

# **FAST Act STSFA Grant Program**

## **Annual Report – Federal Fiscal Year 2019**

(October 2018 thru September 2019)

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### **California Road Charge Program**



#### **Submitted By:**

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## Purpose

This is the third annual report, required under Section 5(b) of the FAST Act, STSFA grant agreement entered into between the Federal Highway Administration (FHWA) and the California Department of Transportation (Caltrans). This report describes how the demonstration activities carried out with grant funds in federal fiscal year (FFY) 2019 meet the objectives of the Fixing America’s Surface Transportation (FAST) Act, Surface Transportation System Funding Alternatives (STSFA) Program.

## Background

### California’s Road Charge Pilot Program (RCPP)

As California and the entire nation transition away from fossil fuels, we cannot continue to rely solely on the gas tax to fund the maintenance and operations of our vital transportation system. Beginning in 2013, California initiated investigations into a mileage-based user fee. In September 2014, the California Legislature passed legislation to conduct a pilot testing road charge as an alternative to the gas tax. The pilot was successfully completed in 2017, with over 5,000 participants logging 37 million miles.

In early 2017, the California Legislature passed the Road Repair and Accountability Act of 2017 (Senate Bill 1, Beall, Chapter 5, Statutes of 2017), which raised the gas tax to address the state’s transportation infrastructure repair and maintenance needs. The citizens of California rejected the gas tax repeal effort by voting “No” on Proposition 6 in November 2018.

The passage of the Road Repair and Accountability Act provided California the opportunity to thoughtfully develop a sustainable, equitable transportation revenue mechanism to eventually replace the gas tax.

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.

### 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 for an additional three demonstration projects. Caltrans merged Round 2 and Round 3 into one contract to enhance California’s Road Charge Pilot Program through a Phased Demonstration.

Grant FFY	FAST Act STSFA Grants	Estimated 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	In Progress
2018	Caltrans Award – Round 3	\$4,060,000	\$2,030,000	\$940,000	\$1,090,000	In Progress
	<b>Totals</b>	<b>\$9,087,000</b>	<b>\$4,530,000</b>	<b>\$2,224,100</b>	<b>\$2,332,900</b>	

FAST Act STSFA Goals	Caltrans RCPP Objectives							
	Round 1		Round 2		Round 3			
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.		✓	✓	✓		✓	✓	✓

## Project Status

### Caltrans FFY 2016 STSFA FAST Act Award – Round 1

Complete

Grant FFY	Task	Estimated Cost	Federal Funds	State Funds	State In-Kind Contribution	Task Completed
	Education & Outreach	\$1,000,000	\$500,000	\$460,600	\$39,400	Jan. 2019
	Organizational Structure and Compliance Program	\$277,000	\$125,000	-	\$152,000	Sept. 2018
	Pay-at-the-Pump / Charge Point Test	\$250,000	\$125,000	\$73,500	\$51,500	Jan. 2019
<b>2016</b>	<b>Total Estimated Cost</b>	<b>\$1,527,000</b>	<b>\$750,000</b>	<b>\$534,100</b>	<b>\$242,900</b>	
	Expended thru Sept 2019	\$1,359,190	\$557,671	\$452,563	\$348,956	
	Balance	\$167,810	\$192,329	\$81,537	-\$106,056	
	<b>% Expended thru Sept 2019</b>	<b>89%</b>	74%	85%	144%	

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

**1. Expand Education and Outreach**

- a. Provide the public with information related to road usage charge.
- b. Develop research initiatives aimed at informing the public on the current system of generating revenues for transportation infrastructure, how those funds are distributed and used.
- c. Provide an open and transparent forum for the discussion of road charge as an alternative to the gas tax.

**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

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 are being utilized to conduct several comprehensive road charge demonstrations that will feature emerging technologies in transportation. Caltrans will conduct four demonstrations in 2020 thru 2022 that will explore 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.

**Caltrans FFY 2017 STSFA FAST Act Award – Round 2**

**In Progress**

Grant FFY	Task	Estimated Cost	Federal Funds	State Funds	State In-Kind Contribution	Task Completed
	Pay-at-the-Pump / Charge Point Demonstration	\$3,500,000	\$1,750,000	\$750,000	\$1,000,000	June 2020 (estimated)
<b>2017</b>	<b>Total Estimated Cost</b>	<b>\$3,500,000</b>	<b>\$1,750,000</b>	<b>\$750,000</b>	<b>\$1,000,000</b>	
	Expended thru Sept. 2019	\$2,333,712	\$1,749,777	\$0	\$583,935	
	Balance	\$1,166,288	\$223	\$750,000	\$416,065	
	<b>% Expended thru Sept 2019</b>	<b>67%</b>	<b>100%</b>	<b>0%</b>	<b>58%</b>	

Below are the primary project objectives from the Caltrans 2017 STSFA Grant Award (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.

