Santa Cruz Branch Rail Line Rail Transit Feasibility Study

Executive Summary

Santa Cruz County Regional Transportation Commission

December 2015

EXECUTIVE SUMMARY

Is rail transit service feasible in Santa Cruz County? What criteria should be used to define what is feasible? How can the community maximize use of the publicly-owned Santa Cruz Branch Rail Line? How much would it cost and how many people would ride rail transit? Could it help advance the community's mobility, environmental, economic, and other goals? Is there a "starter" rail transit service that could be implemented in the near term, and then augmented as demand and resources change? Could rail transit service be part of an integrated transportation network? How will rail transit service be coordinated with existing bus transit service, freight trains, planned regional and state rail service, and the planned Monterey Bay Sanctuary Scenic Trail Network – especially the 32 mile rail-with-trail project? These are some of the questions that spurred policy makers, agency staff, and community members to investigate if rail transit could serve some of Santa Cruz County's extensive transportation needs.

The Santa Cruz County Regional Transportation Commission (RTC) received a transit planning grant from the California Department of Transportation (Caltrans) to evaluate the feasibility of rail transit service[1] on the Santa Cruz Branch Rail Line. In May 2014, the RTC hired a team of consultants with extensive transit planning experience, led by Fehr & Peers, to conduct this study. The study includes a broad technical analysis of several public transportation service scenarios (developed based on input from the public), ridership projections, capital and operating cost estimates, review of vehicle technologies, and evaluation of funding options. Service scenarios were evaluated against multiple goals and objectives identified by the community, and compared to other rail transit systems in the nation. The report also discusses integration with other rail corridor uses, connectivity to other bus and rail services, and identifies feasible options for further analysis, environmental clearance, engineering, and construction. Based extensive input provided on the draft study, this final study includes additional information and clarification on many aspects of rail transit, as summarized in Appendix A.

[1] While there are many different types of passenger service that could operate on the Santa Cruz Branch Rail Line, this study focuses on public transportation options characterized by passenger service using the fixed guideway rail and either self-propelled or locomotive hauled passenger cars, operated on a regular basis by or under contract with a public transit agency or Joint Powers Authority for the purpose of transporting passengers within urbanized areas, or between urbanized areas and outlying areas.

STUDY AREA

The Santa Cruz Branch Rail Line is a continuous transportation corridor offering a variety of mobility options for residents, businesses, and visitors. In October 2012 the RTC completed acquisition of the rail line, which has been a transportation corridor since the mid-1870s, bringing it into public ownership. Funding for acquisition included state transit funds and passenger rail bond funds approved by the voters of both Santa Cruz County and the state of California. The rail corridor (Figure ES-1) spans approximately 32 miles of Santa Cruz County's coast from Davenport to Watsonville/Pajaro, runs parallel to the often congested Highway 1 corridor, and connects to regional and state rail lines. This underutilized transportation corridor is within one mile of more than 92 parks, 42 schools, and approximately half of the county's residents. Based on public input, travel patterns, and analysis of existing and forecasted future demographic conditions, this study focuses on the most populous and congested sections of Santa Cruz County – from the western edge of the city of Santa Cruz to downtown Watsonville - though service north to Davenport is not precluded from future analysis.

Figure ES-1: Santa Cruz Branch Rail Line

Source: SCCRTC, 2015

Although Santa Cruz County is not considered a major metropolitan area, the topography of the area concentrates development between the ocean and the mountains. The county's population density is one of the highest in California, with approximately 90,000 people living within one-half mile of the rail line. Areas along the rail line have population densities similar to Berkeley/Oakland and cities along the San Francisco Bay Peninsula. The number of people per square mile in the City of Santa Cruz and the Seacliff area are approximately 4,000; Live Oak ranges from 5,300 to 7,100 people/square mile, and the City of Watsonville has over 7,500 people/square mile.[2]

PURPOSE OF STUDY

The RTC was awarded a federal transit planning grant by Caltrans to conduct a rail transit study for the Santa Cruz Branch Rail Line. The objective of this study is to analyze potential public transit service scenarios using the rail fixed guideway, along with potential station locations that could serve Santa Cruz County. This analysis lays the groundwork for more detailed evaluation of operational characteristics and costs. Overall objectives of the study include:

- Analyze the feasibility of rail transit service on the Santa Cruz Branch Rail Line.
- Identify, evaluate and compare a range of near- and long-term rail transit service options.
- Understand how rail transit service can improve people's access to jobs, schools, recreation, goods/services, and other activities.
- Provide data regarding ridership potential, capital and operating/maintenance costs, revenue projections, and connectivity with other transportation modes.
- Identify governance and financing options.
- Meet or exceed sustainable communities, greenhouse gas emission reduction and natural environment protection goals. These include the California Global Warming Solutions Act of 2006 (AB 32) and Sustainable Communities and Climate Protection Act of 2008 (SB375) which aim to reduce greenhouse gas emissions, in part by reducing the number of miles people drive.
- Provide the community with general information regarding rail transit service options and service implementation, in consideration of forecasted ridership demand and funding.
- Identify possible locations for stations and passing sidings and assist local entities in ensuring coordination of land use, transit, trail, and freight plans along the corridor.
- Involve the community and the RTC board in the service evaluation and decision making process.

