Santa Cruz County Regional Transportation Commission's

Interagency Technical Advisory Committee (ITAC)

AGENDA
Thursday, November 16, 2017
1:30 p.m.

RTC Conference Room
1523 Pacific Avenue, Santa Cruz, CA

1. Call to Order

2. Introductions

3. Oral communications

   The Committee will receive oral communications during this time on items not on today's agenda. Presentations must be within the jurisdiction of the Committee, and may be limited in time at the discretion of the Chair. Committee members will not take action or respond immediately to any Oral Communications presented, but may choose to follow up at a later time, either individually, or on a subsequent Committee agenda.

4. Additions or deletions to consent and regular agendas

CONSENT AGENDA

All items appearing on the consent agenda are considered to be minor or non-controversial and will be acted upon in one motion if no member of the Committee or public wishes an item be removed and discussed on the regular agenda. Members of the Committee may raise questions, seek clarification or add directions to Consent Agenda items without removing the item from the Consent Agenda as long as no other committee member objects to the change.

5. Approve Minutes of the September 21, 2017 ITAC meeting – *page 3*

REGULAR AGENDA

6. Status of ongoing transportation projects, programs, studies and planning documents – Verbal updates from project sponsors

7. Caltrans Updates – *Page 6*
   a. Memorandum on the streamlined PEER process
   b. Santa Cruz County State Highway Operation and Protection Program (SHOPP) project updates

8. Cruz511 In Your Neighborhood – *Page 19*
   a. Staff report – Grace Blakeslee

9. 2018 Regional Transportation Improvement Program (RTIP): Preliminary Staff

Recommendations – *Page 21*
a. Staff report – Rachel Moriconi

10. Unified Corridor Investment Study Phase 1 Scenario Analysis – *Page 31*
    a. Staff report – Ginger Dykaar

11. Santa Cruz County Bicycle Signage Project – *Page 92*
    a. Staff report – Anais Schenk

12. Local, Regional, State, and Federal Transportation Funding Updates and Information Sharing
    a. Verbal updates – Rachel Moriconi and ITAC members
    b. News Release on 2017 Active Transportation Program (ATP) – *Page 125*

13. Next Meeting – The next ITAC meeting is scheduled for **December 21, 2017** in the SCCRTC Conference Room, 1523 Pacific Avenue, Santa Cruz, CA. Meetings will be canceled if there are no action items to be brought before the committee.

Adjourn

HOW TO REACH US: *Santa Cruz County Regional Transportation Commission*
1523 Pacific Avenue, Santa Cruz, CA 95060; phone: (831) 460-3200 / fax (831) 460-3215
email: info@sccrtc.org / website: www.sccrtc.org

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Santa Cruz County
Regional Transportation Commission
Interagency Technical Advisory Committee (ITAC)

DRAFT MINUTES

Thursday, September 21, 2017, 1:00 p.m. (special meeting time)
SCCRTC Conference Room
1523 Pacific Ave, Santa Cruz, CA

ITAC MEMBERS PRESENT
Claire Fliesler, Santa Cruz Planning
Murray Fontes, Watsonville Public Works and Planning Proxy
Sean Vienna, Association of Monterey Bay Area Governments (AMBAG)
Jessica Kahn, Scotts Valley Planning Proxy
Tom Hiltner, Santa Cruz Metropolitan Transit District (METRO)
Chris Schneiter, Santa Cruz Public Works
Steve Wiesner, County Public Works

RTC Staff Present: Rachel Moriconi, Anais Schenk

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1. **Call to Order:** Chair Fontes called the meeting to order.

2. **Introductions:** Self introductions were made.

3. **Oral Communications:** A certificate of appreciation was presented to Steve Wiesner for his past service as chair of the Interagency Technical Advisory Committee (ITAC). Rachel Moriconi announced that the fall Bike to Work Day is on October 5, 2017. Jessica Kahn announced that Scott Hamby will be retiring as Scotts Valley Public Works Director this year.

4. **Additions, deletions, or changes to consent and regular agendas:** None.

CONSENT AGENDA

5. **Approved Minutes of the August 17, 2017 ITAC meeting**. *A motion (Fliesler/Wiesner) to approve the minutes passed unanimously with all members in attendance voting "yes."*

6. **Received Caltrans Santa Cruz County project updates.**

REGULAR AGENDA

7. Status of ongoing transportation projects, programs, studies and planning documents

   Scotts Valley: Jessica Kahn reported that video detection equipment will be installed as part of the Scotts Valley Dr./Mt. Hermon Rd./Whispering Pines intersection project, which will begin construction soon.
   METRO: Tom Hiltner reported that METRO is awarding a contract for lease of articulated

buses for service to UCSC. METRO was awarded a $200,000 AB2766 grant for the downtown Watsonville circulator route.

RTC: Rachel Moriconi appreciated members for participating in the Unified Corridor Investment Study (UCS) stakeholder meetings earlier in the month. Staff will return to the ITAC for committee recommendations on the UCS in October. RTC has issued a call for projects for consolidated 2018 Regional Transportation Improvement Program (RTIP) grants, with applications due to the RTC by October 23, 2017. Anais Schenk reported that she plans to meet with local jurisdictions to discuss locations, installation and other details for the bicycle route signage project in November.

AMBAG: Sean Vienna reported that the Draft Environmental Impact Report (EIR) on the *2040 Metropolitan Transportation Plan (MTP)/Sustainable Communities Strategy* (SCS) is expected to be available for public review in November.

County of Santa Cruz: Steve Wiesner reported that storm damage repair work continues on several roadways, including Bear Creek Road. A "hard closure" of Swanton Road at Molino Creek is scheduled for September 25- October 20 in order to put in a new bridge. Roadway repairs will also be starting in Lompico, on Jarvis Road, and Soquel Drive near Aptos Street. The County is also working on its Senate Bill 1 (SB1) project list. Construction of the Aptos Village project has also restarted.

Santa Cruz: Chris Schneiter reported that the Branciforte Creek bicycle/pedestrian bridge ribbon-cutting event is at noon on September 28. The last of the city's 2017 paving projects are beginning, including on King Street. The city Planning Commission will be considering the Mitigated Negative Declaration for the Monterey Bay Sanctuary Scenic Trail Network (MBSST)/Rail Trail on October 5. The city is also awarding a contract for design of the San Lorenzo River Trestle walkway. Claire Fliesler reported that the city will be seeking input on bike share locations, including during Bike to Work Day and at Open Streets in October.

Watsonville: Murray Fontes reported that the city awarded a contract for the STIP-funded sidewalk infill project. Next month the Measure D-funded safe routes to schools education program will begin.

8. Presentation on the Visualization project

Anais Schenk presented the RTC's visualization project, which uses virtual reality technology to provide examples of what terms such as "sustainable transportation", "transit oriented development" and "infill development" might look like within the context of locations in Santa Cruz County. Binocular-like viewers are intended to engage the community in a dialogue about transportation and land use concepts. Viewers will be available at locations on Soquel Drive near Chanticleer Avenue and Natural Bridges Drive at the railroad crossing in October, with locations in Watsonville and 17th Avenue in Live Oak planned for Spring 2018. Visuals will also be available online. She requested that ITAC members share information about the project with the community.

9. Measure D: Informing the Public about Investments – *Continued from August ITAC meeting*

Rachel Moriconi solicited input on methods Measure D recipient agencies could use to inform the public about how Measure D revenues are being used. Members indicated that draft Measure D sign specifications are reasonable, especially since they allow agencies to customize the overall sign and placement based on conditions at the project site. Some agencies expressed interest in magnetic signs for use on contractor vehicles in locations where placing a sign is not possible. The ITAC also received a list of possible outreach efforts, including news releases, social media posts, and groundbreaking events.

10. Local, Regional, State, and Federal Funding Updates and Information Sharing

Rachel Moriconi reported that applications for the federal TIGER program are due to the U.S. Department of Transportation (DOT) on 10/16/17. Planning and adaptation grant applications are due to Caltrans on October 20. Agencies reported on possible projects. Christine Kahn with Caltrans Local Assistance reported that the California Transportation Commission (CTC) has released its recommendations for the 2017 Active Transportation Program (ATP) Augmentation, which includes funds for the City of Santa Cruz's riverwalk lighting and Watsonville's Lincoln Street projects. Agencies seeking an allocation of funds at the December California Transportation Commission (CTC) meeting must submit their request paperwork by October 9. Applications for ATP Cycle 4 will likely be due in Spring 2018, with minor changes to the program including a new benefit/cost tool, different applications for small and large projects, non-infrastructure and infrastructure projects. Award of the next cycle of Highway Safety Improvement Program (HSIP) grants may be as soon as Fall 2018.

11. Next meeting: The next ITAC meeting scheduled for October 12, 2017. This is one week earlier than the typical meeting date.

The meeting adjourned at 2:18 p.m.

Minutes prepared by: Rachel Moriconi, RTC Planner

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State of California
DEPARTMENT OF TRANSPORTATION

California State Transportation Agency

Memorandum

Serious drought.
Help Save Water!

To: DEPUTY DISTRICT DIRECTORS
DIVISION CHIEFS
OFFICE CHIEFS

Date: July 6, 2017

File: District 5 Streamlined PEER Procedures

From: RICHARD ROSALES
Deputy District Director Program/Project Management
District 5

Subject: **PROCEDURE FOR DISTRICT 5 PROJECTS USING "PROCESSING PROJECTS FUNDED BY OTHERS"** (Streamlined PEER)

This memo is a follow-up to the July 3, 2007, Headquarters policy memo entitled "Processing Projects Funded by Others". The policy provides guidance for projects with between $1 million and $3 million of encroachment within the state highway rights of way and that are not major State-funded projects. Although the Headquarters memorandum provides general statewide policy, the Districts may create individual procedures for processing these projects. The District 5 Office of Program Project Management has developed the attached District 5 Permit Engineering Evaluation Report Procedures for initiating a $1 million to $3 million Project Funded by Others (Streamlined PEER).

Effective immediately, all projects funded by local agencies or private entities between $1 million and $3 million will comply with these procedures. It is the responsibility of Project Management in consultation with Caltrans Transportation Advance Planning Senior Engineer, Project Development (Design Manager) and the District Permit Engineer to determine the appropriate Project Approval process for the project and present to the District Director for concurrence to proceed. In some cases, it may be determined that a project should follow the traditional PSR-PDS and PR process. Projects that qualify for the Streamlined PEER process will be assigned a Project Manager.

Approval of the Streamlined PEER project is the responsibility of the District Director and may be delegated. For a District 5 Streamlined PEER, signature approval is delegated to the District 5 Deputy District Director Program Project Management (Single Focal Point (SFP)).

If you have any questions or require additional information, please contact the District 5 SFP.

APPROVAL RECOMMENDED BY:

Richard Rosales
Deputy District Director Program Project Management (SFP)

APPROVED BY:

Timothy M. Gubbins
District Director

District 5 PEER Procedures

Projects Funded by Others

$1 million to $3 million

(Streamlined PEER)

GENERAL

The purpose of this District 5 policy is to supplement the policy memorandum "Processing Projects Funded by Others" dated July 3, 2007, that provides direction and guidance for processing projects funded by others (local agencies or private entities) between $1 million and $3 million. While the policy memorandum provides general policy and guidance, details of the implementation of the process and approvals are left to the individual districts. This document provides additional procedures specific to District 5 projects.

For the purposes of this document, a Permit Engineering Evaluation Report may be used as the project approval document for projects funded by others between $1 million and $3 million (Streamlined PEER).

A Permit Engineering Evaluation Report (PEER) may be required for projects less than $1 million, which will be resourced through Traffic Operations as per the Decision Document attached to the memorandum "Processing Projects Funded by Others" dated July 3, 2007.

PROJECT INITIATION

A local agency or private entity will initiate a consultation meeting for a proposed project on the state highway system by making contact with the Caltrans Transportation Advance Planning Senior Engineer. This contact must be written communication via letter of intent, email, etc. The Caltrans Transportation Advance Planning Senior Engineer will coordinate the consultation meeting with Capital Outlay (initially: Project Management), Encroachment Permits, and Local Assistance to discuss the proposed project and how to proceed. Once contact is made, the District 5 Single Focal Point (SFP) will be notified and will provide a Project Management contact. This person will most likely be an Oversight Project Manager, but another Capital Outlay Support person may be assigned at the discretion of the District 5 SFP.

The assigned Project Manager will coordinate with the local agency or private entity to determine scope, cost, funding and complexity of the proposed project. It is the responsibility of Project Management in consultation with Caltrans Transportation Advance Planning Senior Engineer, Project Development (Design Manager) and the District Permit Engineer to determine if the Streamlined PEER process is appropriate for the proposed project, or if the PSR-PDS and PR process should be followed and present to the District Director for concurrence to proceed.. This determination will be made utilizing the current policy and guidance for Projects Funded by Others between $1 million and $3 million (Streamlined PEER).

If the Streamlined PEER process is selected for the project, the assigned Project Manager will follow the current adopted procedures for opening a new Project Identifier (see attached "PROCESSING PROJECTS FUNDED BY OTHERS – D05 QUICK REFERENCE" for more information).

PROJECT REVIEW AND FUNCTIONAL APPROVALS

Chapter 9 of the Project Development Procedures Manual (PDPM) states, *"The Caltrans point of contact will ensure that the appropriate district units, such as Design, Environmental, Right of Way, Utilities, Maintenance, etc., review the project as needed."* For Streamlined PEER projects in District 5, the assigned Project Manager will be the point of contact and will determine which functional units will be involved in the project review process and the number of plan submittal iterations required.

All Streamlined PEER projects must demonstrate compliance with CEQA and, if applicable, NEPA laws governing environmental approval. As per PDPM Chapter 9, *"The Project Sponsor is responsible for preparation of the PEER and providing all supporting documentation."* as the Project Sponsor the local agency or private entity will be responsible for preparing the Encroachment Permit application, Streamlined PEER and providing all supporting documents for the Streamlined PEER as determined needed by the project team.

The Project Manager will consult with District Environmental units to review and concur with submitted environmental documentation covering the proposed project. Under this process, District 5 delegates CEQA lead agency for all Streamlined PEER projects to the responsible local agency unless otherwise documented in writing. NEPA approval has been delegated to Caltrans by FHWA.

If the proposed project includes new or modified right of way, access control[1] or utilities, District Right of Way must be included in the Streamlined PEER review process. Right of way certification may be required as determined by District Right of Way. In some cases, a cooperative agreement determining roles and responsibilities may be required. If there is no modification of right of way or utilities, District Right of Way involvement is not required.

APPROVAL

As per PDPM Chapter 9, *"The District Director is responsible for approval of the PEER."* For all Streamlined PEER projects in District 5, the District Director has delegated approval authority of the Streamlined PEER to the District 5 SFP.

The signature of the Oversight Engineer (Design Manager) on the plans will be verification that

[1] Refer to Chapter 27 of the PDPM for Access Control Modifications for when CTC action is required.

the project is ready for issuance of the encroachment permit. There is no requirement for an additional memo certifying completion of project review, as is the procedure for Highway Improvement Projects over $3 million. The Project Manager will then submit the approved Streamlined PEER, plans and completed encroachment permit application to District 5 Encroachment Permits for issuance of the permit. For local agency projects, the permit issued will be a double permit with no fees charged to the local agency or their contractors.

PROCESS REVISIONS

As the process for Projects Funded by Others continues to evolve, this District 5 policy and procedure may be revised. The District 5 SFP has the authority to approve revisions to this document as necessary. The Project Manager is responsible for providing the local agency or private entity with the most current District 5 policy and procedure.

REFERENCES

"Processing Projects Funded by Others", Headquarters policy memo July 3, 2007 (and accompanying Decision Document)

Project Development Procedures Manual, Chapters 2, 8 and 9 and Appendix I, most current edition

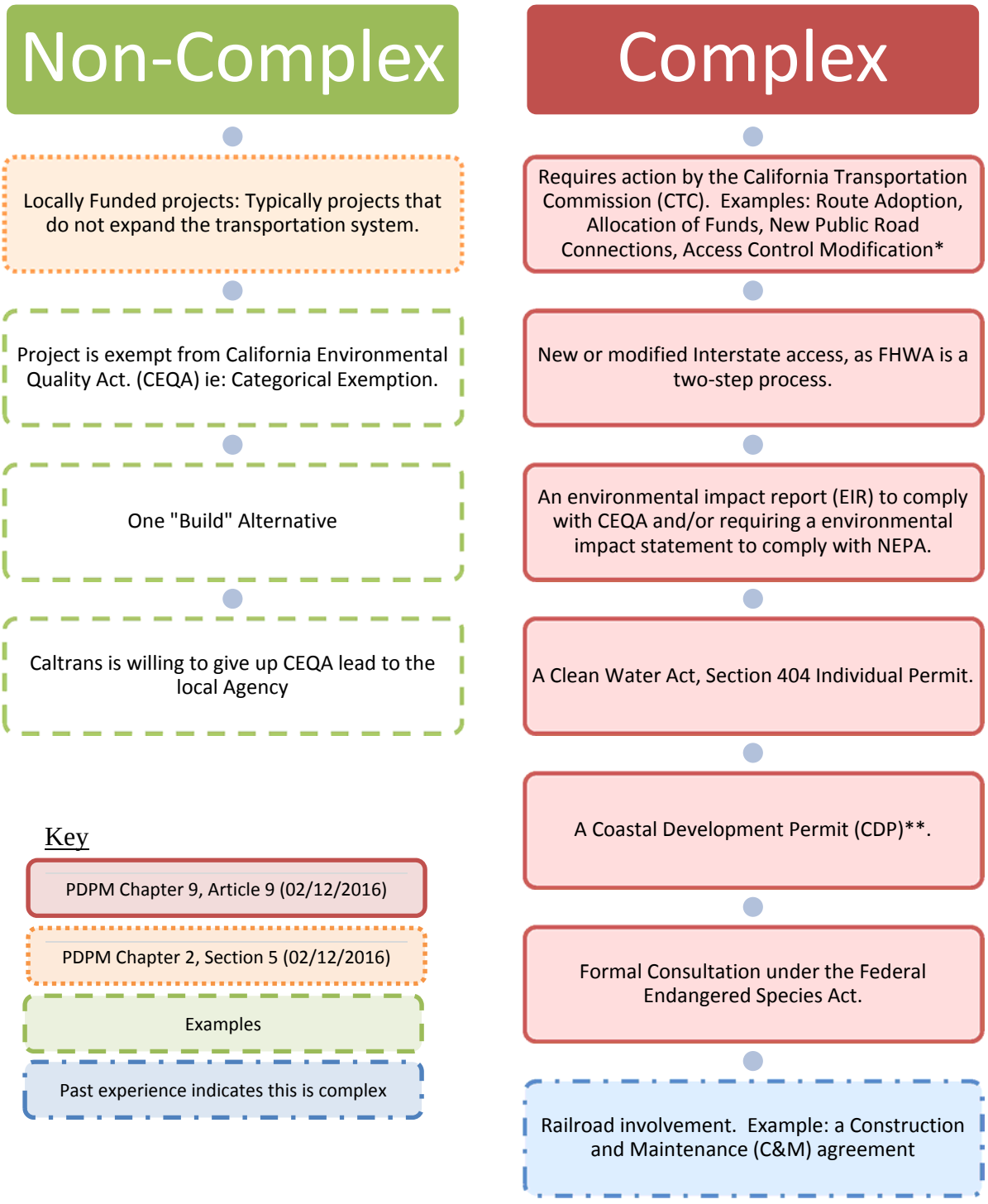
Manual for Encroachment Permits on California State Highways, most current edition

Business Process Documentation for PEER Projects with Construction Capital between $1million and $3 million, September 2007

District 3 “New Procedure for Processing District 3 Projects Using the PEER Process, April 09, 2008

Eligibility

"…If the project does not meet the eligibility requirements for processing a combined project study report-project report (PSR-PR), it is not eligible for processing a PEER." PDPM, Chapter 9, Article 8.



*Refer to Chapter 27 of the PDPM for Access Control Modifications for when CTC action is required.
**Condition may be waived by the District Director if the local jurisdiction developing the project is also the CDP permitting authority.

If it is determined that the project qualifies to follow the Projects Funded by Others $1 million to $3 million (Streamlined PEER) then proceed with these instructions for obtaining a Capital Outlay Support (COS) Project ID (EA) for a Streamlined PEER Project with Construction Capital between $1 Million and $3 Million for work within the state right of way.

Project Manager (PM):

- A letter documenting the determination, assumptions, constraints and risks that the project currently meets the eligibility requirements for processing a Streamlined PEER (ie: meets eligibility for a combined project study report-project report (PSR-PR)) shall be sent to the Local Agency.
- Provides support to the Local Agency, who will prepare a DRAFT Standard Encroachment Permit Application (SEPA)
- Prepares a Project Initiation Form (PIF) documenting project information.
- Completes the "CALTRANS DISTRICT 05 - SINGLE FOCAL POINT (SFP) CONCURRENCE" memo and obtains SFP signature.
- Submits PIF, signed memo and Draft SEPA to District Project Control to get a PREPID Project Identifier (PI) and Expense Authorization (EA) assigned to allow the project to transfer from AMSAdvantage to Project Resourcing and Schedule Management (PRSM). **Note: Phases cannot be opened for work yet. A workplan, Headquarters approval, categorization flags and a baseline must be established in PRSM first.**
    a. The PRSM Implementation manager will request the project be added to various databases (PRSM, Project Management Control System (PMCS)) and authorized to start the $1M to $3M Streamlined PEER process. Please provide the PIF, Draft SEPA and approved concurrence memo.
- Upon HQ's approval and categorization the project and appropriate phase(s) may be opened in AMS.
- Develop and manage the project workplan, expenditures, reviews and progress through the planning, design, and construction process.

In the event that the project is stopped, terminated or no longer qualifies for the $1M-$3M Streamlined PEER process, it is the Project Manager's responsibility to notify the PRSM Implementation manager that the project is now on-hold. The PRSM Implementation manager will notify HQ Project Management.

References (some of these links are not available to those outside of Caltrans or D5 PPM)

Statutory Authority: Authority for Caltrans to control encroachments within the State highway right-of-way is contained in the California Streets and Highways Code starting with Section 660.

Caltrans Internet links – Available to everyone

- July 3, 2007 Memo - Processing Projects Funded by Others
- Permit Engineering Evaluation Report (PEER) - Booklet
- When is a PID Required?
- Project Development Procedures Manual (PDPM)
  - Chapter 2 - Roles and Responsibilities - Section 5 – Special Funded Projects and Related Projects
  - Chapter 8 – Overview of Project Development
  - Chapter 9 – Project Initiation - Article 8 – Project Initiation Process for Projects-Funded-by-Others
  - Chapter 27 - Access Control Modification
  - Appendix I – Preparation Guidelines for Permit Engineering Evaluation Report
- Encroachment Permits Manual
  - Chapter 100 The Permit Function
  - Chapter 200 Processing Permits

D5 PPM Library links – Available to D5 PPM staff only

- Business Process Documentation for PEER projects with construction capital between $1M and $3M

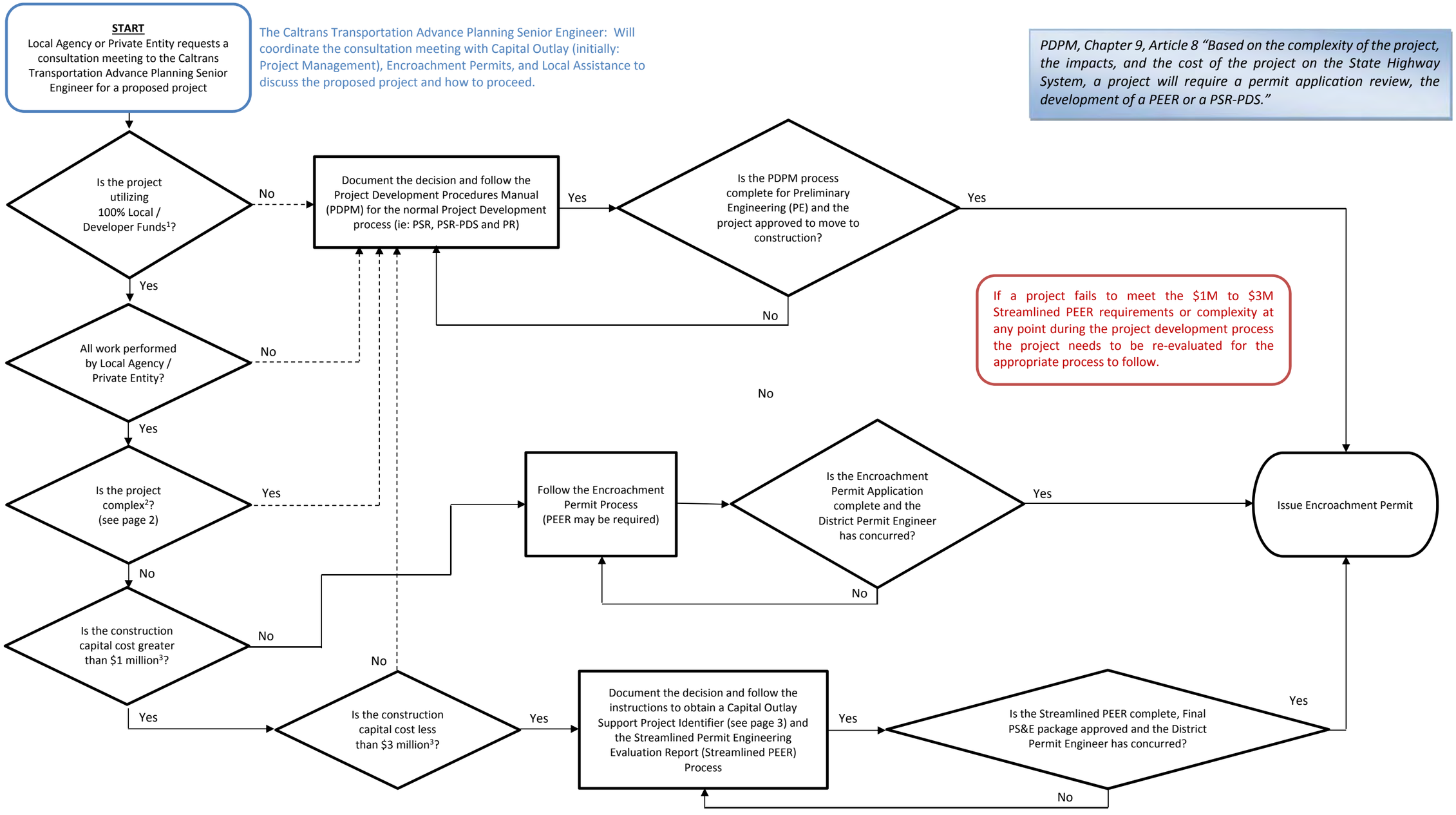
Emails chains are provided for history and can be found in the Library

- COOP vs PEER
- PEER w-coop vs PEER no coop question
- Project w/ATP funds do not qualify for PEER process

Caltrans Intranet links – Available to Caltrans staff only

Links to other Districts PEER information

- D3 PEER Procedures
- D11 Business Practice Memo



1. 100% Local / Developer funds: Per the PDPM, Chapter 9 "Projects-funded-by-others – projects that are sponsored by a local agency or private developer, and do not use any funds that are programmed into the STIP or SHOPP" (examples: STIP (RIP/IIP), ATP, SHOPP, SHOPP-Minor, TCRP, Federal Trust Fund, Prop 1B Bond, CMIA, etc). If you are unsure if the fund type being utilized would qualify to follow the "July 3, 2007 Memo - Processing Projects Funded by Others" memo - PLEASE CHECK!
2. "Is the project complex?": Per the Encroachment Permits Manual, Chapter 100 "A project is considered complex if it is ineligible for a combined PSR-PR. Other factors that can contribute to the complexity of a project are included in "Considerations for a Combined PSR-PR" (see PDPM Chapter 9, Article 9)."
3. Construction Capital costs are for work that is within the state right of way.

DEPARTMENT OF TRANSPORTATION
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PHONE (805) 549-3101
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http://www.dot.ca.gov/dist05/

Making Conservation
A California Way of Life.

October 20, 2017

George Dondero
Executive Director
Santa Cruz County Regional Transportation Commission
1523 Pacific Avenue
Santa Cruz, CA 95060

Dear Mr. Dondero:

This letter provides an update for District 5's State Highway Operation and Protection Program (SHOPP) delivery of active and programmed 2016 SHOPP projects and 2018 SHOPP project candidates in your county.

Enclosed is a list of programmed 2016 SHOPP projects as of October 2017 (Attachment 1). The 2016 SHOPP became effective March 16, 2016 and include all major and minor projects as well as emergency repairs underway.

In June 2017, Caltrans completed Project Initiation Documents (PIDs) as candidates for the 2018 SHOPP (Attachment 2). Please share this information with your member agencies and encourage them to contact the Project Manager for further information regarding these projects.

Thank you for your agency's input this summer regarding opportunities to coordinate efforts with projects for the 2020 SHOPP. We would like to continue this discussion at an upcoming TTAC meeting and would appreciate you letting us know of any new regional or locally-funded transportation projects that should be considered in our planning efforts.

For more information, please contact Garin Schneider at 805-549-3640 or email Garin.Schneider@dot.ca.gov.

