



625 Burnell Street
Napa, CA 94559

Agenda - Final

**Wednesday, April 15, 2020
1:30 PM**

MEETING LOCATION: REFER TO COVID-19 SPECIAL NOTICE

NVRTA Board of Directors

******COVID-19 SPECIAL NOTICE******

PUBLIC MEETING GUIDELINES FOR PARTICIPATING VIA PHONE/VIDEO CONFERENCE

Consistent with Executive Orders No. N-25-20 and N-29-20 from the Executive Department of the State of California and Napa County's Shelter in Home Order issued March 18, 2020 and further extended, a physical location will not be provided for the Napa Valley Transportation Board of Directors meeting. The public is invited to participate telephonically or electronically via the methods below:

To observe the meeting by video conference, click on the link below at the noticed meeting time: <https://countyofnapa.zoom.us/j/610751062> and use the Password 332070.

Instructions on how to join a video conference are available at: <https://support.zoom.us/hc/en-us/articles/201362193-Joining-a-Meeting>

To observe the meeting by phone, call 1 (669) 900-6833 at the noticed meeting time, then enter Meeting ID 610 751 062. When asked for the participant ID or code, press #.

Instructions on how to join a meeting by phone are available at: <https://support.zoom.us/hc/en-us/articles/201362663-Joining-a-meeting-by-phone>

How to Submit a Public Comment

1. Members of the public may submit a public in writing by emailing info@nvta.ca.gov by 11 a.m. on the day of the meeting with PUBLIC COMMENT identified in the subject line of the email. For comments to be read into record, emails with the equivalent of a maximum of 3 minutes shall contain in the subject line "Public Comment-Not on the Agenda" or "Public Comment-Agenda Item # (include item number)". All written comments should be 350 words or less, which corresponds to approximately 3 minutes of less of speaking time. All other written comments received will still be provided to the Board of Directors and be included as part of the meeting record.
2. To comment during a virtual meeting (Zoom), click the "Raise Your Hand" button to request to speak when Public Comment is being taken on the Agenda item. You will be unmuted when it is your turn to make your comment for up to 3 minutes. After allotted time, you will be re-muted.

Instructions for how to "Raise Your Hand" are available at: <https://support.zoom.us/hc/en-us/articles/205566129-Raise-Hand-In-Webinar>.

3. To comment by phone, press "*9" to request to speak when Public Comment is being taken on the Agenda item. You will be unmuted when it is your turn to make your comment for up to 3 minutes. After your allotted time, you will be re-muted.

Acceso y el Título VI: La NVTa puede proveer asistencia/facilitar la comunicación a las personas discapacitadas y los individuos con conocimiento limitado del inglés quienes quieran dirigirse a la Autoridad. Para solicitar asistencia, por favor llame al número (707) 259-8633. Requerimos que solicite asistencia con tres días hábiles de anticipación para poderle proveer asistencia.

Ang Accessibility at Title VI: Ang NVTa ay nagkakaloob ng mga serbisyo/akomodasyon kung hilingin ang mga ito, ng mga taong may kapansanan at mga indibiduwal na may limitadong kaalaman sa wikang Ingles, na nais na matugunan ang mga bagay-bagay na may kinalaman sa NVTa Board. Para sa mga tulong sa akomodasyon o pagsasalin-wika, mangyari lang tumawag sa (707) 259-8633. Kakailanganin namin ng paunang abiso na tatlong araw na may pasok sa trabaho para matugunan ang inyong kahilingan.

10.1 NVTA Revenues and Vine Transit Update (Kate Miller) (Pages 22-29)

Recommendation: Information only. The Board will receive information about NVTA finances, Vine operations and changes to the collective Vine Transit services in March of 2020, and the future changes due to the Coronavirus (COVID-19).

Estimated Time: 1:45 p.m.

Attachments: [Staff Report](#)

10.2 Draft State Route Comprehensive Multimodal Corridor Plan (SR 29 CMCP) (Rebecca Schenck) (Pages 30-147)

Recommendation: Board action will release the Draft Route Comprehensive Multimodal Corridor Plan to the public for review.

Estimated Time: 2:00 p.m.

Attachments: [Staff Report](#)

10.3 Project Work Order No. E-14 to NVTA Agreement No. 18-21 with GHD, Inc. to Provide Design Plans, Specifications and Estimates (PS&E) Phase Services for the Soscol Junction Project (Sanjay Mishra) (Pages 148-164)

Recommendation: Board action will approve Work Authorization No. E-14 to NVTA Agreement No. 18-21 with GHD, Inc. to provide Design Plans, Specifications and Estimates (PS&E) phase services for the base scope of Soscol Junction Project for an amount not to exceed \$2,712,434 plus \$406,865 in contingencies.

Estimated Time: 2:15 p.m.

Attachments: [Staff Report](#)

10.4 Legislative and State Bill Matrix Update (Kate Miller) (Pages 165-173)

Recommendation: The Board will receive the State Legislative update prepared by Platinum Advisors and approve board position recommendations for bills on the State Bill Matrix.

Estimated Time: 2:15 p.m.

Attachments: [Staff Report](#)

11. FUTURE AGENDA ITEMS

12. ADJOURNMENT

12.1 Approval of Next Regular Meeting of Wednesday, May 20, 2020 and Adjournment

Estimated Time: 2:45 p.m.

I hereby certify that the agenda for the above stated meeting was posted at a location freely accessible to members of the public at the NVTA Offices, 625 Burnell Street, Napa, CA by 5:00 p.m. by Friday, April 10, 2020.

Karalyn E. Sanderlin (e-sign) April 8, 2020

Karalyn E. Sanderlin, NVTA Board Secretary

Glossary of Acronyms

AB 32	Global Warming Solutions Act	GTFS	General Transit Feed Specification
ABAG	Association of Bay Area Governments	HBP	Highway Bridge Program
ADA	American with Disabilities Act	HBRR	Highway Bridge Replacement and Rehabilitation Program
ATAC	Active Transportation Advisory Committee	HIP	Housing Incentive Program
ATP	Active Transportation Program	HOT	High Occupancy Toll
BAAQMD	Bay Area Air Quality Management District	HOV	High Occupancy Vehicle
BART	Bay Area Rapid Transit District	HR3	High Risk Rural Roads
BATA	Bay Area Toll Authority	HSIP	Highway Safety Improvement Program
BRT	Bus Rapid Transit	HTF	Highway Trust Fund
BUILD	Better Utilizing Investments to Leverage Development	HUTA	Highway Users Tax Account
CAC	Citizen Advisory Committee	IFB	Invitation for Bid
CAP	Climate Action Plan	ITIP	State Interregional Transportation Improvement Program
Caltrans	California Department of Transportation	ITOC	Independent Taxpayer Oversight Committee
CEQA	California Environmental Quality Act	IS/MND	Initial Study/Mitigated Negative Declaration
CIP	Capital Investment Program	JARC	Job Access and Reverse Commute
CMA	Congestion Management Agency	LIFT	Low-Income Flexible Transportation
CMAQ	Congestion Mitigation and Air Quality Improvement Program	LOS	Level of Service
CMP	Congestion Management Program	LS&R	Local Streets & Roads
CalSTA	California State Transportation Agency	MaaS	Mobility as a Service
CTP	Countywide Transportation Plan	MAP 21	Moving Ahead for Progress in the 21 st Century Act
COC	Communities of Concern	MPO	Metropolitan Planning Organization
CTC	California Transportation Commission	MTC	Metropolitan Transportation Commission
DAA	Design Alternative Analyst	MTS	Metropolitan Transportation System
DBB	Design-Bid-Build	ND	Negative Declaration
DBF	Design-Build-Finance	NEPA	National Environmental Policy Act
DBFOM	Design-Build-Finance-Operate-Maintain	NOAH	Natural Occurring Affordable Housing
DED	Draft Environmental Document	NOC	Notice of Completion
EIR	Environmental Impact Report	NOD	Notice of Determination
EJ	Environmental Justice	NOP	Notice of Preparation
FAS	Federal Aid Secondary	NVTA	Napa Valley Transportation Authority
FAST	Fixing America's Surface Transportation Act	NVTA-TA	Napa Valley Transportation Authority-Tax Agency
FHWA	Federal Highway Administration	OBAG	One Bay Area Grant
FTA	Federal Transit Administration	PA&ED	Project Approval Environmental Document
FY	Fiscal Year	P3 or PPP	Public-Private Partnership
GHG	Greenhouse Gas	PCC	Paratransit Coordination Council
GGRF	Greenhouse Gas Reduction Fund		

Glossary of Acronyms

PCI	Pavement Condition Index	STA	State Transit Assistance
PCA	Priority Conservation Area	STIC	Small Transit Intensive Cities
PDA	Priority Development Areas	STIP	State Transportation Improvement Program
PID	Project Initiation Document	STP	Surface Transportation Program
PMS	Pavement Management System	TAC	Technical Advisory Committee
Prop. 42	Statewide Initiative that requires a portion of gasoline sales tax revenues be designated to transportation purposes	TCM	Transportation Control Measure
PSE	Plans, Specifications and Estimates	TCRP	Traffic Congestion Relief Program
PSR	Project Study Report	TDA	Transportation Development Act
PTA	Public Transportation Account	TDM	Transportation Demand Management Transportation Demand Model
RACC	Regional Agency Coordinating Committee	TE	Transportation Enhancement
RFP	Request for Proposal	TEA	Transportation Enhancement Activities
RFQ	Request for Qualifications	TEA 21	Transportation Equity Act for the 21 st Century
RHNA	Regional Housing Needs Allocation	TFCA	Transportation Fund for Clean Air
RM2	Regional Measure 2 (Bridge Toll)	TIGER	Transportation Investments Generation Economic Recovery
RM3	Regional Measure 3	TIP	Transportation Improvement Program
RMRP	Road Maintenance and Rehabilitation Program	TLC	Transportation for Livable Communities
ROW	Right of Way	TLU	Transportation and Land Use
RTEP	Regional Transit Expansion Program	TMP	Traffic Management Plan
RTIP	Regional Transportation Improvement Program	TMS	Transportation Management System
RTP	Regional Transportation Plan	TNC	Transportation Network Companies
SAFE	Service Authority for Freeways and Expressways	TOAH	Transit Oriented Affordable Housing
SAFETEA-LU	Safe, Accountable, Flexible, and Efficient Transportation Equity Act-A Legacy for Users	TOD	Transit-Oriented Development
SB 375	Sustainable Communities and Climate Protection Act 2008	TOS	Transportation Operations Systems
SB 1	The Road Repair and Accountability Act of 2017	TPA	Transit Priority Area
SCS	Sustainable Community Strategy	TPI	Transit Performance Initiative
SHA	State Highway Account	TPP	Transit Priority Project Areas
SHOPP	State Highway Operation and Protection Program	VHD	Vehicle Hours of Delay
SNCI	Solano Napa Commuter Information	VMT	Vehicle Miles Traveled
SNTDM	Solano Napa Travel Demand Model		
SR	State Route		
SRTS	Safe Routes to School		
SOV	Single-Occupant Vehicle		

**Napa Valley Transportation
Authority
Meeting Minutes - Draft
NVTB Board of Directors**

April 15, 2020
NVTB Agenda Item 9.1
Continued From: New
Action Requested: APPROVE

625 Burnell Street
Napa, CA 94559

Wednesday, March 18, 2020

1:30 PM

JoAnn Busenbark Board Room

1. Call to Order

Chair Canning called the meeting to order at 2:39. p.m.

3. Roll Call

Leon Garcia
Chris Canning
Jill Techel
Alfredo Pedroza
Paul Dohring
Mark Joseph
Kerri Dorman
Belia Ramos
Geoff Ellsworth
Liz Alessio
Gary Kraus
Beth Kahiga
John F. Dunbar

2. Pledge of Allegiance

Chair Canning

4. Adoption of the Agenda

Motion MOVED by PEDROZA, SECONDED by KRAUS to APPROVE adoption of the agenda.

Motion carried by the following roll call vote:

Aye: 23 - Garcia, Canning, Techel, Pedroza, Dohring, Joseph, Dorman, Ramos, Ellsworth, Alessio, and Kraus

Absent: 1 - Dunbar

5. Public Comment

None

6. Chairperson's, Board Members', Metropolitan Transportation Commissioner's, and Association of Bay Area Governments Update

MTC Commissioner's Report

Alfredo Pedroza reported on recent MTC activities.

ABAG Update

Leon Garcia reported on recent ABAG activities.

7. Director's Update

- Briefed the Board on the activities that NVTA is doing to ensure the safety and wellbeing of [transit] riders and the community.
- Reported that Vine service hours have been reduced in response to the COVID-19 Shelter in Place mandates and school closures.
- Reported that due to COVID-19, NVTA's ADA assessment contractor, CARE Services, is providing its services and performing assessments by telephone.
- Reported that MTC and Caltrans District 4 have both closed their offices [due to COVID-19].
- Reported that MTC has opened up its Emergency Operations Center (EOC).
- Reported that NVTA has contacted the Napa County EOC and offered agency services/resources if needed.
- Reported that the American Public Transportation Association and the California Transit Association are advocating at the federal and state levels for relief associated with lost fares and revenues due to COVID-19.
- NVTA was awarded \$1.5M from the Transit Performance Initiative grant for the Imola Park and Ride project. This funding completes the funding package for the project.
- Announced that Christina Lee, NVTA's Communication Officer, has taken a position with the City of Vallejo as their Public Information Officer. Christina's last day [at NVTA] will be March 26th.

8. Caltrans' Update

Kelly Hirschbery, Caltrans,

- Announced that Caltrans employees will be working remotely but are available by telephone or email.
- Provided an update on the status of various projects located in the county.

4.1 Adoption of the Agenda

Chair Canning stated in his haste, that he forgot to announce modifications to the agenda. These modifications included the removal of the following agenda items: 9.6, 10.2, 10.5, and both Closed Session Items 12.1 and 12.2. All items except Item 9.6 will be brought back at a later date for Board approval.

Motion MOVED by PEDROZA, SECONDED by GARCIA to APPROVE adoption of the modified agenda removing Items 9.6, 10.2, 10.5, 12.1 and 12.2 with all items except Item 9.6 will be brought back at a later date for Board approval. Motion carried by the following Roll Call vote:

Aye: 23 - Garcia, Canning, Techel, Pedroza, Dohring, Joseph, Dorman, Ramos, Ellsworth, Alessio, and Kraus

Absent: 1 - Dunbar

9. CONSENT AGENDA ITEMS (9.1 - 9.6)

Motion MOVED by PEDROZA, SECONDED by KRAUS to APPROVE Consent Items 9.1-9.5. Motion carried by the following Roll Call vote:

Aye: 23 - Garcia, Canning, Techel, Pedroza, Dohring, Joseph, Dorman, Ramos, Ellsworth, Alessio, and Kraus

Absent: 1 - Dunbar

9.1 Approval of Meeting Minutes of February 19, 2020 (Karrie Sanderlin) (Pages 10-14)

Attachments: [Draft Minutes](#)

Board action approved the meeting minutes of February 19, 2020.

9.2 Citizens Advisory Committee (CAC) Member Appointments (Karrie Sanderlin) (Pages 15-25)

Attachments: [Staff Report](#)

Board action approved the re-appointment of members Nicole Cumming and Jean-Vincent Deal, and Patricia Lynch, and the new appointments of Linsey Gallagher and Hans Korve to the Citizen Advocacy Committee.

9.3 Resolution No. 20-03 Authorizing Federal Funding under Federal Transit Administration (FTA) Sections 5311 and 5311(f) with the California Department of Transportation (Antonio Onorato) (Pages 26-29)

Attachments: [Staff Report](#)

Board action approved Resolution No. 20-03 authorizing the Executive Director, or designee, to execute actions necessary to obtain grant funds authorized under Sections 5311 and 5311(f) provided by California State Department of Transportation (Caltrans) for rural and intercity services.

9.4 Resolution No. 20-04 Authorization for the Execution of the Certifications and Assurances and Authorized Agent Forms for the Low Carbon Transit Operations Program (LCTOP) for the Following Project: NVTA Zero Emission Bus Electrification (Antonio Onorato) (Pages 30-34)

Attachments: [Staff Report](#)

Board action approve Resolution No. 20-04 approving the Fiscal Year 2019-20 Low Carbon Transit Operations Program (LCTOP) project.

9.5 Resolution No. 20-05 Authorization to Transfer an Easement Interest in Real Property Identified as Assessor Parcel Numbers 007-082 and 007-082-002 by Quitclaim Deed to the City of Napa (Rebecca Schenck) (Pages 35-47)

Attachments: [Staff Report](#)

Board action approved Resolution No.20-05, authorization to transfer an Easement Interest in Real Property Identified as a Portion of Assessor Parcel Number 007-082-001 and 007-082-002 by Quitclaim Deed to the City of Napa and authorize the Executive Director to execute and take all actions necessary to quitclaim deed portions of APN 007-082-001 and 007-082-002 to the City of Napa.

9.6 Resolution No. 20-06 Authorizing the Executive Director to Execute the Disbursement Agreement between the State of California Department of Housing and Community Development (HCD) and the Napa Valley Transportation Authority (NVTA) for an Affordable Housing and Sustainable Communities Program Grant (Rebecca Schenck) (Pages 48-96)

Attachments: [Staff Report](#)

Item was pulled from the agenda.

10. REGULAR AGENDA ITEMS

10.1 Vine Transit Update (Rebecca Schenck) (Pages 97-103)

Attachments: [Staff Report](#)

Item was tabled to a future agenda.

10.2 Second Amendment to Napa Valley Transportation Authority (NVTA) Agreement No. 17-07 with DoubleMap Incorporated (Rebecca Schenck) (Pages 104-111)

Attachments: [Staff Report](#)

This agreement has an option for two (2) one (1) year extensions subject to the review and recommendation of NVTA. The staff proposal adds an additional software subscription to accommodate the second shuttle now operating in American Canyon. Staff requested that the NVTA Board authorize the Executive Director to amend the agreement to make these modifications. The additional cost for the two additional years of service and the required hardware and software in American Canyon is \$94,477.

Board action approved the Second Amendment to NVTA Agreement No. 17-07 for Additional Scope of Work in an amount not to exceed \$94,477 and authorized the Executive Director, or designee, to execute contract documents subject to review by legal counsel.

10.3 Resolution No. 20-07 Authorizing the Executive Director to Execute Cooperative Agreement 04-2783 between the State of California Department of Transportation (Caltrans) and the Napa Valley Transportation Authority (NVRTA) for the Soscol Junction Project (Rebecca Schenck) (Pages 112-137)

Attachments: [Staff Report](#)

This Cooperative Agreement is a standard Caltrans Plans, Specifications and Engineering (PS&E) document, and the Right-of-Way (ROW) will come directly from the NVRTA's State Transportation Improvement Program (STIP) for this project. Execution of this Cooperative Agreement is contingent upon the California Transportation Commission (CTC) approval of NVRTA's STIP allocation for the PS&E and ROW phases at the March 26, 2020 CTC Meeting.

Motion MOVED by JOSEPH, SECONDED by RAMOS TO approve adoption of Resolution No. 20-07 approving Cooperative Agreement 04-2783 with Caltrans and authorize the Executive Director, or designee, to sign the Cooperative Agreement and make minor modifications to the agreement and amendments for the Soscol Junction Project. Motion carried by the following Roll Call vote:

Aye: 23 - Garcia, Canning, Techel, Pedroza, Dohring, Joseph, Dorman, Ramos, Ellsworth, Alessio, and Kraus

Absent: 1 - Dunbar

10.4 Regional Transportation Plan (RTP) 2050 Napa County Target Budget Project List (Danielle Schmitz) (Pages 138-149)

Attachments: [Staff Report](#)

Board action approved the draft list of Regional Transportation Plan 2050 Project list.

Motion MOVED by KRAUS, SECONDED by GARCIA to APPROVE the constrained list of Regional Transportation Plan projects (as provided in Attachment 1) for submittal to the Metropolitan Transportation Commission. Motion carried by the following Roll Call vote:

Aye: 23 - Garcia, Canning, Techel, Pedroza, Dohring, Joseph, Dorman, Ramos, Ellsworth, Alessio, and Kraus

Absent: 1 - Dunbar

10.5 Legislative and State Bill Matrix Update (Kate Miller) (Pages 150-159)

Attachments: [Staff Report](#)

Item pulled from the agenda and will return at a later date.

11. FUTURE AGENDA ITEMS

Member Kraus requested information on NVRTA finances in light of the COVID-19 crises and the impact it will likely have on NVRTA revenues.

12. CLOSED SESSION

Closes Session items 12.1 and 12.2 were pulled from the agenda and will be brought back at a later date.

12.1 CONFERENCE WITH LEGAL COUNSEL - ANTICIPATED LITIGATION

Significant exposure to litigation pursuant to Government Code Section 54956.9(d)
(2) (1 case)

This Closed Session was tabled.

12.2 PUBLIC EMPLOYEE PERFORMANCE EVALUATION (Government Code Section 54957(B)(1))

Title: Executive Director

This Closed Session was tabled.

13. ADJOURNMENT**13.1 Approval of Next Regular Meeting of Wednesday, April 15, 2020 and Adjournment**

The next regular meeting will be held on Wednesday, April 15, 2020 at 1:30 p.m.

Chair Canning adjourned the meeting at 2:21 p.m.

Karalyn E. Sanderlin, NVTA Board Secretary



NAPA VALLEY TRANSPORTATION AUTHORITY Board Agenda Letter

TO: NVRTA Board of Directors
FROM: Kate Miller, Executive Director
REPORT BY: Danielle Schmitz, Director - Capital Development and Planning
(707) 259-5968 / Email: dschmitz@nvta.ca.gov
SUBJECT: Sub-Housing Incentive Pool (HIP) Program Call for Letters of Interest

RECOMMENDATION

Information only

OTHER OPTIONS FOR CONSIDERATION

The Board could decide to not accept Letters of Interest for the Sub-Housing Incentive Pool Program

COMMITTEE RECOMMENDATION

None. The Technical Advisory Committee received information on the call for Letters of Interest at their April 2 meeting.

EXECUTIVE SUMMARY

The Metropolitan Transportation Commission (MTC) administers the Housing Incentive Pool (HIP) Program to incentivize transportation infrastructure improvements that support low-income housing generation or preservation. A sub-program totaling \$1,000,000 (Sub-HIP) is dedicated to the North Bay counties of Sonoma, Napa and Marin. Napa County's share of this funding is \$300,000, and must be spent on projects within Priority Development Areas (PDAs). In order to assess potentially eligible projects and interested parties, the Napa Valley Transportation Authority (NVRTA) is issuing a Call for Letters of Interest. Letters received by April 20 will be reviewed, summarized and presented to the Board for approval in May 2020.

PROCEDURAL REQUIREMENTS

1. Staff Report
2. Public Comments
3. Motion, Second, Discussion and Vote

FISCAL IMPACT

Is there a Fiscal Impact? Not with this action

Is it currently budgeted? No

Future Fiscal Impact? No

Consequences if not approved? The County would not receive \$300,000 in sub-HIP funds

STRATEGIC GOALS MET BY THIS PROPOSAL

Goal 1 – Serve the transportation needs of the entire community regardless of age, income or physical ability.

CEQA REQUIREMENTS

ENVIRONMENTAL DETERMINATION: The proposed action is not a project as defined by 14 California Code of Regulations 15378 (California Environmental Quality Act (CEQA) Guidelines) and therefore CEQA is not applicable.

BACKGROUND AND DISCUSSION

MTC administers the HIP program, which is a \$71 million dollar pot of transportation infrastructure dollars to reward cities and counties that produce or preserve the largest number of affordable housing units in designated Priority Development Areas (PDAs) or Transit Priority Areas (TPAs) during the time period of 2018-2022. Separate from the HIP is the sub-HIP, which is a \$5 million dollar pilot program.

NVRTA is issuing a Call for Letters of Interest for sub-HIP projects. Projects must meet the following criteria:

- Must be a transportation investment directed within or connected directly to a Priority Development Area (PDA) or Transit Priority Area (TPA)
- Must meet the eligibility guidelines for One Bay Area Grant Cycle 2 (OBAG 2) County program
- Must be able to obligate funds by the end of FY 2022, consistent with OBAG 2
- Must be eligible for Federal Surface Transportation Block Grant / Congestion Mitigation and Air Quality Improvement (STP/CMAQ) funding

-
- Project sponsors must be compliant with OBAG 2 county program policies (such as Housing Element annual reporting, Surplus Lands Act, Complete Streets Requirements)

Examples of eligible project types include the following:

- Local Street and Roads Maintenance
- Bicycle and Pedestrian Improvements
- Transportation for Livable Communities projects – roundabouts, bulb-outs, streetscapes, transit amenities, crosswalk enhancements, etc.
- Safe Routes to School projects

Please submit Letters of Interest to Danielle Schmitz, dschmitz@nvta.ca.gov by April 20, 2020.

SUPPORTING DOCUMENTS

Attachments: (1) Sub-HIP Call for Letters of Interest
(2) MTC Sub-HIP Project Proposal
(3) Map of Napa and American Canyon PDAs

March 25, 2020

Sub-Housing Incentive Program
Letters of Interest

To All Interested Parties:

Napa County Transportation Authority seeks letters of interest from any eligible agency who may have a transportation infrastructure project that supports generation or preservation of housing units of affordable housing (housing at the very low-, low-, and moderate- income levels). New or preserved units must be located in a Priority Development Area or Transit Priority Area (PDA or TPA). The Metropolitan Transportation Commission has made available a pilot portion of the Housing Incentive Pool Program (HIP) to the North Bay counties (AKA Sub-HIP). Napa County's share will be \$300,000. NVTA seeks interested agencies that are eligible under One Bay Area Grant guidelines, and able to use Surface Transportation Program/ Congestion Mitigation Air Quality Program funds. All interested parties should submit letters of Interest to Danielle Schmitz, Director of Capital Development and Planning via email at dschmitz@nvta.ca.gov or by mail 625 Burnell Street, Napa, CA 94558, by April 20, 2020. All inquiries regarding this process should be similarly be forwarded to Ms. Schmitz.



METROPOLITAN
TRANSPORTATION
COMMISSION

ATTACHMENT 2
NYTA Agenda Item 9.2
April 15, 2020
Bay Area Metro Center
375 Beale Street, Suite 100
San Francisco, CA 94105
415.778.6700
www.mtc.ca.gov

November 7, 2019

Scott Haggerty, Chair
Alameda County

Alfredo Pedroza, Vice Chair
Napa County and Cities

Jeannie Bruins
Cities of Santa Clara County

Damon Connolly
Marin County and Cities

Dave Cortese
Santa Clara County

Carol Dutra-Vernaci
Cities of Alameda County

Dorene M. Giacomini
U.S. Department of Transportation

Federal D. Glover
Contra Costa County

Anne W. Halsted
San Francisco Bay Conservation
and Development Commission

Nick Josefowitz
San Francisco Mayor's Appointee

Sam Liccardo
San Jose Mayor's Appointee

Jake Mackenzie
Sonoma County and Cities

Gina Papan
Cities of San Mateo County

David Rabbitt
Association of Bay Area Governments

Hillary Ronen
City and County of San Francisco

Libby Schaaf
Oakland Mayor's Appointee

Warren Slocum
San Mateo County

James P. Sperling
Solano County and Cities

James Stracner
U.S. Department of Housing
and Urban Development

Tony Tavares
California State
Transportation Agency

Amy R. Worth
Cities of Contra Costa County

Therese W. McMillan
Executive Director

Alix Bockelman
Deputy Executive Director, Policy

Andrew B. Fremier
Deputy Executive Director, Operations

Brad Paul
Deputy Executive Director,
Local Government Services

RE: Sub-HIP Project Proposals – North Bay Counties

To: Bay Area County Transportation Agencies

On October 23, 2019, the Commission approved revisions to the Housing Incentive Pool (HIP) framework (MTC Resolution No. 4348), including project and eligibility guidelines for the \$5 million Sub-HIP set-aside.

In adopting the program guidelines for the \$76 million HIP program in October 2018, the Commission carved out \$5 million for a pilot competitive program and directed staff to develop guidelines. The pilot program, now referred to as Sub-HIP is intended to fund eligible transportation infrastructure to support affordable housing projects in Priority Development Areas (PDAs) or Transit Priority Areas (TPAs).

Resolution 4348 directs \$4 million in Sub-HIP funds for eligible projects in Solano County. The remaining \$1 million in Sub-HIP funds are available to projects in Marin, Napa, and Sonoma counties. Consistent with the overall One Bay Area Grant (OBAG 2) County Program, grants must be a minimum of \$250,000 and Surface Transportation Block Grant Program/Congestion Mitigation Air Quality Improvement Program (STP/CMAQ) eligible. The full program guidelines are attached to this letter.

County Transportation Agencies (CTAs) in the four North Bay counties are expected to submit project proposals that conform to the Sub-HIP program guidelines to MTC staff by **May 1, 2020**. CTAs are also required to develop county-specific guidelines and manage a call for projects. Given the relatively small amount of funding available for Marin, Napa, and Sonoma counties, MTC staff encourages CTA coordination prior to submitting project proposals to MTC.

Please reach out to Mallory Atkinson at matkinson@bayareametro.gov or (415) 778-6793 with any questions or concerns related to this program.

Sincerely,

Ross McKeown
Acting Director,
Programming & Allocations

Attachment – Sub-HIP Project and Eligibility Guidelines

OBAG 2 SUB-HIP Program
\$5 Million Set-Aside Eligibility and Programming Guidelines
(per MTC Resolution No. 4348)

The following framework will guide the distribution of the \$5 million set-aside from the HIP program. The set-aside is intended to help finance eligible infrastructure that will support affordable housing projects in Priority Development Areas (PDAs) and Transit Priority Areas (TPAs).

Funding Distribution:

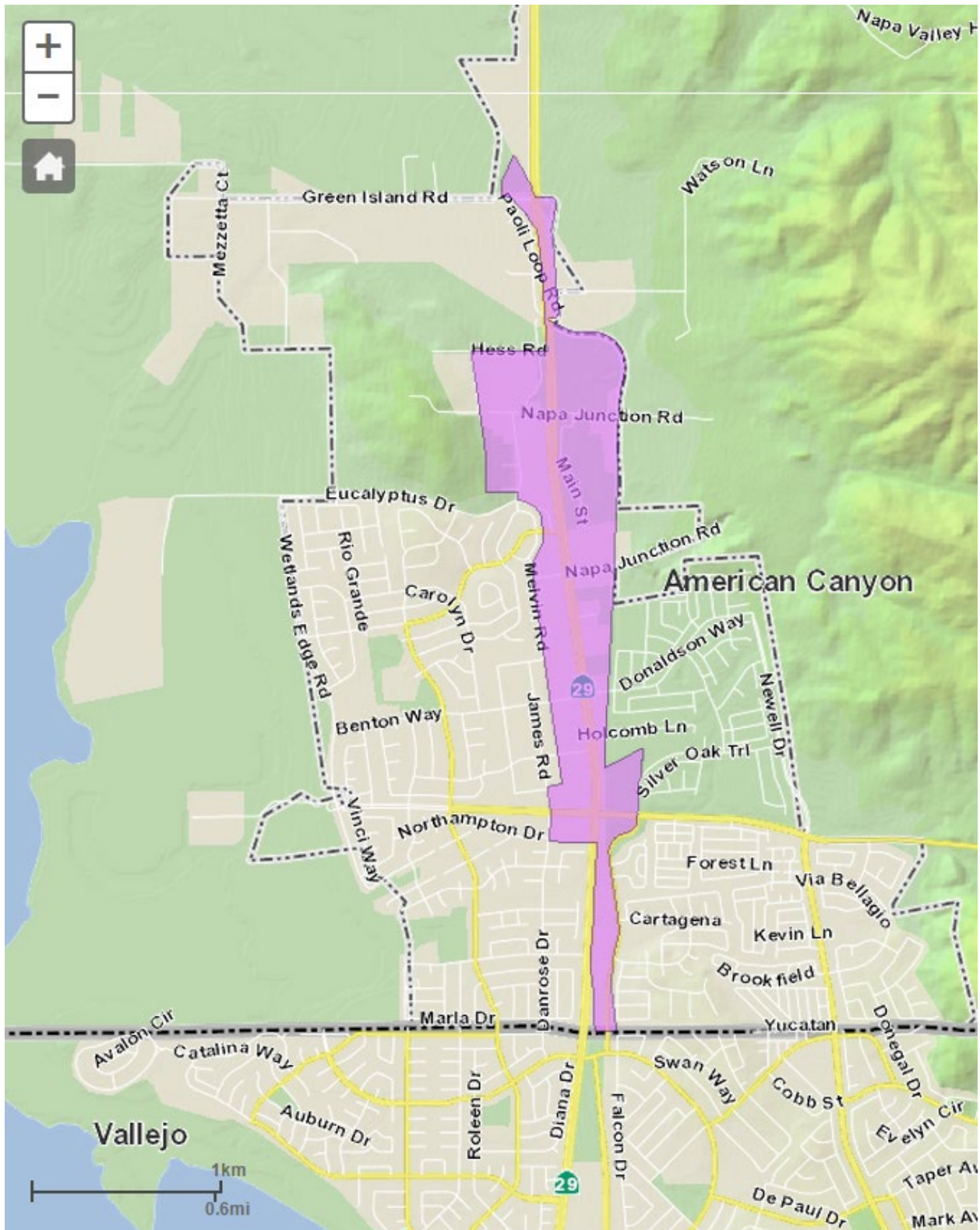
1. Funds will be apportioned \$4 million to the Solano Transportation Authority (STA) and \$1 million for the other North Bay counties (Marin, Napa, and Sonoma) to be distributed after evaluation of proposals from the County Transportation Agencies (CTAs) in those counties for eligible projects, due to MTC by May 1, 2020.
2. Eligible counties will be responsible for developing county-specific guidelines, managing a call for projects, and submitting project recommendations to MTC that are consistent with these guidelines.

Project Eligibility:

1. Project must be a transportation investment directed within or connected directly to a PDA or TPA.
2. Project must meet the eligibility guidelines for the OBAG 2 County Program.
3. Project must be able to obligate funds by the end of FY2022, consistent with OBAG 2.
4. Project must be eligible for Federal Surface Transportation Block Grant/ Congestion Mitigation and Air Quality Improvement (STP/CMAQ) funding.
5. The minimum grant size to be awarded is \$250,000.

Jurisdiction Eligibility:

Project sponsors for selected transportation projects must be compliant with OBAG 2 County Program policies (such as Housing Element annual reporting, Surplus Lands Act, Complete Streets Requirements.)





April 15, 2020
NVRTA Agenda Item 10.1

Continued From: New
Action Requested: INFORMATION

NAPA VALLEY TRANSPORTATION AUTHORITY Board Agenda Letter

TO: Board of Directors
FROM: Kate Miller, Executive Director
REPORT BY: Rebecca Schenck, Principal Planner/Administrator
(707) 259-8636 / Email: rschenck@nvta.ca.gov
SUBJECT: NVRTA Revenues and Vine Transit Update

RECOMMENDATION

Information only. The Board will receive information about NVRTA finances, and Vine operations and changes to the collective Vine Transit services in March of 2020 and the future changes due to the Coronavirus (COVID-19).

COMMITTEE RECOMMENDATION

None

EXECUTIVE SUMMARY

Under current the COVID-19 Shelter in Place (SIP) conditions, NVRTA staff is estimating that its sales tax revenues, the single largest fund source the agency relies on for both transit operations and planning, are down 85% (from \$756,000 to \$113,000) each month. Other funds sources that we rely on include tax on diesel fuel, bridge tolls, and fare revenues. While more stable than sales tax, tax on fuel and bridge tolls are still expected to be down by 50%. NVRTA is currently waiving fares for reasons discussed below. Fares generated roughly \$80,000 per month.

It's currently unclear how many months the SIP order will be in place and it is equally difficult to guess how the economy will respond once the SIP order has been lifted. This complicates projecting revenues for the upcoming year. Speculative estimates range from between 25% and 40% reduction in sales tax revenues in the first year of economic recovery with slow growth thereafter.

In response to declining revenues, the Vine is operating on a modified Saturday service schedule but with regional routes 10, 11, 21, and 29 still operating. Staff is planning additional service changes and is now working with its consultant to expand its on demand

capabilities with the intention of launching on-demand service to replace fixed route service in the City of Napa at least until the SIP order has been lifted.

Staff has also been working with State and Federal advocacy organizations as well as the regional agency and its county partners on efforts associated with the existing federal CARES stimulus bill as well as future state and federal bills focused on infrastructure.

FINANCIAL IMPACT

Is there a fiscal impact? No

BACKGROUND AND DISCUSSION

NVRTA Finances and Impacts to Revenues

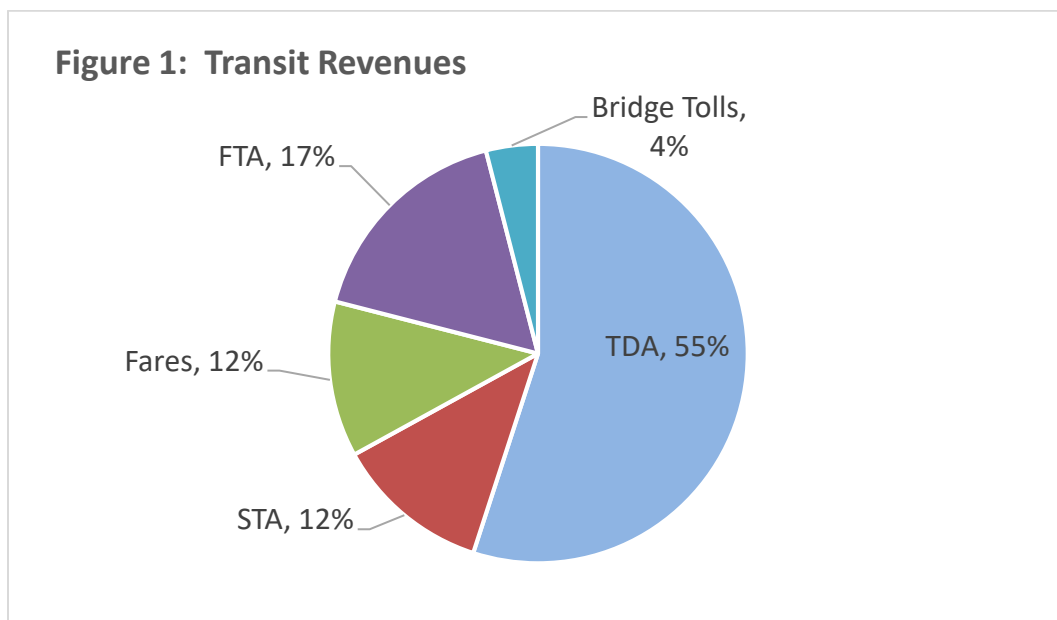
The Vine Transit system is funded through multiple fund sources, however, the majority of funds come from two sources, of which only the Federal Transit Administration funds are anticipated to remain stable.

- 1) The largest single fund source that NVRTA receives is Transportation Development Act (TDA) funds. The agency receives these funds for operating the Vine collective system and Congestion Management Agency planning. These funds are based on $\frac{1}{4}$ percent of Napa County's sales tax revenues. TDA makes up roughly 55% of the Transit revenues. NVRTA staff anticipates that sales tax will be down by 85% during the SIP order but will rebound once the SIP is lifted to roughly 60-75% of sales tax revenue generations prior to the SIP Order.
- 2) Federal Transit Administration (FTA) Section 5307 small urbanized area formula funds are appropriated annually based on the Fixing America's Surface Transportation (FAST) Act authorization levels on a formula linked to Napa urbanized area population, with a smaller subset of funds awarded on strong operational performance metrics. NVRTA also receives FTA Section 5311 Non Urbanized Area funds based on population figures in the rural areas of the county. The FAST Act is funded through federal fuel tax. Roughly 17% of Vine Transit revenues come from FTA combined fund sources. There is no reason to expect significant changes in FTA revenues, and in fact, these funds make up the largest share of the federal CARES stimulus package.
- 3) State Transit Assistance (STA) is part of the TDA act but is generated from sales tax on diesel fuel. STA is distributed 50% on population formula and 50% on revenue formula. In the Metropolitan Transportation Commission (MTC) region, MTC receives the population-based funds and distributes a small subset to small transit operators. The revenue-based funds are distributed statewide to transit operators based on the eligible revenues used for operations. For NVRTA we receive a small amount of revenue-based funds because of the combined Regional Measure 2 bridge tolls and jurisdictions' fare contributions that the agency reports to the State Controller's office. Roughly 94% of NVRTA's STA revenues are from population-based funds and 6% from revenue-based funds. STA makes up roughly

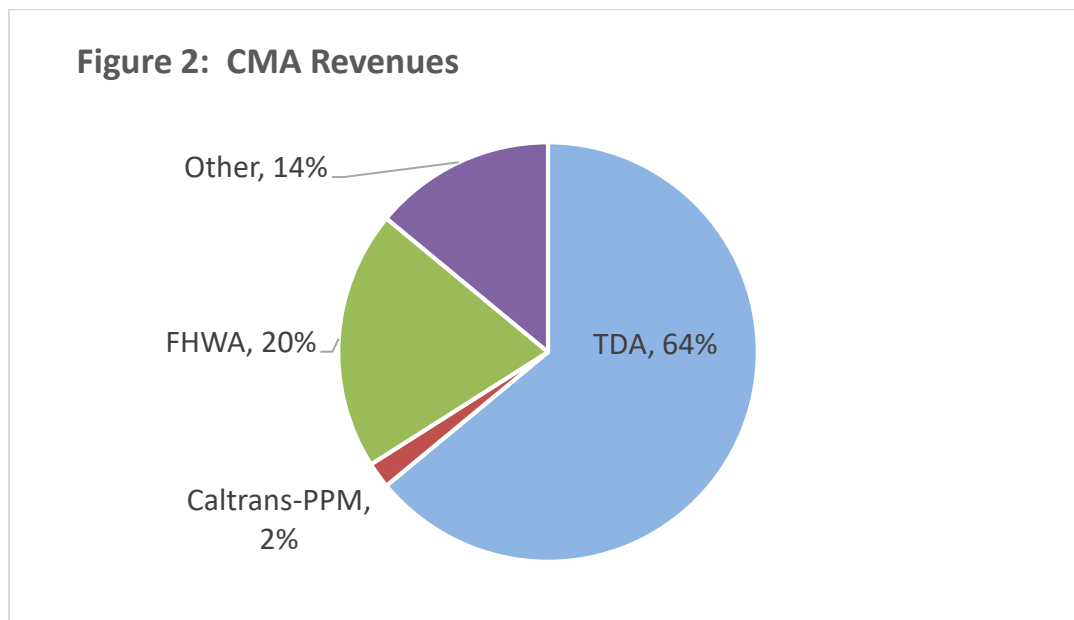
12% of NVTA's Transit revenues. Gasoline sales have gone down roughly 50% during the SIP Order and NVTA staff thinks that diesel is likely to be about the same. Fuels tend to be more inelastic than other taxable goods so these revenues are likely to rebound more quickly than other tax-based revenues.

- 4) NVTA collects fares from its riders. Fares are 12% of NVTA's Transit revenues. Under the SIP, the agency is no longer collecting fares. NVTA anticipates that fare revenues will likely rebound faster than other revenues because of the high unemployment rate that is likely to result from a post SIP order recession.
- 5) NVTA also receives Regional Measure 2 bridge tolls for operating Vine Express Bus Route 29. These make up 4% of Vine Transit revenues. The Bay Area Toll Authority has indicated that bridge toll revenues are down 50%. Bridge tolls are likely to rebound fairly quickly – probably not to the pre-SIP order levels. Staff anticipates there will be meaningful near term cuts in how these revenues are distributed.

Figure 1 shows the percentage of each revenue source in context of the Vine Transit's total budget.



The Congestion Management Agency (CMA) also relies heavily on TDA funds. Roughly 64% of revenues are TDA with the balance of funds being federal and state highway planning funds. Like FTA funds, the funds that come from federal and state highway programs are based on federal and state gas tax and, therefore, these sources are more stable than sales tax revenues. Figure 2 below reflects the mix of revenues for the CMA.



The COVID-19 SIP order has resulted in a reduction in sales tax by an estimated 85%, gas tax by an estimated 50%, bridge tolls revenues to an estimated 50%. As discussed below, NVTA is currently waiving fares. It is unclear how profoundly this event will effect revenues once the SIP order is lifted but expert speculative estimates range between 25% to 40% reduction in sales tax revenues in the first year of economic recovery with slow growth thereafter. NVTA staff will have a refined perspective next month on revenue projections for the next fiscal year, which will be presented to the Board at its May meeting with the proposed FY 2021-22 budget.

Measures Underway to Stabilize the Budget and Counteract Current and Future Economic Impacts of the COVID-19 Shelter in Place Order

Staff has been heavily involved in advocacy to pass the federal CARES stimulus bill. The federal stimulus bill will generate \$1.3 billion for San Francisco Bay Area transit operators. Roughly \$7.9 million of these funds will flow to the Napa urbanized area and roughly another \$500,000 in 5311 funds could flow to Napa's non-urbanized areas. MTC is working with all the region's operators to understand the magnitude of need and lost revenues to balance the funds between transit operators and urbanized areas. Staff will continue to update the board on exactly what that ultimately means in aid to the Vine Transit system. As of this writing MTC's proposal would reduce the amount of funds that would flow to NVTA to \$2.7 million. MTC is proposing to distribute the funds in two tranches; the first to triage the flailing revenue shortfalls and the second to address longer term needs once the SIP is lifted. The first tranche is 60.8% of the total funds available to the region. Additional discussions will need to occur to develop the distribution for the balance funds and will likely be focused on systems with the greatest long term challenges.

NVRTA currently has a budget reserve because the agency has been banking TDA funds to construct the new Vine Maintenance facility. Some of these funds are being spent down to run the system. The Vine Maintenance Facility funding package relied on Regional Measure 3 North Bay Transit Funds and Transportation Infrastructure Finance Innovating Act (TIFIA) funding. The financing plan relied on the agency's ability to make significant debt payments using TDA and other fund sources. Given revenue forecasts, NVRTA may no longer be in a position to borrow at the level that was previously proposed, and staff is recommending delaying construction until revenues rebound and Regional Measure 3 funds begin to flow. In some ways the delay is fortuitous as it has opened a window to apply for a FTA 5339 grant and the facility is a good candidate for a state or second federal stimulus bill.

Staff continues to work with industry leaders and its partners to advocate for a state or federal infrastructure bill. State leadership has indicated an interest in infrastructure projects including:

- Energy infrastructure
- Water infrastructure
- Cyber-related workforce
- Job-creating projects

Table 1 below is a list of shovel-ready "job creating" projects that is being submitted to legislative leaders.

