



iteris®

Comprehensive Multimodal Corridor Plan

May 27, 2020

Background Information

- **SB-1**

Funding Amount (per year)	Program Name/Description
Local Programs	
\$1.5 billion	Local Street and Road Maintenance and Rehabilitation
\$750 million	Transit Operations and Capital
\$200 million	Local Partnership Program
\$100 million	Active Transportation Program
\$82.5 million	State Transportation Improvement Program – Regional Share
\$25 million	Local Planning Grants
State Programs	
\$1.9 billion	State Highway Maintenance and Rehabilitation
\$300 million	Trade Corridor Enhancement Program
\$250 million	Solutions for Congested Corridors Program
\$80 million	Parks, Off-Highway Vehicle, Boating, and Agricultural Programs
\$27.5 million	State Transportation Improvement Program – Interregional Share
\$25 million	Freeway Service Patrol Programs
\$7 million	California University Transportation Research Programs

Solutions for Congested Corridors Program (SCCP)

- **Project Nomination/Application**
 - Projects Types – (No General Purpose Lanes)
 - Requirement, among many:
 - “A description of how the corridor plan is consistent with Streets and Highways Code 2391-2394 as explained in Section 9.1 of the 2018 Comprehensive Multimodal Corridor Plan Guidelines”*

California Transportation Commission
2018 Comprehensive Multimodal Corridor Plan Guidelines

9.1 Statutory Requirements:

Pursuant to Streets and Highways Code (SHC), a **comprehensive multimodal corridor plan** that is utilized by eligible applicants to identify a project for potential funding through the Congested Corridors program must:

- 1.) Be designed to reduce congestion in highly traveled corridors by providing more transportation choices for residents, commuters, and visitors to the area of the corridor while preserving the character of the local community and creating opportunities for neighborhood enhancement projects. [SHC 2391]
- 2.) Reflect a comprehensive approach to addressing congestion and quality-of-life issues within the affected corridor through investment in transportation and related environmental solutions. [SHC 2392]
- 3.) Be developed in collaboration with state, regional, and local partners. [SHC 2392]
- 4.) Evaluate the following criteria as applicable [SHC 2394]
 - Safety
 - Congestion
 - Accessibility
 - Economic Development and Job Creation and Retention
 - Air Quality and Greenhouse Gas Emissions Reduction
 - Efficient Land Use
- 5.) Be consistent with the goals and objectives of the Regional Transportation Plan [SHC 2393].

Projects funded through the Congested Corridors Program shall also be “designed to achieve a balanced set of transportation, environmental, and community access improvements within highly congested travel corridors” [SHC 2391]. Planners may therefore wish to evaluate the balance of proposed projects and identify those projects in the plan that best achieve this balance.

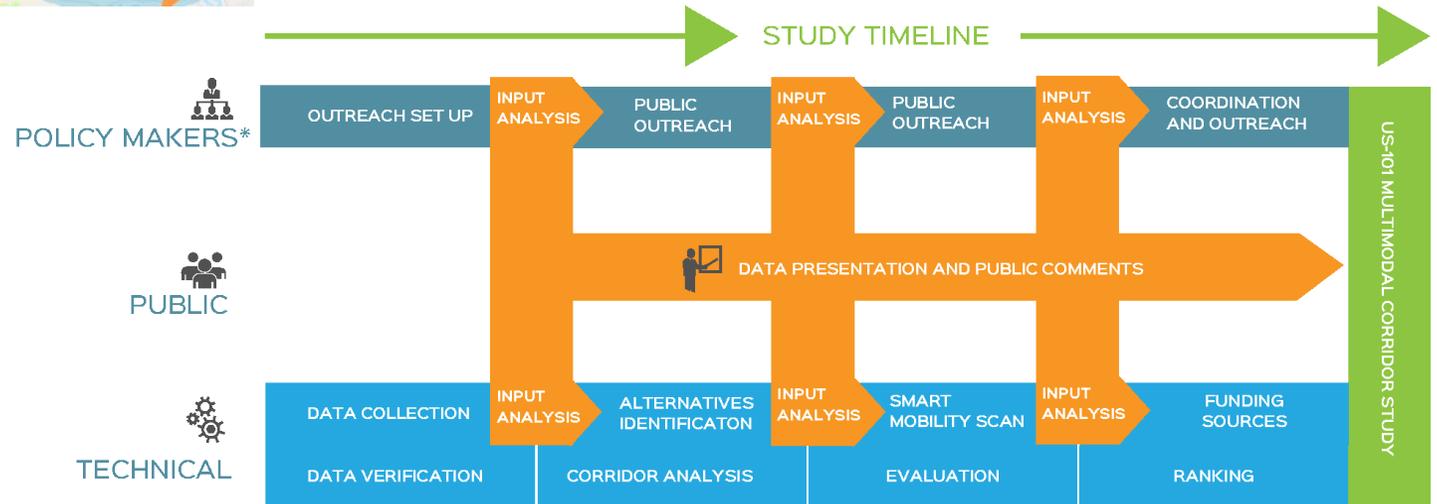
9.2 Key Elements of a Comprehensive Multimodal Corridor Plan

Solutions for Congested Corridors Program (SCCP)

- I-105 Corridor Sustainability Study
- US 101 Communities Connected
- Inland Empire CMCP
- I-405 CMCP

“There is no specific format that a CMCP must meet. Plans are unique to the region in which they are prepared” (page 8, CTC 2018 CMCP Guidelines)

US 101 Communities Connected



Approach

- Goals and Objectives
- Existing and Future Conditions
- Identify Multi-modal Improvements (Funded and Unfunded Projects)
- Public Workshops and Stakeholder Outreach
- Project Evaluation Framework



Safety and Health – Improve safety and health by reducing the frequency and severity of safety incidents and hazards for all modes, improve air quality and provide safe routes for children to get to school.



Social Equity – Be inclusive of all community members and their needs by ensuring a fair share of benefits of the transportation system for disadvantaged communities, provide viable transportation options for people who do not have cars, and improve workers' access to jobs.



Multimodal Mobility – Improve mobility and accessibility for a connected and integrated transportation system by reducing Vehicle Miles Traveled, congestion and delay, increasing throughput and reliability for all users, and increasing transit ridership and active transportation participation.

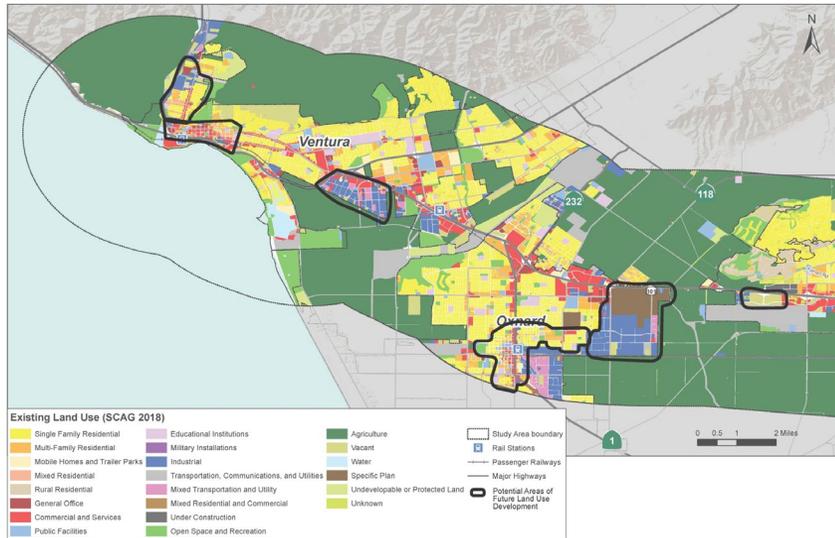
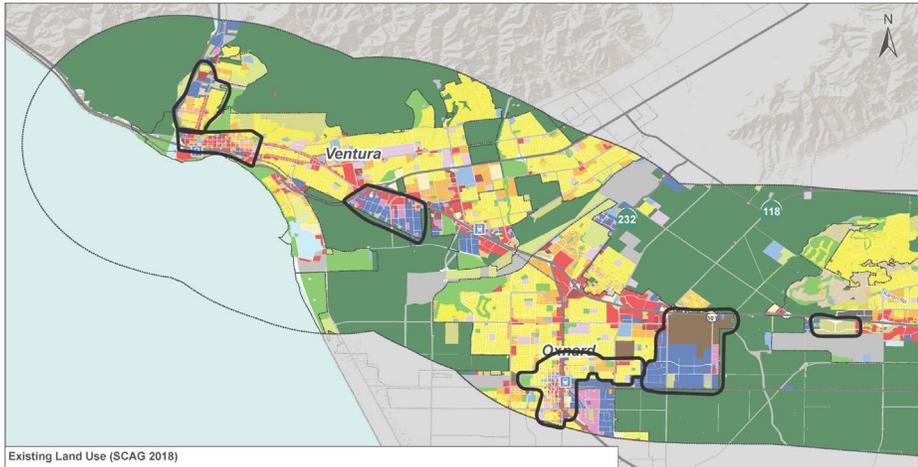


Robust Economy – Improve freight movement while mitigating its impacts, manage curb demand, and improve access to jobs.



Environmental Stewardship – Preserve and increase access to habitat and open space, reduce GHG emissions and improve air quality.