Sincerely,

Garin Schneider for

AILEEN K. LOE
Deputy District Director
Planning and Local Assistance

Attachments
1. Programmed SHOPP Projects
2. 2018 Candidate SHOPP Projects

PROGRAMMED/FUNDED SHOPP PROJECTS in Santa Cruz County

Jul 2017 Semi-Annual List (Delivered in Oct 2017)

Route	Post Miles	EA Project Identifier	PPNO	Project Description	Project Name	Current Project Phase	Ready To List (Target)	Project Manager Phone # Email	Cost ($1,000) CON/RW
Programmed in 14/15 FY									
129	9.5/10.0	0T540 0500000857	2285	In Santa Cruz County, west of Chittenden Road. Improve roadway alignment.	Hwy 129 Realignment	CON	4/1/2015(A)	Doug Hessing 805-549-3386 doug.hessing@dot.ca.gov	$5,830 Award/$101
VAR	VAR	1G190 0514000123	2589	In Santa Barbara, Monterey, San Benito, San Luis Obispo and Santa Cruz counties at various locations. Replace overhead signs with retro-reflective sheeting. (Project in SB; some work in SCr)	Replace Overhead Signs	CON	5/26/2015(A)	Aaron Henkel 805-549-3084 aaron.henkel@dot.ca.gov	$2,307 Award/$5
VAR	VAR	0J490 0514000120	4900	In Santa Barbara, Monterey, San Benito, Santa Cruz, and San Luis Obispo counties at various locations. Upgrade highway signs and lighting. (Project in SB; some work in SCr)	Exit Retrofit Signs	CON	5/12/2015(A)	Lisa Lowerison 805-542-4764 lisa.lowerison@dot.ca.gov	$5,990 Award/$0
Programmed in 15/16 FY									
17	0.7/1.4	0Q600 0500020290	1989	In Santa Cruz, from 0.7 mile north of Route 1/17 Separation to Beulah Park Undercrossing. Storm water mitigation.	Hwy 17 Storm Water Mitigation	CON	5/2/2016(A)	Doug Hessing 805-549-3386 doug.hessing@dot.ca.gov	$6,499 Award/$37
1	R7.5/17.4	1C100 0512000074	2358	In and near the city of Santa Cruz, on Route 1, also on Route 17 (PM 0.0/6.3) at various locations. Construct roadside paving, access gates, and relocate facilities.	Santa Cruz Worker Safety	CON	6/29/2016 (A)	Luis Duazo 805-542-4678 luis.duazo@dot.ca.gov	$1,767 Vote/$0
17	8.3/9.4	0T980 0500020244	2311	Near Scotts Valley, from south of Sugarloaf Road to 0.1 mile south of Laurel Road. Shoulder widening and concrete guardrail.	Hwy 17 Shoulder Widening and Concrete Guardrail	CON	6/25/2015(A)	Doug Hessing 805-549-3386 doug.hessing@dot.ca.gov	$6,428 Award/$250
1	R7.8/9.5	1G800 0515000107	2616	In and near the cities of Santa Cruz and Scotts Valley on Routes 1 and 17 at various locations; also in Monterey County on Route 101 in Salinas (PM 85.7/R89.8). Drought conservation improvements. (Project in MON & SCR Counties.)	Upgrade Irrigation Systems for Drought Conservation	CON	N/A	Lance Gorman 805-549-3315 lance.gorman@dot.ca.gov	$600/$0
Programmed in 16/17 FY									
129	1.8/9.5	1F030 0513000037	2476	Near Watsonville, from east of Lakeview Road to west of Old Chittenden Road; also from the Santa Cruz/San Benito County line to School Road (PM 0.0/0.4). Place open graded friction pavement and upgrade guardrail.(Project in SCR; some work in SBt)	129 Open Grade Overlay and MBGR Upgrade	CON	10/17/16(A)	Doug Hessing 805-549-3386 doug.hessing@dot.ca.gov	Suballocated $3,814 Vote/$61
Programmed in 17/18 FY									
Mon, SCr, SBt - Var	Various	1G910 0515000136	N/A	In Monterey, Santa Cruz and San Benito Counties, on various routes at various locations. Signs (Project in MON; some work in SCR & SBt)	North District One WaySigns	PS&E/RW	1/10/2018	Aaron Henkel 805-549-3084 aaron.henkel@dot.ca.gov	$1,200/$0
17	0.1/0.4	1C670 0512000194	2422	Near the city of Santa Cruz, from southbound exit ramp to Route 1 to entrance ramp from Pasatiempo Drive. Widen shoulder and construct retaining wall.	Pasatiempo Shoulder Widening	PS&E/RW	4/2/2018	Luis Duazo 805-542-4678 luis.duazo@dot.ca.gov	$5,713/$181
129	3.0/3.5	1F350 0513000103	2506	Near Watsonville, realign Carlton Road. Construct a new intersection and a left-turn channelization.	Hwy 129/Carlton Rd. Accel and Decel Lanes	PS&E/RW	3/29/2018	Doug Hessing 805-549-3386 doug.hessing@dot.ca.gov	$2,700/$457

NOTE: For general information about the SHOPP program
contact Sherri Martin at (805) 549-3788 or sherri.martin@dot.ca.gov
* RTL=Actual (target achieved)

ATTACHMENT 1

PROGRAMMED/FUNDED SHOPP PROJECTS in Santa Cruz County

Jul 2017 Semi-Annual List (Delivered in Oct 2017)

Route	Post Miles	EA Project Identifier	PPNO	Project Description	Project Name	Current Project Phase	Ready To List (Target)	Project Manager Phone # Email	Cost ($1,000) CON/RW
9	22.1/23.8	1C650 0512000185	2418	In Castle Rock State Park, from 5 miles south to 3.3 miles south of Route 35. Widen shoulders, replace guardrail and construct centerline rumble strips.	Hwy 9 Shoulder Widening, Guardrail Upgrades, and Center Rumble Strips	PS&E/RW	5/15/2018	Doug Hessing 805-549-3386 doug.hessing@dot.ca.gov	$7,658/$20
1	VAR	1F520 0514000005	2585	Near the city of Santa Cruz, on Routes 1 and 17 at various locations. Bridge rail replacement and upgrades.	Santa Cruz Bridge Rails	PS&E/RW	5/31/2018	Luis Duazo 805-542-4678 luis.duazo@dot.ca.gov	$4,167/$0
17	6.0/12.6	1F760 0514000051	2538	In and near Scotts Valley, from north of Santa's Village Road to the Santa Clara County line. Pavement rehabilitation	North Route 17 CAPM	PS&E/RW	5/31/2018	Doug Hessing 805-549-3386 doug.hessing@dot.ca.gov	$15,381/$7
1	10.2/17.5	1C850 0512000240	2432	Near the city of Santa Cruz, from North Aptos Underpass to Route 9. Rehabilitate pavement.	SCR-1 Pavement Overlay	PS&E/RW	6/1/2018	Luis Duazo 805-542-4678 luis.duazo@dot.ca.gov	$14,952/$19
152	1.3/R2.0	1E020 0513000025	2464	In Watsonville, from Wagner Avenue to Holohan Road. Construct pedestrian infrastructure.	SCR 152 ADA	PS&E/RW	6/1/2018	Mike Lew 805-549-3227 mike.lew@dot.ca.gov	$1,709/$195
1	3.7/3.9	1H730 0516000146		Near Watsonville, at Buena Vista Drive Undercrossing. Repair sinkholes, drainage system and install erosion control measures.	Reconstruct failed drainage system.	CON	N/A	Lance Gorman 805-549-3315 lance.gorman@dot.ca.gov	$750/$10
1,9,35,236	VAR	1H790 0516000152	2689	In Santa Cruz County, on Routes 1, 9, 35, and 236 in various locations. Emergency Contract project. EFA #05A1960	Solrm Damage Repail @ multiple sites	CON	N/A	Lance Gorman 805-549-3315 lance.gorman@dot.ca.gov	$2,000/$40
129	8.2	1J070 0517000058	2707	In Santa Cruz County, on Route 129 at PM 8.2. Emergency Contract project. EFA #05A1957	Reconstruct Embankment and Roadway	CON	N/A	Lance Gorman 805-549-3315 lance.gorman@dot.ca.gov	$500/$10
17	9.8/10.8	1J120 0517000063	2712	In Santa Cruz County on Route 17 near Scotts Valley from PM 9.8 to PM 10.8. Emergency Contract project. EFA #05A1978	Protect slope and repair slipout	CON	N/A	Lance Gorman 805-549-3315 lance.gorman@dot.ca.gov	$500/$10
1	36.3/37.5	1J370 0517000092	2719	In Santa Cruz County,from Waddell Creek Bridge to San Mateo County Line. Reconstruct slope and restore roadway. EFA #05A19__	Slope Repair	CON	N/A	Lance Gorman 805-549-3315 lance.gorman@dot.ca.gov	$200/$10

Programmed in 18/19

VAR	VAR	1G160 0514000118	2590	In Santa Cruz County, on Routes 1, 9, 17, 129, and 152 at various locations. Install Accessible Pedestrian Signals (APS).	Santa Cruz County APS	PS&E/RW	1/11/2019	Mike Lew 805-549-3227 mike.lew@dot.ca.gov	$1,700/$11
1	R0.0/R8.1	1C980 0513000021	2452	In Santa Cruz and Monterey Counties, from south of Salinas Road to south of Larkin Valley Road Undercrossing. Construct maintenance vehicle pull outs, repairing guardrail, improve gate access and relocate irrigation equipment. (Project in MON; some work in SCR.)	MON SCR Roadside Safety	PA&ED	3/26/2019	Carla Yu 805-549-3794 carla.yu@dot.ca.gov	$2,765/$0
VAR	VAR	1G310 0514000140	2595	In Monterey, Santa Cruz and San Benito counties, on various routes at various locations. Replace and install advance curve warning signs. (Project in MON; also in SCR & SBt Counties)	Warning Sign Upgrades	PA&ED	5/1/2019	Joe Erwin 805-549-3792 joe.erwin@dot.ca.gov	$1,852/$48
17	0.7/1.4	0Q601 0514000145	1989Y	In Santa Cruz, from 0.7 mile north of Route 1/17 Separation to Beulah Park Undercrossing. Landscape mitigation for PPNO 1989.	Hwy 17 Source Control Landscape Split	PS&E/RW	6/5/2019	Doug Hessing 805-549-3386 doug.hessing@dot.ca.gov	$507/$0

NOTE: For general information about the SHOPP program
contact Sherri Martin at (805) 549-3788 or sherri.martin@dot.ca.gov
* RTL=Actual (target achieved)

ATTACHMENT 1

PROGRAMMED/FUNDED SHOPP PROJECTS in Santa Cruz County

Jul 2017 Semi-Annual List (Delivered in Oct 2017)

Route	Post Miles	EA Project Identifier	PPNO	Project Description	Project Name	Current Project Phase	Ready To List (Target)	Project Manager Phone # Email	Cost ($1,000) CON/RW
Programmed in 19/20									
9	0.1/7.5	1F920 0514000075	2569	In and near the city of Santa Cruz, from Route 1 to north of Fall Creek Drive. Stormwater improvements.	SCR 9 South Drainage and Erosion Control Improvements	PA&ED	5/4/2020	Doug Hessing 805-549-3386 doug.hessing@dot.ca.gov	$2,356/$214
17	VAR	1G260 0514000131	2593	Near Scotts Valley, from 0.06 miles south of Laurel Road to 0.25 miles north of Laurel Road. Construct wildlife undercrossing. (Project in MON, SCR & SBt Counties) SHOPP Financial Contributions $3,155 for PA&ED, PS&E and R/W only. Local contributions to fund remaining components.	Wildlife Habitat Crossing	PA&ED	3/24/2020	Aaron Henkel 805-549-3084 aaron.henkel@dot.ca.gov	$0/$138
129	1.4/1.4	1G990 0516000010	2625	Near Watsonville, at Lakeview Road. Construct roundabout and improve street lighting.	129/Lakeview Intersection Project	PA&ED	6/1/2020	Luis Duazo 805-542-4678 luis.duazo@dot.ca.gov	$4,481/$684
1,17	16.7/16.7, 0.3/0.3	1H060 0516000020	2636	In and near Santa Cruz, from 0.1 mile south of Route 1/17 Separation to 0.4 mile south of Pasatiempo Overcrossing; also on Route 17 (PM 0.0/0.3). Realign southbound Route 17 connector to southbound Route 1.	Construct Ramp Safety Improvements	PA&ED	11/27/2019	Luis Duazo 805-542-4678 luis.duazo@dot.ca.gov	$5,811/$658
2018 SHOPP Projects Accelerated into 2016 SHOPP									
VAR	VAR	1H990 0517000047	2735	In various counties on various routes throughout District 5. Replace failed Traffic Management System (TMS) detection . (Project in MON, SBt, SCR, SLO and SB counties)*This was a 2018 SHOPP Candidate that was accelerated into 2016 SHOPP due to SB1 funding.	TMS Detection Repair.	PA&ED	5/13/2020	Brandy Rider 805-549-3620 brandy.rider@dot.ca.gov	$14,372/$378
1	31.9/35.7	0J200 0512000069	1967	On Route 1 in Santa Cruz county near Davenport and south of Waddell creek from PM 31.9 to 35.7 . Replace Culverts. *This was a 2018 SHOPP Candidate that was accelerated into 2016 SHOPP due to SB1 funding.	Davenport Culvert Replacement	PA&ED	7/19/2021	Doug Hessing 805-549-3386 doug.hessing@dot.ca.gov	$3,570/$84
9	13.6/15.5	1H470 0516000078	2655	On Route 9 in Santa Cruz County, near boulder Creek, at San Lorenzo River Bridge (PM13.6) and at Kings Creek Bridge (PM 15.5) . Replace Bridges. *This was a 2018 SHOPP Candidate that was accelerated into 2016 SHOPP due to SB1 funding.	San Lorenzo River Bridge & Kings Creek Bridge Replacement	PA&ED	10/18/2021	Doug Hessing 805-549-3386 doug.hessing@dot.ca.gov	$12,550/$622
1	13.31	1H480 0516000079	2736	In Santa Cruz County in Capitola at Soquel Creek Bridge. Bridge Preventative Maintenance. *This was a 2018 SHOPP Candidate that was accelerated into 2016 SHOPP due to SB1 funding.	Soquel Creek Scour Protection	PA&ED	7/1/2021	Doug Hessing 805-549-3386 doug.hessing@dot.ca.gov	$2,774/$546

(A) = Actual date RTL was achieved.

Minor A Projects

Note: Construction Award or Vote costs are actuals;otherwise Construction costs are estimates.

NOTE: For general information about the SHOPP program
contact Sherri Martin at (805) 549-3788 or sherri.martin@dot.ca.gov
* RTL=Actual (target achieved)

ATTACHMENT 1

Santa Cruz County
2018 SHOPP Candidate

EA	Category - Project Description	Route	Postmile	Project Location	Project Manager
1G950	Storm Water Mitigation- Upgrade drainage systems and stabilize slopes	9	8.5/23.9	In SCR County between the communities of Ben Lomond and the Santa Cruz/San Mateo County Line	Doug Hessing (805) 549-3386
1F620	Mandates-Construct a ADA Pedestrian Bridge	152	1.9/R2.0	In Santa Cruz County, east of Watsonville 0.1 mile East of Beverly Drive to Holohan/College Road	Mike Lew (805) 549-3227
1G960	Traffic Signal Upgrades for Pedestrian Enhancements	VAR	VAR	Various locations in Santa Cruz County	Mike Lew (805) 549-3227
1H040	Mobility Improvements- County wide replacement of overhead signs with retro-reflective sheeting	VAR	VAR	All routes in Santa Cruz County	Aaron Henkel (805) 549-3084

Note: For project-specific questions, contact the corresponding project manager.
For general PID program & planning questions contact Garin Schneider at (805) 549-3640

ATTACHMENT 2
October 2017

AGENDA: November 16, 2017

TO: Interagency Technical Advisory Committee (ITAC)

FROM: Grace Blakeslee, Transportation Planner

RE: Cruz511 In Your Neighborhood – Program Activities and Results

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RECOMMENDATIONS

Staff recommends that the Interagency Technical Advisory Committee (ITAC) receive information about the Cruz511 In Your Neighborhood Program activities and results.

BACKGROUND

The Santa Cruz County Regional Transportation Commission's (RTC) Cruz511 In Your Neighborhood Program (previously the User Oriented Transit Planning Project) was a program focused on reducing the number of drive alone trips and increasing the number of trips made by bus, biking, walking and carpooling in Santa Cruz County. The Cruz511 In Your Neighborhood Program was designed to test the effectiveness of individualized marketing techniques on changing travel choices and reduce vehicle miles traveled. This involved providing interested individuals with a comprehensive set of customized travel resources and tools to motivate and convince them to switch from drive alone car trips to trips made by bus, biking, walking, and carpooling. The RTC, in partnership with the Santa Cruz Metropolitan Transit District (Santa Cruz Metro), secured a Caltrans Transit Planning for Sustainable Communities Grant to conduct this pilot project. The Cruz511 In Your Neighborhood Program was carried out in Santa Cruz County between March 2017 and September 2017.

DISCUSSION

Previously entitled the "User Oriented Transit Planning Project", the indivudal marketing of travel choices pilot program identified neighborhoods as the unique community segment to be the focus of the program and was rebranded "Cruz 511 In Your Neighborhood". After a review of neighborhoods countywide, neighborhoods defined as Central Watsonville and Eastside Santa Cruz were selected to be the program's target audience. Between April and July 2017, households in these neighborhoods were invited to participate in the program using several outreach strategies though: direct mail, contact with travel advisors who canvas neighborhoods and speak with individuals at their household about the program, neighborhood events and notifications on Nextdoor, a neighborhood social media site. Participants were asked to complete a before program survey about their travel habits and preferences and invited to order customized travel resources specific to each neighborhood. Cusomtized travel resources included bus, biking and walking map guides, information about region-wide transportation services

and how to conveniently and safely use the bus, biking, walking and carpooling. Almost all materials were available in both English or Spanish.

The Cruz511 In Your Neigbhorhood Program's effectiveness is measured by the changes in: the frequency of drive alone, riding the bus, bike, walk and carpool trips, and awareness and attitudes towards transportation options before and after the program intervention. Program effectiveness also considers the number of program participants and materials distributed and the public's perception of the Cruz511 In Your Neighborhood Project.

RTC staff will provide a presentation to the committee about the Cruz511 In Your Neighborhood program activites and results.

SUMMARY

The Santa Cruz County Regional Transportation Commission's (RTC) Cruz511 In Your Neighborhood Program (previously the User Oriented Transit Planning Project) was a program focused on reducing the number of drive alone trips and increasing the number of trips made by bus, biking, walking and carpooling in Santa Cruz County. The program was carried out in Santa Cruz County between March 2017 and September 2017.

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AGENDA: November 16, 2017

TO: Interagency Technical Advisory Committee (ITAC)

FROM: Rachel Moriconi, Senior Transportation Planner

RE: *2018 Regional Transportation Improvement Program*
Preliminary Staff Recommendations

RECOMMENDATIONS

Staff recommends that the Interagency Technical Advisory Committee (ITAC) review and provide input on preliminary staff recommendations for the *2018 Regional Transportation Improvement Program* (RTIP) (Attachment 1) and make Committee recommendations to the Regional Transportation Commission (RTC).

BACKGROUND

As the Regional Transportation Planning Agency (RTPA) for Santa Cruz County, the Santa Cruz County Regional Transportation Commission (RTC) is responsible for selecting projects to receive certain state and federal funds.

In September 2017, the RTC issued a consolidated call for projects for the region's anticipated shares of funds including:

- State Transportation Improvement Program (STIP): $17.5 million target through FY22/23 (which includes $9 million in past balances), though the California Transportation Commission (CTC) is only required to program $4.7 million of those funds.
- Surface Transportation Block Grant Program/Regional Surface Transportation Program Exchange (STBG/RSTPX): $3.5 million.
- SB 1-Local Partnership Program (LPP): Preliminary estimates are that $250,000 per year for FY17/18 and FY18/19 will be available. CTC will release updated estimates in mid-November.
- Senate Bill 1 Supplemental State Transit Assistance (STA) population-formula funds for FY17/18: Approximately $975,500. Includes funds from the State of Good Repair program.

In total, approximately $22 million is expected to be available. Applications were due on October 23, 2017. Projects the RTC selects for STIP and LPP funds are subject to concurrence from the California Transportation Commission (CTC) and the RTC's project lists are due to the CTC on December 15, 2017, with CTC action scheduled for March 2018.

DISCUSSION

Project sponsors submitted 36 applications requesting over $38 million. Attachment 1 summarizes the projects and preliminary staff recommendations for anticipated funds. Project applications are posted on the RTC website http://www.sccrtc.org/funding-planning/project-funding/.

Project Evaluation

The RTC selects projects to receive funds on a competitive basis. The RTC considers how well projects address *Regional Transportation Plan* (RTP) goals, policies, and targets and federal and state criteria and guidelines when evaluating projects. Since available funding is limited compared to the cost to operate, maintain, and improve the local transportation system, it is important to ensure that funds are directed to projects that maximize improvements to the region's multimodal transportation network. In September 2017, the RTC approved several factors to be considered when evaluating projects. The RTC directed staff to give the highest priority to projects that address one or more of the first four criteria.

1. **Number of people served by project**
2. **Safety**
3. **Preservation of existing infrastructure**
4. **Reduce vehicle miles traveled, air pollution, greenhouse gas emissions and/or fuel consumption**
5. Improve access for all modes, especially to and within key destinations
6. Change in travel times and travel time reliability and efficiency of the transportation system, including transit
7. Change in passenger, freight and goods movement efficiency
8. Change in disparities in safety and access for people who are transportation disadvantaged due to age, income, disability or minority status
9. Inclusion of projects in the Regional Transportation Plan (RTP) "constrained" project list, which implements the SB375-mandated Sustainable Communities Strategy (SCS)
10. Consistency with the Monterey Bay Area Complete Streets Guidebook
11. Public engagement, in identification of the project as a priority and planned during project implementation
12. Funding, including if all other funding is secured and amount of match
13. Deliverability of the project, if there are possible barriers to project schedules.

Recommendations

Staff recommends that RTC advisory committees provide input on preliminary staff recommendations and make recommendations to the RTC on which projects to fund with anticipated state and federal funds (Attachment 1). For some projects, it is possible for agencies to reduce the project scope and still implement the project, even if full funding is not awarded.

Consistent with the evaluation criteria noted above, the staff recommendations focus the anticipated funds to projects that serve the greatest number of users, have

demonstrated safety needs, preserve existing transportation infrastructure and programs, and/or would do the most to reduce the number of miles driven and associated air pollution and greenhouse gas emissions. For roadway system preservation projects, staff generally prioritized the most cost-effective treatments, such as chip seals over full roadway rehabilitation.

At its September 2017 meeting, the RTC indicated its intent to program STIP funds for three years of state and federally-mandated regional planning, programming and monitoring activities (PPM) and to program $2 million in STIP previously reserved for the Highway 1 Soquel-41st Avenue Auxiliary Lanes to that project. The staff recommendations are consistent with this action.

The RTC also discussed taking the new Senate Bill 1 (SB1) $975,000 transit funds (from the State Transit Assistance (STA) State of Good Repair and STA-base funds) out of this competitive process and established an ad-hoc committee to develop a recommendation on STA funds. The ad-hoc committee recommends providing 100% of all STA funds to Santa Cruz METRO for the 2017/18 fiscal year, as well as the next fiscal year, with some reduction in future years to make some funds available to other eligible recipients. The ad-hoc committee's recommendation will be presented to the RTC for their consideration. In light of the ad-hoc committee's discussions and since Santa Cruz METRO is the only agency that submitted applications for eligible projects under STA, the staff recommendation includes 100% of the supplemental FY17/18 SB1 funds for bus replacements, as requested by Santa Cruz METRO.

While staff has identified projects to receive most of the anticipated funds, the RTC may decide to keep some of the region's shares in reserve to address future funding needs. Additionally, though the RTC is responsible for selecting projects to receive the region's share of STIP funds, the CTC makes the final decision on whether projects are included in the STIP and in what year. It is not uncommon for the CTC to program only some projects and to shift projects to later years than requested. While the region's target for the 2018 STIP is $17 million, the CTC is only required to make $4.7 million in STIP funds available for programming in this cycle (the county minimum). **In consideration of the potential that the CTC might not make all of the region's shares available, the staff recommendations include "worst-case" and "mid-case" scenarios.**

The CTC has stated that it will prioritize STIP funds to regions for state-mandated planning, programming and monitoring costs (PPM), cost increases on previously programmed projects and projects or project components deleted in the 2016 STIP due to statewide funding shortfalls. After those priorities, the CTC will consider new projects – with focus on RTIP proposals that meet state highway improvement and intercity rail needs. The CTC is also considering how well projects advance a wide range of performance measures, address climate preparedness and reduce greenhouse gas emissions.

Next Steps

RTC advisory committees are concurrently reviewing proposals for funds at their November 2017 meetings. Staff will consider input from committees when developing

final staff recommendations. Committee recommendations and final staff recommendations will be presented at the December 7, 2017 RTC board meeting. The RTC is scheduled to select projects to receive funds following a public hearing at that meeting.

SUMMARY

The RTC is responsible for selecting projects to receive certain state and federal funds, including State Transportation Improvement Program (STIP), Surface Transportation Block Grant Program (STBG), and certain new Senate Bill 1 funds. If the California Transportation Commission (CTC) agrees to program 100% of the region's targeted share of STIP funds through FY22/23, approximately $22 million total (in STIP, STBG, and SB1) is available for programming to projects in Santa Cruz County. Under the worst case scenario, only $9.7 million would available. Staff is seeking input from advisory committees on projects proposed to receive these limited funds. A public hearing is scheduled for the December 7, 2017 RTC meeting, where the RTC will select projects to receive the funds.

Attachment:

1. 2018 RTIP Application Summary and Preliminary Staff Recommendations

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Attachment 1

2018 Regional Transportation Improvement Program (RTIP)

Application Summary and Preliminary Staff Recommendations

Available funds: Up to $17.5M STIP (through FY22/23), $3.5M STBG (through FY18/19), and est. $500k SB 1 LPP and $975,590 SB1 Transit funds

Agency	#	Project Name	Description	Summary of Benefits *(RTC staff summary of info provided in application)*	Estimated Daily Use	Sponsor Priority #
Bike Santa Cruz County *(County HSA sponsor)*	1	**Open Streets Events – Watsonville and Santa Cruz**	2 events/year over two years that temporarily transform roadways into parks for people to bike, walk, skate, and play in a safe and festive environment by temporarily blocking automobile traffic. Watsonville: Brennan/Union St (Freedom-Peck St); SC: West Cliff Dr. (Lighthouse Field-Swanton Blvd). Request: $12.5k/event	Increase active transportation use. Promote physical activity and health, promote a culture of bicycling and walking, and increase safety and access to the roadway for users of all ages, abilities and modes. Help communities achieve key sustainable transportation goals; reduce single-occupant vehicle trips, mitigate traffic congestion, reduce carbon emissions, and increase access and safety. Create culture of biking, walking, riding bus, and carpooling; firsthand experience of modes; outreach event for agencies promoting alts to SOV	4 one day events: 1k-2k (Watsonville); 10k-12k (Santa Cruz)	1 of 1
Ecology Action *(RTC oversight)*	2	**Every Day is Bike to Work Day**	Pilot bike commuter initiative to increase bike commuting at 6 large employers in Santa Cruz, Live Oak, and Watsonville areas; includes bike commute and safety workshops, online tracking apps/systems, support/encouragement	Increase number of people bike community and safety practices of those biking through targeted education and support. Reduce VMT -est. 450 trips per day.	450	1 of 1
METRO	3	**METRO Refurbish Buses**	Refurbish 16 fixed route buses to add 4 - 8 years to their useful life (avg. 6 yrs). Includes rebuild or replacement of engine/transmission assembly, cooling system, doors, windows, floors, seat cushions, paint, and wheelchair securement system.	System preservation: Maintains buses in state of good repair to retain service. Refurbishing adds up to 8 years to the useful life of a bus at 40% of the cost for a new replacement bus; new motor reduces greenhouse gas emissions; reduces maintenance costs; passenger amenities help sustain rider experience/ridership.	avg: 2978 = 16buses; 186/bus	2 of 3
METRO	4	**METRO ITS Equipment**	Install Automatic Vehicle Locaters (AVL), automatic passenger counters, and automatic vehicle announcing system on up to 100 buses to provide real-time schedules, next bus info at bus stops, and data collection for system operations, security, planning and maintenance.	Provide real-time bus arrival information to ease trip planning, reduce uncertainty, and improve access for bus riders, which may foster increased ridership; reduce operating costs and delays by automating passenger counting equipment; provide stop-level data to enable more effective route planning and deployment of benches, shelters, signage.	15280	3 of 3
METRO	5	**METRO Revenue Vehicle Replacements**	Purchase 1 CNG bus, 5 battery-electric buses, and 4 paratransit vans to replace 1998 diesel buses and 14-year old paratransit vans which have exceeded their useful life.	System preservation: Maintain bus service, improve service reliability, reduce maintenance costs, reduce greenhouse gas emissions, modern buses may attract new riders.	1267 total; 7 per paratransit van; 200 per bus.	1 of 3
RTC	6	**Planning, programming, and monitoring (PPM)**	State and federally-mandated planning and programming activities associated with state and fed. funding programs, assisting project sponsors, and coordination with Caltrans and the California Transportation Commission.	Secure and maintain state and federal transportation funds for projects in Santa Cruz County. Keep projects on schedule, meet state and federal planning, programming and monitoring mandates.	Serves entire county	1 of 5
RTC	7	**Cruz511**	Cruz511 provides traveler information and transportation demand management services including traffic map, traffic congestion, traffic incidents, outreach, education, and incentives with the mission of reducing single occupancy vehicle (SOV) trips, vehicle miles traveled and roadway congestion. The program also acts as a traveler information hub for commuters and visitors looking for information on road conditions or sustainable transportation modes.	Reduce traffic congestion, trips, VMT, greenhouse gases and improve health and air quality. Make more efficient use of the existing transportation system by shifting SOV trips to carpool, vanpool, transit, bike and walk. Provide real-time traveler information (traffic), and info on transit, carpool, bicycle and walkways.	Varies: 1000-15,000/day (website visits)	4 of 5
RTC/Caltrans	8	**41st/Soquel Auxiliary Lanes and Chanticleer Overcrossing**	Construct auxiliary lanes on Highway 1 between 41st Ave and Soquel Dr. interchanges, and construct 12-14' pedestrian/bike overcrossing at Chanticleer Ave.	Improve traffic flow, increase safety, improve travel times and reliability and improve pedestrian/bike access across highway. Heavily traveled - over 100,000 vehicles per day. Daily congestion results in by-pass traffic on local arterials.	120,000 (avg. veh=1.2persons)	2 of 5
RTC/Caltrans	9	**State Park/Bay Porter Auxiliary Lanes Project**	Prelim. design and project level environmental review of auxiliary lanes on Highway 1 between the State Park to Park Ave to Bay/Porter interchanges (approx. 2.5 miles). Includes retaining walls, drainage, reconstruction of Capitola Ave overcrossing to include wider sidewalk and bridge lighting.	Improve traffic flow, access and reduce collisions by improving merging. improve pedestrian access across highway. Heavily traveled - over 90,000 vehicles per day. Daily congestion results in by-pass traffic on local arterials.	90-100k vehicles/day	5 of 5
RTC/Caltrans	10	**Highway 1 Corridor Tiered Environmental Document**	Environmental analysis of HOV lanes (Tier 1/program-level) and Soquel-41st Ave Aux Lanes (Tier 2/project level), including interchange reconstruction, ramp metering, 3 bike/ped crossings, and intelligent vehicle management systems. Additional funds to finalize the environmental document.	Analysis of options, impacts and benefits of modifying Highway 1 corridor. Reduce delay and congestion; improve travel times - especially for transit, carpools; improve pedestrian/bike access across highway. Heavily traveled - over 100,000 vehicles per day. Daily congestion results in by-pass traffic on local arterials.	Over 120k	3 of 5

Agency	#	Project Name	Description	Summary of Benefits *(RTC staff summary of info provided in application)*	Estimated Daily Use	Sponsor Priority #
Capitola	11	**Brommer Street Complete Street Improvements** (250' west of 38th Ave to 41st Ave)	Construct complete street roadway improvements on Brommer St. to improve access for vehicles, bikes, and pedestrians. Pavement reconstruction, install ADA driveways and sidewalks, and reconfigure eastbound approach to 41st Ave. for vehicle access.	System preservation, fills gap in existing transportation system, improve accessibility and safety for all users, especially bikes and pedestrians. Route used by trucks, autos, and bike commuters travelling between Capitola and Live Oak to residents and businesses. Currently the roadway pavement is in poor condition PCI 13, lacks a continuous sidewalk on the north side between 38th and 41st Ave. restripe the Class II bike lane, and reconfigure the eastbound intersection approach to 41st Avenue.	6400 vehicles; 265 bus riders; 106 bikes; 110 peds	1 of 1
City of Santa Cruz	12	**Pacific Ave. Sidewalk**	Construct 200' of new sidewalk on Pacific Avenue between Front Street and 55 Front St, including installation of a new accessible crosswalk at Front and Pacific; 150' bike lane.	Improve pedestrian safety and walking levels through construction of new sidewalk and an improved crossing in a highly traveled corridor. Solve conflict between pedestrians and bikes, autos, and transit vehicles and creates a safer environment for all roadway users.	720 (8300 autos)	4 of 4
City of Santa Cruz	13	**Bay/High Roundabout**	Replace 4-way signal light with new roundabout at Bay/High intersection	Expected to improve overall function of intersection; reduce collisions associated with unprotected left-turns; reduce emissions associated with congestion/idling at stop lights; reduce delay; reduce auto speeds/severity of collisions with bikes and peds.	21,000+9800bus riders+ 3800 bike, +3300 ped	3 of 4
City of Santa Cruz	14	**River Street Pavement Rehabilitation (Water St to Potrero Street)**	Pavement rehabilitation of River Street between Water Street and Potrero Street. (0.4 mi)	Preserves existing infrastructure and improves accessibility for a multimodal arterial for all users: auto, trucks, transit, bikes and pedestrians. The method of paving may include could-in-place recycling which is a more sustainable paving practice.	10,535 ADT; METRO buses	2 of 4
City of Santa Cruz	15	**State Route 1/9 Intersection Improvements**	Adds lanes to the Highway 1 and 9 intersection to improve operations and safety. The intersection will be upgraded to include standard lane widths, transitions, shoulders, bike lanes, lighting, sidewalks and access ramps.	Regionally significant intersection. Improve access and safety, reduce congestion and bottleneck, energy use and emissions. Heavily traveled, provides access for the university, Santa Cruz west side, Harvey West Area and Downtown.	85000	1 of 4
UCSC	16	**UCSC Great Meadow Bike Path Preservation and Safety Improvement Project (Phase 2)**	Reconstruct and widen Class I main bike path to meet current Caltrans standards within current alignment for safety and system preservation needs (approx. 1 mile).	System preservation, safety, bicycle and pedestrian access. Bring 43-year-old path up to current Caltrans standards, reduce potential bike conflicts with other bikes and pedestrians, allow cyclists more recovery room when traveling at high downhill speeds .	660-1320	1 of 1
Scotts Valley	17	**Bean Creek Road Rehabilitation**	Pavement rehabilitation of Bean Creek Rd (Bluebonnet Lane to city limits), improve signage and road markings for bikes (0.6mi)	System preservation (current PCI: 42), improve drainage. May use road recycling method and green bike lane treatments.	1869	4 of 4
Scotts Valley	18	**Glenwood Drive Rehabilitation and Bicycle Improvement Project**	Pavement rehabilitation of Glenwood Dr. (K Street Way to city limits), drainage repair, and widen to add bike lanes. (0.58mi)	System preservation (current PCI: 44) and enhance bicycle safety through new bike lanes. Part of roadway failed during 2017 storms, project will improve drainage. May use road recycling method. Serves SVHS, city and county residents	2167	3 of 4
Scotts Valley	19	**Glen Canyon Road/Green Hills Road/S. Navarra Drive Bike Corridor and Roadway Preservation**	Roadway rehabilitation on Green Hills Rd. (Glen Canyon to end at S. Navarra) and Glen Canyon Rd. (Flora Lane to Green Hills); add bicycle lanes on Green Hills Rd., and green lanes, markings on 3 roads.	System preservation (current PCI: 22) and fill gap in bicycle network. Increase active transportation and safety, reduce greenhouse gas emissions by shifting approx. 200 trip to bike or walk. Extend service life of roadways and ensure safe, drivable surface for motorists and bicyclists.	8900	2 of 4
Scotts Valley	20	**Kings Village Road/ Bluebonnet Lane Sidewalk**	Construct new, fill gaps, and improve accessibility of sidewalks on both sides of King's Village Rd. (Mt. Hermon to Bluebonnet) and south side of Bluebonnet Lon (KV to Bean Creek). Approx.0.3mi. Curb ramp upgrades at Mt. Hermon.	Fill gaps in pedestrian network to increase safety and improve access to schools, shopping, transit center, parks, and housing.	222.1	1 of 4
Watsonville	21	**Airport Blvd Reconstruction: Westgate/Larkin Valley Rd to Hanger Way**	Reconstruct roadway & bike lanes (1300 ft), install new sidewalk (1070 ft), upgrade curb ramps and driveway crossings, install median islands, modify traffic signals to include additional ped crossings and install rectangular rapid flashing beacon.	System preservation, fill gaps in sidewalks and adds high visibility crosswalk @Holm Rd to improve safety for pedestrians, improve access to bus stops, ADA upgrades.	16,600	4 of 4
Watsonville	22	**Bicycle Safety Improvements**	New bicycle lane striping, markings, green lanes, and signage, esp. at intersections, on 7.47 miles. Beach St (Lee Rd to Rodriguez St); Bridge St (Beck St to E. Lake Ave), Green Valley Rd (Harkins Slough Rd to Corralitos Ck Bridge), Harkins Slough/Walker St (GV-Riverside Dr), Rodriguez St (Riverside-Main St)	Improve existing bicycle facilities to improve visibility and reduce crashes on roadways with severe injury and fatal incidents in past 10 year; increase cycling with improved safety and route/wayfinding signage.	unknown	2 of 4
Watsonville	23	**Freedom Blvd Reconstruction from Alta Vista Ave to Green Valley Rd**	Reconstruct existing roadway (0.6mi), replace non-ADA compliant curb ramps and driveways, ped scale lighting and illumination at crosswalks, install traffic signal at Sydney Ave, replace bus shelter, traffic calming	System preservation (PCI 58) on major arterial (ADT 24,000), ADA upgrades, sharrows/signage to improve bike safety, crossing feature to improve pedestrian safety.	24,000	1 of 4

