Los Angeles County
Metropolitan Transportation Authority

Antelope Valley Line Study Results

North Los Angeles County Transportation Coalition
April 22, 2019

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Metro Provides Excellence in Service and Support.

Study Scenarios

6 separate service scenarios were analyzed based on stakeholder feedback:

Scenario 1: 1 additional late evening train

Scenario 2: 2 additional off-peak round trips to provide hourly mid-day service

Scenario 3: Improved peak service and semi-hourly off-peak service

Scenario 4: Semi-hourly service plus express service

Scenario 5: Same as (4), with intermediate turns at Santa Clarita

Scenario 6: Same as (4), with intermediate turns at Sylmar/San Fernando

Collectively, the 6 service scenarios will require 14 capital projects.

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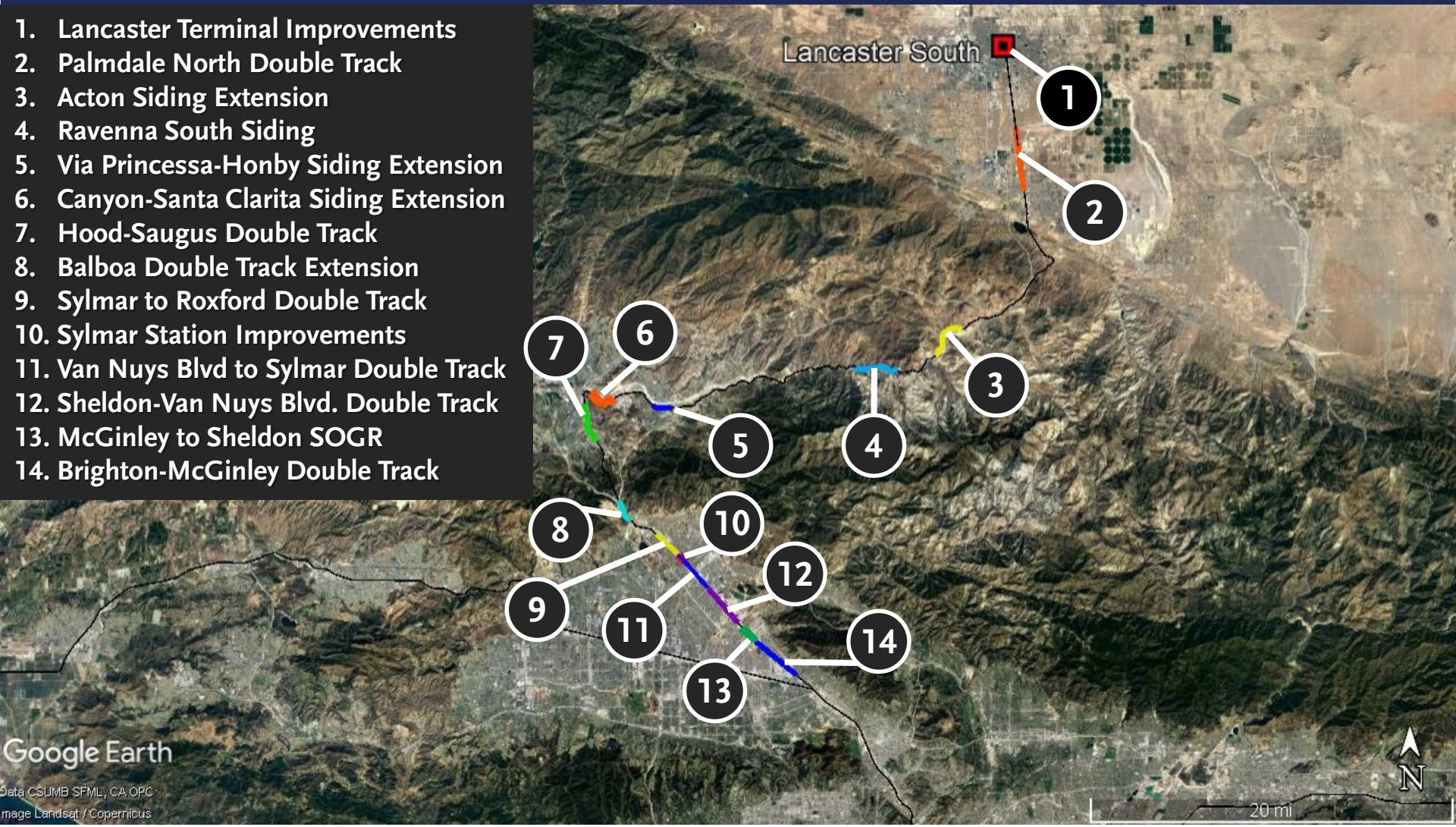
Scenario Infrastructure Project Overview

1. Lancaster Terminal Improvements
2. Palmdale North Double Track
3. Acton Siding Extension
4. Ravenna South Siding
5. Via Princessa-Honby Siding Extension
6. Canyon-Santa Clarita Siding Extension
7. Hood-Saugus Double Track
8. Balboa Double Track Extension
9. Sylmar to Roxford Double Track
10. Sylmar Station Improvements
11. Van Nuys Blvd to Sylmar Double Track
12. Sheldon-Van Nuys Blvd. Double Track
13. McGinley to Sheldon SOGR
14. Brighton-McGinley Double Track



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NCTC stakeholders advised to move forward with Scenarios 1 to 3; which require 4 of 14 capital projects.

Analysis Results

1. Existing O&M subsidy cost for the Antelope Valley Line is $20 million with 15 daily round trips with 6 train sets and AVTA supports 5 round trips. Adding 1 late night round trip service (11 pm, TBD) on Friday and Saturday nights only; no capital improvements needed but increase by $0.5 million in O&M per year.
2. Increase hourly off-peak Metrolink frequency from LAUS to Lancaster, requires $42 million of new capital infrastructure improvements, 1 new train set, would reduce AVTA support to only 3 round trips and adding 2 new weekday mid-day round trip services (to 18) with an increase in $3 million in O&M per year.
3. Increase 30 minute bi-directional Metrolink frequency from LAUS to Santa Clarita and hourly bi-directional from Santa Clarita to Lancaster; requires an additional $133 million of new capital infrastructure improvements with a total of 2 new train sets, AVTA support of 5 new round trips and adding 15 new weekday round trip services (to 30) with an increase $15 million in O&M per year.

Recommended Capacity Infrastructure Projects

Initial Project

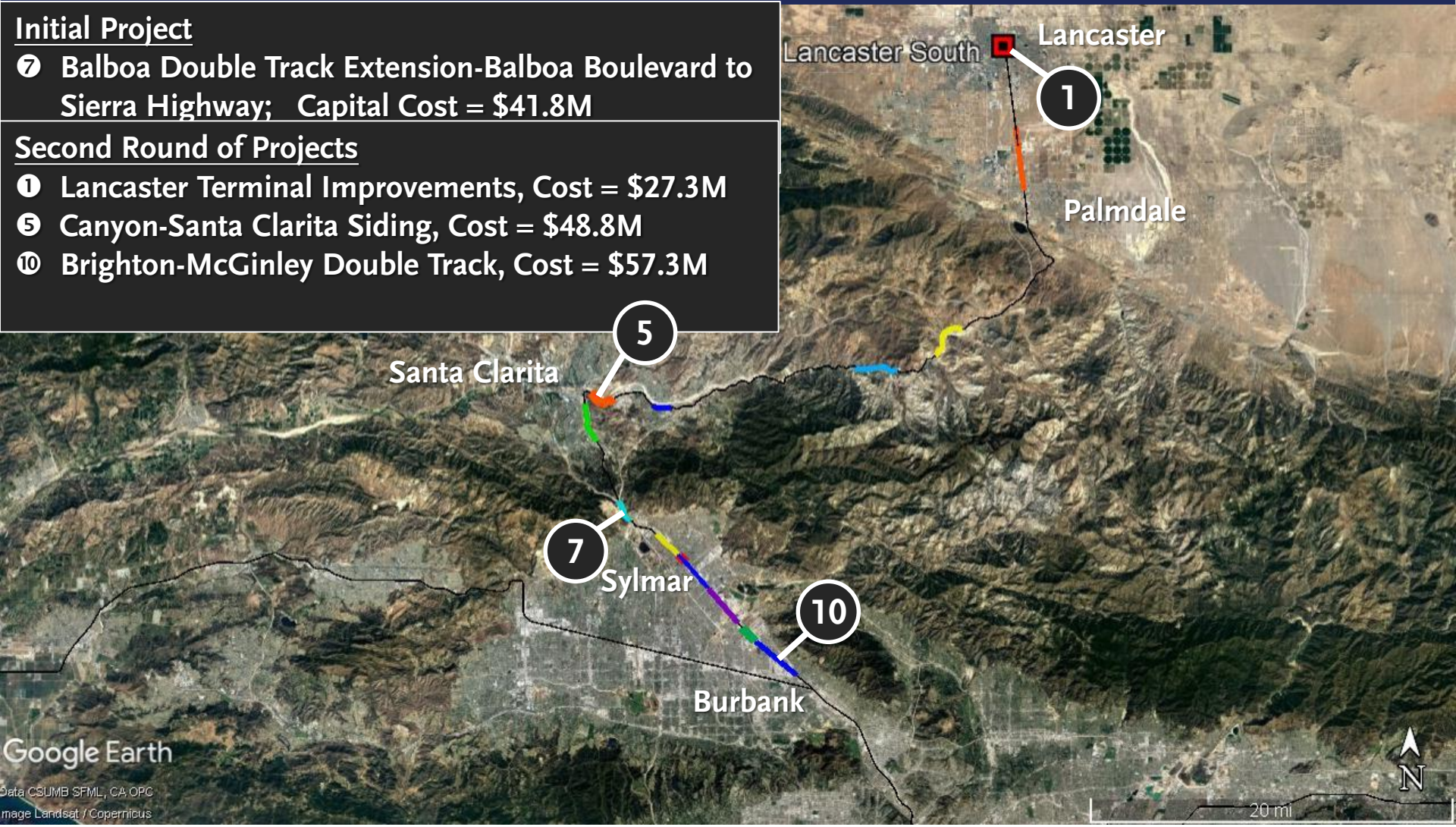
❼ Balboa Double Track Extension-Balboa Boulevard to Sierra Highway; Capital Cost = $41.8M

Second Round of Projects

❶ Lancaster Terminal Improvements, Cost = $27.3M

❺ Canyon-Santa Clarita Siding, Cost = $48.8M

❿ Brighton-McGinley Double Track, Cost = $57.3M



Initial project allows for hourly mid-day service and existing peak service

Second phase projects allows for 30 minute bi-directional service to Santa Clarita and hourly service from Santa Clarita to Lancaster.

