DATE: September 13, 2021

TO: Transportation Authority of Marin
    Administration, Projects & Planning Executive Committee

FROM: Anne Richman, Executive Director
       Dan Cherrier, Principal Project Delivery Manager

SUBJECT: Traffic Study for Richmond San Rafael Bridge Westbound Vehicle Shoulder Use
         (Discussion), Agenda Item No. 6

RECOMMENDATION

This is an informational item. No action is required.

BACKGROUND

One of the recommendations of the Greenbrae Working Group in 2013 was to improve access to the Richmond San Rafael Bridge (RSRB). This recommendation resulted in several projects, of which some were managed by TAM and others implemented by the Bay Area Toll Authority (BATA). TAM’s projects included the completed modifications to eastbound Sir Francis Drake Boulevard (SFD) in the vicinity of the Larkspur Ferry Terminal and on-going improvements to the Bellam off-ramp. A joint project between BATA and TAM resulted in the recently opened two-way bicycle connector on the SFD Overcrossing on I-580.

The largest scale improvement was the work on the RSRB consisting of a part-time third traffic lane on the lower eastbound (EB) deck and a two-way, barrier-separated multi-use path on the upper westbound (WB) deck. The EB part-time traffic lane opened for vehicle use in April of 2018; and the WB Project, the multi-use path, opened for bicycles and pedestrians in November of 2019. Both projects were put in place for a four-year pilot period and are being evaluated during that time.

The EB Project resulted in immediate elimination of the afternoon traffic congestion that could back up as far as US-101. The multi-use path has very high use by recreational users, especially on weekends. Just months after the path opened, the COVID-19 pandemic started, which affected travel considerably and may have reduced some of the expected weekday mode shift since the roadway was no longer congested during the morning commute.

Morning congestion has continued to exist WB approaching the bridge on the Richmond side. TAM, BATA and the Contra Costa Transportation Authority (CCTA) have been investigating the feasibility of a similar part-time travel lane project WB, as was implemented EB, to reduce congestion. BATA, in conjunction with Caltrans, was tasked to study if the bridge could structurally accommodate the extra loading, while TAM was asked to look at potential traffic impacts. The TAM Board authorized the increase in budget utilizing the team already on board for the US-101 to I-580 Direct Connector Project to complete the Study.
DISCUSSION/ANALYSIS

Traffic Study

The study assessed the potential impacts of a future third traffic lane on the upper deck of the bridge in weekday morning peak hours only. The moveable barrier currently in place on the upper deck to create the multi-use pathway would be moved every weekday to create this part-time travel lane. The limits of the Study were from the junction of I-580/I-80 in Albany to US-101 in Marin. The study assumed that major elements of the BATA Richmond Bridge Forward Project would be in place prior to the study year of 2025. Some of those elements include converting the toll plaza to open road tolling and converting the far left lane of WB I-580 to a two-person carpool lane from the Regatta interchange to one-half mile east of the toll plaza. The traffic study was completed by Kimley-Horn & Associates and its traffic consultant Fehr & Peers.

The Study explored travel times from the intersection of I-80/I-580 to US-101, either northbound (NB) or southbound (SB). For traffic going to NB US-101, the route of travel was simply using I-580. For traffic headed towards SB US-101, two routes of travel were studied, one using WB SFD and the other utilizing a future WB I-580 to SB US-101 direct connector. The Study covers 5:00 am to 11:00 am on weekdays only.

In summary, these are the major findings from the Study:

- The addition of the third travel lane will cost approximately $70–90 million, largely due to the need for significant capital improvements on the Marin side in order to make a third WB travel lane feasible. Primary components are signage on the bridge; widening of a portion of the WB trestle section, the Main Street Undercrossing, and the I-580 shoulder; and relocation of the Francisco Boulevard East (FBE) on-ramp to a new location west of SFD. Five years of operating costs were also included. The costs of the RSR Forward project were not included in this estimate.

- For the 79% of the vehicles that exit the bridge WB and head towards NB US-101 or San Rafael, there will be an average travel time savings of two minutes, with an eleven-minute savings during the peak hour.

- For the 21% of the vehicles that exit the bridge and head towards SB US-101 or points along SFD west of US-101, there will be an increased average and peak hour travel time of three minutes. The increase is due to capacity constraints at the SFD off-ramp and along SFD.

- A new WB 580 to SB US-101 direct connector eliminates congestion on the bridge with the third part-time travel lane.

- WB connectivity between FBE and SFD would need to be eliminated. This could be a significant concern for the community.

- The new WB FBE on-ramp would be a more standard design and result in operational improvements compared to the existing hook ramp with a very short acceleration section.

- MTC/BATA has expressed concern that the part-time third lane may induce WB travel demand and eliminate some of the benefits associated with the Richmond Bridge Forward Project to drive mode shift.

- Concerns have also been raised that the increased backup at SFD will be moving the congestion from east to west, converting a regional congestion issue to a local one.
Water Pipeline Discussions

Recently, Marin Municipal Water District (MMWD) has begun evaluating the feasibility of placing a 24-inch pipeline on the RSRB to bring water to Marin during the current extreme drought. Two locations on the bridge are being evaluated, one in the current multi-use path and one placed underneath the upper deck. A pipeline on the upper deck multi-use path would likely mean that there would be insufficient room for a third vehicle travel lane, due to the space needed for the pipeline and the barrier. MMWD is still determining if the multi-use path can co-exist with the water pipeline.

