CHAPTER 6 Transportation Investments

Identifying Needs

The Action Element of the RTP is a list of programs, projects and actions needed to operate, maintain, and improve the transportation system in Santa Cruz County (Appendix E - Project List). The cost to implement all of these projects is $10 billion through 2045. The RTP project list strives to assess the full cost to operate, maintain, and improve all modes of the transportation system in Santa Cruz County. The project list encompasses nearly 650 projects aimed at meeting the transportation needs of the community through 2045.

The Action Element includes:

- Highway, local road, bicycle, pedestrian, transit, airport, goods movement, transportation demand management (e.g. carpool and traveler information), and transportation system management (e.g. signal synchronization, transit signal priority) projects;
- Operation and maintenance costs of existing transportation facilities – such as bridges, pavement, sidewalks, and public buses;
- Projects local agencies identified through their own planning processes, including transportation studies, General Plans, and capital improvement programs;
- Projects identified by members of the public and public interest groups;
- Projects recommended by RTC advisory committees;
- Projects resulting from a Complete Streets Needs Assessment, which identified projects that would increase safety and promote greater use of active transportation (biking, walking, transit) near major activity centers.

Prioritizing Projects

The transportation needs identified in the Action Element far outweigh revenues available from 2020 through 2045. As discussed in the financial section of this plan, only $5.235 billion in local, state, and federal funds is reasonably expected to be available through 2045, but $10 billion is needed to fully fund all the projects identified in the RTP. An additional $150 million per year in new taxes, fees, and other

revenues beyond what was identified in the Financial Element (Chapter 5) would be required to deliver all of the transportation projects identified in Appendix E. Given the significant gap between funding needs and projected revenues, the projects listed in the RTP were divided into two groups:

1. ***Within Projected Funds ("Constrained") Projects*** —Priority projects that could be funded over the next 25 years with reasonably foreseeable transportation revenues including dedicated and already programmed funds ($5.235 billion).

2. ***Need New Funds ("Unconstrained") Projects*** —Projects that cannot be implemented over the next 25 years unless there are significant changes in the amount of local, state, and federal funding available for transportation.

Within Projected Funds (Constrained) Project List

The 2045 RTP is a minor update to the 2040 RTP. The projects on the constrained list for the 2045 RTP reflect the work performed by the RTC utilizing the Sustainable Transportation and Analysis Rating System (STARS) framework in developing the project list for the 2045 RTP. The STARS sustainability framework served as a tool to screen projects for their ability to provide the greatest benefit for our region from limited transportation dollars. RTC also worked closely with AMBAG on a scenario planning process to identify priority projects given financial constraints. The AMBAG scenario planning process supported the development of the state-mandated Sustainable Communities Strategy (SCS) to reduce greenhouse gas emissions as forecasted in the Metropolitan Transportation Plan (MTP). The preferred scenario defines the transportation projects that are on the constrained project list in the RTP (Appendix E) and in the MTP/SCS.

Input was solicited from project sponsors, public, public interest groups and RTC committees in developing the final project list that identifies the projects as either constrained and/or unconstrained. The within projected funds or "constrained" project list consists of over 360 projects that could be implemented over the 25-year timeframe and the need new funds or "unconstrained" list includes nearly 290 projects that will need additional funds in order to be implemented. Approximately 150 projects are identified as both constrained and unconstrained. For these projects, only a portion of a project could be funded over the next 25 years, and it will be necessary to secure and/or generate additional funding sources (beyond those identified in Appendix D) to fulfill all the needs. For some capital projects, if new funds do not become available, a project may have to be scaled back and only a portion of the project built.

Summary of Constrained Projects

In order to meet the goals and targets of the 2045 RTP, both short term and long-term strategies need to focus on developing a multimodal transportation system that provides safe choices for how people travel. The following sections provide a summary of how the transportation investments that have been prioritized for the 2045 RTP advance the sustainability goals and policies identified for this RTP.

Goal 1 – Access and Environment

One of the goals of the RTP is to improve people's access to daily needs in ways that improve health, reduce pollution and improve the economy. The constrained project list addresses this goal through a variety of projects.

