

California Road Charge Program

Annual Report – Federal Fiscal Year 2023



Submitted By:

The California Department of Transportation

Lauren Prehoda,
Road Charge Program Manager

Table of Contents

Contents

Purpose.....	3
Background.....	3
FHWA FAST Act STSFA Grant Awards	3
FAST Act STSFA Goals mapped to Caltrans Objectives	7
Budget Status.....	8
Project Status.....	9
Conclusion and Next Steps.....	11

Purpose

This is the sixth annual report, required under Section 5(b) of the FAST Act, STSFA grant agreement entered into between FHWA and the California Department of Transportation (Caltrans). This report describes how the demonstration activities carried out in the year of 2023 with grant funds meet the objectives of the FAST Act STSFA Program.

Background

California's Road Charge Program

As California looks toward a future without gas-powered vehicles, alternative funding sources for our transportation system must be explored. Beginning in 2013, California initiated investigations into a mileage-based user fee. In September 2014, legislation was enacted to conduct a pilot testing road charge as an alternative to the gas tax. The pilot had over 5,000 participants logging over 37 million miles and successfully demonstrating the feasibility of a road charge. However, areas of research remained, with the final report recommending an exploration of pay-at-the-pump opportunities.

The passage of the Road Repair and Accountability Act provided California the opportunity to thoughtfully develop a fair and sustainable transportation revenue mechanism to eventually replace the gas tax. California has relied on the gas tax for 100 years, and a decision to move away from this model must be approached thoroughly and carefully. The Road Charge Program has continued to research the key topics outlined in the STSFA goals including minimizing administrative costs of a road charge system, understanding and enhancing public perceptions of transportation, and demonstrating potential road charge technology mechanisms to ease future adoption.

In 2022, Caltrans completed the California Road Charge Four-Phase Demonstration that tested the technical feasibility of reporting and assessing road charge across pay-at-the-pump/charge point, usage-based insurance, transportation network companies, and autonomous vehicle platforms. This successful demonstration concluded in 2022.

This year, Caltrans launched the Public/Private Roads Project, funded by a Round 5 STSFA grant which included a research effort and seven-month pilot to engage motorists across rural and tribal communities to explore how their lives may be impacted with a road charge program. The seven-month pilot that was completed this September 2023 and focused on testing the viability of geolocation technology to differentiate between public and private roads. The final report is expected in summer of 2024.

Also in 2023, Caltrans began its fourth pilot, the Road Charge Collection Pilot, authorized by Senate Bill SB 339 (Wiener, 2021). The intent of SB 339 is to establish and test a revenue collection process and to identify state agencies and departments that need to be involved to ensure a seamless flow of funds and for revenue management, as well as testing different rate structures. Caltrans was awarded an STSFA round 6 grant to support this work.

FHWA FAST Act STSFA Grant Awards

Caltrans was awarded federal grant funding from the Federal Highway Administration (FHWA) under the Fixing America's Surface Transportation (FAST) Act Surface Transportation System Funding Alternatives (STSFA) program in 2016 (Round 1) and 2017 (Round 2). In 2018, Caltrans also applied for Round 3 of the STSFA Grant and was awarded funding in early 2019. Round 2 and Round 3 have been combined into California's Four Phase Demonstration project, which was completed in 2022. Caltrans also applied for

and received Round 5 funding to support the Public/Private Roads Project, which is currently ongoing with an expected end in 2024. Caltrans has also applied for and received Round 6 funding to support the Road Charge Collection Pilot.

Below are the primary project objectives from the 2016 STSFA Grant (Round 1):

1. Recruit Consultant Partners
 - a. Solicit interest and select consultant partners that can lead technical effort to differentiate between public and private roads via GPS.
2. Develop Organizational Structure and Compliance Program
 - a. Define organizational structure for California's road charge program
 - b. Examine and identify improvements to the current gas tax revenue model
 - c. Identify enforcement and compliance strategies
3. Test a Pay-at-the-Pump/Charge Point Model
 - a. Identify technology solutions for a Pay-at-the-Pump/Charging Station model
 - b. Select viable Pay-at-the-Pump/Charging Station software/applications
 - c. Demonstrate the effectiveness of the Pay-at-the-Pump/Charging Station software/applications through internal testing

Below are the primary project objectives from the 2017 STSFA Grant (Round 2):

4. Demonstrate a Pay-at-the-Pump/Charge Point Model
 - a. Test the viability of a Pay-at-the-Pump/Charge point system through a live demonstration and evaluation of new technologies
 - b. Evaluate feasibility, cost effectiveness, and public acceptance of a Pay-at-the-Pump/Charge Point model
 - c. Make recommendations regarding Pay-at-the-Pump/Charge Point implementation
5. Research on Public Attitudes
 - a. Examine public perception of transportation funding and transportation funding alternatives.
 - b. Execute a multi-channel, multi-lingual transportation funding communication and outreach program.
 - c. Evaluate and refine the most effective transportation funding messages and channels.

