



Caltrans System Investment Strategy (CSIS)

Workshop: CAPTI Alignment Metrics Refinements – Freight Sustainability and Efficiency Metric

OCTOBER 2025

House Keeping Items



Please mute your microphone when you are not speaking



Use emojis during the session to stay engaged



You can utilize the Q&A function to write your questions or comments



Hold live questions until the end and use the 'raise hand' function to speak



This session is recorded



All materials will be provided to the attendees after the workshop

Agenda

1 – Introductions

2 – Context for the Metrics' Refinements

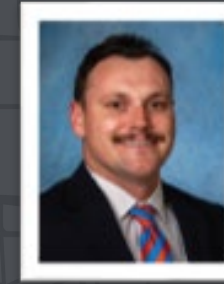
3 – Changes to the Freight Metrics

4 – Feedback on the Freight Metric

5 – Q & A



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Purpose for the Refinements

Caltrans System Investment Strategy (CSIS)



CSIS operationalizes Climate Action Plan for Transportation Infrastructure (CAPTI) Strategy 4.1



Planning-forward prioritization investment framework



Guides decision making for nominations and prioritization of state and federal discretionary funding

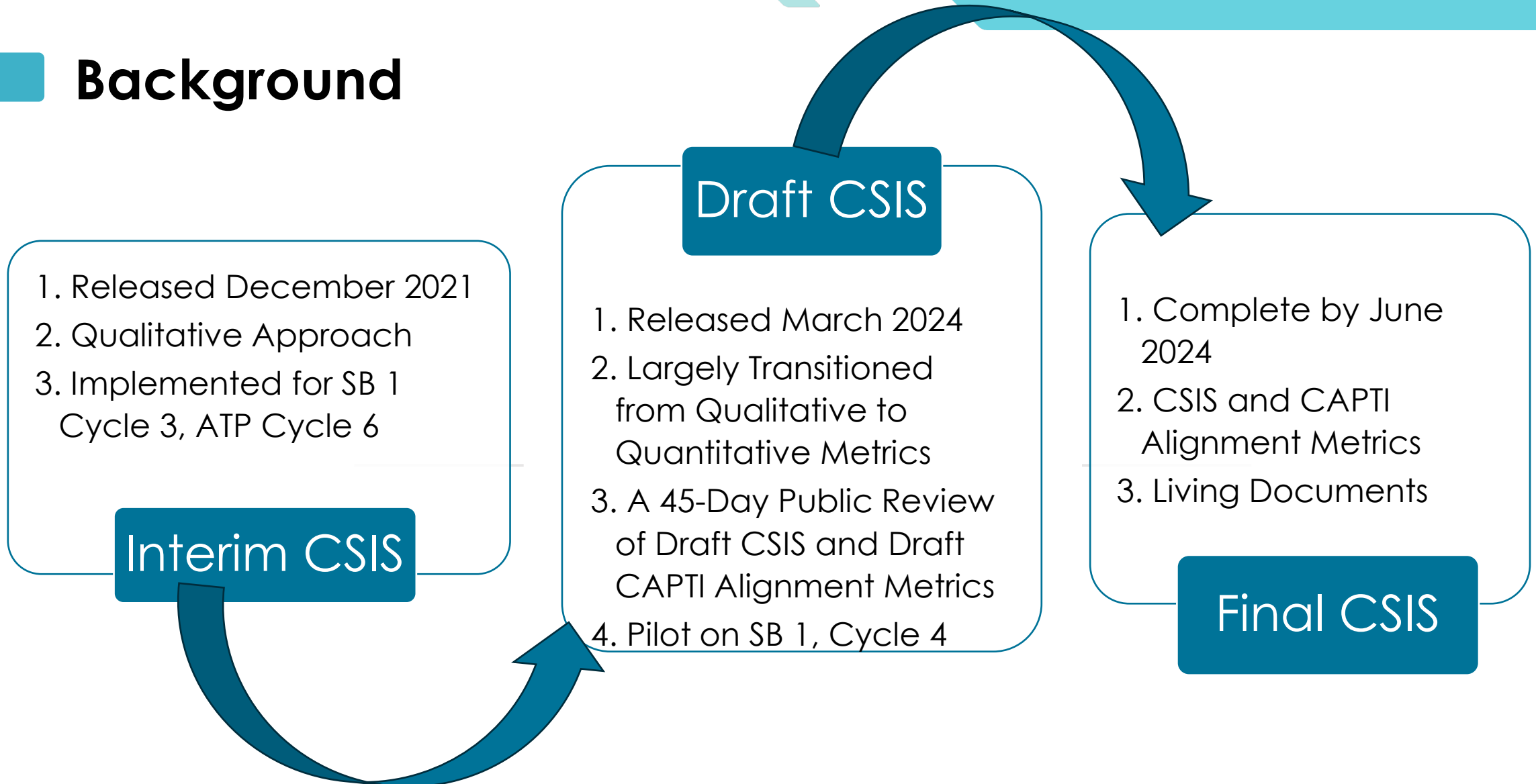


Assesses how projects perform across various CAPTI Guiding Principles and CTP Goals.

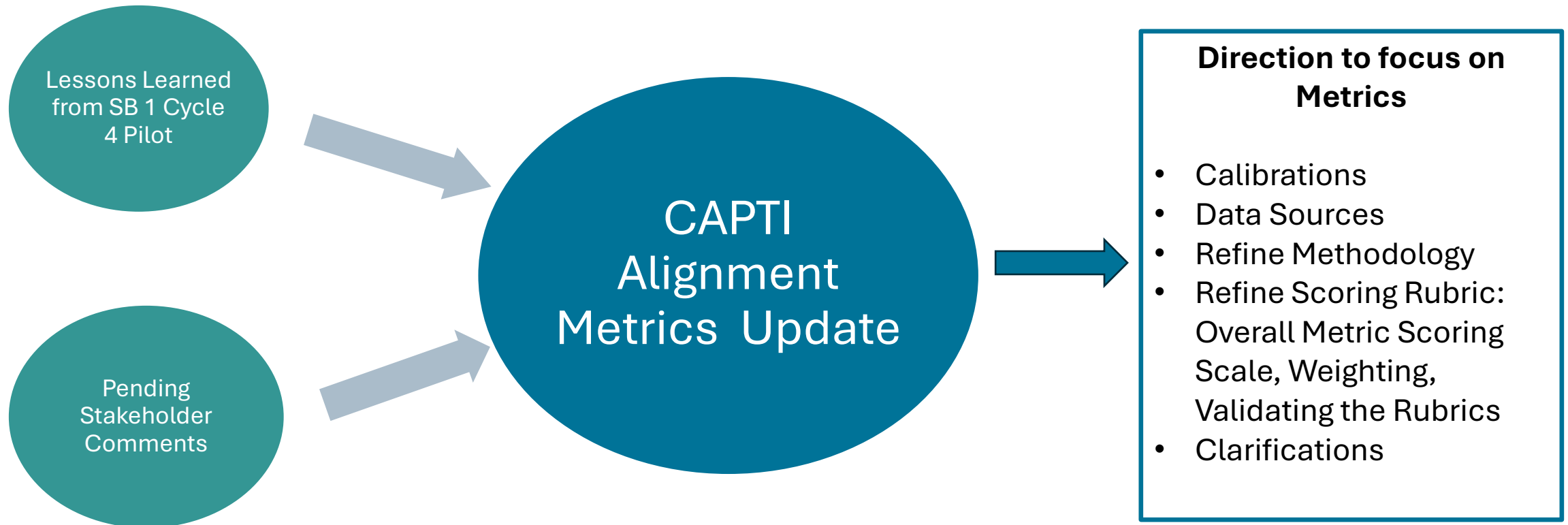


Data-and-performance based approach with 11 CAPTI Alignment Metrics

Background



Context for Refined CAPTI Alignment Metric



Spectrum of Changes to Metrics

Methodological Update

- Safety
- Land Use and Natural and Working Lands
- **Freight Sustainability and Efficiency**
- ZEV Infrastructure

