



SR 37 Travel Behavior & Transit Feasibility Study Transit Options Evaluation

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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

About incrementally getting people out of their cars



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

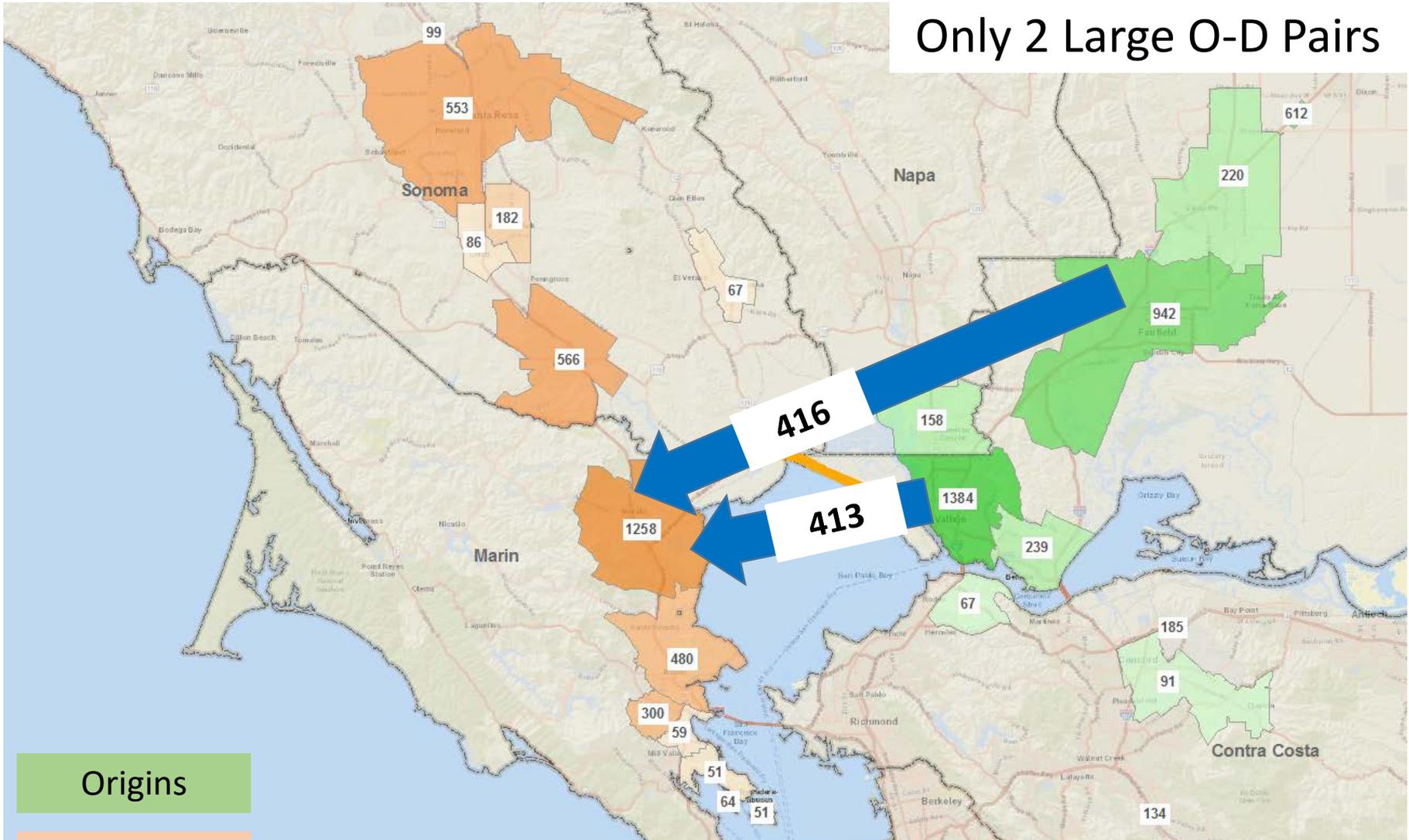
Traffic Count Data



Source: PeMS, March to May 2018, 6 AM to 10 AM

Segment B - Westbound AM

Only 2 Large O-D Pairs