Agency	#	Project Name	Description	Summary of Benefits *(RTC staff summary of info provided in application)*	Estimated Daily Use	Sponsor Priority #
Watsonville	24	**Green Valley Road Reconstruction (Struve Slough to Freedom Boulevard)**	Reconstruct existing roadway and bike lanes, install curb, gutter, sidewalk, ADA upgrades at curb ramps and driveways (0.3mi)	Extend service life of arterial roadway (PCI 62) and ensure safe, drivable surface for motorists and bicyclists. Replacement of existing striping and signage to enhance safety of motorists and bicyclists. Replacement of existing paved path with concrete curb, gutter and sidewalk and replacement of non-ADA compliant curb ramps and driveways improve existing pedestrian facilities and extend service life.	21,000	3 of 4
County of Santa Cruz	25	**Aptos Creek Road Traffic Signal, Soquel Dr. Sidewalks & Bike Lanes.**	Installation of a traffic signal at Aptos Creek Rd and Soquel Dr including railroad crossing arms. Controlled pedestrian at-grade railroad crossing along Aptos Creek Road and crosswalks across Aptos Creek Road and Soquel Drive. Sidewalks, curb, gutter on south side of Soquel Dr. and bicycle lanes.	Fill gaps in sidewalk network, improve bicycle facilities, improve access in village and to Forest of Nisene Marks State Park. Bring intersection up to current standards, improve safety and convenience for people in vehicles, on bikes, or walking.	8910	none
County of Santa Cruz	26	**Branciforte Drive Chip Seal Project**	Roadway rehabilitation: Digouts, Rubberized Chip Seal, and restriping of a portion of Branciforte Drive (Granite Creek Rd to SC city limits - 1.91mi)	System preservation. Serves as primary route conveying vehicular traffic from Scotts Valley & Happy Valley to Santa Cruz and Hwy 17. Current PCI 54-75.	4657	none
County of Santa Cruz	27	**Branciforte Drive Road Recycle & Overlay Project**	Roadway rehabilitation: Pavement Recycling, Asphalt Overlay, and restriping of a portion of Branciforte Drive (PM 2.4 to Granite Creek Rd - 0.62 miles)	System preservation. RTC approved $174,000 for chip seal in 2016, but the 2017 winter storms exacerbated damage; additional funds to upgrade proposed treatment to full depth recycle and overlay. Current PCI 35.	<4657	none
County of Santa Cruz	28	**Empire Grade Chip Seal Project**	Roadway rehabilitation: Digouts, Chip Seal, and restriping of Empire Grade: PM 13.86 to 14.38; near Alba (0.52mi)	System preservation. ADT: 2329; PCI 68-82; Provides access to Bonny Doon	2329	none
County of Santa Cruz	29	**Empire Grade Road Recycle And Overlay Project**	Roadway rehabilitation: Pavement Recycling/Asphalt Overlay of Empire Grade Rd - PM 1.32 to end of county maintained road (1.32 mi)	System preservation. ADT: 1094; PCI 25-39; Connects Bonny Doon and SLV; serves Lockheed Facility.	1094	none
County of Santa Cruz	30	**Glenwood Drive Chip Seal Project**	Roadway rehabilitation: Digouts, Rubberized Chip Seal, and restriping Glenwood Dr. from Bean Creek Rd. to Mt. Charlie Rd. (0.98mi)	System preservation. ADT: 5825; PCI 38-40; used as bypass for Hwy 17; connects County residents to Scotts Valley.	5825	none
County of Santa Cruz	31	**Granite Creek Rd Road Recycle & Overlay Project**	Roadway rehabilitation: Pavement Recycling/Asphalt Overlay on Granite Creek Rd from Scotts Valley limits to 0.56 miles south (0.56 mi)	System preservation. ADT 4249. Serves as alternate route between northern Scotts Valley and Branciforte Dr./Happy Valley.	4249	none
County of Santa Cruz	32	**Highway 17 To Soquel Corridor Chip Seal Project**	Roadway rehabilitation: Digouts, Chip Seal, and restriping of Vine Hill Rd (Hwy 17 to B40), Branciforte Dr (Vine Hill to PM 0.7), Mt. View Rd (B40-N. Rodeo Gulch), N. Rodeo Gulch Rd (Mt. View-PM 1.97), Laurel Rd (N. Rodeo-Soquel San Jose Rd), and Soquel-San Jose Rd. (Laurel to Dawn Lon) - 9.90 mi.	System preservation. ADT varies - Soquel-SJ Rd (8400) to lows on Laurel Glen & Mt View (840); PCI also varies 10-79 on varying sections of 9.9mi of roads. Several routes had increased use due to closures of other roadways after winter 2017 storms.	Varies - B40, Soquel SJ= over 4K; N. Rodeo - 2856; others less than 1K.	none
County of Santa Cruz	33	**Hwy 152/Holohan - College Intersection**	Add sidewalks and bicycle lanes on Holohan Rd, an additional left-turn lane from Holohan to EB Hwy 17, sidewalk on north side of Hwy 152 from Holohan to Corralitos Creek bridge, adds crosswalks and speed feedback signs.	Fill gaps in bike and walk facilities, access to schools; reduce traffic congestion; ADA upgrades; reduce speeding in school zone. Anticipated use: 25K/day - 1% bike, 1% ped, 0.5% bus. ADT: 15,800	25k	none
County of Santa Cruz	34	**Scotts Valley Area Routes Chip Seal Project**	Roadway rehabilitation: Digouts, Chip Seal, and restriping Mt. Hermon Rd (PM 1.31 to SV city limits), Lockewood Ln (GH-SV city limits), and Graham Hill Rd (Sims to Lockewood) - 2.76mi	System preservation. ADT (PCI) Mt. Hermon: 19,330 (41-62); Lockwood: 3900 (24); Graham Hill: 17,500 (38). Provide access from SLV to Hwy 17 and Scotts Valley.	19k-4000	none
County of Santa Cruz	35	**Seacliff Village Streetscape Improvements**	Construct sidewalks, bike lanes, bus stops, central plaza, parking, landscaping, drainage infrastructure, and roadway rehabilitation; includes St. Park Dr, Center Ave, Broadway, and Santa Cruz Ave.	Provide gateway to Seacliff Village and the Seacliff State Beach, improve multi-modal access to and through the Village, increase landscaping, formalize parking, and create a public plaza. Roadway rehab (PCI in 50's now); 12,000	11k	none
County of Santa Cruz	36	**Zayante Road Corridor Chip Seal Project**	Roadway rehabilitation: Digouts, Chip Seal, and restriping East Zayante & Upper E. Zayante from Quail Hallow to SR 35 (9.07mi)	System preservation. ADT~7800; PCI 0-62	7800	none

Preliminary Recommendations

#	Project Name	*Total Cost*	Funds Requested	Staff Recommendation	Staff Rec. Worst-Case Scenario (if only $9.7M)	Staff Rec. Mid-Case Scenario (if only $15M)	RTC Staff Comments/Conditions
1	**Open Streets Events – Watsonville and Santa Cruz**	*$97,000*	**$50,000**	**$25,000**	*$0*	*$25,000*	**Fund events in Watsonville which has high collision rates, lower bike/walk use.** $50k RSTPX approved by RTC 2/7/13 for events in Watsonville and Capitola. In 2016- RTC approved $10K for Watsonville event. Provides venue to raise awareness of other programs (e.g. METRO, Cruz511, etc.) One-day event reaches large audience, however unclear if more effective compared to other TDM and infrastructure/focused education programs.
2	**Every Day is Bike to Work Day**	*$70,000*	**$60,000**	**$50,000**	*$0*	*$30,000*	Low cost program to test effectiveness of new methods to encourage bicycle commuting which could be applied at other employers in the future. **Require records include info about frequency that participates bike before/after program.**
3	**METRO Refurbish Buses**	*$4,080,000*	**$3,612,024**	**$900,000**	*$0*	*$0*	Avg. cost is $255k/bus to extend life 6 years. **Fund approx. 4 buses**.
4	**METRO ITS Equipment**	*$2,000,000*	**$1,770,600**	**$1,400,000**	*$0*	*$1,000,000*	Automatic Vehicle Locator (AVL) = $1M; passenger counters=$500k; auto vehicle announcement system=$500k. **Staff recommends funding at least AVL portion.**
5	**METRO Revenue Vehicle Replacements**	*$5,915,000*	**$5,236,550**	**$2,000,000**	*$975,590*	*$2,000,000*	**Funding for CNG buses and paratransit vans. $975k from FY17/18 supplemental SB1 PUC 99313 formula funds (SB1 STA and SB1 SGR); balance from STIP.** Cost is $1M/electric bus; $615k/CNG bus; $75k /paratransit van.
6	**Planning, programming, and monitoring (PPM)**	*$250k/year*	**$409,000**	**$409,000**	*$0*	*$409,000*	While cost of state/fed mandated activities is approx. $250k/year, legislation restricts STIP available for this work to $409k for FY20/21-22/23. **Only program STIP formula available for PPM**; staff does not recommend using STBG/RSTPX.
7	**Cruz511**	*$313k/year*	**$500,000**	**$300,000**	*$150,000*	*$225,000*	Request is for **2 years of funds**. Recent program evaluation has resulted in updated program goals and work program focused on serving low income residents, Vision Zero safety messaging, and improved user experience. Measure D Hwy Corridor funds would cover balance of program cost.
8	**41st/Soquel Auxiliary Lanes and Chanticleer Overcrossing**	*$34,000,000*	**$2,000,000**	**$2,000,000**	*$2,000,000*	*$2,000,000*	**RTC has reserved $2M STIP for this project since 2014.** This is a regionally significant multi-modal project serving over 100,000 vehicles per day. Approx. 28% of project cost attributed to bike/ped crossing.
9	**State Park/Bay Porter Auxiliary Lanes Project**	*$73,000,000*	**$2,400,000**	**$1,830,000**	*$0*	*$0*	Heavily used transportation facility. Initiate work to **make project more competitive for grants.** Application was for 50% of PA/ED (environmental review) cost; lower CTs overhead rate if STIP-funded. RTC could also request Advance Project Development (APDE) STIP funds (from future county shares). Balance of PA/ED would be funded by Measure D.
10	**Highway 1 Corridor Tiered Environmental Document**	*Enviro: $14.5M; $600M total project cost*	**$500,000**	**$500,000**	*$250,000*	*$350,000*	Most heavily used transportation facility in Santa Cruz County. Provides long term vision for the corridor, upgrades design standards and adds new bicycle and pedestrian facilities. **RTC needs to complete environmental document, including responses to comments.**

#	Project Name	*Total Cost*	Funds Requested	Staff Recommendation	Staff Rec. Worst-Case Scenario (if only $9.7M)	Staff Rec. Mid-Case Scenario (if only $15M)	RTC Staff Comments/Conditions
11	**Brommer Street Complete Street Improvements** (250' west of 38th Ave to 41st Ave)	*$770,000*	**$470,000**	**$470,000**	*$450,000*	*$470,000*	Fills gap in pedestrian network. Only request from Capitola.
12	**Pacific Ave. Sidewalk**	*$439,870*	**$339,870**	**$0**	*$0*	*$0*	City's 4th priority. Serves fewer people, sidewalk available on one side of road - unclear would increase walking rates. Low collision rate. Consider for TDA in future.
13	**Bay/High Roundabout**	*$2,150,000*	**$1,600,000**	**$0**	*$0*	*$0*	City priority 3 of 4. 14 collisions in past 10 years. Encourage city to seek AB2766 grant and other funds for construction.
14	**River Street Pavement Rehabilitation (Water St to Potrero Street)**	*$2,000,000*	**$1,000,000**	**$815,000**	*$0*	*$504,000*	2nd priority for city. Medium use, mixed-use, multimodal roadway; however cost/mile of roadway preservation is high. **Consider partial funding if city can scale project or commit other funds.**
15	**State Route 1/9 Intersection Improvements**	*$8,361,000*	**$2,000,000**	**$1,650,000**	*$1,250,000*	*$1,250,000*	City's highest priority. Very high use, multimodal, regionally significant project. Some of bike/ped components of project were constructed earlier as the Highway 1 undercrossing. RTC has previously awarded $1,329,000 STIP to project and $1M shifted to MBSST.
16	**UCSC Great Meadow Bike Path Preservation and Safety Improvement Project (Phase 2)**	*$1,134,000*	**$1,004,000**	**$750,000**	*$0*	*$250,000*	Demonstrated need. There is a history of collisions on the path. Consider funding **contingent on UCSC securing ATP grant** for balance of funds.
17	**Bean Creek Road Rehabilitation**	*$810,000*	**$717,000**	**$0**	*$0*	*$0*	4th priority of city. Higher cost/mile. Relatively low use
18	**Glenwood Drive Rehabilitation and Bicycle Improvement Project**	*$865,000*	**$763,000**	**$275,000**	*$0*	*$0*	Priority 3 of 4 applications. Located near school. **Consider partial funding if city can scale project or commit other funds.**
19	**Glen Canyon Road/Green Hills Road/S. Navarra Drive Bike Corridor and Roadway Preservation**	*$993,000*	**$102,000**	**$102,000**	*$0*	*$102,000*	Supplements $711k approve by RTC in 2016. Moderate traffic volumes, complete streets project. Identified as priority through community meetings.
20	**Kings Village Road/ Bluebonnet Lane Sidewalk**	*$306,000*	**$271,000**	**$271,000**	*$271,000*	*$271,000*	Fills gap in sidewalk network in urbanized area.
21	**Airport Blvd Reconstruction: Westgate/Larkin Valley Rd to Hanger Way**	*$1,645,000*	**$177,000**	**$177,000**	*$0*	*$0*	RTC programmed $1,195,000 STIP in 2013. Supplemental funds requested due to cost increase/change in scope from full-depth rehab to "remove and replace existing hot mix asphalt" and escalating construction costs statewide. Scope change required due to PG&E gas line location.
22	**Bicycle Safety Improvements**	*$525,000*	**$400,000**	**$275,000**	*$150,000*	*$200,000*	32 collisions in past 10 years. Safety project will increase visibility of bicyclists. **Project can be scaled to focus on highest crash locations.**
23	**Freedom Blvd Reconstruction from Alta Vista Ave to Green Valley Rd**	*$3,125,000*	**$2,500,000**	**$1,550,000**	*$750,000*	*$1,250,000*	High use, major arterial, multi-modal safety improvements. **Consider partial funding if city can scale project or commit other funds.**

#	Project Name	*Total Cost*	Funds Requested	Staff Recommendation	Staff Rec. Worst-Case Scenario (if only $9.7M)	Staff Rec. Mid-Case Scenario (if only $15M)	RTC Staff Comments/Conditions
24	**Green Valley Road Reconstruction (Struve Slough to Freedom Boulevard)**	*$1,598,000*	**$354,000**	**$354,000**	*$354,000*	*$354,000*	**Address funding shortfall.** RTC programmed $1,047,00 STBG in 2016. Used by over 21k/day, major arterial,
25	**Aptos Creek Road Traffic Signal, Soquel Dr. Sidewalks & Bike Lanes.**	*$3,201,671*	**$2,651,000**	**$1,900,000**	*$0*	*$300,000*	High use, major arterial (Soquel Dr), multi-modal project. Includes improved safety and access for bikes, pedestrians, and transit riders; system preservation. RTC has previously awarded $1.4M to Aptos Village project components. Priority for county.
26	**Branciforte Drive Chip Seal Project**	*$433,000*	**$384,000**	**$384,000**	*$0*	*$384,000*	Complete Branciforte repairs.
27	**Branciforte Drive Road Recycle & Overlay Project**	*$431,000*	**$208,000**	**$208,000**	*$208,000*	*$208,000*	**Addresses funding shortfall.** Would bring total RTC funding for project to $382,000.
28	**Empire Grade Chip Seal Project**	*$286,000*	**$253,000**	**$0**	*$0*	*$0*	Low use.
29	**Empire Grade Road Recycle And Overlay Project**	*$808,000*	**$715,000**	**$0**	*$0*	*$0*	Very low use.
30	**Glenwood Drive Chip Seal Project**	*$127,000*	**$112,000**	**$0**	*$0*	*$0*	Relatively low use.
31	**Granite Creek Rd Road Recycle & Overlay Project**	*$1,103,000*	**$476,000**	**$476,000**	*$476,000*	*$476,000*	**Addresses funding shortfall.** In 2016, RTC approved $500k for project. County providing $127k.
32	**Highway 17 To Soquel Corridor Chip Seal Project**	*$1,881,000*	**$1,665,000**	**$800,000**	*$0*	*$500,000*	Alterante route to Hwy 17. Chip seal is cost effective. **County will need to scale project or commit additional funds.**
33	**Hwy 152/Holohan - College Intersection**	*$3,153,205*	**$767,000**	**$767,000**	*$767,000*	*$767,000*	Fills gap in sidewalk and bike lane network, reduce traffic congestion at intersection; bypass to downtown Watsonville; Still needs extra $1.7M. CTC will not approve STIP for partially funded project. **Funding contingent on County securing other funds by Sept. 2018.**
34	**Scotts Valley Area Routes Chip Seal Project**	*$940,000*	**$832,000**	**$832,000**	*$680,000*	*$725,000*	High use, primary routes between SLV and Scotts Valley. Chip seal is cost effective.
35	**Seacliff Village Streetscape Improvements**	*$3,436,332*	**$410,000**	**$0**	*$0*	*$0*	RTC has approved RSTPX & TDA funds for project since 2007 ($587k RSTPX and $263k TDA). **Still needs extra $1.69M, consider in future cycles.**
36	**Zayante Road Corridor Chip Seal Project**	*$1,725,000*	**$1,527,000**	**$950,000**	*$950,000*	*$950,000*	Chip seal is cost effective. Ensure small aggregate used to improve safety for bicycles, widen shoulders where feasible. Road used by transit also. **Consider partial funding if county can scale project or commit other funds.**
		Total	**$38,236,044**	**$22,420,000**	*$9,681,590*	*$15,000,000*	

AGENDA: November 16, 2017

TO: Interagency Technical Advisory Committee

FROM: Ginger Dykaar and Grace Blakeslee, Senior Transportation Planners

RE: Unified Corridor Investment Study - Step 1 Scenario Analysis Results - DRAFT

RECOMMENDATIONS

Staff recommends that the Interagency Technical Advisory Committee (ITAC) provide input on the draft Step 1 scenario results (Attachments 1 and 2).

BACKGROUND

The objective of the Unified Corridor Investment Study (UCS) is to identify multimodal transportation investments that provide the greatest benefit and most effective use of Highway 1, Soquel Avenue/Drive and Freedom Blvd, and the Santa Cruz Branch Rail Line. See the project area map in Attachment 3. Goals for the UCS focus on developing a sustainable transportation system which seeks to maximize benefits in terms of the natural environment, economic vitality and health and equity. At the May 4, 2017 meeting, the RTC approved the goals, criteria, performance measures (Attachment 4) and project list (Attachment 5). At the June 15, 2017 meeting the RTC approved the groups of projects or scenarios to be evaluated in the Step 1 analysis (Attachment 5). Input from the public, stakeholders, and RTC advisory committees have been solicited at key milestones of project development.

DISCUSSION

An analysis is in progress to determine how different scenarios or groups of transportation projects implemented by 2035 will advance the goals of the project. A two step scenario analysis is being performed. In Step 1, scenarios are being evaluated based on feasibility using an initial set of criteria which will allow some scenarios to be eliminated early on. Step 2 will be a more detailed evaluation of the remaining scenarios using performance measures and will result in a recommended preferred scenario or group of projects for implementation.

Step 1 Analysis

The scenarios being evaluated in the Step 1 analysis (Attachment 5) were designed to include all modes (auto, transit, bike, and walk) consistent with RTC sustainability policies to advance triple bottom line goals of environment, equity and economy. The scenarios present a range of potential future transportation networks that are well integrated and connect the three parallel routes. Projects

were grouped together to identify where the interaction between projects could produce a combined effect greater than what could be accomplished individually, adding value to each investment. The development of the scenarios considered input from the public, community organizations, stakeholders, RTC Advisory Committees, and the RTC.

The draft Step 1 analysis qualitatively evaluates projects and scenarios based on a set of feasibility criteria. The summary of the Step 1 analysis is in Attachment 1 with information on the methodology for how projects and scenarios were evaluated. The detailed evaluation of each of the projects is in Attachment 2.

RTC staff is requesting input from the ITAC on the following:

- Project descriptions
- Completeness of issues discussed for each project and criterion
- Rating per criterion for each project
- Overall rating per project
- Projects to recommend for evaluation in Step 2
- Scenarios to recommend for evaluation in Step 2

RTC staff will be soliciting input from all RTC advisory committees and stakeholders in fall, 2017. Two public workshops were held to solicit public input (see details in timeline below). RTC staff will be bringing the draft Step 1 scenario analysis results to the RTC in December, 2017 with a recommendation on scenarios to evaluate in the quantitative Step 2 analysis. **RTC staff recommends that the Interagency Technical Advisory Committee provide input on the draft Step 1 scenario results (Attachments 1 and 2).**

Timeline

September, 2017: Draft results of Step 1 scenario analysis brought to stakeholders, RTC advisory committees, and public workshops.

October, 2017: Survey released soliciting input on draft Step 1scenario analysis

October 2, 2017: Public Workshop will be held at the Watsonville Public Library, 275 Main Street from 6:00pm to 7:30pm. (Rescheduled from a date in September)

October 3, 2017: Public Workshop will be held at the Live Oak Elementary School, 1916 Capitola Rd in Live Oak from 6:00pm to 7:30pm. (Rescheduled from a date in September)

November 8, 2017: Last day to complete the survey

December 2, 2017: Results of draft Step 1 scenario analysis and recommendations for Step 2 brought to RTC for approval.

Fall 2018: Results of Step 2 scenario analysis and draft preferred scenario brought to stakeholders, RTC advisory committees, public and RTC.

Fall 2018: Develop draft project report.

December 2018: Final Unified Corridor Investment Study report and preferred scenario.

SUMMARY

The Unified Corridor Investment Study is in progress to identify multimodal transportation investments that optimize usage of Highway 1, Soquel Avenue/Drive and Freedom Blvd and the Santa Cruz Branch Rail Line while advancing sustainability goals. Input is being solicited from the public, stakeholders, and RTC advisory committees on the draft Step 1 scenario results. **RTC staff recommends that the Interagency Technical Advisory Committee provide input on the draft Step 1 scenario results (Attachment 1 and 2).**

Attachments:

1. Summary of Draft Step 1 Scenario Analysis Results
2. Project Evaluations by Criterion
3. Project Area Map
4. Goals, Criteria and Performance Measures
5. Step 1 Scenarios to be Evaluated

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Unified Corridor Investment Study

Step 1 Draft Scenario Analysis

The Unified Corridor Investment Study (UCS) will identify multimodal transportation investments that provide the greatest benefit and most effective use of Highway 1, Soquel Ave/Dr and Freedom Blvd, and the Santa Cruz Branch Rail Line to help meet the transportation needs of current and future generations. In investigating how these three parallel routes can work together most effectively, the UCS will provide an analysis of the transportation options for the rail corridor as required by Measure D.

A scenario analysis is being performed for comparing different groups of projects to assess how well they advance the goals of the project. The scenario analysis for the UCS is a two step analysis where Step 1 will evaluate the projects based on the following set of feasibility criteria.

Goal	Step 1 Criteria
Promote feasible solutions that address transportation challenges.	Community support and coordination/consistency with local, regional, state and federal plans
	Potential to address transportation challenges and advance environmental, economic and equity goals
	Compatibility with regulatory requirements
	Level of public investment
	Right of way and constructability constraints
	Technological feasibility

Table 1. Step 1 Criteria for Project Evaluation

The detailed evaluation of each project, based on these Step 1 criteria, is in Attachment 2. The projects were evaluated using a standard set of indicators that were developed for each criterion as well as a narrative providing an explanation of the opportunities and challenges that affect the feasibility of the project. Each project was given a rating for each criterion based on a five level rating system as shown in Table 2. An overall rating was also given for each project.

Ratings	***Rating Definition***
	Indicates a greater level of potential opportunities within the criteria
	Indicates more potential opportunities than challenges within the criteria
Neutral	Indicates a balance of opportunities and challenges within the criteria
	Indicates more potential challenges than opportunities within the criteria
	Indicates a greater level of potential challenges within the criteria

Table 2. Step 1 Project Rating System

The Step 1 scenario analysis aims to evaluate the feasibility of the various projects and scenarios in order to help direct the discussion on what projects will provide the greatest benefit. The main question that is posed in this step of the analysis is "Will this project help Santa Cruz County address its transportation challenges? For example, will it reduce congestion on Highway 1, will it help to meet the requirements for GHG emission reductions, will it improve safety and provide access for people who do not drive, etc."

If there is benefit from the project, are there other barriers that would make this project infeasible?

- Is there community support for the project?
- How much will it cost the residents of Santa Cruz County to implement this project?
- What are the right-of-way needs and will that delay the project significantly?
- Are there significant environmental impacts that will make the project less feasible?
- Are there regulatory requirements for this project that will be challenging to meet?

The Step 1 evaluation attempts to address these questions in order to determine project feasibility and if projects should be evaluated further in Step 2. A summary of the draft Step 1 results can be found below which provides the list of projects in each scenario along with the project ratings for each criterion. An acronym guide is provided on the last page of the attachment.

Scenario A

	Projects in Scenario A	Community support and coordination/ consistency with plans	Potential to address transportation challenges	Compatibility with regulatory requirements	Level of public investment	Right of way and constructability constraints	Technological feasibility	OVERALL RATING
Hwy 1	HOV lanes	👍	👍	👍	👎	👍	👍👍	👍
	Auxiliary lanes (State Park to Freedom)	👍👍	👍	👍	👍👍	👍	👍👍	👍👍
	Ramp Metering	👍	👍	👍👍	👍	👍	👍👍	👍
	San Lorenzo River Bridge widening	👍	👍	👍👍	👍	👍	👍👍	👍
	Mission St Intersection Improvements	👍👍	👍👍	👍	👍👍	👍	👍👍	👍👍
Soquel/ Freedom	BRT lite	👍	👍👍	👍👍	👍👍	👍	👍👍	👍👍
	Increased transit frequency	👍👍	N	👍👍	👍	👍👍	👍👍	👍
	auto intersection improvements	👍	👍	👍	👍	👍	👍👍	👍👍
Rail Corridor	Bike and pedestrian trail	👍👍	👍	👍👍	👍👍	👍👍	👍👍	👍👍

Scenario A includes major transportation investments for auto and transit on Highway 1, low cost auto and transit improvements on Soquel/Freedom and a bike and pedestrian trail solely on the rail ROW. The Highway 1 projects include construction of high occupancy vehicle lanes (and associated auxiliary lanes and ramp metering) for improvements to travel time, travel time reliability and safety for carpools, transit and single occupant vehicles on Santa Cruz County's primary transportation route. Scenario A includes operational improvements on Soquel/Freedom through implementation of bus priority strategies at intersections, increased transit frequency and intersection improvements for autos. The transit investments on Soquel/Freedom will improve transit travel time, improve access, support lower cost transportation options and benefit people who don't drive. The primary improvement for bicycles and pedestrians included in Scenario A is construction of a bike and pedestrian trail on the rail ROW, which has potential to improve safety and health and promote a shift from driving to bicycling and walking for short trips and in turn, reduce VMT and GHG emissions.

Scenario B

	Projects in Scenario B	Community support and coordination/ consistency with plans	Potential to address transportation challenges	Compatibility with regulatory requirements	Level of public investment	Right of way and constructability constraints	Technological feasibility	OVERALL RATING
Hwy 1	Bus on Shoulders	👍	👍	👍	👍👍	👍	👍👍	👍
	Ramp Metering	👍	👍	👍👍	👍	👍	👍👍	👍
	Mission St Intersection Improvements	👍👍	👍👍	👍	👍👍	👍	👍👍	👍👍
Soquel/ Freedom	BRT lite	👍	👍👍	👍👍	👍👍	👍	👍👍	👍👍
	Increased transit frequency	👍👍	N	👍👍	👍	👍👍	👍👍	👍
	Buffered/protected bike lanes	👍	👍👍	👍👍	👍👍	N	👍👍	👍👍
	Bike/pedestrian intersection improvements	👍	👍👍	👍👍	👍👍	👍	👍👍	👍👍
Rail Corridor	Bike and pedestrian trail	👍👍	👍	👍👍	👍👍	👍👍	👍👍	👍👍
	Rail transit	👍	👍	👍👍	👎	👍	👍👍	👍

Scenario B projects provide an expanded transit network by supporting transit improvements on each of the three routes. Projects include low cost transportation improvements for auto and transit on Highway 1, buffered/protected bike lanes and low cost transit improvements for Soquel/Freedom and significant increases in transit capacity with a major investment in rail transit on the rail ROW, along with a bike and pedestrian trail in the rail ROW. The Highway 1 bus on shoulders and ramp metering projects will provide some operational improvements for autos and transit including travel time and travel time reliability improvements. The feasibility of bus on shoulders is currently being investigated. The Soquel/Freedom projects will provide some improvement to transit travel time and reliability, increase transit frequency, and improve bicycle and pedestrian safety. A bike and pedestrian trail and rail transit on the rail ROW could improve access to jobs, education and services, increase the potential for shifting trips from auto to transit and biking and walking, improve safety, reduce VMT and GHG emissions, support lower cost transportation options and benefit people who don't drive. Rail transit from Watsonville to Santa Cruz also encourages more intensive and compact use of land surrounding stations and the potential for future regional transit connections to Monterey, the Bay Area and beyond. Together, the trail on the rail ROW and buffered bicycle lanes on Soquel provide significant safety improvements for bicyclists that will promote a shift from driving to bicycling and in turn, a reduction in VMT and GHG.

Scenario C

	Projects in Scenario C	Community support and coordination/ consistency with plans	Potential to address transportation challenges	Compatibility with regulatory requirements	Level of public investment	Right of way and constructability constraints	Technological feasibility	OVERALL RATING
Hwy 1	Auxiliary lanes (State Park to Freedom)	👍👍	👍	👍	👍👍	👍	👍👍	👍👍
Soquel/ Freedom	BRT lite	👍	👍👍	👍👍	👍👍	👍	👍👍	👍👍
	Increased transit frequency	👍👍	N	👍👍	👍	👍👍	👍👍	👍
	auto intersection improvements	👍	👍	👍	👍	👍	👍👍	👍
Rail Corridor	Bike and pedestrian trail	👍👍	👍	👍👍	👍👍	👍👍	👍👍	👍👍
	Bus rapid transit	👍	👍	N	N	👍	👍👍	👍

Scenario C offers a scenario with moderate auto improvements on Highway 1, transit and auto improvements on Soquel and major bus transit, bike and pedestrian improvements on the rail ROW. Construction of auxiliary lanes on Highway 1 between State Park Dr. and San Andreas Rd will improve traffic flow and safety for autos on Highway 1. Projects on Soquel/Freedom improve transit operations through implementation of bus priority strategies at intersections, an increase in transit frequency and improvements to intersections for autos. Bus rapid transit on the rail ROW is a major cost investment that significantly increases transit capacity. Bus rapid transit and a bike and pedestrian trail on the rail ROW could improve access to jobs, education and services, increase the potential for shifting trips from auto to transit and biking and walking, improve safety, reduce VMT and GHG emissions, support lower cost transportation options and benefit people who don't drive. Implementing bus rapid transit utilizing only the rail ROW north of Aptos and south of Natural Bridges Dr in the City of Santa Cruz would allow for trail and transit services between Aptos and Westside of Santa Cruz with only a bike and pedestrian trail south of Aptos and north of the City of Santa Cruz up to Davenport.

