



California Transportation Plan Implementation Progress Report

2022





TABLE OF CONTENTS

CTP 2050 RECOMMENDATIONS	4
1 STATEWIDE ALIGNMENT	5
SHARING PROGRESS	5
CTP Implementation Dashboard	5
Focused Engagement	5
ONGOING IMPLEMENTATION.....	5
2 PROGRAM & PROJECT UPDATES	7
MODAL PLANS	7
SELECT IMPLEMENTATION EFFORTS.....	8
Middle-Mile Broadband Initiative	8
Caltrans Reconnecting Communities Program	9
Caltrans Active Transportation (CAT) Plans	10
Transportation Infrastructure Resiliency	10
Advancing Zero Emission Vehicles (ZEV)	11
3 PLAN DEVELOPMENT	13
PLANNING AHEAD	13
CTP Guidelines Update	13
APPENDIX A: Monitoring CTP Actions	1
MONITORING ACTION STATUS.....	1
1. Expand Access to Safe and Convenient Active Transportation Options	2
2. Improve Transit, Rail, and Shared Mobility Options	4
3. Expand Remote Access to Jobs, Goods, Services, And Educations	8
4. Advance Transportation Equity	10
5. Enhance Transportation System Resiliency	16
6. Enhance Transportation Safety and Security	18
7. Improve Goods Movement Systems and Infrastructure	19
8. Advance Zero-Emissions Vehicle (ZEV) Technology and Supportive Infrastructure	22
9. Manage The Adoption of Connected and Autonomous Vehicles	23
10. Price Roadways to Improve the Efficiency of Auto Travel	25
11. Encourage Efficient Land Use	27
12. Expand Protection of Natural Resources and Ecosystems Use	29
13. Strategically Invest in State of Good Repair Improvements	31



14. Seek Sustainable, Long-Term Transportation Funding Mechanisms 33

LIST OF TABLES

TABLE 1: MODAL PLAN UPDATES.....	7
TABLE 2: MIDDLE-MILE BROADBAND INITIATIVE.....	8
TABLE 3: RECONNECTING COMMUNITIES PROGRAM.....	9
TABLE 4: CALTRANS ACTIVE TRANSPORTATION (CAT) PLANS.....	10
TABLE 5: TRANSPORTATION INFRASTRUCTURE RESILIENCY.....	10
TABLE 6: ADVANCING ZEV.....	11
TABLE 7: EXPAND ACCESS TO SAFE AND CONVENIENT ACTIVE TRANSPORTATION OPTIONS.....	2
TABLE 8: IMPROVE TRANSIT, RAIL, AND SHARED MOBILITY OPTIONS.....	4
TABLE 9: EXPAND REMOTE ACCESS TO JOBS, GOODS, SERVICES, AND EDUCATION.....	8
TABLE 10: ADVANCE TRANSPORTATION EQUITY.....	10
TABLE 11: ENHANCE TRANSPORTATION SYSTEM RESILIENCY.....	16
TABLE 12: ENHANCE TRANSPORTATION SAFETY AND SECURITY.....	18
TABLE 13: IMPROVE GOODS MOVEMENT SYSTEMS AND INFRASTRUCTURE.....	19
TABLE 14: ADVANCE ZEV TECHNOLOGY AND SUPPORTIVE INFRASTRUCTURE.....	22
TABLE 15: MANAGE THE ADOPTION OF CONNECTED AND AUTONOMOUS VEHICLES.....	23
TABLE 16: PRICE ROADWAYS TO IMPROVE THE EFFICIENCY OF AUTO TRAVEL.....	25
TABLE 17: ENCOURAGE EFFICIENT LAND USE.....	27
TABLE 18: EXPAND PROTECTION OF NATURAL RESOURCES AND ECOSYSTEMS.....	29
TABLE 19: STRATEGICALLY INVEST IN STATE OF GOOD REPAIR IMPROVEMENTS.....	31
TABLE 20: SEEK SUSTAINABLE, LONG-TERM TRANSPORTATION FUNDING MECHANISMS.....	33



CTP 2050 RECOMMENDATIONS



1 Enhance access to safe and convenient active transportation options.



2 Improve transit, rail, and shared mobility options.



3 Expand access to jobs, goods, services, and education.



4 Advance transportation equity.



5 Enhance transportation system resiliency.



6 Enhance transportation safety and security.



7 Improve goods movement systems and infrastructure.



8 Advance Zero-Emissions Vehicle (ZEV) technology and supportive infrastructure.



9 Manage the adoption of connected and autonomous vehicles.



10 Price roadways to improve the efficiency of auto travel.



11 Encourage efficient land use.



12 Expand protection of natural resources and ecosystems.



13 Strategically invest in state of good repair improvements.



14 Seek sustainable, long-term transportation funding mechanisms.





1 STATEWIDE ALIGNMENT

The California Transportation Plan (CTP) is a plan for all Californians. The reach of CTP implementation goes beyond Caltrans efforts and relies heavily on stakeholders around the state. The CTP framework presents a vision for California's transportation system to achieve an array of statewide goals, including statutory commitments to reduce greenhouse gas (GHG) emissions. To meet the vision of the CTP, Caltrans and stakeholders must diligently work together to implement the CTP 2050's recommendations and actions.

SHARING PROGRESS

The goal of the annual *California Transportation Plan (CTP) Implementation Progress Report 2022* is to highlight progress implementing CTP recommendations and actions. The implementation efforts in this report highlight statewide initiatives that implement the CTP policy framework. This 2022 implementation report demonstrates progress made since the initial release of the [CTP 2050 Implementation Progress Report 2020-2021](#).

CTP Implementation Dashboard

In addition to this report, Caltrans has developed the [CTP Implementation Dashboard](#). This digital dashboard monitors and tracks implementation progress of new actions for each of the 14 CTP recommendations. As we strive to deliver on the vision of the CTP, it is crucial for Caltrans to work with partners to identify efforts that align with new actions identified in the [California Transportation Plan 2050](#). Please refer to APPENDIX A: Monitoring CTP Actions to learn more about the status of each of the 14 CTP recommendations. The CTP Implementation Dashboard will be updated quarterly to show the most current progress toward CTP implementation.

Focused Engagement

All implementation efforts are recorded by Caltrans staff. Caltrans districts help lead and facilitate coordinated engagement with a diverse group of partners and stakeholders, including those focusing on transportation, environmental protection, climate change, freight, public health, housing, social equity, and public safety. The role of the department has not changed – Caltrans remains committed to its State, regional, and local partners efforts to build a transportation system that serves all Californians.

ONGOING IMPLEMENTATION

Stakeholders should note that implementation of the CTP will remain an ongoing process where all efforts will continue to improve with each new iteration of the implementation plan. It is crucial that Caltrans continue to track, monitor, and report on progress achieved towards the implementation of the CTP. Through implementation, Caltrans will continue to align transportation planning and investments with State priorities. Although the CTP itself remains fiscally unconstrained, all committed planning efforts and progress will occur in a fiscally constrained



2022

environment. Accordingly, implementing efforts may prioritize, emphasize, or combine components within CTP recommendations to meet funding needs.



2 PROGRAM & PROJECT UPDATES

Implementation of the CTP requires continued engagement and effective coordination with external partners. While the CTP provides the overarching policy framework for transportation in California, specific initiatives are carried out by state agencies at the lead and or support of Caltrans. These same initiatives are guided by the Caltrans modal plans as their particular focus is on bettering specific components of the statewide transportation system.

MODAL PLANS

Unlike the CTP, statewide modal plans can include interregional or specific needs, making them the first step in implementing CTP policies. The interrelationship between the State and regional plans are leveraged by each of the Caltrans modal plans. Broadly speaking, the State modal plans further guide State partners on respective transportation matters. This associated role and engagement approach helps to revise and inform each new iteration of the CTP. A link to Caltrans modal plans can be found in the Caltrans program webpage for [transportation planning](#).

