



CAPTI

Climate Action Plan for
Transportation Infrastructure

2023 Annual Progress Report



October 2023 • Public Draft

Acknowledgments

The California State Transportation Agency (CalSTA) extends our sincere appreciation to the dedicated staff at lead agencies and supporting agencies for their work on implementing the actions listed.

Additionally, we express deep gratitude to all our partners and stakeholders who were involved in individual action item implementation and whose meaningful comments, feedback, and expertise help to shape the outcomes.

CalSTA staff compiled this report with input from the lead agency staff and stakeholders.



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Table of Contents

Acknowledgments	2
Introduction	4
Implementation Progress	7
Conclusion & Next Steps	23
Appendix A. Implementation Strategies and Action Matrix	24
Appendix B. Glossary of Terms and Acronyms	46
Appendix C. Summary of Funding Programs	48
Appendix D. CAPTI Investment Framework	49
Appendix E. VMT Rating Methodology	51

Introduction

CAPTI Vision

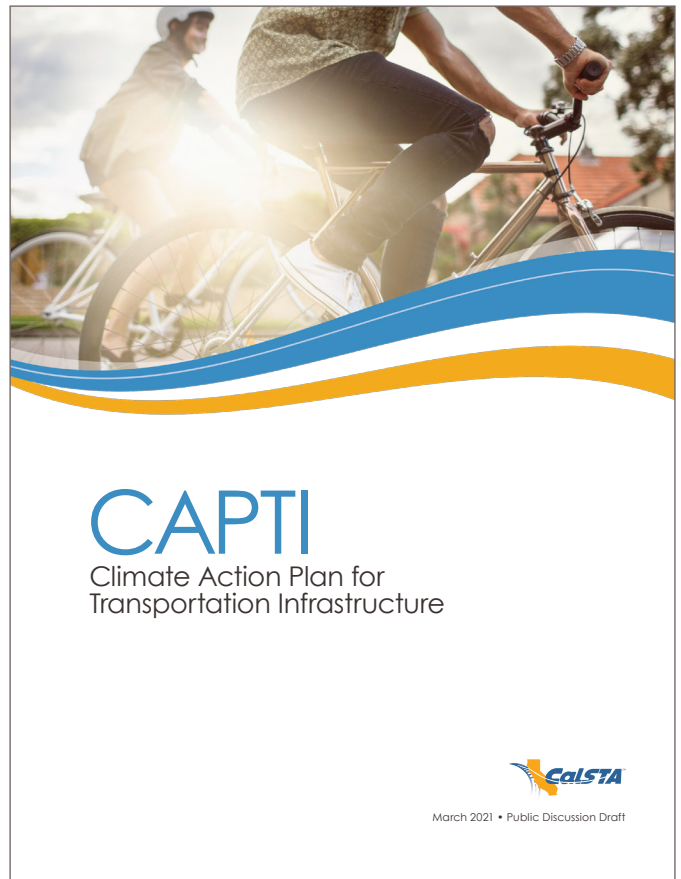
The Climate Action Plan for Transportation Infrastructure (CAPTI) responds to Governor Newsom's call to action in Executive Order (EO) N-19-19 and N-79-20. The plan outlines strategies and actions that will advance more sustainable, equitable, and healthy modes of transportation, such as walking, biking, transit, and rail, as well as accelerate the transition to zero-emission vehicle technology.

CAPTI provides a holistic framework that aligns the state's transportation infrastructure investments with the state's climate, health, and social equity goals, while also maintaining the commitment made in Senate Bill (SB) 1 to a fix-it-first approach to transportation.

California's varied statewide transportation funding programs collectively provide the state with an opportunity to work toward a unified vision for transportation. Executive Order (EO) N-19-19 specifically calls on CalSTA to leverage the annual discretionary transportation infrastructure funding found in Appendix C.

CAPTI identifies 10 guiding principles and 8 strategies, encompassing 31 key actions of ongoing and future changes to state transportation planning, project scoping, programming, and mitigation activities needed to align with the CAPTI Investment Framework, found in appendix D.

The final adopted CAPTI can be viewed at:
<https://calsta.ca.gov/-/media/calsta-media/documents/capti-july-2021-a11y.pdf>





CAPTI Second Annual Report Process

Following the adoption of CAPTI on July 12, 2021, state agencies began work to implement the identified key actions. Additionally, Action 8.3 commits CalSTA to develop an annual progress report to document implementation accomplishments and to inform the public on the status of actions identified in CAPTI. For reference, the first annual report, published in December 2022, reported 12 completed action, 18 as underway, and four as having made early progress.

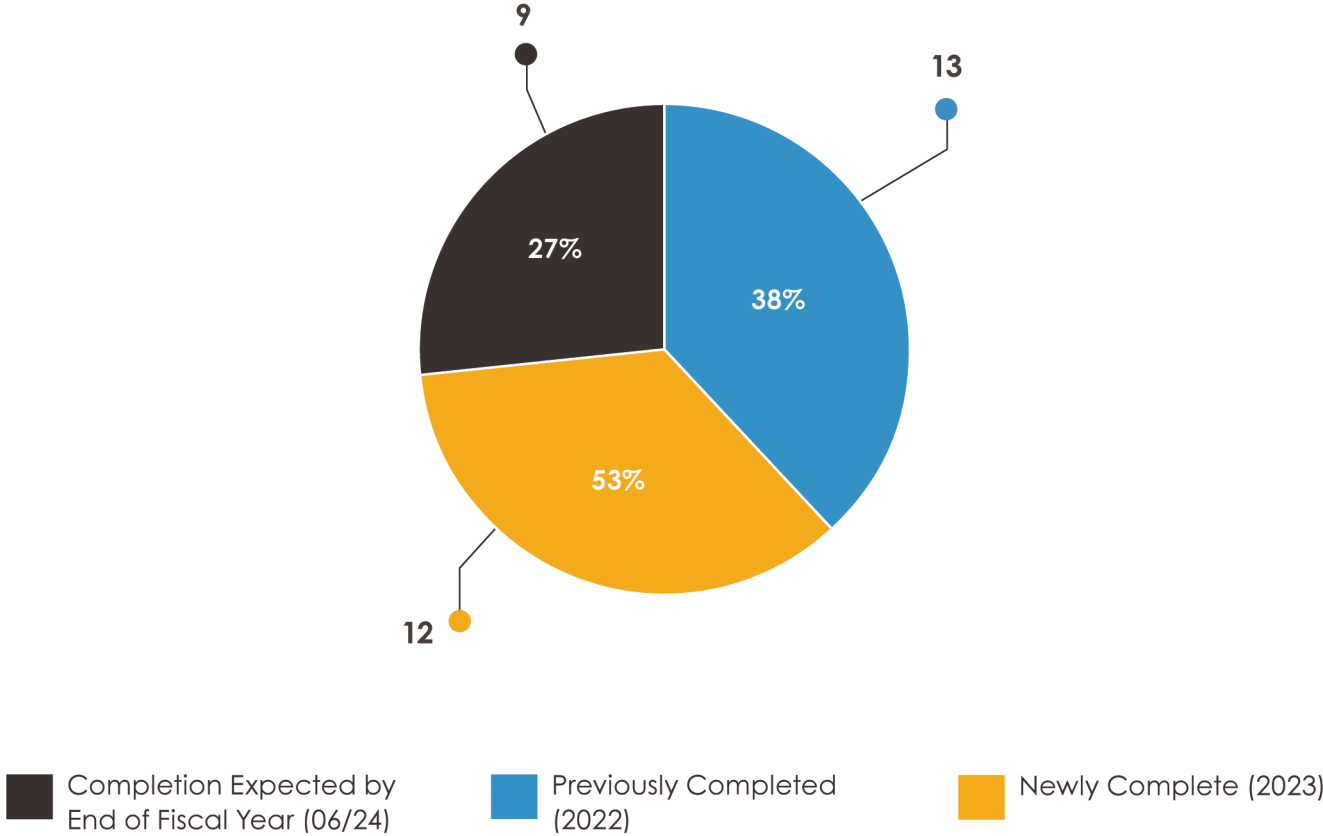
To ensure oversight on progress, CalSTA has continued to convene the Interagency Working Group to provide regular updates on progress implementing CAPTI action items. The Working Group includes staff from the California Department of Transportation (Caltrans), the California Transportation Commission (CTC), the California Air Resources Board (CARB), the Department of Finance (DOF), the Department of Housing and Community Development (HCD), the Governor's Office of Planning and

Research (OPR), the Strategic Growth Council (SGC), and the Governor's Office of Business and Economic Development (GO-Biz). In summer 2023, CalSTA coordinated with lead agencies on the status of progress implementing each action. Detailed status updates of each action, and their anticipated completion date, can be found in Appendix A.

Implementation Progress

Two years in, there is significant progress completing the initial actions called for in CAPTI. Each action was assessed based on the original description provided to determine if the intent has been accomplished. In some cases, the method of delivery or scope was adjusted to make the action deliverable. In many cases, although initial actions are complete, there is still ongoing work on the topic covered by the action. See Appendix A for a status of all the actions and detailed information about implementation progress.

Figure 1. CAPTI Action Items by Implementation Status Implementation, Since July 2021 Adoption



Summarized in figure 1, of the total 31 actions (split into 34 unique entries in the matrix for reporting convenience), 13 were reported as complete in the 2022 annual report, 12 are being reported as newly completed in this 2023 report, and nine are underway but also expected to be complete by the end of this fiscal year (June 2024). **This means all initial CAPTI actions should be completed by the 3rd Annual Report due in Fall 2024.** This is significantly sooner than these actions were expected to be completed when CAPTI was adopted, with mid-term actions initially expected to take three to seven years.

Interagency Transportation Equity Advisory Committee Launches and Helps to Guide Equitable Investment



Equity Advisory Committee Members and Interagency Staff convened in Stockton on September 26, 2023. Pictured left to right, back to front: Laura Pennebaker, Paul Golaszewski, Randy Torres Van Vleck, Kristine Williams, Ana Gonzalez, Marta Armas, William Walker, Cheryl Viegas Walker, Amber Novey, Abigail Jackson, Carolyn Abrams, Sequoia Erasmus, Alexis Lantz, Cherry Zamora.

In March 2023, members of the newly created Interagency **Equity Advisory Committee (EAC)** convened for a kickoff meeting and have continued to meet quarterly. Convened in partnership with CalSTA, Caltrans and the California Transportation Commission, the EAC advises each agency on how to achieve meaningful outcomes in transportation equity, environmental justice and equitable economic opportunities, especially in transportation planning and programming. Notably, in 2023, the EAC participated in the evaluation of projects as part of the first program cycle to incorporate the principles of CAPTI in guidelines of SB 1 programs and the one-time Port and Freight Infrastructure Program.

Consisting of up to 15 members serving two-year staggered terms, the committee is

intended to elevate diverse and historically marginalized voices, including Black, Indigenous, and People of Color, rural communities, women, lesbian, gay, bisexual, transgender, queer, intersex and asexual individuals, older adults, youth, low-income, and unhoused individuals in California. The Committee includes experts representing tribal and indigenous communities, community-based organizations, climate and air quality organizations, housing and housing justice organizations, statewide environmental justice and equity organizations, individuals or organizations offering an accessibility and disability perspective, and community members reflecting different geographic areas of the state, especially rural areas (See S3.1 in Appendix A).

New Investments Informed by the CAPTI Framework

As mentioned in the first CAPTI annual report, CAPTI provides a holistic framework that can be applied to a wide range of issues at the California State Transportation Agency. Since the adoption of CAPTI, there have been several new funding opportunities created that align with the CAPTI framework.

Building on CAPTI action S7.3 to “Explore a Highways to Boulevards Conversion Pilot Program”, \$149 million in the FY 22/23 State Budget established the **Reconnecting Communities Highways to Boulevards Pilot Program (RC:H2B)**, with the primary goal to reconnect communities harmed by transportation infrastructure, through community-supported planning activities and capital construction projects that are championed by those communities. One hundred percent of the program funds are to be awarded to projects that benefit underserved communities, and applicants were incentivized to submit proposals created through partnerships with organizations that have a demonstrated history of representing the affected community. RC:H2B is a pilot program where California can reinvest in communities that were disconnected or divided as a result of past investment, and the pilot offers an opportunity to form and grow best practices in community reconnection, where transportation investments increase community benefits without exacerbating existing burdens, embracing the guiding principles of the CAPTI framework.

The 2022-23 state budget included \$1.2 billion to create a **Port and Freight Infrastructure Program (PFIP)** to improve the capacity, safety, efficiency, and resilience of goods movement to, from and through California’s maritime ports, while also reducing greenhouse gas emissions and harmful impacts to communities adjacent to the corridors and facilities used for goods movement. Investing in 15 projects statewide and creating an estimated 20,000 jobs, approximately \$450 million of the \$1.2 billion in awards directly fund zero-

emission infrastructure, locomotives, vessels and vehicles, to help maintain California’s competitive edge in nation-leading supply chain infrastructure while lessening impacts on neighboring communities. Administered by CalSTA, \$350 million was also awarded to 13 PFIP projects that eliminate street-level rail crossings to make critical lifesaving safety improvements, reduce emissions and keep goods and people moving.

The Infrastructure Investment and Jobs Act (IIJA) created the **Carbon Reduction Program (CRP)** to provide federal funding to projects that decrease transportation emissions, which are defined as the carbon dioxide (CO₂) emissions that result from on-road, highway sources. California receives annual apportionments of CRP over five years. The apportionments are split, with 65% as Local CRP and 35% as State CRP. Both Local and State CRP funds must be invested in alignment with a Carbon Reduction Strategy (CRS) that was developed by Caltrans, in partnership with metropolitan planning organizations and stakeholders of the State Roadway Pricing Workgroup (see S6.2). California’s CRS focuses on the “Three Pillars”: zero-emission vehicles and infrastructure, active transportation, and rail and transit, and Caltrans will program State CRP to projects that convert existing lanes to priced managed lanes and invest toll revenues in low-carbon travel options. The collective input received from open dialogue in the **CalSTA and Caltrans State Roadway Pricing Workgroup** was key to developing this strategy, where the group continues to focus on providing recommendations for equitable roadway pricing implementation pathways.