Below are the primary project objectives from the 2018 STSFA Grant (Round 3):

6. Usage Based Insurance and Road Charge Demonstration
 - a. Demonstrate the feasibility of auto insurance companies (those currently utilizing UBI) acting as CAMs in the collection of a road charge.
 - b. Assess the cost-effectiveness of auto insurance companies (those currently utilizing UBI) acting as CAMs in the collection of a road charge
 - c. Build partner and public awareness of this type of road charge model
7. Transportation Network Companies and Road Charge Demonstration
 - a. Demonstrate the feasibility of collecting a road charge through transportation network companies
 - b. Assess the cost effectiveness of collecting a road charge through transportation network companies
 - c. Build partner and public awareness of this type of road charge model
8. Autonomous Vehicles and Road Charge Demonstration
 - a. Identify road charge opportunities that stem from autonomous vehicle usage of California roadways

- b. Build partner and public awareness of this type of road charge model

Below are the primary project objectives from the 2020 STSFA Grant (Round 5):

9. Demonstrate the viability of current GPS technology in differentiating between public and private roads.
 - a. Assess the accuracy of GPS technology to accurately differentiate between a public (i.e., Caltrans maintained) road and a private road.
 - b. Show how GPS technologies can differentiate between these road types using commonly accepted map sets.
10. Engage rural communities and more fully understand how road charge uniquely impacts them and what their priorities are in finding solutions. If possible, engage the Native American tribes in the state.
 - a. Identify key concerns from rural and Native American communities as they relate to road charge such as privacy protection, technology ambiguity, privacy protection, and motorist cost implications.
 - b. Recruit members from California’s rural and tribal communities to participate in the demonstration to both educate them on the road charge concept, and also better understand their needs and concerns with California transportation.
11. Examine the current state process for refunding gas tax payments for miles on private roads and determine what elements of the organizational design could be used or need to be changed for a road charge system.
 - a. Explore other state agencies that refund gas tax payments and capture their existing processes and systems.
 - b. Identify key organizational, policy, and technical considerations that could be leveraged for a large-scale road charge program.
12. Continue to build and monitor public awareness of road charge in California.
 - a. Expand public education to rural and tribal communities on how California currently funds transportation, why road charge is being explored, and how these rural and tribal communities can bring forward key policy, operational, and technical considerations.
 - b. Capture rural and tribal specific issues with road charge to help inform Caltrans and other stakeholders on how to improve road charge ubiquity.

Below are the primary project objectives from the 2021 STSFA Grant (Round 6):

13. Testing a Road Charge revenue collection process with two different rate structures that involves participant payments of road charges (former pilots only simulated payments).
 - a. Identify state agencies and departments that need to be involved to ensure a seamless flow of funds and for revenue management.
 - b. Capture whether the two rate structures will change the pilot participants driving behavior.
14. Continue to build and monitor public awareness of road charge in California.

Grant FFY	STSFA Grants	Est. Cost	Federal Funds	State Funds	State In-Kind Contribution	Projects Completed
2016	Caltrans Award – Round 1	\$1,527,000	\$750,000	\$534,100	\$242,900	Jan. 2019
2017	Caltrans Award – Round 2	\$3,500,000	\$1,750,000	\$750,000	\$1,000,000	Jun. 2022
2018	Caltrans Award – Round 3	\$4,060,000	\$2,030,000	\$940,000	\$1,090,000	Jun. 2022
2020	Caltrans Award – Round 5	\$4,300,000	\$2,150,000	\$1,070,000	\$1,080,000	Ongoing
2021	Caltrans Award – Round 6	\$7,000,000	\$3,000,000	\$4,000,000	\$0	Ongoing
	Totals	\$20,387,000	\$9,680,000	\$7,294,100	\$3,412,900	

FAST Act STSFA Goals mapped to Caltrans Objectives

The table below summarizes the FAST Act STSFA Goals and maps Caltrans’ program objectives to these goals.

