dot.ca.gov/hq/MassTrans/Docs-Pdfs/5311/2013-5311(f)process/program_guidelines.2013.pdf

5.4.1.Estimated Cost

Operating cost estimates are based on the existing Burney Express route. As an intercity bus route that is already operated by RABA, it provides a suitable estimate for the cost structure of the proposed intercity bus service. Cost information was obtained from the 2014 Redding Area Bus Authority Short Range Transit Development Plan which presents operating costs and various performance statistics for the Burney Express route. Operating costs per vehicle mile were calculated and added to the capital expenditures of purchasing five zero emission buses for the route. This information is presented in Table 10.

Table 10: Proposed Intercity Bus Service Startup Cost Estimate

Vehicle Service Miles	Cost per Mile[31]	Operating Costs	Capital Expenditures	Total Cost
495,040	$2.36	$1,168,294	$4,000,000	$5,168,294

Generally, longer distance routes lead to increased maintenance costs. However, the decrease in fuel costs offset the increase in maintenance costs when compared to the Burney Express route. The cost of $800,000 per bus is based on Sierra Club estimates for the Proterra Catalyst Extended Range Transit Buses. This type of bus is necessary due to the distance from Redding to Sacramento.[32]

After the initial year the cost of the service will decrease to the operating costs, plus the yearly contribution towards replacement capital costs as determined by the transit operator.

5.4.2.Fare Estimates

Fares must be set to compete with alternative methods of transportation from Redding to Sacramento, and meet minimum farebox recovery ratios (should they exist) for any source of funding used to finance the proposed intercity bus service.

While there are multiple options of travel from Redding to Sacramento, the mode most closely resembling the intercity bus service is Greyhound bus service. Therefore, fares should be set to be competitive with Greyhound. Table 11 shows the proposed fare schedule.

For the purpose of setting a fare schedule, this study assumes that the number of passengers utilizing the intercity bus service will be the average of the trip rate, and regression methods, or 31,256 for the current year's catchment area population. The lowest Greyhound fare from Redding to Sacramento is $28.00 for a one-way trip. Therefore, a reasonable fare on the intercity bus service for a trip from the origin of the route to the terminus (Turtle Bay in Redding to the stop at 13th & L in Sacramento) is $25.00. Although shorter trips on the intercity service will have lower costs, the purpose of the intercity bus service is to provide trips from far northern California, south to Sacramento and not to serve as a commuter service between the counties just north of Sacramento, and Sacramento. Therefore, fares are set to incentivize long distance usage.

[31] Obtained from 2014 RABA Short Range Transit Development Plan for the Burney Express route
[32] https://www.sierraclub.org/sites/www.sierraclub.org/files/uploads-wysiwig/ZEBmetrics.pdf

Table 11: Proposed Fare Schedule[33]

Origin ↓ / Destination →	Turtle Bay Exploration Park	Downtown Transit Center, Redding	Bus & Ride, Red Bluff	Glenn County Fairgrounds, Orland	Granzella's, Williams	Sacramento International Airport	Sacramento Amtrak Station	7th & Capitol Stop	13th & L Stop
Turtle Bay Exploration Park		$5.00	$15.00	$15.00	$20.00	$25.00	$25.00	$25.00	$25.00
Downtown Transit Center, Redding	$5.00		$15.00	$15.00	$20.00	$25.00	$25.00	$25.00	$25.00
Bus & Ride, Red Bluff	$15.00	$15.00		$10.00	$15.00	$20.00	$20.00	$20.00	$20.00
Glenn County Fairgrounds, Orland	$15.00	$15.00	$10.00		$15.00	$20.00	$20.00	$20.00	$20.00
Granzella's, Williams	$20.00	$20.00	$15.00	$15.00		$15.00	$15.00	$15.00	$15.00
Sacramento International Airport	$25.00	$25.00	$20.00	$20.00	$15.00		$10.00	$10.00	$10.00
Sacramento Amtrak Station	$25.00	$25.00	$20.00	$20.00	$15.00	$10.00		$10.00	$10.00
7th & Capitol Stop	$25.00	$25.00	$20.00	$20.00	$15.00	$10.00	$10.00		$10.00
13th & L Stop	$25.00	$25.00	$20.00	$20.00	$15.00	$10.00	$10.00	$10.00	

If all 30,164 estimated passengers purchased a $25.00 ticket, revenue from the Redding to Sacramento intercity bus service route would have a farebox recovery ratio of approximately 65%. This is certainly optimistic as many trips will be over shorter, cheaper distances. However, a farebox recovery ratio of 30% to 50% is reasonable.

As described earlier, to improve performance of the preferred alternative, technology applications for demand pricing and trip-chaining are recommended. For example, certain stop locations should be identified as on-demand stops, i.e. the intercity bus would only stop at those locations if a rider is already ticketed to embark or disembark. Similarly demand ticketing could be developed to have a sliding fair that at first has higher cost fares for shorter trips and later discounts the fares for the shorter trips to fill the available seats.

[33] Table 11 is read as follows: where the passenger boards the bus is found in the rows to the left and where the passenger departs is found in the columns. For example, if a passenger boards at the Sacramento International Airport and departs at the Sacramento Amtrak Station the trip would cost $10.00.

6.Conclusion

This intercity bus service feasibility study and action plan was produced to determine the possibility of implementing a new intercity bus service between Redding and Sacramento, and to take the first steps in planning that route. Intercity bus service to Sacramento stems from the need of Shasta County residents for intercity transportation options which are the result of a discontinuation of flights at the Redding Municipal Airport, and inconvenient Amtrak and Greyhound schedules. Furthermore there is a great need in the North State counties to have better access to medical resources in large urban areas, educational opportunities, employment opportunities, and more efficient options for business travel to the capital.

The purpose of intercity bus service is to connect two or more urban areas that are not in close proximity; provide capacity for baggage and other travel needs of passengers; and provide meaningful connections and reasonable layover times. Through examination of current intercity transportation options, feeder services schedules, and possible stop locations, SRTA and CBPR have developed a reasonable proposed intercity bus service route from Redding to Sacramento. The proposed service route departs from Turtle Bay Exploration Park in Redding and makes eight stops before reaching the final destination at 13th & L Streets in Downtown Sacramento. These stops include the Sacramento International Airport, the Sacramento Amtrak Station and the enhanced bus stop at 7th & Capitol in Sacramento next to the new Golden One Center arena. It is recommended that the proposed intercity bus service makes four southbound and northbound trips daily, departing Redding at 4:45 AM, 10:10 AM, 1:30 PM, and 4:05 PM, and departing Sacramento at 8:25 AM, 1:50 PM, 5:10 PM and 7:45 PM.

If the intercity bus service were implemented today, expected demand would range from 24,200 to 38,312 passenger trips annually. This level of demand should ensure a sustainable farebox recovery ratio. In addition to the benefits to these passengers, there are also well documented benefits to the communities served, especially disadvantaged communities. These benefits include greenhouse gas emission reductions, economic development opportunities, increased educational opportunities, access to medical resources, employment opportunities and occasional business travel opportunities, among others.

While this study provides a starting point for the development of an intercity bus service, more planning and research is needed (further examination of the Red Bluff and Orland stops, for example). The Butte County Inter-City Commuter Bus Feasibility Study and AirSage consumer movement data are good initial resources for further analysis. Furthermore early data and findings from the draft study were used in a Transit and Intercity Rail Capital Program grant application. The application was not successful; however, the California State Transportation Agency and Caltrans's Division of Rail and Mass Transportation support the concept and encouraged SRTA to reapply for funding. A second grant application was submitted in November 2016, requesting $223,203 for a detailed business plan that could be used to secure capital and operational funding. Grant award announcements are anticipated in the spring of 2017, with projects starting July.

Appendix A.Existing Services

Appendix A provides additional details regarding existing intercity transportation resources available to Shasta County residents. This includes a list of additional intercity transportation providers not included as the core service providers in Section 2 – Review of Existing Intercity Service. These additional intercity service providers were not included in the body of the report due to the size and relative importance of the services to the overall intercity transportation network in Shasta County.

A.1.Shasta County Intercity Transportation Providers

A.1.1.Amtrak

The Coast Starlight, California Zephyr, San Joaquins, and Capitol Corridor routes allow for connectivity to the entire national Amtrak network. In addition to direct train service from Sacramento, Amtrak offers Thruway Bus service from Sacramento to Davis (Route 3), and San Francisco (combination of Route 3 and Route 6). However, Thruway Bus service can only be utilized in conjunction with train service, with the following exceptions.

- Thruway Bus service is provided along Highway 50 between Sacramento and South Lake Tahoe
- Thruway Bus service without a passenger rail ticket is also permitted along I-5 between Lebec in Kern County and the city of Santa Clarita in Los Angeles County as long as there is no private intercity service providers
- Amtrak can enter into a contract for the transport of Amtrak passengers by bus if the buses are operated by the motor carrier as part of regularly scheduled, daily bus service that has been operating consecutively without an Amtrak contract for 12 months immediately prior to contracting with Amtrak.

A.1.2.Greyhound

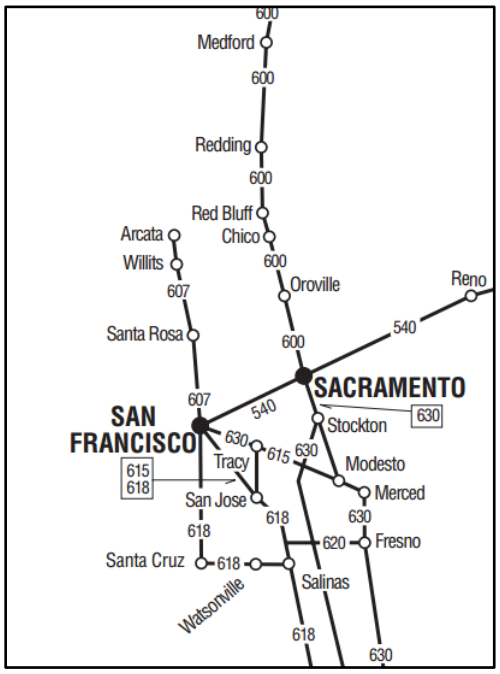


Figure 31: Redding, Sacramento and San Francisco Greyhound Lines

Figure 31 depicts the Greyhound bus routes in Greyhound's Northern California Intercity bus service region including Redding, Sacramento, and the Bay Area. [34] The cost of a ticket from Redding to Sacramento is $28.00 ($36.00 if not purchased online). From Sacramento passengers can transfer to:

- San Francisco, or Reno on Route 540
- Stockton, Merced, or Fresno on Route 630

Additionally, although Route 600 ends in Portland, passengers can transfer to Seattle or Vancouver on Route 601.

[34] http://extranet.greyhound.com/Revsup/schedules/sa-50.pdf

A.1.3.First Class Shuttle

Besides service to the Sacramento International Airport, and the San Francisco International Airport (via a transfer to the Davis Airporter), First Class Shuttle also provides transportation to a select number of San Francisco Giants baseball games each year; with the games always occurring on Saturdays. Transportation is provided from Oxford Suites in Redding directly to the stadium for $90.00 per person for the round-trip, not including the price of the game.

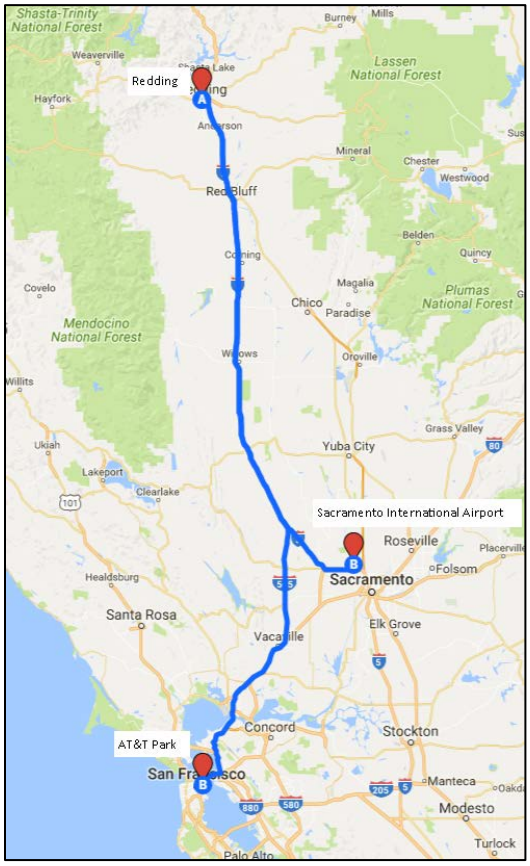


Figure 32: First Class Shuttle Fixed Route Service

The shuttle can also be rented for trips to any destination for an hourly rate of $125.00, or a maximum daily charge of $900.00 for a 12 person van, or an hourly rate of $65.00 ($500.00 per day maximum) for a 5 person van.

A.1.4.Ambassador Limousine

Ambassador Limousine is a limousine service located in Redding. Ambassador Limousine provides service throughout Shasta and the surrounding counties. Standard rates are available for any destination or event with a two hour minimum booking required. Rates for an 8 passenger limousine begin at $70 per hour for a two to four hour rental and decrease to $60 per hour for an eight to ten hour rental. Similarly, rates for a 2-6 passenger sport utility vehicle begin at $50 per hour and decrease to $40.00 per hour for similar hourly usage. Special packages are available for events held in Sacramento, Wheatland, Mountain View, San Francisco, San Jose, Oakland and Oroville.

Transportation is available in both the limousines and sport utility vehicles to the Redding Municipal Airport, and the Sacramento, San Francisco, Oakland and San Jose International Airports. Prices vary by airport, but begin at $45.00 for a one way sport utility vehicle trip to/from the Redding Municipal Airport. Service to the Sacramento International Airport begins at $190.00 for a one way trip.

Ridership on Ambassador Limousine is approximately one person per day.

A.1.5.NorCal Limousine Services

NorCal Limo Bus Services is a 24/7 limousine service located in Redding. Standard limousine service is available for $70.00 per hour for the first four hours and $65.00 per hour thereafter. Sedan services are also available for $50.00 per hour for the first four hours and $45.00 per hour thereafter. Intercity service is available to any destination, although special trips are available to local attractions such as the Beer Bear Tour.

Limousine and sedan services are also available to the Redding Municipal Airport, and the Sacramento, San Francisco and Oakland International Airports for both one-way and round-trips. One-way trips begin at $90.00 ($50.00 for the sedan) to the Redding Municipal Airport and go to $450.00 ($300.00 for the sedan) to the San Francisco and Oakland International airports. Round-trips begin at $170.00 ($90.00 for

the sedan) to the Redding Municipal Airport and go to $900.00 ($490.00 for the sedan) to the San Francisco and Oakland International Airports. A one-way trip to the Sacramento International Airport is $300.00 ($170.00 for the sedan) and the round-trip is $575.00 ($300.00 for the sedan).

A.1.6.Executive Limo Bus Service

Executive Limo Bus Service provides limousine bus service in Shasta, Siskiyou, Tehama, Sacramento, Napa and Humboldt Counties. Located in Redding, services are available 24 hour a day, seven days a week. Local and intercity reservations are available.

A.1.7.Platinum Limo

Platinum Limo is a limousine service located in Redding. Locally owned and operated, service is available 24 hours a day, seven days a week. Popular destinations outside of Shasta County include: Dunsmuir, Chico, Rolling Hills Casino, and Sacramento, although service is available throughout Northern California. Transportation is available in many formats including sedans and limousines and door-to-door service is provided. Private and corporate services are also provided.

A.1.8.Shasta Premier Transportation

Shasta Premier Transportation provides limousine bus, limousine and sedan transportation services to residents of Shasta County. Standard hourly rates begin at $50.00 per hour for sedan service, $70.00 per hour for limousine service, and $140.00 an hour for limousine bus service. Sedans are also available for $20.00 per trip if the vehicle is only used for very short distances.

Shasta Premier Transportation is also available for trips to the Sacramento and San Francisco International Airports. Service to the Sacramento International Airport is available for $250.00 while service to the San Francisco International Airport is available for $450.00. Services are available seven days a week.

A.1.9.Merit Medi Trans

Merit Medi Trans is a private non-emergency medical transportation (NEMT) provider operating in Shasta, Tehama and Butte Counties, although transportation is provided beyond those counties. Merit Medi Trans specializes in ambulatory, wheelchair, and gurney transports. Merit Medi Trans is a licensed Medi-Cal provider and also accepts LogistiCare and Partnership Healthplan of California insurance plans. Transportation can be provided to any location from Sacramento to the Oregon border.

A.1.10.Benton Airpark

Benton Airpark is a general aviation airport owned and operated by the city of Redding. Benton Airpark is home to Hillside Aviation which offers charter flights in addition to flight training, aircraft maintenance and aircraft rentals.

A.1.11.Redding Jet Center

The Redding Jet Center is operated by Redding Aero Enterprises, Inc. and offers charter flight service to any desired destination. Round-trip, drop-off and stand-by service is provided. Flights are available by reservation 24 hours a day, seven days a week.

A.1.12.Taxi Services

An examination of customer reviews of Shasta County taxi services revealed many customers have had to wait for rides while taxis were picking up, or dropping off passengers in areas outside of Shasta

County, such as Red Bluff.[35] This indicates Shasta County taxis are willing to provide intercity transportation services. However, as the taxi fare schedule is designed for short range transportation, these trips can become prohibitively expensive.

A.1.13.Ride Sharing Services

Of the two major ride sharing companies in the United States, only Uber operates in Redding. However, the service is new and not well established, and rides are oftentimes unavailable. The rates are set by Uber, and vary with the time of day and the demand for Uber in a given area. According to the app, a trip from Redding to Chico costs between $61.00 and $81.00. Drivers are also private contractors which means they have the right to decide whether to give a passenger a ride to any location or not. Because of this, it is possible to use Uber to travel outside of Shasta County, although it is not guaranteed that this service will be available when desired.

A.2.Feeder Services

A.2.1.Sage Stage

Figure 33 shows the Sage Stage route from Alturas to Redding[36]. In addition to that route, which would feed the proposed intercity bus service, Sage Stage also operates routes from Alturas to Klamath Falls, Oregon; Reno, Nevada; and Susanville in Lassen County.

Figure 33: Alturas to Redding Sage Stage Route

A.2.2.Trinity Transit

Figure 34 shows the Trinity Transit route from Weaverville to Redding[37]. Trinity Transit also operates many intra-county routes, as well as routes connecting to Klamath Trinity Non-Emergency Transportation (KT Net System) and the Redwood Transit System. This expands transportation options for residents of the Redding urbanized area, although travel to these systems via Trinity Transit is time consuming and not very convenient.

Figure 34: Weaverville to Redding Trinity Transit Route

[35] http://www.yelp.com/biz/abc-cab-redding
[36] Modoc Short Range Transit Development Plan, 2013
[37] Trinity Transit Short Range Transit Development Plan and Coordinated Plan Update, 2014

A.2.3.Susanville Rancheria Bus

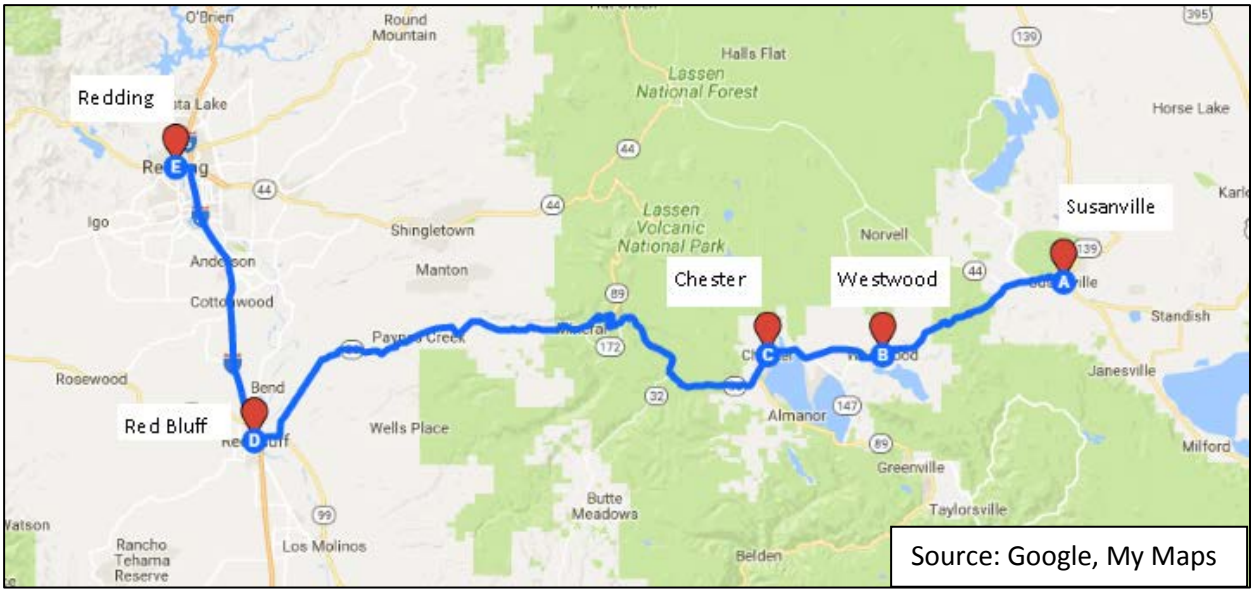


Figure 35: Susanville Rancheria Bus Route

Figure 35 shows the Susanville Indian Rancheria Bus route from Susanville to Redding. While the primary purpose of this route is to provide service between Susanville and Redding, it can also provide transportation for Redding urbanized area residents to the cities of Red Bluff, Chester, and Westwood.

Appendix B.Sacramento Route and Meaningful Connections

B.1.Core Service Route – Sacramento

This appendix describes the rationale for the timing of northbound and southbound trips along the core service route between Redding and Sacramento. Details of the departures and associated stops along the route are provided in Table 12 on the following page.