Capital Investment Considerations

1. **Local funding can leverage Federal and State capital funds for capacity infrastructure projects, Total Cost: $175.2 M**
   a) **Initial phase: $41.8M in Measure M North County Subregional Funds (24% of total)**
      If funded, first phase of the capital projects can be completed by 2025;
   b) **Second phase: $133.4M from other sources (48-61% Federal; 16-28% State)**
      If funded, second phase of the capital projects can be completed by 2030.

2. **Metrolink systemwide investment must progress in parallel with AVL capacity investment**
   a) **10 cab cars ($10 M) rehab already funded as part of Metrolink's SOGR; 2 new locomotives ($14 M) already funded with TIRCP/Metro**
   b) **Expansion of fleet maintenance capability**

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Proposed Cashflow of Capital Projects

PURPOSE:

Capital project investment identified for the AVL to provide thirty minute bi-directional service to Santa Clarita and hourly service for the Antelope Valley.

ESTIMATED PROJECT CASH FLOW:

Project Name	FY19	FY20	FY21	FY22	FY23	FY24	FY25	FY26	FY27	FY28	FY29	FY30	Subtotal	Use
Balboa Double Track Extension	-	964,813	6,700,959	13,861,371	13,882,665	6,336,435	-	-	-	-	-	-	41,746,243	41,800,000
CP Canyon Siding Extension	-	-	-	-	-	1,786,007	2,146,841	13,033,759	19,512,571	12,287,115	-	-	48,766,293	48,800,000
Brighton to McGinley Double Track	-	-	-	-	-	836,007	3,455,906	26,968,393	25,997,802		-	-	57,258,108	57,300,000
Lancaster Terminal Improvements	-	-	-	-	-	959,514	1,618,643	2,628,892	1,840,146	6,119,824	8,089,677	6,020,745	27,277,441	27,300,000
FY Subtotals	-	964,813	6,700,959	13,861,371	13,882,665	9,917,963	7,221,390	42,631,044	47,350,519	18,406,939	8,089,677	6,020,745		

ESTIMATED SERVICE SCENARIO TOTAL COST: $175.2 million

ESTIMATED SCHEDULE, BASED ON FUNDING AVAILABLE:

FIRST PHASE	PRELIMINARY ENG./ ENVIRONMENTAL	FINAL DESIGN	CONSTRUCTION/ PROJECT CLOSE OUT
5 YEARS	1 YEAR	1.5 YEARS	2.5 YEARS

SECOND PHASE	PRELIMINARY ENG./ ENVIRONMENTAL	FINAL DESIGN	CONSTRUCTION/ PROJECT CLOSE OUT
7 YEARS	1 - 1.5 YEARS	1.5 - 2.5 YEARS	2.5 - 3.0 YEARS

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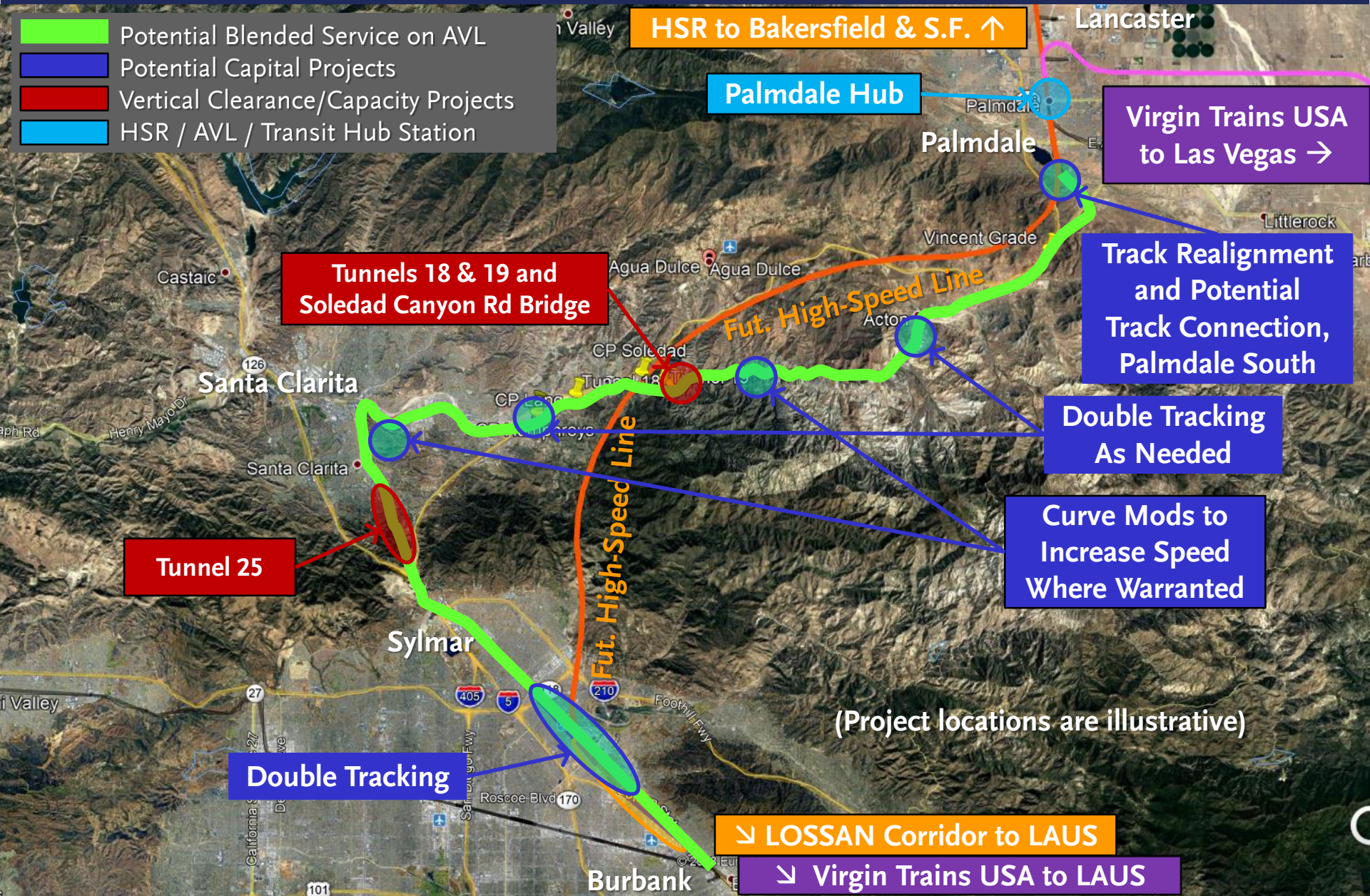
Future HSR in the AVL Corridor

1. **Current Limitations on HSR between Palmdale and Los Angeles**
   a) Original HSR Plan for dedicated alignment extremely costly; funding unlikely
   b) Blended service on the AVL route offers potential benefits for CHSRA, Virgin Trains USA, Amtrak and Metrolink rail services
2. **Further analysis required to determine the additional capital investment warranted to support blended service**
   a) Identify and evaluate capital projects to further reduce AVL trip times
   b) Identify and evaluate additional capacity projects to support blended service
   c) Rolling stock and station platform requirements
   d) Signal system requirements for blended operations at short headways
   e) Requirements for preserving opportunities for future investment in HSR parallel to the AVL
   f) Line electrification constraints for CHSRA, Virgin Trains USA investigating use of biodiesel fuel train within the corridor

Future HSR in the AVL Corridor



Next Steps for AVL Study

1. Discuss Draft Antelope Valley Line Study Report on May 15th in Santa Clarita
2. Finalize Ridership Projections
3. Metro July Board Meeting – Finalize and present AVL Study

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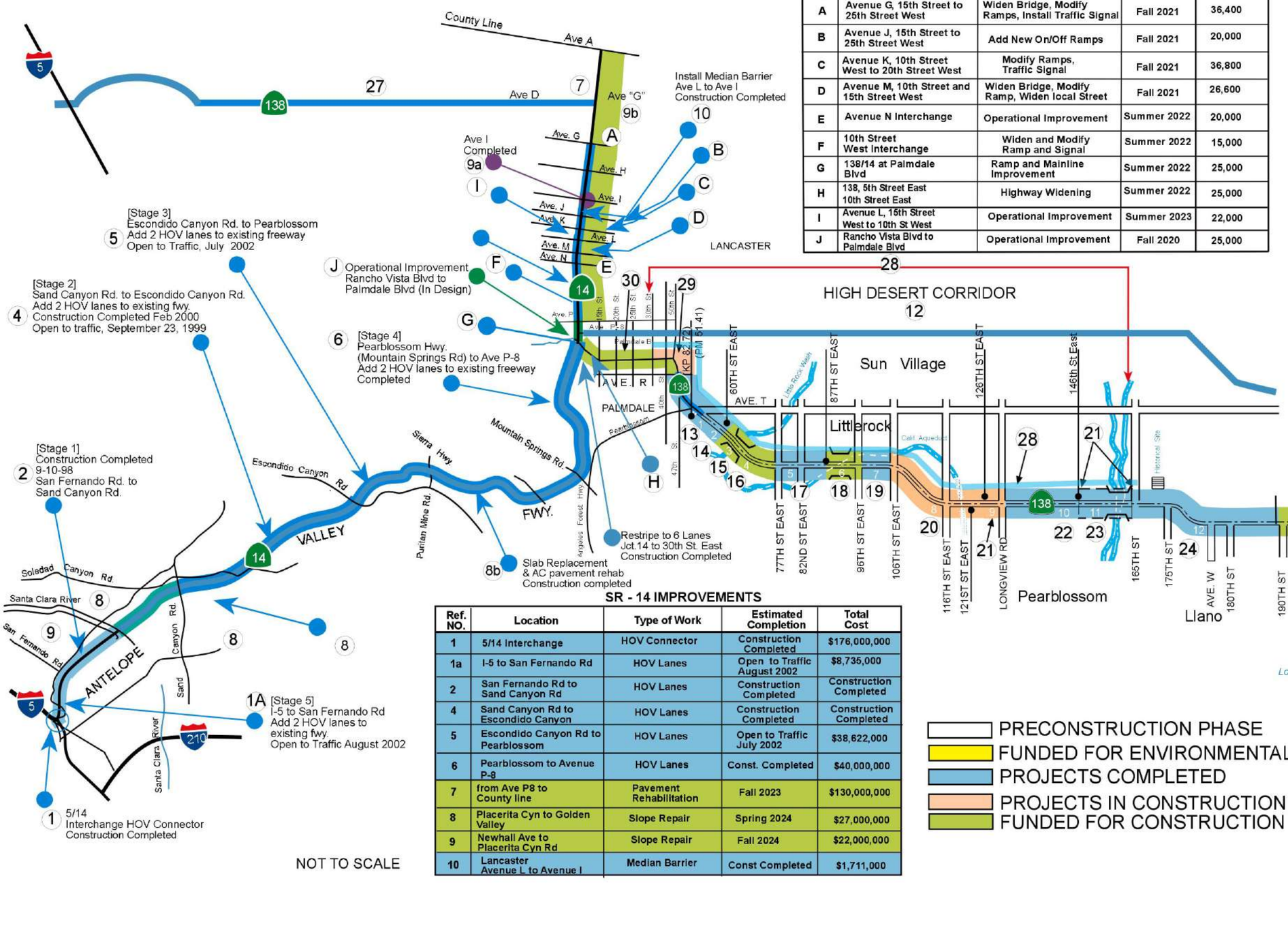
Thank You