Calibrations

- Accessibility
- DAC-Accessibility
- DAC-Traffic Impacts
- Passenger Mode Shift

Enhanced Clarity

- Vehicle Miles Traveled (VMT)
- Public Engagement
- Climate Adaptation and Resiliency

Key Steps

- Prepared two Freight Metric Alternatives
- Workshopped both Alternatives with California Freight Advisory Committee (CFAC) Members on July 30
- Refined the Metric based on the feedback—published in the Draft Public Review Document
- Continual work with Internal Divisions/Office — more refinements presented today



Freight Metric

CAPTI Guiding Principle

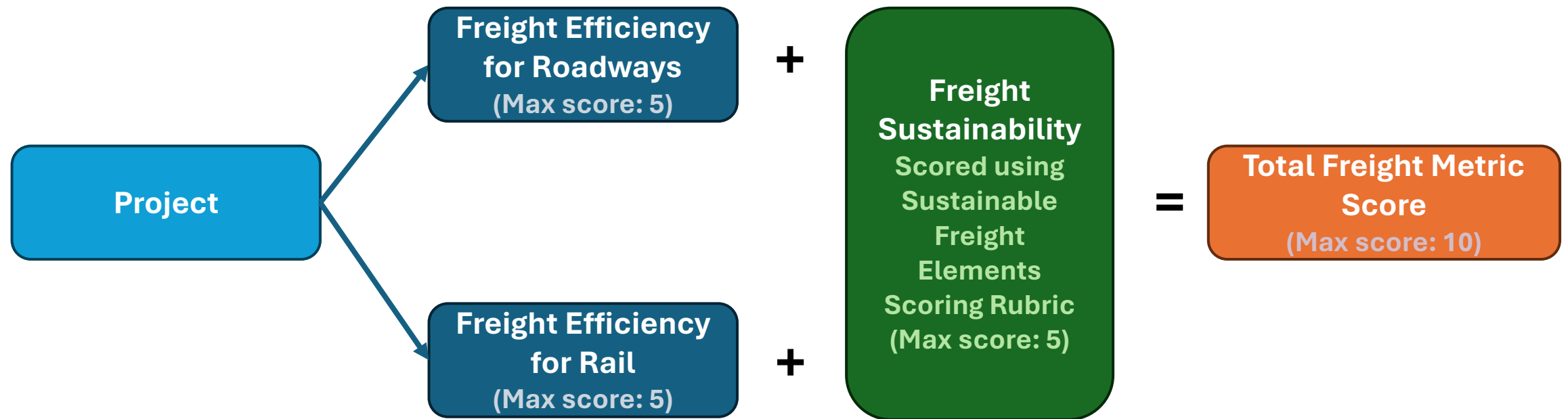
Developing a zero-emission freight transportation system that avoids and mitigates environmental justice impacts, reduces criteria and toxic air pollutants, improves freight's economic competitiveness and efficiency, and integrates multimodal design and planning into infrastructure development on freight corridors

Freight Metric

The existing (2024) Freight metric includes 2 sub-metrics:

- **Freight Efficiency** (up to 5 points)
 - Scores by project area truck travel time reliability. Corridors with low reliability receive higher points.
- **Freight Sustainability** (up to 5 points)
 - Scores by percent of project construction budget spent on freight Sustainability elements.
- Two sub-metrics are combined to reach a maximum of 10 points

Freight Metric Updates – Decision Tree



Metric Updates – Freight Efficiency for Roadway Projects

- Scores projects using formula, which is converted to points.
- **Step 1:** Calculate **Truck Efficiency Improvement Index**