Table 1 below contains a list of the Caltrans modal plans associated with CTP implementation, and their update cycles:

TABLE 1: MODAL PLAN UPDATES

Plan	Pending Update	Update Cycle	Plan Features
California State Rail Plan (CSR)	2023	4 Years (49 U.S. Code Chapter 227)	This plan complies with State and federal law and provides a long-term plan for freight and passenger rail, including establishing a vision and plan for an integrated passenger rail network including high-speed, intercity, and regional.
California Aviation System Plan (CASP)	2026	2-5 Years (FAA Advisory Circular 150/5070-7)	This plan includes updated programs and directives to better support aviation in California.
California Freight Mobility Plan (CFMP)	2023	4 Years (49 USC 70101)	The CFMP is a comprehensive plan that governs the immediate and long-range planning activities and capital investments by the State with respect to freight movement.



Plan	Pending Update	Update Cycle	Plan Features
Interregional Transportation Strategic Plan (ITSP)	2025	Aligned with CTP update cycle	The ITSP provides guidance for the identification and prioritization of interregional transportation improvements to be funded in the Interregional Transportation Improvement Program. The plan is the guiding document for investment in the interregional transportation system.
California Statewide Bicycle and Pedestrian Plan (CSBPP)	2026	At Caltrans discretion	California's statewide plan that lays out the policies and actions that Caltrans and its partner agencies will take to increase statewide walking and bicycle trips.

SELECT IMPLEMENTATION EFFORTS

The following section focuses on CTP 2050 implementation efforts. Please note that the following tables do not represent the entire list of CTP actions, but a select group that will have a profound impact on transportation long-term. These efforts highlight the progress made in year 2022. A complete listing of CTP 2050 actions and their implementation efforts can be found in APPENDIX A: Monitoring CTP Actions.

Below is a list of the highlighted efforts that have helped support the CTP 2050 recommendations:

- ▶ Middle-Mile Broadband Initiative
- ▶ Caltrans Reconnecting Communities Program
- ▶ Caltrans Active Transportation (CAT) Plans
- ▶ Transportation Infrastructure Resiliency
- ▶ Advancing Zero Emission Vehicles (ZEV)

Tables 2-6 highlight each of these efforts:

Middle-Mile Broadband Initiative

TABLE 2: MIDDLE-MILE BROADBAND INITIATIVE

Implementation Effort	CTP Recommendation	Action
Middle-Mile Broadband Initiative	Expand Access to Jobs, Goods, Services, and Education	Accelerate implementation of transportation projects within the Strategic Broadband Corridors identified by the Department of Technology.
		Integrate smart cities considerations into broadband planning and deployment.





The *Middle-Mile Broadband Initiative* is a middle-mile network that will build infrastructure to provide high-speed broadband internet to unserved and underserved communities. This initiative is the beginning to providing accessibility to education, health services, and employment opportunities to areas and communities that have struggled to have access to these services. Caltrans is helping implement this strategy by promoting the acceleration of transportation projects within the corridors that the Department of Technology (CDT) identifies as key areas for broadband expansion.

Caltrans Reconnecting Communities Program

TABLE 3: RECONNECTING COMMUNITIES PROGRAM

Implementation Effort	CTP Recommendation	Action
Reconnecting Communities Program	Advance Transportation Equity	Prioritize investments in disadvantaged communities to improve mobility and access to jobs, education, health care, services, and recreation. Ensure that investments are aligned with community-identified transportation needs and paired with anti-displacement policies.

Caltrans is preparing to publish its draft *Reconnecting Communities Handbook*. With a focus on equity, external regional and local partners helped shaped the handbook, which provides a framework for how agencies can partner with Caltrans to reconnect communities that have been negatively impacted by the State's transportation system.

The draft handbook covers the following topics:

- Understanding the significance of addressing past harm
- Identifying available funding resources
- Defining the role and process for partnerships
- Embracing equitable public engagement
- Exploring data tools and resources to bolster projects that reconnect communities

Caltrans is also leading the development and implementation of the new Reconnecting Communities: Highways to Boulevard Pilot Program. \$149 million has been allocated in the FY 22/23 State budget to plan and fund the conversion of key underutilized highways in the state into multi-modal corridors to reconnect communities divided by transportation infrastructure.



Caltrans Active Transportation (CAT) Plans

TABLE 4: CALTRANS ACTIVE TRANSPORTATION (CAT) PLANS

Implementation Effort	CTP Recommendation	Action
Caltrans Active Transportation (CAT) Plans	Expand Access to Safe and Convenient Active Transportation Options	Identify priority actions in <i>Toward an Active CA</i> needed to support and maintain the increase in active travel following COVID-19.
		Expand partnerships with CBOs in marginalized communities to ensure active transportation investments reflect community needs and priorities.
	Improve Transit, Rail, and Shared Mobility Options	Develop a statewide strategy for responsible expansion of shared mobility options, particularly in disadvantaged communities.

Caltrans finalized the remaining district CAT plans. Using geospatial tools, all 12 CAT plans identify active transportation asset needs within or adjacent to the state highway system (SHS). With broad consideration to the CTP, all district CAT plans were developed in a frame of reference to a statewide context. Asset needs are analyzed, collected, and compiled into an inventory list based on prioritization so that future projects better improve network connectivity gaps. Caltrans staff will continue to provide technical and engagement support to ensure that active transportation implementation delivers on statewide goals and targets.

Transportation Infrastructure Resiliency

TABLE 5: TRANSPORTATION INFRASTRUCTURE RESILIENCY

Implementation Effort	CTP Recommendation	Action
2020 Adaptation Priorities Reports	Enhance Transportation System Resiliency	Develop a statewide repository of location-specific adaptive strategies that can be incorporated into infrastructure maintenance and rehabilitation projects.
Climate Change Vulnerability Assessment Statewide Summary Report		Integrate natural land, resource, and ecosystem protection strategies into resiliency planning.

Caltrans continues to develop guidance and data to assist in the incorporation of adaptation strategies into Caltrans activities such as maintenance, corridor, and project planning. The Caltrans [2020 Adaptation Priorities Reports](#) helped to identify location-specific adaptation strategies through the utilization of nature-based

adaptation solutions for vulnerable transportation infrastructure. The CTP is helping to implement this strategy by recommending the development of tools and resources that will assist in the development of location-specific adaptation strategies, potentially including natural and nature-based features which can be incorporated into transportation projects. Projects that incorporate considerations for identified climate impacts by using adaptation features such as these will result in a more resilient state transportation system.

Advancing Zero Emission Vehicles (ZEV)

TABLE 6: ADVANCING ZEV

Implementation Effort	CTP Recommendation	Action
Clean Miles Standard Incentive Program	Advance Zero-Emissions Vehicle (ZEV) Technology and Supportive Infrastructure	Require Transportation Network Companies (TNC) and other car-sharing services to transition to electric vehicle fleets consistent with the statewide rate of electric vehicle adoption.
Research project: "A Before and After Evaluation of Shared Mobility Projects in the San Joaquin Valley"		
Charging Access for Reliable On-Demand Transportation Services (CARTS) Program		

Caltrans continues to work with partners to sponsor research and prioritize investments that will look to further improve ZEV implementation. Statewide assessments on our current ZEV fleet will help Caltrans in identifying needs across the state. Through the assembly and coalition of interagency workgroups, Caltrans has been able to assist and provide guidance to both participating and leading state agencies to support charging and fueling infrastructure for ZEVs across the state. To achieve the vision of our CTP, the State must continue to align statewide efforts if we are to deliver on our statewide ZEV goals.

Per SB 1014 (2018), the California Air Resources Board (CARB) adopted the Clean Miles Standard and Incentive Program in May 2021, which requires rideshare companies to begin electrification of vehicles used in their California operations by 2023, and ensure 90 percent of their vehicle miles are fully electric by 2030. The California Public Utilities Commission (CPUC) is currently developing the policy to implement the [Clean Miles Standard](#). The California Energy Commission (CEC) is supporting charging infrastructure for ridesharing operations through the Charging Access for Reliable On-Demand Transportation Services (CARTS) Program. Funding from this program will support electric vehicle charging infrastructure for high-mileage on-demand transportation

2022

services. In February 2022, CEC announced the proposed awards of more than \$16 million for the CARTS program.





3 PLAN DEVELOPMENT

The CTP provides a framework for the State to achieve statewide transportation goals. Now that CTP 2050 Implementation is underway, the next iteration of the CTP development is anticipated for 2025. The updated plan will include new legislative provisions and statewide initiatives. As with implementation – all drafting and development of the next CTP remains a fluid process. While draft development remains within the early phases of discussion and planning, Caltrans is currently exploring new options to help curate an even better long-range transportation plan.

