FEHR & PEERS

Valley Transportation Authority

LRT ENHANCEMENTS PROJECT

APTA Rail Conference

June 2018

Agenda

1. Agency Context
2. Study Background
3. Innovations Applied
4. N. First Street Project Results
5. Tasman Drive Project Results
6. Next Steps

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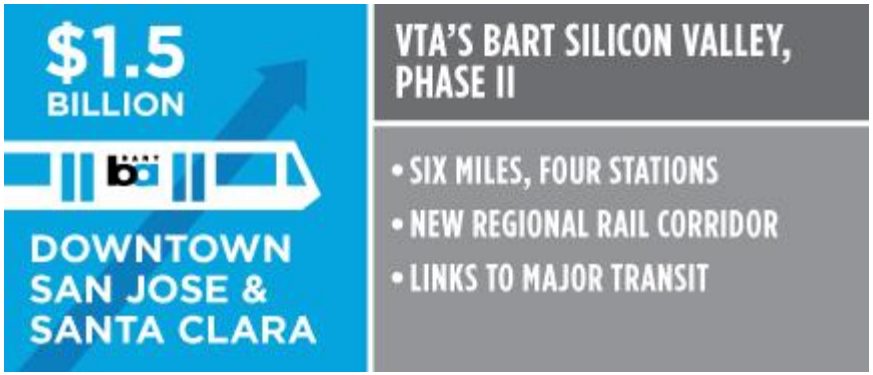
AGENCY CONTEXT

- Measure B
- BART extension
- Ridership declines
- Focus on fiscal responsibility and efficiency
    - Bus service restructuring
    - Ad hoc committee



