SB 1 Programs Benefits Workgroup

July 18, 2019

Laura Pennebaker, Associate Deputy Director

GoToWebinar Logistics

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- Access to handouts
- How to engage in the discussion today 
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Our Plan for Today

- Purpose
- Process
- Schedule
- Discuss Initial Measures and Metrics

Why are we here?

- Need some simple standard measures (by project type) for reporting benefits (across all programs)
- Project Benefits = Accountability

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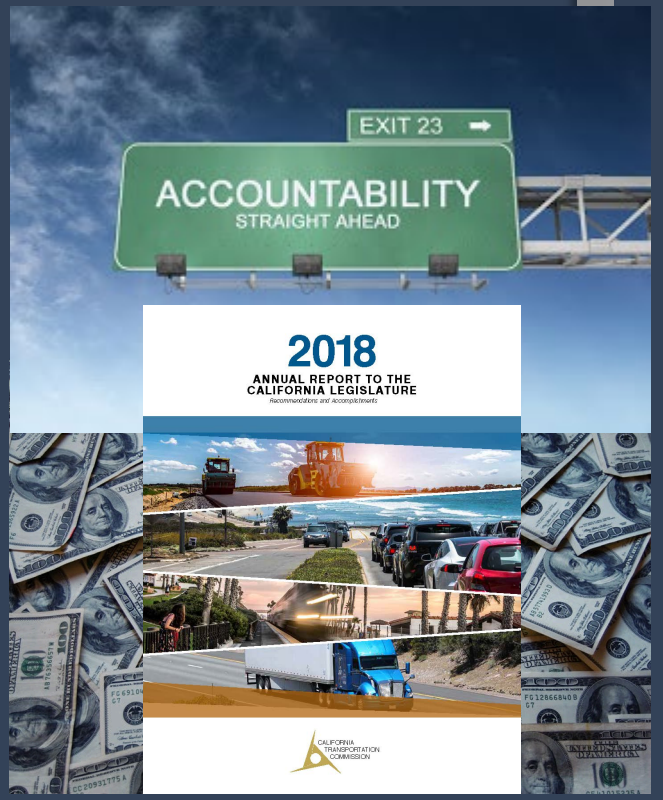
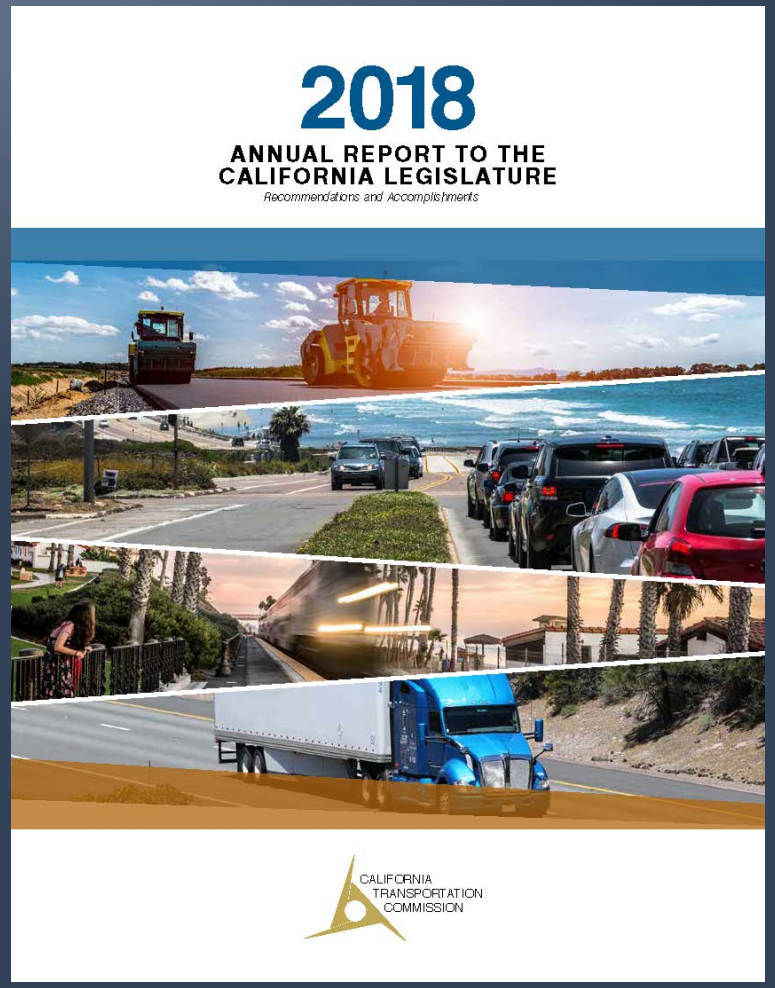


