Topics

- Study Purpose
- Study Approach Overview
- Transit Options Evaluation
Study Purpose

- Explore other modes of travel to relieve congestion
- Address equity concerns
- Understand demand and propensity to use fixed route service, micro-transit, and pooling options
Four-Step Approach

- Who is using the corridor?
- What do the travel markets look like?
- What are the demographics of the users? What is their transit propensity?
- What transit approaches might work for this corridor?
Previous Findings

- Corridor serves lower density, dispersed development patterns
- Most people not utilizing a high-capacity rapid transit service
- Mostly long-distance work trips
- High percentage by those earning below Bay Area median income
- Suggests on-demand and pooling as opposed to fixed route service
Traffic Count Data

Relatively low travel demand along corridor

Source: PeMS, March to May 2018, 6 AM to 10 AM
Segment B - Westbound AM

Only 2 Large O-D Pairs

Focus on AM Peak Period because typically when modal decision is made...
Large Portion of Commute in Free Flow

Considerations:

• Will people stop if they are in free flow for so long already?
• Will people be willing to transfer at other end to travel an additional 5+ miles?
Step 4

What transit approaches might work for this corridor?

Focus on Segment B
Solutions Overview

- Solutions focus on carpooling
  - Expanded park-and-ride system
  - Mobility-as-a-Service app with rewards
  - Subsidized for low-income and disabled
- With a few peak period express bus routes with limited service
Fixed Route Options

• Two westbound O-D pairs could be served by express bus service

• Other patterns are too dispersed

• Micro-transit and pooling to serve others
Propensity for Taking Transit

• Focused on metrics that influence transit ridership

• Auto ownership normally a metric but must own car if using corridor today
## Scores for Origins and Destinations

### AM Origins

<table>
<thead>
<tr>
<th>City</th>
<th>Low</th>
<th>Medium</th>
<th>High</th>
<th>Very High</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vallejo</td>
<td>8%</td>
<td>15%</td>
<td>22%</td>
<td>54%</td>
<td>1,421</td>
</tr>
<tr>
<td>Fairfield</td>
<td>9%</td>
<td>35%</td>
<td>31%</td>
<td>25%</td>
<td>983</td>
</tr>
<tr>
<td>Novato</td>
<td>18%</td>
<td>12%</td>
<td>16%</td>
<td>54%</td>
<td>841</td>
</tr>
<tr>
<td>I-80 East</td>
<td>30%</td>
<td>50%</td>
<td>11%</td>
<td>9%</td>
<td>625</td>
</tr>
<tr>
<td>Santa Rosa</td>
<td>9%</td>
<td>22%</td>
<td>39%</td>
<td>29%</td>
<td>450</td>
</tr>
<tr>
<td>Petaluma</td>
<td>14%</td>
<td>43%</td>
<td>29%</td>
<td>14%</td>
<td>418</td>
</tr>
<tr>
<td>San Rafael</td>
<td>14%</td>
<td>13%</td>
<td>22%</td>
<td>52%</td>
<td>272</td>
</tr>
</tbody>
</table>

### AM Destinations

<table>
<thead>
<tr>
<th>City</th>
<th>Low</th>
<th>Medium</th>
<th>High</th>
<th>Very High</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Novato</td>
<td>10%</td>
<td>20%</td>
<td>29%</td>
<td>41%</td>
<td>1,269</td>
</tr>
<tr>
<td>Vallejo</td>
<td>6%</td>
<td>17%</td>
<td>30%</td>
<td>47%</td>
<td>787</td>
</tr>
<tr>
<td>I-80 East</td>
<td>33%</td>
<td>34%</td>
<td>27%</td>
<td>6%</td>
<td>712</td>
</tr>
<tr>
<td>Petaluma</td>
<td>10%</td>
<td>31%</td>
<td>32%</td>
<td>26%</td>
<td>578</td>
</tr>
<tr>
<td>Santa Rosa</td>
<td>27%</td>
<td>36%</td>
<td>19%</td>
<td>18%</td>
<td>566</td>
</tr>
<tr>
<td>San Rafael</td>
<td>14%</td>
<td>26%</td>
<td>23%</td>
<td>37%</td>
<td>488</td>
</tr>
<tr>
<td>Fairfield</td>
<td>14%</td>
<td>31%</td>
<td>27%</td>
<td>28%</td>
<td>443</td>
</tr>
</tbody>
</table>