FAST Act STSFA Goals	Caltrans Program Objectives													
	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1. Test the design, acceptance, and implementation of 2 or more future user-based alternative revenue mechanisms.		✓	✓	✓	✓	✓	✓	✓	✓	✓			✓	
2. Improve the functionality of such user-based alternative revenue mechanisms.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
3. Conduct outreach to increase public awareness regarding the need for alternative funding sources for surface transportation programs and to provide information on possible approaches.	✓		✓		✓						✓	✓		✓
4. Provide recommendations regarding adoption and implementation of user-based alternative revenue mechanisms.			✓	✓		✓	✓	✓	✓	✓	✓	✓	✓	
5. Minimize the administrative cost of any potential user-based alternative revenue mechanisms.		✓	✓	✓		✓	✓	✓	✓	✓	✓		✓	
6. Minimize the administrative costs associated with the collection of fees.		✓	✓	✓		✓	✓	✓	✓	✓	✓		✓	

Budget Status

Caltrans FFY 2016 STSFA FAST Act Award – Round 1

Complete

Grant FFY	Task	Estimated Cost	Federal Funds	State Funds	State In-Kind Contribution
2016	Total Estimated Cost	\$1,527,000	\$750,000	\$534,100	\$242,900
	Total Expenditures	\$1,359,190	\$557,671	\$452,563	\$348,956
	Balance	\$167,810	\$192,329	\$81,537	-\$106,056
% Expended thru Completion		89%	74%	85%	144%

During 2019, the California projects funded by the STSFA FAST Act 2016 grant (Round 1) concluded and their respective final reports were submitted to FHWA.

The funds from the 2017 STSFA grant (Round 2) and 2018 STSFA grant (Round 3), in addition to the work accomplished through 2016 grant funds were utilized to conduct several comprehensive road charge demonstrations that featured emerging transportation technologies. In 2022, Caltrans completed the California Four-Phase Demonstration that tested how a mileage-based road charge can be assessed through Pay-at-the-Pump/Electric Charge Points, Usage-Based Insurance, Transportation Network Companies, and Autonomous Vehicles.

During 2023, the funds from the 2020 STSFA grant (round 5) were utilized in the Public/Private roads project which conducted a pilot that concluded in September 2023 that explored the reliability of GPS technology to differentiate between public and private roads and assist with determining a taxable mile in a road charge system. Outreach was also conducted with targeted rural and tribal communities and organizations. The Public/Private roads project remains ongoing.

Also in 2023, state funds from the 2021 STSFA grant (round 6) were utilized to begin the California Road Charge Collection Project. This project will conduct a pilot that will test a Road Charge revenue collection process with two different rate structures that involves participant payments of road charges (former pilots only simulated payments).

The following table indicates the total estimated cost for each project, as reflected in Caltrans' 2017 STSFA FAST Act Grant Proposal.

Caltrans FFY 2017 STSFA FAST Act Award – Round 2

Complete

Grant FFY	Task	Estimated Cost	Federal Funds	State Funds	State In-Kind Contribution
2017	Total Estimated Cost	\$3,500,000	\$1,750,000	\$750,000	\$1,000,000
	Total Expenditures	\$3,680,580	\$1,749,777	\$1,068,173	\$862,629
	Balance	-\$180,802.27	\$223	-\$318,173	\$137,371
% Expended thru Completion		105%	100%	142%	86%

The following table indicates the total estimated cost for each project, as reflected in Caltrans' 2018 STSFA FAST Act Grant Proposal.

Caltrans FFY 2018 STSFA FAST Act Award – Round 3

Complete

Grant FFY	Task	Estimated Cost	Federal Funds	State Funds	State In-Kind Contribution
2018	Total Estimated Cost	\$4,060,000	\$2,030,000	\$940,000	\$1,090,000
	Total Expenditures	\$3,898,142	\$2,030,000	\$771,296	\$1,096,846
	Balance	\$161,858	\$0	\$168,704	-\$6,846
% Expended thru Completion		96%	100%	82%	101%

The following table indicates the total estimated cost for each project, as reflected in Caltrans' 2020 STSFA FAST Act Grant Proposal.

Caltrans FFY 2020 STSFA FAST Act Award – Round 5

In Progress

Grant FFY	Task	Estimated Cost	Federal Funds	State Funds	State In-Kind Contribution
2020	Total Estimated Cost	\$4,300,000	\$2,150,000	\$1,070,000	\$1,080,000
	Expended thru Sept. 2023	\$3,576,676	\$2,150,000	\$350,000	\$1,076,676
	Balance	\$723,324	\$0	\$720,000	\$3,324
% Expended thru Sept. 2023		83%	100%	32%	99%

The following table indicates the total estimated cost for each project, as reflected in Caltrans' 2021 STSFA FAST Act Grant Proposal.

Caltrans FFY 2021 STSFA FAST Act Award – Round 6

In Progress

Grant FFY	Task	Estimated Cost	Federal Funds	State Funds	State In-Kind Contribution
2020	Total Estimated Cost	\$6,793,722	\$3,000,000	\$3,793,722	\$0
	Expended thru Sept. 2023	\$0	\$0	\$0	\$0
	Balance	\$6,793,722	\$3,000,000	\$3,793,722	\$0
% Expended thru Sept. 2023		0%	0%	0%	0%

Project Status

Round 1

Round 1 is complete.