PLANNING AHEAD

Caltrans will continue the momentum of the CTP 2050 by refining the relationship between State, regional, and local planning. To ensure that the CTP is developed accordingly to account for any new statewide improvements, expectations, and or changes in legislation, Caltrans has partnered with the California Transportation Commission (CTC) to revise the [California Transportation Plan Guidelines](#). The guidelines serve as a reference for all Caltrans and CTP stakeholders – they provide a framework for how to develop the CTP and were first adopted in 2017.

CTP Guidelines Update

The guidelines consolidate and summarize all relevant legislation and information which helps to streamline the entire CTP development process. It is crucial that Caltrans revise the guidelines periodically to account for necessary changes to improve every next iteration of the CTP. In addition to legislative updates, the guidelines will also build on the lessons learned from the previous round of development of the CTP 2050 to better improve the next iteration of the plan.

Examples of changes and adjustments to the CTP Guidelines include:

- Improving implementation
- Adding a fiscal analysis
- Incorporating key findings from SGC's [California Transportation Assessment \(AB 285 Final Report\): Summary of Stakeholder Feedback](#)¹.

¹ Pursuant to Assembly Bill (AB) 285, the development of the [AB 285 Final Report](#) and future iterations of the CTP must include a forecast of new and emerging technologies as well as their potential impacts to the transportation system.





APPENDIX A: Monitoring CTP Actions

The 14 CTP recommendations each have two categories of actions: new actions that can be implemented over the next five years, and continued actions which build upon existing activities that remain essential to addressing the CTP 2050 vision. As previously mentioned, implementation of all the CTP actions can only be accomplished through partnership with stakeholders. Through focused partnership, Caltrans will continue to monitor the newly tailored actions – working with stakeholders to identify, leverage, and institute CTP policy. Therefore, to move forward with CTP implementation – it was decided that Caltrans should monitor progress for each recommendation's new actions.

MONITORING ACTION STATUS

For each CTP Recommendation, there is an individual table that displays columns in the order of action, status, agency effort, and participating agencies. Each column features rows with a list of actions that highlight the status progression of statewide efforts that align with any newly specified CTP 2050 actions. Every new action is categorized to show which agency implementation effort is, are, or have been implemented by specific participating agencies.

The tables published within this report serve as a snapshot of CTP progress at the time of the final release of this report. This section may not include any recent changes and or department developments beyond the final release of the *California Transportation Plan Implementation Progress Report 2022*². Although some actions may be listed as “Not Started”, it does not mean that progress has not been done.

Tables 7-20 highlight how each of the CTP 2050 recommendations have been implemented within the first two years of the CTP 2050:

² For the most up to date progress, please refer to the [CTP Implementation Dashboard](#) as discussed earlier within the *California Transportation Plan Implementation Progress Report 2022*.





1. Expand Access to Safe and Convenient Active Transportation Options

TABLE 7: EXPAND ACCESS TO SAFE AND CONVENIENT ACTIVE TRANSPORTATION OPTIONS

Action	Action Status	Agency Effort	Effort Description
Identify priority actions in <i>Toward an Active CA</i> needed to support and maintain the increase in active travel following COVID-19.	ONGOING SERVICE	Caltrans Active Transportation (CAT) Plans (Caltrans)	CAT Plans identify community needs within each of the Caltrans Districts including underserved and disadvantaged communities.
Expand partnerships with Community Based Organizations (CBO) in marginalized communities to ensure active transportation investments reflect community needs and priorities.	ONGOING SERVICE	Caltrans Active Transportation (CAT) Plans (Caltrans)	CAT Plans identify community needs within each of the Caltrans Districts including underserved and disadvantaged communities.
		Research project: " <i>Assessing the Impact of Equity Work in Transportation</i> " (Caltrans)	State sponsored research that assesses equity work within transportation in California by analyzing the expert perspectives of transportation professionals.
		Research project: " <i>Community Engagement Metric for Pilot Equity Index</i> " (Caltrans)	State sponsored research aimed at developing an Equity Indicator that will measure community engagement.
		Research project: " <i>Cross-Sectional Study of the Effects of Disability on the Mismatch of Desires versus Choices for Transportation Modes and Residential Locations</i> " (Caltrans)	State sponsored research aimed at improving the understanding of how individuals' needs for local transportation and housing in California differ based on disability along with other characteristics including: income, race, gender, household size and composition, and age.





Action	Action Status	Agency Effort	Effort Description
		Reconnecting Communities project programming (Caltrans)	Caltrans' Reconnecting Communities Program centers on equitable community engagement and relationship building to facilitate a way for affected communities to express how they are burdened by highway facilities, identify their need for reconnection and improved access, and develop transformational strategies and connectivity solutions.
Revise permitting and standards to provide local and regional transportation agencies with more flexibility to pilot and implement innovative transportation projects, such as "Slow Streets" programs.	IN PROGRESS	Design Information Bulletin (DIB #81-02) update (Caltrans)	State DIB update to incorporate Complete Streets concepts and scoping requirements.
		Research project: " <i>Slow Streets and Dockless Travel: Using a Natural Experiment for Insight into the Role of Supportive Infrastructure on Non-Motorized Travel</i> " (Caltrans)	State sponsored research project that will give insights into the effect of the slow street programs on non-motorized travel, and by extension, on the role that supportive non-motorized infrastructure can play in encouraging more non-motorized travel.
Revise permitting and standards to support local and regional agencies in implementing active transportation projects on State-owned right-of-way.	IN PROGRESS	Design Information Bulletin (DIB #81-02) update (Caltrans)	State DIB update to incorporate Complete Streets concepts and scoping requirements.
Explore partnerships and incentive programs to support expanded use of e-bikes, both for short- and longer-distance travel.	ONGOING SERVICE	Electric Bicycle Incentives Project (CARB)	The state Legislature allocated \$10 million for CARB to create an Electric Bicycle Incentives Project to help people afford to purchase electric bicycles. The program is expected to officially launch in the first quarter of 2023.
		Research project: " <i>Optimizing Bikeshare Service to Connect</i> "	State sponsored research that will develop a framework to optimize the location of bikeshare





Action	Action Status	Agency Effort	Effort Description
		Affordable Housing Units with Transit Services" (Caltrans)	stations to mitigate the barriers between affordable housing and transit services.
		Research project: "The Effectiveness of Alternative Policy Designs on Electric Vehicle Adoption: Purchase Rebates, Guaranteed Financing and Per-eVMT" (Caltrans)	State sponsored research will undertake the first side-by-side comparison of the performance of three commonly proposed policies for increasing the adoptions of clean vehicles: i) vehicle purchase rebates, ii) guaranteed low-interest financing, and iii) incentives that lower the costs of electric vehicle miles traveled (e-VMT).
		Research project: "Examining e-Bike Rebates in California" (Caltrans)	State sponsored research aimed at evaluating three e-bike rebate programs for their effects on increasing bicycling and decreasing car use.

2. Improve Transit, Rail, and Shared Mobility Options

TABLE 8: IMPROVE TRANSIT, RAIL, AND SHARED MOBILITY OPTIONS

Action	Action Status	Agency Effort	Effort Description
Provide emergency State funding to transit agencies facing shortfalls due to COVID-19.	IN PROGRESS	CAPTI S2.3 Action: Accelerate TIRCP Cycles to Support Transit Recovery with Deployment of ZEV Transit/Rail Fleets and Transit/Rail Network Improvements (CalSTA & Caltrans)	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. Additionally, TIRCP now has a process for local agencies to request payment in advance of project completion, to expedite invoicing and project delivery.
		Research project: "Commuting During and after COVID-19: The Impact of COVID-19 on Shared Mobility and Extreme Commuting in	State sponsored research aimed at specific mobility challenges of disadvantaged populations as they experienced them during the COVID-19 pandemic.