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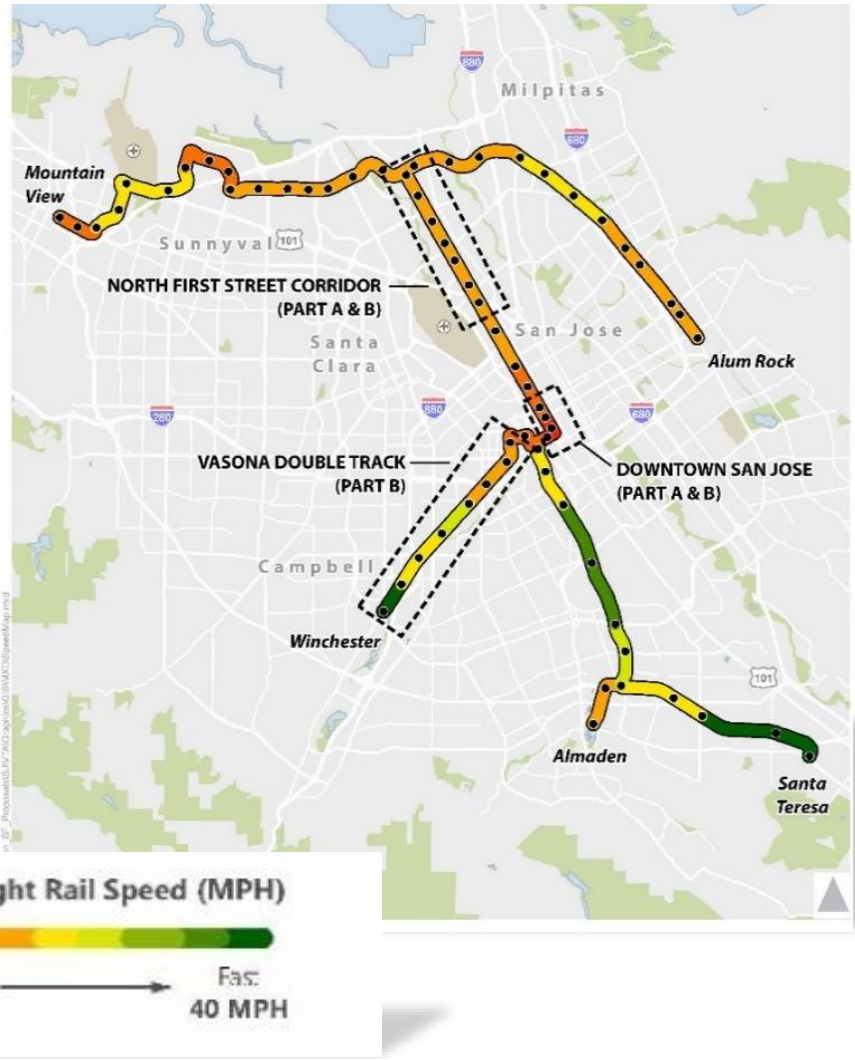
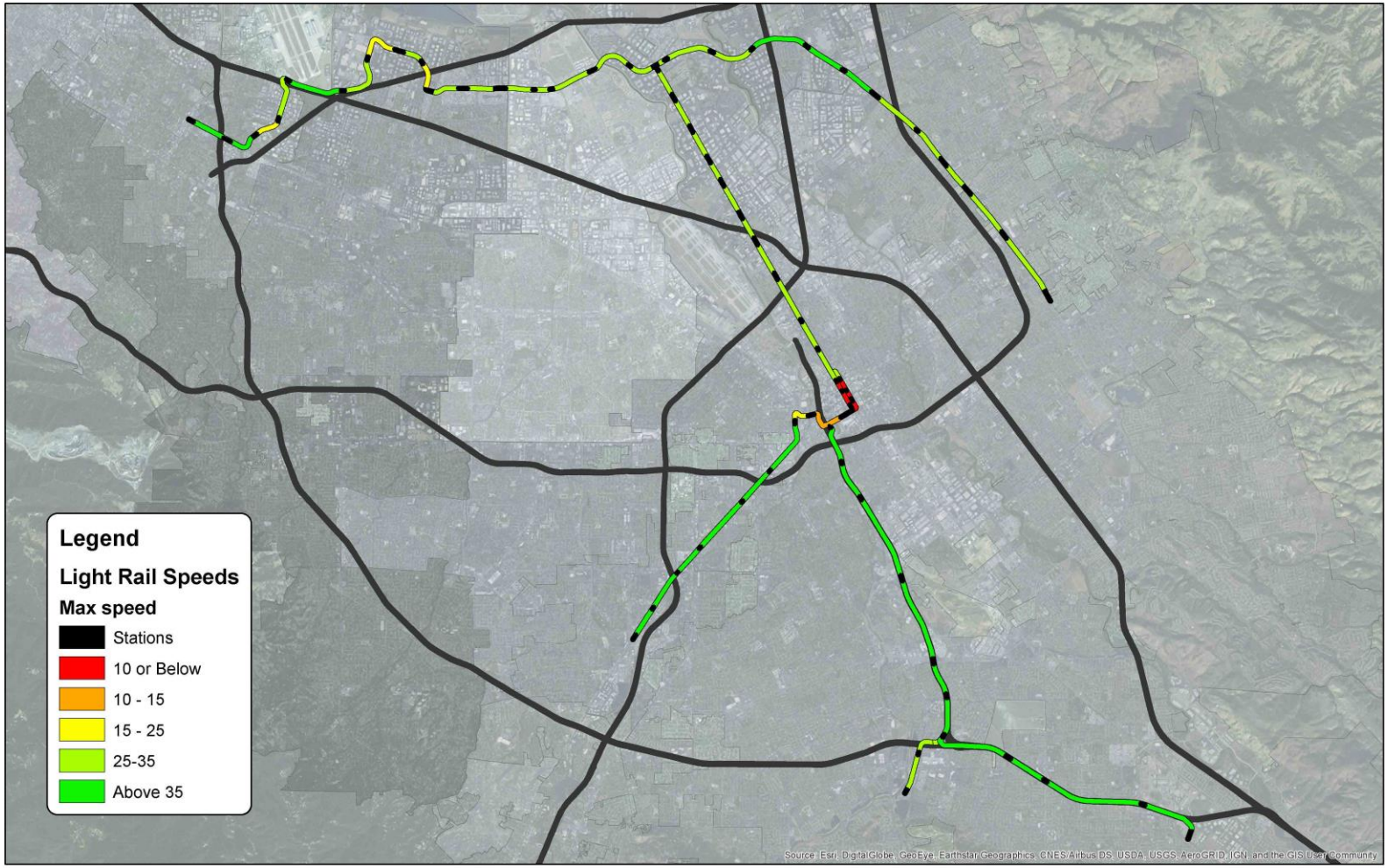