Round 2 & 3

Rounds 2 and 3 are complete.

Round 5

Innovation and Research

- Completed the California Public/Private Roads Pilot, a seven-month demonstration that

included 289 participants testing how road charge impacts rural and tribal communities.

- Conducted the opinion research polling for rural, tribal, and the general public which ended in April 2023. Caltrans is currently compiling the results and will provide the synopsis as part of the project final report.
- Testing included a partnership with the Transportation Corridor Agencies (TCA) in which a subpilot was added to demonstrate the ability of a tolling agency to serve as a third-party account manager.
- Began developing a report on the effectiveness of data collected from an OBD-II device for use for road charges that include road segment differentiation.

Technical Design

- Completed the 6 month Public/Private Road Charge Project pilot while addressing non-critical enhancements to the California Road Charge Account Management System and the myMiles mobile app.
- During the pilot, Account Manager Security Systems and Financial audits were conducted.
- During the pilot, constantly monitored pilot data integrity, participant account access, and vehicle data reporting.
- Established data feeds and reports for Transportation Corridor Agency (TCA) executives.
- Evaluated trip data against public and private land geofences to accurately delineate between California public, private, and tribal roads, as well as state boundaries.
- Explored recommendations for better delineation between public and private lands and impacts when the road charge program may scale to over 30M motorists.
- Completed the majority of all customer support, and financial reporting.
- Launched pilot closeout activities, including device returns and account closeout.

Communications:

- Supported participant engagement, including addressing customer issues, providing communications, and addressing questions.
- Closed out the six-month pilot.
- Deployed pilot closeout communications materials for all participants.
- Began authoring the final pilot report.
- Conducted outreach and engagement with targeted rural and tribal communities and organizations.
- Continued monthly updates to the caroadcharge.com program website with updated information on the Public/Private Roads project
- Engaged members of the California Road Charge Technical Advisory Committee on pilot activities.

Round 6

Road Charge Collection Pilot

Technical Design

- Held initial design workshops.
- Began review of design recommendations from Technical Advisory Committee.

Communications

- Completed the initial project schedule and deliverable payment list for expenditure tracking.
- Requested the DMV allow videos in public service announcements at the DMV offices.
- Developed communications and recruitment plan.

Conclusion and Next Steps

In 2023, Caltrans concluded the California Public/Private Roads Pilot which tested the viability of GPS technology embedded in OBD-II devices to differentiate between public and private roads in a road charge system. In addition, Caltrans also began initial planning for the Road Charge Collection Pilot.

Caltrans continues to support regional and national road charge initiatives through active participation in the 20-state pooled fund research consortium RUC America, IBTTA, and the Mileage- Based User Fee Alliance.

In 2024, the following high-level tasks will be completed through utilization of the 2020 STSFA Round 5 and 2021 STSFA Round 6 grant awards:

Communications

- Continue supporting rural and tribal outreach initiatives to inform California motorists as well as explain the need for road charge throughout California.
- Continue updating and maintaining the road charge website (<https://www.caroadcharge.com>)
- Develop focus group results documents.
- Develop Public opinion survey results.
- Implement Quarterly website updates.
- Support ad-hoc communications requests from other state agencies, legislators, the road charge Technical Advisory Committee, and key stakeholders.
- Identify trends and knowledge gaps uncovered during surveys, public opinion polls, and focus groups.
- Conduct as-needed presentations to statewide organizations on the road charge concept.
- Release newsletters, flyers, and frequently asked questions.

Innovation and Research

- Continue evaluating potential risks, mitigation strategies, and policy considerations for deploying a road charge program.
- Continue supporting national road charge research and policy initiatives.

California Public/Private Roads Project

- Continue program communications and supporting ad-hoc discussions and presentations on the road charge concept and the Public/Private Roads Pilot.
- Evaluate lessons learned from the Public/Private Roads Project.
- Complete the Public/Private Roads Project Final Report.
- Continue engaging California Road Charge Technical Advisory Committee on program-related considerations.
- Finish completing research papers about California aviation fuel taxes, boating fuel taxes, off-road vehicle fuel taxes and fuel taxes used in the agriculture industry.

Road Charge Collection Pilot

- Finalize development of requirements for account management system.
- Finalize business and system requirement documents in addition to other design documents.
- Conduct general public polls and participant pilot surveys.
- Develop recruitment strategy and finalize the incentive strategy for the pilot.
- Launch the Road Charge Collection pilot and maintain monthly participant progress reports.