What we ultimately need from this process…



Local Partnership Program:

- ✓ 18 million fewer tons of CO2 emissions over 20 years
- ✓ 2.5 billion hours of time saved over 20 years
- ✓ 76,000 hours in reduced truck delay over 20 years

Solutions for Congested Corridors Program:

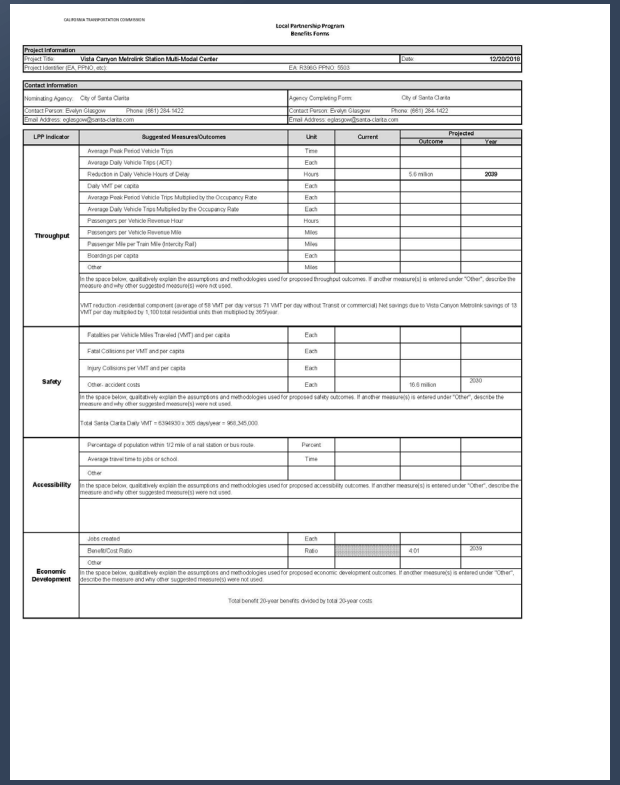
- ✓ 2 million fewer tons of CO2 emissions over 20 years
- ✓ 4 billion fewer vehicle miles traveled by 2040
- ✓ 28 million hours of time saved by 2040
- ✓ 18.7 million increased transit boardings by 2040

Trade Corridor Enhancement Program:

- ✓ 4.8 million fewer tons of CO2 emissions over 20 years
- ✓ 150 million hours of idling time at border crossings reduced
- ✓ 713 million hours of time saved over 20 years
- ✓ 2.1 million hours of truck delay reduced over 20 years
- ✓ 24,000 fewer vehicle miles traveled per day

Cycle 1 Benefits Recap

- Used a Benefits Form specific to each program that was completed as part of Baseline Agreement



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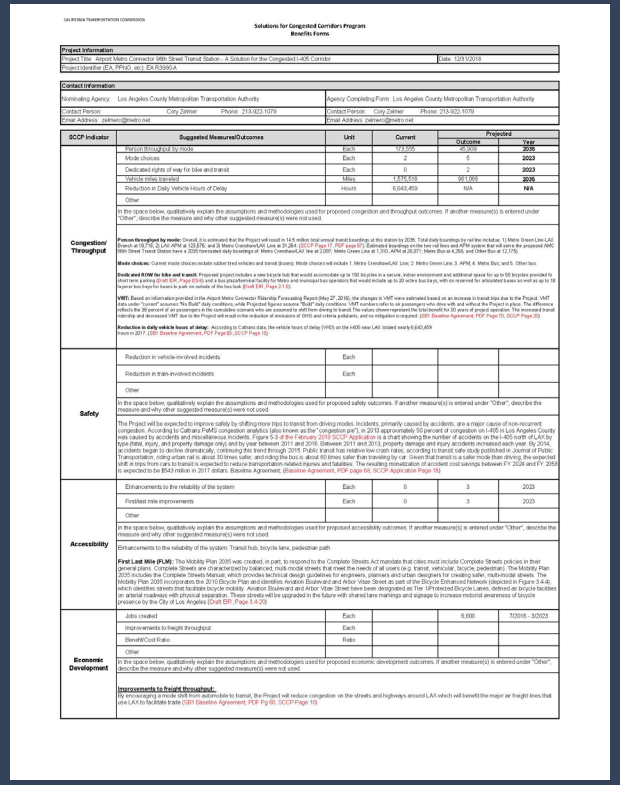
Local Partnership Program
Benefits Forms