MMWD is considering a very aggressive schedule, targeting construction being complete by June 2022. Their staff have been in coordination with Caltrans for several months, with Caltrans committed to try and accommodate their requests. Staff from MMWD have indicated that the alignment choice must be made by October to allow for sufficient time to acquire the necessary materials. The western portion of the pipeline is currently scheduled for installation along FBE and Bellam Boulevard towards a terminus located along SFD. A letter from MMWD to Caltrans is included as Attachment B and includes additional information about the pipeline project process.

FISCAL CONSIDERATION

The cost estimated for improvements needed for a third travel lane WB, including operating costs for five years, is approximately $70–90 million. A WB I-580 to SB US-101 connector near the Bellam area would be an additional $220 million. No funding is identified for either of these projects.

NEXT STEPS

TAM staff along with staff from Caltrans and BATA will provide a comprehensive presentation on the proposed part-time lane, including a summary of the traffic study, as well as the RSRB structural analysis/loading study and evaluation of the bridge’s short and long term repair/replacement needs, to the TAM Board in September, the CCTA Board/Committee in October, and the BATA Oversight Committee in November.

A study by University of California (UC) Berkeley of the current multi-use path pilot will be complete in mid-2024 and a decision will be made to either eliminate the barrier or continue with operation of the multi-use path.

Staff will also continue to monitor the development of the possible MMWD water pipeline.

ATTACHMENTS

A – PowerPoint Presentation
B – Letter from MMWD to Caltrans explaining Pipeline Project as part of CEQA process
THIS PAGE LEFT BLANK INTENTIONALLY
Richmond San Rafael Bridge
West Bound Third Lane
Traffic Study
Preliminary Findings

TAM Administration, Projects and Planning
Executive Committee
September 13, 2021
Project Background

History

• EB Third lane on lower deck opened in April 2018
• Multi-Use path on upper deck (WB) opened in November 2019
• Increased congestion in the WB direction in the last 5 years

Studies & Plans

• BATA/Caltrans completing bridge structural analysis
• TAM completing third lane traffic study (subject item)
• UC Berkeley will complete evaluation of the pilot projects
• BATA is advancing the planning & design of RSR Forward program
Traffic Study

• Show benefits/drawbacks of a third WB traffic lane between 5:00AM and 11:00AM on weekdays
  • Lane would be created by moving the barrier on the bridge daily
• Identify improvements in Marin County, if needed
• Previously collected traffic data was used to generate the results
  • Richmond side data: 2016
  • San Rafael side data: 2018-2019
  • Combined data set converted using Year 2019 INRIX data.
Richmond Bridge Forward

Major elements of MTC/BATA Project are:
• Replace the existing toll structure with Overhead Toll Gantries (Open Road Tolling).
• Reinstall a previous WB I-580 HOV lane from Regatta Avenue Interchange to near the Toll Plaza by converting the existing left General Purpose lane to a Carpool Lane.
• Benefits Include:
  • Improve operational efficiency by upgrading the existing toll infrastructure.
  • Improve safety by eliminating the need to pass through the existing toll plaza.
  • Improve peak period person throughput across the RSRB.
  • Promote mode shift by providing travel time savings for carpooling and transit users.
Scenarios Evaluated

Existing Conditions (2019)
Baseline (2025)
- Assume Richmond Forward project is implemented
- Shoulder stays as a multi-use path
- No other improvements in Marin County

Build Alternative 1 (2025)
- Assume Richmond Forward project is implemented
- Third Lane on the upper deck ends at existing Sir Francis Drake Blvd Off-ramp
- Francisco Blvd E. to WB I-580 on-ramp moved to west of existing SFD structure
- No Access from Francisco Blvd E. to Sir Francis Drake Blvd

Build Alternative 2 (2025)
- New Connector from WB I-580 to SB US 101 is added
- Same as Alternative 1 except Third Lane ends at New Connector (instead of SFD)
Conceptual WB 580 to SB US 101 Connector
Cost of Project (escalated to 2025)

Build Alternative 1
• Improvements on RSR Bridge (signage): up to $20 M
• Widening of portion of RSR bridge: $30 M
• Barrier Operating Costs ($1M per year for 5 Year Pilot): $5 M
• Relocate Francisco Blvd. on-ramp and widen I-580: $35 M
• Total: Approximately $70-$90 M

Build Alternative 2
• Improvements and widening on RSR Bridge: $50 M
• Barrier Operating Costs ($1 M per year for 5 Year Pilot): $5 M
• Relocate Francisco Blvd. on-ramp: $35 M
• Direct Connector near Bellam: $220 M
• Total: Approximately $310 M
WB I-580 Traffic Before and After Last Recession
WB I-580 Bridge Vehicle Travel
2019 vs. 2021