Metric Updates – Freight Efficiency for Roadway Projects

Truck Efficiency Improvement Index

3 Minutes of Truck Travel Time Saving												
TTTRI	Truck Volume											
	500	1000	1500	2000	2500	3000	3500	4000	4500	5000	5500	6000
1	25	50	75	100	125	150	175	200	225	250	275	300
1.25	31	63	94	125	156	188	219	250	281	313	344	375
1.5	38	75	113	150	188	225	263	300	338	375	413	450
1.75	44	88	131	175	219	263	306	350	394	438	481	525
2	50	100	150	200	250	300	350	400	450	500	550	600
2.25	56	113	169	225	281	338	394	450	506	563	619	675
2.5	63	125	188	250	313	375	438	500	563	625	688	750
2.75	69	138	206	275	344	413	481	550	619	688	756	825
3	75	150	225	300	375	450	525	600	675	750	825	900

6 Minutes of Truck Travel Time Saving												
TTTRI	Truck Volume											
	500	1000	1500	2000	2500	3000	3500	4000	4500	5000	5500	6000
1	50	100	150	200	250	300	350	400	450	500	550	600
1.25	63	125	188	250	313	375	438	500	563	625	688	750
1.5	75	150	225	300	375	450	525	600	675	750	825	900
1.75	88	175	263	350	438	525	613	700	788	875	963	1050
2	100	200	300	400	500	600	700	800	900	1000	1100	1200
2.25	113	225	338	450	563	675	788	900	1013	1125	1238	1350
2.5	125	250	375	500	625	750	875	1000	1125	1250	1375	1500
2.75	138	275	413	550	688	825	963	1100	1238	1375	1513	1650
3	150	300	450	600	750	900	1050	1200	1350	1500	1650	1800

1. **Identify the problem.** The first step in the problem-solving process is to identify the problem. This involves recognizing the issue, understanding its scope, and determining the impact it has on the organization.

- **Step 2:** Convert Truck Efficiency Improvement Index to points
 - Truck Efficiency Improvement Index to points of 300 = 5 points
 - Index below 300 receive partial points
 - $[\text{Truck Efficiency Improvement Index} / 300] \times 5$
- | Score Overview | |
|----------------|---------------------|
| 3 | Minutes of Truck Tr |

Truck Efficiency Improvement Index	Freight Efficiency Score
300	5
240	4
180	3
120	2
60	1
0	0

[illegible]

Example Roadway Project

Freight Efficiency

Project Area TTTRI: 1.75

Peak period truck volume: 3,000

Peak period Truck Travel Time Improvements: 3 minutes

Off-peak Truck Travel Time Improvements: 0 minutes

Truck Efficiency Improvement Index =

$$1.75 \times 3,000 \times \frac{3 \text{ minutes}}{60 \text{ minutes/hour}} = 263$$

Project Freight Efficiency score = $263 / 300 \times 5 \text{ points} = 4.38 \text{ points}$

Score Overview									
3 Minutes of Truck Travel Time Saving									
TTTRI	Truck Volume								
	500	1000	1500	2000	2500	3000	3500	4000	4500
1	0.42	0.83	1.25	1.67	2.08	2.50	2.92	3.33	3.75
1.25	0.52	1.04	1.56	2.08	2.60	3.13	3.65	4.17	4.69
1.5	0.63	1.25	1.88	2.50	3.13	3.75	4.38	5.00	5.00
1.75	0.73	1.46	2.19	2.92	3.65	4.38	5.00	5.00	5.00
2	0.83	1.67	2.50	3.33	4.17	5.00	5.00	5.00	5.00
2.25	0.94	1.88	2.81	3.75	4.69	5.00	5.00	5.00	5.00
2.5	1.04	2.08	3.13	4.17	5.00	5.00	5.00	5.00	5.00
2.75	1.15	2.29	3.44	4.58	5.00	5.00	5.00	5.00	5.00
3	1.25	2.50	3.75	5.00	5.00	5.00	5.00	5.00	5.00

Metric Updates – Freight Efficiency for Rail Projects

- Each component is scored separately, then combined to be up to 5 points



Metric Updates – Freight Efficiency for Rail Projects

Rail System Factor	Performance Measure	Threshold for Maximum Points ¹	Maximum Points
Rail Volume	Existing Average Daily Freight Train Volume in Project Area	50 Trains/Day	1
Rail Throughput Increase	Additional Goods Moved by Rail	Increase by 2,000 TEU/Day Equivalent to: 3.8 Trains/Day 1,111 Containers/Day 15,600 Tons/Day	4
Rail Delay Reduction	Hours of Freight Delay Reduced (travel time or terminal dwell time)	Reduce by 5.5 Hours/Day	
Total Freight Efficiency Score for Rail			5

