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# **BRIEFING BOOK FOR THE CALIFORNIA ROAD CHARGE TECHNICAL ADVISORY COMMITTEE**

**Pre-Meeting Background Reading for TAC Meeting #5**

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May 29, 2015





**Briefing Book for TAC Meeting #5**

**Contents**

Section 1: TAC Decision Schedule ..... 1

Section 2: Policy Overview ..... 6

Section 3: Privacy Protections in California’s Road Charge Pilot  
Program ..... 19

Section 4: Introduction to the Business Case Analysis of Road  
Charging in California ..... 52

Section 5: Introduction to Pilot Evaluation Criteria ..... 84

Appendix 1: Detailed Monthly Decision Schedule ..... 106

Appendix 2: Relevant Driver Privacy Laws and Legislation ..... 116

Appendix 3: References for Evaluation ..... 135

Appendix 4: Elements of Utility Metering and Billing Systems ..... 137



**Briefing Book for TAC Meeting #5**

# **Section 1: TAC Decision Schedule**

To be discussed during Agenda Item # 6

**Briefing Book for TAC Meeting #5**

## Summary of TAC Decisions and Preview of Schedule

This section summarizes the TAC's decisions made to date, and previews issues the TAC must consider and decide upon during the remaining meetings for 2015.

- ▶ The Decisions Summary page displays:
  - > Decision points that the TAC has addressed in prior meetings;
  - > Any actions taken; and
  - > A brief summary of the TAC's proposal that reflects more detailed direction on pilot design.
- ▶ Following the Decisions Summary page you will find a table displaying the Decisions Schedule at-a-glance, providing an overview of all remaining questions the TAC needs to address, organized chronologically according to when the question will be raised and discussed at TAC meetings, and indicating which work streams will inform the TAC's discussion.
- ▶ Finally, Appendix 1 (Detailed Monthly Decision Schedule) provides a more detailed look at each of the 8 remaining TAC meetings, from May through December. These pages include topic areas that each meeting will cover; statutory language associated with each topic area; and any corresponding TAC decision points to address in the meeting.

The Decisions Summary will be updated each month to reflect decisions made. Although CTC staff, Caltrans, and the consulting team recommend that the TAC achieve consensus and direction on the questions in the timeframes presented, the Decision Schedule remains a living document. Any changes, such as moving questions up or down on the schedule or adding new questions will be reflected in the briefing materials each month and discussed at each meeting.



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<b>MONTH</b>	<b>TAC DECISION POINTS</b>	<b>ACTION</b>
April	What mileage measurement and reporting method(s) are most promising?	TAC selected time permit, mileage permit, odometer read (pre- and post-pay), non-location automated device, and location-based automated device
	What technologies should be further studied to pursue those measurement and reporting methods?	TAC selected the following: Time permit, mileage permit, odometer, usage-based insurance devices, smartphone, telematics
	Should the pilot assess road charges on out-of-state vehicle owners driving on California roads?	Yes
	Should the pilot test interoperability with other states considering road charges?	Yes
	Should the pilot test offer multiple account managers?	Yes



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**Based on TAC decisions made up to this point, the proposed road charge pilot has the following parameters:**

**The pilot will offer drivers a choice in account managers**

More than one non-state account manager will be available for pilot participants to choose from. A California state-agency based account manager may be simulated for the pilot, if the TAC recommends it (based on input from the Business Case and Concept of Operations documents).

**The pilot will offer drivers a choice in mileage recording methods**

Methods still under consideration include time-based permits, permits for fixed-blocks of miles, and three mileage-based methods (odometer reporting, non-location aware automated device, and location-aware automated device).

*This list is subject to further refinement by the TAC through September*

**Out-of-state vehicles will be included in the pilot, be assessed a fee, and simulate payment for driving on California roads**

Drivers from neighboring states who drive regularly in California will be recruited to participate in the pilot.

**The pilot will test an open system design**

Security standards and privacy protections will be required and data content messaging formats between service providers and the state may be defined. However, the system will otherwise be designed in a way that is technology agnostic and allows entry of new operational concepts, technologies, and service providers.

**The pilot will test interoperability of California’s system with that of other states**

In the event another state does not have a pilot operational concurrent with California’s, interoperability will be simulated using account managers.



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**Decisions Schedule at-a-glance**

<b>MONTH</b>	<b>TOPICS</b>	<b>TAC DECISION POINTS TO BE RAISED</b>
May	Policy	What types (individuals, households, businesses, government agencies, etc.) of participants should be included in the pilot? What road usage mileage exemptions does the TAC recommend testing in the road charge pilot? What specific personal privacy protections should be used for the pilot?
	Business Case Analysis	What vehicles are included in the pilot – all vehicles or some subset of vehicles (such as light vehicles, heavy vehicles, private vehicles only, etc.)?
June	Technical Design	What system data security requirements should be used for the pilot? How many participants should be involved in the pilot? How should participants be distributed throughout the state?
	Evaluation Strategy	What evaluation criteria does the TAC recommend for the pilot?
July		[Comprehensive review of TAC Decisions made to date]
August	Technical Design	What type of enforcement and compliance activities should be demonstrated during the pilot?
September	Evaluation Strategy	Finalize evaluation criteria.
	Policy	Address additional questions raised during the course of TAC meetings.
	Communications	Has the TAC adequately gathered, considered, and addressed public comment on pilot issues?
October	Report to CalSTA	Feedback on report outline.
	Policy	Address additional questions raised during the course of TAC meetings.
November	Report to CalSTA	Feedback on draft report.
December	Report to CalSTA	Adopt final report on recommendations to CalSTA.



# Section 2: Policy Overview

To be discussed with Agenda item #6

**Briefing Book for TAC Meeting #5****Policy Overview for Meeting #5**

This month we move from consideration of the technical options available for road charging to considerations related to the business case for road charging (what vehicles are subject to the charge), what types or organizations to include, and what (if any) road usage mileage to exclude, as well as identifying the framework for personal privacy protection under the pilot. We will also introduce the topic of pilot program evaluation criteria, which will continue in June.



As shown in the Decision Schedule, this month, we would like to reach consensus on four new policy questions:

1. What types of participants (individuals, households, businesses, government agencies, etc.) should be included in the pilot?
2. What vehicles are included in the pilot – all vehicles or some subset of vehicles (such as light vehicles, heavy vehicles, private vehicles only, etc.)?
3. What road usage mileage exemptions does the TAC recommend testing in the road charge pilot?
4. What specific personal privacy protections should be used for the pilot?

The remainder of this section provides context and data to support the policy dialog that leads to answers to each of these questions. The following sections of this Briefing Book provide more detailed information.