[2] http://quickfacts.census.gov

WHY CONSIDER RAIL TRANSIT ON THE SANTA CRUZ BRANCH LINE?

When considering the current state of Santa Cruz County's strained infrastructure, as well as housing shortages and anticipated growth in population and jobs, we are faced with many questions. How will people get around? Where will they live? What kind of jobs will they find? What does this mean for quality of life? Will our highways support our growing transportation needs? Improvements in the housing supply and the transportation network are essential for a stronger local economy and quality of life.

> ***"I don't think we should plan for a [transportation] system that's 1956. We should plan for 2045."***
>
> **—Anthony Foxx, US Secretary of Transportation**

- **Provide mobility options.** Considering that local roads and highways are increasingly congested, that our population continues to grow, that state mandates require reductions in how much people drive, that many people in our community cannot drive, as well as our community values, it is important to provide transportation options which have the capacity to move people more efficiently and sustainably. Commuters, youth, seniors, low-income individuals, people with disabilities, businesses, and visitors have a diverse set of transportation needs. Adding new mobility options that expand travel choices can help address a multitude of these needs and provide an alternative to congested roadways.
- **More predictable travel times.** Congested roadways make it difficult to predict how long it will take to get places either by car or bus. Rail transit, operating on a fixed guideway, provides more reliable travel times. Transit riders are also able to relax, read, work, and avoid traffic.
- **Connecting Watsonville and Santa Cruz.** Rail transit could improve connections between the two largest and fastest growing cities in Santa Cruz County, expanding access to jobs, educational opportunities, and housing.
- **Connecting to California**. Rail transit would provide a new option for travel not only within Santa Cruz County, but would also connect at Pajaro Station with planned rail service to the San Francisco Bay Area, Monterey County, Sacramento, and south along the California Coast. Pajaro Station is about 20 miles from the planned High Speed Rail Station in Gilroy.
- **Rising demand for compact complete communities.** Public transportation investments can promote more walkable neighborhoods, with essential services and jobs nearby.[3] Compact development in turn provides a host of environmental and social benefits, helping to reduce vehicle miles traveled (VMT), fuel use, and greenhouse gas (GHG) emissions even from non-transit users. Compact development also makes the most of existing infrastructure (water, roads, utilities, schools, etc.) while minimizing sprawl into open spaces.

[3] *Transit Cooperative Research Program (TCRP) Report 176: Quantifying Transit's Impact on GHG Emissions and Energy Use,* Transportation Research Board (TRB), 2015.

- **Funding landscape is changing**. The state's new Cap and Trade program includes significant funding for rail transit investments and is expected to grow over time. Recently the state has also made major policy changes to provide funding to maintain state highways but not to expand capacity on those highways.

Rail transit service could also contribute to or support many existing policies and goals of the RTC, local government, environmental groups and local business organizations. Coordination and collaboration with these entities would be essential to realize community goals. As part of a more diverse transit system, rail service would need to be integrated with existing fixed route bus service and the bicycle and pedestrian network. It is not realistic to represent rail transit service as the singular solution to many problems, yet it could provide a very strong supporting role in the future development of healthy sustainable communities in Santa Cruz County.

MEASURING FEASIBILITY: GOALS AND OBJECTIVES

At the start of this study, the RTC solicited input from the public on the goals, objectives and measures that should be used to evaluate the feasibility of rail service. Goals and objectives identified as priorities by the community are shown in Figure ES-2. These goals and objectives for rail transit in Santa Cruz County are consistent with regional, state and federal transportation planning goals and objectives related to access, mobility, maintenance, efficiency, economic vitality, safety, quality of life, and the environment.

STATIONS AND SCENARIOS ANALYZED

Based on existing and forecasted future travel patterns, as well as input from community members, technical stakeholders and rail peers, a series of station locations and service scenarios were analyzed for this study. The project team conducted a general, initial screening of ten service scenario concepts, with varying station locations, termini, and service hours. This included a qualitative assessment of ridership potential, capital costs, and connectivity to local, regional, state transit and intercity rail systems. Taking into consideration the initial screening, seven service scenarios (Figure ES-3), which represent a range of costs and near and longer term implementation potential, were selected for more detailed evaluation.