Scenario D

	Projects in Scenario D	Community support and coordination/ consistency with plans	Potential to address transportation challenges	Compatibility with regulatory requirements	Level of public investment	Right of way and constructability constraints	Technological feasibility	OVERALL RATING
Hwy 1	Rail Transit on Hwy 1	👎👎	N	N	👎👎	👎	👍👍	👎
	Automated Vehicles	👍	👍	👍	👍	👍	👍	👍
Soquel/ Freedom	Dedicated lane for BRT and bike	👎	N	👍👍	👍👍	👍	👍👍	N
Rail Corridor	Bike and pedestrian trail	👍👍	👍	👍👍	👍👍	👍👍	👍👍	👍👍

Scenario D significantly increases transit capacity in the corridor by implementing rail transit on the highway and replacing a general purpose lane on Soquel/Freedom with dedicated lanes for bus rapid transit shared with biking. The rail ROW is used solely for a bike and pedestrian trail. The rail transit investment along the highway would require a major cost investment with limited benefits and significant environmental impacts. The percentage of automated vehicles on the highway by 2035 would not create a significant increase in capacity or improvements to auto travel time although safety improvements will be likely. A dedicated lane for bus rapid transit and biking that would occupy a general purpose lane will likely have substantial traffic impacts with negative effects on auto travel time but would improve transit travel time and reliability significantly. A bicycle and pedestrian trail on the rail ROW has potential to improve safety and health and promote a shift from driving to bicycling and walking for short trips and in turn, reduce VMT and GHG emissions. Together, the trail on the rail ROW and the dedicated lanes for bus and bike on Soquel/Freedom provide significant safety improvements for bicyclists that will promote a shift from driving to bicycling and in turn, a reduction in VMT and GHG.

Scenario E

	Projects in Scenario E	Community support and coordination/ consistency with plans	Potential to address transportation challenges	Compatibility with regulatory requirements	Level of public investment	Right of way and constructability constraints	Technological feasibility	OVERALL RATING
Hwy 1	HOV lanes	👍	👍	👍	👎	👍	👍👍	👍
	Auxiliary lanes (State Park to Freedom)	👍👍	👍	👍	👍👍	👍	👍👍	👍👍
	Ramp Metering	👍	👍	👍👍	👍	👍	👍👍	👍
Soquel/ Freedom	Buffered/protected bike lanes	👍	👍👍	👍👍	👍👍	N	👍👍	👍👍
	Bike/pedestrian intersection improvements	👍	👍👍	👍👍	👍👍	👍	👍👍	👍👍
Rail Corridor	Bike and pedestrian trail	👍👍	👍	👍👍	👍👍	👍👍	👍👍	👍👍
	Rail transit	👍	👍	👍👍	👎	👍	👍👍	👍
	Freight Service	👍	👍	👍👍	👍	👍👍	👍👍	👍

Scenario E includes major transportation investments for auto and transit on Highway 1, buffered/protected bike lanes for Soquel/Freedom and significantly increases transit capacity with a major investment in rail transit, along with freight service and bike and pedestrian trail in the rail ROW. The construction of high occupancy vehicle lanes (and associated auxiliary lanes and ramp metering) is expected to provide improvements to travel time, travel time reliability and safety for carpools, transit and single occupant vehicles. Soquel/Freedom projects prioritize bicycle and pedestrian facilities for safety benefits through buffered/protected bicycle lanes. Trail and rail transit on the rail ROW could improve access to jobs, education and services, increase the potential for shifting trips from auto to transit and biking and walking, improve safety, reduce VMT and GHG emissions, support lower cost transportation options and benefit people who don't drive. Rail transit from Watsonville to Santa Cruz also encourages more intensive and compact use of land surrounding stations and the potential for future regional transit connections to Monterey, the Bay Area and beyond. Freight service on the rail line would provide an alternative option with less congestion for goods movement in Santa Cruz County and improve safety by reducing the number of trucks on Highway 1. Together, the trail on the rail ROW and buffered bicycle lanes on Soquel provide significant safety improvements for bicyclists that will promote a shift from driving to bicycling and in turn, a reduction in VMT and GHG.

Scenario F

	Projects in Scenario F	Community support and coordination/ consistency with plans	Potential to address transportation challenges	Compatibility with regulatory requirements	Level of public investment	Right of way and constructability constraints	Technological feasibility	OVERALL RATING
Hwy 1	Bus on shoulders	👍	👍	👍	👍👍	👍	👍👍	👍
	Ramp Metering	👍	👍	👍👍	👍	👍	👍👍	👍
Soquel/ Freedom	Dedicated lane for BRT and bike	👎	N	👍👍	👍👍	👍	👍👍	N
	Bike/pedestrian intersection improvements	👍	👍👍	👍👍	👍👍	👍	👍👍	👍👍
Rail Corridor	Bike and pedestrian trail	👍👍	👍	👍👍	👍👍	👍👍	👍👍	👍👍
	Rail transit	👍	👍	👍👍	👎	👍	👍👍	👍

Scenario F significantly increases transit capacity through the corridor by implementing bus on shoulders on the highway, converting a general purpose lane on Soquel/Freedom to dedicated lanes for bus rapid transit shared with biking, and with a major investment in rail transit and bike and pedestrian trail in the rail ROW. The Highway 1 bus on shoulders and ramp metering projects will provide some operational improvements for autos and transit including travel time and travel time reliability improvements. The feasibility of bus on shoulders is currently being investigated. A dedicated lane for bus rapid transit and biking on Soquel/Freedom that would occupy a general purpose lane will likely have substantial traffic impacts with negative effects on auto travel time but would improve transit travel time and reliability significantly. Trail and rail transit on the rail ROW could improve access to jobs, schools and services and supports lower cost transportation options and benefit people who don't drive. Rail transit from Watsonville to Santa Cruz also encourages more intensive and compact use of land surrounding stations and the potential for future regional transit connections to Monterey, the Bay Area and beyond. Together, the trail on the rail ROW and the dedicated lanes for bus and bike on Soquel/Freedom provide significant safety improvements for bicyclists that will promote a shift from driving to bicycling and in turn, a reduction in VMT and GHG.

Route	**Highway 1**
Project Title	Bus On Shoulder (BOS)
Project Description	A Bus on Shoulders Feasibility Study is currently underway to investigate the possibility of express bus service utilizing the shoulders on Highway 1 between Santa Cruz Metro Center and Watsonville Transit Center. Options being considered include use of either inside or outside shoulders and potential use of the existing/future (funded by Measure D) auxiliary lanes between Morrissey Blvd and State Park Dr (approximately 6 miles). The Bus on Shoulders Feasibility Study is scheduled to be finalized in spring 2018. Frequency of transit service on Highway 1 would remain the same as existing service but would utilize the shoulders/auxiliary lanes and therefore would require minor or no change in operating costs.
Overall Rating	
Summary	BOS is a potentially low cost option that could improve transit travel time and reliability. Decreases in travel time could increase transit ridership, reducing VMT and therefore greenhouse gas emissions. The available right-of-way along shoulders is being investigated in the BOS Feasibility Study.

Step 1 Criteria		Rating	Evaluation	Narrative
Community Support and Consistency with Applicable Plans	**Positives/ Neutral**		✓ Project specific planning effort (BOS Feasibility Study) ✓ Consistent with long range planning effort with public input (approved draft 2040 RTP project list)	▫ Monterey Salinas Transit/Metro/Caltrans District 5/CHP are working in cooperation on a feasibility study for bus on shoulders. The feasibility study is scheduled to be finalized in spring 2018. ▫ The approved draft project list for the 2040 Regional Transportation Plan (RTP) includes the bus on shoulders project. Partner agency, public and stakeholder input are solicited at key milestones of the RTP development.
	Negatives			
Addresses Transportation Challenges & Environmental, Economic, and Equity Goals	**Positives/ Neutral**		Economic ✓ Improves transit travel time ✓ Improves transit travel time reliability ✓ Improves access to jobs, education and services Environmental ✓ Mode shift to transit ✓ Reduces VMT and GHG Equity ✓ Improves access for people who do not drive ✓ Reduces household transportation costs	▫ Bus on shoulders has the potential to improve transit travel times and travel time reliability between Watsonville and Santa Cruz Metro Center providing improved access to jobs, education centers and services. ▫ Transit in the auxiliary lanes (with minimal time on shoulders) may still provide operational improvements but not as significant as transit travel on a dedicated shoulder. ▫ Faster and more reliable transit service could encourage people to shift from driving to transit, reducing VMT and GHG emissions. Transit improvements support lower cost transportation options which can reduce household transportation costs and benefit people who do not drive including youth, seniors, people with disabilities, low income, and minorities.
	Negatives		Economic × Increases auto travel time (on ramps) Environmental	▫ Highway shoulders have typically been used for emergency and traffic law enforcement. As required by legislation (AB 1746) emergency and traffic law enforcement use is still the priority for highway shoulders. ▫ Highway 1 ramp metering to benefit transit may have a negative effect on auto travel time as transit would be given priority over autos.

Step 1 Criteria		Rating	Evaluation	Narrative
			× Environmentally sensitive areas may be impacted × Traffic impacts (at highway ramps due to bus priority) Equity × Potential Safety conflicts (with emergency response vehicles, law enforcement and disabled vehicles)	
Compatible with Regulatory Requirements	**Positives/ Neutral**		✓Consistent with legislation (AB 1746, SB 375, SB 32) ✓Consistent with design standards (Caltrans) ✓Approvals required (Caltrans and CHP)	▫ AB 1746 provides the authority for Metro to use highway shoulders for bus-only traffic during congested periods with approval from Caltrans and CHP. ▫ Greenhouse gas reduction legislation (SB 375, SB 32) requires reductions in GHG from transportation in order to slow climate change.
	Negatives			
Level of Public Investment	**Positives/ Neutral**		✓ Minor new investment for capital costs may be required ✓ Minor new investment for operations required ✓ Existing funding sources could cover cost of operations ✓ Some funding sources (federal, state or local) may be available for capital costs	▫ Once the auxiliary lane projects between State Park Dr and Soquel that have been funded by Measure D have been constructed, the cost for BOS on the auxiliary lanes will be minimal. Minor amounts of paving may be required near the interchanges where bus will travel on shoulders. ▫ Frequency of transit service on Highway 1 would remain the same as existing service but would utilize the shoulders/auxiliary lanes, and therefore would require minor or no change in operating costs. Some new investment in buses and operations would be needed if transit service is expanded as a result of this project.
	Negatives			
Right-of-Way and Constructability Constraints	**Positives/ Neutral**		✓Minor amounts of right-of-way may need to be acquired	▫ Bus on shoulder transit services are expected to be accommodated primarily within existing Highway 1 right-of-way. Some additional right-of-way may need to be acquired for widening at ramps and widening of over and under-crossings.
	Negatives		× Construction challenges may require significant additional funds or alternative designs	▫ Limited shoulder width at a number of over-crossings and under-crossings along Highway 1 may make project infeasible in the near term due to cost required to widen these structures. Any widening necessary for BOS would be consistent with the Highway 1 Corridor Investment Program DEIR. The BOS Feasibility Study is scheduled to be final in spring 2018 which will provide information on feasibility and cost.
Technological Feasibility	**Positives/ Neutral**		✓Technologically feasible ✓Could accommodate future technologies	▫ BOS and any associated widening requirements are all technologically feasible. New technologies could be implemented to improve bus flow through ramp meters. Design could allow for implementation of self-driving buses in future.
	Negatives			

Route	**Highway 1**
Project Title	Additional lanes for high occupancy vehicles (HOV) and increased transit frequency
Project Description	The project would construct HOV lanes for a nine mile section between San Andreas Rd and Morrissey Blvd in both the north and southbound directions. Project includes construction of new HOV lanes, auxiliary lanes (in addition to those included in Measure D) and reconstruction of the interchanges and ramps, and over and under-crossings along this nine mile section. Interchange improvements include enhanced bicycle and pedestrian treatments. Express transit service in the HOV lanes is also considered here with 15 minute headways between Watsonville and Santa Cruz. Stops at Cabrillo and Capitola will be more limited.
Overall Rating	
Summary	Highway 1 is a principle transportation route for Santa Cruz County residents with traffic volumes as high as approximately 97,000 vehicles per day. Commuters, visitors, residents and businesses rely on Highway 1 for accessing their destinations. The HOV lanes project is a high cost capacity increasing project which would relieve congestion on Highway 1 and provide travel time improvements for transit, carpooling and single occupancy vehicle (SOV) motorists. Project would promote carpooling and transit use as a means to further increase transportation system capacity. Economic vitality of the region could be increased and access between north and south county improved. There could be potentially significant environmental impacts for all interchange improvements and over and under-crossings along this 9 mile stretch of Highway 1.

Step 1 Criteria		Rating	Evaluation	Narrative
Community Support and Consistency with Applicable Plans	**Positives/ Neutral**		✓ Project specific planning effort with public input (Hwy 1 Corridor Investment Program Draft EIR) ✓ Consistent with long range planning effort (2014 RTP) ✓ Multi-agency support (RTC, City of Capitola General Plan)	▫ The RTC is working in cooperation with Caltrans and FHWA on the draft Highway 1 Corridor Investment Program environmental review. The draft EIR has gone through the public comment period and responses to comments are being generated. ▫ The HOV Lane Project is included in the 2014 Regional Transportation Plan. Partner agency, public and stakeholder input are solicited at key milestones of the RTP development.
	Negatives		× May have some public opposition	▫ Concern has been expressed that increasing highway capacity will make traveling by automobile easier, increasing the number or length of trips people take, and thus will increase VMT and GHG emissions. Some members of the public are represented by advocacy groups that oppose improvements to Highway 1.
Addresses Transportation Challenges & Environmental, Economic, and Equity Goals	**Positives/ Neutral**		Economic ✓ Improves auto travel time ✓ Improves auto travel time reliability ✓ Improves transit travel time ✓ Improves transit travel time reliability ✓ Improves access to jobs, education and services	▫ Travel time for HOV, SOV and transit would be reduced, improving access to jobs, education centers and services and promoting business development and associated economic vitality for the region. Travel time improvements will also benefit emergency vehicles. Faster and more reliable transit travel times could increase transit ridership and HOV lane travel times could increase carpooling. HOV lanes would help to decrease the "cut-through" traffic on local streets by adding capacity to the highway. Auxiliary lanes improve traffic flow and safety of the highway by extending the merging area between off and on ramps.

Step 1 Criteria		Rating	Evaluation	Narrative
			✓ Potential to increase land use development, business activity, employment and tax revenues Environmental ✓ Mode shift to transit ✓ Mode shift to carpooling Equity ✓ Improves access for people who do not drive (transit) ✓ Improves safety	
	Negatives		Environmental × Environmentally sensitive areas may be impacted × Potential to increase GHG emissions	▫ The HOV lane project extending over a 9 mile section of highway with reconfiguration of the interchanges may impact environmentally sensitive areas. ▫ The goal of adding HOV lanes is to reduce congestion and increase the speed of travel. Increasing travel speeds and making it easier to travel can increase the number or length of trips but the extent of any induced demand would need to be evaluated. GHG could be increased if the number or length of trips is increased due to induced demand. Alternatively, GHG could be reduced if speeds are in the most optimal range (30-50 mph) for GHG emission reductions.
Compatible with Regulatory Requirements	**Positives/ Neutral**		✓ Standard permitting process ✓ Consistent with legislation (FAST Act)	▫ Permitting of any roadway project can be a time and resource intensive endeavor. Hwy 1 HOV lanes will be required to go through the standard permitting process although the large scale of the project, geography and natural resources potentially within the project area, may increase the amount of coordination needed with federal and state agencies may require significant effort to obtain the required permits. However, the length of the project (9 miles), geography and natural resources potentially in the area may increase the amount of coordination with federal and state agencies and increase the level of effort required to obtain the necessary permits. ▫ FAST Act legislation will require AMBAG to meet regional targets for safety and travel time reliability. Targets are currently being determined by the state for the MPOs and may need to be met in the next few years. HOV lanes can improve safety and travel time reliability to help meet regional targets.
	Negatives		× Design exceptions required	▫ Requests for design exceptions are anticipated on the HOV Lane project to avoid sensitive resources such as protected plant, animal and wetland habitat areas and to minimize impacts to residential, commercial and existing infrastructure.
Level of Public Investment	**Positives/ Neutral**		✓ Some funding sources may be available for capital costs (STIP, STBG, SB1 -LPP & CC, TIGER, trade corridor funds but unlikely) ✓ Minor new investment for operations required ✓ Existing funding sources could	▫ With the passage of Senate Bill 1 (SB 1) earlier this year, additional funds for transportation investments in Santa Cruz County will be available through both formula funding and grant programs. The congested corridors program, a grant program through SB 1 designed to provide funds for congested commute corridors could provide funds for Highway 1 HOV lanes, although it is unlikely at this time that Highway 1 will be competitive for these funds. STIP funds have been a source of funds for SCC over the years although even the STIP funds dropped within the last few years. STIP funds will be restored by SB 1 although they still may be lower than historic levels.

Step 1 Criteria		Rating	Evaluation	Narrative
			cover cost of operations (Caltrans SHOPP and maintenance budget)	▫ Opportunities arise from time to time from federal infrastructure investment programs, road user fees, and special grants to fund projects that are essentially "one-time" events. ▫ Currently, highway maintenance operation costs are paid for by the state. In future, Caltrans may require local agencies to cover costs of maintenance for projects that increase capacity.
	Negatives		× Major new investment for capital costs required × Few funding sources may be available for capital costs	▫ Cost to implement HOV lanes on Highway 1 is significant due to the interchange and crossing improvements that are needed to eliminate the constrictions that limit widening of the highway.
Right of Way and Constructability Constraints	**Positives/ Neutral**		✓ Can be built in phases	▫ Project can be implemented in phases with independent utility as funding becomes available. One of the several auxiliary lane projects that are needed to accommodate the additional HOV lane has already been built and three more are funded through Measure D.
	Negatives		× Moderate amounts of ROW will need to be acquired × Construction challenges may require significant additional funds or alternative design	▫ The project can generally be accomplished within the existing Caltrans highway right-of way, but some additional right-of-way acquisition will be required to expand some interchanges to accommodate HOV lanes. Geometrically challenged structures at interchanges and bridges may require additional funds or alternative designs.
Technological Feasibility	**Positives/ Neutral**		✓ Technologically feasible ✓ Could accommodate future technologies	▫ The HOV lanes project is feasible with current day technology. Technologies such as autonomous vehicles could be accommodated in future that may increase the capacity of the facility, safety and operational efficiencies such as fuel economies and emissions
	Negatives		x Planning for future technologies has not been initiated	▫ The effect of automated vehicles on the future transportation system is still unknown. Roadway capacity may increase as vehicles can travel more closely together but there will likely be increases in travel due to ease of taking more and longer trips. Regulations related to automated vehicles are still in their infancy. Larger MPOs are beginning to take steps to plan for future technologies. The smaller RTPAs such as RTC will be following their lead in planning for future technologies.

Route	**Highway 1**
Project Title	Auxiliary lanes to extend merging distance *(in addition to Measure D auxiliary lanes)*
Project Description	This project would construct auxiliary lanes along Highway 1 between interchanges from State Park Dr to San Andreas Rd. Auxiliary lanes between Morrissey and Soquel were completed in 2015. Measure D provides funds for 3 sets of auxiliary lanes between Soquel and 41st Ave, Bay-Porter and Park Ave, and Park to State Park Dr. This project would continue construction of auxiliary lanes between interchanges from State Park Dr. to San Andreas Rd. The project would require reconstruction of the two overcrossings of the Santa Cruz Branch Rail Line in Aptos, and widening of the Aptos Creek Bridge.
Overall Rating	
Summary	Moderate cost operational improvement to improve traffic flow and safety of the highway by extending the merging area between off and on ramps. Congestion may be slightly reduced, improving travel time and travel time reliability.

Step 1 Criteria		Rating	**Evaluation**	**Narrative**
Community Support and Consistency with Applicable Plans	**Positives/ Neutral**		✓ Project specific planning effort with public input (Highway 1 Corridor Investment Program and DEIR) ✓ Consistent with long range planning effort with public input (2014 RTP)	▫ The RTC is working in cooperation with Caltrans and FHWA on the draft Highway 1 Corridor Investment Program Environmental Documents. The draft EIR has gone through the public comment period and responses to comments are being generated. The auxiliary lane projects being considered here between State Park Dr and San Andreas are included in the Highway 1 Corridor Investment Program. Other auxiliary lane projects along Highway 1 (between Soquel and State Park Dr) have been supported by voters through passage of Measure D. ▫ Auxiliary lanes projects are included in the 2014 Regional Transportation Plan as stand-alone projects with independent utility. Partner agency, public and stakeholder input are solicited at key milestones of the RTP development.
	Negatives		× May have some public opposition	▫ Concern has been expressed that increasing highway capacity will make traveling by automobile easier, increasing the number or length of trips people take, and thus will increase VMT and GHG emissions. Some members of the public are represented by advocacy groups that oppose improvements to Highway 1.
Addresses Transportation Challenges & Environmental, Economic, and Equity Goals	**Positives/ Neutral**		Economic ✓ Improves auto travel time ✓ Improves auto travel time reliability Equity × Improves safety	▫ The auxiliary lanes projects could improve traffic flow and safety of the highway by extending the merging area between off and on ramps. Travel time benefits could be realized due to improvements in traffic flow and fewer traffic incidents.
	Negatives		× Environmentally sensitive areas may be impacted	▫ The auxiliary lane project extending a 3 mile section from State Park Dr to San Andreas Rd may impact environmentally sensitive areas.

Step 1 Criteria		Rating	Evaluation	Narrative
Compatible with Regulatory Requirements	Positives/ Neutral		✓ Consistent with legislation (FAST Act) ✓ Consistent with design standards (Caltrans) ✓ Standard permitting process	▫ Permitting of any roadway project can be a time and resource intensive endeavor. Auxiliary lanes will be required to go through the standard permitting process however the length of the project (5 miles), geography and natural resources potentially in the area, may increase the amount of coordination with federal and state agencies and increase the level of effort require to obtain the necessary permits. ▫ FAST Act legislation will require AMBAG to meet regional targets for safety and travel time reliability. Targets are currently being determined by the state for the MPOs and may need to be met in the next few years. Auxiliary lanes can improve safety and travel time reliability to help meet regional targets.
	Negatives			
Level of Public Investment	Positives/ Neutral		✓ Moderate new investment for capital costs required ✓ Some funding sources may be available for capital costs (STIP, STBG, SB1 -LPP & CC, TIGER, trade corridor funds but unlikely) ✓ Minor new investment for operations required ✓ Existing funding sources could cover cost of operations (Caltrans SHOPP and maintenance budget)	▫ A significant amount of funds are needed to implement auxiliary lanes on Highway 1. The cost of constructing auxiliary lanes between State Park and Rio Del Mar is greater due to the need to replace two rail road bridges in Aptos. With the passage of Senate Bill 1 (SB 1) earlier this year, additional funds for transportation investments in Santa Cruz County will be available through both formula funding and grant programs. The congested corridors program, a grant program through SB 1 designed to provide funds for congested commute corridors, could provide funds for Highway 1 auxiliary lanes, although it is uncertain at this time whether Highway 1 will be competitive for these funds. STIP and STBG funds have been a source of formula funds for SCC over the years although even the STIP funds dropped within the last few years. STIP funds will be restored by SB 1 although they still may be lower than historic levels. ▫ Opportunities arise from time to time from federal infrastructure investment programs, road user fees, and special grants to fund projects that are essentially “one-time” events. ▫ Currently, highway maintenance operation costs are paid for by the state. In future, Caltrans may require local agencies to cover costs of maintenance for projects that increase capacity.
	Negatives			
Right-of-Way and Constructability Constraints	Positives/ Neutral		✓ Can be built in phases ✓ Minor amounts of ROW may need to be acquired	▫ Project can be implemented in phases with independent utility as funding becomes available. One auxiliary lane project has already been built on Highway 1 and three more are funded through Measure D. This project would construct 3 more sets of auxiliary lanes phased over time. The project can generally be accomplished within the existing Caltrans highway right-of-way, but some additional right-of-way acquisition may be required to for under and over-crossings through this area.
	Negatives		× Design exceptions required	▫ Requests for design exceptions are anticipated on the Auxiliary Lane project to avoid sensitive resources such as protected plant, animal and wetland habitat areas and to minimize impacts to residential, commercial and existing infrastructure.
Technological Feasibility	Positives/ Neutral		✓ Technologically feasible ✓ Could accommodate future technologies	▫ The auxiliary lanes project is feasible with current day technology. Technologies such as autonomous vehicles could be accommodated in future.
	Negatives			

Route	**Highway 1**
Project Title	Ramp Metering
Project Description	Reconfiguration of on-ramps and local streets to allow for ramp metering and installation of ramp meters at interchanges between San Andreas Rd and Morrissey Blvd. Ramp metering will control entry onto the highway through use of meter lights during peak periods. The metering rate will be traffic responsive based on actual traffic conditions of the mainline flow in the vicinity of the ramp. Reconfiguration of on-ramps may require widening and/or lengthening of the on-ramps to allow room for queuing to limit backup onto local streets. Separate lanes for SOV and HOV would be installed with faster metering rates for HOV.
Overall Rating	
Summary	Highway 1 is a principle transportation route that serves Santa Cruz County residents with traffic volumes up to approximately 97,000 vehicles per day. Commuters, visitors, residents making local trips and businesses rely on Highway 1 for accessing their destinations. The economy of Santa Cruz County is dependent on a functioning transportation system where Highway 1 is the backbone. Ramp metering on Highway 1 has the potential to make significant near term operational efficiencies at a low project cost. Benefits from ramp metering include safety improvements from spacing vehicles as they merge onto highway and less stop and go traffic; improvements to travel time and travel time reliability; and reductions in GHG emissions. With the improved efficiencies of the highway, cut through traffic through the neighborhoods will be reduced. Ramp metering loses effectiveness when demand is significantly greater than capacity.

Step 1 Criteria		Rating	**Evaluation**	**Narrative**
Community Support and Consistency with Applicable Plans	**Positives/ Neutral**		✓Project specific planning effort with public input (Highway 1 Corridor Investment Program DEIR) ✓Consistent with long term planning effort (2014 RTP)	▫ The RTC is working in cooperation with Caltrans and FHWA on the draft Highway 1 Corridor Investment Program Environmental Documents. The Highway 1 Corridor Program includes ramp metering in both alternatives being evaluated. The draft EIR has gone through the public comment period and responses to comments are being generated. The ramp metering project being considered here between Morrissey Blvd and San Andreas Rd are included in the 2014 Regional Transportation Plan as a stand-alone project with independent utility.
	Negatives		× May have some public opposition	▫ Ramp metering could result in queue overflow on local streets impacting traffic but this could be limited with ramp design, detector placement and timing design. Motoring public and businesses could express opposition.
Addresses Transportation Challenges & Environmental, Economic, and Equity Goals	**Positives/ Neutral**		<u>Economic</u> ✓Improves auto travel time ✓Improves auto travel time reliability ✓Improves access to jobs, education and services ✓Potential to increase land use development, business activity, employment and tax revenues	▫ The ramp metering project could improve operational efficiencies by metering the flow of vehicles onto the highway during peak periods. Ramp metering has also been shown to increase capacity of the highway. Speeds will increase on the freeway and congestion will be reduced, decreasing travel time and improving travel time reliability. A short wait on the on-ramp allows motorists to increase their average freeway speed and shorten overall freeway travel times. Ramp metering loses effectiveness when demand is significantly greater than capacity. ▫ Greater operational efficiencies on the highway will relieve cut through traffic through the neighborhoods. ▫ Ramp metering has also been shown to improve safety by spacing the vehicles as they

Step 1 Criteria		Rating	Evaluation	Narrative
			Environmental ✓Potential to reduce GHG Equity ✓Improves safety	merge onto the highway and by reducing the stop and go traffic thereby reducing the number of collisions. ▫ Vehicles traveling at speeds between 30 to 50 mph emit fewer GHG emissions per mile than vehicles in stop and go traffic.
	Negatives		Environmental × Environmentally sensitive areas may be impacted × Traffic Impacts (on local streets)	▫ Widening of ramps where needed for queuing capacity may have an impact on environmentally sensitive areas ▫ Ramp metering could result in queue overflow on local streets impacting traffic but this could be managed with detector placement and timing design.
Compatible with Regulatory Requirements	**Positives/ Neutral**	👍👍	✓Consistent with legislation (FAST Act, SB 375, SB 32) ✓Consistent with design standards (Caltrans) ✓Standard permitting process	▫ FAST Act legislation requires AMBAG to meet regional targets for safety and travel time reliability. Targets are currently being determined by the state for the MPOs and may need to be met in the next few years. Ramp metering can improve both safety and travel time reliability. ▫ Greenhouse gas reduction legislation (SB 375, SB 32) requires reductions in GHG from transportation in order to slow climate change.
	Negatives			
Level of Public Investment	**Positives/ Neutral**	👍	✓Minor new investment for capital costs required ✓Minor new investment for operations required ✓Some funding sources may be available for capital costs (STIP, STBG, SB1 -LPP & CC, TIGER, trade corridor funds but unlikely) ✓Some funding sources may be available for operations (Caltrans SHOPP and maintenance budget)	▫ The level of investment needed for ramp metering still needs to be determined in detail based on how much effort will be needed to provide the queuing capacity on the on-ramps. The amount of investment may be relatively small compared to increase in operational efficiencies and the safety benefits. The 3 sets of auxiliary lane projects funded through Measure D could potentially include reconfiguration of on-ramps for ramp metering which would reduce the amount of additional funds needed for this project.
	Negatives			
Right-of-way and Constructability Constraints	**Positives/ Neutral**	👍	✓Some right-of-way may need to be acquired ✓Project is readily constructible	▫ Some additional right-of-way may need to be acquired for widening at ramps to accommodate queuing as shoulder widths may be limited.
	Negatives		× Design exceptions required	▫ Requests for design exceptions are anticipated on the ramp metering project to minimize impacts to residential, commercial and existing infrastructure.
Technological Feasibility	**Positives/ Neutral**	👍👍	✓Technologically feasible ✓Could accommodate future technologies	▫ Current technology exists for implementation that would allow the metering rate to be responsive to actual traffic conditions of the mainline flow in the vicinity of ramp. Additional technology also exists to determine the metering rate based on overall traffic conditions of highway and major arterials which will likely improve over time.
	Negatives			

Route	**Highway 1**
Project Title	Additional lanes on Highway 1 bridge over San Lorenzo River
Project Description	The project would widen the bridge at the San Lorenzo River overcrossing from 2 lanes in each direction to 3 lanes southbound and 4 lanes northbound to improve traffic flow through the Highway 1/9 intersection and bring the bridge up to seismic safety standards.
Overall Rating	
Summary	The project could help to improve traffic flow through the Hwy 1/9 intersection, one of the most utilized intersections in the county at a moderate cost. Safety improvements include increasing the distance for automobiles to merge on/off Highway 1 from Ocean Street and River Street/Highway 9. Bridge replacement would be completed to meet seismic safety standards and could also decrease environmental impacts by removing the center pier from the middle of the river channel.