RSR Hourly Volume at Toll Plaza

<table>
<thead>
<tr>
<th>Hour</th>
<th>2019</th>
<th>2021</th>
</tr>
</thead>
<tbody>
<tr>
<td>12</td>
<td>50,000</td>
<td>100,000</td>
</tr>
<tr>
<td>1</td>
<td>100,000</td>
<td>200,000</td>
</tr>
<tr>
<td>2</td>
<td>150,000</td>
<td>250,000</td>
</tr>
<tr>
<td>3</td>
<td>200,000</td>
<td>300,000</td>
</tr>
<tr>
<td>4</td>
<td>250,000</td>
<td>350,000</td>
</tr>
<tr>
<td>5</td>
<td>300,000</td>
<td>400,000</td>
</tr>
</tbody>
</table>

RSR Weekly Volume at Toll Plaza

<table>
<thead>
<tr>
<th>Month</th>
<th>2019</th>
<th>2020</th>
<th>2021</th>
</tr>
</thead>
<tbody>
<tr>
<td>March</td>
<td>200,000</td>
<td>250,000</td>
<td>300,000</td>
</tr>
<tr>
<td>April</td>
<td>250,000</td>
<td>300,000</td>
<td>350,000</td>
</tr>
<tr>
<td>May</td>
<td>300,000</td>
<td>350,000</td>
<td>400,000</td>
</tr>
<tr>
<td>June</td>
<td>350,000</td>
<td>400,000</td>
<td>450,000</td>
</tr>
<tr>
<td>July</td>
<td>400,000</td>
<td>450,000</td>
<td>500,000</td>
</tr>
<tr>
<td>Aug</td>
<td>450,000</td>
<td>500,000</td>
<td>550,000</td>
</tr>
<tr>
<td>Sept</td>
<td>500,000</td>
<td>550,000</td>
<td>600,000</td>
</tr>
<tr>
<td>Oct</td>
<td>550,000</td>
<td>600,000</td>
<td>650,000</td>
</tr>
<tr>
<td>Nov</td>
<td>600,000</td>
<td>650,000</td>
<td>700,000</td>
</tr>
<tr>
<td>Dec</td>
<td>650,000</td>
<td>700,000</td>
<td>750,000</td>
</tr>
<tr>
<td>Jan</td>
<td>700,000</td>
<td>750,000</td>
<td>800,000</td>
</tr>
<tr>
<td>Feb</td>
<td>750,000</td>
<td>800,000</td>
<td>850,000</td>
</tr>
</tbody>
</table>
Origin-Destination Pairs

Study results are reported by OD Pair

- I-80/I-580 Split to NB US 101
- I-80/I-580 Split to SB US 101
2018 Origin/Destination Data Shows:
Of the traffic that comes across the bridge and continues to US 101
• **79%** of AM traffic continues north onto NB US 101
• **21%** of AM traffic continues south onto SB US 101

• *These numbers do not include traffic that exits to local roads*
WB I-580 Travel Time: From I-80/I-580 Split to NB US 101
(Downtown San Rafael)

Existing Cond. (Avg/Peak): 23.7/34.7 min

2025 No Build (Avg/Peak): 24.3/43.0 min

Alt 1 (Avg/Peak): 22.7/32.0 min (-6.6%/-25.6%)

Alt 2 (Avg/Peak): 19.2/31.5 min (-21.0%/-26.8%)
WB I-580 Travel Time: From I-80/I-580 Split to SB US 101

Existing Cond (Avg/Peak): 30.4/47.9 min

2025 No Build (Avg/Peak): 32.6/48.7 min

Alternative 1 (Avg/Peak): 35.5/52.0 min (6.5%/6.8%)
(via existing Sir Francis Drake - Blue Line)

Alternative 2 (Avg/Peak): 20.6/32.7 min (-36.7%/-32.9%)
(via new WB I-580 to SB US 101 Connector - Red Line)
WB I-580 Maximum Queue Length at Sir Francis Drake

Existing: 0.8 Miles (7:45AM)

No Build 2025: 1.1 Miles (8:30AM)

Build Alternative 1: 4.9 Miles (9:15 AM)
## WB I-580 Speed Profile - 2019 Conditions

### Bellam Blvd to US-101
- Bellam Blvd Off-ramp to On-ramp
- Sir Francis Drake Blvd to Bellam Blvd
- Main St to Sir Francis Drake Blvd
- Bridge Star to Main St

### Sir Francis Drake Blvd to Bellam Blvd
- Sir Francis Drake Blvd Off-ramp to On-ramp
- Main St to Sir Francis Drake Blvd
- Bridge Star to Main St