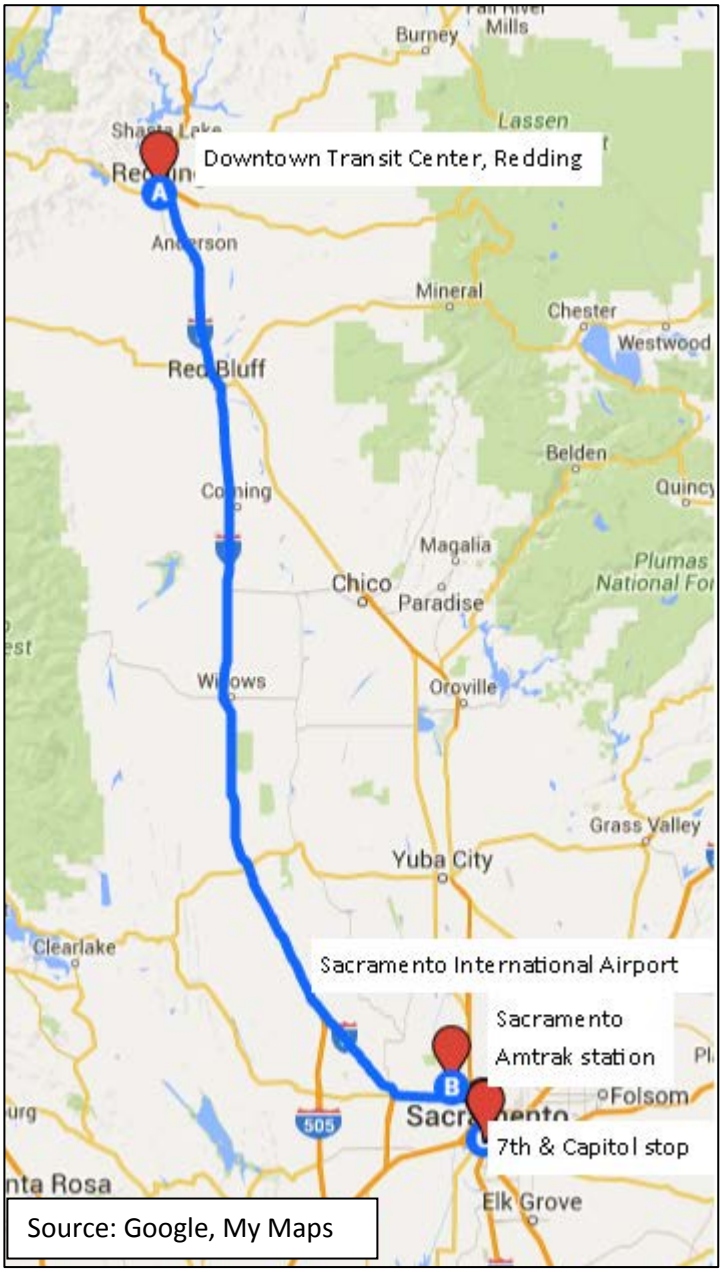


Figure 36: Core Service Route

The purpose of the first trip is to connect with morning departures at both SMF and the Sacramento Amtrak Station. The first flights depart SMF at 5:30 AM, while the first trains leave the Sacramento Amtrak Station at 4:30 AM. Because of the length of time required to pass airport security, the intercity service would have to leave Redding before 2:00 AM in order for passengers to be able to catch these first flights. A similar southbound departure time would be necessary to reach the first Amtrak train. While this might not be reasonable, most airlines have morning flights that depart from SMF between 8:30 AM and 9:00 AM which is a more reasonable time frame for the intercity bus service. Additionally, Amtrak has nine westbound trains that depart after 9:00 AM. Considering time requirements to clear security at SMF and the travel time from Redding to Sacramento, the first intercity bus is proposed to depart Redding at 5:00 AM. This will preclude transfers from other transit services from taking the initial southbound trip, but park and ride passengers can still benefit from the service and passengers arriving in Redding from Modoc, Siskiyou, and Trinity Counties will still be able to utilize the proposed intercity bus service on the second southbound trip. The immediate 8:00 AM return northbound trip allows for residents of Sacramento, or the intermediate counties that wish to travel to Redding the opportunity to arrive in the morning, allowing them the maximum time possible in Shasta County before returning south on either the third, or fourth daily trip.

The second southbound trip at 10:10 AM allows for Trinity Transit and Sage Stage passengers to arrive in Redding at 8:42 AM and 10:00 AM, respectively and then transfer to the intercity service (proposed STAGE service to Redding should arrive before this 10:10 AM departure). The second southbound trip would also be useful for those catching flights that leave in the mid afternoon and early evening. Likewise, there are still six westbound Capitol Corridor Amtrak trains that depart after 12:45 PM. The second northbound return trip immediately following the arrival of the intercity service in Sacramento also affords northbound residents from Sacramento and intermediate counties the opportunity for a day trip to Redding. The later departure time also allows a more leisurely departure time to Redding for potential passengers in Sacramento, and the intermediate counties, that do not need to return south in the same day.

Table 12: Core Service Route Schedule

Stop	Trip 1	Trip 2	Trip 3	Trip 4
Southbound				
Redding	5:00 AM	10:10 AM	2:00 PM	5:05 PM
Sacramento International Airport	7:15 AM	12:25 PM	4:15 PM	7:20 PM
Sacramento Amtrak Station	7:35 AM	12:45 PM	4:35 PM	7:40 PM
7th & Capitol Stop	7:50 AM	1:00 PM	4:50 PM	7:55 PM
Northbound				
7th & Capitol Stop	8:00 AM	1:10 PM	5:00 PM	8:00 PM
Sacramento Amtrak Station	8:15 AM	1:25 PM	5:15 PM	8:15 PM
Sacramento International Airport	8:35 AM	1:45 PM	5:35 PM	8:35 PM
Redding	10:50 AM	4:00 PM	7:50 PM	10:50 PM

The third southbound trip allows for passengers that travelled north on the first trip to return south to Sacramento, or any of the intermediate counties. It also allows passengers wishing to travel by air from SMF in the evening to arrive at the airport closer to their flight times. There are also four westbound Amtrak departures on the Capitol Corridor from Sacramento Amtrak Station after 4:35 PM. Additionally, it allows residents of Shasta County to return to Redding at the conclusion of the workday in Sacramento. Besides the normal workday ending at this time; meetings, workshops and other activities that Shasta County residents might have participated in also tend to end at this time, making the immediate northbound departure an appropriate time for a return trip to Redding from Sacramento.

Likewise, the fourth southbound trip allows for passengers that travelled north on the first two trips to return to Sacramento, or any of the intermediate counties. It also allows passengers with late night flights to reach the airport closer to their flight times. There is also one westbound Capitol Corridor departure from Sacramento Amtrak Station after 7:45 PM. The immediate fourth northbound return trip is also late enough for those arriving back in Sacramento by train or plane in the evening to reasonably be able to return to Redding. The last train arrives at Sacramento Amtrak Station at approximately midnight. Likewise, depending on the flight origin, planes land fairly frequently between 6:00 PM and midnight. While it is certainly not realistic for the intercity service to depart Sacramento at midnight, the proposed 8:00 PM departure from the enhanced bus stop at 7th & Capitol in Sacramento would allow many of the late arrivals in Sacramento to utilize the intercity service and would see passengers arrive in Redding at approximately 11:00 PM.

Table 13: Amtrak/Greyhound Schedule (current as of November 2016)

Southbound from Redding			Northbound from Sacramento		
Intercity	Amtrak	Greyhound	**Intercity**	Amtrak	Greyhound
5:00 AM	2:21 AM train	***4:05 AM**	**8:00 AM**	10:15 AM bus	***2:30 AM**
10:10 AM	5:55 AM bus	9:45 AM	**1:10 PM**	1:30 PM bus	8:30 AM
2:00 PM	9:05 AM bus	5:40 PM	**5:00 PM**	4:20 PM bus	7:00 PM
5:05 PM	12:40 PM bus	***11:30 PM**	**8:00 PM**	6:45 PM bus	***10:25 PM**
	2:30 PM bus			11:59 PM train	

**Bold: Proposed and existing service that travels the most direct route along the I-5 corridor.*

Existing Amtrak and Greyhound departure time between Redding and Sacramento are presented in Table 13. Together the three services offer a range of travel times along this important intercity corridor. The table also highlights the important mid-day service options the intercity service will provide to and from Redding and Sacramento. This flexibility is particularly important when one considers that although service on the Amtrak Thruway Buses is available near some of the intercity times, that service is designed to complement the Amtrak passenger train service and requires a ticket to be purchased on an Amtrak passenger train in conjunction with the Amtrak Thruway Bus.

B.2.Route Alternatives - Sacramento

B.2.1.Starting at Turtle Bay

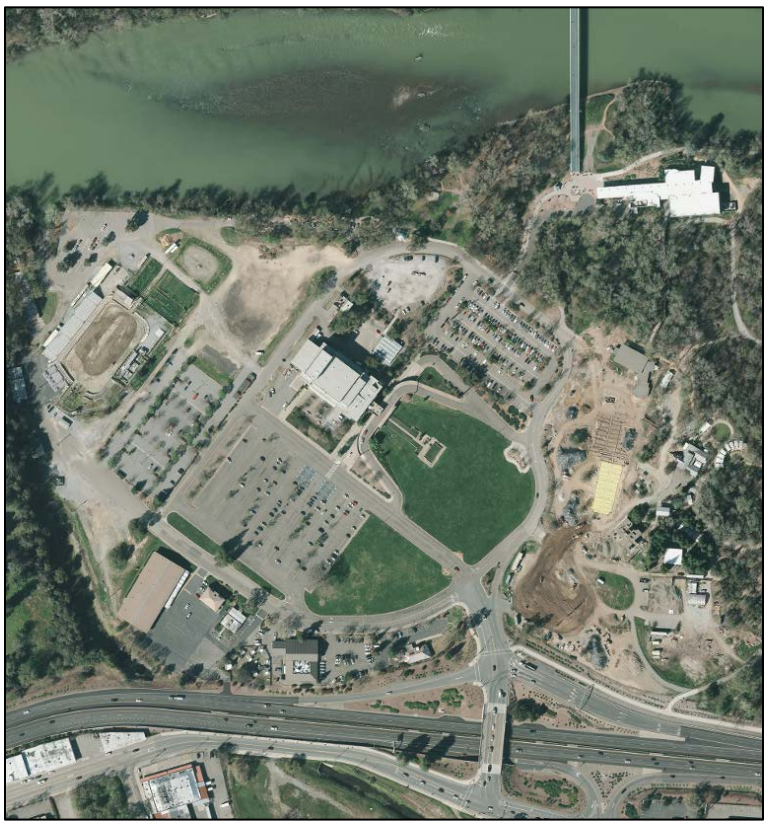


Figure 37: Turtle Bay

A possible alternative to beginning the intercity service route at the Downtown Transit Center would be to begin the service at the Turtle Bay Exploration Park. Due to the close proximity of Turtle Bay and the Downtown Transit Center, the schedule timing would be the same as the core service route.

Strengths	Weaknesses
• Desire of Turtle Bay management to participate in the service • Aesthetic appeal (Sacramento River, Sundial Bridge, Park lands) • Offers parking and overnight stays at hotel for early departures and late arrivals • Direct access to complementary uses and amenities (hotel, restaurant, restrooms, benches, museum) • Direct access to civic center, regional trails, fishing, boat ramps, rodeo grounds , gardens, Sunday farmer's market and arboretum • Exposure of service to broader population • Direct access to Highway 44 • 2 miles to Interstate 5 • Parking alternatives to Downtown • Served by Trinity Transit	• Not an intermodal facility • Increase to total service run time • Draws foot traffic away from downtown
Opportunities	**Threats**
• Attract northbound riders to regional visitor attraction (e.g. Kool April Nights and Big Bike Weekend at the Civic Center) • Exclusive infrastructure for the intercity bus service • Science nexus with museum and exploration park if electric vehicles run service • Bike racks or storage on buses could draw out of town visitors to Redding to use renowned trail system • Possible charging stations or storage at Turtle bay so buses do not have to deadhead to beginning and end point • Hotel could offer park and ride packages • Cost sharing with other electric bus providers • Attract student ridership from Bethel Church who has a long-term lease of the Civic Center	• Possible opposition for not starting from the Downtown Transit Center • Parking options conflicting with existing uses • Maneuverability of buses in packed parking lot

Figure 38: Turtle Bay SWOT Analysis

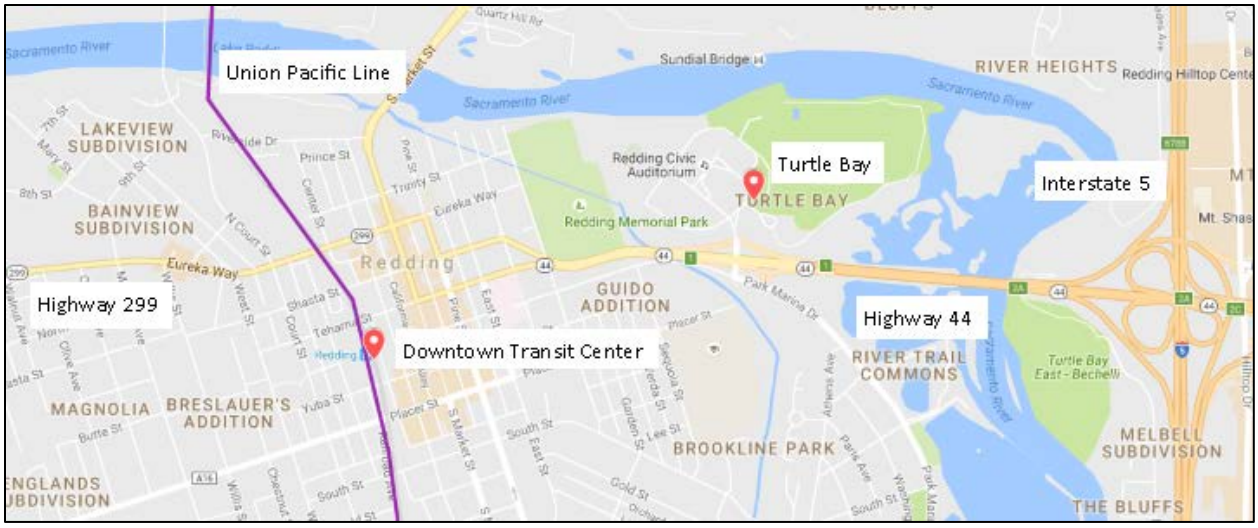


Figure 39: Turtle Bay (Approximately 1.4 miles from the Downtown Transit Center)

B.2.2.Stopping in Red Bluff

If a stop in Red Bluff were added at the Bus & Ride at Rio & Walnut Streets, the adjustments to the core service route schedule would not be severe due to the close proximity of the Bus & Ride to I-5. Additionally, because this is an express service built around ease of access from Redding to Sacramento, the stop in Red Bluff will be just 5 minutes. Thus, Tehama County residents wishing to use the intercity service will have to wait for the next bus to arrive, as opposed to the intercity bus waiting for the next TRAX bus to arrive. This holds true for all potential intermediate stops.

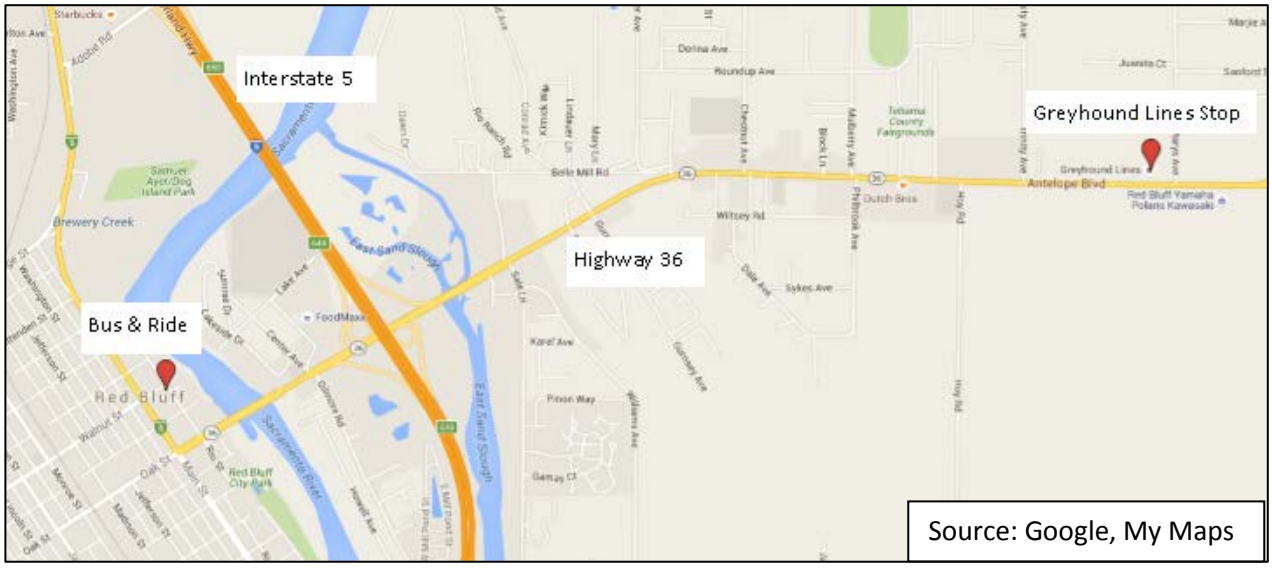


Figure 40: Red Bluff Transit Connections

Strengths	Weaknesses
• Existing travel patterns between Shasta and Tehama Counties • Red Bluff is the largest city between Redding and Woodland • Connections to Highway 36 and 99 • Serves disadvantaged communities • 0.8 miles to I-5 • Connection to Downtown Red Bluff amenities such as shops and restaurants	• TRAX only operates from 6:00 AM to 6:50 PM • TRAX headways are 1 hour long • Lack of secure long-term parking • Detour from I-5 in often congested area • Close proximity of Redding and Red Bluff • Increase to total service run time
Opportunities	**Threats**
• Access to the 120,000 annual TRAX passengers • Access to the Susanville Rancheria bus • Interest in improved parking and safety/security at the location by TRAX • Coordination opportunities with Amtrak Thruway Buses • Coordination opportunities with Susanville Rancheria Bus	• Duplication with existing services • Limited parking capacity • Parking options conflict with existing uses

Figure 41: Red Bluff SWOT Analysis

Because the intercity service departs Redding at 5:05 AM to allow passengers to reach connecting flights at SMF, as well as connecting trains at the Sacramento Amtrak Station, many of the intercity bus service feeder services will not be operating during the first southbound trip. TRAX is one such system and begins operating at 6:00 AM during the week, while ceasing operation at 6:50 PM. This also means Tehama County residents will not be able to utilize TRAX to reach the third and fourth northbound trips.

Table 14: Core Service Route with Red Bluff Connection Schedule

Stop	Trip 1	Trip 2	Trip 3	Trip 4
Southbound				
Redding	5:00 AM	10:10 AM	2:00 PM	5:05 PM
Red Bluff	5:30 AM	10:40 AM	2:30 PM	5:35 PM
Sacramento International Airport	7:25 AM	12:35 PM	4:25 PM	7:30 PM
Sacramento Amtrak Station	7:45 AM	12:55 PM	4:45 PM	7:50 PM
7th & Capitol Stop	7:55 AM	1:05 PM	4:55 PM	7:50 PM
Northbound				
7th & Capitol Stop	8:00 AM	1:10 PM	5:00 PM	8:00 PM
Sacramento Amtrak Station	8:10 AM	1:20 PM	5:10 PM	8:10 PM
Sacramento International Airport	8:30 AM	1:40 PM	5:30 PM	8:30 PM
Red Bluff	10:25 AM	3:35 PM	7:25 PM	10:25 PM
Redding	10:55 AM	4:05 PM	7:55 PM	10:55 PM

Figure 42: Red Bluff Bus & Ride

B.2.3.Stopping in Corning

A connection in Corning at the Corning Transportation Center, like the possible connection in Red Bluff, would not alter the overall timing of the route significantly due to the close proximity of the Corning Transportation Center to I-5 (1.1 miles).

Similar to a stop in Red Bluff, a stop in Corning would preclude the TRAX feeder service operating during the first southbound, and the third and fourth northbound trips.