Figure ES-2: Study Goals and Objectives

Transportation Alternatives/Choices

GOAL 1: Provide a convenient, competitive and accessible travel option

More Options
Provide additional and competitive travel options to address the current and future needs of the community (including employment, school, visitor, shopping, recreational, neighborhood and other daily trips)

Ridership
Increase the number of people using transit

Faster Travel Times
Reduce how long it takes to get places

Transit Connections
Connect to the bus transit system (METRO)

Bike & Walk Connections
Ensure connectivity to sidewalks, bike lanes and Monterey Bay Sanctuary Scenic Trail (or Rail-Trail)

Non-Drivers
Expand options for seniors, children, people with disabilities, low-income, and those who cannot or do not drive

Visitors
Expand options for visitors and tourists to reduce traffic congestion

Reliability
Make it easier to predict how long it will take to get places (*reliability of transit travel times)*

Sustainability

GOAL 2: Enhance communities and the environment, support economic vitality

Reduce Traffic
Reduce the number of cars on Highway 1 and local roads

Climate
Reduce fuel consumption, greenhouse gas emissions, and air pollution

Other Car Impacts
Reduce need for parking, road expansion and other land use effects of cars (preserve open space and reduce sprawl)

Serve Major Destinations
Locate stations in areas with high concentrations of housing, jobs, services, visitors and activities

Economy
Support access to jobs, shopping, tourist, and other economic activity centers/opportunities

Revitalization
Stimulate sustainable development and revitalization of areas near stations

Minimize Impacts
Minimize negative impacts of rail transit on neighborhoods, adjacent properties, and the environment (traffic, noise, parking, construction, etc)

Safety
Provide safety measures to avoid conflicts between rail transit vehicles & cars, bicyclists or pedestrians

Consistency
Ensure consistency with local, regional, state, and federal plans and policies

Cost Effectiveness

GOAL 3: Develop a rail system that is cost effective and financially feasible

Cost to Benefit (Cost Effectiveness)
Develop a rail system that is cost effective

Cost per Rider
Generate sufficient ridership to minimize per rider and system costs

Existing Resources
Optimize use of existing infrastructure

Financially Feasible
Develop a system that keeps operating and capital costs to a minimum

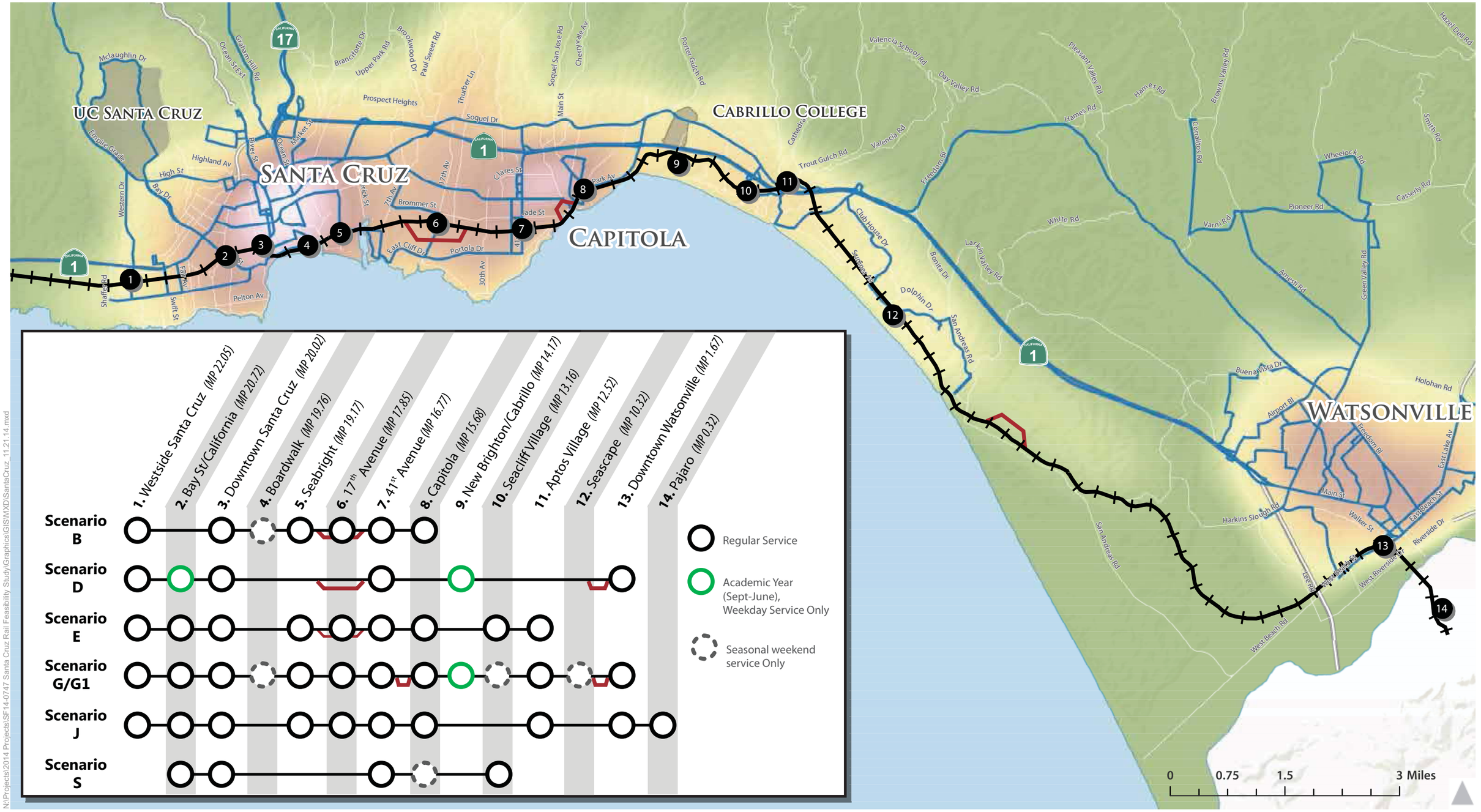
Funding Options
Identify service options that are competitive for local, state, and federal funding sources