The Impact of CAPTI on State Transportation Investments

CalSTA, in partnership with Caltrans, contracted with the Mineta Transportation Institute (MTI) at San Jose State University to develop a set of quantitative and qualitative metrics to track program level outcomes through the implementation of CAPTI to determine how state transportation investments are shifting (action S8.1). While the MTI CAPTI Report is still under

development with an anticipated release of this winter, this report highlights some of their preliminary key findings, in addition to highlighting observations made by CalSTA on how our investments have shifted.¹ The study observed shifts in three time periods as more CAPTI-aligned projects are being programmed:

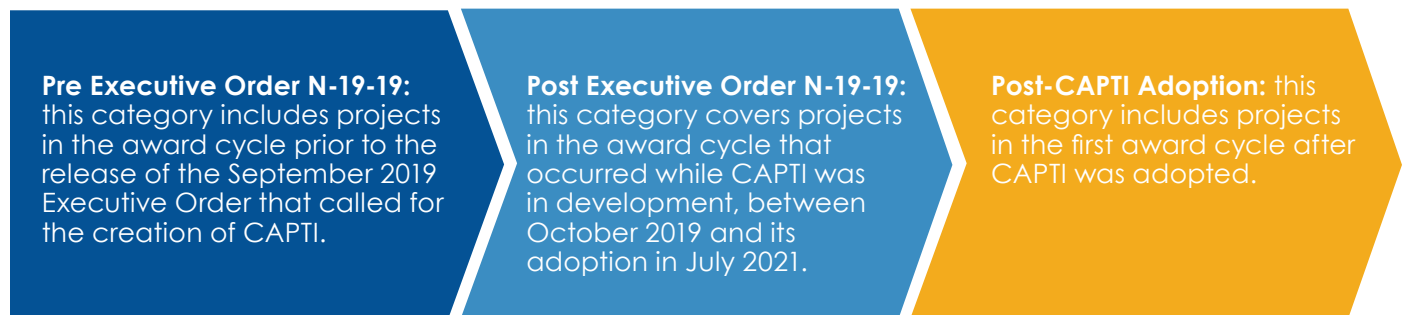


Figure 2. Funding Program Cycles Organized by Time Period

Program	Pre EO-N-19-19 (before September 2019)	Post EO-N-19-19 (October 2019-June 2021)	Post-CAPTI Adoption (after July 2021)
ITIP	2018 ITIP (2017)	2020 ITIP (2019)	2022 ITIP (2021)
TIRCP	Cycle 3 (2018)	Cycle 4 (2020)	Cycle 5 (2022)
SCCP	Cycle 1 (2018)	Cycle 2 (2020)	Cycle 3 (2023)
TCEP	Cycle 1 (2018)	Cycle 2 (2020)	Cycle 3 (2023)
LPP-C	Cycle 1 (2018)	Cycle 2 (2020)	Cycle 3 (2023)
ATP	Cycle 4 (2019)	Cycle 5 (2021)	Cycle 6 (2023)
SHOPP	2018 SHOPP	2020 SHOPP	2022 SHOPP

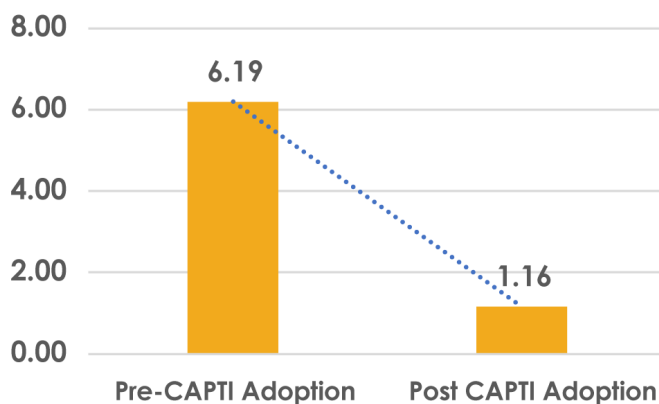
¹ "Evaluating Benefits from Transportation Investments aligned with CAPTI", Mineta Transportation Institute (MTI, 2023). <https://transweb.sjsu.edu/mctm/research/utc/Evaluating-Benefits-Transportation-Investments-aligned-Climate-Action-Plan-Transportation-Infrastructure-CAPTI>

Summary of Findings

Emissions

Overall, the MTI CAPTI Report preliminary findings observed that there has been a reduction of greenhouse gas (GHG) emissions generated across the portfolio of programs in the post-CAPTI adoption timeframe, as compared to earlier (pre- and post-N-19-19) timeframes. Inversely, the number of investments that do not result in higher greenhouse gas emissions and other pollutants increased post-CAPTI adoption, and the number of investments that do not induce vehicle miles traveled (VMT) also increased post-CAPTI adoption. The MTI CAPTI Report will include an analysis of relative VMT by creating a VMT Rating metric that used qualitative and quantitative research to assign VMT attributes to different project components. The higher the VMT rating, the more VMT that is projected to be generated by the projects being funded in that program. Negative VMT ratings represent VMT decreases. Those VMT ratings were then normalized per dollar spent, to be able to illustrate and compare the magnitude of equivalent VMT generated or decreased between programs and cycles. As highlighted in figure 4, all four programs that previously funded VMT increasing components saw a decrease in the amount of VMT generated after CAPTI adoption compared to the previous two cycles. Notably, two of the four programs are now VMT neutral or VMT decreasing. Collectively, the four programs' average VMT rating went from 6.19 in the two cycles pre-CAPTI adoption, to 1.16 in the first cycle of funding following CAPTI adoption as seen in Figure 3.

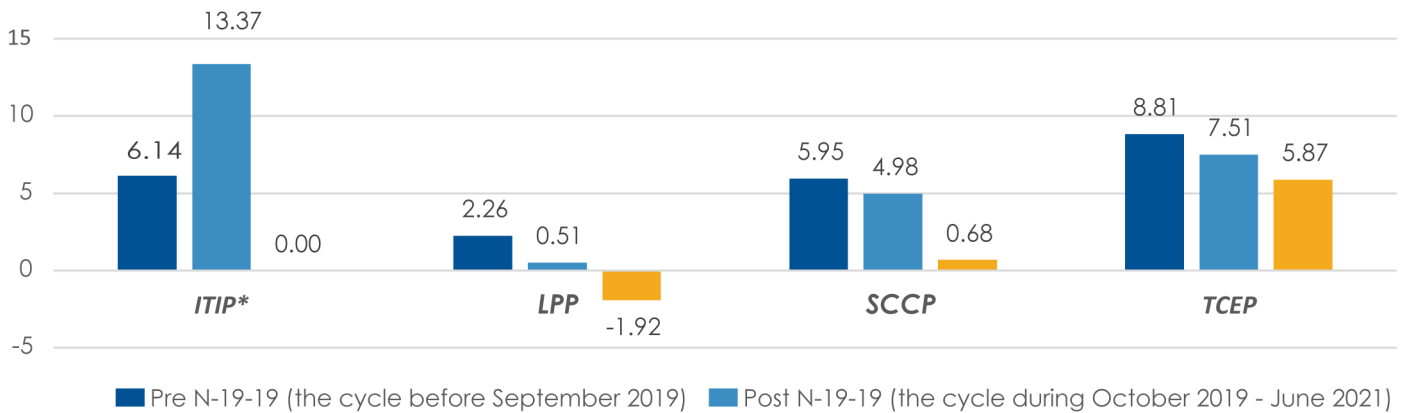
Figure 3. VMT Rating per Total Program Dollar Cost by Program Cycle by Time Period



Source: MTI, 2023

The VMT ratings were created for the purposes of this study based on best available research regarding VMT outcomes of certain project types, and are not directly based on project level reported VMT numbers, and therefore may not reflect project specific estimates as reported by applicants. For more information regarding the VMT ratings methodology used in the MTI CAPTI Report, please see Appendix E.

Figure 4. Total VMT Rating per Total Program Dollar Cost by Program Cycle**



*Only newly added ITIP projects per cycle are included

See Appendix E for methodology on how VMT rating was calculated for each program. Positive VMT ratings represent VMT generated by program, while negative ratings represent decreases.

In addition to the programs analyzed in Figure 4, Table 1 provides VMT rating per total program dollar cost information for the other three programs analyzed in the MTI CAPTI Report that were VMT reducing even prior to CAPTI adoption. All maintained their VMT reducing nature, with the SHOPP and TIRCP seeing deeper reductions post CAPTI adoption. ATP experienced the opposite trend according to the analysis; however, this is likely attributed to limitations in the methodology not capturing the VMT impact of larger more transformative projects that were funded in later rounds, resulting in data that shows a decline in VMT reduction cost efficiency.

Table 1. Total VMT Rating per Total Program Dollar Cost

	Pre N-19-19 (the cycle before September 2019)	Post N-19-19 (the cycle during October 2019 - June 2021)	Post - CAPTI Adoption (the cycle just after July 2021)
ATP	-59.6	-38.82	-23.71
SHOPP	-2.88	-1.89	-4.40
TIRCP**	-0.35	-0.19	-0.66

Source: MTI, 2023

TIRCP VMT Rating per total program dollar cost is based on emission reduction data reported by the program in compliance with California Climate Investment reporting requirements of the California Air Resources Board.

Equity

By increasing the amount of more multi-modal, community-driven projects (through emphasizing engagement and technical assistance and adding pro-housing incentives to programs) throughout all CAPTI funding programs, there have been improved the transportation equity outcomes among disadvantaged communities. The full MTI CAPTI Report will contain more comprehensive analysis on the breakdown of project locations and their impact on communities.

Economy

While CAPTI implementation may shift the types of transportation outcomes the state is striving for, throughout economic sectors impacted by state transportation improvements the number of jobs created and job quality are maintained. Large investments in transportation yield large economic benefits, where overall job quality is high, especially for non-college educated workers, creating inclusive high-road jobs throughout the state. Economic analysis finds that these trends have continued since the implementation of EO N-19-19 and CAPTI. More comprehensive analysis on the economic impact of CAPTI will be forthcoming as part of the full MTI CAPTI Report.

Upcoming Quantitative Tools Informed by the CAPTI Framework

The use of data and quantitative tools are important to implementing the direction of CAPTI in our work. To further guide their investment-making in alignment with CAPTI, Caltrans is creating and refining two upcoming tools —**the Equity Index (EQI)** and its **Caltrans Strategic Investment System (CSIS)**, both called for as actions in CAPTI. By spring 2024, the Department will complete development of Version 1.0 of the EQI, a tool to assist in the evaluation and prioritization of Department projects through data-driven assessment of transportation equity needs. An engagement process informed development of the tool, and additional outreach and training continue to be offered to Caltrans employees, interagency partners, and other stakeholders. Caltrans is moving into the next phase of work to implement the EQI. The first application will be the integration of the EQI with CSIS.

Caltrans developed CSIS Version 1.0 in 2022 and is working on version 2.0. Version 1.0 has been applied to methodology for State Sponsored Project Initiation Documents (PIDS, or early Caltrans planning documents of proposed projects). Version 2.0 of the CSIS will be completed by early 2024. This update adds Local Sponsored Project Initiation Document (PID) Guidance to the CSIS Framework. The Guidance will provide early feedback on local sponsored projects for CAPTI alignment. The CSIS 3.0, with an anticipated completion date of summer 2024, will use quantitative metrics for objectively scoring projects to guide Caltrans-led and Caltrans-partnered project nominations. The quantitative metrics will be piloted during the SB 1 Cycle 4 project nominations in 2024. The quantitative scoring process can inform how projects adjust scope over time to be more comprehensive and multimodal to improve a project's nomination viability.

How have outcomes from each funding program changed under CAPTI?

Solutions for Congested Corridors (SCCP)

As figure 4 shows, total VMT rating per total dollar cost of projects funded by SCCP saw a decline in the amount of VMT the program is generating after Cycle 2, which is the point at which CAPTI was adopted. As called for in CAPTI, the SCCP Program Guidelines for Cycle 3 were updated to include incentives to prioritize multi-modal projects or projects that encourage a mode shift.

As figure 5 helps illustrate, all of the ten projects totaling a \$532.8 million investment in Cycle 3 are multi-modal, up from previous cycles. For comparison, in Cycle 2, four of seven projects included multimodal elements and in Cycle 1, five of nine projects were multimodal. While improvements to the state highway system are eligible costs of this program, funds may not be used to build general purpose or unmanaged capacity increasing projects. Accordingly, only two multi-modal SCCP Cycle 3 projects include expansion components, where travel on the newly expanded lanes will be managed. Half (five) of the awarded projects include active transportation improvements, and eight have direct transit benefits, including one award that funds the purchase of battery electric buses in the San Fernando Valley.

Trade Corridor Enhancement Program (TCEP)

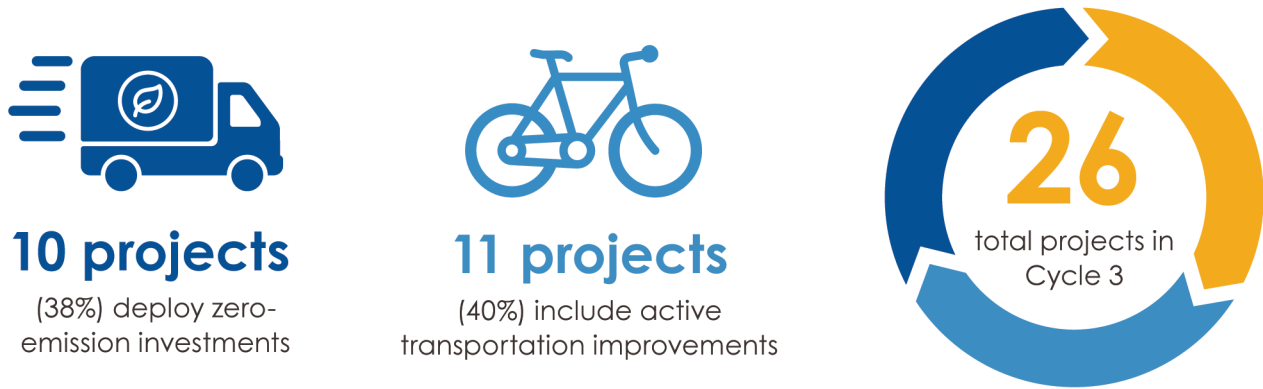
The Trade Corridor Enhancement Program (TCEP) contributes to major transportation improvements across the state to enable more efficient goods movement and improve freight capacity. The program made significant changes to their

guidelines to carry through the commitments of CAPTI to develop a zero-emission freight system, support resilient transportation, and reduce public health and economic harms while maximizing community benefits. Specifically, in TCEP Cycle 3, program guidelines were updated to include incentives to support zero-emission vehicle infrastructure projects. Zero-emission and active transportation investments improve air quality and access without exacerbating existing transportations burdens, which can be especially meaningful in environmental justice communities harmed by past intensive freight and highway investment.