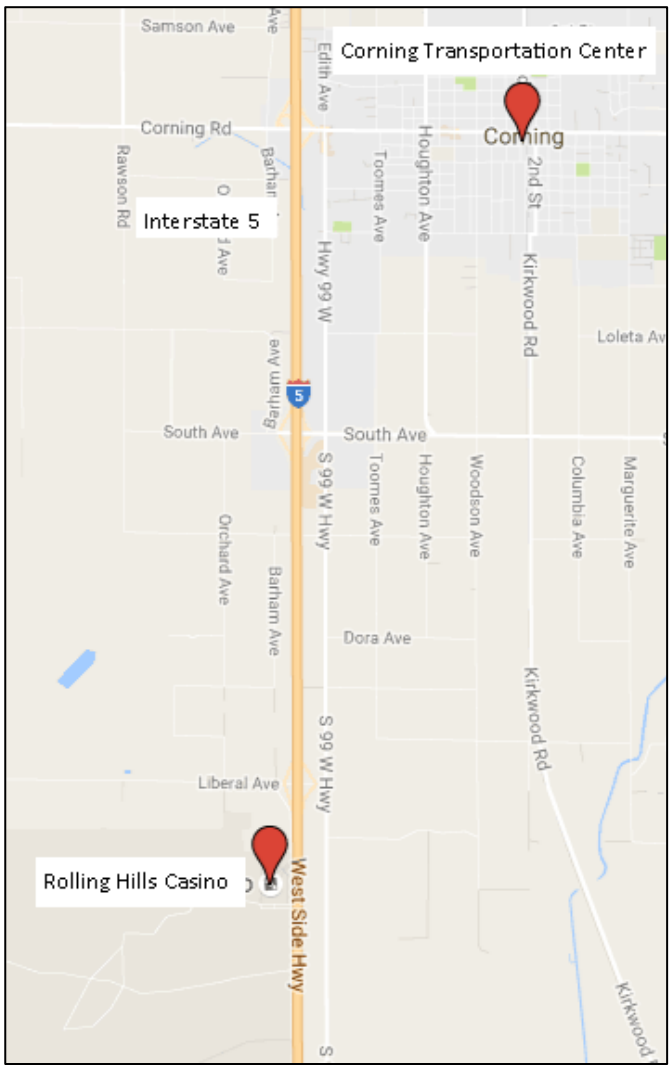


Figure 43: Corning Transit Connections

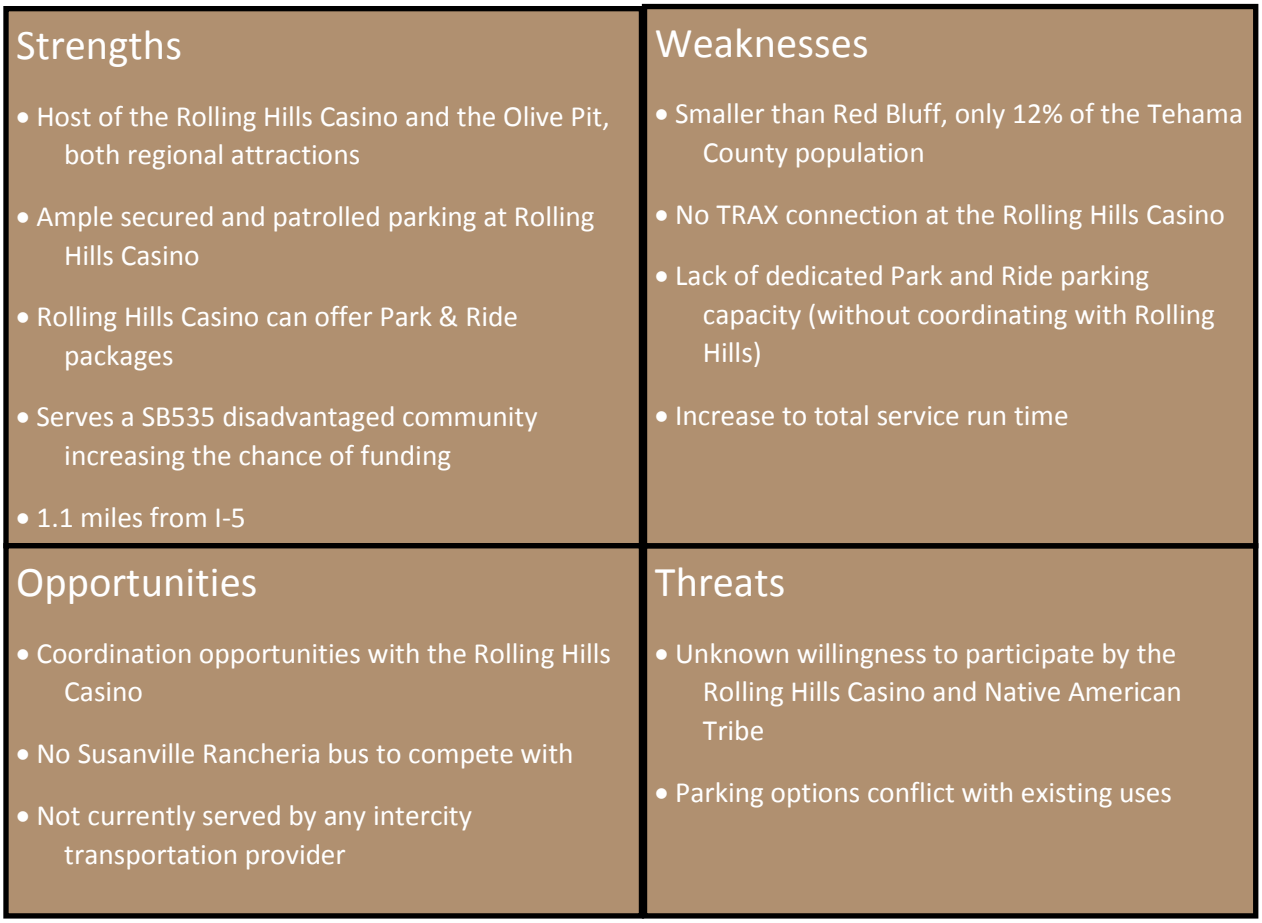


Figure 44: Corning SWOT Analysis

Table 15: Core Service Route with Corning Connection Schedule

Stop	Trip 1	Trip 2	Trip 3	Trip 4
Southbound				
Redding	5:00 AM	10:10 AM	2:00 PM	5:05 PM
Corning	5:50 AM	11:00 AM	2:50 PM	5:55 PM
Sacramento International Airport	7:30 AM	12:40 PM	4:30 PM	7:35 PM
Sacramento Amtrak Station	7:50 AM	1:00 PM	4:50 PM	7:55 PM
7th & Capitol Stop	8:00 AM	1:10 PM	5:00 PM	8:05 PM
Northbound				
7th & Capitol Stop	8:00 AM	1:10 PM	5:00 PM	8:00 PM
Sacramento Amtrak Station	8:10 AM	1:20 PM	5:10 PM	8:10 PM
Sacramento International Airport	8:30 AM	1:40 PM	5:30 PM	8:30 PM
Corning	10:10 AM	3:20 PM	7:10 PM	10:10 PM
Redding	11:00 AM	4:10 PM	8:00 PM	11:00 PM

Figure 45: Corning Transportation Center

B.2.4.Stopping in Orland

If a connection were added in Orland at the Glenn County Fairgrounds the adjustments to the core service route schedule would not be severe due to the close proximity of the Fairgrounds to I-5 (1.0 miles).

Unlike TRAX in Tehama County, Glenn Ride begins operating at 5:15 AM during the week so passengers would be able to take Glenn Ride to the Glenn County Fairgrounds for the first southbound trip. However, Glenn Ride ceases operating at 7:40 PM during the week which means potential passengers of the intercity bus service would not be able to take Glenn Ride to the Fairgrounds to catch the last northbound trip.

Table 16: Core Service Route with Orland Connection Schedule

Stop	Trip 1	Trip 2	Trip 3	Trip 4
Southbound				
Redding	5:00 AM	10:10 AM	2:00 PM	5:05 PM
Orland	6:00 AM	11:10 AM	3:00 PM	6:05 PM
Sacramento International Airport	7:30 AM	12:40 PM	4:30 PM	7:35 PM
Sacramento Amtrak Station	7:50 AM	1:00 PM	4:50 PM	7:55 PM
7th & Capitol Stop	8:00 AM	1:10 PM	5:00 PM	8:05 PM
Northbound				
7th & Capitol Stop	8:00 AM	1:10 PM	5:00 PM	8:00 PM
Sacramento Amtrak Station	8:10 AM	1:20 PM	5:10 PM	8:10 PM
Sacramento International Airport	8:30 AM	1:40 PM	5:30 PM	8:30 PM
Orland	10:00 AM	3:10 PM	7:00 PM	10:00 PM
Redding	11:00 AM	4:10 PM	8:00 PM	11:00 PM

Strengths

- Proximity to Chico (25 minutes)
- Glenn Ride has longer operating hours so connecting to the intercity bus service is easier
- Connection to Highway 32
- Serves disadvantaged communities
- Park and Ride space available at the Fairgrounds
- 1.0 miles from I-5

Weaknesses

- Less connected with Shasta County than Tehama County
- Few visitor attractions
- No dedicated multimodal facility close to I-5
- Increase to total service run time

Opportunities

- Marketing to Butte County to increase ridership
- Increase connectivity with a county that is not already well connected to Shasta
- Willingness of local transit agency to coordinate connections to Chico
- Connecting to Glenn Ride meets an unmet transit need presented by Shasta County residents

Threats

- Smaller population and less ridership than Tehama County
- No strong connection to Sacramento
- Parking options conflict with existing uses

Figure 46: Orland SWOT Analysis

Figure 47: Glenn County Fairgrounds

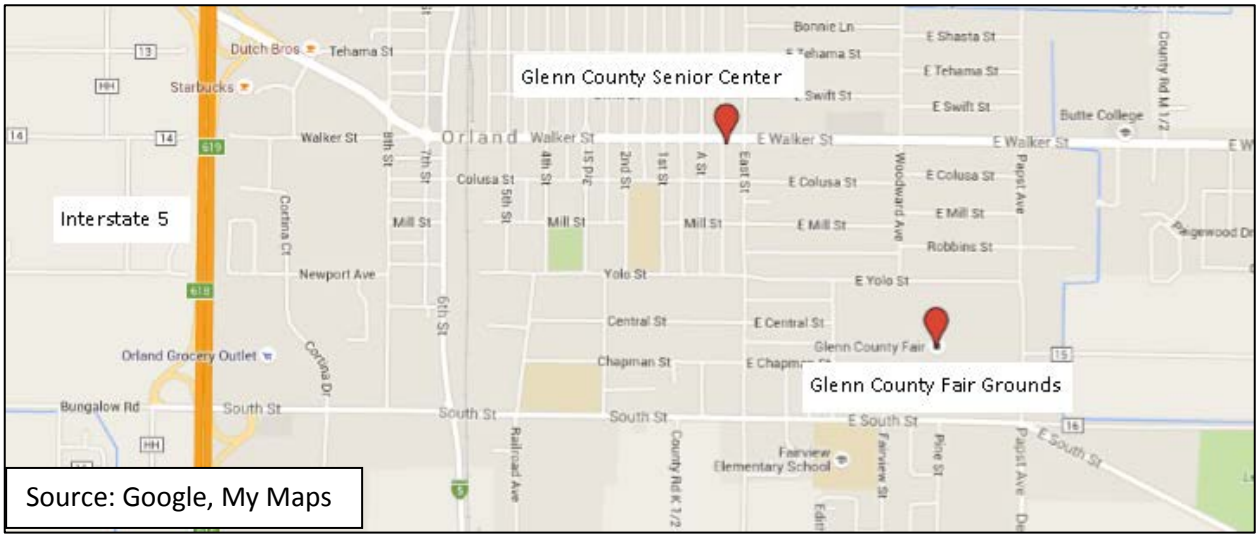


Figure 48: Orland Transit Connections

B.2.5.Stopping in Williams

If a connection were added in Williams at Granzella's the core service route schedule would not need to be severely altered due to the close proximity of Granzella's to I-5 (0.3 miles).

Colusa County Transit begins operating at 7:30 AM during the week, meaning it will not be in operation during the first southbound trip. Colusa County Transit also ends most of its routes at 6:00 PM or earlier during the week, meaning it will not be in operation for the third and fourth northbound trips.

Figure 49: Williams SWOT Analysis

Table 17: Core Service Route with Williams Connection Schedule

Stop	Trip 1	Trip 2	Trip 3	Trip 4
Southbound				
Redding	5:00 AM	10:10 AM	2:00 PM	5:05 PM
Williams	6:30 AM	11:40 AM	3:30 PM	6:35 PM
Sacramento International Airport	7:25 AM	12:35 PM	4:25 PM	7:30 PM
Sacramento Amtrak Station	7:45 AM	12:55 PM	4:45 PM	7:50 PM
7th & Capitol Stop	7:55 AM	12:05 PM	4:55 PM	8:00 PM
Northbound				
7th & Capitol Stop	8:00 AM	1:10 PM	5:00 PM	8:00 PM
Sacramento Amtrak Station	8:10 AM	1:20 PM	5:10 PM	8:10 PM
Sacramento International Airport	8:30 AM	1:40 PM	5:30 PM	8:30 PM
Williams	9:25 AM	2:35 PM	6:25 PM	9:25 PM
Redding	10:55 AM	4:05 PM	7:55 PM	10:55 PM

Figure 50: Williams Transit Connections

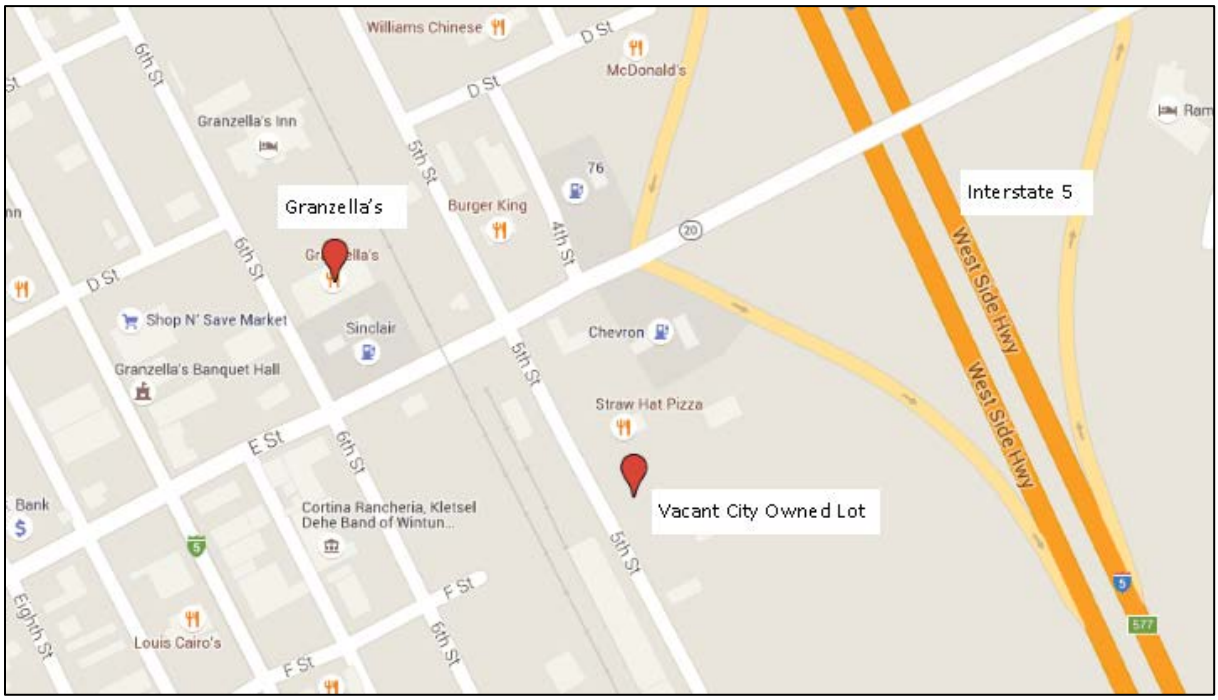


Figure 51: Granzella's

B.3.Additional Redding – Sacramento Meaningful Connections

The alternative intermediate connections examined in the previous section of this appendix were those that SRTA and CBPR staff determined would be the most beneficial to this initial intercity bus service. However, there are numerous other possible stops along the route from Redding to Sacramento. The following are some potential stops that could be considered if service from Redding to Sacramento was successful and eventually expended to include additional stops.

B.3.1.Willows Transit Connections

In addition to the potential stop in Orland discussed above, Willows is another potential stop location in Glenn County. The reason why Orland is included in the alternatives analysis and Willows is not is twofold:

- Orland is a larger city than Willows, making it a more important stop in terms of services available in the city as well as potential ridership
- Orland is closer to Butte County and the city of Chico which makes it easier for Butte County residents to connect with the intercity service

Willows is a distinct city with over 6,000 residents with separate attractions and amenities from Orland. Two potential stops in Willows are the Walmart Park & Ride on the west side of I-5 (0.3 miles from I-5), and the Glenn County Public Works Park & Ride on North Colusa Street (1.7 miles from I-5). Figure 52 shows possible stop locations in Willows.

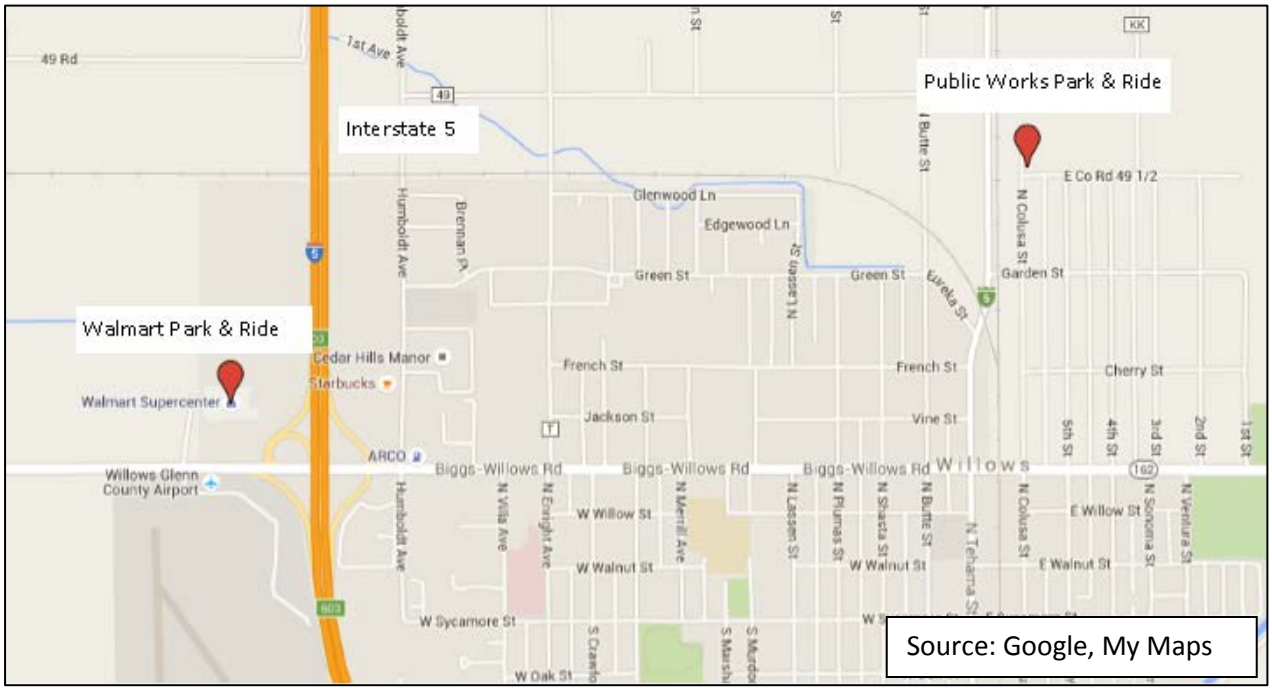


Figure 52: Willows Transit Connections

B.3.2.Other Sacramento Stops

In addition to the stops at the Sacramento Amtrak Station and Capitol & 7th in Sacramento, there are myriad other possible stop locations within the city. Three of the most beneficial stops include L & 13th, the State Capitol and the Sacramento Greyhound station. A stop at the Greyhound station would allow for direct connections to the national bus network without the need to transfer to a local SacRT bus to access the Greyhound line. Additionally, the Sacramento Greyhound station is located in close proximity to the Sacramento Railyard which is being redeveloped into a 244-acre mixed-use transit oriented hub[38]. A stop at the Capitol would allow for access to the surrounding government agency buildings. A similar benefit would be granted if a stop was implemented at L & 13th.

Figure 53 shows the location of each of these stops relative to the Sacramento Amtrak station and the capitol & 7th stop. The intercity bus service (or a future implemented bus service) cannot stop at all desired destinations in the Sacramento area. Therefore, transfers to Sacramento Regional Transit might be necessary. Sacramento Regional Transit fares are $2.50 per ride on

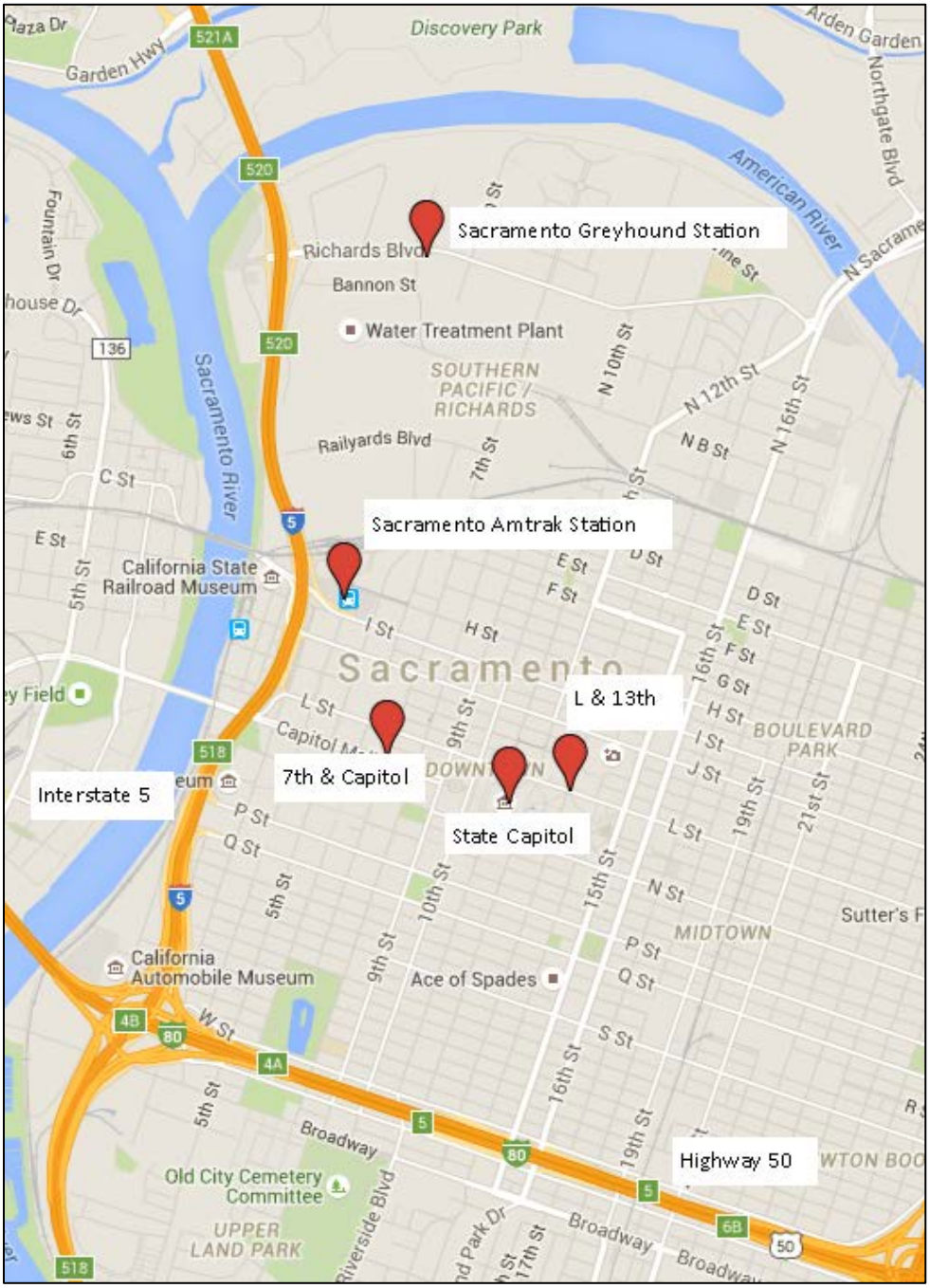


Figure 53: Other Sacramento Stop Locations

[38] http://www.cityofsacramento.org/City-Manager/Major-Projects/Railyards-Project

both the bus and light rail systems with discounted tickets sold for $1.25 to seniors (aged 62 and over), passengers with disabilities, Medicare cardholders and students (aged 5 to 18). Daily passes are available for $6.00 ($3.00 for discount-eligible passengers).