Efficiencies
Maximize operational efficiencies, build partnerships with public and private agencies, groups, and interests

- Limited Service, Santa Cruz ←→ Capitola: Weekday and weekend service limited to primary stations[4] and a few key visitor destinations (Scenario B)
- Peak Express Service, Santa Cruz ←→ Watsonville: Service hours limited to peak weekday commute hours (Scenario D)
- Local Service, Santa Cruz ←→ Aptos: Weekday and weekend service to primary and secondary stations, including service near Cabrillo College (Scenario E)
- Expanded Local Service, Santa Cruz ←→ Watsonville: Weekday and weekend service to primary and secondary stations expanded to Watsonville (Scenario G)
- Santa Cruz ←→ Watsonville: Weekday and weekend service to primary and secondary stations utilizing FRA-compliant locomotives (Scenario G1)
- Regional Rail Connector, Santa Cruz ←→ Pajaro: Service connecting to future Capitol Corridor/Amtrak and Coast Daylight service at Pajaro to test potential for ridership demand with regional rail accessibility (Scenario J)
- Limited Starter Service, Santa Cruz/Bay St ←→ Seacliff Village: Very limited weekday and weekend service hours and station stops utilizing locomotives. (Scenario S)

While this represents a range of rail transit service options, the locations where service starts and ends (route/termini), the number and location of station stops, service days and times, vehicle types, passing sidings, station design and other factors could ultimately reflect a scalable hybrid of these scenarios and could change over time. For the purpose of estimating costs and travel times, light DMU vehicles[5] were analyzed for most scenarios. For Scenario G1, new locomotive-powered vehicles were analyzed. Scenario S included leased locomotive-powered vehicles, rather than purchasing new vehicles. If rail transit service is implemented, the range of transit vehicle types available would be analyzed during the procurement process.

[4] Potential station locations anticipated to have higher ridership potential were identified as "primary stations". "Secondary stations" also have promising ridership potential, but not as high as primary stations. Other potential station locations were screened out for this analysis; however could ultimately be developed, in-step with growth in ridership potential (jobs, housing, infrastructure development or transit connections) or be utilized at special time periods (such as seasonal weekends or for special events).
[5] Light DMU: Diesel-electric Multiple Unit is a light, self-propelled tram-like rail unit consisting of 2 or more rail cars.



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Potential Station

Santa Cruz Branch Line

Santa Cruz Metro Transit Routes

Transit Likelihood: High — Low

Passing Sidings *

SCCRTC RAIL STUDY

* *Varies by scenario.*

Figure ES-3
Santa Cruz Rail Feasibility Project Service Scenarios

November 2015

TECHNICAL ANALYSIS: RIDERSHIP AND COSTS

Technical analysis of the scenarios described above included ridership forecasts, capital cost estimates, as well as operations and maintenance cost estimates.

Ridership: Fehr & Peers conducted a ridership modeling analysis to determine potential ridership demand at each station under each scenario. Based on existing travel and land use patterns, population and employment levels, as well as projected transit travel times, the ridership models found that in the base year[6] up to 1.65 million passengers per year (5,500 daily weekday boardings) would ride rail transit between Santa Cruz and Watsonville in Scenario G, which serves the greatest number of stations with the most frequency. This represents an increase in transit ridership, which currently is approximate 5.7 million on METRO's bus system.[7] In 2035, rail transit ridership could increase for this same service to over two million annual boardings. For the base year, the scenario with rail transit limited to morning and evening peak commute hours, serving significantly fewer stations had the lowest ridership estimate of 1,100 per day (287,500 annual boardings in Scenario D).