1. Daily threshold x 365 = Annual threshold

Metric Updates – Freight Efficiency for Rail Projects

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Rail Delay Reduction	Hours of Freight Delay Reduced (travel time or terminal dwell time)	Reduce by 5.5 Hours/Day	

Are these reasonable?
 Measure improvement in percentage?
 Let us know your thoughts in the comment intake form.

1. Daily threshold x 365 = Annual threshold

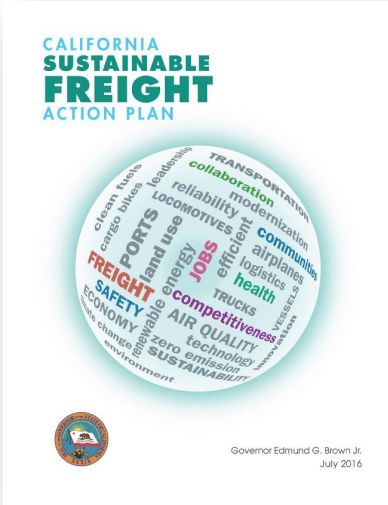
Example Rail Project

Rail System Factor	Project Performance	Points Received without Cap	Points Received with Cap
Rail Volume	40 Average Daily Freight Train Volume in Project Area	$(40 / 50) = 0.8$ points	0.8
Rail Throughput Increase	1,500 Additional TEU Moved by Rail per Day	$(1,500 / 2000) = 0.75$ $0.75 * 4 = 3$ points	Capped at 4.0
Rail Delay Reduction	3 Hours of Freight Delay Reduced per Day	$(3 / 5.5) = 0.55$ $0.55 * 4 = 2.2$ points	
Total Freight Efficiency Score for Rail			4.8

1. Daily threshold x 365 = Annual threshold

1. **Identify the problem.** The first step in the problem-solving process is to identify the problem. This involves recognizing the symptoms of the problem and determining the underlying cause.

- Scores projects by their inclusion of sustainable freight elements
- Adjusted qualifying elements to align with the California Sustainable Freight Action Plan (CSFAP, 2016), the California Freight Mobility Plan (CFMP, 2023), and the California State Rail Plan (CSRP, 2024)
 - Keep elements freight-focused
 - Moved zero-emission vehicle (ZEV) related components into the ZEV metric