## Briefing Book for TAC Meeting #5

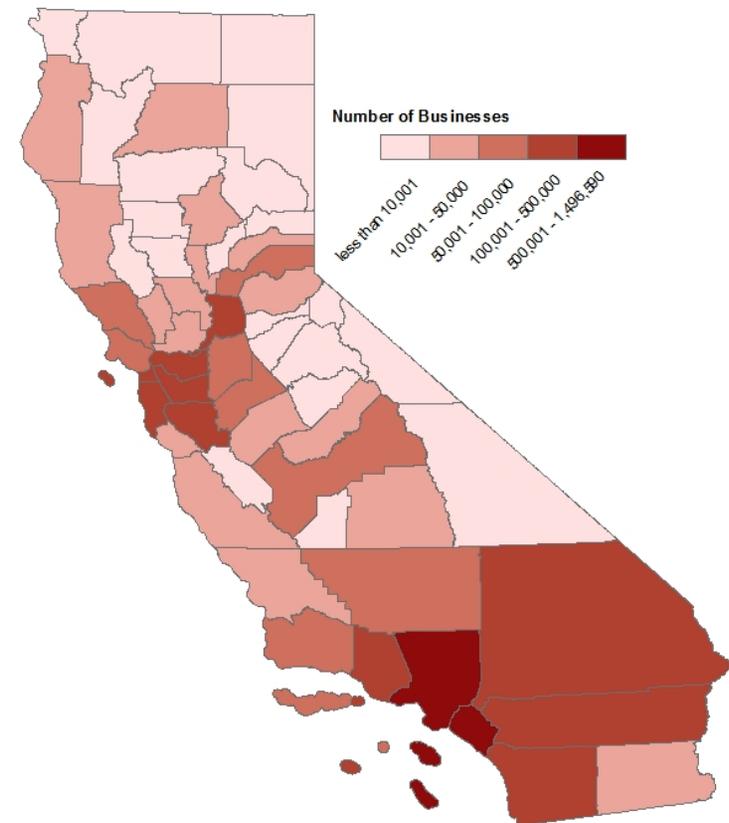
### Question 1: What types of participants (individuals, households, businesses, government agencies etc.) should be included in the pilot? (1/3)

Currently, outside of a limited number of exemptions, all entities that use gasoline or diesel-powered on-road vehicles pay fuel taxes and contribute funds for highway maintenance. A key component of the participant question for the TAC is whether to include businesses or government agencies as participants in a road charge pilot or to limit participation to individuals or households.

The TAC may choose to include one or a combination of the following categories of pilot participants:

- ▶ Individuals – single participants not connected to any other unit within the pilot
- ▶ Households – all cars, and drivers, in a household would be recruited to participate together
- ▶ Businesses
- ▶ Government agencies
- ▶ Other

There are both advantages and disadvantages to including each of the categories listed.



**Briefing Book for TAC Meeting #5****Question 1: What types of participants (individuals, households, businesses, government agencies, etc.), should be included in the pilot? (2/3)**

- ▶ Individuals
  - > Advantages: recruiting only individual participants might simplify the recruitment process since the target population is more easily defined.
  - > Disadvantages: data collected during the pilot on ease of use, acceptability, reporting burden, etc., will not be as robust as if businesses are included.
- ▶ Households
  - > Advantages: the opportunity to solicit input via multigenerational surveys and, potentially, for account managers to test a variety of invoicing methods (e.g. single invoices for entire households rather than individual account holders); opportunities to test the viability of value-added services targeted as households such as young driver monitoring; opportunity for participants to experience more than one reporting method and provide comparative feedback.
  - > Disadvantages: including entire households could limit the geographic and economic diversity of the participant pool.
- ▶ Businesses
  - > Advantages: provide baseline data on the costs of reporting and compliance for businesses so that informed decisions about future program designs, including the possibility of value-added services like fleet-management, may be made.

**Briefing Book for TAC Meeting #5****Question 1: What types of participants (individuals, households, businesses, government agencies, etc.) should be included in the pilot? (3/3)**

- > Disadvantages: businesses would need to ensure that all vehicles are registered for the road charge. This may create additional overhead activity for them. However, private account managers participating in an operational program would likely offer business accounts that provide special value-added services for businesses, which may reduce the amount of extra effort to a very low level, and even potentially provide some added benefits for the business.
- ▶ Government agencies
  - > Advantages: provide baseline data on the costs of reporting and compliance for government agencies so that informed decisions about future program designs, including potential vehicle exemptions and the possibility of value-added services like fleet-management, may be made.
  - > Disadvantages: agencies would need to ensure that all vehicles (or at least a portion of the fleet) are registered for the road charge. This may create additional overhead activity for them. However, private account managers participating in an operational program would likely offer government accounts that provide special value-added services for government agencies, which may reduce the amount of extra effort to a very low level, and even potentially provide some added benefits such as fleet or asset management services.

**Briefing Book for TAC Meeting #5****Question 2: What vehicles are included in the pilot – all vehicles or some subset of vehicles (such as light vehicles, heavy vehicles, private vehicles only, etc.)? (1/4)**

All vehicles that travel on state roadways cause road wear and tear. Thus, it seems straightforward that a road charge might be levied on all vehicles that travel on state roadways, particularly if the road charge is envisioned as a replacement for the current fuel tax system.



The Business Case Analysis section of this briefing book presents several vehicle classification systems (e.g. weight, fuel-type, and age-based classification) and suggests using an 8-class weight based framework in the business case. This section describes some possible vehicle groupings for inclusion in a pilot study. The groupings draw from weight and fuel-type classifications, as well as a consideration of vehicle use (commercial, government, or private use).

These categories are illustrative, not prescriptive or exclusive, and as always the TAC may identify some other grouping it wishes to recommend:

**1. All vehicles**

- ▶ Includes all vehicles – light duty, medium duty, heavy duty, motorcycles, and historic vehicles
- ▶ Includes commercial, government, and private vehicles
- ▶ Assumes participation of businesses in the pilot
- ▶ Approximately 18% of California’s registered vehicle fleet consists of trucks and other commercial vehicles

**Briefing Book for TAC Meeting #5****Question 2: What vehicles are included in the pilot – all vehicles or some subset of vehicles (such as light vehicles, heavy vehicles, private vehicles only, etc.)? (2/4)**

## 2. All vehicles except motorcycles

- ▶ Motorcycles represent a relatively small portion of registered vehicles in California (2.6%).

## 3. Light-duty vehicles only (&lt;10k pounds) except motorcycles

- ▶ Includes all light-duty vehicles (cars, pickups, vans)
- ▶ Includes commercial, government, and private vehicles

## 4. Non-commercial vehicles only

- ▶ Vans, passenger cars, and pickups used for commercial purposes, along with nearly all larger trucks, would be excluded from the pilot.

## 5. Gasoline vehicles only

- ▶ Limits participation to gasoline powered vehicles
- ▶ Excludes most large trucks (they tend to be diesel powered) as well as CNG/LNG-powered, hydrogen fuel cell, and plug-in electric cars
- ▶ Spans commercial, government, and private vehicle use
- ▶ Assumes business participation in the pilot if commercial vehicles are included





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**Question 2: What vehicles are included in the pilot – all vehicles or some subset of vehicles (such as light vehicles, heavy vehicles, private vehicles only, etc.)? (3/4)**

6. Gasoline and alternative fuel vehicles only (non-diesel)
  - ▶ Similar to category 5 above, but does include CNG/LNG, hydrogen fuel cell, and plug-in electric vehicles
7. Class 1 vehicles only (<6k pounds)
  - ▶ Typically referred to as “passenger cars”
  - ▶ Includes commercial, government, and private uses
  - ▶ Assumes business participation in the pilot if commercial vehicles are included
8. Class 1 and 2a vehicles only (<8500 pounds)
  - ▶ In addition to passenger cars, includes light-duty pickup trucks and SUVs
  - ▶ Includes commercial and private uses
  - ▶ Assumes business participation in the pilot if commercial vehicles are included



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**Question 2: What vehicles are included in the pilot – all vehicles or some subset of vehicles (such as light vehicles, heavy vehicles, private vehicles only, etc.)? (4/4)**