Capital Costs: In order to assess the capital needs of each scenario, consultants from RailPros conducted an assessment of existing infrastructure conditions and identified upfront and long-term cost estimates for the track, signal systems, crossings, stations, vehicles, and other components. In some instances, to minimize construction impacts once service is initiated and to reduce maintenance needs, full replacement and reconstruction of many rail elements is recommended and included in the cost estimates; though it is possible to initiate rail transit service before making all of the upgrades identified. The initial infrastructure construction costs (capital outlay) range from a low of $23 million (Scenario B: Capitola to/from Santa Cruz) to a high of approximately $48 million (Scenario G1: Watsonville to/from Santa Cruz using new locomotives). In addition to the base (or "raw") construction estimates, the study assumes an additional 30 percent for support costs (includes preliminary design and environmental review, preparing construction documents, permitting, construction management, etc.) and a 30 percent contingency. Not surprisingly, the capital cost is closely related to the amount of the rail line that is utilized for rail transit service, the number of stations, and the number of rail vehicles. The cost estimates are conceptual, based on recent unit costs on other rail projects in the California and the nation, as no engineering was performed for this feasibility-level study. Actual capital costs could range between 70 percent and 130 percent of these estimates, with more precise cost estimates only available following detailed surveying and engineering analysis.

[6] "Base year" is from 2010 AMBAG Regional Travel Demand Model information.
[7] Santa Cruz METRO *June 2015 Monthly Ridership Summary* report.

Operations and Maintenance: LTK Engineering Services developed travel time forecasts, identified where new passing tracks (sidings) may be required to allow rail transit vehicles traveling in opposite directions to pass, and developed annual operating and maintenance cost estimates. This analysis found that with the capital upgrades identified, including new passing sidings, it would take either 36 or 41 minutes for rail transit vehicles to travel between Santa Cruz and Watsonville, depending on the number of station stops (6 or 10, respectively). Service between the Westside of Santa Cruz to Capitola Village would take 16 minutes. On average, rail vehicles would travel at 25-35 miles per hour (mph).

Annual Operating & Maintenance (O&M) costs were estimated for each of the operating scenarios under consideration. The annual O&M estimates are based on real cost data obtained from operating rail transit lines with similar service characteristics.

Cost data for ongoing annual costs for rail systems include:

- Rail vehicle operating costs – cost of operator salaries, dispatching, fuel, etc.
- Rail vehicle maintenance costs
- Ongoing rail right-of-way and station maintenance
- Administrative costs (including security, scheduling. marketing, and other administrative activities)

The rail service operating costs were derived by multiplying the number of annual hours that rail equipment would be in service for each scenario by the average hourly cost of providing service for six comparable rail transit systems. The rail vehicle maintenance costs were derived by multiplying the number of vehicles required for each scenario by an average maintenance cost per vehicle for comparable rail systems. Administrative costs represent an average of 38 percent of the combined total of annual rail operating and maintenance costs for peer systems. A 20 percent contingency was then added to the sum of these three cost sectors, resulting in the total O&M cost estimate for each scenario. The operating costs for scenarios utilizing locomotives pulling coaches (Scenarios G1 and S) are higher due to the additional vehicles, heavier weight and increased fuel consumption.

Table ES-1 provides a summary of the ridership, travel time, and cost estimates for each scenario analyzed. Preliminary capital and operating costs for Scenario S were provided by Iowa Pacific and then adjusted for consistency regarding contingency and support costs, Positive Train Control, and labor rates.