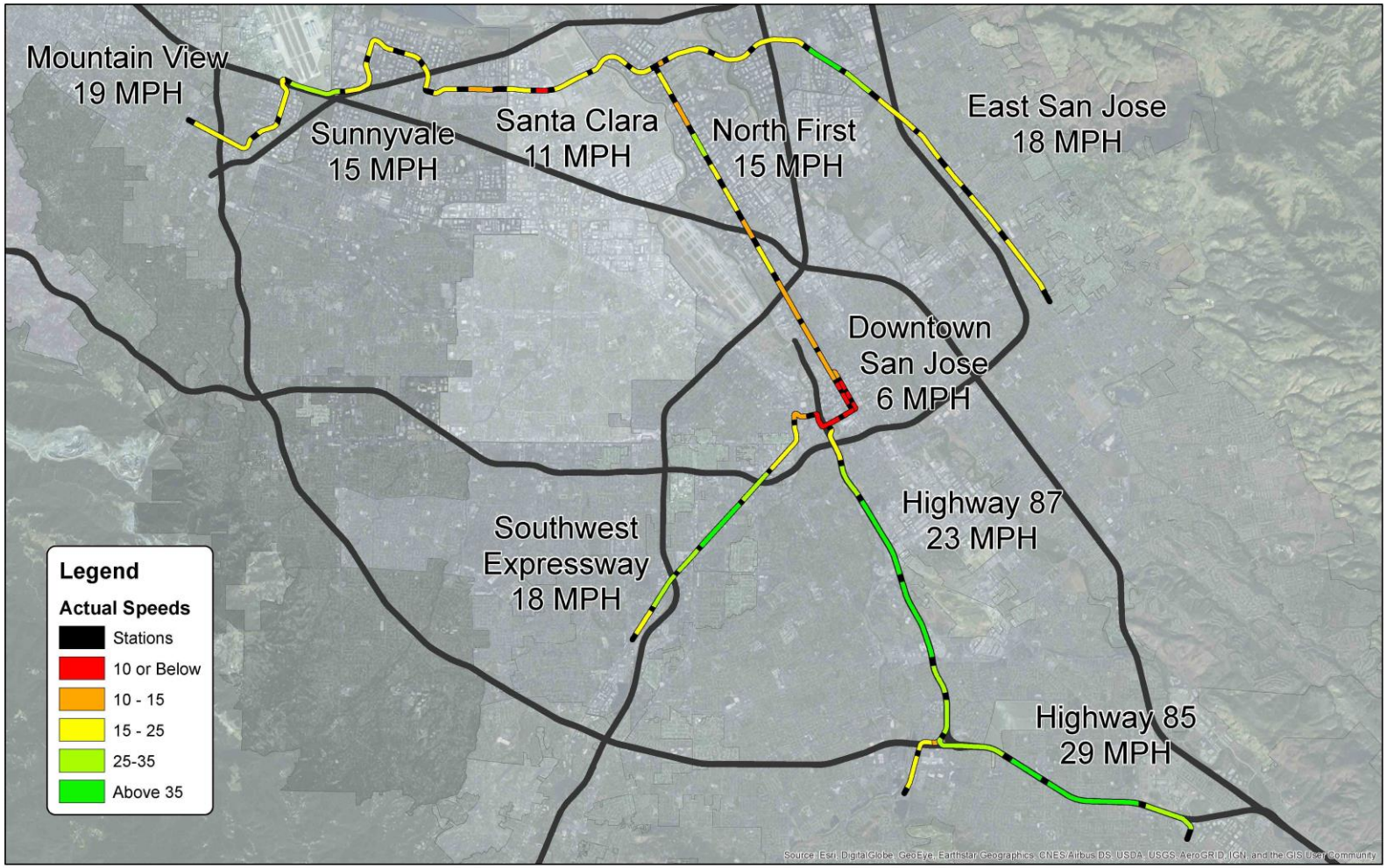
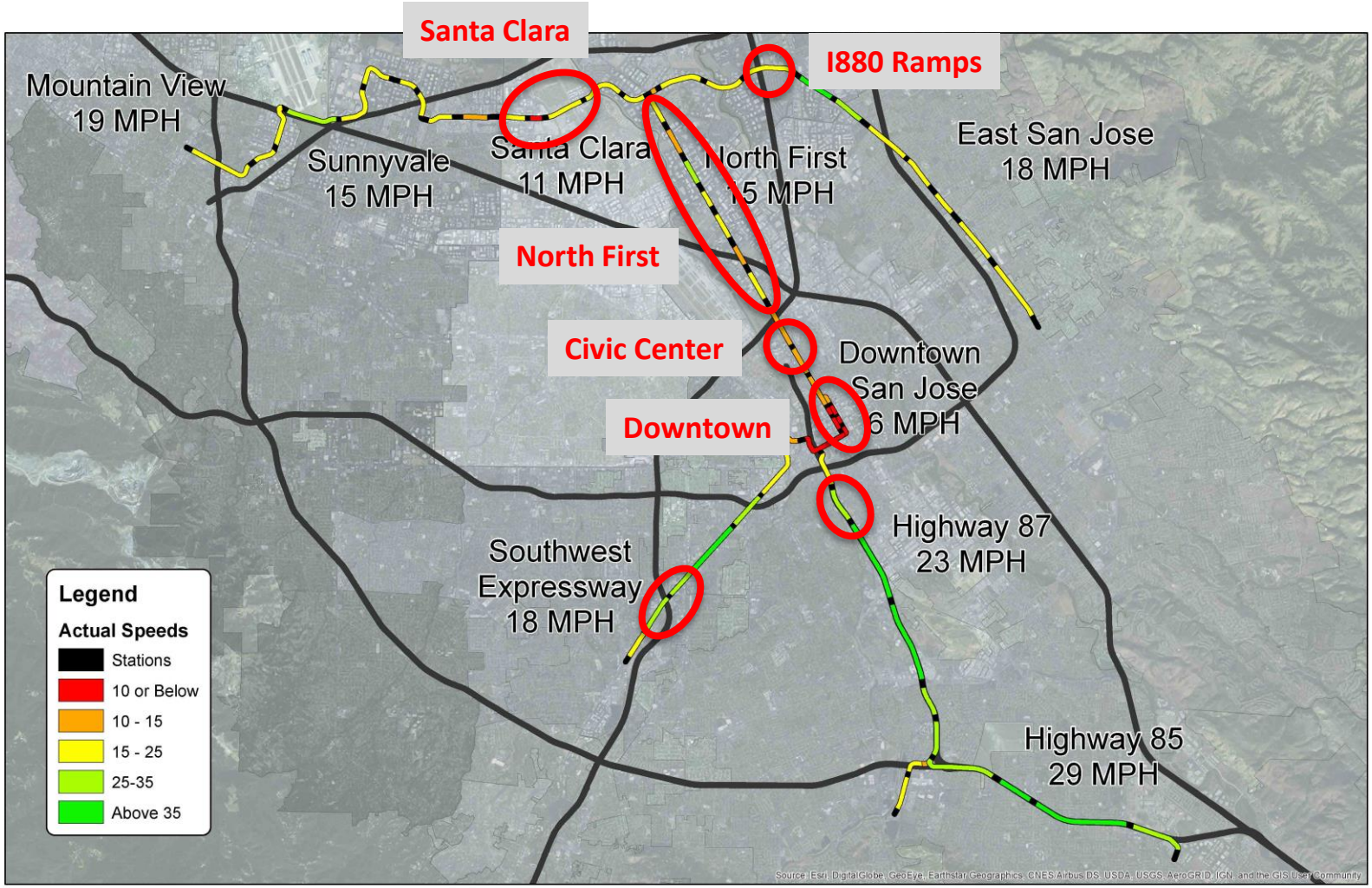
STUDY BACKGROUND