Step 1 Criteria		Rating	Evaluation	Narrative
Community Support and Consistency with Applicable Plans	**Positives/ Neutral**		✓ Consistent with long range planning effort (2014 RTP) ✓ Consistent with other planning efforts (City of Santa Cruz CIP)	▫ Project is included in the 2014 RTP. Partner agency, public and stakeholder input are solicited at key milestones of the RTP development.
	Negatives			
Addresses Transportation Challenges & Environmental, Economic, and Equity Goals	**Positives/ Neutral**		<u>Economic</u> ✓ Improves auto travel time ✓ Improves auto travel time reliability ✓ Improves access to jobs, education and services ✓ Potential to increase land use development, business activity, employment and tax revenues <u>Equity</u> ✓ Improves safety	▫ The Highway 1 bridge over the San Lorenzo River is part of the bottleneck for automobiles accessing the west side of the City of Santa Cruz and the Harvey West business area. Widening San Lorenzo Bridge in coordination with the Highway 1/9 intersection improvements will improve traffic operations in this area. The degree to which travel time and reliability improve may not be significant. ▫ Safety will improve by increasing length of merge lanes northbound from Ocean St onto Highway 1 and southbound from River Street/Hwy 9 onto Highway 1.
	Negatives		<u>Environmental</u> × Environmentally sensitive areas may be impacted	▫ Widening the bridge over San Lorenzo River may impact the riverine habitat and associated species. Designs to reduce project impacts compared to existing impact are being considered.
Compatible with Regulatory Requirements	**Positives/ Neutral**		✓ Consistent with design standards ✓ Standard permitting process	▫ Project includes seismic retrofit of bridge as required by the Caltrans Seismic Retrofit Program. ▫ The San Lorenzo Bridge Widening will be required to go through the standard permitting process although the need for construction near the waterway may require significant effort to obtain the required permits.
	Negatives			

Step 1 Criteria		Rating	Evaluation	Narrative
Level of Public Investment	**Positives/ Neutral**		✓ Existing funding sources could cover cost of operations ✓ Moderate new investment for capital costs required	▫ Currently, highway maintenance operation costs are paid for by the state. In future, Caltrans may require local agencies to cover costs of maintenance for projects that increase capacity.
	Negatives		× Few funding sources may be available for capital costs (STIP, STBG, CC, Measure D – local)	▫ Few funding sources are available for capital costs of project.
Right-of-Way and Constructability Constraints	**Positives/ Neutral**		✓ Right of way is sufficient	
	Negatives		× Construction challenges may require significant additional funds or alternative design	▫ Alternative designs may be considered to reduce impacts on traffic during construction and impacts to environmentally sensitive areas.
Technological Feasibility	**Positives/ Neutral**		✓ Technologically feasible ✓ Could accommodate future technologies	
	Negatives			

Route	**Highway 1**
Project Title	Mission Street Intersection Improvements
Project Description	The project would improve intersections along Mission Street in Santa Cruz including modifying design and adding lanes at Hwy1/Mission/Chestnut/King intersection, widening at Mission and Bay, right turn lanes at Swift and Laurel, and installation of a traffic signal at Shaffer Rd. Intersection improvements are needed to reduce conflicts between autos, transit, bicyclists and pedestrians and to improve traffic flow.
Overall Rating	
Summary	Mission Street on the west side of Santa Cruz has many roles to perform. It functions as State Route 1 for through traffic connecting the north coast to the City of Santa Cruz and destinations to the south. It also serves as the "main street" for the City of Santa Cruz's upper and lower westside neighborhoods and is the primary automobile and transit route serving UCSC. The Mission Street intersection improvements will improve access for through traffic and local destinations, improve traffic operations and travel time reliability and improve safety for autos, bicyclists and pedestrians.

Step 1 Criteria		Rating	Evaluation	Narrative
Community Support and Consistency with Applicable Plans	**Positives/ Neutral**		✓ Consistent with long range planning effort (2014 RTP, City of SC General Plan and 2015-2017 CIP) ✓ Multi-agency support (City of SC, RTC)	▫ Intersection improvement projects on Mission Street are included in the 2014 RTP. Partner agency, public and stakeholder input are solicited at key milestones of the RTP development. ▫ Hwy 1/Mission/Chestnut/King and Mission/Bay projects are listed in the most recent City of Santa Cruz CIP. ▫ Improving safety for bicyclists on Mission Street was the focus of recent bicycle safety campaigns.
	Negatives			
Addresses Transportation Challenges & Environmental, Economic, and Equity Goals	**Positives/ Neutral**		Economic ✓ Improves auto travel time ✓ Improves auto travel time reliability ✓ Improves transit travel time ✓ Improves transit travel time reliability ✓ Improves access to jobs, education and services ✓ Potential to increase land use development, business activity, employment and tax revenues Equity ✓ Improves safety	▫ The intersection improvements will improve traffic flow on Mission Street to destinations on the westside of SC including UCSC, commercial areas and residences. Safety, travel time and travel time reliability for autos and transit will be improved. Commuters, businesses, residents making local trips, visitors and students will benefit from these improvements. ▫ Improvements for auto and transit must consider effects on bicyclists and pedestrians and their ability to navigate safely through intersections.
	Negatives			
Compatible with	**Positives/ Neutral**		✓ Consistent with design standards (Caltrans)	▫ FAST Act legislation requires AMBAG to meet regional targets for safety and travel time reliability. Targets are currently being determined by the state for the MPOs and may need

Step 1 Criteria		Rating	Evaluation	Narrative
Regulatory Requirements			✓ Consistent with legislation (FAST Act)	to be met in the next few years. Mission St. intersection improvements can improve both safety and travel time reliability.
	Negatives		X Design exceptions required	▫ Request for design exceptions are anticipated for intersection improvements on Mission St. to minimize impacts to residential, commercial and existing infrastructure.
Level of Public Investment	Positives/ Neutral		✓ Minor new investment for capital costs required ✓ No new investment for operational costs required ✓ Some funding may be available for capital costs (STIP, STBG, SB1 -LPP & CC, TIGER, trade corridor funds but unlikely)	▫ Funding may be available for these projects from a number of different sources including the traditional sources (STIP, STBG) and a couple of new sources of funds due to passage of SB 1 (LPP and CC). Operational costs would not likely need to be increased based on these intersection improvements.
	Negatives			
Right-of-Way and Constructability Constraints	Positives/ Neutral		✓ Minor amounts of ROW may need to be acquired	▫ Intersection improvements to accommodate all modes (auto, transit, biking and walking) will require some additional right-of-way.
	Negatives			
Technological Feasibility	Positives/ Neutral		✓ Technologically feasible	▫ Intersection improvements can be designed to accommodate future technologies.
	Negatives			

Route	Highway 1
Project Title	Provide rail transit along the Highway 1 alignment
Project Description	Rail transit service would travel primarily along Highway 1 between Santa Cruz and Watsonville. Rail transit service would be bidirectional and extend from Depot Park in Santa Cruz along Chestnut St to Highway 1 at Mission St, continue on Highway 1 until north of Beach St in Watsonville where rail transit service would continue on the Santa Cruz Branch Rail Line to Pajaro Station. Rail transit along Highway 1 would occur in the median in order to limit the number of points where the highway and rail cross. Portions of the rail transit service are expected to be elevated and other sections constructed in tunnels as a result of insufficient space in the median for bidirectional tracks and platforms, proximity of the project to the built environmental, and changes in grade along Highway 1. Station locations would include Depot Park, Emeline Ave, Soquel Ave, 41st Ave, Park Ave and downtown Watsonville.
Overall Rating	
Summary	Rail transit service on a combination of new rail transit facilities along Highway 1 and existing Santa Cruz Branch Line rail ROW and Roaring Camp ROW is a high cost capacity increasing improvement that would provide a new transit route along Santa Cruz County's most heavily traveled route connecting north and south county. Rail transit service along Highway 1 would improve transit travel time and transit travel time reliability and provide an alternative to congestion on Highway 1 and Soquel/Freedom. By improving travel time and travel time reliability, transit ridership could increase, reducing VMT and therefore greenhouse gas emissions. Rail transit increases options for those who do not drive including seniors, youth, people with disabilities, and low-income.

Step 1 Criteria		Rating	Evaluation	Narrative
Community Support and Consistency with Applicable Plans	Positives/ Neutral			
	Negatives		× Project is not included in any planning document.	▫ A rail transit service alignment along Highway 1 has not previously been investigated by the RTC and community input has not been solicited on project concepts. However, RTC policy supports consideration of passenger rail service.
Addresses Transportation Challenges & Environmental, Economic, and Equity Goals	Positives/ Neutral	Neutral	Economic ✓Improves transit travel time ✓Improves transit travel time reliability ✓ Improves access to jobs, education and services ✓ Potential to increase land use development, business activity, employment and tax revenues Environmental ✓Mode shift to transit ✓Improves safety ✓Reduces VMT and GHG Equity	▫ Rail transit service on Highway 1 between Watsonville and Santa Cruz has the potential to significantly improve transit travel times and travel time reliability between Santa Cruz and Watsonville by providing a separate continuous right of way dedicated to rail transit along Highway 1. This new direct transit connection between Watsonville and Santa Cruz will improve access to jobs, education centers and services and promote business development and associated economic vitality for the region. A new transit alternative to congested automobile travel on Highway 1 may increase ridership, encourage people to shift from driving to transit, reducing VMT and GHG emissions. ▫ Access to jobs, education and services may improve but may be limited. Rail ridership has been shown to correlate with the number of jobs within ¼ mile of rail stops (approximately a 5 minute walk) and the intensity of land use near the stations. Much of this ¼ mile distance (approximately 1/10 mile) is taken up by the highway/interchange structure limiting the amount of jobs that can be accessed within a 5 minute walk from the stations. The distance between rail stations along this rail line will also limit ridership. ▫ Access for people who do not drive (youth, seniors, people with disabilities, low income,

Step 1 Criteria		Rating	Evaluation	Narrative
			✓ Improves access for people who do not drive	minority) can be improved by a rail transit option.
	Negatives		× Environmentally sensitive areas may be impacted × Traffic impacts (near rail stations)	▫ A passenger rail project extending approximately 20 miles and requiring construction of new structures along the route may impact environmentally sensitive areas. Elevating or tunneling rail service would have more extensive environmental impacts. ▫ Traffic impacts near rail stations will be significant as station locations will be located in areas that are already congested during peak periods. Alternatively, rail along highway will not cross roadways at grade and thus will not have traffic or safety impacts at roadway intersections.
Compatible with Regulatory Requirements	Positives/ Neutral	Neutral	✓ Consistent with legislation (SB 375, SB 32) ✓ Consistent with design standards (Caltrans, CPUC, and rail operator)	▫ Greenhouse gas reduction legislation (SB 375, SB 32) requires reductions in GHG from transportation in order to slow climate change. Rail on Highway 1 could result in a significant mode shift to transit, thereby reducing VMT and GHG emissions.
	Negatives		× Complex permitting process	× Federal regulatory requirements for rail are challenging to meet
Level of Public Investment	Positives/ Neutral	👎👎	✓ Some funding sources may be available for capital costs (FTA5309-New/Small Starts, TIGER, STIP, STBG, SB 1-LPP & CC, LCTOP, TIRCP, Section 130)	▫ Capital funds may be available from Federal Transit Agency New/Small Starts program and other federal, state and local sources.
	Negatives		× Major new investment for capital costs required × Major new investment for operations required × New funding source required for operations	▫ Significant expense related to construction, provision of stations and rail operations. Costs would include interchange improvements to make room for rail transit in the median. A rail transit system that includes elevated sections as well as tunneled sections would require a major cost investment.
Right of Way and Constructability Constraints	Positives/ Neutral	👎		
	Negatives		✓ Moderate amounts of ROW may need to be acquired ✓ Construction challenges may require significant additional funds or alternative design	▫ The project can generally be accomplished within the existing Caltrans highway right-of way, but some additional right-of-way acquisition may be required to reconstruct interchanges to accommodate station stops. ▫ A design for rail transit along Highway 1 has not been initiated. An initial project design would need to consider right of way, terrain and station locations. Building new structures in locations where Highway 1 right of way is already constrained may present construction challenges. Interchanges would need to be reconstructed to remove column structures in median to allow for rail transit travel. Elevating or tunneling rail transit service along Highway 1 may be required due to geographical constraints and result in significant construction challenges.
Technological Feasibility	Positives/ Neutral	👍👍	✓ Technologically feasible ✓ Could accommodate future technologies (battery electric	▫ Future technologies could provide battery electric multiple units for noise reduction and for reduced GHG.

Step 1 Criteria		Rating	Evaluation	Narrative
			multiple units)	
	Negatives			

Route	**Highway 1**
Project Title	Automated vehicles
Project Description	Automated vehicles (AVs) are defined by the ability of the vehicle to control a safety-critical function such as steering, throttle, or braking without direct driver input. Driver-assistance automation is already included in many vehicles where the driver is assisted with acceleration through adaptive cruise control, assisted parking and other features. Improvements in these technologies are rapidly advancing. There is much debate in the field about the timeline for implementation of fully automated vehicles. The need for regulatory agencies to address ethical questions on maneuvering around obstacles including other vehicles, bicyclists, pedestrians, and animals is an area of uncertainty that may delay introduction of fully automated vehicles onto our roadways even after the technology is readily available. Based on historic vehicle purchasing and turnover rates as well as the infancy of the regulatory decision making process for automated vehicles, market saturation of fully automated vehicles are estimated for around the years 2050 - 2060. It is assumed that by 2035, the horizon for this study, fully automated vehicles with human presence (auto and transit) will be operating on the roadways, but they will constitute less than 20 percent of the fleet vehicle mix. This assumption relies on a number of factors including the adoption of state regulatory guidance, the realization of cost efficiencies, and consumer acceptance. Roadway infrastructure to support automated vehicles will be minimal in 2035. Traffic signals will include technology for detecting the presence of vehicles at intersections and communicating some data, but will not fully replace present day loop-detectors. Additional infrastructure that may be implemented prior to 2035 would include devices to provide vehicles with safety information such as warnings about work zones, sharp curves, or other hazards. As fully automated vehicles become a larger portion of the fleet vehicle mix, smart infrastructure such as traffic signals with wifi communication to vehicles, pedestrians, and bicyclists will be required.
Overall Rating	
Summary	The effects of automated vehicles on future transportation systems are under much debate. This new technology has the ability to make vast improvements to safety, access and mobility or conversely, the potential to drastically increase traffic congestion and vehicle miles traveled. The effect of AV technology on the transportation system is dependent on the regulatory system that is developed and the ability of government agencies to implement equitable solutions that serve the community's mobility needs and simultaneously reduce vehicle miles traveled. The cost for automated vehicles is mostly taken on by the individual consumer as the public infrastructure needs for AV will be minimal by 2035. By 2035, automated vehicles, including transit, will likely still be mixed with conventional vehicles on all roadways. Improvements to travel time and travel time reliability for autos and transit will likely be slight as the increased density at which vehicles can operate only becomes significant when there is at least 40% AVs in the flow. More significant traffic flow benefits could be achieved once there is 75% or greater AVs in the flow which is unlikely prior to 2035. Safety benefits could be significant with AV technology, reducing the number of collisions on roadways which in turn reduces non-recurring congestion.

Step 1 Criteria		Rating	**Evaluation**	**Narrative**
Community Support and Consistency	**Positives/ Neutral**		✓Consistent with other planning efforts (Federal and State)	▫ The research, development and manufacturing of automated vehicle technology have increased substantially over the last decade. Efforts at the state and federal level to regulate manufacturing and use of AVs on roadways are challenged to keep pace with advancements in technology.

Step 1 Criteria		Rating	Evaluation	Narrative
with Applicable Plans				▫ Community support can be shown by individual purchasing of these vehicles.
	Negatives		× May have some public opposition	▫ Lower income individuals may not support government expenditures on infrastructure for AVs. Results from the UCS survey expressed significant concern from a number of survey responders that AVs are for the wealthy and they do not see benefit for themselves or the community.
Addresses Transportation Challenges & Environmental, Economic, and Equity Goals	Positives/ Neutral		<u>Economic</u> ✓Improves auto travel time ✓Improves auto travel time reliability ✓Improves transit travel time ✓Improves transit travel time reliability <u>Environmental</u> ✓Reduces GHG <u>Equity</u> ✓Improves safety	▫ Improvements to safety from level 5 automated vehicles (AV5s) can be realized through use of sensing technology to detect obstructions in vehicle path and respond efficiently. Concerns have been raised about reliance on programmed systems rather than human response but overall safety is considered one of the main benefits to AV5s. ▫ Improvements to travel time and reliability for both autos and transit may occur as simulations have found that a small percentage of HAVs among human-driven cars on a lane reduces congestion. An AV5 will not sit idle after the car in front has started moving improving the traffic flow. AV5s will also systematically adhere to a closer distance to the car in front in comparison to human-driven which significantly increases the density of vehicles. This improvement will become more significant as the number of AV5s increases and human-driven vehicles are decreased. Others debate that any significant improvements to increased capacity and thus travel time improvements will only be realized in lanes dedicated to HAVs as mixed flows will not show much improvement to roadway capacity. ▫ Once AV technology is advanced to the point where human presence is not required in vehicles, vehicle miles traveled and thus travel time will likely increase substantially as vehicles will be sent to run errands and take other trips without regard for costs of travel time on people. This assumption is not being made here as this will likely occur after 2035. ▫ AV5s in 2035 will likely be primarily electric vehicles and thus will reduce GHG. Improved driving efficiencies from fuel powered AV5s will also reduce GHG. ▫ Fully autonomous vehicles may be able to operate much earlier on a dedicated facility but limited land and resources will limit the feasibility of this occurring by 2035. Once the market is saturated with HAVs, transit HAVs could provide increased local mobility at a low cost, for which private vehicles may be forfeited but this occurrence is likely further in the future than 2035.
	Negatives		<u>Economic</u> × Increases household transportation costs	▫ The expense of purchasing AVs is greater than the average costs for automobiles and thus will increase household transportation costs. Many people may not be able to afford AVs prior to 2035.
Compatible with Regulatory Requirements	Positives/ Neutral		✓Consistent with legislation (FAST Act)	▫ FAST Act legislation requires AMBAG to meet regional targets for safety and travel time reliability. Targets are currently being determined by the state for the MPOs and may need to be met in the next few years. Automated vehicles can improve safety and potentially travel time reliability.
	Negatives		× Standards currently under development	▫ Federal and State regulations determining the new requirements for both auto manufacturers and roadway users may take a while to catch up with the advancements in AV technology.

Step 1 Criteria		Rating	Evaluation	Narrative
Level of Public Investment	Positives/ Neutral		✓Minor new investment for capital costs required ✓Minor new investment for operations required	▫ The amount of public infrastructure needed in the short term for vehicle-to-vehicle technology for AVs will be minimal since AVs can operate in mixed traffic on existing roadways shared with conventional vehicles. Vehicle-to-infrastructure technology would require more significant investments but will likely not be utilized on a large scale until there is market saturation of HAVs. Examples include curve speed warning to vehicles that speed is too high to safely negotiate the curve; pedestrian in crosswalk warning that alerts vehicles that a pedestrian is in a crosswalk; work zone warnings to alert vehicles that a work zone is approaching; and transit signal requests for extended green when approaching intersection.
	Negatives		× Unknown sources of funding for capital and operational costs	▫ Sources of funding for capital and operational costs for infrastructure technology associated with AVs are unknown at this time but will likely become available over time as more AVs are on the roadways.
Right of Way and Constructability Constraints	Positives/ Neutral		✓Right of way is sufficient	▫ The right of way is sufficient in the near term for AVs but if dedicated facilities are required for HAVs in future, ROW needs will be substantial particularly while there is a shift from conventional vehicles to AVs.
	Negatives			
Technological Feasibility	Positives/ Neutral		✓Emerging technology	▫ Automated vehicles are an emerging technology that is rapidly advancing. The debate for when and exactly how HAVs will affect the transportation system is ongoing with large differences in opinions. Despite these differences, it is clear that highly automated vehicles will become an integral part of the transportation system in the future.
	Negatives			

Route	**Soquel Ave/Dr and Freedom Blvd**
Project Title	Bus Rapid Transit lite (BRT lite)
Project Description	A branded bus rapid transit lite on Soquel Ave/Dr and Freedom Blvd would reconfigure intersections where feasible for transit queue jumps and transit signal priority to provide faster and more reliable service. Faster boarding could also be implemented through platform level boarding and electronic or off-board fare collection. Frequency of buses would remain same as existing service. Bus stops would be located to promote fast bus service and travel time, preferably at the downstream side of intersections.
Overall Rating	
Summary	BRT lite is a low cost operational improvement to improve transit travel time along Soquel Ave/Dr and Freedom Blvd, two of the main arterials through Santa Cruz County. By improving transit travel time and travel time reliability, transit ridership could increase, reducing VMT and therefore greenhouse gas emissions. BRT lite can be implemented incrementally as each intersection that is reconfigured for BRT lite can reduce transit travel times. As transit is prioritized, auto travel time may be increased.

Step 1 Criteria		Rating	**Evaluation**	**Narrative**
Community Support and Consistency with Applicable Plans	**Positives/ Neutral**		✓ Consistent with long range planning effort (2014 RTP) ✓ Agency support (Metro staff) ✓ Consistent with other planning efforts (2015 Sustainable Santa Cruz County, Santa Cruz Corridors Plan)	▫ This project is consistent with recent planning efforts focused on improving transportation options on Soquel Ave/Dr by the County and City of Santa Cruz and is listed in the 2014 Regional Transportation Plan.
	Negatives		× May have some public opposition	▫ Traffic impacts due to transit priority at intersections and moving on-street parking to alternate locations in some sections could be opposed by motoring public and some businesses. ▫ Members of the public, some represented by advocacy groups, oppose parking being relocated from Soquel Ave and have signature gathering efforts in progress.
Addresses Transportation Challenges & Environmental, Economic, and Equity Goals	**Positives/ Neutral**		Economic ✓ Improves transit travel time ✓ Improves transit travel time reliability ✓ Improves access to jobs, education and services Environmental ✓ Mode shift to transit ✓ Reduces VMT and GHG. Equity ✓ Improves access for people	▫ The reason for implementing bus rapid transit lite would be to decrease transit travel times and improve transit travel time reliability by allowing transit to have priority at intersections and decrease boarding times. Faster and more reliable transit travel times will promote increased ridership, reducing VMT and GHG emissions. Transit improvements support lower cost transportation options which can reduce household transportation costs and benefit people who don't drive including, but not limited to, youth, seniors, people with disabilities, low income, and minorities.

Step 1 Criteria		Rating	Evaluation	Narrative
			who do not drive ✓ Reduces household transportation costs	
	Negatives		Economic × Increases auto travel time Environmental × Traffic impacts (at intersections)	▫ Intersection improvements for transit may have a negative effect on auto travel time as autos will need to wait for transit to move through the intersection.
Compatible with Regulatory Requirements	Positives/ Neutral		✓ Consistent with legislation (SB 375, SB 32) ✓ Consistent with design standards (local transit standards)	▫ SB 375 and SB 32 require reductions in GHG emissions. Faster transit travel times could make transit a more convenient alternative to driving and encourage a shift from driving to transit.
	Negatives			
Level of Public Investment	Positives/ Neutral		✓ Minor new investment for capital costs required ✓ No new investment for operations costs required ✓ Some funding sources may be available for capital costs (FTA5309-New/Small Starts, TIGER, STIP, STBG, SB 1-LPP & CC, LCTOP, TIRCP)	▫ Capital costs include new traffic signals with transit signal priority, reconfiguration of the intersection for a transit queue jump lane and electronic board payment or boarding platforms. ▫ Existing transit services on Soquel Ave/Dr and Freedom Blvd would continue and benefit from faster travel times. No additional transit service is planned as part of the BRT lite project and thus no additional operational costs are required.
	Negatives			
Right-of-Way and Constructability Constraints	Positives/ Neutral		✓ Minor amounts of right of way may need to be acquired ✓ Project is readily constructible ✓ Could be built in phases	▫ BRT lite could be built in phases to work towards a continuous BRT lite system for the entire Soquel and Freedom route. Intersections with enough right of way could be reconfigured to incorporate transit priority initially. Intersections with limited right of way could be reconfigured over time as right of way is acquired.
	Negatives		× Parking may need to be moved	▫ On-street parking still exists along certain areas of Soquel Ave/Dr and Freedom Blvd. Utilizing the current right of way to prioritize transit may require moving parking to alternate locations.
Technological Feasibility	Positives/ Neutral		✓ Technologically feasible	▫ Transit signal priority, transit queue jumps and faster boarding strategies are common uses of technology applied as a means for improving transit travel times.
	Negatives			

Route	**Soquel Ave/Dr and Freedom Blvd**
Project Title	Dedicated Lanes for Bus Rapid Transit and Biking
Project Description	A branded bus rapid transit system on Soquel Ave/Dr and Freedom Blvd with dedicated lanes where feasible shared with biking. The dedicated lanes would occupy the existing right hand general purpose lane in segments where there are a minimum of 2 lanes in each direction. Intersections would be reconfigured for transit signal priority. Transit queue jumps would be provided where dedicated lanes are not feasible. Faster boarding would also be implemented through platform level boarding and electronic or off-board fare collection. Frequency of buses would be increased to 10 minute headways. Bus stops would be located to promote fast bus service and travel time, preferably at the downstream side of intersections.
Overall Rating	Neutral
Summary	BRT on dedicated lanes will significantly improve transit travel time along Soquel Ave/Dr and Freedom Blvd, two of the main arterials through Santa Cruz County. By improving travel time and travel time reliability, transit ridership could increase, reducing VMT and therefore greenhouse gas emissions. BRT can be implemented in phases with priority in sections with the greatest congestion. Shared bus-bike lanes provide basic bicycle access on transit-focused streets when no space is available for dedicated bikeways. Biking in a lane shared with BRT would create a safer biking facility and increase bicycle ridership as they generally travel at similar speeds and thus "leap frogging" is less likely. As transit and biking is prioritized, auto travel time will be increased.

Step 1 Criteria		Rating	**Evaluation**	**Narrative**
Community Support and Consistency with Applicable Plans	**Positives/ Neutral**		✓ Consistent with long range planning effort (2014 RTP) ✓ Agency support (Metro staff) ✓ Consistent with other planning efforts (2015 Sustainable Santa Cruz County, Santa Cruz Corridors Plan)	▫ This project is consistent with recent planning efforts focused on improving transportation options on Soquel Ave/Dr by the County and City of Santa Cruz and is listed in the 2014 Regional Transportation Plan.
	Negatives		× May have some public opposition	▫ Traffic impacts due to transit priority at intersections, reducing the existing two general purpose travel lanes to one travel lane and moving on-street parking to alternate locations in some sections could be opposed by motoring public and some businesses.
Addresses Transportation Challenges & Environmental, Economic, and Equity Goals	**Positives/ Neutral**	Neutral	<u>Economic</u> ✓ Improves transit travel time ✓ Improves transit travel time reliability ✓ Improves access to jobs, education and services <u>Environmental</u> ✓ Mode shift to transit ✓ Mode shift to biking ✓ Reduces VMT and GHG. <u>Equity</u> ✓ Improves access for people who do not drive	▫ The reason for implementing bus rapid transit is to decrease transit travel times and improve transit travel time reliability by allowing transit to travel unrestricted by auto traffic. Faster and more reliable transit travel times will promote increased ridership, reducing VMT and GHG emissions. Transit improvements support lower cost transportation options which can reduce household transportation costs and benefit people who don't drive including youth, seniors, people with disabilities, low income, and minorities. Access to jobs, education and services would be improved for transit riders but decreased for autos. ▫ A dedicated lane shared between buses and bikes would also provide a safer bicycling facility and promote increased bike ridership.

Step 1 Criteria		Rating	Evaluation	Narrative
			✓ Reduces household transportation costs	
	Negatives		Economic × Increases auto travel time Environmental × Traffic impacts	▫ Converting a general purpose lane to a dedicated lane for transit and biking will have significant traffic impacts and a substantial negative effect on auto travel time and travel time reliability.
Compatible with Regulatory Requirements	Positives/ Neutral		✓ Consistent with legislation (SB 375, SB 32, FAST Act) ✓ Consistent with design standards (local transit standards)	▫ SB 375 and SB 32 require reductions in GHG emissions. Faster transit travel times could make transit a more convenient alternative to driving and encourage a shift from driving to transit. Increased bicycle ridership will also contribute to reductions in VMT. ▫ FAST Act legislation will require AMBAG to meet regional targets for safety. Targets are currently being determined by the state for the MPOs and may need to be met in the next few years. A designated lane shared between buses and bicyclists can improve safety to help meet regional targets.
	Negatives			
Level of Public Investment	Positives/ Neutral		✓ Minor new investment for capital costs required ✓ Minor new investment for operational costs required ✓ Some funding sources may be available for capital costs (FTA5309-New/Small Starts, TIGER, STIP, STBG, SB 1-LPP & CC, LCTOP, TIRCP, ATP) ✓ Some funding sources may be available for operational cost (Fares, STA, TDA, LCTOP, TIRCP)	▫ Capital costs include new traffic signals with transit signal priority, reconfiguration of the intersection for a transit queue jump lane and electronic board payment or boarding platforms. Frequency of transit services on Soquel and Freedom would increase and benefit from faster travel times.
	Negatives			
Right-of-Way and Constructability Constraints	Positives/ Neutral		✓ Minor amounts of right-of-way may need to be acquired ✓ Project is readily constructible ✓ Could be built in phases	▫ BRT could be built incrementally over time to work towards a more complete BRT system. Roadway segments with 2 general purpose lanes in each direction in congested areas could be prioritized first for converting to BRT. Intersections with enough right-of-way could be reconfigured to incorporate transit priority initially.
	Negatives		× Parking may need to be moved	▫ On-street parking still exists along certain areas of Soquel Ave/Dr and Freedom Blvd. Utilizing the current right of way for dedicated lanes for transit and bicyclists may require moving parking to alternate locations.
Technological Feasibility	Positives/ Neutral		✓ Technologically feasible ✓ Could accommodate future technologies	▫ Dedicated transit lanes, transit signal priority, transit queue jumps and faster boarding strategies are common uses of technology as a means for improving transit travel times. Autonomous transit could utilize dedicated lanes in future.
	Negatives			

Route	**Soquel Ave/Dr and Freedom Blvd**
Project Title	Increased Transit Frequency with Express Service
Project Description	Increased bus frequency on Soquel Ave/Dr and Freedom Blvd to increase headways to every 10 minutes along Soquel Ave/Dr, every 10 minutes along Freedom Blvd within the City of Watsonville and every 15 minutes on Freedom Blvd in rural areas.
Overall Rating	
Summary	Increased frequency of transit service along Soquel Ave/Dr and Freedom Blvd is a minor cost operational improvement to increase transit ridership along two of the major arterials connecting Watsonville to City of Santa Cruz. Increased frequency of service has been shown to increase ridership although without reductions in transit travel time, the increase in ridership will not likely be significant. Increased transit frequency will improve access for people who do not drive including youth, seniors, people with disabilities, low income and minorities. An increase in ridership will reduce VMT and therefore greenhouse gas emissions.

Step 1 Criteria		Rating	Evaluation	Narrative
Community Support and Consistency with Applicable Plans	**Positives/ Neutral**		✓ Consistent with long range planning effort (2014 RTP) ✓ Agency support (Metro staff) ✓ Consistent with other planning efforts (2015 Sustainable Santa Cruz County, Santa Cruz Corridors Plan)	▫ Public expressed support for increases in transit service when Metro restructured service in 2016 due to budget shortfalls. ▫ Increasing transit frequency is included in the 2014 Regional Transportation Plan. Partner agency, public and stakeholder input are solicited at key milestones of the RTP development. ▫ This project is consistent with recent planning efforts focused on improving transportation options on Soquel Ave/Dr by the County and City of Santa Cruz.
	Negatives			
Addresses Transportation Challenges & Environmental, Economic, and Equity Goals	**Positives/ Neutral**	Neutral	Economic ✓ Improves access to jobs, education and services Environmental ✓ Mode shift to transit ✓ Reduces VMT and GHG. Equity ✓ Improves access for people who do not drive ✓ Reduces household transportation costs	▫ Increasing transit frequency makes it easier for people to take transit and thus will promote increased ridership, reducing VMT and GHG emissions. However, increasing frequency may attract few new riders if transit travel times are not also improved in congested areas. Transit improvements support lower cost transportation options which can reduce household transportation costs and benefit people who don't drive including youth, seniors, people with disabilities, low income, and minorities.
	Negatives			
Compatible with Regulatory Requirements	**Positives/ Neutral**		✓ Consistent with legislation (SB 375, SB 32)	▫ SB 375 and SB 32 require reductions in GHG emissions. More frequent transit service could encourage a shift from driving to transit.
	Negatives			

Step 1 Criteria		Rating	Evaluation	Narrative
Level of Public Investment	Positives/ Neutral		✓ Minor new investment for capital costs required ✓ Minor new investment for operations costs required ✓ Some funding sources may be available for capital costs (STIP, STBG, LCTOP)	▫ Capital costs include new buses to support more frequent service. Capital costs could be funded from a number of sources including STIP, STBG and LCTOP).
	Negatives		× Few funding sources may be available for operational costs (Fares, STA, TDA, LCTOP, TIRCP)	▫ Operational costs could be funded from a number of sources including Fares, STA, TDA, LCTOP, and TIRCP although recent budget cuts reduced the level of transit service in 2016.
Right-of-Way and Constructability Constraints	Positives/ Neutral		✓ Right of way is sufficient ✓ Project is readily implemented ✓ Could be implemented in phases	▫ There are no ROW or constructability constraints for this project.
	Negatives			
Technological Feasibility	Positives/ Neutral		✓ Technologically feasible ✓ Could accommodate future technologies	▫ Autonomous vehicles could be accommodated in future.
	Negatives			

Route	**Soquel Ave/Dr and Freedom Blvd**
Project Title	Buffered/protected bike lanes
Project Description	Bike lanes currently exist along much of Soquel Ave/Dr and Freedom Blvd. Where feasible, this project would widen the bicycle lanes to 5 feet and provide a 1-2 feet buffer zone next to the lanes with either striping or a physical barrier to clearly mark the area for bicycle travel. Bike boxes can be provided at signalized intersections where shared lanes are required.
Overall Rating	
Summary	Buffered/protected bike lanes are a low cost solution to improve safety for bicyclists if the right-of-way is available. The added width of the bicycle lanes with the additional buffer from high volume and high speed traffic would likely increase bicycle ridership as people feel more comfortable with the increased spacing from fast moving traffic. The right-of-way on Soquel and Freedom is limited and thus the feasibility to reconfigure the roadway design to accommodate buffered/protected bike lanes still needs to be determined. If right-of-way needs are substantial, environmentally sensitive areas may be impacted and permits may be required.