Figure 5. CAPTI Investment Trends



Figure 6. Details of TCEP Cycle 3 Projects



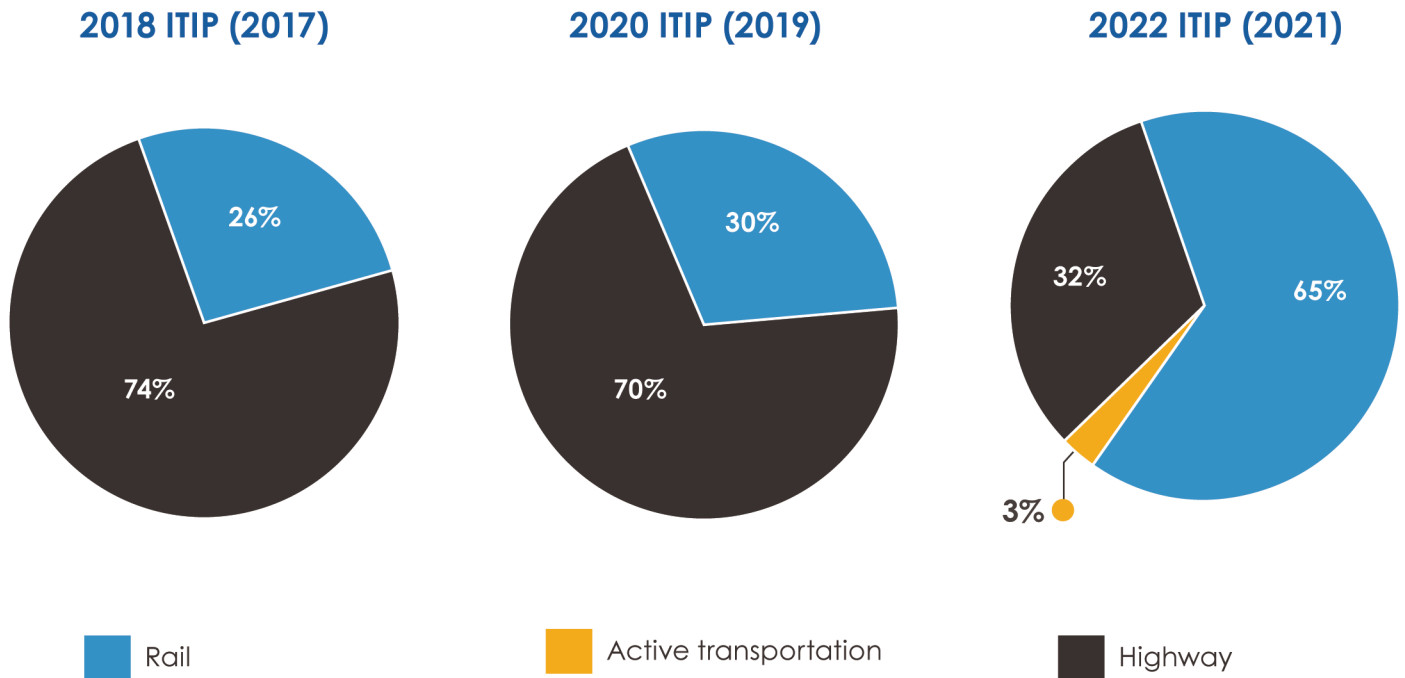
As illustrated in figure 6, over a third (10 of 26) of the TCEP awards included projects that support the deployment of a zero-emission freight transportation system and invest in light, medium and heavy zero-emission vehicle infrastructure. Over 40% (11 of 26) of the TCEP projects in Cycle 3 include active transportation improvements bundled among freight improvements, to improve networks of safe and accessible bicycle and pedestrian infrastructure that may have otherwise been impacted by freight movement.

While TCEP Cycle 3's portfolio of awards includes passenger VMT-inducing impacts as a result of necessary freight system improvements, the total VMT rating per total dollar cost of projects funded by TCEP has still decreased steadily from cycle to cycle in response to CAPTI.

Interregional Transportation Improvement Program (ITIP)

As shown in figure 4, none of the new projects included in the 2022 ITIP will induce VMT, per MTI's VMT rating methodology. The new projects in the 2022 ITIP included eight rail projects, two active transportation, and one highway (truck climbing lanes). When looking at the overall investment made in the ITIP, including legacy carryover projects that received funding for additional project phases, 65% of 2022 ITIP funding was dedicated to rail investments, with an additional 3% on active transportation. It is possible this portfolio of projects collectively results in a VMT reduction; however, there is a research gap for VMT impact of certain passenger rail investments, thereby limiting the ability to estimate VMT reduction impacts of passenger rail. (See Appendix E for details on the MTI Study's VMT rating methodology). This 68% total multi-modal investment was a significant increase compared to previous ITIPs, as illustrated in figure 7.

Figure 7. 2018 ITIP (2017) Multi-modal investments



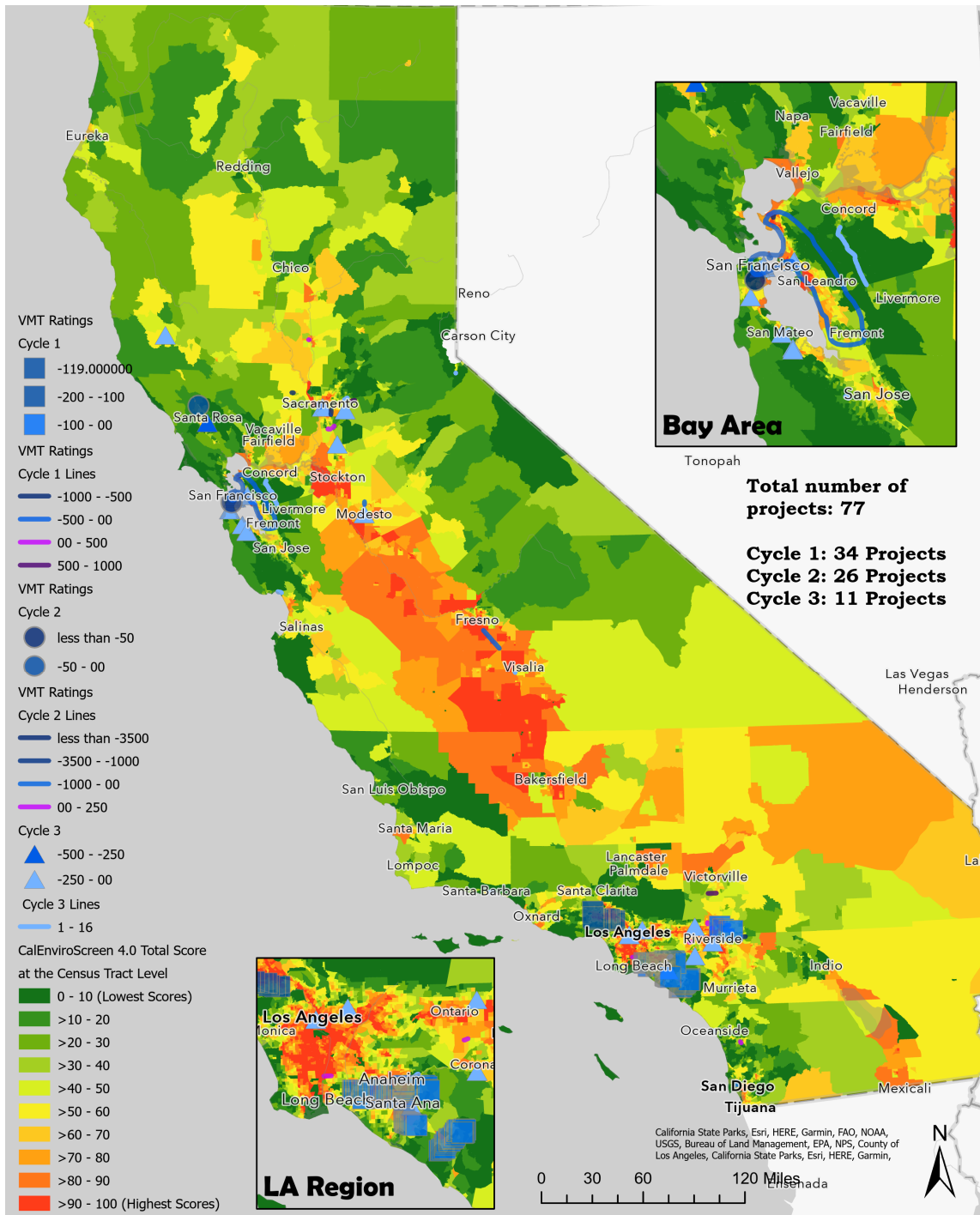
Local Partnership Program (LPP)²

Through Cycles 1, 2, and 3 of the LPP program, a total of \$2.1 billion when accounted for total project costs was invested throughout 26 counties (MTI, 2023). **As shown in figure 4, in LPP VMT reductions per total program dollar cost grew in the post-CAPTI-adoption timeframe.** LPP decreased VMTs in rural and urban areas, as well as in areas disproportionately burdened by

pollution based on CalEnviroScreen 4.0 scores (as mapped in figure 8). Large metropolitan areas experienced significant VMT reductions due to LPP-funded projects, where both the San Francisco Bay Area as well as Greater Los Angeles had a significant number of projects that led to reduced VMT across all three cycles.

²Note: the CAPTI Annual Report 2023 only analyzes and refers to the discretionary (not formula) portion of LPP funding. Commentary on LPP in this report does not apply to the formulaic component of LPP.

Figure 8. Map of VMT Ratings of LPP Projects by Cycle



Map credit: MTI, 2023

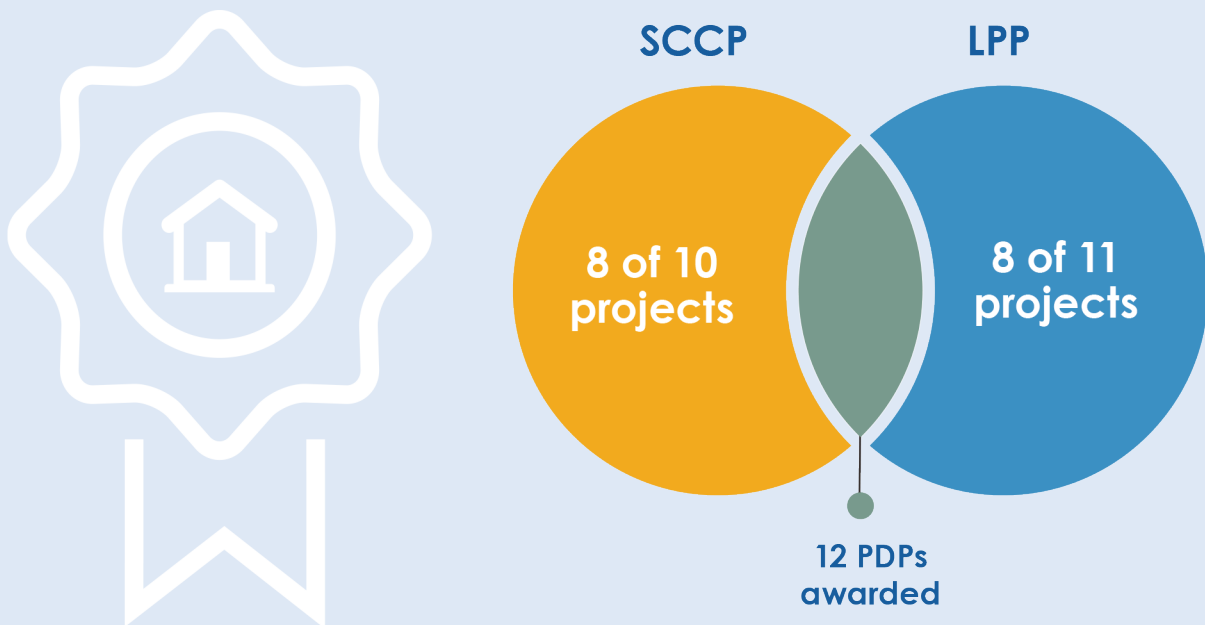
Pro-housing Designation Incentivizes CAPTI Implementation

As a first in SB 1 competitive award-making, Cycle 3 LPP and SCCP program guidelines incentivized local governments to adopt pro-housing policies that reduce VMT by increasing infill development. These program changes are designed to encourage jurisdictions to make transit supportive land use decisions that reduce transportation impacts. A majority of awarded Cycle 3 LPP and SCCP recipients competed for the pro-housing designation incentive:

- Eight of ten SCCP Cycle 3-funded projects and eight of 11 LPP Cycle 3-funded projects were more competitive on their applications for being within or spanning a jurisdiction that applied for designation as a California pro-housing jurisdiction.
- 12 of the 30 total California pro-housing jurisdictions (as of September 20, 2023) received LPP and/or SCCP cycle funding for a transportation project.

A “pro-housing” community is a jurisdiction recognized for committing to policies and practices that will help them remove barriers to housing production. (HCD, 2022)

Figure 9. Relationship between awarded projects and the pro-housing designation incentive

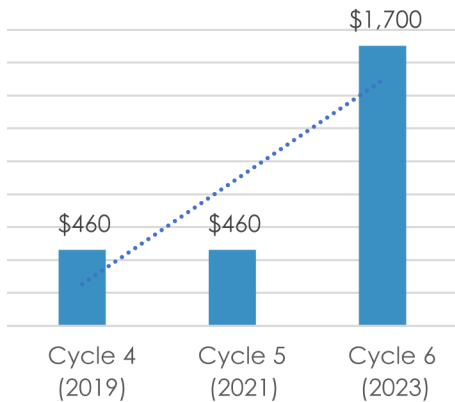


Active Transportation Program (ATP)

As shown in figures 10 and 11, for Cycle 6, the Active Transportation Program (ATP) received an increase of about \$50 million per year in federal funding and a one-time \$1.05 billion increase in state funds, allowing Cycle 6 to more than double the number of projects it funded in past cycles (242 in Cycle 6, up from 106 in Cycle 5 and 120 in Cycle 4). As a direct result, Cycle 6 shows investments in many more communities that did not benefit from investments during the previous two cycles (MTI), as mapped in figure 12.