Highway. The RTC and Caltrans have made several improvements to the Highway 1 Corridor over the last decade and the 2045 RTP continues to include funding for Highway 1 improvements. The 2045 RTP includes three new auxiliary lanes projects (Soquel to 41st Ave, Bay/Porter to Park Ave, and Park Ave to State Park Drive), funded by Measure D. An auxiliary lane connects an on-ramp with the next off-ramp, thereby extending the weaving and merging distance between the ramps and improving traffic flow by allowing greater separation between vehicles entering and exiting the freeway from mainline traffic. The auxiliary lanes are expected to ease congestion for the morning commute and increase the efficiency of the highway (the number of vehicles served during the peak period). Highway congestion leads to traffic diverting to local streets and neighborhoods. The northbound auxiliary lane from San Andreas Rd to Freedom Blvd is also included on the constrained project list. The auxiliary lanes projects are stand alone projects but along with interchange reconstruction are designed to provide the additional width necessary for high occupancy vehicle lanes in the future.

High occupancy vehicle (HOV) lanes on Highway 1 are identified as a need and are listed on the full project list for the 2045 RTP. However, the cost of completing the entire HOV lanes project on Highway 1 (approximately $650 million) is beyond the amount of discretionary funding that can be used for highway projects in our county through 2045. Additional Highway 1 Corridor projects, including several new interchanges, that would need to be designed and constructed in advance of HOV lanes are identified in the unconstrained project list as needs that are not currently financially feasible with revenues projected through 2045. This is especially true given the need to maintain existing transportation facilities, including local roadways. If other revenue becomes available, it is possible that more of the Highway 1 Corridor projects on the project list could be implemented to move closer to adding HOV lanes to Highway 1. Nine percent of the projected funds are designated for highway improvements and 13% for highway maintenance.

Transportation System Management. There is a broad array of strategies to better use capacity of the existing transportation infrastructure. These techniques improve the operation of the transportation system; reduce congestion, travel times, and fuel lost to traffic delays; and provide more consistent travel times day to day. RTP projects that support the goals of greater efficiency include:

- **Incident management**. Collisions and other incidents can cause travel times to be unpredictable and significantly prolonged. A variety of technologies and programs included in the RTP help identify, respond to, and clear incidents, including Freeway Service Patrol, call boxes, closed-circuit TV cameras, and traffic management centers.

- **Arterial management**. Coordinated signal timing, separate queues, and priority at signals for high occupant vehicles/buses, roundabouts and additional intersection improvements provide for increased traffic flow and have been prioritized in the 2045 RTP.

Transit Efficiencies and Improvements. Santa Cruz Metropolitan Transit District (METRO) runs an extensive public transit system. Thirty-seven (37%) percent of the constrained RTP project list is designated for transit (Figure 6.2), with a significant portion of those funds coming from a local half-cent sales tax approved by Santa Cruz County voters in 1978. The passage of Measure D in 2016 provides the Metro with 16% of the Measure D half-cent sales tax funds over a 30-year period. This RTP includes projects focused on increasing transit ridership. Strategies include:

- **Reduced Travel Times:** Improve travel times through reduced headways, transit signal priority, and transit queue jumps.

- **Increased Levels of Service:** Increased frequency on high ridership and express service routes have been prioritized on the 2045 project list.

- **Passenger amenities:** Bus stop improvements totaling $500,000 are prioritized in the RTP. These improvements include shelters, benches, and lighting. Upgrades to park-and-ride lots are also prioritized in the RTP.

- **Bus and Paratransit vehicle replacements**: Bus and van replacement totaling over $80 million are prioritized in the 2045 RTP

- **Access to Transit:** Most bus riders walk to bus stops. In order to increase ridership, this RTP invests in new sidewalks, curb ramps, and improved pedestrian crossings that provide safer and more appealing access to transit.

- **Traveler Information:** Real time transit schedule information can be provided online, via mobile applications, and at bus stops if the infrastructure is in place. This plan calls for funding equipment to provide real time transit schedule information.

Rail. In 2012, the RTC purchased the Santa Cruz Branch Rail Line right-of-way. Measure D provides eight percent of funds for the rail right of way which includes environmental and economic analysis of future potential use to better serve Santa Cruz County residents and visitors.