Table 1: Shovel Ready Stimulus Projects

Project Title	Project Cost	Funding Shortfall	Construction
Soscol Junction	\$65 million	\$20 million	June 2021
Vine Maintenance Facility	\$32 million	\$20 million	August 2020
Calistoga to St. Helena Vine Trail	\$13 million	\$3 million	June 2021
Imola Park and Ride	\$3 million	\$0.5 million	September 2020
St. Helena Downtown Pedestrian Improvement Project (SR 29)	\$7 million	\$5.8 million	March 2021
Green Island Industrial Road and Complete Street Enhancement Project	\$16 million	\$10 million	September 2020

NVRTA staff is also working with the jurisdictions to compile a list of Measure T projects that are likely to be delayed due to anticipated revenue shortfalls. That list will be submitted the legislature through the Self Help County Coalition once it's completed.

Vine Service Changes

Fares have been waived on all transit services, including fixed route, shuttle services, and ADA paratransit services. This was done to limit interaction between drivers and riders to help reduce the spread of the COVID-19 virus. On dual door vehicles, riders are boarding and alighting from the rear door. Other protocols have been put in place to protect drivers and riders including thoroughly cleaning and disinfecting the vehicles, and transit hubs. Masks and gloves have been ordered for the drivers.

Fixed Route

Anticipating the dwindling revenue scenario, staff acted swiftly to reduce service. Prior to the SIP order, NVTA decreased its fixed route hours of operation to Saturday hours with all regional routes from March 17th to 22nd and then further reduced service on March 23rd to eliminate the 10X and 11X routes. Figure 3 below summarizes the week by week ridership changes between March 2019 and March 2020 justifying the service changes.

Figure 3: Difference in Trips Taken 2019 to 2020 by Month for Routes 10, 11, 10X, 11X, 21, and 29

	Percent Change				Numerical Change			
	Wk1	Wk 2	Wk 3	Wk 4	Wk1	Wk 2	Wk 3	Wk 4
Local Routes	3%	-19%	-56%	-65%	52	-379	-1,148	-1,292
Route 10/10X	-5%	-25%	-46%	-63%	-76	-415	-740	-868
Route 11/11X	- 3%	-20%	-41%	-52%	-40	-328	-616	-814
Route 21	33%	58%	11%	-21%	28	43	8	-18
Route 29	-15%	-14%	-59%	-45%	-40	-38	-159	-116
Total	-2%	-20%	-48%	-59%	-76	-1,118	-2,654	-2,268

Shuttles and Ride the Vine App

The shuttle ridership total across all jurisdictions was higher at the beginning of March 2020 than it was the previous year, but fell off as the month progressed. NVTA reduced the service hours of the shuttles on March 17th and again on March 23rd. Figure 4 illustrates the year of year ridership changes between March 2019 and March 2020, excluding the American Canyon and St. Helena fixed route service.

Figure 4: Difference in Trips Taken 2019 to 2020 by Month for the Community Shuttles

	Percent Change				Numerical Change			
	Wk1	Wk 2	Wk 3	Wk 4	Wk1	Wk 2	Wk 3	Wk 4
American Canyon Transit	33.7%	8.38%	-57.65%	-54.48%	13	3	-23	-16
Calistoga Shuttle	6.8%	-4.50%	-86.45%	-87.89%	10	-5	-138	-135
St. Helena Shuttle	-20.2%	-19.71%	-53.87%	-90.85%	-14	-11	-38	-58
Yountville Trolley	18.6%	-39.32%	-77.20%	-97.83%	17	-62	-110	-153
Total	7.4%	-21.05%	-74.96%	-89.81%	26	-75	-308	-361

Upcoming Service Changes

NVRTA is exploring options for on-demand service in the City of Napa in the areas currently served by the local routes A to H. The main points are as follows:

- Napa would be added to the RidetheVine App. This is the app currently in use to provide on demand services on the four shuttles services. (Call in number would be available as well for reservations).
- Pickup/Drop off would be at any of the existing stops in the City of Napa.
- Hours would be Saturday Hours every day 7:30am to 5:30pm.
- The initial plan is to operate eight (8) vehicles at a given time and have a 9th and 10th for driver lunch and break relief as needed; however, additional vehicles and drivers will be available to respond to ride requests if demand exceeds expectations.
- The service area will be “geo-fenced” and riders will be required to transfer to regional or express bus routes to reach destinations outside the geo-fenced area.
- While the service area would remain the same, on demand services would make it easier to scale service hours up or down with ridership changes.
- The on-demand system would remain in place for 3 months initially and can be extended up to one year or ended at any time after 3 months without penalty.
- NVRTA is planning a major marketing campaign to ensure riders are prepared for this change.
- The cost of the consultant services (DoubleMap) equipment leasing is anticipated to be less than \$40,000.

Staff will continue to evaluate ridership and revenue generations to understand if and when to restore service to a fixed route system. This service demonstration will be useful to understand if and how we might consider a permanent on-demand system in the future in all or parts of the City of Napa. This is an opportunity for us to better

understand the demand for this kind of service, and whether NVTA has the resources to run in it on a more permanent basis in the future.

Larger Transit Trends in the Bay Area

NVTA is participating in MTC organized meetings that include staff representing the Bay Area's transit systems to share ridership statistics and changes due to COVID-19. Other transit operators are regularly reporting ridership decreases of 70% to 90%. While many agencies maintained regular services hours through March 23rd, the agencies are now starting to reduce service hours and suspend weekend service on selected routes. Most agencies are also moving to rear-door boarding and in some cases, no fare collection just like NVTA. Overall, NVTA was able to reduce service hours quickly and as noted is taking similar precautions to protect drivers and passengers as other agencies.

First Responders - Emergency Operations Center Work

Napa Valley Transportation Authority is an arm of the Napa County Emergency Operations Center (EOC) under the Operations – transportation branch. On March 19 NVTA was called to service for the COVID-19 pandemic. Emergency transportation services to date are as follows:

- On March 27 Vine Transit began delivering meals to shelter occupants and isolation sites three times a day.
- On March 29 Vine Transit started providing transportation to the County's high risk congregate living clients in the Winter and South shelters to an isolation and quarantine site. This site is to protect the county's vulnerable population and to curb the spread of the virus.
- On March 30th Vine Transit started delivering lunch to EOC staff at various EOC sites in the county.
- Vine Transit is on standby to move individuals who do not have access to transportation or have mobility needs to the COVID-19 testing site.
- NVTA staff is on standby for other transportation needs that arise in the EOC.

SUPPORTING DOCUMENTS

None



NAPA VALLEY TRANSPORTATION AUTHORITY Board Agenda Letter

TO: NVRTA Board of Directors
FROM: Kate Miller, Executive Director
REPORT BY: Rebecca Schenck, Principal Program Planner/Administrator
(707) 259-8636 / Email: rschenck@nvta.ca.gov
SUBJECT: Draft State Route Comprehensive Multimodal Corridor Plan (SR 29 CMCP)

RECOMMENDATION

That the NVRTA Board release the Draft Route Comprehensive Multimodal Corridor Plan (SR 29 CMCP) to the public for review

OTHER OPTIONS FOR CONSIDERATION

The NVRTA Board could decide to wait to release the SR29 CMCP for public comment.

COMMITTEE RECOMMENDATION

None

EXECUTIVE SUMMARY

The Napa Valley Transportation Authority (NVRTA) contracted with GHD to complete the SR 29 Comprehensive Multimodal Corridor Plan (CMCP) to better define improvements along the corridor in March 2019. The Staff Working Group has been working in conjunction with GHD to develop the draft CMCP document (Attachment 1). The goal is to finalize the CMCP in time to apply for Senate Bill 1 (SB1) Solutions for Congested Corridor (SCCP) funding in June 2020.

PROCEDURAL REQUIREMENTS

1. Staff Report
2. Public Comments
3. Motion, Second, Discussion and Vote

FISCAL IMPACT

None

STRATEGIC GOALS MET BY THIS PROPOSAL

Goal 2 – Improve system safety in order to support all modes and serve all users

The SR 29 CMCP outlines ways to improve safety for motor vehicles, transit, bicycles and pedestrians traveling the SR 29 corridor from Imola Avenue to SR 37

CEQA REQUIREMENTS

ENVIRONMENTAL DETERMINATION: The proposed action is not a project as defined by 14 California Code of Regulations 15378 (California Environmental Quality Act (CEQA) Guidelines) and therefore CEQA is not applicable.

BACKGROUND AND DISCUSSION

NVTA decided to develop the SR 29 Comprehensive Multimodal Corridor Plan to better define improvements in the corridor and to be eligible for Senate Bill 1 (SB 1) Solutions for Congested Corridor Program funding in the summer of 2020. In March of 2019, Napa Valley Transportation Authority (NVTA) contracted with GHD to complete both the 1) SR 29 Comprehensive Multimodal Corridor Plan (CMCP) and 2) the Project Initiation Document (PID) for SR 29 through American Canyon.

The purpose of the SR 29 CMCP is to identify a preferred SR 29 corridor concept and associated infrastructure improvements that will best meet both the local and regional goals, while providing the highest return on investment of limited regional transportation funding for the next 20 years. The plan will serve as an update to SR 29 Gateway Plan and be developed consistent with the 2018 Comprehensive Multimodal Corridor Plan Guidelines (California Transportation Commission, December 2018) and the draft SB-1 Solutions for Congested Corridors Program Guidelines (California Transportation Commission). To be competitive for procuring limited discretionary transportation funding-the CMCP must document how the recommended CMCP capital improvements address recent federal and state transportation planning objectives/initiatives—including multimodal considerations, social equity, climate change, goods movement, economic development and return on investment. Ultimately, the CMCP will serve as the formal update to the SR 29 Transportation Corridor Concept Report (Caltrans System Planning). Acquiring grant funding is the primary impetus for this effort. Improvements associated with Soscol Junction will be included in a Cycle 2 Solutions for Congested Corridor grant application to the State (June 2020) and the remaining improvements will be submitted as part of Cycle 3 grant application (2023).

Once NVTA Board releases the draft document, NVTA will collect public comments on the document through the project's website <http://www.sr29corridorplan.com/>. Then a final document will be adopted by the NVTA Board in May 2020.

SUPPORTING DOCUMENTS

Attachment: (1) Draft State Route 29 Comprehensive Multimodal Corridor Plan

State Route 29

Comprehensive Multimodal Corridor Plan

Administrative Draft Plan
March 2020



Acknowledgments

This plan was prepared for



Napa Valley Transportation Authority



Napa County



City of Napa



City of American Canyon



Caltrans District 4

This plan was prepared by



GHD

With support from



Regional Government Services



Elite Transportation Group

*This project received funding from the
Transportation Development Act, Congestion Management Agency Planning Funds,
and the City of American Canyon.*

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Appendix B	SR 29 CMCP VISSIM Microsimulation Model Development Report
Appendix C	Public Outreach Materials
Appendix D	Public Workshop Summary Reports
Appendix E	Bicycle LTS Methodology
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1 - Introduction

State Route (SR) 29 is part of the California Freeway and Expressway System within Caltrans District 4. It serves as the gateway to the world-renowned Napa Valley, extending from SR 20 in Lake County to Interstate 80 in Solano County, as shown in Figure 1. The highway connects the Napa County cities of Calistoga, St. Helena, Yountville, Napa, and American Canyon. As the prime freight and agricultural access route for residents and wine industry businesses, SR 29 provides a vital regional connection to both the San Francisco Bay Area and the Sacramento Valley. Daily travel within Napa County ranges from 40,000 to 70,000 vehicles per day, including people commuting to work, tourists visiting the legendary wine region, and special event traffic.

The SR 29 is eligible for inclusion into the State Scenic Highway System but has yet to be officially designated a scenic highway by Caltrans. The historic alignment of SR 29 began as Old Bull Trail Road in the 1850s, which included steep grades up to 35 percent. That road was replaced by the St Helena Toll Road in 1868, which reduced inclines to 12 percent. During World War II, the highway was widened again to support military operations at the US Naval Base on Mare Island in Vallejo, leading to the current four-lane configuration.

The SR 29 Comprehensive Multimodal Corridor Plan (SR 29 CMCP) evaluates the most constrained portion of SR 29 – an 11.5-mile portion that stretches from Imola Avenue (designated SR 121 east of SR 29) in the City of Napa to SR 37 in the City of American Canyon. The study corridor is shown in Figure 2. There are several discontinuous parallel roadways in the study corridor including SR 221, SR 12, South and North Kelly Road, Devlin Road, Soscol Ferry Road, Soscol Creek Road, Newell Drive, Flosden Road, and Fairgrounds Drive. This lack of continuous alternative routes contributes to the congestion problems on SR 29 and has elevated the importance of this state route as a lifeline for many of the communities it serves.

The SR 29 study corridor experiences significant safety and operational issues during weekday and weekend peak hour conditions. The most pronounced issues in the corridor include:

- Lack of multimodal connectivity particularly for bicycle and pedestrian access along and across SR 29;
- Lack of low-stress routing options for bicyclists;
- Lack of continuous parallel routes to support local and regional travel demand;
- Capacity constraints at key SR 29 intersections that persist and cause extensive queuing that results in excessive delays, extensive bottleneck durations, and unreliable travel times for both motorists and transit;
- Compromised feasibility to provide enhanced transit service due to travel time unreliability
- Increased safety risk and conflicts between motorists and active transportation users
- Compromised emergency response times, evacuation routes and incident clearance capabilities.

Napa County residents have long expressed concerns about congestion and safety on SR 29. Area residents, commuters and others who regularly drive the corridor have noted the 11.5-mile segment between SR 121 and SR 37 is particularly challenging. In recognition of the regional importance of SR 29, its diminishing quality of service, and its priority need for improvement by the jurisdictions it serves, the Napa Valley Transportation Authority (NVTa) in partnership with Caltrans District 4, the County of Napa, and the Cities of Napa and American Canyon commissioned and now developed this SR 29 Comprehensive Multimodal Corridor Plan (SR 29 CMCP).

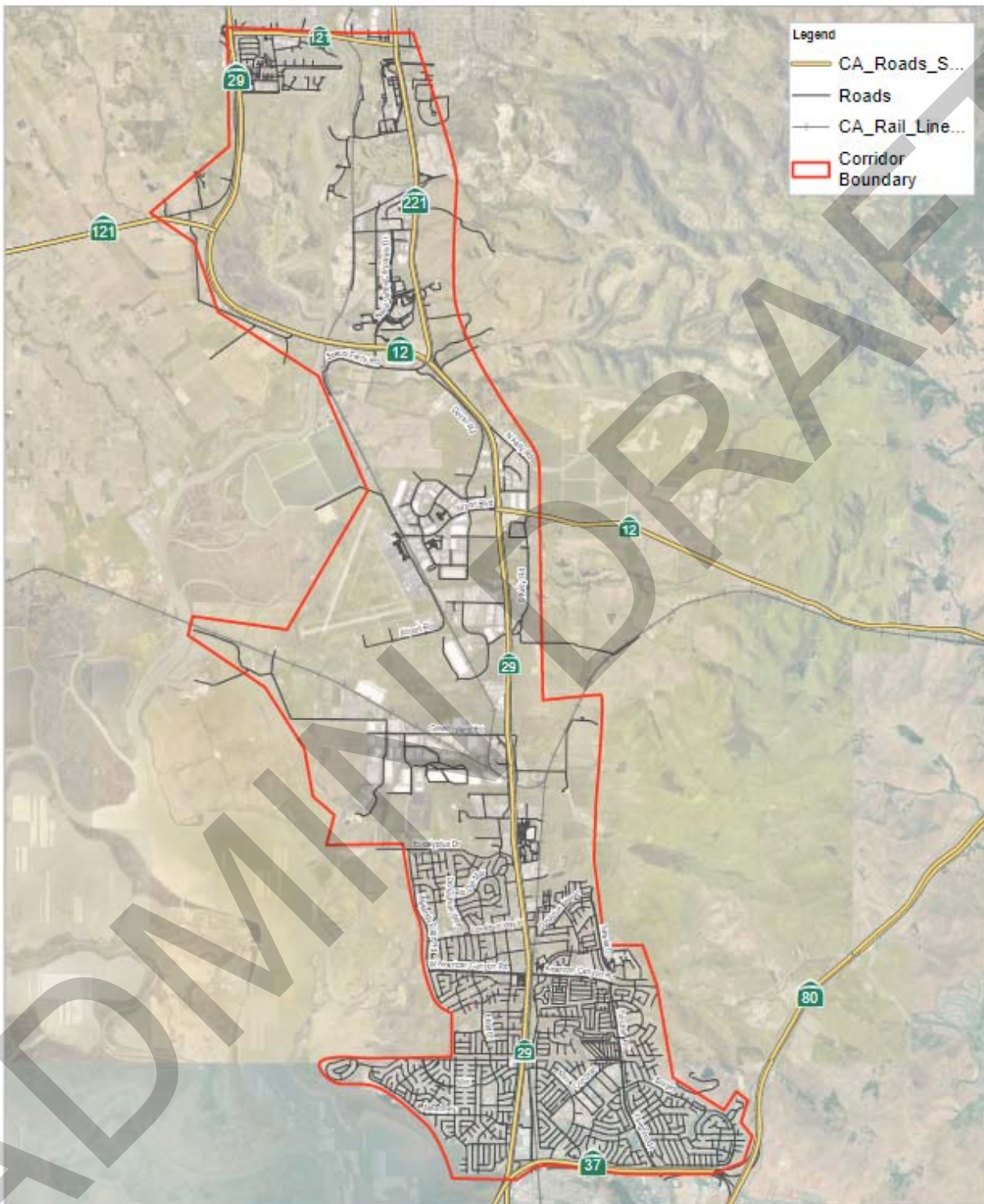
Study Objective

The objective of The SR 29 CMCP is to inventory known planned and programmed corridor improvements identified in prior corridor planning efforts to form a comprehensive multimodal package of prioritized improvements. The preferred package of multimodal improvements must be feasible, equitable, cost-effective, and have community support. The preferred multimodal package of improvements will serve to systematically guide future SR 29 corridor programming decisions over a 20-year timeframe based on available funding. Enhancements for multimodal travel, parallel capacity, operational, and telecommunication strategies were a key focus of the SR 29 CMCP. Requisite technical information consistent with state and federal grant program guidelines and implementation phasing of the multimodal improvement package were also key elements of the Plan.

Figure 1: Regional Context



Figure 2: SR 29 Study Corridor



Study Approach

To determine the most cost-effective solution for resolving the various operational and safety needs on the SR 29 corridor, the SR 29 CMCP holistically examines the existing and future operational and safety performance of SR 29 from its juncture with SR 37 to Imola Avenue (approximately 11.5 miles). Using the Smart Mobility Framework approach, a performance-based analysis was performed to develop and evaluate alternative corridor improvement concepts. The results of the performance analysis were combined with substantial input from the public to inform the ultimate selection of the SR 29 preferred corridor concept recommendation. The SR 29 preferred corridor concept with associated multimodal improvements establishes the funding priorities for the corridor that best meet both the local and regional goals while providing the highest return on investment (benefit-cost) of limited regional transportation funding over the next 20 years.

The SR 29 CMCP includes the following primary objectives:

- Draw from existing data sources and apply advanced data collection technology and resources such as multiple “Big Data” data sources and video to establish travel characteristics, vehicle/bicyclist/pedestrian counts, vehicle speeds, and travel time variation trends to establish an accurate baseline;
- With direct input from the public, develop a preferred corridor concept that: 1) maximizes efficiency and safety; 2) achieves acceptable operating conditions relative to projected future demand; 3) improves air quality, economic development, and socially equity; 4) is context sensitive in accord with SR 29’s rural and scenic character; and, 5) minimizes potential impacts to the natural environment;
- Consistent with Caltrans’ *Smart Mobility Framework 2010* and the *2018 Comprehensive Multimodal Corridor Plan Guidelines* and *SB 1 Solutions for Congested Corridors Program Guidelines* from the California Transportation Commission (CTC), perform a transparent and objective performance-based analysis to identify a preferred corridor concept to calculate life-cycle benefit-costs that support infrastructure investment decisions made by NVT, MTC, Caltrans District 4, and other stakeholders including the County of Napa and the Cities of Napa and American Canyon.

The SR 29 CMCP builds on a solid foundation of plans, policy documents, and community outreach efforts already completed along the SR 29 corridor. In particular, the SR 29 CMCP is a continuation of the outreach, analysis, and findings from the SR 29 Gateway Corridor Improvement Plan (NVT, 2014).

The SR 29 Gateway Corridor Improvement Plan was a community driven vision and improvement strategy for the southern portion of SR 29 from the Vallejo Ferry Terminal to the Trancas Park & Ride lot (near Redwood Road in the City of Napa). It included extensive public outreach, engaging the community in conversations about transportation challenges on the corridor and identifying possible solutions. The Gateway Plan evaluated current and future travel conditions guided by community input to develop a corridor vision and identified multimodal safety and operation improvements to roadway sections and intersections. Given this prior planning groundwork, the SR 29 CMCP carries forward several

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State Route 29
Gateway Corridor Improvement Plan
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projects identified in the Gateway Plan alongside new improvement concepts and strategies for evaluation and community feedback.

The SR 29 CMCP expands the breadth of analysis beyond what was addressed in the SR 29 Gateway Corridor Improvement Plan. The CMCP broadens the planning area by including parallel facilities east and west of the highway and expands the technical analysis and performance assessment of the identified improvements consistent with state guidance. However, the SR 29 CMCP study area ends south of Imola Avenue, rather than the Trancas Park & Ride lot.

Public Outreach Overview

An effective community engagement program creates confidence in the planning process, promotes broad-based understanding, and reflects the interests and needs of the community. Successful implementation of the improvements recommended in this plan will require cooperation between NVTa, Napa County, the cities of Napa and American Canyon, and the community as a whole.

The SR 29 CMCP pivots off the prior Gateway Plan community engagement efforts. Gateway Plan input primarily focused on the identification of problem areas and needs which helped inform improvement recommendations. The SR 29 CMCP community engagement was strategically targeted to gauge the public's support for the SR 29 CMCP candidate improvement concepts.

The SR 29 CMCP outreach effort was robust in its focus on reaching the diverse communities. This outreach effort included the following:

- **Community Workshops**
 - November 19, 2019
 - April 21, 2020 (To be confirmed)
- **Staff Working Group, including:**
 - Napa Valley Transportation Authority (NVTa)
 - City of Napa
 - City of American Canyon
 - Napa County
 - Caltrans District 4
- **Stakeholder Committee**
- **Media**
- **Project Logo Branding and Project Information Cards**
- **Online Engagement**
- **Interactive Mapping Tool**



The input received through these various channels helped inform the SR 29 preferred improvement concept and associated multimodal improvements. The community workshops, their participation and insights as well as each of the other outreach efforts are more fully described in the **Public Outreach** section of this report.

Organization of this Plan

This plan is organized into seven chapters. These chapters include:

Chapter 1 - Introduction: includes a brief study background, study objective, approach/purpose and need, public outreach overview and organization of this SR 29 CMCP document.

Chapter 2 - Planning Guidance and Metrics: examines past planning documents for planning context and the Caltrans Smart Mobility Framework for performance criteria for selection of priority of improvements.

Chapter 3 - Public Outreach: summarizes outreach process conducted to gather feedback on potential solutions and preferred concepts

Chapter 4 - Existing Conditions: documents findings from field observations, technical analyses, and models

Chapter 5 - Corridor Solutions: outlines the potential improvements identified for the corridor based on the existing conditions analysis and prior outreach conducted during the SR 29 Gateway Corridor Improvement Plan

Chapter 6 - Performance Assessment: evaluates the preferred concept under current and future conditions based on performance metrics described in the Introduction

Chapter 7 - Preferred Corridor Plan: describes the Preferred Corridor Plan that evolved from the Public Outreach and Performance Assessment efforts.

In addition, appendices provided under separate cover have more detail on analysis methodology, data, and findings as well as community feedback.

2 - Planning Guidance and Metrics

In providing an overall framework and planning guidance for the preparation of this SR 29 CMCP, an understanding of all past transportation related planning studies needed to be understood as well as the performance criteria for establishing a Comprehensive Multimodal Corridor Plan that meets mobility needs, is fundable and implementable. For this planning effort, the Caltrans *Smart Mobility Framework 2010*, as described in the following pages was utilized. It is consistent with both the *2018 Comprehensive Multimodal Corridor Plan Guidelines* and the *SB 1 Solutions for Congested Corridors Program Guidelines* from the California Transportation Commission (CTC).

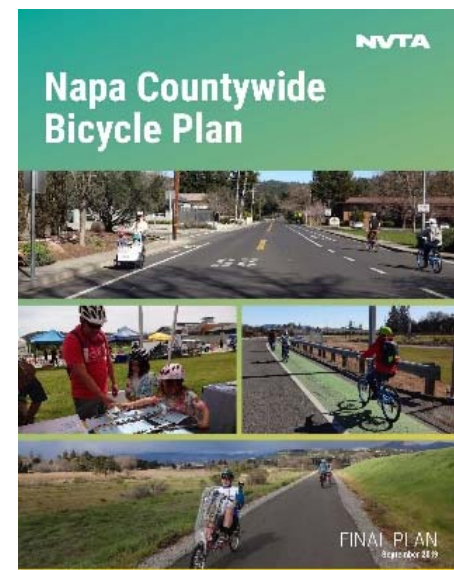
Planning Context

In addition to the SR 29 Gateway Corridor Improvement Plan, several other related planning documents were used to help inform the SR 29 CMCP. These are described below. It should be noted that the Caltrans District 4 System Planning division is currently developing the SR 29 Transportation Concept Report (TCR). As a key partner in the development of the SR 29 CMCP, Caltrans District 4 opted to delay completion of the SR 29 TCR until after adoption of the SR 29 CMCP to ensure consistency between the two documents.

Countywide Bicycle Plan (2019)

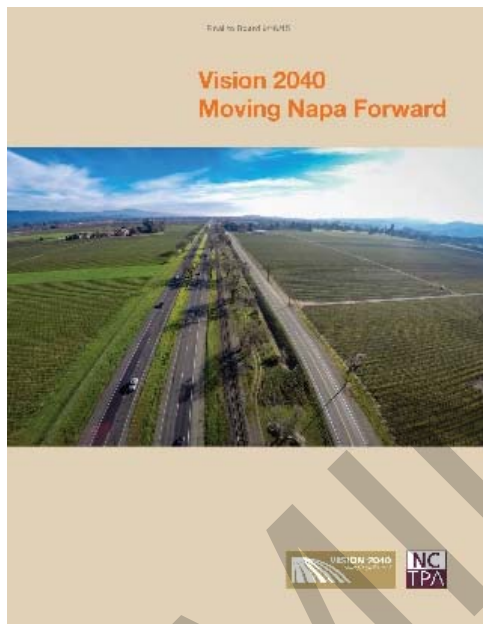
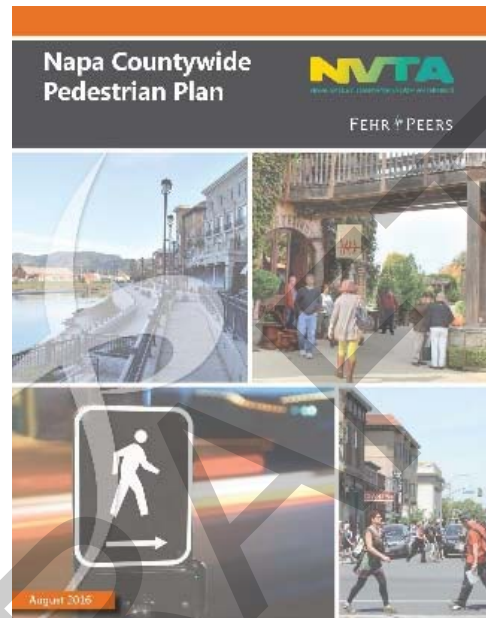
The 2019 Napa Countywide Bicycle Plan outlines a strategy to make bicycling accessible and appealing to the broader county community, beyond those who have traditionally identified themselves as bicyclists. The plan focuses on developing low-stress bicycle routes, improving safety, and improving access for disadvantaged communities.

Identified improvements in the SR 29 CMCP study area include closing gaps in the San Francisco Bay Trail and the Napa Valley Vine Trail. A shared use path is also recommended on SR 221 from SR 29 to Imola Avenue, and bicycle lanes are recommended on SR 29. In American Canyon, shared use paths are proposed for both sides of SR 29 in addition to parallel off-street bicycle routes along Devlin Road and S Kelly Road.



Countywide Pedestrian Plan (2016)

The 2016 Countywide Pedestrian Plan aims to improve safety, convenience, and accessibility for people walking in Napa County. In addition to recommending new sidewalks and accessibility features, the Pedestrian Plan carries forward recommendations for larger-scale improvements that would positively impact the experience for pedestrians, including roundabouts at First Street at SR 29.

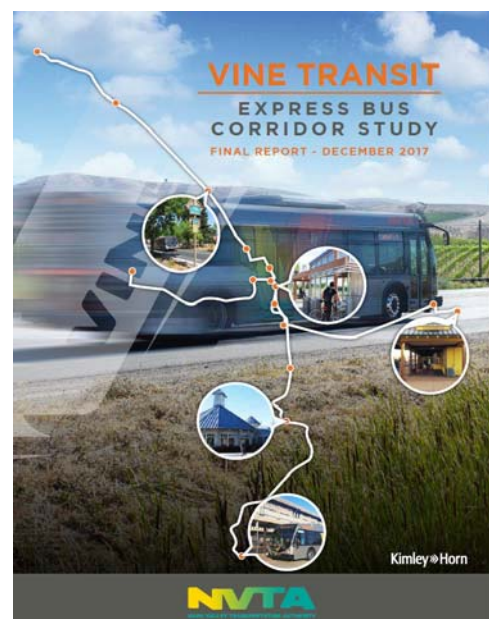


Countywide Transportation Plan – Vision 2040: Moving Napa Forward (2014)

The Vision 2040 plan sets long-range goals and investment strategies for all modes of transportation in Napa County over the next 25 years. In addition to identifying multimodal improvements, it highlights the nexus between multimodal transportation and economic development, public health, and place-making.

Vine Transit Express Bus Corridor Study (2017)

The Vine Transit Express Bus Corridor Study identified and recommended operational and capital improvements for the express bus system in the Napa Valley. Many of these solutions are evaluated in this CMCP, including queue jumping, use of shoulders, and station improvements.

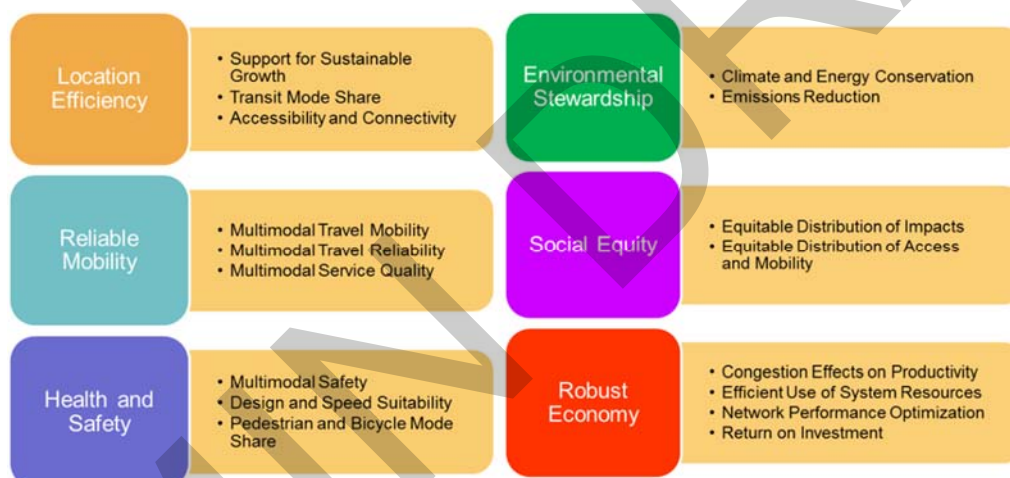


Smart Mobility Framework

Caltrans' *Smart Mobility Framework 2010: A Call to Action for the New Decade* provides a broad planning framework to guide multimodal and sustainable transportation planning and project development. It also provides tools to assess how plans, programs, and projects meet Smart Mobility goals throughout the state.

Smart Mobility moves people and freight while enhancing California's economic, environmental, and human resources by emphasizing convenient and safe multimodal travel, speed suitability, accessibility, management of the circulation network, and efficient use of land.

The Smart Mobility Framework is premised on six key objectives: Location Efficiency; Reliable Mobility; Health and Safety; Environmental Stewardship; Social Equity; and, Robust Economy. These six objectives are informed through the application of seventeen candidate performance measures. The Smart Mobility Framework process is consistent with both the 2018 Comprehensive Multimodal Corridor Plan Guidelines and the SB 1 Solutions for Congested Corridors Program Guidelines from the California Transportation Commission (CTC).



Source: Caltrans' *Smart Mobility Framework 2010: A Call to Action for the New Decade*

The fundamental premise of the Smart Mobility Framework is to ensure that planning or programming decisions for transportation improvements are performance based, transparent, and address sustainable outcomes and objectives. The performance metrics selected for the SR 29 CMCP informed each of the six Smart Mobility Framework objectives to ensure that the resulting improvement recommendations provide a balanced, sustainable, and multimodal assessment of current and forecast corridor conditions. Requisite rubrics include: planning level cost opinions; vehicular delay and buffer time reduction; level of traffic stress scores; mode shift and vehicle miles traveled (VMT) reduction; collision reduction benefit; health and air quality benefit; societal cost and benefit monetization factors (per Caltrans 2018 Economic Parameters); and return on investment (i.e., benefit-cost). Equal attention will be given to documenting the beneficial outcomes of measures not directly reflected in the benefit-cost assessment. These include: Plan Consistency (with existing plans); Policy Consistency (NMTA, the City and County of Napa, City of American Canyon and Caltrans); Environmental/Institutional Sensitivity; Adaptation; Economic Development and, Community Acceptance. Metrics selected for this SR 29 Plan are described on the following section. Results from this analysis were combined with substantial input from the public to inform the selection of the preferred multimodal corridor improvement package.

Performance Metrics

The performance metrics selected to evaluate this Plan are coordinated with the six objectives outlined in the Smart Mobility Framework to ensure the resulting improvement recommendations provide a balanced, sustainable, and multimodal assessment of current and future corridor conditions.

Many of these performance measures do not have established standards but were analyzed to better understand the existing and future operational characteristics of SR 29 and inform a comparative analysis of improvement concept alternatives. Use of additional metrics other than vehicular Level of Service (LOS) is consistent with the Smart Mobility Framework and with the recent Senate Bill (SB) 743 intended to streamline the California Environmental Quality Act (CEQA) process. Some metrics such as delay, collision reduction, mode shift, and vehicle miles of travel reduction can be monetized and were incorporated into a benefit-cost analysis. Other quantifiable indices, such as suitability scores (i.e. level of traffic stress analysis), adaptation assessments, economic development assessments, and environmental justice impacts, etc. are not conducive to being monetized. Although some of the presented performance metrics cannot be monetized, assessment of the results of these analyses provide value to informing improvement recommendations.

The measures of effectiveness for the SR 29 CMCP performance metrics and analysis tools used to generate the measure of effectiveness is mapped in matrix form in Table 1. Also shown is whether the measure can be monetized for inclusion in a benefit-cost assessment. The performance measures by

Table 1: Performance Measures of Effectiveness and Analysis Tools

Analysis Purpose	Measure of Effectiveness	Model or Analysis Tool											
		Solano-Napa ABM	Microsimulation	Level of Traffic Stress	NCHRP 552 Method	TCRP 118 Elasticity	HSM Part C CMFs	SB1 Emissions Calc.	GIS Analysis	Online Mapping Tools	Literature Review	NPMRDS/INRIX	Monetized Benefit?
Baseline Travel Demand	Trips, Ridership, VMT												Y
Future Travel Demand	Trips, Ridership, VMT												Y
Roadway Operations	Delay, Buffer Time, Throughput												Y
Transit Ridership	Ridership, VMT												Y
Pedestrian/Bike Connectivity	Access Indices												N
Pedestrian/Bike Mode Shift	Trips, VMT												Y
Safety	Collision Reduction, Rate												Y
Air Quality	Emissions (criteria, GHG)												Y
Social Equity	Access, Benefit/Burden												N
Economic Development	GRP, Jobs, Income												N
Health	VMT												Y
Adaptation	Network Vulnerability												N

Location Efficiency

Accessibility and Connectivity

Bicycle Level of Traffic Stress (Bicycle LTS) measures a bicyclist's perceived sense of risk associated with riding in or adjacent to vehicle traffic. Roadways are assigned an LTS score based on posted speed limit, number of travel lanes, the type of bikeway provided, and other factors. Low-stress facilities would be considered by up to 60% of the general population a viable option for biking. Bicycle LTS in the study corridor was evaluated using methodology developed by the Mineta Institute. The objective is to provide a connected network of low-stress bicycle facilities within the study corridor.

Transit Mode Share

Transit mode share measures the degree that system and service improvements in transit service induce more ridership. The methodologies described in TCRP-118 the Bus Rapid Transit Practitioner's Guide were used to determine the degree of mode shift to transit resulting from proposed service and system transit improvements.

Vehicle Miles Traveled VMT

Vehicle Miles Traveled (VMT) is calculated by multiplying the number of trip and the average segment lengths of a given trip. Per California's Senate Bill (SB) 743, VMT is now the operative metric used to assess transportation impacts under the California Environmental Quality Act (CEQA). VMT is a measure of both transportation and land use efficiency given that shorter trips or trips not requiring an automobile will result in less VMT.

Reliable Mobility

Multimodal Service Quality

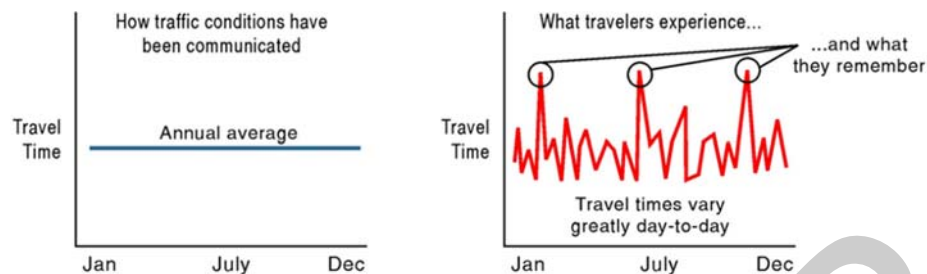
Baseline service quality in the SR 29 corridor was empirically based using INRIX and the National Performance Monitoring Research Data Set (NPMRDS) travel time data sets. The Federal National Performance Rule Congestion Threshold performance measure was used to determine the performance of roadway segments within the study corridor: Uncongested ($\geq 60\%$ of free-flow) vs. Congested ($< 60\%$ of free-flow).

To forecast corridor performance a VISSIM micro-simulation model was developed to determine corridor-wide person throughput, vehicle throughput, vehicle miles of travel and travel time, travel time index (TTI), and delay.

Intersection operations were also quantified using the SR 29 micro-simulation model through the determination of Level of Service (LOS) at key intersections. LOS is a qualitative metric that describes the experience of motorists. Intersections and approaches are assigned scores from "A" through "F" with A being free-flowing traffic with little to no congestion and F being highly congested. LOS criteria are established to determine whether a given roadway facility is providing the desired quality of service. The methodologies used to determine LOS (i.e. delay, speed, density) were based on the Highway Capacity Manual (HCM) 6th Edition. Caltrans operating standards have been applied that identify the cusp between LOS C and D as the acceptable threshold for SR 29.

Multimodal Service Reliability

Travel time reliability is defined as the variation in travel time for the same trip from day to day (“same trip” implies a trip made with the same purpose, from the same origin, to the same destination, at the same time of the day, using the same mode, and by the same route). If variability is large, the travel time is considered to be unreliable, because it is difficult to generate consistent and accurate estimates for it. If there is little or no variation in the travel time for the same trip, the travel time is considered to be reliable.



Two sources of the travel time data were used for the SR 29 CMCP, a combination of INRIX data (for passenger vehicles and trucks combined) and NPMRDS data. These data were used to establish baseline passenger car and freight travel time reliability for the SR 29 CMCP. The following performance metrics for passenger vehicles were generated:

- Buffer time
- Buffer time index

Both the national rule's definition of reliability (based on 80th percentile speed) and the HCM definition of reliability (based on 95th percentile speed) were applied.

To estimate the change in reliability (buffer time only) as a result of the SR 29 CMCP improvement concepts, the change of travel time reliability was holistically projected for each SR 29 CMCP alternative under future year conditions. The relative change in the Travel Time Index (TTI) between baseline and future was applied to adjust the empirically based NPMRDS baseline estimate of buffer time. This assumes that the effect of construction, weather, and incidents reflected in the most recent 12-24 months of NPMRDS data is reasonably reflective of the frequency of like events in the future.

Health and Safety

Pedestrian and Bicycle Mode Share

To estimate the induced demand associated with the bicycle improvements proposed in the study corridor, the National Cooperative Highway Research Program (NCHRP) 552 methodology provided in the Guidelines for Analysis of Investment in Bicycle Facilities was utilized. The analysis quantifies the induced demand mode shift (induced demand) associated with the proposed improvements, and monetizes the annualized mobility, health, recreation and decreased auto use benefits provided by the projected mode shift at high, moderate and low estimates. The estimated mode shift is then converted to VMT reduction by applying an average trip length estimate.

Design and Speed Suitability (i.e., Collision Reduction Potential of Infrastructure Improvements)

Based on the contributing factors from the baseline collision hot-spot assessment, Parts B and D of the Highway Safety Manual (HSM) 2010 were applied to identify location-specific and corridor-wide countermeasures. At intersections, Part C of the HSM was applied to estimate the potential safety

performance and crash reduction potential of identified infrastructure design treatments. Estimated collision reductions are then monetized using societal cost estimates from the Caltrans 2018 Economic Parameters.

Environmental Stewardship

Vehicle Emissions (Criteria Health-Based Pollutants and Climate Change Pollutants)

Corridor and intersection-specific on-road mobile sources of health-based criteria pollutants (including VOC, NOx, and PM₁₀) and climate change pollutants (greenhouse gases) were estimated using the California Transportation Commission (CTC) Emissions Analyzer which is based on modified base emission rates consistent with the California Air Resources Board (CARB) emissions model EMFAC.

Adaptation

A qualitative assessment of the degree of vulnerability and sustainability of future transportation investments in the SR 29 corridor as well as potential benefits associated with evacuation responses to climate change related events such as flood and wildfire was determined using the Caltrans Vulnerability Mapping web-based resources.

Social Equity

Equitable Distribution of Benefits and Impacts

A qualitative assessment of the distribution of benefits (i.e., access to and utilization of) and impacts (construction, environmental, and right-of-way impacts) of the proposed future transportation investments in the SR 29 corridor relative to advantaged and disadvantaged communities was determined through application of Cal-environ web-based mapping resources.

Robust Economy

Return on Investment

To provide an indication of the projected return on investment of the proposed investment in the SR 29 corridor, a holistic 20-year life cycle benefit-cost (B/C) metric is computed based on the net present value (i.e. life cycle duration using a discount rate of four percent) incorporating the following five measures of effectiveness:

- Safety Benefit (predicted collision reduction)
- Health Benefit (mode shift to active transportation)
- Reduced Vehicle Operating Cost Benefit (VMT reductions)
- Delay and Buffer Time Reduction Benefit (delay and buffer time savings)
- Vehicle Emission Reduction Benefit (VMT and vehicular operations i.e., delay reductions)
- Operations and Maintenance Costs
- Initial Capital Costs

Monetized benefits were based on the 2018 societal cost parameters developed by Caltrans. Improvement costs (capital and operations and maintenance) used a format based on Caltrans preparation guidelines for developing project planning cost options.

The following assessments, though qualitative, relate to the robust economy objective given the importance of ensuring and protecting the integrity and sustainability of the proposed SR 29 corridor investment.

Economic Development

An economic assessment using IMPLAN economic multipliers of the short- and long-term economic impacts of the proposed investments in the SR 29 corridor on Gross Regional Product, job creation and income.

Plan/Policy Consistency

A qualitative assessment of the degree that the proposed investments in the SR 29 corridor are politically and institutionally feasible and implementable.

Emerging Technologies

A qualitative assessment of the degree that the proposed investments in the SR 29 corridor are compatible with emerging transportation technologies and service trends.

Data Collection/Retrieval

Performance measures require data. The following data sources were tapped to collect/retrieve data needed to operationalize the performance measures used for the SR 29 CMCP.

Longitudinal Employment-Housing Dynamic (LEHD) Origin-Destination Data

Longitudinal Employer-Household Dynamics (LEHD) data is primarily based on Unemployment Insurance (UI) earnings data and the Quarterly Census of Employment and Wages (QCEW), and censuses and surveys. Firm and worker information are combined to create job level quarterly earnings history data, data on where workers live and work, and data on firm characteristics, such as industry. The most recent available LEHD data (2017) was utilized.

Streetlight Data Origin-Destination Data

Streetlight Data is cell data including navigation-GPS and other location-based data from connected cars, trucks, and location apps collected on an “opt-in” basis. Streetlight also uses publicly available Census, traffic counts, and points of interest data. This sample-based data is expanded, tracked and mapped using proprietary algorithms to determine travel characteristics including origins-destinations by trip purpose. A full year of Streetlight data for calendar year 2018 was acquired by NVTa for regional planning purposes.

National Performance Monitoring Research Data Set (Speed Data)

Per and the National Performance Management Measures Final Rule, the preferred data for complying with the National Highway Performance Program is the National Performance Management Research Data Set (NPMRDS) from FHWA. The NPMRDS provides average speed data (five-minute averaging time) for federally defined roadway segments designated as part of the National Highway System (NHS) including SR 29.

Two and half years of NPMRDS speed data was retrieved (1/1/2017 to 7/31/2019). Data was filtered to isolate average weekday conditions (Tuesday-Thursday AM/PM peak periods) for passenger vehicles

and heavy-duty truck vehicles separately. To identify the AM/PM peak hour, the peak periods between 6:00 AM to 9:00 PM and 4:00 PM and 7:00 PM were analyzed to identify the most congested continuous 60-minute span for both passenger vehicles and trucks.

After filtering the data to isolate average peak hour conditions, a total of 1,048,575 individual data records were processed to yield 1,195 averaged observations for 278 segments (reflecting both directions of travel) for both passenger vehicles and heavy-duty trucks respectively. The only data cleansing applied was to remove extreme high-speed outliers (e.g., 90+ mph) from the free flow speed, congestion and reliability calculations. All data was processed and summarized based on the NPMRDS segmentation.

INRIX Data (Speed Data)

Through the Metropolitan Transportation Commission (MTC), NVTA accessed one-year of INRIX speed data (7/1/2018 to 6/30/2019). This data was processed similarly to the NPMRDS data. INRIX collects data streams from local transport authorities, sensors on road networks, fleet vehicles such as delivery vans, long haul trucks and taxis. It includes data for additional roadways other than the NHS. This allowed local parallel facilities to SR 29 to be analyzed.