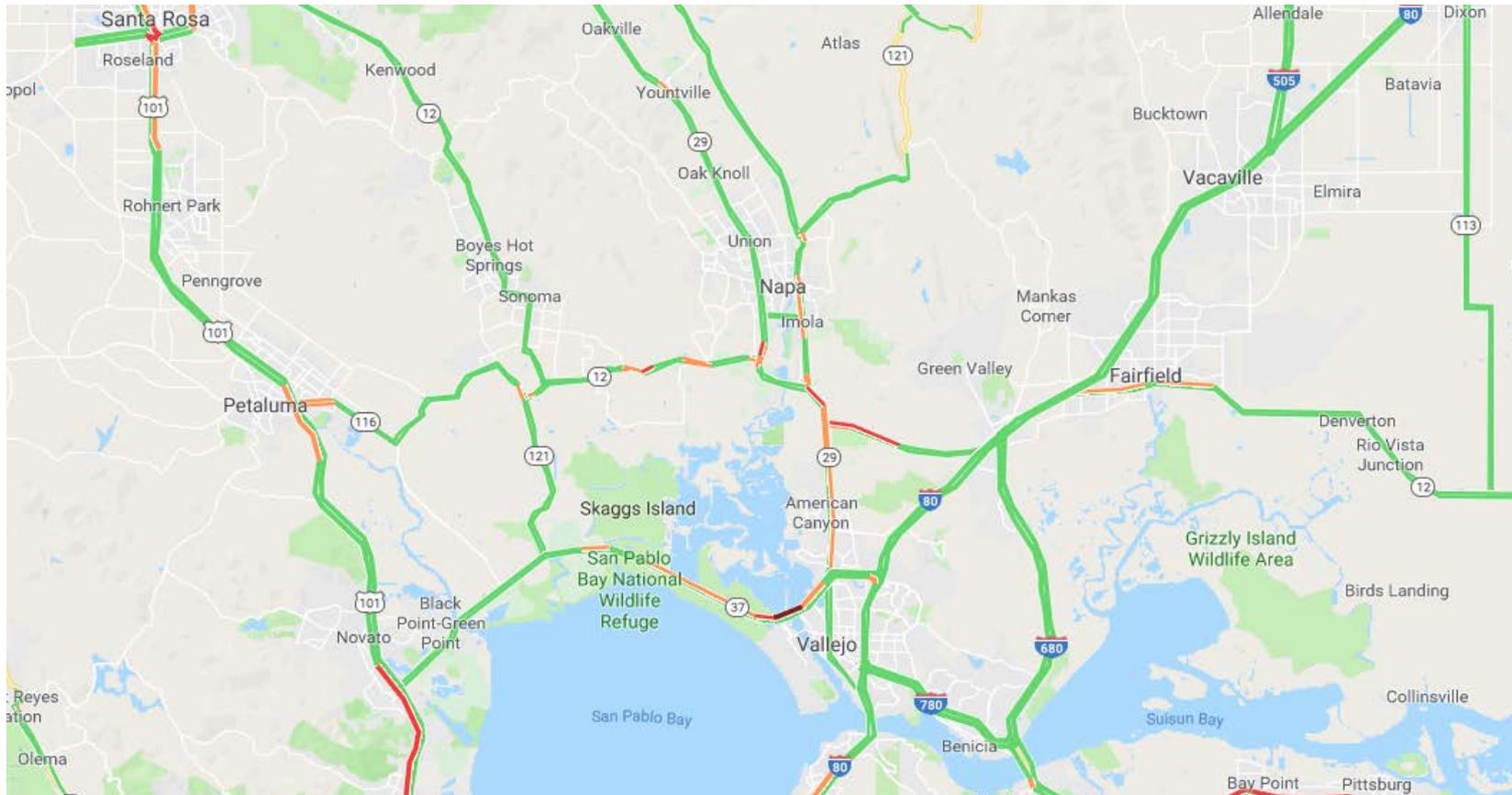


Origins

Destinations

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



ride**amigos**
scop

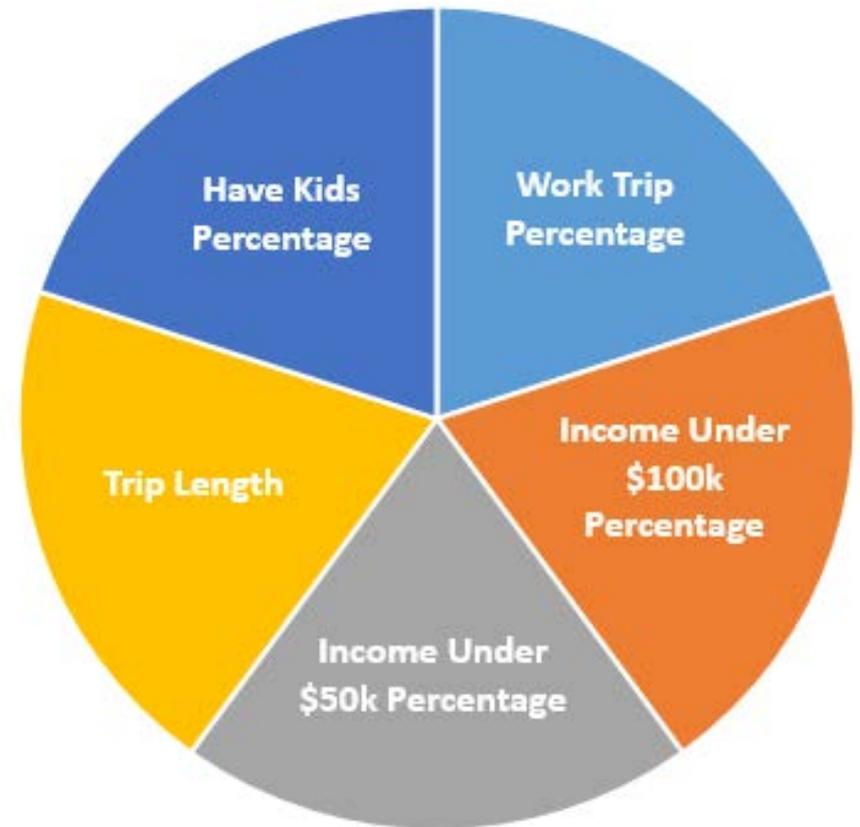


Fixed Route Options

- 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

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



AM Destinations

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

Weighted Average for City to City

Origin-Destination Pair	Average TLI	Quartile	Trips
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Segment B - Westbound AM

Fairfield to Novato	7.1	High	416
Vallejo to Novato	8.1	High	413
Vallejo to Petaluma	7.6	High	220
Vallejo to Larkspur	8.5	High	215
Vallejo to San Rafael	8.3	High	193

Segment B - Eastbound AM

Novato to Benicia	7.4	High	169
Novato to Vallejo	8.3	High	160
Petaluma to Vallejo	7.5	High	149
San Rafael to Vallejo	8.8	Very High	132
Santa Rosa to Vallejo	7.4	High	126