CALTRANS PROJECTS ON ROUTES 14 AND 138 IN LOS ANGELES AND SAN BERNARDINO COUNTIES



LOCAL AGENCY

Ref. NO.	Location	Type of Work	Estimated Completion	Total Cost $ x 1000
A	Avenue G, 15th Street to 25th Street West	Widen Bridge, Modify Ramps, Install Traffic Signal	Fall 2021	36,400
B	Avenue J, 15th Street to 25th Street West	Add New On/Off Ramps	Fall 2021	20,000
C	Avenue K, 10th Street West to 20th Street West	Modify Ramps, Traffic Signal	Fall 2021	36,800
D	Avenue M, 10th Street and 15th Street West	Widen Bridge, Modify Ramp, Widen local Street	Fall 2021	26,600
E	Avenue N Interchange	Operational Improvement	Summer 2022	20,000
F	10th Street West Interchange	Widen and Modify Ramp and Signal	Summer 2022	15,000
G	138/14 at Palmdale Blvd	Ramp and Mainline Improvement	Summer 2022	25,000
H	138, 5th Street East 10th Street East	Highway Widening	Summer 2022	25,000
I	Avenue L, 15th Street West to 10th St West	Operational Improvement	Summer 2023	22,000
J	Rancho Vista Blvd to Palmdale Blvd	Operational Improvement	Fall 2020	25,000

SR - 14 IMPROVEMENTS

Ref. NO.	Location	Type of Work	Estimated Completion	Total Cost
1	5/14 Interchange	HOV Connector	Construction Completed	$176,000,000
1a	I-5 to San Fernando Rd	HOV Lanes	Open to Traffic August 2002	$8,735,000
2	San Fernando Rd to Sand Canyon Rd	HOV Lanes	Construction Completed	Construction Completed
4	Sand Canyon Rd to Escondido Canyon	HOV Lanes	Construction Completed	Construction Completed
5	Escondido Canyon Rd to Pearblossom	HOV Lanes	Open to Traffic July 2002	$38,622,000
6	Pearblossom to Avenue P-8	HOV Lanes	Const. Completed	$40,000,000
7	from Ave P8 to County line	Pavement Rehabilitation	Fall 2023	$130,000,000
8	Placerita Cyn to Golden Valley	Slope Repair	Spring 2024	$27,000,000
9	Newhall Ave to Placerita Cyn Rd	Slope Repair	Fall 2024	$22,000,000
10	Lancaster Avenue L to Avenue I	Median Barrier	Const Completed	$1,711,000

SR - 138 IMPROVEMENTS

Ref. NO.	Location	Type of Work	Estimated Completion	Total Cost $ x 1000
12	L.A.-14 to SB-18 High Desert Corridor	Muti-purpose Corridor	PA/ED Completed	$4-$10 Billion
13	From Ave R to 60th St. (Extended Seg.1)	Pavement Rehabilitation	Completed	$1,000
14	From 60th St. to E of Ave T (Seg. 2)	Widen to 4 lanes	Completed	$10,000
15 16	From 0.3 mile West o Little Rock Wash to 77thSt. Combine Seg. 3 & 4	Widen to 4 lanes	Summer 2024	$40,000
17	From 77th St to 87th St (Seg. 5)	Widen to 3 lanes	Completed	$11,500
18	87th St. to 96th St (Seg. 6)	Widen 2 to 4 lanes	Fall 2021	$34,000
19	from 96th St to 106th St (Seg 7)	Widen to 4 lanes	Completed	$10,000
20 21	from 0.7 mile West of 121st St. to Longview Rd Combine Segs 8&9	Widen to 4 lanes	Summer 2020	$30,000
22	From Longview Rd to 146th St (Seg. 10)	Replace Bridge and Widen Highway to 4 lanes	Completed	$9,000
23	Twin Bridge (Seg. 11)	Widen to 4 lanes	Completed	$24,000
24	From 165th to 190th St. (Seg. 12)	Widen to 4 lanes	Completed	$39,811
25	From 185th St. to SR-18 Junction (Seg 13)	Widen to 4 lanes	Winter 2025	$91,000
26	Jct 18 to SB County Line	Widen roadway and Pave shoulder	Completed	$30,300
27	I-5 to LA 14	Widen 4 to 6 lanes	PA/ED Completed	$1,100,000
28	LA-138 from 25th St E. to Big Rock Wash	Cold plane and overlay	Completed	$19,200
29	LA-138 from 30th St to Ave S	Pavement Preservation	Summer 2019	$9,000
30	LA-138 from 138/14 Junction to Ave T	ADA compliance	Winter 2024	$20,000

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North County Transportation Coalition

Metro Highway Program Project Status Update

April 22, 2019

Project	Phase	Activities
North County		
I-5 HOV Lanes between SR-14 in Santa Clarita and Parker Road in Castaic	Design	In progress. Final design to be completed by May 2019. Metro will construct the project.
SR-138 (NW) Improvements	Post Environmental	Future projects to be determined/funding needs to be identified. The Centennial development was approved by LA Board of Supervisors December 2018. Mitigation funds from the development could fund SR-138 highway improvements near I-5.
SR-138 Widening, E/O SR-14	Design and Construction	Coordinating with Caltrans to complete the gap projects on SR-138 Segments (4,6,9,13). Segment 9 Construction work began August 2018 with the completion of the LA County DWP utility work. Segment 6 in construction. Segments 4 and 13 in design.
Measure R Projects on 138/14 Overlap	Various Phases	10 Projects along the overlap of 14 and 138 in Palmdale and Lancaster. Projects advancing in various phases. Rancho Vista to Palmdale Blvd Project is in construction. On going coordination between local jurisdiction and Metro's Highway Program to advance the remaining projects.
High Desert Corridor	Post-Environmental	Discussion on next steps in progress. Coordination is underway with SBCTA to study/pursue improvements on SR-18 for development of a continuous 4 lane highway from Palmdale to Victorville as alternate to HDC highway component.
General		
Measure M 5-Year Expenditures for Highway Projects	Programming	Metro, Caltrans and NCTC GOG staff and member cities met to discuss SR-14 improvements. Caltrans will be finalizing a needs assesment report by end of May 2019. Priority locations will need to be identified and agreed to by all stakeholders to begin early highway planning studies.