Traffic Counts

AM/PM peak hour intersection turn movement counts utilized in SR 29 CMCP were a combination of existing counts sourced from recent planning studies including: Gateway Corridor Plan (1 intersection); Imola Avenue Complete Streets (9 intersections); Soscol Junction PA-ED Traffic Analysis (7 intersections); and Watson Ranch Specific Plan Traffic Impact Analysis (21 intersections). New traffic counts were performed in November 2019 specifically to update or augment the existing traffic count data. These include:

- SR 221 -- Napa Valley Corporate Way, Napa, CA
- SR 29-- N Kelly Rd, Napa, CA Syar Way -- Kaiser Rd, Napa, CA
- Napa Valley Corporate Dr -- Kaiser Rd, Napa, CA
- Enterprise Way -- Kaiser Rd, Napa, CA
- SR 221 -- Kaiser Rd, Napa, CA
- Napa Valley Corporate Dr -- Napa Valley Corporate Way, Napa, CA
- Napa Valley Corporate Dr -- Bordeaux Way, Napa, CA
- Devlin Rd -- Soscol Ferry Rd, Napa, CA
- Stanly Ln -- SR 12, Napa, CA
- Stanly Ln -- Golden Gate Dr, Napa, CA
- Kelly Rd -- SR 12, Napa, CA
- Devlin Rd -- S Kelly Rd, Napa, CA
- Devlin Rd -- Tower Rd, Napa, CA
- Airport Blvd -- Devlin Rd, Napa, CA

The source of the SR 29 daily segment counts was the NVTa 2018 Travel Behavior Study. These counts were collected in November/December 2018.

Transit Ridership Data

Transit ridership data for 2019 was provided by NVTa.

SWITRS and TIMS Collision Data

Collision data was obtained from the Statewide Integrated Traffic Records System (SWITRS) for the years between 2014 and 2018. Transportation Injury Mapping System (TIMS) data was also accessed for the same period to cross reference the injury and fatality collision data in SWITRS.

Infrastructure Costs

Planning-level costs for infrastructure recommendations were obtained from existing planning studies and regional transportation planning documents. Where costs were unavailable through these sources, costs were estimated based on industry standard planning level procedures.

Societal Costs

Societal cost data were sourced from the 2018 Economic Parameters published by Caltrans. These societal costs are consistent with parameters resident in the Caltrans benefit-cost analysis tool Cal-BC.

On-line Mapping Resources

On-line mapping tools such as Climate Change Vulnerability (Caltrans District 4), LEHD, and CalEnviroScreen 3.0 were utilized to inform examinations for adaptation, travel pattern and environmental justice respectively.

Analysis Tool Development

Solano Napa Activity Based Model

The Solano-Napa Activity-Based Model (SNABM) is an analysis tool that gives NVTa the capability to generate technical information pertinent to the understanding of travel behavior and transportation network performance within the SR 29 study corridor boundary. This information is critical to the development, updating and monitoring of the NVTa's transportation capital improvement program, analysis of specific transportation projects and programs, as well as the General Plan land use and transportation strategies and policies of its member agencies including the Cities of American Canyon and Napa and the County of Napa. The SNABM model yields the future volume sets (i.e., roadway segment volumes and intersection turn movements) to inform operational analyses that determine whether a given road segment or intersection will operate acceptably in the future.

The most recent version of the SNABM model including a 2015 Baseline and 2040 Out-year was utilized for the SR 29 CMCP. Though the SNABM model has been regionally validated/calibrated, a sub-area validation analysis was performed to better ensure that the SNABM model would generate reasonable forecasts within the study corridor sub-area. The following tasks were performed as part of the sub-area validation:

- Approximately 40 intersection turn movement counts within the SR 29 study corridor boundary were summed to generate AM and PM peak hour segment volume sets for validation purposes;
- For segments not emulating observed counts, select link was performed to identify the TAZs that contribute trips on the link; the peak hour origin-destination pairs were then incrementally adjusted in relative proportion to the link error and the assignment step re-run. This procedure modifies the AM/PM peak hour factors to allow the daily origin-destination table to better emulate peak hour conditions.
- % Root Mean Square Error (%RMSE) was performed for the AM and PM peak hour assignments respectively. Validation criteria was %RMSE of 40% or less overall.

Based on the sub-area validation results in Table 2, the SNABM model was determined to be suitable for generating reasonable travel forecasts within the SR 29 study corridor. A detailed description of the SNABM sub-area validation analysis is provided in Appendix A.

Table 2: SNABM Sub-Area Validation Results

%RMSE	AM PH	PM PH
Original SNABM Subarea	57.3%	49.2%
After Subarea Validation	41.5%	34.9%

A 2015 baseline model run and two travel forecast scenarios were developed: 1) a 2040 Programmed Forecast that reflected all currently programmed projects (i.e., considered the future baseline); and, 2) SR 29 CMCP Planned Forecast which included all applicable SR 29 CMCP roadway improvements. Coding of network attributes (lane capacity, free flow speed, etc.) for new roadways was based on accepted network coding conventions used by NVTA.

The SNABM model projects approximately 20% growth in AM/PM peak hour traffic levels by 2040. This equates to slightly less than a one percent annual average growth rate over the planning horizon of the plan.

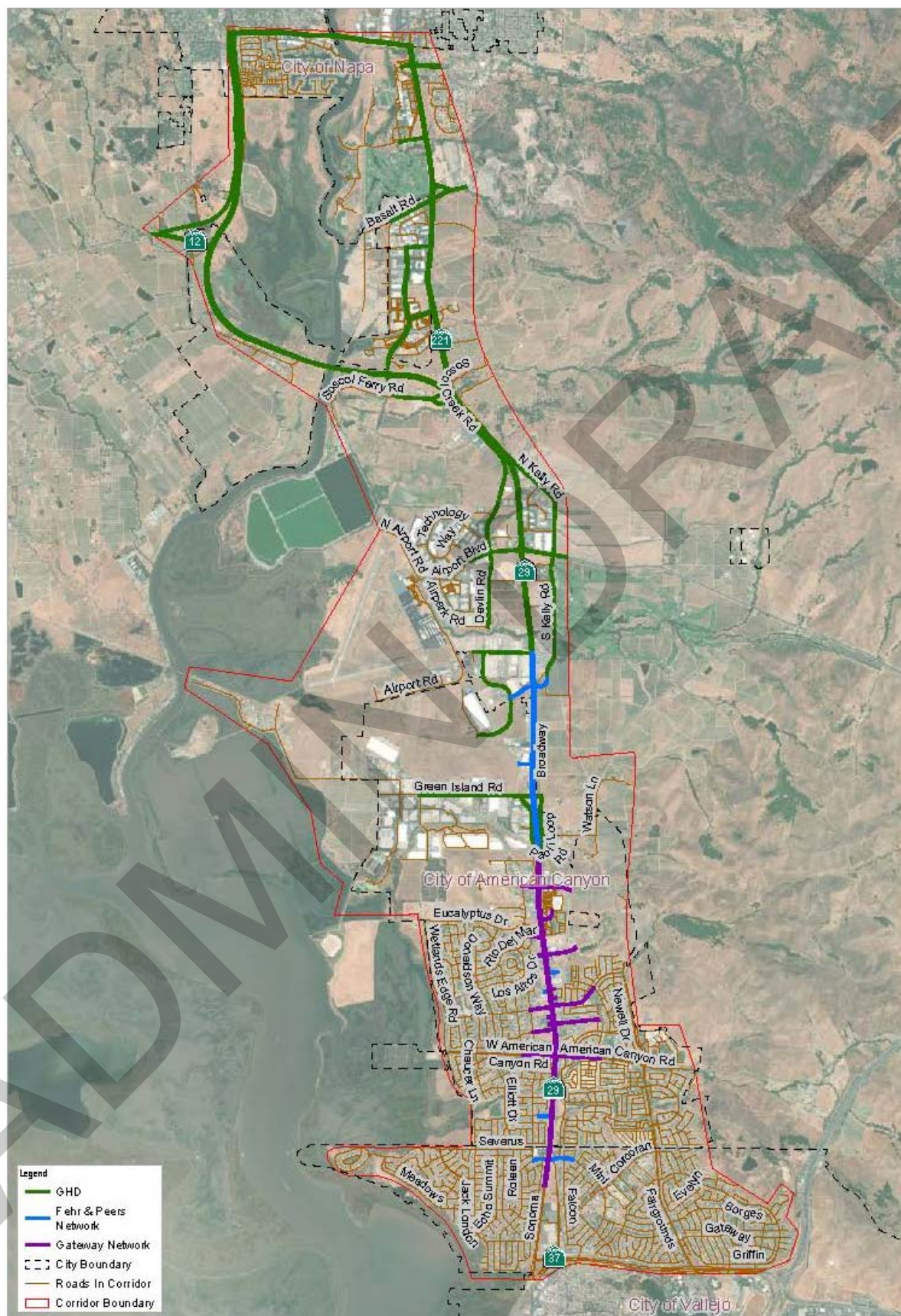
All raw model volumes were processed by applying the AM and PM peak hour model growth to ground counts to essentially “grow” the counts to reflect future year conditions and circulation changes.

SR 29 VISSIM Micro-simulation Model

VISSIM microsimulation software was developed to simulate SR 29 corridor operations under both baseline and future year conditions. The model network was built by amalgamating VISSIM networks completed for other planning studies (SR 29 Gateway Plan and Watson Ranch Specific Plan Traffic Impact Analysis) and new coding to complete the remaining applicable SR 29 CMCP study corridor network. Figure 3 displays the sources by location used to develop the corridor network.

The SR 29 micro-simulation model was validated to applicable criteria established by the Federal Highway Administration (FHWA) *Guidelines for Applying Traffic Microsimulation Software* using INRIX and NPMRDS travel time data. The SR 29 microsimulation model was used to analyze the operational performance using volume sets generated from the 2040 Programmed and SR 29 CMCP travel forecasts. All VISSIM microsimulation runs were based on a minimum 10-minute seeding time, 60-minute analysis time (divided into four 15-minute intervals), and reflect an average of 5 multiple runs. The development of the SR 29 microsimulation model is described in greater detail in Appendix B.

Figure 3: SR 29 Microsimulation Model Network Development



3 - Public Outreach

A robust and targeted public outreach program was created to augment the prior Gateway Plan outreach effort and to gauge public acceptance of specific improvement options.

Outreach efforts included both traditional and non-traditional venues for gathering community input.

These outreach efforts, starting with the Community Workshops, are more fully described in the following sections. Clearly, as will be evident through the process, the input received through these various channels helped inform and guide the analysis and the SR 29 corridor solutions that ultimately lead to the creation of the SR 29 CMCP, itself.

Community Workshops

Two public workshops were held during the course of the plan's development on November 12, 2019 and on April 21, 2020. Both were supplemented with on-line virtual workshops which emulated all materials presented at the traditional workshops. This allowed the results of both workshops to be appropriately merged and summarized together. Presentation materials including all input/responses from the public workshops are provided in Appendix C.

Workshop #1

A public workshop was held on November 12, 2019 to introduce the project to the public, inform the public how to stay actively engaged during its development; and gather feedback from the community on the potential solutions under consideration. Of the 31 attendees, seven were staff or elected officials from the City of American Canyon.

Building on prior community outreach conducted for the SR 29 Gateway Plan, this workshop presented potential improvement concepts for the corridor and asked attendees to share their thoughts and preferences.



Attendees were also asked a series of polling questions about their current experiences on the corridor and their priorities for improvements.

Most respondents reported that driving was their most frequent mode traveled on the SR 29 corridor. Few people said they walk or bicycle on the corridor currently, citing concerns about safety and a lack of dedicated paths. Transit on the corridor is not commonly used by attendees, due to concerns about travel time.

Workshop attendees rated improving safety for people walking and driving as their highest priority for the corridor, followed by improving safety for transit and then people bicycling. Most that choose not to walk cited safety concerns or lack of designated paths. Similarly, the reason most often cited for not biking was fear for safety at 52.38%, followed by lack of paths/connections at 28.57%.

Reducing vehicle congestion and improving signal timing were also identified as top priorities, in addition to improved connectivity for bicyclists.

Potential solutions rated as top priorities by attendees include:

- Increase parallel roadway capacity
- Multimodal improvements on SR 29 between SR 37 and Soscol Junction
- Intersection improvements on SR 29 at Airport Drive and at Carneros Highway
- Transit frequency improvements on SR 29 including queue jumps or part-time use of shoulder for transit vehicles

A complete summary of Workshop #1 is provided in Appendix D.

Workshop #2

The second public workshop was held on **April 21, 2020** to present the draft SR 29 CMCP including the proposed multimodal improvements to the community for comment. In recognition of the COVID-19 meeting and gathering restrictions, the April workshop was performed remotely via webinar to the public. **XX** members of the public participated in the workshop. A complete summary of Workshop #2 is provided in Appendix D.



Staff Working Group

A staff working group was convened to guide development of this Plan and ensure consistency with the goals and complementary planning efforts of partner agencies in the region. Members included representatives from the following agencies:

- Napa Valley Transportation Authority (NVTa)
- City of Napa
- City of American Canyon
- Napa County
- Caltrans District 4

Each of these agencies were a key partner in implementing the recommendations in this Plan. The group met a total of nine times throughout the plan's development (monthly) to provide guidance and oversight on the process and review draft deliverables and documents at key milestones.

Media

Various forms of social media were used for posting announcements of outreach events including Facebook, Twitter and Next Door. Public announcements of outreach events were also made on various news and radio media outlets including the American Canyon Eagle, the Napa Valley Register and KVON Wine Country Radio station.

A mailing list of interested community members was also developed to share project updates and information about outreach opportunities. More than 160 people provided their email address for this list.

Project partners and stakeholders were also encouraged to use their existing social media platforms to share information about the project and outreach opportunities.

Project Logo Branding and Project Information Cards

To distinguish the SR 29 CMCP planning effort from other on-going planning activities by NVTa and partnering agencies a Project Logo was developed. This branding was placed on all project deliverables and products.



In addition, a Project Information Card was also developed to encourage the use of online engagement by the public particularly the use of the interactive mapping tool on the project website (see below). The Project Information Card was printed in both English and Spanish (back-to-back) and provided SR 29 project website URL.

Online Engagement

To support and supplement public engagement activities, a project website was developed, available at www.sr29corridorplan.com.

The website was used to share information about outreach events, host online versions of the community workshops, and gather feedback on draft project deliverables.

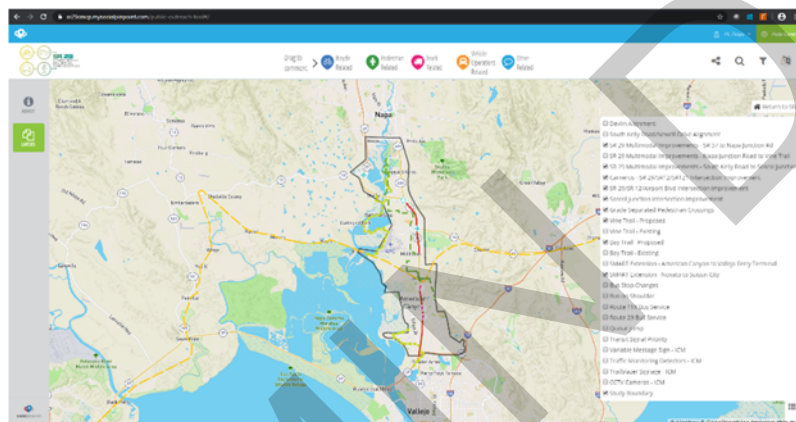
Over the course of the project study period, the website was visited 259 times by 198 unique website visitors. One survey was completed through the virtual workshop, and ten comments were left through

the comment form available on the site. Most input was received through the interactive mapping tool described below.

Interactive Mapping Tool

To supplement in-person engagement and gather additional feedback, an online interactive mapping tool was developed through the engagement platform Social Pinpoint. The mapping tool was made available on the project website beginning in early November 2019 and remained “live” through March 2020.

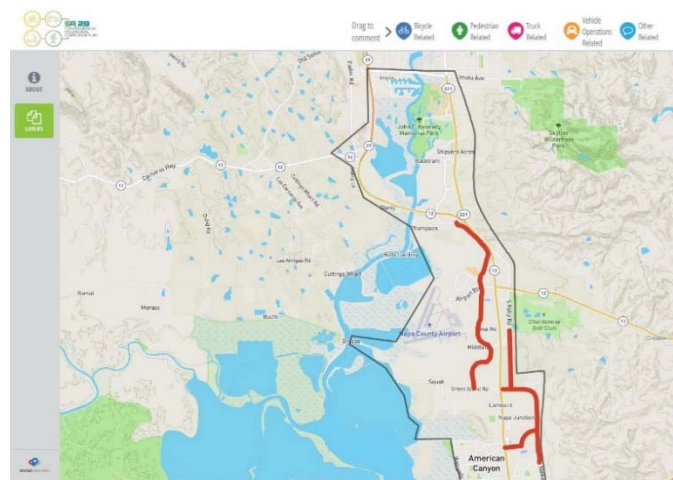
Typically, on-line mapping tools are used to solicit public input on where issues and needs are located by allowing geo-referenced pin-drops and comments to be placed on a map. However, given that extensive outreach to identify existing needs and issues had already been accomplished as part of previous planning efforts, the SR 29 CMCP outreach effort pivoted from earlier efforts to solicit more specific public input on candidate improvement concepts identified by these efforts. This entailed specifically tailoring the on-line mapping tool to show candidate improvement concepts (shown as separate map layers the user could toggle on or off) and provide input on whether they could support the improvement concept and why via a dialogue comment box. This approach allowed the SR 29 CMCP to leverage the previously gathered input on existing conditions and present potential corridor improvement concepts to the public.



The mapping tool, offered in over 70 languages including English and Spanish, presented graphical renditions of candidate corridor improvements and allowed the community to comment on the various options. Users were also able to leave location-specific comments on needs and issues.

Between November 2019 and March 2020, the website was visited 1,451 times by 550 unique users. Seventeen general comments were left and 186 targeted survey responses on the various improvement concepts were provided by the public.

Public input on the various improvement concepts examined as part of the SR 29 CMCP are summarized in the Corridor Solutions section of the plan. This input served to facilitate along with the technical analyses the ultimate selection of improvements to include in the SR 29 preferred multimodal package of improvements.



4 - Baseline Conditions

Regional Context

As described in the Gateway Plan and Vision 2040, SR 29 is an essential north-south connection within the North Bay's transportation network, providing connections to significant east-west routes, including SR 12 and secondary roadways, and SR 121 and SR 221 to the north. Many commuters travel on SR 29 from affordable housing in Solano County to jobs in Napa or Sonoma Counties, or from the Napa Valley to jobs in the greater Bay Area. On weekends and during summer and harvest months, the corridor also plays a significant role in bringing tourists to the Napa Valley wine region.

By 2040, the nine-county Bay Area region is projected to have a total of approximately 4.5 million jobs and 3.4 million housing units, or an additional 1.1 million jobs and 660,000 housing units from 2010 levels. The region's population is expected to grow to 9.3 million in 2040, as indicated by economic and demographic trends, housing production, and the Bay Area's unique role in the national and state economies. Within the study area, an additional 30,000 jobs and 10,000 housing units are projected.

As shown in Figure 4 (heat map of existing employment concentrations), SR 29 is also an important corridor for commercial activity and residential access, drawing in commuters from the rest of the region. Figure 5: Resident Locations and Concentration (LEHD) shows the concentration of residents in the study area. Figure 6 shows the concentration of total job locations in the study area.

Plan Bay Area and Priority Development Areas

The Association of Bay Area Governments (ABAG) and the Metropolitan Transportation Commission (MTC), the regional planning agencies for this MPO region, recently prepared Plan Bay Area, informed by the Sustainable Communities Strategy required to implement SB 375. The plan projects growth in households and jobs through 2040 and identifies strategies for reducing greenhouse gas emissions from cars and light trucks through land use and transportation planning efforts. These strategies plan for future growth in a way that encourages compact development with a broad array of housing types and transportation choices. To accommodate the Bay Area's projected growth while meeting environmental sustainability goals, Plan Bay Area focuses on directing development into Priority Development Areas (PDAs). PDAs are locally identified nodes of development (such as a corridor, a downtown, or an area around a transit station) that have substantial opportunity for infill housing that supports increased walkability and transit usage.

Region-wide, PDAs are proposed to absorb about 80 percent of new housing and 66 percent of new jobs on about five percent of the total regional land area. This pattern holds true for the one PDA identified in the SR 29 Corridor Planning Area, in American Canyon. In this city, approximately 81 percent of new housing and 67 percent of new jobs are projected to be located in the PDA. One other PDA has been identified in Napa County: Downtown Napa/Soscol Corridor, north and east of the SR 29 study corridor. In Vallejo, the Waterfront and Downtown PDA is located southwest of the SR 29 study corridor.

Figure 4: Employment Concentrations Served by the SR 29 Corridor

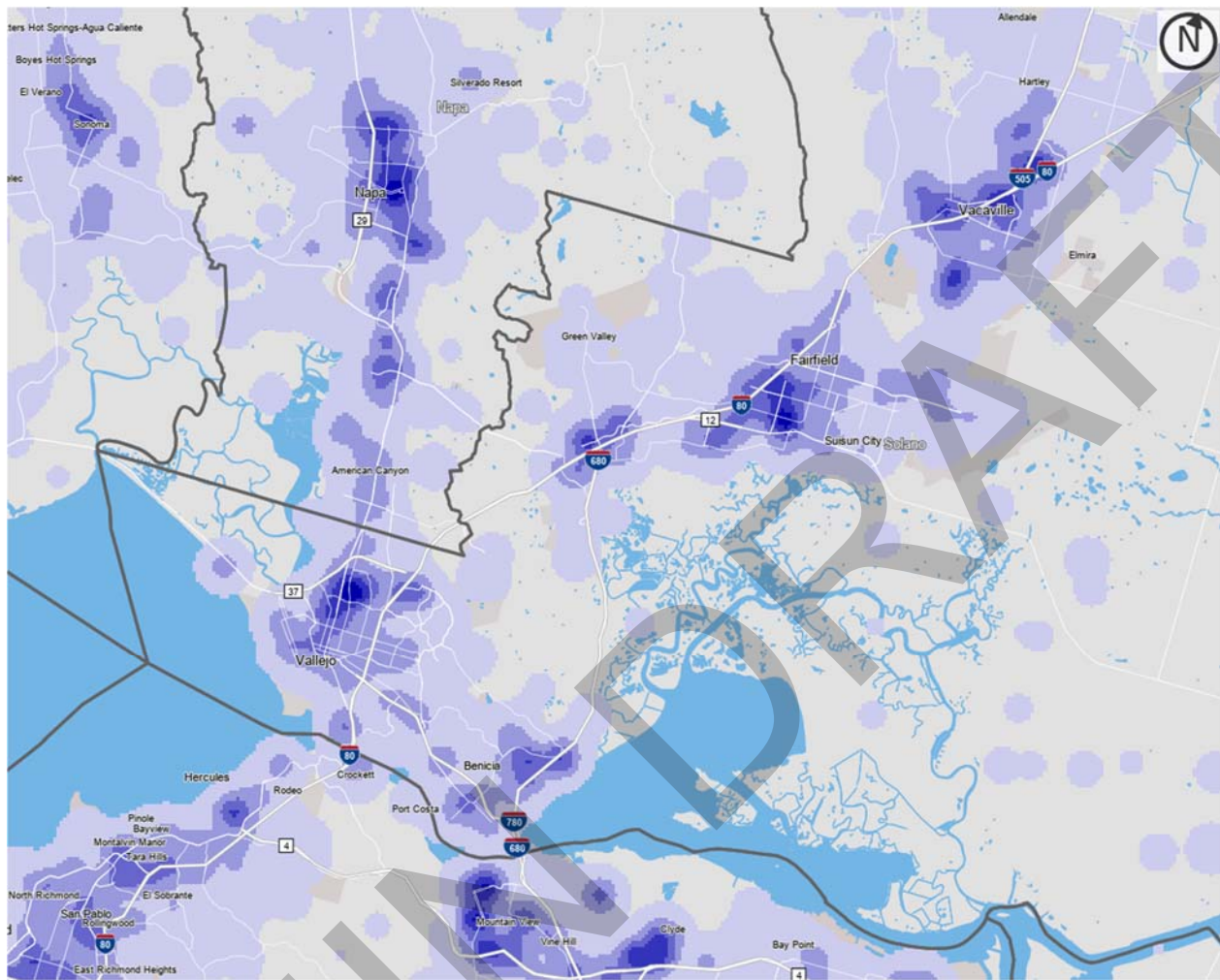


Figure 5: Resident Locations and Concentration (LEHD)

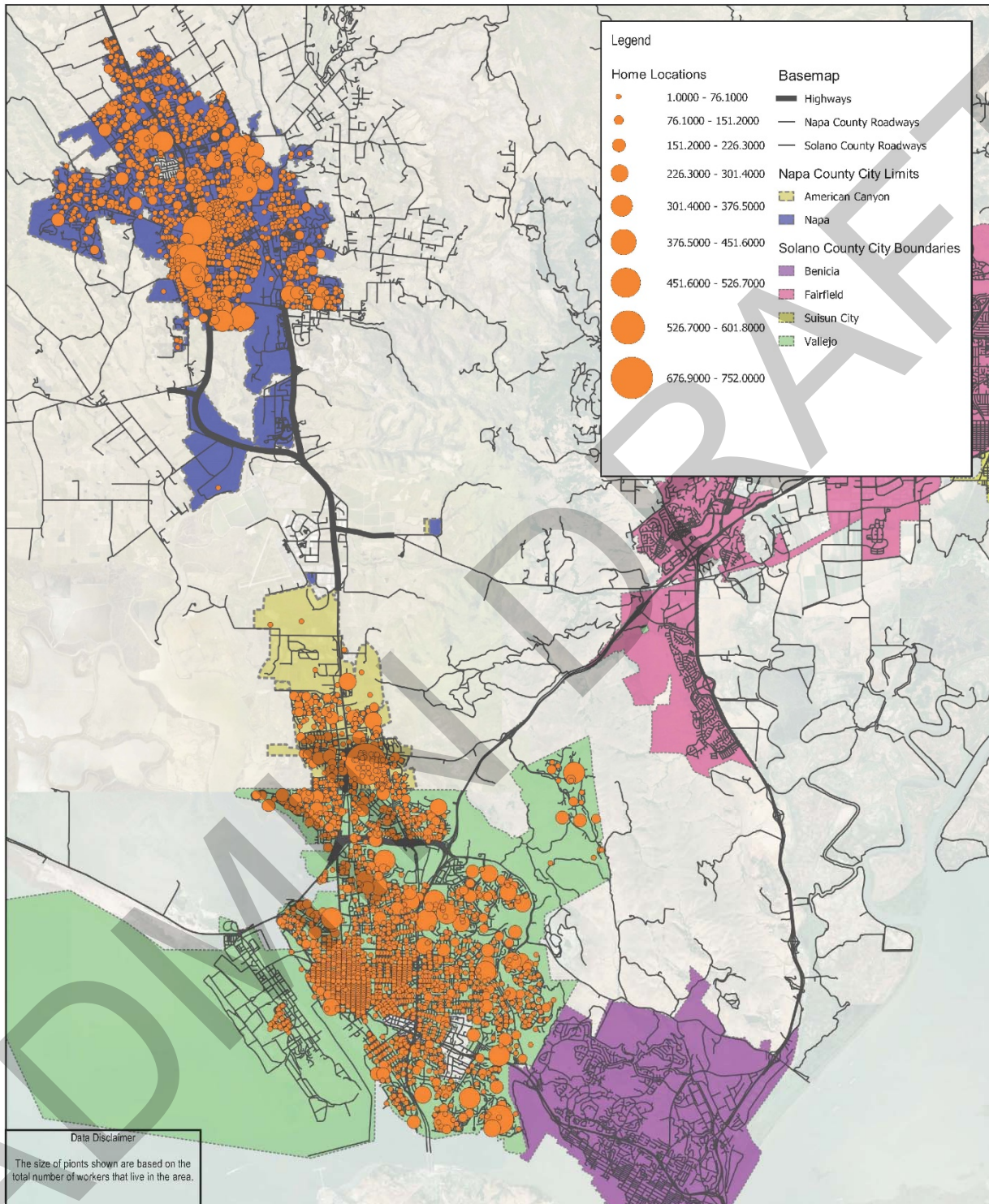
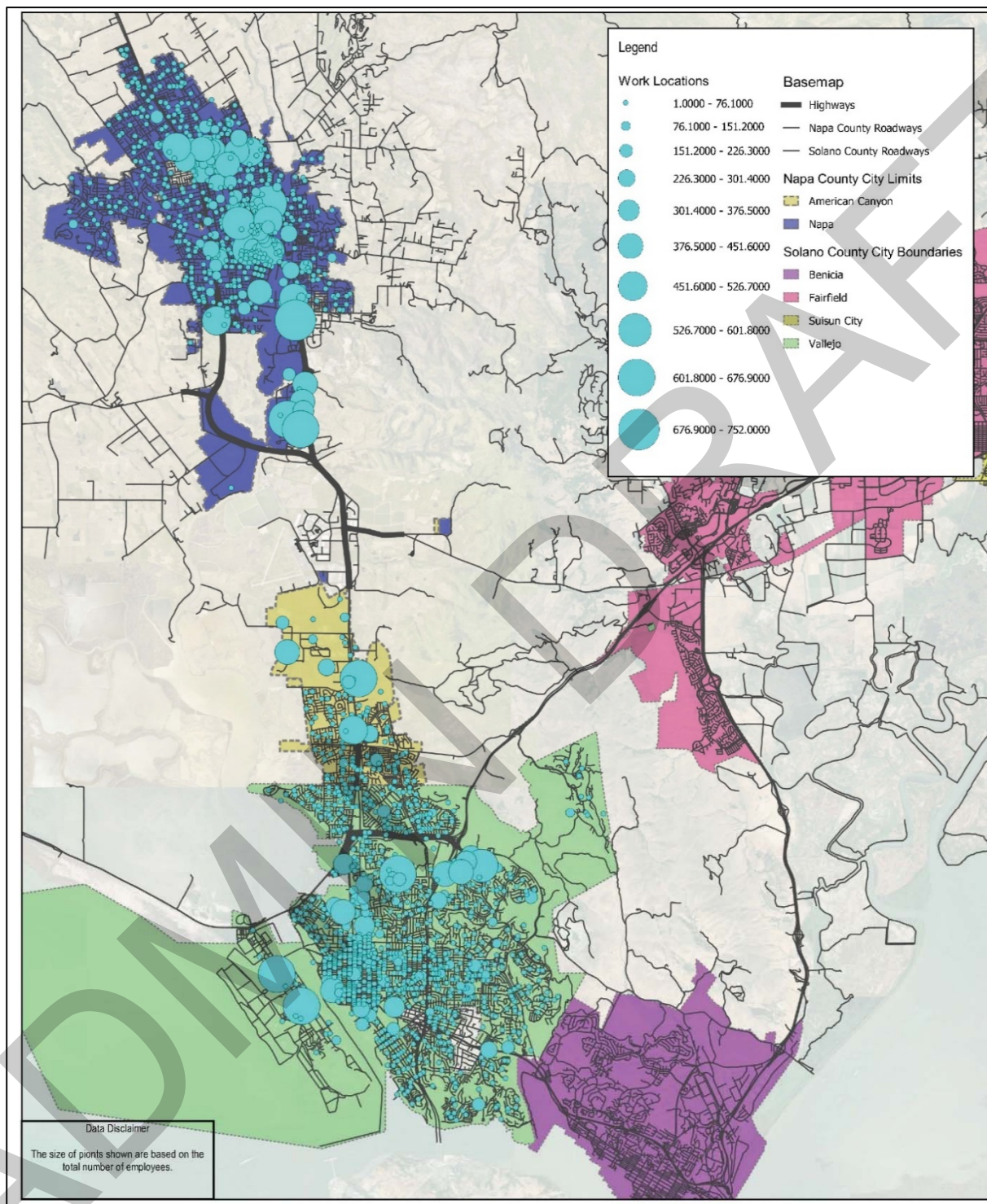


Figure 6: Job Locations and Concentration (LEHD)



City of American Canyon

SR 29 is the only continuous north-south roadway through the City of American Canyon, both providing access to homes and local businesses but also acting as a substantial barrier to east-west local travel through the city. In American Canyon, SR 29 is lined with retail commercial uses and other destinations that serve residents and visitors. Local connections to these businesses are limited, and SR 29 often provides the only access. Surrounding urban areas have few north-south routes, so SR 29 serves many local trips. Residential development abuts the roadway on both sides at the southern end of the city, though it is buffered by landscaping. On the east side, the railroad also separates adjacent development from the highway.

Local- and community-serving commercial uses start just south of the intersection of SR 29 and American Canyon Road, and are the predominant land use between there and Napa Junction Road. Uses are auto-oriented, typically single story, and set back from the highway with surface parking and some landscaping. North of Napa Junction Road, land uses transition to light industrial on larger parcels, interspersed with vacant and agricultural land.

Nearly the entire SR 29 corridor that runs through American Canyon has been designated as a PDA by ABAG and MTC. ABAG/MTC give priority to PDAs when issuing technical assistance and capital grants, in exchange for a community's commitment to compact growth and alternative modes within PDAs. The City intends to complete a Specific Plan for the PDA within the next several years.

Most of the PDA has a Community Commercial and Commercial Neighborhood designation under American Canyon's General Plan. These designations allow for a range of retail, office, personal services, and other commercial uses; these designations also allow 50 percent of a site to be used for multi-family residential development.

Unincorporated County of Napa

Immediately north of the American Canyon city limits (and within American Canyon just north of Napa Junction Road), land uses adjacent to SR 29 consist primarily of business and light industrial parks. Many are to the west, clustered near the Napa County Airport, and support the wine industry. Most industrial parcels south of South Kelly Road connect directly to the highway, with intermittent access to roads shared among multiple parcels. This is not the case north of South Kelly Road. Business parks along this corridor typically exhibit a high level of design—buildings are separated from the highway with landscaping, and properties within the Business/Industrial Park portion of the Airport Area Specific Plan are subject to design review with regards to site planning, landscaping, signage, off-street parking, noise control, and outdoor storage facilities.

North of the industrial area, land uses adjacent to the highway are almost entirely rural, comprised of open space (wetlands surrounding the Napa River) and agricultural uses.

Within unincorporated Napa County, parcels abutting SR 29 are generally designated either as Agriculture, Watershed and Open Space or Industrial by the County's General Plan. Urban uses are not permitted on land designated as Agriculture, Watershed and Open Space; however County Policy AG/LU-40 says that "Hess Vineyard area" (just north of American Canyon and east of SR 29) is to be "considered for re-designation to an Industrial designation if [the] Newell Road [extension] is ever extended north of Green Island Road." However, this is unlikely to occur, as a 2008 voter initiative by the City of American Canyon rerouted Newell Road to connect to SR 29 at Green Island Road specifically in order to preserve the Hess Vineyard.

While most of the corridor is designed for agricultural or industrial uses, exceptions exist: just north and east of the Napa River crossing where the “Napa Pipe” site is re-designated for multi-family with some retail/commercial uses, and annexed to the City of Napa; and south of SR 29 and just east of the Napa River, where land designated as Public-Institutional includes the Napa County Airport and allows for public and quasi-public uses, but also limited commercial uses.

Another asset of this area is the Grape Crusher statue, located just west of the SR 29/Highway 221 intersection. A tourist attraction and significant landmark, the statue helps to signify entrance to the Napa Valley.

City of Napa

While SR 29 is a major route through the city, its design as a grade-separated freeway means that it does not interface directly with adjacent land uses, which are a mix of residential, commercial, office, and institutional developments, and are separated from the highway by landscaping and sound walls. Landscape improvements remain possible, along with gateway identity features at interchanges.

Where SR 29 passes alongside urban uses in the City of Napa, a freeway configuration limits access and land use designations vary. Parcels with commercial designations tend to surround freeway interchanges, while other frontages along the freeway include parcels with Corporate Park, multi-family residential, single-family residential and other designations.

Observed Travel Patterns

Longitudinal Employer-Household Dynamics Database (LEHD) Data

As shown in Table 3 **Error! Reference source not found.** based on the LEHD journey to work data shows over 6,000 residents of the Cities of Napa, American Canyon and Vallejo commute to their jobs outside their home-city to one of the other two neighboring cities. The vast majority of these trips must traverse SR 29 within the study corridor. Approximately 25,000 residents live and work in their respective jurisdictions. This journey to work origin-destination information is also graphically shown in Figure 8.

Table 3: LEHD Journey to Work Origin-Destination Pairs

Home Location	Work Destination				Total
	Napa	American Canyon	Vallejo	Other	
Napa	12,437	470	787	20,063	39,757
American Canyon	1,288	432	928	7,251	9,899
Vallejo	2,224	589	8,348	45,308	56,469

Looking beyond the three cities, Figure 7: Internal Trip Work Flows (LEHD) **Error! Reference source not found.** shows the total number of in-coming, intra-, and out-going commuters for the Cities of Napa, American Canyon and Vallejo. This data indicates that over 11,000 additional commuters either commute to or from the City of American Canyon to/from places other than the City of Napa or Vallejo. Many of these commuters must traverse a portion of SR 29. Nearly 50,000 commuters do the same from the City of Napa. Over 70,000 commuters either commute to or from the City of Vallejo – many of which are either coming or going to the Bay Area or Sacramento Valley.

Figure 7: Internal Trip Work Flows (LEHD)

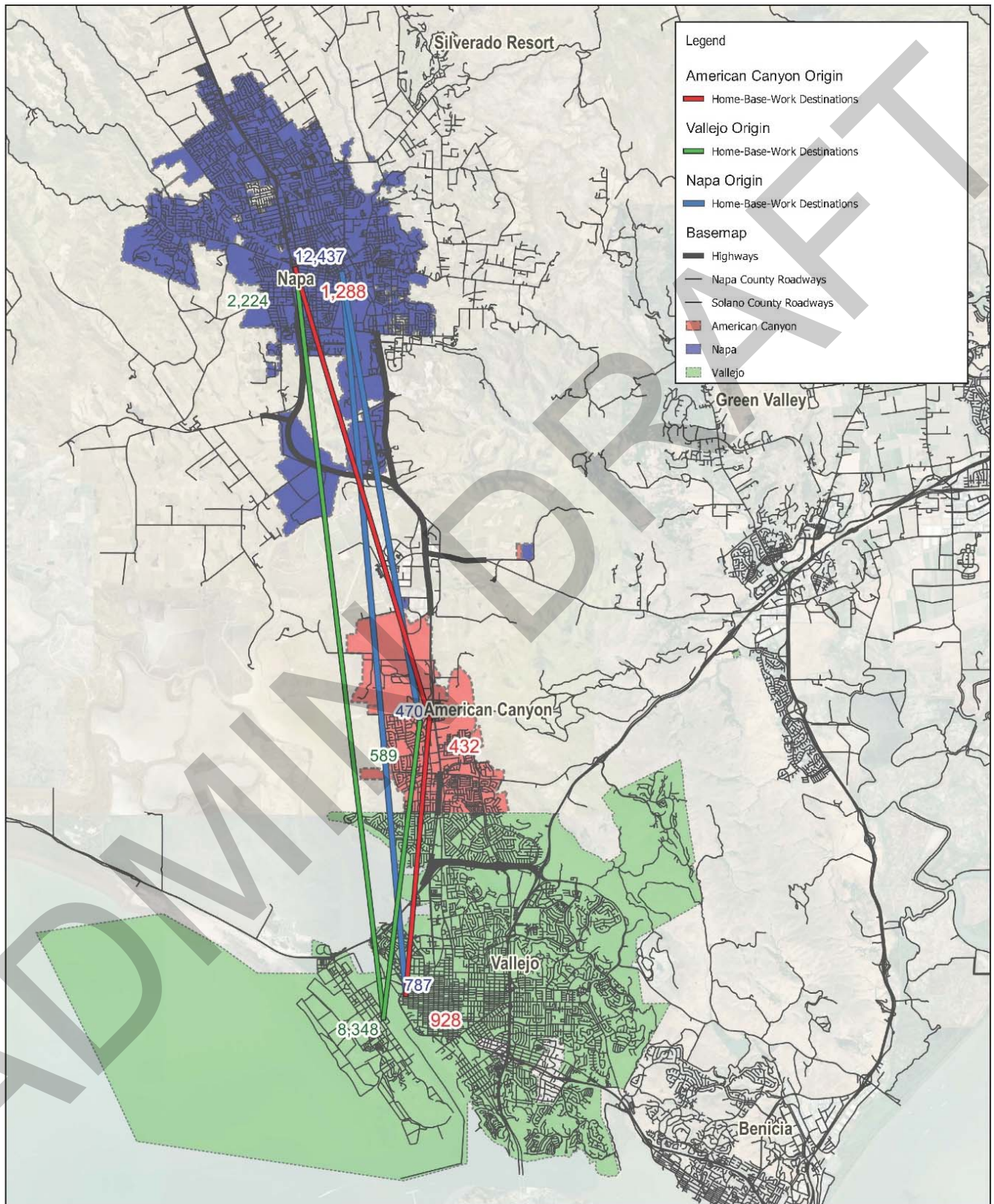
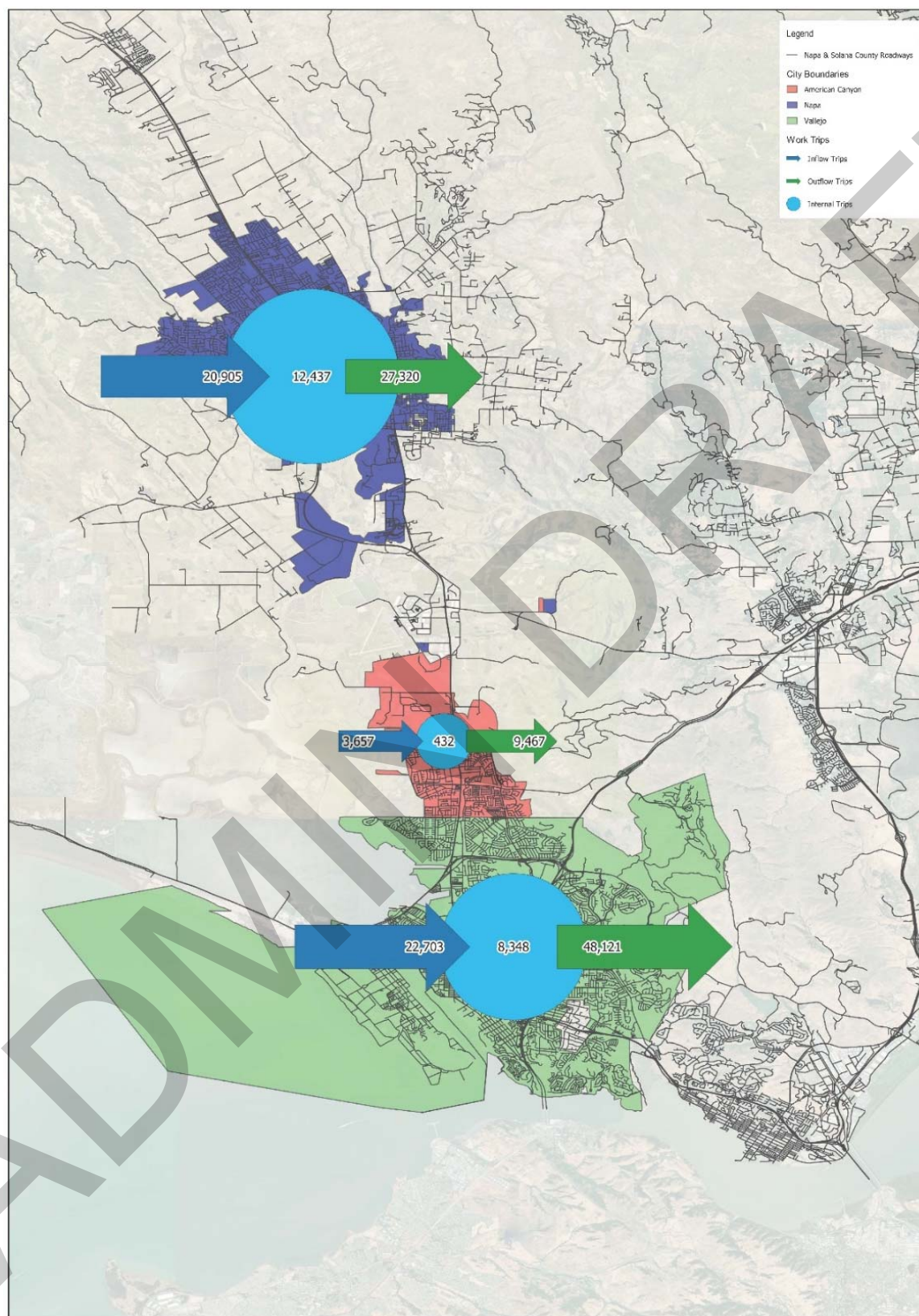


Figure 8: Employment Origin-Destinations (LEHD)



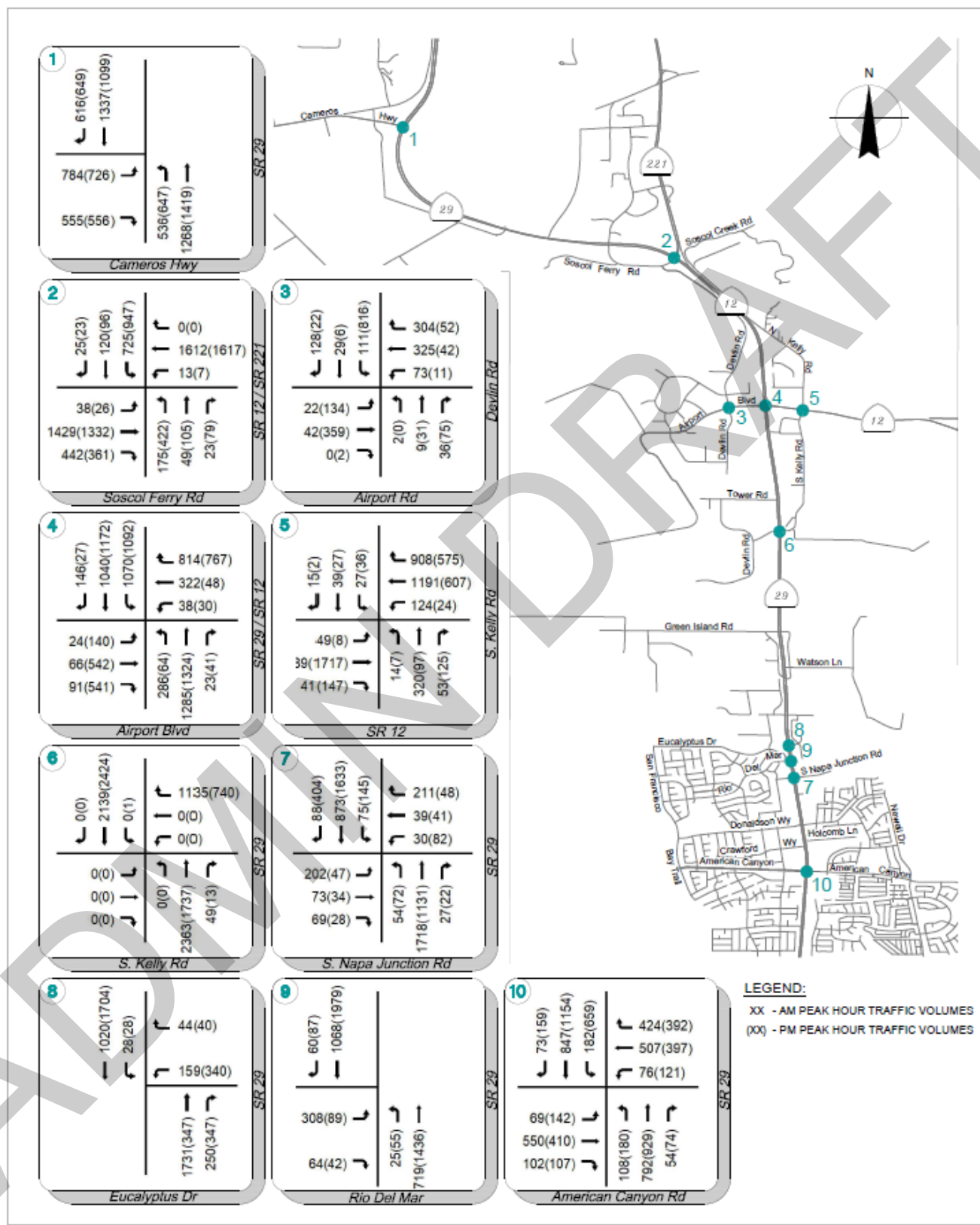
Streetlight Data

LEHD data only provided journey to work origin-destination pairs. Based on Streetlight Data which captures all trip types (versus just journey to work trips), annually, an average of 64% of the traffic that use SR 29 is traveling between destinations located in the City Napa and American Canyon. During weekdays this percentage is 66% while on weekends it drops to 61% due to the influx of regional traffic. Countywide, 70% of trips stay within Napa County while 30% travel from or to areas outside Napa County. Countywide, 40% of total trips are intra-city trips in the City of Napa. This results in 63% of trips are less the 5 miles in length. These are trips that are most conducive for non-motorized travel such, biking or walking.