Action	Action Status	Agency Effort	Effort Description
		<i>the Bay Area - Central Valley</i> " (Caltrans)	
		Research project: <i>"The Impact of COVID-19 on California Transportation Revenue"</i> (Caltrans)	State sponsored research aimed at estimating the potential impact and economic recovery on state-generated transportation revenues from the COVID-19 pandemic.
		Research project: <i>"Studying the Impacts of the Pandemic and Future Mobility Patterns in California During the Post COVID-19 Recovery"</i> (Caltrans)	State sponsored research aimed at studying the impacts of the Pandemic and future mobility patterns in California during post COVID-19.
Explore alternative State, local, and Federal transit funding sources to support transit agencies over the long-term.	IN PROGRESS	CAPTI S2.2 Action: Support a Robust Economic Recovery by Revitalizing Transit, Supporting Zero-Emission Vehicle (ZEV) Deployment, and Expanding Active Transportation Investments (CalSTA & Caltrans)	Caltrans is developing a database to cultivate a 10 Year Investment Plan for Non-SHOPP projects. The database will include planning-level project information and allow Caltrans to categorize, track, measure, and retrieve information in preparation for upcoming state and federal discretionary funding opportunities.
		Research project: <i>"Implementing Pricing Schemes to Meet a Variety of Transportation Goals"</i> (Caltrans)	State sponsored research that utilizes analysis to find opportunities for integrating technology across multiple pricing programs—by relying on overlapping systems, programs can be implemented more efficiently and provide tremendous cost savings.
		Research project: <i>"Understanding the Influence of Local Option Sales Tax Measures on SB 375"</i> (Caltrans)	State sponsored research project that assesses how county sales tax measures affect funding allocations and policy and program choices adopted in MPO plans in California's four largest regions.
		Research project: <i>"Road Usage Charge (RUC) America"</i> (Caltrans)	Multi-state pooled research where member states and provinces will have the research, technical expertise, operational understanding, and member support to be poised to initiate an effective interoperable RUC system investigation,





Action	Action Status	Agency Effort	Effort Description
			<p>demonstration, or implementation, if and when desired.</p> <p>State sponsored research that utilizes models to estimate the impacts of different economic recovery scenarios from the COVID-19 pandemic on state-generated transportation revenue.</p>
<p>Develop statewide public health standards to reduce the spread of COVID-19 on transit vehicles, such as capacity limitations, thermal screening, no-touch payment, and others. Make these investments eligible for State funding.</p>	<p>IN PROGRESS</p>	<p>Research project: <i>"TELE-commuting" During the COVID-19 Pandemic and Beyond: Unveiling State-wide Patterns and Trends of Telecommuting in Relation to Transportation, Employment, Land Use, and Emissions in California"</i> (Caltrans)</p>	<p>State sponsored study that reveals advantages and disadvantages of telecommuting and unveils the complex relationships among the COVID-19 outbreak, transportation systems, employment, land use, and emissions as well as public risk perception and economic factors; informs statewide and regional policies to adapt to the new patterns of telecommuting.</p>
<p>Study the economic and travel impacts of tax benefits and subsidies for those who choose to commute by transit or other non-auto modes.</p>	<p>IN PROGRESS</p>	<p>Research project: <i>"Increasing Access, Mobility, and Shelter Opportunities for Disadvantaged Populations: Affordable Housing in Transit-Oriented Developments"</i> (Caltrans)</p>	<p>State sponsored study that identifies those barriers to affordable housing and recommend how to redress this problem.</p>





Action	Action Status	Agency Effort	Effort Description
		Research project: "Mobility, Accessibility and Disadvantaged Neighborhoods: Assessing Diversity in Transportation-Related Needs and Opportunities" (Caltrans)	State sponsored project that examines commonalities and differences among disadvantaged neighborhoods in mobility and access to opportunities.
Explore the benefits and tradeoffs of universal fare-free transit.	IN PROGRESS	Research project: "All Aboard! Easier Transit Travel with Standardized Payments" (Caltrans)	State sponsored study that examines the potential for the adoption of a standardized fare payment system throughout California's transit operators; to better serve their customers and provide seamless trip-planning and payment.
Develop a statewide strategy for responsible expansion of shared mobility options, particularly in disadvantaged communities.	IN PROGRESS	Caltrans Active Transportation (CAT) Plans (Caltrans)	CAT Plans identify community needs within each of the Caltrans Districts including underserved and disadvantaged communities.
		Complete Streets Action Plan 2022-2023 (Caltrans)	Complete Streets project prioritization for transportation investments into the SHOPP and other key programs.
		Research project: "Mobility, Accessibility and Disadvantaged Neighborhoods: Assessing Diversity in Transportation-Related Needs and Opportunities" (Caltrans)	State sponsored study that examines commonalities and differences among disadvantaged neighborhoods in mobility and access to opportunities.





3. Expand Remote Access to Jobs, Goods, Services, And Educations

TABLE 9: EXPAND REMOTE ACCESS TO JOBS, GOODS, SERVICES, AND EDUCATION

Action	Action Status	Agency Effort	Effort Description
<p>Convene a statewide advisory committee to guide and oversee broadband deployment on the transportation system.</p>	<p>COMPLETE</p>	<p>Senate Bill 156 Legislative Change</p>	<p>The bill would require the department to establish a broadband advisory committee to monitor the construction and establishment of the broadband network, as specified.</p>
<p>Develop a statewide strategy to accelerate broadband deployment, including a roadmap to digital inclusion that focuses on underserved parts of the State, last-mile Information & Communication Technologies (ICT) in rural areas, and connectivity to essential service institutions such as hospitals and distribution centers.</p>	<p>COMPLETE</p>	<p>Senate Bill 156 Legislative Change</p>	<p>The bill would require the department to establish a broadband advisory committee to monitor the construction and establishment of the broadband network, as specified.</p>
		<p>Research project: "Evaluating Policies and Incentives to Reduce Vehicle-Miles-Traveled and Air Pollutant Emissions through the Promotion of Telework and Remote Services" (Caltrans)</p>	<p>State sponsored research that quantitatively explores the relationship between telework and reduction of VMT and GHG emissions.</p>





Action	Action Status	Agency Effort	Effort Description
<p>Accelerate implementation of transportation projects within the Strategic Broadband Corridors identified by the Department of Technology.</p>	<p>IN PROGRESS</p>	<p>Middle-Mile Broadband Initiative (CDT, PUC, & Caltrans)</p>	<p>The Middle-Mile Broadband Initiative is the first step to creating an open-access, middle-mile network that will build infrastructure to bring high-speed broadband service to unserved and underserved communities, regardless of technology used, on equal economic and service terms.</p>
		<p>Research project: "<i>Securing the Emerging Technologies of Autonomous and Connected Vehicles</i>" (Caltrans)</p>	<p>State sponsored research that establishes a network of autonomous and connected vehicles that communicate with one another through facilitation led by road-side units (RSU) and a central trust authority (TA).</p>
<p>Study the economic, equity, and travel impacts of a variety of policies and incentives to reduce VMT and promote telework.</p>	<p>IN PROGRESS</p>	<p>Research project: "<i>Evaluating Policies and Incentives to Reduce Vehicle-Miles-Traveled and Air Pollutant Emissions through the Promotion of Telework and Remote Services</i>" (Caltrans)</p>	<p>State sponsored research that quantitatively explores the relationship between telework and reduction of VMT and GHG emissions.</p>





Action	Action Status	Agency Effort	Effort Description
Integrate smart cities considerations into broadband planning and deployment.	IN PROGRESS	Middle-Mile Broadband Initiative (CDT, PUC, & Caltrans)	The Middle-Mile Broadband Initiative is the first step to creating an open-access, middle-mile network that will build infrastructure to bring high-speed broadband service to unserved and underserved communities, regardless of technology used, on equal economic and service terms.
		Research project: "Implications of Information Structure in Control of Urban Traffic Networks" (Caltrans)	State sponsored research that develops the foundations for a framework to design closed-loop control under given information structures.

4. Advance Transportation Equity

TABLE 10: ADVANCE TRANSPORTATION EQUITY

Action	Action Status	Agency Effort	Effort Description
Launch a comprehensive statewide effort to identify and reform existing transportation policies that uphold racial and economic justice, including traffic enforcement practices.	IN PROGRESS	Formation of the SB 743 VMT Technical Advisory Committee (OPR)	Engagement with stakeholders through the statewide SB 743 VMT Technical Advisory Committee to plan and discuss the benefits of moving to a VMT metric to better community development.
		Community Economic Resilience Fund (CERF) (OPR, GO-Biz, & LWDA)	The CERF was created to promote a sustainable and equitable recovery from the economic distress of COVID-19 by supporting new plans and strategies to diversify local economies and develop sustainable industries that create high-quality, broadly accessible jobs for all Californians.





