May 04, 2017 TAC Agenda Item 7.3 Continued From: February 02, 2017



Action Requested: INFORMATION

NAPA VALLEY TRANSPORTATION AUTHORITY **TAC Agenda Letter**

TO: Technical Advisory Committee (TAC)

FROM Kate Miller, Executive Director

REPORT BY: Alberto Esqueda, Associate Planner

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SUBJECT: Vine Express Bus Study Update—Draft Recommendations Summary

RECOMMENDATION

Information only

EXECUTIVE SUMMARY

The goal of the Express Bus Study is to improve operations for Vine Transit's regional express bus routes. The study analyzed various performance aspects such as on-time performance, average bus speed, and ridership to recommend potential improvements and increase ridership and reduce travel times. The study also evaluated what capital improvements are needed to better serve riders on major corridors to improve running times.

Previously, NVTA staff presented Survey Results Memo, the Existing Conditions Report, the Needs Assessment memorandum and the Infrastructure & Technology Solutions Matrix. NVTA staff invited committee members to attend the open house, which was held at the Soscol Gateway Transit Center on January 26th. At the event, committee and public members had the opportunity to provide feedback on the reports, which was considered in the development of the Draft Improvement Recommendations Summary Memorandum.

The Recommendations Summary Memo proposes a wide variety of short and long term implementation measures for each of the Express Routes, 21, 25 and 29.

Recommendations included:

- New and improved park & rides
- Transit signal priority
- New stops
- Service changes
- Stop improvements

- Route alignment change
- Stop modifications/relocations

The next steps will evaluate and prioritize recommended express bus enhancements, which will lead to the final document. The final Express Bus Plan will be a flexible financial plan that will allow for the selection of individual transportation elements or enhancements to allow the agency to be strategic in investments to improve the Vine express bus system in order to encourage ridership and reduce highway congestion.

FISCAL IMPACT

Is there a fiscal impact? No

BACKGROUND AND DISCUSSION

Previously the Existing Conditions Report supplemented by the Survey Summary Memorandum produced the five top priorities for survey participants:

- 1. Increased frequency and transfers
- 2. Shorter trip time
- 3. A more expansive service area
- 4. Improved route reliability
- 5. Lower fares

With those priorities in mind the NVTA consultant, Kimley-Horn, set out to develop the Needs Assessment and Infrastructure and Technology Solutions Matrix. The Needs Assessment memorandum focused on the opportunity areas of the express bus network; it noted the service opportunity areas. The report identified 21 improvement needs and paired it with a potential solution. This report also underscores the well-known local congestion points in the county and detailed the impact those congestion areas have on on-time performance and express bus service reliability. The Infrastructure & Technology Solutions Matrix complemented the Needs Assessment Memorandum by showcasing a list of potential solutions; however, solutions were not assigned to particular locations. The outcomes of these reports were displayed at the January 26th Express Bus Open House where comments were solicited, collected and conveyed to Kimley-Horn for the development of the Draft Improvement Recommendations Summary Memorandum.

The Recommendations Memorandum proposes a wide range of short and long term enhancements to improve express bus service trip times. Short term recommendations include new route alignments, modification of current bus service, and stop relocations—where typically there are not many capital improvements associated with these modifications. Capital improvements are programmed for long-term implementation these include new and improved park and rides and additional service for current and new routes where new capital vehicle purchases would be needed.

Some notable long-term recommendations are:

- A new southbound Route 11 Express (11X) from Napa Redwood Park & Ride to El Cerrito del Norte BART station
- A new southbound Route 10 Express (10X) from Napa Redwood Park & Ride to Calistoga
- Additional service on Route 21 From Soscol Gateway Transit Center to Vacaville
- A new modified Route 25 to the Petaluma SMART station
- Major improvement to the Imola park and ride, owned by Caltrans
- Transit Signal Priority to most Caltrans-owned traffic signals
- A new park and ride on the east side of SR-29 in American Canyon.

PROPOSED RECOMMENDATIONS

Route 21

- Service Changes
 - 21 A- Suisun Train Depot
 - o 21 B- Davis Street Park & Ride in Vacaville
- New stops
 - Red Top Road Park & Ride
- Alignment Change
 - Use SR-221/Soscol Ferry Road between Devlin Road and Napa Valley College instead of Vista Point Drive/Napa Valley Corporate Drive/Kaiser Road.

Route 25

- Short term
 - Eliminate Service (due to funding loss)
- Long Term
 - Reinitiate Route 25 to Downtown Petaluma SMART station
 - New stops
 - Downtown Napa
 - Imola Park & Ride
 - Sonoma
 - Downtown Petaluma SMART Station
 - Alignment Change
 - Use 3rd and 1st Street between SR-29 and the Soscol Gateway Transit Center.

Route 29

Split existing Route 29 into three separate routes: Route 10 Express (10X), Route 11 Express (11X), and Route 29.

• Route 10X

 Will serve existing Route 29 stops north of the Soscol Gateway Transit Center

Route 11X

- Short term
 - Will serve stops from Redwood Park & Ride (in Napa) to Curtola Park & Ride (in Vallejo)
- Long term
 - Will serve stops from Redwood Park & Ride (in Napa) to El Cerrito del Norte BART
- Route 29
 - Short term
 - Will serve stops from Redwood Park & Ride (in Napa) to El Cerrito del Norte BART (including the Downtown Napa stop)
 - New stop in Downtown Napa
 - Long term
 - Will serve stops from Redwood Park & Ride (in Napa) to El Cerrito del Norte BART (including the Imola Park & Ride stop)
 - New stop at the Imola Park & Ride
 - Remove Downtown Napa, Soscol Gateway Transit Center and Napa Valley College stops from Route 29 (all to be served by Route 11X)

Any comments received for this recommendation memorandum will be reviewed by the consultant and run through the screening criteria they have developed, which will evaluate and prioritize enhancements, conduct a cost–benefit analysis. This analysis will lead to a financial plan that will outline the cost of project implementation, should NVTA decide to move forward with any enhancements proposed by the plan.

SUPPORTING DOCUMENTS

- 1. DRAFT Improvement Recommendations Summary Memorandum
- 2. Recommended Express Bus Route Diagram



MEMORANDUM – DRAFT

To: Alberto Esqueda

Napa Valley Transportation Authority

From: Adam Dankberg, P.E.

Kimley-Horn and Associates, Inc.

Date: April 13, 2017

Subject: Improvement Recommendations Summary, Vine Transit Express Bus Corridor Study

1. Introduction

This objective of this memo is to list all proposed recommendations to the Vine Express Bus System. Recommendations address route alignments, existing stop locations, new stops, stop improvements, intersection priority improvements, trip planning, scheduling, and Soscol Gateway Transit Center parking. **Figure 1** shows a summary of all proposed short-term route alignments and stops. **Figure 2** shows a summary of all proposed long-term route alignments and stops. Proposed route and stop modifications are summarized in **Table 1**. Proposed queue jump and transit signal priority (TSP) improvements are summarized in **Tables 2** and **3**, respectively.