Traffic Counts

On a typical weekday, SR 29, north of American Canyon Road, carries 24,000 vehicles travel northbound and 25,000 vehicles travel southbound daily. On SR 29 at the Napa/Solano County Line 19,000 vehicles travel both northbound and southbound daily. At the Napa/Lake County Line 4,500 vehicles travel northbound and 4,000 vehicles southbound on SR 29. These daily volumes do not significantly change during weekends. Existing turn movement counts by source are shown in Figure 9.

Figure 9: Existing Turn Movement Counts by Source



Roadway Operations

Key Intersections

Turn movement counts for approximately 40 intersections were input into the SR 29 microsimulation model for baseline validation purposes. Of the 40 intersections, ten key intersections were selected for detailed operational analysis using microsimulation. As shown in Table 4 and Table 5 below, the following six intersections currently operate below established standards during either the AM or PM peak hours: 1) SR 29/SR 221/Soscol Ferry Rd; 2) SR 29/Carneros Hwy (SR 121/12 West); 3) SR 29/Airport/SR 12; 4) SR 29 & S. Kelly Rd; 5) SR 29/South Napa Junction Road; and, 6) SR 29/American Canyon Road. Each of these intersections experience excessive delays which propagate congestion upstream of these critical nodes.

Table 4: Existing Conditions Level of Service (AM Peak Hour)

Intersection	Control Type ^{1,2}	AM Peak Hour					
		Intersection Delay (sec)	LOS	Vehicle Throughput	Veh Hrs of Delay (hrs)	Person Throughput	Person Hrs of Delay (hrs)
SR 29 & Carneros Hwy	Signal	32.9	C	4,767	43.6	6,197	56.6
SR 29 & SR 221/Soscol Ferry Rd	Signal	143.7	F	4,840	193.3	6,292	251.2
Airport Blvd/Devlin Rd	Signal	16.5	B	1,398	6.4	1,817	8.3
SR 29 & Airport Blvd/SR 12	Signal	52.1	D	5,489	79.4	7,136	103.3
SR 12 & Kelly Rd	Signal	29.4	C	3,038	24.8	3,949	32.3
SR 29 & S. Kelly Rd	Signal	47.8	D	4,068	54.0	5,288	70.1
SR 29 & Eucalyptus Drive	Signal	8.6	A	3,422	8.1	4,449	10.6
SR 29 & Rio Del Mar	Signal	17.4	B	3,436	16.6	4,467	21.6
SR 29 & S. Napa Junction Rd	Signal	57.3	E	3,683	58.7	4,788	76.3
SR 29 & American Canyon Rd	Signal	48.6	D	3,985	53.8	5,181	70.0

Table 5: Existing Conditions Level of Service (PM Peak Hour)

Intersection	Control Type ^{1,2}	PM Peak Hour					
		Intersection Delay (sec)	LOS	Vehicle Throughput	Veh Hrs of Delay (hrs)	Person Throughput	Person Hrs of Delay (hrs)
SR 29 & Carneros Hwy	Signal	72.3	E	5,712	114.7	7,426	149.2
SR 29 & SR 221/Soscol Ferry Rd	Signal	240.8	F	5,039	337.1	6,551	438.2
Airport Blvd/Devlin Rd	Signal	3.8	A	883	0.9	1,148	1.2
SR 29 & Airport Blvd/SR 12	Signal	112.8	F	5,288	165.7	6,874	215.4
SR 12 & Kelly Rd	Signal	28.0	C	3,444	26.8	4,477	34.8
SR 29 & S. Kelly Rd	Signal	18.1	B	3,119	15.7	4,055	20.4
SR 29 & Eucalyptus Drive	Signal	13.4	B	3,595	13.4	4,674	17.4
SR 29 & Rio Del Mar	Signal	17.1	B	3,648	17.3	4,742	22.5
SR 29 & S. Napa Junction Rd	Signal	40.6	D	3,675	41.4	4,778	53.8
SR 29 & American Canyon Rd	Signal	65.6	E	4,523	82.4	5,880	107.1

Roadway Congestion (Speed-Based Analysis)

The Federal National Performance Rule Congestion Threshold performance measure was used to determine the performance of roadway segment operating conditions within the study corridor. Under the federal definition, a roadway is considered congested if peak period travel speeds fall below 60% of free flow speeds. This includes delays experienced at intersections. The analysis is based on NPMRDS and INRIX speed data collected over a two-year period and reflects the AM/PM peak hours. Given that free flow speed is a key variable for calculating this performance measure, free flow speed was empirically estimated for each roadway segment using NPMRDS data between the hours of midnight and 3 AM.

Congestion Threshold results are graphically presented in Figure 10, Figure 11, and Figure 12 respectively. As shown, during the AM peak hour chronic congestion occurs on SR 29 in the northbound direction between the junctures with SR 12 and Soscol Junction and between American Canyon Road and Napa Junction Road. During the PM peak hour, the majority of southbound SR 29 operates at less than 60% of free flow speed – from Soscol Road to American Canyon Road. During the Weekend peak hour, chronically congested conditions occur on SR 29 within the City of American Canyon as well as on SR 29 north of Airport Road/SR 12 through Soscol Junction.

Figure 10: Congestion - Weekday AM Peak

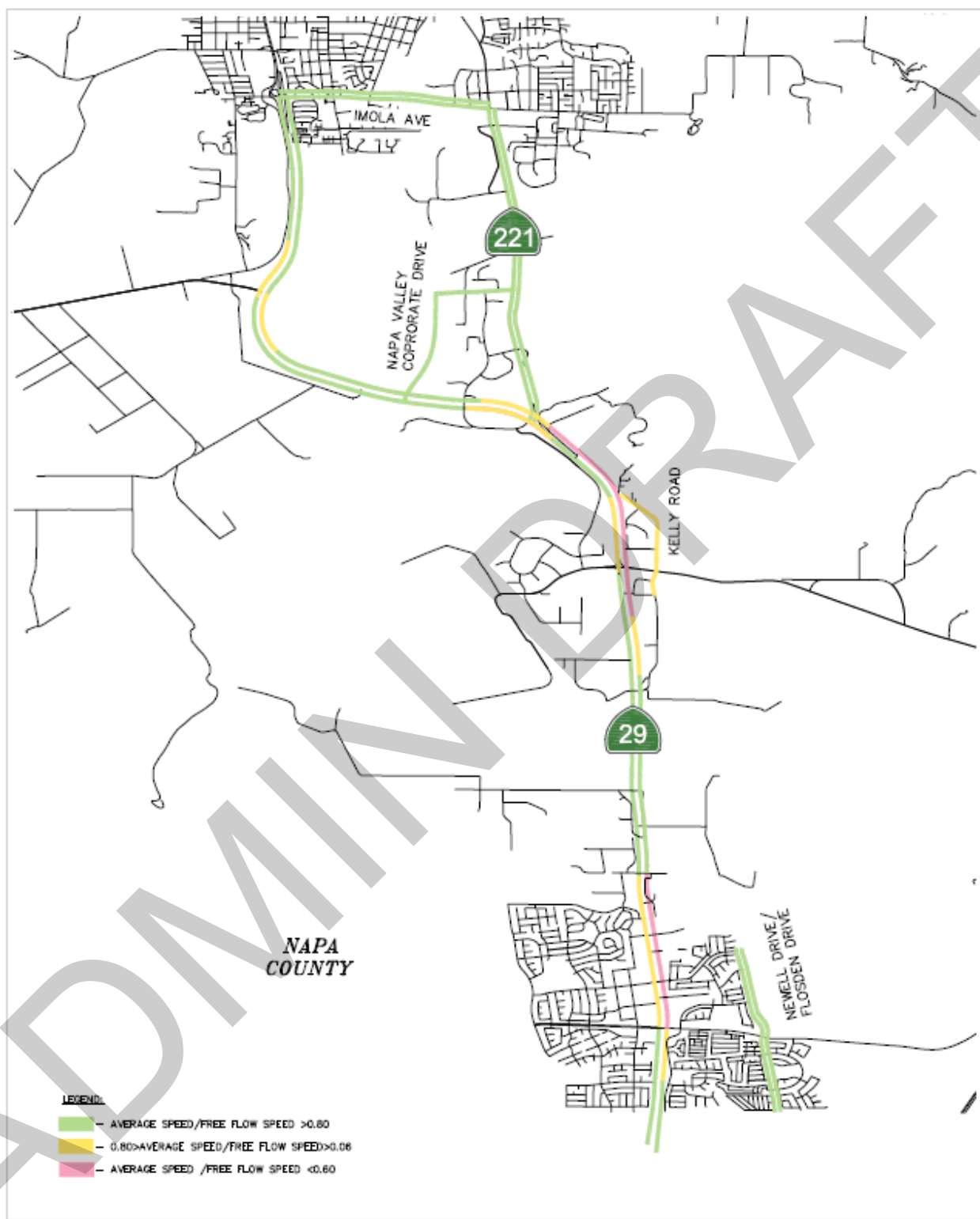


Figure 11: Congestion - Weekday PM Peak

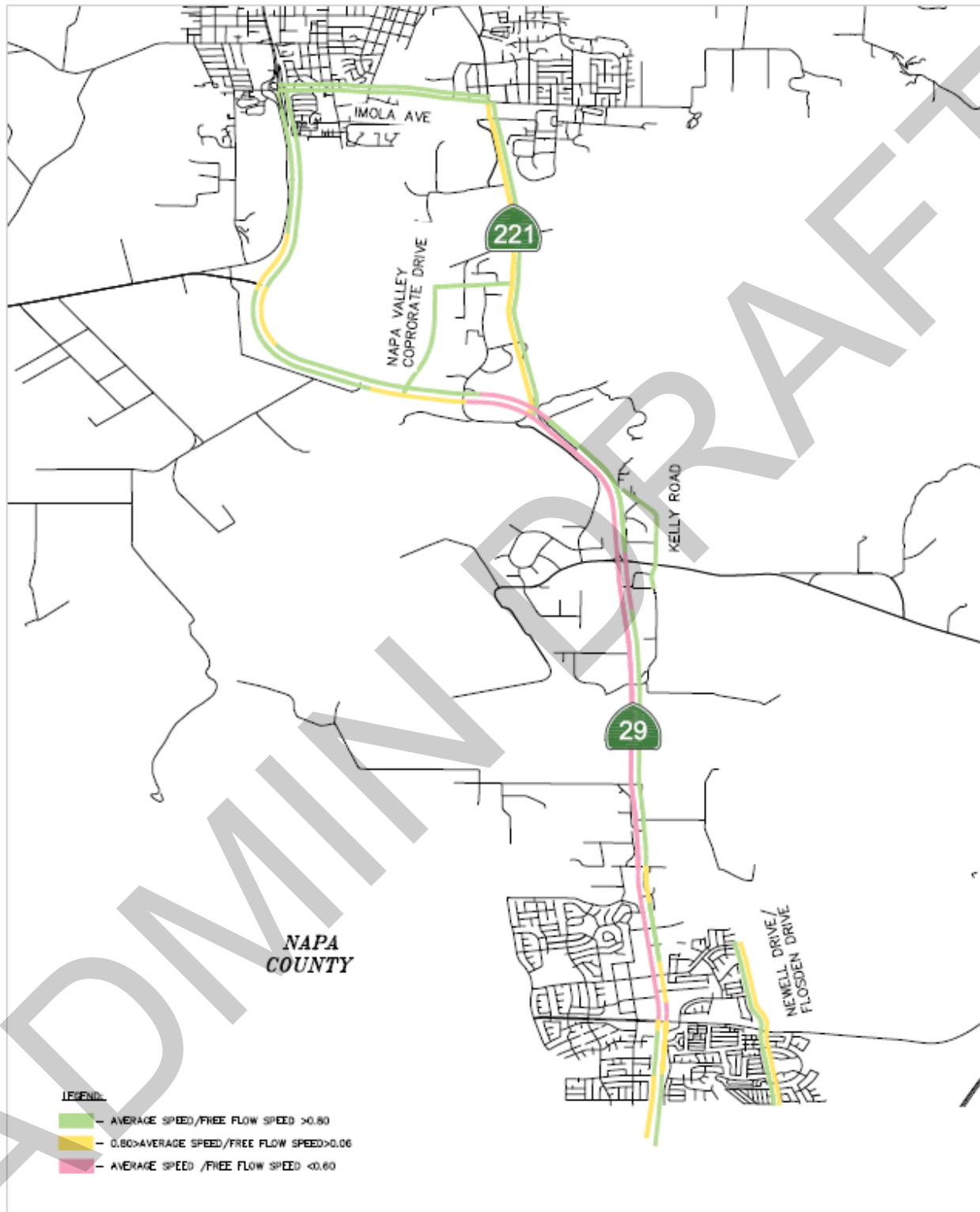
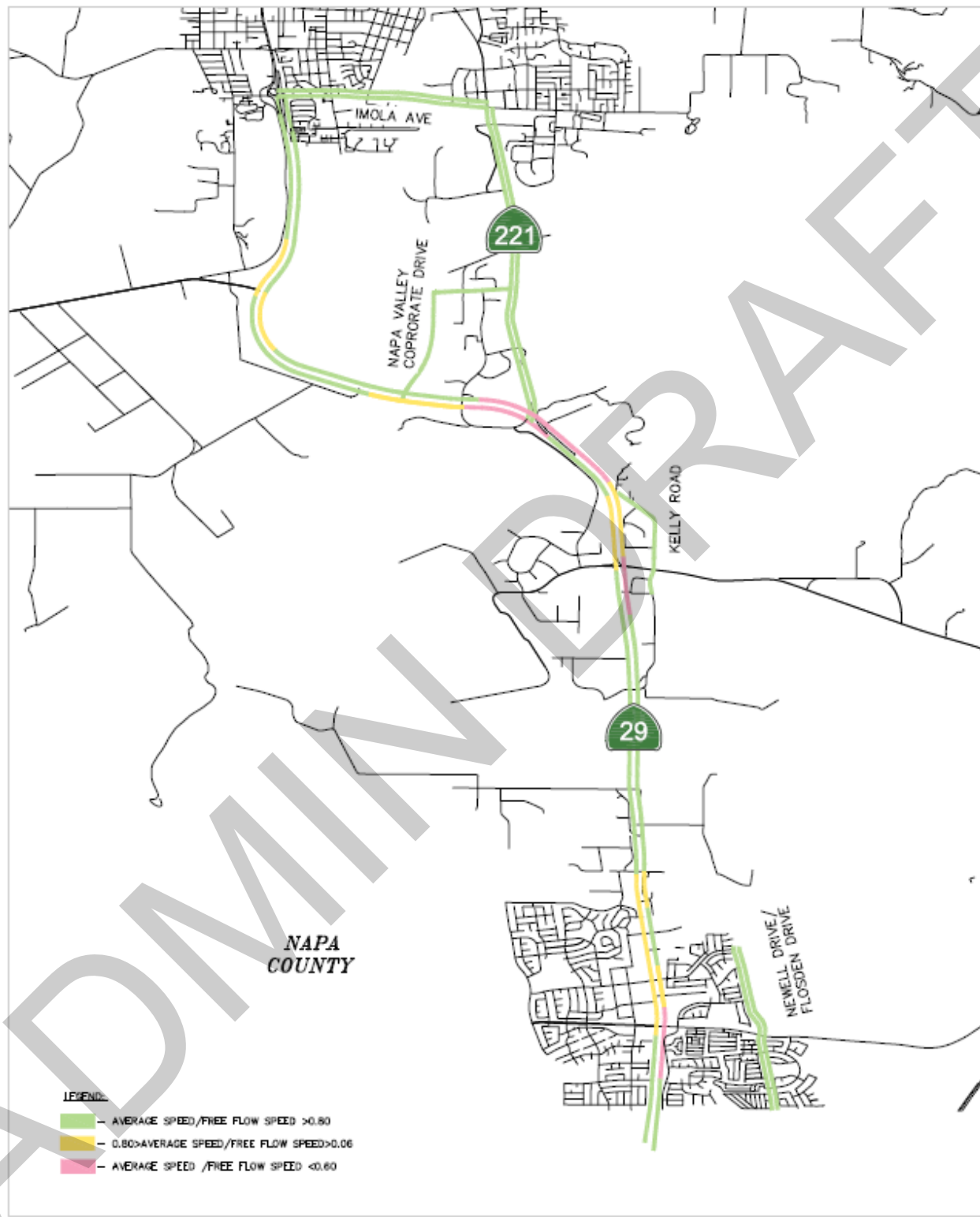


Figure 12: Congestion - Weekend PM Peak



Travel Time Reliability Analysis

NPMRDS speed data was used for baseline travel time reliability analysis. The following performance metrics for passenger vehicles were generated:

- Buffer time
- Buffer time index

Federal definitions from the National Performance Management Measures Rule were used to define reliability. Both the national rule's definition of reliability (based on 80th percentile speed) and the HCM definition of reliability (based on 95th percentile speed) were applied. Buffer Time represents the additional time a motorist needs to budget for to ensure they arrive at their destination at the expected time 95% of the time. Buffer Time Index (BTI) simply normalizes Buffer Time for distance and is expressed as a ratio or percentage (added percent of time required). A higher BTI indicates more time drivers need to budget for to drive the corridor as a typical drive time becomes less reliable. BTI equal to or greater than 0.5 indicates that a motorist will need to budget 50+ percent more time over the normal travel window (i.e., departing earlier) to ensure an on-time arrival 95 percent of the time (i.e., equates to allowing for one late arrival for every 30 trips). Table 6 displays the Buffer Time Index thresholds as they relate to reliability.

Table 6: Buffer Time Index Thresholds

Reliable	Moderately Reliable	Unreliable
BTI ^A < 0.25	BTI ^A 0.25 - < 0.5	BTI ^A > = 0.5

^A Buffer Time Index – A measure of reliability, measures percentage of travel time devoted to being on time above average travel time.

Buffer time indices for weekday AM peak hour, weekday PM peak hour, and weekend PM peak hour are shown in Figure 13, Figure 14, and Figure 15 respectively. As shown, chronic service reliability issues occur predominantly during the weekday AM and PM peak commute hours and do not particularly mirror where congestion typically occurs. Although reliability issues are present during weekends – they are much more specific at the SR 29 junctures with American Canyon Road, Airport/SR 12 and Soscol Junction.

Figure 16 and Figure 17 show how motorists who use SR 29 in either direction respectively must compensate for both travel delay and buffer time. As shown, instead of a 13-minute drive to traverse 11.5 miles under non-congested conditions within the study corridor motorist must typically commit to over 30 minutes to reliably travel on SR 29 during peak hours. This also presents issues for on-time performance of transit service in the SR 29 corridor.

Figure 13: Buffer Time Index - Weekday AM Peak

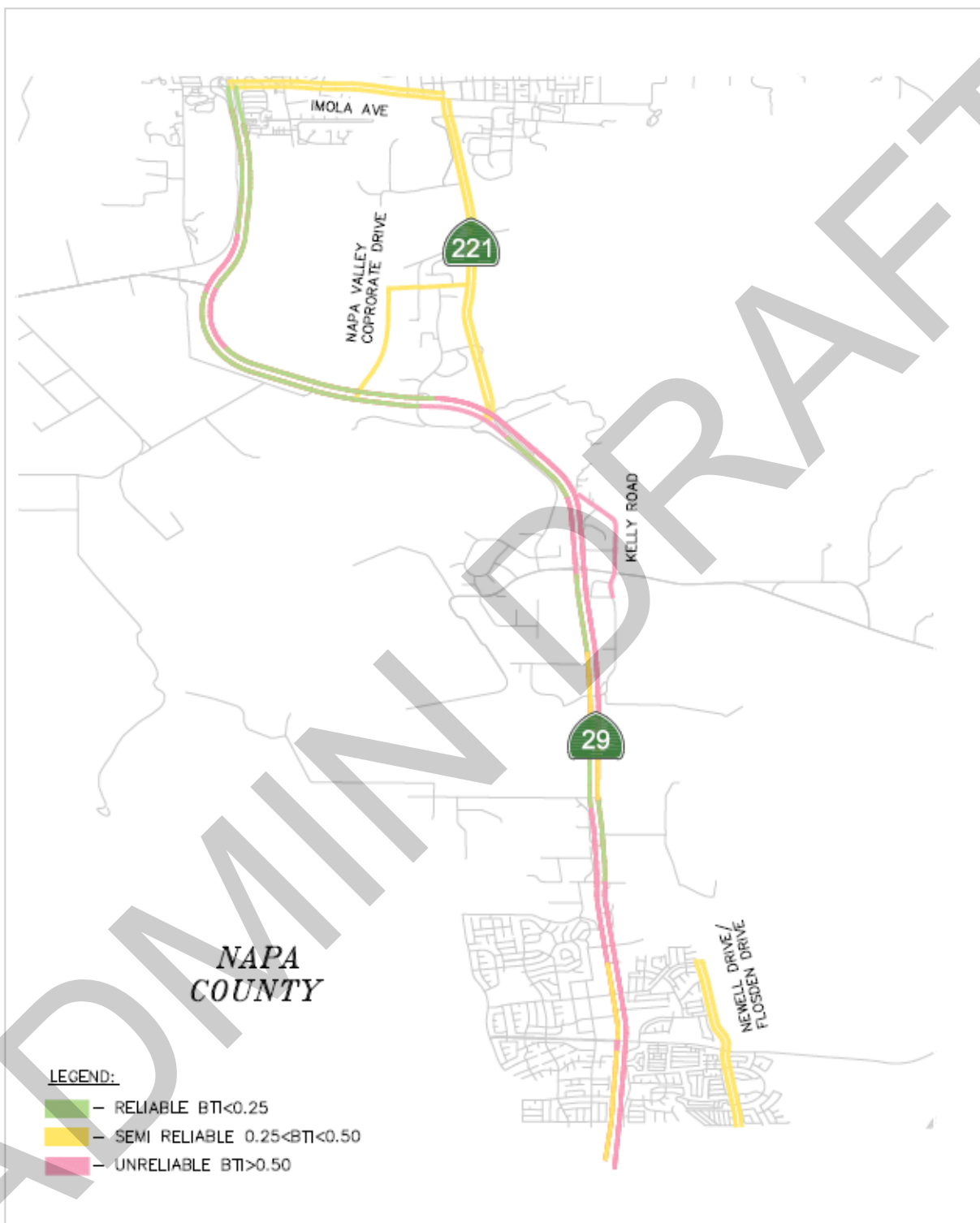


Figure 14: Buffer Time Index - Weekday PM Peak

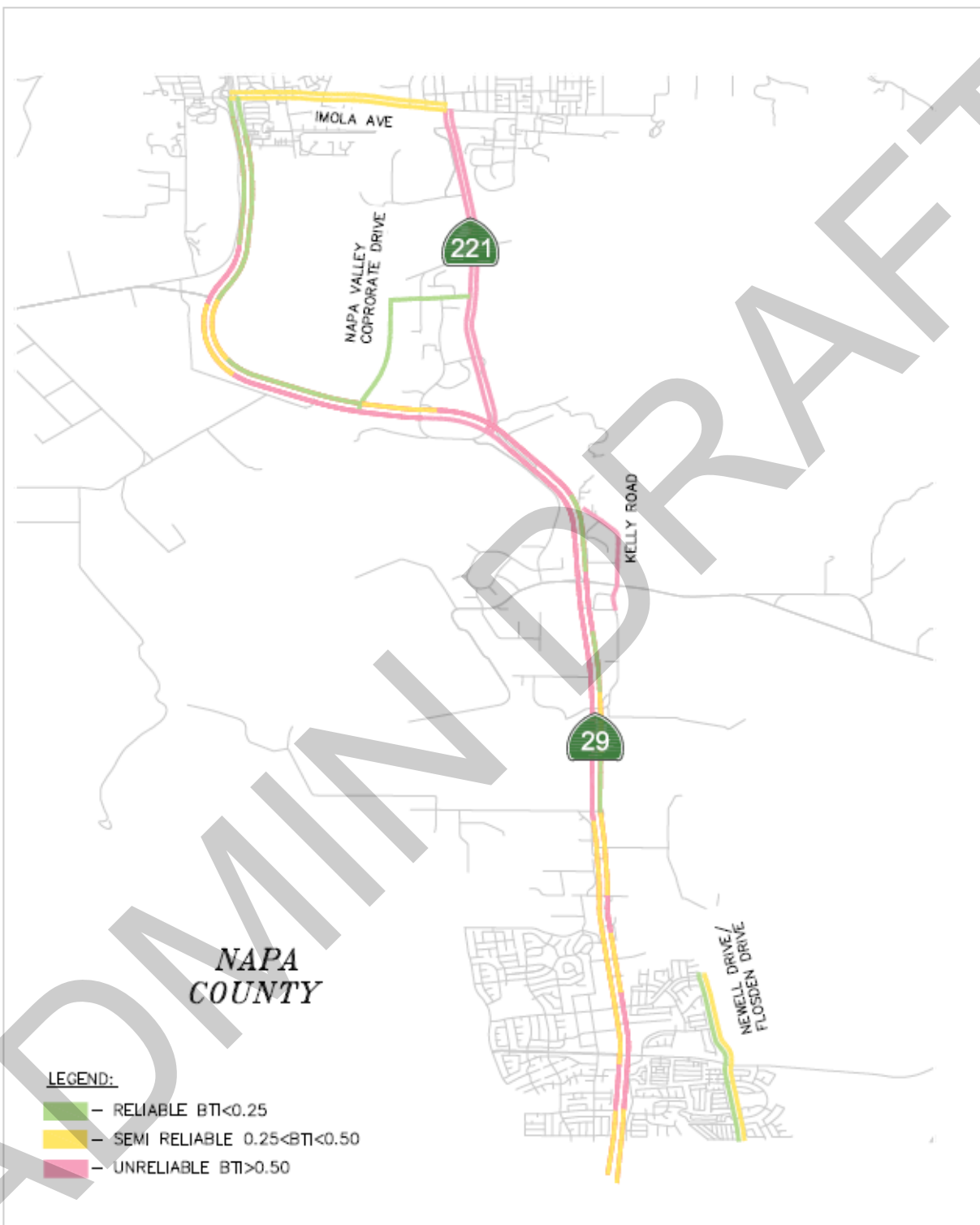


Figure 15: Buffer Time Index - Weekend PM Peak

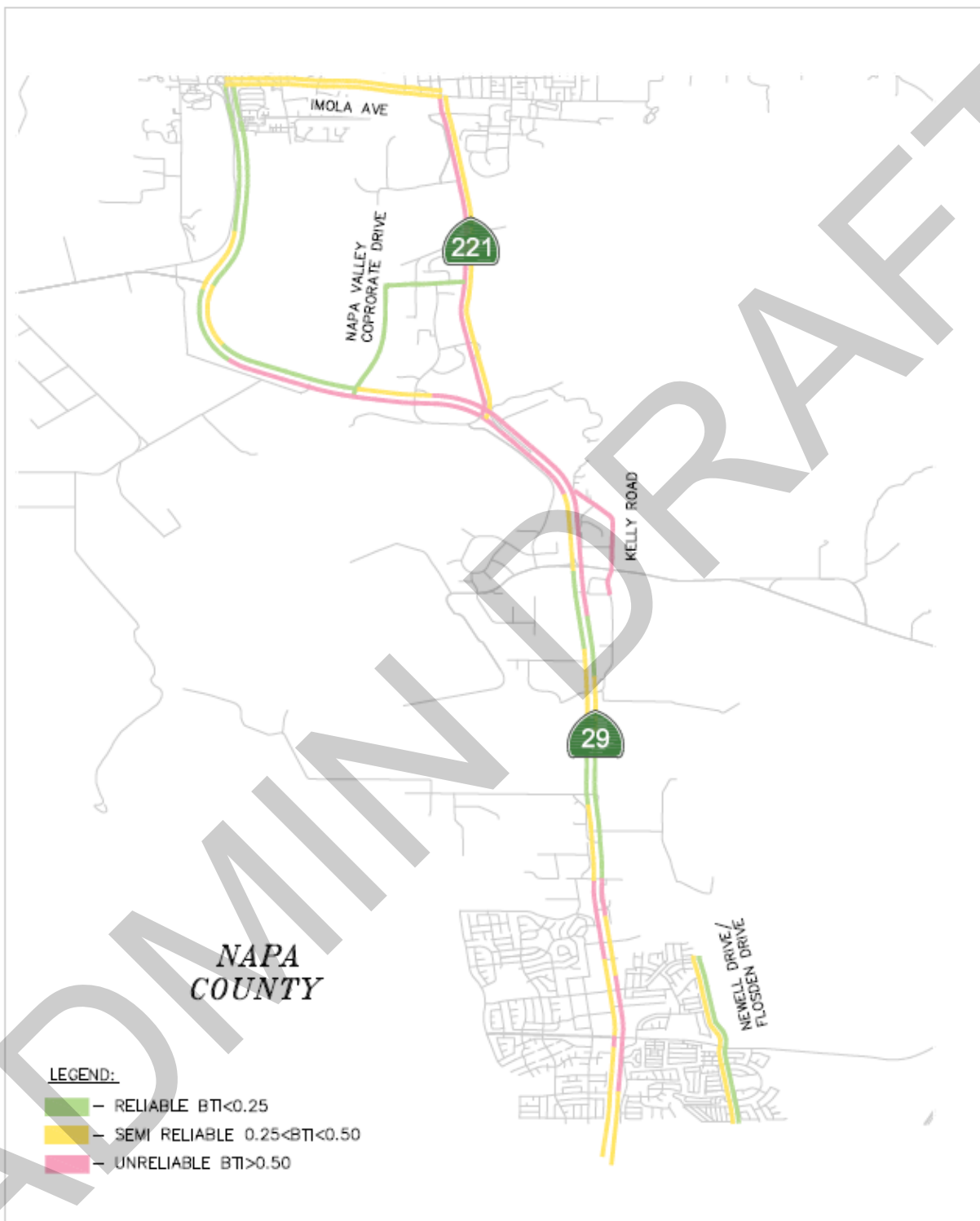


Figure 16: Total Time Required for Reliably Traveling Northbound on SR 29

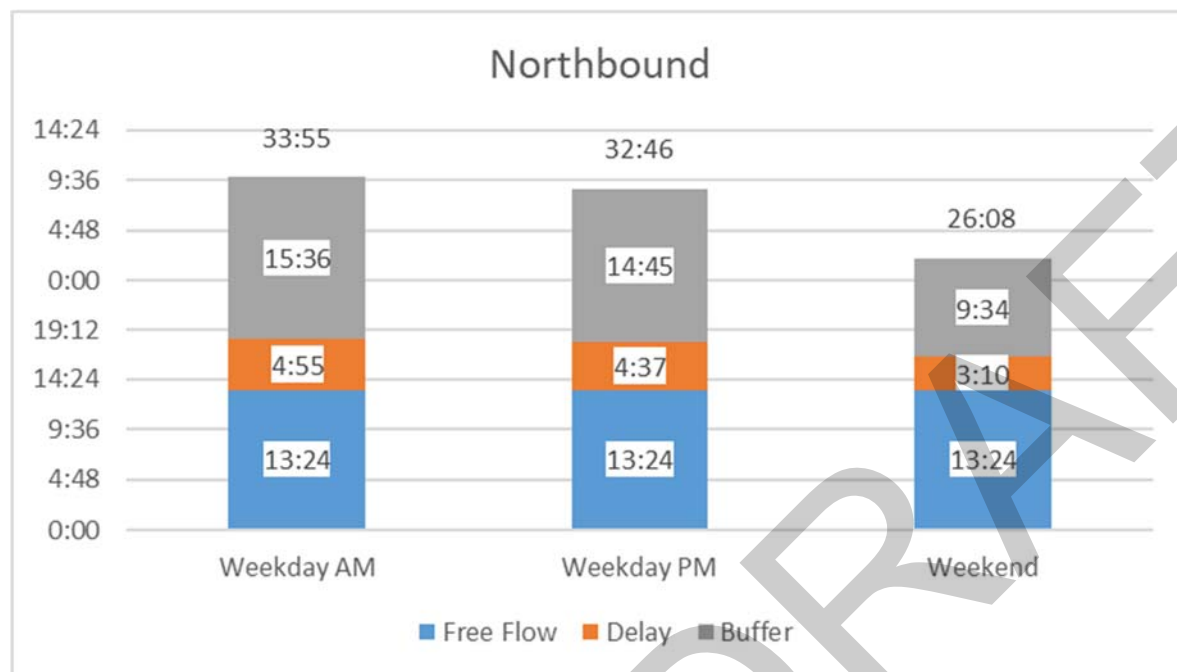
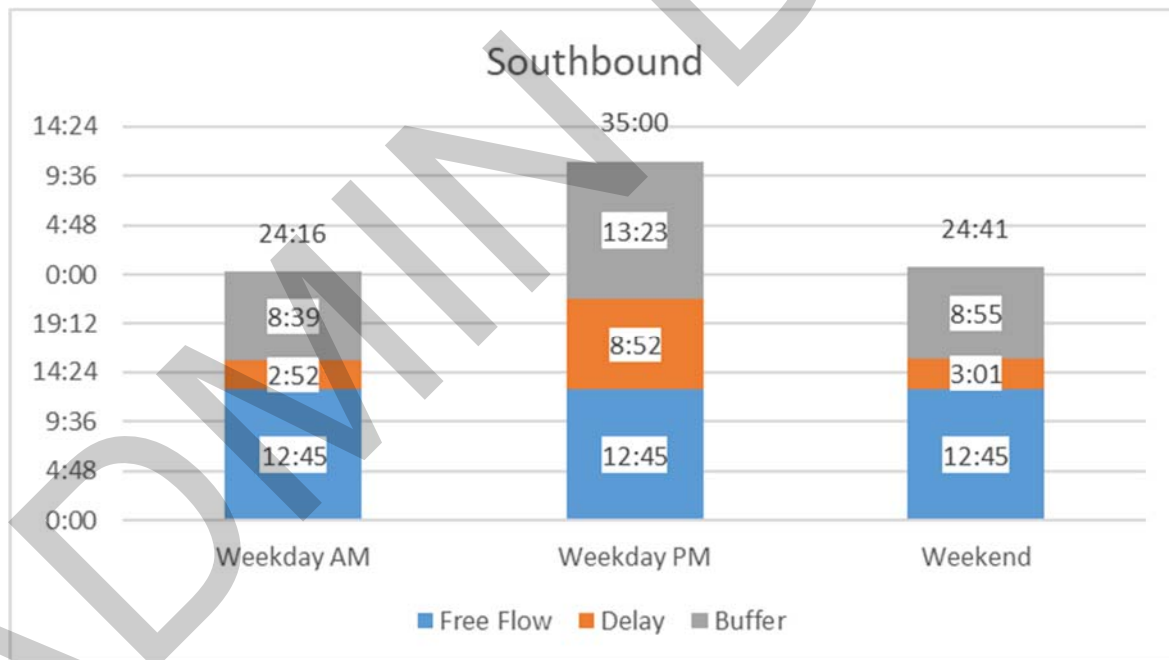


Figure 17: Total Time Required for Reliably Traveling Southbound on SR 29



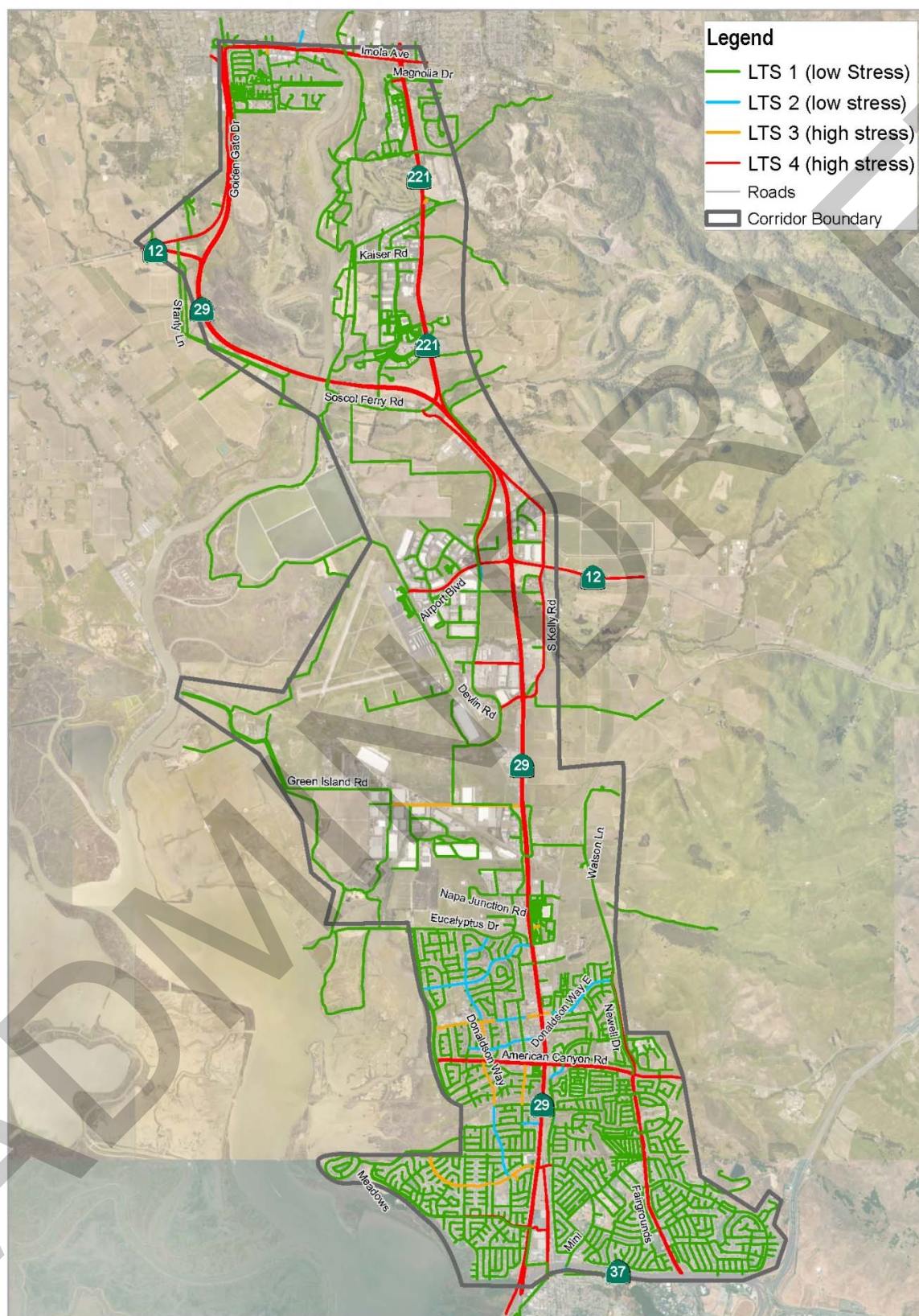
Level of Traffic Stress

Bicycle Level of Traffic Stress (Bicycle LTS) is an objective, data-driven evaluation of the bicycling experience on various types of streets. The analysis uses roadway characteristics like posted speed limit, street width, number of travel lanes, intersection conditions, traffic controls, and the presence and character of bikeways to determine bicyclist comfort level. The results assign a score between 1 and 4, with Bicycle LTS 1 being most comfortable and least stressful. Bicycle LTS 4 is least comfortable and most stressful. Additional detail on Bicycle LTS methodology is provided in Appendix E.

Corridor segments and intersection approaches in the study area were both evaluated for LTS. An overall LTS score was determined by applying the worst score between adjacent street segments and intersection approaches. **Error! Reference source not found.** Figure 18 displays the overall existing condition LTS for the study corridor. LTS for crossings were not evaluated; however, all crossings of SR 29 are assumed to be high-stress due to the traffic volume and speed of the roadway. Most local streets provide low stress connectivity within neighborhoods; however, higher stress roadways bisect these areas throughout the study area to create pockets of low stress connectivity with high stress barriers at streets with higher functional classifications, street widths, speeds and volumes.

The main barriers to low-stress connectivity for bicyclists within the SR 29 study corridor are the high stress state routes, including SR 29, SR 221, SR 121, and SR 12. These high-stress facilities serve to discourage access to and bicycling on SR 29 itself (north-south bicycle travel). SR 29 also bifurcates the study corridor, posing as a barrier to east-west bicycle travel. American Canyon Road, Newell Drive, Flosden Road, Fairgrounds Drive, and S. Kelly Road are additional high-stress roadways that limits local low-stress bicycling community access and limit viable on-street low-stress alternatives to SR 29.

Figure 18: Existing Level of Traffic Stress (LTS)



Transit

Existing Service

Transit service in the Napa Valley is provided by Napa Valley Transportation Authority (NVRTA)'s Vine Transit. Of the eight local routes, several serve the Imola corridor, which is at the northern end of the project study area. Several regional routes serve the study corridor directly, including Route 29, Route 21, Route 11 and Route 11X. Routes 29, 21, and 11X operate Monday through Friday, and Route 11 operates Monday through Sunday. Figure 19¹ displays the main transit lines serving the study corridor—Routes 29, 21, 11, and 11X.

Figure 19: Regional Vine Transit Routes Serving Corridor¹



Routes 11X, 21 and 29 are express buses, serving a limited number of stops and providing access to regional destinations, and connection to the regional transit network, including Bay Area Rapid Transit (BART), San Francisco Bay Ferry, Fairfield-Suisun Transit, Rio Vista Delta Breeze, Solano County Transit, Lake Transit, Greyhound, and Amtrak.

In addition to the previously described routes operating in the study area, Vine Transit also provides

American Canyon Transit service offering fixed route and on-demand, door-to-door, transit service within the City of American Canyon.

Existing Performance

Based on an analysis of existing ridership data of the express routes serving the study area, Route 29 experiences the highest ridership demand. However, traffic congestion on SR 29 causes significant service delays, varied travel times and diminished reliability. While Route 21 sees lower ridership demand than Route 29, Route 21 also experiences significant congestion on some segments of the route. Based on data presented in the *Vine Transit Express Bus Corridor Study* (2017), Routes 21 and 29 perform below Vine transit performance standards and typical express bus service standards across several performance metrics. Moreover, on-time performance and service reliability were highlighted as issues for both routes. The #1 need identified in the *Express Bus Corridor Study* was to reduce the impact of congestion on trip time and variability on Route 29.

¹ Figure 19 Source: vinetransit.com

Ridership Levels

65% of surveyed respondents said they very rarely or never used transit.² Existing Vine Transit ridership data was obtained from NVT. Existing ridership for Routes serving the study area is summarized in Table 7. As shown, Route 29 experiences the highest ridership demand of the express buses serving the study area.

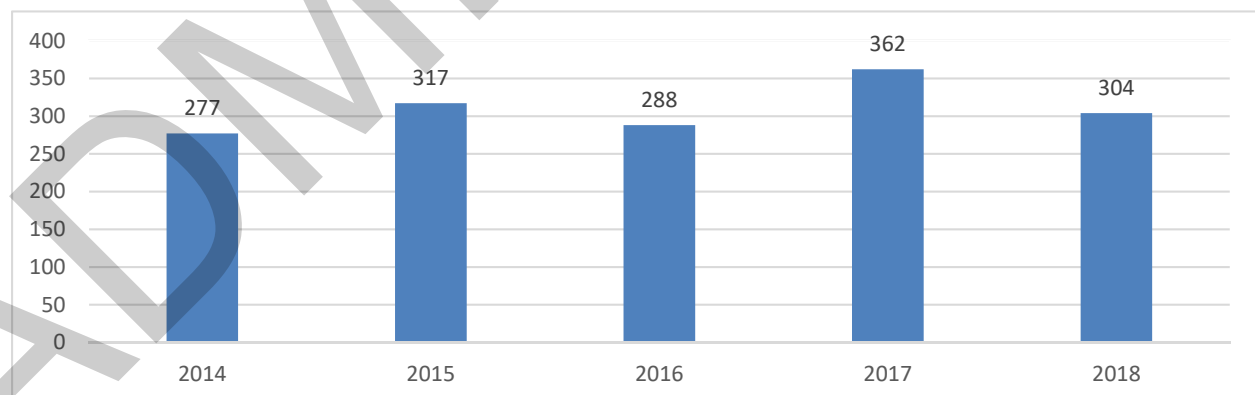
Table 7: Existing VINE Transit Ridership - Routes 29 and 11X

Existing Ridership			
Route	Peak Period		
	AM	PM	
Route 11 Northbound	95	47	345
Route 11 Southbound	51	86	365
Route 11X Northbound	42	22	64
Route 11X Southbound	11	17	28
Route 29 Northbound	58	77	135
Route 29 Southbound	88	35	123
Route 21 Northbound	16	30	77
Route 21 Southbound	27	12	65

Collision Data

The primary data source for collisions was the Transportation Injury Mapping System (TIMS), which uses data from the Statewide Integrated Traffic Records System (SWITRS). Non-PDO collisions occurring within the study area was analyzed over a five-year period for the years between 2014 and 2018. The number of non-PDO collisions occurring within the study area during this time frame is displayed in Figure 20. Table 8 displays this data by collision severity and type.