Figure 10. Bar graph of ATP funding by cycle

ATP Funding by Cycle (Millions)

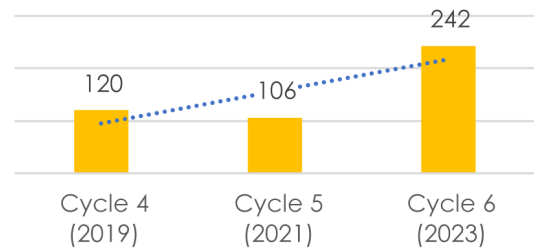


Source: California Transportation Commission, 2023

Cycle 6 funded more projects overall than past cycles, in new places, but also a greater number of transformative projects or network-forming projects throughout the state. In Cycle 6, the number of \$10+ million (large, transformative) projects increased (57 in Cycle 6, up from 24 in Cycle 5 and 17 in Cycle 4). As reminded in the forthcoming MTI report and seen in Table 1, investments in active modes of transportation result in a significant per dollar reduction of VMT due to their cost efficiency. As the number of larger, more transformative projects grows in each cycle of ATP, the cost efficiency reported in the MTI report decreases and results in a smaller VMT

Figure 11. Bar graph of ATP projects by cycle

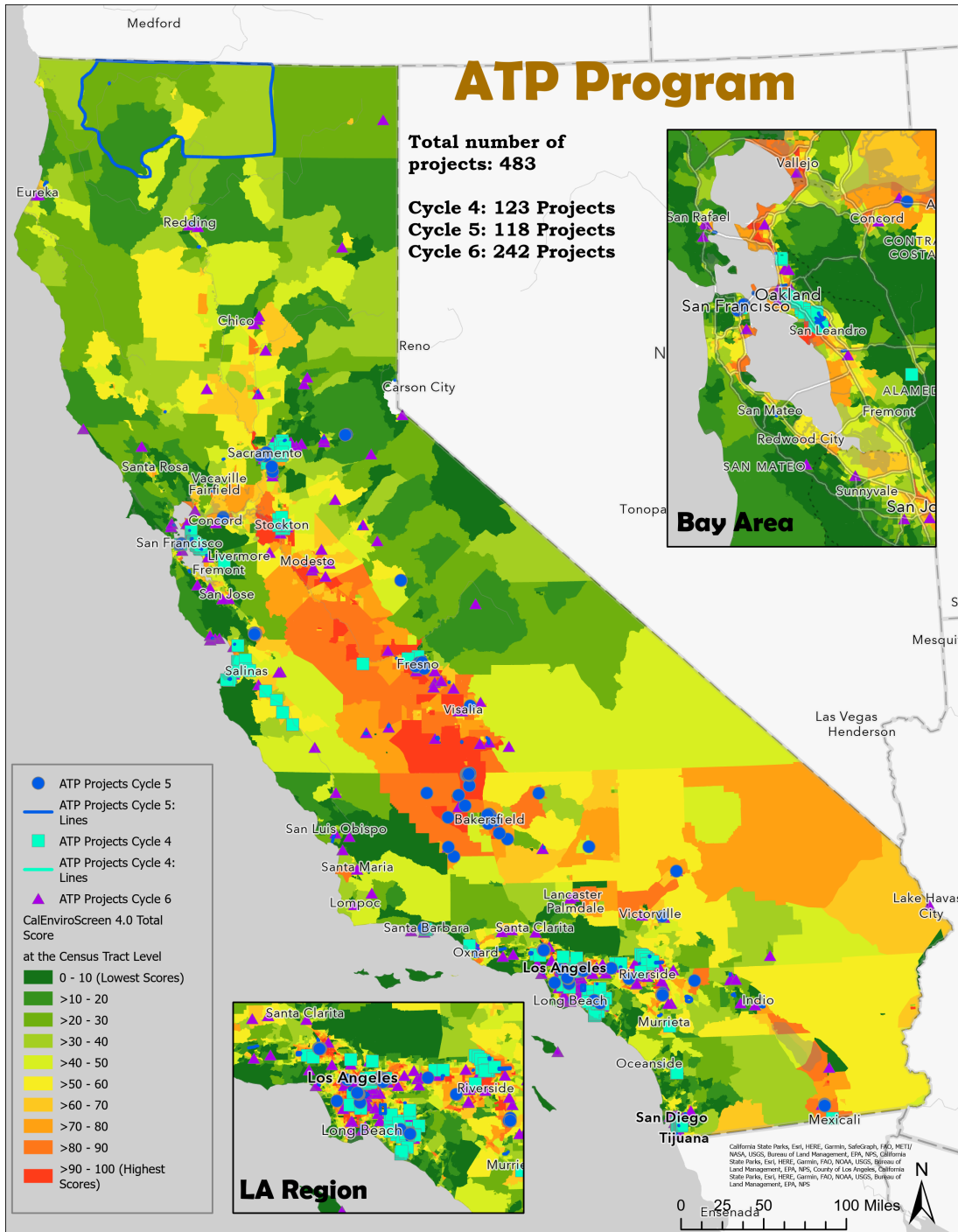
Count of ATP Projects by Cycle



Source: California Transportation Commission, 2023

reduced rating per dollar. This is primarily due to current research gaps regarding VMT impacts of large, transformative, or network-forming active transportation investments. Thereby, the current methodology's ability to account for the mode-shifting nature of large, transformative active transportation projects is limited. Nonetheless, qualitative equity analysis from the forthcoming MTI study notes that because disadvantaged communities are excessively burdened by pollution and adversely impacted by health disparities, the ATP program can directly and significantly benefit these communities.

Figure 12. ATP projects by cycle over Cal Enviro Screen 4.0 Data



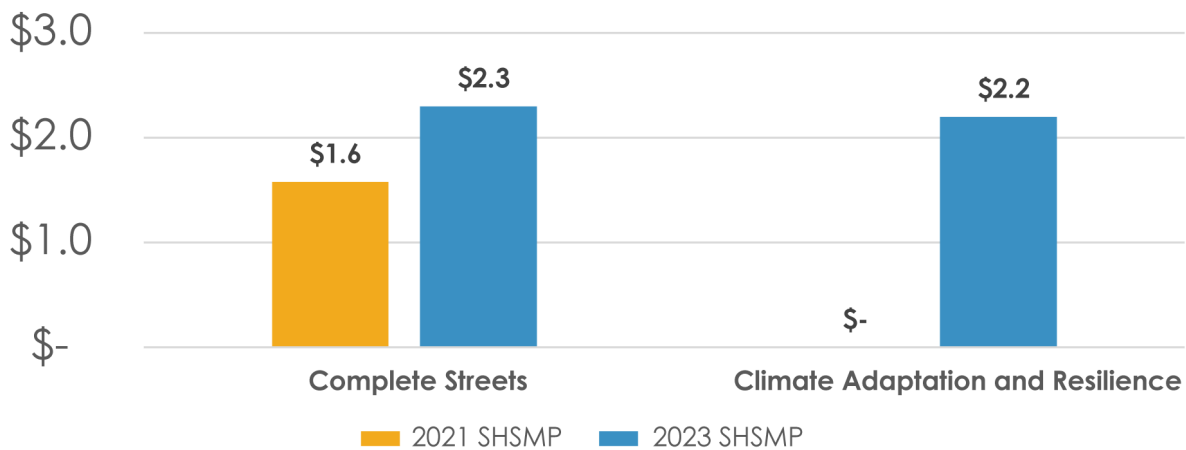
Map credit: by MTI, 2023

State Highway Operations and Protection Program (SHOPP)

Post CAPTI adoption, the draft 2023 State Highway System Management Plan (SHSMP) calls for dedicated funding to implement active transportation infrastructure. In total, more than \$2.3 billion is being invested in bicycle and pedestrian infrastructure in the State Highway Operation and Protection Program (SHOPP) over the next 10 years; the majority funding bicycle and pedestrian system expansion. Additionally, the draft 2023 SHSMP included the first funding specifically for climate adaptation projects on the state highway system. Investments include more than 50 projects for adaptation and additional planning efforts for future projects. Due to the SHSMP being a 10-year plan, the SHOPP MTI data might not yet be fully impacted by CAPTI but still show trends of where it is headed in Table 1, with a steady increase in VMT reduction per dollar from the pre N-19-19 era (the 2018 SHOPP).

Figure 13. Proposed 10-year investments in SHSMP (billions)

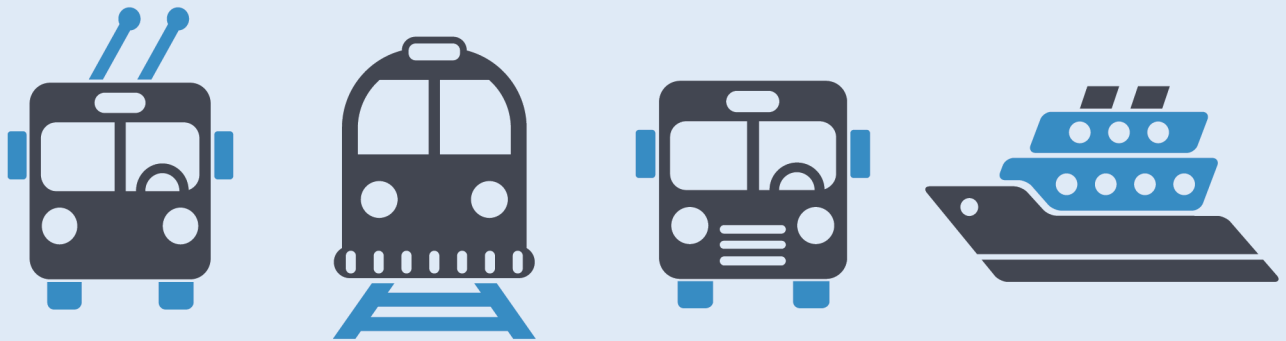
Proposed 10-year investments in SHSMP (billions)



Transit and Intercity Rail and Capital Program (TIRCP)

Following CAPTI adoption, the Transit and Intercity Rail Capital Program (TIRCP) continues to fund transformative capital improvements that modernize California's intercity, commuter, and urban rail systems, and bus and ferry transit systems, to significantly reduce emissions of greenhouse gases, vehicle miles traveled, and congestion, accomplished primarily through a mode shift strategy. But in Cycle 5, TIRCP added a new award category that furthers CAPTI through decarbonization—the Clean Fleet/Equipment

and Network Improvement Project Category. Disadvantaged communities, especially in dense urban areas, often suffer from higher pollution burdens with multiple sources of pollution (MTI, 2023). The projects funded by TIRCP can help relieve these burdens through the GHG and VMT reduction benefits associated with expanding public transit systems and improving the integration of rail systems³. Collectively, Cycles 3, 4 and 5 of TIRCP have reduced 41,291,000 metric tons of CO₂e (TIRCP, 2023 sourced from CARB CCI reporting, 2018 - 2022). For reference, a typical passenger vehicle emits about 4.6 metric tons of CO₂ per year (CSULB).



For TIRCP Cycle 5, in addition to continuing to invest in projects that increase transit ridership, this change to the guidelines increased the program's portfolio of zero-emission investments, resulting in the purchase of 393 additional zero-emission buses, 51 zero-emission shuttles or microtransit vehicles, eight new light rail vehicles and two zero-emission ferries.

³As explained in the TIRCP guidelines, Pursuant to the requirements of SB 535, as amended by AB 1550, the overall California Climate Investments Program funded with Cap-and-Trade auction proceeds must result in: (1) a minimum of 25% of the available moneys in the GGRF to projects located within, and benefiting individuals living in, disadvantaged communities, (2) an additional minimum of 5% to projects that benefit low-income households or to projects located within, and benefiting individuals living in, low-income communities located anywhere in the state, and (3) an additional minimum of 5% either to projects that benefit low-income households that are outside of, but within a 1/2 mile of, disadvantaged communities, or to projects located within the boundaries of, and benefiting individuals living in, low-income communities that are outside of, but within a 1/2 mile of, disadvantaged communities.

This assumes the average gasoline vehicle on the road today has a fuel economy of about 22.2 miles per gallon and drives around 11,500 miles per year. Every gallon of gasoline burned creates about 8,887 grams of CO₂.

Conclusion & Next Steps

This CAPTI Annual Report shows encouraging trends towards advancing more sustainable, equitable, and healthy modes of transportations, as well as acceleration in the transition to zero-emission vehicle technology, indicating the CAPTI Investment Framework's effectiveness in garnering accountability towards addressing the climate crisis. We anticipate all CAPTI actions to be complete by the end of the fiscal year (06/2024) and have already witnessed a five-fold reduction in projected VMT generation in the first cycle of funding since CAPTI adoption. Dedicated efforts of transportation partners and state agencies have been key in implementing the plan and bringing this work to fruition. Despite our progress, we know that these efforts alone will not result in the necessary reductions to meet the Climate Change Scoping Plan VMT reduction targets needed to meet our state climate goals. We will continue to work with our partners and stakeholders across all of our initiatives and programs to find opportunities for further urgent and necessary progress.

CalSTA is interested in hearing from stakeholders through the public comment period for this draft report on interest areas and ideas for further action to implement the vision outlined in the CAPTI Framework. CalSTA anticipates holding a public process in 2024 to update CAPTI strategies and actions in order to further implement the existing CAPTI Framework. Feedback received through this public comment period will inform next year's discussion.

Looking to 2024, initial themes and areas of interest to further commit to action within CAPTI could include:

- **The Future of the State Highway System:** Re-envisioning a state highway system where projects are evolved to meet the

state's current and future transportation, climate health and equity needs. This includes further exploring initiatives that more efficiently manage the existing system, prioritize the movement of transit, and better address negative impacts of vehicle travel.

- **Transit Transformation:** Beyond investing in transit infrastructure, coordinating with the Transit Transformation Task Force to commit to actions that set transit agencies up for long-term success and recovery.
- **Improving Housing and Transportation Coordination:** As a transportation agency, finding opportunities to deliver transportation programs that support climate friendly housing in coordination with efforts of our partners.
- **Climate Adaptation:** Implementing a comprehensive climate adaptation planning framework to increase resilience.
- **Data Transparency and Accountability:** Increasing transparency on all transportation investments and critical infrastructure projects through more accessible project data that allows decision-makers and the public to better understand the overall impacts of our investment choices and be accountable towards meeting state climate, health, and equity goals.
- **Embed Equity:** Find opportunities beyond the development of current tools and processes changes to further embed equity considerations in our work.