Vehicles Registered in California, 2014

TYPE OF VEHICLE	NUMBER	NOTES
Automobiles and motorcycles	24.7 million	
Trucks and commercial vehicles	8.2 million	Includes Commercial Vehicle Registration Act trucks, non-CVRA trucks and commercial vehicles, Permanent Trailer Identification, California-based International Registration Plan vehicles
Misc. Vehicles	0.15 million	Includes historical vehicles, farm equipment, etc.
<b>Fee-paid registered:</b>	<b>33 million</b>	
Exempt Registered:	0.6 million	
<b>Total Registered Vehicles:</b>	<b>33.6 million</b>	
Foreign-based IRP trucks	1.4 million	Vehicles based in other states which pay fees to operate in California

Source: State of California Department of Motor Vehicles Statistics for Publication January through December 2014, <https://www.dmv.ca.gov/portal/wcm/connect/5aa16cd3-39a5-402f-9453-0d353706cc9a/official.pdf?MOD=AJPERES>



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### Question 3: What road usage mileage exemptions does the TAC recommend testing in the road charge pilot? (1/2)

Under a fully operational road charging system, policy makers may opt to exempt any number of road uses from paying the road charge.

For instance, a new system could:

- ▶ Mirror the current law and exempt mileage driven in the operation of farming or other equipment on private property (a specific use off the public road network). This is currently accomplished through a request for refund of tax paid.
- ▶ Opt to assess charges for only those miles driven on California's public roads, not on private roads (whatever the industry or use) or outside the state, by either:
  - > not charging for those uses, or
  - > charging, but providing a mechanism for rebates or credits (similar to the current system for farming operations).



In light of this, it may be useful during the pilot to test one or more mechanisms for exempting payment of some mileage driven to provide information for future decision-making on the topic. For the purposes of a pilot test, the TAC may wish to consider both **road uses** subject to exemptions and **mechanisms** for claiming exemptions.

- ▶ **Road uses** might include:
  - > Driving on private roads
  - > Driving out of state

**Briefing Book for TAC Meeting #5****Question 3: What road usage mileage exemptions does the TAC recommend testing in the road charge pilot? (2/2)**

- > Driving on USDA-owned and maintained roads
- > Driving off-road
- > Driving on tribal lands (sovereign nations)
- > Driving on a federal military base
- ▶ **Mechanisms** might include:
  - > Using location-aware devices that differentiate between in-state and out-of-state miles driven
  - > Offering a standard mileage deduction for each vehicle (for instance 250 miles per year for all drivers)
  - > Offering a refund form similar to that currently in use for agricultural exemptions

Under a scenario where exemptions for using private roads or out of state roads are offered, those pilot participants who opt for a location-based device would simply not be charged for their non-state-road travel. Those who do not choose such a device could be given the option to receive a refund for non-state-road mileage based on documentation they would provide in a refund request, such as out-of-state fuel receipts, detailed mileage logs, and other documentation such as property records.

One reason for including exemptions of one or more types of mileage or road use in the pilot is to assess the documentation burden and privacy implications for those who opt to use a fully-manual recording/reporting system such as purchasing mileage in blocks but who also wish to claim any available exemptions.

**Briefing Book for TAC Meeting #5****Question 4: What specific personal privacy protections should be used for the pilot?**

Privacy protection is vital to the success of a road charge program. The TAC has already made preliminary recommendations about the inclusion of reporting options that do not require the electronic transmittal of distance or location data.

In section 3 (Privacy Protections in California's Road Charge Pilot Program) of this briefing book you will find a detailed discussion of the personal privacy protections required by SB 1077 and under federal and California law, along with several potential approaches the TAC can adopt to ensure privacy is protected in the road charge pilot.

Consideration of alternative personal privacy protection approaches is the starting point to recommending specific actions to protect privacy in a road usage charge pilot. It involves consideration of the following issues:

1. What is the minimum personal information required to assess a road charge?
2. How is the information collected?
3. How is information transmitted to service provider or government computers?
4. How is the information used once a service provider or government has received it?

**Briefing Book for TAC Meeting #5****Question 4: What specific personal privacy protections should be used for the pilot? (2/2)**

- ▶ More robust privacy protections can occur by applying “security by design” principles, where privacy is taken into account at the very beginning, during the initial stages of system architecture, and built upon throughout the entire project lifecycle.
- ▶ Some approaches emphasize overarching privacy protection guidelines, rules and laws that define the goals and outer boundaries for a system’s operations.
- ▶ Other approaches are more focused on prescribing specific procedures that must be followed or processes used in order to protect personal privacy.
- ▶ Still others are more focused on outcomes and measures, where decisions about the design, specifications, operations and procedures are left to administrators to decide, but where compliance and effectiveness are independently evaluated after a set period of time.



Consideration of the questions outlined above should help the TAC decide which privacy protection approach is best suited for the California road charge pilot.



# Section 3: Privacy Protections in California's Road Charge Pilot Program

To be discussed during Agenda Item #8



## Briefing Book for TAC Meeting #5

### Introduction

In this section we address the topic of **privacy** as it relates to road charging systems. The need to protect personal privacy has been discussed at TAC meetings. This section takes that discussion a step further. The two main objectives of this section are:

1. To more formally introduce the privacy concepts and the legal underpinnings applicable in California; and
2. To identify potential approaches for ensuring personal privacy is protected in the forthcoming California road charge pilot program.

After first reviewing the specific privacy-related requirements contained in SB 1077, we will:

- ▶ Define what is meant by personal privacy and how it relates to (but is distinct from) data security provisions;
- ▶ Review federal and state constitutional provisions and emerging statutory policy responses aimed at privacy protection;
- ▶ More closely examine privacy-related issues within the field of transportation: in-vehicle technologies, revenue collection, and vehicle data collection; and
- ▶ Analyze potential privacy issues in the California road charge pilot system, and consider various privacy protection methods that could be incorporated into the road charge pilot program.



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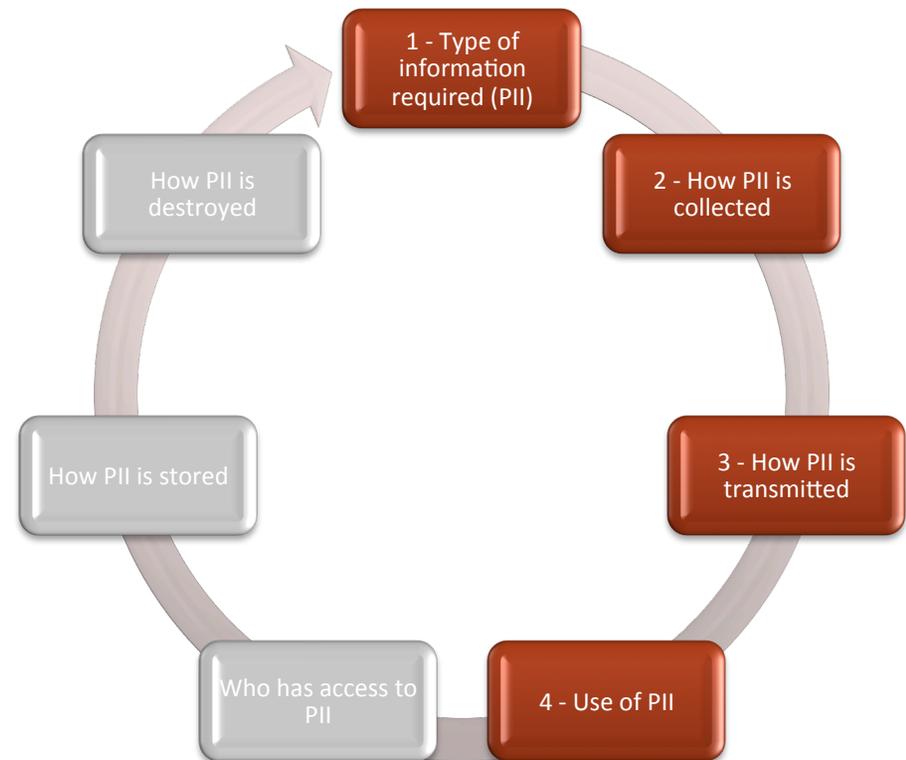
## Scope of privacy protections considered this month