Figure 1 - Stops and Alignments Improvement Recommendations (Short-Term)

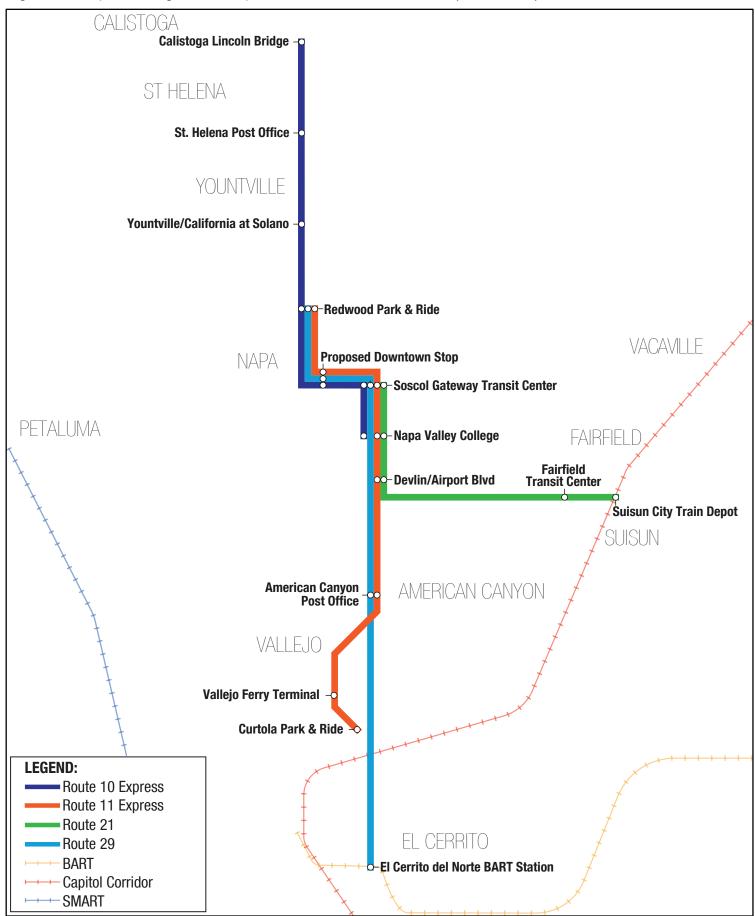


Figure 2 - Stops and Alignments Improvement Recommendations (Long-Term)

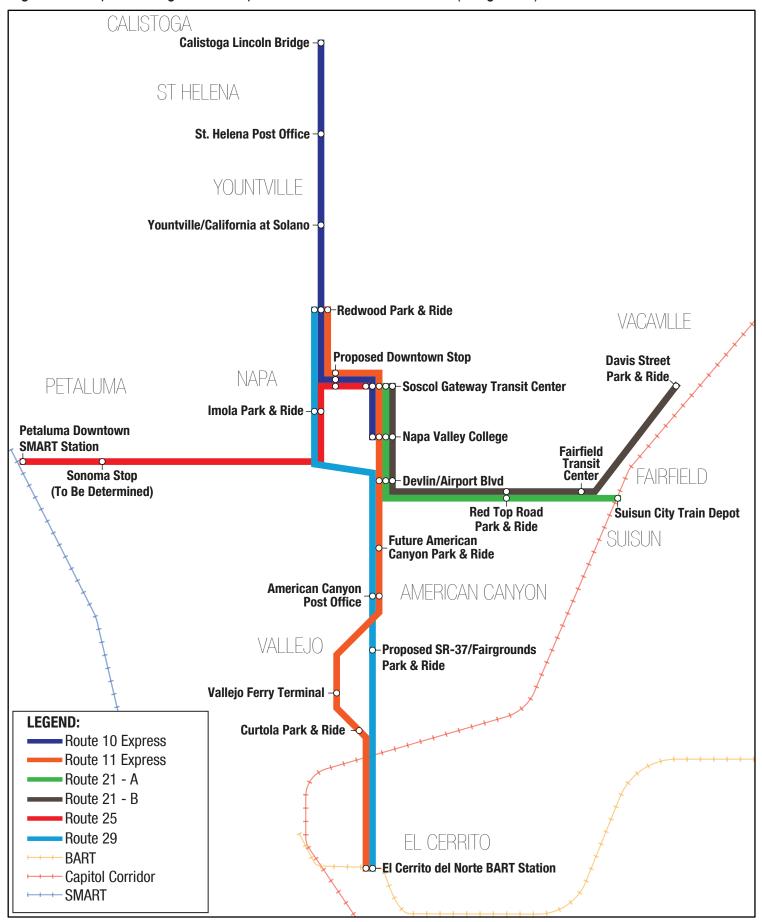




Table 1 – Route Modifications Summary

Route	Proposed Service	New or Relocated Stops	Proposed Alignment Changes
Route 21	 Short-Term Soscol Gateway Transit Center Napa Valley College Devlin Road/Airport Blvd Fairfield Transit Center Suisun City Train Depot 	·	
	 Long-Term Soscol Gateway Transit Center Napa Valley College Devlin Road/Airport Blvd Red Top Road Park & Ride` Route 21 A: Suisun City Train Depot Route 21 B: Fairfield Transit Center Davis Street Park & Ride (Vacaville) 	 Napa Valley College (relocation) Red Top Road Park & Ride (new) Davis Street Park & Ride (Vacaville) (new) (Route 21 B) 	 Devlin Road/Airport Boulevard - Napa Valley College Use SR-221/Soscol Ferry Road. This new alignment eliminates the Corporate Drive stop.
Route 25	Short-Term Route eliminated Long-Term Soscol Gateway Transit Center Downtown Napa Imola Park & Ride Future Sonoma Stop Petaluma Downtown SMART Station	 Downtown Napa (3rd St & Randolph St) (new) Imola Avenue Park & Ride (relocation) Future Sonoma Stop (to be determined) Downtown Petaluma SMART Station (new) 	 Imola Park & Ride - Soscol Gateway Transit Center Replace Gasser Dr & Hartle Ct stops with downtown Napa stops Use SR-29 Imola Park & Ride - SR-12 Use SR-29 rather than Foster Rd with stops on the SR-29 on-/off-ramps at the Imola Park & Ride
Route 10 Express	Short-Term and Long-Term Napa Valley College Soscol Gateway Transit Center Downtown Napa Redwood Park & Ride Yountville at California Drive St Helena Post Office Calistoga Lincoln Bridge	 Yountville (relocation) Downtown Napa (new) Napa Valley College (relocation) 	Redwood Park & Ride - Soscol Gateway Transit Center Use 3rd St, Jefferson St, 1st St, and SR-29



