

**DIVISION OF RESEARCH, INNOVATION & SYSTEM INFORMATION**  
**Research Initial Scope of Work**  
**SUBMITTAL FORM - FY 16/17**

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- I. **Project Number:** P101  
Project Title: Alternative Transportation Finance
- II. **Task Number:** 3000  
Task Title: Road Charge White Paper
- III. **Project Problem Statement:**  
Per SB 1077 CalSTA and Caltrans as staff are charged to design, develop, test and recommend a viable Road Charge System for California. There are many technology options available for the Road Charge System design. The problem, and Caltrans challenge is to understand the many technological attributes as strengths and weaknesses in a road charge system to help Caltrans determine the best technologies available for a California Road Charge System.
- IV. **Objective:**  
To conduct basic and applied research white paper(s) of unique and innovative ideas to help solve some of California's road charge concept challenges using technology.
- V. **Task Description of Work and Expected Deliverables:**  
Design Challenges  
Caltrans Road Charge unit is looking for research white paper(s) addressing one or more innovative ideas to help identify solutions to some of California's key road charge design challenges using technology. Any ideas and technologies that have the potential to advance the road charge concept will be considered for further development. Some key design challenge areas include:
1. A road charge will have to be collected and enforced;
  2. Simple systems report total miles traveled, but more complex systems report mileage by geographic area or class of road;
  3. Any system to collect revenue will be subject to evasion and avoidance behavior;
  4. If integrated with the current gas tax, modifying the point of sale software to allow the system to interact with a road charge system;
  5. Communicating information on prices to vehicles and displaying to drivers;
  6. Privacy and data security concerns; and
  7. Simplicity to the State and end user (drivers)

VII. **Deliverables:**

Ideas should be submitted in the form of a whitepaper addressing the following elements: (1) Title; (2) Background/Introduction; (3) Design Challenge Area Identification/Business Value; (4) Description of Concept/Design; (5) Examples; (6) Draft Project Scope; (7) Estimated Cost; (8) General Schedule/Timeline; and (9) Contact Information.

VII. **Background:**

An efficient transportation system is critical for California's economy and quality of life. The revenues currently available for highways and local roads are inadequate to preserve and maintain existing infrastructure and to provide funds for improvements that would reduce congestion and improve service. The gas tax is an ineffective way for meeting California's long-term revenue needs because it will steadily generate less revenue as cars become more fuel efficient and alternative sources of fuel are identified. By 2030, as much as half of the revenue that could have been collected will be lost to fuel efficiency. Additionally, bundling fees for roads and highways into the gas tax makes it difficult for users to understand the amount they are paying for roads and highways.

Through the enactment of Senate Bill 1077 in 2014, the Legislature and Governor determined it important for the state to begin to explore alternative revenue sources that may be implemented in lieu of the antiquated gas tax structure now in place. The California State Transportation Agency (CalSTA) through the California Department of Transportation (Caltrans) is launching a statewide pilot program, California Road Charge Pilot Program, to explore road charging as a potential long term replacement for the gas tax. Road charging is a funding mechanism where drivers pay to maintain the roads based on the miles they drive, rather than the amount of fuel they consume.

VIII. **Estimate of Duration:** Six (6) Months

IX. **Related Research:**

- Task ID 2620, Western Road Usage Charging Consortium (WRUCC), TPF-5(288)
- Task ID 2656, Road Usage Charge (RUC) Initial Study
- Task ID 2780, Road Charge Pilot Demonstration Program
- Task ID 3058, Road Charge Pilot Evaluation

X. **Deployment Potential:**

High – The Road Charge Pilot Demonstration Program will be completed in the spring of 2017. Results from this with paper will be added to the pilot demonstration.

XI. **Authors:** Brady Tacdol and Scott Williams

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