- 2010 LRT System Analysis Found Slow Light Rail System Speeds
  - Many at-grade intersections
  - Lots of track curves
  - Mix of different cities and agencies involved
- Focus Areas:
  - First Street
  - Tasman Drive
  - Downtown Transit Mall




Legend
Light Rail Speeds
Max speed
Stations
10 or Below
10 - 15
15 - 25
25-35
Above 35
Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community


Mountain View
19 MPH
Sunnyvale
15 MPH
Santa Clara
11 MPH
North First
15 MPH
East San Jose
18 MPH
Downtown
San Jose
6 MPH
Highway 87
23 MPH
Southwest
Expressway
18 MPH
Highway 85
29 MPH
Legend
Actual Speeds
Stations
10 or Below
10 - 15
15 - 25
25-35
Above 35
Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community


Santa Clara
I880 Ramps
Mountain View
19 MPH
Sunnyvale
15 MPH
Santa Clara
11 MPH
North First
15 MPH
East San Jose
18 MPH
North First
Civic Center
Downtown
Downtown
San Jose
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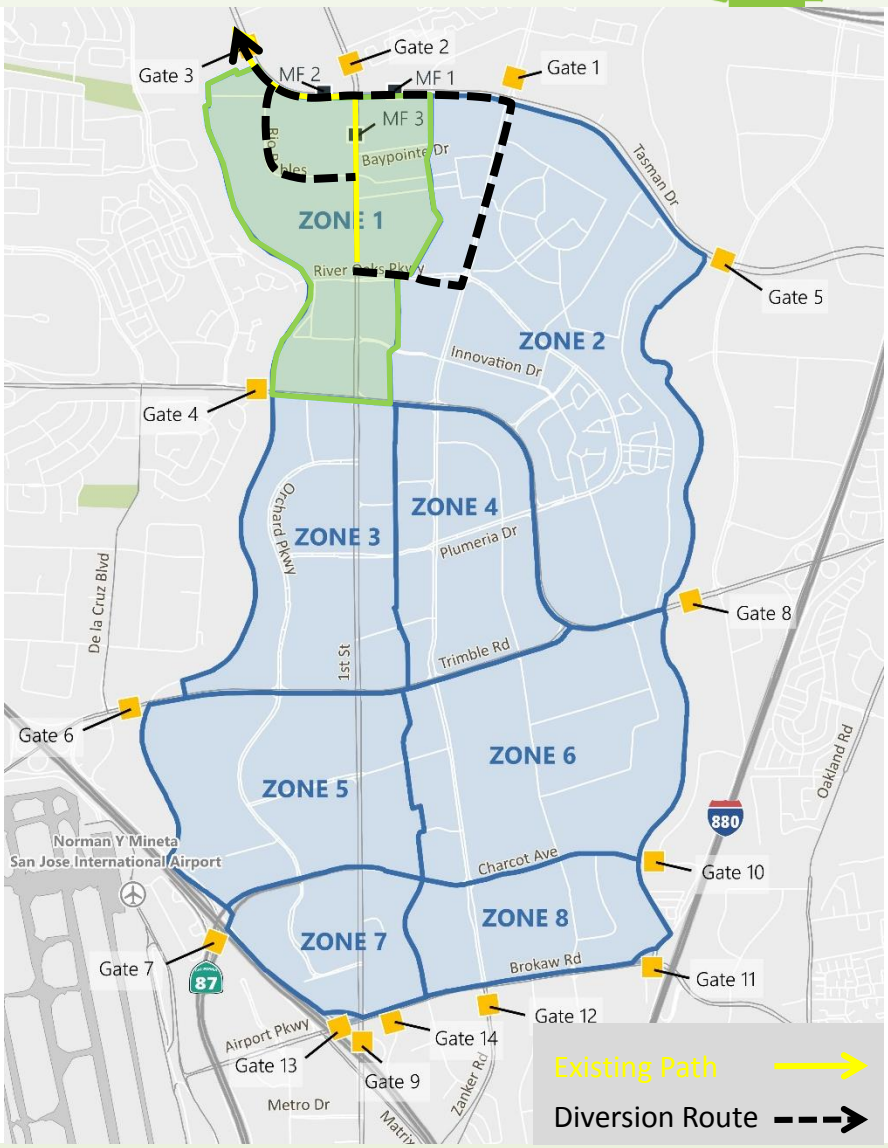
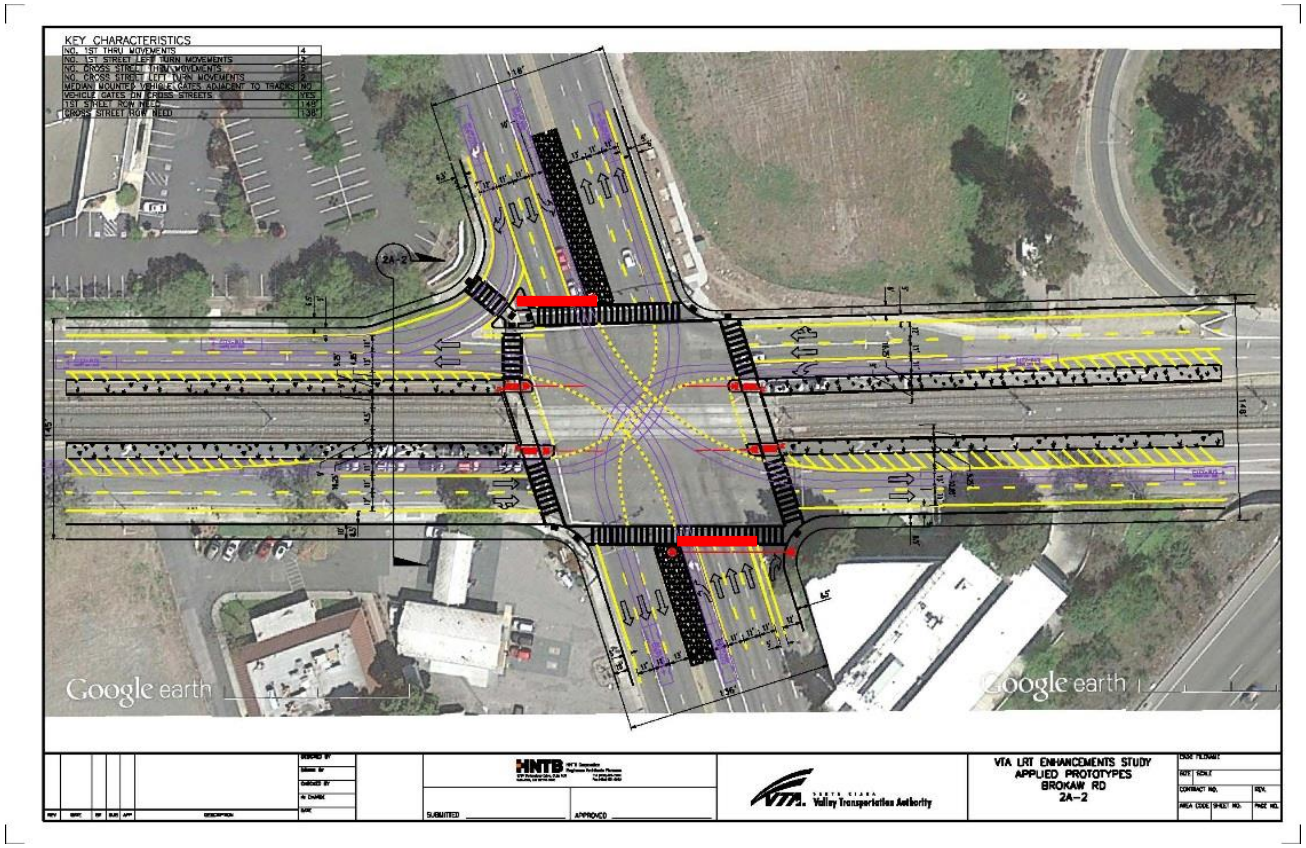
INNOVATIONS APPLIED