Route	Proposed Service	New or Relocated Stops	Proposed Alignment Changes
Route 11 Express	 Short-Term Redwood Park & Ride Downtown Napa Soscol Gateway Transit Center Napa Valley College Devlin Road/Airport Boulevard American Canyon Post Office Vallejo Ferry Terminal Curtola Park & Ride Long-Term Redwood Park & Ride Downtown Napa Soscol Gateway Transit Center Napa Valley College Devlin Road/Airport Boulevard Future American Canyon Park & Ride American Canyon Post Office Vallejo Ferry Terminal Curtola Park & Ride El Cerrito del Norte BART 	 Downtown Napa (new) Napa Valley College (relocation) Future American Canyon Park & Ride (new) American Canyon Post Office (relocation) Curtola Park & Ride (new) 	Redwood Park & Ride - Soscol Gateway Transit Center • Use 3rd St, Jefferson St, 1st St, and SR-29 Devlin Road/Airport Boulevard - Napa Valley College • Use SR-221/Soscol Ferry Road
Route 29	Short-Term Redwood Park & Ride Downtown Napa Soscol Gateway Transit Center American Canyon Post Office El Cerrito del Norte BART Long-Term Redwood Park & Ride Imola Avenue Park & Ride American Canyon Post Office SR-37/Fairgrounds Park & Ride El Cerrito del Norte BART	 Imola Avenue Park & Ride (relocation) American Canyon Post Office (relocation) SR-37/Fairgrounds Park & Ride Transit Village (new) 	Redwood Park & Ride - Soscol Gateway Transit Center (Short-Term) Use 3rd St, Jefferson St, 1st St, and SR-29



Table 2 – Queue Jump Summary

Intersection	Routes	Improvements
SR-29 & SR- 221/Soscol Ferry Road (Napa)	• Route 11 Express • Route 21 • Route 29	 Northbound Direction (Route 11 Express, Route 21, Route 21-A, Route 21-B) Construct dedicated right-turn lane and use as queue jump lane Southbound Direction (Route 11 Express, Route 21, Route 21-A, Route 21-B) Extend right-turn lane and use as queue jump lane Eastbound Direction (Route 29) Convert existing right-turn only lane into queue jump lane and construct new right-turn only lane
SR-29 & SR- 12/Airport Boulevard (Napa)	• Route 11 Express • Route 29	 Northbound Direction (Route 11 Express, Route 29) Implement queue jump lane in right hand through lane Southbound Direction (Route 11 Express, Route 29) Construct a dedicated queue jump lane accessed from the right turn lane
SR-29 & Napa Junction Road (American Canyon)	• Route 11 Express • Route 29	 Northbound Direction (Route 11 Express, Route 29) Utilize the right-turn lane as a queue jump Southbound Direction (Route 11 Express, Route 29) Use existing right-turn lane for queue jump lane and construct new right-turn lane
SR-29 & Donaldson Way (American Canyon)	• Route 11 Express • Route 29	 Northbound Direction (Route 11 Express, Route 29) Convert shoulder to shared right-turn/queue jump lane Southbound Direction (Route 11 Express, Route 29) Convert shared through/right-turn lane into a right-only lane and use as queue jump
SR-29 & American Canyon Road (American Canyon) • Route 11 Express • Route 29		 Northbound Direction (Route 11 Express, Route 29) Convert right-turn only lane into a dedicated queue jump lane and construct new right-turn only lane Southbound Direction (Route 11 Express, Route 29) Convert right-turn only lane into a dedicated queue jump lane and construct new right-turn only lane



Table 3 – TSP Improvement Locations

Roadway	Intersections with TSP Improvement
SR-29	 SR-29/Washington St (Calistoga) SR-29/Foothill Blvd (Calistoga) SR-29/Fulton Ln (St Helena) SR-29/Adams St (St Helena) SR-29/Pope St (St Helena) SR-29/Mitchell Dr (St Helena) SR-29/Madison St (Yountville) SR-29/Oak Knoll Ave (Napa) SR-29/Salvador Ave (Napa) SR-29/Wine Country Ave (Napa) SR-29/Trower Ave (Napa) SR-29/Trower Ave (Napa) SR-29/SR-12 Sonoma Hwy (Napa) SR-29/SR-12 Knoma Hwy (Napa) SR-29/SR-221 (Napa) SR-29/CA-12/SR-221 (Napa) SR-29/SR-29/S Kelly Rd (American Canyon) SR-29/Napa Junction Rd (American Canyon) SR-29/Eucalyptus Dr (American Canyon) SR-29/Rio Del Mar (American Canyon) SR-29/Donaldson Way W (American Canyon) SR-29/W American Canyon Rd (American Canyon)
SR-121 (Soscol Avenue)	SR-121 (Soscol Ave)/Silverado Trail (Napa) SR-121 (Soscol Ave)/Kansas Ave (Napa) SR-121 (Soscol Ave)/Shetler Ave (Napa)
SR-221	SR-221 (Napa Vallejo Hwy)/Imola Ave (Napa) SR-221 (Napa Vallejo Hwy)/Magnolia Dr (Napa) SR-221 (Napa Vallejo Hwy)/Streblow Dr (Napa) SR-221 (Napa Vallejo Hwy)/Kaiser Rd (Napa) SR-221 (Napa Vallejo Hwy)/Napa Valley Corporate Way (American Canyon)
SR-12	SR-12-Airport Blvd/SR-29 (Napa) SR-12/S Kelly Rd (American Canyon) SR-12/Kirkland Ranch Rd (American Canyon)



2. Route 21

2.1 PROPOSED SERVICE

In the short-term, Route 21 will continue to serve the following stops:

- Soscol Gateway Transit Center
- o Napa Valley College (stop relocation see **Section 2.2**)
- Devlin Road/Airport Boulevard (alignment change see Section 2.3, stop improvement see Section 2.4)
- Fairfield Transit Center
- o Suisun City Train Depot

In the long-term, it is recommended to split Route 21 into Route 21-A and Route 21-B.

Route 21-A

- Route 21-A will serve the following stops:
 - o Soscol Gateway Transit Center
 - o Napa Valley College (stop relocation see **Section 2.2**)
 - Devlin Road/Airport Boulevard (alignment change see Section 2.3, stop improvement see Section 2.4)
 - o Red Top Road Park & Ride (possible new stop, for consideration when I-80/SR-12/I-680 interchange project is complete see **Section 2.2**)
 - o Suisun City Train Depot
 - Stays on SR-12 instead of deviating to Fairfield Transportation Center
- Meet two AM and one mid-day westbound Capitol Corridor trains. Meet two PM eastbound Capitol Corridor trains.