Proposed Express Bus Service

Assumptions

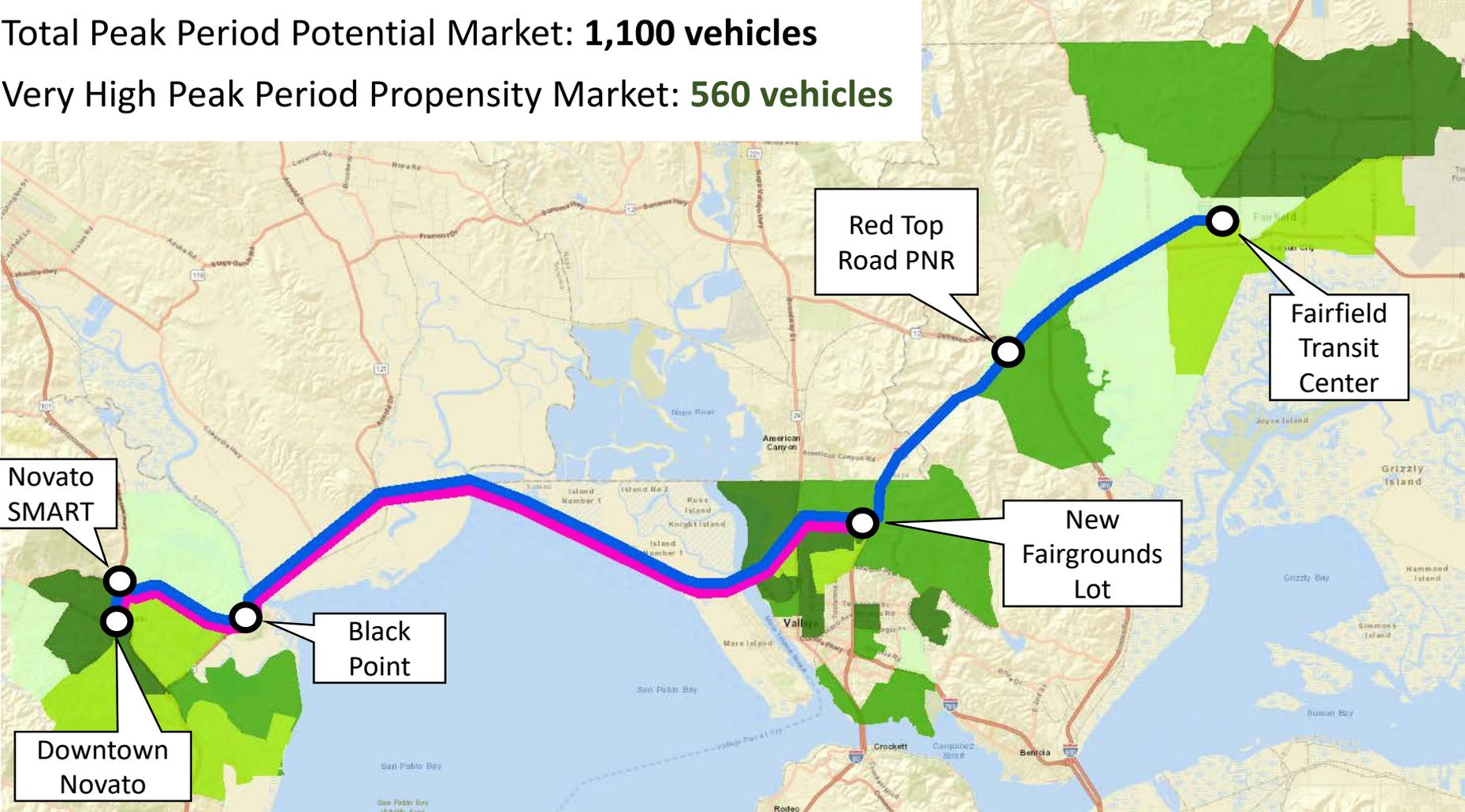
- Headways
 - M-F: 30 min 5-9 AM, 2-6 PM
 - M-F: 60 min 9 AM-2 PM, 6-8 PM
 - Sat: 60 min 5 AM-8 PM
- 8-12 buses, 24 roundtrips per weekday
- \$129 operating cost per hour
- AOC: \$3-5million
- \$6 cash fare, \$120 31-day pass
- 20% farebox recovery



Transit Propensity

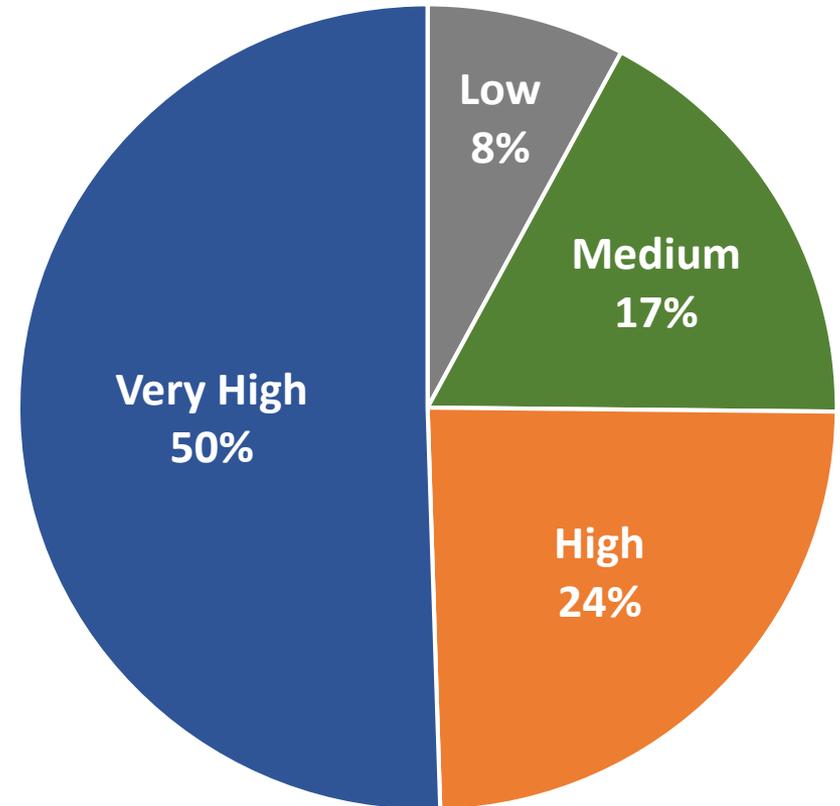
Total Peak Period Potential Market: **1,100 vehicles**