### Main St to Sir Francis Drake Blvd
- Main St to Sir Francis Drake Blvd
- Bridge Star to Main St

### Bridge Start to Main St
- Bridge Start to Main St

### Stenmark Dr Off-ramp to Bridge Start
- Stenmark Dr Off-ramp to Bridge Start

### Castro St On-ramp to Stenmark Dr Off-ramp
- Castro St On-ramp to Stenmark Dr Off-ramp

### Canal Blvd Off-ramp to Castro St On-ramp
- Canal Blvd Off-ramp to Castro St On-ramp

### Cutting Blvd On-ramp to Canal Blvd Off-ramp
- Cutting Blvd On-ramp to Canal Blvd Off-ramp

### Harbor Way Off-ramp to Cutting Blvd On-ramp
- Harbor Way Off-ramp to Cutting Blvd On-ramp

### Marina Bay Pkwy Diagonal On-ramp to Harbor Way Off-ramp
- Marina Bay Pkwy Diagonal On-ramp to Harbor Way Off-ramp

### Regatta Blvd On-ramp to Marina Bay Pkwy Off-ramp
- Regatta Blvd On-ramp to Marina Bay Pkwy Off-ramp

### Regatta Blvd Off-ramp to On-ramp
- Regatta Blvd Off-ramp to On-ramp

### Bayview Ave On-ramp to Regatta Blvd Off-ramp
- Bayview Ave On-ramp to Regatta Blvd Off-ramp

### Bayview Ave Off-ramp to On-ramp
- Bayview Ave Off-ramp to On-ramp

### Central Ave On ramp to Bayview Ave Off-ramp
- Central Ave On ramp to Bayview Ave Off-ramp

### Central Ave Off-ramp to On-ramp
- Central Ave Off-ramp to On-ramp

### Buchanan St to Central Ave Off-ramp
- Buchanan St to Central Ave Off-ramp

### I-80 to Buchanan St
- I-80 to Buchanan St

### Bellam Blvd to US-101
- Bellam Blvd Off-ramp to On-ramp
- Sir Francis Drake Blvd to Bellam Blvd
- Main St to Sir Francis Drake Blvd
- Bridge Star to Main St

### Sir Francis Drake Blvd to Bellam Blvd
- Sir Francis Drake Blvd Off-ramp to On-ramp
- Main St to Sir Francis Drake Blvd
- Bridge Star to Main St

### Main St to Sir Francis Drake Blvd
- Main St to Sir Francis Drake Blvd
- Bridge Star to Main St

### Bridge Start to Main St
- Bridge Start to Main St

### Stenmark Dr Off-ramp to Bridge Start
- Stenmark Dr Off-ramp to Bridge Start

### Castro St On-ramp to Stenmark Dr Off-ramp
- Castro St On-ramp to Stenmark Dr Off-ramp

### Canal Blvd Off-ramp to Castro St On-ramp
- Canal Blvd Off-ramp to Castro St On-ramp

### Cutting Blvd On-ramp to Canal Blvd Off-ramp
- Cutting Blvd On-ramp to Canal Blvd Off-ramp

### Harbor Way Off-ramp to Cutting Blvd On-ramp
- Harbor Way Off-ramp to Cutting Blvd On-ramp

### Marina Bay Pkwy Diagonal On-ramp to Harbor Way Off-ramp
- Marina Bay Pkwy Diagonal On-ramp to Harbor Way Off-ramp

### Regatta Blvd On-ramp to Marina Bay Pkwy Off-ramp
- Regatta Blvd On-ramp to Marina Bay Pkwy Off-ramp

### Regatta Blvd Off-ramp to On-ramp
- Regatta Blvd Off-ramp to On-ramp

### Bayview Ave On-ramp to Regatta Blvd Off-ramp
- Bayview Ave On-ramp to Regatta Blvd Off-ramp

### Bayview Ave Off-ramp to On-ramp
- Bayview Ave Off-ramp to On-ramp

### Central Ave On ramp to Bayview Ave Off-ramp
- Central Ave On ramp to Bayview Ave Off-ramp

### Central Ave Off-ramp to On-ramp
- Central Ave Off-ramp to On-ramp

### Buchanan St to Central Ave Off-ramp
- Buchanan St to Central Ave Off-ramp

### I-80 to Buchanan St
- I-80 to Buchanan St

### Bellam Blvd to US-101
- Bellam Blvd Off-ramp to On-ramp
- Sir Francis Drake Blvd to Bellam Blvd
- Main St to Sir Francis Drake Blvd
- Bridge Star to Main St

### Sir Francis Drake Blvd to Bellam Blvd
- Sir Francis Drake Blvd Off-ramp to On-ramp
- Main St to Sir Francis Drake Blvd
- Bridge Star to Main St