CALIFORNIA
High-Speed Rail Authority

CONNECTING CALIFORNIA

Michelle Boehm,
Southern California Regional Director

NCTC
April 22, 2019
Los Angeles, CA

HIGH-SPEED RAIL: Connecting California

Increase Mobility

Needed Alternative

Better Air Quality

Job Growth

A NEW VISION FOR THE NEXT GEN: Designing for the Future

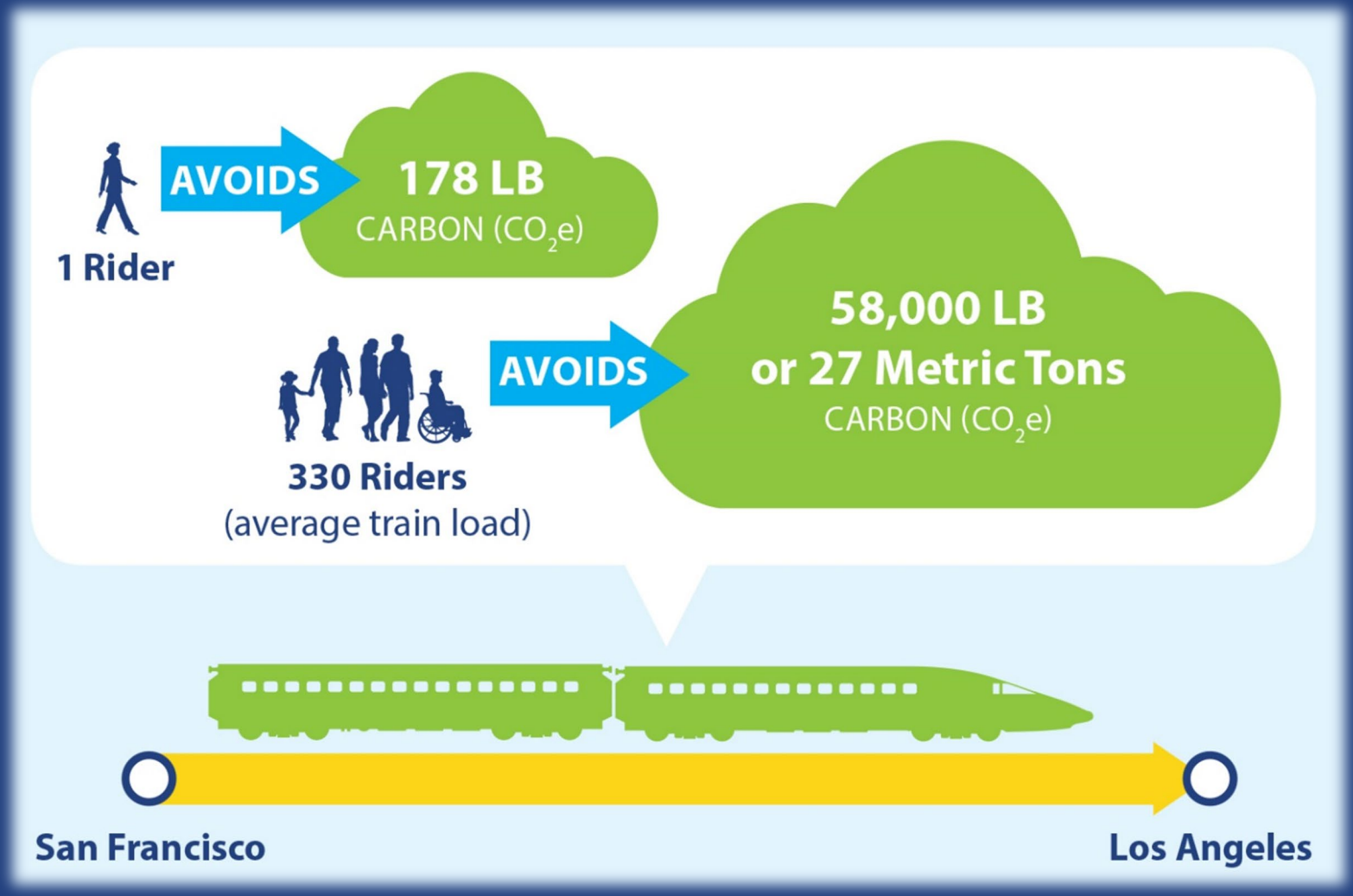
Climate Analysis

Resilient Infrastructure

A NEW VISION FOR THE NEXT GEN: Unlock Access, Air Quality, Jobs, and Housing

- **High-Speed Rail is Part of an Integrated, Multi-tiered Rail Network**
  - » Complement existing and planned services
  - » Complement other regional initiatives
- **Working Together to Multiply the Benefits**
  - » Explore broader mobility corridor improvements
  - » Identify and prioritize connections for value capture potential
- **Plan a Sustainable Future**
  - » Support a strong economy and sustainable communities
  - » Focus on bringing better, faster, more frequent connections throughout the state and beyond
- **The Path Forward**
  - » Incorporate State Rail Plan goals and objectives
  - » Increase focus on network integration

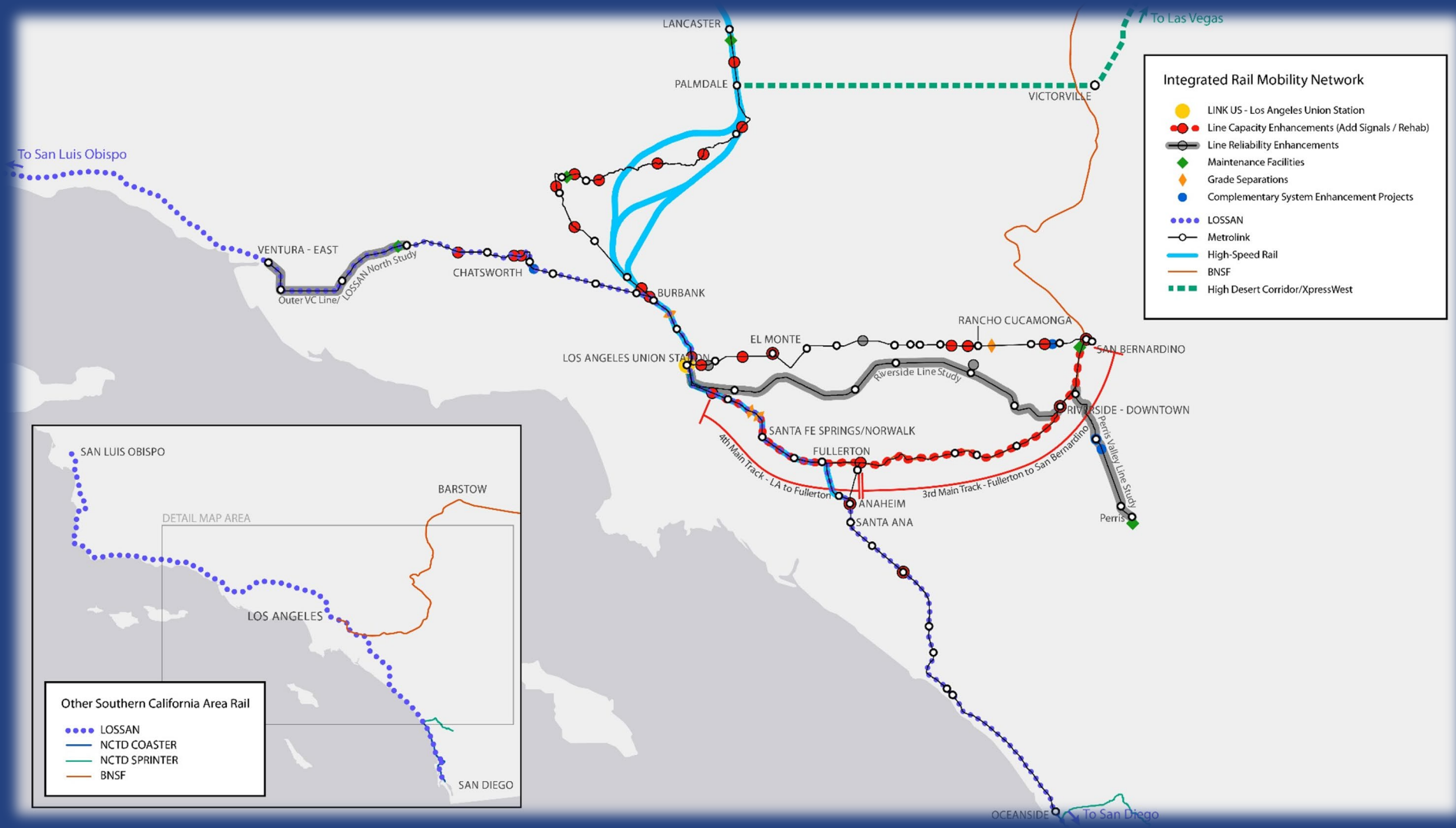
RESULTS: Avoid GHG Emissions



RESULTS: TREE PLANTING PROGRAM Offset GHG Emissions

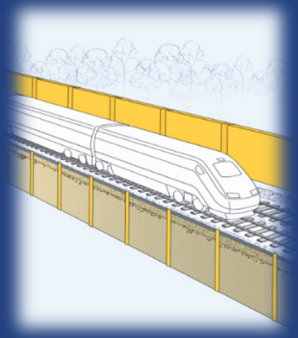
- 1,020 trees planted to date in Southern California
  - » Offer shade
  - » Improve air quality
  - » Provide recreation benefits
  - » Offset 600 tons of GHG over their lifetime
- Additional planting: California Urban Forestry Coalition partnering with cities of Los Angeles, Cudahy, Glendale, Covina, Buena Park, Santa Fe Springs/Norwalk

BREAKING THE VISION DOWN TO STRATEGIC NEXT STEPS: Share a Connected Modern Rail Corridor



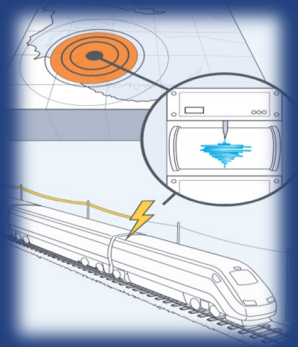
SHARED CONNECTED MODERN RAIL CORRIDOR: Features

- **Positive Train Control**
  - » Restricts speed limits and serves as fail safe system
  - » Takes over system preventing running red signals
- **Corridor Protection/Detection**
  - » Fencing
  - » Walls
  - » Soundwalls
- **Grade Separations**
  - » Take vehicles and pedestrians over or under active railroad tracks to prevent accidents and free up traffic flow
- **Early Earthquake Warning System**
  - » Detects initial seismic wave
  - » Immediately cuts off power to trains
- **Planning Around Stations**
  - » Potential increase in housing stock