These ideas are proposed for discussion purposes. Stakeholder feedback on these ideas as well as other suggestions submitted through the public comment period will be critical to informing future CAPTI strategies and actions for 2024.



Appendix A. Implementation Strategies and Action Matrix

S1

Cultivate and Accelerate Sustainable Transportation Innovation by Leading with State Investments

Action	Description	Agencies	Implementation Progress	Status
S1.1 Prioritize Solutions for Congested Corridors Program Projects (SCCP) to Enable Travelers to Opt Out of Congestion	<ul style="list-style-type: none"> Pursue update of SCCP Guidelines to further prioritize innovative sustainable transportation solutions. Innovative solutions should focus on reducing vehicle miles travelled (VMT) and could include investments in bus and rail transit, active transportation, and highway solutions that improve transit travel times and reliability (such as priced managed lanes with transit service, dedicated transit lanes, and transit signal priority) or generate revenue for VMT reducing projects. 	Lead CTC Support CalSTA CARB	<ul style="list-style-type: none"> Through its public guidelines development process for Cycle 3, the CTC updated the SCCP Guidelines and scoring criteria to better prioritize projects that provide travelers with options to opt out of congestion, including additional consideration for projects that encourage mode shift to transit or active transportation and other zero-emission options, as acknowledged in the 2022 CAPTI Annual Report. The 2022 SCCP Guidelines were adopted by the CTC on August 17, 2022. SCCP Cycle 3 awards were adopted on June 28, 2023. 	Previously completed
S1.2 Promote Innovative Sustainable Transportation Solutions in SCCP by Requiring Multimodal Corridor Plans	<ul style="list-style-type: none"> Pursue requirement that all projects be a part of a multimodal corridor plan consistent with the California Transportation Commissions' Comprehensive Multimodal Corridor Plan Guidelines. 	Lead CTC Support CalSTA	<ul style="list-style-type: none"> Through its public guidelines development process for Cycle 3, the CTC established a requirement that SCCP projects must be a part of a comprehensive multimodal corridor plan consistent with the CTC's Comprehensive Multimodal Corridor Plan Guidelines, as acknowledged in the 2022 CAPTI Annual Report. 	Previously completed

S1

Cultivate and Accelerate Sustainable Transportation Innovation by Leading with State Investments

Action	Description	Agencies	Implementation Progress	Status
<p>S1.3</p> <p>Fast Track New CAPTI Aligned Projects in Early Planning Phases by Adding Them to Interregional Transportation Investment Plan (ITIP)</p>	<ul style="list-style-type: none"> New ITIP projects that are in alignment with the CAPTI will be added with a portion of future funding capacity. This will be done in collaboration with local and regional partners and be in addition to the need to continue funding for existing ITIP projects. 	<p>Lead Caltrans</p> <p>Support CTC</p>	<ul style="list-style-type: none"> In the 2022 ITIP, Caltrans programmed a majority of the new ITIP funding for projects in alignment with the CAPTI framework, the revised Interregional Transportation Strategic Plan (ITSP), and was supported by the revised Caltrans corridor planning process, as acknowledged in the 2022 CAPTI Annual Report. 	<p>Previously completed</p>
<p>S1.4</p> <p>Mainstream Zero- Emission Vehicle Infrastructure Investments within the Trade Corridor Enhancement Program (TCEP)</p>	<ul style="list-style-type: none"> Pursue updates to TCEP guidelines to prioritize projects that improve trade corridors by demonstrating a significant benefit to improving the movement of freight and also reduce emissions by creating or improving zero-emission vehicle charging or fueling infrastructure either within the project itself or within the larger trade corridor. 	<p>Lead CTC</p> <p>Support CalSTA CARB CEC GO-Biz</p>	<ul style="list-style-type: none"> Through the public guidelines development process for Cycle 3, the CTC added zero-emission infrastructure as an evaluation criterion in SCCP guidelines. This added criterion prioritized projects that demonstrated a significant benefit to improving the movement of freight along trade corridors, while also reducing emissions of diesel particulates, greenhouse gases, and other pollutants, as acknowledged in the 2022 CAPTI Annual Report. The 2022 TCEP Guidelines were adopted by the CTC August 17, 2022. TCEP Cycle 3 awards were adopted June 28, 2023. 	<p>Previously completed</p>



Support a Robust Economic Recovery by Revitalizing Transit, Supporting Zero-Emission Vehicle (ZEV) Deployment, and Expanding Active Transportation Investments

Action	Description	Agencies	Implementation Progress	Status
S2.1 Implement the California Integrated Travel Project (Cal-ITP)	<ul style="list-style-type: none"> Update Transit and Intercity Rail Capital Program (TIRCP) guidelines to support transit providers with implementation of contactless payment and coordination of services via Cal-ITP. 	<p>Lead CalSTA</p> <p>Support Caltrans CARB</p>	<ul style="list-style-type: none"> The 2022 TIRCP Guidelines for Cycle 5 were updated to support and incentivize transit providers to adopt and implement Cal-ITP tools and technologies, as acknowledged in the 2022 CAPTI Annual Report. 	Previously completed
S2.2 Identify A Long-Term Strategic Funding Pathway Across All Funding Opportunities to Realize the State Rail Plan	<ul style="list-style-type: none"> Lead process to prioritize rail investments statewide for major state funding programs and future federal grant opportunities. 	<p>Lead CalSTA</p> <p>Support Caltrans CTC</p>	<ul style="list-style-type: none"> Additional progress was made to develop and finalize the State's phased list of capital priorities in the State Rail Plan, which are cross-indexed to the service goals that the projects are intended to deliver in individual passenger rail corridors for advancing development of an integrated statewide rail network. The Draft State Rail Plan was released in March 2023 for public comment. Caltrans expects to release the final plan by the end of the year (Dec 2023). The process to implement a strategic funding pathway is coordinated with Caltrans Strategic Investment Planning initiative to develop a non-SHOPP capital project database for prioritizing State Rail Plan projects for funding across the different eligible funding programs. This database and prioritization process is still underway (see also s4.1). 	Completion expected by 12/2023



Support a Robust Economic Recovery by Revitalizing Transit, Supporting Zero-Emission Vehicle (ZEV) Deployment, and Expanding Active Transportation Investments

Action	Description	Agencies	Implementation Progress	Status
S2.3 Accelerate TIRCP Cycles to Support Transit Recovery with Deployment of Zero-Emission Transit/Rail Fleets and Transit/ Rail Network Improvements	<ul style="list-style-type: none"> Develop new Clean Fleet/Equipment and Network Improvement Project Category in the TIRCP. Explore allocation strategies to accelerate TIRCP cycles 	<p>Lead CalSTA</p> <p>Support CARB Caltrans CTC</p>	<ul style="list-style-type: none"> The 2022 TIRCP Guidelines for Cycle 5 included a new Clean Fleet and Facilities Network Improvement project category to provide additional support and funding to transit agencies to replace their aging vehicle fleets with ZEVs as they work with other local agencies to improve transit and rail network efficiency and integration, as acknowledged in the 2022 CAPTI Annual Report. 	Previously completed
S2.4 Increase Funding to Active Transportation Program (ATP)	<ul style="list-style-type: none"> Explore potential for additional funding for the ATP from various sources, including flexing new federal funds into the Surface Transportation Block Grant Program — Transportation Alternatives Set-Aside or pursuing new state sources of funding. 	<p>Lead CalSTA</p> <p>Support Caltrans CTC</p>	<ul style="list-style-type: none"> The Active Transportation Program (ATP) received an increase of approx. \$100 million per year in federal funding and a one-time \$1.05 billion increase in state funds to Cycle 6. A Resulting \$1.7 billion investment in ATP projects was awarded in 2023. 	Complete

S3

Elevate Community Voices in How We Plan and Fund Transportation Projects

Action	Description	Agencies	Implementation Progress	Status
S3.1 Establish Transportation Equity and Environmental Justice Advisory Committee(s)	<ul style="list-style-type: none"> Establish advisory committee(s) focused on transportation equity and environmental justice issues stemming from transportation planning and programming. Focus membership on marginalized voices, such as community-based organizations and community members reflecting different geographies and areas of the state, statewide environmental justice and equity organizations, individuals or organizations offering an accessibility and disability perspective, as well as other organizations. Coordinate with other state agency advisory bodies, including but not limited to CTC Equity Advisory Roundtable, California Air Resources Board's Environmental Justice Advisory Committee, California Energy Commission and California Public Utilities' Commissions' Senate Bill (SB) 350 Disadvantaged Communities Advisory Group. Designate staffing and resources to support committee's work. Explore payment mechanisms to provide financial compensation to committee members for their time and expertise. Explore, in addition to other topics, the following topics of interest as a committee(s): <ol style="list-style-type: none"> overarching minimum community engagement requisites for transportation programs; and how to implement innovative approaches to community-based planning and engagement efforts in planning and program funding guidelines. 	<p>Lead CalSTA</p> <p>Support Caltrans CTC CARB HCD SGC</p>	<ul style="list-style-type: none"> The Interagency Equity Advisory Committee (EAC) consisting of up to 15 members serving two-year staggered terms was established in March 2023 to make recommendations to the Commission, CalSTA, and Caltrans. The EAC members are compensated for their time and expertise through stipends (including travel) under the CTC's budgetary authority, and the EAC is facilitated by designated staff and resources of the three agencies. The EAC meets quarterly and is intended to elevate diverse and historically marginalized voices to advise the three agencies on how to achieve meaningful outcomes in transportation equity, environmental justice, and equitable economic opportunities. 	Complete

S3

Elevate Community Voices in How We Plan and Fund Transportation Projects

Action	Description	Agencies	Implementation Progress	Status
S3.2 Strengthen and Expand Coordinated, Targeted Technical Assistance on State Transportation Funding Programs	<ul style="list-style-type: none"> • CTC to provide ongoing technical assistance to applicants on tools, methods, and practices required for CTC funding programs. • CTC to explore structures for ad hoc in-house TA for program applicants. 	Lead CTC Support CalSTA SGC CARB	<ul style="list-style-type: none"> • The CTC provided technical assistance to applicants on tools, methods, and practices required for Cycle 3 of the SB1 programs (LPP, SCCP, and TCEP) as acknowledged in the 2022 CAPTI Annual Report. The CTC made this type of support a standard process in every cycle moving forward. 	Previously completed
S3.2 Strengthen and Expand Coordinated, Targeted Technical Assistance (TA) on State Transportation Funding Programs	<ul style="list-style-type: none"> • Caltrans to evaluate existing technical assistance portfolio and identify opportunities for targeted expansion. • Caltrans to cultivate partnerships with and build capacity of community-based organizations and residents to engage in the State Highway Operations and Protection Program (SHOPP) and ITIP project development. 	Lead Caltrans Support CalSTA SGC CARB	<ul style="list-style-type: none"> • Action 3.2 has partially evolved into building the capacity of the districts to engage locally, through twelve new Community Engagement Coordinator positions, which are currently in the process of being filled, one per Caltrans district statewide. These new positions will also help facilitate the roll-out and initiation of a new online public engagement platform, the Caltrans Public Engagement System (CPES), currently in procurement. <ul style="list-style-type: none"> » The CPES is intended to provide consistent and continuous access for the public to give input on Caltrans projects and plans and to provide Caltrans staff a centralized system to collect, store, categorize, track, measure, respond, and report on the public input. The tool will support the continuity of public comments through each phase of project delivery, with features to support meaningful and equitable engagement while improving overall efficiency. Caltrans will pilot CPES in 2024 and plans to fully deploy it in 2025 so that all Caltrans-led plans, PIDs, and projects will be able to use it. This tool could be helpful for improving engagement in SHOPP and ITIP project development. • See related actions S3.1 and S3.3 (Caltrans) for more information. 	Previously completed

Elevate Community Voices in How We Plan and Fund Transportation Projects

Action	Description	Agencies	Implementation Progress	Status
<p>S3.3</p> <p>Lift Up and Mainstream Community Engagement Best Practices</p>	<ul style="list-style-type: none"> • CTC to host workshops to identify best practices for meaningful community engagement for inclusion in program guidelines. 	<p>Lead CTC</p> <p>Support CalSTA SGC CARB</p>	<ul style="list-style-type: none"> • The CTC hosted two workshops to gain stakeholder feedback regarding best practices for meaningful community engagement to incorporate into all SB1 Program Guidelines. Feedback from the workshops informed language on best practices in meaningful engagement and were added to the each of the SB 1 Program guidelines through its Transportation Equity Supplement, as acknowledged in the 2022 CAPTI Annual Report. 	<p>Previously completed</p>
<p>S3.3</p> <p>Lift Up and Mainstream Community Engagement Best Practices</p>	<ul style="list-style-type: none"> • Caltrans to create community engagement playbook for planning and project development work. • Caltrans to review existing programs, processes, and procedures to identify opportunities to strengthen community engagement. • Caltrans to explore leveraging existing contracts to strengthen partnerships with community-based organizations. 	<p>Lead Caltrans</p> <p>Support CalSTA SGC CARB</p>	<ul style="list-style-type: none"> • Caltrans has initiated work on a Community Engagement Playbook, which will consist of a statewide framework for compiling and making available best practices, templates, tools, and other guidance in tailored District-level Playbooks, expected to be finalized by June 2024. • Among the tools and guidance included in the Playbook are several other new products and efforts – new guidance on Equitable Public Engagement for the Project Initiation Documents (PID) Phase, a new Public Engagement Plan (PEP) Template and Guide, and communication with the interagency Equity Advisory Committee. • In an effort to explore strengthening community engagement, applicants of the Reconnecting Communities Highways to Boulevards (RC:H2B) Pilot Program were highly encouraged to establish partnerships with CBOs, to approach planning and project development using a collaborative stakeholder structure. • See also S3.1 and S3.2 (Caltrans) for related information. 	<p>Completion expected by 06/2024</p>