Project Information		
Project Title:	Vista Canyon Metrolink Station Multi-Modal Center	Date: 12/20/2016
Project Identifier (EA, PPNO, etc.):	EA: R3860-PPNO: 5503	

Contact Information			
Nominating Agency:	City of Santa Clarita	Agency Completing Form:	City of Santa Clarita
Contact Person: Evelyn Glasgow	Phone: (661) 284-1422	Contact Person: Evelyn Glasgow	Phone: (661) 284-1422
Email Address: eglasgow@santa-clarita.com		Email Address: eglasgow@santa-clarita.com	

LPP Indicator	Suggested Measure/Outcomes	Unit	Current	Projected	
				Outcome	Year
Throughput	Average Peak Period Vehicle Trips	Time			
	Average Daily Vehicle Trips (ADT)	Each			
	Reduction in Daily Vehicle Hours of Delay	Hours		5.6 million	2039
	Daily VMT per capita	Each			
	Average Peak Period Vehicle Trips Multiplied by the Occupancy Rate	Each			
	Average Daily Vehicle Trips Multiplied by the Occupancy Rate	Each			
	Passengers per Vehicle Revenue Hour	Hours			
	Passengers per Vehicle Revenue Mile	Miles			
	Passenger Mile per Train Mile (Intercity Rail)	Miles			
	Boardings per capita	Each			
	Other	Miles			
	In the space below, qualitatively explain the assumptions and methodologies used for proposed throughput outcomes. If another measure(s) is entered under "Other", describe the measure and why other suggested measure(s) were not used.				
	VMT reduction -residential component (average of 58 VMT per day versus 71 VMT per day without Transit or commercial) Net savings due to Vista Canyon Metrolink savings of 13 VMT per day multiplied by 1,100 total residential units then multiplied by 365/year.				
Safety	Fatalities per Vehicle Miles Traveled (VMT) and per capita	Each			
	Fatal Collisions per VMT and per capita	Each			
	Injury Collisions per VMT and per capita	Each			2020
	Other- accident costs	Each		10.6 million	
	In the space below, qualitatively explain the assumptions and methodologies used for proposed safety outcomes. If another measure(s) is entered under "Other", describe the measure and why other suggested measure(s) were not used.				
	Total Santa Clarita Daily VMT = 6394930 x 365 days/year = 969,345,000.				
Accessibility	Percentage of population within 1/2 mile of a rail station or bus route	Percent			
	Average travel time to jobs or school.	Time			
	Other				
	In the space below, qualitatively explain the assumptions and methodologies used for proposed accessibility outcomes. If another measure(s) is entered under "Other", describe the measure and why other suggested measure(s) were not used.				
Economic Development	Jobs created	Each			
	Benefit/Cost Ratio	Ratio		4.01	2039
	Other				
	In the space below, qualitatively explain the assumptions and methodologies used for proposed economic development outcomes. If another measure(s) is entered under "Other", describe the measure and why other suggested measure(s) were not used.				
	Total benefit 20-year benefits divided by total 20-year costs				



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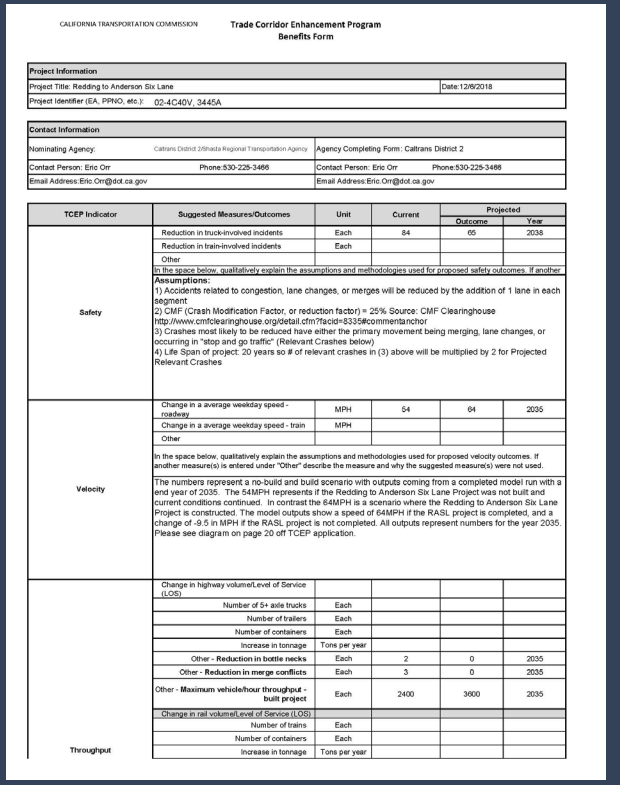
Solutions for Congested Corridors Program
Benefits Forms