Corridor Protection

Poor Corridor Protection



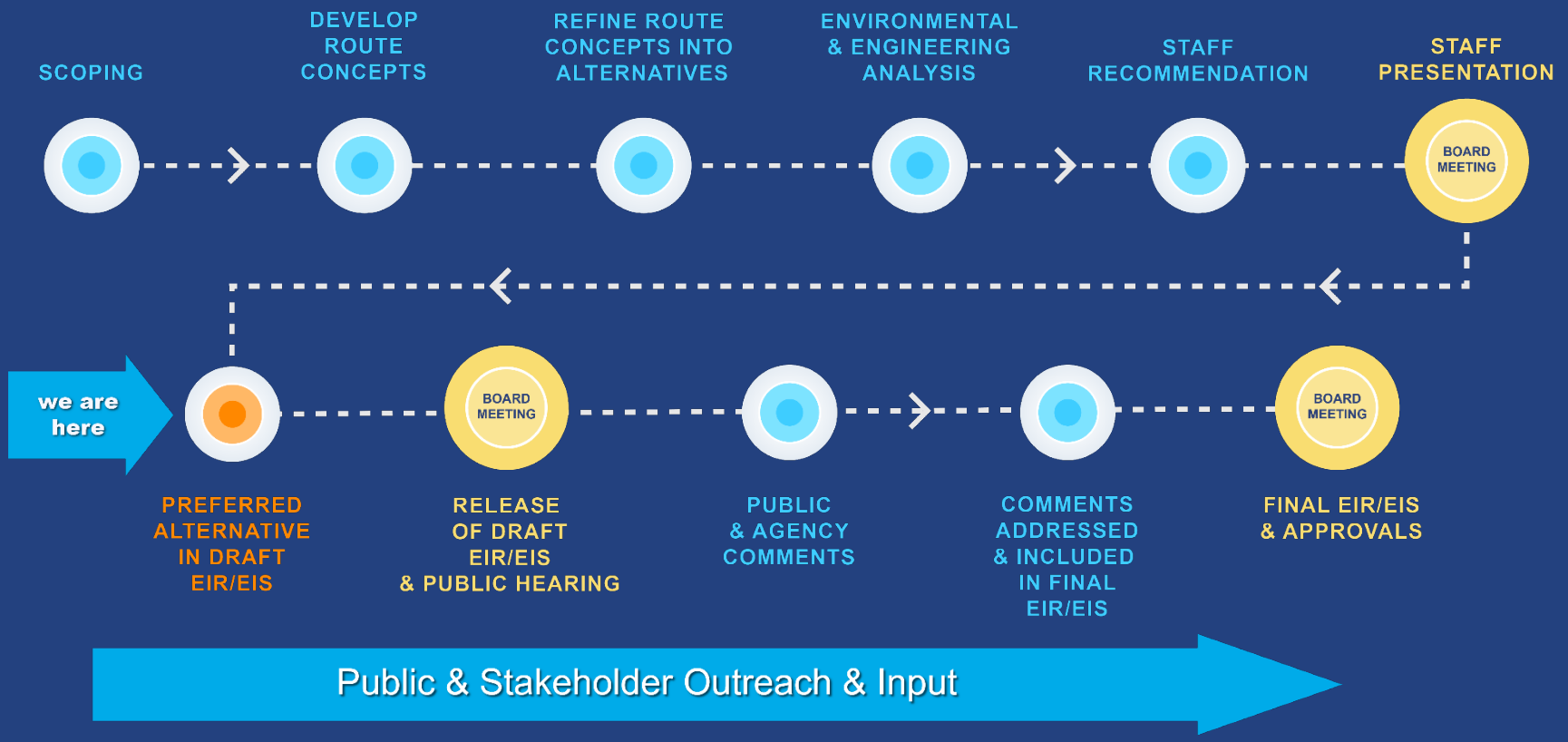
Early Earthquake Warning

Soundwall Example

CONNECTING CALIFORNIA: HSR In Your Neighborhood Now

- **Short-Term Benefits:**
  - » Safety, Connectivity/Capacity, Air Quality
    - **LA Metro:** Regional Connector in Downtown LA
    - **Metrolink:** Cleaner, faster trains
    - **San Diego MTS:** Modernize Blue Line Light Rail
    - **Metrolink/North County Transit District:** Positive Train Control
- **Mid-Term Benefits:**
  - » More Air Quality, Connectivity/Capacity and Phasing
    - **Regional Projects** – Link US (formerly SCRIP) benefits regional rail including Metrolink and Amtrak
    - **Local Projects** – Grade separations and operational improvements to support integrated regional rail network

CONNECTING CALIFORNIA: Next Steps In Defining Full Phase 1 Route



IT'S HAPPENING!

- Approximately $10 Billion Investment
- 21 Active Construction Sites across 100+ miles
- 2,600+ Jobs and Counting
- 500 Small Businesses

STAY INVOLVED

Thank you!

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Los Angeles, CA 90071
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Metro

MEASURE UP

Arterial Performance Measurement Pilot Program

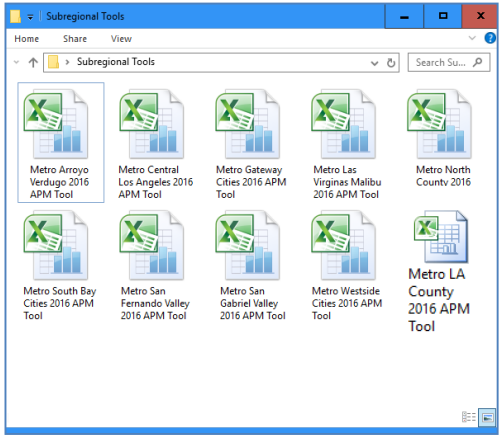
North Los Angeles County Transportation Coalition Board of Directors Meeting

April 22, 2019

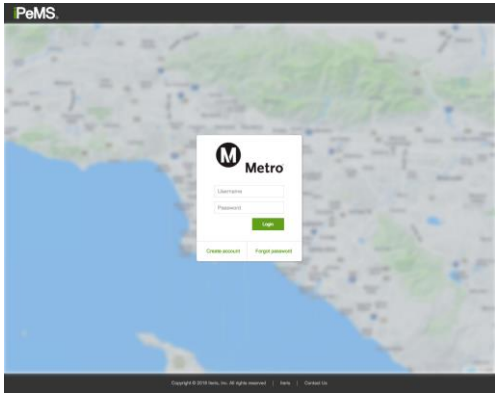
Enhancing Performance-Based Decision Making

Measure Up (Arterial Performance)

- Countywide Arterial Performance Measurement Baseline Conditions Analysis
  - 2016 Baseline
  - Currently being updated with 2018 data

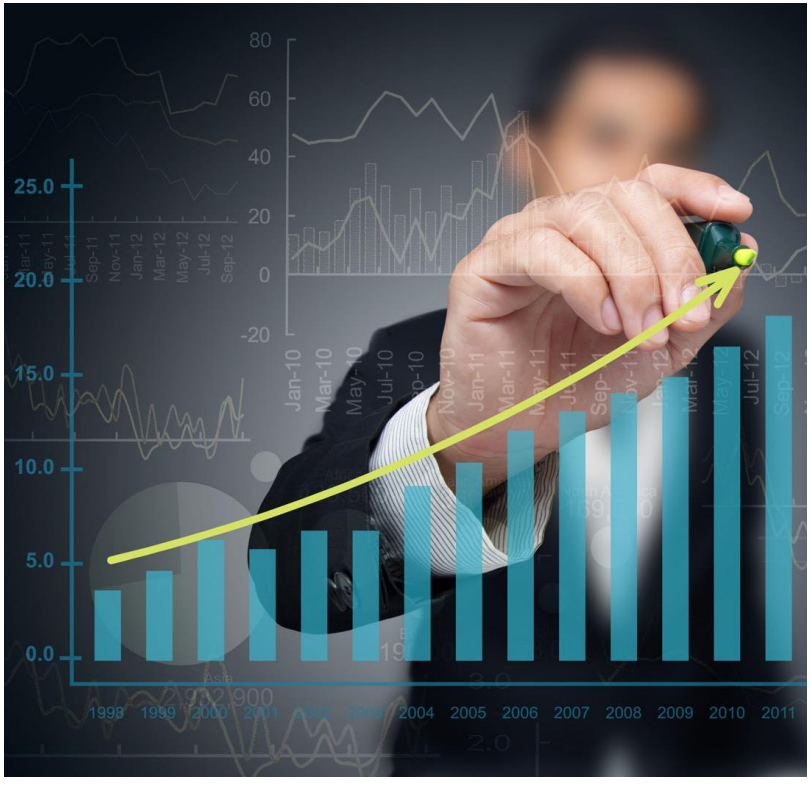


- Arterial Performance Measurement Pilot
  - Countywide tool now available
  - Presented today



Arterial Performance Measurement Pilot

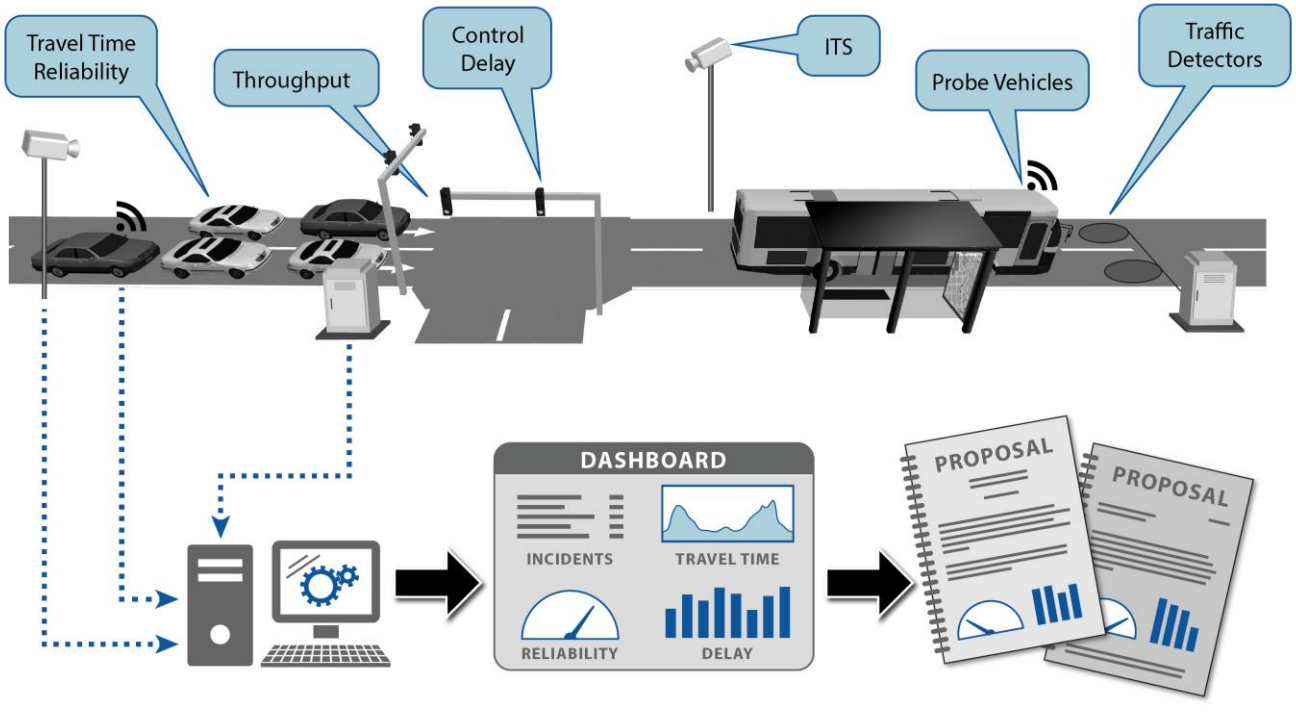
- Be able to assess mobility performance measures on arterial corridors
- Arterial performance measurement tool to support local agency and sub-regional operations and planning efforts
- Data-driven decision-making
- https://metro.iteris-pems.com/



Arterial Performance Measurement Framework

1. Select Performance Measures

2. Identify Data Sources



3. Data Management: Integrate and Validate Data

4. Develop Performance Measurement Tool

5. Apply Framework for Data-Driven Decisions

Performance Measures Selected:

Vehicle Miles Travelled (VMT)

Vehicle hours of delay

Hourly/daily volumes (flow)