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

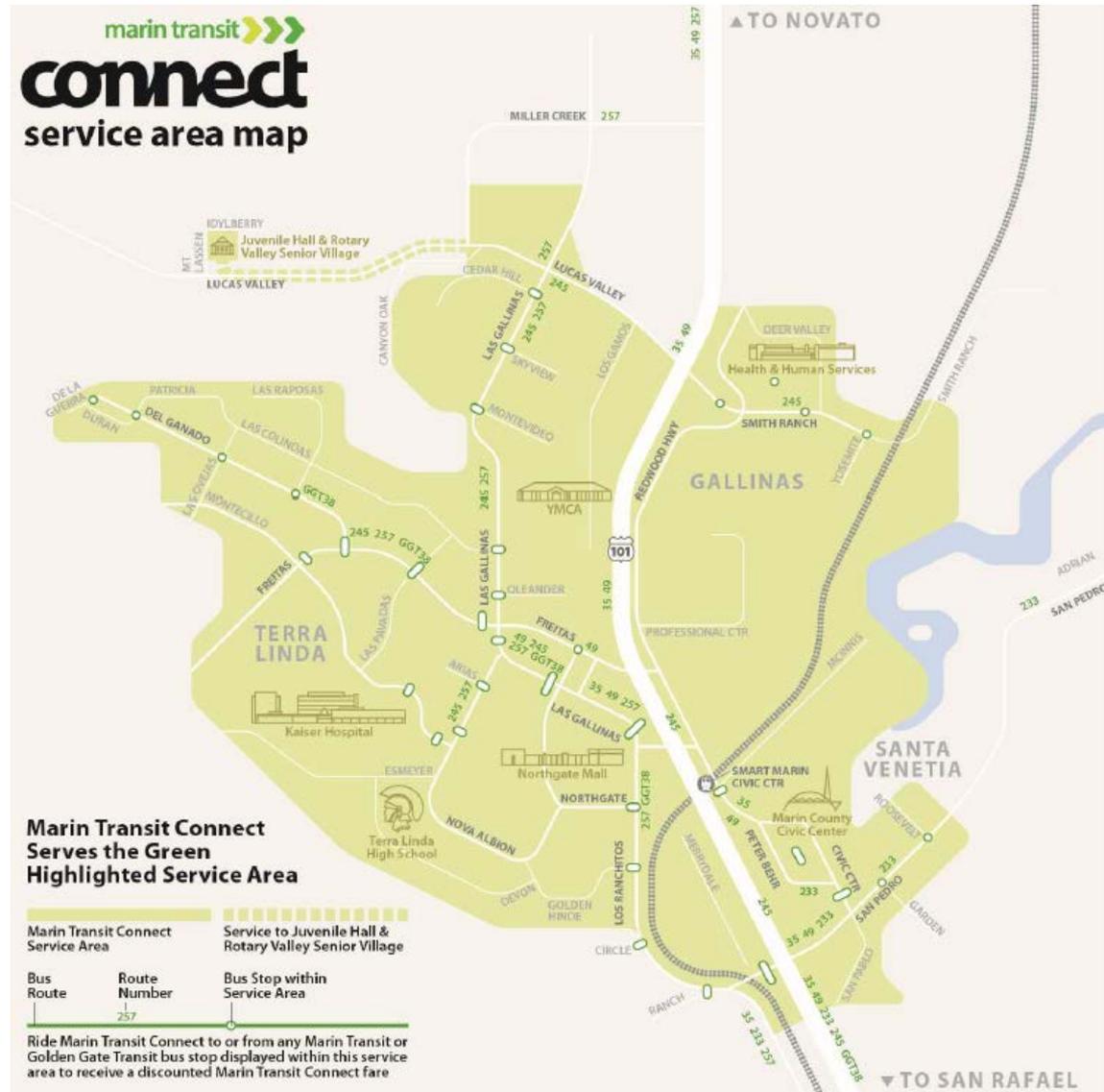
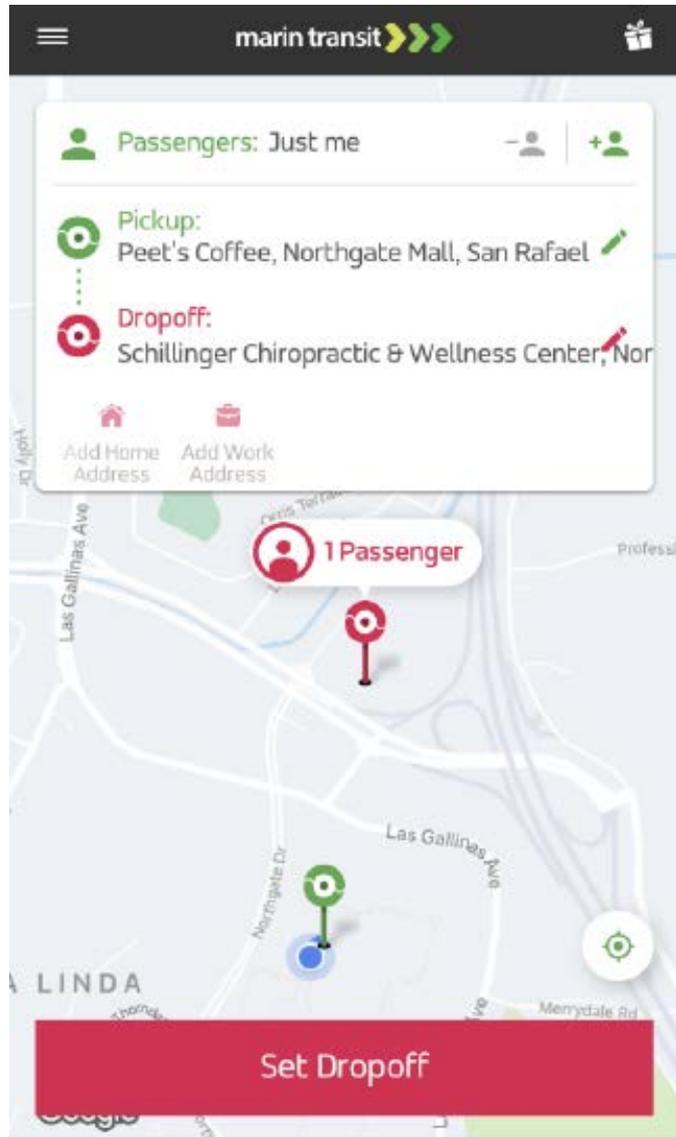
- Form of Demand Responsive Transit (DRT)
- Uses technology to offer flexible routing and scheduling of service vehicles
- Transit service in between private autos and fixed-route transit
- Examples: Chariot, Lyft, Uber, UberPool