Project Information		
Project Title:	Airport Metro Connector 96th Street Transit Station - A Solution for the Congested I-405 Corridor	Date: 12/13/2018
Project Identifier (EA, PPNO, etc.):	EA R3990-A	

Contact Information			
Nominating Agency:	Los Angeles County Metropolitan Transportation Authority	Agency Completing Form:	Los Angeles County Metropolitan Transportation Authority
Contact Person:	Cory Zelmer Phone: 213-922-1079	Contact Person:	Cory Zelmer Phone: 213-922-1079
Email Address:	zelmerc@metro.net	Email Address:	zelmerc@metro.net

SCCP Indicator	Suggested Measure/Outcomes	Unit	Current	Projected	
				Outcome	Year
Congestion/ Throughput	Person throughput by mode	Each	173,555	45,909	2035
	Mode choices	Each	2	5	2023
	Dedicated rights of way for bike and transit	Each	0	2	2023
	Vehicle miles traveled	Miles	1,575,518	361,066	2035
	Reduction in Daily Vehicle Hours of Delay	Hours	6,643,459	N/A	N/A
	Other				
	In the space below, qualitatively explain the assumptions and methodologies used for proposed congestion and throughput outcomes. If another measure(s) is entered under "Other", describe the measure and why other suggested measure(s) were not used.				
	Person throughput by mode: Overall, it is estimated that the Project will result in 14.5 million total annual transit boardings at this station by 2035. Total daily boardings by rail line included: 1) Metro Green Line LAX Branch at 18,736; 2) LAX APM at 12,876; and 3) Metro Crenshaw/LAX Line at 31,264. (SCCP Page 17, PDF page 67) Estimated boardings on the two rail lines and APM system that will serve the proposed AMC 96th Street Transit Station have a 2035 forecasted daily boardings of: Metro Crenshaw/LAX line at 2,090; Metro Green Line at 1,390; APM at 26,071; Metro Bus at 4,266; and Other Bus at 12,076.				
	Mode choices: Current mode choices include rubber tired vehicles and transit (buses). Mode choices will include 1. Metro Crenshaw/LAX Line; 2. Metro Green Line; 3. APM; 4. Metro Bus; and 5. Other bus.				
	Docks and ROW for bike and transit: Proposed project includes a new bicycle hub that would accommodate up to 150 bicycles in a secure, indoor environment and additional space for up to 50 bicycles provided in short term parking (Draft EIR, Page ES-6) and a bus plaza/terminal facility for Metro and municipal bus operators that would include up to 20 active bus bays, with six reserved for articulated buses as well as up to 10 layover bus bays for buses to park on outside of the bus bulb (Draft EIR, Page 2-13).				
	VMT: Based on information provided in the Airport Metro Connector Ridership Forecasting Report (May 27, 2016), the changes in VMT were estimated based on an increase in transit trips due to the Project. VMT data under "current" assumes "No Build" daily conditions, while Projected figures assume "Build" daily conditions. VMT numbers refer to all passengers who drive with and without the Project in place. The difference reflects the 38 percent of air passengers in the cumulative scenario who are assumed to shift from driving to transit. The values shown represent the total benefit for 30 years of project operation. The increased transit ridership and decreased VMT due to the Project will result in the reduction of emissions of GHG and criteria pollutants, and no mitigation is required. (SBX Baseline Agreement, PDF Page 70, SCCP Page 30)				
	Reduction in daily vehicle hours of delay: According to Caltrans data, the vehicle hours of delay (VHD) on the I-405 near LAX totaled nearly 6,643,459 hours in 2017. (SBX Baseline Agreement, PDF Page 66, SCCP Page 19).				
Safety	Reduction in vehicle-involved incidents	Each			
	Reduction in train-involved incidents	Each			
	Other				