- Streetlight and Inrix Data Analysis
- Adaptive Pedestrian Timing



INNOVATIONS APPLIED

- Space Saving Gate Configurations



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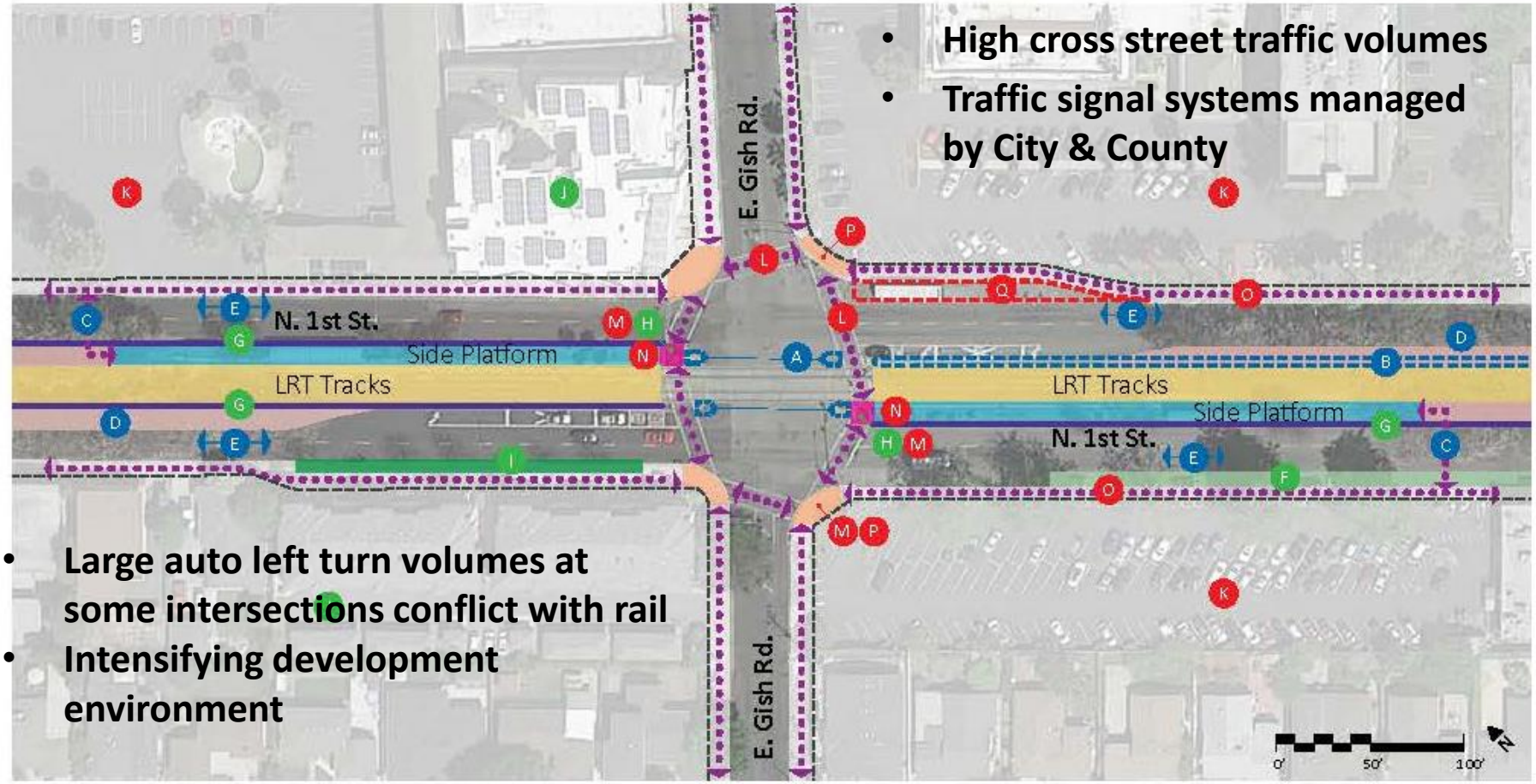
N. FIRST STREET ISSUES &OPPORTUNITIES



- High cross street traffic volumes
- Traffic signal systems managed by City & County

- Large auto left turn volumes at some intersections conflict with rail
- Intensifying development environment

ORIGINAL PROJECT CONCEPT

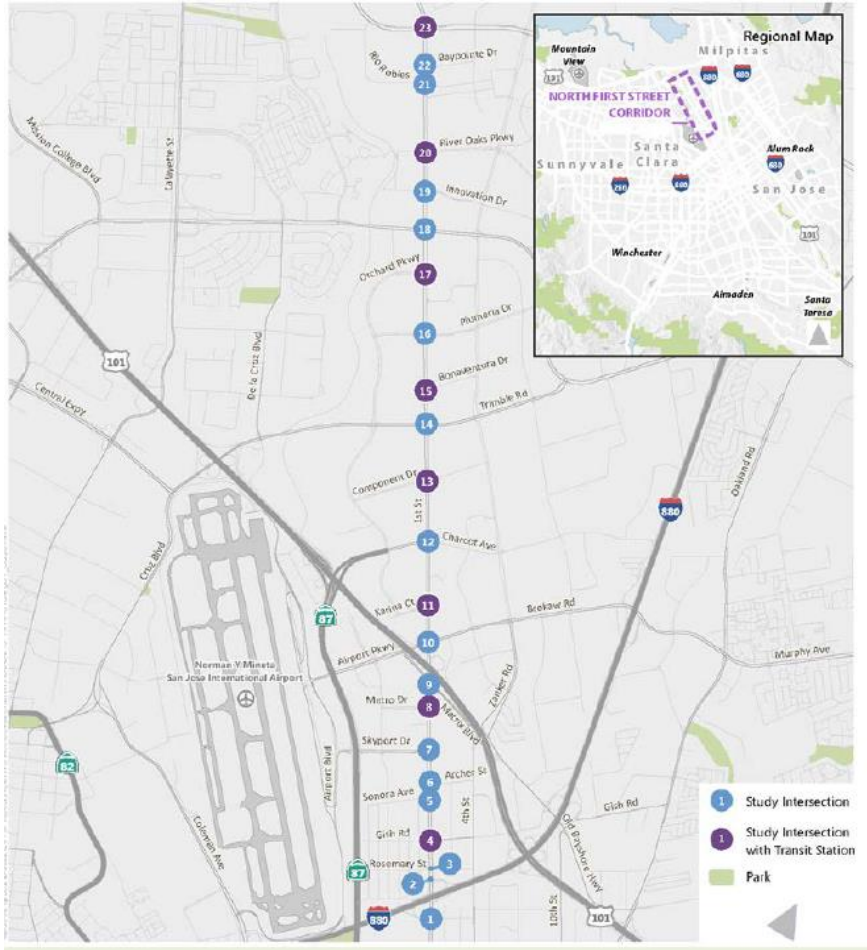
- **Increase maximum speeds from 35mph to 45mph requiring:**
  - Full fencing on both sides
  - Four quadrant intersections gates and gates at cross street stop bar
  - Full signal preemption