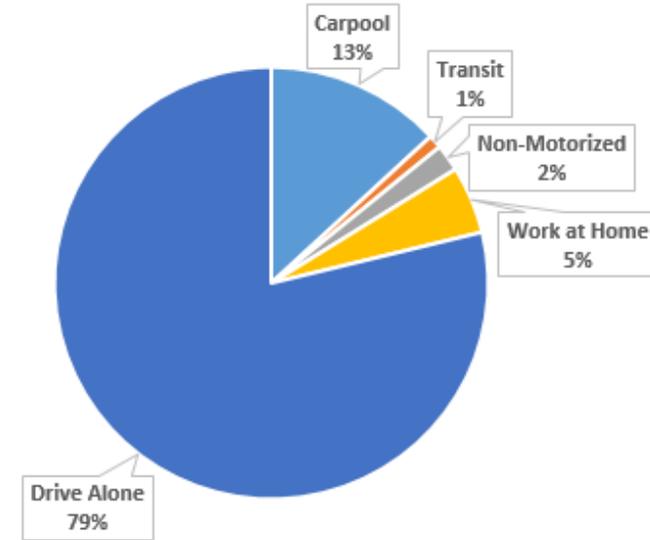
Land Use



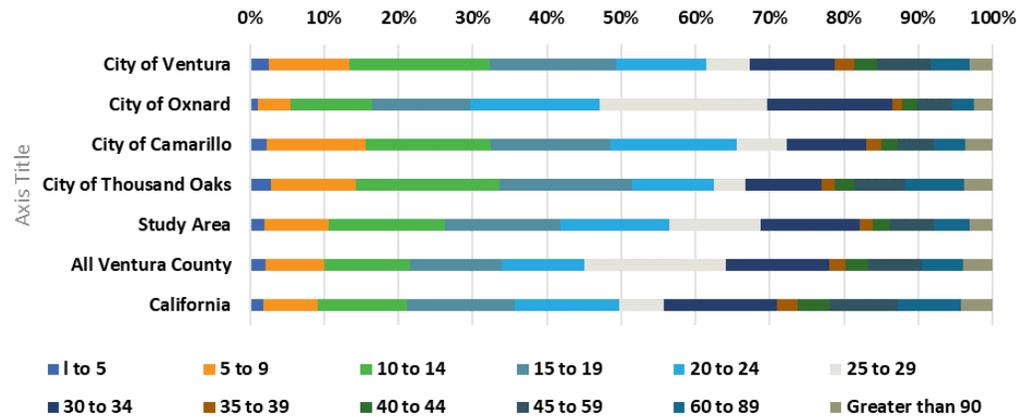
EXISTING LAND USE	CITY OF VENTURA		CITY OF OXNARD		CITY OF CAMARILLO		CITY OF THOUSAND OAKS		UNINCORPORATED VENTURA COUNTY	
	Acres	% of Total	Acres	% of Total	Acres	% of Total	Acres	% of Total	Acres	% of Total
Residential										
Single-family Residential	5,565.7	36.5%	3,414.8	29.3%	3,465.4	22.1%	10,842.9	31.9%	4,734.5	6.4%
Multi-Family Residential	1,171.9	7.7%	891.3	7.6%	587.7	3.8%	1,329.8	3.9%	34.1	0.0%
Mobile Homes and Trailer Parks	280.2	1.8%	107.0	0.9%	174.2	1.1%	211.2	0.6%	2.2	0.0%
Mixed Residential	93.8	0.6%	4.3	0.0%					170.1	0.2%
Rural Residential	8.3	0.1%			1,833.9	11.7%			764.6	1.0%
Commercial and Office										
Commercial and Services	1,290.0	8.5%	1,088.8	9.3%	579.7	3.7%	1,191.8	3.5%	37.3	0.1%
General Office Use	287.8	1.9%	186.9	1.6%	91.8	0.6%	694.1	2.0%	15.0	0.0%
Institutional Facilities										
Facilities	447.7	2.9%	284.9	2.4%	286.1	1.8%	645.3	1.9%	1,038.1	1.4%
Educational Institutions	613.2	4.0%	406.7	3.5%	490.2	3.1%	819.5	2.4%	971.3	1.3%
Military Installations	7.4	0.0%								
Industrial	931.9	6.1%	1,709.5	14.7%	1,007.9	6.4%	787.7	2.3%	529.2	0.7%
Transportation, Communications, and Utilities										
Commercial and Services	470.8	3.1%	427.0	3.7%	1,189.3	7.6%	354.7	1.0%	2,549.8	3.5%
Mixed Uses										
Mixed Commercial and Industrial	124.1	0.8%	331.5	2.8%	28.1	0.2%	10.7	0.0%	25.8	0.0%
Mixed Residential and Commercial	1.1	0.0%	1.4	0.0%	1.9	0.0%	0.3	0.0%	3.8	0.0%
Undeveloped Space										
Open Space & Recreation	1,796.3	11.8%	1,327.7	11.4%	1,846.6	11.8%	15,020.0	44.2%	627.4	0.9%
Vacant	830.1	5.4%	210.9	1.8%	977.1	6.2%	1,602.1	4.7%	1,649.6	2.2%
Agriculture	378.5	2.5%	45.1	0.4%	1,680.5	10.7%	0.1	0.0%	44,534.3	60.5%
Water										
	382.5	2.5%	4.4	0.0%	75.7	0.5%	96.5	0.3%	991.5	1.3%
Undevelopable or Protected Land	315.5	2.1%	326.2	2.8%	129.6	0.8%			2,800.4	3.8%
Specific Plan			887.3	7.6%						
Under Construction							12.5	0.0%		
Unknown	254.9	1.7%	4.7	0.0%	1,222.7	7.8%	371.0	1.1%	12,072.3	16.4%
Total	15,251.8		11,660.3		15,668.5		33,990.1		73,551.4	

Travel Patterns

- Mode Share
- Commute Time
- Daily Flow Patterns



Journey-to-Work Travel Times (minutes)



ORIGIN/DESTINATION	CAMARILLO	OXNARD	VENTURA	THOUSAND OAKS	OTHER DESTINATIONS
Camarillo	73,000	11,000	9,000	17,000	63,000
Oxnard	12,000	115,000	32,000	8,000	103,000
Ventura	9,000	31,000	332,000	3,000	101,000
Thousand Oaks	17,000	7,000	3,000	301,000	176,000
Other Origins	63,000	103,000	101,000	176,000	N/A

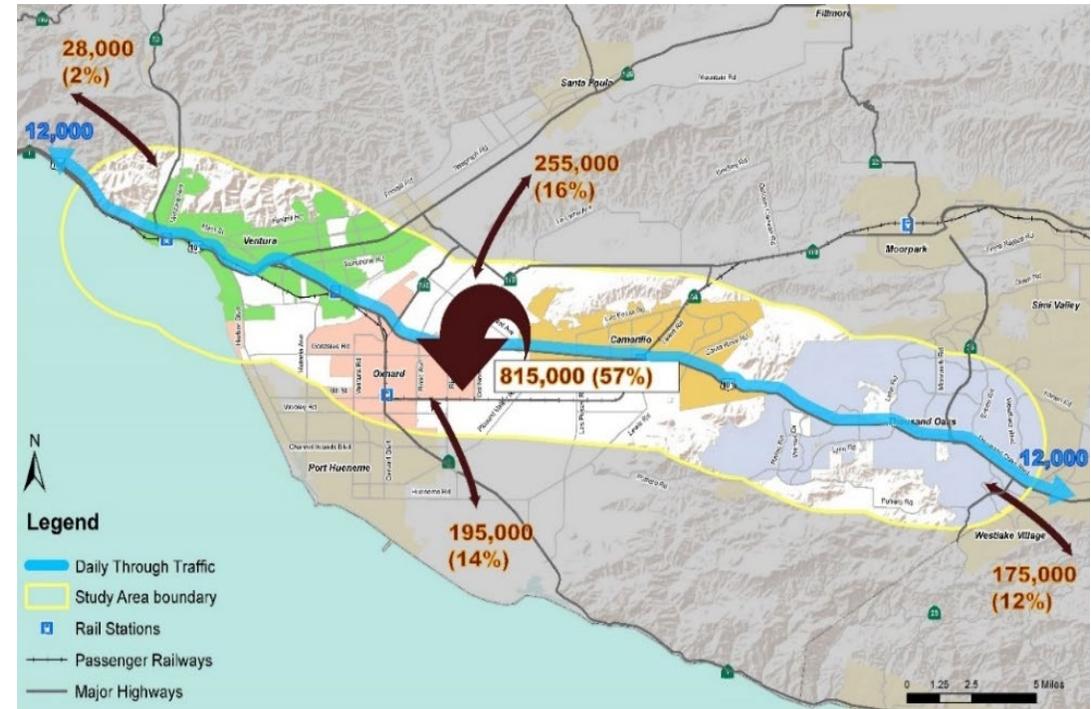
Travel Patterns

County-to-County Commuting Flows for Workers Living in Ventura County

WORKPLACE	SHARE
Ventura County	78.5%
Los Angeles County	17.3%
Santa Barbara County	3.3%
Other	0.9%