	In the space below, qualitatively explain the assumptions and methodologies used for proposed safety outcomes. If another measure(s) is entered under "Other", describe the measure and why other suggested measure(s) were not used.				
	The Project will be expected to improve safety by shifting more trips to transit from driving modes. Incidents, primarily caused by accidents, are a major cause of non-recurrent congestion. According to Caltrans PeMS congestion analytics (also known as the "congestion pie"), in 2018 approximately 50 percent of congestion on I-405 in Los Angeles County was caused by accidents and miscellaneous incidents. Figure 5-3 of the February 2018 SCCP Application is a chart showing the number of accidents on the I-405 north of LAX by type (fatal, injury, and property damage only) and by year between 2011 and 2016. Between 2011 and 2013, property damage and injury accidents increased each year. By 2014, accidents began to decline dramatically, continuing this trend through 2015. Public transit has relative low crash rates, according to transit safe study published in Journal of Public Transportation, riding urban rail is about 30 times safer, and riding the bus is about 50 times safer than traveling by car. Given that transit is a safer mode than driving, the expected shift in trips from cars to transit is expected to reduce transportation-related injuries and fatalities. The resulting monetization of accident cost savings between FY 2024 and FY 2058 is expected to be $543 million in 2017 dollars. Baseline Agreement, (Baseline Agreement, PDF page 66, SCCP Application Page 19)				
Accessibility	Enhancements to the reliability of the system	Each	0	3	2023
	Finishest mile improvements	Each	0	3	2023
	Other				
	In the space below, qualitatively explain the assumptions and methodologies used for proposed accessibility outcomes. If another measure(s) is entered under "Other", describe the measure and why other suggested measure(s) were not used.				
	Enhancements to the reliability of the system: Transit hub, bicycle lane, pedestrian path				
	First Last Mile (FLM): The Mobility Plan 2035 was created, in part, to respond to the Complete Streets Act mandate that cities must include Complete Streets policies in their general plans. Complete Streets are characterized by balanced, multi-modal streets that meet the needs of all users (e.g. transit, vehicular, bicycle, pedestrian). The Mobility Plan 2035 includes the Complete Streets Manual, which provides technical design guidelines for engineers, planners and urban designers for creating safer, multi-modal streets. The Mobility Plan 2035 incorporates the 2010 Bicycle Plan and identifies Aviation Boulevard and Arbor Vitae Street as part of the Bicycle Enhanced Network (depicted in Figure 3.4-4), which identifies streets that facilitate bicycle mobility. Aviation Boulevard and Arbor Vitae Street have been designated as Tier 1/Protected Bicycle Lanes, defined as bicycle facilities on arterial roadways with physical separation. These streets will be upgraded in the future with shared lane markings and signage to increase motorist awareness of bicycle presence by the City of Los Angeles (Draft EIR, Page 3.4-23)				
Economic Development	Jobs created	Each		6,800	7/2016 - 3/2023
	Improvements to freight throughput	Each			
	Benefit/Cost Ratio	Ratio			
	Other				
	In the space below, qualitatively explain the assumptions and methodologies used for proposed economic development outcomes. If another measure(s) is entered under "Other", describe the measure and why other suggested measure(s) were not used.				
	Improvements to freight throughput: By encouraging a mode shift from automobile to transit, the Project will reduce congestion on the streets and highways around LAX which will benefit the major air freight lines that use LAX to facilitate trade (SBX Baseline Agreement, PDF Pg 66, SCCP Page 19)				