Appendix C.Bay Area Route and Meaningful Connections

Although the need for a Bay Area intercity bus service was determined to be of less value at the time of this study, the following information is included as initial research that could be used as a first step in reexamining a Redding to the Bay Area intercity bus service.

C.1.Core Service Route – Bay Area

The core service route from Redding to the Bay Area runs from the Downtown Transit Center in Redding to the combined BART/Amtrak station in Richmond. Like the Sacramento core service route, the Bay Area core service route is designed to provide express service from Redding to the Bay Area. Other characteristics of the core service route are:

- The core service route makes no additional stops between Redding and Richmond
- A one-way trip between Redding and Richmond should take approximately 3 hours, with the return trip taking the same amount of time
- If, as desired, the proposed intercity bus service is implemented with battery electric buses, then a round trip would require multiple vehicles
- Proposed four southbound departures: 3:00 AM, 5:00 AM, 2:00 PM, and 5:00 PM
- Proposed four northbound departures: 6:10 AM, 8:10 AM, 5:10 AM, and 8:10 AM
- Proposed uniform seven-day a week

The purpose of the first southbound trip is to allow passengers on the intercity bus service to arrive at the Oakland, and San Francisco International Airports in time to catch mid-morning flights.

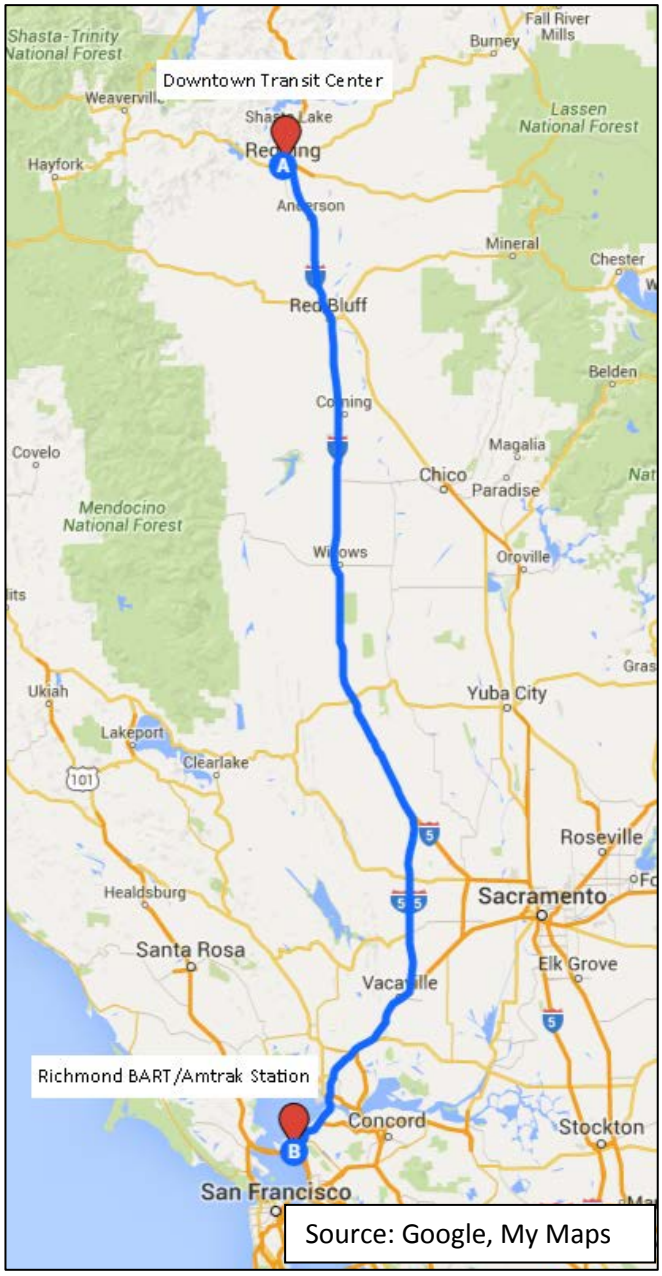


Figure 54: Bay Area Core Service Route

The Oakland International Airport is a 50 minute BART ride from the Richmond Station, while the San Francisco International Airport is a 1 hour and 15 minute BART ride, with a transfer[39]. Because of the need to transfer to BART to reach these airports, the first southbound trip of the intercity bus service should leave Redding at 3:00 AM. A 3:00 AM departure from Redding would arrive at the Richmond station at 6:00 AM. After transferring to BART, passengers would arrive at SFO at approximately 7:30 AM. This should provide passengers enough time to clear security and catch a 9:00 AM flight. The first northbound trip leaves directly after the arrival of the first southbound trip to allow Bay Area residents to reach Redding early enough to spend the entire work day in Redding. Table 18 shows the core service route schedule for the four daily trips.

Table 18: San Francisco Core Service Route Schedule

Stop	Trip 1	Trip 2	Trip 3	Trip 4
Southbound				
Redding	3:00 AM	5:00 AM	2:00 PM	5:00 PM
Richmond BART/Amtrak Station	6:00 AM	8:00 AM	5:00 PM	8:00 PM
Northbound				
Richmond BART/Amtrak Station	6:10 AM	8:10 AM	5:10 PM	8:10 PM
Redding	9:10 AM	11:10 AM	8:10 PM	11:10 PM

The second southbound trip allows passengers on the intercity bus service to arrive in the Bay Area for the regular workday, without having to arrive early enough to catch a flight out of the Oakland, or San Francisco International Airports. The second northbound trip is designed to allow Bay Area residents to arrive in Redding at midday for both afternoon business, and recreational opportunities.

Trip three is designed to allow people to travel south to the Bay Area for flights in the evening, while allowing Shasta County residents to return to Redding once the workday is over. The fourth trip is to allow people arriving later in the evening via train or plane to use the intercity service to travel back to Redding. The fourth southbound trip is to ensure there is a bus starting in the Bay Area for the next day's routes. Figure 54 presents a map of the core service route to the Bay Area.

The Richmond station is served by the Red and Orange BART lines. The Red line runs from Richmond through Oakland into San Francisco. Like all BART lines in San Francisco it has stations at the mains streets: Embarcadero, Montgomery, Powell and the Civic Center. Monday through Friday before 9:00 PM, the Red Line continues through Daly City to Milbrae, however, all other times the Red Lines terminates in Daly City. The Orange line travels north/south through the East Bay from Richmond to Fremont.[40] Before reaching Fremont he Orange line passes through Oakland and the Oakland International Airport.

[39] https://www.bart.gov/stations

[40] There are plans to extend the BART systems past Fremont to San Jose, Santa Clara and Silicon Valley. This project is scheduled to be completely finished by 2025.

BART fares are determined by distance from the departing station, therefore the cost of a transfer to BART would depend on the final destination. From the Richmond station (the end of the Red and Orange lines) to the San Francisco Airport (the end of the Yellow line) would be $10.15 each way (3.80 for seniors and children). Intermediate stops would be less expensive than this. Figure 55 shows the BART system map.

BART should be contacted to coordinate allowing buses to drop off and pick up passengers at their stations.

Figure 55: BART System Map

C.2.Route Alternatives – Bay Area

The alternative stops on the route from Redding to the Bay Area will require outreach and coordination with the cities and transportation agencies that the intercity service could potentially share stops with. However, due to the more urban nature of the stops on the way to the Bay Area the need to add more parking infrastructure at these stops is not as great. This is because public transportation is much more common in the Bay Area and this parking infrastructure already exists. Additionally, the increase in the usage of this parking infrastructure due to the intercity service will most likely be negligible when compared to existing use.

In addition to all of the potential alternative intermediate stops and meaningful connections examined in this appendix, all of the alternative intermediate stops and meaningful connections examined in Appendix B - Sacramento Route and Meaningful Connections could also be on the route from Redding to the Bay Area. This is because all of the Sacramento alternative intermediate stops are located along I-5 which is also the main route the intercity service would take on its way to the Bay Area.

C.2.1.Stopping in Woodland

Woodland is the most convenient city in Yolo County for an intercity bus stop. In Woodland, the intercity service can connect with Yolobus which provides approximately 1.7 million passenger trips per year. On Yolobus, passengers can go to the Davis Amtrak station and the Sacramento International Airport. This is convenient since the core route to the Bay Area does not stop at SMF. A stop in Woodland would mean the intercity bus service would take Highway 113 to I-80, as opposed to I-505. This only adds 15 minutes to the total trip length, which is reasonable given the connections available in Woodland. Figure 56 shows a SWOT analysis of implementing a stop in Woodland.

Strengths	Weaknesses
• Large population and transit ridership • Located at the convergence of highways 15, 113, and I-5 • Large secure parking available at the County Fair Fashion Mall	• Most appropriate bus stop location is 4.6 miles from I-5 • Increase in total service run time • No dedicated multimodal facility
Opportunities	**Threats**
• Easy transfer to both the Sacramento International Airport and the Sacramento and Davis Amtrak stations	• No regional visitor draw in Woodland • If the Redding to Sacramento route does not get implemented, passengers could use capacity on the bus to travel to Sacramento instead of the Bay Area • Parking options conflict with existing uses

Figure 56: Woodland SWOT Analysis

The most reasonable stop location is the County Fair Fashion Mall, located 4.6 miles from I-5. The reasons for this are the options available at the mall to passengers waiting for the intercity bus service, and the abundance of parking available at the mall. Another alternative stop location is the bus stop at Matmor Road and Main Street directly adjacent to Highway 113 and I-5. While this stop is closer to the freeway, stopping at the County Fair Fashion Mall is more desirable due to the abundance of parking available.

The core service route schedule, updated for a potential stops in Woodland is presented in Table 19 on the following page.

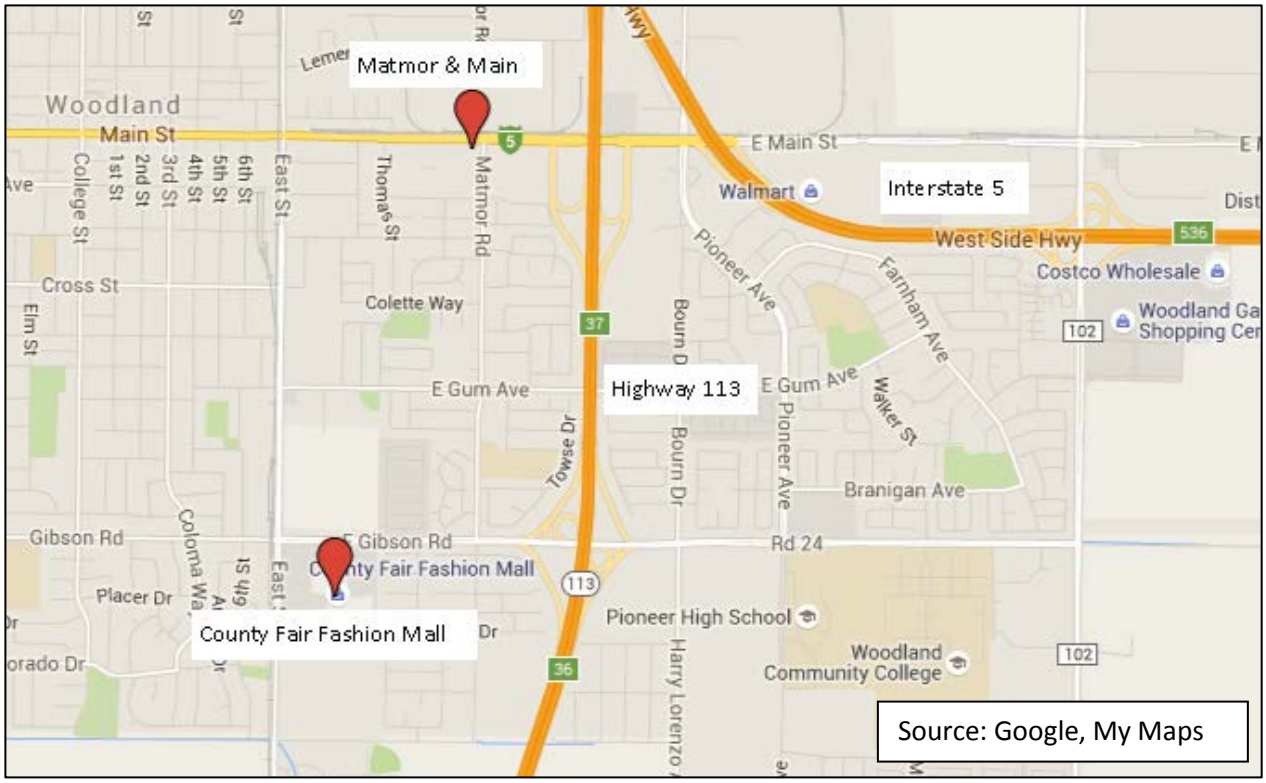


Figure 57: Woodland Transit Connections

Table 19: Core Service Route with Woodland Connection Schedule

Stop	Trip 1	Trip 2	Trip 3	Trip 4
Southbound				
Redding	3:00 AM	5:00 AM	2:00 PM	5:00 PM
Woodland	5:10 AM	7:10 AM	4:10 PM	7:10 PM
Richmond BART/Amtrak Station	6:15 AM	8:15 AM	5:15 PM	8:15 PM
Northbound				
Richmond BART/Amtrak Station	6:25 AM	8:25 AM	5:25 PM	8:25 PM
Woodland	7:30 AM	9:30 AM	6:30 PM	9:30 PM
Redding	9:40 AM	11:40 AM	8:40 PM	11:40 PM

C.2.2.Stopping in Davis

Implementing a stop in Davis makes the intercity bus service accessible to Yolo County residents. Davis is host to the Davis Amtrak station; therefore the intercity could stop there without using one of its three available stops at destinations other than intermodal terminals. Additionally intercity bus passengers can transfer to the 42A Yolobus for service to SMF since the intercity service does not stop at the airport on its route to the Bay Area. Figure 58 on the following page shows the SWOT analysis of implementing a stop in Davis.

Figure 58: Davis SWOT Analysis

The most reasonable stop location in Davis is at the Amtrak Station located 3.9 miles from Highway 113. The Amtrak Station both provides existing parking, and does not count against one of the three possible non-intermodal stops. Another possible stop location is at UC Davis. While this stop would allow access to a premier research institute in northern California, concerns over available parking and lack of connections to transportation options make the Amtrak Station a more desirable stop location. Figure 59 shows these possible connection locations.

Because Davis is farther away from the fastest route from Redding to Sacramento, the adjustments necessary to the core service route schedule to accommodate this stop with me more significant. Table 20 shows these adjustments.

Table 20: Core Service Route with Davis Connection Schedule

Stop	Trip 1	Trip 2	Trip 3	Trip 4
Southbound				
Redding	3:00 AM	5:00 AM	2:00 PM	5:00 PM
Davis	5:20 AM	7:20 AM	4:20 PM	7:20 PM
Richmond BART/Amtrak Station	6:25 AM	8:25 AM	5:25 PM	8:25 PM
Northbound				
Richmond BART/Amtrak Station	6:35 AM	8:35 AM	5:35 PM	8:35 PM
Davis	7:40 AM	9:40 AM	6:40 PM	9:40 PM
Redding	10:00 AM	12:00 PM	9:00 PM	12:00 AM

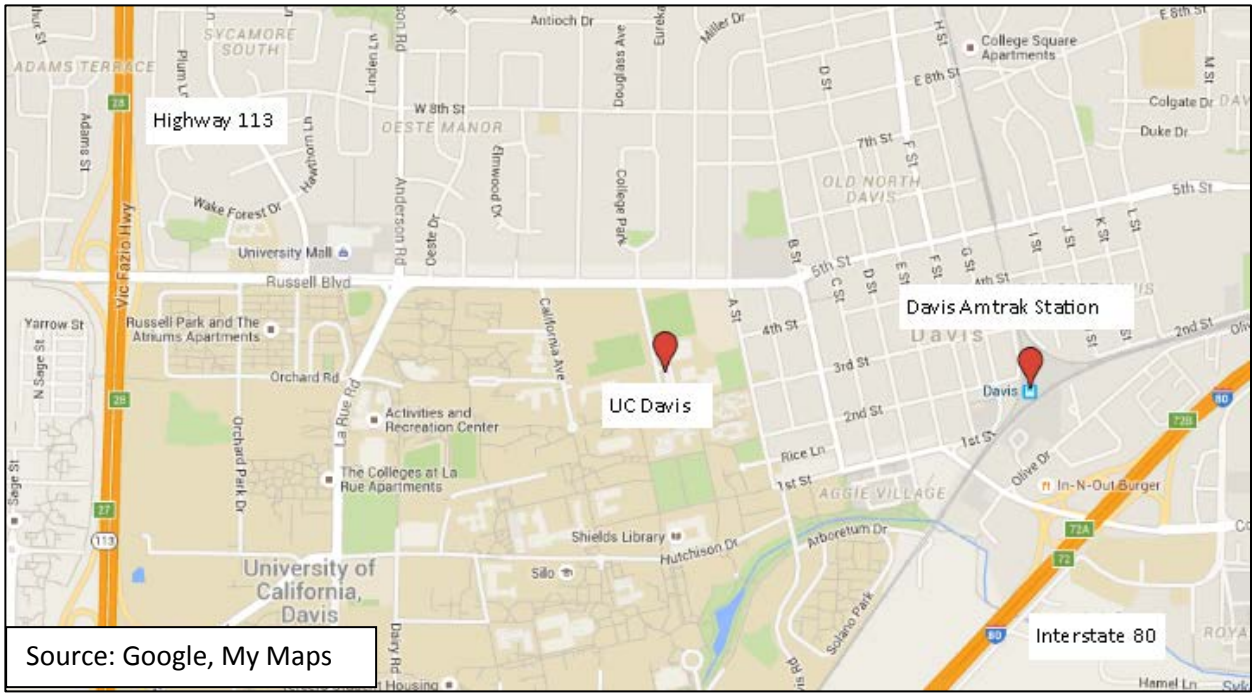


Figure 59: Davis Transit Connections

C.2.3.Stopping in Vallejo

Stopping in Vallejo allows for connections with SolTrans and the San Francisco Bay Ferry in Solano County. SolTrans has approximately 1.5 million annual riders as well as connections to Napa Transit. The San Francisco Bay Ferry has eight terminals throughout the Bay Area and can be a more efficient method of travel between Bay Area locations than BART. However, the ferry terminal is not a suitable stop location because of limited parking with no overnight parking available. Figure 60 shows a SWOT analysis of implementing a stop in Vallejo.

There is only one meaningful connection in Vallejo, at the Curtola/Lemon Park & Ride located 0.5 miles from I-80. The Park & Ride has abundant parking so residents of the city of Vallejo and Solano County can drive to the Park & Ride to connect to the intercity service. Figure 61 shows the connection location.

Because of the close proximity of the Park & Ride to I-80, the adjustments to the core service route schedule are very small. These adjustments are presented in Table 21.

Table 21: Core Service Route with Vallejo Stop Schedule

Stop	Trip 1	Trip 2	Trip 3	Trip 4
Southbound				
Redding	3:00 AM	5:00 AM	2:00 PM	5:00 PM
Vallejo	5:45 AM	7:45 AM	4:45 PM	7:45 PM
Richmond BART/Amtrak Station	6:10 AM	8:10 AM	5:10 PM	8:10 PM
Northbound				
Richmond BART/Amtrak Station	6:20 AM	8:20 AM	5:20 PM	8:20 PM
Vallejo	6:45 AM	8:45 AM	5:45 PM	8:45 PM
Redding	9:35 AM	11:35 AM	8:35 PM	11:35 PM

Strengths	Weaknesses
• Connections to multiple other county's transit systems for increased ridership potential • Home of Six Flags Discovery Kingdom • Connections to Highways 29, 37, and I-780 • 0.5 miles to I-80	• Unlikely final destination for passengers • Very little connectivity to Shasta County • Could be seen as adding to urban sprawl due to the location at the periphery of the Bay Area • Increase to total service run time
Opportunities	**Threats**
• Connections to BART • Connections to the Vallejo Ferry	• Already well established Bay Area wide public transit options • There are more popular Bay Area destinations so passengers might utilize a different service to go directly to those locations • Parking options conflict with existing uses

Figure 60: Vallejo SWOT Analysis

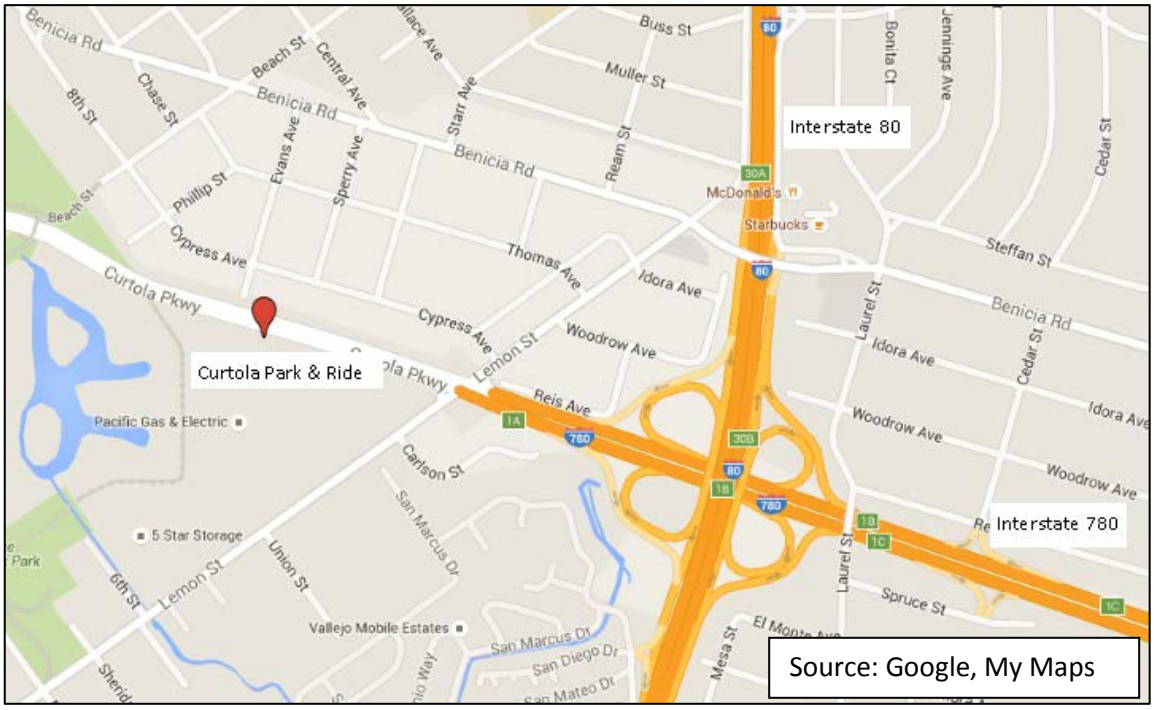


Figure 61: Vallejo Transit Connection (0.9 miles from I-80)

C.3.Additional Redding – S.F. Bay Area Meaningful Connections

The alternative intermediate connections examined in the previous section of this appendix were those that SRTA and CBPR staff determined would be the most beneficial to an intercity bus service route from Redding to the Bay Area, should such as route ever be implemented. However, there are numerous other possible stops along the route from Redding to the Bay Area. The following are potential stops that could be considered if service from Redding to the Bay Area were ever explored further.