County-to-County Commuting Flows for Workers Working in Ventura County

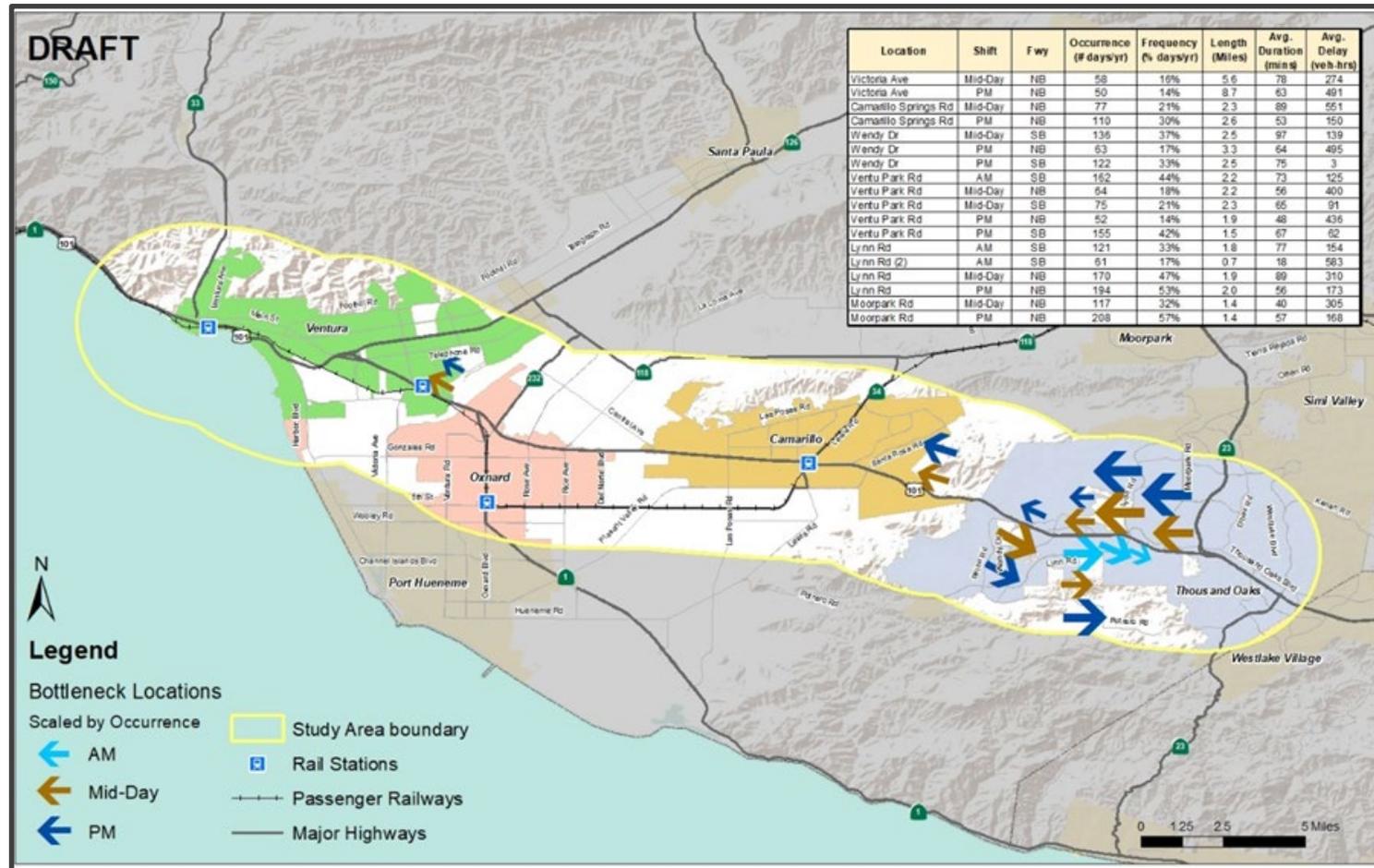
WORKPLACE	SHARE
Ventura County	87.5%
Los Angeles County	10.8%
Santa Barbara County	0.6%
Other	0.1%



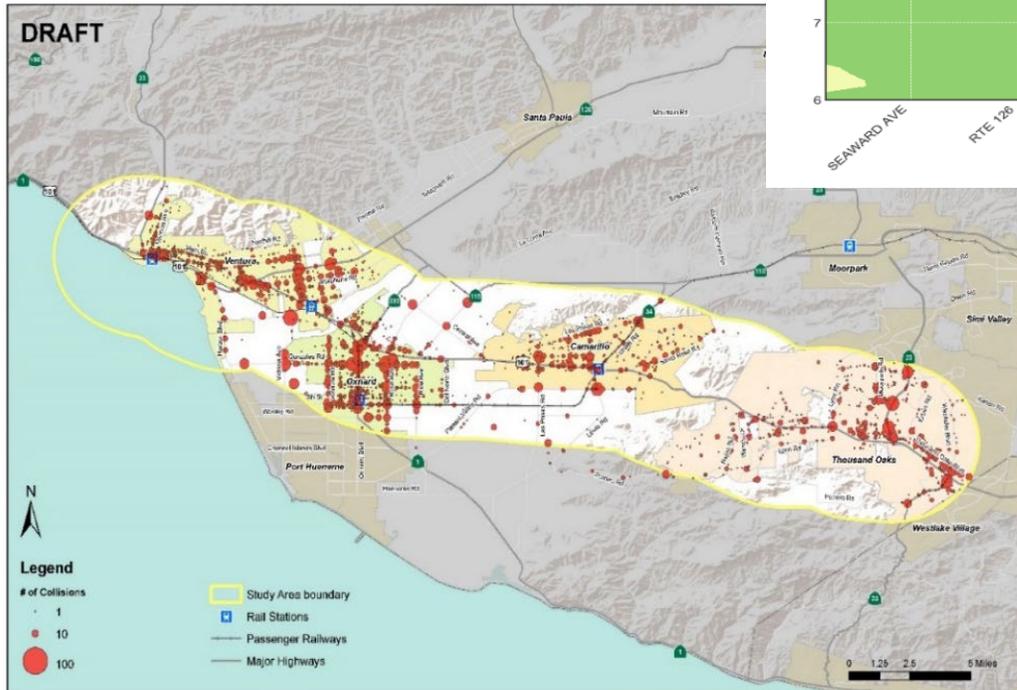
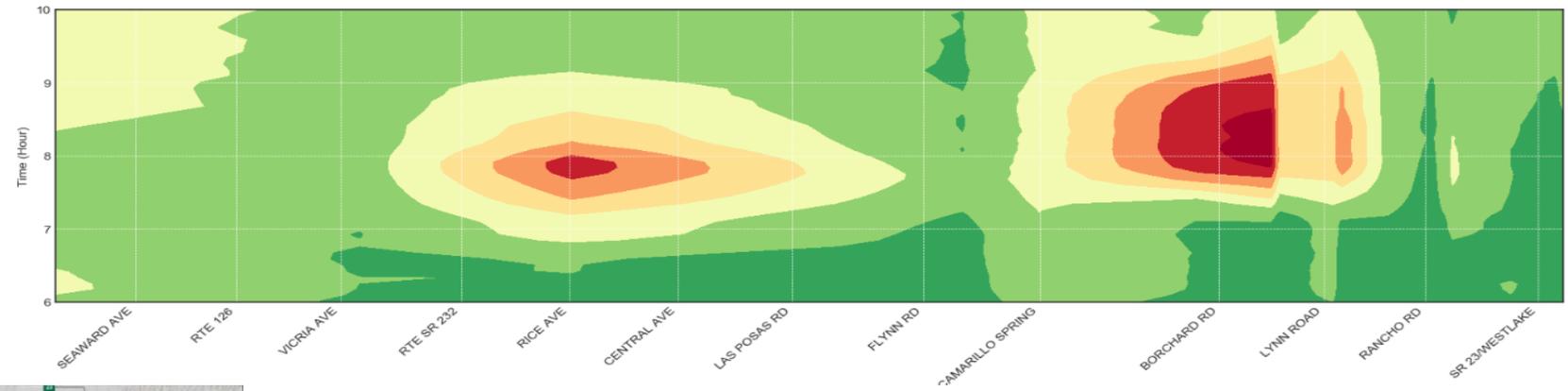
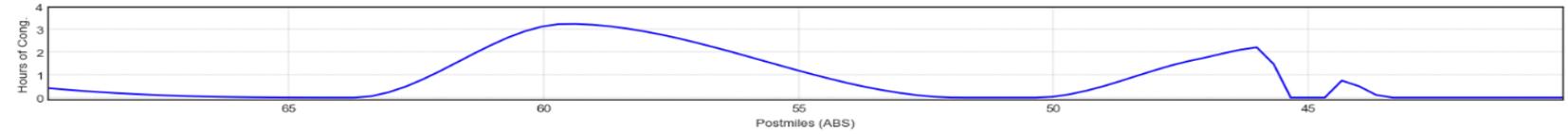
Source: ACS 2012-2016 via CTPP (Census Transportation Planning Products) County to County Flows

Note: This data includes all of Ventura County (including outside of the study area)

Freeway Bottlenecks



Collisions / Congestion



Projects (Funded and Unfunded)

Roadway Projects and Programs:

- Auxiliary lanes
- Bridge improvement
- Capacity enhancement
- Grade separation
- HOV lanes
- Interchange improvement
- Intersection improvement
- ITS
- Funded and Unfunded