Blue Line in Los Angeles

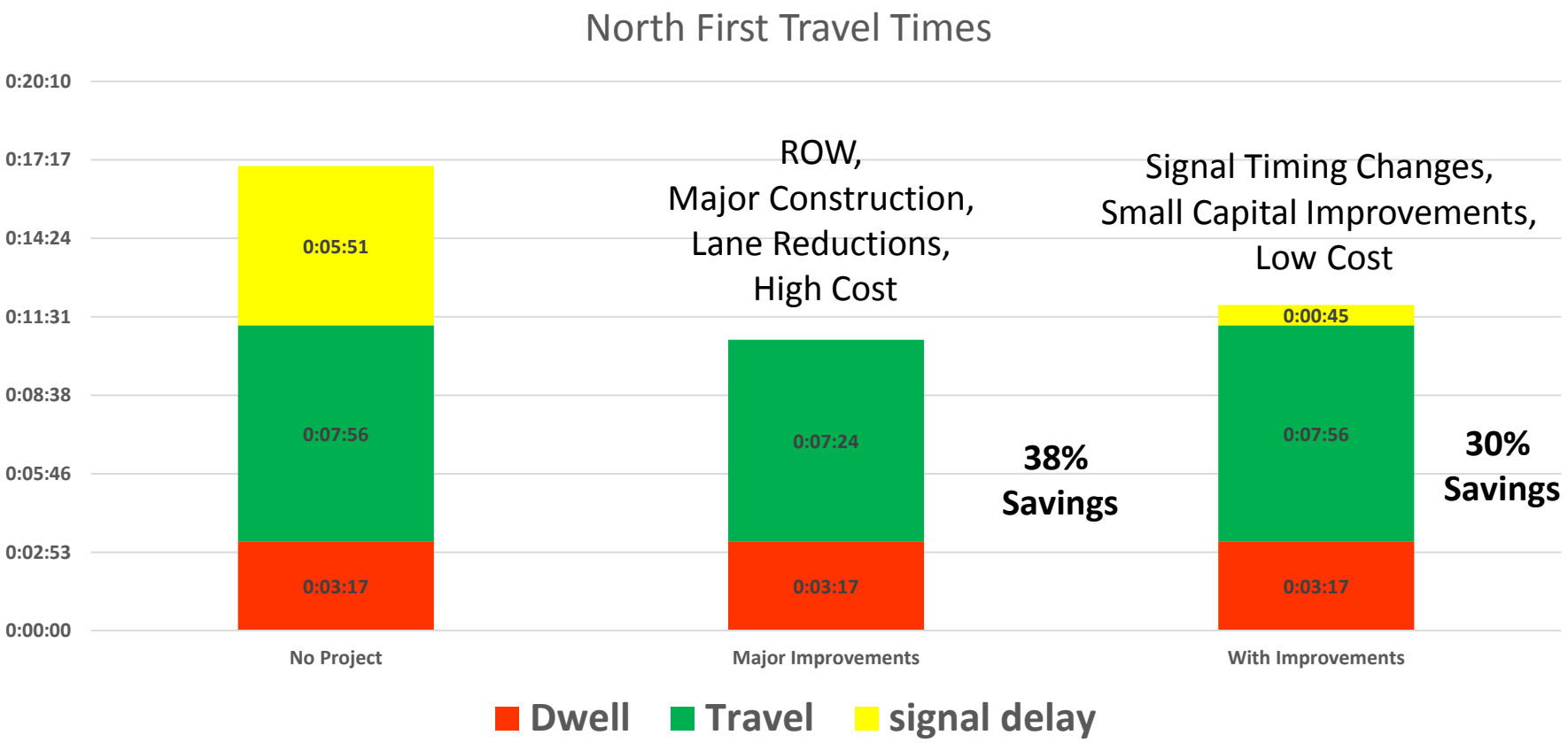
North First Street

FINAL PROJECT CONCEPT

- **Proposed Changes**
  - Provide traffic signal pre-emption w/o gates
  - Install pedestrian detection radar
  - Install LRT confirmation signals



COMPARISON OF ALTERNATIVES



PEDESTRIAN CROSSWALK DETECTION

- **How does it work?**
  - Greatly Improve Signal Priority
  - Extending crossing time based on passive in crosswalk detection is allowed
  - Not allowed to reduce actual timing, but may assume a faster walking speed for initial countdown time
  - Thermal or Radar detection