During 2019, the following activities occurred on the projects funded by the Caltrans 2017 STSFA Grant Award (Round 2):

**Pay-at-the-Pump / Charge Point Demonstration and Research**

- Developed and released Scope of Work (SOW) and Request for Proposals (RFP) package and executed contract for joint Pay-At-The-Pump/ Usage-Based Insurance/ Transportation Network Companies/ Autonomous Vehicle demonstration (Phased Demonstration).
- Began design of Phased Demonstration.
- Conducted research on Blockchain.
- Developed road charge cloud database concepts.
- Revamped road charge demonstration public facing website and acquired a third-party entity to handle hosting and maintenance.
- Continued to coordinate with the California Transportation Commission’s Road Charge Technical Advisory Committee.
- Submitted draft and final schedule for six focus groups throughout state.
- Authored concept memo that included review of public perception research completed from 2015 to present, potential road charge impacts to disadvantaged communities, and initial recommendations to ease impacts.
- Released whitepaper titled “The Importance of Assessing Potential Impacts of Road Charge on Disadvantaged and Low-Income Communities in California.”
- Researched potential 2019/2020 STSFA Grant Research Topics.

**Caltrans FFY 2018 STSFA FAST Act Award – Round 3**

**In Progress**

Grant FFY	Task	Estimated Cost	Federal Funds	State Funds	State In-Kind Contribution	Task Completed
	Usage Based Insurance (UBI) Demonstration	\$1,320,000	\$660,000	\$310,000	\$350,000	June 2022 (estimated)
	Transportation Network Companies Demonstration	\$1,170,000	\$585,000	\$330,000	\$255,000	June 2022 (estimated)
	Autonomous Vehicles Demonstration	\$1,570,000	\$785,000	\$300,000	\$485,000	June 2022 (estimated)
<b>2018</b>	<b>Total Estimated Cost</b>	<b>\$4,060,000</b>	<b>\$2,030,000</b>	<b>\$940,000</b>	<b>\$1,090,000</b>	
	Expended thru Sept. 2019	\$2,030,000	\$2,030,000	\$0	\$0	
	Balance	\$2,030,000	\$0	\$940,000	\$1,090,000	
	<b>% Expended thru Sept. 2019</b>	<b>50%</b>	<b>100%</b>	<b>0%</b>	<b>0%</b>	

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

**6. Usage Based Insurance and Road Charge Demonstration**

- d. Demonstrate the feasibility of auto insurance companies (those currently utilizing UBI) acting as certified account managers in the collection of a road charge.
- e. Assess the cost-effectiveness of auto insurance companies (those currently utilizing UBI) acting as certified account managers in the collection of a road charge.
- f. Build partner and public awareness of this type of road charge model.

**7. Transportation Network Companies and Road Charge Demonstration**

- d. Demonstrate the feasibility of collecting a road charge through transportation network companies.
- e. Assess the cost effectiveness of collecting a road charge through transportation network companies.
- f. Build partner and public awareness of this type of road charge model.

**8. Autonomous Vehicles and Road Charge Demonstration**

- g. Identify road charge opportunities that stem from autonomous vehicle usage of California roadways.
- h. Build partner and public awareness of this type of road charge model.

During 2019, the following activities occurred on the projects funded by the Caltrans 2018 STSFA Grant Award (Round 3):

**Usage Based Insurance, Transportation Networks, and Autonomous Vehicle Demonstrations**

- Developed and released Scope of Work (SOW) and Request for Proposals (RFP) package and executed contract for joint Pay-At-The-Pump/ Usage-Based Insurance/ Transportation Network Companies/ Autonomous Vehicle demonstration (Phased Demonstration).
- Began design of Phased Demonstration.
- Briefed new California State Transportation Agency Secretary and Caltrans Director on planned road charge demonstrations.
- Worked with the California Transportation Commission to define 2020 technical advisory committee meeting schedule and agendas.
- Led Communications Strategy Workshop to define strategies, messages, and methods for communicating demonstrations and overall road charge program.
- Developed briefing papers on the nexus between road charge with autonomous vehicles and usage-based insurance.

**Next Steps**

In 2020, the following high-level tasks are expected to be completed through utilization of the Caltrans 2017 STSFA grant and 2018 STSFA grant awards:

**Demonstration and Research**

- Conduct a literature review of relevant road charge programs.
- Interview key academics and practitioners on key aspects of road charge programs and systems.
- Launch a general population survey to capture the travel decision-making processes with and without the Pay-at-the-Pump/Charge Point, UBI, and TNC programs.

- Analyze survey results and identify any trends.
- Conduct focus groups with demonstration participants.
- Synthesize focus group results.
- Develop Communications plan.

**Pay-at-the-Pump/Charge Point, UBI, TNC, and AV Demonstrations**

- Develop phase concepts for the Pay-at-the-Pump/Charge Point, Usage Based Insurance (UBI), Transportation Network Companies (TNC), and Autonomous Vehicles (AV) Demonstrations.
- Finalize systems architecture.
- Develop technical, operational, and business requirements for technology partners and account managers.
- Identify, analyze, and quantify demonstration and road charge program risks.
- Develop and deploy risk mitigation strategies where appropriate.
- Create road charge business case and revenue model based on Pay-at-the-Pump/Charge Point, UBI, TNC, and AV platforms.
- Launch demonstration and road charge program communications initiative.
- Develop demonstration evaluation strategy.
- Develop road charge test plans, and conduct systems validation with technology providers.
- Identify potential road charge demonstration participants.
- Develop and deploy road charge recruiting strategy.
- Collaborate with the Road Charge Technical Advisory Committee on specific research topics and demonstration briefings.
- Collaborate with national leaders, academia, professional organizations, and FHWA on key program status and new initiatives.
- Explore ways California Road Charge can be integrated with other STSFA programs.
- Capture lessons learned for dissemination with FHWA and other road charge practitioners.
- Maintain communications through California Road Charge Demonstration website.