This month we will focus strictly on the following personal privacy issues:

- ▶ The **type** of personal private information that warrants the highest levels of protection;
- ▶ How this personal information is **collected** in a road charge system;
- ▶ How information relevant to assess the road charge is **transmitted** to the mileage accounting system; and
- ▶ How this personal information is to be **used** in a road charge system.

We do not specifically address information protection and data security measures (grey boxes), as these will be covered next month.

Finally, privacy implications related to ensuring compliance and providing enforcement of the road charge will be addressed in the month of August.



**Briefing Book for TAC Meeting #5****Protection of personal privacy: Senate Bill 1077 requirements (1/2)**

SB 1077 (2014), authorizing the California road charge pilot program, contains several provisions pertaining to personal privacy protections and the related topic of data security. The statute requires:

**Legislative findings and declarations:**

- ▶ Privacy implications must be taken into account, especially with regard to location data. Travel locations or patterns shall not be reported, and legal and technical safeguards shall protect personal information.

**TAC's pilot design recommendations must consider:**

- ▶ The necessity of protecting all personally identifying information used in reporting highway use;
- ▶ The ease of re-identifying location data, even when personally identifiable information has been removed from the data;
- ▶ Increased privacy concerns when location data is used in conjunction with other technologies; and
- ▶ Public and private agency access, including law enforcement, to data collected and stored for purposes of the road charge to ensure individual privacy rights are protected pursuant to Section 1 of Article I of the California Constitution.

**Briefing Book for TAC Meeting #5****Protection of personal privacy: Senate Bill 1077 requirements (2/2)****California State Transportation Agency must implement a road charge pilot program that:**

- ▶ Collects a minimum amount of personal information including location tracking information, necessary to implement the road charge pilot program;
- ▶ Ensures that processes for collecting, managing, storing, transmitting, and destroying data are in place to protect the integrity of the data and safeguard the privacy of drivers; and
- ▶ Does not disclose, distribute, make available, sell, access, or otherwise provide for another purpose, personal information or data collected through the road charge program to any private entity or individual unless authorized by a court order, as part of a civil case, by subpoena issued on behalf of a defendant in a criminal case, by a search warrant, or in aggregate form with all personal information removed for the purposes of academic research.

**California State Transportation Agency must submit a report that discusses the issues of:**

- ▶ Privacy, including recommendations regarding public and private access, including law enforcement, to data collected and stored for purposes of road charging to ensure individual privacy rights are protected pursuant to Section 1 of Article 1 of the California Constitution; and
- ▶ Data collection technology, including a discussion of the advantages and disadvantages of various types of data collection equipment and the privacy implications and considerations of the equipment.

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## What is meant by “privacy”?

The concept of privacy tends to be highly subjective, meaning different things to different people depending upon the context. Attitudes and expectations about personal privacy, and what constitutes an invasion of personal privacy, vary not only among individuals, but also among generations, cultures and nations.

To establish a common frame of reference for our analysis, we adopt the following working definition<sup>1</sup> of personal privacy:

*“Personal privacy is the condition of being protected from unwanted access by others – either physical access, personal information, or attention.”*



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<sup>1</sup> Adopted from “Privacy and the Limits of Law,” Ruth Gavison, Yale Law Journal, at page 428. (1980).

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## Three facets of personal privacy

Each of these three facets of personal privacy – **physical privacy**, **personal information privacy**, and **attention privacy** – are described below.

- 1. Physical privacy** involves unauthorized access into a person’s physical space, such as a person’s home, vehicle, or possessions. This aspect of privacy is mostly concerned with the *methods used* to collect information about a person. An example of a violation of a person’s physical privacy would be placement of a tracking device onto a person’s vehicle without a proper warrant<sup>2</sup>.
- 2. Information privacy** involves the unauthorized collection, use or sharing of data that is uniquely identifiable with a person, such as a person’s social security number, religious or political affiliations, sexual orientation, personal activities, etc. In the digital age, the potential for misuse of personal information is great, as information privacy involves not only the *type of information collected*, but also *by whom*, for what *purposes*, who has *access* to it, whether it is *shared*, whether it is *accurate*, how long it is *retained*, and how it is *disposed of*. A violation of information privacy would be collecting and selling information about a person’s pharmaceutical purchases without their consent<sup>3</sup>.
- 3. Attention privacy** is violated by unauthorized monitoring of a person, whether or not personal information is gained. Examples include calling, peeping, watching, photographing, etc. Repeated unwanted auto-dialed calls (“robo-calls”) made without a person’s consent violate attention privacy.<sup>4</sup>

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<sup>2</sup> *U.S. v. Jones*, 132 S. Ct. 945 (2012).

<sup>3</sup> *In re Phmatrak, Inc. Privacy Litig.*, 329 F.3d (1<sup>st</sup> Cir. 2003).

<sup>4</sup> *Osorio v. State Farm Bank, F.S.B.*, 746 F.3d 1242 (2014).

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## Personal privacy and data security: related but different concepts

Personal privacy and data security are related but distinct concepts.

Transfer of **private information** does not necessarily constitute an intrusion of privacy. For example, a person might agree to release private information to another party for a specific purpose (say, someone who discloses their annual salary to a bank to qualify for a loan). Even though the bank now possesses sensitive personal information, privacy has not been compromised because access is not unwanted. However, if adequate data security protections are not in place, allowing unauthorized parties access to that same information, the owner's personal privacy is then breached due to poor data security.



The reverse of this situation can also be true: even if effective **data security** protections exist, if the original means of obtaining personal information is overly intrusive, personal privacy may be compromised. For example, if a law enforcement agency stores personal identifying information on computers that utilize the highest levels of encryption and access control policies, that data is considered secure. However, if the agency collected information by searching a person's personal files without a search warrant, personal privacy has indeed been breached, even though the data is secure.



The distinction between personal privacy and data security is highlighted here because the legal, technology and policy protections will be different for each. Data security will be addressed in more detail at the June 2015 TAC meeting.

**Briefing Book for TAC Meeting #5****What is “Personally Identifiable Information” (PII)?**

This term is commonly used to describe information that can be used on its own or with other information to identify, contact, or locate a single person, or to identify an individual in context.

Under California’s Online Privacy Protection Act (2003), PII is defined as “individually identifiable information about an individual consumer collected online by the operator from that individual and maintained by the operator in an accessible form, including any of the following:

- (1) A first and last name.
- (2) A home or other physical address, including street name and name of a city or town.
- (3) An e-mail address.
- (4) A telephone number.
- (5) A social security number.
- (6) Any other identifier that permits the physical or online contacting of a specific individual.
- (7) Information concerning a user that the Web site or online service collects online from the user and maintains in personally identifiable form in combination with an identifier described in this subdivision.”