S3

Elevate Community Voices in How We Plan and Fund Transportation Projects

Action	Description	Agencies	Implementation Progress	Status
S3.4 Develop and Utilize Equity Index to Assist in Evaluation or Prioritization of Caltrans Projects	<ul style="list-style-type: none"> Develop an Equity Index tool to assist in the evaluation and prioritization of Department projects. Implement Equity Index in project prioritization. Develop and roll out training to Caltrans staff on utilizing Equity Index for project prioritization. Develop an Equity Index tool to assist in the evaluation of Department projects. Develop and roll out training to Caltrans staff on utilizing Equity Index. 	<p>Lead Caltrans</p> <p>Support CalSTA CTC CARB CDPH SGC OPR</p>	<ul style="list-style-type: none"> Completion of Version 1.0 of the Equity Index (EQI) is expected by spring 2024. An engagement process informed development of the tool, and additional outreach and training continue to be offered to Caltrans employees, interagency partners, and other stakeholders. Caltrans is moving into the next phase of work to implement the EQI. Potential use of the tool includes evaluating and prioritizing Caltrans projects. The first application will be the integration of the EQI with Caltrans Systems Investment Strategy (see action S4.1). Additional use cases will be developed in collaboration with partners. 	Completion expected by 3/2024

S4

Advance State Transportation Leadership on Climate and Equity through Improved Planning & Project Partnerships

Action	Description	Agencies	Implementation Progress	Status
S4.1 Develop and implement the Caltrans System Investment Strategy (CSIS) to Align Caltrans Project Nominations in with the CAPTI Investment Framework	<ul style="list-style-type: none"> Develop CSIS to guide project nominations. Implement CSIS for Caltrans-only and Caltrans-partnered project nominations. 	Lead Caltrans Support CalSTA CTC	<ul style="list-style-type: none"> Caltrans developed CSIS 1.0 in 2022 and is working on version 2.0. Version 1.0 has been applied to methodology for State Sponsored PIDs. Version 2.0 of the CSIS will be completed by 1/2024. This update adds Local Sponsored Project Initiation Document (PID) Guidance to the CSIS Framework. The Guidance will provide early feedback on local sponsored projects for CAPTI alignment. The CSIS 3.0, anticipated 6/2024, will use quantitative metrics for objectively scoring projects to guide Caltrans-led and Caltrans-partnered project nominations. The quantitative metrics will be piloted during the SB 1 Cycle 4 project nominations in 2024. The quantitative scoring process can inform how projects adjust scope over time to be more comprehensive and multimodal to improve a project's nomination viability. 	Completion expected by 06/2024
S4.2 Align Interregional Transportation Strategic Plan 2021 (ITSP) with CAPTI Investment Framework	<ul style="list-style-type: none"> Update 2021 ITSP with meaningful integration of CAPTI Investment Framework and Administration's Regions Rise Together effort. 	Lead Caltrans Support CalSTA	<ul style="list-style-type: none"> The 2021 ITSP was finalized in October 2021 and incorporated the CAPTI Investment Framework and Regions Rise Together in the plan. The 2021 ITSP included metrics to evaluate reductions in vehicle miles travelled, improved climate resilience, prioritization of underserved communities, and increased multimodality, as acknowledged in the 2022 CAPTI Annual Report. 	Previously completed

S4

Advance State Transportation Leadership on Climate and Equity through Improved Planning & Project Partnerships

Action	Description	Agencies	Implementation Progress	Status
<p>S4.3</p> <p>Update the 2023 State Highway System Management Plan (SHSMP) to Meaningfully Advance CAPTI Investment Framework</p>	<ul style="list-style-type: none"> Update 2023 SHSMP with meaningful integration of CAPTI Investment Framework. Update the 2023 SHSMP's SHOPP and Maintenance Investment Strategies and Performance Outcomes to align with CAPTI Investment Framework. Update will include following approaches or considerations, at a minimum: active transportation, climate resiliency, nature-based solutions, greenhouse gas emission reduction, climate smart decision-making. Incorporate roadside land management activities related to wildfire prevention into the SHSMP, such as prescribed and managed fire, and other strategies aligned with the California Forest Carbon Plan and the Draft Natural and Working Lands Implementation Plan. 	<p>Lead Caltrans</p> <p>Support CalSTA</p>	<ul style="list-style-type: none"> Climate resiliency and nature-based solutions: the 2023 SHSMP included and expanded reporting of climate adaptation cost estimates for the State Highway System (SHS). Adaptation cost estimates now include sea level rise, storm surge and coastal cliff retreat. Additionally, research is underway in coordination with the Caltrans Division of Maintenance to assess wildfire management and response needs on the SHS. The 2023 SHSMP included the first funding specifically for climate adaptation projects on the SHS. Funding was made available through the federal Infrastructure Investment and Jobs Act (IIJA). Investments include over 50 projects for adaptation and additional planning efforts for future projects. Active transportation: the 2023 SHSMP included additional investments for bicycle and pedestrian infrastructure. In total over \$2.3 billion is being invested in bicycle and pedestrian infrastructure in the State Highway Operation and Protection Program (SHOPP) over the next 10 years. 	<p>Complete</p>

S4

Advance State Transportation Leadership on Climate and Equity through Improved Planning & Project Partnerships

Action	Description	Agencies	Implementation Progress	Status
<p>S4.4</p> <p>Re-focus Caltrans Corridor Planning Efforts to Prioritize Sustainable Multimodal Investments in Key Corridors of Statewide and Regional Significance</p>	<ul style="list-style-type: none"> • Provide direction to Caltrans Districts on identifying key corridors of statewide and regional significance. • Require corridor planning efforts to prioritize sustainable multimodal investments. • Update Caltrans Corridor Planning Guide and CTC Comprehensive Multimodal Corridor Plan Guidelines accordingly. • Support the development of innovative safety solutions based on the safe systems approach that advance sustainable transportation modes, particularly for rural communities 	<p>Lead Caltrans</p> <p>Support CalSTA CTC</p>	<ul style="list-style-type: none"> • In April 2022, Caltrans completed its Corridor Planning Process Guide and conducted outreach workshops about the new guide. The guide is used to develop Comprehensive Multimodal Plans (CMCPs) in which sustainable multimodal investments are prioritized. A future goal is to develop an Emphasis Area Guide for Safety to supplement the Caltrans Corridor Planning Process Guide. • CTC updated their comprehensive multimodal corridor plan guidelines in alignment with CAPTI. • In 2023, Caltrans drafted frameworks for categorizing and prioritizing CMCP-planned corridors and intend to create supplementary technical assistance guidance documents to support implementation of the frameworks. • During the process, Caltrans is looking forward to coordinating with local and regional partners to inform a categorization and prioritizing process (approx. slated for November 2023). • Early 2024, Caltrans will work with the Districts to develop a Categorization and Prioritization Matrix which will determine a prioritized corridor list by June 2024. 	<p>Completion expected by 6/2024</p>

S4

Advance State Transportation Leadership on Climate and Equity through Improved Planning & Project Partnerships

Action	Description	Agencies	Implementation Progress	Status
S4.5 Develop and Implement Caltrans Climate Action Plan (CCAP)	<ul style="list-style-type: none"> Develop Caltrans Climate Action Plan aligned with CAPTI Investment Framework. Explore actions that reduce GHGs and VMT — including from use of the state highway system and internal operations. Establish mode share targets for passenger travel. 	Lead Caltrans Support CalSTA CTC	<ul style="list-style-type: none"> The foundational documents of CCAP, the California Transportation Carbon Reduction Strategy (CRS) and State Climate Resilience Improvement Plan for Transportation (SCRIPT), are under development. The CRS will be finalized by 12/2023 and the SCRIPT will be submitted to FHWA by 12/2023 for their review and approval. Development of these documents and delivery of their associated IJA funding programs explore actions that reduce GHGs and VMT from use of the state highway system and internal operations, informing scope from which the CCAP will be developed. A public draft of the CCAP is to be completed by 06/2024. The CRS outlines how California will spend its Carbon Reduction Program dollars on reducing transportation carbon emissions. California's CRS focuses on zero-emission vehicles and infrastructure, active transportation, and rail and transit. The SCRIPT includes a Priority Project List identifying all projects selected for and seeking federal transportation resilience formula and discretionary funding (the PROTECT program) in California, to be periodically updated. 	Completion expected by 06/2024
S4.6 Incorporate Zero Emission Freight Infrastructure Needs in California Freight Mobility Plan (CFMP)	<ul style="list-style-type: none"> Update CFMP and project list to incorporate zero-emission freight infrastructure needs. Analyze CFMP project impacts and mitigations for environmental justice communities — including but not limited to air quality, pedestrian and bicyclist safety, and noise. 	Lead Caltrans Support CalSTA CARB	<ul style="list-style-type: none"> The CFMP 2023 was approved by FHWA in August 2023. Caltrans has incorporated TCEP Cycle 3 projects that have ZEV components in the project list. Projects from the SB 671 Clean Freight Corridor Assessment will be included in the next plan update. Significant outreach was conducted to AB 617 communities throughout California, feedback was included in Chapter 5B Partnerships and Engagement. 	Complete

S5

Support Climate Resilience through Transportation System Improvements and Protections for Natural and Working Lands

Action	Description	Agencies	Implementation Progress	Status
<p>S5.1</p> <p>Develop Climate Risk Assessment Planning and Implementation Guidance</p>	<ul style="list-style-type: none"> Update OPR Climate Risk Assessment Guidance. 	<p>Lead OPR</p> <p>Support CalSTA CNRA</p>	<ul style="list-style-type: none"> In winter 2023/24, OPR will engage agencies, stakeholders, and technical experts to assess the current guidance, identify priorities for changes to the updated guidance, and recruit a small working group to help summarize these priorities and develop updated guidance. This working group will also connect with the new Integrated Climate Adaptation and Resiliency Program (ICARP) Science Advisory Group and take input from the ICARP Technical Advisory Council. This assessment and review process will ensure recommendations for updated guidance (expected in early 2024) will include the latest climate science and the best practices to guide state agencies in applying climate science to their policies, programs, and investments. 	<p>Completion expected by 03/2024</p>

S5

Support Climate Resilience through Transportation System Improvements and Protections for Natural and Working Lands

Action	Description	Agencies	Implementation Progress	Status
<p>S5.1</p> <p>Develop Climate Risks Assessment Planning and Implementation Guidance</p>	<ul style="list-style-type: none"> Collaborate to integrate climate risk guidance into Caltrans planning and project delivery processes. Integrate Caltrans' District Climate Change Vulnerability Assessments and District Adaptation Priorities Reports in implementation guidance. 	<p>Lead Caltrans</p> <p>Support CalSTA CNRA</p>	<ul style="list-style-type: none"> Caltrans has incorporated OPR's Planning and Investing for a Resilient California guidance as well as previous planning efforts, such as the Caltrans' District Climate Change Vulnerability Assessments and the District Adaptation Priorities Reports, into standard planning practice. To date, Caltrans has released new guidance integrating climate risk and adaptation considerations, including wildfire, sea level rise, drought, changes in temperature and precipitation, and other extreme weather events, into corridor planning and project nominations. Caltrans is releasing guidance for Project Initiation Documents (PIDs) in September 2023. This aligns with recently released Transportation Planning Scoping Information Sheet (TPSIS) guidance to improve consideration of climate change in early project scoping. These actions now require consideration of climate risk in project planning. Caltrans is also working to finalize a department-wide sea level rise guidance in fall 2023. Caltrans also released an educational resource on adaptation strategies for project scoping and required that Adaptation Priority Report findings were considered to nominate adaptation projects for IIJA PROTECT Program funding. The Adaptation Priorities Reports informed the allocation of ~\$350M from the FHWA PROTECT Program to incorporate resilience improvements into SHOPP projects to make the State Highway System more resilient to a mix of climate hazards. Finally, Caltrans is launching a major planning effort to identify location-based climate adaptation needs, to inform future project investment strategies for all transportation funding sources. This effort will kick off this fall and be completed next year. 	<p>Complete</p>

S5

Support Climate Resilience through Transportation System Improvements and Protections for Natural and Working Lands

Action	Description	Agencies	Implementation Progress	Status
S5.2 Update SHOPP and SB 1 Competitive Program Guidelines to Incentivize Climate Adaptation and Climate Risk Assessments/Strategies	<ul style="list-style-type: none"> CalSTA and CTC will evaluate OPR/Caltrans Climate Risk Assessment Planning and Implementation Guidance and pursue inclusion in SHOPP, TIRCP, and SB 1 Competitive Program Guidelines. 	Lead CTC Support CalSTA Caltrans	<ul style="list-style-type: none"> Climate change resilience and adaption language was added to the Cycle 3 SB 1 program guidelines for consideration in projects, as was acknowledged in the 2022 CAPTI Annual Report. 	Previously completed
S5.3 Explore Incentivizing Land Conservation through Transportation Programs	<ul style="list-style-type: none"> Consider inclusion of land conservation and climate smart solution incentives in next scheduled updates to Regional Transportation Plan and SB 1 Competitive Program guidelines. 	Lead CTC Support CalSTA CNRA CARB OPR SGC	<ul style="list-style-type: none"> By December 2022, Competitive SB 1 Program applicants were asked to provide information in project nominations regarding land conservation measures that were employed through the project's development to demonstrate that impacts on natural and working lands were minimized. Strategy 5.3 will continue to be considered in upcoming SB 1 Program guidelines development during Cycles 4 and 5 of the competitive SB 1 Programs. The Commission released the second draft of the Regional Transportation Plan Guidelines for Metropolitan Planning Organizations and the first draft of the Regional Transportation Plan Guidelines for Regional Transportation Planning Agencies in October 2023. These draft versions included proposed language that supports the protection of natural and working lands, developed in partnership with stakeholders and subject matter experts. 	Completion expected by 03/2024

Action	Description	Agencies	Implementation Progress	Status
<p>S6.1</p> <p>Explore New Mechanisms to Mitigate Increases in Vehicle Miles Travelled (VMT) from Transportation Projects</p>	<ul style="list-style-type: none"> Collaborate with local and regional transportation agencies to develop new mechanisms for viable VMT mitigation options for highway capacity projects, particularly with equity and land conservation in mind. Explore statewide and regional VMT mitigation bank concept. Evaluate feasibility and explore potential expansion of Advance Mitigation Program to include GHG/VMT mitigation. 	<p>Lead Caltrans</p> <p>Support CalSTA CARB CTC HCD</p>	<ul style="list-style-type: none"> Caltrans funded a study of the legal and regulatory framework for VMT mitigation bank and exchange programs that was released in August 2022. This study helped explore mitigation mechanisms and outline pathways for the creation of mitigation banks and exchanges. Caltrans is working with partners to develop project specific and programmatic VMT mitigation options. Meetings have been held with partners, such as those in District 4, to discuss the establishment of a regional bank. These discussions are ongoing. Caltrans continues to look for opportunities to expand the Advance Mitigation Program to include advance GHG and VMT mitigation. Although the initial work required in this action is complete, Caltrans will continue to pursue opportunities to improve options for VMT mitigation. 	<p>Complete</p>