Route 21-B

- Route 21-B will serve the following stops:
 - o Soscol Gateway Transit Center
 - o Napa Valley College (stop relocation see **Section 2.2**)
 - Devlin Road/Airport Boulevard (alignment change see Section 2.3, stop improvement see Section 2.4)
 - o Red Top Road Park & Ride (possible new stop, for consideration when I-80/SR-12/I-680 interchange project is complete see **Section 2.2**)
 - o Fairfield Transportation Center
 - o Vacaville Park & Ride (new stop see **Section 2.2**)
- The extension to Vacaville duplicates FAST Route 20 between Fairfield Transit Center and Vacaville, but provides a faster, single seat ride between Vacaville and Napa and at presumably lower cost to the user



2.2 PROPOSED NEW STOPS/STOP MODIFICATIONS

Napa Valley College (Route 21-A, Route 21-B, Route 10 Express, and Route 11 Express)

- Napa Valley College has three potential stop relocations:
 - o Option 1
 - Place a new stop along the west side of SR-221 in the shoulder on the opposite side of James Diemer Drive from the existing stop. Southbound buses will serve the stop on SR-221. Northbound buses will be re-routed to turn left at Streblow Drive to James Diemer Drive to serve the new stop. Northbound buses will then return to SR-221 via Magnolia Drive.
 - o Option 2
 - Implement mid-block southbound stop as in Option 1
 - Construct northbound stops at SR-221 & Magnolia Drive and SR-221 & Streblow Drive
 - Streblow Drive Stop
 - Near-side stop location with bus shelter and pedestrian infrastructure
 - o Construct new west leg crosswalk
 - Construct new sidewalk on north side of Streblow Drive to James Diemer Drive and along James Diemer Road into the College OR construct new sidewalk between SR-221 and the vineyard and connect to James Diemer Drive
 - Magnolia Drive Stop
 - Far-side stop location with bus shelter and pedestrian infrastructure
 - o Construct new west leg crosswalk.
 - Construct new sidewalk to connect southwest corner of SR-221 & Magnolia Drive with James Diemer Drive OR construct new sidewalk on west side of SR-221 from Magnolia Drive to midblock southbound stop and campus
 - o Option 3
 - Place a southbound stop on the west side of SR-221 in the shoulder on the opposite side of James Diemer Drive from the existing stop.
 - Place a northbound stop on the east side of SR-221 in the shoulder across from the proposed southbound stop.
 - Construct a grade separated pedestrian crossing across SR-221 between northbound stop and Napa Valley College campus
 - Option 4
 - Place a stop on the north side of Magnolia Drive west of SR-221 that serves both northbound and southbound directions. Buses can use the roundabout on Magnolia Drive to immediately turn around back towards SR-221 after serving the stop.
 - Stop infrastructure would include platform, waiting area, shelter, lighting, connection to nearby path, wayfinding materials, real-time transit information, and Wi-Fi.



- Magnolia Drive stop may be used in conjunction with a stop on Streblow Drive or a mid-block southbound stop as in Option 2.
- Similar to the current Napa Valley College stop, with any option, the new stop(s) would include a bench and shelter, real-time arrival information, wayfinding and transit route information.

Red Top Road Park & Ride (Route 21-A and Route 21-B)

• Red Top Road Park & Ride has existing infrastructure and could be a long-term stop option. Access from the park & ride to westbound SR-12 is currently very challenging. This may improve with the ongoing interchange project. Upon completion of the interchange project, evaluate feasibility of serving park & ride.

Vacaville Park & Ride Opportunities (Route 21-B)

- Vacaville offers an opportunity for Vine Express Bus service expansion east of the Fairfield Transportation Center and Suisun City Train Depot. Two park & ride options easily accessible from I-80 have been identified:
 - o Vacaville Davis Street Park & Ride, located at Hickory Lane and Davis Street.
 - Potential stop locations are on Hickory Lane directly adjacent to the park & ride or at one of the bus bays located in the center of the park & ride.
 - This location is also served by:
 - FAST Route 20
 - Vacaville City Coach Route 8
 - The distance from Fairfield Transportation Center is 10.1 miles
 - The Vacaville Transportation Center, located at Allison Drive & Travis Way.
 - This location is currently served by the following transit routes:
 - FAST Route 20
 - Express service between Fairfield Transportation Center and Vacaville Transportation Center
 - FAST Route 30
 - Express service between Fairfield Transportation Center and Sacramento
 - FAST Route 40
 - Express service between Walnut Creek and Vacaville Transportation Center
 - Yolobus Route 220
 - Express service between Vacaville Transportation Center and UC Davis
 - All six Vacaville City Coach routes
 - The distance from Fairfield Transportation Center is 11.2 miles



2.3 PROPOSED ALIGNMENT CHANGE

Alignment between Napa Valley College and Devlin Road/Airport Boulevard (Route 21-A and Route 21-B)

 Use SR-221/Soscol Ferry Road between Devlin Road and Napa Valley College instead of Vista Point Drive/Napa Valley Corporate Drive/Kaiser Road. This new alignment eliminates the Corporate Drive stop.

2.4 PROPOSED STOP IMPROVEMENTS

Devlin Road/Airport Boulevard (Route 21-A, Route 21-B, and Route 11 Express)

- Implement improved stop facilities including sidewalks and concrete waiting area with lighting, wayfinding, shelter, seating, Wi-Fi, bike storage, and real-time transit information. Provide crosswalks and pedestrian infrastructure at signalized intersection.
- Provide improved bike network through the industrial/business park

3. Route 25

3.1 PROPOSED SERVICE

Route 25 funding is ending due to Caltrans 5311 F program cuts.

In the long-term, when alternative grant funding sources become available, Route 25 may be reintroduced and serve the following stops:

- o Soscol Gateway Transit Center (alignment change see **Section 3.3**)
- o Downtown Napa (new stop see **Section 3.2**)
- Imola Park & Ride (stop relocation see Section 3.2, alignment change see Section 3.3, stop improvement see Section 3.4)
- o Sonoma Stop (To Be Determined)
- o Downtown Petaluma SMART Station (new stop– see Section 3.2)

3.2 PROPOSED STOPS

Downtown Napa (Route 25, Route 10 Express, Route 11 Express, and Route 29)

- A new stop is recommended in Downtown Napa between Redwood Park & Ride and Soscol Gateway Transit Center. A potential location for this stop is 3rd Street & Randolph Street. Proposed stop locations are:
 - o Northbound/Westbound
 - On 3rd Street near-side or far-side of Randolph Street
 - Southbound/Eastbound
 - On 3rd Street far-side of Randolph Street
- This stop will include a bench and shelter, real-time arrival information, wayfinding and transit route information.