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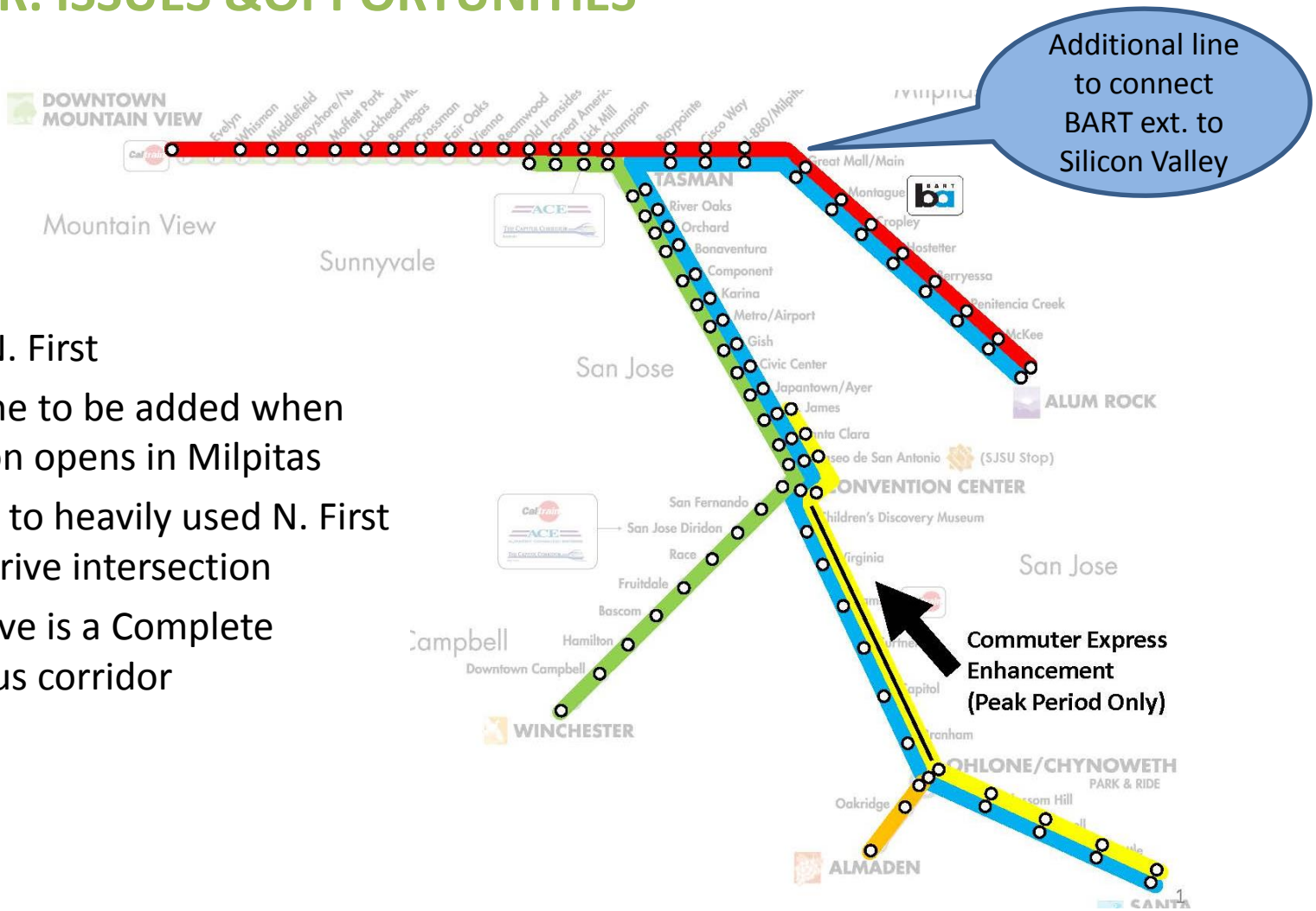
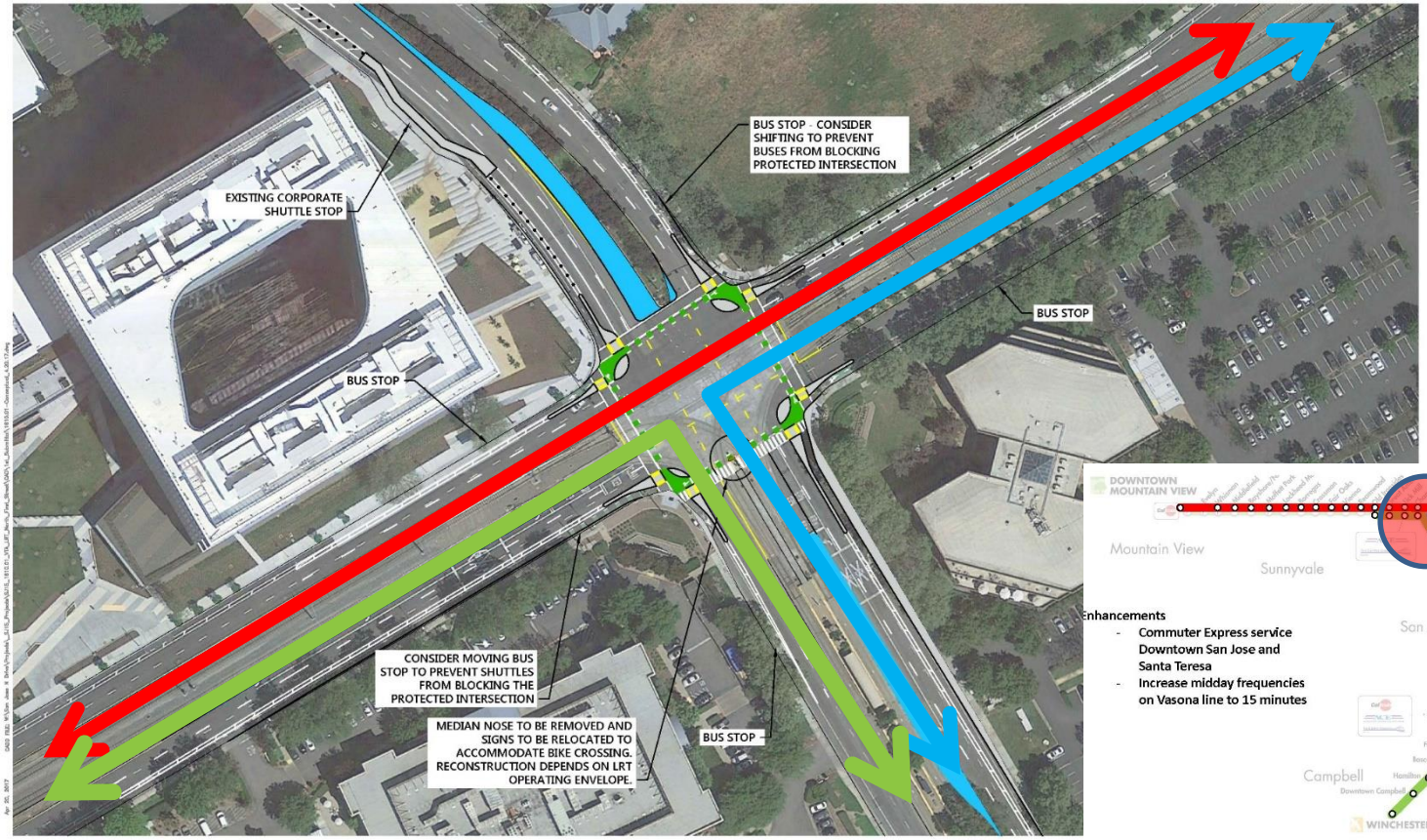
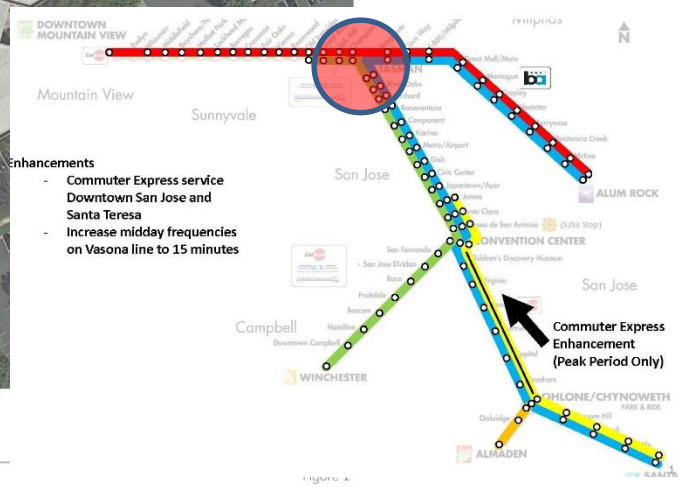
TASMAN DR. ISSUES &OPPORTUNITIES

- Similar to N. First
- New LRT line to be added when BART station opens in Milpitas
- Adds trains to heavily used N. First / Tasman Drive intersection
- Tasman Drive is a Complete Streets focus corridor