Active Transportation. This RTP prioritizes numerous projects that encourage walking, bicycling, and taking transit as an alternative to driving especially near major activity centers. Approximately 12% of the constrained RTP project list is designated for pedestrian and bicycling improvements and programs

(Figure 6.2). The RTP prioritizes projects that fill gaps in the bicycle network and provide separated bicycle and pedestrian paths to promote new riders and encourage physical activity. These include two new bicycle/pedestrian bridges over Highway 1 that will provide improved access over the highway.

Funding prioritized for the Monterey Bay Sanctuary Scenic Trail (MBSST), the Pajaro River Levee Trail and the San Lorenzo Valley Trail are examples of this commitment to active transportation. Investments in new bicycle lanes, bicycle parking, bike-accessible transit, and bicycle education programs are also included. Traffic calming measures in business districts and neighborhoods can make walking and bicycling more attractive by reducing automobile speeds. Several projects in the RTP include landscaping, bulb-outs, speed bumps and other traffic calming measures. The 2045 RTP strives to increase the number of people who are using active forms of transportation through providing greater connectivity, higher quality facilities, education and encouragement programs, and evaluation of progress over time.

Transportation Demand Management. Transportation demand management (TDM) is a general term for strategies that increase transportation system efficiency through a reduction in demand, especially during peak periods. TDM strategies can reduce automobile use by making alternatives more desirable through incentives or make automobile use less desirable through disincentives such as increased travel costs.

The RTP includes several TDM strategies that increase the efficiency of existing transportation facilities by promoting carpooling, vanpooling, and use of transit, as well as increasing bicycling and walking. Rideshare matching services and individualized assistance to employers, schools, and residents facilitate use of alternatives to driving alone. TDM services that promote employers to allow a flexible work schedule or allow employees to telecommute will reduce demand during the peak hours. Providing easy access to up-to-date information about transportation options is a key component of TDM. Cruz511 Traveler Information will provide people with information on roadway conditions as well as alternative transportation options. Motorists may change their route, when they travel, or mode to avoid congestion.

Goods Movement. Goods movement benefits from reduced congestion and predictable travel times. Projects to improve traffic flow and travel time reliability of our roadways are being prioritized in the plan including Highway 1 auxiliary lane projects, Freeway Service Patrol, intersection improvements, signal synchronization and 511 Traveler Information. Prioritization of active transportation projects may also reduce traffic congestion in key destination areas as people shift from driving to biking and walking.

Goal 2 – Improve Safety

Ensuring the safety of people using the transportation system is a key goal of the RTP. Safety can be improved through enforcement of traffic laws, motorist education of rules, facility design and emergency response. The 2045 RTP continues investing in programs that increase the safety of the transportation system in Santa Cruz County. The 2045 RTP continues investing in the following programs:

Motorist Aid. The RTP prioritizes programs that help remove stranded motorists from the highway to reduce the risk of collisions. The Freeway Service Patrol, which operates tow trucks that clear incidents and tow vehicles off segments of Highway 1 and Highway 17, reduce the potential for secondary collisions. The call boxes located on state highways can be used by motorists to seek help.

Enforcement. The number of injuries and fatalities can be reduced by enforcement of traffic laws on our roadways to reduce unsafe driving practices. The RTP continues to fund the California Highway Patrol to provide extra enforcement on Highway 17 and bus-on-shoulder enforcement on Highway 1.

Education. The RTP continues to invest in bicycle and walking safety education programs that result in increased use of safety equipment (helmets and lighting), increase predictable and responsible behavior and raise awareness about risk factors to decrease the risk and severity of collisions. The RTC partners with a number of agencies to promote transportation safety to Santa Cruz County residents.

Safe Routes to School. The 2045 RTP invests in programs that construct or repair crosswalks, sidewalks, trails and traffic calming measures that enable children to safely walk and bike to school.

Traffic Calming. There are a number of traffic calming projects that are prioritized in the RTP that will reduce the speed and volume of automobile traffic on local roads and thus can reduce the likelihood and severity of collisions.

Highway. The RTP invests in four Highway 1 auxiliary lanes projects that will reduce opportunities for conflicts by supplying longer distances for vehicles to merge in and out of the through lanes.