Imola Avenue Park & Ride (Route 25 and Route 29)

- Construct in-line stops on SR-29 ramps.
 - Northbound Stop
 - Place stop on the SR-29 northbound off-ramp before Imola Avenue
 - o Southbound Stop
 - Located on the SR-29 southbound on-ramp adjacent to the park & ride lot
 - Allow for through movements from SR-29 SB off-ramp to SB on-ramp
- Implement pedestrian infrastructure and lighting between park & ride lot, southbound stop, and northbound stop, including new sidewalk under SR-29 on south side of Imola Avenue
- Provide improved stop facilities including sidewalks and concrete waiting area with lighting, wayfinding, shelter, seating, Wi-Fi, additional bike storage, and real-time transit information.

Future Sonoma Stop (Route 25)

• A long-term stop in or near the City of Sonoma would be beneficial to connect to Sonoma County Transit service. While Sonoma Plaza may require significant out-of-direction travel, it is suggested to identify a stop to provide connectivity to Sonoma County Transit service near the City of Sonoma, likely via Routes 38 and/or 40. The location of this stop would be coordinated with Sonoma County Transit at a point in the future when funding for Route 25 service is identified and the route re-instituted.

Downtown Petaluma SMART Station (Route 25)

 A new stop at the Downtown Petaluma SMART Station in order to connect to SMART rail transit.

3.3 PROPOSED ALIGNMENT CHANGE

Alignment between Soscol Gateway Transit Center and Imola Park & Ride

- Eliminate Gasser Drive & Hartle Court stops
- Route 25 will use SR-29 between Soscol Gateway Transit Center and Imola Park & Ride
 - Eastbound from Imola Park & Ride
 - SR-29 northbound towards 1st Street off-ramp
 - East on 1st Street to California Boulevard
 - South on California Boulevard to 2nd Street
 - East on 2nd Street to Jefferson Street
 - South on Jefferson Street to 3rd Street
 - East on 3rd Street to Soscol Gateway Transit Center
 - Westbound from Soscol Gateway Transit Center
 - West on 3rd Street to Jefferson Street
 - North on Jefferson Street to 1st Street
 - West on 1st Street to SR-29 southbound
- With future reversal of 1st/2nd Street couplet, directions on 1st and 2nd Streets are reversed. Also, evaluate feasibility of modifying parking striping on 3rd Street to allow southbound left-turn from



California Street to 3^{rd} Street. This would allow buses to remain on 3^{rd} Street instead of using Jefferson Street to $1^{st}/2^{nd}$ Streets.

Alignment between Imola Park & Ride and SR-12

Route 25 will use SR-29 to and from SR-12 rather than Foster Road with stops on the SR-29 on/off-ramps at the Imola Park & Ride.

4. Route 29

4.1 PROPOSED SERVICE

Split existing Route 29 into three separate routes: Route 10 Express, Route 11 Express, and Route 29.

Route 10 Express

- Route 10 Express will serve existing Route 29 stops north of the Soscol Gateway Transit Center:
 - o Napa Valley College (stop relocation see **Section 2.2**)
 - Soscol Gateway Transit Center (alignment change see Section 4.3)
 - Downtown Napa (new stop see **Section 3.2**)
 - Redwood Park & Ride (alignment change see Section 4.3, stop improvement see Section 4.4)
 - Yountville at California Drive (stop relocation see Section 4.2)
 - o St Helena Post Office
 - Calistoga Lincoln Bridge
- Provide 2-4 trips per day per direction

Route 11 Express

- In the short-term, Route 11 Express would serve the following stops:
 - Redwood Park & Ride (alignment change see **Section 4.3**, stop improvement see **Section 4.4**)
 - o Downtown Napa (new stop see **Section 3.2**)
 - Soscol Gateway Transit Center
 - Napa Valley College (stop relocation see Section 2.2)
 - Devlin Road/Airport Boulevard (alignment change see Section 4.3, stop improvement see Section 2.4)
 - o American Canyon Post Office
 - Vallejo Ferry Terminal
 - Curtola Park & Ride (new stop see Section 4.2)
- In the long-term, Route 11 Express would serve the following stops:
 - Redwood Park & Ride (alignment change see Section 4.3, stop improvement see Section 4.4)
 - o Downtown Napa (new stop see **Section 3.2**)
 - o Soscol Gateway Transit Center
 - o Napa Valley College (stop relocation see **Section 2.2**)



- Devlin Road/Airport Boulevard (alignment change see **Section 4.3**, stop improvement see **Section 2.4**)
- o Future American Canyon Park & Ride (new stop see **Section 4.2**)
- o American Canyon Post Office (stop relocation see **Section 4.2**)
- o Vallejo Ferry Terminal
- o Curtola Park & Ride (new stop see Section 4.2)
- El Cerrito del Norte BART
- Direct one-transfer connections to Pleasant Hill BART or Walnut Creek BART can be provided at the Curtola Park & Ride via SolTrans Route 78.
- Provide hourly service during peaks, and every two hours during off-peaks

Route 29

- In the short-term, Route 29 would serve the following stops:
 - Redwood Park & Ride (alignment change see Section 4.3, stop improvement see Section 4.4)
 - o Downtown Napa (new stop see **Section 3.2**)
 - o Soscol Gateway Transit Center
 - o American Canyon Post Office
 - o El Cerrito del Norte BART
- In the long-term, Route 29 would serve the following stops:
 - Redwood Park & Ride (alignment change see Section 4.3, stop improvement see Section 4.4)
 - Imola Avenue Park & Ride (stop relocation see Section 3.2, stop improvement see Section 3.4)
 - o American Canyon Post Office (stop relocation see **Section 4.2**)
 - o SR-37/Fairgrounds Park & Ride (new stop see **Section 4.2**)
 - o El Cerrito del Norte BART
- Provide hourly service during peaks, and every two hours during off-peaks

4.2 PROPOSED STOPS

Yountville (Route 10 Express)

- Remove existing Yountville stops. Implement in-line stops on SR-29 at California Drive.
 - Northbound
 - Place stop on SR-29 northbound on-ramp at California Drive. Bus will exit SR-29 northbound using the California Drive off-ramp, cross California Drive, serve the new stop at the SR-29 northbound on-ramp, and re-enter SR-29 northbound.
 - Southbound
 - Place stop on SR-29 southbound off-ramp at California Drive. Bus will exit SR-29 southbound using the California Drive off-ramp, serve the new stop at the SR-29 southbound off-ramp, cross California Drive, and re-enter SR-29 southbound using the on-ramp.



• Provide improved stop facilities including sidewalks and concrete waiting area with lighting, wayfinding, shelter, seating, Wi-Fi, additional bike storage, and real-time transit information.