C.3.1.Oakland Transit Connections

If bus service to the Bay Area gets implemented, the current recommendation is for the bus to travel to Richmond. This is due to the connections possible in Richmond that will take passengers of the intercity service throughout the Bay Area. However, if the intercity bus service was to travel farther into the Bay Area, Oakland would be a potential stop location for the following reasons:

- Oakland is home to an international airport
- Oakland has a successful downtown business district
- Oakland is home to over 400,000 residents

Potential stops in Oakland include the Emeryville Amtrak Station, and the 19th Street, 12th Street and West Oakland BART Stations. Figure 62 shows the location of possible stops in Oakland.

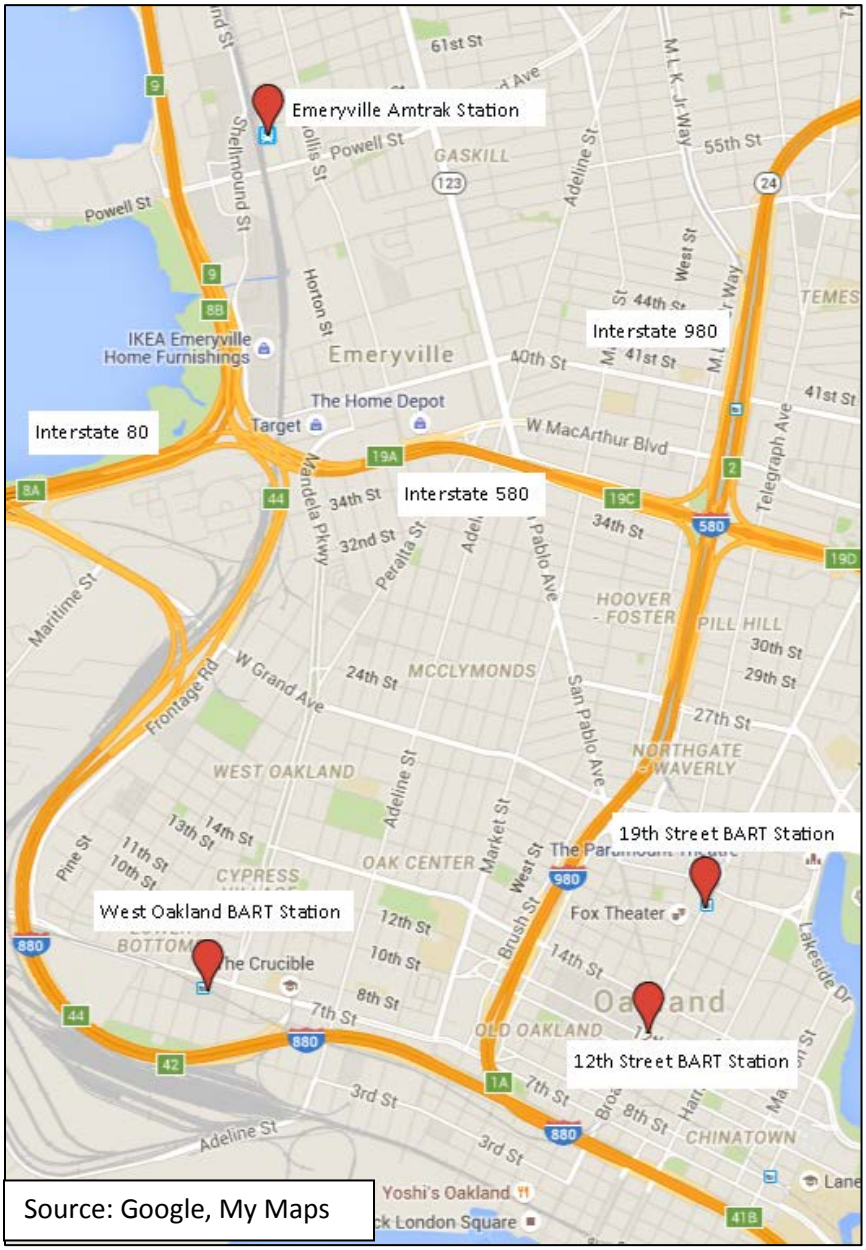


Figure 62: Oakland Transit Connection

C.3.2.San Francisco Transit Connections

Like Oakland, the city of San Francisco would be another possible stop location if the intercity bus service does not end its route in Richmond. San Francisco would be a reasonable stop location for the following reasons:

- San Francisco is one of the business, economic and cultural centers of northern California
- San Francisco has a population of approximately 850,000 in the city proper
- San Francisco is a strong tourist draw which could help increase ridership on the intercity bus service

Potential stop locations in San Francisco include the Powell Street and Civic Center BART stations, and the San Francisco Caltrain Station. Figure 63 shows possible stops in San Francisco.

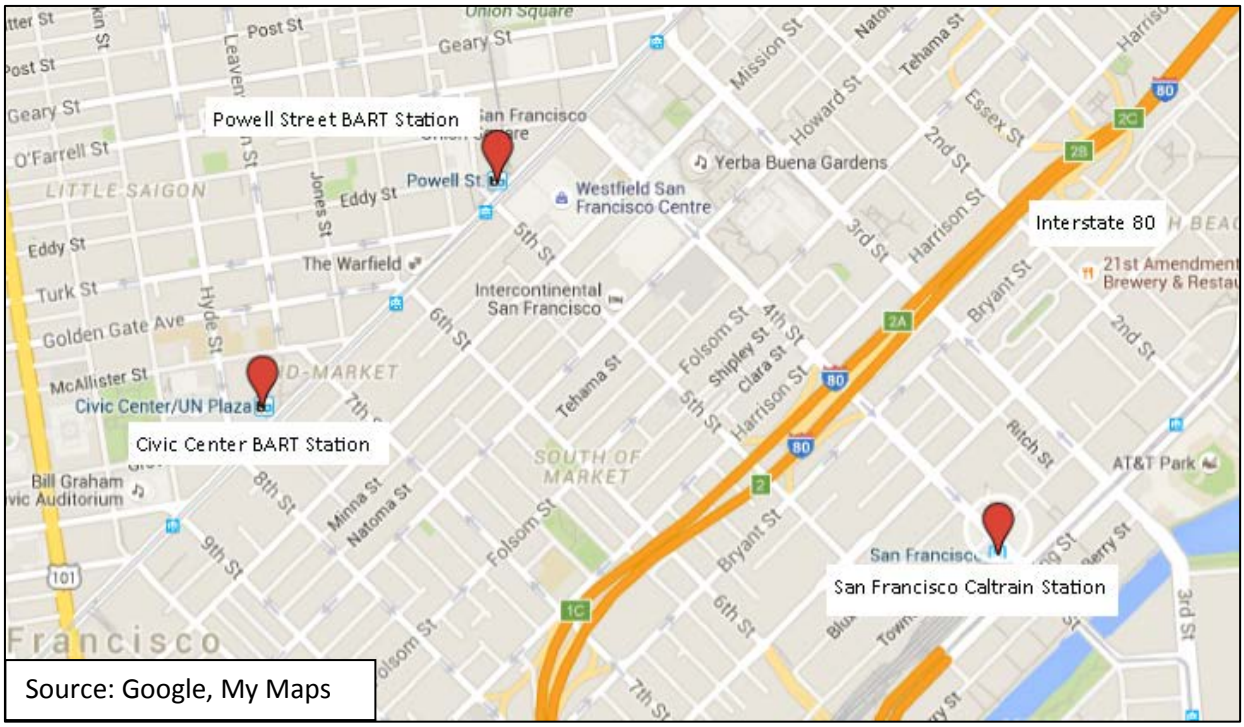


Figure 63: San Francisco Transit Connections

C.4.Redding to San Francisco Charging Stations

If intercity bus service is implemented from Redding to San Francisco, a similar storage and charging facility system to the system discussed in the context of the Redding to Sacramento route will be necessary on the route to San Francisco as well. This facility should be located at the terminus of the route, which would preliminarily be located in Richmond to minimize travel time and maximize connections. AC Transit has its maintenance and storage facility on Franklin Street in Oakland. While this is approximately 20 minutes (without traffic) from the Richmond BART/Amtrak station, it might be the best option for bus storage. Like the final transit connection in Sacramento at 13th & L Streets, this might also present the opportunity for an additional stop in Oakland while the intercity bus service travels to its charging station. AC Transit should be contacted to see if they would allow storage of the intercity buses at their location. Similarly to Sacramento, SRTA should then install charging stations at the storage

facility to allow buses to charge overnight, as well as after making a trip from Redding to Richmond. This will also necessitate multiple buses running for each headway.

Appendix D.Outreach

D.1.Stakeholder Survey

Figure 64: Survey Postcard

The stakeholder survey was sent to 118 recipients. Of those recipients 33 responded to the survey, a 28 % response rate. Table 22 presents the list of stakeholder agencies that received a survey link.

Table 22: Stakeholder Agency Contact List

Name	Agency	Position
John Wagner	Air Ambulance	Program Manager
	Redding Air Services, Inc.	
Bryant Garrett	City of Redding Department	Airport Manager
	Fall River Mills Airport	
	A Touch of Heaven	
	Welcome Home Assisted Living	
	Northstar Senior Living	
	Marquis Care at Shasta	
	Visiting Angels	
	Vistas Assisted Living	
	Sundial Assisted Living	
	Willow Springs Alzheimer Care Center	
Sandra Cassina	Comfort Keepers	Manager
	Shasta County Superintendent of Schools	
	Fall River Unified School District	
Pamela Carney	Shasta College	Transportation Supervisor
	Gateway Unified School District	
Tyson Stenlund	Shasta Union High School	Director of Transportation
	American Medical Response	
	Cow Creek Community Church	
	Bethel Redding	
Chris Overstreet	Bethel Redding	Outreach Pastor
Michael Tate	Bethel Redding	Volunteer Coordinator
	Fountain Ministries	
	Redding Jet Center	
	Krista Transitional Housing	
Tommy Key	Veterans	County Veteran Service Officer
Board email	Shasta County Board of Supervisors	
Bill Schappel	Shasta County Board of Supervisors, District 4	Supervisor
Les Baugh	Shasta County Board of Supervisors, District 5	Supervisor
Patrick Minturn	Shasta County Public Works	Director
Megan Dorney	Shasta County Administrative Office	Analyst
John Duckett	City of Shasta Lake	City Manager
Brian Crane	City of Redding	Public Works Director
Jeff Kiser	City of Anderson	City Manager

Gayle Ashton	Medical Home Care Professionals	
	Home Helpers	
	Accent Care	
	Arcadia Health Care	
	Far Northern Regional Center	
Sharon Smyth	Golden Umbrella, Inc.	Support Specialist
	Home & Health Care Management	
	Shasta Regional Medical Center	
	Pit River Health Services	
	Shasta Community Health Center	
	Golden Living Centers	
	Addus Health Care	
	Mercy Medical Center: Mercy Outreach Van	
	Redding Area Bus Authority	
	River Oaks Retirement	
	Holiday Retirement	
	Quiet Waters Independent Living	
	Shasta County Opportunity Center	
	Shasta Senior Nutrition Program	
	Northern Valley Catholic Social Services	
	Head Start Child Development, Inc.	
	Good News Rescue Mission	
	Shascade Community Services	
	Veterans Administration	
	Health and Human Services	
	Compass Shining Care	
	Deluxe Limousine	
	Amtrak	
	Sage Stage	
	Greyhound	
	Ambassador Limousine	
	Shasta Premier Transportation	
	First Class Shuttle	
	First Class Limo	
	Trinity Transit	
	Executive Limo Bus Services	
	NorCal Limousine Services	
	ABC Cab	
	Road Runner Taxi	

	Stans Pilot Car Service	
	Quality Medi-Ride	
	Redding Yellow Cab	
	Champagne Limousine	
	Liberty Coach Charters	
	Platinum Limo	
	Mercy Air Ambulance Service	
	Merit Medi Trans	
	Precious Cargo	
	Greenville Rancheria	
Mickey Gemmill, Jr.	Pit River	Chairman
Herb Quinn	Pit River	Roads Coordinator
Nicole Wilkes	Redding Rancheria	Community Services Coordinator
	Redding Rancheria	
Christine Murphy	Redding Rancheria	Tribal Elder
	Redding Rancheria	
Rob Krikorian	Redding Rancheria	Public Works Department
Russel Burriel	Susanville Indian Rancheria	Public Works
	Care-A-Van	
	Cfb Inc	
	Susanville Indian Rancheria	
Wendy Dickens	First 5	Executive Director
Liz Poole	First 5	Associate Director
	First Transit	
Steve C. Smith	Help Inc.	SSTAC
Robert Hale	Citizen	SSTAC
Susan Morris Wilson	Shasta 2-1-1	SSTAC
Del Lockwood	Opportunity Center	SSTAC
M.Susan Tieden	Veteran Affairs	SSTAC
Kao Saechao	Far Northern Regional Center	SSTAC
Marinda May	Hill Country Health and Wellness Center	SSTAC
Jennifer Powell	Shasta Senior Nutrition Programs Inc.	SSTAC
Lisa White	Shasta Senior Nutrition Programs Inc.	SSTAC
Margie McAleer	Shasta Living Streets	SSTAC
Phylicia Snow	United Way	SSTAC
Cindy Dodds	Tri County Community Network	SSTAC
Don Kirk	Citizen	SSTAC
Sarah Grant	RABA Staff	SSTAC
Aaron Casas	Caltrans	SSTAC

Sue Crowe	Shasta County Public Works	SSTAC
Chuck Aukland	RABA Staff	SSTAC
		SSTAC
Kathy Urlie	SRTA Staff	SSTAC
Keith Williams	SRTA Staff	SSTAC

D.1.1.Select Stakeholder Survey Responses

1. Please Provide Your Contact Information

Organization Name	Address	City/Town
First Class Shuttle, Inc.	PO Box 7	Palo Cedro
City of Redding	777 Cypress	Redding
Shasta Living Streets		
Hill Country Health and Wellness Center	Main office in Round Mountain. Another clinic in Redding	Redding and Round Mountain
Tri County Community Director	37477 Main Street	Burney
United Way of Northern California	2280 Benton Drive	Redding
Shasta Senior Nutrition Program	100 Mercy Oaks Dr	Redding
Caltrans	1657 Riverside Drive MS 7	Redding
Shasta County Health & Human Services	PO Box 496005	Redding
Department of Veteran Affairs	351 Hartnell Ave	Redding
Shasta County	1855 Shasta St	Redding
Help, Inc.		
Pit River Tribe		Burney, CA
Shasta College		
TC Dept. of Social Services	310 S. Main St.	Red Bluff
Tehama County Transportation Commission/Transit Agency Board	9380 San Benito Avenue	Gerber
Shasta County DPW	1855 Placer St	Redding
SSTAC		Redding
Shasta County Opportunity Center	1265 Redwood Blvd	Redding
We Care A Lot Foundation/Far Northern Regional Center	150 Amber Grove Drive Suite 156 Chico, CA 95973	Chico
Shasta Senior Nutrition Program	100 Mercy Oaks Drive	Redding
SSTAC	2646 Sharon Ave. # B	Redding
Far Northern Regional Center	P.O. BOX 492418	Redding
2-1-1 Shasta	2280 Benton Drive Building B	Redding
Redding Rancheria	2000 Redding Rancheria Road	Redding
The Vistas Assisted Living & Memory Care Community	3030 Heritagetown Drive	Redding
MCTC/MTA	108 S Main St	Alturas
Susanville Indian Rancheria	745 Joaquin St.	Susanville
City of Redding - Airports Division	6751 Woodrum Circle, Suite 200	Redding
Trinity County Transportation Commission	P.O. Box 2490	Weaverville
Ambassador Limousine	PO Box 493608	Redding
Far Northern Regional Center	1900 Churn Creek, Suite #319	Redding

Shasta County DPW	1855 Placer Street	Redding

Other information about the respondents is redacted for privacy reasons.

33 Responses

2. Which of the Following Classifications Best Describes your Organization?

Category	%	Count
Healthcare/health services provider	6.3%	2
Foundation	3.1%	1
American Indian tribal government	3.1%	1
Local government agency	37.5%	12
State government agency	6.3%	2
Federal government agency	3.1%	1
Tribal organization	6.3%	2
Religious organization	0.0%	0
Vocational/employment agency/center	3.1%	1
Residential care facility	3.1%	1
Community food service provider (e.g. food bank, soup kitchen, etc.)	3.1%	1
Other not-for-profits	6.3%	2
Private transportation provider	3.1%	1
Public transit provider	9.4%	3
Not-for-profit	18.8%	6
Private enterprise/business	6.3%	2
Other (please specify)	18.8%	6

Other Responses:

- Safe bike and walking in Redding area
- Federally qualified health center
- Human services
- Provide various social services including transportation, meals, etc.
- Community college
- SSTAC

32 Responses

3. Which of the Following Populations do you Service/Represent?

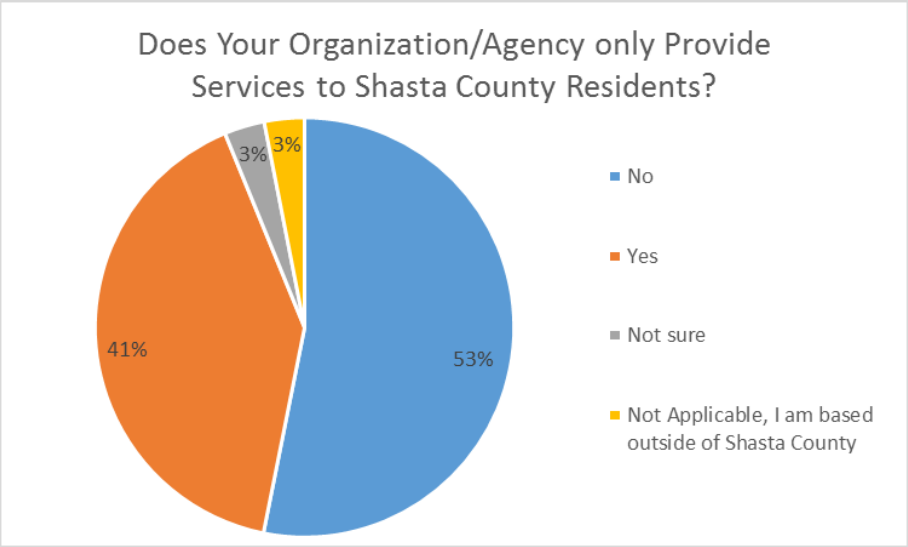
Category	%	Count
General public	53.1%	17
Persons with disabilities	53.1%	17
College students	37.5%	12
Patients (medical/mental health)	28.1%	9
Persons with low incomes	50.0%	16
Seniors/elderly population	43.8%	14
Children/youth	18.8%	6
Criminal justice related (e.g. parolees)	15.6%	5
Daycare/pre-school students	6.3%	2
Veterans	46.9%	15
K-12 students	25.0%	8
Individuals seeking employment/education	28.1%	9
Individuals/families pursuing mental counseling/substance abuse services	18.8%	6
Other (please specify)	28.1%	9

Other Responses:

- District Attorney witnesses, corporate accounts and business travelers
- Represent everyone, even underrepresented people of all ages
- Underserved, people who love off the grid, people with limited access to health services
- Families and children, people with mental health challenges
- Government/agency level work
- Veteran's families
- Tribe that is spread between four counties
- Under-served transit users
- Low income Native Americans in Shasta and Trinity Counties