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Trade Corridor Enhancement Program
Benefits Form

Project Information	
Project Title: Redding to Anderson Six Lane	Date:12/6/2018
Project Identifier (EA, PPNO, etc.): 02-4C40V, 3445A	

Contact Information			
Nominating Agency:	Caltrans District 2/Shasta Regional Transportation Agency	Agency Completing Form: Caltrans District 2	
Contact Person: Eric Orr	Phone:530-225-3466	Contact Person: Eric Orr	Phone:530-225-3466
Email Address:Eric.Orr@dot.ca.gov		Email Address:Eric.Orr@dot.ca.gov	

TCEP Indicator	Suggested Measures/Outcomes	Unit	Current	Projected	
				Outcome	Year
Safety	Reduction in truck-involved incidents	Each	84	65	2038
	Reduction in train-involved incidents	Each			
	Other				
	In the space below, qualitatively explain the assumptions and methodologies used for proposed safety outcomes. If another measure(s) is entered under "Other" describe the measure and why the suggested measure(s) were not used.				
	Assumptions: 1) Accidents related to congestion, lane changes, or merges will be reduced by the addition of 1 lane in each segment 2) CMF (Crash Modification Factor, or reduction factor) = 25% Source: CMF Clearinghouse http://www.cmfclearinghouse.org/detail.cfm?facid=8335#commentanchor 3) Crashes most likely to be reduced have either the primary movement being merging, lane changes, or occurring in "stop and go traffic" (Relevant Crashes below) 4) Life Span of project: 20 years so # of relevant crashes in (3) above will be multiplied by 2 for Projected Relevant Crashes				
Velocity	Change in a average weekday speed - roadway	MPH	54	64	2035
	Change in a average weekday speed - train	MPH			
	Other				
	In the space below, qualitatively explain the assumptions and methodologies used for proposed velocity outcomes. If another measure(s) is entered under "Other" describe the measure and why the suggested measure(s) were not used.				
	The numbers represent a no-build and build scenario with outputs coming from a completed model run with a end year of 2035. The 54MPH represents if the Redding to Anderson Six Lane Project was not built and current conditions continued. In contrast the 64MPH is a scenario where the Redding to Anderson Six Lane Project is constructed. The model outputs show a speed of 64MPH if the RASL project is completed, and a change of -9.5 in MPH if the RASL project is not completed. All outputs represent numbers for the year 2035. Please see diagram on page 20 off TCEP application.				
Throughput	Change in highway volume/Level of Service (LOS)				
	Number of 5+ axle trucks	Each			
	Number of trailers	Each			
	Number of containers	Each			
	Increase in tonnage	Tons per year			
	Other - **Reduction in bottle necks**	Each	2	0	2035
	Other - **Reduction in merge conflicts**	Each	3	0	2035
	Other - **Maximum vehicle/hour throughput - built project**	Each	2400	3600	2035
	Change in rail volume/Level of Service (LOS)				
	Number of trains	Each			
	Number of containers	Each			
	Increase in tonnage	Tons per year			

Cycle 1 Benefits Recap

- Benefit measures not consistent across programs
- Need more stakeholder input on measures
- Benefits Form is useful but needs improvement
- This is our chance to improve the content and process!

We need your help to….

- Standardize our terminology
- Agree on some consistent measures
- Focus on statutorily required measures
- Focus on quality vs quantity
- Focus on quantitative measures (while maintaining qualitative measures)
- Determine a format for providing project benefits as required information in the project application

Cycle 2 Benefits Form Approach

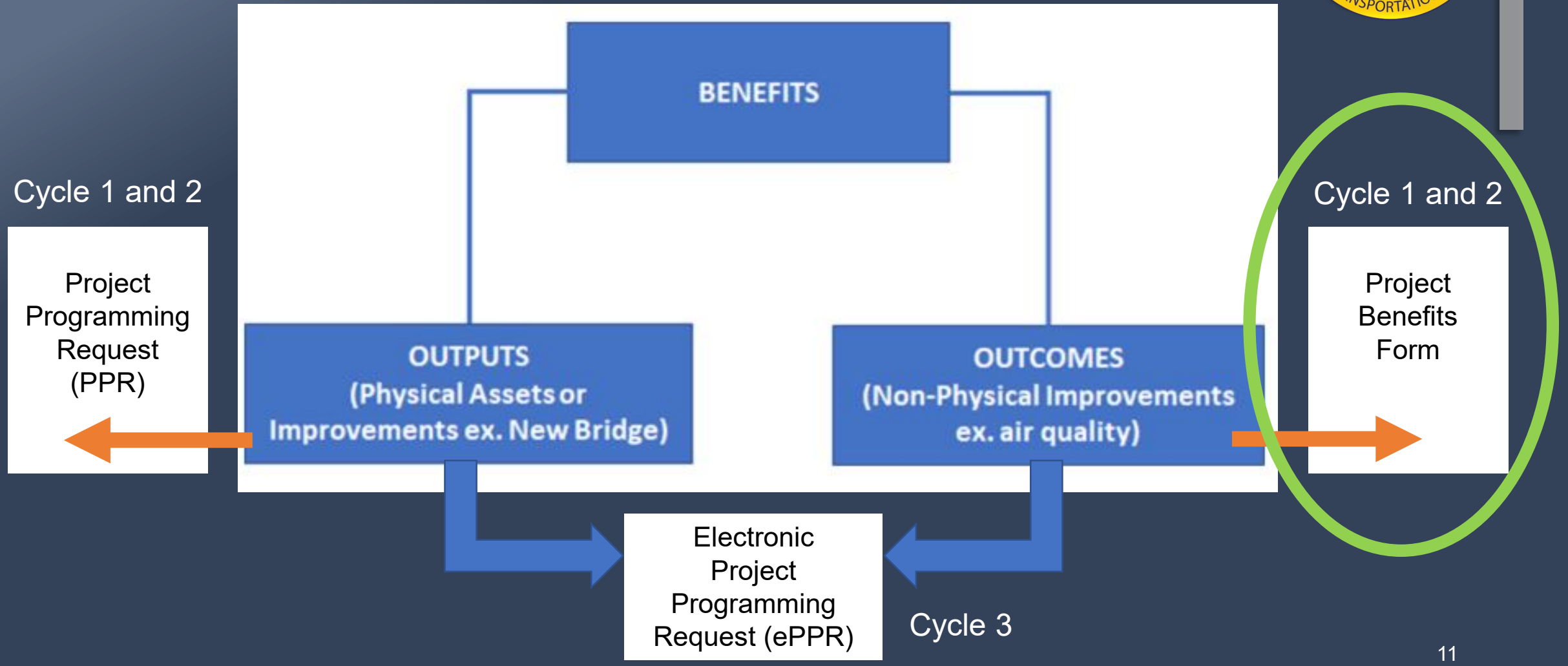
Using workgroup feedback, CTC staff will:

- Determine if we are we asking for the right information
- Define some consistent measures/metrics across programs (LPP, SCCP, TCEP) by project type
- Recommend measures/metrics for inclusion in program-specific guidelines (further vetted through that stakeholder process)
- Benefits information provided as a required part of the Project Application

Key points to keep us focused….

- Find measures and metrics (based on statutory requirements) that allow us to clearly and easily report and aggregate program-wide benefits (to the public, legislature etc.)
- This effort will NOT focus on how project benefits are utilized in the evaluation process. That will be discussed through the individual program guidelines processes.
- The development of standard measures and metrics does not limit your ability to use additional measures/metrics in your application.

Benefits Reporting Approach



Objective – Standard Terms

- Capture **Outputs** - the actual infrastructure
- Capture **Outcomes** – the non-physical improvements
- Collectively these are the **Project Benefits**

Outputs
Miles of Bike Lanes
# of Transit Stations
Miles of HOV Lanes
# of Buses

Outcomes
Congestion Reduction
Air Quality Improvement
Improved Safety
Economic Development

Is the workgroup OK with these terms?

Objective – Standard Terms

- **Measures** – what outcome is being measured?
- **Metrics** – how it is being measured?

Measure an Outcome	Metric
Congestion	Peak Hour Travel Time Index
Safety	Annual # of Fatal Injury Collisions per Capita
Air Quality	Criteria Pollutant Reduction
Economic Development	# of Jobs Created

Is the workgroup OK with these terms?