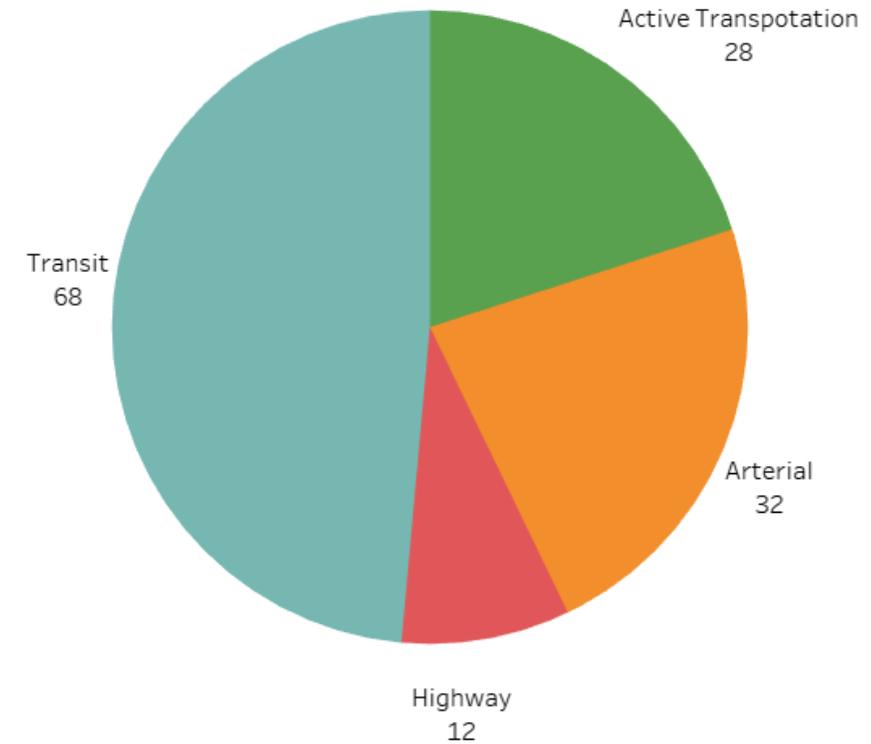
Non-Roadway Projects

- Passenger rail projects
- Planning, marketing, and other services (operating assistance, etc.)
- Vehicle purchase and lease
- Travel demand management
- Telecommuting
- Incentives for transit and alternate modes
- Active Transportation (Pedestrian/Bike facilities)
- Capital and demonstration projects
- Demonstration projects
- Other capital projects
- Multipurpose/grouped projects

Project List

140 Projects

- 49% Transit Projects
- 20% Active Transportation Projects
- 23% Arterial Projects
- 8% Highway Projects



Continued

Funded Roadway Projects

PROJECT CATEGORY	COST (\$1,000's)
Auxiliary Lanes	\$232,175
Capacity Enhancement	\$6,735
Grade Separation	\$79,192
Interchange Improvement	\$65,988
Intersection Improvement	\$11,866
Total	\$395,956

Funded Non-Roadway Projects

PROJECT CATEGORY	COST (\$1,000's)
Capital and Demonstration Projects	\$39,441
Passenger and Rail Projects	\$93,290
Planning, Marketing and Other Services	\$61,617
Vehicle Purchase and Lease	\$13,284
Active Transportation	\$206,677
Total	\$414,309

Un-funded Roadway Projects

PROJECT CATEGORY	COST (\$1,000's)
Capacity Enhancement	\$789,876
Grade Separation/Bridge Improvement	\$233,272
HOV Lanes	\$700,000
Interchange Improvement	\$56,700
Intersection Improvement	\$104,476
Total	\$1,884,324

Un-funded Non-Roadway Projects Summary

PROJECT CATEGORY	COST (\$1,000's)
Active Transportation	\$67,997
Travel Demand Management	\$31,453
Passenger and Rail Projects	\$106,014
Capital and Demonstration Projects	\$120,031
Planning, Marketing and Other Services	\$115,330
Total	\$440,825

Public Outreach

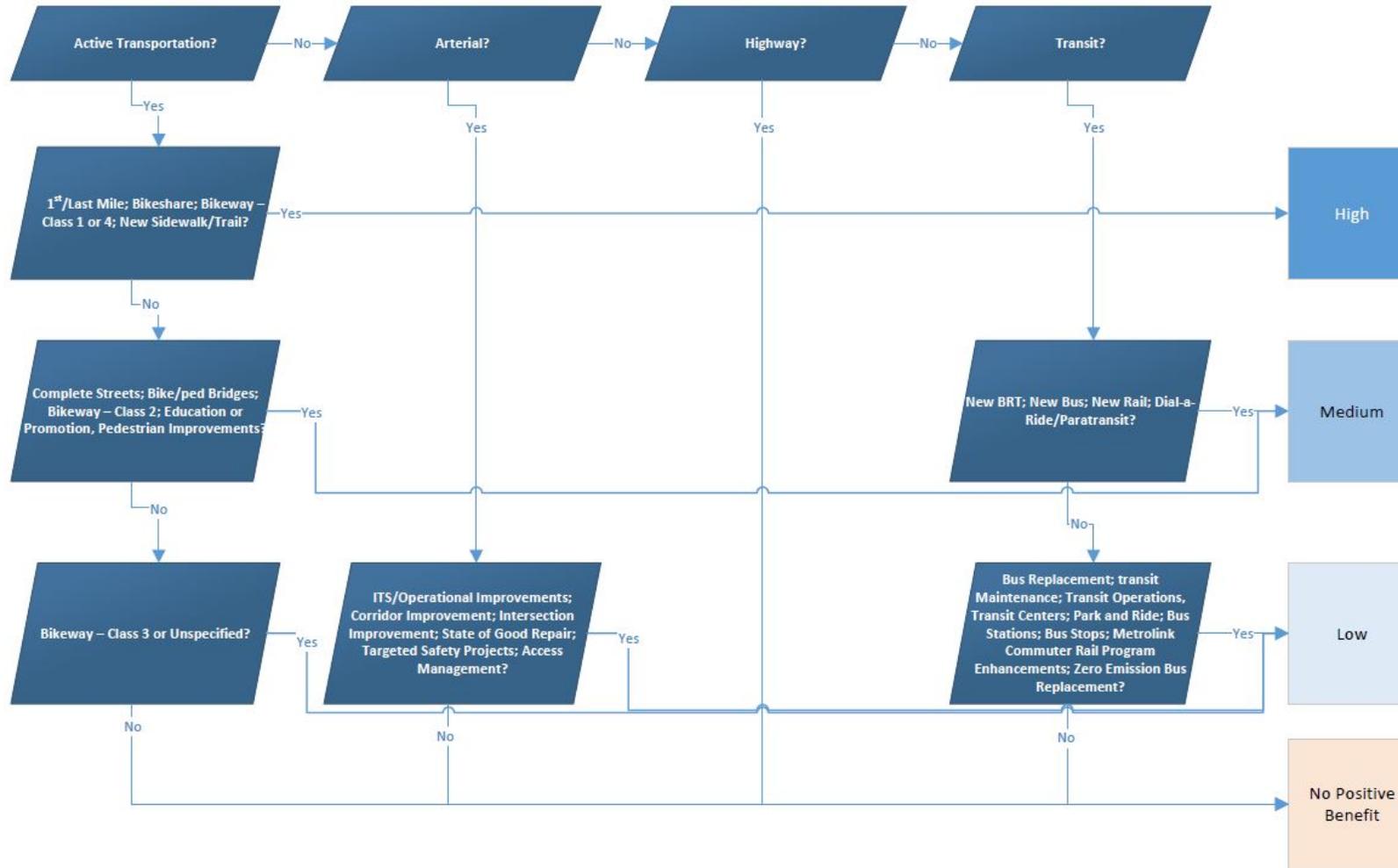
- Digital outreach
- Digital campaigns
- Online survey tool
- Public workshops
- \$100 in “Transportation Dollars”
- Public comments summary