Bicycle and Pedestrian Facilities. The RTP prioritizes projects that will expand the network of sidewalks, bike lanes, bike treatments and multiuse trails which separates active transportation modes from motor vehicles thereby reducing opportunities for collisions. Intersection improvements prioritized in the RTP, with particular attention to bicycle and pedestrian movements and ADA accessibility, will help to reduce incidents at intersections. Nationwide, roughly 50% of the serious injury collisions and 21% of the fatal collisions occur at intersections.[1]

Security/Emergency Services. Transportation systems can be greatly impacted by natural disasters or security incidents**.** Transportation systems are also a critical part of the response effort by connecting law enforcement and safety responders to the incident site and handling the public's transportation needs in response to the incident. Consistent with the California Strategic Highway Safety Plan and emergency relief and disaster preparedness plans, the 2045 RTP continues to invest in projects that provide security and emergency services. Surveillance and communication are key components to facilitating effective response and recovery efforts. Changeable message signs and CCTV cameras on the highways provide real time incident and traffic operation information. Cameras and security lighting at transit centers and

bus stops are part of METRO's ongoing operations. A 511 Traveler Information System provides a centralized location to communicate travel conditions during an emergency. Additionally, the transit system can play an important role in assisting the public during times of emergency by helping to provide transport out of or around affected areas.

Goal 3 - Maintain the Existing Transportation System and Provide Access Equitably

System Maintenance. The cost to maintain our existing transportation system is accelerating as the backlog of roads in disrepair keeps increasing. This is due primarily to funding shortfalls for maintenance over the last many years as well as higher costs associated with maintaining an aging system. As shown in Figure 6.1, the cost to fix roadways increases exponentially as a roadway deteriorates. Note the cost difference per square yard (SY) for sealing versus overlays versus reconstruction. For that reason, it is oftentimes more cost effective to regularly repair some roadways that are in fair condition, rather than to rebuild roadways with severe deterioration. The longer there is a delay in maintenance of our streets and roads, the rate of deterioration accelerates, and the greater the future maintenance costs. Preserving the existing infrastructure is a key focus of this RTP. Local jurisdictions and Caltrans have developed Pavement Management Systems (PMS) to spread funding for maintenance as far as possible.

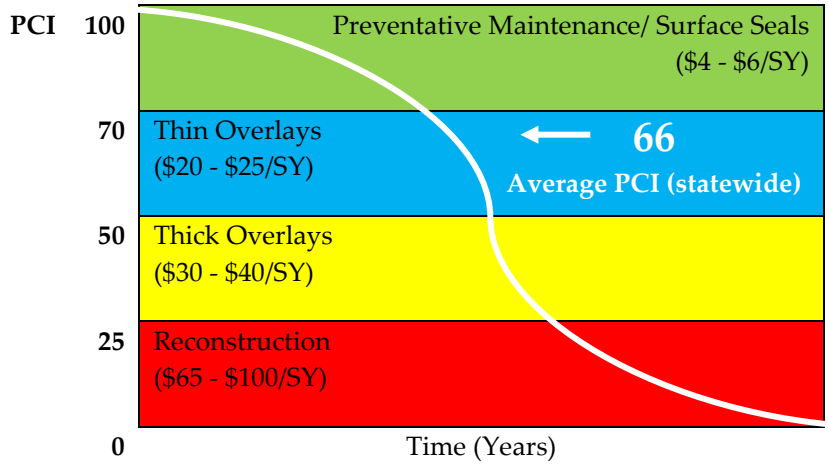

Figure 6.1 – Cost of Road Maintenance

Source: 2020 California Statewide Local Streets and Roads Needs Assessment[2]

Highway Maintenance. The 2045 RTP also includes Caltrans State Highway Operation and Protection Program (SHOPP) projects that provide operational improvements, address collision reduction mandates, and preserve the current state highway system.

Maintenance of current transit infrastructure: The transit system needs consistent funding for maintaining the system. Buses need to be replaced; transit centers updated; bus shelters, service vehicles and operations facilities need to be maintained. Fleet maintenance, bus replacements, physical plant upgrade, and transit center renovations have all been partially funded in the RTP.

Equity. The RTP project list has been developed to address the transportation needs of the entire community, and attempts to ensure that no one community bears more of the benefits or burdens of transportation investments than any other. The 2045 RTP accomplishes this by soliciting broad public input, building on strong community-based partnerships, and identifying projects that support an integrated and multi-modal system that improves mobility and access for all communities in the region.