Step 1 Criteria		Rating	Evaluation	Narrative
Community Support and Consistency with Applicable Plans	**Positives/ Neutral**		✓ Consistent with other planning efforts (2015 Sustainable Santa Cruz County) ✓ Consistent with long range planning effort (2014 RTP)	▫ There is considerable support for bicycle facilities throughout Santa Cruz County, especially protected ones. RTC policy supports safe multimodal transportation options especially for the most vulnerable users.
	Negatives		× May have some public opposition	▫ Right-of-way may be a challenge to accommodate the motor vehicle general purpose lanes and the additional width required for a protected bicycle lane. Parking may need to be moved to alternate locations to accommodate improved bicycle facilities. ▫ Members of the public, some represented by advocacy groups, oppose parking being relocated from Soquel Ave and have signature gathering efforts in progress. ▫ Some members of the public may oppose buffered bike lanes if there are impacts to auto travel.
Addresses Transportation Challenges & Environmental, Economic, and Equity Goals	**Positives/ Neutral**		Economic × Improves access to jobs, education and services × Potential to decrease individual and community health care costs Environment × Mode shift to biking × Reduces VMT and GHG Equity × Improves health × Improves safety × Improves access for people	▫ A buffered/protected bike lane on Soquel Ave/Dr and Freedom Blvd will provide a more comfortable and safer facility for bicyclists. This in turn encourages people to shift from driving to biking, reducing VMT and GHG emissions. Additional benefits include increased physical activity (resulting in decreased health care costs) and improved access using active transportation, which can reduce transportation costs, and benefit people who don't drive including youth, some seniors, and low income individuals.

Step 1 Criteria		Rating	Evaluation	Narrative
			who do not drive × Reduces household transportation costs	
	Negatives		Environmental × Traffic Impacts	▫ Traffic may be impacted by reducing the width of the general purpose lanes slightly to accommodate the wider bicycle facilities. ▫ Moving parking to alternate locations to accommodate a wider bicycling facility may impact nearby businesses ▫ If right-of way is required, environmentally sensitive areas may be impacted including agricultural lands and soil characterization and remediation may be required
Compatible with Regulatory Requirements	Positives/ Neutral		✓ Consistent with legislation (SB 375, SB 32, FAST Act) ✓ Consistent with design standards (Caltrans standards, NACTO and AASHTO guidelines)	▫ SB 375 and SB 32 require reductions in GHG emissions. A comfortable and safer active transportation facility could encourage people to shift from driving to biking, reducing VMT and GHG emissions. ▫ The buffered/protected bike lanes can be designed to Caltrans standards and AASHTO best practices. The new tools available within the regulatory context encourage this application. ▫ FAST Act legislation will require AMBAG to meet regional targets for safety. Targets are currently being determined by the state for the MPOs and may need to be met in the next few years. Protected bike lanes can improve safety to help meet regional targets.
	Negatives			
Level of Public Investment	Positives/ Neutral		✓ Minor new investment for capital costs required ✓ Minor new investment for operational costs required ✓ Several funding sources may be available for capital costs (ATP, Measure D LJ allocation, SRTS) ✓ Some funding sources may be available for operating costs (STIP, STBG, Measure D -local, ATP, HUTA)	▫ Funding may be available for capital costs through several sources including ATP, Measure D allocation to local jurisdictions, HUTA, SRTS, STIP and STBG. If right-of-way needs are substantial, cost for project will escalate.
	Negatives			
Right-of-Way and Constructability Constraints	Positives/ Neutral	Neutral	✓ Minor amounts of right-of-way may need to be acquired ✓ Could be built in phases ✓ Project is readily constructible	▫ Additional right-of-way may be needed to accommodate a fully protected bike lane. Project could be built incrementally since there are significant benefits as incremental improvements are made. ▫ If right-of-way needs are substantial, cost for project will escalate, environmentally sensitive areas may be impacted and associated permits may be required
	Negatives		× Parking may need to be moved	▫ On-street parking still exists along segments of Soquel Ave/Dr and Freedom Blvd. Utilizing the current right-of-way to include a wider bicycling facility may require moving parking to alternate locations.
Technological Feasibility	Positives/ Neutral		✓ Technologically feasible	▫ Buffered/protected bicycle facilities are currently technologically feasible and are becoming more and more common throughout the country.

Step 1 Criteria		Rating	Evaluation	Narrative
	Negatives			

Route			**Soquel Ave/Dr and Freedom Blvd**	
Project Title			Intersection Improvements for autos	
Project Description			The project would improve intersections along Soquel Ave/Dr and Freedom Blvd for auto travel. Improvements include modifying design and adding turn lanes in numerous locations including Soquel/Morrissey/Poplar and Soquel/Frederick in the City of SC and Soquel/41st, Soquel/Bay-Porter, and Soquel/Robertson in the county. Intersection improvements along Freedom Blvd in the City of Watsonville include Freedom/Green Valley, Freedom/Airport and Freedom/Buena Vista. Widening of Soquel between Branciforte and Morrissey is also being considered here.	
Overall Rating				
Summary			The intersection improvements are a low cost option that will improve traffic operations, travel time and reliability, safety, and access to local destinations.	
Step 1 Criteria		Rating	**Evaluation**	**Narrative**
Community Support and Consistency with Applicable Plans	**Positives/ Neutral**		✓ Consistent with long range planning effort (2014 RTP, City of SC General Plan, County of SC General Plan, Watsonville General Plan) ✓ Multi-agency support (City of Santa Cruz, County of Santa Cruz, Watsonville, RTC)	▫ Numerous intersection improvement projects on Soquel and Freedom are included in the 2014 RTP. These projects are consistent with local planning goals and policies.
	Negatives			
Addresses Transportation Challenges & Environmental, Economic, and Equity Goals	**Positives/ Neutral**		<u>Economic</u> ✓ Improves auto travel time ✓ Improves auto travel time reliability ✓ Improves transit travel time ✓ Improves transit travel time reliability ✓ Improves access to jobs, education and services ✓ Potential to increase land use development, business activity, employment and visitor tax revenues <u>Equity</u> ✓ Improves safety	▫ The intersection improvements will improve traffic flow on Soquel Ave/Dr and Freedom Blvd improving safety, travel time and travel time reliability to destinations all along the route. Commuters, commerce, and emergency vehicles will benefit from these improvements.
	Negatives			
Compatible with	**Positives/ Neutral**		✓ Consistent with design standards (Caltrans)	▫ FAST Act legislation will require AMBAG to meet regional targets for safety and travel time reliability. Targets are currently being determined by the state for the MPOs and may need

Step 1 Criteria		Rating	Evaluation	Narrative
Regulatory Requirements			✓Standard permitting process ✓Consistent with legislation (FAST Act)	to be met in the next few years. Auto intersection improvements can improve safety and travel time reliability for motorists to help meet regional targets.
	Negatives			
Level of Public Investment	Positives/ Neutral		✓Minor new investment for capital costs required ✓No new investment for operational costs required ✓Some funding may be available for capital costs (STIP, STBG, Measure D -local, HUTA)	▫ Funding may be available for capital costs through a number of sources including the Measure D allocation to local jurisdictions, HUTA, STIP and STBG.
	Negatives			
Right-of-Way and Constructability Constraints	Positives/ Neutral		✓Minor amounts of ROW may need to be acquired ✓Project is readily constructible	▫ Intersection improvements to add turn lanes may need additional ROW.
	Negatives			
Technological Feasibility	Positives/ Neutral		✓Technologically feasible	▫ Improvements are technologically feasible
	Negatives			

Route	**Soquel Ave/Dr and Freedom Blvd**
Project Title	Bike and Pedestrian Intersection Improvements
Project Description	Project would improve intersections for bicyclists and pedestrians along Soquel Ave/Dr and Freedom Blvd using a variety of best practices including bike boxes, green lane treatments, bulb outs, islands, and bicycle and pedestrian priority at intersections.
Overall Rating	
Summary	Bicycle and pedestrian improvements at intersections are a low cost solution to improve safety for the most vulnerable transportation users. Safety improvements at intersections are the most critical as the majority of collisions occur at intersections. As safety for bicyclists and pedestrians is improved, people become more comfortable with choosing walking or biking as a way to access their destinations.

Step 1 Criteria		Rating	**Evaluation**	**Narrative**
Community Support and Consistency with Applicable Plans	**Positives/ Neutral**		✓ Consistent with other planning efforts (2015 Sustainable Santa Cruz County) ✓ Consistent with long range planning effort (2014 RTP)	▫ There is considerable support for bicycle facilities throughout Santa Cruz County, especially improvements that promote safety of bicyclists and pedestrians. RTC policy supports safe multimodal transportation options especially for the most vulnerable users.
	Negatives			
Addresses Transportation Challenges & Environmental, Economic, and Equity Goals	**Positives/ Neutral**		Economic ✓ Improves job and education access ✓ Decreases individual and community health care costs Environment ✓ Mode shift to biking ✓ Mode shift to walking ✓ Reduces VMT and GHG Equity ✓ Improves access for people who do not drive ✓ Reduces household transportation costs ✓ Improves safety ✓ Improves health	▫ Intersection improvements for bicyclists and pedestrians on Soquel Ave/Dr and Freedom Blvd will have the ability to greatly improve safety and help to shift people from driving to biking and walking. This in turn reduces VMT and GHG emissions. Additional benefits include decreased health care costs; improved active transportation access for youth, some seniors and people who do not drive a car; and a reduction in transportation costs.
	Negatives		Environmental × Traffic Impacts	▫ Traffic may be impacted by reconfiguring intersections to accommodate bicycle and pedestrian safety improvements.
Compatible with	**Positives/ Neutral**		✓ Consistent with legislation (SB 375, SB 32) ✓ Consistent with design	▫ SB 375 and SB 32 require reductions in GHG emissions. Intersection improvements for bicyclists and pedestrians on Soquel Ave/Dr and Freedom Blvd would help reduce GHG by providing safer active transportation facilities.

Regulatory Requirements			standards (Caltrans standards, NACTO and AASHTO guidelines) ✓ No additional permits required	▫ Bike and pedestrian intersection improvements will follow design standards or best practices although some treatments for bicycles and pedestrians at intersections are newer to the county, though many neighboring regions employ them extensively.
	Negatives			
Level of Public Investment	**Positives/ Neutral**		✓ Minor new investment for capital costs required ✓ Minor new investment for operational costs required ✓ Several funding sources may be available for capital costs (STIP, STBG, Measure D -local, ATP, HUTA, SRTS) ✓ Some funding sources may be available for operating costs (Measure D-local, HUTA, general funds)	▫ Funding may be available for capital costs through a number of sources including the ATP, Measure D allocation to local jurisdictions, HUTA, SRTS, STIP and STBG.
	Negatives			
Right of Way and Constructability Constraints	**Positives/ Neutral**		✓ Minor amounts of right of way may need to be acquired ✓ Could be built incrementally ✓ Project is readily constructible	▫ Additional right of way may be needed to accommodate intersection improvements. Project could be built incrementally since there are significant benefits as incremental improvements are made.
	Negatives			
Technological Feasibility	**Positives/ Neutral**		✓ Technologically feasible ✓ Could accommodate future technologies	▫ Bicycle and pedestrian intersection improvements are currently technologically feasible and are becoming more and more common throughout the country.
	Negatives			

Route	**Rail Right-of-Way (ROW)**
Project Title	Bike and Pedestrian Trail
Project Description	A bicycling and pedestrian trail along the rail right-of-way will span the 32-mile distance from Davenport on the north coast to Watsonville in south county. The trail will serve transportation, recreation and interpretive uses for walkers, joggers, bicyclists, people with mobility impairments, and families. The trail will pass within 1 mile of half of the County's population and will provide access to 44 schools and 92 parks including several beaches along the Monterey Bay. The width of the trail will vary depending on right-of-way and slope constraints but will range from 12 feet to 16 feet wide or wider for trail with transit and could be wider if a "trail-only" option is implemented. Connectivity to origins and destinations within the two-mile wide unified corridor will be provided via the existing and planned bike and pedestrian network infrastructure.
Overall Rating	
Summary	A biking and walking trail along the rail corridor, separated from motor vehicle traffic, will provide a new, safe, and more comfortable active transportation facility which could encourage people to shift from driving to biking and walking. Benefits include safety and health improvements, greenhouse gas emission reductions, and economic benefits from a trail facility that will attract both residents and visitors. A trail will improve access for people who do not drive including youth, low income, and minorities as well as some seniors and people with disabilities. A bike and pedestrian trail could be combined with rail or bus transit on the rail right-of-way or the trail could be the only facility in the rail right-of-way. Walking and biking are typically travel options for shorter trips but if combined with transit can extend travel distances significantly.

Step 1 Criteria		Rating	**Evaluation**	**Narrative**
Community Support and Consistency with Applicable Plans	**Positives/ Neutral**		✓ RTC policy ✓ Project specific planning effort with public input (Monterey Bay Sanctuary Scenic Trail Master Plan (MBSST)) ✓ Project specific planning effort (Completing the California Coastal Trail) ✓ Consistent with long range planning effort (2014 RTP) ✓ Environmental Impact Report completed (MBSST EIR) ✓ Multi-agency support (Cities of Santa Cruz, Capitola and Watsonville; County of Santa Cruz; Coastal Conservancy) ✓ Supported by voters through passage of Measure D	▫ Voters approved Measure D in November 2016 which allocates funds for trail within the rail right-of-way. <u>Trail with Rail</u> ▫ The Monterey Bay Sanctuary Scenic Trail (MBSST) Master Plan establishes the alignment and a set of design standards for a bike and pedestrian trail within the rail right-of-way alongside the existing railroad track. The MBSST Master Plan went through a 3 year comprehensive and inclusive public and stakeholder outreach process and was adopted by the RTC in November 2013 and a revision in February 2014. Each of the local jurisdictions that the trail passes through (Cities of Watsonville, Santa Cruz, Capitola and Santa Cruz County) also adopted the MBSST Master Plan. A policy that was adopted in the Master Plan states "Develop trails in such a way so that future rail transit services along the corridor are not precluded." <u>Trail Only</u> ▫ Members of the public, some represented by advocacy groups, support a trail only option and have campaigns and/or signature gathering efforts in progress.
	Negatives		× May have some public	▫ Some farmers in the vicinity of Harkins Slough are concerned about the impacts of a trail on

Step 1 Criteria		Rating	Evaluation	Narrative
			opposition	crop production. Restrictions on spraying of crops to times when people are not in the vicinity, fecal matter from pets, farm equipment restrictions over the trail and other issues have raised concerns. Trail with Rail ▫ Farmers on north coast oppose trail if trail is not located in rail bed. Trail-Only or Trail with BRT ▫ Trail-only and trail with BRT options have not gone through a comprehensive public process. If the community decides to use the rail right-of-way only for a trail or for trail with BRT, it would require a new planning effort to solicit public input and more fully assess impacts and costs.
Addresses Transportation Challenges & Environmental, Economic, and Equity Goals	**Positives/ Neutral**		Economic ✓ Improves access to jobs, education and services ✓ Decreases individual and community health care costs ✓ Potential to increase property values ✓ Recreational asset with potential to increase business activity and visitor tax revenues Environmental ✓ Mode shift to biking ✓ Mode shift to walking ✓ Reduces VMT and GHG Equity ✓ Improves health ✓ Improves safety ✓ Improves access for people who do not drive ✓ Reduces household transportation costs	▫ A trail separated from motor vehicles will provide a more comfortable and safer facility for people to ride bicycles and walk. This in turn encourages people to shift from driving to biking and walking for transportation, reducing VMT and GHG emissions. Additional benefits include increased physical activity (resulting in decreased health care costs) and increased visitor revenues associated with recreation on the trail. Properties along a trail separated from automobiles have been shown in other communities to increase in value. A trail on the rail right-of-way will provide new access to a low cost transportation option for shorter trips, which can reduce transportation costs and benefit people who don't drive including, youth, seniors, people with disabilities, low income, and minorities. Trail with Rail or Trail with BRT ▫ If trail use is combined with transit, the new facility will support longer trips for communities of south county who work in the Santa Cruz area.
	Negatives		Economic × Potential agricultural impacts Environmental × Environmentally sensitive areas may be impacted × Soil sampling, testing and/or remediation of contaminated soils may be needed	▫ Increased rail corridor use may impact agricultural lands that have been encroaching on the ROW. ▫ The trail may impact environmentally sensitive areas that have been found along the rail corridor as part of the MBSST EIR. ▫ Soil contaminants have been found along the rail corridor. Soil along rail corridor may need to be assessed for contaminants and possibly remediated. Construction of a paved surface over the bare soil could serve as the remediation for some of the contaminants. Trail with Rail or Trail with BRT

Step 1 Criteria		Rating	Evaluation	Narrative
			× Traffic impacts (at roadway crossings) Equity × Potential conflicts between modes (BRT and trail users- fencing could reduce conflicts; people riding bikes and people walking - separation could reduce the potential conflicts).	▫ A trail alongside transit in the rail corridor will provide numerous opportunities for separating biking and walking. If trail is not separated by use, potential safety conflicts could occur between bicyclists and pedestrians. ▫ More vegetation would likely need to be removed to accommodate a trail next to transit. ▫ Fencing between trail and rail is included in the MBSST trail design to reduce conflicts and utilize best practices for safety. Fencing may be recommended between trail and BRT for reducing conflicts and best practices for safety. Fencing between trail and transit may limit access to some destinations along the rail ROW. Trail Only ▫ A trail-only option could allow for separation of bicyclists and pedestrians along a greater portion of the rail line. The rail bridges and other constrained locations with elevation changes may not allow separation. ▫ Fencing would not be needed for a trail only option. Less vegetation would need to be removed for trail-only option and may be able to avoid environmentally sensitive areas.
Compatible with Regulatory Requirements	**Positives/ Neutral**		✓ Consistent with legislation (SB 908, SB 375, SB 32, FAST Act) ✓ Consistent with state law (Trail and Rail -Proposition 116) ✓ Consistent with design standards (Caltrans, AASHTO, MUTCD) ✓ Standard permitting process	▫ Senate Bill 908 requires the State Coastal Conservancy to complete a plan to develop the California Coastal Trail. The entire MBSST project and trail along the rail right-of-way will serve as the California Coastal Trail through Santa Cruz County, as agreed to by the California Coastal Commission and the California Coastal Conservancy. ▫ SB 375 and SB 32 require reductions in GHG emissions. A comfortable and safer active transportation facility could encourage people to shift from driving to biking and walking, reducing VMT and GHG emissions. ▫ FAST Act legislation will require AMBAG to meet regional targets for safety. Targets are currently being determined by the state for the MPOs and may need to be met in the next few years. A bike and pedestrian trail separated from auto traffic can improve safety to help meet regional targets. ▫ Any trail that is designed for the rail corridor can be designed to meet trail design standards. Trail with Rail ▫ The Santa Cruz Branch Rail Line was purchased using Proposition 116 funds which were allocated for passenger rail capital projects. Trail with rail would meet these requirements.
	Negatives		× Not consistent with state law (Trail Only and Trail with BRT - Proposition 116)	Trail Only or Trail with BRT ▫ If rail right-of-way will not be used for passenger rail service, at least $11 million and possibly up to $25 million or more in funds will need to be returned to CTC because Proposition 116 requirements will not be met and the project will not be consistent with the funding application for purchase and rehabilitation of right-of-way.
Level of Public Investment	**Positives/ Neutral**		✓ Some funding already allocated for capital costs (Measure D – all Trail options) ✓ Some funding already allocated for capital costs (FLAP, ATP, Land Trust – Trail	Trail with Rail ▫ Funding that has been acquired from FLAP, ATP and Land Trust for capital costs assumes the trail alongside rail tracks. Trail Only ▫ Constructing the trail-only option could potentially require less capital costs than trail with

Step 1 Criteria		Rating	Evaluation	Narrative
			with Rail) ✓ Some funding sources may be available for capital costs (Measure D, ATP, STIP, STBG, FLAP, HSIP) ✓ Some funding already allocated for maintenance costs (Measure D) ✓ Some funding sources may be available for maintenance costs (HUTA, general funds) ✓ Minor new investment for maintenance required ✓ Moderate new investment for capital costs required	transit due to ability to use current rail bridges.
	Negatives		× Potential to lose funds (FLAP, ATP, Land Trust – Trail Only or Trail with BRT) × Additional funds/time needed (to revise current direction – Trail Only and Trail with BRT)	Trail Only or Trail with BRT ▫ If rail right-of-way will not be used for passenger rail service, at least $11 million and possibly up to $25 million or more in funds will need to be returned to CTC because Proposition 116 requirements are not met and the project will not be consistent with the funding application for purchase and rehabilitation of right-of-way. ▫ Funds currently allocated for trail from FLAP and ATP will not meet deadline for use of funds and thus will likely be lost. ▫ Costs and time to revise current direction are unknown (additional costs include new public outreach process, negotiations with CTC and Iowa Pacific, applying for abandonment of rail to Surface Transportation Board, soil contaminants assessment and mitigation, legal fees)
Right-of-way and Constructability Constraints	**Positives/ Neutral**		✓ ROW is sufficient (for Trail Only) ✓ Minor amounts of ROW may need to be acquired (trail with transit) ✓ Can be constructed in phases	▫ Project can be implemented in phases with independent utility as funding becomes available. ▫ Trail widths for the rail ROW as designed in the MBSST are paved widths of 8 to 12 feet wide or wider if right-of-way exists with 2 foot shoulders on either side. Trail with Transit (Rail or BRT) ▫ The ROW for trail with transit will accommodate a trail with many segments that can accommodate bike and pedestrian separation, especially where higher volumes may be expected. ▫ Additional ROW may be needed for stations and rail sidings. In some locations where the rail right-of-way is constrained, the bicycle and pedestrian route could be routed to on street facilities.
	Negatives		× Construction challenges may require additional funds or alternative design	Trail with Rail or Trail with BRT ▫ Trail with transit will require more retaining walls than a trail only option. Alternative alignments to on-street facilities may be required if expense of additional bridges to accommodate bike and pedestrian movement is too high.

Step 1 Criteria		Rating	Evaluation	Narrative
Technological Feasibility	**Positives/ Neutral**		✓ Technologically feasible ✓ Could accommodate future technologies	▫ Construction of trail is technologically feasible. ▫ Present and future pedal assist technologies could potentially be accommodated based on speed limitations.
	Negatives			

Route	**Rail Right-of-Way**
Project Title	Local rail transit with inter-regional connections
Project Description	Rail transit along the rail right-of-way would provide passenger rail transit service between the Westside of Santa Cruz and downtown Watsonville with service to approximately 10 stations along the corridor. Service would run on a frequency of every 30 minutes during the weekdays in each direction. Additional sidings will be needed to accommodate passing of trains due to single set of tracks. Recreational rail service would also be provided between the Westside of Santa Cruz and Davenport seasonally on weekends and holidays.
Overall Rating	
Summary	Rail transit would increase transportation choices, provide an alternative to congestion, and has the potential to shift people from driving to taking transit, thereby reducing vehicle miles traveled (VMT) and greenhouse gas emissions. Rail transit increases options for seniors, youth, people with disabilities, low-income, and those who cannot or do not drive. Rail transit can improve transit travel time and travel time reliability. Rail transit can carry many bicycles to help increase the range for bicyclists and encourage greater bicycle use for longer trips in combination with transit. Rail transit also encourages more intensive and compact use of land surrounding stations (transit oriented development) making more efficient use of limited land, ensuring greater levels of open space and helping to reduce automobile traffic, environmental impacts and GHG emissions.

Step 1 Criteria		Rating	Evaluation	Narrative
Community Support and Consistency with Applicable Plans	**Positives/ Neutral**		✓ Project specific planning effort with public input (Rail Transit Feasibility Study) ✓ Consistent with RTC policy (MBSST, policy 1.2.4) ✓ Consistent with long range planning effort (2014 RTP) ✓ Consistent with other planning efforts (MBSST Master Plan, 2013 California State Rail Plan) ✓ Advocacy groups in support of project	▫ The current RTC policy is for a trail to be developed along the rail corridor so that future rail transit is not precluded. Rail transit along the Santa Cruz Branch Rail Line could provide not only local transit but also interregional connections through Pajaro Station to Gilroy to connect to the high speed rail line that is currently being developed as well as the planned extension of Capitol Corridor service to Salinas and planned extension of the Coast Daylight to run between Los Angeles and San Francisco along the coast. ▫ Members of the public, some represented by advocacy groups, support rail with trail and have campaigns and/or signature gathering efforts in progress.
	Negatives		× May have some public opposition	▫ Horn noise from trains as required at roadway crossings has raised concerns. Horn noise could be mitigated with adequate crossing improvements and approval by the Federal Railroad Administration (FRA.) ▫ Members of the public, some represented by advocacy groups, support a trail only option and have campaigns and/or signature gathering efforts in progress.
Addresses Transportation Challenges &	**Positives/ Neutral**		Economic ✓ Improves transit travel time ✓ Improves transit travel time reliability	▫ Rail transit on the rail corridor could provide another option for how Santa Cruz County residents and visitors travel through the county. It could improve access to jobs and education centers by providing an alternative to congested roadways and provide a faster transit connection between Santa Cruz and Watsonville. Rail transit could increase the

Step 1 Criteria		Rating	Evaluation	Narrative
Environmental, Economic, and Equity Goals			✓ Improves access to jobs, education and services ✓ Potential to increase land use development, business activity, employment and tax revenues ✓ Recreational asset with potential to increase visitor tax revenues and benefit businesses (north coast section) Environmental ✓ Mode shift to transit ✓ Reduces VMT and GHG Equity ✓ Improves access for people who do not drive ✓ Reduces household transportation costs	transit mode share which will reduce VMT and GHG emissions. Transit oriented developments will likely occur along the rail corridor that will help to reduce VMT. ▫ Recreational rail transit on the north coast could be used by residents and visitors to access the newly acquired San Vicente Redwoods and Cotini Coast Dairies National Monument as well as provide economic vitality to the town of Davenport. ▫ Rail transit also encourages more intensive and compact use of land surrounding stations making more efficient use of limited land, ensuring greater levels of open space and helping to reduce automobile traffic, environmental impacts and GHG emissions. ▫ Transit improvements support lower cost transportation options which can reduce household transportation costs and benefit people who don't drive including youth, seniors, people with disabilities, low income, and minorities.
	Negatives		Environmental × Environmentally sensitive areas may be impacted (biological, cultural, aesthetic - noise) × Soil sampling, testing and/or remediation of contaminated soil may be needed × Traffic impacts at roadway crossings × Less adaptable to flooding from climate change Equity × Potential for conflicts between modes (rail with bikes and pedestrians and with autos at intersections)	▫ Increased rail service along the rail corridor could impact environmentally sensitive areas. Noise from horns could impact neighborhoods but quiet zones could be pursued that would reduce this impact. ▫ Any change in use of rail corridor will require characterization and possibly remediation of any soil contaminants. ▫ There may be increased safety conflicts between rail transit and autos at intersections and between rail transit and bikers/pedestrians on corridor that reduce comfort. Fencing can be constructed to minimize these safety concerns. There are greater opportunities to eliminate crossing conflicts at railroad rights-of-way than at roadways by making improvements that prevent automobiles, bicyclist and pedestrians from entering the railroad right-of-way when trains are coming. Fencing between trail and transit may limit access through neighborhoods. ▫ Rail right-of-way crosses areas that may be impacted by flooding due to climate change such as Harkins Slough area in south county. Rail is less adaptable to flooding from climate change as trains cannot readily shift onto alternate roadways where and when necessary due to temporary or permanent flooding on rail corridor. Railbed may need to be raised in areas that could be affected by climate change.
Compatible with Regulatory Requirements	**Positives/ Neutral**		✓ Consistent with legislation (Proposition 116, SB 375, SB 32) ✓ Consistent with design standards (CPUC) ✓ Standard permitting process	▫ The Santa Cruz Branch Rail Line was purchased using Proposition 116 funds which were allocated for passenger rail capital projects. Rail transit on the rail corridor would meet Prop 116 requirements. ▫ Rail transit is consistent with requirements of SB 375 and SB 32 to reduce greenhouse gas emissions.

Step 1 Criteria		Rating	Evaluation	Narrative
	Negatives			
Level of Public Investment	Positives/ Neutral		✓ Some funding sources may be available for capital costs (FTA5309-New/Small Starts, TIGER, STIP, STBG, SB 1-LPP & CC, LCTOP, TIRCP, Prop 1A)	▫ Capital funds may be available from Federal Transit Agency New/Small Starts program and other federal, state and local sources as identified in the Rail Transit Feasibility Study. ▫ New capital funding for both inter-city and commuter rail was created by the state in passage of SB-1.
	Negatives		× Major new investment for capital costs required × Major new investment for operations required × New funding source required for operations	▫ Capital and operational costs may be costly and funding sources are limited. A tax measure would likely be needed to cover operational costs.
Right-of-way and Constructability Constraints	Positives/ Neutral		✓ Minor amounts of ROW may need to be acquired	▫ The existing ROW can accommodate a rail way track alongside a trail. ROW requirements for the rail line are 17 feet in width or 8.5 ft in both directions from the centerline of the tracks. ▫ Additional ROW may be needed for sidings for the trains to pass and for some station locations. The number and locations of sidings will depend on the desired rail transit service frequency. ▫ Tracks may need to be laid for some sidings
	Negatives			
Technological Feasibility	Positives/ Neutral		✓ Technologically feasible ✓ Could accommodate future technologies (battery electric multiple units)	▫ Future technologies could provide battery electric multiple units for noise reduction and for reduced GHG emissions.
	Negatives			

Route	**Rail Right-of-Way**
Project Title	Bus rapid transit (BRT)
Project Description	Two-directional bus rapid transit between Watsonville Transit Center and Natural Bridges Dr on Westside of Santa Cruz would utilize a combination of the rail right-of-way, Highway 1, and local streets. Buses would travel on Highway 1 between Watsonville Transit Center and State Park Drive, utilize the rail ROW for two-directional travel between State Park Dr and Natural Bridges Dr. Connections to Capitola Transit Center, Santa Cruz Metro Center, UCSC, Cabrillo College and other locations could be made using local streets. The best available information on the rail right-of-way shows that for the majority of the distance between State Park Dr and Natural Bridges Dr, the ROW is greater than 50 feet wide which could accommodate two lanes of BRT (24 feet plus 4 feet for buffer zones) and trail. There are a limited number of sections/bridges with right-of-way width under 50 ft that could be addressed by alternate alignments on parallel streets; design solutions such as transit signals in short sections that hold one direction of travel while transit in other lane travels through; or acquisition of a minor amount of ROW. These sections include between 49th Ave and 30th Ave in Live Oak (Brommer St. could be used for alternate alignment), between Seabright Ave and California Ave, along Poplar Ave in Mar Vista and a few other shorter sections. Bridges in some locations could potentially be shared between buses and bikes/pedestrians using signals. Frequency of travel would be approximately every 15 minutes during peak periods. Local bus service between Capitola/Live Oak and Santa Cruz could also be enhanced by bus rapid transit utilizing the rail ROW. Electric buses could be utilized and buses would be prioritized at roadway crossings. Rail right-of-way south of State Park Drive and north of Natural Bridges Dr would be used solely for trail. One exception could be rail with trail from Lee Rd to Pajaro Station to continue freight service to Watsonville.
Overall Rating	
Summary	Bus rapid transit on a combination of the rail ROW, Highway 1 and local streets is a moderate cost capacity increasing improvement that would provide a new transit route connecting north and south county, improve transit travel time and transit travel time reliability and provide an alternative to congestion on Highway 1 and Soquel Ave/Dr. By improving travel time and travel time reliability, transit ridership could increase, reducing VMT and therefore greenhouse gas emissions. Electric vehicles would further reduce GHG emissions and reduce noise impacts along the rail right-of-way. BRT increases options for those who do not drive including seniors, youth, people with disabilities, low-income and minorities. BRT on rail right-of-way could require a shift from current RTC policy to not preclude rail transit.