Average travel speed

Average travel time

Travel time variability

(Travel time) Reliability

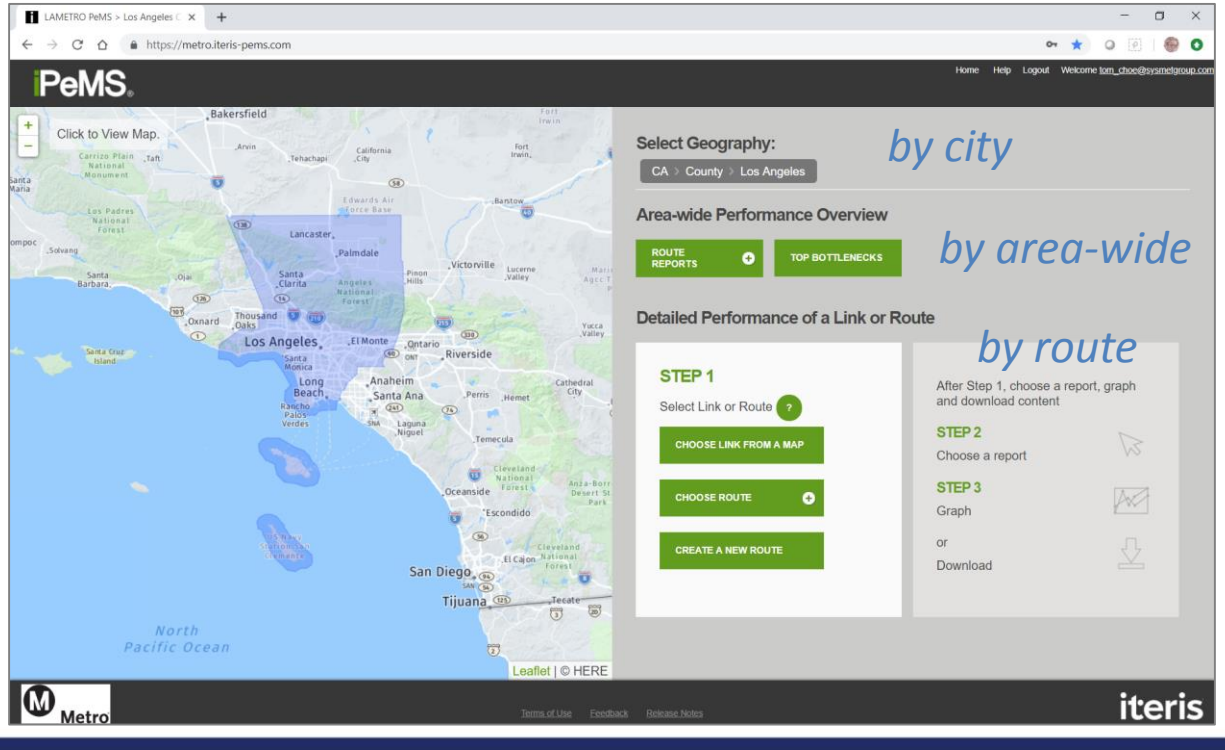
Others (persons, trucks)

Online Performance Measurement Tool

- iPeMS
  - Online roadway performance monitoring tool (freeways and arterials)
  - Data, performance measures, route congestion, map animations, etc.
    - Reports, charts, and export
  - Using HERE real-time crowd-source data
    - Real-time continuous speed data every minute by short links (data is archived)
  - Manual traffic volume collected on selected arterials (as part of Countywide Arterial Performance Measurement Baseline Analysis)
    - About 200 arterial corridors in County taken 2017 and 2018
    - Some provided by local agencies

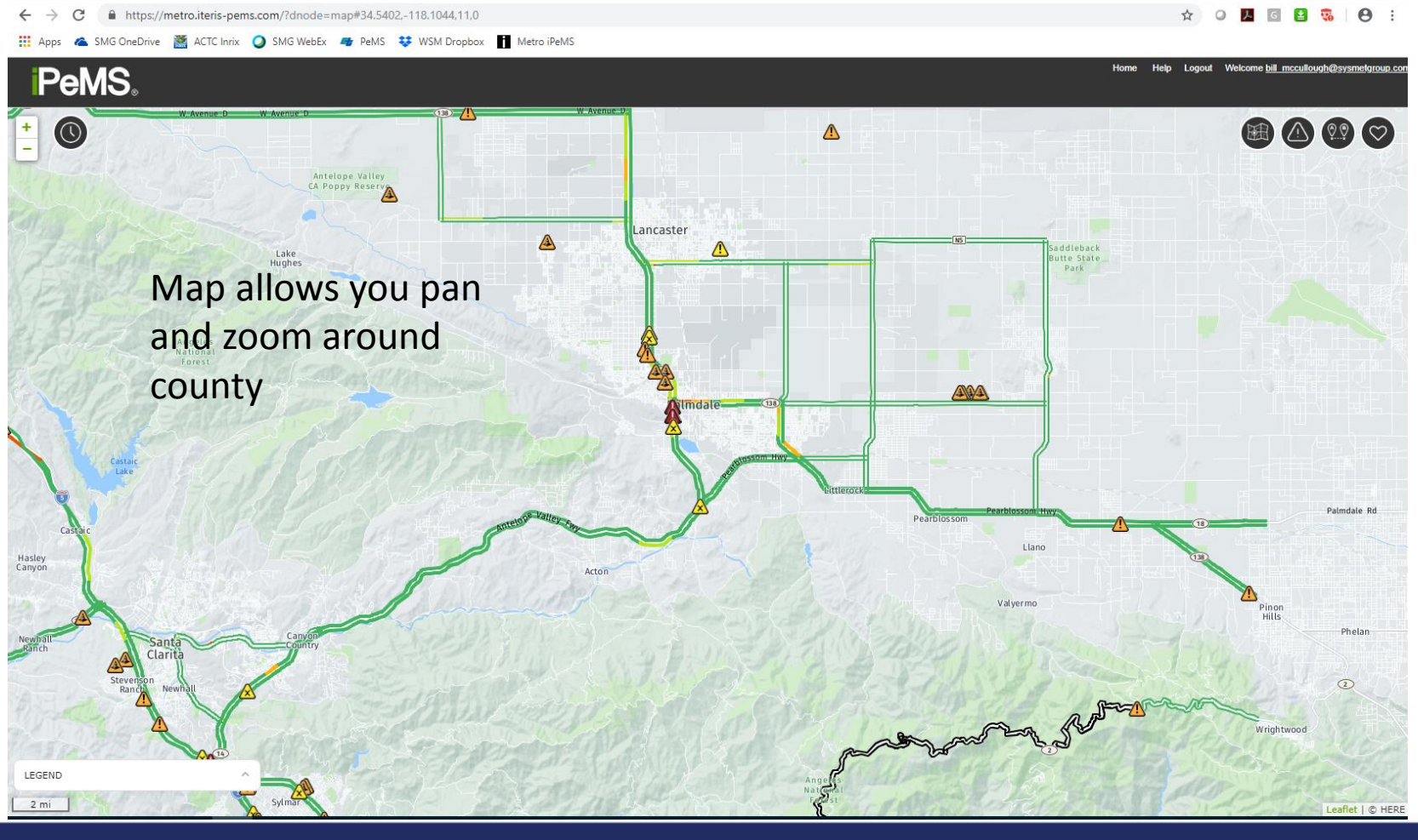
Online Performance Measurement Tool

- **iPeMS** (https://metro.iteris-pems.com/)
  - First, apply for an online account (no cost) to get user name and password
  - Then login