The protection of this type of information is of paramount concern. Other types of information that are less concerning are anonymized data and aggregated data where PII has been removed.



**Briefing Book for TAC Meeting #5**

**Federal privacy protections under the US Constitution**

Many people are surprised to learn that the US Constitution contains no explicit provisions guaranteeing a right to privacy. In fact, the word “privacy” cannot be found anywhere in the text. Instead, as with other constitutionally protected rights and activities, the legal basis for personal privacy has been developed through judicial decisions interpreting various constitutional provisions.

**At-a-Glance: Privacy Protections Derived from US Constitutional Provisions**

<b>Constitutional Provision (summarized)</b>	<b>Privacy Implication</b>
1 <sup>st</sup> Amendment: <b>right to free speech and freedom of assembly</b>	Privacy of beliefs
4 <sup>th</sup> Amendment: <b>right against unreasonable search and seizure</b>	Privacy of person and possessions against unreasonable searches
5 <sup>th</sup> Amendment: <b>privilege against self-incrimination</b>	Privacy of personal information
9th Amendment: <b>rights not enumerated are retained by the people</b>	General right of privacy beyond those derived from the Constitution
14th Amendment: <b>no deprivation of life, liberty or property without due process of law</b>	Right against government intrusion in matters of family, marriage and health.

It is important to note that these provisions only act to protect persons from unwarranted *governmental* intrusions upon privacy. There is no US constitutional protection against invasion of personal privacy by individuals or non-governmental entities; those protections are covered by federal and state statutory law, or through case law (private tort actions).



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### Federal statutory privacy protections

The scope of privacy protection derived from the US Constitution is limited. In order to more fully protect the public's reasonable expectations for privacy, Congress, state legislatures and citizens voting directly have enacted a panoply of laws aimed at privacy protection.

At the federal level, the **Federal Privacy Act of 1974** (5 USC Sec 552a) regulates access to, and disclosure of, records of individuals held by federal executive and regulatory agencies. It requires such agencies, with some exemptions, to limit disclosure, provide access to the individual, and to apply the Federal Trade Commission's Fair Information Practice Principles to such records containing personal information of individual U.S. citizens and legal alien residents.

Other federal privacy-related statutes protect a wide range of citizens' activities and interests:

- ▶ Controlling the Assault of Non-Solicited Pornography and Marketing Act
- ▶ Children's Online Privacy Protection Act
- ▶ Computer Fraud and Abuse Act
- ▶ Computer Matching and Privacy Projection Act
- ▶ Driver's Privacy Protection Act
- ▶ Electronic Communications Privacy Act
- ▶ Family Educational Rights and Privacy Act
- ▶ Fair Credit Reporting Act
- ▶ Fair Debt Collection Practices Act
- ▶ Federal Identity Theft and Assumption Deterrence Act
- ▶ Financial Services Modernization Act
- ▶ Health Insurance Portability and Accountability Act
- ▶ Telephone Consumer Protection Act
- ▶ Video Privacy Protection Act



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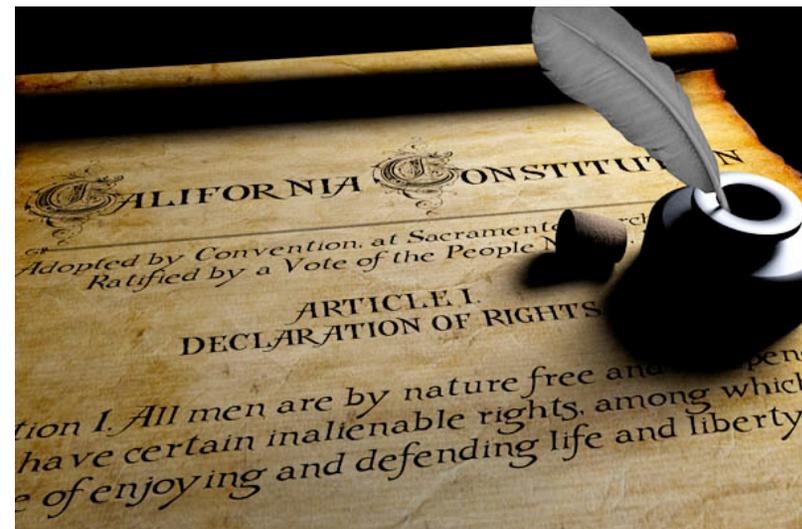
# Privacy protections under the California Constitution

Given the limited nature of privacy protections afforded citizens under the US Constitution, California became the first state in the nation to establish an inalienable constitutional right to privacy:

*All people are by nature free and independent and have inalienable rights. Among these are enjoying and defending life and liberty, acquiring, possessing, and protecting property, and pursuing and obtaining safety, happiness, and **privacy**.*

— Article 1 of Section 1, California Constitution

Since its enactment, ten other states have adopted privacy-related provisions in their state constitutions. Florida, Hawaii, and Illinois state constitutions include specific provisions to protect the privacy of communications, and in September, 2014, Missouri enacted the nation's first constitutional protection specifically for electronic communications or data.



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## California state statutes protecting personal privacy

Advances in technology, software and the Internet have led to new and pervasive ways to collect, aggregate, disseminate—and sometimes misappropriate—private information. As a world leader in the development of new technologies and electronic services, and with 38 million people holding their inalienable right to privacy, California is at the crossroads of technology and personal privacy protection.

As a result, California is widely considered the leading state in protecting personal privacy. The California State Department of Justice Privacy Enforcement and Protection web page lists 99 statutory provisions that protect aspects of personal privacy, ranging from disclosure of Event Data Recorders (a.k.a. “automotive black boxes”), to sharing energy consumption data, to unsolicited commercial communications (a.k.a. “robo-calls”).

The following California state laws are well recognized for establishing new privacy protections:

- ▶ **Online Privacy Protection Act**, CA Business and Professions Code sec. 22575 (2003), the nation’s first law requiring persons, agencies and businesses to notify any California resident whose personal information may have been compromised;
- ▶ **“Shine the Light” law**, CA Civil Code sec. 1798.83 (2003), the nation’s first law regulating the sharing of personal information for marketing purposes; and
- ▶ **California “Automotive Black Box” law**, CA Vehicle Code sec. 9950 (2003), that nation’s first law establishing a vehicle owner’s right to control data collected from automotive event data recorders.

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## The right to personal privacy is not absolute

The privacy right does not always trump other governmental powers (e.g., the protection of public safety) or other personal rights (e.g., free speech). Constitutional framers, Congress, state legislatures and the judiciary have all taken a balancing approach to protecting privacy that involves (or requires) a weighing of personal rights and interests against compelling governmental or public interests. Some examples:

- ▶ Protections are limited to the “reasonable” privacy expectations of society generally – not the subjective expectations of an individual person;
- ▶ Searches can be conducted when probable cause exists and warrants issued;
- ▶ First Amendment right to free speech may allow publication of certain private information;
- ▶ Government has the power to enforce collection of taxes to provide for the general welfare; and
- ▶ Personal Identifying Information (PII) may be disclosed when there are compelling public policy reasons for disclosure.