Figure 20: Non-PDO Study Area Collisions, 2014-2018



² NVT. VINE Transit Express Bus Corridor Study, 2017.

The most common crash type among all collisions within the study area was rear end type collisions, at 55% of the total. Eight percent of all fatal and injury collisions resulted in fatal or severe injury. Fifty percent of all collisions were reported as unsafe speed being the primary violation category.

Table 8: Study Area Non-PDO Collisions

Collision Category		Number of Collisions	
Collisions By Severity	Total Collisions	Count	Percent
		1548	100%
	Injury (Complaint of Pain)	1102	71%
	Injury (Other Visible)	323	21%
	Injury (Severe)	109	7%
	Fatality	14	1%
	Total Fatal/Severe Injuries(FSI)	123	8%
Collisions By Type	Broadside	252	16%
	Head-On	48	3%
	Hit Object	187	12%
	Not Stated	4	0%
	Other	23	1%
	Overtaken	49	3%
	Rear End	846	55%
	Sideswipe	93	6%
	Vehicle/Pedestrian	46	3%

Table 9 displays collisions by severity and type that occurred on state routes within the study area. Because the majority, or 75 %, of the total collisions occurred on state routes, the results are similar to the total study area collision counts reported in Table 8.

Table 9: Study Area Non-PDO Collisions on State Routes

Collision Category		Number of Collisions	
Collisions By Severity	Total Collisions	Count	Percent
		1173	100%
	Injury (Complaint of Pain)	856	71%
	Injury (Other Visible)	222	21%
	Injury (Severe)	82	7%
	Fatality	13	1%
	Total Fatal/Severe Injuries(FSI)	95	8%
Collisions By Type	Broadside	115	16%
	Head-On	23	3%
	Hit Object	141	12%
	Not Stated	4	0%
	Other	13	1%
	Overtaken	36	3%
	Rear End	758	55%
	Sideswipe	67	6%
	Vehicle/Pedestrian	16	3%

Bicycle and Pedestrian Collisions

Error! Reference source not found. Table 10 displays the pedestrian collisions and **Error! Reference source not found.** display the bicycle collisions that occurred within the corridor between 2014 and 2018.

Bicycle Collisions

The most common crash type among bicycle-related collisions were broadside collisions with 41% percent of bicycle collisions reported as this type. Thirty-five percent were ported as “Other.”

Table 10: Bicycle Collisions

	Collision Category	Number of Collisions	
		Count	Percent
Collisions By Severity	Total Collisions	34	100%
	Injury (Complaint of Pain)	17	50%
	Injury (Other Visible)	14	41%
	Injury (Severe)	1	3%
	Fatality	2	6%
	Total Fatal/Severe Injuries (FSI)	3	9%
Collisions By Type	Broadside	14	41%
	Head-On	1	3%
	Hit Object	0	0%
	Not Stated	0	0%
	Other	12	35%
	Overtaken	2	6%
	Rear End	2	6%
	Sideswipe	2	6%
	Vehicle/Pedestrian	1	3%

Pedestrian Collisions

Twenty-seven percent of pedestrian collisions resulted in fatal and severe injury. Forty-three percent of pedestrian-related collisions occurred when the pedestrian was crossing in a crosswalk at an intersection.

Table 11: Pedestrian Collisions

	Collision Category	Number of Collisions	
		Count	Percent
Collision by Severity	Total Collisions	51	100%
	Injury (Complaint of Pain)	20	39%
	Injury (Other Visible)	17	33%
	Injury (Severe)	11	22%
	Fatality	3	6%
	Total Fatal/Severe Injuries(FSI)	14	27%
Pedestrian Action	Crossing in Crosswalk at Intersection	22	43%
	Crossing in Crosswalk Not at Intersection	1	2%
	Crossing Not in Crosswalk	12	24%
	In Road, Including Shoulder	12	24%
	Not in Road	2	4%
	Not Stated	2	4%

Figure 21: Pedestrian Collision



Figure 22: Bicycle Collisions



5 - Corridor Solutions

This chapter presents potential solutions examined for the SR 29 corridor. These solutions are based on prior public outreach conducted for the SR 29 Gateway Corridor Improvement Plan and other corridor planning documents as referenced, as well as from the needs analysis identified within the Existing Conditions chapter of this report.

As outlined below, seven (7) categories of potential improvements have been identified. Within each of these categories, 24 separate and distinct improvements and/or services are described. Each of these improvements within these 7 categories were individually costed and prioritized for future grant funding and implementation. The categories and improvements are outlined below:

Parallel Capacity Improvements

- Devlin Road
- South Kelly Road/Newell Drive

SR 29 Multimodal Improvements

- SR 37 to Napa Junction Road
- Napa Junction Road to Napa Valley Vine Trail
- South Kelly Road to Soscol Junction

Intersection Improvements

- Carneros Junction
- Airport Boulevard/SR 12/SR 29
- Soscol Junction
- Grade-Separated Pedestrian Crossings

Shared Use Paths

- Napa Valley Vine Trail
- San Francisco Bay Trail

SMART Train Extensions

- American Canyon to Vallejo Ferry Terminal
- Novato to Suisun City

Bus Improvements

- Bus Stop Changes
- Part Time Use of Shoulder
- 11X Bus Service
- New Route 29 Bus Service
- Queue Jump
- Transit Signal Priority
- NVT Maintenance Facility/Transportation Management Center

Integrated Corridor Management

- Variable Message Signs
- Traffic Monitoring Detectors
- Adaptive Signal Control
- Trailblazer Signs
- CCTV Cameras

Online Response Summary

These potential solutions were presented to the community at outreach events and on-line mapping tool. The mapping tool presented graphical renditions of each of the candidate corridor improvements and allowed the community to comment on the various options. A summary of this targeted outreach is provided below in Table 12

Table 12: Existing VINE Transit Ridership - Routes 29 and 11X

<i>Concept</i>	<i>Yes Support</i>	<i>Don't Support</i>	<i>Not Sure</i>
Parallel Capacity: Devlin	7	0	0
Parallel Capacity: South Kelly/Newall Drive	7	0	1
Multi-Modal Improvements: SR 37 to Napa Junction	2	0	1
Multi-Modal Improvements: Napa Junction to Vine Trail	3	0	0
Multi-Modal Improvements: So. Kelly Rd to Soscol Junction	3	0	1
Intersection Improvements: Carneros - SR 29/SR12/SR121	2	1	0
Intersection Improvements: SR 29/SR 12/Airport Blvd	2	1	1
Intersection Improvements: Soscol Junction	4	1	0
Grade Separated Pedestrian Crossings	17	1	1
Vine Trail Alignment Improvement	6	0	0
Bay Trail Alignment	6	1	0
SMART Extension: American Canyon to Vallejo Ferry Terminal	5	0	1
SMART Extension: Novato to Suisun City	4	0	2
Bus Stop Changes	6	0	0
Bus on Shoulder	1	1	1
Route 11 Express Bus Service	4	0	0
New Route 29 Bus Service	6	1	0
Bus Queue Jump	4	3	2
Bus Transit Signal Priority	4	2	5
Future NVTa Maintenance Facility / Transportation Management Center	3	0	1
Integrated Corridor Management: Variable Message Sign	9	3	2
Integrated Corridor Management: Traffic Monitoring Detectors	7	1	2
Integrated Corridor Management: Trailblazer Signage	6	1	1
Integrated Corridor Management: CCTV Cameras	7	1	1

Parallel Capacity Improvements

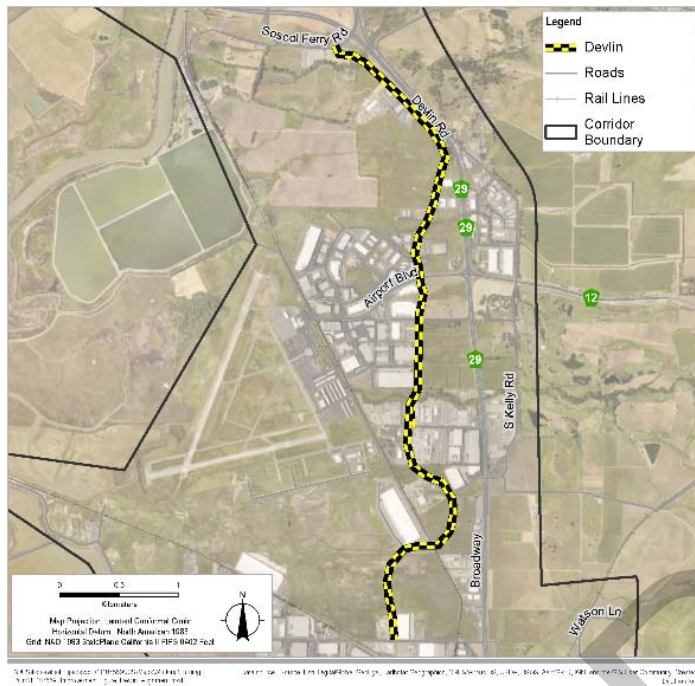


Figure 23 Devlin Road Parallel Capacity

Devlin Road Extension

The Devlin Road alignment (shown in will provide parallel road capacity to SR 29, and connectivity within the employment and industrial areas of unincorporated Napa County, in the vicinity of the airport. Most segments of this ultimate alignment have been constructed. Segment E, between Tower Road and south of Airpark Road, opened in March 2020.

Segment H, between Green Island Road and Devlin Road's current southern terminus has received California Statewide Transportation Improvement Program (STIP) funding, and will complete this alignment after it is constructed.

South Kelly Road/Newell Drive Extension

The South Kelly Road/Newell Drive alignment would provide parallel roadway capacity to SR 29. This improvement would include roadway extensions of Newell Drive, Rio Del Mar, and South Kelly Road. Newell Drive would be extended as a four-lane roadway from Donaldson Way to Rio Del Mar, and a two-lane roadway from Rio Del Mar to Green Island Road.

Additionally, Rio Del Mar and South Kelly Road would each be extended as two-lane roadways to connect with the Newell Drive extension at the southern and northern ends, respectively.

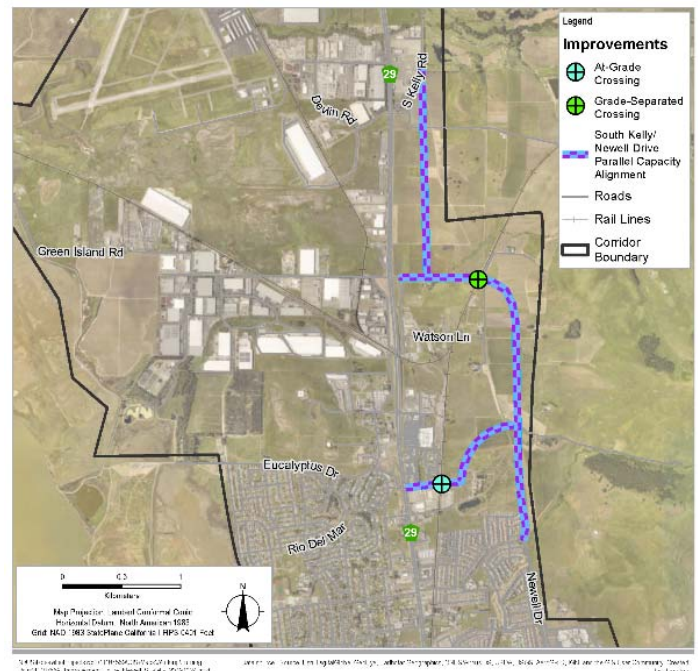


Figure 24 South Kelly Road/Newell Drive Parallel Capacity

SR 29 Multimodal Improvements

Recognizing the character of the SR 29 corridor changes as the adjacent land uses and access needs change, three (3) distinct segments of SR 29 became apparent for which different cross-sections of improvements were developed. An overview of this segmentation is presented in Figure 25. The segmentation of SR 29 is as follows:

- SR 37 to Napa Junction Road
- Napa Junction Road to Napa Valley Vine Trail
- South Kelly Road to Soscol Junction

For each of these segments, the key elements of the proposed improvements to meet the multi-modal needs of the segment are highlighted in the following sections.

SR 37 to Napa Junction Road

This solution would provide multimodal improvements on SR 29 between SR 37 and Napa Junction Road. Improvements would maintain the existing four-lane roadway and add Class I shared use paths on both sides of the roadway, 8 foot shoulders, pedestrian refuge islands at intersections, and landscaped planting strips to separate the Class I paths from vehicle traffic. A path exists from Eucalyptus Road to Napa Junction Road. The proposed improvements along SR 29 would connect to this path. Segment One improvements are depicted in **Error! Reference source not found.** Figure 26.

Napa Junction Road to Napa Valley Vine Trail

This solution would provide multimodal improvements from Napa Junction Road to the proposed Napa Valley Vine Trail and Paoli Loop Road. Improvements would maintain the existing four-lane roadway and include new and existing Class I shared use paths for bicycling and walking.

There is an existing Class I shared use path east of SR 29 from Napa Junction Road to Paoli Loop Road, which would be improved. This path would connect to the proposed Napa Valley Vine Trail alignment at Paoli Loop Road with an at-grade bicycle and pedestrian railroad crossing south of Paoli Loop Road. This would provide access to the proposed Napa Valley Vine Trail alignment along Paoli Loop Road and Green Island Road, which extends north to the west of SR 29.

This proposed connection and alignment would provide a safe avenue for bicyclists and pedestrians completely separated from and parallel to SR 29, and provide connection to the proposed Napa Valley Vine Trail. Segment Two improvements are depicted in Figure 27 **Error! Reference source not found.**

South Kelly Road to Soscol Junction

This solution would provide multimodal improvements from South Kelly Road to Soscol Junction (SR 221). Improvements would provide buffered bike lanes on SR 29 from South Kelly Road to Soscol Junction, and improve the intersection at South Kelly Road to provide safer bicycle and pedestrian access. These facilities would provide a bicycle connection to existing Napa Valley Vine Trail and San Francisco Bay Trail segments east of Soscol Junction via SR 29. Segment three improvements are depicted in Figure 28.

Figure 25: SR 29 Multimodal Improvements Segment Overview

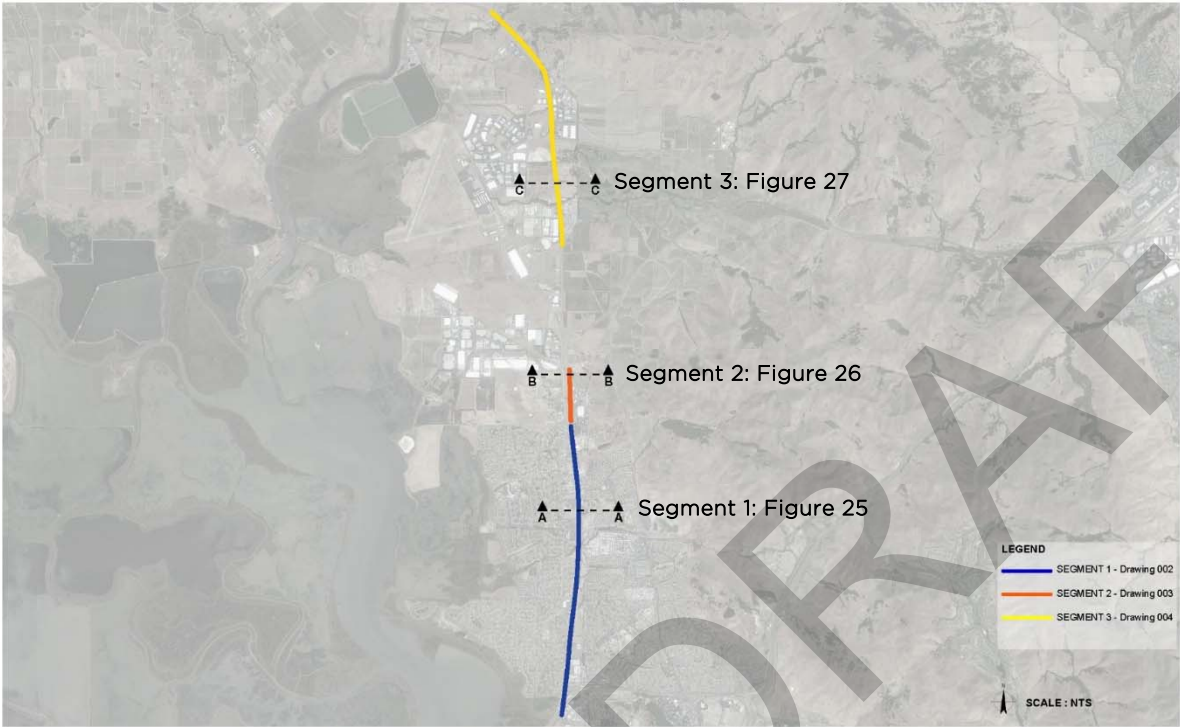


Figure 26: SR 29 Multimodal Improvements Segment One

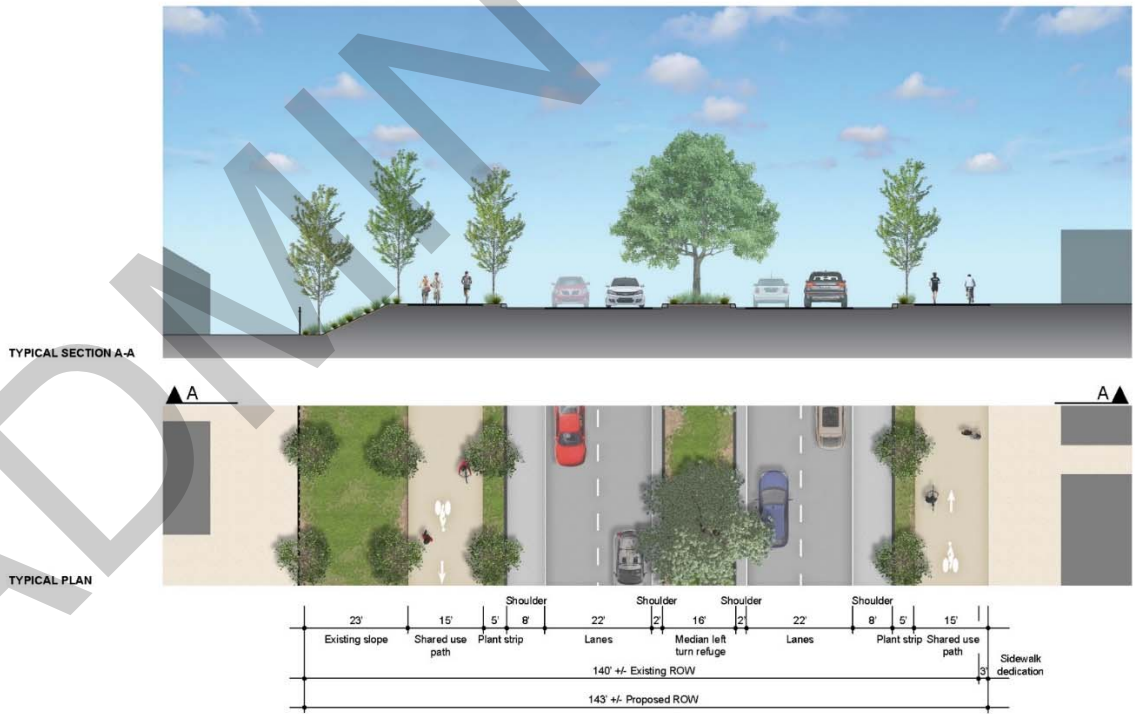


Figure 27: SR 29 Multimodal Improvements Segment Two

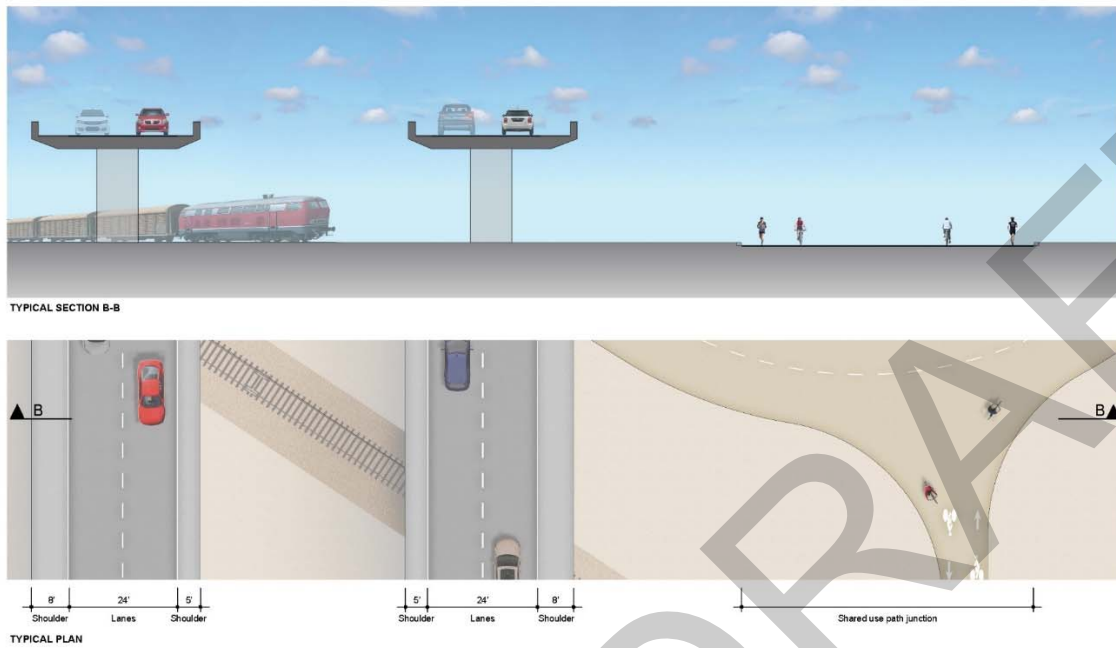
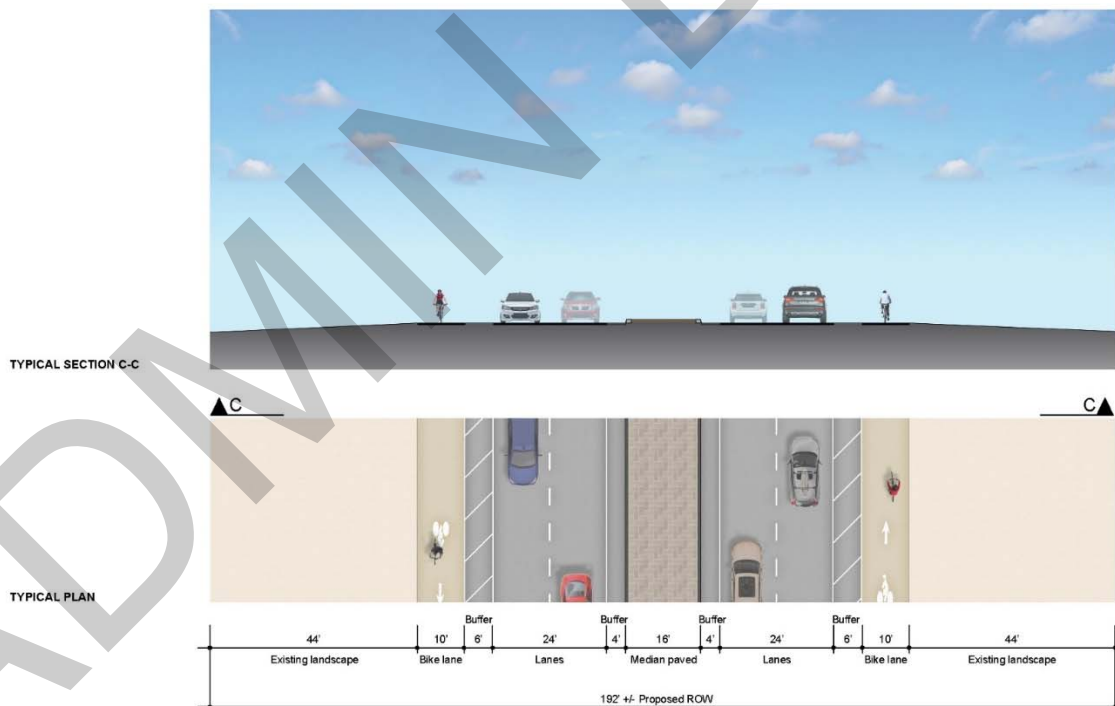


Figure 28: SR 29 Multimodal Improvements Segment Three



Carneros Junction

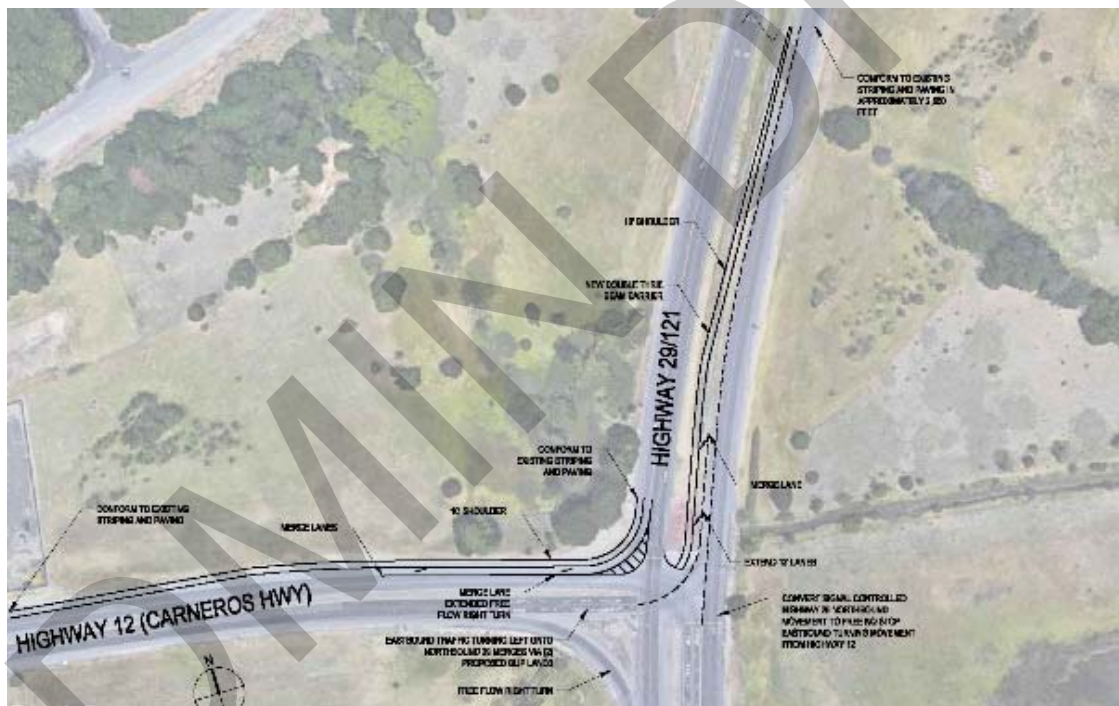
This solution would improve the existing signalized intersection at Carneros Junction, where SR 29 intersects with SR 12/SR 121.

Improvements would include:

- Converting the signal-controlled northbound through movement on SR 29 to a free no-stop through movement
- Constructing a dedicated unsignalized right turn lane from southbound SR 29 to westbound SR 12, including a merge lane on SR 12 that extends approximately 1,000 feet
- Constructing two receiving slip lanes in the existing SR 29 median for left turns from westbound SR 12 to northbound SR 29, extending approximately 3,100 feet

Carneros Junction intersection Improvements are depicted in Figure 29Error! Reference source not found..

Figure 29: Carneros Junction Intersection Improvements



Airport Boulevard/SR 12/SR 29

Two alternatives were proposed for improvements at the intersection of SR 29 and SR 12/Airport Boulevard. The current configurations at the three study intersections (Airport Blvd & Devlin Road, SR 29 & Airport Blvd/SR 12, SR 12 & N/S Kelly Rd) are all signal configuration.

Alternative 1 would include an interchange, with SR 12/Airport Boulevard crossing either over or under SR 29 with roundabouts also proposed at Airport Boulevard/Devlin Road, and SR 29 and North/South Kelly Road.

The proposed intersection improvement at Airport Blvd & Devlin Rd will become a single lane roundabout with a reduction in lanes to a two lane road from all approach directions. Currently the roadway is a four lane facility.

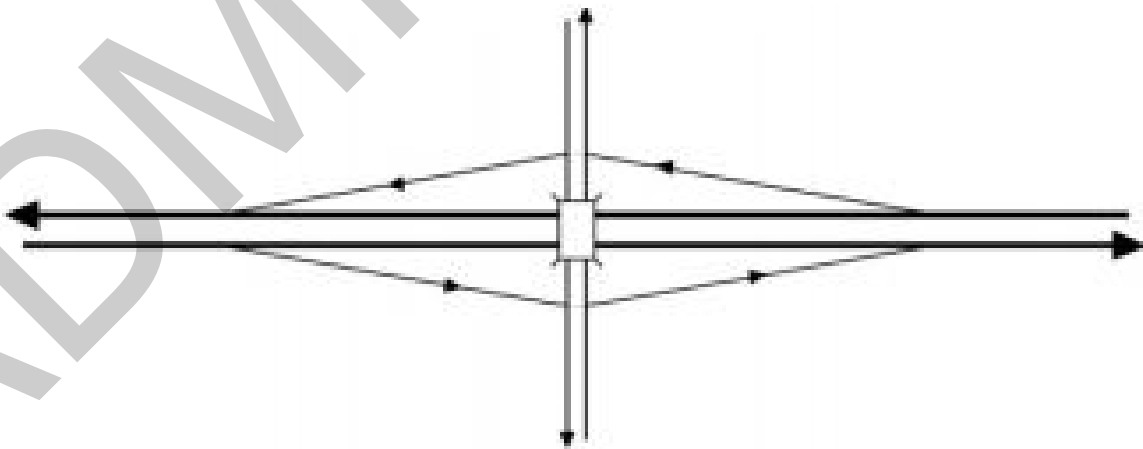
The intersection of SR 12 & N/S Kelly Rd would become a hybrid roundabout (4 lane roadway east/west and 2 lane roadway north/south) from a signal concept today.

The intersection of SR 29 & Airport Blvd/SR 12 would be transformed from an at-grade signalized intersection into a grade-separate roundabout interchange. It is still to be determined if SR 29 would be improved to either an overcrossing structure or depressed (sunk into the ground) design. Airport Blvd/SR 12 would become roundabout controlled with a single lane westbound and two lanes eastbound coming from the SR 29 and continuing through the downstream intersection.

These improvements are depicted in Figure 31.

Alternative 2 would be a tight diamond interchange. With this alternative, SR 29 would be on a grade-separated overcrossing structure, and SR 12/Airport Boulevard would cross underneath it. This is depicted in Figure 30.

Figure 30: Airport Boulevard/SR 12/SR 29 Alternative 2



Source: Caltrans Highway Design Manual

Figure 31: Airport Boulevard/SR 12/ SR 29 Intersection Improvement Alternative 1



Soscol Junction

The proposed improvement at Soscol Junction (SR 29/SR 221/Soscol Ferry Road) includes construction of two roundabouts and a grade-separated overcrossing structure for SR 29. Soscol Ferry Road would cross beneath SR 29, and shared use paths would be provided to connect to future alignments in the vicinity. The improvement is displayed in Figure 32 and Figure 33.

Figure 32: Soscol Junction Intersection Improvement



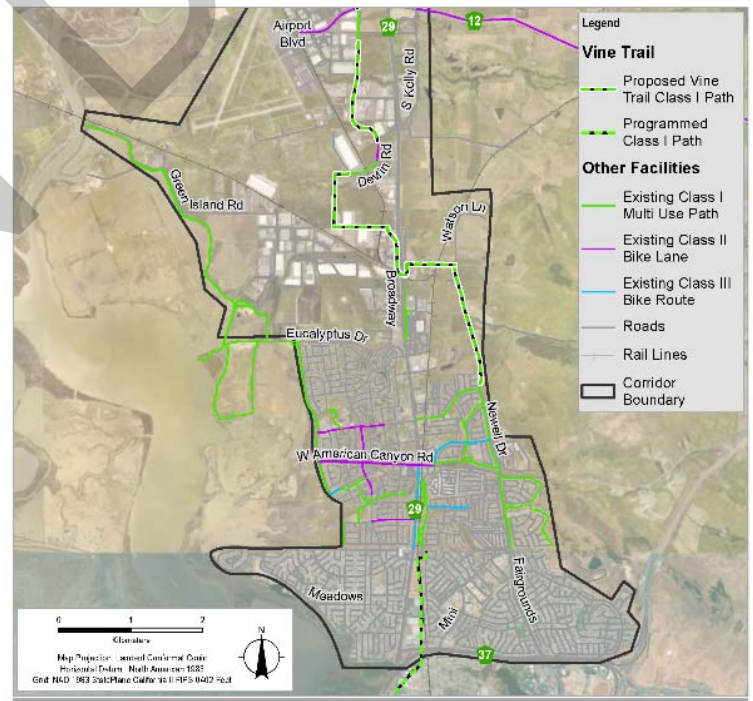
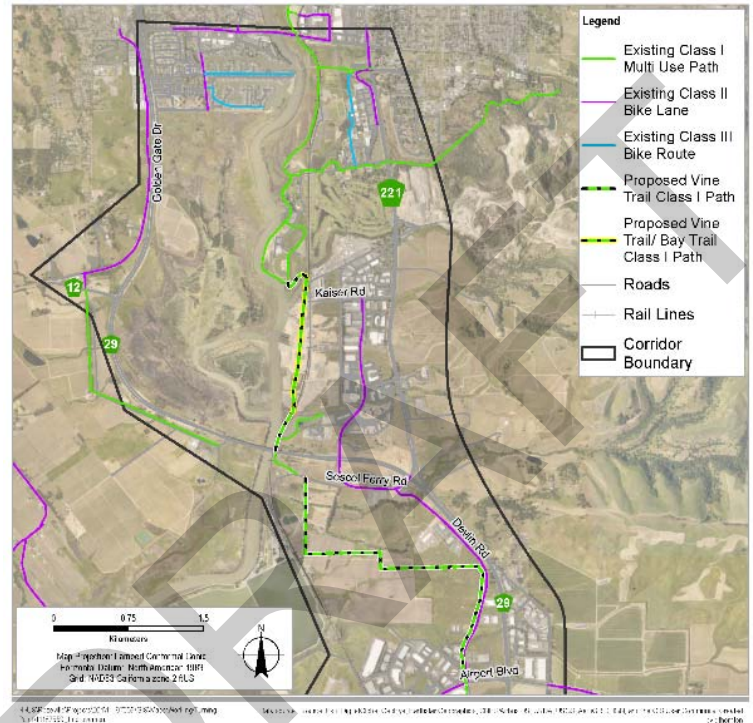
Figure 33: Soscol Interchange Improvement



Shared Use Paths

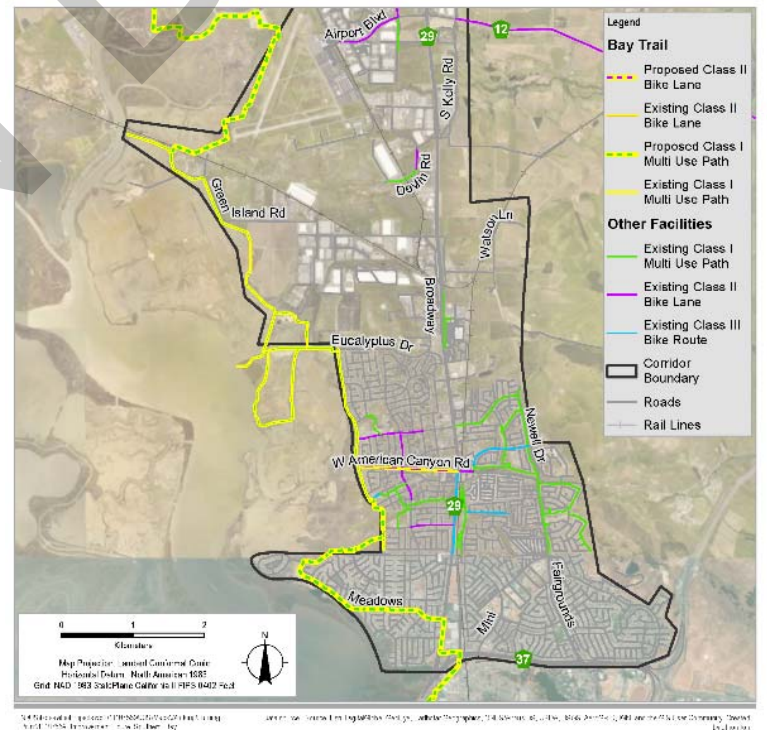
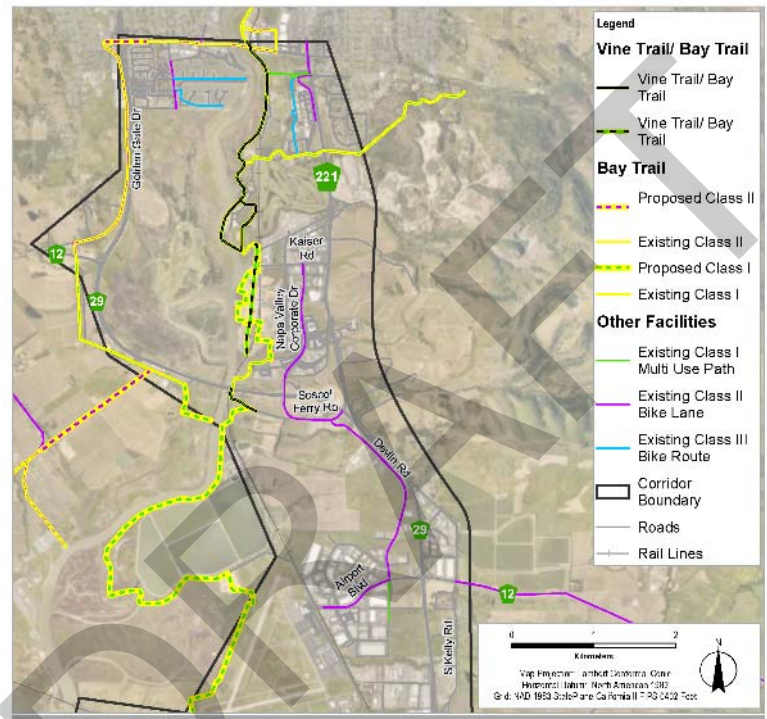
Napa Valley Vine Trail

This proposed path would offer a dedicated space for people walking and bicycling parallel to SR 29 and completely separated from vehicle traffic.

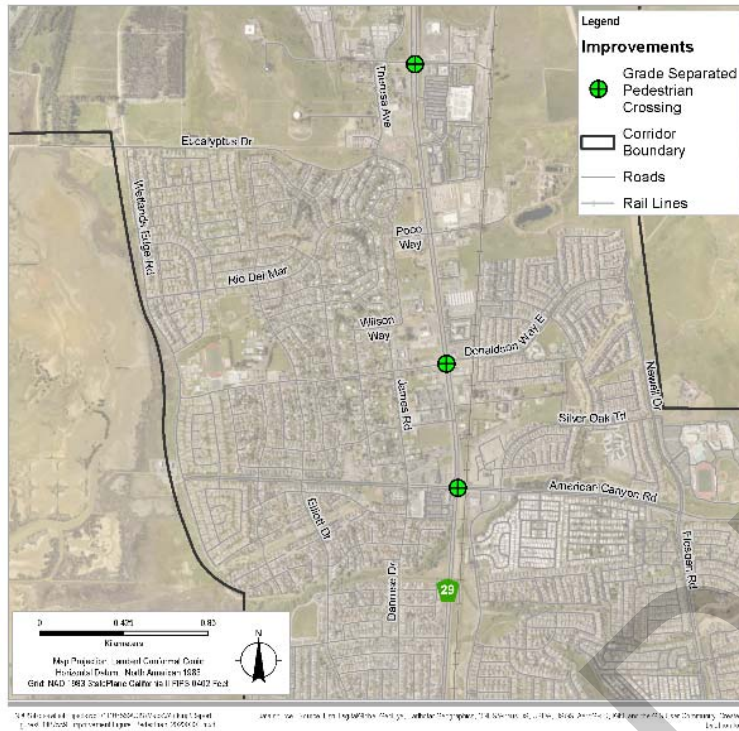


San Francisco Bay Trail

This proposed path would offer a dedicated space for people walking and bicycling parallel to SR 29, closer to the bay. The proposed alignment includes gap closure of the existing trail spanning the study area.



Grade-Separated Pedestrian Crossings



Grade-separated pedestrian crossings would provide safe access across major intersections for pedestrians. Proposed locations along SR 29 include Donaldson Drive, American Canyon Road, and Napa Junction Road.

Transit

SMART Train Extensions

American Canyon to Vallejo Ferry Terminal

This north-south extension of the Sonoma-Marín Area Rail Transit (SMART) train would extend from Napa Junction in American Canyon to the Vallejo Ferry Terminal.

Novato to Suisun City

This extension of the SMART train would extend from Novato to Suisun City, passing through Napa County and providing east-west rail connectivity as an alternative to the SR 12, SR 37, and SR 29 corridors.

The extension would include upgrades to existing tracks, several bridges, and at-grade crossings.

Station improvements would include upgrades to existing facilities at Novato-Hamilton and Suisun-Fairfield, and construction of new stations between these existing facilities. A passenger rail communication system would also need to be implemented.

Figure 34: Transit Improvements - Northern Study Area

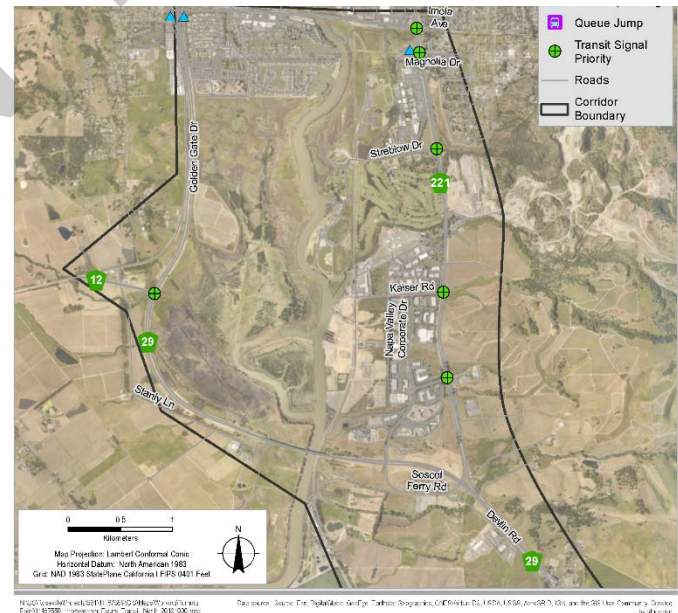
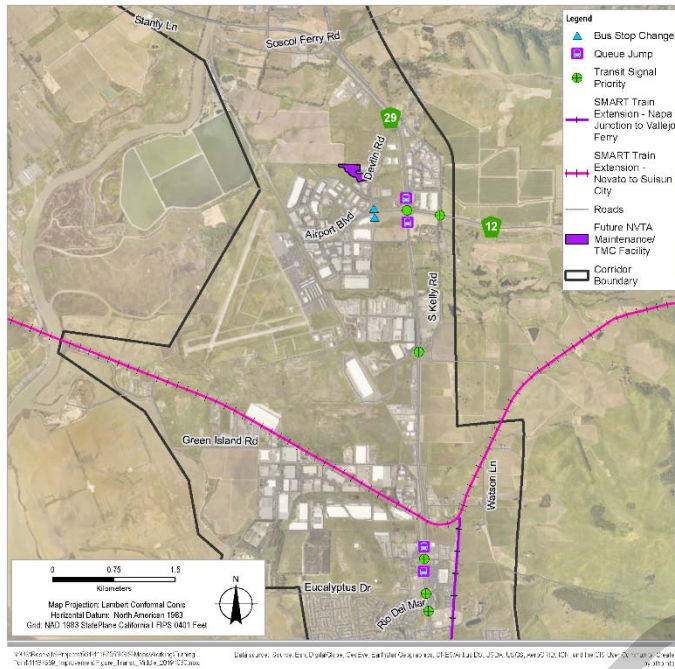


Figure 35: Transit Improvements - Mid Study Area

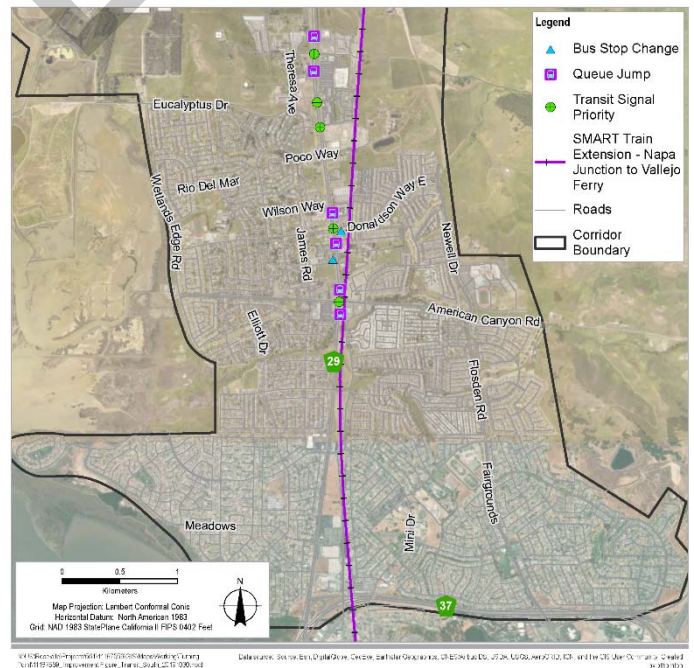
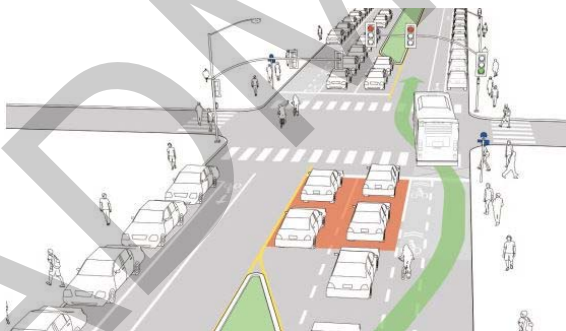


Bus Stop Changes

Proposed bus stop changes and/or upgrades would include benches, new or improved bus shelters, real-time travel information, wayfinding, and transit route information. Some locations would include wi-fi, bicycle storage, lighting, and improved pedestrian facilities.