Fund Distribution

A breakdown of project costs by transportation mode for projects listed on the constrained list is shown in Figure 6.2. Many projects included in the constrained list are multimodal. For example, a project on a local road may include roadway repairs, new bicycle lanes, new sidewalks, and intersection improvements and thus funds for these projects will be distributed amongst the various modes.

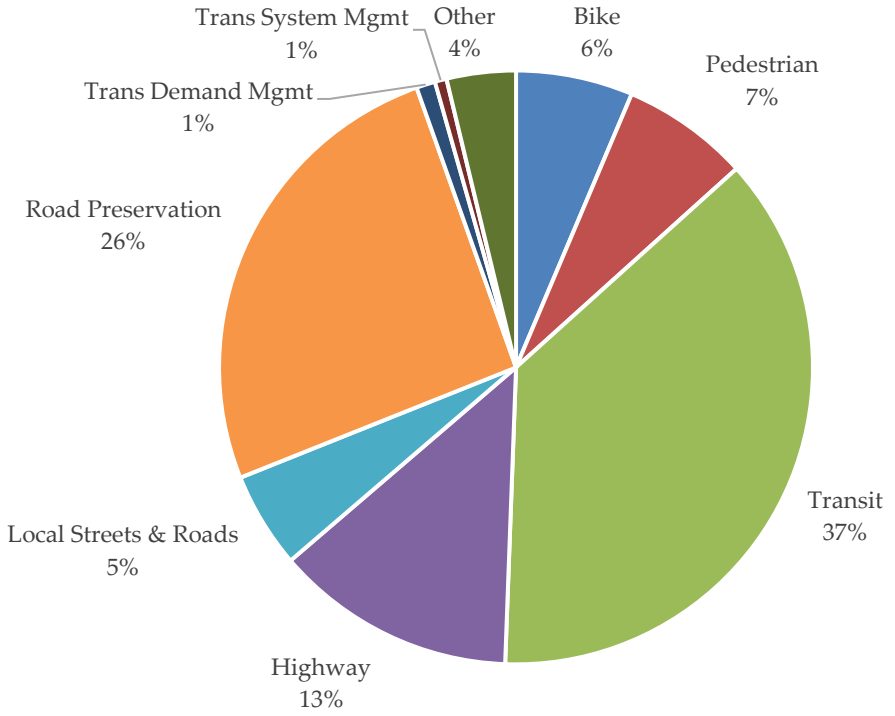

Figure 6.2 – $5.235 Billion Fund Distribution by Mode
Note: Dedicated and Discretionary Funds
Source: Santa Cruz County Regional Transportation Commission

The Need New Funds (Unconstrained) Project List

While many projects can be funded within the revenues projected for the next 25 years, there are many proposed projects which still cannot be funded within projected revenues. Projects that "Need New Funds" (Appendix E – "Unconstrained" column) include projects that are not financially feasible through 2045, may be lower priority, have potentially significant environmental constraints, and/or do not

advance regional targets to the same level as other projects. It represents the next tier of projects and programs that could be pursued if new revenue sources are generated or become available to the region.

These additional roadway projects, public transit services, pedestrian and bicycle facilities and other projects that are important to both the public and local agencies but are feasible only if projected revenues are supplemented either through increased local taxes or other new local, state or federal funds.

Implementing the Investment Program

Together, the 2045 RTP's constrained and unconstrained projects reflect the wide range of transportation needs in Santa Cruz County and serve as the basis for investing future transportation funds. Development of the project list, however, is just the first step towards actual implementation of the projects, as the majority of the projects are not yet scheduled to receive funding. Figure 6.3 outlines the main steps that bring a transportation project through development, funding, and implementation. Project implementation can take from six months to 20 years, depending on the size and complexity of the project, the availability of funding, and whether or not the project is exempt from certain state and federal mandates. Often, a project is delayed during the environmental phase due to the need for several levels of federal and state agency approvals. In other cases, delays may be due to public concerns with a project.

Absence of reliable funding can create stops and starts during a project's development, which is particularly costly to transportation projects that require long lead times. A project may achieve a milestone only to find funding for the next phase has been postponed. Long lags between project phases can require project sponsors to redo costly studies to address updated conditions once funding for the subsequent phase becomes available. Reliable funding sources, as provided by Measure D, help to stabilize project costs.