Downtown Napa (Route 10 Express, Route 11 Express, and Route 25)

(Proposed stop placement discussed in **Section 3.2**)

• Provide improved stop facilities including sidewalks and concrete waiting area with lighting, wayfinding, shelter, seating, Wi-Fi, additional bike storage, and real-time transit information.

Imola Avenue Park & Ride (Route 29, Route 25)

(Proposed stop placement discussed in **Section 3.2**)

Napa Valley College (Route 10 Express, Route 11 Express, Route 21)

(Proposed stop placement discussed in **Section 2.2**)

Future American Canyon Park & Ride (Route 11 Express)

A future park & ride in American Canyon can be included for long-term consideration. Potential
city-owned properties may be viable locations for a park & ride that can serve the northern parts
of American Canyon.

American Canyon Post Office (Route 29 and Route 11 Express)

- Remove existing American Canyon Post Office stops. Implement northbound and southbound stops on SR-29 at Crawford Way. The southbound stop would be near-side and the northbound stop would be far-side. This location would be an approximately 800 foot walk from the existing park & ride lot at the American Canyon Post Office.
- Provide improved stop facilities including sidewalks and concrete waiting area with lighting, wayfinding, shelter, seating, Wi-Fi, additional bike storage, and real-time transit information.
- Signalize SR-29 & Crawford Way and provide pedestrian infrastructure and crosswalk.

SR-37 / Fairgrounds Park & Ride (Route 29)

• This is a potential future park & ride being considered by STA and SolTrans. If this park & ride is built and served by those agencies, then re-route Route 29 to serve this location via SR-37

Curtola Park & Ride (Route 11 Express)

• This stop has existing infrastructure and offers transfer opportunities to SolTrans Route 3, Route 78, and Route 80.

Note: All new/relocated stops to include lighting, shelter, seating, wayfinding, and real-time transit information. Some may include Wi-Fi and security elements if feasible.

4.3 PROPOSED ALIGNMENT CHANGE

Alignment between Soscol Gateway Transit Center and Redwood Park & Ride (Route 10 Express, Route 11 Express, and Route 29 short-term)

- Northbound from Soscol Gateway Transit Center
 - o Burnell Street to 3rd Street



- o West on 3rd Street to Jefferson Street
- o North on Jefferson Street to 1st Street
- West on 1st Street to SR-29 northbound
- North on SR-29 to Trancas St/Redwood Road
- West on Redwood Road to Solano Avenue
- North on Solano Avenue to Redwood Park & Ride
- Southbound from Redwood Park & Ride
 - o South on Solano Avenue to Redwood Road
 - o East on Redwood Road to SR-29 southbound
 - o South on SR-29 to 1st Street
 - o East on 1st Street to Jefferson Street
 - o South on Jefferson Street to 3rd Street
 - East on 3rd Street to Burnell Street
- With future reversal of 1st/2nd Street couplet, directions on 1st and 2nd Streets are reversed. Also, evaluate feasibility of modifying parking striping on 3rd Street to allow southbound left-turn from California Street to 3rd Street. This would allow buses to remain on 3rd Street instead of using Jefferson Street to 1st/2nd Streets.
 - Continue onto SR-29 SB on-ramp

Alignment at Devlin Road/Airport Boulevard (Route 11 Express)

- Northbound from American Canyon
 - o North on SR-29 towards Airport Boulevard
 - West on Airport Boulevard to Devlin Road
 - o North on Devlin Road and serve Devlin Road/Airport Boulevard stop
 - o East on Soscol Ferry Road
 - o Continue on Soscol Ferry Road to SR-221
- Southbound from Napa
 - o South on SR-221 to Soscol Ferry Road
 - o South on Devlin Road
 - o Serve Devlin Road/Airport Boulevard stop
 - o East on Airport Boulevard
 - o South on SR-29

4.4 PROPOSED STOP IMPROVEMENTS

Redwood Park & Ride (Route 10 Express, Route 11 Express, Route 29)

• Implement improved stop facilities including wayfinding, Wi-Fi, additional bike storage, and real-time transit information.

Devlin Road and Airport Boulevard (Route 11 Express)

(Proposed stop improvement discussed in **Section 2.4**)



5. Intersection Priority Improvements in Napa County

5.1 TRANSIT SIGNAL PRIORITY

Implement TSP at signalized intersections in Napa County on SR-29, SR-121, SR-221, and SR-12. Locations proposed for TSP are shown in **Table 4**.

Table 4 – TSP Improvement Locations and Characteristics

Arterial	Intersection	Bus Route	Controller	Program	Coordination?
	SR-29/Washington St (Calistoga)	10X	*	*	*
	SR-29/Foothill Blvd (Calistoga)	10X	*	*	*
	SR-29/Fulton Ln (St Helena)	10X	170	C8.4	No
	SR-29/Adams St (St Helena)	10X	170	C8.4	No
	SR-29/Pope St (St Helena)	10X	170	C8.4	No
	SR-29/Mitchell Dr (St Helena)	10X	170	C8.4	No
	SR-29/Madison St (Yountville)	10X	170	C8.4	No
	SR-29/Oak Knoll Ave (Napa)	10X	2070	2.20	No
	SR-29/Salvador Ave (Napa)	10X	*	C7.4	Yes
	SR-29/Wine Country Ave (Napa)	10X	170	C8.4	Yes
SR-29	SR-29/Trower Ave (Napa)	10X	170	C8.4	Yes
	SR-29/SR-12 Sonoma Hwy (Napa)	29	2070	2.20	No
	SR-29/CA-12/SR-221 (Napa)	29, 11X, 21	170	C8.4	No
	SR-29/Airport Blvd-SR-12 (Napa)	29	170	C8.4	No
	SR-29/S Kelly Rd (American Canyon)	29, 11X	170	C8.4	No
	SR-29/Napa Junction Rd (American Canyon)	29, 11X	170	C8.4	Yes
	SR-29/Eucalyptus Dr (American Canyon)	29, 11X	170	C8.4	Yes
	SR-29/Rio Del Mar (American Canyon)	29, 11X	170	C8.4	Yes
	SR-29/Donaldson Way W (American Canyon)	29, 11X	170	C8.4	Yes
	SR-29/W American Canyon Rd (American Canyon)	29, 11X	2070	2.17	*
SR-121	SR-121 (Soscol Ave)/Silverado Trail (Napa)	29 (ST), 11X, 21	2070	2.20	Yes
	SR-121 (Soscol Ave)/Kansas Ave (Napa)	29 (ST), 11X, 21	2070	2.20	Yes
	SR-121 (Soscol Ave)/Shetler Ave (Napa)	29 (ST), 11X, 21	2070	2.20	Yes
	SR-221 (Napa Vallejo Hwy)/Imola Ave (Napa)	29 (ST), 11X, 21	2070	2.20	Yes
	SR-221 (Napa Vallejo Hwy)/Magnolia Dr (Napa)	29 (ST), 11X, 21	2070	2.20	Yes
SR-221	SR-221 (Napa Vallejo Hwy)/Streblow Dr (Napa)	29 (ST), 11X, 21	170	C8.4	No
	SR-221 (Napa Vallejo Hwy)/Kaiser Rd (Napa)	29 (ST), 11X, 21	2070	2.20	No
	SR-221 (Napa Vallejo Hwy)/Napa Valley Corporate Way (American Canyon)	29 (ST), 11X, 21	2070	2.20	No
SR-12	SR-12-Airport Blvd/SR-29 (Napa)	11X, 21	170	C8.4	No
	SR-12/S Kelly Rd (American Canyon)	21	170	C8.4	No
	SR-12/Kirkland Ranch Rd (American Canyon)	21	170	C8.4	No