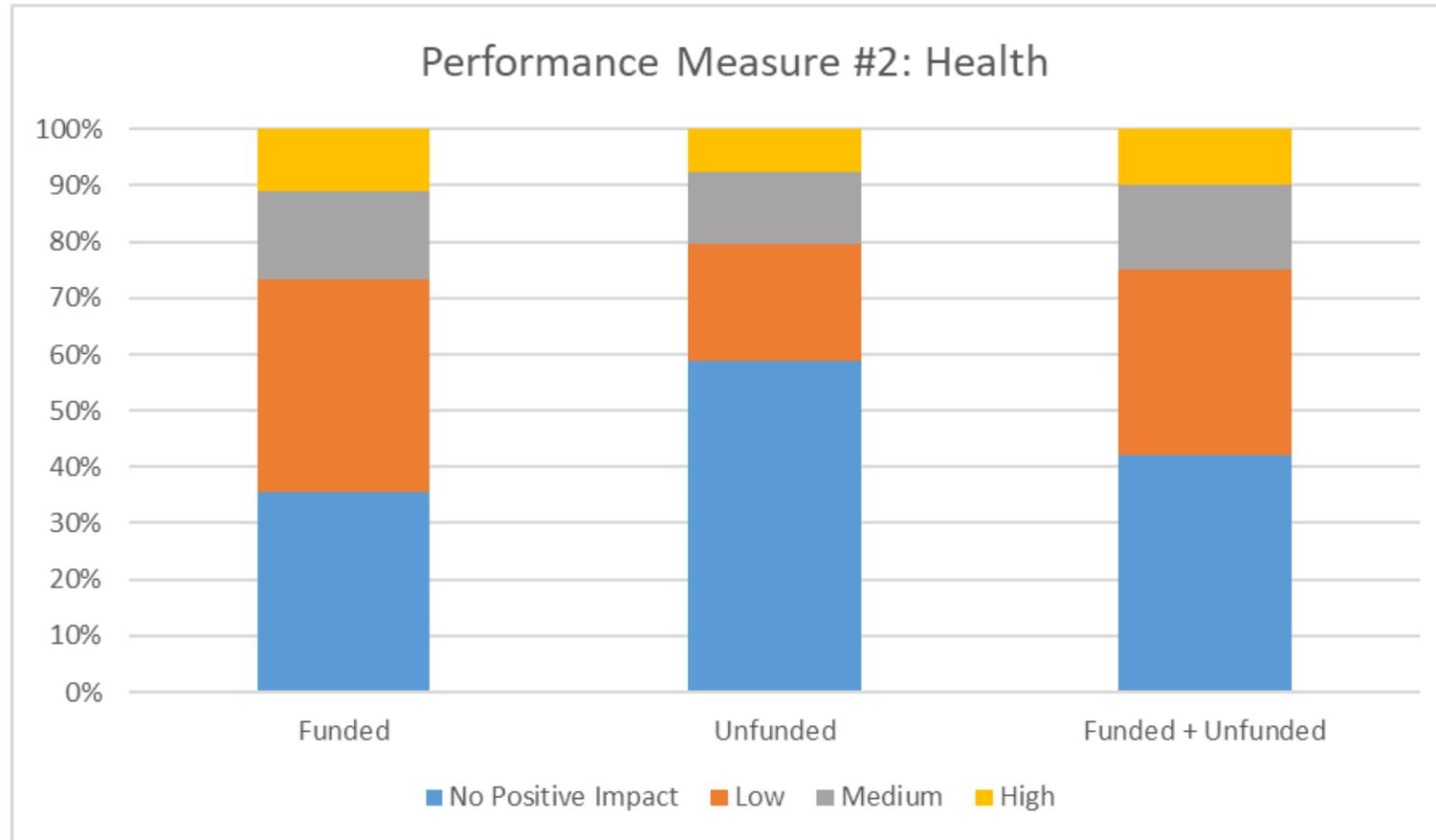
How to Evaluate Projects? -Performance Measures

- **VMT Reduction** – Minimizing vehicle miles traveled
- **Person Throughput** – Maximizing person throughput in the corridor
- **Accessibility** - Improving accessibility and connectivity everyone who travels the corridor; the project closes an existing gap in transit and active transportation
- **Safety** - Increasing safety for motorized and non-motorized users
- **Economic Development and Job Creation Retention** - supporting economic development and access to employment
- **GHG and Air Quality** - Reducing greenhouse gas emissions and criteria pollutants and advance the State's air quality and climate goals
- **Transit Proximity** - Half mile of major transit stop or High Quality Transit Area
- **Low-VMT Zone** - VMT/HH is 15 percent below regional average
- **Social Equity** - Disadvantaged and Communities of Concern
- **High Accident Locations** – *Accidents are 50% above the corridor average*