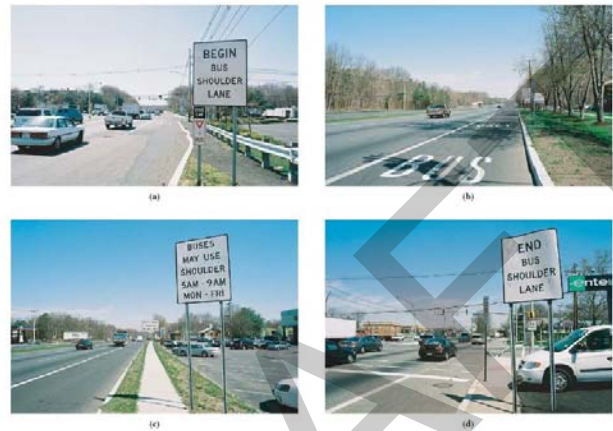
Queue Jump

Queue jump locations would provide dedicated lane space for buses to travel around queued vehicles at particular locations. Queue jumps reduce delay for buses caused by intersections and reduce travel time and variability. Proposed locations along SR 29 include Napa Junction Road, Donaldson Way, and American Canyon Road. The graphic below depicts an example of a queue jump intersection location.



Part Time Use of Shoulder

This improvement allows buses to use available shoulder width to increase efficiency and improve transit service. Use of shoulders by buses would be implemented in conjunction with queue jump locations with between 1,000 and 1,500 feet depending on location constraints.



Transit Signal Priority

Transit signal priority can reduce travel time and improve reliability by giving priority to buses at intersections. Installation of equipment is needed on buses to activate the signal priority.

Increased Service Frequency

The Route 11X and Route 29 would be served by two new, electric, 40-foot buses, and increased service frequency to 30 minute headways.

Integrated Corridor Management

The Integrated Corridor Management (ICM) improvements considered in this Plan include: traffic monitoring detectors, Trailblazer Signs, CCTV Cameras, Variable Message Signs, and a Transportation Management Center to facilitate the deployment of the communications systems needed to facilitate the various intelligent transportation systems (ITS) within the ICM package. It is assumed that all field devices deployed would use wireless communications and that data is transferred to the Traffic Management Center through an internet network over 4G cellular system. All current and future signalized intersections would be upgraded with traffic sensors/traffic detection; traffic signal controllers; and fiber optic or wireless communication systems at key corridor intersections. These communication devices would allow signalized intersections to be adaptive and allow them to react to changing traffic conditions; monitor traffic conditions in real time, and continuously distribute green time equitably for all traffic movements. Proposed locations of the ICM components discussed below are shown in Figure 36.

NVTA Maintenance Facility/ Transportation Management Center

The new NVTA Vine Transit Maintenance facility is proposed to replace the existing facility at 720 Jackson Street. The new facility would be constructed on undeveloped land at the terminus of Sheehy Court, approximately 900 feet west of its intersection with Devlin Road in unincorporated Napa County. The eight-acre site would provide for maintenance for six bays, an administrative building, parking for 74 transit vehicles up to 45 feet long, 75 visitor and employee parking spaces, and host a Transportation Management Center (TMC). The TMC would coordinate transportation communication within the corridor.

Traffic Monitoring Detectors

Field deployment of traffic monitoring detectors include underground loop and radar detectors. The detectors would monitor traffic conditions and communicate with the TMC for incident management.

Proposed locations along SR 29 include:

- Near 231 Devlin Road
- 0.37 miles north of Airport Boulevard
- 850 feet south of Airport Boulevard
- 350 feet north of Tower Road
- 1,200 feet south of Kelly Road
- 830 feet north of Donaldson Way
- 200 feet north of Eucalyptus Drive
- Overpass near Paoli Loop Road
- 1,000 feet north of Paoli Loop Road
- 430 feet south of S Kelly Road
- 1,100 feet north of Tower Road
- 250 feet north of Airport Boulevard
- 0.27 miles south of Kelly Road

Trailblazer Signs

Trailblazer signs provide wayfinding information on roadways, guiding road users to routes, connections, and destinations. Signs at the proposed locations below would provide detour and route information to manage circulation and direct traffic in the corridor. This could alleviate congestion on SR 29 by diverting some drivers to parallel routes.

Proposed locations include:

- Soscol Ferry Road/Devlin Drive: 250 ft east
- Devlin Road/Airport Boulevard: 300 ft north
- Airport Boulevard/Devlin Road: 300 ft east
- Tower Road/Devlin Road: 300 ft east
- Devlin Road/S Kelly Road: 650 ft north
- S Kelly Road/Devlin Road: 300 ft east
- Devlin Road/Green Island Road: 300 ft north
- American Canyon Road/Newell Drive: 500 ft west
- Newell Drive/Donaldson Way: 300 ft south
- S Kelly Road/Rio Del Mar: 300 ft south
- Rio Del Mar/S Kelly Road: 300 ft east
- Paoli Loop Road/S Kelly Road: 300 ft south
- S Kelly Road Extension/S Kelly Road: 300 ft south
- S Kelly Road/S Kelly Road Extension: 300 ft west

- S Kelly Road/Lincoln Avenue: 300 ft south
- Lincoln Avenue/S Kelly Road: 500 ft west

CCTV Cameras

Closed-circuit television (CCTV) cameras would be used in conjunction with variable message signs and traffic monitoring detectors to monitor and manage traffic conditions throughout the corridor.

Proposed locations along the west side of SR 29 include:

- Soscol Ferry Road
- 231 Devlin Road
- Airport Boulevard
- Tower Road
- South Kelly Road

Proposed locations along the east side of SR 29 include:

- American Canyon Road
- Donaldson Way
- Rio Del Mar
- Paoli loop Road
- South Kelly Road
- Lincoln Avenue

Variable Message Sign

Variable message signs are traffic control devices capable of displaying one or more alternative messages. As one component of the Integrated Corridor Management improvement package, variable message signs would be used for incident management and route diversion to divert and control traffic throughout the corridor. This may result in lowered congestion and delay on more commonly traversed routes.

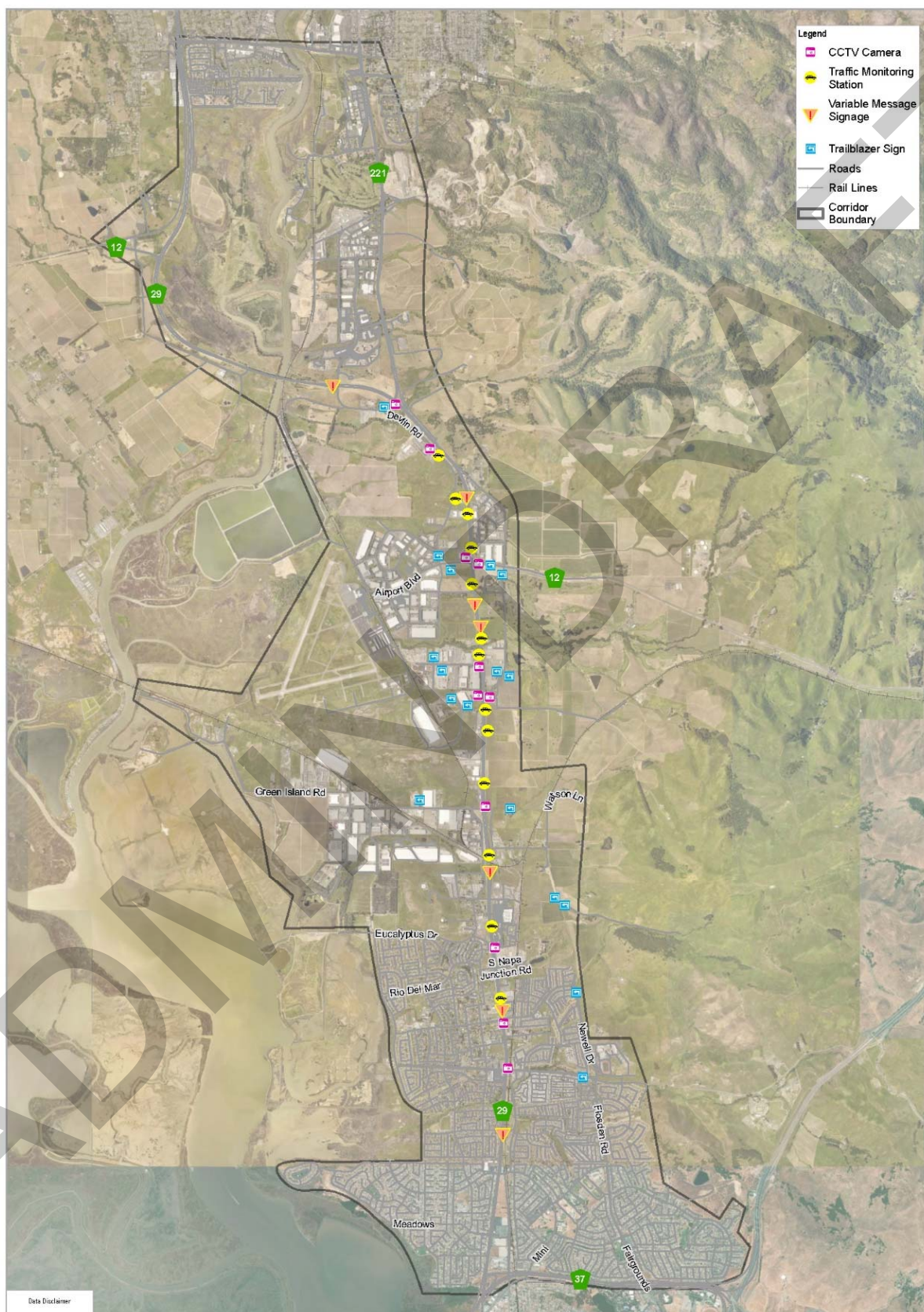
Proposed locations along SR 29 include one half-mile north of the following intersections:

- Soscol Ferry Road
- Airport Boulevard
- Tower Road
- Donaldson Way

Proposed locations also include one half-mile south of the following intersections:

- American Canyon Road
- Paoli Loop Road
- Lincoln Avenue

Figure 36: Integrated Corridor Management Improvements



6-Performance Assessment

The performance metrics selected for the SR 29 CMCP informed each of the six Smart Mobility Framework objectives to ensure that the resulting improvement recommendations provide a balanced, sustainable, and multimodal assessment of current and forecasted corridor conditions. Requisite rubrics include:

- Planning level cost opinions;
- Mode shift and vehicle miles travelled;
- Level of traffic stress scores;
- Vehicular delay and buffer time reductions;
- Collision reduction benefit;
- Health and air quality benefit;
- Societal cost and benefit monetization factors (per Caltrans 2018 Economic Parameters); and,
- Return on investment (i.e. benefit-cost).

Equal attention was given to document the beneficial outcomes of measures not directly reflected in the benefit-cost assessment. These include: Plan Consistency (with existing plans); Policy Consistency (NVTa, the City and County of Napa, City of American Canyon and Caltrans); Environmental/Institutional Sensitivity; Adaptation; Economic Development and, Community Acceptance.

Using these tools to measure effectiveness, the following benefit quantitative and qualitative analyses are summarized below and presented in the following sections:

- Induced Demand/Bicycle Mode Shift Benefits
- Multi-modal Connectivity/Level of Traffic Stress
- Travel Forecasting
- Transit Ridership
- Safety
- Interconnected Streets and Integrated Corridor Management
- Air Quality
- Environmental Justice and Social Equity
- Economic Development
- Adaptation Assessment
 - Climate Change Vulnerability
- Plan and Policy Consistency
 - Plan Consistency
 - Policy Consistency
 - Community Support
- Emerging Technologies Assessment

Induced Demand/Bicycle Mode Shift Benefits

To estimate the induced demand associated with the bicycle improvements proposed in the State Route 29 Comprehensive Multimodal Corridor Plan, the project team utilized the National Cooperative Highway Research Program (NCHRP) 552 methodology provided in the *Guidelines for Analysis of Investment in Bicycle Facilities*.

The facilities included in the benefit analysis presented herein include the Class I path gap closures along the Bay Trail and Vine Trail alignments and the provision of bike paths adjacent to SR 29 from SR 37 to Napa Junction Road, Napa Junction Road to Napa Valley Vine Trail, and South Kelly Road to Soscol Junction. The employed methodology, estimated benefits and associated benefit-cost ratio is described in the following sections.

Methodology

The analysis quantifies the induced demand mode shift (induced demand) associated with the proposed improvements, and monetizes the annualized mobility, health, recreation and decreased auto use benefits provided by the projected mode shift at high, moderate and low estimates. Bicyclists are more likely to use a facility if they live within a 1.5 mile buffer than if they live outside of this distance. Moreover, the highest likelihood of a member of the population to use the facility exists if they live within a 0.5 mile buffer around the facility. The NCHRP 552 methodology suggests that bicycle commute mode share can be utilized to estimate the number of existing and future bicycle ridership based on the population, and low, moderate, and high likelihood multipliers at 1.5 mile, 1 mile, and 0.5 mile buffers that surround a facility. Each buffer area—at 0.5, 1 and 1.5 mile buffers from the proposed improvements was created using a network-based analysis in a GIS environment. Benefit values are based on the following assumptions:

- Existing cyclists near a new facility will shift from a nearby facility to a new facility
- The new facility will induce new cyclists as a function of the number of existing cyclists relative to the attractiveness of the proposed facilities

To estimate future bicycle ridership, the population near the improvements was calculated using block level population data from the 2010 Decennial U.S. Census, Solano-Napa Activity Based Model (SNABM), and distance buffers of 0.5 miles, 1 mile and 1.5 miles based on the NCHRP Report 552 methodology. 2010 population estimates were utilized as baseline population estimates. Population growth rates were calculated using the land use data by TAZ found in the 2015 and 2040 SNAB Models and applied to the baseline to estimate future population. The total population within each buffer distance range near the proposed improvements was estimated by multiplying the proportion of area of each buffer to the area of the whole block by the estimated block population.

Using the estimated population and the sketch planning method presented in Appendix A of NCHRP Report 552, existing bicycle rates and the mobility, health, recreation, and decreased auto use benefits at high, moderate and low levels were estimated.

Induced Demand

Induced demand takes into account percentage of child and adult population, bicycle commute mode share, percentage of children who bicycle, and the population within three buffer distances, 0.5 miles, 1.0 miles, and 1.5 miles, of the proposed facility. These variables are incorporated into the equations provided in the NCHRP methodology.

The results of the estimated induced demand analysis is reported below. Appendix F provides a detailed explanation of the analysis procedures and results. Table 13 presents the new adult, children commuter and total bicyclists estimated to induce with implementation of the proposed improvements.

These results are used to calculate the measures of effectiveness associated with bicycle mode shift (reduction in trips and VMT), and the mobility, health, recreation, and decreased auto use benefits discussed in the following sections.

Table 13: Study Area Induced Demand Results

Study Area Induced Demand Results	
Total New Commuters, 2400m	67
Total New Commuters, 1600m	186
Total New Commuters, 800m	142
Total New Adult Cyclists, High 2400m	205
Total New Adult Cyclists, High 1600m	571
Total New Adult Cyclists, High 800m	437
Total New Adult Cyclists, Moderate 2400m	95
Total New Adult Cyclists, Moderate 1600m	263
Total New Adult Cyclists, Moderate 800m	202
Total New Adult Cyclists, Low 2400m	53
Total New Adult Cyclists, Low 1600m	147
Total New Adult Cyclists, Low 800m	111
Total New Child Cyclists, 2400m	106
Total New Child Cyclists, 1600m	296
Total New Child Cyclists, 800m	232
Total New Cyclists, High	2243
Total New Cyclists, Moderate	1590
Total New Cyclists, Low	1340

Measures of Effectiveness

Induced demand/bicycle mode shift can be measured by the reduction in vehicle trips and vehicle miles traveled (VMT) associated with the proposed bicycle improvements using the methodology described above. The number of trips and VMT reduced was calculated using the number of new commuters estimated using the NCHRP methodology and the average person trip length reported by the 2017 National Household Transportation Survey (NHTS). Because the NCHRP 552 methodology uses new commuters to estimate decreased auto trips, trip reductions and VMT are annualized under the assumption that a working year is comprised of 47 weeks and 5 days per week to account for the typical work week and vacations. These measures are reported in Table 14.

Table 14: Reduction in Trips and VMT Associated with Induced Demand

Induced Demand Measures of Effectiveness (MOE)	
MOE	Count
Daily Reduction in Trips	396
Daily Reduction in VMT	3,699
Annualized Reduction in Trips	93,060
Annualized Reduction in VMT	869,265

Induced Demand Benefit

The SR 29 study area encompasses portions of both Napa and Solano Counties. Because the NCHRP 552 methodology takes into account bicycle commute mode share and the percentage of adult versus children comprising the population, the analysis presented herein was completed separately for the two portions of the study area. .

Table 15 provides the total estimated benefit associated with the bicycle improvements proposed throughout the entire study area, which range from approximately \$7 million at the low end and \$10.4 million at the high end. Appendix F presents the induced bicycle demand benefit by Napa County and Solano County portions of the study area.

Additionally, the annualized benefits described in Table 15 **Error! Reference source not found.** should be adjusted to account for a 20-year life cycle. Assuming a 20-year life span, and incorporating a four percent discount rate or P/A Factor to reflect the present worth of future dollars, the 20 year adjusted benefit for the study area is estimated to total \$145.2 million, shown in Table 16.

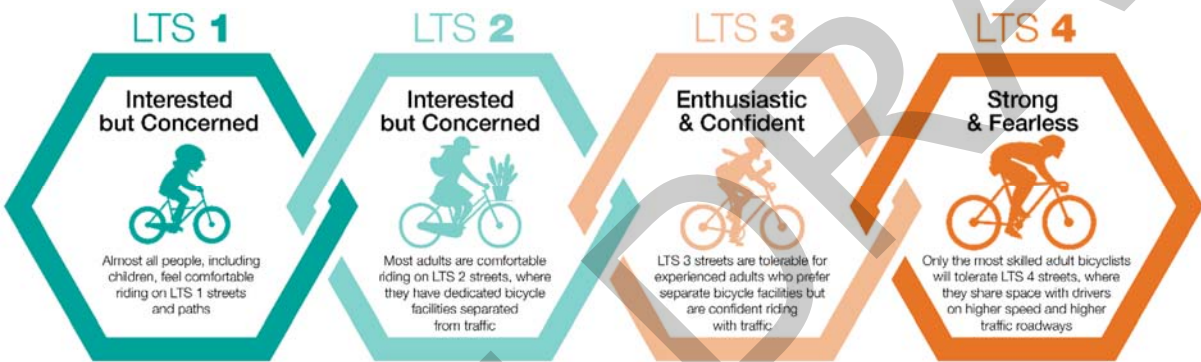
Table 15: Bicycle Mode Shift Benefits – Total Study Area

Bicycle Facility Benefits	
Annual Mobility Benefit	
Class I Shared Use Path	\$3,364,579
Annual Health Benefit	
High Estimate	\$286,976
Moderate Estimate	\$203,520
Low Estimate	\$171,520
Annual Recreation Benefit	
High Estimate	\$6,741,550
Moderate Estimate	\$4,361,750
Low Estimate	\$3,449,250
Annual Decreased Auto Use Benefit	\$17,384
Total Annual Benefit	
High Estimate	\$10,410,489
Moderate Estimate	\$7,947,233
Low Estimate	\$7,002,733

Table 16: Bicycle Mode Shift Benefits Annualized to 20 Year Life Cycle

Multimodal Connectivity/ Level of Traffic Stress

While the quantitative benefits associated with bicycle and pedestrian improvements are assessed using induced demand and bicycle mode shift, qualitative benefits of these improvements can be analyzed by examining improvements to multimodal connectivity throughout the corridor. Connectivity benefits associated with the improvements recommended in this plan are analyzed through the lens of Level of Traffic Stress (LTS). The LTS analysis presented herein incorporates Bicycle Level of Traffic Stress methodologies as a proxy for analyzing traffic stress for all active transportation network users. The recommended improvements provide low stress connectivity throughout the study area with off-street bicycle and pedestrian facilities and improved crossings along and adjacent to SR 29.



These improvements include the SR 29 Multimodal Improvements, the San Francisco Bay Trail and Napa Valley Vine Trail, a grade-separated pedestrian crossing at American Canyon Road/SR 29, and intersection improvements at Soscol Junction and Airport Boulevard/SR12/SR 29—both of which feature bicycle and pedestrian facilities planned to safely integrate with the proposed network improvements. The LTS with the recommended improvements are displayed in Figure 37Error! Reference source not found..

The active transportation improvements along SR 29 allows for low stress travel options for bicyclists and pedestrians through Vallejo, American Canyon and unincorporated Napa County, and provide connectivity to other low-stress facilities proposed within the corridor study area.

Segment One, between SR 37 and Eucalyptus Drive, include Class I Paths, landscaping, and median improvements. Segment One improvements extend to an existing Class I Path that begins at Eucalyptus Drive and terminates at Napa Junction Road. Landscaping improvements and an eight foot shoulder serve as a barrier between the separated path and vehicular traffic, providing low stress connectivity through the entirety of this roadway segment. Additionally, the landscaping and median improvements could contribute to traffic calming and lowered traffic stress by transforming the look and feel of the corridor segment from both the driver and active user's perspective. Vehicles tend to slow in areas that look like pedestrian and bike-friendly corridors, and active users are more likely to utilize the facility when the environment encourages them to travel there.

Segment Two improvements are proposed to extend the existing Class I facility between Eucalyptus Drive and Napa Junction Road north to the Paoli Loop segment of the proposed Napa Valley Vine Trail.

Together, Segment One and Two improvements provide continuous low stress transportation options along SR 29 from the Southern ingress of the corridor study area. Additionally, the proposed improvements connect to the proposed Napa Valley Vine Trail alignment to provide comprehensive low stress connectivity across the study area.

Finally, Segment Three improvements include Buffered Class II facilities along SR 29 between South Kelly Road and Soscol Junction. While this facility is higher stress due to high speeds and volumes, the facility results in reduced traffic stress compared against the existing condition due to the 10 foot Class II bike lane with a 6 foot buffer. There are a variety of buffering materials that could further reduce traffic stress by increasing driver awareness. This includes but is not limited to rumble strips; high visibility, hatched pavement markings; and painted bike lanes.

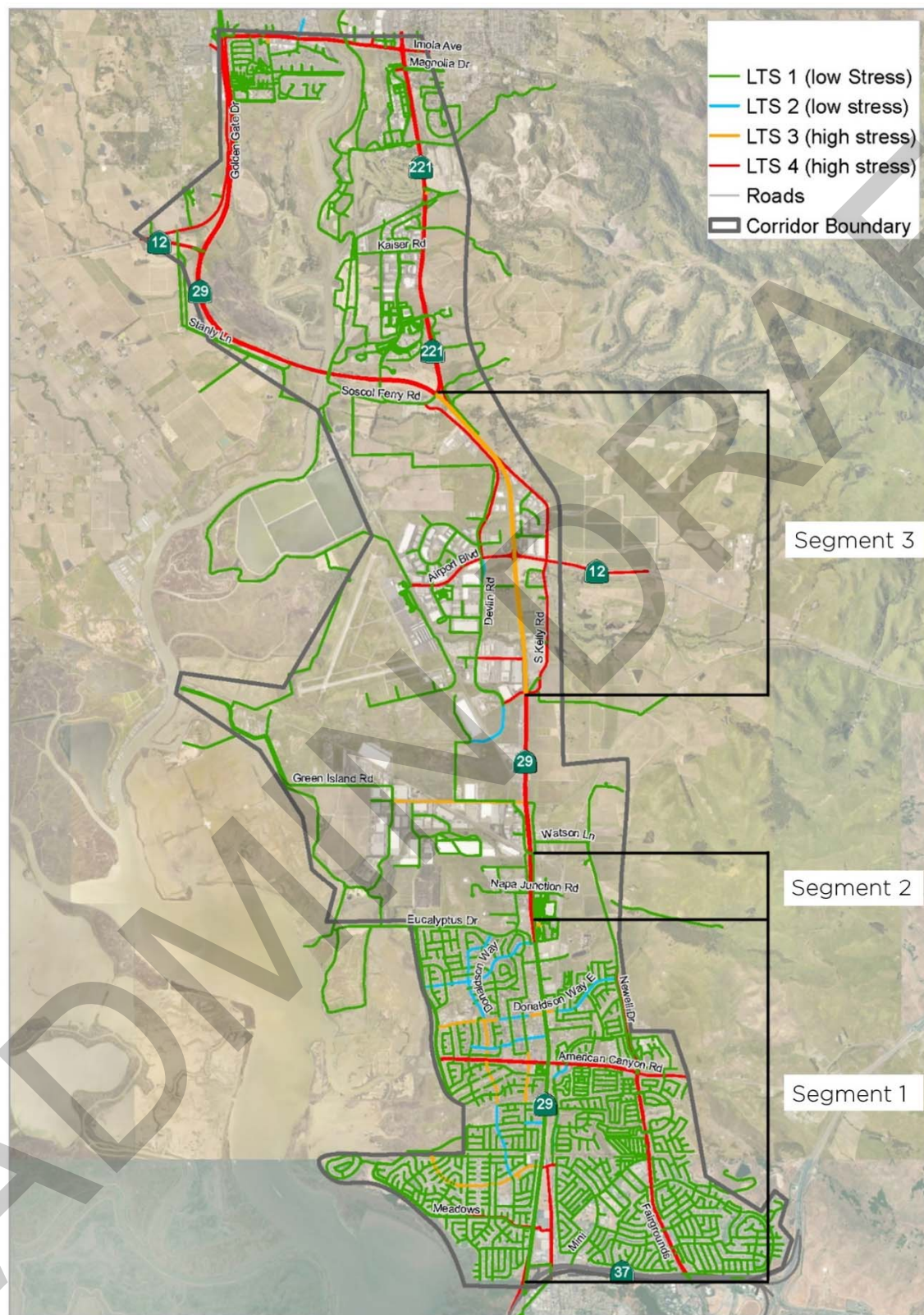
While SR 29 remains a high stress barrier north of Napa Junction Road, the San Francisco Bay Trail and Napa Valley Vine Trail Class I Paths offer low stress travel options as an alternative to SR 29. These facilities connect to low stress, local streets and other low stress recommended facilities to enable multimodal connectivity across the study area.

Additionally, the intersection improvements at Soscol Junction and Airport/SR 12/SR 29 improve high stress bicycle and pedestrian crossing conditions at these locations by incorporating multi-stage crossings, bicycle ramps, and shared-use bicycle and pedestrian facilities connecting to existing and proposed facilities.

All of the Class I Path and intersection improvements discussed above provide low stress connectivity for both bicyclists and pedestrians. In addition, the proposed pedestrian overcrossing at American Canyon Road provides low stress crossing opportunity for pedestrians crossing at American Canyon Road and SR 29. Three pedestrian crossing locations were considered, as described previously. The American Canyon Road location was chosen based on the proximity to key origins and destinations, including schools, parks, commercial, and residential land uses.

Collectively, the proposed active transportation, transit and operational improvements coalesce to provide a comprehensively connected, safe and multimodal corridor.

Figure 37: Level of Traffic Stress with Improvements



Transit Ridership

Overview

To assess the benefits associated with the transit improvements proposed in the SR 29 CMCP, the methodologies presented in Transit Cooperative Research Program (TCRP) Report 118: *Bus Rapid Transit Practitioner's Guide* was employed to project transit ridership. Transit improvements include a 30 minute increase in service frequency for Route 11X and Route 29, as well as Transit Queue Jumps, Transit Signal Priority, and Part-Time Use of Shoulder at select intersection locations. Route 11X and Route 29 are both proposed to transition from 60 minute to 30 minute headways and add two 40' electric busses to NVTA's fleet. Although a dedicated BRT line is not proposed (i.e., dedicated travel lane and 15 minute headways), the above improvements all serve to prioritize transit vehicle operations and travel times to improve on-time performance and reliability in ways that emulate BRT operations. These improvements justify the conservative application of the BRT Practitioners Guide Elasticity Methodology for estimating the mode shift analysis for improving the service frequency of Routes 11X and 29.

Ridership Projections and VMT Reduction Benefit

Available ridership data from the Vine Transit System was analyzed in addition to ridership projections associated with proposed service expansions for Route 11X and Route 29. These routes will be servicing their existing routes so any change in ridership will be solely attributable to the increase in frequency (not capturing new markets via route diversions). Annualized projections of ridership changes, and average vehicle trip length reported by the 2017 National Household Transportation Survey (NHTS) were utilized to estimate a reduction in Vehicle Miles Traveled (VMT) associated with the proposed improvements. The annualized increase in ridership projected to occur as a result of the proposed service frequency improvements is presented in Table 17 and the annualized VMT reduction associated with these projected changes in ridership are summarized in Table 18.

Table 17: Annualized Transit Ridership Increases

Annualized Transit Ridership Increase		
Route	Service Period	
	AM	PM
29-N	43,732	58,058
29-S	66,352	26,390
11X-N	31,668	16,588
11X-S	8,294	12,818

Table 18: Annualized VMT Reduction Associated with Transit Ridership

Annualized VMT Reduction		
Route	Service Period	
	AM	PM
29-N	408,457	542,262
29-S	246,483	619,728
11X-N	295,779	154,932
11X-S	77,466	119,720

Vehicle Operations

Unique 2040 Programmed (Baseline) and 2040 SR 29 CMCP (Planned) future year volume sets that reflect the traffic diversion and AM/PM peak hour circulation characteristics were developed to quantify the diversion of traffic onto parallel routes created by potential roadway capacity improvements and other operational improvements. These future-year volume sets served as inputs to the VISSIM microsimulation model.

Roadway Operations Performance Summary

Operational benefits associated with the planned roadway network were quantified by changes to delay and travel time reliability. Performance measures were generated from the VISSIM microsimulation for existing, future baseline, and future with project conditions. These performance measures included:

- Person throughput
- Person hours of delay (PHD)
- Travel time reliability – travel time index/buffer time index
- Vehicle hours of delay (VHD)
- Vehicle miles traveled (VMT)

Performance measure results are provided in Table 19.

Table 19: Roadway Operations Measures of Effectiveness

Simulation Scenario	Vehicle Miles Traveled (miles)	Total Delay (Hrs)	Person Delay (Hrs)	Vehicle Throughput	Person Throughput
Existing AM	249030.7	1297.3	1686.4	20,824	27,071
Existing PM	297697.4	1296.2	1685.1	23,083	30,008
Baseline 2040 AM	295588.7	2052.9	2668.7	21,929	28,508
Baseline 2040 PM	328934.4	2778.1	3611.6	25,808	33,550
Planned 2040 AM	283004.0	1089.9	1416.8	23,680	30,784
Planned 2040 PM	374066.3	2126.2	2764.0	26,006	33,808

Travel Time Reliability

Table 20 **Error! Reference source not found.** shows the travel time and buffer time as well as indices for each of these metrics for each scenario (passenger vehicle and trucks combined). **Error! Reference source not found.** Table 21 shows the same information for trucks only. NPMRDS was used to calculate existing truck delay and build correlation between existing truck delay and regular vehicle delay. Truck delay was then estimated under baseline and future year conditions both with and without the project.

Table 20: Travel Time Results by Scenario – All Vehicle Types

Travel Time (Minutes)			Travel Time Index		Buffer Index		Buffer Time	
Direction	AM Peak Hour	PM Peak Hour	AM Peak Hour	AM Peak Hour	PM Peak Hour	PM Peak Hour	PM Peak Hour	PM Peak Hour
Northbound								
Existing	21.5	17.7	0.8	0.4	0.79	0.43	16.96	7.59
Baseline	23.8	26.4	0.9	1.2	0.05	0.05	1.19	1.32
Planned	21.1	23.9	0.7	1.0	0.07	0.06	1.48	1.43
Southbound								
Existing	16.2	14.6	0.3	0.2	0.39	0.85	6.33	12.39
Baseline	20.6	27.6	0.7	1.3	0.06	0.06	1.23	1.65
Planned	16.3	21.7	0.4	0.8	0.04	0.03	0.65	0.65

Table 21: Travel Time Results by Scenario – Trucks Only

Travel Time (Minutes)			95th percentile travel time		Buffer Index	
Direction	AM Peak Hour	PM Peak Hour	AM Peak Hour	PM Peak Hour	AM Peak Hour	PM Peak Hour
Northbound						
Existing	27.4	20.6	91.5	55.7	2.34	1.71
Baseline	44.9	22.5	63.2	80.7	0.41	2.59
Planned	39.9	20.3	57.0	75.0	0.43	2.69
Southbound						
Existing	20.0	35.8	43.2	93.1	1.17	1.60
Baseline	20.0	61.9	50.0	62.0	1.51	0.00
Planned	15.8	48.8	39.0	47.9	1.47	0.00

Vehicular Level of Service

Table 22 shows the LOS of the study intersections for the Planned Network scenario within the AM peak hour, and Table 23 displays this for the PM peak hour. As shown – all intersections identified for improvements operate at LOS D or better except SR 29/Carneros Highway. Two intersections that were not identified for capacity improvements, SR 29/American Canyon Road and SR 29/South Napa Junction Road are shown to operate at LOS E or worse in one or both of the peak hours. Both these intersections will be improved to include channelization for bus queue jumps and part-time use of shoulder for transit which will provide operational benefits (these infrastructure improvements are not reflected in the microsimulation model). Secondly, a pedestrian only grade separated bridge is identified near the intersection of SR 29/American Canyon Road which will preclude the need for a pedestrian crossing cycle which will allow more green time to the through movements on SR 29 which will also improve operations at this intersection.

Table 22: Level of Service – SR 29 CMCP (Planned) Improvements 2040 Network (AM Peak Hour)

Intersection	Control Type ^{1,2}	AM Peak Hour					
		Intersection Delay (sec)	LOS	Vehicle Throughput	Veh Hrs of Delay (hrs)	Person Throughput	Person Hrs of Delay (hrs)
SR 29 & Carneros Hwy	Signal	61.2	E	5,136	87.3	6,677	113.5
SR 29 & SR 221/Soscol Ferry Rd	Signal	7.5	A	6,024	12.5	7,831	16.3
Airport Blvd/Devlin Rd	Signal	9.5	A	1,318	3.5	1,713	4.5
SR 29 & Airport Blvd/SR 12	Signal	7.4	A	5,551	11.4	7,216	14.9
SR 12 & Kelly Rd	Signal	7.0	A	2,531	4.9	3,290	6.4
SR 29 & S. Kelly Rd	Signal	24.0	C	3,949	26.3	5,134	34.2
SR 29 & Eucalyptus Drive	Signal	16.7	B	3,690	17.1	4,797	22.3
SR 29 & Rio Del Mar	Signal	25.8	C	3,721	26.6	4,837	34.6
SR 29 & S. Napa Junction Rd	Signal	51.5	D	3,798	54.4	4,937	70.7
SR 29 & American Canyon Rd	Signal	123.8	F	4,654	160.0	6,050	208.0

Table 23: Level of Service SR 29 CMCP (Planned) Improvements 2040 Network (PM Peak Hour)

Intersection	Control Type ^{1,2}	AM Peak Hour					
		Intersection Delay (sec)	LOS	Vehicle Throughput	Veh Hrs of Delay (hrs)	Person Throughput	Person Hrs of Delay (hrs)
SR 29 & Carneros Hwy	Signal	209.3	F	4,806	279.4	6,248	363.3
SR 29 & SR 221/Soscol Ferry Rd	Signal	16.7	B	6,936	32.3	9,017	42.0
Airport Blvd/Devlin Rd	Signal	10.2	B	1,686	4.8	2,192	6.2
SR 29 & Airport Blvd/SR 12	Signal	36.3	D	6,829	68.8	8,878	89.5
SR 12 & Kelly Rd	Signal	15.2	B	3,335	14.1	4,336	18.3
SR 29 & S. Kelly Rd	Signal	37.6	D	3,889	40.6	5,056	52.8
SR 29 & Eucalyptus Drive	Signal	24.1	C	4,266	28.6	5,546	37.2
SR 29 & Rio Del Mar	Signal	32.8	C	3,934	35.9	5,114	46.6
SR 29 & S. Napa Junction Rd	Signal	55.6	E	4,180	64.6	5,434	84.0
SR 29 & American Canyon Rd	Signal	114.2	F	5,208	165.3	6,770	214.8

Monetized Operational Benefits

Monetization expresses the amount of savings society directly and indirectly experiences. This monetization has been annualized and is based on 208 weekdays over one year. Table 24 shows the monetized delay per year and annualized for a 20-year life cycle.

Table 24: Delay and Buffer Time Index Benefit

Alternative	Delay Reduction Monetized Benefit Per Year	Life-Cycle Delay Reduction Monetized Benefit
AM Peak Hour	\$18,964,251	\$379,285,018
PM Peak Hour	\$18,705,592	\$374,111,836
Combined	\$37,669,843	\$753,396,854

Notes:

1. Calculation based on two incidents per year.

The results presented above reflect delay reduction for the peak hour only. However, congestion on SR 29 extends beyond the traditional peak hours during typical commute times. Therefore, this delay reduction benefit is conservative since it does not account for delay benefits that occur outside the single-hour peak commute times. Additionally, it does not account for delay benefits during weekends.

Safety

Overview

Based on contributing factors identified in the collision assessment, Part C of the Highway Safety Manual (HSM) was applied to estimate the potential safety performance of the CMCP improvement package. Crash Modification Factors (CMF) were applied to estimate the reduction in collisions. These reduced collisions were then distributed by severity—property damage only (PDO), injury, severe injury, or fatality—based on historical data of bicycle and pedestrian collisions experienced in the study corridor.

Bicycle and pedestrian related collisions and associated reductions were isolated to assess safety for active transportation users. The estimated reduction in collisions was distributed by severity—property damage only (PDO), injury, severe injury, or fatality—based on historical data of bicycle and pedestrian collisions experienced in the study corridor.

Safety Benefits

Vehicular and bicycle/pedestrian related collisions and improvements identified to improve safety were summarized for input into the HSIP analyzer to compute monetized benefits. The safety benefit calculation worksheets that inform this analysis are provided in Appendix H. The basis for this analysis is the Caltrans 2016 Economic Parameters. Once monetized, the estimate was expanded to reflect the design life horizon year. As shown in Table 25, the expected benefit of the identified countermeasures is \$102,268,048.

Table 25: Safety Benefit Analysis Summary

Countermeasure	Benefit
R37 - Install Shared-Use Path – SR 29: SR 37 to Napa Junction Road	\$13,895,040
R37 - Install Shared-Use Path – SR 29: Napa Junction Road to Paoli Loop Vine Trail	N/A*
R36 - Install Bike Lanes – SR 29:South Kelly Road to SR 12/Airport	\$2,900,661
S18 - Convert Signalized Intersection to Roundabout at Soscol Junction ^{1,2}	\$25,892,431
S18 - Convert Signalized Intersection to Roundabout Devlin Rd at Airport Blvd ²	\$4,519,821
S18 - Convert Signalized Intersection to Roundabout SR 29 at SR 12/Airport Blvd ^{1,2}	\$34,175,295
S18 - Convert Signalized Intersection to Roundabout at S Kelly Rd/SR 12 ²	\$20,884,800
Total Project Area Expected Benefit	\$102,268,048

*No benefit reported because no pedestrian and bicycle collisions reported near countermeasure area.

1. These results need to be reassessed using the HSM Part C Predictive Methodology

2. Additional multimodal benefit is being calculated at these locations

Interconnected Streets and Integrated Corridor Management

According to FHWA, over 60% of delay experienced on United States roadways is caused by traffic incidents. Integrated Corridor Management (ICM) improvements provide benefit by directing traffic through the network by utilizing a series of interconnected, intelligent transportation communication devices. The ICM improvements recommended in this Plan include:

- Traffic monitoring detectors, such as underground loop and radar detectors;
- Trailblazer signage, providing wayfinding and route guidance to vehicles;
- Variable message signage, providing information through changeable messages to vehicles;
- CCTV cameras, used in conjunction with variable message signs and traffic monitoring detectors to monitor and manage traffic conditions; and
- Transportation Management Center, serving as the ICM hub to facilitate intelligent communications between the components listed above.

Additionally, these improvements are recommended to coincide with the parallel capacity improvements along Devlin Road and South Kelly/Newell Drive.

Some components can be useful during expected periods of congestion. However, the system can be particularly useful during unexpected incidences that cause high amounts of congestion such as special events or emergency incidences to manage and divert traffic quickly and safely through the corridor.

ICM Scenario Development

On June 14, 2019 in the city of American Canyon, commuters into Napa experienced a significant collision related incident as a utility pole was struck overnight between Green Island Rd and S. Kelly Road. This collision caused one northbound lane of SR 29 to be blocked during commute time while the utility pole was being replaced. Traffic was backed up for five miles during this incident and normal traffic operation were not seen until hours after all lanes were opened. This incident occurred and drivers were not alerted or aware as they attempted to travel northbound on SR 29.

With an Integrated Corridor Management (ICM) system, local agencies would be able to inform drivers of quick and easily accessible parallel routes along Devlin Road and S. Kelly Road. With these two parallel roadways providing much needed additional capacity, and with interconnected signals allocating significantly more green time to the through movements, the delay and backup from an incident similar to the one described above could drastically diminished queues, delays, and reduce GHG emissions.

An ITS benefit assessment was conducted to validate the operational impacts of implementing Integrated Corridor Management (ICM) throughout the study area through active freeway management, active Transportation Demand Management strategies, active transit management, active arterial management, and traveler information systems in the corridor. To assess the benefit associated with the proposed ICM improvements, corridor network operations were modeled using the VISSIM Planned networks with incidents and without incidents.

Scenario # 1 – Baseline

A VISSIM micro-simulation was completed to simulate the conditions if one lane of northbound traffic was closed during the AM and PM peak hour commutes. With no ICM system in place, drivers would not be immediately aware of the parallel capacity that Devlin Road and S. Kelly Road could provide to alleviate congestion along SR 29 during an event. Table 26 shows the potential travel time runs that may be experienced if only one northbound lane was open during the AM and PM peak hours.

Table 26: Scenario # 1 Travel Time

Travel Time (Minutes)	
AM Peak Hour	PM Peak Hour
Northbound - No Diversion	
46.7	48.4

Scenario # 2 – Planed Network with ICM Improvements

A second VISSIM micro-simulation model was built to simulate the conditions if one lane of northbound traffic was closed during the AM and PM peak hour commutes but with an ICM system operating. Under this scenarios, drivers would see signs indicating the travel time benefits of using parallel roadways such as Devlin Road and Kelly Road.

Table 27 shows the projected travel time with an ICM system in operation.

Table 27: Scenario # 2 Travel Time

Travel Time (Minutes)	
AM Peak Hour	PM Peak Hour
Northbound - With Diversion	
37.6	36.6

Adjacent intersection will experience higher delays as a results of traffic diverting from SR 29. The travel time presented above accounts for the additional delays that drivers would experience at adjacent intersections. With the parallel roadways, drivers can expect to save approximately 9.1 minutes in the AM peak hour and 11.8 minutes in the PM peak hour if an incident were to occur and one lane northbound was required to be closed during the entire commute time.

ICM Benefits

The ICM system provides information to drivers to change travel patterns providing additional parallel capacity to SR 29. This benefits the drivers by reducing the amount of queues, delay, and emissions. The decrease in delay is an attribute that can be monetized to show how drivers not only benefit from a time perspective but also monetarily. The monetary benefit comes from less time spent driving which reduces fuel consumption, greenhouse gas emissions, and loss time. The monetized benefits are presented in Table 28.

Table 28: ICM Benefits Summary

Alternative	Delay Reduction Monetized Benefit Per Year	Buffer Time Life-Cycle Reduction Monetized Benefit
AM Peak Hour	\$614,447	\$12,288,945
PM Peak Hour	\$840,774	\$16,815,474

Notes:

1. Calculation based on two incidents per year.

As presented in Table 28, the total life cycle benefit if two incidents occurred during the AM peak hour is approximately \$12.3 million and PM peak hour is approximately \$16.8 million over 20 years.

If the northbound direction of SR 29 experience a reduction in capacity from two lane to one lane between Green Island Road and Airport Boulevard/SR twice a year, the ICM would reduce travel times in the AM peak hour by approximately 9.1 minutes per incident and save drivers approximately \$12.3 million in delay costs. If the incident occurred in the PM peak hour, the travel time savings would be 11.8 minutes per incident and approximately \$16.8 million in delay costs over 20 years.

Air Quality

Air quality benefits were estimated using the Emissions Calculator or Cal-B/C. All requisite on-road activity inputs (i.e. study corridor VMT and vehicle speeds) for this analysis were generated by the VISSIM microsimulation model, the NCHRP 552 bicycle mode shift analysis, and TCRP-118 transit mode shift analysis.

Health-based criteria pollutants and climate change greenhouse gases (CO₂ and CO₂ equivalents) were quantified. Based on the on-road vehicle activity changes quantified, the SB 1 Emissions Calculator tool developed by the California Transportation Commission (CTC) was used to calculate the change in these emissions as a result of the SR 29 CMCP improvements. The emissions analysis was informed by the VMT and average vehicle speed characteristics of each of the CMCP improvements.

Air Quality benefits associated the operational, bike-related and Transit improvements, reflected in Table 29, Table 30, and Table 31, respectively.