Action	Action Status	Agency Effort	Effort Description
		Health and Equity Program (HEP) led by the Health in All Policies (HiAP) Task Force (SGC)	Established in 2010, the California Health in All Policies (HiAP) Task Force convenes 22 state government departments and agencies to advance health, equity, and environmental sustainability. As the first state-level initiative of its kind in the United States, it has become a national and international model for promoting policies that improve health outcomes.
		CAPTI S3.4 Action: Develop and Utilize Equity Index to Assist in Evaluation or Prioritization of Caltrans Projects (Caltrans)	Caltrans is currently underway in the development of the Equity Index (EQI), the EQI will target and prioritize relevant transportation program funding to these priority populations. Caltrans aims to use this tool to help address potential shortcomings of other previously used analysis tools.
		CAPTI S4.2 Action: Align Interregional Transportation Strategic Plan 2021 (ITSP) with CAPTI Investment Framework (Caltrans)	The 2021 ITSP expands the focus of interregional travel to all modes. The 2021 ITSP also includes scoring criteria for the ITIP that include metrics to evaluate reductions in vehicle miles travelled, improved climate resilience, prioritization of underserved communities, and increased multimodality. The 2022 ITSP Addendum furthers this alignment.
		Reconnecting Communities Program (Caltrans)	This program centers on equitable community engagement and relationship building to facilitate a way for affected communities to express how they are burdened by highway facilities, identify their need for reconnection and improved access, and develop transformational strategies and connectivity solutions.
Prioritize investments in disadvantaged communities to improve mobility and access to jobs, education, health care, services, and recreation.	IN PROGRESS	Regional Early Action Planning Grants of 2021 (REAP 2.0) (HCD)	REAP 2.0 is a flexible program seeks to accelerate infill housing development, reduce VMT, increase housing supply at all affordability levels, affirmatively further fair housing, and facilitate the implementation of adopted regional and local plans to achieve these goals.





Action	Action Status	Agency Effort	Effort Description
<p>Ensure that investments are aligned with community-identified transportation needs and paired with anti-displacement policies.</p>		<p>Research project: "Community Engagement Difficulties Metric for Pilot Equity Index" (Caltrans)</p>	<p>State sponsored research aimed at developing an equity indicator that will measure community engagement.</p>
		<p>Research project: "Mobility Justice in Rural California: Examining Transportation barriers and Transportation in Carless Households" (Caltrans)</p>	<p>State sponsored research that describes the scope and scale of car access in rural areas, identifies barriers that rural zero-car and car-deficit households face in their mobility and access, and proposes personal and policy-level adaptations that would help these households achieve their mobility and access needs using descriptive analysis from US census microdata and interviews with 22 residents of California's Central Valley.</p>
		<p>Developing grant programs for adaptation planning and regional resilience (OPR)</p>	<p>Programs such as ICARP provides funding to help fill local, regional, and tribal planning needs, provides communities the resources to identify climate resilience priorities, and supports the development of a pipeline of climate resilient infrastructure projects across the state.</p>
		<p>Community Economic Resilience Fund (CERF) (OPR, GO-Biz, & LWDA)</p>	<p>The CERF was created to promote a sustainable and equitable recovery from the economic distress of COVID-19 by supporting new plans and strategies to diversify local economies and develop sustainable industries that create high-quality, broadly accessible jobs for all Californians.</p>
		<p>Transportation Co-Op Committee (TCC) (SGC)</p>	<p>The Committee is a forum for various agencies, Caltrans, and FHWA to discuss policy and technical issues to help facilitate the implementation of Federal-aid Highway Program by local agencies. It is composed of members who represent various local jurisdictions, the State, and FHWA. Its local agency members are selected by the League of California Cities (League), California State Association of Counties (CSAC), and CalCOG/RTPA.</p>





Action	Action Status	Agency Effort	Effort Description
		Affordable Housing and Sustainable Communities (AHSC) Program (SGC)	The AHSC Program funds land-use, housing, transportation, and land preservation projects to support infill and compact development that reduce GHG emissions. Funding for the AHSC Program is provided from the Greenhouse Gas Reduction Fund (GGRF), an account established to receive Cap-and-Trade auction proceeds.
		Health and Equity Program (HEP) led by the Health in All Policies (HiAP) Task Force (SGC)	Established in 2010, The California Health in All Policies (HiAP) Task Force convenes 22 state government departments and agencies to advance health, equity, and environmental sustainability. As the first state-level initiative of its kind in the United States, it has become a national and international model for promoting policies that improve health outcomes.
		CAPTI 3.1 Action: Establish Transportation Equity and Environmental Justice Advisory Committee(s) (Caltrans, CalSTA, & CTC)	A joint effort between CalSTA, Caltrans, and the CTC intended to elevate diverse and historically marginalized voices to advise our agencies on how to achieve meaningful outcomes in transportation equity, environmental justice, and equitable economic opportunities.
		Reconnecting Communities Program (Caltrans)	This program centers on equitable community engagement and relationship building to facilitate a way for affected communities to express how they are burdened by highway facilities, identify their need for reconnection and improved access, and develop transformational strategies and connectivity solutions.
Establish a statewide advisory committee tasked with expanding action around racial equity and	IN PROGRESS	Planning and community development through SB 743 (OPR)	Encourages development that makes Californians' lives easier by putting destinations closer together, for example by providing residents nearby shopping or dining opportunities





Action	Action Status	Agency Effort	Effort Description
transportation. Task the committee with developing a racial equity analysis framework to guide investment decision-making.		Interagency Equity Advisory Committee (CTC, CalSTA, & Caltrans)	Intended to elevate historically marginalized voices to advise our agencies on how to achieve meaningful outcomes in transportation equity, EJ, and equitable economic opportunities, especially as related to transportation planning and programming.
		Research Project: " <i>Charging Drivers by the Gallon vs. the Mile: An Equity Analysis by Geography and Income in California</i> " (Caltrans)	State sponsored research that explores how replacing the current state vehicle fuel tax with a flat-per-mile-rate road-user charge (RUC) would affect costs for different kinds of households.
Support local agencies in linking anti-displacement policies such as tenant protections, affordable housing production, and affordable housing preservation to transportation investments.	IN PROGRESS	Regional Early Action Planning Grants of 2021 (REAP 2.0) (HCD)	Convene interagency working group to explore actions to enable transportation programs to incentivize anti-displacement strategies within their funding frameworks.
		CAPTI 7.2 Action: Create Working Group to Explore Potential Actions to Address Direct and Indirect Displacement in Transportation Programs (CalSTA)	An anti-displacement working group developed and disseminated preliminary information from an in-depth stakeholder survey aimed at both subject matter experts and individuals facing displacement challenges in the field. Focusing its policy recommendations for Cycle 4 of the SB 1 programs.





Action	Action Status	Agency Effort	Effort Description
Explore a transportation tax credit or other incentive for qualified low-income Californians.	IN PROGRESS	Transportation Co-Op Committee (TCC) (SGC)	The Committee is a forum for cities, counties, regional agencies, Caltrans, and FHWA to discuss policy and technical issues to help facilitate the implementation of Federal-aid Highway Program by local agencies.
Establish policies to protect marginalized and disadvantaged communities from displacement and community fragmentation that may result from transportation investments.	IN PROGRESS	CAPTI S3.2 Action: Strengthen and Expand Coordinated, Targeted Technical Assistance on State Transportation Funding Programs (Caltrans & CalSTA)	In collaboration with CalSTA and SGC, Caltrans is committed to elevating existing technical assistance and finding opportunities for targeted expansion of technical assistance to state funding programs, especially to cultivate partnerships and build the capacity of community-based organizations (CBOs) to engage in SHOPPP and ITIP project development.
		Reconnecting Communities Program (Caltrans)	This program centers on equitable community engagement and relationship building to facilitate a way for affected communities to express how they are burdened by highway facilities, identify their need for reconnection and improved access, and develop transformational strategies and connectivity solutions.