Metric Updates – Freight Sustainability

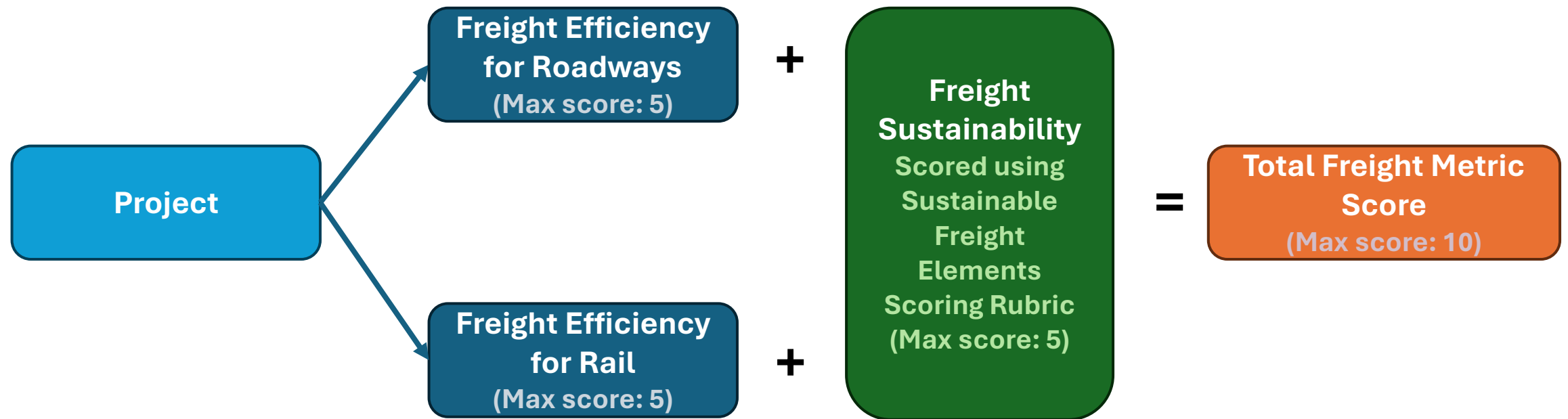
Points	Sustainable Elements Scoring Rubric (points are additive, for up to 5 points)
5	• New or rehabilitated bridges that shorten travel distance by creating a more direct route, by addressing existing asset's poor conditions, or by accommodating oversized freight trains. • New grade separation between roadway and freight rail. • Inland ports, short line rail, access to industrial land uses and freight distribution hubs, and other inland intermodal improvements. • On-dock, near-dock, and short line rail, transload infrastructure, terminal, and other intermodal improvements. • Double tracking, siding, and other improvements to reduce freight and passenger rail conflicts.
4	• New or rehabilitated bridges that shorten travel distance by creating a more direct route, by addressing existing asset's poor conditions, or by accommodating oversized trucks. • New grade separation between roadways. • Truck-only lanes. • New or expanded truck parking facility that addresses the statewide truck parking deficit.
3	• Truck climbing lanes. • Positive train control (PTC) technology. • Intelligent transportation systems (ITS) and other technology to improve the efficiency of freight, including traffic signal prioritization, ramp management and metering, truck queue management and appointment systems, and active traffic and demand management (ATDM). • Real-time traffic, truck parking, roadway and weather condition, border wait time, and other transportation information, detection, and advanced warning systems that enhance decision-making and freight network resiliency.
2	• Electronic screening and credentialing systems, including weigh-in-motion (WIM) technology and smart roadside commercial motor vehicle monitoring. • Border security technologies that improve truck movement, such as non-intrusive technology.

Metric Updates – Freight Sustainability

- **Freight Sustainability Element Score**
 - Each element is assigned points from 1 to 5 based on its alignment with the following tenets:
 - Avoids or mitigates environmental justice impacts to communities.
 - Reduces criteria and toxic air pollutants.
 - Integrates multimodal design that contributes to mode shift from highways to rail or vessel.
 - Contributes to the safety and resiliency of the freight network.
 - Difficult and/or costly to implement, per FHWA guidance.

Sustainable Element (from CSFAP, CFMP)	A. Avoids and mitigates environmental justice impacts.	B. Reduces criteria and toxic air pollutants.	C. Integrates multimodal design	D. Difficult and/or costly to implement.	E. Contributes to the safety and resiliency of the freight network.	Points
On-dock, near-dock, and short line rail, transload infrastructure, terminal, and other intermodal improvements.	X	X	X	X	X	5
New or rehabilitated bridges that shorten travel distance by creating a more direct route, by addressing existing asset's poor conditions, or by accommodating oversized freight trains.	X	X	X	X	X	5
New or expanded truck parking facility that addresses the statewide truck parking deficit.	X	X		X	X	4
Electronic screening and credentialing systems, including weigh-in-motion (WIM) technology and smart roadside commercial motor vehicle monitoring.		X			X	2

Freight Metric Updates – Decision Tree



Key Milestones

- **Stakeholder Workshops:** Sept 17 and Sept 25 (comment period closed)
- **Freight Metric Comment Period:** October 28 to November 18
- **Review feedback and Revise:** Nov - Dec
- **Release the Finalized Document:** Dec

[Freight Metric Feedback Intake Form](#)

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[Public Review Draft Revised CAPTI Alignment Metrics](#)
[Freight Metric Presentation will be uploaded](#)





Q&A/Open Comment



THANK YOU

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