Table 29: Air Quality Benefits - Operational Improvements

Emissions Reduction	Short Tons		Value	
	Total Over 20 Years	Average Annual	Total Over 20 Years	Average Annual
CO Emissions Saved	335.31091	16.76555	\$17,530	\$888
CO2 Emissions Saved	184,749.51194	9,237.47560	\$5,500,480	\$275,020
NOX Emissions Saved	27.76687	1.38834	\$298,130	\$14,910
PM10 + PM2.5 Emissions Saved	3.16035	0.15802	\$159,850	\$7,990
SOX Emissions Saved	1.96519	0.09826	\$92,960	\$4,650
VOC Emissions Saved	29.71929	1.48596	\$24,670	\$1,230
Total Monetized Reduction			\$6,093,620	\$304,688

Table 30: Air Quality - Bike Related Improvements

Emissions Reduction	Short Tons		Value	
	Total Over 20 Years	Average Annual	Total Over 20 Years	Average Annual
CO Emissions Saved	10.77796	0.53890	\$500	\$30
CO2 Emissions Saved	3,734.20417	186.71021	\$105,580	\$5,280
NOX Emissions Saved	1.12636	0.05632	\$12,920	\$650
PM10 + PM2.5 Emissions Saved	0.03623	0.00181	\$1,660	\$80
SOX Emissions Saved	0.03671	0.00184	\$1,540	\$80
VOC Emissions Saved	0.41624	0.02081	\$320	\$20
Total Monetized Reduction			\$122,520	\$6,140

Table 31: Air Quality Benefits - Transit Improvements

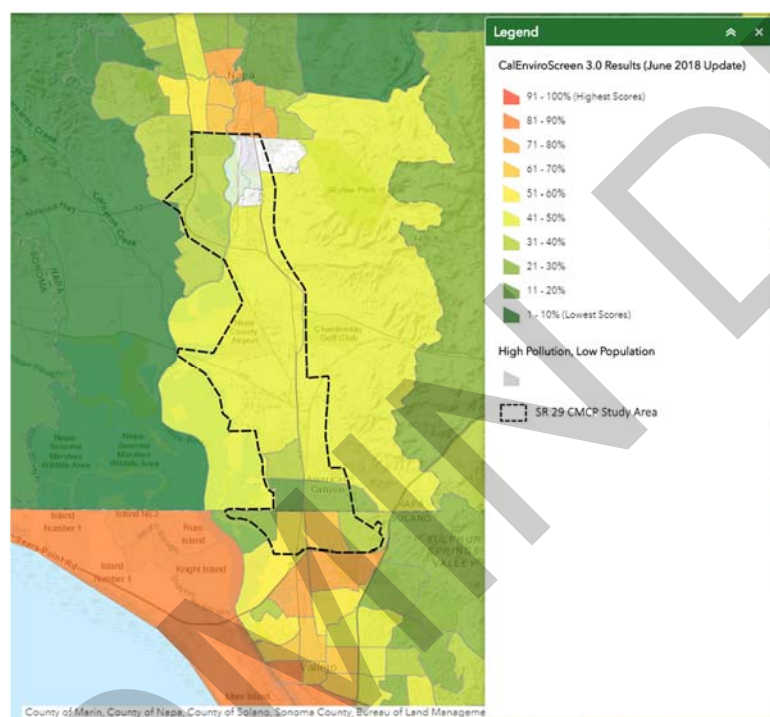
Emissions Reduction	Short Tons		Value (mil. \$)	
	Total Over 20 Years	Average Annual	Total Over 20 Years	Average Annual
CO Emissions Saved	27.67315	1.38366	\$1,290	\$60
CO2 Emissions Saved	9,587.82153	479.39108	\$271,100	\$13,550
NOX Emissions Saved	2.89201	0.14460	\$33,180	\$1,660
PM10 + PM2.5 Emissions Saved	0.09303	0.00466	\$4,250	\$210
SOX Emissions Saved	0.09426	0.00471	\$820	\$40
VOC Emissions Saved	1.06872	0.05344	\$1,290	\$60
Total Monetized Benefit			\$314,600	\$15,720

Environmental Justice and Social Equity

Impacts of construction and benefit of use should be shared across the community regardless of ethnicity, economic situation or physical ability because improvements developed with public funds are of everyone. Projects that could potentially impact minority or low-income communities, or that will provide benefits that favor wealthier communities, need to be off-set by mitigating activities, or another less impactful solution should be pursued.

Figure 38 presents CalEnviroScreen 3.0 results within the direct SR 29 CMCP study area. As shown, none of the study area covers any census tracts with a CalEnviroScreen 3.0 result worse than 80%, which is typically used to designate disadvantaged communities. Figure 39 presents low income communities (per AB 1550) and disadvantaged communities (per SB 535). As shown, the SR 29 corridor connects several disadvantaged and low-income communities. Improvements will benefit these users disproportionately.

Figure 38: Study Area CalEnviroScreen 3.0 Results

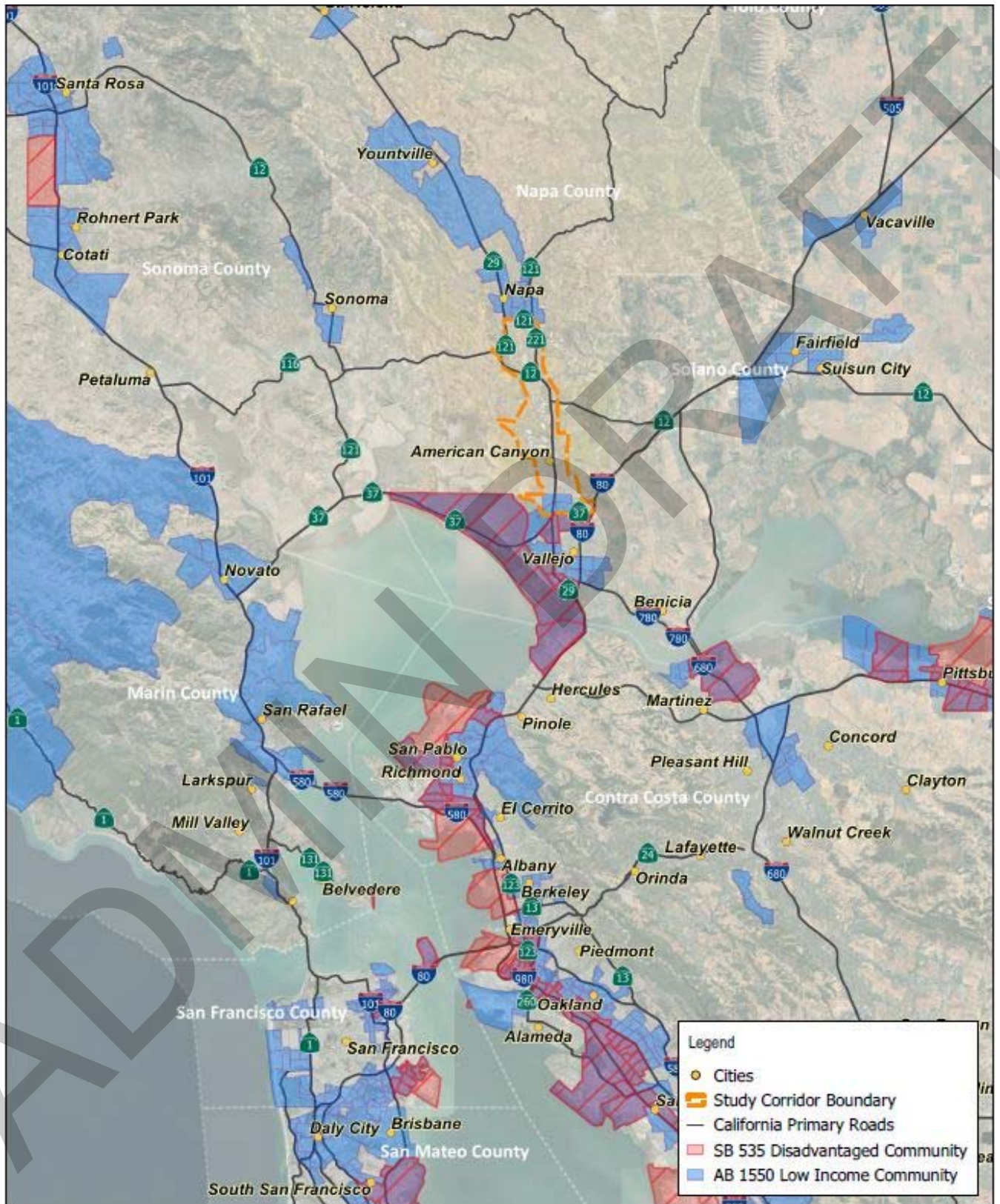


All the improvements identified in the SR 29 CMCP preferred package address regional corridor-wide needs. Given that the SR 29 corridor itself serves a significant number of low income and minority populations, particularly those who work in service and agriculture-based industries, all improvements promote a social equity perspective. NVTa and MTC definitions for disadvantaged communities were used to differentiate the degree of improved accessibility between advantaged and disadvantaged communities resulting from the SR 29 CMCP improvement package.

As described under the Active Transportation Accessibility and Mode Shift Analysis, LTS connectivity assessments were also conducted to identify the degree of access to active transportation and transit improvements by disadvantaged communities versus non-disadvantaged communities.

Disproportionately high adverse effects resulting from the implementation of the SR 29 CMCP improvements on minority and low-income populations were also examined and found not to exist.

Figure 39: Regional Disadvantaged Community and Low Income Conte



Economic Development

The economic analysis of the mobility improvements along the study corridor within the Corridor Plan consist of two parts:

- Benefit-cost analysis comparing the user benefits of the improvement plan with the costs of implementation
- Economic impact analysis showing the regional impacts/benefits of the Corridor Plan to help achieve the economic forecasts of increased jobs, housing and people.

Benefit-Cost Analysis - The quantification of the benefit-cost of the proposed improvements are contained in this Performance Assessment chapter of this SR 29 CMCP document. To receive Federal or State grant funding, clear benefit to cost need to be calculated for each of the corridor solutions, which are contained herein.

Freight Movement - The quantification of truck-specific delay and buffer time reduction is contained in the Performance Assessment chapter of this SR 29 CMCP.

Economic Development - The IMPLAN 2018 Multiplier for Gross Regional Product for Napa County is 1.29. This indicates that every dollar expended in NICS Code 54, Highway Construction Streets and Roads, will generate a total (direct, indirect and induced) return of an additional 29 cents in GRP countywide. Of the **\$478,214,453** funding necessary to implement the SR 29 CMCP. This equates to \$138 million of additional GRP through 2040.

The IMPLAN 2018 Multiplier for Job Creation is 1.407. This indicates that for every job added to NICS Code 54, a total (direct, indirect and induced) of .407 full-time equivalent jobs should be generated. The direct job creation of the proposed SR 29 CMCP investment is projected to be 1,711 added FTEs that will generate the indirect effect of creating an additional 696 FTEs over the same time frame.

Economic Impact Analysis - The nine-county Bay Area region has continued growth and development plans, anticipating to have more than 4.5 million jobs and a population of upwards to 9.3 million people by 2040. To house this growing population, upwards of 450,000 to 500,000 more housing units will be needed by 2040. Within the study area, designated PDAs have the potential to absorb a significant share of this growth potential.

Currently as identified in this document, the existing SR 29 corridor is already impacted with congestion, limiting not only automobile travel for work commuting and recreation, but also limiting substantial truck travel for goods movement and agriculture. In addition, without a current connected multi-modal system, multi-modal corridor options are very limited, leaving only the State highway and local roadways available to move people and goods.

The SR 29 CMCP is a comprehensive multi-modal corridor plan that has identified high benefit-cost improvements and prioritized them to systematically meet the growing capacity and multi-modal needs as they arise through 2040. Without the improvements contained in this Corridor Plan, travel, particularly during peak periods and peak seasons, would come to a standstill for extended periods of time. The balanced approach to not only provide additional street capacity, but also modal options for public transit and paths for both cycling and walking, greatly enhances the ability to move both people and goods in the future to at least, 2040. The implementation of the SR 29 CMCP will be essential to provide

the increased capacity and modal options to support the planned economic growth and development of the Napa Valley region.

Adaptation Assessment

A qualitative assessment of climate preparedness and infrastructure asset production/resilience was developed, taking full advantage of online mapping tools including the Caltrans Vulnerability Interactive Mapping Tool (District 4) and CalEnviroScreen 3.0, developed by the Office of Environmental Health Hazard Assessment. Flood and wildfire events were evaluated.

This assessment evaluated the enhanced risk associated with not implementing the SR 29 CMCP improvements as well as the corridor's overall use and functionality on:

- Multimodal transportation infrastructure assessment
- Network connectivity assessment
- Goods movement assessment
- Emergency response assessment
- Evacuation response assessment

State Route 29 – Climate Change Vulnerability Assessment

As a part of this comprehensive assessment for the SR 29 CMCP, a climate change vulnerability assessment has been prepared for each of the primary improvement categories. This assessment follows the guidance recently provided in the Caltrans Climate Change Vulnerability Assessment 2018 Summary Report, prepared by Caltrans District 4. In the 2018 Summary Report, Caltrans identifies in their assessment approach, three action items that must be considered in evaluating the potential climate change impacts on the assets of the State's transportation infrastructure, both existing and planned. These action items of their assessment included the following:

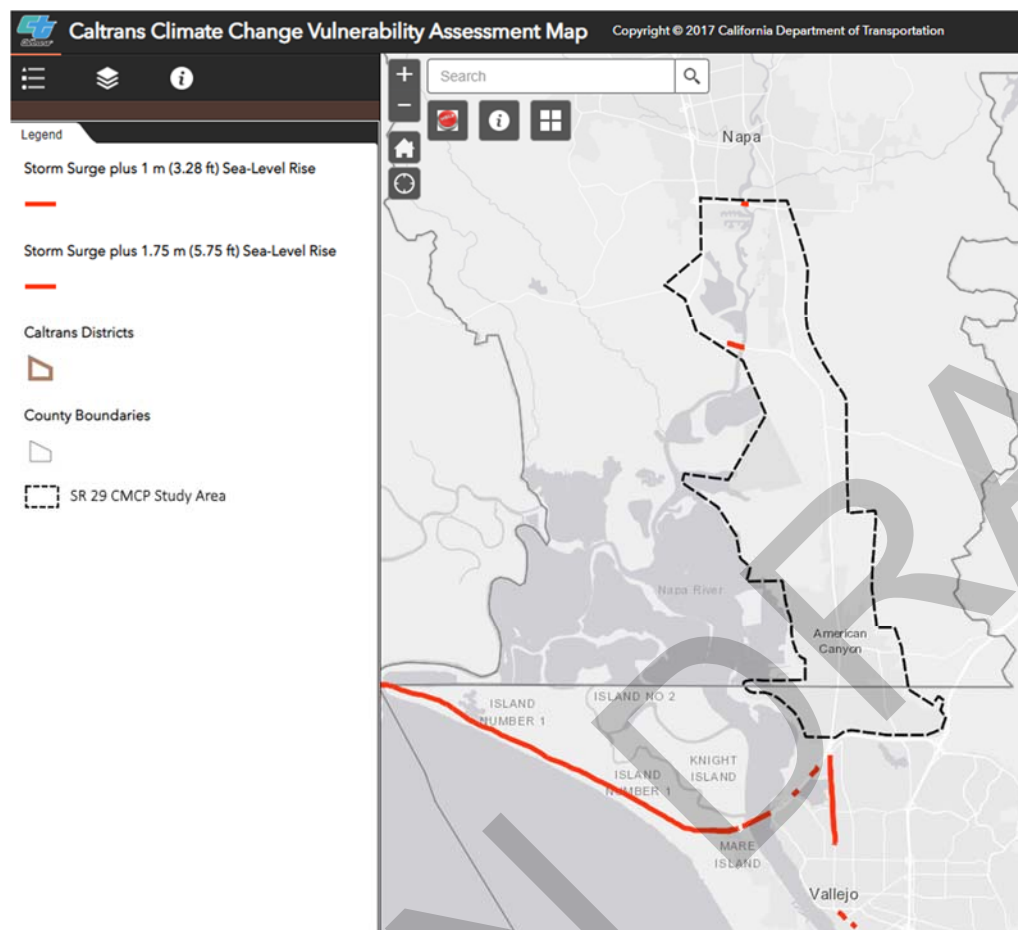
- Exposure – Will the asset be exposed to climate change?
- Consequence – If it is, how will the asset deteriorate or otherwise be impacted and how quickly will such impact occur?
- Prioritizations – Presuming the asset is impacted, how frequent, at what cost and what risk needs to be considered prior to making the investment for improving or replacing the asset?

With acknowledgement that climate change is occurring and significant adverse events will continue to increase, the Caltrans report identifies the four primary climate change impacts for which the above action items need to be considered and the risks assessed. They are as follows:

- Temperature
- Precipitation
- Sea Level Rise
- Wildfires

For each of these above potential climate change impacts, an assessment has been conducted regarding the proposed mobility improvements recommended in the SR 29 CMCP as to their potential impact, benefit and risk. The following is a brief summary of each assessment for each proposed improvement category of the SR 29 CMCP improvement package. Additionally, Figure 40 shows the Storm Surge 1 meter (3.28 feet), and 1.75 meter (5.75 feet) Sea-Level Rise vulnerability maps developed using Caltrans District 4 Climate Change Vulnerability web-based mapping tool.

Figure 40: Storm Surge (Sea-Level Rise) Vulnerability Map



As shown above, a short segment of SR 29 across the Napa River, as well as a short segment of SR 121 (Imola Avenue) across the Napa River, appear as vulnerable against anticipated storm surge levels following starting at 1 meter (3.28 feet) of sea-level rise. The mapping tool was used to review wildfire vulnerability, but no results were found in the SR 29 corridor study area. The mapping tool was used to assess the various SR 29 CMCP corridor concepts below.

Climate Change Assessment by Improvement Category Proposed in the Mobility Plan

Parallel Capacity Improvements

Temperature – With construction of new parallel roadways that would connect North Kelley to Newell to the east of SR 29 and a Devlin Road extension on the west side, more impervious surface will be added contributing to temperature rise. Additionally, with more pavement, such additional pavement will deteriorate with heat and will require more cost to maintain and eventually replace.

Precipitation – With the additional roadways creating additional impervious surfaces, more runoff will occur requiring additional storm drainage infrastructure at additional cost to construct and maintain.

Sea Level Rise – According to the Caltrans Climate Change Vulnerability Assessment Map (2017), the proposed improvements within the Mobility Plan are outside of the potential inundation areas as sea levels continue to rise.

Wildfires – With new parallel roadways, alternative routes and capacity become available for both evacuation and emergency response. Although the corridor itself, will not likely be directly impacted by wildfires, the corridor is an important regional connector.

State Route 29 Multimodal Improvements

Temperature – Some additional impervious surfaces may be added to accommodate provision of pedestrian and bicycle facilities and public transit stops and bus queue bypass lanes, however, the extent of the proposed improvements will not likely effect climate change. Additionally, to offset any potential negative impacts, any diversion of emission producing vehicle travel to the proposed multi-modal improvements should reduce any increase in impacts to insignificant levels.

Precipitation – Not likely to effect a change in precipitation levels.

Sea-Level Rise – According to the Caltrans Climate Change Vulnerability Assessment Map (2017), the proposed improvements within the Mobility Plan are outside of the potential inundation areas as sea levels continue to rise.

Wildfires – Not likely to effect a change in wildfires. Some multi-modal improvements could provide additional or alternative surfaces along the corridor for evacuation or emergency response.

Intersection Improvements

Temperature – With construction of new intersection improvements, either roundabouts or signalized intersections, more impervious surfaces will be added contributing to temperature rise. Additionally, with more pavement, such additional pavement will deteriorate with heat and will require more cost to maintain and eventually replace.

Precipitation – With the additional intersection improvements creating more impervious surfaces, more runoff will occur requiring additional storm drainage infrastructure at additional cost to construct and maintain.

Sea Level Rise – According to the Caltrans Climate Change Vulnerability Assessment Map (2017), the proposed improvements within the Mobility Plan are outside of the potential inundation areas as sea levels continue to rise.

Wildfires – With intersection improvements, potentially more capacity could become available for both evacuation and emergency response. Although the corridor itself, will not likely be directly impacted by wildfires, the corridor is certainly an important regional connector for which the

proposed intersection improvements will enhance future traffic operations. Lastly, between the intersection enhancement alternatives, roundabouts are the preferred alternative as no electrical power is needed during times of emergency.

Shared Use Paths

Temperature – Some additional impervious surfaces may be added to accommodate provision of a shared use path, however, the extent of the proposed improvements will not likely effect climate change. Additionally, to offset any potential negative impacts, any diversion of emission producing vehicle travel to the proposed shared use path should reduce any increase in impacts to insignificant levels.

Precipitation – Not likely to effect a change in precipitation levels.

Sea-Level Rise – According to the Caltrans Climate Change Vulnerability Assessment Map (2017), the proposed improvements within the Mobility Plan are outside of the potential inundation areas as sea levels continue to rise.

Wildfires – Not likely to effect a change in wildfires. A shared use path could provide additional or alternative surfaces along the corridor for evacuation or emergency response.

Bus Improvements

Temperature – Some additional impervious surfaces may be added to accommodate provision of bus improvements, including bus stops and bus queue jump lanes, however, the extent of the proposed improvements will not likely effect climate change. Additionally, to offset any potential negative impacts, any diversion of emission producing vehicle travel to increased bus utilization should reduce any increase in impacts to insignificant levels.

Precipitation – Not likely to effect a change in precipitation levels.

Sea-Level Rise – According to the Caltrans Climate Change Vulnerability Assessment Map (2017), the proposed improvements within the Mobility Plan are outside of the potential inundation areas as sea levels continue to rise.

Wildfires – Not likely to effect a change in wildfires. Some of the bus improvements could provide additional or alternative surfaces along the corridor for evacuation or emergency response.

Integrated Corridor Management

Temperature – The extent of the management of the proposed corridor improvements will not likely significantly affect climate change or a change in temperature levels.

Precipitation – The extent of the management of the proposed corridor improvements will not likely significantly affect climate change or a change in precipitation levels.

Sea-Level Rise – According to the Caltrans Climate Change Vulnerability Assessment Map (2017), the proposed improvements within the Mobility Plan are outside of the potential inundation areas as sea levels continue to rise.

The extent of the management of the proposed corridor improvements will not likely effect climate change nor rise in sea level.

Wildfires – The extent of the management of the proposed corridor improvements will likely not affect climate change. However, centralized management and communication of ITS field deployment throughout the corridor would facilitate emergency response capabilities and evacuation response capabilities should a wildfire emergency were to happen.

Climate Change Vulnerability Summary

The improvements recommended along the State Route 29 corridor are proposed to enhance multimodal use and safety and improve traffic operations. These proposed improvements are not anticipated to significantly contribute to any climate change.

Plan/Policy Consistency

In sorting and selecting a preferred corridor concept for the SR 29 CMCP, both a quantitative and qualitative measures were considered and used. The Benefit/Cost Analysis quantified and compared metrics associated with traffic operations, safety, emissions and cost characteristics to help narrow and focus the selection to the most beneficial improvements to corridor circulation and safety. In addition to these quantitative metrics, qualitative measures, although often less objective, can provide further insights into the desirability and functionality of proposed improvements. Per the Smart Mobility Framework process, the following qualitative factors were also considered when evaluating and selecting the preferred alternative. These factors included:

- **Plan Consistency** (namely, SR 29 Gateway Plan, Regional Transportation Plan and local agencies' General Plan Circulation Elements)
- **Policy Consistency** (NVRTA, Caltrans and local agencies)
- Environmental/Institutional Sensitivity (per the environmental screen analysis)
- Community Acceptance (based on the community engagement process)
- Social Equity (consideration of low income and minority population concentrations relative to the location of anticipated improvement impacts and benefits)

Plan Consistency

An assessment was performed as to the general consistency of the corridor alternatives relative to the following plan documents emanating from the involved agencies; Caltrans SR 29 Route Concept Report, NVRTA Regional Transportation Plan and the Napa County, City of American Canyon and City of Napa General Plan Circulation Elements.

With the exception of one improvement concept, the proposed SR 29 CMCP was found consistent with the plan documents from the involved agencies. The City of American Canyon is supportive of SR 29 multimodal improvements of the SR 29 CMCP which maintains SR 29 as a four-lane arterial through their City.

Policy Consistency

Recognizing the importance of SR 29 to both regional and local circulation, the involved agencies have been and are aligned in establishing policies that further the improvement of the corridor to enhance traffic operations, capacity, safety and multi-modal opportunities and reduce environmental impacts.

Similar to the assessment made regarding Plan Consistency, with the exception of the SR 29 Multimodal Improvements, the SR 29 CMCP was found consistent with all policies established by the involved agencies. In the case of the SR 29 Multimodal Improvements, the concept is not in opposition to adopted

City of American Canyon policies.

Community Support

The process of involving and gaining community support began long before the initiation of this SR 29 CMCP. Through local planning efforts to address circulation in the Cities and County's General Plan Circulation Elements and through previous studies, like the SR 29 Gateway Plan, the communities have been invited and encouraged to participate in identifying corridor solutions for State Route 29. **Based on** the citizens of that community want to have vehicular capacity enhancements in addition, to enhance modal opportunities. The other communities within the involved agencies are supportive, but are cognizant of the improvement needs of the rest of the corridor and the competitive prioritization of constructing improvements over the next 20 years.

Emerging Technologies Assessment

Innovation is a touchstone of our advancing lifestyles to live more efficient and connected lives. New technologies continue to emerge, narrowing the privacy line in the name of "big data". As a part of this Corridor Plan, Integrated Corridor Management or ICM is proposed for implementation to achieve "inter-connected streets" through:

- Active freeway management,
- Active Transportation Demand Management Strategies,
- Active Transit Management,
- Active Arterial Management, and
- Traveler information Systems in the Corridor.

As technologies continue to advance for autonomous vehicles, the need to obtain a centralized Traffic Management Center (TMC), which is proposed in the Corridor Plan, becomes critical to actively management in "real-time" all, multi-modal travel within the corridor. With a TMC planned in the future, as technologies advance, when a TMC is available, such a facility in this key regional travel corridor can actively management in "real-time" the following:

- Facilitate Multi-modal Operations, including:
 - Real-time bus arrival information
 - Improve bus on-time performance through signal pre-emption
- Facilitate Real-time Incident Management
- Facilitate VTI (vehicle to infrastructure communications as autonomous vehicles advance) to actively manage corridor travel flow
- Collect travel data to create a historical database to actively manage hourly, daily, weekly and seasonal corridor travel fluctuations.

As new technologies continue to emerge at an astonishing pace, it is difficult to forecast the advanced mobility options and opportunities that will emerge for transportation users on the SR 29 corridor. The SR 29 CMCP acknowledge that such new technologies will come and anticipates, with a planned TMC, to evaluate their value, utility, application and timing for appropriate integration. With this forward thinking, travel demand/ridership can be better managed, congestion and air quality impacts minimized and economic benefits maximized.

7-Benefit Monetization Assessment

Benefits were monetized based on the societal cost information from either the Caltrans 2018 Economic Parameters or the Caltrans 2016 Economic Parameters if updated 2018 values were not available. The latter information informs the Caltrans Cal-B/C analysis tool. All quantified benefits were annualized and projected to reflect a 20-year design year condition (i.e., life-cycle costs). These monetized benefits are then combined with currently available planning level improvement cost opinions (described below) to yield a holistic benefit-cost estimate for each project alternative.

The Caltrans 2018 Economic Parameters societal cost of time is provided below. The weighted average is based on the 7% truck percentage assumption used as part of this study. The weighted average of societal cost will be applied to both the reduction in delay and buffer time as follows:

- Automobile: \$14.20 hr/per
- Truck: \$32.25 hr/veh
- Weighted Average: \$15.46 hr/veh

The Caltrans 2016 Economic Parameters societal costs by collision severity is as follows:

- Fatal Accident: \$10,800,000 \$/accident
- Injury Accident: \$148,800 \$/accident
- PDO Accident: \$9,700 \$/accident

Improvement Costs

Table 42Error! Reference source not found. displays the planning-level cost estimates of improvements recommended in the plan. Cost estimates were sourced from previous planning documents, reviewed and adjusted to be consistent with existing costs, where possible. Where not possible, preliminary planning-level costs were estimated by project team planning and engineering staff.

Table 32: Total Rounded Improvement Costs

Improvement	Total Cost
<i>Parallel Capacity Improvements</i>	\$100,000,000
South Kelly Road/Newell	\$68,680,000
Devlin Road	Programmed
<i>Intersection Improvements</i>	
Soscol Junction	\$52,900,000
Carneros Junction	\$2,700,000
SR 12/Airport/SR 29	\$144,447,000

Improvement	Total Cost
American Canyon Road/SR 29 Pedestrian Crossing	\$22,486,000
<i>SR 29 Multimodal Improvements</i>	
Segment 1	\$66,626,000
Segment 2	\$1,030,000
Segment 3	\$50,083,000
<i>Bus Improvements</i>	
Queue Jumps/Part-Time Use of Shoulder	\$3,201,000
Transit Signal Priority	\$537,000
Service Frequency Increase (Annual)	\$374,000
Additional Bus Fleet	\$2,200,000
<i>Integrated Corridor Management Improvements</i>	
Transportation Management Center	\$25,000
Variable Message Signage	\$840,000
Traffic Monitoring Detectors	\$427,000
Trailblazer Signage	\$663,000
CCTVs	\$183,000
Communications equipment	\$2,410,000
<i>Shared-Use Paths</i>	
San Francisco Bay Trail gap closure	\$18,662,000
Napa valley Vine Trail gap closure	\$7,420,000
Total Rounded Improvement Costs	\$545,894,000

Comprehensive Benefit-Cost Assessment

Induced Demand/Bicycle Mode Share Benefit-Cost

Bicycle Facility Costs

The costs reported in **Error! Reference source not found.** Table 33: Class I Path Costs – Bicycle Mode Shift reflect the estimated costs for the proposed gap closures and extensions to the San Francisco Bay Trail, the Napa Valley Vine Trail, and the SR 29 Class I Paths. These improvements were identified in the analysis to project the benefits associated with induced demand/bicycle mode shift described herein.

Table 33: Class I Path Costs – Bicycle Mode Shift

Description	Construction Cost
San Francisco Bay Trail	\$18,661,673
Napa Valley Vine Trail	\$7,420,094
SR 29 Class I Paths	\$66,625,902
Total Project Cost	\$92,707,668

The monetized benefits of the induced demand resulting from improvements were compared against the estimated costs of improvements to calculate a benefit-cost ratio, or return on investment, of the improvements. Table 34 **Error! Reference source not found.** reflects the benefit-cost (B/C) using the existing year benefit projection, as well as the B/C using the adjusted 20-year estimates for the comprehensive study area. As seen, the B/C ratio for the current year is .11. After taking into account the 20-year life cycle, the B/C improves to .63.

Table 34: Induced Demand life Cycle Benefit-Cost Summary

Total Annualized Benefit	2020			Expected Life (yr)	20 Year Adjusted		
	Benefit	Cost	B-C		Benefit	Cost	B-C
Bicycle Mode Shift	\$10,410,489	\$92,707,668	0.11	20	\$145,225,683	\$231,869,052	0.63

Notes:

20 year life cycle cost estimated using planning-level cost estimates include 20 year operations and maintenance costs associated with Class I shared use paths

20 year benefit estimated by multiplying the annualized benefit by a factor of 20 and applying a 4% year over year discount rate to account for the present worth of future dollars

Generally, a benefit-cost ratio of greater than 1 is desired to justify a return on investment. The Life Cycle B/C associated specifically with induced demand/bicycle mode shift at .63 falls short of this goal. However, additional benefits, both qualitative and quantitative, can be attributed to other metrics such as multimodal connectivity, safety, air quality, environmental justice/social equity, and economic development. The benefits associated with the proposed active transportation improvements as they relate to these performance metrics will be discussed in the sections that follow.

Transit Improvement Benefit-Cost

Benefits

As described in Table 18, the recommended service frequency improvements and increases in transit ridership are associated with an annualized reduction in VMT. The estimated reduction in VMT associated with projected transit ridership increases was utilized as an input in the air quality analysis, where the reduction in emissions and pollutants correlated with the reduction in VMT was monetized. The results of this analysis is presented in Table 35. Additional detail on this analysis is presented in Section 6-Air Quality.

Table 35: Air Quality Benefits - Transit Improvements

Emissions Reduction	Short Tons		Value (mil. \$)	
	Total Over 20 Years	Average Annual	Total Over 20 Years	Average Annual
CO Emissions Saved	27.67315	1.38366	\$1,290	\$60
CO2 Emissions Saved	9,587.82	479.39108	\$271,100	\$13,550
NOX Emissions Saved	2.89201	0.14460	\$33,180	\$1,660
PM10 + PM2.5 Emissions Saved	0.093031	0.00466	\$4,250	\$210
SOX Emissions Saved	0.09426	0.00471	\$3,960	\$200
VOC Emissions Saved	1.06872	0.05344	\$820	\$40
Total Monetized Reduction Benefit			\$314,500	\$15,720

Service Frequency Improvement Costs

Costs associated with service frequency improvement, shown in Table 36, include:

- 40' Electric Bus = \$1.1 Million per bus
- Operational costs: \$48 per service hour
 - Peak Period Operation Only (6 hrs. during weekdays)

Table 36: Transit Service Frequency Improvements Costs

Improvement	Cost
Operational Costs (Annual)	\$374,400
Additional Bus Fleet	\$2,200,000
Total	\$2,547,400

The benefit-cost ratio associated with the proposed transit improvements are shown in Table 37: Transit Benefit-Cost Ratio

Table 37: Transit Benefit-Cost Ratio

20-Year Total Benefit	Total Cost	B/C
\$314,500	\$2,547,400	.12

Safety Benefit-Cost

Table 38: Safety Benefit-Cost Summary presents the benefit-cost ratios for each identified safety countermeasure. As seen, the benefit-cost ratios for the examined improvements do not perform well in terms of safety except the roundabout at South Kelly Road/SR 12, which has a robust B/C of 2.39. That said, in order to project a safety benefit based on reduced collisions associated with an improvement countermeasure, there must be collisions near the improvement vicinity. There could be a lack of bicycle and pedestrian to associate with improvements due to a perception of unsafe or uncomfortable conditions. Moreover, near misses are not included in the analyzed collision data.

Table 38: Safety Benefit-Cost Summary

Countermeasure	Benefit	Cost	B/C
R37 - Install Shared-Use Path - SR 29: SR 37 to Napa Junction Road	\$13,895,040	\$49,352,520	0.28
R37 - Install Shared-Use Path- SR 29: Napa Junction Road to Paoli Loop Vine Trail*	No Benefit	\$ 763,000	0.00
R36 - Install Bike Lanes SR 29:South Kelly Road to SR 12/Airport	\$2,900,661	\$37,098,880	0.08
S18 - Convert Signalized Intersection to Roundabout at Soscol Junction	\$25,892,431	\$58,000,000	0.45
S18 - Convert Signalized Intersection to Roundabout Devlin Rd at Airport Blvd	\$4,519,821	\$6,622,000	0.68
S18 - Convert Signalized Intersection to Roundabout SR 29 at SR 12/Airport Blvd	\$34,175,295	\$129,102,714	0.26
S18 - Convert Signalized Intersection to Roundabout at S Kelly Rd/SR 12	\$20,884,800	\$8,722,000	2.39

Total Project Area Expected Benefit	\$102,268,048	\$289,661,114	0.35
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Integrated Corridor Management Benefit-Cost

As seen in Table 39, the total project cost for the ICM package is roughly \$4.5 million. The annual benefit associated with the proposed ICM improvements is \$1.4 million between the two peak periods. This benefit is \$29.1 when annualized to a 20-year life cycle. The yearly B/C is .32, but when life cycle costs are accounted for, the B/C increases to 6.40.

Table 39: Integrated Corridor Management Benefit-Cost Summary

Improvement	Cost	Delay Reduction Monetized Benefit Per Year		Buffer Time Life-Cycle Reduction Monetized Benefit	
		AM Peak	PM Peak	AM Peak	PM Peak
Transportation Management Center	\$25,000	\$614,447	\$840,774	\$12,288,945	\$16,815,474
Variable Message Signage	\$840,000				
Traffic Monitoring Detectors	\$427,000				
Trailblazer Signage	\$663,000				
CCTVs	\$183,000				
Communications equipment	\$2,410,000				
		Combined		Combined	
Total Cost	\$4,548,000	\$1,455,221		\$29,104,419	
		B/C		B/C	
		0.32		6.40	

Air Quality Benefit Summary

Table 40 displays the monetized air quality benefits related to operational, bicycle and transit improvements, as well as the total air quality benefit resulting from all emissions and pollutant reduction. These benefits is incorporated into the comprehensive benefit-cost ratio reported in Table 41.

Table 40: Air Quality Benefits Summary

Emissions Reduction	Total Over 20 Years	Average Annual
Total Monetized Emissions Reduction – Operational Benefits	\$6,093,620	\$304,688
Total Monetized Emissions Reduction – Bike-Related Benefits	\$122,520	\$6,140
Total Monetized Emissions Reduction Benefit – Transit Benefits	\$314,600	\$15,720
Total Monetized Air Quality Benefits	\$6,530,740	\$326,548

Comprehensive Benefit-Cost Summary

Project Benefits

A summary of the quantitative benefits that could be monetized are presented in Table 41.

Table 41: Monetized Benefits Summary

Benefit Type	Annual Benefit	Life Cycle Benefit (20 Yrs.)
Bicycle Mode Shift Benefit	\$10,410,489	\$145,225,683
Transit Ridership Benefit	Included in Air Quality Benefit	Included in Air Quality Benefit
Operational Delay Benefit	\$37,669,843	\$753,396,854
Safety Benefit*	\$102,268,048*	\$102,268,048*
ICM Delay Benefit	\$1,455,221	\$29,104,419
Air Quality/ Emissions Benefit	\$326,548	\$6,530,740
Total Benefit	\$152,130,149	\$1,036,525,744

* Safety benefit will be reassessed and likely result in improved benefits

Project Costs

Error! Reference source not found. Table 42 displays the planning-level cost estimates of improvements recommended in the plan. Cost estimates were sourced from previous planning documents, reviewed and adjusted to be consistent with existing costs, where possible. Where not possible, costs were estimated by project team engineering staff.

Table 42: Total Rounded Improvement Costs

Improvement	Total Cost
<i>Parallel Capacity Improvements</i>	\$100,000,000
South Kelly Road/Newell	\$68,680,000
Devlin Road	Programmed
<i>Intersection Improvements</i>	
Soscol Junction	\$52,900,000
Carneros Junction	\$2,700,000
SR 12/Airport/SR 29	\$144,447,000
American Canyon Road/SR 29 Pedestrian Crossing	\$22,486,000
<i>SR 29 Multimodal Improvements</i>	
Segment 1	\$66,626,000
Segment 2	\$1,030,000
Segment 3	\$50,083,000
<i>Bus Improvements</i>	
Queue Jumps/Part-Time Use of Shoulder	\$3,201,000
Transit Signal Priority	\$537,000

Improvement	Total Cost
Service Frequency Increase (Annual)	\$374,000
Additional Bus Fleet	\$2,200,000
<i>Integrated Corridor Management Improvements</i>	
Transportation Management Center	\$25,000
Variable Message Signage	\$840,000
Traffic Monitoring Detectors	\$427,000
Trailblazer Signage	\$663,000
CCTVs	\$183,000
Communications equipment	\$2,410,000
<i>Shared-Use Paths</i>	
San Francisco Bay Trail gap closure	\$18,662,000
Napa valley Vine Trail gap closure	\$7,420,000
Total Rounded Improvement Costs	\$545,894,000

Total Benefit-Cost

Table 43 displays the comprehensive benefit cost for all improvements proposed within the study corridor. While the existing benefit-cost equates to a ratio of .28, when monetized to a 20-Year life cycle, the B/C increases to 1.95.

Table 43: Comprehensive Benefit-Cost Summary

Total Project Cost	Life Cycle Benefit (20 Yrs.)
\$545,894,000	\$1,036,525,744
Total B/C	1.90

8 - Preferred Corridor Plan

The culmination of the process for the SR 29 CMCP is to identify a comprehensive and systemic Corridor Plan that achieves the corridor objective to:

“.....form a comprehensive multimodal package of prioritized improvements that will serve to systematically guide future SR 29 corridor programming decisions over a 20-year timeframe based on available funding.”

To achieve this objective, consistent with the chapters of this Plan:

- A performance-based analysis based on the Smart Mobility Framework was applied,
- The Public was engaged for their input throughout the process,
- Existing Conditions to establish a baseline were evaluated,
- Corridor Solutions from prior planning efforts identified, and
- Performance Assessments of those corridor solutions conducted.

Following the collation of the high performing corridor solutions, the next challenge was to systemically integrate these corridor solutions into a priority schedule based on anticipated need and funding through the plan year 2040.

The following Preferred Corridor Plan, which includes the implementation phasing of the prioritized multi-modal improvement package and funding, is the outcome achieved from the input from the Public and output from the technical information that has been performed consistent with the Smart Mobility Framework and the state and federal grant program guidelines.

The Preferred Plan

Based on the input from the extensive public outreach and the comprehensive performance assessments conducted, the proposed Corridor Solutions identified were reduced in number and prioritized to correspond with a phased implementation plan, so systemically, the most critical multi-modal improvements are met over time and as likely funding becomes available. The overall Corridor Plan improvements and services are identified as follows with the physical corridor improvements shown in Figure 41, Figure 42, and Figure 43.

Figure 41: Preferred Plan: Imola Avenue to Soscot Junction

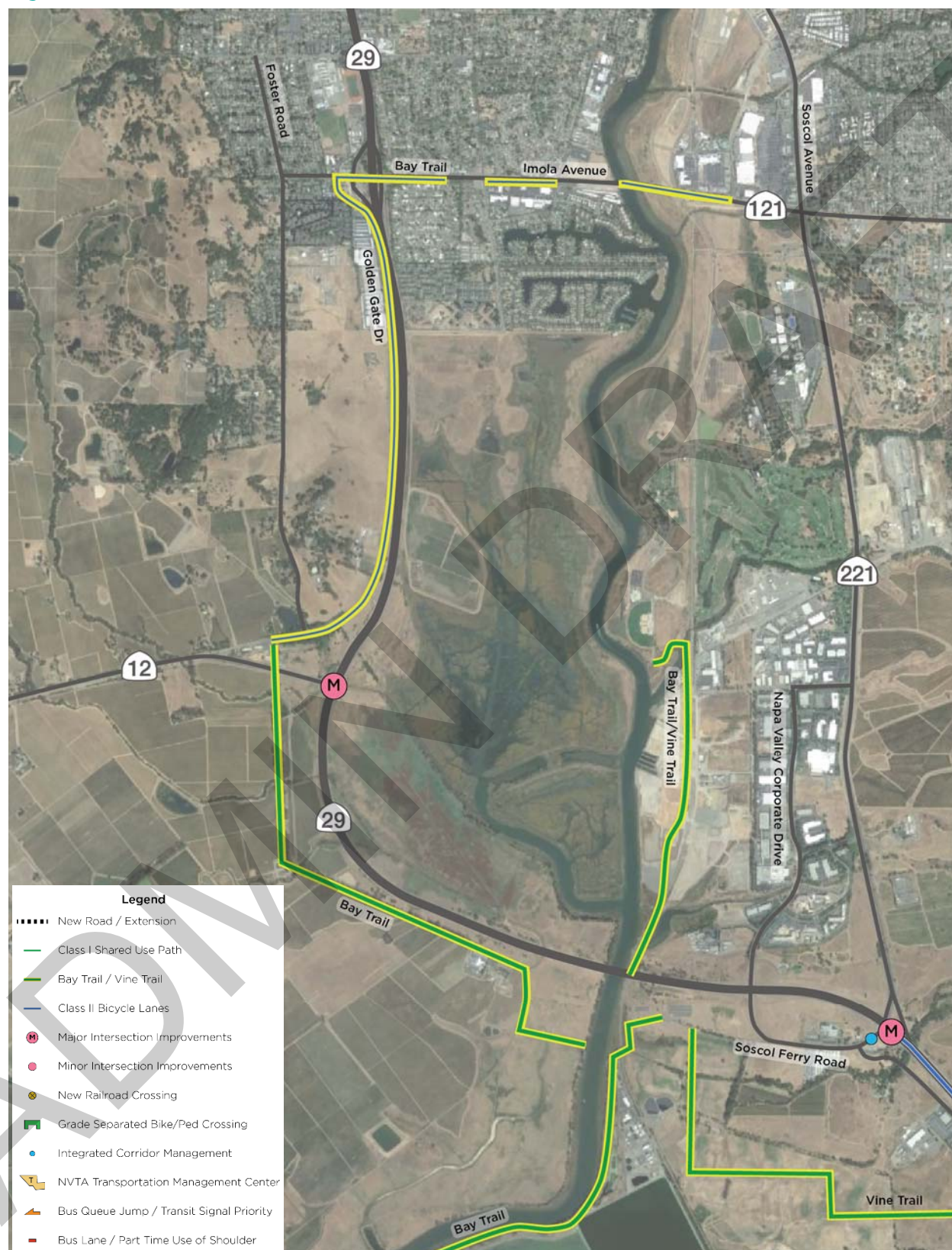


Figure 42: Preferred Plan: Soscol Junction to Green Island Road

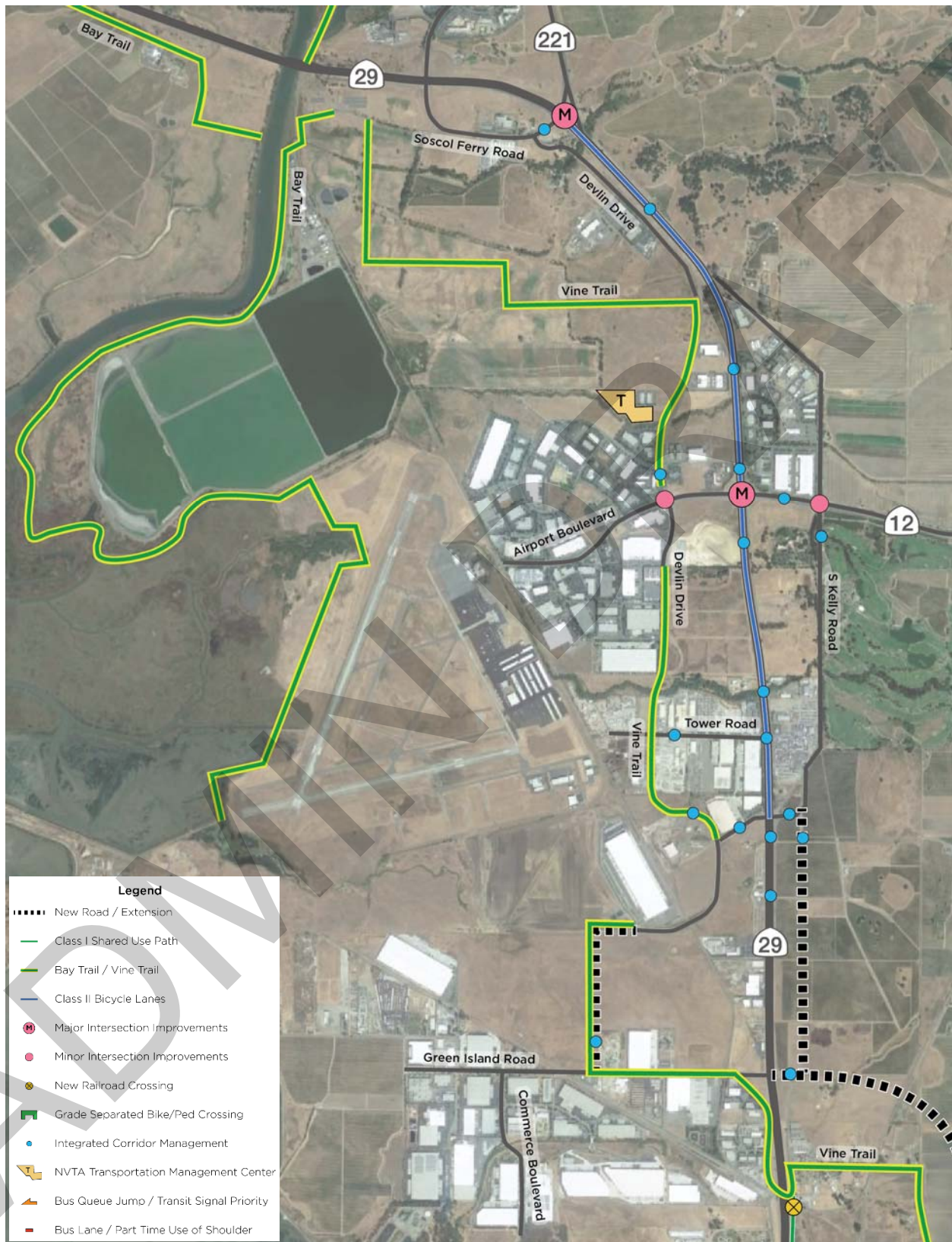
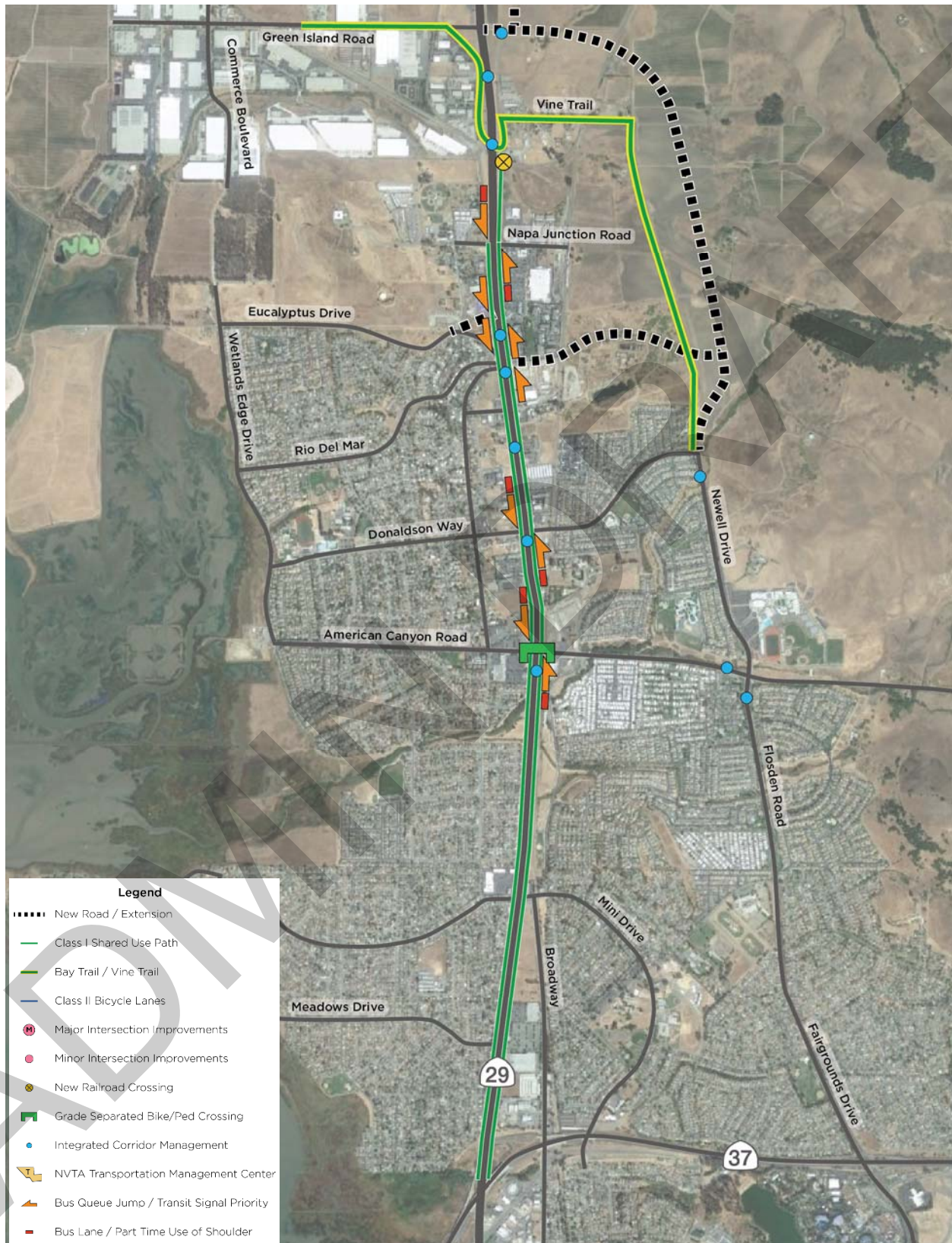


Figure 43: Preferred Plan: Green Island Road to State Route 37



Parallel Capacity Improvements

- Devlin Road
- South Kelly Road/Newell Drive

SR 29 Multimodal Improvements

- SR 37 to Napa Junction Road
- Napa Junction Road to Napa Valley Vine Trail
- South Kelly Road to Soscol Junction

Intersection Improvements

- Carneros Junction
- Airport Boulevard/SR 12/SR 29
- Soscol Junction
- Grade-Separated Pedestrian Crossing

Shared Use Paths

- Napa Valley Vine Trail
- San Francisco Bay Trail

Bus Improvements

- Bus Stop Changes
- Part Time Use of Shoulder
- 11X Bus Service
- New Route 29 Bus Service
- Queue Jump
- Transit Signal Priority
- NVTa Maintenance Facility/
Transportation Management Center

Integrated Corridor Management

- Variable Message Signs
- Traffic Monitoring Detectors
- Trailblazer Signs
- CCTV Cameras

Of these above Corridor Plan improvements, several improvements, including the final extension of Devlin Road to Paoli Loop and the NVTa Maintenance Facility have already received funding and are in the processing of being designed and/or constructed. Although these projects are both part of the comprehensive and systematic Corridor Plan, no further programming is necessary for future funding and construction, which is the focus of the following section – Implementation Plan.