Step 1 Criteria		Rating	Evaluation	Narrative
Community Support and Consistency with Applicable Plans	**Positives/ Neutral**		✓ Consistent with long range planning effort (2014 RTP) ✓ Consistent with other planning efforts (1999 MTIS) ✓ Agency support (Metro staff)	▫ Bus rapid transit for Santa Cruz County without a specified location is included in the 2014 RTP ▫ The 1999 MTIS study recommended two lane bus way between Westside Santa Cruz and Aptos next to the tracks. The 1999 MTIS report was not limited by current understanding of ROW. ▫ Residents adjacent to the rail corridor may be more supportive of bus on right-of-way as it may be a quieter option (no noise from train horns, less noise from rubber wheels and electric motor).
	Negatives		× May have some public opposition	▫ BRT on the rail corridor has not gone through a comprehensive public process. If rail corridor was used for BRT and trail, it would require a new planning effort to solicit public input. ▫ Members of the public, some represented by advocacy groups, support a trail only option and have campaigns and/or signature gathering efforts in progress.
Addresses Transportation Challenges & Environmental, Economic, and Equity Goals	**Positives/ Neutral**		Economic ✓ Improves transit travel time ✓ Improves transit travel time reliability ✓ Improves access to jobs, education and services ✓ Potential to increase land use development, business activity, employment and tax revenues Environmental ✓ Mode shift to transit ✓ Reduces VMT and GHG Equity ✓ Improves access for people who do not drive ✓ Reduces household transportation costs	▫ Bus rapid transit on the rail corridor will provide a new transit route connecting north and south Santa Cruz County. A new transit connection with competitive travel times could improve access to jobs, education centers and services by providing an alternative to congested roadways. Faster transit travel times could also make transit more convenient and encourage people to shift from driving to transit, reducing VMT and GHG emissions. Utilizing electric buses could decrease GHG emissions further. BRT would allow more flexibility in route and network structure than rail transit service on the rail ROW with potential to have greater ridership. ▫ The potential to encourage more intensive land use development as a result of investment in bus rapid transit is less than rail transit service due to the limited capacity of BRT when compared to rail transit, and the potential for bus rapid transit routes to change, unless bus rapid transit is seen as a precursor to rail transit. ▫ Transit improvements support lower cost transportation options which can reduce household transportation costs and benefit people who don't drive including youth, seniors, people with disabilities, low income, and minorities.
	Negatives		Environmental × Environmentally sensitive areas may be impacted × Soil sampling, testing and/or remediation of contaminated soil may be needed × Traffic impacts (at roadway crossings) Equity × Potential for conflicts between	▫ Improvements to support BRT on the rail right-of-way may impact environmentally sensitive areas but less so when compared to impacts of rail transit service on the rail ROW from Santa Cruz to Watsonville. This is attributed to the fact that BRT would only utilize about nine miles of the 32-mile rail right-of-way and would not utilize the rail ROW in the vicinity of the sloughs to the west of Watsonville. ▫ Noise impact from bus rapid transit will likely be less than rail due to horns not being required for BRT at intersections. ▫ Soil contaminants have been found along the rail ROW. Soil along rail ROW may need to be assessed for contaminants and possibly remediated. Construction of a paved surface over the bare soil could serve as the remediation for some of the contaminants. ▫ There may be conflicts between BRT and autos at intersections and between BRT and trail

Step 1 Criteria		Rating	Evaluation	Narrative
			modes (buses with bikes and pedestrians and with autos at intersections)	on rail ROW. Fencing may be recommended between BRT and trail for safety best practices. Fencing between trail and transit may limit access through neighborhoods.
Compatible with Regulatory Requirements	**Positives/ Neutral**	Neutral	✓ Consistent with legislation (SB 375, SB 32) ✓ Consistent with design standards (AASHTO, local transit standards) ✓ Standard permitting process	▫ BRT is consistent with requirements of SB 375 and SB 32 to reduce greenhouse gas emissions. ▫ BRT would be designed to follow design standards and best practices.
	Negatives		× Not consistent with regulations (Proposition 116)	▫ The Santa Cruz Branch Rail Line was purchased using Proposition 116 funds which were allocated for passenger rail capital projects. If rail right-of-way will not be used for passenger rail service, at least $11 million and possibly up to $25 million or more in funds will need to be returned to CTC because Proposition 116 requirements will not be met and the project will not be consistent with the funding application for purchase and rehabilitation of right-of-way. ▫ It is unknown what the requirements would be if the rail line was railbanked for rail in future with BRT and trail constructed in the near term.
Level of Public Investment	**Positives/ Neutral**	Neutral	✓ Some funding sources may be available for capital costs (FTA5309-New/Small Starts, TIGER, STIP, STBG, SB 1-LPP & CC, LCTOP, TIRCP, Section 130) ✓ Some funding sources may be available for operating costs (Fares, new sales tax for transit, STA, TDA, LCTOP, TIRCP) ✓ Moderate new investment for capital costs required ✓ Moderate new investment for operations required	▫ Capital funds may be available from federal, state and local sources. BRT is a typical starter project for a light rail or heavy passenger rail project. FTA funding will support this approach. Funds available from SB 1 may also be available for this project. ▫ Could be operated by existing operator (Metro)
	Negatives		× Potential to lose funds	▫ If rail right-of-way will not be used for passenger rail service, at least $11 million and possibly up to $25 million or more in funds will need to be returned to CTC because Proposition 116 requirements will not be met and the project will not be consistent with the funding application for purchase and rehabilitation of right-of-way. A new planning effort would be needed to solicit public input. Funds currently allocated for trail from FLAP and ATP may not meet deadline for use of funds and thus may be lost. ▫ Costs and time to revise current direction are unknown (additional costs include new public outreach process, negotiations with CTC and Iowa Pacific, applying for abandonment of rail to Surface Transportation Board, hazardous material assessment and mitigation, legal fees).
Right-of-way and	**Positives/ Neutral**		✓ Minor amounts of right-of-way may need to be acquired (along	▫ The existing ROW could potentially accommodate two lanes for bus movement alongside a trail for the majority of the length between State Park Dr and Seabright Ave. ROW

Step 1 Criteria		Rating	Evaluation	Narrative
Constructability Constraints			some constrained sections and at station stops) ✓ Could be built in phases ✓ Project is readily constructible	requirements for two-directional BRT are approximately 24 ft plus 2 feet buffer zones on either side. ▫ Additional ROW may be needed along constrained sections and for some station stop locations.
	Negatives			
Technological Feasibility	**Positives/ Neutral**		✓ Technologically feasible ✓ Could accommodate future technologies (autonomous and evolving electric buses)	▫ Electric buses along the rail right-of-way are currently feasible and will likely become even more efficient in future. New technologies could be implemented to improve bus flow at rail ROW and roadway intersection crossings. BRT on dedicated lanes along the rail corridor could allow for implementation of self-driving buses sooner than they could be implemented in traffic mixed with conventional vehicles.
	Negatives			

Route	**Rail Right-of-Way**
Project Title	Freight service on the rail line
Project Description	Freight service on the rail line between Davenport and Pajaro Station, with connection to the Harvey West industrial area and Felton via the Big Trees line, as needed primarily during nighttime to not conflict with weekday and weekend passenger rail schedules.
Overall Rating	
Summary	Freight service is a moderate cost option that has been occurring on the rail line for nearly 140 years although currently not many businesses are utilizing this service. Rail freight provides an alternative option for goods movement as opposed to travel on a congested highway, reduces GHG emissions, and can increase safety by reducing the number of trucks on the highway. Noise impacts from freight can be challenging for residents in the vicinity of the rail corridor especially if freight occurs during night time to avoid a passenger rail schedule.

Step 1 Criteria		Rating	Evaluation	Narrative
Community Support and Consistency with Applicable Plans	**Positives/ Neutral**		✓ RTC policy ✓ Consistent with long range planning effort (2014 RTP) ✓ Supported by voters through passage of Measure D	▫ Freight service on the rail line has been more or less active since its inception. Freight service is the current RTC policy and is included in the agreement with the rail operator, Iowa Pacific. Upgrades to the rail line for freight service are included in the 2014 RTP. Voters approved Measure D in November 2016 which allocates funds for rail corridor infrastructure preservation.
	Negatives		× May have some public opposition	▫ Horn noise from trains as required at roadway crossings has raised concerns. ▫ Members of the public, some represented by advocacy groups, support a trail only option and have campaigns and/or signature gathering efforts in progress.
Addresses Transportation Challenges & Environmental, Economic, and Equity Goals	**Positives/ Neutral**		Economic ✓ Alternative option for goods movement to/from businesses Environmental ✓ Reduces GHG Equity ✓ Improves safety (by removing trucks off roadways)	▫ Freight service on the rail line would provide an alternative option for goods movement in SCC with less congestion and reduce the number of trucks on Highway 1, improving safety. Rail freight uses significantly less fuel and thus reduces GHG emissions. ▫ Environmental impact assessment is not required since freight service has been ongoing for decades and there has not been a change in use.
	Negatives			
Compatible with Regulatory Requirements	**Positives/ Neutral**		✓ Consistent with legislation (SB 32) ✓ Consistent with design standards ✓ No additional permits required	▫ Rail freight is consistent with SB 32 to reduce GHG emissions.
	Negatives			
Level of Public Investment	**Positives/ Neutral**		✓ Moderate new investment for capital costs required	▫ Rail freight due to increased weight of loads, may require a greater level of bridge repair and maintenance if passenger rail service is not also provided. Measure D provides some

Step 1 Criteria		Rating	Evaluation	Narrative
			✓ Some funding sources may be available for capital costs (Trade corridor grants, TIGER, leases, operator funds, Section 130/crossing, RRIF) ✓ Minor new investment for operations required ✓ Some funding sources may be available for operations (Measure D, leases, operator funds/fees)	funds for maintenance costs of tracks for good movements of the rail line. Private businesses who utilize rail corridor for freight can pay for use providing funds for rail operations.
	Negatives			
Right-of-way and Constructability Constraints	**Positives/ Neutral**		✓ ROW is sufficient ✓ Project is readily constructible	▫ The existing ROW is sufficient for freight service and can accommodate a rail way track alongside a trail. ROW requirements for the rail line are 17 feet in width or 8.5 ft in both directions from the centerline of the tracks on straight track and up to 20 feet or 10 feet in both directions from the centerline of the tracks at curves. ▫ Additional ROW may be needed for sidings for trains to pass if freight service increases significantly. ▫ Freight has been operational since inception of rail service and thus only maintenance of tracks is required.
	Negatives			
Technological Feasibility	**Positives/ Neutral**		✓ Technologically feasible ✓ Could accommodate future technologies (autonomous trains for goods movement)	▫ Future technologies for improved goods movement could be accommodated.
	Negatives			

Acronym Guide

AASHTO: American Association of State Highway and Transportation Officials
ATP: Active Transportation Program
ATP: Active Transportation Program
BRT: Bus rapid transit
CIP: Capital Improvement Program
CPUC: California Public Utilities Company
CTC: California Transportation Commission
EIR: Environmental Impact Report
FLAP: Federal Lands Access Program
FTA: Federal Transit Administration
GHG: Greenhouse gas
HOV: High Occupancy Vehicle
HSIP: Highway Safety Improvement Program
HUTA: Highway User's Tax Account
LCTOP: Local Carbon Transit Operations Program
LJ: Local jurisdiction
MBSST: Monterey Bay Sanctuary Scenic Trail
MTIS: Major Transportation Investment Study
MUTCD: Manual on Uniform Traffic Control Devices
ROW: Right of way
RTC: Regional Transportation Commission
RTP Regional Transportation Plan
SB1 - CC: Senate Bill 1 - Congested Corridors
SB1 - LPP: Senate Bill 1 - Local Partnership Plannning
SC: City of Santa Cruz
SCC: Santa Cruz County
SHOPP: State Highway Operation and Protection Program
SOV: Single occupancy vehicle
SRTS Safe Routes to Schools
STA: State Transportation Agency
STBG: Surface Transportation Block Grant
STIP: State Transportation Improvement Program
STIP: State Transportation Improvement Program
TDA: Transportation Development Act
TIGER: Transportation Investment Generating Economic Recovery
TIRCP: Transit and Intercity Rail Capital Program
UCSC: University of California Santa Cruz
VMT: Vehicle miles traveled

ATTACHMENT 3

Unified Corridor Investment Study

Highway 1, Soquel Ave/Drive & Freedom Blvd, and the Santa Cruz Branch Rail Line

Goals, Criteria and Performance Measures

The goals, criteria and performance measures below support a vision for an integrated, multimodal transportation network based on a triple bottom line approach that maximizes the environmental, economic and equity benefits.

Goal	Step 1 Criteria
Promote feasible solutions that address transportation challeges.	Community support and coordination/consistency with local, regional, state and federal plans
	Potential to address transportation challenges and advance environmental, economic and equity goals
	Compatibility with regulatory requirements
	Level of public investment
	Right of way and constructability constraints
	Technological feasibility
Goals	**Step 2 Performance Measures**
Safer transportation for all modes	Injury and fatal collisions by mode
Reliable and efficient transportation choices that serve the most people and facilitate the transport of goods	Peak period mean automobile travel time
	Peak period mean transit travel time
	Peak period travel time reliability
	Mode share
	Person trips across N-S screenline
Develop a well-integrated transportation system that supports economic vitality	Level of public investment
	Visitor tax revenues
	Cost associated with fatalities and injuries
Minimize environmental concerns and reduce adverse health impacts	Automobile vehicle miles traveled
	Environmentally sensitive areas
	Criteria pollutants
	Greenhouse gas emissions
Accessible and equitable transportation system that is responsive to the needs of all users	Transit Vehicle Miles Traveled
	Household transportation costs
	Benefits and impacts to transportation disadvantaged communities

Unified Corridor Investment Study - Step 1 Scenarios for Analysis

	Scenario A	Scenario B	Scenario C	Scenario D	Scenario E	Scenario F	No Build
Highway 1 Projects							
buses on shoulders							
high occupancy vehicle lanes (HOV) and increased transit frequency							
auxiliary lanes to extend merging distance IN ADDITION TO MEASURE D							
metering of on-ramps							
additional lanes on bridge over San Lorenzo River							
Mission St intersection improvements							
rail transit on Hwy 1 between Santa Cruz and Watsonville							
self driving cars							
Soquel Avenue/Drive and Freedom Blvd							
bus rapid transit lite (faster boarding, transit signal priority and queue jumps)							
dedicated lane for bus rapid transit and bikes							
parking moved from Soquel Avenue/Drive to improve bike and transit options							
increased frequency of transit with express services							
buffered/protected bike lanes							
intersection improvements for auto							
intersection improvements for bikes/pedestrians							
Rail Corridor							
multiuse trail (bike and pedestrian)							
bike trail separate from pedestrian trail							
local rail transit with interregional connections							
bus rapid transit							
freight service on rail							
Overall Project Area/Connections between Routes							
improved bike/pedestrian facilities throughout urban area closing gaps in network	These projects will be evaluated in all scenarios.						
additional transit connections							
bike share, bike amenities, transit amenities, park and ride lots							
multimodal transportation hubs							
Transportation Demand and System Management							
employers and residences - incentive programs	These projects will be evaluated in all scenarios.						
education and enforcement - electric vehicle, motorist safety, and bike safety							

AGENDA: November 16, 2017

TO: Interagency Technical Advisory Committee

FROM: Anais Schenk, Transportation Planner

RE: Santa Cruz County Bicycle Signage Project

RECOMMENDATIONS

Staff recommends that the Interagency Technical Advisory Committee receive a report on the Santa Cruz County Bike Signage project, identify a primary staff contact for each jurisdiction, and provide input on sign placement, design and content as described below.

BACKGROUND

In May 2015 the Regional Transportation Commission (RTC) adopted the Santa Cruz County Bicycle Route Signage Program Implementation Plan (Attachment 1). Development of the Implementation Plan involved extensive research, review of similar plans from other regions, and discussions with local jurisdictions. The Implementation Plan contains goals and objectives, recommends standards for sign design, and provides guidelines for sign placement, public involvement and program administration. Preferred bicycle routes were identified concurrent with the development of the final Implementation Plan with input from the local jurisdictions and the advisory committees of the RTC.

In 2015, the RTC was awarded an Active Transportation Program grant to install approximately 875 directional signs that direct bicyclists to preferred cycling routes and increase motorists' awareness of shared roadway facilities. The grant scope also includes before and after counts at 40 locations and public outreach. The environmental documentation for the project was completed in early 2017 and the project is now in the Plans, Specifications and Engineering (PS&E) phase. All PS&E work must be completed by March 19th 2018 to receive the next funding allocation from the California Transportation Commission.

DISCUSSION

Routes

Perceived safety of a route is influenced by "stress factors" including separation from adjacent traffic, vehicle speeds, bicycle facility width and intersection conditions. Stress factors and route directness were considered when identifying routes with stakeholders. Regional routes connect destinations across the County

and place a greater emphasis on the most direct route. Local routes connect destinations between two nearby neighborhoods or jurisdictions and considered directness and low stress facilities equally. Neighborhood routes connect destinations within neighborhoods and are on low stress facilities. As part of the Implementation Plan five regional routes, ten local routes, and seventeen neighborhood routes were identified.

Sign Design, Content, and Placement

The Implementation Plan provides guidance on the sign design which includes a number of factors including type of sign, text, mileage, symbols, and layout. Two types of signs are included: destination and confirmation signs. Destination signs are provided before decision points and identify direction and distance to the destination or point of interest. Confirmation signs are used after complex decision points to confirm that a bicyclist has made the correct decision and is headed towards the correct destination. **Figure 1** shows these two sign options.

Figure 1: Sign Layout

Destination Sign Layout

Confirmation Sign Layout

The text included on the signs is limited to destinations and points of interest. Approximately 50 destinations were identified as part of the Implementation Plan. The destinations and points of interest shown on each destination sign consider the network of routes and are not limited to destinations that are on any single route. For example, a sign along West Cliff primarily includes destinations along West Cliff, but will also direct cyclists to UCSC where there the route intersects with a local route connecting to UCSC.

References to commercial destinations are discouraged unless there is a major transit connection such as the Capitola Mall. The layout for destination signs includes no more than three "slots" for destinations or points of interest. The nearest locations are to be placed in the top two slots and the final route

destination in the bottom place. The final destination of the route is listed on all signs. Mileage and directional arrows are provided for all three slots as shown in **Figure 1**.

Symbols were identified to convey destination and point of interest information for three categories of location types: transit stations, multi-use paths, and State Parks. These symbols were identified to save space on the sign, however as the draft sign database was developed it was determined that these symbols may actually increase the size of the signs and are can be repetitive of the text included on the sign. **Therefore it is the recommendation of staff that symbols be excluded from the signage.**

The signs should be placed at the nearside of intersections and should consider intersection geometries, number of lanes, merging distance and professional judgment. The number of signs per directional mile will vary based on the number of decision points. There is no minimum or maximum established by the Implementation Plan.

Draft Signage Database

A database of signs was developed to direct bicyclists along the routes identified as part of the Implementation Plan. We are asking for review and comments on the following topics:

- **Placement:** Signs were sited on existing poles where possible. Signs were not sited on stop signs. Some of these existing poles may already have more than one sign on them. Consider whether the existing pole can be used or if a new pole is needed.

- **Multi Use Trails:** Some of the signs are placed on multi-use trails. However, these trails may have their own branding and wayfinding plans, such as the Monterey Bay Sanctuary Scenic Trail. Please review signs located on these trails and consider how the branding may be incorporated into the sign design. For example, we may be able to place a "topper" on the pole.

- **Materials:** We need information from each jurisdiction on preferences and standards for pole material (wood or metal, square or round, finish, holes, etc.), anchor method, attachment method, and reflectivity.

- **Replacement of "Bike Route" Signs:** There are existing signs that contain the words "Bike Route" which is a variant from the preferred design identified in the Implementation Plan. Consider whether these should be removed since they may cause confusion regarding preferred routes and are inconsistent with future signage.

Staff requests that ITAC members identify a point of contact for each jurisdiction to review, collect, and provide comments to the RTC. The draft database will be emailed to ITAC members and the primary points of contact. Please review each

sign for placement and content. **We request that all comments and review be completed by Friday December 15th.**

Pacific Coast Route

The draft database of signs includes signs for the Pacific Coast Route between Shaffer Road and the San Lorenzo River that direct bicyclists to the City of Santa Cruz adopted route designation. There is already existing signage already in place providing wayfinding. However, some of this signage contradicts other existing wayfinding signs. For example there are signs that direct bicyclists onto Mission Street as well as onto Natural Bridges. Additionally, current placement of the signs is on the farside of the intersection whereas the standard established in the Implementation Plan for the Bicycle Route Signage Program is nearside.

Staff requests input on whether we should resign the entire Pacific Coast Route to provide consistency in signage design and placement. If the ITAC directs staff to replace existing wayfinding for the Pacific Coast Route staff recommends varying from the three line standard and stacking a fourth line for this unique routing. Including the Pacific Coast Route as one of the three destinations or points of interest would result in important destinations being "bumped" off the signage. (See **Figure 2** below.) If the ITAC decides not to remove and replace existing wayfinding the existing signs can be supplemented with new signage simply to fill in existing gaps in wayfinding.

Figure 2: Pacific Coast Route Signage

Existing Sign Design

Recommended Sign Design

SUMMARY

In 2015, the RTC was awarded an Active Transportation Program grant to install approximately 875 directional signs that direct bicyclists to preferred cycling routes and increase motorists' awareness of shared roadway facilities. The project is now in the PS&E phase which must be completed by March 19th 2018 to receive the next funding allocation from the California Transportation Commission. Staff requests that the ITAC identify a primary staff contact for each jurisdiction, and provide input on sign placement, design and content by Friday, December 15th 2017.

Attachments:

1. Santa Cruz County Bicycle Route Signage Program 2015 Implementation Plan

S:\Bike\Countywide Sign Program\1. ProjectMgmt\Staff Reports\Countywide Bike Signage Draft Sign Locations ITAC.docx

Attachment 1

Santa Cruz County Bicycle Route Signage Program
2015 IMPLEMENTATION PLAN

Prepared by
Santa Cruz County Regional Transportation Commission
Santa Cruz, CA

Final May 2015

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Santa Cruz County Bicycle Route Signage Program
2015 Implementation Plan

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Chapter 1- Project Description

In an effort to further increase bike ridership and improve safety, the Santa Cruz County Regional Transportation Commission (RTC) developed the Santa Cruz County Bicycle Route Signage Program (SCC Bicycle Route Signage Program). The SCC Bicycle Route Signage Program directs bicyclists to preferred bicycle routes. Preferred bicycle routes link common origins and destinations throughout Santa Cruz County.

The Draft SCC Bicycle Route Signage Program - 2015 Implementation Plan (2015 Implementation Plan) builds on previous efforts, sets up the methodology for selecting routes, lists Phase I bicycle routes, defines standard signs, establishes sign design guidelines, and describes scenarios for project delivery. The 2015 Implementation Plan will be reviewed and revised as necessary.

The RTC is committed to promoting sustainable transportation options, including bicycle use. Commuters, recreational cyclists, families with children, and visitors, ranging from experienced to new bicycle riders, will benefit from a SCC Bicycle Route Signage Program. Because the RTC is a Regional Transportation Planning Agency, not a public works department with construction authority over streets and roads, coordinating with local jurisdictions to implement such a program is vital to its success.

Background

The need for a bicycle route sign system was identified by community members, transportation professionals and elected officials, in order to increase the number of bicyclists, as well as improve bicyclists' safety. The project gained significant momentum after two bicyclist fatalities on Mission Street (state Highway 1). Other areas across the United States with significant bicycle ridership have implemented similar systems, including Santa Barbara, Berkeley, and Oakland in California; Portland, Oregon; Seattle, Washington; and Chicago, Illinois, among others. The Transportation Agency for Monterey County is in the early stages of developing a way finding plan, including bike route signing.

In June 2009, the RTC programmed $100,000 in Regional Surface Transportation Program funding for the SCC Bicycle Route Signage Program. In December 2013, RTC staff presented the Preliminary Draft SCC Bicycle Route Signage Program Implementation Plan. Development of the SCC Bicycle Route Signage Program Implementation Plan involved extensive research, review of similar implementation plans, and discussions with local jurisdictions. Earlier stages in the development of the SCC Bicycle Route Signage Program Implementation Plan were used to: establish goals and objectives; identify the target audience; recommend standards signs and outline potential strategies for selecting routes; sign placement; public involvement; and program administration.

The SCC Bicycle Route Signage Program is expected to be implemented over time as resources become available. The 2015 Implementation Plan introduces the first group of routes proposed for implementation consistent with the 2015 Implementation Plan methodology. The bicycle routes identified in the 2015 Implementation Plan are the first step in developing the community's bicycle route signage program and are referred to as "phase 1 bicycle routes". A phased approach introduces bicycle signage to the community at a scale that fits within available planning funds and allows for revisions to the system to

adapt to the community's level of interest. Additional signed bicycle routes could be identified consistent with available resources and funding opportunities.

Goals and Objectives

A bicycle route signage program in Santa Cruz County will assist in directing cyclists to preferred bicycle routes. The goals of the program are to improve safety and increase bicycling in Santa Cruz County by way of reducing conflicts between bicycles and motor vehicles; educating motorists and bicyclists about shared roadways; and increasing awareness of bicycling as a viable transportation option. Increasing the bicycling mode share, a goal of the Regional Transportation Plan, will serve to maximize use of the existing transportation network, promote non-emission generating trips by converting short distance automobile trips to bicycling trips, and improve community members' health and well-being.

To achieve program goals, the bicycle route signage program is designed to:

1) Identify and guide cyclists onto streets better suited for bicycle travel to common destinations;
2) Promote bicycle use by making the public more aware of the bicycle as a viable transportation mode;
3) Remind motorists that they are sharing the road with cyclists who are traveling on bicycle routes;
4) Attract new bicycle riders, who may be intimidated by traffic and other safety considerations or constraints, to routes with lower traffic stress; and,
5) Make it easier for bicyclists to find common destinations while being informed about trip length.

The 2015 Implementation Plan will assist transportation planners, local jurisdictions and interested organizations in:

1) Providing a framework for logical and useful routes for bicyclists in the county;
2) Selecting bike routes that provide convenient and comfortable access to common destinations such as: parks, beaches, shopping areas, schools, work, and scenic areas;
3) Selecting routes well-suited to a broad range of riders such as: commuters, tourists, families, fitness riders, and recreational riders;
4) Eliminating and consolidating unnecessary existing bikeway signs to "de-clutter" area streets and bikeways; and,
5) Developing a bike route signage program that can be implemented in phases as funding permits, and that provides clear directions to signing future bikeways in the same manner.

Target Audience

Community

While the main focus of the program are bicyclists and community members interested in riding a bicycle, the population to be served includes all Santa Cruz County residents and visitors. Design features increase bicycle ridership benefits to all members of the community since it promotes human-scale environments, traffic calming, reduced greenhouse gas emissions, and a healthier population.

Bicyclists

Bike route signs will serve bicycle riders of all persuasions — commuters, families, recreational riders, and visitors ranging from experienced to new bicycle riders. Bicycle counts taken in 2012 and 2014 show an overall increase in bicycle ridership in Santa Cruz County since 2003, with the greatest number of bicyclists in the City of Santa Cruz and mid-County, including Capitola. On average, over 3,500 workers ride a bicycle to work in Santa Cruz County between 2006 and 2010, according to the American Community Survey 5- year estimate. While the sign program will clearly serve commuters, commute trips account for just 16% of all trips nationally, according to the 2009 National Household Travel Survey. So there are a far larger number of residents traveling for other household trips, such as shopping and school by bicycle, who will benefit.

New Bicycle Riders

Community members who want to travel by bicycle but have safety concerns may be encouraged by the designation of specific bicycle routes and add to the total number of bicyclists in Santa Cruz County. Safety concerns are the main reason why residents do not choose bicycling for short trips in Santa Cruz County, according to a 2012 public input survey conducted by the RTC. Increased bicycle ridership also means higher visibility which heightens safety and provides an inviting atmosphere to timid or novice riders.

Visitors

Visitors to Santa Cruz County will be served from improved guidance while traveling through the county on touring trips or navigating around town by bicycle.

Pedestrian Way finding

While the bike route signs will be useful to pedestrians, the system will not be specifically designed to support pedestrian travel. Pedestrian way finding signage is generally focused on a finer level of detail, with support of shorter trips, areas with higher density, and more local destinations. A bicycle signage system supports longer trips and are designed and located to accommodate users traveling at speeds in the range of ten to fifteen miles per hour.

Funding

The RTC initially considered an application for $300,000 for development of this program and later estimated $500,000 was needed for a robust and comprehensive countywide signage program. The requested amount was determined after researching the cost of developing such programs in other areas; identifying preliminary estimates for the number of routes and signs needed; considering maintenance requirements; and estimating the staff time needed to adequately coordinate sign and route development

with all local jurisdictions. In response to the application for $300,000 in funding to develop the program, the RTC approved a reduced amount of $100,000 in Regional Surface Transportation Program funding. RTC staff worked with a limited project scope to develop a SCC Bicycle Route Signage Program 2015 Implementation Plan designed to accomplish program goals and position the region to take advantage of future funding opportunities.

Other jurisdictions have financed their programs through the following funding mechanisms: Bicycle Transportation Account (BTA), Transportation Development Act (TDA), Proposition 116, Transportation Enhancement Act (TEA), local maintenance funds, and various tax measures, among others. Many of these funding sources could be pursued to acquire additional funds for the county's program, while others are no longer available due to legislative changes in recent years. For example, individual jurisdictions or the RTC could apply for Active Transportation Program funds to help fund portions of the sign program within their jurisdiction.

Chapter 2- Needs Assessment

Existing Conditions

As of December 2014, there are 216 bikeway miles in Santa Cruz County, consisting of 191 miles of Class II striped bike lanes on a street or highway and 25 miles of Class I separated paths designated exclusively for bicycle travel. Class II bike lanes can be found on most arterials and collector roads. Green bicycle lane treatments are sometimes incorporated with Class II bike lanes when bike lanes are painted green in all or some locations. Class I bike paths can be found on the San Lorenzo River Levee, Arana Gulch Multi Use Path, Branciforte Creek Trail, and some segments of the Watsonville Slough Trails. RTC staff has not conducted an analysis of the number of Class III miles existing in the county. Sharrows are sometimes found on Class III facilities and provide improved visibility for bicycles. The area has an active bicycling community, which promotes the provision of dedicated bicycle facilities on a variety of road way types, to accommodate the varied ability and comfort levels of bicycle riders. While the county is currently served by a wide variety of bicycle facilities, the majority of the areas lack a clear, comprehensive, and consistent sign system that provides bicycle riders with directional information and information about mileage to destinations and points of interest. Two different sign systems already exist, namely the Pacific Coast Bike Route and the California Coastal Trail, but they do not provide destination or mileage-to-destination information. Additionally, many Pacific Coast Bike Route signs are in need of maintenance, and gaps in the sign system need closing. The SCC Bicycle Route Signage Program provides an opportunity to connect routes and make improvements.

Safety

Safety concerns are the main reason why residents do not choose bicycling for short trips in Santa Cruz County, according to a public input survey conducted by the RTC in 2012. Santa Cruz County bicyclists' injury/fatality rate is almost twice the State injury/fatality rate, with 158 bicyclists injured or killed in 2010, according to the Community Traffic Safety Coalition 2010 Bicycle State of the County Report. State injury/fatality rates are based on collisions per total population and not collisions per total bicycle ridership. Bicycle crashes were common at major intersections on high-speed, multi-lane arterial streets, and roads with high truck traffic volumes.

Multimodal Network Quality

The level of use of bicycle facilities is highly dependent on the quality of the facility. The quality of a bicycle facility reveals the level of comfort it provides to people riding bicycles. The Multimodal Network Quality Analysis of Santa Cruz bicycle facilities completed in 2014 concluded that the overall quality of the Santa Cruz County bicycle network rated 26 out of a maximum of 100. Although the presence of signed bicycle routes was not a variable analyzed in the bicycle network quality analysis, the location of bicycle facilities with respect to motor vehicle speed and the type of bicycle facility was a factor to determining the network score. Understanding the quality of bicycle facilities is important for increasing the number of bicycle riders by way or offering comfortable environments for bicycling.

Bicycle Plans

All local jurisdictions within the RTC planning area have developed bicycle plans to guide implementation of local policies and funding to support bikeway development, maintenance and support facilities. The purpose of bicycle plans range from developing integrated bicycle networks to implementing bicycle safety goals and designing a system that will increase bicycle commuting. Bicycle plans have undergone public review. Routes are generally consistent with priorities dictated in bicycle plans.