S6

Support Local and Regional Innovation to Advance Sustainable Mobility

Action	Description	Agencies	Implementation Progress	Status
S6.2 Convene a Roadway Pricing Working Group to Provide State Support for Implementation of Local and Regional Efforts	<ul style="list-style-type: none"> Convene a working group consisting of state agencies and local and regional partners to provide state leadership and support to local, regional, and state efforts already underway. Create an inventory of various ongoing efforts across the state Outline state and federal statutory and administrative opportunities and barriers to equitable implementation of various roadway pricing applications currently under consideration by local and regional partners, including but not limited to cordon pricing, congestion pricing, and other dynamic pricing tools. 	Lead Caltrans CalSTA Support CTC CARB OPR SGC	<ul style="list-style-type: none"> CalSTA and Caltrans have convened the State Roadway Pricing Working Group since 2021, quarterly and ongoing, to identify and provide recommendations for equitable roadway pricing implementation pathways. The Working Group has provided valuable input and feedback to the development of the state's Carbon Reduction Strategy and Program. The Working Group has also formed an Equity Sub-Working Group to discuss roadway pricing-specific research, policies, and best practices around equity. Although this action to launch the Working Group is complete, the now established State Roadway Pricing Working Group will continue to convene, to advance and grow the inventory of roadway pricing efforts. 	Complete
S6.3 Convene Discussion on Sustainable Rural Transportation Solutions	<ul style="list-style-type: none"> Convene discussion to explore actions CalSTA can take to advance rail, transit, active transportation, and ZEV deployment in rural communities 	Lead CalSTA Support —	<ul style="list-style-type: none"> CalSTA, in partnership with the Rural Counties Task Force (RCTF), convened a discussion with local and regional rural transportation partners and state staff to share information and best practices and to identify and explore actions to equip rural communities with the tools they need to further the vision of the CAPTI framework in rural settings. The full-day virtual summit was held on August 4, 2022, as acknowledged in the 2022 CAPTI Annual Report. 	Previously completed

S7

Strengthen Transportation-Land Use Connections

Action	Description	Agencies	Implementation Progress	Status
<p>S7.1</p> <p>Leverage Transportation Investments to Incentivize Infill Housing Production</p>	<ul style="list-style-type: none"> Explore and identify opportunities in transportation funding programs to incentivize pro-infill housing policies and to expand upon recent successes of programs such as the Affordable Housing and Sustainable Communities (AHSC) program. 	<p>Lead CalSTA</p> <p>Support CTC Caltrans HCD CARB</p>	<ul style="list-style-type: none"> HCD, CalSTA, and CTC collaborated to integrate Pro-Housing policies into TIRCP, SCCP, and LPP program guidelines. In addition, the ATP Cycle 6 guidelines encouraged applicants for large infrastructure projects to apply for the Pro-housing Designation Program to fulfill existing requirements to address housing policies, as acknowledged in the 2022 CAPTI Annual Report. 	<p>Previously completed</p>
<p>S7.2</p> <p>Create Working Group to Explore Potential Action to Address Direct and Indirect Displacement in Transportation Programs</p>	<ul style="list-style-type: none"> Convene interagency working group to explore actions to enable transportation programs to incentivize anti-displacement strategies within their funding frameworks. 	<p>Lead CalSTA</p> <p>Support Caltrans CTC CARB HCD SGC OPR</p>	<ul style="list-style-type: none"> CalSTA convened an interagency working group to explore actions and incentives that could be taken to integrate anti-displacement strategies in state transportation programs' funding frameworks. This group has met periodically since November 2021 and will continue to meet through spring 2024. The group is currently in its final phase of work and developing a memo of policy recommendations to encourage anti-displacement strategies in transportation programs, and the memo is on track to be finalized by spring 2024, after input from the EAC and stakeholders is incorporated this winter. The working group also developed an inventory of policies, strategies and actions that are known to help curtail the displacement of low-income, disadvantaged, or otherwise vulnerable households, communities, and businesses. Many of the strategies on the inventory are already in-use across some state funding programs, such as the Transformative Climate Communities program, Affordable Housing and Sustainable Communities program, and Sustainable Transportation Equity Project. This inventory is intended to be adapted by programs who may use it to create a "menu" of activities for their applicants to incorporate in their projects. 	<p>Completion expected by 03/2024</p>

S7

Strengthen Transportation-Land Use Connections

Action	Description	Agencies	Implementation Progress	Status
S7.3 Explore a “Highways to Boulevards” Conversion Pilot Program	<ul style="list-style-type: none"> Identify locally nominated candidate locations for pilot program. Pursue creation of Highway to Boulevards Conversion Pilot Program. Integrate anti-displacement strategies as part of pilot program concept. 	<p>Lead CalSTA</p> <p>Support Caltrans HCD OPR SGC</p>	<ul style="list-style-type: none"> Through the adopted Fiscal Year 2022-23 state budget, California established the \$150 million Highways to Boulevards Pilot Program, a discretionary grant program offered to locals, administered by Caltrans, as acknowledged in the 2022 CAPTI Annual Report. The final program guidelines (published in fall 2023) incentivize anti-displacement strategies as part of the pilot concept. See page X of this document for more details. 	Previously completed

S8

Monitor Implementation and Report Progress

Action	Description	Agencies	Implementation Progress	Status
S8.1 Develop and Coordinate Metrics to Track Progress	<ul style="list-style-type: none"> Develop draft set of quantitative and qualitative metrics to monitor and track progress of CAPTI implementation and outcomes Facilitate stakeholder review of conceptual CAPTI evaluation metrics Coordinate metrics development with the ZEV Market Development Strategy and State Adaptation Strategy, and other Administration climate efforts. Finalize CAPTI evaluation metrics 	Lead CalSTA Support Caltrans CTC CARB HCD OPR SGC GO-Biz CNRA CDPH	<ul style="list-style-type: none"> CalSTA, in partnership with Caltrans, contracted with the Mineta Transportation Institute to develop a set of quantitative and qualitative metrics to track program level outcomes through the implementation of CAPTI to determine how project investments are shifting. Throughout 2023, the Mineta Transportation Institute developed evaluation metrics and ran program lists through various modeling tools, the outcomes of which are profiled in this Annual Report (see CAPTI Implementation Progress section). 	Complete
S8.2 Deploy Tools to Analyze CAPTI Progress	<ul style="list-style-type: none"> Identify existing tools or need(s) for tool development to enable use of metrics identified in S8.1 for reporting purposes Launch and convene Statewide Data Analytics Work Group Explore collaboration options, cost-sharing opportunities, and technical assistance needs for travel datasets and emerging data analytics tools 	Lead CalSTA Support Caltrans CTC CARB HCD OPR SGC GO-Biz CNRA CDPH	<ul style="list-style-type: none"> CalSTA, in partnership with Caltrans, identified existing tools to enable use of metrics identified in S8.1 for reporting purposes. Use of these tools were tested through the production of the study mentioned in s8.1. Through the Housing and Transportation Working Group, a data subcommittee launched and worked across agencies to inventory data and data access, identify data gaps, and share data resources and best practices. This work was memorialized in an interagency memo that also contained recommendations for exploring collaboration options and other needs. 	Complete

S8

Monitor Implementation and Report Progress

Action	Description	Agencies	Implementation Progress	Status
S8.3 Prepare Annual Progress Report & Provide Public Status Updates	<ul style="list-style-type: none"> • Prepare annual fall report beginning Fall 2022 • Deliver CAPTI implementation status updates to joint CTC-CARB-HCD meetings • Prepare subsequent annual reports • Deliver status updates to CARB and CTC, as requested 	Lead CalSTA Support Caltrans CTC CARB HCD OPR SGC GO-Biz CNRA CDPH	<ul style="list-style-type: none"> • First Annual Report was published in fall 2022. • CAPTI implementation status update was delivered at joint CTC-CARB-HCD meetings in November 2022 and November 2023. • This subsequent annual report was published in October 2023. • CAPTI status updates are being delivered to CARB and CTC, as requested. 	Complete
S8.4 Lead CAPTI Interagency Working Group	<ul style="list-style-type: none"> • Convene Interagency Working Group meetings on quarterly basis 	Lead CalSTA Support Caltrans	<ul style="list-style-type: none"> • The interagency Working Group has been meeting to discuss CAPTI work-products (such as the MTI Metrics Study and this annual report) on an as needed basis. 	Complete

Appendix B.

List of Acronyms and Abbreviations

EO	Executive Order
AB	Assembly Bill
AHSC	Affordable Housing and Sustainable Communities Program
ATP	Active Transportation Program
BIPOC	Black, Indigenous, and People of Color
CalEPA	California Environmental Protection Agency
Cal-ITP	California Integrated Travel Project
CalSTA	California State Transportation Agency
Caltrans	California Department of Transportation
CARB	California Air Resources Board
CAPTI	Climate Action Plan for Transportation Infrastructure
CBO	Community Based Organization
CCAP	Caltrans Climate Action Plan
CCI TA	California Climate Investment Technical Assistance Program
CDPH	California Department of Public Health
CFMP	California Freight Mobility Plan
CEQA	California Environmental Quality Act
CNRA	California Natural Resources Agency
CRP	Carbon Reduction Program
CRS	Carbon Reduction Strategy
CSIS	Caltrans System Investment Strategy
CTC	California Transportation Commission
CTP/CTP 2050	California Transportation Plan 2050
CWDB	California Workforce Development Board

List of Acronyms and Abbreviations

DOF	California Department of Finance
GHG	Greenhouse Gas
GO-Biz	Governor's Office of Business and Economic Development
HCD	California Department of Housing and Community Development
ICARP	Integrated Climate Adaptation and Resiliency Program
ICE	Internal Combustion Engine
IIJA	Infrastructure Investment and Jobs Act
ITIP	Interregional Transportation Improvement Program
ITSP	Interregional Transportation Strategic Plan
LPP	Local Partnership Program
LWDA	Labor and Workforce Development Agency
MHDV	Medium and Heavy-Duty Vehicle
OPR	Governor's Office of Planning and Research
PROTECT	Promoting Resilient Operations for Transformative, Efficient, and Cost-Saving Transportation
RTP	Regional Transportation Plan
SB	Senate Bill
SCCP	Solutions for Congested Corridors
SCS	Sustainable Communities Strategy
SGC	California Strategic Growth Council
SHOPP	State Highway Operations & Protection Program
SHSMP	State Highway System Management Plan
TCEP	Trade Corridor Enhancement Program
TDM	Transportation Demand Management
TIRCP	Transit & Intercity Rail Capital Program
VMT	Vehicle Miles Travelled
ZEV	Zero-Emission Vehicle

Appendix C.

Summary of Funding Programs

As previously mentioned, EO N-19-19 specifically calls on CalSTA to leverage \$5 billion in annual discretionary transportation infrastructure funding. The funding identified in EO N-19-19 includes the following programs:

Active Transportation Program (ATP)

Annual Funding Amount: \$223 million

Statutory Intent: To encourage increased use of active modes of transportation through investments in walking, biking, Safe Routes to Schools, and trail infrastructure projects and non-infrastructure programs.

Interregional Transportation Improvement Program (ITIP)

Annual Funding Amount: Variable (2022 ITIP anticipated to be \$175 million)

Statutory Intent: To improve interregional movement for people and goods across California on the State Highway System (SHS) and develop Intercity Passenger Rail corridors of strategic importance.

Local Partnership Program (LPP)

Annual Funding Amount: \$200 million

Statutory Intent: To provide funding to local and regional agencies with voter approved fees/taxes dedicated solely to transportation improvements in order to improve aging infrastructure; road conditions; active transportation; transit and rail; or health and safety benefits.

Solutions for Congested Corridors (SCCP)

Annual Funding Amount: \$250 million

Statutory Intent: To achieve a balanced set of transportation, environmental, and community access improvements within highly congested travel corridors throughout the state.

State Highway Operations & Protection Program (SHOPP)

Annual Funding Amount: \$4.2 billion

Statutory Intent: To preserve and protect the state highway system through improvements relative to the maintenance, safety, operation, and rehabilitation of state highways and bridges that do not add a new traffic lane to the system.

Trade Corridor Enhancement Program (TCEP)

Annual Funding Amount: \$400 million

Statutory Intent: To improve infrastructure on federally designated Trade Corridors of National and Regional Significance, on the Primary Freight Network, and along other corridors that have a high volume of freight movement.

Transit & Intercity Rail Capital Program (TIRCP)

Annual Funding Amount: approximately \$275 million

Statutory Intent: To fund transformative capital improvements that will modernize California's intercity, commuter, and urban rail systems, and bus and ferry transit systems, to significantly reduce emissions of greenhouse gases, vehicle miles traveled, and congestion.



Appendix D. CAPTI Investment Framework

Although California's statewide transportation funding programs have different statutory direction and invest in various types of infrastructure, collectively they can help us work toward our transportation vision. Understanding that there is not a one-size-fits-all approach to achieving the needs of the state's diverse communities, realizing the outcomes outlined in the CTP 2050 requires a range of investment strategies. These guiding principles for investment will work to reduce Californians' dependence on driving, increase multimodal options for all communities, and equitably meet the state's climate goals. These programs should collectively focus on prioritizing projects that align with the following guiding principles, as applicable within their existing structure.

Guiding Principles

Within the "fix-it-first" approach and through existing funding frameworks, the State's transportation infrastructure investments should be deployed to do the following, where feasible:

Per EO N-79-20, invest to create new clean transportation options in urban, suburban, and rural settings for all Californians as well as for goods movement by:



Building toward an integrated, statewide rail and transit network, centered around the existing California State Rail Plan that leverages the California Integrated Travel Project to provide seamless, affordable, multimodal travel options in all context, including suburban and rural settings, to all users.



Investing in networks of safe and accessible bicycle and pedestrian infrastructure, particularly by closing gaps on portions of the State Highway System that intersect local active transportation and transit networks or serve as small town or rural main streets, with a focus on investments in low-income and disadvantaged communities throughout the state.



Including investments in light, medium, and heavy-duty zero-emission vehicle (ZEV) infrastructure as part of larger transportation projects. Support the innovation in and development of the ZEV market and help ensure ZEVs are accessible to all, particularly to those in more rural or remote communities.