Implementation Plan (FORTHCOMING)

Based on the Performance Assessments and input from the Public Outreach, the top initial improvements that will need to be funded and constructed are:

- Soscot Junction
- SR 29 Multi-modal Improvements (all three segments)
 - SR 37 to Napa Junction Road
 - Napa Junction Road to Napa Valley Vine Trail
 - South Kelly Road to Soscot Junction



NAPA VALLEY TRANSPORTATION AUTHORITY Board Agenda Letter

TO: NVTA Board of Directors
FROM: Kate Miller, Executive Director
REPORT BY: Sanjay Mishra, Program Manager-Engineering and Projects
(707) 259-5951 / Email: smishra@nvta.ca.gov
SUBJECT: Project Work Order No. E-14 to NVTA Agreement No. 18-21 with GHD, Inc. to Provide Design Plans, Specifications and Estimates (PS&E) Phase Services the Soscol Junction Project

RECOMMENDATION

That the Napa Valley Transportation Authority (NVTA) Board direct the Executive Director, or designee, pending legal review, to execute and make minor modifications to Work Authorization No. E-14 (Attachment 1) to NVTA Agreement No. 18-21 with GHD, Inc. to provide Design Plans, Specifications and Estimates (PS&E) phase services for the base scope of Soscol Junction Project for an amount not to exceed \$2,712,434 plus \$406,865 in contingencies. The major portion of the negotiated scope of work is expected to be completed within 12 calendar months; however, the contract will be for a period of 36 months to provide engineering support during construction. The current master agreement with GHD expires in June 2021 and will be extended to an estimated construction completion date.

OTHER OPTIONS FOR CONSIDERATION

1. Reject current proposal and release another request for proposals (RFP) to procure a more competitive bid from design consultants to provide Design Plans, Specifications and Estimate work; or
2. Suspend all further efforts on the Soscol Junction project until a future date when adequate construction funding is identified.

COMMITTEE RECOMMENDATION

None

STRATEGIC GOALS MET BY THIS PROJECT

Goal 1 - Serve the transportation needs of the entire community regardless of age, income, or ability.

The project will improve the intersection to make it more accessible to bicyclists and pedestrians.

Goal 2 - Improve system safety in order to support all modes and serve all users.

The project will improve intersection safety for all modes.

EXECUTIVE SUMMARY

The professional engineering services to provide "Design Plans, Specification and Estimates phase services for the Soscol Junction Project"- Request for Proposals (RFP) No. 2020-02 was released on February 4, 2020 to NVRTA's on-call architectural and engineering firms. The RFP's Scope of Work entails engineering design services and construction document services to complete the plans, specifications and estimates (PS&E) for the Soscol Junction Project.

The RFP was open for 24 days until February 28, 2020 and one proposal was received. An evaluation committee comprised of NVRTA, City of Napa, Caltrans and County of Napa staff reviewed the proposal. A total of \$5,045,000 is available to complete the PS&E phase. The initial bid from GHD, Inc. was \$3,168,406 for base scope and \$831,164 for the optional Structures design scope. Staff negotiated the base scope and cost to \$2,712,434, which includes design of a Fish passage, a requirement of the California Fish and Game to remediate fish passage barriers affected by adjacent highway improvements. Board approval will allow NVRTA to proceed with one of the options listed in this staff report.

Staff is recommending Option 1, which is to award the contract to GHD for completion of PS&E phase services for a total amount not to exceed \$2,712,434 plus a contingency of \$406,865 (i.e. a total of \$3,119,299). This work is fully funded by Regional Transportation Improvement Program (RTIP 19/20 and 20/21). This allows the project to move forward, keeping it on its critical timeline. NVRTA staff is working in conjunction with Caltrans and the Metropolitan Transportation Commission (MTC) to apply for various grants i.e. Solutions for Congested Corridors Program (SCCP), Better Utilizing Investments to Leverage Development (BUILD) grant, and COVID-19 Shelter in Place (SIP) related stimulus funding to obtain revenues to complete the construction phase. These funds would be in addition to the \$20 million in RTIP advance approved by the California Transportation Commission (CTC) and at least a portion of the \$20 million in Regional Measure 3 funds apportioned in part to the Soscol Junction project.

PROCEDURAL REQUIREMENTS

1. Staff Report
2. Public Comments
3. Motion, Second, Discussion and Vote

FISCAL IMPACT

Is there a Fiscal Impact? Yes- Option 1: \$3,119,299, which includes a contingency of \$406,865

Is it currently budgeted? Yes. Fully funded

Where is it budgeted? PS&E: RTIP Grant – FY 2019-20 -\$3,000,000 & FY 2020-21-\$2,045,000

Future fiscal impact? Undetermined. NVRTA currently has enough funding for PS&E phase work. Currently approximately \$3.1million in RTIP funding is allocated for construction phase from existing RTIP reserves. In addition, the California Transportation Commission (CTC) approved advancing \$20 million future RTIP funds at its March meeting. Staff is also applying for SCCP, BUILD grants, and has prioritized this project for potential State and Federal stimulus funds.

NVRTA has requested an advance payment of \$250,000 from Caltrans to address anticipated cash flow concerns and will continue to work with Caltrans for timely reimbursements. However, depending upon the consultant billing amount and the reimbursement from Caltrans there may be a cash flow issue, which will require borrowing funds, which will incur interests during the PS&E work.

Consequences if not approved: The project would not move forward and allocated RTIP grant funding committed to the project for PS&E phase will be lost.

CEQA REQUIREMENTS

ENVIRONMENTAL DETERMINATION: The proposed project has completed a NEPA and CEQA determination and Final Environmental Document (FED) was signed on Feb 2020.

BACKGROUND AND DISCUSSION

The Soscol Junction Project will provide safety, access, and operational improvements for traffic, pedestrian and bicycle operations at Soscol Junction in Napa County. This project is located at the intersection of State Route (SR) 29 and SR 221, near the City of Napa, in Napa County. It ranges from postmile (PM) R6.04 to R6.48, along SR 29 and PM 0.00 to 0.12, along SR 221. This project proposes to replace the current at-grade, signal controlled intersection with a grade separated interchange. It would consist of

elevating SR 29 above SR 221 with an undercrossing structure and constructing three ramps. The northbound SR 29 to northbound SR 221 movement would be satisfied by the SR 29/SR 221 bypass, an existing feature to remain from the current configuration. Flanking the undercrossing would be two, modern, single lane-multilane hybrid roundabouts. The southernmost roundabout contains a right turn bypass at the southbound SR 29 off-ramp approach.

The Project Approval and Environmental Document (PA&ED) phase of the project is complete and a single build alternative is being pursued. Caltrans published the Draft Environmental Document "State Route 29/State Route 221 Soscot Junction Improvement Project - Initial Study with Proposed Mitigated Negative Declaration / Environmental Assessment with Finding of No Significant Impact" and received public comments. Caltrans signed the Final Environmental Document (FED) on February 2020.

The objective of this RFP is to build upon the available PA&ED documents with available design drawings and continue the PS&E for 100% design and construction documents for the Project.

NVRTA has been working with Caltrans on the Soscot Junction Project for PA&ED phase and hired GHD to help conceptualize the current build (roundabout and bridge for SR 29) option. NVRTA negotiated and agreed to split the PS&E tasks between the Consultant and Caltrans. This significantly improved the overall cost of the phase since Caltrans agreed to waive the oversight and review fee and because it creates an additional incentive for Caltrans to support the project for various state funding sources. The RFP included a table of tasks identifying base scope and additional structures PS&E (optional) scope. The task list also contained permitting, hazardous waste management, landscaping, construction bid documents etc. as part of Caltrans scope. The proposer was required to provide the cost for both base scope and additional structures (optional) scope. GHD's optional scope i.e. (structures PS&E) was \$831,164.

Caltrans provided a quote to complete the structures PS&E scope and environmental permitting / landscaping and erosion control PS&E / Develop special provisions / Material recommendation / Complete Advertisement and Award contract for Construction phase, Hazmat testing and design support etc. for \$1,700,000. The NVRTA board approved a cooperative agreement with Caltrans for Soscot Junction Project in March 2020 for a not to exceed amount of \$1,800,000. Caltrans has agreed to reduce its estimate to \$1,700,000. That cooperative agreement may need to be adjusted to account for contingency costs moving forward.

The recommended Option 1 saves significant review time and money as no additional oversight cost will be paid to Caltrans for the structures PS&E scope.

The combined cost for Option 1, which includes the Caltrans' cooperative agreement, is \$4,412,434 (excluding contingencies).

GHD's original proposal for the complete PS&E phase work, including the structures and other elements that staff is recommending to award Caltrans is \$4,599,570 (i.e. \$3,168,406-GHD base scope+\$831,164- GHD Structures proposal+\$600,000-Caltrans Landscaping, Environmental and Permitting etc.) based on the total scope and current design costs of similar projects. An additional cost of roughly \$750,000 would also be charged by Caltrans for project review and oversight, bringing the total estimated cost to award the entire contract to GHD would be closer to \$5,349,570.

SUPPORTING DOCUMENTS

Attachment: (1) Draft Project Work Order No. E-14

PROJECT WORK ORDER NO. E-14
ON-CALL A/E & PROJECT DELIVERY SERVICES

PROJECT NAME: DESIGN PLANS, SPECIFICATIONS AND ESTIMATES (PS&E) PHASE SERVICES FOR THE SOSCOL JUNCTION PROJECT

PROJECT MANAGER: Sanjay Mishra, PE, QSD, TE, Program Manager – Engineer,
smishra@nvta.ca.gov, T 707.259.5951

CONSULTANT DESIGNATED TEAM MEMBERS:

- GHD COMPANY– see Cost Proposal (attached as EXHIBIT B)

Consultant will independently and at its own discretion and liability enter into agreement with sub-consultant(s) listed in their proposal for any services required to complete the project as described in the scope of work. Sub-consultants listed are:

- WACO and Y&C - see Cost Proposal (attached as EXHIBIT B).

SCOPE OF SERVICE: Provide professional services and the delivery of design plans, specifications and estimates (PS&E) for the Soscol Junction Project (RFP #2020-02) as described in the scope of services (EXHIBIT A) attached hereto:

START DATE: *APRIL 15, 2020*

COMPLETION DATE: *DECEMBER 31, 2021*

NOT-TO-EXCEED AMOUNT FOR THIS PROJECT: \$2,712,434

CHARGE NUMBER FOR PAYMENT: 8309000 52310 CMA_PLANS_PRGRAMS RTIP STATE 83010

TERMS AND CONDITIONS: This Project Work Order is issued and entered into as of the last date written below in accordance with the terms and conditions set forth in the Master Agreement with CONTRACTOR dated *MAY 15, 2018*, which terms are hereby incorporated and made part of this Project Work Order.

NVTA

By: _____
KATE MILLER, Executive Director Date

Approved as to Form	
By:	_____
	NVTA General Counsel
Date:	_____

Contractor
GHD COMPANY

By: _____
KAMESH VEDULA, PE, TE Date
Principle-in-Charge

EXHIBIT A

SCOPE OF WORK

CONTRACTOR shall perform the following services in the delivery of the Design Plans, Specifications and Estimates (PS&E) for the Soscol Junction Project:

TASK 1 PROJECT KICK-OFF AND REVIEW OF EXISTING DOCUMENTS

- A.** Attend an organization and scoping meeting with NVTa staff to:
 - 1. Review project objectives
 - 2. Review scope of services and design criteria
 - 3. Establish a meeting and presentation schedule
 - 4. Establish communication channels
- B.** Review existing documentation with NVTa relating to previous investigations, studies, and design work including but not limited to:
 - 1. DED and /or FED - Soscol Junction
 - 2. PA&ED documents
 - 3. TOAR / Design Decision Document / Design Exceptions
 - 4. Project Report
 - 5. Value Analysis
 - 6. Cooperative Agreement between NVTa and Caltrans

TASK 2 PROJECT MANAGEMENT. CONTRACTOR shall serve as the overall Project Manager during the entire duration of the Project. This task includes all work to effectively manage the scope, cost, and schedule of the Project. This may include, but is not limited to, the following activities and deliverables identified below:

- A. Contract Administration.** CONTRACTOR shall
 - 1. Prepare and submit monthly progress reports and invoices
 - 2. Coordinate in-house design staff and subconsultants to assure free and timely flow of information for each task activity.
 - 3. Manage contract costs.
- B. Project Control.** CONTRACTOR shall
 - 1. Prepare and obtain consensus for a Project Implementation Plan that describes the overall project methodology approach and assumptions and documentation requirements to complete PS&E.
 - 2. Prepare a detailed Critical Path Method (CPM) schedule, and submit an updated electronic file schedule on a quarterly or as-needed basis.
 - 3. Prepare, update, and submit a four-week Horizon Schedule at the regular progress meetings such as PDT Meetings.
 - 4. Develop and maintain a QA/QC Program.
 - 5. Maintain project records.
 - 6. Prepare and maintain a Risk Management Plan.
 - 7. Develop and maintain a Project Management Plan.

C. Project Communications. CONTRACTOR shall

1. Prepare and submit correspondence and memos, including all meeting minutes.
2. Maintain project factsheet, web-page information, or other public materials to update the public and elected officials of project progress.
3. Support and prepare materials as may be requested for meetings including but not limited to: Presentations, Technical Advisory Committees, and other stakeholders.

D. Project Meetings. CONTRACTOR shall

1. Initiate and conduct monthly PDT (first to begin two months from NTP).
2. Coordination meetings as may be required to obtain required deliverables.
3. Prepare for and attend one Public Meeting near the 100% submittal in order to discuss stage construction activities and anticipated construction schedule/durations. Information from this meeting will also be made available for posting to the project web-page.

TASK 3 DESIGN PLANS, SPECIFICATIONS AND ESTIMATES. The CONTRACTOR will review all the documents available for this project (i.e. DED/FED, Value Analysis, design documents, Project Reports, Project meeting records, etc.) from the PA&ED phase.

The CONTRACTOR will prepare the PS&E for Caltrans approval.

A. Surveying and Mapping. CONTRACTOR will use the electronic design level mapping that was prepared during the Environmental Document Phase. CONTRACTOR shall perform conform surveys and generate additional survey data as necessary to perform the final design and right-of-way engineering.

B. Preliminary Engineering and Technical Reports (GAD). The CONTRACTOR shall prepare and revise the Geometric Approval Drawing (GAD) and design exception fact sheets for approval of the GAD base file for distribution to the Project Team to begin development of the 65% PS&E. It is assumed that Caltrans will be preparing Foundation Reports, Bridge type selection, and Geotechnical Design & Material Report.

Some of these tasks have been completed as part of PA&ED. The CONTRACTOR will evaluate all the available documents provided and has bid for the work that is required beyond the available information as described below.

C. 65%, 95%, and Final PS&E Packages for Caltrans Review and Approval.

The PS&E packages must be prepared in accordance with Caltrans processes/procedures. This task involves transfer of prior phase design data and preparing Caltrans 65%, 95%, and Final level construction documents. This task

includes, but is not limited to, circulating PS&E packages to participating agencies and other interested parties for review and comment, logging and indexing all comments received as a result of the circulation, and preparing a written response to each comment received.

C1.1 65% PS&E. The CONTRACTOR will prepare the 65% PS&E, and the draft reports and memorandums. Though this was not included in the RFP scope, in order to efficiently develop the plan set, CONTRACTOR will prepare a list of anticipated technical specifications required for the project. To this end, CONTRACTOR will prepare detailed quantities in accordance with Caltrans and County Standards, including a draft Bid Schedule with estimated quantities and unit prices. This estimate will also identify any additive/alternate bid items to include in the contract documents. The Engineer's Estimate of Probable Construction Cost ("Marginal Estimate") for the project will be prepared using the most recent and relevant Caltrans Cost Data, as well as any available County cost data. Technical Specifications will also be prepared and formatted in accordance with Caltrans formatting standards, prepared in Microsoft "WORD" format.

CONTRACTOR and/or their subcontractor will be responsible for developing the Soscol Creek fish passage design plans, specifications, and estimate (PS&E). The fish passage PS&E will be incorporated into the drainage design PS&E package. CONTRACTOR's and/or their subcontractor will utilize the fish passage design developed by Caltrans for the PA/ED phase as a 65% PS&E design basis.

The following plans sheets are anticipated for 65% thru Final PS&E:

Sheet Owner	ID Code	Type of Sheet	Number Required
GHD	---	Title	1
GHD	X	Typical Cross Sections	6
GHD	K	Key Map and Line Index	3
GHD	PCS	Project Control Sheet	1
GHD	L	Layouts	6
GHD	PS	Profile and Superelevation Diagrams	7
GHD	C	Construction Details	
GHD		Demolition	6
GHD		Tree Removal	6
GHD		Paving Plan	6
GHD		ADL Removal	6
GHD		10 Scales & Specialty Details	45
GHD		Lightweight Fill, Embankment, & Load Distribution Slab Details	4
GHD		Wick Drains	2
GHD		Misc. Details	3
WRECO	WPC & WPCQ	Temporary Water Pollution Control Plans & Quantities	7

Sheet Owner	ID Code	Type of Sheet (Continued)	Number Required
GHD	G	Contour Grading	6
WRECO	D, DP, DD, DQ	Drainage Plans, Profiles, Details, & Quantities	40
GHD	U	Utility Plans and Quantities	6
GHD	CS	Construction Area Signs	1
GHD	MI	Motorist Information Plans	5
GHD	SC, TH, THQ	Stage Construction/Traffic Handling Plans & Quantities	60
GHD	DE & DEQ	Detour Plans and Quantities	6
GHD	PD, PDD, PDQ	Pavement Delineation Plans, Details & Quantities	14
GHD	S, SD, SDQ	Sign Plans, Details, & Quantities	21
GHD	Q	Quantity Sheets	8
Caltrans	I	Irrigation Notes, Plans, & Details	0
Caltrans	P	Planting Plans and Details	0
Caltrans	EC	Erosion Control Plans & Details	0
Y&C	E, ED, EQ	Electrical Notes, Lighting Plans (Electroliers & Signs)	25
		Total	301

C1.2 Reports/Memorandums.

C1.2A Drainage Report. CONTRACTOR and/or their subcontractor will prepare a Drainage Report. The Report will include Hydraulic Grade Line Calculations and analysis of existing and proposed pipes, culverts, and swales.

In addition, CONTRACTOR and/or their subcontractor will add to the Drainage Report discussion of the proposed fish passage design and include the design calculations used to develop the fish passage plans and details.

C1.2B Storm Water Data Report. CONTRACTOR and/or their subcontractor will prepare the Stormwater Data Report. We will summarize the Project impacts to water quality and recommended Best Management Practices (BMPs). The report will be based on the PA/ED-level report and will be updated with the development of the PS&E. CONTRACTOR and/or their subcontractor will perform detailed calculations to complete the design of the treatment BMPs and any necessary hydromodification calculations.

C1.2C Construction Schedule. CONTRACTOR will prepare a Critical Path Method (CPM) style Construction Schedule utilizing Microsoft Project software based on the 65% staging concept to identify key stage/phase scheduling constraints and approximate construction timing.

C1.2D Traffic Management Plan (TMP) and Lane Closure Report. CONTRACTOR will prepare a Draft TMP and Lane Closure Report

based on the 65% Design and the initial TMP Checklist completed during Preliminary Engineering per Caltrans requirements. Lane Closure Report will be reviewed with the Lane Closure Committee for approval of overall detour concepts.

C1.2E Site Investigation Report. The purpose of an Initial Site Assessment (ISA) is to evaluate the Project area for the presence of Recognized Environmental Conditions (REC). The ISA will be prepared in general accordance with American Society for Testing and Materials (ASTM) Standard E-1527-13 per Caltrans Standard Environmental Reference (SER) Environmental Handbook (EH) Volume 1, Chapter 10, "Guidelines for Hazardous Materials, Hazardous Waste, and Contamination," and Environmental Protection Agency (EPA) Standards and Practices for All Appropriate Inquiries (AAI) (40 CFR Part 312). Exceptions to the ASTM standard include no title searches, property appraisals, or interviews will be performed for the Project area.

Database Review. CONTACTOR and/or their subcontractor will review all pertinent data, including previous studies provided by Caltrans and the Project Team, as well as site investigation reports, groundwater monitoring reports, and federal and state records within a 1-mile radius of the Project area.

As part of the study, the following sources, will be reviewed for the purpose of determining the potential for RECs within the Project limits that may impact the proposed improvements:

- Environmental Data Resources (EDR) Corridor Report, EDR Aerial Photo Decade Report, EDR Historical Topo Map Report, EDR Certified Sanborn Map Report, and the EDR City Directory Image Report
- Department of Toxic Substances Control's EnviroStor Database
- Regional Water Quality Control Board's GeoTracker Database
- United States Department of Agriculture Natural Resources Conservation Service Web Soil Survey
- County Land Use and Zoning maps, Office of the Assessor/Recorder files, and Building and Planning Department permits/records

CONTRACTOR and/or their subcontractor will order an EDR database search for the Project, which includes regulated underground storage tanks, active and closed case files of cleanup operations, hazardous materials storage facilities, historical cleaners, historical auto shops, and regulated sites.

CONTACTOR and/or their subcontractor will review these available records to determine the potential presence of RECs based on previous land use and any historical operations at or near the Project area. This

research will also be used to help support the absence of RECs at the Project area.

Field Reconnaissance. Not required as it is assumed that Caltrans will do all field testing and analysis.

ISA Report. The results of the database search and field reconnaissance will be summarized and presented in a report, describing the existing or potential RECs at the Project area. CONTRACTOR and/or their subcontractor will submit a Draft ISA Report to the NVT and Project Team, and then incorporate comments received into the Final ISA Report. The report will comply with the California Environmental Quality Act/National Environmental Policy Act (CEQA/NEPA) requirements. If there are existing or potential RECs at the Project area, CONTRACTOR and/or their subcontractor will provide recommendations in the ISA Report to conduct specific sampling at the Project area. This additional field sampling would be performed as part of a Preliminary Site Investigation (PSI) to confirm the presence or absence of suspected RECs.

C2.1 95% PS&E. The plans prepared as part of the 65% design will be supplemented with additional details and information as necessary to respond to comments received. Supplemental reports and other supporting calculations will be updated and resubmitted as part of the 95% PS&E submittal package.

CONTRACTOR will provide a formal Comment Resolution Table identifying all design review comments received on the design plans and submitted reports. The Cost Estimate and Bid Schedules will be revised to incorporate any changes from the 65% submittal.

C2.2 Final Draft Reports/Memorandums.

Drainage Report. CONTRACTOR and/or their subcontractor will update the Drainage Report based on comments received on the 65% submittal.

Storm Water Data Report. CONTRACTOR and/or their subcontractor will update the Stormwater Data Report based on comments received on the 65% submittal.

Construction Schedule. CONTRACTOR will update the Construction Schedule based on comments received on the 65% submittal.

C3.1 100% PS&E. CONTRACTOR will update the 95% PS&E, including reports, based on the agreement and resolution of comments for the 100% submittal. It is assumed that there will be minor changes required for this submittal.

C3.2 Final Reports/Memorandums.

Drainage Report. CONTRACTOR and/or their subcontractor will update the Drainage Report based on comments received on the 95% submittal and obtain final Caltrans signatures.

Storm Water Data Report. CONTRACTOR and/or their subcontractor will update the Stormwater Data Report based on comments received on the 95% submittal and obtain final Caltrans signatures.

Construction Schedule. CONTRACTOR will update the construction schedule as required based on any stage construction updates for use in the Resident Engineers File.

Traffic Management Plan (TMP) and Lane Closure Report. CONTRACTOR will update the TMP and Lane Closure Report as required based on any stage construction updates and comments received from the Lane Closure Committee at 65% PS&E for use in the Resident Engineers File.

C4.1 Final PS&E/Bid Document Preparation. CONTRACTOR will update the 100% PS&E based on the agreement and resolution of comments for final submittal of sealed plans and specifications to the County/Caltrans. This submittal will represent the final contract documents that will be issued for bid and construction.

D. Right of Way and Utilities. CONTRACTOR shall confirm that no Right of Way is needed to construct the project and relocate utilities. Additionally, CONTRACTOR shall coordinate with the utility companies to complete Utility Relocation Agreements and initiate the relocations once the needed Right of Way has been acquired. The procedures must follow Caltrans Right of Way Manual and procedures.

D1 Utility Policy Certification and Utility Matrix. CONTRACTOR will prepare a Draft and a Final Utility Policy Certification and Utility Matrix in conformance with the latest Caltrans' guidelines. In addition, an encroachment policy exception request can be prepared, if necessary, however is not included in the budget.

D2 Right of Way Identification. CONTRACTOR shall verify that there are no permanent or temporary construction easements required for the project based on the design refinement/detailing that occurs as part of the 65% PS&E submittal. It is assumed that this will require little effort as right of way is not anticipated for the project at this time.

D3 Utility Certification. CONTRACTOR will prepare the Notice to Owner letters and corresponding Caltrans standard Utility Certification paperwork and

provide a copy to NVTa for signature and subsequent delivery to the utility companies and Caltrans. At this time, it is assumed that the project will require a “non-cert” utility certification, i.e. all utilities remain in place and are unaffected by the project.

D4 Right of Way Certification. Right of Way Certification is a written statement summarizing the status of all right of way related matters pertaining to a proposed construction project. As part of the certification process, CONTRACTOR will work with Caltrans to provide a Right of Way Certification that states the following:

- Real property interests have been, or are being, secured.
- Physical obstructions including utilities and railroads have been, or will be removed, relocated, or protected as required for construction, operation, and maintenance of the proposed project.
- Right of way acquisition requirements were conducted and in accordance with applicable federal and state laws and procedures.

At this time, it is assumed the project will require a “non-cert” Right of Way Certification, which will be completed by Caltrans.

E. Obtain Permits and Preconstruction Surveys. The CONTRACTOR will assist Caltrans in identifying and obtaining Resource Agency Permits/authorizations and other Permits that may be necessary to construct the project. If environmental document and/or permit require pre-construction surveys be done for various endangered species, CONTRACTOR will support Caltrans in determining which of those are needed for the project and conduct the surveys prior to construction.

F. Design Support Services during AAA and Construction. The CONTRACTOR will provide construction support during advertisement and construction of the Project. This task will include, but is not limited to, responding to bid inquiries, reviewing shop drawings and responding to RFIs regarding the design, evaluating Contract Change Orders (CCOs) if requested, submittal reviews as required, construction observation as requested, and attending construction meetings when requested.

F1 Resident Engineer’s Pending File.

Prepare Information Handout. CONTRACTOR will compile and organize pertinent project data for both the Resident Engineer’s (RE) and the Contractor’s use in delivering the project per guidance from Caltrans Project Development Procedures Manual Chapter 15, Section 2 – Construction.

Prepare Cross Sections. CONTRACTOR will prepare annotated roadway cross sections at 25-foot intervals and/or as necessary to identify critical

areas at a horizontal scale of 1"=50' and a vertical scale of 1"=5'.

Resident Engineer File Checklists. CONTRACTOR will aid Caltrans in compiling/completing the Resident Engineer File Checklists as required utilizing Caltrans Project Development Procedures Manual Appendix GG as a guide.

F2 Services during Bid Period. CONTRACTOR will be available during the bid phase of the project to provide Caltrans/NVTA assistance as required. The following tasks are anticipated:

Respond to Bidder Inquiries. Assist Caltrans by answering technical questions from potential bidders. For budget purposes, response of up to five (5) bidder inquiries were assumed.

Pre-Bid Meeting. Attend and aid Caltrans in preparing for a pre-bid meeting to explain key design issues.

Prepare Draft Addenda. Draft addenda for Caltrans approval/release to clarify design intent or correct errors. For budget purposes, the preparation of three (3) draft addenda were assumed.

F3 Services During Construction.

Respond to Requests for Information. Under this task, CONTRACTOR will provide an assumed additional 100 hours to provide support to the RE in response to formal requests for information from the contractor and clarification of questions from the RE.

Review Submittals. CONTRACTOR will provide an additional 40 hours to review specific material submittals for specialty items and substitutions as requested by the RE.

Project Coordination and Field Meetings. Under this task, CONTRACTOR will coordinate with the RE to attend project progress meetings and field meetings as requested by the RE, for up to an additional 80 hours.

Record Drawings and TIFF Files. It is assumed that Caltrans will be doing As-Builts and minor effort will be required by the CONTRACTOR to back-check the changes that Caltrans has implemented based on input from the Resident Engineer.

EXHIBIT B
COST SHEET

<u>DESCRIPTION</u>	<u>AMOUNT</u>
TASK 1 Project Kick-Off & Review of Existing Documents	\$ 14,775
TASK 2 Project Management	\$ 344,133
TASK 3 Design Plans, Specifications & Estimates (PS&E)	<u>\$2,334,322</u>
SUBTOTAL	\$2,693,230
Other Direct Expenses	<u>\$ 19,204</u>
TOTAL NOT TO EXCEED	\$ 2,712,434

The total amount to be paid to the CONTRACTOR for the scope of work defined under EXHIBIT A shall not exceed \$2,712,434. Subject to Agreement, CONTRACTOR shall periodically invoice NVT A based on progress towards completion of tasks/deliverables listed above, amounts not to exceed tasks/deliverable totals as shown in the Cost Proposal attached hereto.

EXHIBIT B

1821 GHD/E14/040620_RYK



NAPA VALLEY TRANSPORTATION AUTHORITY Board Agenda Letter

TO: Board of Directors
FROM: Kate Miller, Executive Director
REPORT BY: Kate Miller, Executive Director
(707) 259-8634 / Email: kmiller@nvta.ca.gov
SUBJECT: State Legislative Update and State Bill Matrix

RECOMMENDATION

That the Napa Valley Transportation Authority (NVRTA) Board receive the State Legislative update prepared by Platinum Advisors (Attachment 1) and approve board position recommendations for bills on the State Bill Matrix (Attachment 2).

OTHER OPTIONS FOR CONSIDERATION

The board could reject the proposed recommendations and adopt other positions, or take no action and request that staff remove the legislation from the bill matrix.

COMMITTEE RECOMMENDATION

None

EXECUTIVE SUMMARY

Attached is the State legislative update (Attachment 1), and State Bill Matrix (Attachment 2). As noted in the legislative report, given the economic considerations associated with the COVID-19 pandemic Shelter in Place Order, the legislature is not likely to focus on any other issues this legislative session other than the following four topics: COVID-19 Economic Recovery, Housing and Homelessness, Fire Prevention and Recovery, and the FY 2020-21 budget. Nevertheless, the following bills were introduced that are likely to be carried over to a future session and staff is requesting that the board take action as follows:

- AB 2057 (Chiu) – is currently a spot bill to establish a seamless Bay Area transit system. Staff recommends that the board take a watch position on this bill.

- AB 2176 (Holden) – This bill would require public transit operators to provide free transit passes to community college and colleges in the State system. It further limits colleges from charging fees to subsidize student transit fares. Staff is recommending that the board take an oppose position unless amended to identify revenues to backfill the agency's fares. This bill would cost the agency \$63,000 annually.
- AB 3209 (Aguiar-Curry) – This bill is currently a spot bill. The bill would redirect proceeds from the sale of excess parcels in/around the Soscol Junction project on SR 29 to highway projects in Napa in coordination with NVTA. Staff is recommending that the Board take a support position on this bill.
- SB 1408 (Dodd) – SB 1408 would authorize tolling on SR 37 to generate revenues to make improvements along the corridor. Staff is recommending that the board take a support position on this bill.

PROCEDURAL REQUIREMENTS

1. Staff Report
2. Public Comments
3. Motion, Second, Discussion and Vote

FISCAL IMPACT

Is there a Fiscal Impact? No

SUPPORTING DOCUMENTS

Attachments: (1) March 27, 2020 State Legislative Update (Platinum Advisors)
(2) March 30, 2020 State Bill Matrix (Platinum Advisors)



March 27, 2020

TO: Kate Miller, Executive Director
Napa Valley Transportation Authority

FR: Steve Wallauch
Platinum Advisors

RE: Legislative Update

Activity and discussions coming from the Administration, Legislature, and legislative staff remain focused on COVID-19. We are acutely aware that you are receiving a huge number of updates from various entities regarding the pandemic, and therefore, we are limiting this update to some basic, high-level state activities.

The Department of Finance released instruction to state agencies and departments this week that the COVID-19 pandemic necessitates revisiting the governor's budget proposal in terms of pending augmentations as well as already approved adjustments. Finance sent a letter to the legislative budget chairs providing the same information and stating that they would be re-evaluating budget changes in the context of a workload budget, which is, in essence, the budget year cost of currently authorized services, adjusted for changes in enrollment, caseload, or population.

The Department of Finance also announced that is transferring \$1.3 billion from the State's emergency reserve account to purchase personal protective equipment and critical medical supplies, enhance the surge capacity of hospitals and medical facilities, and procure other items necessary to support the state's efforts to combat the COVID-19 outbreak.

Legislature: In response to the COVID-19 crisis, the Legislature recessed until at least April 13th. This has raised questions on how the legislature can operate during this shelter-in-place order. Currently, the "desk" is open in the Senate which allows for amendments to Senate bills to be processed. Amendments to bills in the Assembly are not currently being processed. However, other than Senate and Assembly Caucus meetings via conference calls all legislative operations have ceased.

Both the Senate and Assembly are exploring the legal restrictions on the ability to hold hearings via conference call or other remote means. The Assembly is developing an online system to hold hearings and receive public comment. While this will take a few weeks to set-up, legal opinions conflict on the ability to hold hearings and take actions in

this manner. The Capitol will remain closed for the time being, only credentialed staff can enter the building.

Legislation: There is a growing consensus to hold all legislation that is not related to addressing the COVID-19 crisis, homelessness, or wildfire preparedness. At this point members are being asked to narrow and prioritize which bills they want to move forward. However, leadership for now is leaving to the committee chairs the power to decide which bills to hear and which to hold.

Budget: As mentioned above, the Department of Finance issued a budget letter stating it is reevaluating all budget changes proposed for the 2020-21 budget. This includes all support and local assistance adjustments, including capital outlay. The budget being developed by the DOF will be a "workload budget" which will only take into consideration changes to enrollment, caseload, or mandated changes. Since there is a Constitutional deadline to pass a budget by June 15th, the legislature will return at some point to pass a bare bones budget. Sales tax revenue is expected to take an enormous hit. The anticipated severe drop in economic activity is expected to produce immediate impacts to the current fiscal year (2019-20) and the 2020-21 budget year.

Legislative Analyst: The Legislative Analyst's Office has launched a new webpage focused on federal actions impacting California relative to COVID-19. So far, there is information on the page related to unemployment, nutrition programs, disaster declarations and funding implications, and the federal health related response. The page can be found here: lao.ca.gov/Government/COVID19

February General Fund Revenues: These numbers do not reflect any impacts from COVID-19 and are therefore, in a sense, what could have been. We anticipate that the next few months' numbers will prove far more telling. Eight months into the 2019-20 fiscal year, the Department of Finance (DOF) and the State Controller released reports on General Fund revenues, showing them in comparison to the 2020-21 governor's budget forecast.

Feb 2020 Tax Revenues	<u>DOF Feb</u>	DOF Fiscal Year-to-Date	<u>State Controller Fiscal Year-to-Date</u>
Corporation	\$11 million above forecast	\$19 million below forecast	\$92.834 million below forecast
Personal Income	\$257 million above forecast	\$1.665 billion above forecast	\$3.034 billion above forecast
Sales and Use	\$49 million above forecast	\$10 million below forecast	\$22 million below forecast
Total Revenues	\$181 million above forecast	\$1.248 billion above forecast	\$2.6 million above forecast

LEGISLATION:

Bus on Shoulders: Senator Beall has amended SB 1283 to create a pilot program for allowing transit buses to use the highway shoulder in order to avoid congestion. SB 1283 would allow Caltrans to select 4 pilot projects in Northern California and 4 pilot projects in Southern California. Prior to issuing a call for projects, the bill requires Caltrans to work with the Highway Patrol on developing guidelines that will include a 35-mph maximum speed limit and specifications for the shoulders. In addition, based on the applications received Caltrans, the Highway Patrol and the transit operator shall jointly determine the state highways, or highway segments, that will be used in the pilot. After two-years of operating the pilot, the transit operator must submit a report to the legislature addressing specified information.



March 30, 2020

Action Items

Bills	Subject	Status	Proposed - Position
<u>AB 2057</u> (Chiu D) San Francisco Bay area: public transportation	AB 2057 is currently a spot bill that contains intent language to establish a seamlessly integrated regional transit system. While the impetus for this legislation is from the Seamless Bay Area effort, Assemblyman Chiu intends to work with transit operators to craft legislation that will advance service coordination and fare integration throughout the Bay Area. This will not be an easy process, but one that we will be actively involved in.	ASSEMBLY PRINT	Recommended Position: WATCH
<u>AB 2176</u> (Holden D) Free student transit passes: eligibility for state funding.	AB 2176 is also structured the same as AB 1350 and AB 2012, but it would require transit operators to provide a free transit pass to any student enrolled in community college, California State University (CSU), or University of California (UC). In addition, AB 2176 includes language that would prohibit a community college, CSU or UC from charging students a fee for any transit service provided by a transit operator that is required to provide free student passes.	ASSEMBLY TRANSP	Recommended Position: Oppose Unless Amended
<u>AB 3209</u> (Aguiar-Curry D) California Transportation Commission.	As amended, AB 3209 authorizes the NVRTA to develop and submit to the California Transportation Commission (CTC) a local alternative transportation investment plan. The plan would direct the re-investment of proceeds from the sale excess right-of-way located at the intersection of State Highway Route 29 and State Highway Route 221 to address transportation problems and	ASSEMBLY TRANSP	SPONSOR

<u>AB 3209</u> <i>(Continued)</i>	opportunities on state highways in the county.		
<u>SB 1408</u> <u>(Dodd D)</u> State Route 37 Toll Bridge Act.	SB 1408 would authorize another toll bridge in the Bay Area. While the bill currently does not specify the entity that would operate and maintain the toll facilities, the bill would authorize a toll for the use of the Sonoma Creek Bridge along Highway 37. The primary purpose of the toll authority is to fund improvement to the Highway 37 corridor that address sea level rise threats, flooding, and congestion.	SENATE TRANSP	Recommended Position: SUPPORT

Existing Positions

Bills	Subject	Status	Client Positions
<u>AB 1350</u> <u>(Gonzalez D)</u> Youth Transit Pass Pilot Program.	<p>AB 1350 (Gonzalez) was introduced last year with the intent of creating a funding program to provide free student bus passes. However, AB 1350 was amended earlier this month to replace the grant program with a mandate on transit operators.</p> <p>As drafted, if a public transit operator wants to receive State Transit Assistance (STA), Transportation Development Act (TDA) or Low Carbon Transit Operations Program (LCTOP) funds then it shall provide free buses to persons 18 years of age and under. While the bill states that these free passes will be counted as a full fare for purposes of farebox calculations, this would still create a significant fiscal impact on transit operators.</p> <p>While the author intends to address the fiscal impact of this bill, on behalf of NVTa we intend to work with the author to include a stable long-term funding source that is sufficient to address the cost impact.</p>	SENATE RULES	OPPOSE unless amended

<p><u>AB 1839</u> <u>(Bonta D)</u> Climate change: California Green New Deal.</p>	<p>AB 1839 proposes a Green New Deal for California.</p> <p>As currently drafted, this measure would establish a policy framework of principles and goals to address negative climate change impacts and inequity. One of the elements of the New deal include increasing affordable housing and public transportation by doubling their current availability by 2030. AB 1839 would create the California Green New Deal Council, which would consist of specified agency secretaries. This Council will develop and submit a report to the Legislature on recommendations and policies to achieve the specified goals.</p> <p>However, the current version is a general outline of future content. Amendments are expected that provide more details on how the goals of the Green New Deal will achieved.</p>	<p>ASSEMBLY PRINT</p>	<p>Watch</p>
<p><u>AB 2012</u> <u>(Chu D)</u> Free senior transit passes: eligibility for state funding.</p>	<p>AB 2012 by Assemblyman Kansen Chu was introduced on January 28th. Similar to AB 1350, this bill would mandate all public transit operators to provide free transit passes to individuals aged 65 and over if the operators want to remain eligible to receive STA, TDA and LCTOP funds.</p> <p>To be consistent with the action on AB 1350, an Oppose Unless Amended position is also recommended on AB 2012.</p>	<p>ASSEMBLY TRANSP</p>	<p>Oppose Unless Amended</p>
<p><u>ACA 1</u> <u>(Aguiar-Curry D)</u> Local government financing: affordable</p>	<p>ACA 1 failed passage on the Assembly Floor. Reconsideration was granted, and another attempt is possible, but the measure was 8 votes short of the 54 needed for passage. A few Democrat members voted No, and several others</p>	<p>ASSEMBLY FLOOR</p> <p>Failed Passage – Reconsideration Granted</p>	<p>SUPPORT</p>

<p>housing and public infrastructure: voter approval.</p> <p>ACA 1 <i>(Continued)</i></p>	<p>abstained. Given the stigma that this measure erodes Prop 13 protections makes it unlikely it will secure the needed support to move to the Senate.</p> <p>ACA 1 would lower the voter threshold for property tax increases, parcel taxes and sales taxes to 55% if the funds are used for affordable housing and infrastructure projects. This includes capital improvements to transit and streets and highways.</p> <p>However, ACA 1 does not allow for the 55% local measure to use the tax revenue for transit operations.</p>		
<p>SB 336 (Dodd D) Transportation: fully-automated transit vehicles.</p>	<p>SB 336 aims to address safety and customer service issues by requiring at least one public transit employee to be present on any fully automated transit vehicle. The public transit employee shall be trained in passenger safety, communications, emergency preparedness, and assisting the disabled and elderly.</p> <p>SB 336 would also require any transit operator that deploys an autonomous vehicle to submit a report to the legislature on that deployment by March 31st, 2025. SB 336 would sunset on January 1, 2025.</p>	<p>ASSEMBLY TRANSP – Two-Year Bill</p>	<p>SUPPORT</p>