TABLE ES-1: SUMMARY OF TECHNICAL ANALYSIS

Metric	Scenario B SC - Capitola	Scenario D Peak: SC-Wats	Scenario E SC-Aptos	Scenario G SC-Wats	Senario G1 – FRA SC-Wats	Scenario J SC-Pajaro	Scenario S - FRA SC/Bay St -Seacliff
Track Miles	6.6	20.5	9.5	20.5	20.5	21.8	7.6
One-way Travel Time	16 min	36 min	23 min	41 min	41 min	43 min	25 min
Operating Hours and Frequency	All day, every 30 minutes	Peak hours Mon-Fri, every 30 minutes	All day, every 30 minutes	All day, every 30 minutes	All day, every 30 minutes	Match regional train schedules; 6 RT/day	Reduced hours; limited mid-day & weekends
Trips per weekday (both directions)	60	24	60	60	60	12	36
Number of vehicles (rail vehicle sets)	3	4	3	5	5	2	3 (leased)
Number of stations (weekday)	6	6	9	10	10	10	4 + 1 seasonal
Operating hours per year (revenue rail transit service hours)	9,800	4,313	9,800	13,591	13,591	5,024	5,513
Annual service miles (revenue miles)	145,000	136,000	204,000	400,000	400,000	56,000	91,500
Annual Boardings Low Estimate (Base Year)	846,000	287,500	1,413,000	1,509,000	1,509,000	528,000	420,000
Annual Boardings High Estimate (2035)	1,287,000	405,000	1,926,000	2,031,000	2,031,000	741,000	660,000
Daily weekday boardings Low Estimate (Base Year)	2,800	1,100	4,700	5,000	5,000	1,750	1,400
Daily weekday boardings High Estimate (2035)	4,300	1,600	6,400	6,800	6,800	2,500	2,200
Annual O&M cost *(operations, vehicle maintenance, general admin, & contingency)*	$7M	$3.8M	$7M	$9.9M	$14M	$3.7M	$5.4M

TABLE ES-1: SUMMARY OF TECHNICAL ANALYSIS

Metric	Scenario B SC - Capitola	Scenario D Peak: SC-Wats	Scenario E SC-Aptos	Scenario G SC-Wats	Senario G1 – FRA SC-Wats	Scenario J SC-Pajaro	Scenario S - FRA SC/Bay St -Seacliff
Annualized Recurring Maintenance of Way	$705k	$1.5M	$845k	$1.5M	$1.8M	$1.6M	$445k
Average Annual Cost	$7.6M	$5.3M	$7.75M	$11M	$16M	$5.3M	$6M
Infrastructure Cost *(tracks, stations)*	$23M	$40M	$28M	$41M	$48M	$41M	$19.7M
Vehicles	$25.5M	$34M	$25.5M	$42.5M	$61.5M	$17M	$0 (lease)
Total Capital Outlay *(infrastructure+vehicles +30% contingency & 30% support)*	**$77M**	**$119M**	**$85M**	**$133M**	**$176M**	**$93M**	**$31.5M** *(vehicle lease in O&M)*
Total Capital Outlay per Mile	*$12M*	*$6M*	*$9M*	*$6.5M*	*$8.5M*	*$4M*	*$4M*

Source: Fehr & Peers, LTK, RailPros, 2015, Scenario S – Iowa Pacific, adjusted for consistency
Notes: Costs shown in $2014 dollars. SC =Santa Cruz, Cap = Capitola, W = Watsonville, FRA = Federal Railroad Administration; Infrastructure (or "raw") costs include capital construction costs such as tracks, stations, and sidings.

FUNDING ASSESSMENT

A core component for demonstrating feasibility for any transit project is the ability to secure adequate funding for project implementation (planning, environmental review, design, procurement and construction) and for ongoing system operations and maintenance. Initiation of new rail transit service in Santa Cruz County would require a combination of federal and/or state capital funding, as well as new revenues for ongoing operations. This study includes an inventory of existing and potential new federal, state, regional, local, and private funding sources and identifies funding strategies, sources and mechanisms that are most reasonable to pursue. The study also evaluates a range of passenger fare levels that could optimize revenues without significantly impacting ridership levels.

For the purposes of this study it was assumed that funding sources used to fund the existing bus transit system would not be redirected to fund rail transit. The study found that a successful funding strategy for any scenario would need to include a new countywide sales tax with some portion dedicated to rail and some combination of the following sources – U.S. Department of Transportation TIGER grant program, Federal Transit Administration (FTA) §5309 Fixed Guideway Small Starts grant program, and/or California Cap and Trade program funds. Additional potential sources of revenue include regional shares of state

and federal funds (such as the State Transportation Improvement Program), federal Economic Development Administration public works grants, FTA §20005(b) Transit Oriented Development (TOD) grants, developer fees, Smart Cities, Sustainable Communities, Healthy Neighborhoods and other land use or planning type grants; as well as public-private partnerships (P3).

Taking into consideration the universe of sources that may be available for capital and ongoing operations, higher cost scenarios could be more difficult to fund based on the current funding environment.