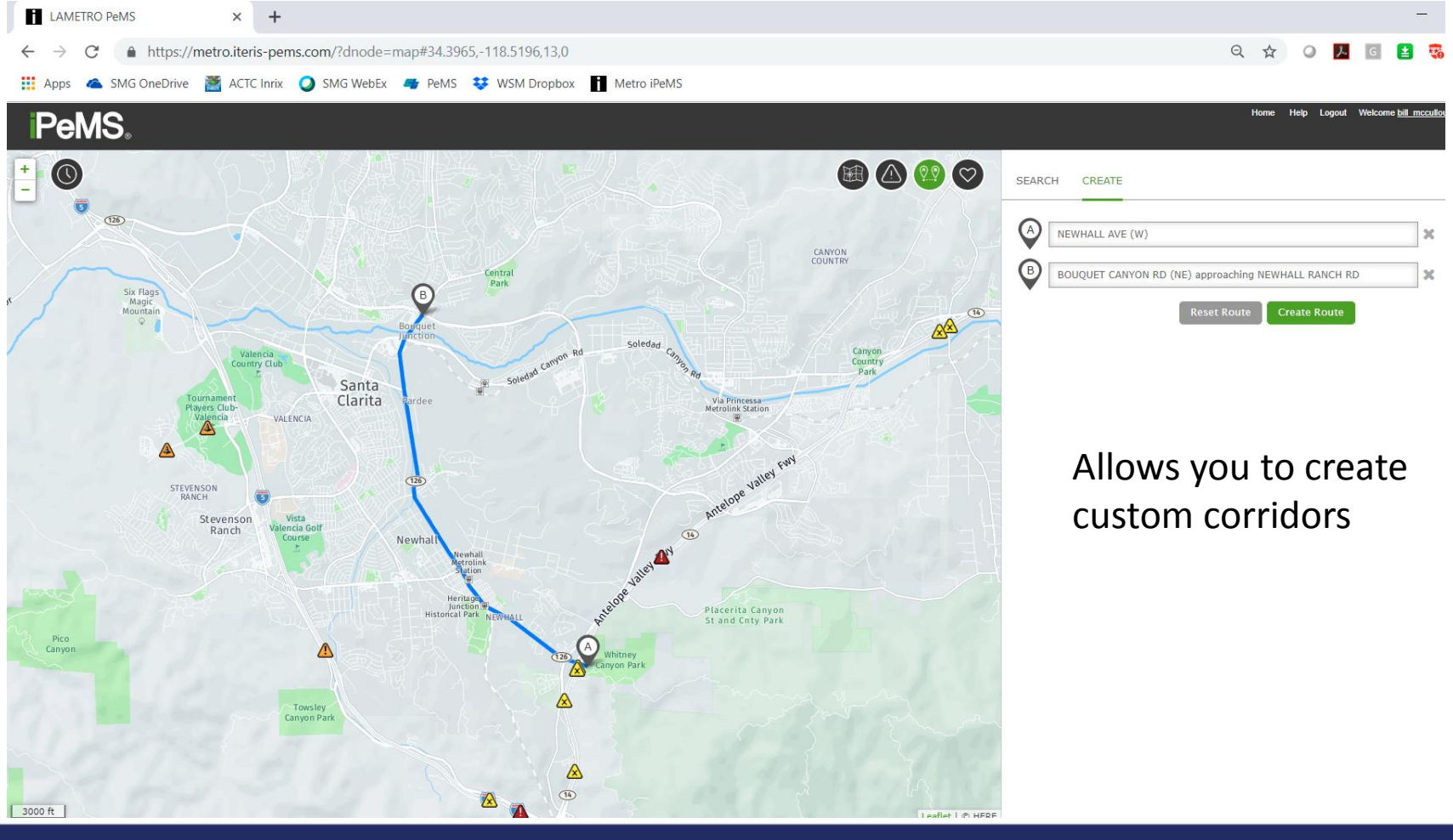


real-time map

Online Performance Measurement Tool

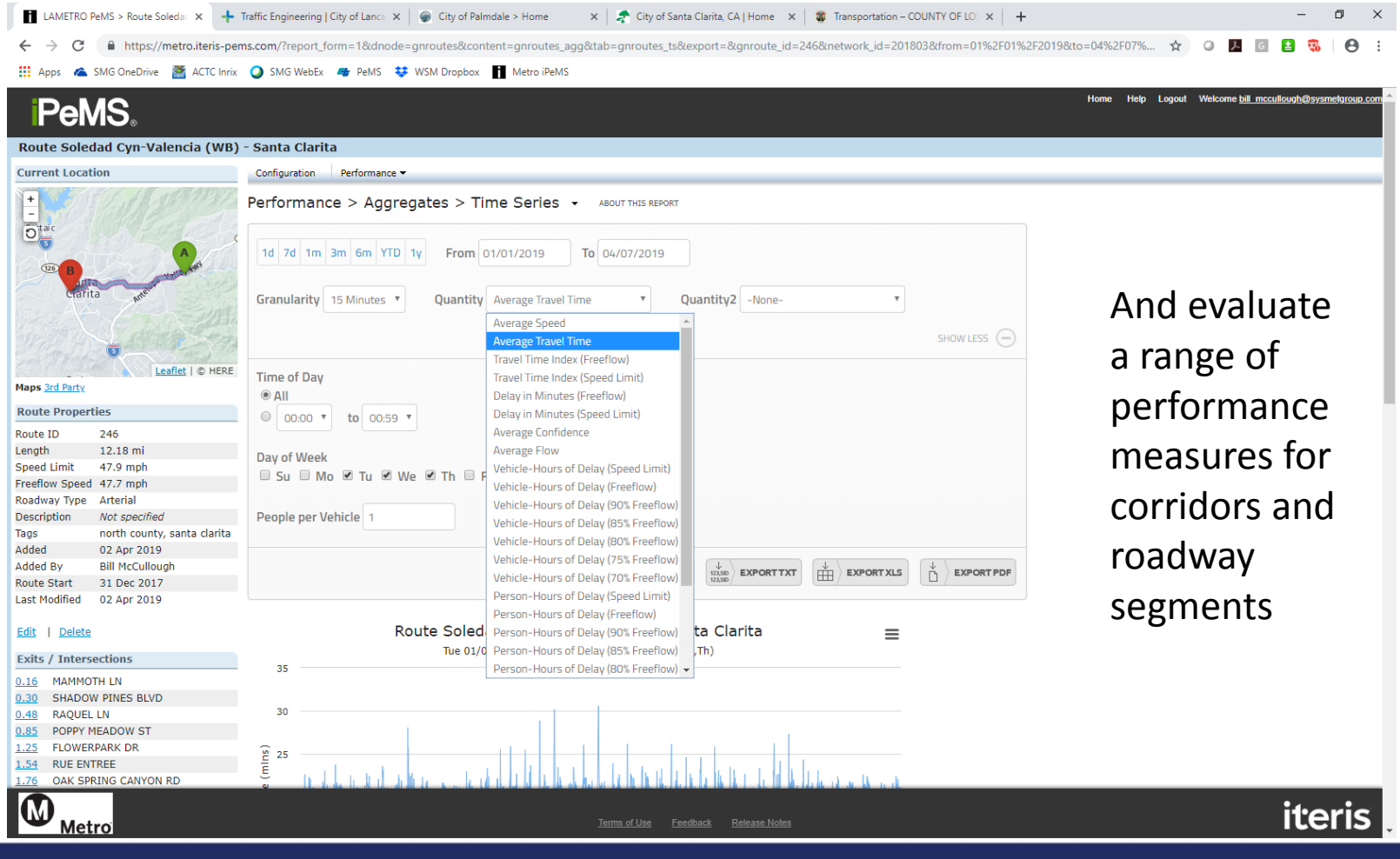


Online Performance Measurement Tool



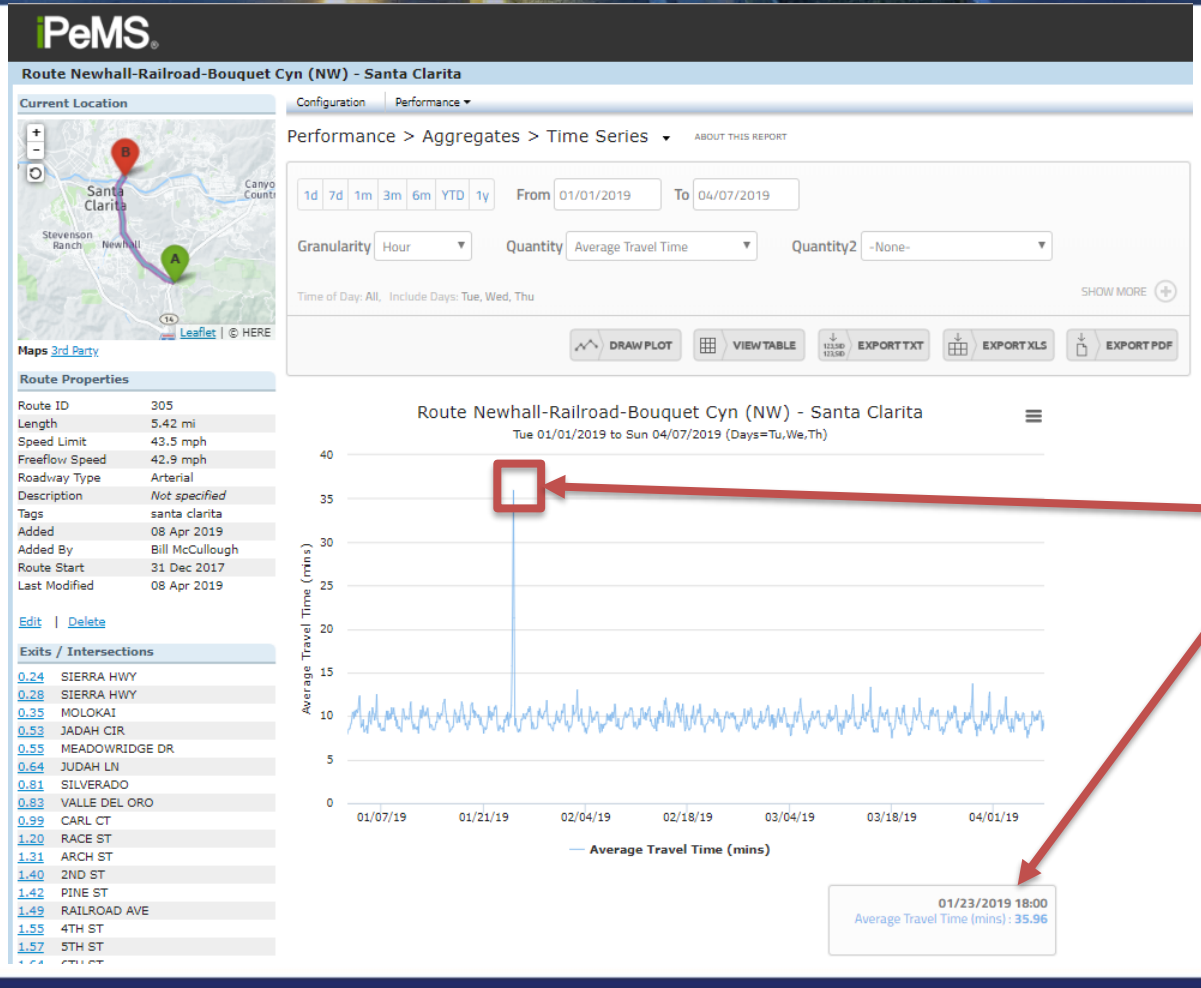
Allows you to create custom corridors

Online Performance Measurement Tool



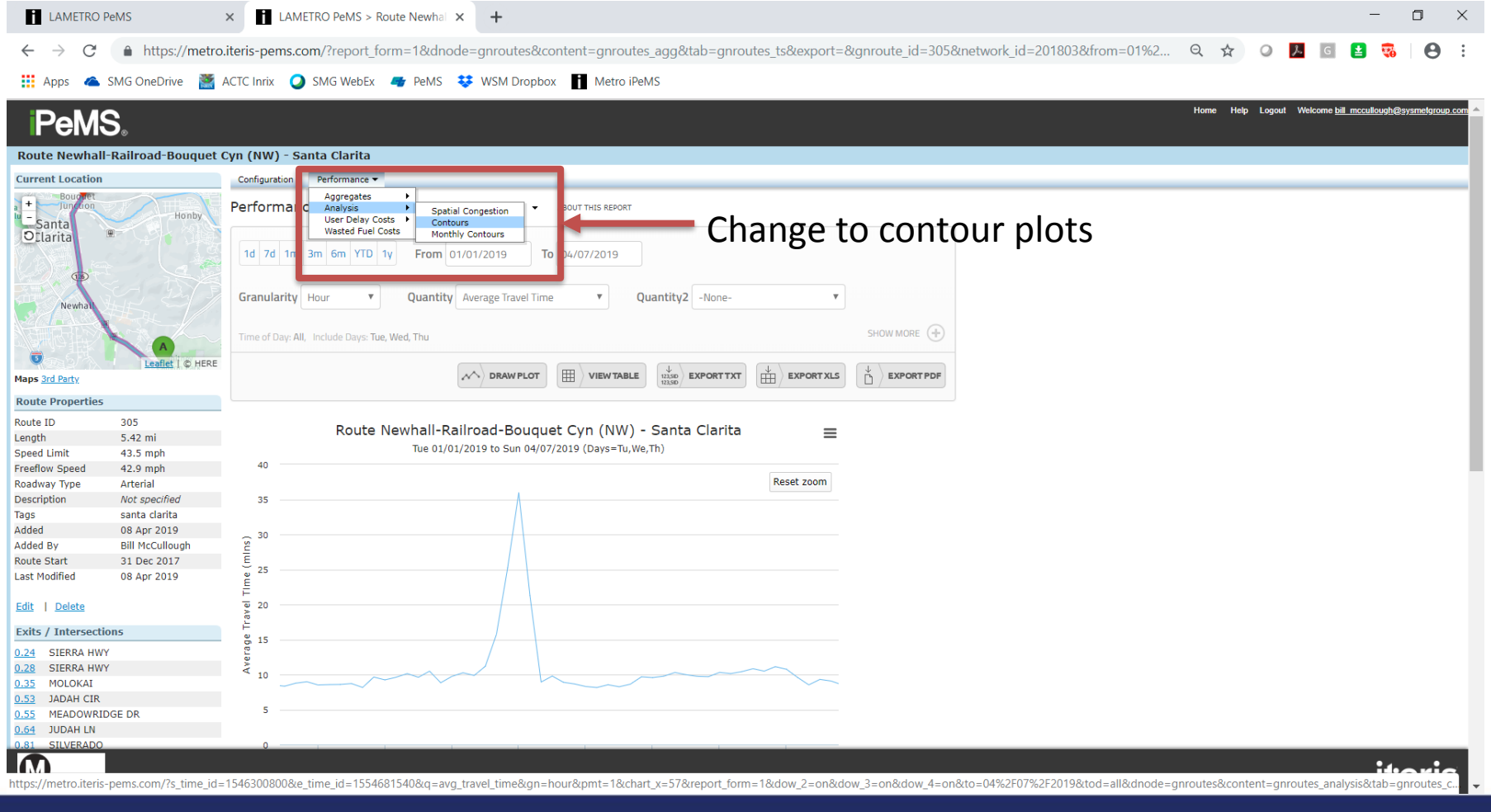
And evaluate a range of performance measures for corridors and roadway segments