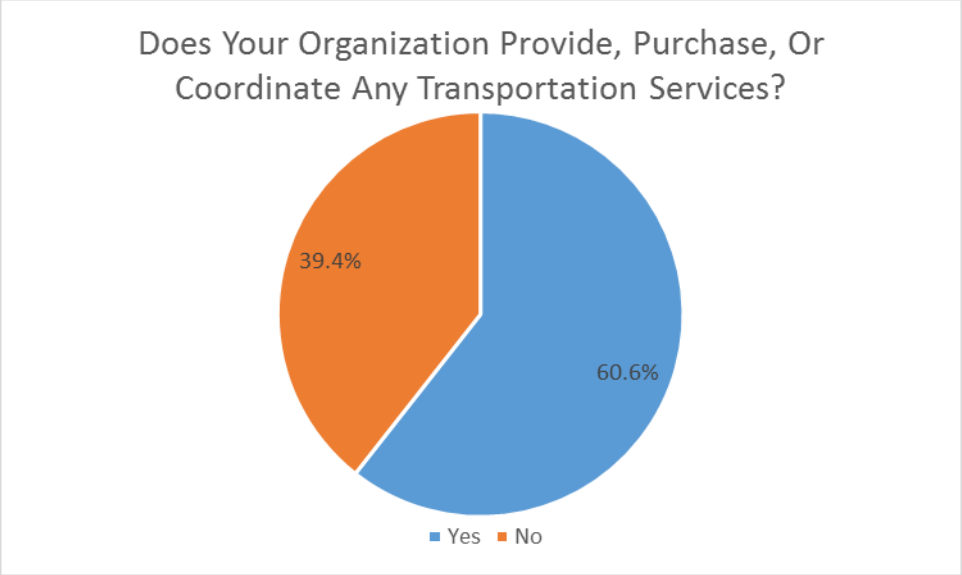
32 Responses

4. Does your Organization/Agency Only Provide Services to Shasta County Residents?



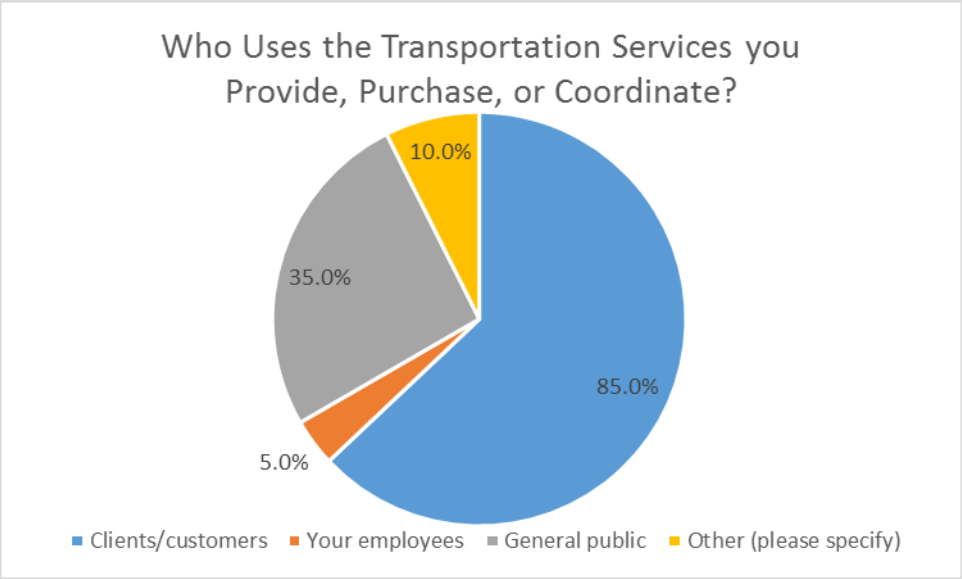
32 Responses

5. Does your Organization Provide, Purchase, or Coordinate any Transportation Services?



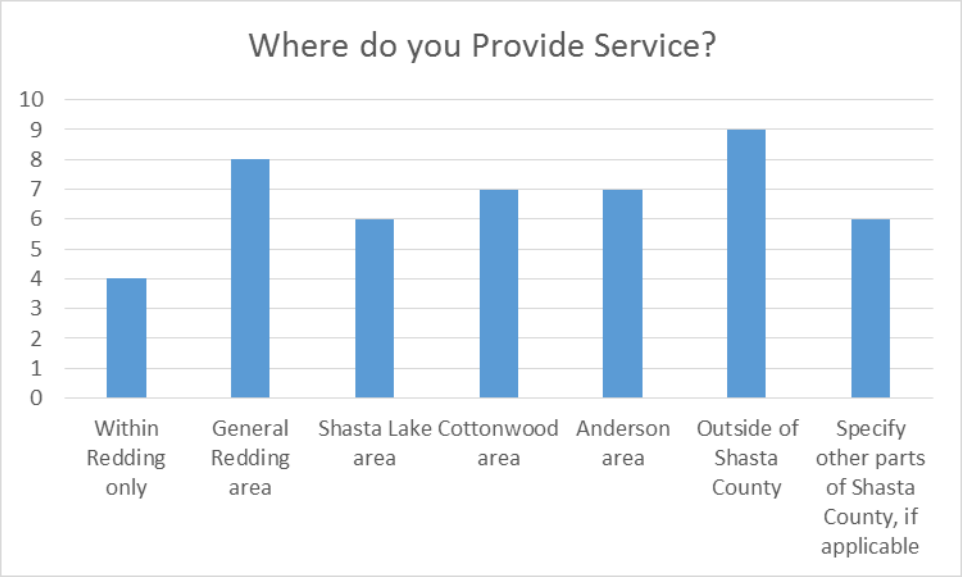
33 Responses

6. Who Uses the Transportation Services you Provide, Purchase, or Coordinate?



20 Responses

7. Where do you Provide Service?

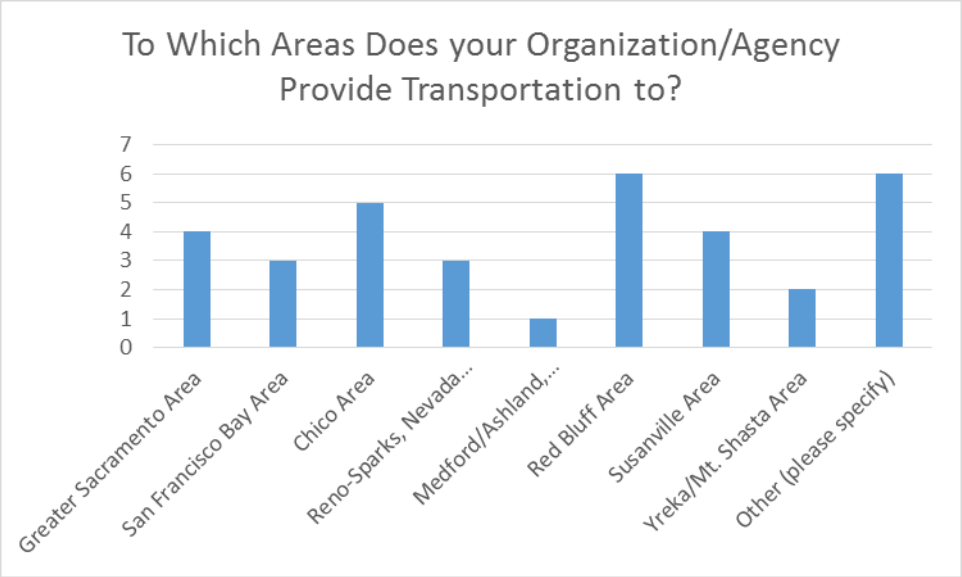


Other Reponses:

- Burney, Oak Run, Round Mountain Area, Eastern Shasta County
- Burney, Round Mountain, Bella Vista
- HUD/VASH, Anderson, Shasta Lake & Redding
- Bella Vista, Happy Valley, MT Gate
- Many riders travel from Trinity to Shasta or Humboldt for services
- Burney, Shingletown

18 Responses

8. To Which Areas Does your Organization/Agency Provide Transportation to?

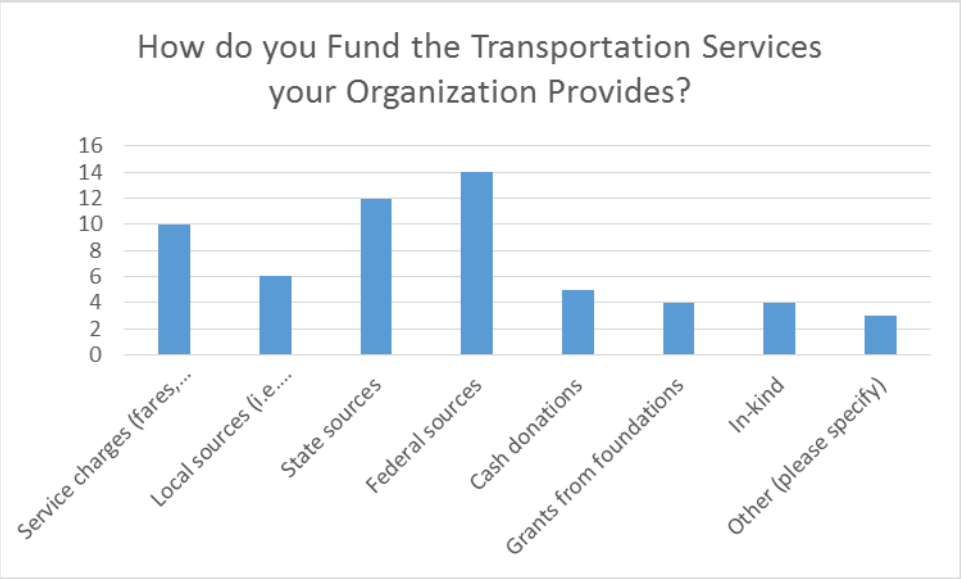


Other Responses:

- Shuttle services can stop in other cities such as Willows, Orland, etc.
- Glenn County, Redding, Corning, Los Molinos
- Trinity County
- Burney, Fall River, Redding connections along SR 299 from Alturas
- PDX (Portland, OR)
- Trinity County communities, Redding, Willow Creek where connections are made with Redwood Transit System and KTNet

11 Responses

9. How do you Fund the Transportation Services your Organization Provides?

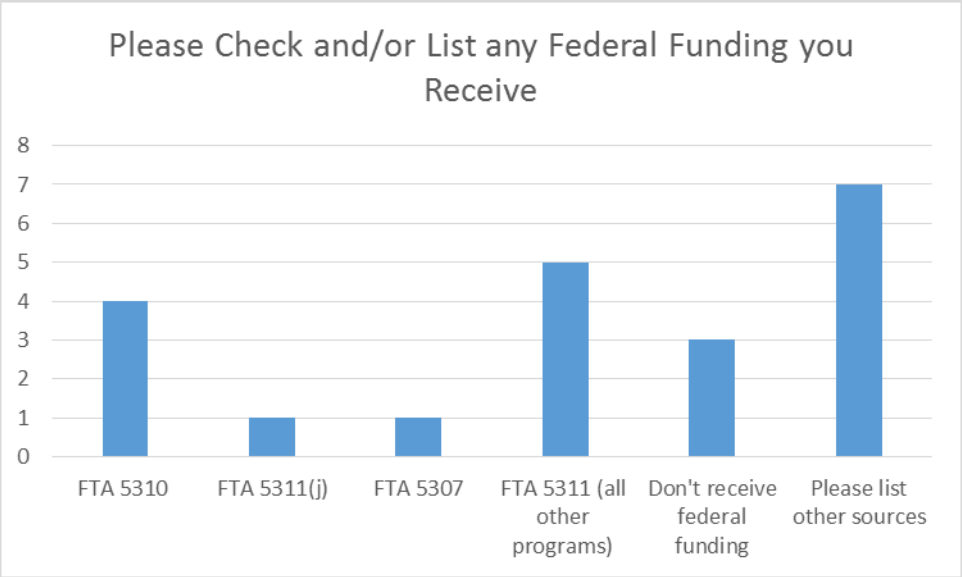


Other Responses:

- Grants for vehicles
- Area Agency on Aging
- LTF

19 Responses

10. Please Check and/or List any Federal Funding you Receive



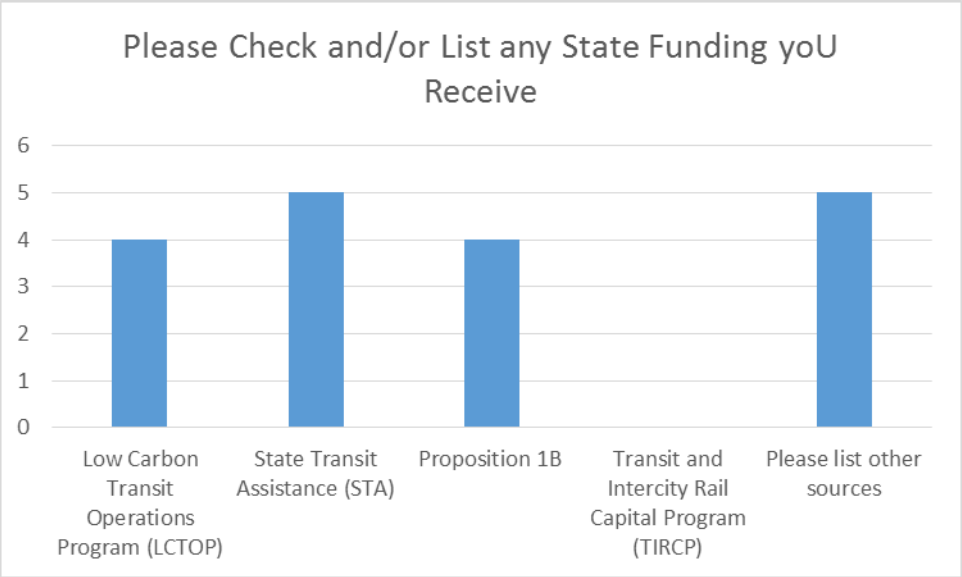
Other Responses:

- Received one 5311(f) grant in the past
- Older Americans Act funding

- We are a federal agency
- Unknown
- CMAQ
- FAA-Airport Improvement Program
- 5311F

15 Responses

11. Please Check and/or List any State Funding Sources you Receive



Other Responses:

- Unknown
- State Department of Developmental Services
- TDA
- Caltrans – State Aeronautics
- Local Transportation Funds

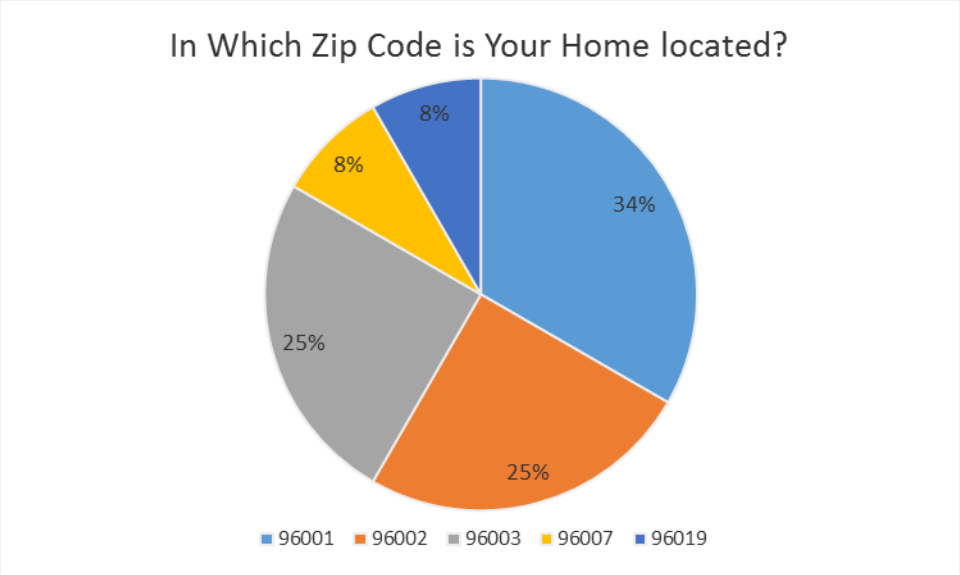
8 Responses

D.2.Public Survey

The public survey received a total of 12 responses, a 0.1% responses rate. There are two possible reasons for the low response rate. First, approximately 146 of the Experian addresses were returned as undeliverable. This could be due to the addresses being older and the resident of the house having moved. Second, due to time constraints associated with the project, surveys were mailed out on Friday and Saturday, making it less likely the resident was home and/or willing to take the survey. Additionally, because it was a random survey and phone numbers were not provided, this severely limited the possibility of follow-up. This also eliminated the ability to find survey participants elsewhere.

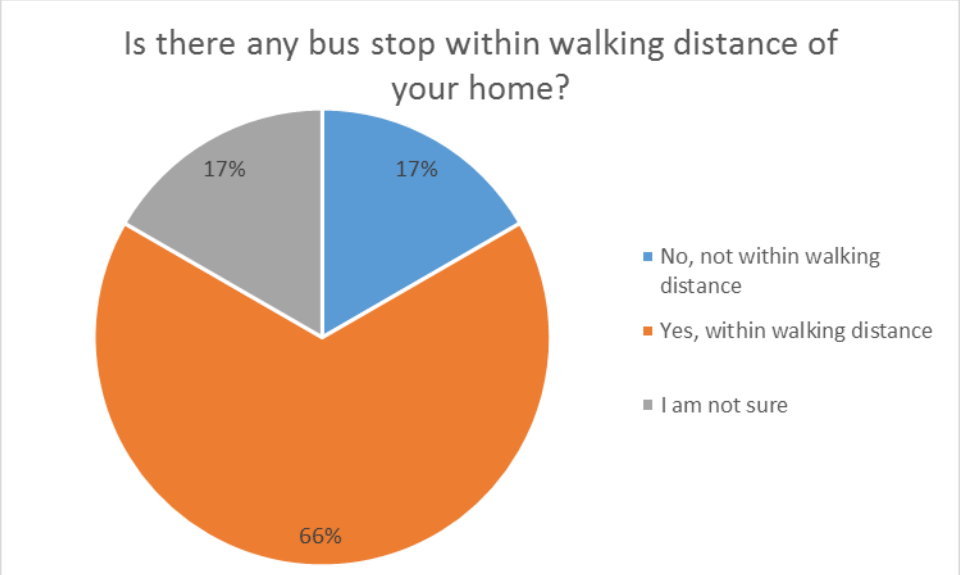
D.2.1.Public Survey Responses

1. **In Which Zip Code is you Home Located**



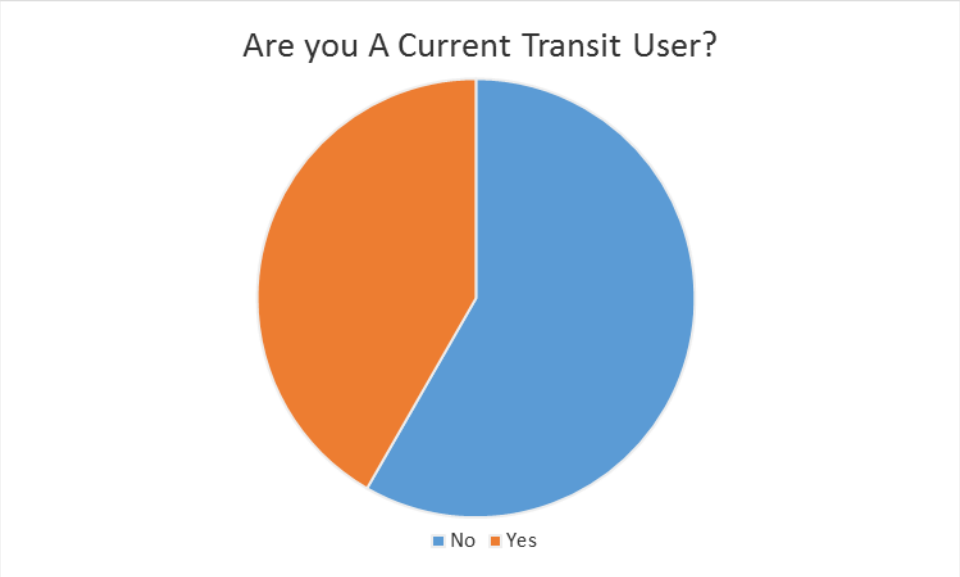
12 Responses

2. **Is There Any Bus Stop Within Walking Distance of your Home?**



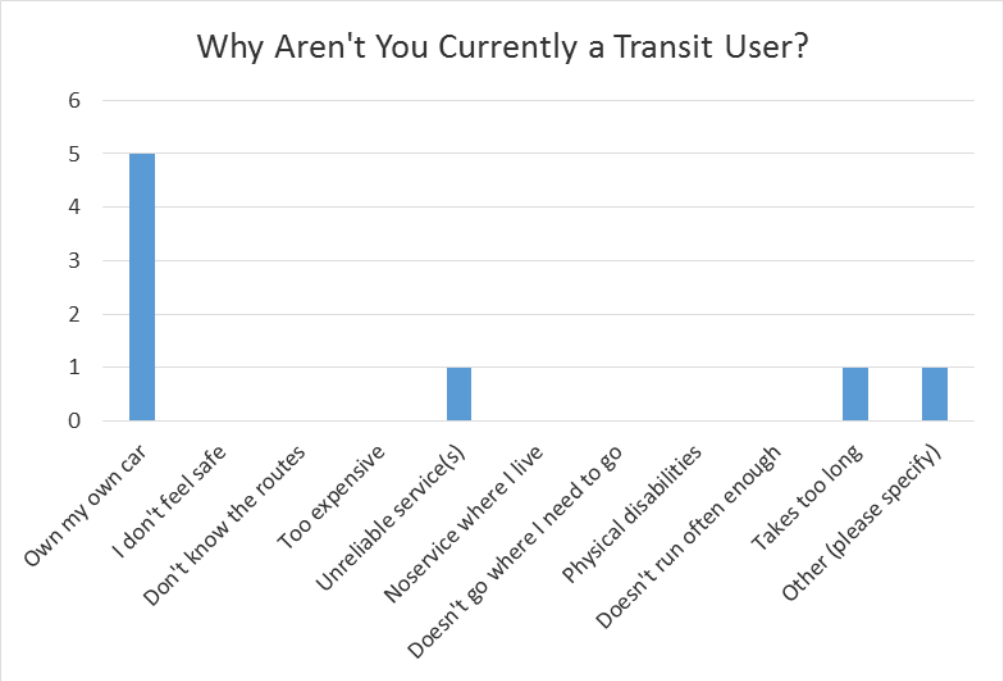
12 Responses

3. Are you a Current Transit User?



12 Responses

4. Why Aren't You Currently a Transit User?

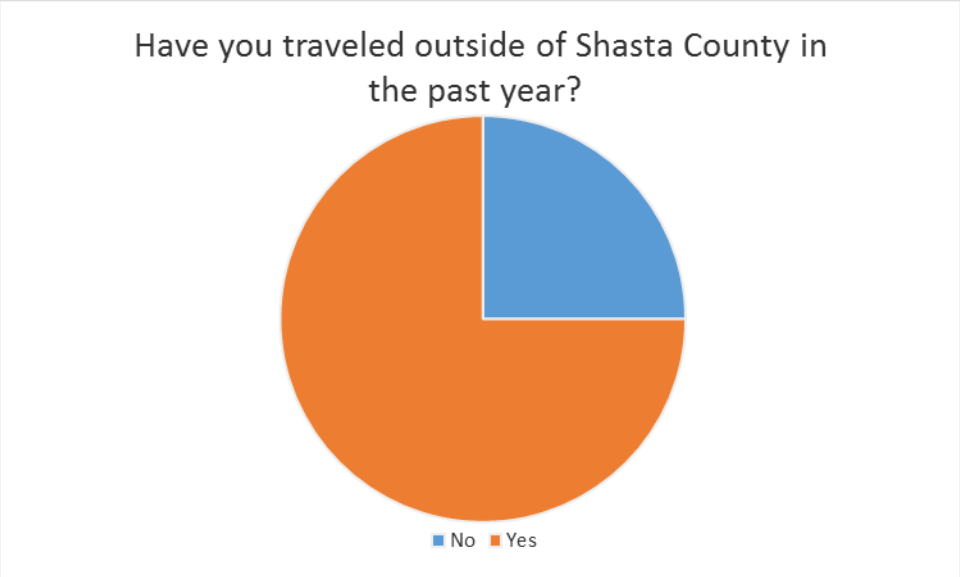


Other Responses:

- Not convenient, in terms of service, timing, route, etc. Takes too long to get around

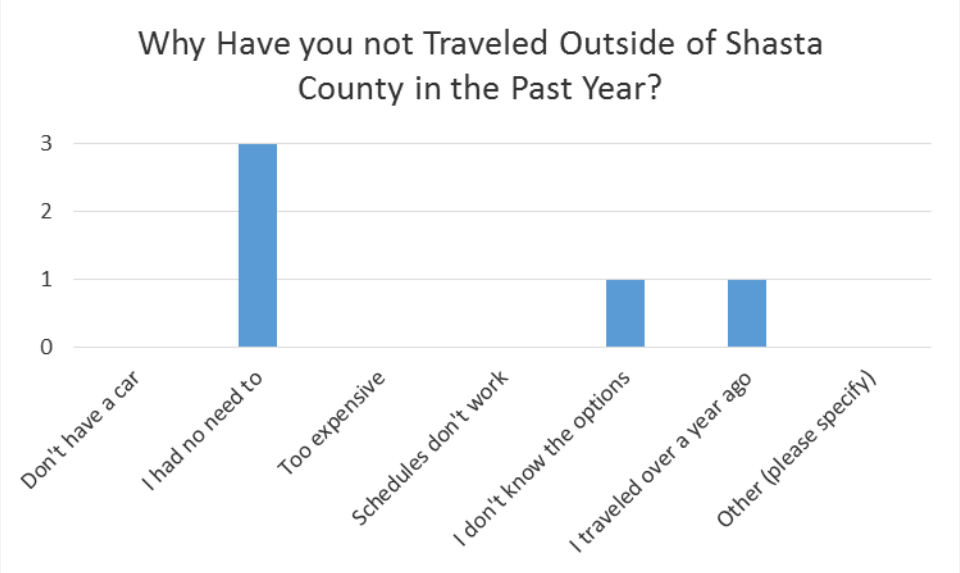
7 Responses

5. Have you Traveled Outside of Shasta County in the Past Year?



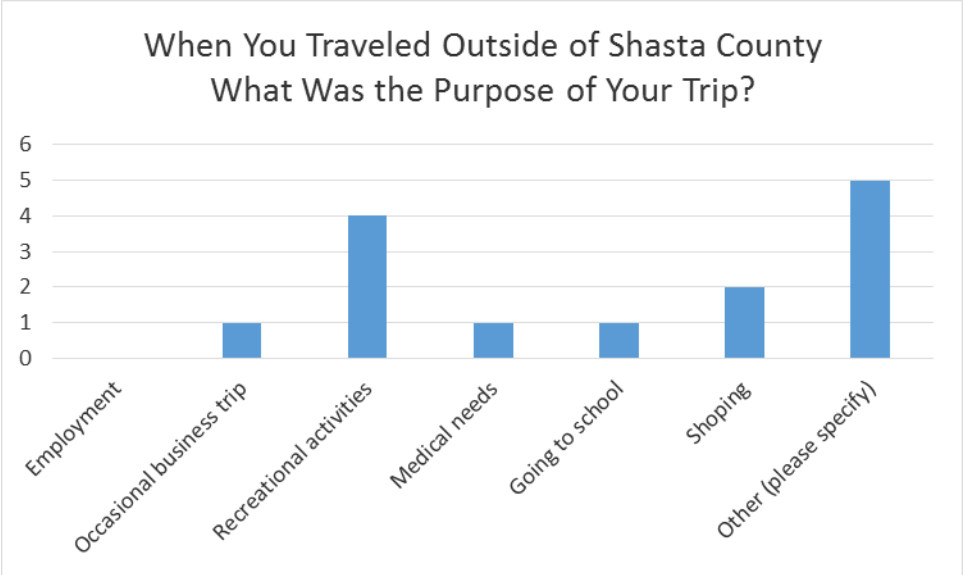
12 Responses

6. Why Have you Not Traveled Outside of Shasta County in the Past Year?



3 Responses

7. When you Traveled Outside of Shasta County What Was the Purpose of your Trip?

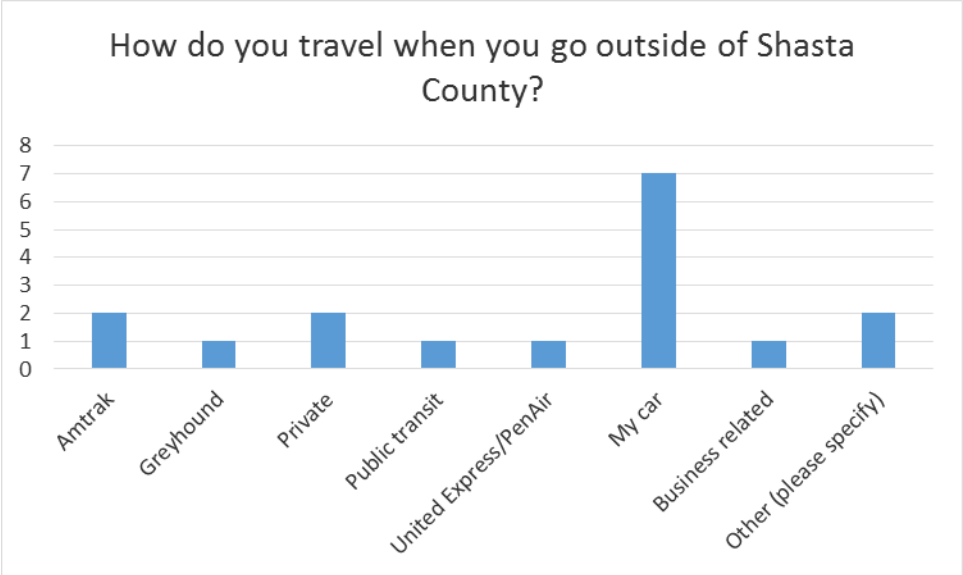


Other Responses:

- Vising family in the Bay Area
- To visit relatives, going on vacation
- Leisure trip
- Visit family
- Airport

9 Responses

8. How do you Travel When you go Outside of Shasta County?

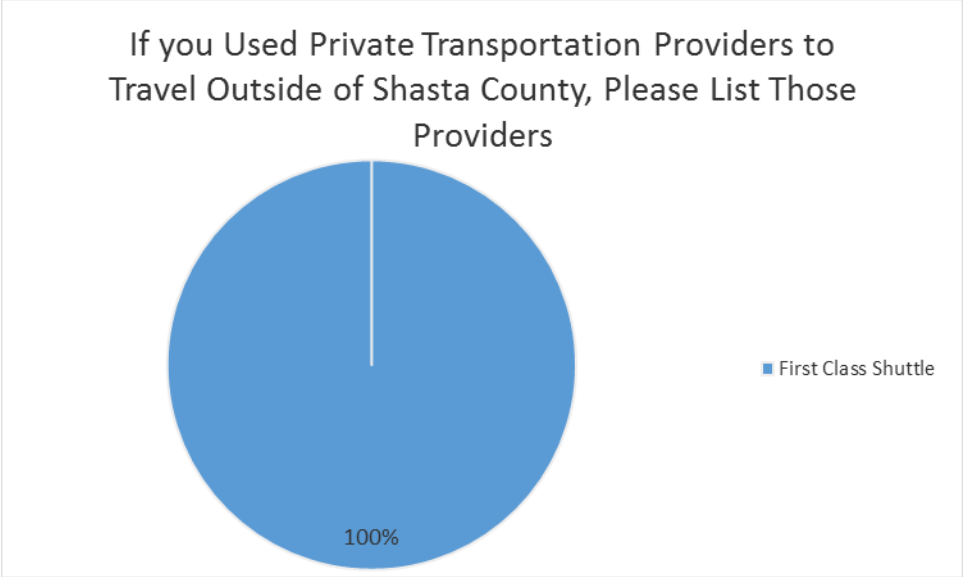


Other Responses:

- Will drive to Sacramento and leave car there or visit a friend in the Bay Area and take a shuttle to SFO
- Someone's car

9 Responses

9. **If you Used Private Transportation Providers to Travel Outside of Shasta County, Please List of Providers you Used.**

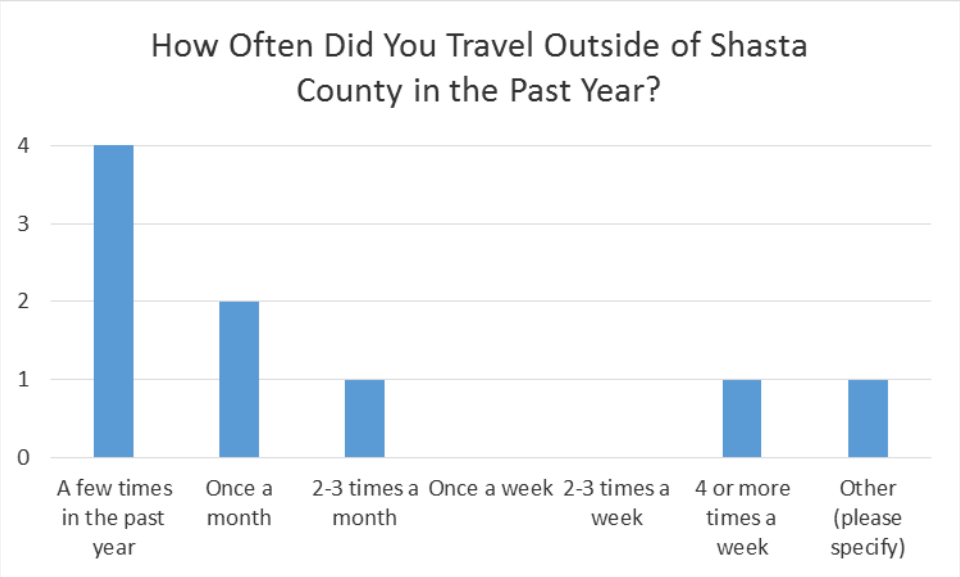


1 Response

10. **If you Used Public Transit Providers to Travel Outside of Shasta County, Please List of Providers you Used.**

No responses

11. How Often Did you Travel Outside of Shasta County in the Past Year?



Other Reponses:

- About 5 times per year

9 Responses

12. What Destinations Did you Travel to Outside of Shasta County?

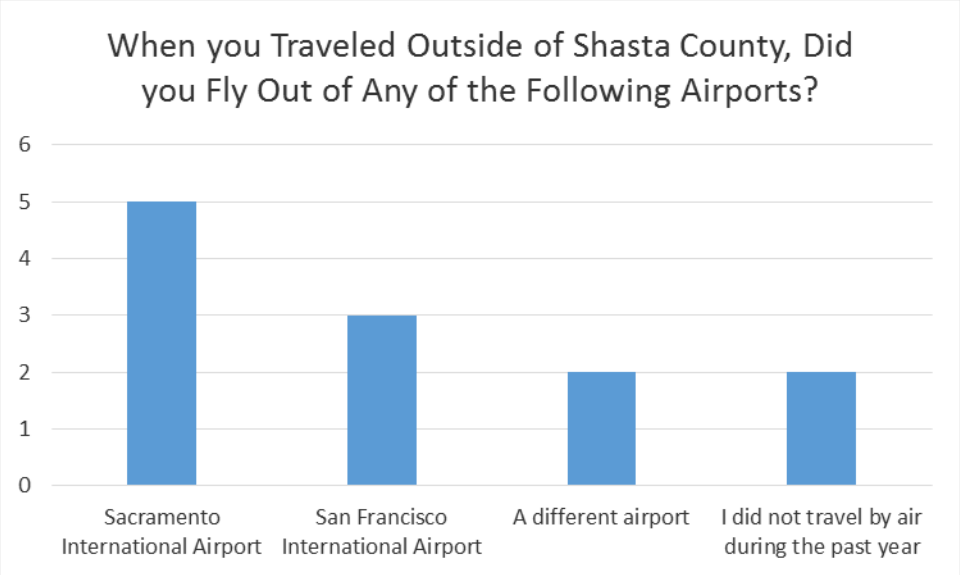
Location	%	Count
Greater Sacramento Area	55.6%	5
San Francisco Bay Area	77.8%	7
Reno-Sparks, Nevada Area	11.1%	1
Medford or Ashland, Oregon Areas	11.1%	1
Counties surrounding Shasta (for example: Siskiyou County, Tehama County, Modoc County, etc.)	33.3%	3
Other parts of California	55.6%	5
Other parts of the United States	33.3%	3
Internationally	22.2%	2
Other (please specify)	22.2%	2

Other Responses:

- Chico
- Mostly Eastern U.S.

9 Responses

13. When you Traveled Outside of Shasta County, Did you Fly Out of Any of the Following Airports?



9 Responses

14. Feel Free to Use This Space to Share Additional Comments About the Questions you Just Answered.

- Couldn't find a transportation provider that would work with disabled husband. Transportation is very complicated to get to medical services in general, especially if they want to see specialists/top doctors.
- Schedules for local transportation including the airport are inconvenient.
- It would be nice to have bus on Sundays to go to church and to/from airport
- I would like to have bigger planes flying out of Redding or a shuttle to Sacramento that is more frequent
- Love First Class Shuttle, but very expensive. Would like a less expensive option with several more trips a day.
- I drive to SFO and pay to park my car for several days when I fly because I cannot find a reasonable alternative in terms of schedule and price
- Would love to have some type of shuttle that can take you and pick up at the Sacramento airport at a reasonable price.

7 Responses

15. If you Would Like to Share More Information and Comments, Please enter your Name and Contact Details so a Member of the Project Team May Contact you.

Responses have been redacted for privacy reasons.

3 Responses

Appendix E.Preferred Route Alternative

Table 23 shows the regional connections of the catchment, and Greater Sacramento areas. The matrix is read as the number of daily business trips from the county in the rows to the county in the columns. The data for this table is the Longitudinal Household-Employer Dynamics Survey.

Table 23: Catchment Area Daily Trips Matrix

	Shasta	Modoc	Siskiyou	Trinity	Lassen	Tehama	Glenn	Butte	Colusa	Lake	El Dorado	Placer	Sacramento	Sutter	Yolo	Yuba
Shasta		303	2,084	1,965	748	5,750	562	3,017	256	172	295	804	2,539	474	435	238
Modoc	303		320	73	408	73	13	100	12	12	32	126	115	26	52	26
Siskiyou	2,084	320		677	229	533	141	386	88	61	55	187	541	41	105	33
Trinity	1,965	73	677		192	494	53	233	16	33	27	87	259	32	70	25
Lassen	748	408	229	192		298	77	388	24	40	76	275	409	36	41	20
Tehama	5,750	73	533	494	298		1,282	2,865	158	195	156	522	1,378	377	294	167
Glenn	562	13	141	53	77	1,282		3,435	679	130	71	269	776	380	300	244
Butte	3,017	100	386	233	388	2,865	3,435		1,044	300	575	1,952	5,090	4,179	1,018	2,196
Colusa	256	12	88	16	24	158	679	1,044		118	97	280	1,384	1,193	1,176	548
Lake	172	12	61	46	27	165	130	300	118		59	197	628	108	167	73
El Dorado	295	32	55	27	76	156	71	575	97	59						
Placer	804	126	187	87	275	522	269	1,952	280	197						
Sacramento	2,539	115	541	259	409	1,378	776	5,090	1,384	628						
Sutter	474	26	41	32	36	377	380	4,179	1,193	108						
Yolo	435	52	105	70	41	294	300	1,018	1,176	167						
Yuba	238	26	33	25	20	167	244	2,196	548	73						

As stated in Section 5.1, both the Bus & Ride in Red Bluff and the Glenn County Fairgrounds in Orland are preliminarily included as stops on the preferred route to Sacramento. The reasons for their preliminary nature include concerns regarding conflicts with Amtrak Thruway Bus service, market demand and proper parking facilities.

E.1.Red Bluff

Scheduling for the preferred route alternative was created to complement Amtrak service in Redding. However, Red Bluff also receives intercity service through Amtrak Thruway Buses which stop at the Bus & Ride in Red Bluff. The schedule of these Thruway Buses should be examined further to determine if there are possible synergies between the two services.

E.2.Orland

Orland is an ideal city to stop in because of the connection Glenn Ride makes with Chico and Butte County through Orland. However, Butte County is already served by Amtrak and Greyhound and is connected to Sacramento via Highway 99. Therefore more information is needed on estimated market demand of Chico and Butte County residents for service to Sacramento via the I-5 corridor. A good starting place for this information is the “Butte County Inter-City Commuter Bus Feasibility Study”

prepared for the Butte County Association of Governments in 2013.[41]The study makes an initial estimate of demand to Downtown Sacramento from Butte County; however, it acknowledges several shortcomings in the methodology that should be examined further.

Additionally, there are limited parking facilities in Orland near I-5. This could be a potentially problematic if there is not sufficient parking for all those wishing to use the intercity service. SRTA should contact Glenn County and the city of Orland to see if it is possible to improve parking options close to I-5.

E.3.13th & L

By the time the intercity service will have reached the bus stop at 13th & L in Sacramento it will have already stopped at three locations which are not intermodal terminals (Orland, Williams, and the enhanced bus stop at 7th & Capitol in Sacramento). Therefore it may not be possible to also stop at 13th & L. However, if the 13th & L stop is on the way to the charging station where each bus will recharge after its southbound trip stopping at 13th & L might be permissible. SRTA should contact the Caltrans Section 5311(f) coordinator for further information. If funding other than Section 5311(f) is used to fund the intercity service then this stop should be included.

[41] Available here: http://www.bcag.org/documents/planning/Butte%20to%20Sac%20Study/Butte%20County%20Commuter%20Plan%20Web.pdf

Appendix F.Community Benefits Analysis

This appendix discusses the benefits of intercity bus service on rural communities. The discussion begins with detailing benefits for all communities, while highlighting those benefits that are especially valuable for disadvantaged communities. The appendix then takes a closer look at the CalEPA definition of disadvantaged community, and how that designation is determined.

F.1.How the Intercity Service Will Benefit Communities

The benefits of public transit and intercity transportation services are not limited to disadvantaged communities. The benefits are these services are felt by all who live in those communities served. However, many funding sources and programs aim to assist disadvantaged communities; therefore it is important to highlight which of the overall benefits to communities from intercity bus service are especially important for disadvantaged communities. The benefits of intercity transit services include employment, economic development, education, and health benefits, among others. Increasingly, smaller communities are investing in transit as a way to address the unique mobility challenges that stem from large geographic distances, an aging population, and limited financial resources.[42] Many of the benefits of public transit are related to increased connectivity achieved through linking communities by means of intercity bus service. Each of these benefits are briefly discussed in turn.

F.1.1.Employment Benefits

While not a commuter service, there are still employment benefits from having an intercity bus service. Sacramento is the capitol of California, as well as has one of the most concentrated public sector labor markets outside of Washington DC. Therefore many of the business meetings, workshops and other gatherings of statewide organizations take place there. The intercity bus service can increase far northern California employee participation in these activities which, in turn, can raise the regions connectivity to the statewide economy. The knowledge obtained by attending these functions can be brought back to the local community thereby making businesses in these areas more competitive and more successful. Likewise, local businesses are more likely to be successful bidding on projects not in their immediate area if their community is better connected to the larger transportation network. This can create more employment opportunities for members of these communities.

F.1.2.Educational Benefits

Many rural communities have incomes that are substantially lower than more urbanized areas. There are many reasons for this including the types of economic activity that takes place in those areas, as well as educational opportunities present in those areas. There is strong evidence in both academic and community based research that shows more education leads to higher incomes. [43,44] Compulsory school attendance policies require students aged 6 through 18 to attend school (with certain exceptions) and government provided public schools make primary and secondary education more accessible to all. However, it can be difficult for young adults in more rural areas to attend college. Intercity bus services can facilitate access to higher education opportunities in large urban areas by lowering the transportation costs to access those resources. This can have an added benefit of increasing salaries and

[42] http://reconnectingamerica.org/assets/PDFs/201205ruralfinal.pdf

[43] See Becker (1962); Miller (1960); Mincer (1974); Becker (1994); Card (1999); Jamison, Jamison, and Hanushek (2007); and Hanushek, Schwedt, Wiederhold and Woessmann (2013); among others.

[44] See research by Education Counts, U.S. New & World Report; and the Pew Research Center, among others.

employment opportunities of Shasta County residents as well, particularly as this greater accessibility is likely to be realized by more economically disadvantaged residents. An intercity bus service may have disproportionally positive benefits among members of disadvantaged communities.

F.1.3.Health Benefits

While there are many communities between Redding and Sacramento along I-5, they are all relatively small (the largest being Woodland with a population of just over 56,000)[45] and many are very rural in nature. This means that many of these communities lack the medical infrastructure needed to serve their elderly and disabled populations. Services such as Merit-Medi-Trans and other Non-Emergency Medical Transportation (NEMT) providers exist to transport these residents, but they are often expensive for those without insurance and are tailored towards those that cannot travel on their own. As a result, the introduction of a public transportation option to travel to large metropolitan areas such as Sacramento can have a range of health related benefits. First, it can encourage the disabled and elderly populations to visit a doctor. A survey of Americans aged 65 and older found that non-drivers take 15% fewer trips to the doctor.[46] It also introduces a cheaper option for those with limited incomes to seek specialized medical care. This in turn can be an economic benefit to the community as well. An elderly person or a person with a disability that receives regular medical attention is more likely to maintain an active lifestyle. This includes participating in community activities, working and contributing to the economic wellbeing of the community.