5. Enhance Transportation System Resiliency

TABLE 11: ENHANCE TRANSPORTATION SYSTEM RESILIENCY

Action	Action Status	Agency Effort	Effort Description
Seek new funding sources to address the growing risks of climate change, pandemics, earthquakes, and other natural disasters.	IN PROGRESS	CAPTI S4.3 Action: Update the 2023 State Highway System Management Plan (SHSMP) to Meaningfully Advance CAPTI Investment Framework (Caltrans & CalSTA)	Caltrans, in collaboration with CalSTA, has developed a more robust strategic vision for transportation investments in the 2023 SHSMP by incorporating considerations for greenhouse gas emissions and climate change impacts to the state's transportation system.
		CAPTI S5.2 Action: Update Transportation Infrastructure Competitive Program Guidelines to Incentivize Climate Adaptation and Climate Risk Assessments/Strategies (Caltrans)	Caltrans has incorporated climate change adaptation and resilience into competitive evaluation criteria for SB 1 programs and will continue to do so.
		2020–2024 Strategic Highway Safety Plan (SHSP) (Caltrans)	The statewide alignment with the SHSP has helped to identify funding sources and project priority areas.
		Infrastructure Investment and Jobs Act (IIJA) Program funding for implementing environmental resilience projects (Caltrans)	An Act to authorize funds for Federal-aid highways, highway safety programs, and transit programs, and for other purposes.
Develop and maintain a statewide transportation risk management plan to identify and respond to future disruptions.	IN PROGRESS	Transportation Asset Management Plan (TAMP) (Caltrans)	Maximize results by managing the life-cycle of transportation assets strategically to minimize costs and manage risks. It provides a framework for understanding performance gaps, prioritizing actions to address the gaps, and establishing business processes that streamline asset management activities.
Develop a statewide repository of location-specific adaptive strategies that can be	IN PROGRESS	CAPTI S4.5 Action: Develop and Implement Caltrans Climate Action Plan (CCAP) (Caltrans & CalSTA)	Development and scoping for the CCAP is currently underway and will incorporate federal guidance for new IIJA programs once the guidance is released by FHWA.





Action	Action Status	Agency Effort	Effort Description
incorporated into infrastructure maintenance and rehabilitation projects.		<i>2020 Adaptation Priorities Reports</i> (Caltrans)	Statewide assessment that helps to identify location-specific adaptation strategies through the utilization of nature-based adaptation solutions for vulnerable transportation infrastructure.
		<i>Climate Change Vulnerability Assessment Statewide Summary Report</i> (Caltrans)	A statewide summary that incorporates considerations for natural and nature-based features and provides adaptation planning guidance to each of Caltrans districts.
Identify and prioritize deployment of resiliency strategies in the State's most vulnerable communities.	NOT STARTED	N/A	N/A
Integrate natural land, resource, and ecosystem protection strategies into resiliency planning.	IN PROGRESS	<i>Climate Change Vulnerability Assessment Statewide Summary Report</i> (Caltrans)	A statewide summary that incorporates considerations for natural and nature-based features and provides adaptation planning guidance to each of Caltrans districts.
		Partnership Agreement (Caltrans & Coastal Commission)	Caltrans and the California Coastal Commission have engaged in several Interagency Agreements since the early 2000s to support a broad range of activities aimed at facilitating effective collaboration that mutually supports the public missions of both agencies.
		Research project: " <i>Conducting an Inventory to Quantify Carbon Sequestration Potential for Fuels Reduction in Caltrans Rights of Way</i> " (Caltrans)	State sponsored research project that aims to support efforts within Caltrans in conducting a wildfire vulnerability risk assessment for fuels reduction in the right of way (ROW) to protect Caltrans' infrastructure and travelers.





Action	Action Status	Agency Effort	Effort Description
Increase the use of simulation systems and predictive technologies to understand how future disruptions may impact infrastructure and travel patterns.	IN PROGRESS	Partnership Agreement (Caltrans & Coastal Commission)	Caltrans and the California Coastal Commission have engaged in several Interagency Agreements since the early 2000s to support a broad range of activities aimed at facilitating effective collaboration that mutually supports the public missions of both agencies.
		Research project: "Socioeconomic Dimensions of Resilience to Seaport and Highway Transportation Network Disruptions" (Caltrans)	State sponsored project that developed an integrated transportation-socioeconomic analysis model to analyze the impacts of port and transportation network disruptions and the effectiveness of resilience tactics across socioeconomic income groups.

6. Enhance Transportation Safety and Security

TABLE 12: ENHANCE TRANSPORTATION SAFETY AND SECURITY

Action	Action Status	Agency Effort	Effort Description
Reduce speed limits by repealing the 85th percentile speed limit rule and enabling local transportation agencies to establish lower speed limits.	COMPLETE	AB 1938 Legislative Change	Authorizes Caltrans or a local authority to lower the speed limit by 5 miles per hour from the nearest 5 miles per hour of the 85th percentile.



7. Improve Goods Movement Systems and Infrastructure

TABLE 13: IMPROVE GOODS MOVEMENT SYSTEMS AND INFRASTRUCTURE

Action	Action Status	Agency Effort	Effort Description
Research the transportation implications of global trade fluctuation and supply chains disruptions and identify infrastructure priorities needed to mitigate risk.	ONGOING SERVICE	California Freight Mobility Plan (CFMP) 2020 (Caltrans)	The CFMP is a comprehensive plan that governs the immediate and long-range planning activities and capital investments by the state with respect to freight movement.
Integrate freight considerations into travel demand management strategies such as roadway pricing and express lane systems.	IN PROGRESS	Research project: "M-580 Corridor to enhance Multimodal Freight Network Optimization Study" (Caltrans)	State sponsored research that examined the M-580 Corridor to assist stakeholders in identifying and prioritizing investment opportunities to efficiently manage assets and equipment in the 1-580 and 1-80 multimodal corridors between the San Francisco Bay Area and Northern San Joaquin Valley.
		Research project: "Economic Analysis and Review of Commercial Vehicle Road User Charges" (Caltrans)	State sponsored research aimed at investigating the potential to use a road user charge (RUC) as an alternative tax instrument to replace gas (or fuel) tax.
Explore infrastructure and operational strategies to meet demand for deliveries post-COVID-19, including research into the	IN PROGRESS	California Freight Advisory Committee (CFAC) (Caltrans & CalSTA)	The CFAC is a charter member advisory body representing public and private sector freight stakeholders, including representatives of ports, shippers,



Action	Action Status	Agency Effort	Effort Description
<p>benefits and tradeoffs of drone deliveries, bike delivery services, staging areas, loading zones, and pick-up centers.</p>			<p>carriers, freight-related associations, the freight industry workforce, the transportation department of the State, and local governments.</p>
		<p>Research project: <i>"Analytical Modeling Framework to Assess the Economic and Environmental Impacts of Residential Deliveries, and Evaluate Sustainable Last-Mile Strategies"</i> (Caltrans)</p>	<p>State sponsored research that aims to develop an analytical framework to model urban last mile delivery and build upon the previously developed econometric behavior models that capture e-commerce demand.</p>
		<p>Research project: <i>"Travel Behavior in E-commerce: Shopping, Purchasing, and Receiving"</i> (Caltrans)</p>	<p>State sponsored research that puts special emphasis on alternative delivery methods that cluster local deliveries, such as automated parcel lockers (APL) offered by Amazon.</p>
		<p>Research project: <i>"Evaluating Mixed Electric Vehicle and Conventional Fueled Vehicle Fleets for Last-mile Package Delivery"</i> (Caltrans)</p>	<p>State sponsored research project to develop a modeling and analysis approach to determine the optimal mix of electric vehicles (EV) and conventional fueled vehicles (CFV) for a last-mile package delivery fleet.</p>





Action	Action Status	Agency Effort	Effort Description
Identify and reform existing policies that pose barriers to innovating the goods movement system and advancing freight technologies.	IN PROGRESS	Research project: <i>"Achieving Excellence for California's Freight System: Developing Competitiveness and Performance Metrics; Incorporating Sustainability, Resilience, and Workforce Development"</i> (Caltrans)	State sponsored research that explores the question of whether California's freight system is staying competitive with other US regions.
Identify and reform existing policies that concentrate freight land uses near low-income communities of color.	IN PROGRESS	<i>California Statewide Truck Parking Study (CSTPS)</i> (Caltrans)	Implementation of the recommended CSTPS strategies and actions incorporate and support the CTP goals.
		Formation of the SB 743 VMT Technical Advisory Committee (OPR)	Engagement with stakeholders through the statewide SB 743 VMT Technical Advisory Committee to plan and discuss the benefits of moving to a VMT metric to better community development.
		Research project: <i>"Routes to Lower Greenhouse Gas Emissions from Freight Transportation in the City of San José"</i>	State sponsored research that aims to examine and present strategies for the City of San José, California to reduce GHG emissions from freight.
Explore strategies to shorten local and regional supply chains to strengthen local economies and increase resilience to natural disasters,	IN PROGRESS	Research project: <i>"Freight Demand Model for Southern California Freeways with Owner-Operator Truck Drivers"</i> (Caltrans)	State sponsored research that evaluates the demand for truck-only toll lanes on Southern California freeways with owner-operator truck drivers.