TASMAN DRIVE AT N. FIRST STREET LRT ROUTES

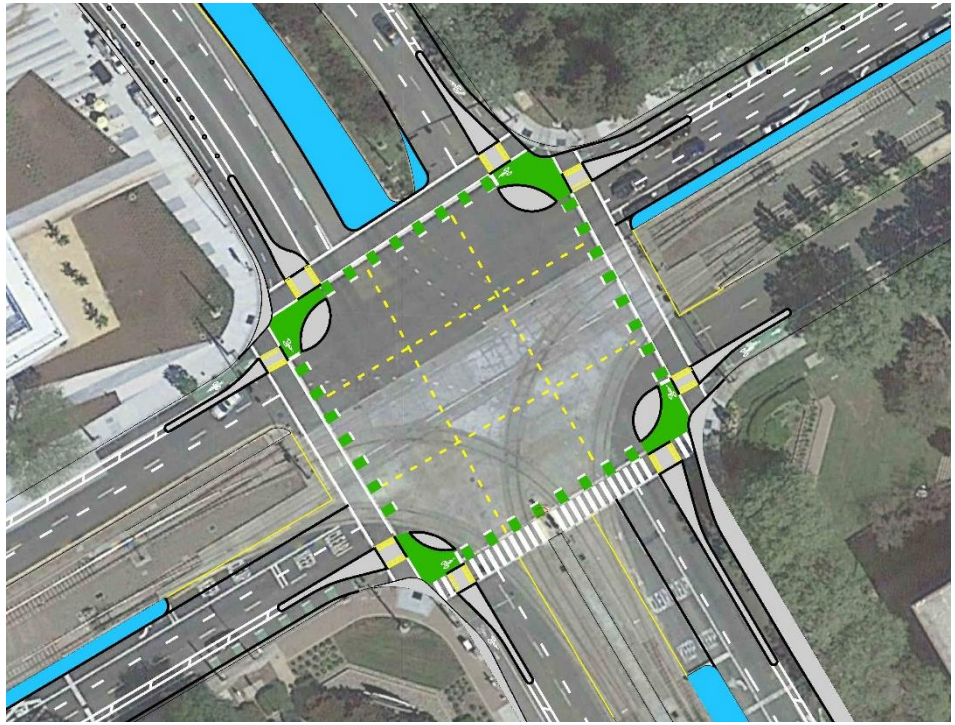




Enhancements
- Commuter Express service Downtown San Jose and Santa Teresa
- Increase midday frequencies on Vasona line to 15 minutes

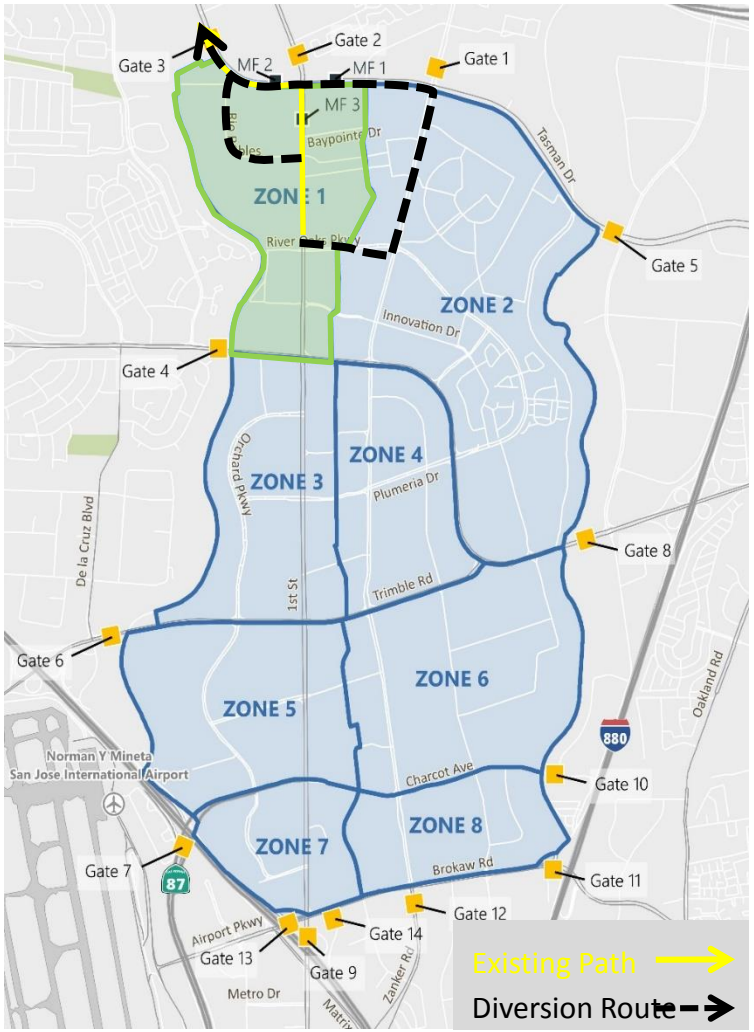
TASMAN DRIVE AT N. FIRST STREET PROJECT

- Eliminate left turns
- Reduce cycle times
- Use space from elimination of lanes for bike & pedestrian improvements



TASMAN DRIVE AT N. FIRST STREET ANALYSIS

- Used Streetlight data to assess traffic diversion impacts



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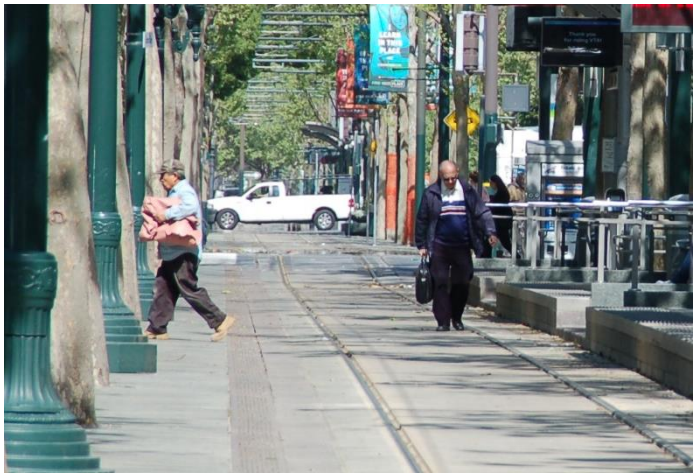
NEXT STEPS



Downtown San Jose Transit Mall

THANK YOU FOR
YOUR TIME AND INTEREST

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