Monterey Bay Sanctuary Scenic Trail Network

The Monterey Bay Sanctuary Scenic Trail Network is planned to be a 50-mile bicycle and pedestrian pathway along the coast of Santa Cruz County. It will go from the San Mateo County line in the north to the Monterey County line at Pajaro, as defined in the Monterey Bay Sanctuary Scenic Trail Master Plan adopted in 2013. The RTC is overseeing the Santa Cruz County sections of the Monterey Bay Scenic Sanctuary Trail. In Santa Cruz County, the Monterey Bay Sanctuary Scenic Trail Network merges plans for a bicycle and pedestrian trail along the rail line – including coastal alignments and neighborhood spurs – into a connected network that will overlap and converge to provide safe and convenient route choices. Segments of the Monterey Bay Sanctuary Scenic Trail Network, located in the urban areas of the City of Santa Cruz and City of Watsonville, are under development. The Monterey Bay Sanctuary Scenic Trail Network will serve as the California Coastal Trail in Santa Cruz County.

California Coastal Trail

The California Coastal Trail is defined as a continuous public right-of-way along the California coastline—a trail designed to foster appreciation and stewardship of the scenic and natural resources of the coast through hiking and other complementary modes of non-motorized transportation. The Monterey Bay Sanctuary Scenic Trail Network will serve as the California Coastal Trail in Santa Cruz County.

Pacific Coast Bicycle Route

In Santa Cruz County, Highway 1 is recognized as the Pacific Coast Bike Route. The route generally follows Highway 1 north of the city of Santa Cruz, surface streets in the cities and county urbanized areas, and along rural surface streets south of Aptos. The Pacific Coast Bike Route is shown in Appendix C. Due to its spectacular scenery, the route draws many recreational bicycle riders, mountain bikers, charity ride participants, group riders, bike delivery operations, triathlons, bicycle races, and is promoted by the national organization, Adventure Cycling Association.

Multiuse Pathways

There are several multi-use pathways in Santa Cruz County that serve bicycle travel. Included are the San Lorenzo River Levee Trail, the Arana Gulch Multi Use Path, Branciforte Creek Trail and some of the Watsonville Slough Trails. The multi-use pathways and most paved trails are considered Class I bicycle facilities and are physically separated from motor vehicle traffic. Multi-use pathways can provide more comfortable facilities for less experienced bicycle riders because they do not have to share the path with motor vehicles and provide fewer opportunities for conflicts between bicycle riders and motor vehicles.

Neighborhood Shared Streets

Neighborhood shared streets are local roadways that emphasize slow speeds and lower volumes and optimize bicycle and pedestrian travel. Neighborhood shared streets are intended to create “low stress” routes for bicyclists to connect to common neighborhood destinations. Neighborhood shared streets are typically located on local roads and may have one or more of the following: pavement markings that signal drivers and bicyclists to share the road; dedicated bicycle and pedestrian facilities; improved bicycle and pedestrian crossings; bicycle and pedestrian scale way finding signs; and traffic calming measures. Future neighborhood shared streets are identified in the 2014 Regional Transportation Plan.

City of Santa Cruz Way Finding Program

The City of Santa Cruz Way Finding and Signage Program is an integrated system which markets the City of Santa Cruz, while communicating that the City is unique, friendly and organized through helping visitors more easily find their way to intended and discovered destinations. The City of Santa Cruz Way Finding and Signage Program recommends developing bicycle signage for the West Cliff Drive and San Lorenzo River Levee bike loops, to include mileage and time specifications.

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Chapter 3- Route Selection

Methodology

Preferred routes are selected based on the following features: proximity to common origins and destinations; proximity to points of interest, route directness and connectivity; bicycle facilities; target audience; and traffic volumes and speeds, with safety as a major consideration. Other factors considered when choosing routes include geographic distribution, scenic attributes, and topography. The route selection process is undertaken in collaboration with all local jurisdictions in the county, as many routes crossover multiple jurisdictions.

Common Origins & Destinations

Selecting common origins and destinations is the first step in identifying preferred bicycle routes for Santa Cruz County. Common origins and destinations are considered major attractors and can generally be described as: downtowns, town centers, commercial centers, universities, state parks and beaches, and neighborhood centers. In some cases, major arterials serve as bicycle route origins (ex. Soquel Avenue and Freedom Boulevard) if their location draws individuals from more than one surrounding neighborhood or where roadways provide a connection to another bicycle route. Points of interest along routes are also important factors in determining route locations. Points of interest are described as major transit stations, colleges, coastal access points, and multi use path and trail systems. A list of common destinations and points of interest is included in Appendix A.

Target Audience

The SCC Bicycle Route Signage Program is designed to serve all ages and abilities and address the needs of commuters, families, recreational riders, and visitors. Within this audience there is a continuum of experience, attitudes, and comfort associated with bicycling. The Federal Highway Administration (FHWA) describes this continuum using a scheme based on bicyclist skill. Advanced cyclists are those whose greater skill enables them to share roads with motor traffic and may be willing to sacrifice separation from traffic stress for greater speed. Basic adult cyclists are those who lack the “skill” to confidently integrate with fast or heavy traffic. Children cyclists are those who are less capable than the basic adult cyclists at negotiating with traffic and more prone to irrational and sudden movements. Common destinations using a bicycle may also vary across the target audience. For example, recreational riders may be most interested in reaching state parks or beaches and transit stations. Families may be most interested in reaching neighborhood centers, parks or schools. The result is a diverse set of bicycle routes that expose bicyclists to varying intensities of motor vehicles and motor vehicle speeds and provide links to nearby and farther away destinations.

Traffic Volumes & Speeds

Traffic volumes and speeds can be factors in a bicycle riders safety and comfort. Increase in traffic speeds and traffic volumes create “traffic stress”. For example, multi-lane streets can promote higher traffic speeds and decrease ability to notice bicyclists to left-turning motor vehicles and cross traffic at driveways and intersections. Also, the severity of a crash involving a bicyclist and motorist increases exponentially with speed. Providing a low level of stress for bicyclists requires progressively more protective measures, which

include dedicated bike lanes and, ultimately, physically segregated bikeways to commensurate with the traffic speed.

Bicycle Facilities

Signed bicycle routes are located on Class I, Class II and Class III bicycle facilities. Examples include: bicycle routes that utilize the San Lorenzo River Levee Class I bicycle path; Class II bicycle lanes on Soquel Avenue/Drive and collectors; and local roadways, including neighborhood streets, which serve as Class III bicycle facilities. The existing bicycle route network represented in the RTC's Santa Cruz County Bike Map should be referenced when selecting routes.

Bicycle facilities by route vary depending on the target audience and route location. Bicycle routes are typically located where there are existing bicycle facilities or low speed and low traffic roadways. Upgrades to existing bicycle facilities on identified routes may be recommended to establish the most conducive environment for the experience level and comfort of different rider types.

Safety

The most common motor vehicle-bicycle crashes are located at intersections and may include a motorist passing a cyclist on the left and turns right into the bike's path or a motorist fails to see a cyclist and makes a left turn. Other common motor vehicle-bicycle crashes are: a person riding a bicycle, traveling next to parked cars lined up on the street, strikes a car door opened by the driver; a motorist exits a driveway or parking lot into the path of a bicyclist; a motorist overtaking bicyclists from behind. In Santa Cruz County, bicycle collisions were most frequent on arterial and collector routes with speeds between 25 and 35 mph. The SCC Bicycle Route Signage Program is designed to reduce potential conflicts between bicycle and motor vehicles.

Geographic Distribution

It is important that chosen routes are equitably distributed throughout the county. Throughout Santa Cruz County there are bicyclists with a range of needs. Providing a variety of bicycle route options at locations throughout the county is the most equitable approach to distributing the benefits of bicycling. Furthermore, the overall success of the SCC Bicycle Route Signage Program is dependent on the routes ability to link common origins and destinations across Santa Cruz County.

Route Type

Preferred bicycle routes are categorized by route type. Regional, local and neighborhood routes have been designated to address the diverse needs of the target audience. Identifying three classes of preferred bicycle routes promotes routes that are designed to maximize utility and appeal to the broadest range of bicycle riders consistent with the SCC Bicycle Route Signage Program target audience. While the preferred bicycle routes are designed for all, bicyclists should always use their judgment in selecting routes that suit their experience and comfort level.

Regional Bicycle Routes: Connect common origins and destinations that support several communities and a mixture of community needs. Routes are designed to prioritize route

directness over low traffic stress. Routes are typically cross-county routes between six and twenty-miles and link to local and neighborhood routes. Routes may appeal to more experienced bicycle riders categorized as advanced riders by FHWA. Routes are typically composed of Class II bicycle facilities. *Local Bicycle Routes:* Connect between three or four common origins and destinations that support a local community's needs and provide connections to adjacent jurisdictions and neighborhoods. Routes are designed to balance route directness with traffic stress. Routes are between five and eight miles in length and link with other local route and neighborhood routes. Routes may appeal to bicycle riders with less experience integrating with traffic and fall into the category of basic adult riders, according to FHWA. Routes are typically composed of Class II and Class I bicycle facilities, and shared local roadways.

Neighborhood Bicycle Routes: Connect two or more common neighborhood origins and destinations. Routes prioritize low traffic stress over route directness. Routes are intended for new bicycle riders with little or no experience negotiating traffic and bicycle riders who fall into the category of children riders according to FHWA. Routes are between two and three miles in length and link with other local and regional routes. Routes are typically Class I bicycle facilities and shared local roadways, such as neighborhood shared streets. Class II bicycle facilities may provide connections along the route. Neighborhood routes may be further evaluated in conjunction with other neighborhood transportation planning projects.

Phased Approach

The SCC Bicycle Route Signage Program is expected to be implemented over time as resources become available. The 2015 Implementation Plan introduces the first group of routes proposed for implementation consistent with the 2015 Implementation Plan methodology. A phased approached introduces bicycle signage to the community at a scale that fits within available planning funds and allows for revisions to the system to adapt to the community's level of interest. Additional signed bicycle routes could be identified in phases consistent with available resources and funding opportunities. Once successful routes have been signed, there will likely be public requests for additional routes. Such support could help facilitate securing of funds for future routes.

Phase I Bicycle Routes

The bicycle routes identified in the 2015 Implementation Plan are the first step in developing the community's bicycle route signage program and establish the foundation for future routes and are referred to as phase 1 bicycle routes. Phase I bicycle routes build on the information provided in 2013 by local jurisdictions' representatives, as well as by bicycle advocacy/advisory organizations' representatives during development of the SCC Bicycle Route Signage Program 2015 Implementation Plan. Phase I bicycle routes focus on identifying preferred routes between common origins and destinations connecting locations generally within the urbanized areas of Santa Cruz County. Phase I bicycle routes are designed to link with an expanded network of routes as future phases of the SCC Bicycle Route Signage Program are implemented. Appendix B includes a description of Phase 1 bicycle routes, maps of routes, and street network details.

Public Involvement

The RTC Bicycle Advisory Committee and representatives from local jurisdictions provided input on the 2015 Implementation Program. The RTC Bicycle Advisory Committee is comprised of members of the public representing a variety of bicycling interests and representatives of local bicycle organizations. Updates to the program goals, phase I bicycle routes, and program promotion were made in response to comments received. Neighborhood routes may be revised as a result of additional input received during future neighborhood transportation planning activities. Development of local bicycle plans and the Regional Transportation Plan include extensive public involvement and were considered in the development of the SCC Bicycle Route Signage Program 2015 Implementation Plan.

Program Expansion

Upon completion of phase I bicycle routes, including sufficient time for completion of field review and program evaluation, the RTC, in partnership with local jurisdictions and partner agencies, may consider expanding the number of signed bicycle routes. Future signed bicycle routes should be selected consistent with the methodology described in the 2015 Implementation Plan. Adjustments to the methodology should only be made if the outcomes do not conflict with previously implemented signed bicycle routes.

Chapter 4- Sign Design Guidelines

Standard Signs

The standard SCC Bicycle Route Signage Program signs provide bicyclists three general kinds of guidance: direction, destination, and distance information along designated SCC Bicycle Route Signage Program routes.

1) Directional information instructs bicyclists about which way to go to reach common destinations near approaching decision points and intersections.
2) Destination information confirms the bicyclist's route choice for reaching common destinations after selection of a direction at decision points and intersections.
3) Distance information indicates mileages and allows bicyclists to plan for energy needs and to better account for the time that the bicycle trip may require.

The SCC Bicycle Route Signage Program proposes to use the Federal Highway Administration's and California Manual on Traffic Safety Control Devices (MUTCD) sign standards to support a destination-based route signing system. The MUTCD destination-based route signs selected for the SCC Bicycle Route Signage Program are recognizable, easy to understand and provide the greatest utility in terms of destination and distance information. The destination-based sign system follow the look and feel of standard highway guide signs, with the addition of a bicycle graphic to identify that the signs are designed for bicyclists, and encourage consistency with existing "Bike Route" signs. Several areas within California with signed bicycle routes are installing or moving towards destination-based route signs.

A modified version of sign D11-1 combined with D1-1a to D1-3a, shown in Figure 1, are the primary signs utilized for the SCC Bicycle Route Signage Program to direct bicycle riders and assure bicyclists they are on the correct route. A modified version of the D11-1 sign is proposed to remove the words "BIKE ROUTE". The words "BIKE ROUTE" officially reference a Class III facility. While this distinction may not be of concern to users, the use of "route" on a Class I or II facility is incorrect. In addition, minimizing the number of words presented on a sign is typically preferred. Sign D11-1c shown in Figure 1 may occasionally be utilized for the SCC Bicycle Route Signage Program when only the final destination is identified, typically in more rural areas where there are few decision points. The D1-1a/D1-3a signs provide directional and mileage aspects when combined with the D11-1 sign.

In order to give jurisdictions as much flexibility as possible while maintaining a uniform look across the county, the SCC Bicycle Route Signage Program should deploy the signs identified in Figure 1 below in a modular fashion, with consideration for the 2015 Implementation Plan sign design guidelines, and professional judgment of location and route specific circumstances.

Figure 1: Standard SCC Bicycle Route Sign

Option 1: To be used before decision points to direct bicycle riders to the correct destination and identify the direction and distance to destinations and points of interest.

D11-1, modified ("Bike Route" removed)

Size: 24" x 18"

D1-1a: Single Destination
D1-2a: Two Destinations
D1-3a: Three Destinations (shown here)

Size: Height varies based on number of destinations; width varies, but could limit to 24" to match width of D11-1

Note: The two signs for Option 1 can be mounted on single plate

Option 2: To be used after decision points or along routes to confirm that bicycle riders are headed towards the correct destination. Only the final destination is identified on confirmation signs.

D11-1c

Size: 24" x 18"

The sign layout specification for the SCC Bicycle Route Signage Program deviates from the MUTCD as described in Table 1.

Table 1: Standard Sign Deviation from MUTCD

Difference from MUTCD	Rationale
Removes "BIKE ROUTE"	Remove reference to Class III facility
Incorporates symbols with destination names	Improved communication while minimizing text

Sign Text & Mileage

Text on signs should be limited to destinations, points of interest and symbols for transit, multiuse paths, and state parks as listed in Appendix A. Reference to commercial destination should be minimized. Final destinations should be included on all respective route signs. Route destinations should be signed at a distance of less than six miles. Points of interest should be signed at a distance of less than two miles. Signs shall use mixed case letters (e.g. upper case and lower case).

Distances on bicycle routes should be measured from the center of intersections to the geographical or business center of urban nodes. Mileage on signs should be listed in one mile increments. When the distance is less than one mile, the mileage number is expressed as a decimal, with a zero placed before the decimal (e.g., "0.5").

Symbols on Standards Signs

Symbols will be used to convey destination and point of interest information in a space efficient manner. Symbols will be incorporated to identify the location of multiuse paths or trails, state parks, and transit stations. Symbols that may be incorporated with the SCC Bicycle Route Signage Program are shown in Figure 2. Figure 3 provides examples of SCC bicycle route sign with symbols.

Figure 2: Symbols for Use with SCC Bicycle Route Signs

Multi Use Path	Transit Station	California State Park
		TBD

Figure 3: SCC Bicycle Route Sign with Transit or Multi Use Path Symbol

Symbols will be used to convey destination and point of interest information in a space efficient manner on SCC Bicycle Route Signs. The modified D1-1a signs here are combined with D11-1 modified sign to indentify the location of a transit station and multi use path.

Sign Layout

The following should be considered when determining sign layout:

1) Include no more than three locations made up of a combination of destinations and points of interest;
2) Locate the nearest destinations or point of interests at the top two places. If destinations or points of interests are equal in distance, the sign with an up arrow should be placed on top;
3) The final destination should be located in the bottom place. If a point of interest is beyond the final destination, then the point of interest beyond the final destination may be located in the bottom place and the final destination should be located in the middle place;
4) If a combination of destinations and points of interest are greater than three, than the two nearest destinations or points of interest should be listed in the top two places and

the final destination should be listed in the bottom place. If a point of interest is beyond the final destination, then the nearest destination or point of interest should be placed in the top place, the final destination placed in the middle and the point of interest beyond the destination should be placed in the bottom place;
5) The straight arrow should be placed to the left of a destination and be left-justified, the left arrow to the left of a destination and be left-justified, and the right arrow to the right of a destination and be right-justified; and,
6) Symbols should be located between arrows and destination text and included only for destinations within two miles of the bicycle route.

Sign Assemblies

A sign assembly is the group of signs that are placed at one location. SCC Bike Route Signage Program sign assembly would include the modified D11-1 "Bike Route" sign shown in Figure 1 plus a second set of D1-1a to D1-3a signs mounted below that contain destination and distance information. In unison, they contain the necessary SCC Bicycle Route Signage Program information at that location.

The RTC recommends that each sign be produced separately, rather than putting all the signs for a given sign assembly on a single plate. Separate signs will ease replacement of individual units. Using a single plate for each sign assembly is possible, though, and has been done by various jurisdictions.

Sign Frequency

Signs per directional mile will vary based on the number of decision points. Some routes might be more rural, and have less decision points, meaning fewer signs are needed. More urban routes will need more signs, since decision points are abundant. Other bicycle route signage program signs frequency range from 14 to 2 signs per bi-directional mile. The Pacific Coast Bike Route signs originally installed in Santa Cruz County contain 8 signs per bi-directional mile (4 in each direction). The SCC Bicycle Route Signage Program is expected to average 2 to 4 signs per bi-directional mile with signs per mile increasing in areas where there are multiple decision points and signs per mile decreasing in areas where there are fewer decision points.

Sign Placement

Effective placement of signs along the routes is crucial to the functioning of the system. Each route should be evaluated individually to determine the most effective location for signs. Signs should generally be located before and after major intersections or decision points, before a bike route turns. Location for sign installations should be determined by the responsible local jurisdiction.

Sign placement located near intersections should consider intersection geometrics, number of lanes, sign distance and professional judgment. For example, left turns may require a sign to be placed a greater distance before the intersection based on the number of lanes the bicyclist must merge across in order to make the left turn. Other bicycle route signage programs place decision signs 30 feet for a zero lane merge and 100 feet for one or more lane merges.
Sign locations should be mapped prior to installation. A database of final sign locations should be documented and shared between local jurisdictions and RTC. Doing so will ease

maintenance efforts when signs need to be replaced, which will help maintain the integrity of the sign system. Evaluation of sign locations conducted during field reviews should utilize maps of planned sign locations.

A database of final sign locations should include a detailed description of:

- Sign placement including closest cross streets and distance in feet from intersections, where possible;
- Sign assembly including MUTCD signs utilized, signed destination and mileage, other signage located on the sign post, and a image of posted sign where possible; and,
- Sign dimensions including sign height and clearance.

Other Sign Systems

SCC Bicycle Route Signage Program signs should integrate with other signs systems to avoid proliferation of signs, where appropriate. Existing signs for the California Coastal Trail, the Pacific Coast Bike Route, San Lorenzo River Levee Trail, as well as standard bike path, bike lane, and bike route signs are installed throughout the county. SCC bicycle route signs should also plan to integrate with future sign systems.

Bike Facility Signs

Figure 4 provides examples of existing bicycle sign systems in Santa Cruz County. Class III signs are similar to and can integrate well with the SCC Bicycle Route Signage Program. Class II signs are different in color scheme and Class I signs are different in color scheme and layout than the SCC Bicycle Route Signage Program. To encourage an easily recognizable sign system, where bike facility signs are located on SCC Bicycle Route Signage Program routes:

1) Existing Class III facility signs should generally be removed or combined with SCC Bicycle Route Signage Program signs; and,
2) Existing Class I and Class II facility signs should be removed.

Two bike facility signs initiatives – one state and one national – could result in new bike signs in the county as shown in Figure 5. The U.S. Bike Route initiative, a program sponsored by the American Association of State Highway and Transportation Officials and the American Cycling Association, is requesting that local jurisdictions designate and sign bike routes of national significance. A California initiative resulting from the passage of AB 1464 is requesting the same thing. Both programs have unique signs. At this time, RTC staff is recommending that the Pacific Coast Bike Route network be used for both programs and that no new signs are installed in order to avoid confusion and sign proliferation.

Figure 4: Existing Bicycle Facility Signs in Santa Cruz County

Pacific Coast Bike Route	Class I Bike Path	Class II Bike Lane	Class III Bike Route
			

Figure 5: Future Bicycle Facility Sign in Santa Cruz County

Possible US Bike Route	AB 1464 State Route Program
	Image not yet determined

Pacific Coast Bike Route

The Pacific Coast Bike Route signs are similar to the SCC Bicycle Route Signage Program signs and can integrate well with the SCC Bicycle Route Signage Program. To encourage an easily recognizable sign system, existing Pacific Coast Bike Route signs may be combined with SCC Bicycle Route Signage Program signs. Combining Pacific Coast Bike Route sign with the SCC Bicycle Route Signage Program sign can be accomplished by replacing the existing D11-1 "Bike Route" sign with the adopted SCC Bicycle Route Signage Program standard signs (modified D11-1 sign), adding directional sign elements, and relocating signs consistent with the SCC Bicycle Route Signage Program sign placement principles. An example of a Pacific Coast Bike Route sign combined with the SCC Bicycle Route Signage Program sign is shown in Figure 6.

Figure 6: SCC Bicycle Route Sign Combined with Pacific Coast Bike Route Sign

Multi Use Path & Trail System Signs

Bicycle route signs identifying the location of multi use paths or trail systems may include the multi use path or trail system symbol in addition to the text description, such as shown on Figure 3. Where SCC Bicycle Route Signage Program routes overlap with multi use path or trail systems, such as the San Lorenzo River Levee Trail, Watsonville Slough Trails, and future Monterey Bay Area Scenic Sanctuary Trail, signing for the SCC Bicycle Route Signage Program could be incorporated into the unique multi use path or trail use signs. When SCC Bicycle Route Signage Program signs are incorporated with unique multi use path or trail system signs, the bicycle route sign should maintain the look and feel of the standard SCC Bicycle Route Signage Program signs and remain consistent with the 2015 Implementation Plan placement principles. The SCC Bicycle Route Signage Program's signs may be modified in size to fit within the adopted multi use path or trail post sign. Figure 7 provides an example of how a SCC Bicycle Route Signage Program sign may be incorporated into a unique multi use path or trail use sign.

Figure 7: SCC Bicycle Route Sign Incorporated with Multi Use Path or Trail System Sign

Chapter 5- Project Delivery

As a Regional Transportation Planning Agency (RTPA), the RTC is in a unique position to implement a countywide bike route signage program. The RTC will work closely with all local jurisdictions through which routes will traverse (the Cities of Watsonville, Scotts Valley, Capitola, and Santa Cruz, the County of Santa Cruz, and Caltrans for state highway facilities) to deliver the SCC Bicycle Route Signage Program.

In 2010, the RTC provided the initial funding for development of the SCC Bicycle Route Signage Program. The RTC developed the 2015 Implementation Plan in coordination with the RTC's Bicycle Advisory Committee and local jurisdictions and adopted the Final 2015 Implementation Plan in May 2015. RTC will work with local jurisdictions to implement the SCC Bicycle Route Signage Program. Sign design standards and placement will be consistent with the adopted 2015 Implementation Plan.

Sign Production and Installation

Available resources for project delivery, related planning efforts, and institutional capacity will influence the role of RTC and local jurisdictions in production and installation of signs. The RTC will pursue funding for implementing the SCC Bicycle Route Signage Program as opportunities arise. Local jurisdictions may also provide funding for sign production and installation. Distribution of funds from RTC for implementation of the SCC Bicycle Route Signage Program will consider equitable geographic distribution, time of requests by local jurisdiction, and route connectivity.

Some examples of RTC and local jurisdictions roles in production and installation of signs may include:

1) Local jurisdictions produce and install signs consistent with the 2015 Implementation Plan.
2) RTC coordinates production of signs and local jurisdictions install signs consistent with the 2015 Implementation Plan. Production of signs may be completed by an outside vendor or one local jurisdiction on behalf of other local jurisdictions within Santa Cruz County.
3) RTC coordinates production and installation of signs consistent with the 2015 Implementation Plan. Production and installation of signs may be completed by an outside vendor or one local jurisdiction on behalf of other local jurisdictions within Santa Cruz County. The RTC does not have a licensed traffic engineer on staff, therefore sign placement would be dependent on engineering evaluations after consideration of line of sight, traffic volume, lane numbers, and other factors. RTC recommends this approach only if all other options have been exhausted.

Agreements, contracts or memorandums of understanding desired or required to carry-out sign production and installation will be handled on a case by case basis. Coordination with Caltrans may require more administration, however, as local bicycle route signs may require greater level of consideration to be located on state facilities.

The RTC will provide as much assistance, direction, and guidance as possible. Local agencies' participation is paramount and creative streamlining, such as waiving

encroachment permits, will provide for time and cost savings.

Sign Maintenance

Sign maintenance is crucial to the success of the SCC Bicycle Route Signage Program. Missing, damaged, or vandalized signs in any link in a route could render that route incomplete.

Local jurisdictions will be responsible for sign maintenance, including manufacture of replacement signs, installation, and all associated costs. In preliminary discussions with local jurisdictions in Santa Cruz County, sign maintenance costs are estimated between $2,000 and $4,000 annually per local jurisdiction, depending on the number of signs installed. If funding is identified, the RTC will strive to cover on-going sign replacement as possible.

Sign Costs

A major expense in the sign program is the cost to manufacture the bike route signs and install them, including hardware and labor. In preliminary discussions with local jurisdictions and a review of other Bay Area bike route sign programs, sign production/installation costs are estimated to be between $300 and $400 per sign for the SCC Bicycle Route Signage Program. This estimate includes the cost of encroachments permits where they may be needed. One way of determining the total costs for implementing signage on bike routes is to determine the average number of signs used per bi-directional mile. Once the number of miles on a given route is known the number of signs and cost per route can be calculated.

Field Survey

It is recommended that a pre-installation field survey occur for each route prior to sign installation to ensure that directional guides are logical, comprehensive, and streamlined. Field survey should reveal route deficiencies that may impact sign placement and solutions or enhancements such as bicycle route pavement markings. A post-installation field review would also be advisable to confirm network connectivity and functionality. Members of the public and/or advocacy organizations could be invited to assist in this effort.

Liability

Liability questions have been raised locally by the members of the RTC. Other jurisdictions determined that improvements associated with the bike route system (i.e. improved road conditions, increased motorist awareness) could themselves reduce liability concerns. Additionally, the recent “Complete Streets” approach to transportation projects, which aims to address the safety and mobility needs of bicyclists, pedestrians, and transit users in all projects, is a goal of this improvement project as well.

Chapter 6- Promotion & Evaluation

Promotion

The SCC Bicycle Route Signage Program will be promoted using a variety of public information strategies including public officials' endorsement at a ribbon cutting, media coverage in local publications, and route maps. Additionally, the resources of partnering organizations such as: Ecology Action and its Bike to Work program, the Community Traffic Safety Coalition, and Bike Santa Cruz County (formerly People Power) will be utilized to promote routes. At the current time, funding is not available for any specific promotional campaign so no-cost avenues will be employed.

Route Maps

Maps of bicycle routes may be developed in hard copy and electronic version when additional resources are available. Maps of the complete bicycle route system may be posted at key junctures along the bicycle route system. In addition, the inclusion of quick response, "QR" codes on hard copies and electronic versions of the maps may assist bicycle riders in identifying their exact location and could be further investigated for inclusion in route map materials.

Route numbering can provide a reference for bicycle riders utilizing reference maps and may be included in hard copy and electronic versions of SCC Bicycle Route Signage Program maps. Consistent with other bicycle route numbering systems, routes that are generally east-west are referenced with even numbers and routes that are generally north-south are referenced with odd numbers. Route numbers will not be included on signs and will serve as reference for planning purposes and mapping resources only.

Evaluation

Bicycle ridership counts should be completed before and after sign installation. Bicycle ridership counts on bicycle routes may be incorporated into existing bicycle count programs held annually and overseen by the Community Traffic Safety Coalition and the RTC. Surveys to capture the public's awareness of bicycle route signage and routes can also evaluate the program effectiveness.

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State Approves over $1.5 million for Active Transportation Projects in Santa Cruz County

MODESTO – The cities of Santa Cruz and Watsonville will receive more than $1.5 million for pedestrian and bicycle safety projects, following action today by the California Transportation Commission (CTC).

Funding for these community-focused projects is made possible due to the Senate Bill 1: Road Repair and Accountability Act of 2017 (SB1), which was passed by the Legislature and signed by the Governor earlier this year.

The City of Santa Cruz was awarded $952,000 for the Riverwalk Lighting project. The project includes installation of LED-pedestrian scale lighting between Water Street and Highway 1 on the east and west banks of the San Lorenzo River path.

The project is expected to increase safety for people walking and biking, as well as increase active transportation options for users of all ages and abilities, especially in the early morning and evening. Lighting can reduce crashes of single riders due to obstacles, crashes between path users who cannot see each other clearly in low light conditions, and collisions between path users because the path edge cannot be seen.

The City of Watsonville, in partnership with Pajaro Valley Unified School District, was awarded $633,000 for the Lincoln Street Safety Improvement Project. The project includes new and improved pedestrian crosswalks, sidewalks, and lighting between East Beach Street and Riverside Drive near Watsonville High School; bicycle racks, pavement markings, and signage; and education programs that improve bicycle and pedestrian safety. Over the past five years there have been 17 pedestrian and bicycle crashes within a two block area of Lincoln Street.

"This project will provide a vitally needed safe connection for students walking, biking and skating to Watsonville High School and provide education programs for children and families," said Jim Murphy, CEO of Ecology Action.

The city and school district are working together to improve safety for students walking and biking. "This grant application came together from a collaborative effort by Watsonville High School, neighborhood residents and the City. We look forward to using the Active Transportation

Program grant to make these much needed improvements," said Maria Esther Rodriguez, Assistant Public Works & Utilities Director for Watsonville.

In addition to these active transportation projects, local jurisdictions throughout the county will be able to deliver more than $7 million in road repair and maintenance projects each year because of revenues from SB 1. Local public works departments will be filling potholes, repairing and resurfacing roadways to extend the service life of public roads. Due to decades of funding shortfalls, nearly 40% of local roads in Santa Cruz County are in poor condition and need repairs.

With SB 1 and the local voter-approved Measure D, cities and the County of Santa Cruz are finally able to start catching up on the backlog and making our local streets, roads and bridges safer, smoother and sustainable for the long term.

SB 1 allows state and local investments, to fix transportation infrastructure, make it safer to bicycle and walk, and improve transit service across California. SB 1 revenues come with strict new accountability provisions to ensure funds can only be spent on transportation. Cities and counties must adopt project lists each year and provide year end reporting on completed projects for both Measure D and SB1.

In addition to local bicycle, pedestrian and road repair projects, the California Transportation Commission (CTC) and California State Transportation Agency (CalSTA) are preparing to award SB 1 funds by spring 2018 through competitive transportation grant programs to projects that improve California's trade corridors, expand public transit systems, provide relief to congested commute corridors, and help regions, cities and counties build better communities. The Santa Cruz County Regional Transportation Commission (RTC), Santa Cruz METRO, Caltrans, and local jurisdictions have identified several possible candidate projects for these funds, including bus replacements and projects along congested local highways.

"SB 1 dedicates transportation dollars to transportation purposes. With the law in place we can begin to put thousands of people to work rebuilding California and its local communities – that's exactly what we're doing. This investment creates jobs, improves roads and bridges and has strong public accountability. Taken together, these projects will make significant improvements in our transportation infrastructure, our mobility options, create jobs and help grow the local economy," said Brian Kelly, Secretary of the California State Transportation Agency.

Until SB 1 was signed by Governor Brown earlier this year, California had not significantly invested in the state's transportation infrastructure in 23 years. RTC Executive Director George Dondero noted, "SB1 will make significant improvements to our transportation infrastructure and our mobility options, while creating jobs and helping grow the local economy." For more information about SB 1 visit http://www.rebuildingca.ca.gov/.

About the Santa Cruz County Regional Transportation Commission: *The Santa Cruz County Regional Transportation Commission (RTC) is responsible for delivering a full range of safe, convenient, reliable, and efficient transportation choices for the community. With a focus on long-term sustainability, the RTC plans, funds, and implements transportation projects and services to meet the needs of all in the county. To receive regular information about RTC projects, please sign up here: http://sccrtc.org/about/esubscriptions/.*

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