### Main St to Sir Francis Drake Blvd
- Main St to Sir Francis Drake Blvd
- Bridge Star to Main St

### Bridge Start to Main St
- Bridge Start to Main St

### Stenmark Dr Off-ramp to Bridge Start
- Stenmark Dr Off-ramp to Bridge Start

### Castro St On-ramp to Stenmark Dr Off-ramp
- Castro St On-ramp to Stenmark Dr Off-ramp

### Canal Blvd Off-ramp to Castro St On-ramp
- Canal Blvd Off-ramp to Castro St On-ramp

### Cutting Blvd On-ramp to Canal Blvd Off-ramp
- Cutting Blvd On-ramp to Canal Blvd Off-ramp

### Harbor Way Off-ramp to Cutting Blvd On-ramp
- Harbor Way Off-ramp to Cutting Blvd On-ramp

### Marina Bay Pkwy Diagonal On-ramp to Harbor Way Off-ramp
- Marina Bay Pkwy Diagonal On-ramp to Harbor Way Off-ramp

### Regatta Blvd On-ramp to Marina Bay Pkwy Off-ramp
- Regatta Blvd On-ramp to Marina Bay Pkwy Off-ramp

### Regatta Blvd Off-ramp to On-ramp
- Regatta Blvd Off-ramp to On-ramp

### Bayview Ave On-ramp to Regatta Blvd Off-ramp
- Bayview Ave On-ramp to Regatta Blvd Off-ramp

### Bayview Ave Off-ramp to On-ramp
- Bayview Ave Off-ramp to On-ramp

### Central Ave On ramp to Bayview Ave Off-ramp
- Central Ave On ramp to Bayview Ave Off-ramp

### Central Ave Off-ramp to On-ramp
- Central Ave Off-ramp to On-ramp

### Buchanan St to Central Ave Off-ramp
- Buchanan St to Central Ave Off-ramp

### I-80 to Buchanan St
- I-80 to Buchanan St

| Time  | 5:00 | 5:15 | 5:30 | 5:45 | 6:00 | 6:15 | 6:30 | 6:45 | 7:00 | 7:15 | 7:30 | 7:45 | 8:00 | 8:15 | 8:30 | 8:45 | 9:00 | 9:15 | 9:30 | 9:45 | 10:00 | 10:15 | 10:30 | 10:45 |
|-------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Speed | 68   | 68   | 68   | 68   | 63   | 63   | 55   | 55   | 55   | 55   | 55   | 55   | 55   | 55   | 55   | 55   | 55   | 55   | 55   | 55   | 55   | 55   | 55   |
| Speed | 59   | 59   | 59   | 59   | 59   | 59   | 55   | 55   | 55   | 55   | 55   | 55   | 55   | 55   | 55   | 55   | 55   | 55   | 55   | 55   | 55   | 55   | 55   |
| Speed | 60   | 60   | 60   | 60   | 60   | 60   | 60   | 60   | 60   | 60   | 60   | 60   | 60   | 60   | 60   | 60   | 60   | 60   | 60   | 60   | 60   | 60   | 60   |
| Speed | 61   | 61   | 61   | 61   | 61   | 61   | 61   | 61   | 61   | 61   | 61   | 61   | 61   | 61   | 61   | 61   | 61   | 61   | 61   | 61   | 61   | 61   | 61   |
| Speed | 63   | 63   | 63   | 63   | 63   | 63   | 63   | 63   | 63   | 63   | 63   | 63   | 63   | 63   | 63   | 63   | 63   | 63   | 63   | 63   | 63   | 63   | 63   |
| Speed | 64   | 64   | 64   | 64   | 64   | 64   | 64   | 64   | 64   | 64   | 64   | 64   | 64   | 64   | 64   | 64   | 64   | 64   | 64   | 64   | 64   | 64   | 64   |
| Speed | 65   | 65   | 65   | 65   | 65   | 65   | 65   | 65   | 65   | 65   | 65   | 65   | 65   | 65   | 65   | 65   | 65   | 65   | 65   | 65   | 65   | 65   | 65   |

### Speed Profile
- **>55 mph**
- **35 to 55 mph**
- **<35 mph**

### Item 6 - Attachment A
WB I-580 Speed Profile - 2025 No Build - GP Lanes

5:00 67 68 68 68 68 64 55
5:15 68 68 68 68 68 63 55
5:30 68 68 67 68 61 54
5:45 67 67 67 66 61 53
6:00 67 67 67 67 60 52
6:15 67 67 67 67 59 52
6:30 67 68 67 67 60 52
6:45 65 67 67 67 57 52
7:00 65 67 66 65 56 52
7:15 64 66 65 65 55 52
7:30 65 66 66 65 55 52
7:45 64 66 66 64 53 52
8:00 64 65 64 64 23 48
8:15 64 66 66 65 27 48
8:30 63 66 65 64 24 45
8:45 60 63 62 64 34 47
9:00 63 65 65 64 57 52
9:15 64 65 65 64 56 52
9:30 65 65 65 64 58 52
9:45 60 63 62 63 55 52
10:00 63 62 62 63 57 52
10:15 60 62 62 63 57 52
10:30 61 63 63 63 56 52
10:45 63 64 63 64 57 53

>55mph
35 to 55 mph
<35mph
RSR Bridge – WB Third Lane Study

WB I-580 Speed Profile - 2025 Build Alt 1 - GP Lanes

5:00  63  63  63  63  63  63  56
5:15  64  64  64  64  64  64  66
5:30  61  62  62  62  63  63  55
5:45  61  61  61  61  62  62  55
6:00  59  60  60  60  61  61  53
6:15  56  58  57  59  59  59  51
6:30  55  55  55  55  55  55  51
6:45  55  56  56  56  56  56  55
7:00  55  56  56  56  56  56  55
7:15  53  57  57  56  56  56  46
7:30  54  57  57  56  56  56  38
7:45  55  57  57  56  56  56  33
8:00  51  56  56  56  56  56  27
8:15  55  57  57  56  56  56  25
8:30  53  56  56  55  55  55  24
8:45  53  57  57  56  56  56  20
9:00  55  56  56  55  55  55  28
9:15  56  56  56  56  56  56  20
9:30  56  56  56  56  56  56  25
9:45  55  55  55  55  55  55  26
10:00 54  55  55  55  55  55  24
10:15 57  57  57  57  57  57  49
10:30 54  58  57  57  57  57  43
10:45 59  60  60  60  61  61  55