OTHER EVALUATION MEASURES/FEASIBILITY

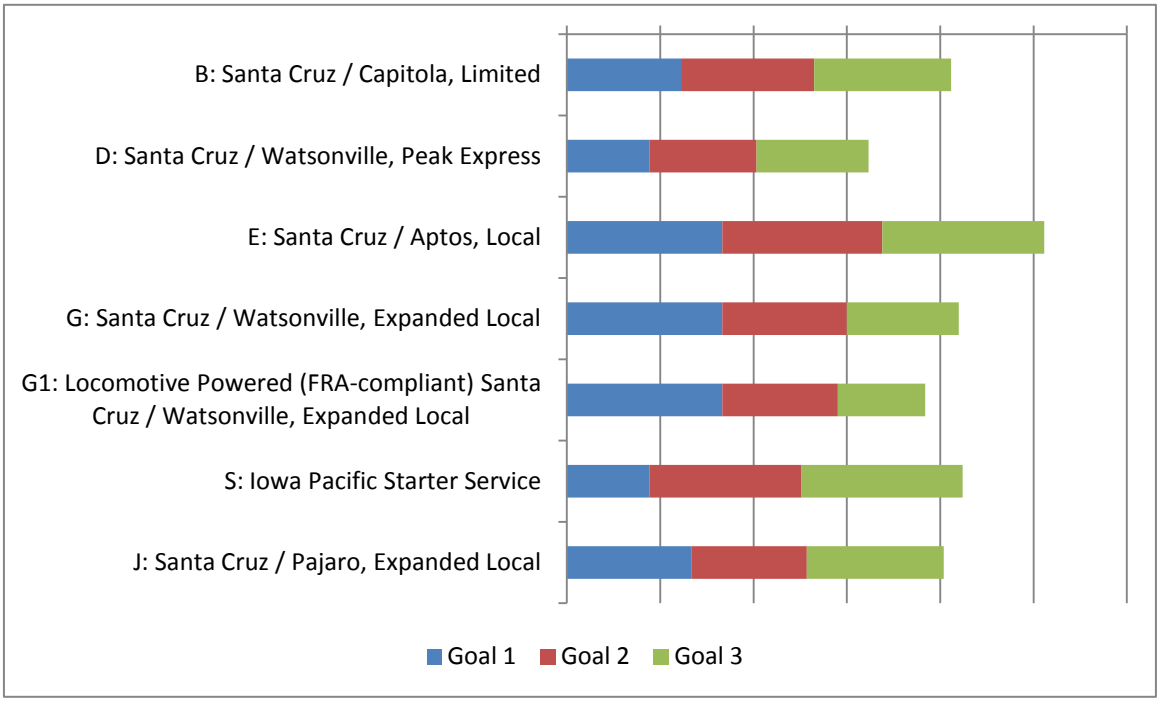
In addition to the base metrics of ridership and cost described above, an evaluation framework was developed to evaluate rail transit service along the Santa Cruz Branch Rail Line in the context of the goals and objectives identified by the community for this study. Each of the seven scenarios was comparatively evaluated against several quantifiable metrics. These evaluation measures included criteria to measure: transit operations and performance, connectivity and quality of access, livability and economic vitality, neighborhood and environmental impacts, impacts of construction on homes and businesses, capital and operating costs, and funding competiveness. Specifically, data for each of the following measures were considered:

- Travel time Competitiveness
- Boardings (ridership)
- Disadvantaged Communities/Equity
- Household Connectivity
- Bicycle/Pedestrian Connectivity
- Transit Connectivity
- Economic Development
- Job Access
- Traffic Impacts
- Environmental Benefits
- Noise & Vibration
- Parking Constraints
- Minimize Impacts to Homes/Local Businesses
- Capital Cost
- Operating and Maintenance (O&M) Costs
- Annualized Lifecycle Cost per Trip
- Funding Potential

Comparing the seven service scenarios based on the goals and evaluation measures (see Figure ES-4 and Section 7), Scenario E (local service between Santa Cruz and Aptos Village) scored the highest, followed by Scenario G (local service between Santa Cruz and Watsonville) and Scenario S (limited service from Santa Cruz to Seacliff). Scenario D (Watsonville/Santa Cruz Peak Express), which only operates during peak commute hours, has the lowest ridership and scored the lowest.

Figure ES-4: Evaluation of Scenarios

Advancement of project goals



GOAL 1 - Transportation Alternatives/Choices: Provide a convenient, competitive and accessible, travel option

GOAL 2 – Sustainability: Enhance communities & the environment, support economic vitality

GOAL 3 - Cost Effectiveness: Develop a rail system that is cost effective and financially feasible

Source: Fehr & Peers, 2015. Reflects equal weighting for each measure.

SERVICE PARAMETERS

This study evaluates the feasibility of implementing rail transit service along the Santa Cruz Branch Rail Line based on how well the range of potential service scenarios advance goals and objectives identified by the community. The technical analysis and evaluation of the service scenarios found that phased implementation of rail service within Santa Cruz County is feasible.

The service options are feasible from a constructability and operational standpoint and all options would improve accessibility and mobility along the underutilized rail corridor. Section 8 describes possible parameters and considerations for introducing rail transit service between Santa Cruz and Watsonville; the ultimate decision to pursue and implement rail transit service will be based on key decision factors.