### Weighted Average for City to City

<table>
<thead>
<tr>
<th>Origin-Destination Pair</th>
<th>Average TLI</th>
<th>Quartile</th>
<th>Trips</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Segment B - Westbound AM</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fairfield to Novato</td>
<td>7.1</td>
<td>High</td>
<td>416</td>
</tr>
<tr>
<td>Vallejo to Novato</td>
<td>8.1</td>
<td>High</td>
<td>413</td>
</tr>
<tr>
<td>Vallejo to Petaluma</td>
<td>7.6</td>
<td>High</td>
<td>220</td>
</tr>
<tr>
<td>Vallejo to Larkspur</td>
<td>8.5</td>
<td>High</td>
<td>215</td>
</tr>
<tr>
<td>Vallejo to San Rafael</td>
<td>8.3</td>
<td>High</td>
<td>193</td>
</tr>
<tr>
<td><strong>Segment B - Eastbound AM</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Novato to Benicia</td>
<td>7.4</td>
<td>High</td>
<td>169</td>
</tr>
<tr>
<td>Novato to Vallejo</td>
<td>8.3</td>
<td>High</td>
<td>160</td>
</tr>
<tr>
<td>Petaluma to Vallejo</td>
<td>7.5</td>
<td>High</td>
<td>149</td>
</tr>
<tr>
<td>San Rafael to Vallejo</td>
<td>8.8</td>
<td>Very High</td>
<td>132</td>
</tr>
<tr>
<td>Santa Rosa to Vallejo</td>
<td>7.4</td>
<td>High</td>
<td>126</td>
</tr>
</tbody>
</table>
Proposed Express Bus Service

Assumptions
- Headways
  - M-F: 30 min 5-9 AM, 2-6 PM
  - M-F: 60 min 9 AM-2 PM, 6-8 PM
  - Sat: 60 min 5 AM-8 PM
- 8-12 buses, 24 roundtrips per weekday
- $129 operating cost per hour
- AOC: $3-5 million
- $6 cash fare, $120 31-day pass
- 20% farebox recovery
Transit Propensity

Total Peak Period Potential Market: **1,100 vehicles**
Very High Peak Period Propensity Market: **560 vehicles**
Key Takeaways

• To meet 20% fare box recovery, need to capture about **12% of the auto travel market** (about 5,000 trips per month)

• Roughly **50% of the market has a very high transit propensity**, largely driven by income

• Demand and propensity exist, need interim HOV project to **incentivize bus service**
What is Micro-Transit

- Form of Demand Responsive Transit (DRT)
- Uses technology to offer flexible routing and scheduling of service vehicles
- Transit service in between private autos and fixed-route transit
- Examples: Chariot, Lyft, Uber, UberPool
Micro-Transit Options

• Work well serving dispersed travel patterns

• Two Main Types: On-Demand Minibus and TNCs

• Can connect to park and ride lots

• Door-to-door option for similar experience

• App-based, can be subsidized and geo-fenced
Marin Transit Connect Example
SR 37 TNC Deployment

- Provide **door-to-door, on-demand service** across the corridor
  - Pickup areas at park and ride lots
- Also provide **first and last mile service** at origin-destination trip centers
- Subsidize for senior/ADA/transit
SR 37 TNC Issues

- TNC subsidy and user cost likely **cost-prohibitive** due to length of trip and lack of TNC supply
  - TNC drivers make more money off short trips
- Sharing target likely **unobtainable**
  - Needed to see VMT and congestion reduction
  - Due to relatively low demand and lack of concentrated trip centers
SR 37 Minibus Deployment

- Travel semi-fixed route across SR 37 with defined stop areas, including PNR lots
- Shared-ride, on-demand pickup via App
- Geo-fenced, subsidized, monthly pass
- Likely need separate paratransit provider
Pooling Options

• Utilize existing and new lots for carpooling, micro-transit, and express bus connections

• Facilitate formal and casual carpool

• App-based and subsidized for low income
Focus on Bolstering Existing Carpooling

- Mobility-as-a-Service App
  - STA and NVTA are in contract with Rideamigos which interfaces with Scoop and TNCs
  - Scoop’s algorithm identifies the most efficient trip based on the fastest route, nearby carpoolers, and carpool lanes
  - Carpooler pays Scoop who then pays driver

19% Carpooling Today
Rideamigos

- **Software-as-a-Service**

- See themselves as a hub for commuter options & benefits

- Offer people an easy means to carpool

- Then rewards them

- Subsidy integration too
Expanded Park and Ride System

Reverse commute in free flow, but tolling likely to incentivize carpooling

- **Black Point:**
  - Under capacity, could be expanded

- **New Fairgrounds Lot:**
  - Over Capacity
  - 43% Capacity

- **Mare Island:**
  - Potential Location

- **Red Top:**
  - Candidate for Expansion
  - 60% Capacity

- **Main Street:**
  - 60% Capacity

- **Existing Park and Ride Lot**

**Potential Opportunity**
Future Considerations

- Short-term reversible carpool lane would incentivize express bus options
- Longer-term 4-lane tolled facility would further incentivize proposed options, as they provide alternatives for those that can’t afford or don’t want to pay toll
Next Steps

Near-Term

• TDM solutions for the corridor
  • Dynamic Ridesharing App
  • Carpool and microtransit solutions
• Fairgrounds Drive Bus Stop to be operating July 1

Longer-term

• Express Bus service deployed with Interim Segment B infrastructure improvements
• Expand Park and Ride system
Questions?