>55mph
35 to 55 mph
<35mph

Item 6 - Attachment A

29 of 43
WB I-580 Speed Profile - 2025 Build Alt 2 - GP Lanes

- Bellam Blvd to US-101
- Stenmark Dr Off-ramp to Bridge Start
- Bellam Blvd Off-ramp to On-ramp
- Sir Francis Drake Blvd to Bellam Blvd 2
- Sir Francis Drake Blvd to Bellam Blvd 1
- Main St to Sir Francis Drake Blvd
- Bridge Start to Main St
- Stenmark Dr Off-ramp to Bridge Start
- Castro St On-ramp to Stenmark Dr Off-ramp
- Canal Blvd Off-ramp to Castro St On-ramp
- Cutting Blvd On-ramp to Canal Blvd Off-ramp
- Harbor Way Off-ramp to Cutting Blvd On-ramp
- Marina Bay Pkwy Diagonal On-ramp to Harbor Way Off-ramp
- Marina Bay Pkwy Off-ramp to Diagonal On-ramp
- Regatta Blvd On-ramp to Marina Bay Pkwy Off-ramp
- Regatta Blvd Off-ramp to On-ramp
- Bayview Ave On-ramp to Regatta Blvd Off-ramp
- Bayview Ave Off-ramp to On-ramp
- Central Ave On Ramp to Bayview Ave Off-ramp
- Central Ave Off-ramp to On Ramp
- Buchanan St to Central Ave Off-ramp
- I-80 to Buchanan St

5:00 63 63 64 64 64 64 56 56 58 68 68 68 68 68 68 68 68 68 69 68 68 68
5:15 64 64 64 64 65 57 56 57 67 67 66 67 66 66 66 66 66 66 65 67 67 67
5:45 61 62 61 61 61 61 61 61 54 54 54 54 54 54 54 54 54 54 54 54 54 54
6:00 60 61 61 61 61 61 61 61 54 54 54 54 54 54 54 54 54 54 54 54 54 54
6:30 57 59 59 59 59 59 59 59 54 54 54 54 54 54 54 54 54 54 54 54 54 54
6:45 57 59 59 59 59 59 59 59 54 54 54 54 54 54 54 54 54 54 54 54 54 54
7:00 58 59 59 59 59 59 59 59 54 54 54 54 54 54 54 54 54 54 54 54 54 54
7:15 57 58 58 58 57 60 60 60 54 54 54 54 54 54 54 54 54 54 54 54 54 54
7:30 56 59 59 59 59 59 59 59 54 54 54 54 54 54 54 54 54 54 54 54 54 54
7:45 56 60 60 60 60 60 60 60 54 54 54 54 54 54 54 54 54 54 54 54 54 54
8:00 56 59 59 59 59 59 59 59 54 54 54 54 54 54 54 54 54 54 54 54 54 54
8:15 57 59 59 59 59 59 59 59 54 54 54 54 54 54 54 54 54 54 54 54 54 54
8:30 56 59 58 58 57 60 60 60 54 54 54 54 54 54 54 54 54 54 54 54 54 54
8:45 55 59 59 59 59 59 59 59 54 54 54 54 54 54 54 54 54 54 54 54 54 54
9:00 58 59 59 59 59 59 59 59 60 60 60 60 60 60 60 60 60 60 60 60 60 60
9:15 57 58 58 58 58 61 61 61 54 54 54 54 54 54 54 54 54 54 54 54 54 54
9:30 59 59 59 59 59 60 60 60 55 55 55 55 55 55 55 55 55 55 55 55 55 55
9:45 59 60 60 60 60 61 61 61 55 55 55 55 55 55 55 55 55 55 55 55 55 55
10:00 59 60 59 59 61 61 61 61 55 55 55 55 55 55 55 55 55 55 55 55 55 55
10:15 57 58 58 58 58 60 60 60 55 55 55 55 55 55 55 55 55 55 55 55 55 55
10:30 57 59 59 59 57 60 60 60 55 55 55 55 55 55 55 55 55 55 55 55 55 55
10:45 59 61 61 61 60 62 62 62 55 55 55 55 55 55 55 55 55 55 55 55 55 55

- 5:00 >55 mph
- 6:00 35 to 55 mph
- 7:00 <35 mph

Item 6 - Attachment A
WB I-580 Speed Profile - 2025 No Build - HOV
### WB I-580 Speed Profile - 2025 Build Alt 2 - HOV