- Physical Privacy
- Privacy of Information
- Privacy from Attention
- Reasonable Societal Expectations
- Compelling Government Interest
- Public Policy Exemptions
- Freedom of Expression





## Briefing Book for TAC Meeting #5

### Privacy laws and relevant transportation technologies (1/4)

The transportation system increasingly relies on new technologies and applications to manage traffic flows, provide motorist safety and pay for the upkeep of the system. High-resolution cameras, thermal imaging, radar, all-electronic toll transactions, and in-vehicle GPS-based navigation systems are just a few examples of emerging technologies that may raise privacy concerns related to the collection and use of personal data.

Key privacy-related laws that could influence how a road charge might be collected in California are summarized below.

- Automotive Event Data Recorders (EDRs, “Black Boxes”)**, California Vehicle Code section 9951. California’s landmark legislation in 2003 requires auto manufacturers to disclose in the owner’s manual the presence of EDRs in their vehicles. It restricts use of EDR data to: the vehicle owner or persons authorized by the owner; response to a court order; use for improving vehicle safety; or for service and repair of the vehicle. Data retrieved (by automakers) for improving vehicle safety may not be released for any other purpose. If shared with other vehicle safety organizations, the owner’s personal information must be removed.
  - Pilot design take-aways:** vehicle data belongs to the owner and can be shared only with the owner’s consent, with very limited exceptions – all related to achieving a public purpose (e.g., safety).



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## Privacy laws and relevant transportation technologies (2/4)

2. **Electronic Toll Collection (ETC) Systems**, Streets and Highways Code section 31490. This 2013 California law requires any transportation agency that uses electronic toll collection systems to have a privacy policy regarding the collection and use of PII, and to conspicuously post its privacy policy on its Internet web site. Agencies are also prohibited from selling or sharing PII of customers. The law also sets time limits for the retention of toll transaction information before that data must be destroyed.
  - ▶ **Pilot design take-aways:** PII may not be sold or shared by transportation agencies; that data must be destroyed after a set period of time; and a detailed privacy policy must be provided to ETC system users in a “conspicuous and meaningful” manner, including posting on their Internet web site.



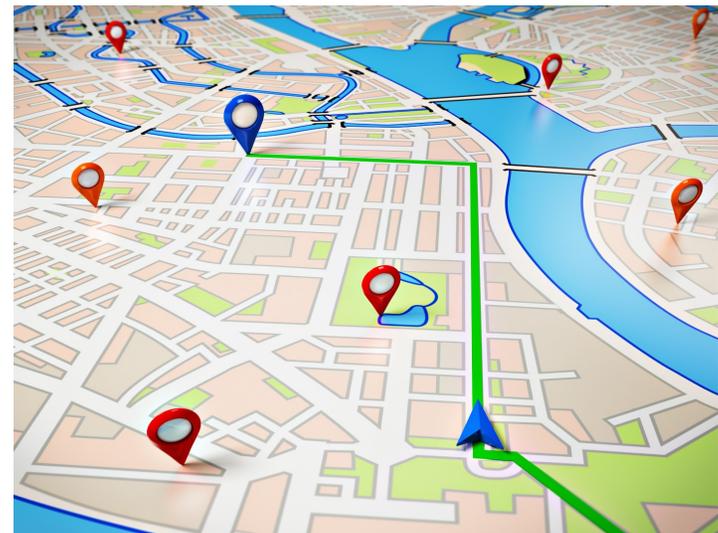


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## Privacy laws and relevant transportation technologies (3/4)

- 3. Location-Based Services (LBS).** This category of services and technologies includes global positioning systems (GPS), cell tower based identification, Wi-Fi triangulation, and Internet protocol (IP) address approximation. All involve the transmission of signals or data capable of revealing location and movement of an individual device (e.g., a cell phone, motor vehicle, etc.). Although bills aimed at protecting locational privacy have advanced in California's legislative process (*c.f.*, SB 34 of 2014), legislation broadly governing the use of location-based services has not yet been enacted. Therefore, locational privacy protections remain the domain of constitutional law, where cases have primarily dealt with law enforcement's use of tracking devices and location data without consent or a warrant. California statutes place some restrictions on the use of locational data in certain contexts – specifically for the collection of road charges as provided for in SB 1077 (unless the motorist consents).

- ▶ **Pilot design take-aways:** SB 1077's requirement that travel locations and patterns not be reported in a road charge pilot system without motorist consent are the most protective provisions found in current law applicable to California (constitutional or statutory).

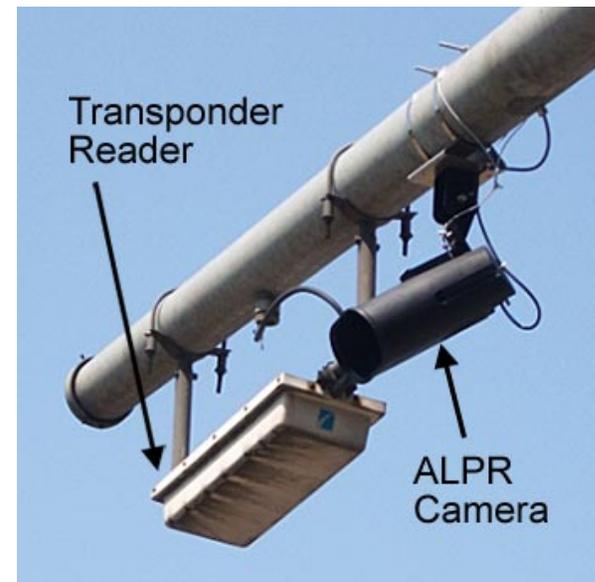


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## Privacy laws and relevant transportation technologies (4/4)

4. **Automated License Plate Recognition (ALPR) Systems.** These high-powered cameras use optical character recognition (OCR, software that turns images of numbers and words into digital letters and number) to read license plates on motor vehicles. Courts have upheld the use of ALPR systems, finding that there is no reasonable expectation of privacy in a license plate number. However, informational privacy concerns remain regarding the accuracy, use and sharing of license plate numbers when linked with driver records. While only Maine and New Hampshire have enacted laws specifically regulating the use of ALPRs, several states have laws generally related to information privacy that could extend to apply to license plate numbers and drivers' records, including California's Information Practices Act of 1977, California Civil Code section 1798. That law requires, among other things, that state agencies be legally authorized to collect the information, that such information be necessary to the agency's duties, and that the public be informed of the collection activity.

- ▶ **Pilot design take-aways:** state agencies must be legally authorized to collect driver records and potentially, license plate numbers; collection of that information must be necessary for the agency's duties; and the public must be informed of the collection activity.