Project Cost

Since most new projects must be shoe-horned into already built-up urban areas, it is not a simple or inexpensive proposition to add new highway lanes, widen city streets to add car or bicycle lanes and sidewalks, start new rail passenger service, or build new bus facilities. Additionally, project costs identified in the RTP are estimates. Once a project undergoes environmental review and final design, the project cost estimate will be updated and may differ significantly from that shown in a large scale planning document such as the RTP. For instance, the cost of implementing transportation projects is subject to fluctuations in the prices of oil, steel and cement. Project delays, environmental constraints, neighborhood opposition, and right-of-way needs can also increase costs and in some cases may even cause a funded project to be withdrawn. With limited funds available, project sponsors oftentimes are left with few options but to significantly scale back plans or to initiate environmental review and design work before construction funding is secured.

Building Transportation Projects

1. **Need** - Need for project identified by a public agency, member of the public, a private business, or a community group.

2. **Planning** - Project included in planning documents, such as the Regional Transportation Plan, State Highway Operation and Protection Program (SHOPP), General Plan, Climate Action Plan, and/or Capital Improvement Program. Public input is encouraged.

3. **Scope Defined** - Project sponsor prioritizes project and develops preliminary cost estimates and defines scope of project. For highway projects, a Project Initiation Document (such as a Project Study Report) is prepared by Caltrans or a local agency with Caltrans oversight to provide this information.

4. **Secure Funding** - Project sponsor seeks and secures funds for project. Project sponsors may approve local funds (e.g. general funds, gas taxes) in their annual budget, submit grant applications to other agencies for funds [e.g. RSTP (RTC), STIP (RTC and CTC), AB2766 (Air District), safety and bridge (Caltrans), etc], or seek voter approval for funds (e.g. sales tax measure, parcel fees). Projects approved for state or federal transportation funds are included in the Regional (RTIP), State (STIP), State Highway (SHOPP) and/or Federal Transportation Improvement Program. Public input is encouraged. Securing funding can take several years.

5. **Environmental Review and Preliminary Design** - Analysis to ensure consistency with local, regional and coastal plans/policies, identify environmental impacts and mitigation measures in accordance with state law (CEQA). Federally-funded projects must also undergo NEPA review. Public input is encouraged. Depending on the size and potential impacts of projects, environmental review and preliminary design can take 1 month to several years.

6. **Approvals** - Obtain approvals, agreements and/or permits from resource agencies. Approvals can take months to years.

7. **Final Design** - Development of final design, includes development of project specifications and estimates used by contractors to bid on a construction project. Design can take 1 to 3 years.

8. **Right of Way Acquisition** - Acquire rights of way and relocate utilities if needed. Acquisition can take months to 2 years.

9. **Construction** - Prepare and advertise construction contract, hire construction contractor and construct project. Construction can take months to 2 years.

Figure 6.3 – Typical Stages of Transportation Project Development

Source: Santa Cruz County Regional Transportation Commission

Funding Decisions

The 2045 RTP is an important tool for identifying the community's transportation priorities. The policy and project lists within the 2045 RTP will help guide future funding decisions. Projects will be given priority for funds that come under the RTC's discretion based on their ability to meet criteria established by the RTC. The analysis of project benefits will inform future funding discussion. This analysis will occur during grant cycles for new federal, state and local funds, which generally occur every two years, depending on the program. Projects eligible for other state, federal and regional funding not under the RTC's discretion, also need to be included in the 2045 RTP project list and/or consistent with the adopted Regional Transportation Plan goals and policies. Construction of planned projects on this list is not assured until actual funds are allocated.

Notes for Chapter 6

[1] "Intersection Safety," U.S. Department of Transportation, Federal Highway Administration, accessed January 2014, http://safety.fhwa.dot.gov/intersection/.

[2] "California Statewide Local Streets and Roads Needs Assessment," Save California Streets. (August, 2021). https://www.savecaliforniastreets.org/wp-content/uploads/2021/08/Statewide-2020-Local-Streets-and-Roads-Needs-Assessment-Final-8-4-21.pdf