Specifically, members of disadvantaged communities tend to be less healthy than advantaged communities, whether because of age, lack of mobility due to disability, or income constraints. Inadequate physical activity due to a relatively sedentary lifestyle is a contributing factor to this trend. The Center for Disease Control and Prevention recommends that adults average 22 minutes of daily physical activity, although less than half of Americans nationally do this. Given that fact that those who ride transit are far more likely to attain this goal than those that do not, intercity bus service can also increase health outcomes and decrease medical costs, especially within disadvantaged communities. Additionally, using public transit instead of driving a personal vehicle decreases the chance of an automobile accident, decreases stress levels and decreases air pollution. All of these lead to increased health outcomes which are more acutely felt in disadvantaged communities.[47]

F.1.4.Greenhouse Gas Emissions Benefits

Private vehicles are generally a household's largest carbon footprint contributor.[48] Public transit and intercity transportation reduces greenhouse gas emissions in two ways. First, intercity bus transportation reduces the number of vehicles on the road, as buses can carry up to 55 passengers.[49] According to the American Public Transportation Association, a single person commuting 20 miles per day can reduce his/her greenhouse gas emissions by 4,800 pounds per year by taking public transit. The benefits of longer distances are even larger.

The second greenhouse gas emissions benefit stems from the possible use of battery electric vehicles. Battery electric vehicles produce zero tailpipe emissions compared to 2,417 grams of carbon dioxide

[45] ACS 5 Year Estimates
[46] http://transloc.com/6-health-benefits-of-public-transportation/
[47] http://www.apta.com/resources/reportsandpublications/Documents/APTA_Health_Benefits_Litman.pdf
[48] http://www.apta.com/resources/reportsandpublications/Documents/greenhouse_brochure.pdf
[49] https://services.greyhound.com/en/about/factsandfigures.aspx

(CO2) per mile with diesel fuel, and 2,305 grams per mile with compressed natural gas.[50] Battery electric vehicles emit no tailpipe emissions of any kind. This is not limited to CO2 and includes nitrogen oxide (NOX), hydrocarbon (HC), and particulate matter (PM) emissions as well.

F.1.5.Occasional Business Traveler Efficiency Benefits

Certainly intercity bus service can benefit the individual traveling by providing transportation where the traveler can relax, and continue working while traveling. However, this analysis looks at community benefits so it will focus on cost and congestion benefits.

Travel costs can be substantial for a business. Publically funded intercity transportation is often cheaper than private providers (such as Greyhound and Amtrak), and it is certainly cheaper than flying. This can therefore save these companies money which can then be reinvested in the local community. This is a benefit that could be felt more strongly by disadvantaged communities. Businesses located within disadvantaged communities are generally not as financially stable as those located in more affluent areas. Therefore, the percent of the businesses budget spent on travel is higher. Having a cheaper option in traveling by having access to public intercity bus service is a significant benefit to disadvantaged communities.

Intercity transportation can also help alleviate traffic and parking congestion in the destination city. When planning the parking and transportation infrastructure of a city, it is difficult to account for the growth in visitors to that city. As such, traffic congestion and parking limitations become more of an issue (the Bay Area is an excellent example of this). According to the Texas A&M Transportation Institute, travelers in the Sacramento urban area save 1.3 million hours of travel delay by using public transit.[51] Intercity transportation from far northern California helps reduce traffic congestion in the urban areas of Sacramento and the Bay Area by reducing the number of cars on the roads during peak travel hours.

F.1.6.Economic Development Benefits

Locally, investments in public transit can help stimulate economic activity along central transit corridors.[52] Similarly, intercity transit can help stimulate economic activity along its service route as it provides increased access to smaller communities not already served by an intercity transit provider. There are also secondary economic benefits from some of the other benefits examined in this section. If local residents receive better employment opportunities by being better able to conduct periodic work in larger metro areas, those increased wages are most likely going to be spent locally. Likewise, if a local contractor can land larger contracts because of increased connectivity with larger metro areas, then more employees will be hired locally for relatively high paying jobs. If students are better able to attend college, then those students' increased skills can facilitate innovation and growth at the local level. Lastly, if communities are better able to stay healthy, they will have more income and a greater ability to frequent local businesses.

The American Public Transportation Association has quantified these benefits. They estimate that for every $1 invested in transit capital, an additional $2 dollars is generated in business sales. Additionally, for every $1 invested in transit operations, another $2.20 is generated because local residents are more

[50] https://cms.dot.gov/sites/dot.gov/files/docs/Infographic_Final_0.pdf
[51] http://www.apta.com/mediacenter/pressreleases/2011/Pages/112001_TTI_Report.aspx
[52] http://reconnectingamerica.org/assets/PDFs/201205ruralfinal.pdf

easily able to shop and participate in recreational activities.[53] In more rural areas much of this investment will remain local, especially for the transit operations expenditures. These compounding economic benefits will also make a much larger relative impact in disadvantaged communities where investments in local economic growth are lower than in other areas.

In addition to the economic benefits to local businesses, there are also savings benefits to individuals and families, which in turn can benefit local businesses. ICF International estimates that a two-adult family using public transit instead of driving saves an average of $6,231 a year.[54] This dollar amount is for a family living in an urban environment and riding transit every day. However, it still highlights the economic benefits to low income members of the disadvantaged community of taking transit.

F.2.CalEPA Disadvantaged Communities

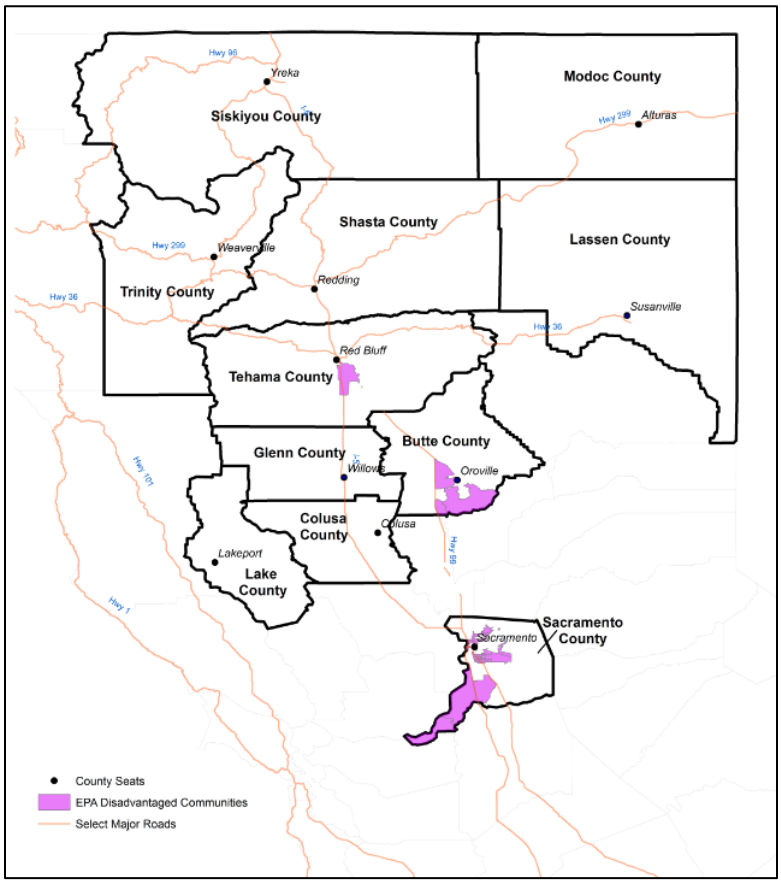


Figure 65: Preferred Alternative Catchment Area CalEPA Disadvantaged Communities

The California Environmental Protection Agency (CalEPA) was tasked by SB 535 to develop a definition for disadvantaged communities. This definition is broad, and encompasses 19 variables in four components. These include pollution exposure (such as ozone concentrations and diesel emissions), environmental effects (such as hazardous waste and groundwater), sensitive populations (such as children and the elderly), and socioeconomic factors (such as poverty and unemployment).[55] While the factors included in the determination of disadvantaged communities is very inclusive, in order to be considered disadvantaged a community must have a combined variable score in the bottom 25% of all Census tracts in California. This excludes many needy groups from being included in this definition. Therefore this analysis looks at the CalEPA definition of disadvantaged communities as well as a broader definition of those needing extra assistance with transit.

[53] "The Benefits of Public Transportation: Wherever Life Takes You". American Public Transportation Association, 2008.
[54] "Public Transportation and Petroleum Savings in the U.S.: Reducing Dependence on Oil", ICD International, 2007
[55] http://www.calepa.ca.gov/EnvJustice/GHGinvest/Documents/SB535DesCom.pdf

In order for a Census tract to be considered disadvantaged its CalEnviroScreen Score must be in the bottom 25% of all California Census tracts[56]. Figure 65 shows a map of the catchment area showing which Census tracts are disadvantaged.

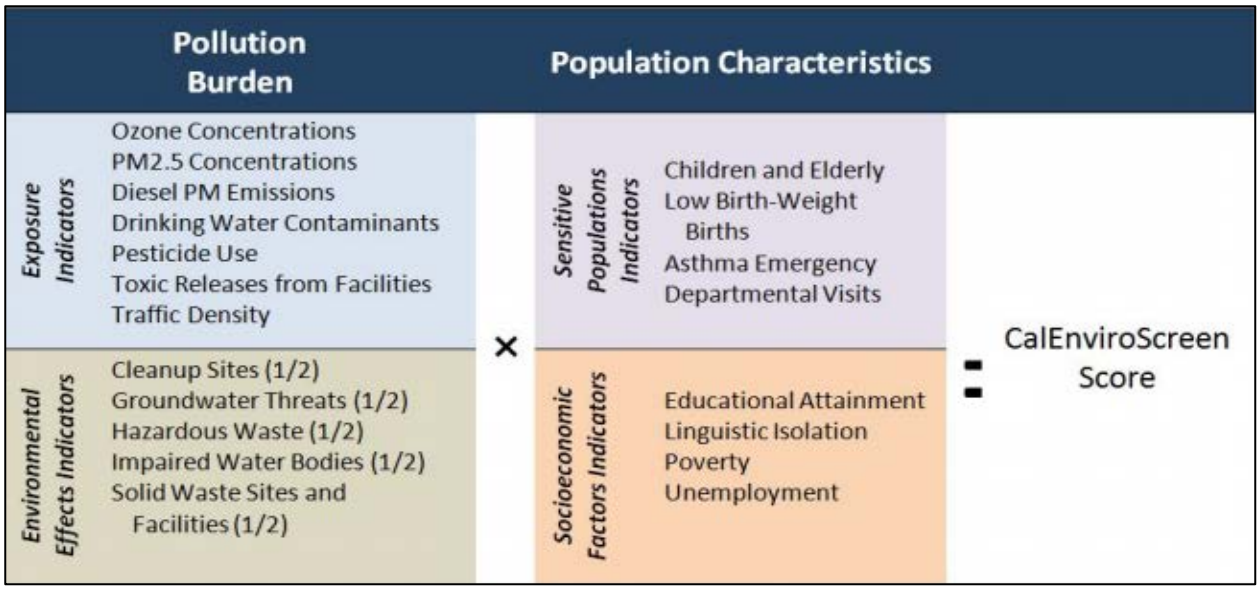


Figure 66: CalEPA Disadvantaged Communities Variables

[56] Designation of Disadvantaged Communities Pursuant to Senate Bill 535, October 2014

Appendix G.Funding Strategy

Table 24: Funding Matrix

Program Fund Source	Funding Purpose	Use of Funds	Estimated Fund Amount	Eligible Recipients	Matching Requirements	Maximum/Minimum Award
Transit and Intercity Rail Capital Program (TIRCP)	Modernize California's transit systems and intercity, commuter, and urban rail systems	Capital improvements and operational investments	$41.2 million in 2015	Any transportation system that meets program requirements	No matching requirement	The maximum award is 1/3 of total program funds, there is no minimum award
Low Carbon Transit Operations Program (LCTOP)	Support new or expanded bus or rail service	Equipment acquisition, fuel, and maintenance	FY 2015/16 Allocation for Shasta County is $187,529	Transit Agencies	No matching requirement	The maximum award is the 2015/16 allocation, there is no minimum award
Affordable Housing and Sustainable Communities (AHCS) Program	Support infill and compact development that reduces greenhouse gas emissions	Improving mobility options, decreasing vehicle miles traveled and reducing greenhouse gas emissions	$320 million in 2016	Locality, public housing authority, redevelopment agency, transit agency, or transit operator	No matching requirement	$20 million maximum award, $1 million minimum award
Low Carbon Transportation Investments and Air Quality Improvement Program (AQIP)	Aid in the introduction of hybrid and zero emission vehicles	Vouchers for the purchase of hybrid and zero emission vehicles	$500 million for FY2016/17	Local air districts, transit agencies, school districts and other public or non-profit entities	25% local match	$110,000 towards the purchase of a zero emissions vehicle, $30,000 towards the purchase of a hybrid vehicle

Program Fund Source	Funding Purpose	Use of Funds	Estimated Fund Amount	Eligible Recipients	Matching Requirements	Maximum/Minimum Award
Alternative and Renewable Fuel and Vehicle Technology Program (ARFVTP)	Provide financial incentives for the deployment of alternative and renewable fuel technologies	Purchase of zero emission buses	$100 million annually, could be a grant or a loan	Vehicle manufacturers, workforce training partners, fleet owners, and academic institutions	50% local match (dollar for dollar match)	Varies with project under the umbrella program
Qualified Energy Conservation Bonds	Reducing California energy consumption	Type I Projects: Capital expenditures; Type II Projects: Research facilities; Type III Projects: Mass commuting facilities	$1.85 million for Shasta County	State, tribal and local governments	No match, but requires repayment of the bond	Maximum award is total allocation for Shasta County. No minimum
California Lending for Energy and Environmental Needs (CLEEN) Center	Reduce GHG emissions to meet the State's long term reduction goals	Purchase of zero emission buses	CLEEN Center connects recipients with funding private funding sources. Funding amount depends on participation in the program	Any level of government and non-profit corporations	No match, but requires repayment of the bond	$30 million maximum award, $500,000 minimum award

Program Fund Source	Funding Purpose	Use of Funds	Estimated Fund Amount	Eligible Recipients	Matching Requirements	Maximum/Minimum Award
Infrastructure State Revolving Fund (ISRF) Loan Program	Provide funding for infrastructure and economic development projects	Purchase of zero emission buses	ISRF connects recipients with funding private funding sources. Funding amount depends on participation in the program	Any level of government and non-profit corporations	No match, but requires repayment of the loan	$25 million maximum award, $50,000 minimum award
Clean Diesel Program	Reduce emissions from diesel vehicles	Mitigate the marginal cost of zero emissions vehicles	$26 million nationwide	Regional, state, local and tribal agencies; non-profit organizations	75% local match for the marginal cost. Additionally, the full cost of the cheaper vehicle	Subjective, projects may be fully or partially funded. Largest 2015 award was $2.07 million
Congestion Mitigation and Air Quality Improvement (CMAQ) Program	Provide operating assistance to new and expanded transportation services	Operating costs	$2.4 billion nationwide	MPOs and RTPAs	20% local match	$250,000 maximum award, $5,000 minimum award
FTA Section 5311(f) - Formula grant for rural intercity bus transportation	Provide capital, planning, and operating assistance to support rural intercity bus service	Planning, capital, operating, and acquisition of public transportation services	$620 million nationwide	Public agencies, local governments, tribal governments, and non-profit corporations	44.77% local match for operating assistance, and 11.47% local match for capital costs	300,000 maximum award, no minimum award

Program Fund Source	Funding Purpose	Use of Funds	Estimated Fund Amount	Eligible Recipients	Matching Requirements	Maximum/Minimum Award
FTA Section 5310 - Enhanced mobility of seniors and individuals with disabilities	Enhanced mobility for seniors and persons with disabilities by providing funds for programs to serve the special needs of transit-dependent populations beyond traditional public transportation services and ADA complementary paratransit services	Capital projects, operating assistance, administration	$28.4 million to California in FY 2014	Public agencies, non-profit corporations	50% local match for operating assistance, 20% local match for capital expenditures	Based on available funding to local areas
Toll Credit Funds in Lieu of Non-Federal Match	Use as federal match for funding requirements	Offset federal match requirements	Based on revenues generated by tolls	RTPAs	No matching requirement, used as federal match	No maximum, or minimum, but FY 2015/16 credit requests have ranged from $1,000 to $1.1 million
Transportation Development Act	Local streets and transportation	Intercity bus transportation under Articles 4 and 8	$1.8 billion in California in FY 2012/13	Counties, Cities and transit operators	No matching requirement	Based on available funding to local areas
AB 2766 Vehicle Air Pollution Fees	Reduction of motor vehicle air pollution	Planning, monitoring, and technical studies of programs designed to reduce vehicle air pollution	$430,000 for Shasta County in 2015	Air Quality Management District	No matching requirement	Based on available funding to local areas

In addition to these specific funding sources there are also other general sources that can be explored. These include social services funding sources and other private and non-profit funding sources.

G.1. *Social Services Funding Sources*

Various social services organizations have a vested interest in transportation. Because the purpose of many social services organizations is to serve populations that are disadvantaged (i.e. low income, elderly, and disabled), some may be willing to help fund transit projects that will help their clients access services and amenities that are not available locally. Although Redding is the largest city in far northern California, it still lacks many of the services available in larger urban areas like the Sacramento and San Francisco metropolitan areas. These services include specialized medical facilities, cultural activities and expanded recreational activities, among others.

The maximum and minimum funding amount from social services funding sources may vary widely by source. Since these funding sources are more likely to be smaller and augment other funding for the intercity service instead of completely funding the service themselves, it is unlikely they will have a matching requirement. If they do, the match should be met by the state and federal funds earmarked for the intercity service.

G.2. Other Funding Sources

While not as large as the funding sources presented above, there are many other sources of funding as well. These sources include:

- Private and non-profit foundations – Foundation grants are highly competitive and require significant research to identify foundations appropriate for the specific service being financed, but can serve as additional funding sources.
- Service clubs and fraternal organizations – Organizations such as the Rotary Club, Soroptimists, Kiwanis, and Lions often pay for special projects. For transportation, they might pay for or help contribute towards the cost of a new vehicle.
- Advertising revenues – On-vehicle advertising is another possible source of revenue. Given the general improvement in the economy, it may be fruitful to pursue an advertising program that could lead to discretionary revenues.
- Contract revenues – Social service providers, employers, higher education institutions, and other entities may contract with local transit services to provide transportation for their constituents.
- In-kind contributions – In-kind contributions can take many forms. Donations can range from financial contributions to the donation of a vehicle, a bench for the new bus route, or a local business displaying transit information on their property.

It is important to keep in mind that it is very unlikely that any of these other funding sources will be as large as the more widely used state and federal programs. However, they can both help ensure that the intercity bus service is fully funded, and pay for additional amenities for the service to make it more desirable for passengers.

Like the social services funding sources, the maximum and minimum award from these other funding sources varies significantly. Also because they will be smaller and augment existing funding it is likely

that no match will be required. If a matching requirement exists, it will be met with funding from other sources.

Appendix H.Rural Intercity Bus Service Demand Model

The TCRP toolkit provides a useful tool in the forecasting of demand for intercity bus service. However, it is also important to understand how these transit models are developed and operate so they can be manually modified, if necessary. This appendix provides further information on both the trip rate, and regression models for forecasting rural intercity bus service demand.

H.1.Trip Rate Model

The trip rate model is the simpler of the two estimation techniques. The trip rate model estimates the number of intercity passenger trips by looking at historical trip rates calculated by dividing the number of intercity trips by the region's population. The number of intercity trips is derived from the 2001 National Household Travel Survey while the region's population is obtained from the Census Bureau. This calculation provides the overall trip rate. However, the majority of intercity travel is done by means other than intercity bus service (driving oneself, and flying, for example), therefore a "mode split" must be applied to the resulting trip rate. A mode split is the percentage of total intercity travel that is conducted by each mode of transportation. The TCRP model determined that intercity bus service accounts for approximately 1% of total intercity travel. Therefore, the overall trip rates are multiplied by 0.01 (1%).

The last step in calculating the trip rate estimate is adding an adjustment factor. The trip rate method was determined to be significantly less accurate than the regression method, so TCRP attempted to increase its accuracy by running regressions on the error terms and using the predicted error terms for each intercity route to calibrate the model. These predicted error terms were then subtracted from the original trip rate model predictions to form an adjusted trip rate model estimate. When using the toolkit, the model automatically assigns the appropriate trip rate based on the size of the geography the user inputs.

H.2.Regression Model

The regression model is the more complicated of the two models in that it requires the use of more complicated statistical techniques. The regression model is developed using a combination of multiple regression, and stepwise regression. Multiple regression is a regression model where there are multiple independent variables as opposed to a single independent variable in a simple regression. Stepwise regression is a technique where many multiple regressions are run, each adding or subtracting an independent variable to find the best fitting model.

The difficulty with the regression model is finding an appropriate model design. Logic would tell us that the higher the population, the higher the expected demand. However, when researchers at TCRP first included a population variable, which included both the corridor, origin, and urban destination population, the model only had an R^2 of 0.139 (the population variable only explained 13.9% of the variation in ridership). After many iterations, a population variable which included only the population of the rural areas along the route resulted in an R^2 of 0.708. The stepwise regression resulted in the following best fitting model:

Ridership = -2,803.536 + 0.194(origin population) + 314.734(number of stops) + 4,971.668(airport connection) + 5,793.653(intercity provider)

Where:

Ridership = Annual one-way passenger boardings

Origin Population = Average of the populations of all of the stops along the route except for the largest

Number of Stops = The number of stops made on the proposed service

Airport Connection = Equals 1 if the route makes a stop at an airport with commercial passenger service, and 0 otherwise

Intercity Provider = Equals 1 if the route will be operated by a carrier meeting the definition of an intercity bus carrier, and 0 otherwise

TCRP Report 147 defines an intercity carrier to be Greyhound, a member of the Trailways National Bus System, or a regional provider of regular-route intercity bus services such as Indian Trails, Jefferson Lines, Black Hill Stage Lines/Arrow, Southeastern Stages, BoltBus, Megabus, or a similar operator. For the purpose of this feasibility study, the proposed intercity service will not be operated by an intercity carrier.

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