<table>
<thead>
<tr>
<th>Time</th>
<th>&lt;35mph</th>
<th>35 to 55 mph</th>
<th>&gt;55mph</th>
</tr>
</thead>
<tbody>
<tr>
<td>5:00</td>
<td>63</td>
<td>63</td>
<td>64</td>
</tr>
<tr>
<td>5:15</td>
<td>64</td>
<td>64</td>
<td>64</td>
</tr>
<tr>
<td>5:30</td>
<td>64</td>
<td>64</td>
<td>64</td>
</tr>
<tr>
<td>5:45</td>
<td>64</td>
<td>64</td>
<td>64</td>
</tr>
<tr>
<td>6:00</td>
<td>60</td>
<td>61</td>
<td>61</td>
</tr>
<tr>
<td>6:15</td>
<td>58</td>
<td>59</td>
<td>59</td>
</tr>
<tr>
<td>6:30</td>
<td>59</td>
<td>59</td>
<td>59</td>
</tr>
<tr>
<td>6:45</td>
<td>59</td>
<td>59</td>
<td>59</td>
</tr>
<tr>
<td>7:00</td>
<td>59</td>
<td>59</td>
<td>59</td>
</tr>
<tr>
<td>7:15</td>
<td>59</td>
<td>59</td>
<td>59</td>
</tr>
<tr>
<td>7:30</td>
<td>59</td>
<td>59</td>
<td>59</td>
</tr>
<tr>
<td>7:45</td>
<td>59</td>
<td>59</td>
<td>59</td>
</tr>
<tr>
<td>8:00</td>
<td>59</td>
<td>59</td>
<td>59</td>
</tr>
<tr>
<td>8:15</td>
<td>59</td>
<td>59</td>
<td>59</td>
</tr>
<tr>
<td>8:30</td>
<td>59</td>
<td>59</td>
<td>59</td>
</tr>
<tr>
<td>8:45</td>
<td>59</td>
<td>59</td>
<td>59</td>
</tr>
<tr>
<td>9:00</td>
<td>59</td>
<td>59</td>
<td>59</td>
</tr>
<tr>
<td>9:15</td>
<td>59</td>
<td>59</td>
<td>59</td>
</tr>
<tr>
<td>9:30</td>
<td>59</td>
<td>59</td>
<td>59</td>
</tr>
<tr>
<td>9:45</td>
<td>59</td>
<td>59</td>
<td>59</td>
</tr>
<tr>
<td>10:00</td>
<td>59</td>
<td>59</td>
<td>59</td>
</tr>
<tr>
<td>10:15</td>
<td>59</td>
<td>59</td>
<td>59</td>
</tr>
<tr>
<td>10:30</td>
<td>59</td>
<td>59</td>
<td>59</td>
</tr>
<tr>
<td>10:45</td>
<td>59</td>
<td>61</td>
<td>61</td>
</tr>
</tbody>
</table>

- **<35mph** includes speeds under 35 mph.
- **35 to 55 mph** includes speeds between 35 and 55 mph.
- **>55mph** includes speeds over 55 mph.

The diagram shows the speed profile along the WB I-580 route, with the map indicating the location of the study area.
MMWD Pipeline

- MMWD is studying two options for a water pipeline on the RSRB including one in the multi-use path.
- The multi-use path option may preclude use of the right lane for any future vehicle lane.
- MMWD’s schedule is to complete construction in June 2022. This will require completing alternative selection and beginning material procurement by October 2021
Summary

• Peak period use lane on the upper deck would require significant new construction on the Marin County side.

• Direct access from Francisco Boulevard East/Morphew Street to Sir Francis Drake Boulevard would not be able to be maintained with the project.

• Traffic headed to northbound US 101 would have a peak hour time savings of 11 minutes with the project (Alt 1) in 2025.

• However, traffic headed to southbound US 101 would have an increased peak hour delay of 3 minutes with the project (Alt 1) in 2025.
  • Travel time savings only possible with construction of WB-SB Direct Connector.
Summary (continued)

• The Project may shift the congestion and bottlenecks from the toll plaza area to Sir Francis Drake Blvd., thereby shifting a regional issue to a local issue.

• MTC/BATA has raised concerns that the PPU Lane will result in Induced Demand for vehicles WB on the Bridge and potentially reverse recent positive changes in Mode Shift

• MMWD Pipeline project could affect options available for the future.
Next Steps

• TAM, Caltrans, BATA staff to present at the September TAM Board meeting on the RSRB loading study and the traffic study.

• A similar presentation will be made to the Contra Costa Transportation Authority Board in October and the BATA Oversight Committee in November.

• TAM staff will monitor the MMWD pipeline project to see if a potential westbound part-time lane project remains feasible.

• BATA/Caltrans are expected to report on the multi-use path pilot results in mid-2024, upon completion of the UC Berkeley evaluation.
THIS PAGE LEFT BLANK INTENTIONALLY
August 31, 2021

Dina El-Tawansy
District Director
CalTrans District 4 – Bay Area
111 Grand Avenue
P.O. Box 23660
Oakland, CA 94612

Via US Mail and email: dina.el-tawansy@dot.ca.gov

RE: CALIFORNIA ENVIRONMENTAL QUALITY ACT LEAD AGENCY DELEGATION REQUEST FOR THE MARIN EAST BAY EMERGENCY INTERTIE PROJECT (CALTRANS EA.3W680, MMWD D21037)

Dear Ms. El-Tawansy,

The Marin Municipal Water District (District) is proposing to implement the Marin East Bay Emergency Intertie Project (Project) to address emergency drought conditions in Marin County and the state of California. A portion of the project would be within the State Highway System (SHS) right-of-way (ROW) of Interstate 580 (I-580). Pursuant to California Environmental Quality Act (CEQA) Guidelines Section 15051(d), the District Water requests California Department of Transportation (Caltrans) approval to designate the District as the CEQA Lead Agency for the Project.

**Project Purpose, Need and Preliminary Description:**

The purpose of the Project is to provide supplemental water supply to the District’s more than 191,000 customers during drought conditions. The Project is needed to provide sufficient water supplies to District customers during emergency drought conditions. After two successive dry winters with significantly below average rainfall, the County of Marin and much of California is facing extreme drought, and District reservoir storage volumes are at historically low levels. The District has implemented aggressive mandatory conservation measures; however, even with extremely aggressive mandatory conservation measures, the District’s 191,000 customers are projected to run out of water as early as July 2022 if drought conditions continue.