Note: * indicates data not available



5.2 QUEUE JUMP LANES

SR-29 & SR-221/Soscol Ferry Road (Napa)

- From Soscol Ferry Road (Route 11 Express, Route 21)
 - o Existing: 1 left-turn only lane, 1 through/right lane
 - Recommended: Construct dedicated right-turn lane and use as queue jump lane for bus through movements
- From SR-221 (Route 11 Express, Route 21)
 - o Existing: 2 left-turn only lanes, 1 through/right lane
 - o Recommended: Construct dedicated right-turn lane and use as queue jump lane
 - o Alternative: Extend southbound through lane to reduce queue impacts on bus
- Eastbound Direction (Route 29 long-term)
 - o Existing: 1 left-turn only lane, 2 through lanes, 1 right-turn only lane, 3 receiving lanes
 - o Recommended: Convert existing right-turn only lane into queue jump lane and construct new right-turn only lane

SR-29 & SR-12/Airport Boulevard (Napa)

- Northbound Direction (Route 29)
 - o Existing: 1 left-turn only lane, 3 through lanes, 1 right-turn only lane, 3 receiving lanes (additionally, westbound right-turn has a channelized lane)
 - o Recommended: Implement queue jump lane in right hand through lane.
- Southbound Direction (Route 29)
 - o Existing: 2 left-turn only lanes, 2 though lanes, 1 channelized right-turn lane, 2 receiving lanes (additionally, eastbound right-turn has a channelized lane)
 - o Recommended: Construct a dedicated queue jump lane accessed from the right turn lane. This would require modifying the signal pole location.

SR-29 & Napa Junction Road (American Canyon)

- Northbound Direction (Route 11 Express, Route 29)
 - Existing: 1 left-turn only lane, 2 through lanes, 1 right-turn only lane, 3 receiving lanes.
 A 2013 turning movement count shows the volume of northbound AM peak hour right-turns is 10 (0.5 percent of the northbound approach total) and the volume of northbound PM peak hour right-turns is 23 (1.9 percent of northbound approach total).
 - o Recommended: Implement advanced right-turn phase and utilize the right-turn lane as a queue jump.
- Southbound Direction (Route 11 Express, Route 29)
 - Existing: 1 left-turn only lane, 2 through lanes, 1 right-turn only lane, 3 receiving lanes.
 A 2013 turning movement count shows the volume of southbound AM peak hour right-turns is 38 (3.6 percent of the southbound approach total) and the volume of southbound PM peak hour right-turns is 504 (21.4 percent of the southbound approach total).



o Recommended: Use existing right-turn lane for queue jump lane and construct new right-turn lane.

SR-29 & Donaldson Way (American Canyon)

- o Northbound Direction (Route 11 Express, Route 29)
 - Existing: 1 left-turn only lane, 2 through lanes, 15 foot striped off shoulder, 2 receiving lanes. A 2013 turning movement count shows the volume of northbound AM peak hour right-turns is 26 (1.7 percent of the northbound approach total) and the volume of northbound PM peak hour right-turns is 64 (4.7 percent of the northbound approach total).
 - Recommended: Convert shoulder to shared right-turn queue jump lane.
 Implement a bus-only phase.
- o Southbound Direction (Route 11 Express, Route 29)
 - Existing: 1 left-turn only lane, 2 through lanes, 1 shared through/right-turn lane, 3 receiving lanes. A 2013 turning movement count shows the volume of southbound AM peak hour right-turns is 60 (4.8 percent of the southbound approach total) and the volume of southbound PM peak hour right-turns is 51 (2.5 percent of the southbound approach total).
 - Recommended: Convert shared through/right-turn lane into a right-only lane and use as queue jump.

SR-29 & American Canyon Road (American Canyon)

- o Northbound Direction (Route 11 Express, Route 29)
 - 1 left-turn only lane, 2 through lanes, 1 right-turn only lane, 3 receiving lanes. A 2013 turning movement count shows the volume of northbound AM peak hour right-turns is 50 (5.5 percent of the northbound approach total) and the volume of northbound PM peak hour right-turns is 81 (7.1 percent of the northbound approach total).
 - Recommended: Convert right-turn only lane into a dedicated queue jump lane and construct new right-turn only lane.
- o Southbound Direction (Route 11 Express, Route 29)
 - 2 left-turn only lanes, 2 through lanes, 1 right-turn only lane, 3 receiving lanes. A 2013 turning movement count shows the volume of southbound AM peak hour right-turns is 94 (7.7 percent of the southbound approach total) and the volume of southbound PM peak hour right-turns is 146 (7.5 percent of the southbound approach total).
 - Recommended: Convert right-turn only lane into a dedicated queue jump lane and construct new right-turn only lane.



6. General Improvements

6.1 TRIP PLANNING

Google Transit

Vine Express Routes are not currently incorporated with Google Maps transit options. Many people may be unaware that Vine Express Routes offer service between their origin/destination because it does not appear in the app. It is recommended to provide a publicly available transit feed.

Smartphone App

The current myStop application has limited information and was not well perceived by the public. It is recommended for NVTA to create a more functional application or to partner with a more user-friendly application (it is noted that NVTA routes and stops are included in Citymapper, a popular Bay Area app, but it does not seem to identify a trip option for using express bus routes).

6.2 SCHEDULE AND TRANSFERS

Trip Times

It was observed from 2015 on-time performance data that a large number of trips were departing late from the trip origin stop. This is likely due to late arrivals from the preceding trip. Trips that are consistently departing late may benefit from additional schedule time for the preceding trip, additional layover time between trips, or a change in scheduled departure. Schedules will be reviewed at a subsequent phase of this project.