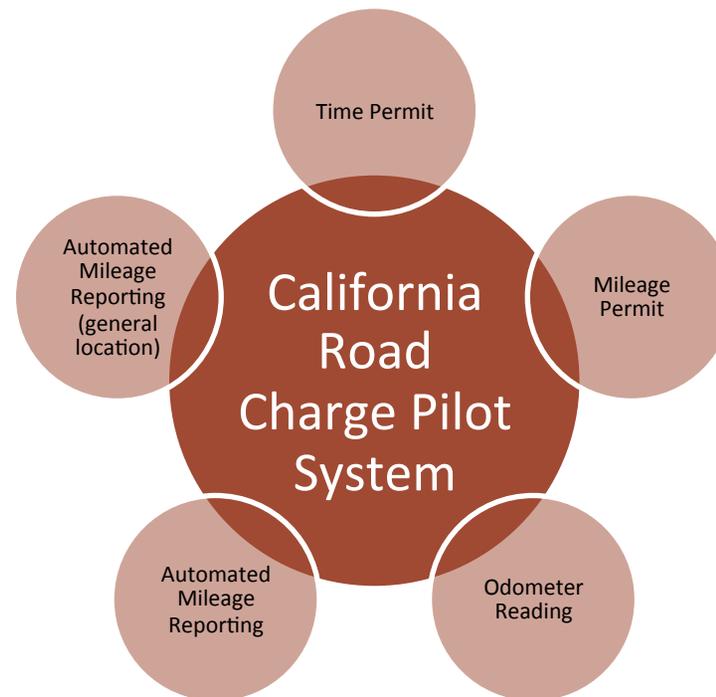


## Briefing Book for TAC Meeting #5

## Security by design: road charge privacy is enhanced with motorist options and choices

It should be recognized that early TAC decisions to allow motorists (a) the option of paying for time instead of miles, and (b) choices for how mileage information will be collected, are two of the most powerful privacy protections that can be provided.<sup>5</sup> Thus, the degree of privacy protections afforded in California's pilot might be viewed from the overall system perspective, where the whole is greater than the sum of the individual parts, rather than focusing strictly on each individual operational concept or system component.

Nonetheless, each component must be examined in greater detail and privacy protections bolstered where feasible.



<sup>5</sup> These design principles align with the views of FTC Chairwoman Edith Ramirez, who is a leading watchdog for privacy and data security practices. *C.f.*, "Internet of Things Demands Security by Design," CIO.com, January 8, 2015. <http://www.cio.com/article/2866679/security-and-privacy/internet-of-things-demands-security-by-design.html>

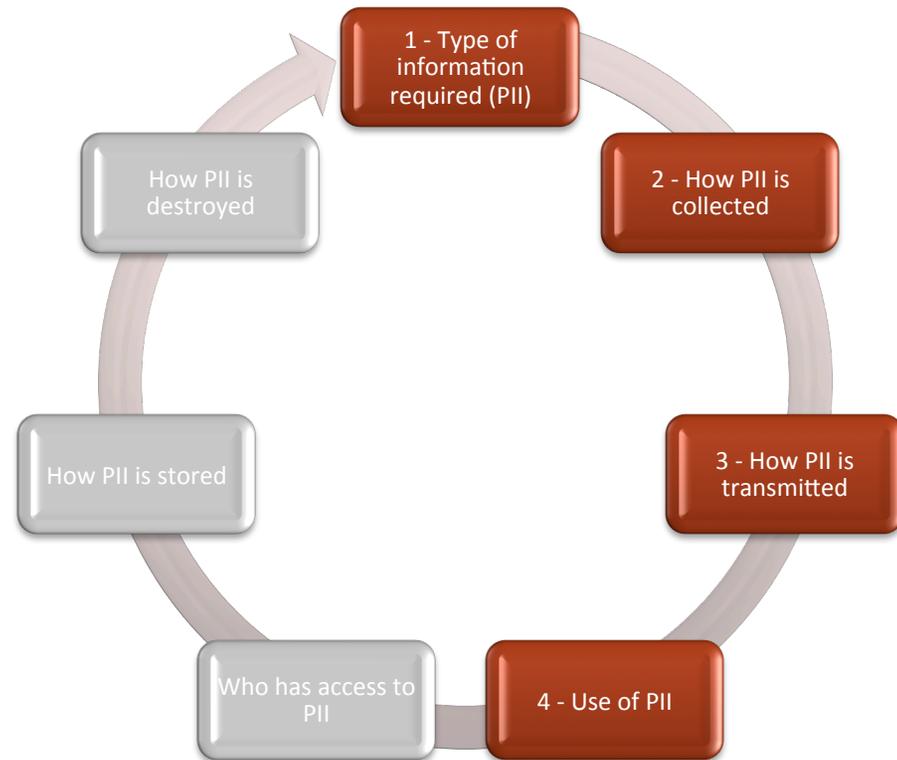


## Briefing Book for TAC Meeting #5

## Analyzing individual Operational Concepts for potential privacy issues

Personal privacy and data security are related concepts because poor data security can lead to a breach of personal privacy. However, for this month we are strictly focused on:

- (1)** The type of Personally Identifying Information required to effectively conduct a road charge pilot;
- (2)** How it will be collected;
- (3)** How (and which) information is transmitted; and
- (4)** How information is used. Issues more closely related to data security (grey boxes) will be addressed next month.



The following pages describe potential concerns and measures for each operational concept in terms of these four personal privacy issues.



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## Operational Concept: Time Permit

Motorists buy time permits to drive an unlimited number of miles for a given period of time (such as a year, half-year, quarter, or month).[table]

	Potential Privacy Concerns	Potential Privacy Protection Measures
<b>Information Required (PII?)</b>	Same as existing vehicle registration (no new PII required)	N/A
<b>Method of Collection</b>	No data collection required	N/A
<b>Method of Reporting</b>	If electronic payments are allowed, data security is required	Use secure e-commerce transaction technologies
<b>Use of Information</b>	No new concerns	N/A





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## Operational Concept: Mileage Permit

Roadway use is recorded by the vehicle’s odometer. It is manually reported by the motorist when buying a mileage permit, authorizing the vehicle to be driven on the roadway network for the purchased number of miles.

	Potential Privacy Concerns	Potential Privacy Protection Measures
<b>Information Required (PII?)</b>	Does vehicle mileage purchased constitute PII?	Retain only ending mileage (e.g., 67,214 miles) from last permit issuance.
<b>Method of Collection</b>	Odometer of owner’s vehicle – no new concerns.	N/A
<b>Method of Reporting</b>	Some may feel a process to verify odometer reading at time of permit purchase is intrusive	<ul style="list-style-type: none"> <li>• Allow certified automotive service shops of owner’s choice to verify</li> <li>• Allow owner to submit smartphone photo as record of odometer reading</li> </ul>
<b>Use of Information</b>	Mileage purchased reveals rough amount of driving by that vehicle	<ul style="list-style-type: none"> <li>• Retain only ending mileage (e.g., 67,214 miles) from last permit issuance</li> <li>• Adopt laws/policies to protect mileage information from disclosure</li> </ul>





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## Operational Concept: Odometer Charge (pre-pay and post-pay)

Roadway use is recorded by the vehicle odometer. Motorists report an odometer reading, either a reading made by the owner, or an authorized agent of the state can take the reading. If the motorist self-reports, this can be done by Internet, smartphone app, or mail-in postcard.

	Potential Privacy Concerns	Potential Privacy Protection Measures
<b>Information Required (PII?)</b>	Does annual miles driven constitute PII?	Remove mileage reports from prior years. Retain only last reported and last verified odometer readings.
<b>Method of Collection</b>	Odometer of owner’s vehicle – no new concerns.	N/A
<b>Method of Reporting</b>	Some may feel the process to verify odometer reading is intrusive.	<ul style="list-style-type: none"> <li>• Allow certified automotive service shops of owner’s choice to verify</li> <li>• Allow owner to submit smartphone photo as record of odometer reading</li> </ul>
<b>Use of Information</b>	Odometer mileage reports reveal actual mileage driven during year.	Adopt laws/policies to protect mileage information from disclosure





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## Operational Concept: Electronic Mileage Metering (no location data)

An in-vehicle device measures the distance the vehicle drives and reports it to an account manager.