The Project involves constructing and operating potable water infrastructure to connect the treated water systems of the District to East Bay Municipal Utility District’s (EBMUD’s) water transmission system. The Project would include up to approximately eight miles of mostly 24-
to 30-inch (inner diameter) potable water pipe, up to three booster pump stations, one 1-
million-gallon steel tank, and improvements at existing District facilities. The pipeline would act
as a one-way intertie to allow the transfer of water from EBMUD facilities to the District, as
necessary. The Project would be constructed primarily within public ROW, including District-
owned property in the City of San Rafael in Marin County, in the City of Richmond in Contra
Costa County, and within the I-580 right-of-way including across the Richmond-San Rafael (RSR)
Bridge, which is part of the SHS owned by the State of California and under the jurisdiction of
Caltrans (see Figure 1).

Several alternatives are currently under consideration; preferred alternatives will be identified
as planning and design progress. Currently, the potential east-end tie-in locations in the City of
Richmond are (1) near the intersection of Tewksbury Avenue and Castro Street, and (2) at the
southeast corner of West Cutting Boulevard and South Garrard Boulevard, north of Judge
George D. Carroll Park. Operation of the pipeline would require use of portable pumps at the
Richmond terminus. The potential west-end tie-in locations, both in the City of San Rafael, are
(1) Morphew Street and Francisco Boulevard, and (2) Pelican Way and Kerner Boulevard. After
tie-in at one of those locations, additional pipeline is planned along Francisco and Bellam
Boulevards.

**CEQA Lead Agency Designation Justification:**

The District requests Caltrans approval to designate the District as the CEQA Lead Agency for
the Project for the following reasons:

- The Project is not anticipated to make improvements of, or permanently affect, capacity or
  operations of the SHS mainline.
- Project elements within the SHS are part of a larger, non-transportation emergency drought
  relief project that is not funded out of the State Highway Account. Although a large segment
  of the waterline would be within the SHS ROW, substantial elements of the Project would
  be outside of the SHS ROW and under the ownership of the District, including the water line
  segments connecting tie-in locations to the water line within the SHS ROW, the booster
  pump stations, a one-million-gallon steel tank, and other improvements to District facilities.
- The District would be the operator of the entirety of the Project, including the segment of
  the water line within the SHS ROW.
- Due to the emergency nature of the Project, completion of preliminary design, CEQA
  review, final design, bid and construction must be completed under an extremely aggressive
  schedule; failure to complete the Project on schedule presents a substantial risk that the
  District’s 191,000 customers will run out of water by July 2022, with catastrophic results.
The District believes that it is best positioned to complete CEQA reviews and approvals to meet the required Project delivery schedule; the District serving as the CEQA Lead Agency would further facilitate the effective delivery of the Project on the required schedule.

- The District anticipates that its Board of Directors will be required to take action with respect to the Project as soon as October 2021, and therefore will likely be "the agency which acts first on the project in question" consistent with CEQA Guidelines section 15051(c).
- Through continued close coordination with Caltrans environmental staff, the District is confident that the District can be made familiar with the resources in the SHS ROW and efficiently and sufficiently address Caltrans’ concerns as they relate environmental resources in the SHS ROW.
- There is no federal transportation funding programmed, planned or requested for the project; as such, it is not anticipated that action or review of the project pursuant to the National Environmental Policy Act (NEPA) will be required by the Federal Highway Administration (FHWA) or by Caltrans under delegated authority by FHWA pursuant to the Memorandum of Understanding Between the Federal Highway Administration and the California Department of Transportation Concerning the State of California’s Participation in the Surface Transportation Project Delivery Program Pursuant to 23 U.S.C. 327 (327 MOU).

**CEQA Lead Agency Designation Concurrence Request:**

Based on the above justifications, the District requests Caltrans’ agreement that the District will be the CEQA Lead Agency for the Project and Caltrans will be a CEQA Responsible Agency for purposes of actions within the SHS ROW.

The District will perform all studies necessary to document and support the anticipated Statutory Exemption (SE) to be prepared for the Project pursuant to CEQA Guidelines Section 15269 Emergency Projects. The District will do its best to conduct supporting technical investigations and documentation according to Caltrans standards that apply to the CEQA process (including the guidance provided in the Standard Environmental Reference), taking into consideration the emergency nature of the project. Caltrans’ review, comment and concurrence on the technical studies is requested for elements that pertain to activities within or that impact the SHS.

Final roles and responsibilities of the District and Caltrans will be defined in a Cooperative Agreement between the two agencies, which is currently under development.

**Conclusion:**
Thank you in advance for your consideration of this request. We appreciate Caltrans' assistance in Project planning thus far and welcome your continued participation in all aspects of the Project with regard to the State highway and the Richmond-San Rafael Bridge. We look forward to continuing to work with Caltrans as a valued partner to deliver this critical emergency response Project. If you have questions, please contact me at 415-945-1460 or bhorenstein@marinwater.org.

Sincerely,

Ben Horenstein, General Manager
Marin Municipal Water District

cc: Anne Richman, Transportation Authority of Marin arichman@tam.ca.gov
    Andrew Fremier, Bay Area Toll Authority afremier@bayareametro.gov