Coordinated Timepoints for Transfers

- Key timepoint transfers include the following:
 - Route 10 Express with Route 29 (near-term)/Route 11 Express at Soscol Gateway Transit Center
 - Connects Calistoga, Vallejo Ferry Terminal, and El Cerrito Del Norte BART
 - o Route 10 Express with Route 29 (long-term) at Redwood Park & Ride
 - Connects Calistoga and El Cerrito Del Norte BART
 - Route 29 (long-term) does not serve Downtown Napa so it is recommended to implement a timed connection with an existing local route that does. Possible options include Route 3 at Imola Park and Ride
 - Route 11 and Route 21 at Soscol Gateway Transit Center
 - Connects American Canyon and Solano County
 - BART to Route 29 at El Cerrito del Norte BART
 - Provide short transfers for afternoon/PM trips



6.3 EXPANDED PARKING NEAR SOSCOL GATEWAY TRANSIT CENTER

Parking Expansion at Adjacent Lots

The most ideal locations for expanded transit center parking are the lots adjacent to the transit center.

- Wine Train Parcel West of Soscol Gateway
 - O The parking lot directly south of the Greenberg Quality Motors building is owned by the Wine Train. An approximately 12,000 square foot area is located immediately east of the rail tracks, just west of the transit center. An approximately 31,000 square foot area is located immediately west of the tracks, with access from 3rd Street and northbound Soscol Ave. The western portion of the Wine Train lot would require pedestrians to access the transit center by crossing the tracks at 3rd Street or Soscol Avenue. Immediately north of the Wine Train lot are the Greenberg lots, totaling 0.3 acres with the same access.
- Bell Products, Inc
 - o This 0.6 acre parking lot is directly south of the transit center and is accessible from Burnell St.

Nearby City Lots

- There are three empty City-owned lots north of 3rd Street near Lawrence Street totaling 1.6 acres. Use of these lots would require pedestrian crossing improvements at 3rd Street & Burnell Street or 3rd Street & Lawrence Street. The City has plans to pave this area for public parking.
- The City owns a 1.4 acre lot at Pearl Street & Yajome Street and is planning to construct a parking garage at this location. Use of this lot for transit parking would require provision of an express bus stop in this vicinity.

Figure 1 - Stops and Alignments Improvement Recommendations (Short-Term)

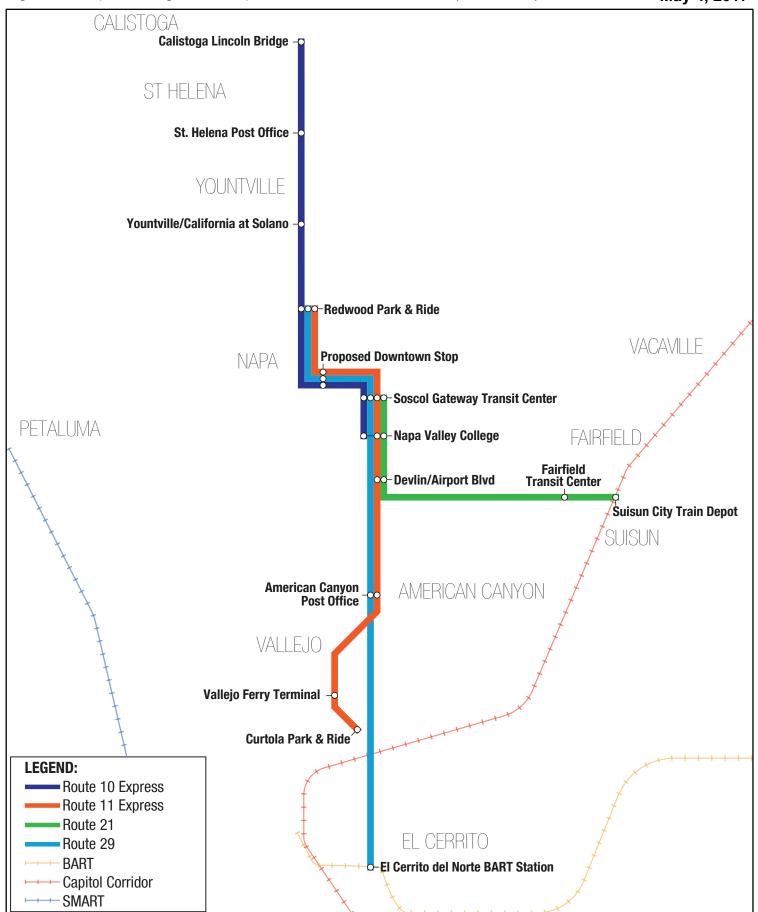


Figure 2 - Stops and Alignments Improvement Recommendations (Long-Term)

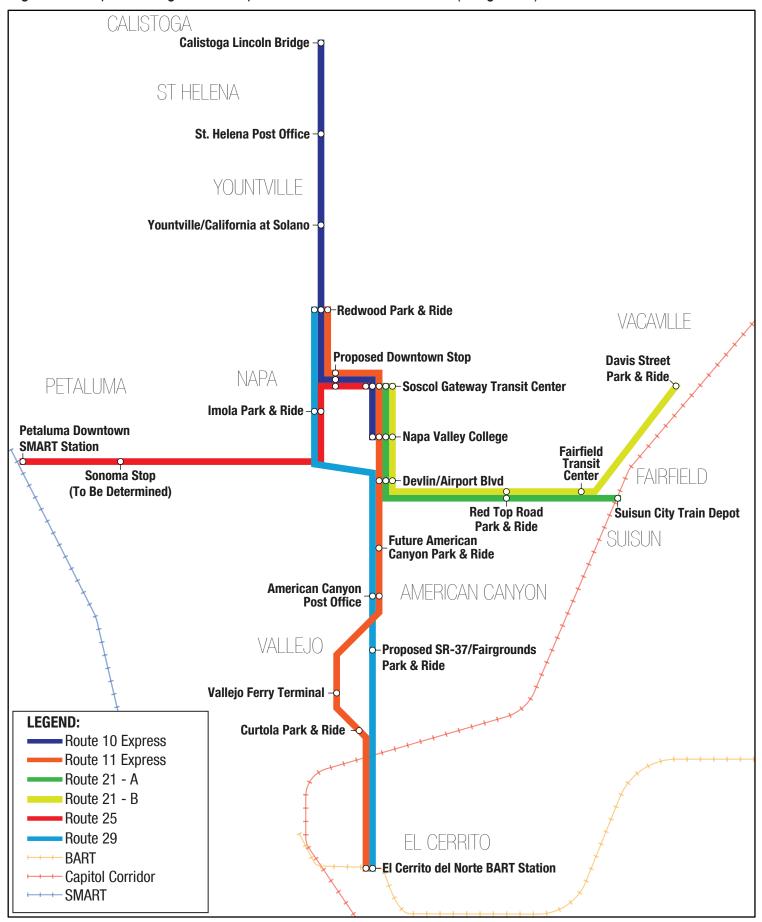


Figure 3 - Long-Term Stops and Alignments Improvement Recommendations (With Existing Express Bus)