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 Uber



- 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

- 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





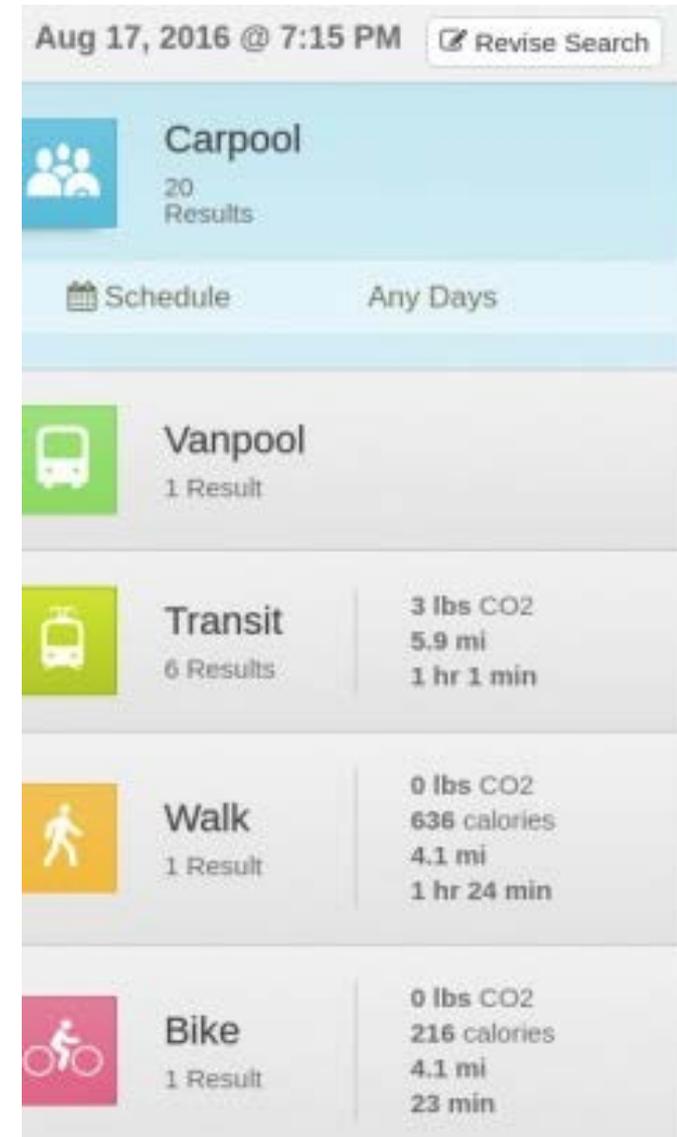
Pooling Options

- 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

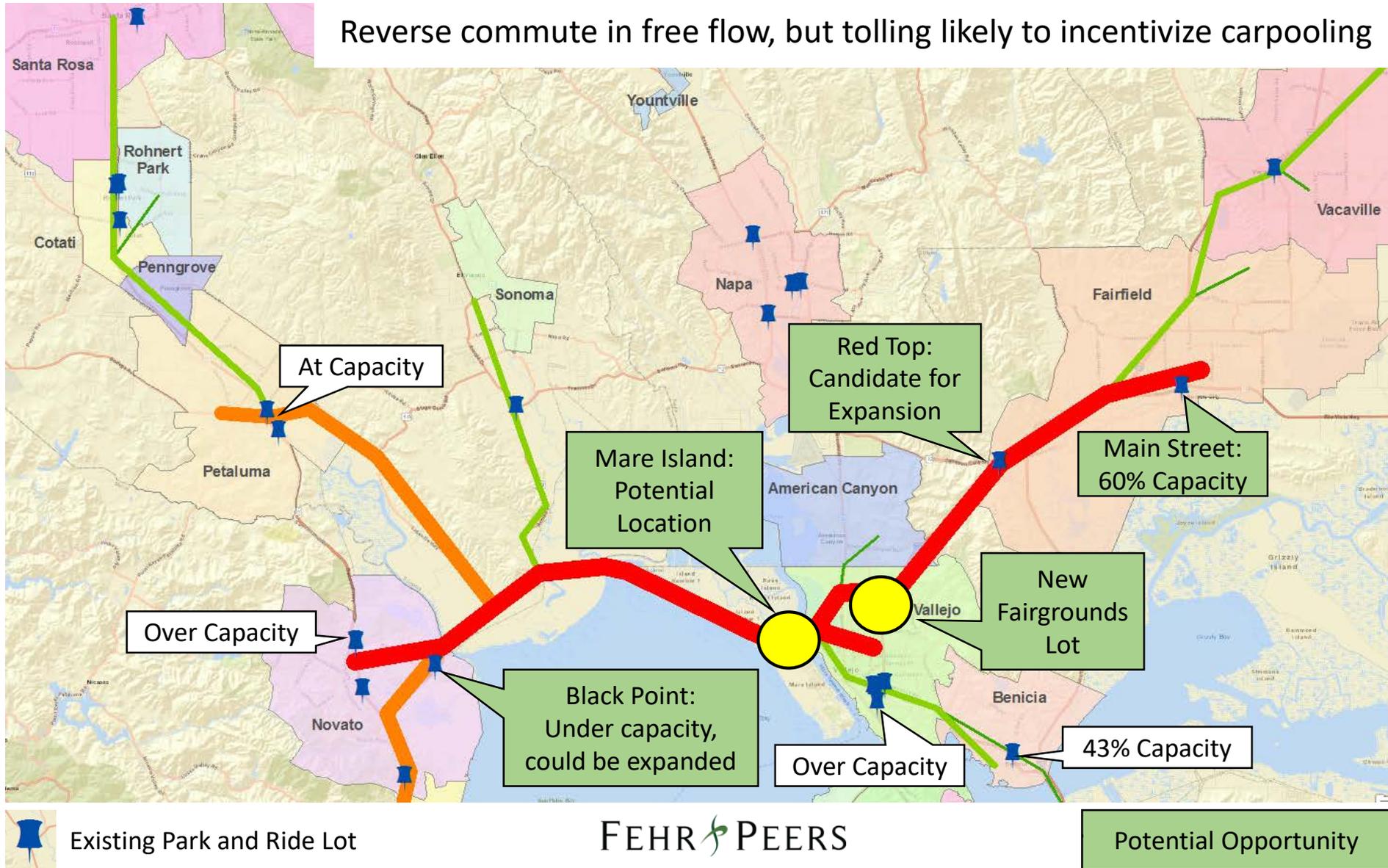
- Software-as-a-Service
- See themselves as a hub for commuter options & benefits
- Offer people an easy means to carpool
- Then rewards them
- Subsidy integration too