Action	Action Status	Agency Effort	Effort Description
pandemics, and other disruptions.		California Freight Mobility Plan (CFMP) 2020 (Caltrans)	Caltrans CFMP safety and resiliency goal to reduce freight-related deaths/injuries and improve system resilience by addressing infrastructure vulnerabilities associated with security threats, effects of climate change impacts, and natural disaster.

8. Advance Zero-Emissions Vehicle (ZEV) Technology and Supportive Infrastructure

TABLE 14: ADVANCE ZEV TECHNOLOGY AND SUPPORTIVE INFRASTRUCTURE

Action	Action Status	Agency Effort	Effort Description
Require Transportation Network Companies (TNC) and other car-sharing services to transition to electric vehicle fleets consistent with the statewide rate of electric vehicle adoption.	IN PROGRESS	Clean Miles Standard Incentive Program (CARB & CPUC)	Implements new requirements for TNCs for innovative ways to curb GHG emissions as new mobility options grow at a rapid pace.





Action	Action Status	Agency Effort	Effort Description
		Charging Access for Reliable On-Demand Transportation Services (CARTS) Program (CEC)	Announces the availability of up to \$6 million in grant funds for projects that will support EV charging infrastructure for high mileage on-demand transportation services.
		Research project: "A Before and After Evaluation of Shared Mobility Projects in the San Joaquin Valley" (Caltrans)	State sponsored research that provides insights into rural travel characteristics and barriers to transportation, travel behavior, trip planning activities, and the extent to which the pilots addressed the travel needs of their target populations region.

9. Manage The Adoption of Connected and Autonomous Vehicles

TABLE 15: MANAGE THE ADOPTION OF CONNECTED AND AUTONOMOUS VEHICLES

Action	Action Status	Agency Effort	Effort Description
Pursue statewide legislation to ensure CAVs are shared, electric, support efficient land use, and are aligned with the automated vehicle key principles for healthy and sustainable communities identified by OPR.	IN PROGRESS	Research project: "Software and Hardware Systems for Autonomous Smart Parking Accommodating Both Traditional and Autonomous Vehicles" (Caltrans)	State sponsored project that addresses the exacerbated congestion created by autonomous vehicles by providing a full-stack solution including sensors to monitor occupancy.





Action	Action Status	Agency Effort	Effort Description
<p>Pursue policies that expand CAV access to aging and youth populations, underserved communities, unbanked and low-income users, and users with disabilities.</p>	<p>IN PROGRESS</p>	<p>Research project: "<i>Impacts of Connected and Autonomous Vehicles on the Performance of Signalized Networks: A network fundamental diagram approach</i>" (Caltrans)</p>	<p>State sponsored study that evaluates the impacts of CAV on the performance of signalized networks at the aggregate level.</p>
		<p>Research project: "<i>Connected Autonomous Vehicles: Safety During Merging and Lane Change and Impact on Traffic Flow</i>" (Caltrans)</p>	<p>State sponsored study that addresses the problem of cooperative lane change maneuvers where vehicles communicate with each other and negotiate the creation of safe spacings to merge without taking any safety risks.</p>
<p>Explore the benefits and tradeoffs of using autonomous buses, trucks, and other essential vehicles to better enable social distancing.</p>	<p>IN PROGRESS</p>	<p>Research project: "<i>Network Differential Global Navigation Satellite System (N-DGNSS) Corrections for Connected and Autonomous Vehicles</i>" (Caltrans)</p>	<p>State sponsored study that examined the positioning of performance receivers using N-DGNSS correctly to determine the vehicle lane for distances up to 1.33 m from lane center (0.47 m from lane edge) and maintained 90% probability of success lane for distances up to 1.4 m from lane center (0.4 m from lane edge).</p>





10. Price Roadways to Improve the Efficiency of Auto Travel

TABLE 16: PRICE ROADWAYS TO IMPROVE THE EFFICIENCY OF AUTO TRAVEL

Action	Action Status	Agency Effort	Effort Description
<p>Study the impacts of roadway pricing on social equity in various future economic scenarios, including implications for goods movement and in rural parts of the state.</p>	<p>IN PROGRESS</p>	<p>CAPTI S6.2 Action: Convene a Roadway Pricing Working Group to Provide State Leadership and Support for Implementation of Local Regional, or State Efforts (Caltrans & CalSTA)</p>	<p>Caltrans has convened a quarterly workgroup to identify and provide recommendations for equitable roadway pricing implementation pathways based on strategies identified in RTPs and SCS'. State and federal statutory and administrative opportunities have been outlined by this workgroup as well as potential barriers to equitable implementation.</p>
		<p>Research project: "<i>Congestion Reduction via Personalized Incentives</i>" (Caltrans)</p>	<p>State sponsored project that studies a different approach of offering positive incentives to drivers to take alternative routes and more specifically, an algorithm is proposed to reduce traffic congestion and improve routing efficiency by offering personalized incentives to drivers.</p>





Action	Action Status	Agency Effort	Effort Description
<p>Enact State legislation to allow for roadway pricing programs, grounded in research on equity and other implications.</p>	<p>NOT STARTED</p>	<p>N/A</p>	<p>N/A</p>
<p>Evaluate road pricing exemptions for low-income Californians, those unable to operate a vehicle, public transit vehicles, and certain freight vehicles.</p>	<p>NOT STARTED</p>	<p>N/A</p>	<p>N/A</p>
<p>Invest in non-auto travel options along corridors subject to roadway pricing to provide people with viable alternatives to driving.</p>	<p>ONGOING SERVICE</p>	<p>Carbon Reductions Program (Caltrans)</p>	<p>The Carbon Reduction Program (CRP), provides funds for projects designed to reduce transportation emissions, defined as carbon dioxide (CO2) emissions from on-road highway sources. Supports congestion pricing, shifting transportation demand to nonpeak hours or other transportation modes, increasing vehicle occupancy rates, or otherwise reducing demand for roads, including electronic toll collection, and travel demand management strategies and programs. Includes</p>





Action	Action Status	Agency Effort	Effort Description
			funding for non-motorized and transit projects.

11. Encourage Efficient Land Use

TABLE 17: ENCOURAGE EFFICIENT LAND USE

Action	Action Status	Agency Effort	Effort Description
Support local agencies in reducing parking minimum and/or enacting parking maximums and provide support in identifying, funding, and implementing mobility solutions for those impacted by parking loss.	COMPLETE	AB 2097 Legislative Change	This bill would prohibit a public agency from imposing any minimum automobile parking requirement on any residential, commercial, or other development project, as defined, that is located within 1/2 mile of public transit, as defined.
		Research project: " <i>Parking Utilization and Site Level VMT Database</i> " (Caltrans)	State sponsored study that collects data to quantify how changing parking supply at different types of developments impacts the use of motorized vehicles.