Online Performance Measurement Tool

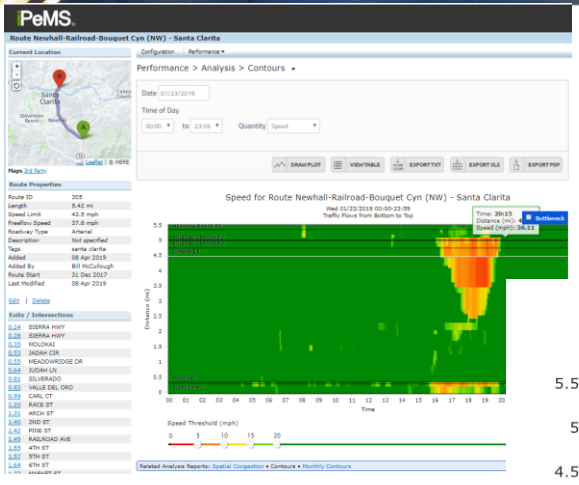


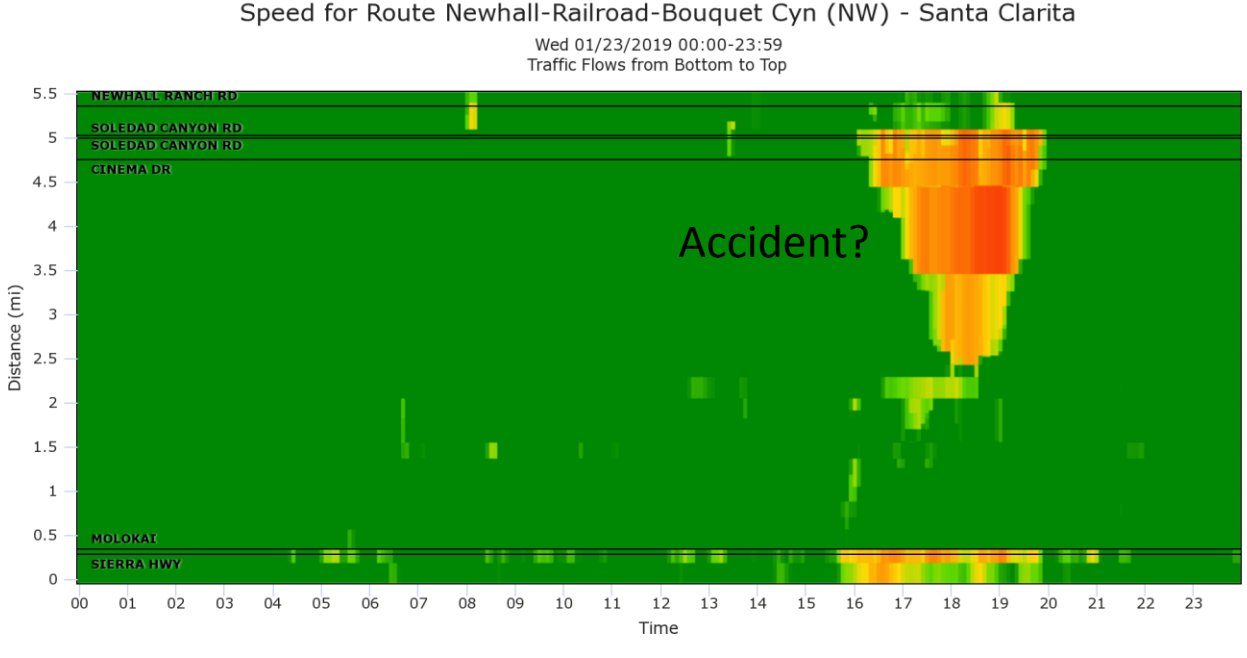
Day with extreme travel times 1/23/2019

Online Performance Measurement Tool



Online Performance Measurement Tool





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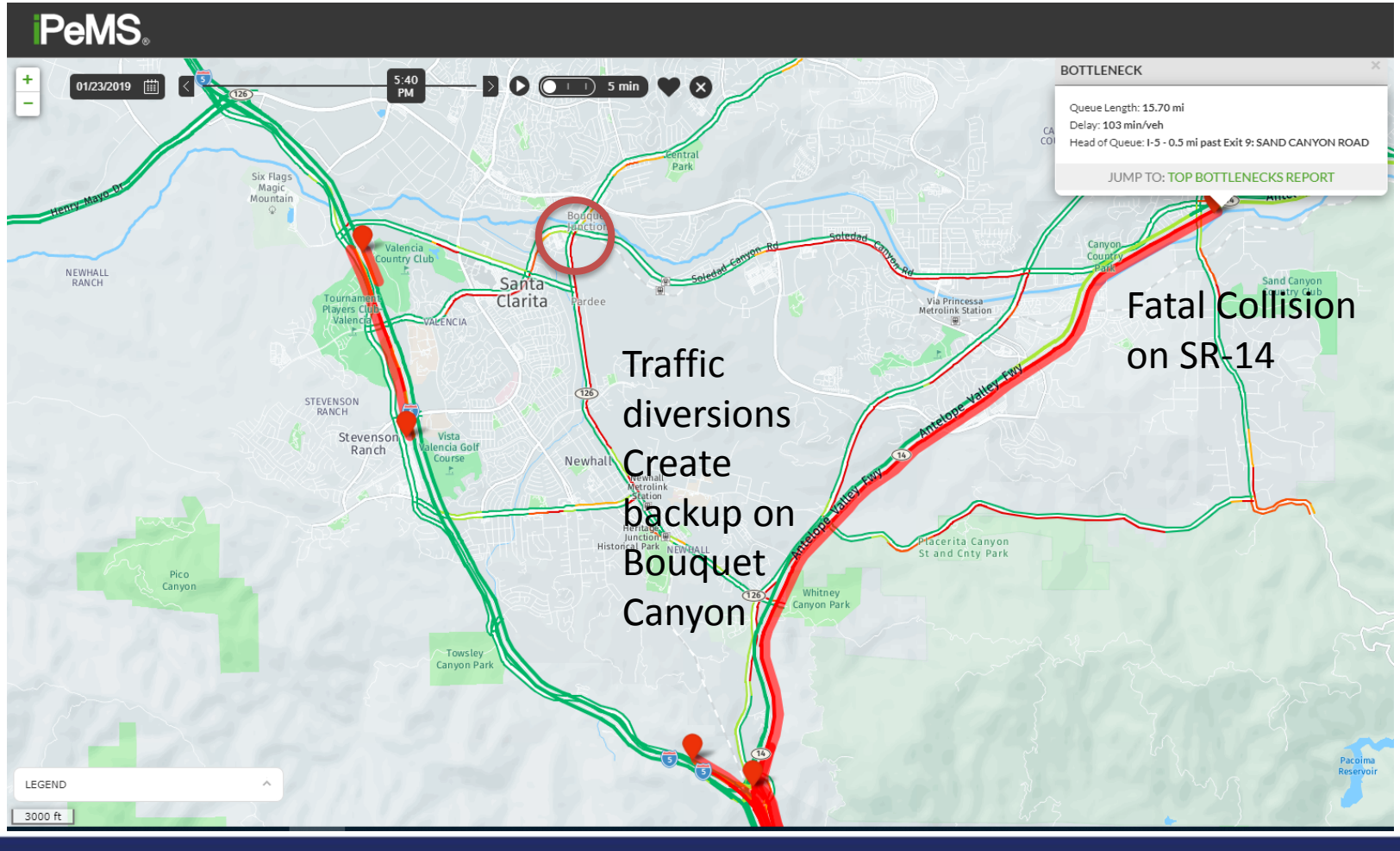

Online Performance Measurement Tool

Detailed Route Reports

Aggregates Reports

Timeseries

- Shows variables over time

Time of Day

- Shows the averages over the time of day
- What is the typical speed at 7am?
- This plot is used to review typical weekday traffic patterns.

Day of Week

- Review the difference in performance between the days of the week
- How is a Monday's performance different from a Wednesday?

Analysis Reports

Spatial Congestion

- Congestion along the length of the route

Contours

- Visual heat map of congestion in time and space
- Understand where and when congestion is occurring

Monthly Contours

- Same as Contour plots, except there is a plot for each day in a month.
- Review congestion trends across a month
- Visually review the route reliability

Congestion Cost Reports

User Delay Cost

- User delay cost, for passenger cars and trucks

Wasted Fuel Cost

- Wasted fuel cost due to congestion, for passenger cars and trucks, based on EPA models

Online Performance Measurement Tool

- Features (to name a few…)
  - Aggregate data to compare minutes, hours, days, weeks, and months
  - Easy to read reports, charts, and diagrams
  - Export tables and charts into MS Word or Excel (txt, xls, pdf)
  - Navigate by map or by route list table
  - Create multiple paths travel routes (monitor detours, commutes)
  - Speed map animation (“play back” speed condition on any day in past)
  - Measure congestion delay, queues, speeds, travel times, bottlenecks
    - Estimate user delay costs, wasted fuel costs
  - Favorites (save animation) and Alerts (by email)

Online Performance Measurement Tool

Develop a state of the system arterial report for your region

Do a Before/After study

Evaluate response to an event

Access data quickly

Prioritize projects

Conduct a Corridor Study

Address Council or stakeholder technical questions

Justify need for upgrading a signal system

Questions

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