Key decision factors include: available funding, ability to achieve community goals, and customer needs. Feasibility will rely heavily on securing a new sales tax with a portion of the funds dedicated for ongoing operation of rail transit service and which would provide an attractive match to federal and/or state grants for capital infrastructure. Additional information from the environmental analysis, market analysis, design engineering, and integrated system planning would also be used to make a final determination regarding what service alternative or hybrid to implement, if any.

IMPLEMENTATION STEPS

Before rail transit service could be initiated, several steps would need to be taken. Near-term (1-5 year) and mid-term (5-10 year) steps involved in transit project implementation include:

- Draft Environmental Studies and Conceptual Engineering –near-term.
- Preferred Alternative Selection and Preliminary Engineering –near-term.
- Final Design, Construction Documents, and Funding – near-term
- Right-of-Way (ROW) Acquisition for stations and sidings, if needed – near-term
- Construction Contractor Procurement – mid-term
- Construction – mid-term
- Vehicle Procurement – mid-term
- Opening – mid-term

Other considerations that would need to be addressed prior to implementation include:

- Integration/coordination with freight service
- Regulatory requirements – FRA and/or CPUC
- Governance structure for agency operating rail service
- Service operator
- Coordination with Santa Cruz METRO bus service

- Ridership forecasting using FTA Simplified Trips-on-Project Software (STOPs) methodology required for federal funding
- Funding strategies, competitiveness and procurement

PUBLIC INVOLVEMENT

Broad community participation helped shape this study, with extensive input gathered at several stages of study development. At the project outset in 2014, 2,000 members of the community provided input on study goals and objectives, evaluation measures, service scenarios, station locations, and operating hours. Through the Draft Study, the community considered the results of ridership, revenue and cost estimates and actively engaged in the discussion about the feasibility of future rail transit service.

Information about the study was provided at public meetings, workshops, and open houses, meetings with community organizations and public agencies, at community events (including farmers markets and First Friday), posted on a project-specific page on the RTC website (www.sccrtc.org), distributed through the RTC's eNews email group (http://www.sccrtc.org/about/esubscriptions/), and via dozens of media articles.

During the 70 day review period for the Draft Study in 2015, the RTC received over 400 written comments and over 2,600 people took a survey about the findings of the analysis. This final document provides clarification and additional information on topics raised by members of the public, Commissioners, RTC Committees, interest groups and partner agencies. Appendix A contains more information about public outreach and input, as well as a summary of comment topics and responses. It is important to note that this is a feasibility study, and answers to some questions would not be available until more detailed analysis is done through environmental, design engineering, or system planning stages.

The RTC received the final Rail Transit Feasibility Study at its December 3, 2015 meeting.

STUDY SCOPE LIMITATIONS

The scope of this study is limited to a preliminary analysis of rail transit options along the publicly-owned Santa Cruz Branch Rail Line. This is not a detailed service or implementation plan. If the RTC decides to move forward with implementing service, environmental review and engineering level design work would be initiated to provide more detailed analysis of potential environmental impacts, station locations, parking needs, and integration with the planned Monterey Bay Sanctuary Scenic Trail (MBSST or "rail trail"). Rail transit service hours, schedules, and frequency would be evaluated and coordinated with METRO buses and established with public input during service planning. Additionally, evaluation of

multimodal transportation improvements along the heavily-traveled Santa Cruz to Aptos corridor is also in process as part of the Santa Cruz County Unified Corridors Plan. Starting with development of a multimodal county level travel demand model, the Unified Corridors Plan will analyze transportation investments on the parallel routes of Highway 1, Soquel Avenue/Drive and the Santa Cruz Branch Rail Line to identify the combination of investments that most effectively move people and provide transportation choices.

The RTC recognizes that there are also other options for the rail right-of-way that have been analyzed in the past or could be analyzed in the future. This includes other rail transit service – such as recreational rail service or intercity rail service to the San Francisco Bay Area or Monterey County; or expanded freight service. Some members of the community have also expressed interest in using the Santa Cruz Branch Rail Line for bus rapid transit (BRT) or personal rapid transit (PRT). Expanding rail transit service from downtown Santa Cruz to Harvey West business area near the Highway 1/Highway 9 intersection or up to Felton and other parts of San Lorenzo Valley has been suggested. Coordination with Big Trees/Roaring Camp to extend service from the downtown Santa Cruz wye toward Harvey West and the San Lorenzo Valley could take place in the future. Many members of the community have also requested that rail transit service be provided from Santa Cruz to San Jose over the Santa Cruz Mountains. This study does not preclude future analysis of these and other options, but they were outside of the scope of this study.