The screenshot displays the Rideamigos mobile application interface, which is organized into several key sections:

- MY COMMUTES:** At the top, it shows the current commute route from "1000 N Ogden St, Denver, CO" to "4000 Cherry Creek South D...". It includes a "Leave By" field set to "01/30/2019" at "03:15 PM" and a weather forecast of "44°" with a "Dark Sky" icon. Below this, there are buttons for "MY POOL" (OWNER, 0 members), "20 CARPOOL OPTIONS", "4 TRANSIT OPTIONS" (3.5 mi, 34 min), "2 BIKE OPTIONS" (3.3 mi, 19 min), "VANPOOL", "WALK" (3.1 mi, 1 hr 5 min), and "DRIVE" (3.8 mi, 32 min). A "MY MEMBERSHIPS" dropdown and "ADD ANOTHER COMMUTE" button are also present.
- LOG MY TRIPS:** This section features a "Log My Trips" calendar for January 2019, where the 30th is selected. A "History" tab is also available. Below the calendar, there are fields for "Selected Dates" (01/30/19), "Favorite Trip", "Departure Time" (8:00 AM), "Return Time" (5:00 PM), "One-Way Distance" (3.5 MI), and "Mode of Travel" (Ride).
- Summary & Rewards:** A central summary card shows a savings of "\$174.57" (YOU HAVE ALREADY SAVED). It also displays "82 Non-SOV Trips", "439.0 mi Non-SOV Distance", "273.2 lbs CO2 Saved", and "9.6k Calories Burned". Below this, it states "YOU HAVE ALREADY EARNED 11 BADGES" and shows three specific badges: "25 BICYCLE TRIPS", "25 NON-SOV TRIPS", and "10 BICYCLE TRIPS".
- UPCOMING RIDEBOARD TRIPS:** A section for upcoming trips, showing a trip from "Bloomington, Indiana" to "Santa Monica, California" on "Saturday, Feb 2 @ 5:00 AM".
- Navigation & Footer:** The bottom of the screen features a navigation bar with "Users" and "Networks" tabs, and a footer with "TOP COMMUTERS" and "TRIPS" links.

Expanded Park and Ride System

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



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?