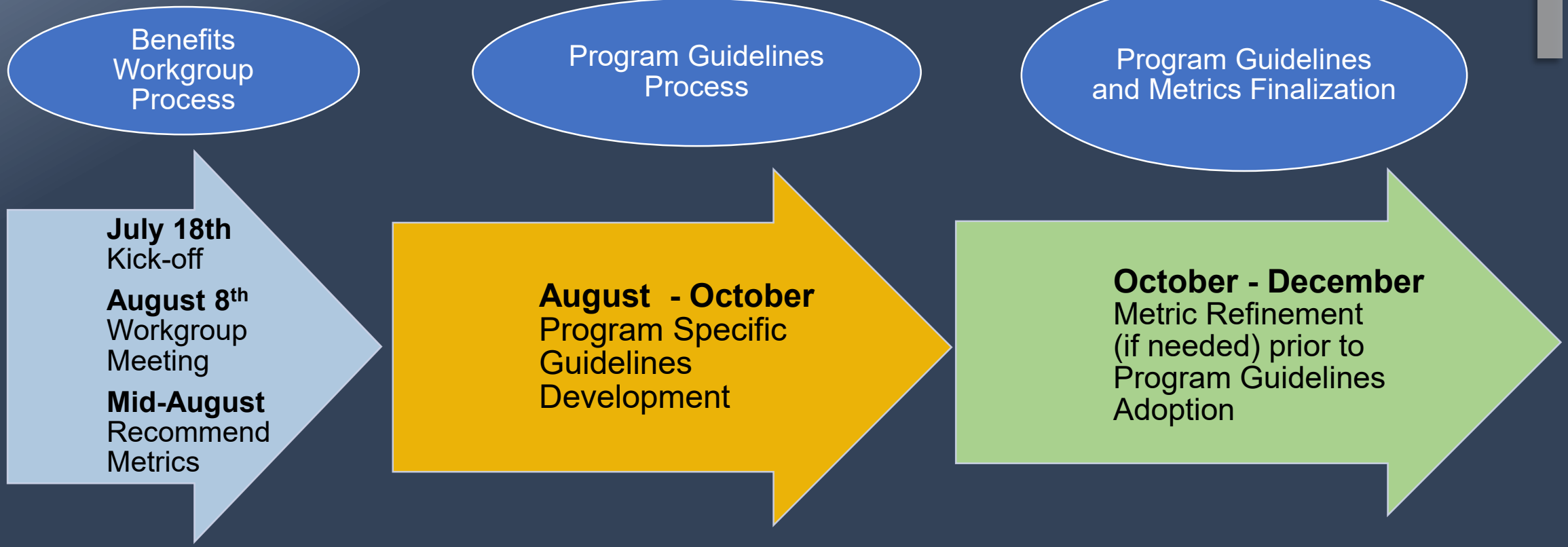
Objective – Consistent & Quantitative

- Use statutory criteria to set the scope for measures
- Identify common measures/metrics for Project Benefits based on Project Type
- Discuss and agree on what everyone can (reasonably) measure and report in an application
- Focus on quantitative measures, we need numbers to tell our story
- Storytelling is further enhanced by the use of qualitative measures and information

Objective – Reporting Project Benefits

- Stakeholders help define the measures
- Staff is committed to a clear, simple place to include measures in the application
- Reduce redundant information requests
- Consistent, standardized information in the application allows us to easily aggregate project benefits
- Improve accuracy, accountability, and transparency

Process and Schedule



Discussion: Initial Draft Metrics

Measures	Initial Draft Metrics [Current vs. Projected with Project]		Applicable Program(s)		
			LPP	SCCP	TCEP
Congestion*	Non-Freight: • County or Regionwide VMT per Capita (horizon year will differ between applicants) [Transit, Roadway] • Peak Hour Travel Time Index (ratio of peak hour travel time to free flow speed) [Transit, Roadway] • % Mode Share (SOV, Carpool, Transit, Bike, Ped) [All project types] • Passenger Hours of Delay/Year [Transit, Roadway]	Freight (TCEP only): • Daily Vehicle Hours of Delay • Reduction in Annual Truck Trips (due to mode shift) • Reduction in Annual Truck Miles Traveled (due to mode shift)	X	X	X
Throughput*	Non-Freight: • Peak Hour Person Trips by Mode (SOV, Carpool, Transit, Bike, Ped) across a screen line [All project types]	Freight (TCEP only): • Change in Highway Volume/Level of Service (# of: 5+ axle trucks, trailers, containers; increased tonnage) • Change in Rail Volume/Level of Service (# of trains, # of containers, increased tonnage) • Change in Port Volume (# of containers, increased tonnage and value)	X	X	X
Reliability*	Freight (TCEP only): • Reduction in travel time variability, typical origin/destination pairs				X
Velocity*	Freight (TCEP only): • Change in average weekday speed – roadway • Change in average weekday speed - train				X
Safety*	Non-Freight: • Annual number of fatal, injury, and property damage only collisions: Total, per VMT, and per Capita (by Mode – Auto, Transit, Bike, Ped) [All project types]	Freight: • Reduction in truck-involved incidents • Reduction in train-involved incident	X	X	X
Accessibility*	Non-Freight: • Average travel time to key destinations (work, school, health care, recreation) by mode [All project types]		X	X	
Air Quality/GHG*	Non-Freight and Freight [All project types]: • Reduction in Particulate Matter (PM 2.5, PM 10) • Reduction in Carbon Dioxide (CO2) • Reduction in Volatile Organic Compounds (VOC) • Reduction in Sulphur Dioxides (SOx) • Reduction in Carbon Monoxide (CO) • Reduction in Nitrogen Oxides (NOx)		X	X	X
Economic Development*	Non-Freight and Freight [All project types]: • Jobs Created • Benefit/Cost Ratio		X	X	X
Efficient Land Use*	Non-Freight (SCCP only) [All project types]: • Quantitative Metric TBD			X	

* Required performance measurement areas for SCCP and/or TCEP pursuant to SHC Sections 2394 and 2192

SB 1 Programs Initial Draft Metrics - July 18, 2019

Other Discussion Areas

- Units, Methodology, and Data Sources
- Urban vs. Rural Metrics
- Alternative Metrics
- TAMP and SHS Checklist Items
- Format
- Others?

Next Steps

- Evaluate Initial Draft Metrics
- Written comments to Laura.Pennebaker@catc.ca.gov by August 1st
- Workgroup meets again to consider revised metrics on August 8th
- Is Webinar effective?

Thank You

More Information

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RebuildingCA.ca.gov

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