Action	Action Status	Agency Effort	Effort Description
<p>Provide data and technical tools to help State, regional, and local governments evaluate the transportation impacts of land use decisions.</p>	<p>IN PROGRESS</p>	<p>Research project: <i>"Tools and Best Practices for Land Use Efficiency and Equity in Cities"</i> (Caltrans)</p>	<p>State sponsored study that utilizes findings to inform interagency collaboration around equity analysis and tool development.</p>
<p>Identify and pursue opportunities in repurpose antiquated land uses such as gas stations, parking lots, and large shopping centers to support compact, mixed-use development and sustainable mobility options.</p>	<p>IN PROGRESS</p>	<p>CAPTI S7.1 Action: Leverage Transportation Investments to Incentivize Infill Housing Production (Caltrans, HCD, CalSTA, & CTC)</p>	<p>HCD, CalSTA, and CTC collaborated to integrate Pro-Housing policies into program guidelines. The ATP Cycle 6 guidelines policies incentivize local adoption of Pro-housing Designation Program policies that reduce VMT by increasing infill development.</p>
		<p>CAPTI S7.3 Action: Explore a "Highways to Boulevards" Conversion Pilot Program (Caltrans)</p>	<p>The Highways to Boulevards Pilot program will support efforts to plan for and fund the conversion of key underutilized state highways into multi-modal corridors that serve existing residents by developing affordable housing and complete streets features.</p>
		<p>Research project: <i>"Redeveloping Failing Malls: Opportunities for Reducing VMT and GHG Emissions and Increasing the Housing Supply through Urban Villages"</i> (Caltrans)</p>	<p>State sponsored research that research aims to develop a model process to assist the State and local governments in the redevelopment of failing</p>





Action	Action Status	Agency Effort	Effort Description
			shopping malls as mixed-use centers that optimize opportunities for housing, providing neighborhood commercial and other residential amenities, i.e., parks, pedestrian and bike oriented streets.

12. Expand Protection of Natural Resources and Ecosystems Use

TABLE 18: EXPAND PROTECTION OF NATURAL RESOURCES AND ECOSYSTEMS

Action	Action Status	Agency Effort	Effort Description
Investigate the benefits of establishing statewide priority development and conservation areas to enhance natural ecosystems and encourage preservation of agricultural lands, open space, and critical environmental areas.	IN PROGRESS	CAPTI S6.1 Action: Explore New Mechanisms to Mitigate Increases in Vehicle Miles Travelled (VMT) from Transportation Projects (Caltrans & CalSTA)	In collaboration with CalSTA, Caltrans has developed a draft of the VMT Mitigation Playbook. The document aims to develop new mechanisms for viable VMT mitigation for highway capacity projects.
		<i>2021-2025 California Coastal Commission Strategic Plan (Coastal)</i>	Commission's mission is to protect and enhance California's coast for present and future generations.
		Research project: " <i>Wildlife Vehicle Collision Reduction and Habitat Connectivity Pooled Fund Study</i> " (Caltrans)	A pooled fund study that identifies cost-effective solutions that integrate highway safety and mobility with wildlife conservation and habitat connectivity.





Action	Action Status	Agency Effort	Effort Description
<p>Partner with resource and local agencies to establish mitigation areas and banks, which will also conform with 23 USC 169 through the Caltrans Advanced Mitigation Program (AMP) planning process outlined in program guidelines.</p>	<p>ONGOING SERVICE</p>	<p>Advanced Mitigation Program (Caltrans, etc.)</p>	<p>Plan and implement advance mitigation solutions for its future transportation projects. This new business practice allows Caltrans to reduce delays by proactively obtaining environmental mitigation in advance of - rather than during - transportation projects.</p>
<p>Partner with resource and local agencies to establish mitigation areas and banks for VMT and GHG mitigation.</p>	<p>IN PROGRESS</p>	<p><i>CAPTI S5.3 Action: Explore Incentivizing Land Conservation through Transportation Programs (Caltrans, CTC, & CalSTA)</i></p> <p>California Coastal Act – Public Resources Code, Division 20 (Caltrans & Coastal)</p>	<p>Identifies conservation resilience strategies and best practices that could be integrated into the next update of the Regional Transportation Plan and SB 1 Competitive Program guidelines with the help of SMEs.</p> <p>Coastal Act policies call for the minimization of energy consumption and VMT, both of which are important ingredients for the reduction of GHGs.</p>





Action	Action Status	Agency Effort	Effort Description
		Research project: "Feasibility of Mitigation Banks on Regional and State Levels" (Caltrans)	State sponsored research that presents a framework for establishing a mitigation bank or exchange to fund projects that reduce VMT as transportation impact mitigation.

13. Strategically Invest in State of Good Repair Improvements

TABLE 19: STRATEGICALLY INVEST IN STATE OF GOOD REPAIR IMPROVEMENTS

Action	Action Status	Agency Effort	Effort Description
Require the addition of multimodal project components, such as Complete Streets upgrades and traffic calming measures, during maintenance and preservation activities, where feasible.	IN PROGRESS	Complete Streets Action Plan 2022-2023 (Caltrans)	Complete Streets project prioritization for transportation investments into the SHOPP and other key programs.
		Research project: "Greenhouse Gas Reduction Opportunities for Local Governments: A Quantification and Prioritization Framework" (Caltrans)	State sponsored research that conducts a literature review on current local approaches to greenhouse gas (GHG) reduction strategies by assessing Climate Action Plans (CAP) in California and presents common strategies in the transportation sector along with useful tools.
		2023 State Highway System Management Plan (SHSMP) (Caltrans)	The 2023 SHSMP needs assessment accounts for new objectives introduced since the 2019 SHSMP – Mobility Hubs, Complete Streets, Fish and Wildlife Connectivity, Climate Adaptation and Resilience.





Action	Action Status	Agency Effort	Effort Description
Align funding for state of good repair and state highway operations projects with VMT-reduction projects such as tolling and express lanes.	IN PROGRESS	CAPTI S1. Applicable Actions (Caltrans, CTC, & CalSTA)	An assortment of completed actions, that are intended to find opportunities where the state can begin to clearly signal its commitment to funding innovative, sustainable transportation projects, while being mindful of previous commitments and projects that are already underway.
		Interim 2.0 update to <i>Caltrans System Investment Strategy (CSIS)</i> (Caltrans)	The CSIS implements the CAPTI S4.1 action by guiding the project nomination process through a data- and performance-driven approach.
		Research project: " <i>Life Cycle Assessment of Complete Streets: Case Studies</i> " (Caltrans)	State sponsored study to test the complete streets Life Cycle Assessment (LCA) framework by using it to quantify the environmental and social impacts of complete streets.
Modernize asset management practices by leveraging new technologies and data.	IN PROGRESS	Active Transportation Asset Inventory tool (Caltrans)	Collection of over 26,000 existing bicycle and pedestrian assets.
		Research project: " <i>Improved Analysis Methodologies and Strategies for Complete Street</i> " (Caltrans)	State sponsored research aimed at developing and testing improved strategies and analysis methodologies for complete streets while taking into consideration the emerging advances in technology on control devices and data availability from multiple sources.





Action	Action Status	Agency Effort	Effort Description
		Research project: "Complete Cities: Bicycle Network Connectivity Evaluation Methodology" (Caltrans)	State sponsored research aimed at developing a simple bicycle network evaluation methodology for practitioners and researchers.

14. Seek Sustainable, Long-Term Transportation Funding Mechanisms

TABLE 20: SEEK SUSTAINABLE, LONG-TERM TRANSPORTATION FUNDING MECHANISMS

Action	Action Status	Agency Effort	Effort Description
Implement a statewide means-based road-user charge program as a replacement for the gas tax, based in the findings of the road-user charge study.	IN PROGRESS	California Road Charge Program (Caltrans, CalSTA, & CTC)	Road Charge is an alternative funding mechanism that allows drivers to support road and highway maintenance based on how many miles they drive, instead of how many gallons of gas they use.
Coordinate with local and regional transportation agencies to develop and implement sustainable transit and active transportation funding models.	IN PROGRESS	CAPTI S2.4 Action: Increase Funding to Active Transportation Program (ATP) (Caltrans & CalSTA)	IIJA increased federal funding to the ATP by roughly \$57 million annually. Additionally, the state's Fiscal Year 2022-23 budget, included a one-time infusion of \$1.05 billion from the General Fund to the ATP. CTC in collaboration with public stakeholders determined that funding will be utilized in Cycle 6 of the ATP.





Action	Action Status	Agency Effort	Effort Description
		<p>Research project: <i>"Tolling lessons learned for road usage charge"</i> (Caltrans)</p>	<p>State sponsored research that will identify the best practices in the existing tolling systems for offsetting some of the costs for low-income drivers and demonstrate their effectiveness using travel behavior data from the National Household Travel Survey.</p>