Additionally, per EO N-19-19, invest in ways that encourage further adoption and use of these clean modes of transportation mentioned above by:



Strengthening our commitment to social and racial equity by reducing public health and economic harms and maximizing community benefits to disproportionately impacted disadvantaged communities, low-income communities, and Black, Indigenous, and People of Color (BIPOC) communities, in urbanized and rural regions, and involve these communities early in decision-making. Investments should also avoid placing new or exacerbating existing burdens on these communities, even if unintentional.



Making safety improvements to reduce fatalities and severe injuries of all users towards zero on our roadways, railways and transit systems by focusing on context-appropriate speeds, prioritizing vulnerable user safety to support mode shift, designing roadways to accommodate for potential human error and injury tolerances, and ultimately implementing a safe systems approach.



Assessing physical climate risk as standard practice for transportation infrastructure projects to enable informed decision-making, especially in communities that are most vulnerable to climate-related health and safety risks.



Promoting projects that do not significantly increase passenger vehicle travel, particularly in congested urbanized settings where other mobility options can be provided and where projects are shown to induce significant auto travel. These projects should generally aim to reduce VMT and not induce significant VMT growth. When addressing congestion, consider alternatives to highway capacity expansion, such as providing multimodal options in the corridor, employing pricing strategies, and using technology to optimize operations.



Promoting compact infill development while protecting residents and businesses from displacement by funding transportation projects that support housing for low-income residents near job centers, provide walkable communities, and address affordability to reduce the housing-transportation cost burden and auto trips.



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.



Protecting natural and working lands from conversion to more intensified uses and enhance biodiversity by supporting local and regional conservation planning that focuses development where it already exists and align transportation investments with conservation priorities to reduce transportation's impact on the natural environment.

Appendix E. VMT Rating Methodology

An Excerpt on VMT Rating Methodology from the Forthcoming Study:
“Evaluating Benefits from Transportation Investments aligned with CAPTI”,
Mineta Transportation Institute

By: Shams Tanvir, PhD, PE, Assistant Professor in the Department of Civil Engineering and Construction Engineering Management (CECEM)

The research group at Cal Poly was tasked to assess the vehicle miles travelled (VMT) impact among 7 unique programs under California's Climate Action Plan for Transportation Infrastructure (CAPTI). The 7 Programs included: Transit and Intercity Rail Capital Program (TIRCP); Interregional Transportation Improvement Program (ITIP); Solutions for Congested Corridors Program (SCCP); Active Transportation Program (ATP); Trade Corridor Enhancement Program (TCEP); State Highway Operation and Protection Program (SHOPP); Local Partnership Program (LPP)

Each program was assessed for their individual projects' infrastructure “outputs” as reported by Caltrans. All programs' outputs were analyzed, and 152 unique outputs were consolidated. The VMT impact for each project stems from the infrastructure outputs that the respective project adds. Each of the 152 outputs have been assigned a “VMT Rating/unit” - the rating corresponds to the unit value that is assigned to each output. For example, the amount of new crosswalks added from an infrastructure project is measured in “each” while the amount of new roadway miles added is measured in “miles”. After the outputs were organized into one table, Dr. Tanvir and Research Assistant, Hayden Flechner first depicted the outputs with “neutral” impact on VMT. The remaining outputs were analyzed to either have a “positive” impact on VMT which are outputs that induce more VMT for a project or a

“negative” impact on VMT which are outputs that induce less VMT for a project.

The VMT ratings were derived by studying literature to understand the impact that each output has by adding or removing metric tons of CO2 per year. For clarification, not all assigned VMT ratings were calculated from the same source; assumptions were made by comparing the impact of outputs on VMT. Many VMT ratings were inconclusive due to inadequate information from the literature reviewed. Inconclusive VMT ratings were given a value of 0.

As CalSTA summarized earlier in its CAPTI Annual Report 2023, VMT ratings of projects were then normalized per dollar spent, to be able to illustrate and compare the magnitude of equivalent VMT generated or decreased between programs and cycles.

Neutral Impact

Regarding the process of analysis for the outputs among the 7 CAPTI programs, the researchers first assigned a “neutral” rating to the outputs that have no VMT impact on a project. These outputs were grouped together to have a VMT rating/unit of 0. Examples of outputs grouped into the neutral category include “fish passage remediation” (each), “LED install lighting” (each), and “guard rail added” (linear feet).

There is a common trend among neutral impacting outputs as seen above. Outputs that have a positive environmental affect or enhance

driver safety were measured in programs like SHOPP and ITIP. Although these outputs are essential to a project's impact on safety and environmentalism, they were deemed not to have an impact on adding vehicle miles travelled from a transportation corridor. Thus, they were assigned a "neutral" impact. Outputs with a neutral impact can be seen in Appendix Ei.

Positive Impact

The outputs with a positive VMT rating are ones who would add vehicle miles due to their construction in a new infrastructure project. There are only 11 outputs of the 152 that have a positive VMT rating. Among these outputs, there are two common groups: capacity expansion and facility improvements.

Adding lanes to highways and heavily trafficked roadways is considered capacity expansion. The outputs included in the data from Caltrans involve the addition of lanes in "miles" to an existing infrastructure project or new project. Examples include "mixed flow lane-miles", "HOV/HOT lane-miles" and "Roadway lane-miles". These outputs induce the highest VMT rating/ mile because constructing additional lanes to a roadway facility allows for more vehicles to use the facility – thus, adding vehicle miles travelled to the project.

The facility improvements outputs reported by Caltrans that were deemed to increase vehicle miles travelled include lane widening and interchange modifications. Lane widening was reported in "miles" while interchange modifications were reported in "each". Outputs with a positive impact can be seen in Appendix Eii.

Negative Impact

The outputs with a negative VMT rating are ones who would subtract vehicle miles due to their construction in a new infrastructure project. There are 38 out of 152 outputs reported by Caltrans that were deemed to have a negative VMT rating. New active transportation facilities, signaling improvements for pedestrians and bicyclists, and new transit infrastructure were predominant groups for outputs of which have a negative VMT rating. Outputs with a negative impact can be seen in Appendix Eiii.

Active transportation facilities involve multi-use pathways, all classes of bike-lanes, and new sidewalk improvements. The output for multi-use facilities is "Pedestrian/Bicycle Facility Miles Constructed" while "Bicycle Lane Miles" were also measured, and the unit "Sidewalk Improvements" is "length feet".

Signaling improvements for pedestrians and bicyclists include amenities at traffic signals and intersections that enhance the safety and accessibility for walking and biking. Examples of outputs in this group include installing "detectable warning surfaces", "new crosswalks", and "bike boxes" – most of which had units in "each".

Adding new transit infrastructure creates an alternative and more sustainable mode of travel for citizens making trips. Examples of outputs that lie within this group include projects that build "new stations", "transit-only lanes", "Rail Cars/ Transit Vehicles", and "Miles of New Track" for light-rail.

Appendix Ei

Improvement Output	Unit	VMT RATING
Border Crossing Improvements	Each	0
intersection constructed	Miles	0
ramps & connectors constructed	Miles	0
Auxiliary lane constructed	Miles	0
mainline shoulder constructed	Miles	0
Shoulder widening	Each	0
Modified / Reconstructed Bridges	Each	0
Truck Climbing Lane Mile(s) constructed	Miles	0
Acceleration/Deceleration Lane	Linear Feet	0
Extend Merging/Acceleration Lane	Linear Feet	0
Roadside Stopping Opportunities (Vista Points, Truck Parking Expansion)	Locations	0
Ramps modification(s)	Each	0
Passing lane mile(s) constructed	Miles	0
Install Electric Vehicle Charging Station	Locations	0
Daily Vehicle Hours of Delay (DVHD) Reduced	DVHD	0
curve and vertical alignment corrections	Each	0
turn pockets constructed	Each	0
Local road reconstructed	Miles	0
Two-way left turns lane	Each	0

Improvement Output	Unit	VMT RATING
At grade crossings eliminated	Sq Feet	0
Grade separations/ rail crossing improvements	Each	0
Changeable Message Signs	Each	0
Communications (fiber optics)	Miles	0
Sign(s), Light(s), Greenway or other safety/ Beautification	Each	0
Sound Wall Mile(s) constructed	Miles	0
Port Improvements	Each	0
Fiber Optic Cable	Miles	0
New Roundabout Constructed	Each	0
Turnouts Constructed	Each	0
Add Safety Edge (Tapered Edge)	Linear Feet	0
Bike Tolerable Drainage Grates	Each	0
Bike Tolerable Rumble Strips	Linear Feet	0
Bridge Preservation	Square Feet	0
Bridge Rail	Linear Feet	0
Census Station	Each	0
Commercial Vehicle Enforcement Station Improvements	Square Feet	0
Concrete Pavement Major Rehab	Lane Miles	0
Concrete Pavement Minor Rehab	Lane Miles	0

Improvement Output	Unit	VMT RATING
Cool Pavement/Permeable Pavement/ Light Colored Pavement	Acres	0
Crash Cushions	Each	0
Curb Ramp Retired	Each	0
Emergency Opening	Locations	0
Enhanced Pavement Surface Friction	Linear Feet	0
Equipment Shop	Locations	0
Erosion Control	Acres	0
Extinguishable Message Sign	Each	0
Fish Passage Remediation	Yes=1/No=0	0
Gore Area Clean-Up	Each	0
Guard Rail	Linear Feet	0
Habitat Created	Acres	0
Hazardous Waste Mitigation	Locations	0
Highway Advisory Radio	Each	0
Improved Highway Geometry	Each	0
In Lieu Fee Program Established/Credit Purchase	Credits	0
Install Cool/Reflective or Green Roof	Each	0
Install LED Lighting	Each	0
Irrigation System	Acres	0
Landscape Elements	Square Feet	0

Improvement Output	Unit	VMT RATING
Landscaped Areas	Square Feet	0
LEED Certified Facility	Each	0
Left-Turn Channelization	Each	0
Maintenance Facilities	Locations	0
Maintenance Facility	Square Feet	0
Material and Testing Laboratory	Square Feet	0
Median Barrier	Linear Feet	0
Mitigation Bank Established/Credit Purchase	Credits	0
Mitigation Planting	Yes=1/No=0	0
Modify Driveway	Linear Feet	0
New Culvert	Each	0
Office Buildings	Square Feet	0
Other	N/A	0
Permanent Restoration	Locations	0
Planting	Acres	0
Proactive Safety Improvements	Annual Fatal & Serious Injury Collisions	0
Reactive Safety Improvements	Collisions reduced	0
Relinquishments	Centerline Miles	0
Remove Obstructions	Each	0
Replace or Rehabilitate Pump Plants	Locations	0

Improvement Output	Unit	VMT RATING
Retaining Wall	Square Feet	0
Roadside Protection & Restoration (Fish Passage Remediation, Scenic Enhancements, etc....)	Locations	0
Roadside Weather Information Station	Each	0
Roadway Adapted To Address Climate Change Threats/Vulnerability	Centerline Miles	0
Roadway Protective Betterments	Locations	0
Rock Slope Protection	Cubic Yards	0
Rockfall Mitigation	Each	0
Rumble Strips	Linear Feet	0
Slide Removal or Slope Excavation	Cubic Yards	0
Standard Slopes	Each	0
Trash Reduction	Acres	0
Use of Locally Available Building Materials	Linear Miles	0
Use of Recycled/Reclaimed Materials	Linear Miles	0
Vehicle Detection	Each	0
Water & Wastewater Treatment at Safety Roadside Rest Area	Locations	0
Weigh-in-Motion System	Stations	0
Wildlife Passage Remediation	-	0
Worker Safety - Barriers	Locations	0

Improvement Output	Unit	VMT RATING
Worker Safety - Miscellaneous Facilities and Equipment	-	0
Worker Safety - Miscellaneous Paving/Treatment	-	0
Worker Safety - Safe Access	Locations	0
Worker Safety - Vegetation Control	Locations	0
Culvert(s)	LF	0
Total Maximum Daily Load Mitigation	Acres	0

Appendix Eii

Improvement Output	Unit	VMT RATING
New interchanges	Sq Feet	0.0001
Interchange modifications	Each	0.5
Modified/ improved interchanges	Each	0.5
Lane Widening	Linear Feet	1
Widen Roadway	Linear Feet	1
Local Road - new	Miles	5
roadway lane miles - new	Miles	141
HOT/HOV Lanes	Miles	141
Roadway lane miles	Miles	141
Mixed Flow lane-Miles Constructed	Miles	354
Mixed flow mainline	Miles	354

Appendix Eiii

Improvement Output	Unit	VMT RATING
Ped/ Bicycle Facilities Constructed	Miles	-8
Pedestrian/Bicycle facilities miles constructed	Miles	-8
Bicycle Lane Miles	Miles	-6
Signaling improvements	Each	-4
Mile(s) of New Track	Miles	-3
Rail cars/ Transit vehicles	Each	-2
Lane Narrowing	Linear Miles	-2
Lane Reduction (Road Diet)	Linear Miles	-2
Park & Ride Lots	Each	-2
Transit-Only Lanes	Linear Miles	-2
Intersection / Signal improvements	Each	-1
Freeway Ramp Meter	Each	-1
Station Improvements	Each	-1
New Stations	Each	-1
Non-Motorized Overcrossing/ Undercrossing For Accessibility	Each	-1
Overpass/Underpass - Pedestrian & Bike	Each	-1
Restripe Bikeways	Linear Miles	-1
new crosswalk	Each	-0.5
Local Road Operational Improvements	Each	-0.1

Improvement Output	Unit	VMT RATING
install new detectable warning surface	Sq Feet	-0.1
sidewalk improvements	Linear feet	-0.1
new curb ramps	Each	-0.1
Pedestrian Amenities	Each	-0.1
ITS Elements	Each	-0.1
Bike and Pedestrian Signage	Each	-0.1
Bike Boxes	Each	-0.1
Bike Detection Loops	Each	-0.1
Bike Lane Gap Closure	Each	-0.1
Bike Parking	Each	-0.1
Bike Signals	Each	-0.1
Conflict Zone Green Paint	Each	-0.1
Curb Extensions/Bulb-Outs	Each	-0.1
Flashing Beacons	Each	-0.1
Vegetative Buffer Between Cars/ Bikes/ Peds	Each	-0.1
Vegetative Street Swales	Each	-0.1
Modified / Improved interchanges	Sq Feet	-0.01
new bridge/tunnel	Sq Feet	-0.01
new local bridge structures/tunnels	Sq Feet	-0.01