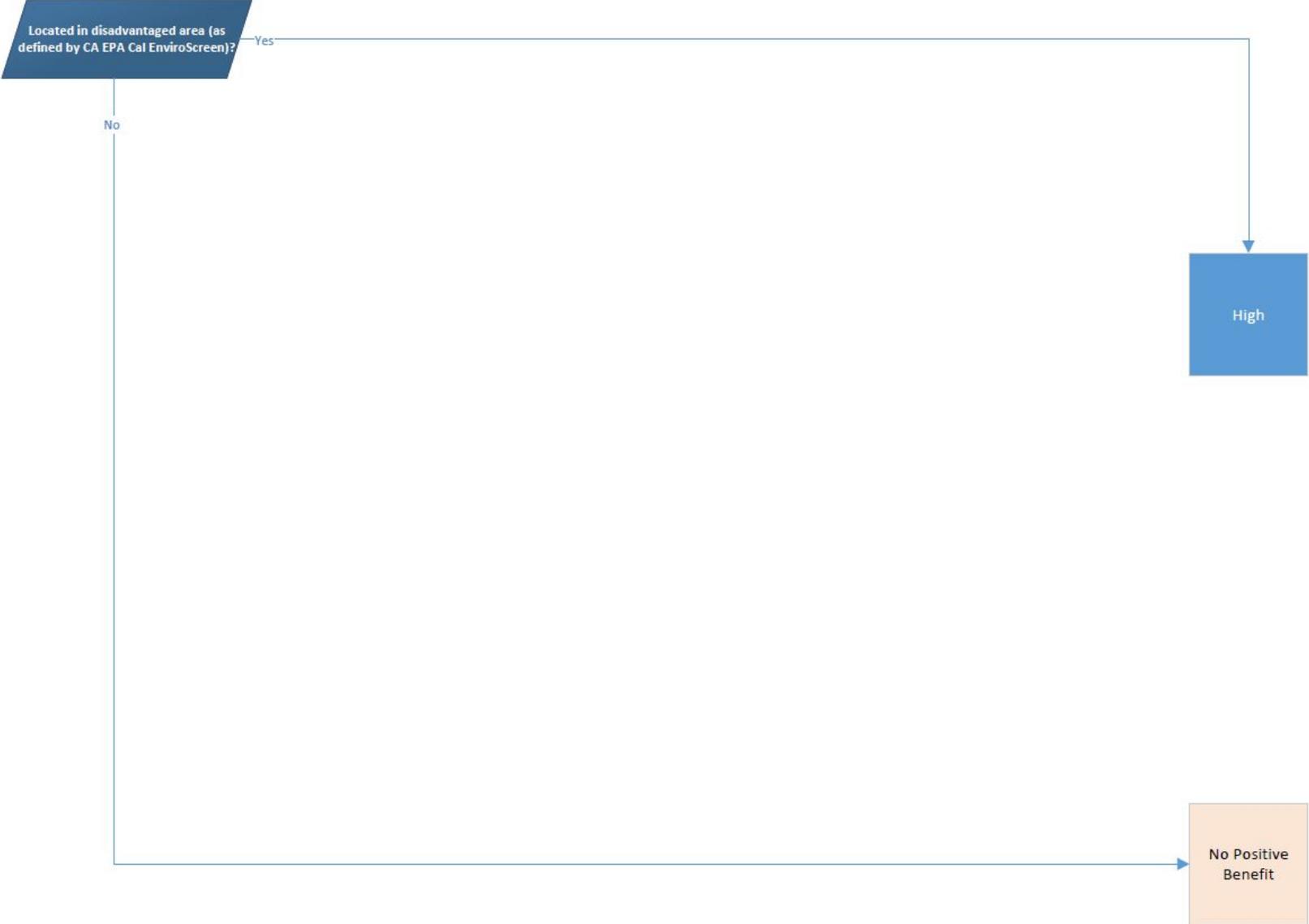
Performance Measure: Safety



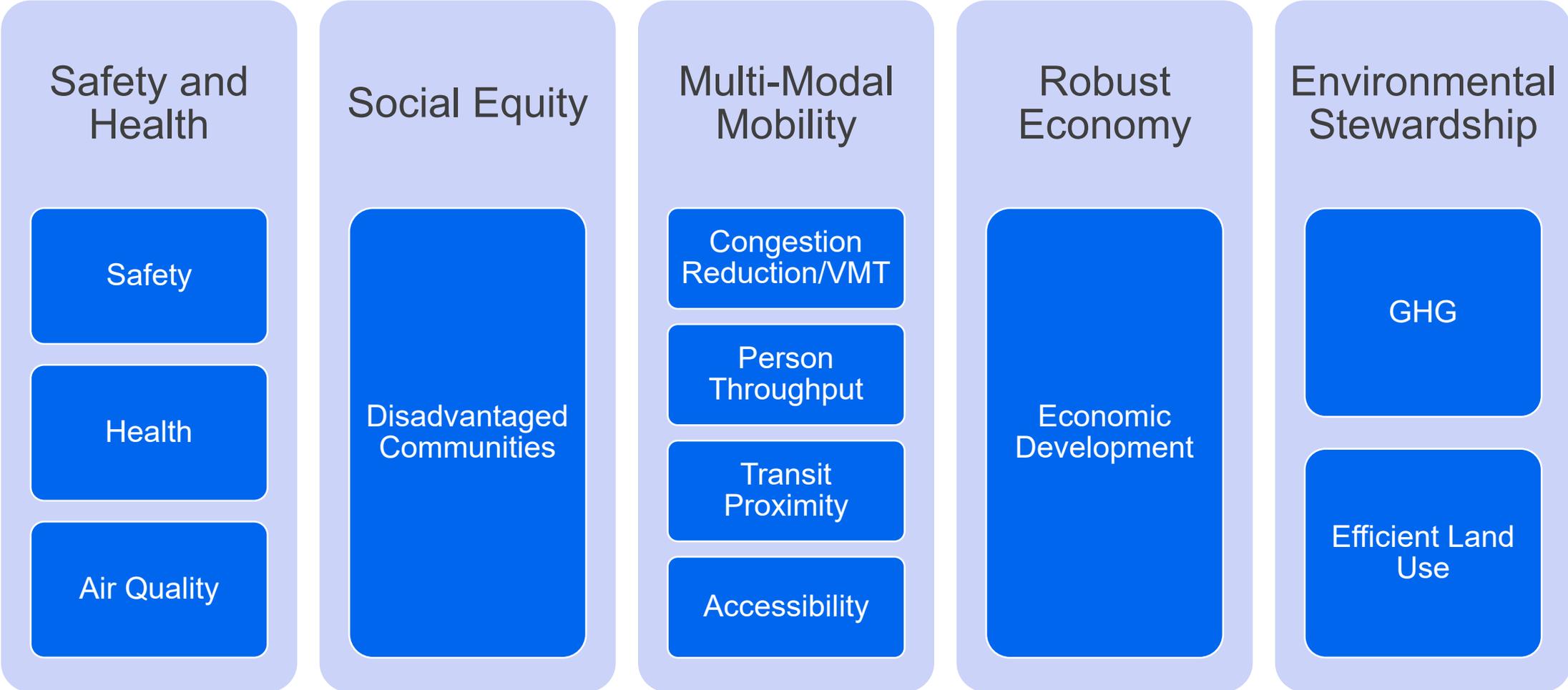
Continued



Social Equity



101 Communities Connected Goals



Results will vary across all projects.

Goals	Safety and Health			Social Equity	Multi-Modal Mobility				Economy	Environment	
Performance Measures	Safety	Health	Air Quality	Disadvantaged Communities	Congestion Reduction/VMT	Person Throughput	Transit Proximity	Accessibility	Economic Development	GHG	Efficient Land Use
Project A	High	Med.	High	High	Low	Low	Med.	Low	Low	Med.	No + Impact
Project B	Med.	Med.	Med.	No + Impact	High	High	High	High	No + Impact	Med.	No + Impact
Project C	Low	Low	Low	Low	Low	Low	Low	Low	High	Low	No + Impact
Project D	No + Impact	No + Impact	No + Impact	No + Impact	No + Impact	No + Impact	High	No + Impact	No + Impact	High	High
Project E	Med.	High	Med.	Low	Low	Low	Low	Med.	Med.	High	High

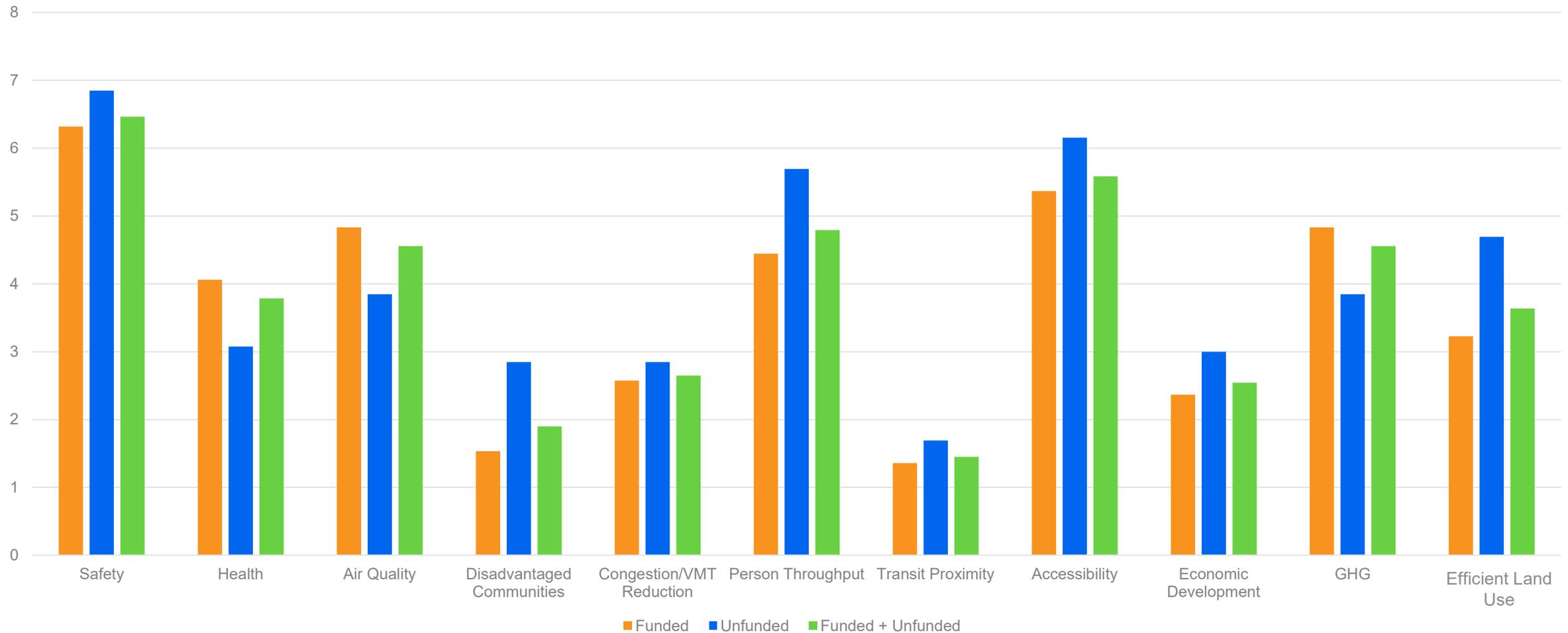
Continued

Criteria are consistent with

- Performance metrics from the CTC CMCP Guidelines
- Performance measures/descriptions from SCAG Connect SoCal technical report
- VCTC CTP Vision statements

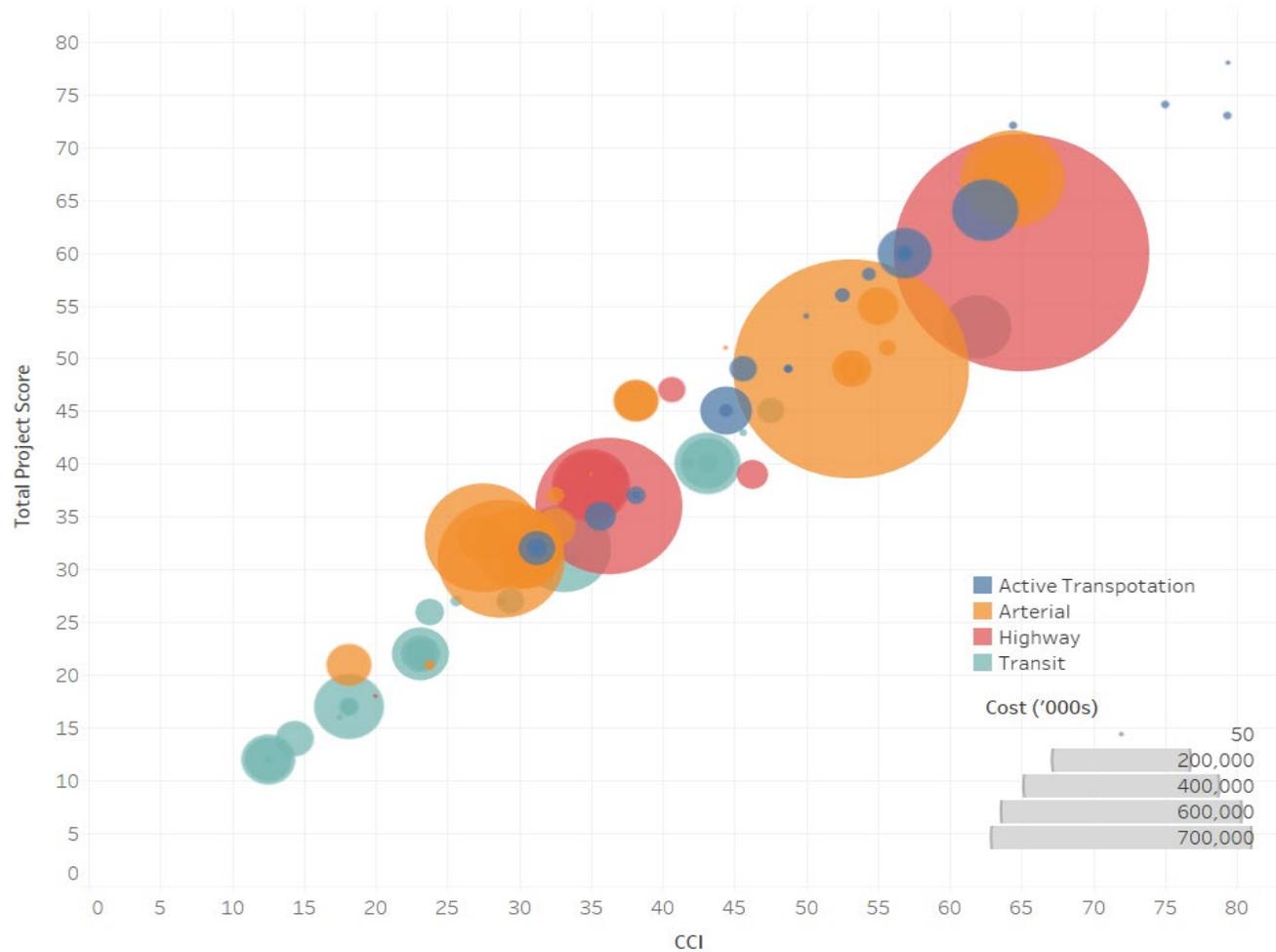
Score	Points
High	10
Medium	7
Low	4
No Benefit	1

Summary of Performance Measure Results

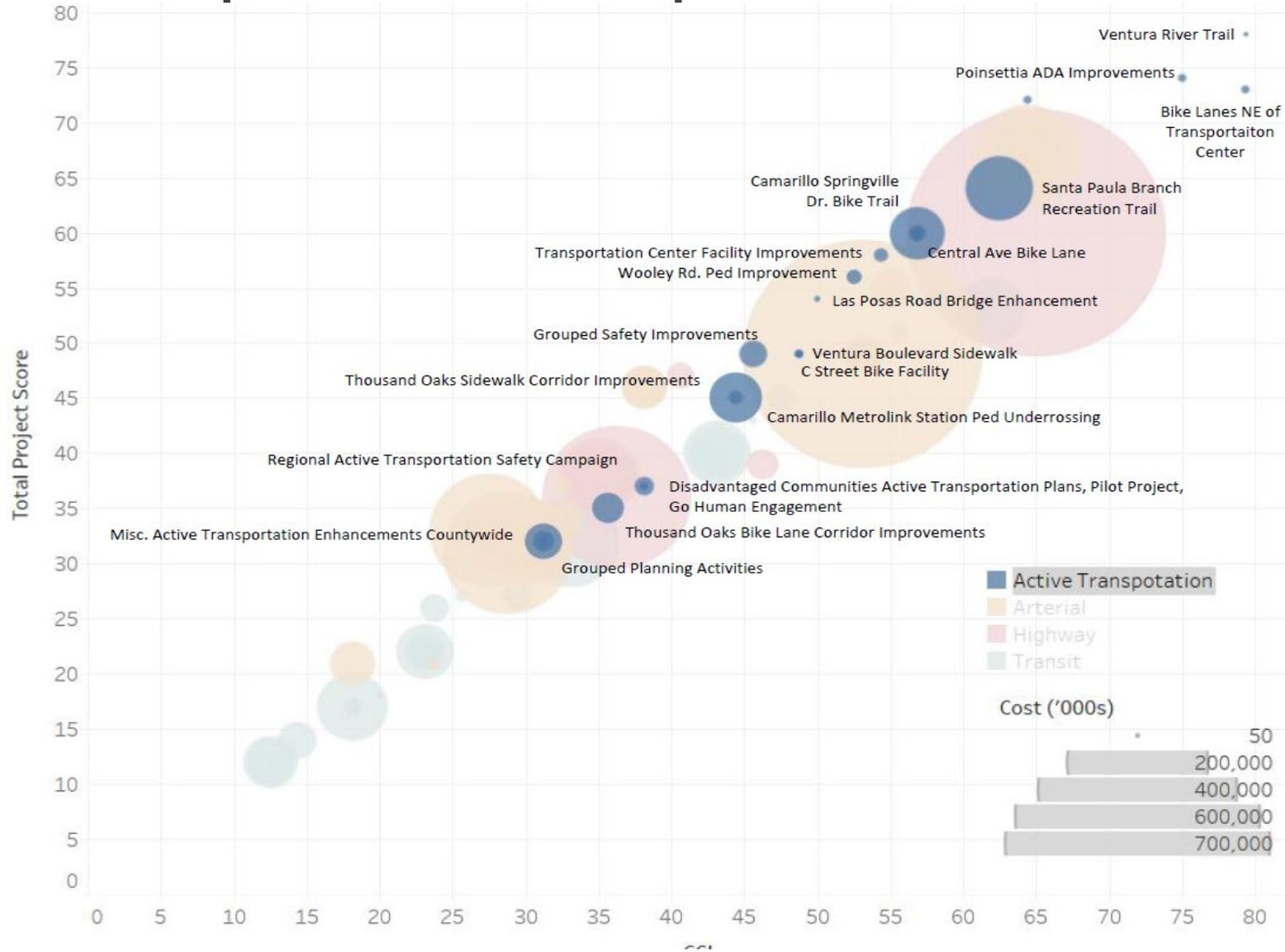


Communities Connected Index (CCI)

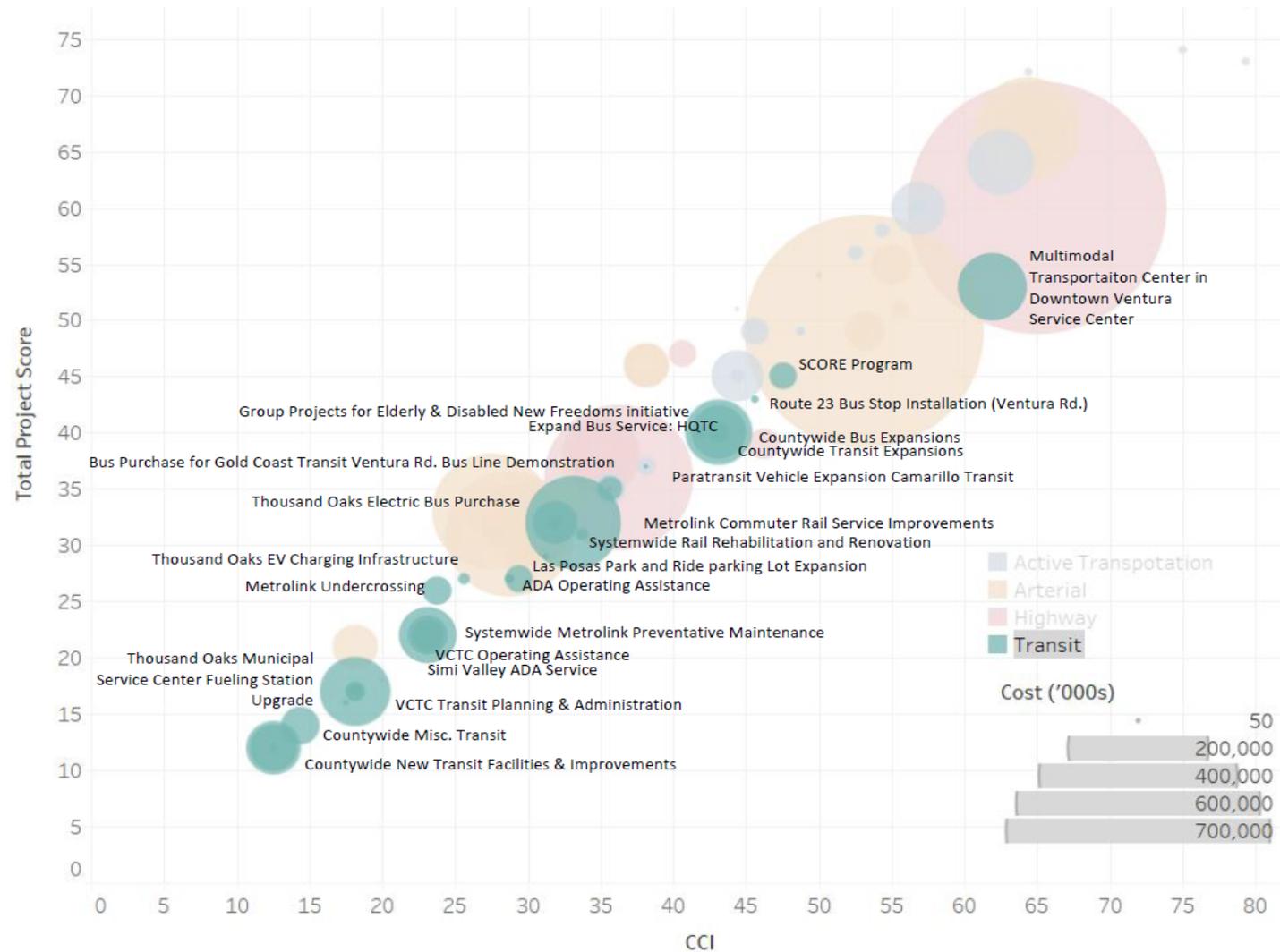
$$CCI = [(Safety \ \& \ Health \times 2) + (Social \ Equity \times 2) + (MultiModal \ Mobility \times 2) + Robust \ Economy + Enviornmental \ Stewardship] * (100/80)$$



Active Transportation Projects



Transit Projects



Transportation Planning Paradigm Shift

- Transportation System (Supply & Demand System)
 - Supply Side: Multimodal Infrastructure
 - Demand Side: Trips
 - Over years, we have mastered the “Supply Side” Analysis
- SB 743, SB 1 and MAP-21
 - From LOS to VMT
 - 10 year program
 - Need to better understand the Demand side

Today – COVID-19

Challenges and Opportunities:

1. Challenges –

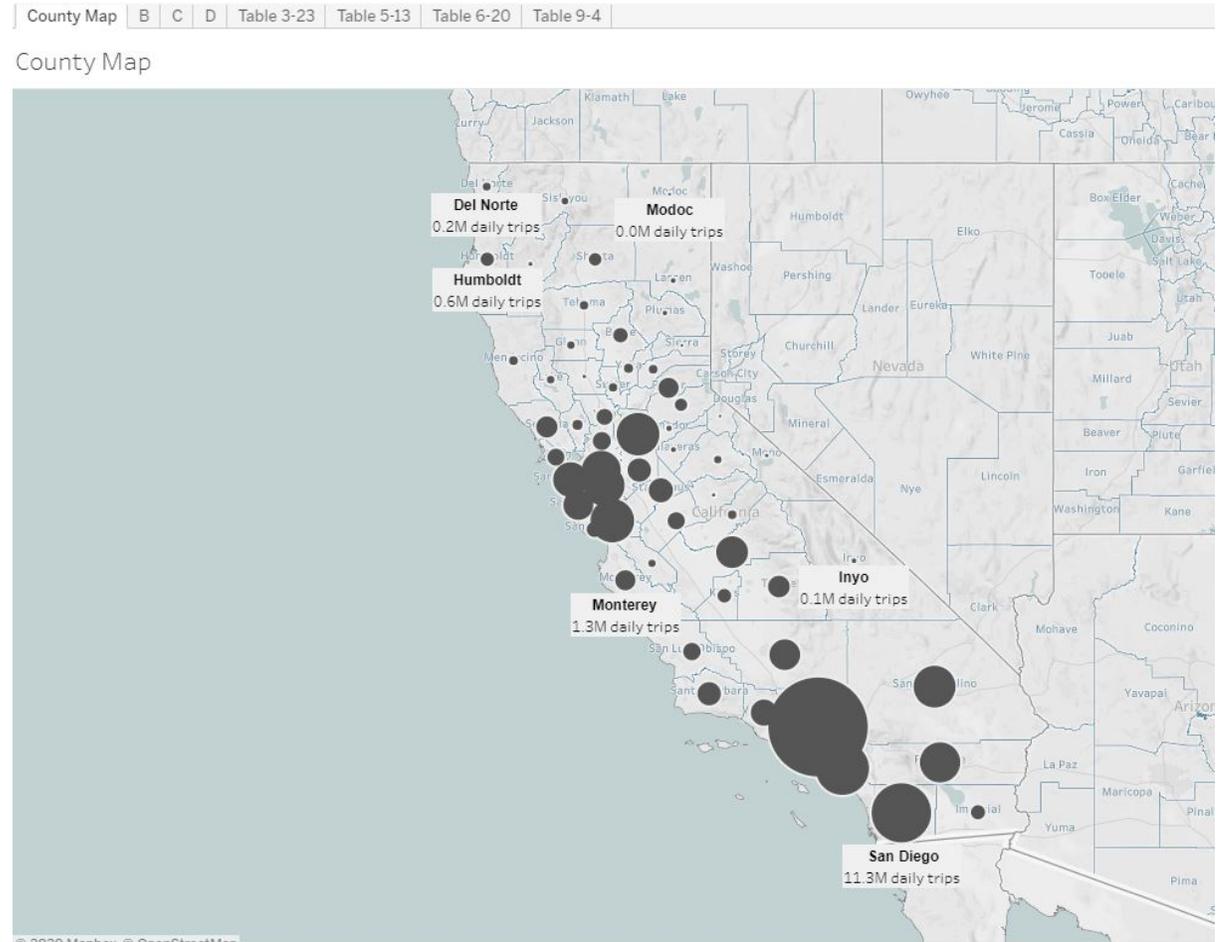
- Transit (60% of riders may not come back)
- Revenue Shortfall

2. Opportunities:

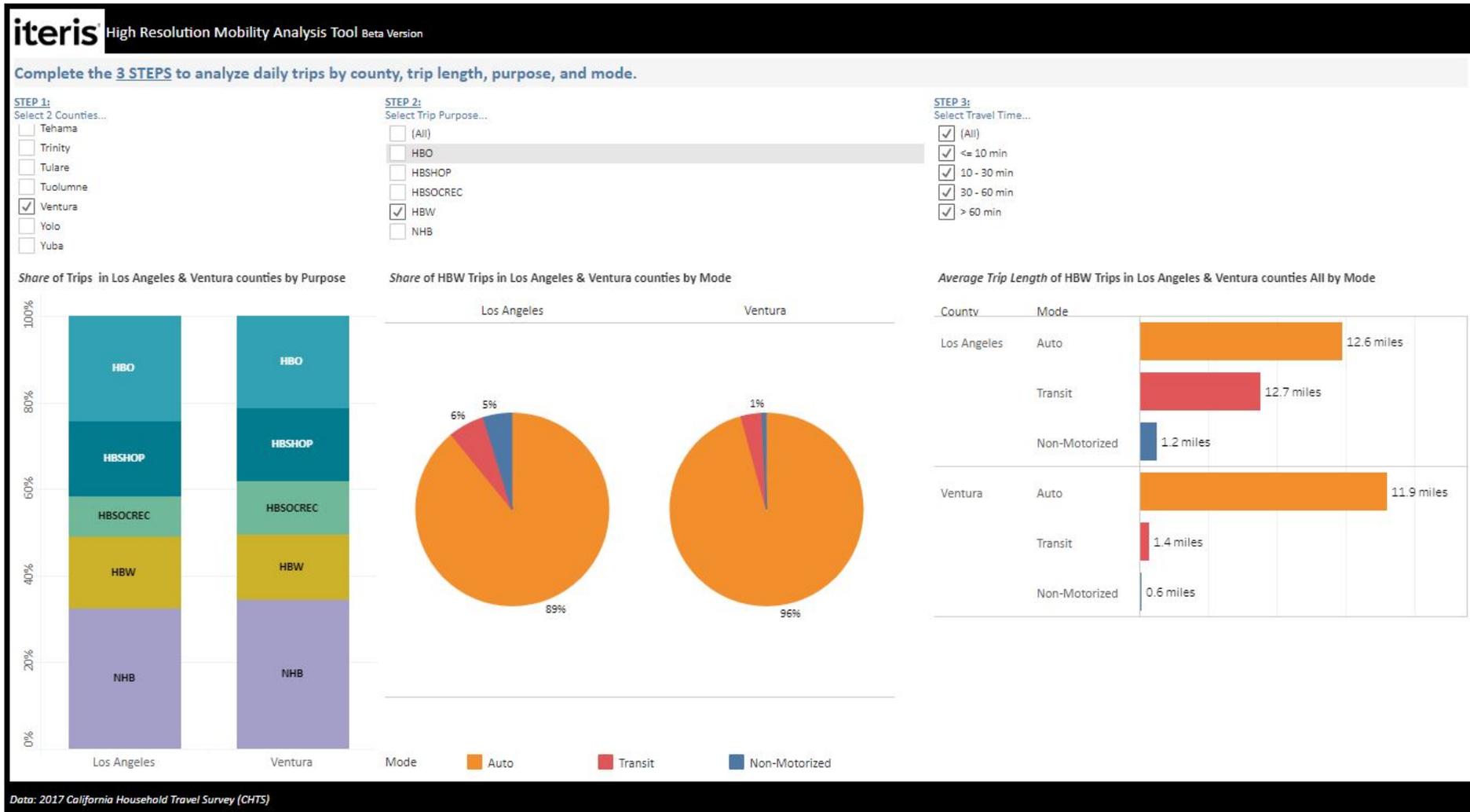
- Telecommute – (20% will continue work at home / CFO's interviews)
- Telehealth – Insurance Companies/Medicare start paying for Telehealth starting March 2020 (My guess: 20% of doctor and hospital visits will be telehealth)
- “Bike Spikes” – Bikes are on back order

Continued

- Transportation Planning:
 - Customer Based
 - Performance Based
- High-Resolution Multimodal Analysis Tool (HiMAT)
 - 2017 Caltrans Household Travel Survey



Continued



High Resolution Mobility Analysis Tool Beta Version

Complete the 3 STEPS to analyze daily trips by county, trip length, purpose, and mode.

STEP 1:
Select 2 Counties...

- Kern
- Kings
- Lake
- Lassen
- Los Angeles
- Madera
- Marin

Share of Trips in Los Angeles & San Bernardino counties by Duration

STEP 2:
Select Trip Length...

- (All)
- <= 10 min
- 10 - 30 min
- 30 - 60 min
- > 60 min

Share of Trips in Los Angeles & San Bernardino counties 10 - 30 min by Purpose

Los Angeles
San Bernardino

STEP 3:
Select Trip Purpose...

- (All)
- HBO
- HBSHOP
- HBSOCREC
- HBW
- NHB

Share of HBSHOP Trips in Los Angeles & San Bernardino counties 10 - 30 min by Mode

Average Trip Length of HBSHOP Trips in Los Angeles & San Bernardino counties 10 - 30 min by Mode

County	Mode	Average Trip Length (miles)
Los Angeles	Auto	4.4 miles
	Transit	2.2 miles
	Non-Motorized	0.7 miles
San Bernardino	Auto	6.9 miles
	Transit	7.4 miles
	Non-Motorized	0.8 miles

Data: 2017 California Household Travel Survey (CHTS)



Thank You.

Mahmoud Ahmadi
mahmadi@iteris.com