	Potential Privacy Concerns	Potential Privacy Protection Measures
<b>Information Required (PII?)</b>	Do periodic (e.g., monthly) reports of miles driven constitute PII?	Require monthly mileage reports to be deleted from database after payment has been made, unless retention is authorized by owner
<b>Method of Collection</b>	Does plug-in mileage meter or in-vehicle telematics record other data?	Mandatory, clear conspicuous disclosure of data collected by devices
<b>Method of Reporting</b>	Electronic transmission of mileage data accessible by 3 <sup>rd</sup> parties?	Adopt robust information and data security standards
<b>Use of Information</b>	Will information be shared with 3 <sup>rd</sup> parties (e.g., insurers)?	Prohibit data sharing without express written consent of owner





**Briefing Book for TAC Meeting #5**

## Operational Concept: Electronic Mileage Metering (with general location)

An in-vehicle device measures the distance a vehicle drives on taxable roadways and reports the taxable mileage to an account manager.

	Potential Privacy Concerns	Potential Privacy Protection Measures
<b>Information Required (PII?)</b>	Location data is recorded when vehicle crosses taxing boundary Is date and time of crossing boundaries recorded?	Data collected should be minimum amount necessary to compute taxable miles. For example, only miles driven within the taxing district and date would be recorded. Out-of-district mileage, time of trip, elapsed time, etc. not recorded.
<b>Method of Collection</b>	GPS, Wi-Fi, cell-tower, automated readers may be viewed as invasive by some people	<ul style="list-style-type: none"> <li>• Allow non-location based options for motorists to report mileage</li> <li>• Offer motorists the choice of technology with the ability to turn GPS and other location technologies off when they wish</li> </ul>
<b>Method of Reporting</b>	Electronic transmission of general location data accessible by 3rd parties?	Require encryption of both mileage and general location data
<b>Use of Information</b>	Even general location data might be combined with other information to calculate approximate locations or travel routes	<ul style="list-style-type: none"> <li>• Require all location data to be anonymized for any interstate tax reconciliation;</li> <li>• Require account service providers to delete all (aggregated) mileage information after road charges have been paid.</li> </ul>



**Briefing Book for TAC Meeting #5**

## Proposed process for considering and adopting privacy protections

Different strategies can be taken to protect privacy in California’s road charge pilot program. The following privacy protection approaches are derived from state and federal laws, privacy protection proposals, technology organizations that have taken assertive stances on protecting privacy, and program evaluation and audit techniques.

These alternative approaches are summarized to help the TAC quickly recognize the primary features of each. The intent is to help facilitate TAC decision-making. One or more approach can be adopted; or if the TAC prefers, they are free to select individual elements from among the approaches for inclusion in their privacy protection recommendation.

- ▶ **Consider:** Privacy Protection approaches (next page)
- ▶ **Select:** one or more approach (or customize by selecting and combining specific measures from different approaches)
- ▶ **Adopt:** motion to incorporate chosen Privacy Protect approach(es)



**Briefing Book for TAC Meeting #5**

## Summary of privacy protection approaches

Below is a high-level summary of the four different approaches that can be adopted by the TAC. More specific details for each are found in the pages that follow.

### **Approach 1: Governance Approach**

Adopt specific California Road Charge Privacy Protection Principles. All aspects of the pilot program must conform to the Principles.

### **Approach 2: Specifications Approach**

Adopt specific privacy protection measures to be applied to each operational concept (e.g., time permit, mileage permit, odometer read, etc.).

### **Approach 3: Accountability Approach**

Evaluate (and/or audit) the performance of the pilot project against specific privacy evaluation criteria and plan measures to address any shortcomings discovered. This could include:

- ▶ Evaluation of the pilot project operations; and/or
- ▶ Evaluation of the entire program, including the adequacy of the privacy protections themselves.

### **Approach 4: Legal Protection Approach**

Recommend model administrative rules and model legislative provisions that can be tested during the pilot program and potentially enacted for any future road charge program.

**Briefing Book for TAC Meeting #5****Approach 1: Road Charge Privacy Protection Guiding Principles (1/2)**

This approach is a holistic governance approach that requires the TAC to adopt high-level Privacy Protection Guiding Principles that will in turn govern all decisions throughout the entire road charge program lifecycle: design, implementation, operations and transition (i.e., winding down). The following draft is offered as a starting point for TAC consideration:

**DRAFT California Road Charge Privacy Protection Guiding Principles**

1. The Road Charge pilot must at all times recognize and respect an individual's interests in privacy and information use.
2. The Road Charge must offer motorists a time-based system of paying for road use, as an alternative payment method for individuals concerned about payment based on miles driven.
3. The Road Charge must allow motorists choice in how mileage will be reported.
4. The Road Charge system must be designed, implemented and administered in a manner transparent to the public and to individual motorists.
5. The Road Charge system must comply with applicable federal and state laws governing privacy and information security.
6. Personally Identifying Information required for the Road Charge system shall not be disclosed to any persons or entities without motorists' consent, specific statutory authority, appropriate legal process, or emergency circumstances as defined in law.



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**Approach 1: Road Charge Privacy Protection Guiding Principles (2/2)**

7. The Road Charge system shall not collect information beyond what is needed to properly calculate, report and collect the road charge, unless the motorist provides his or her consent.
8. Road Charge system data retained beyond the period of time necessary to ensure proper mileage account payment must have all personally identify information removed, and may only be used for the public purposes (i.e., improve the safety of the traveling public).
9. Motorists who chose to release personally identifying information must provide consent in a clear, unambiguous and expressed manner.
10. The Road Charge system must not require use of specific locational information, including specific origins or destinations, travel patterns or times of travel.
11. The Road Charge system must allow the motorist access to all personal data collected to review it for accuracy, and to ensure only data required for proper accounting and payment of road charges is being collected.
12. If a motorist discovers errors in the collection or accounting for road charges, the Road Charge account manager must investigate all potential errors and make all corrections as identified by the motorist.



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**Approach 2: Specifications Approach (1/2)**

This approach is focused on providing specific instructions for Road Charge design, implementation and operations.

**Concerns Regarding Physical Privacy ...**

Plug-in mileage meter or in-vehicle telematics may record other data...

Use of GPS, Wi-Fi, cell tower, automated license plate readers...

Verification of odometer reading by government...

**Possible Remedies...**

- ▶ Mandatory, clear conspicuous disclosure of data collected by devices
- ▶ Allow non-location based options for motorists to report mileage
- ▶ Offer motorists ability to turn GPS and other location technologies off when desired
- ▶ Allow certified automotive service shops of owner’s choice to verify, as alternative to government agency verification.
- ▶ Allow owner to submit smartphone photo as for odometer reading

**Concerns Regarding Informational Privacy...**

Purchase of mileage...

Disclosure of annual miles driven...

**Possible Remedies...**

- ▶ Retain only ending mileage from last purchase.
- ▶ Adopt data retention policy that requires removal of mileage reports after a specific period of time (e.g., 48 months).
- ▶ Retain only last reported and last verified odometer readings



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**Approach 2: Specifications Approach (2/2)**

**Concerns Regarding Informational Privacy...**

- Disclosure of monthly mileage reports...
- Disclosure of location data when vehicles cross tax boundary...
- Disclosure of date and exact times that vehicles cross tax boundary...
- Unauthorized third parties can access electronic transmission of mileage data...
- Odometer mileage reports reveal actual mileage driven during year....
- Information will be shared with 3rd parties (e.g., insurers) without consent of motorist...
- General location data might be combined with other information to calculate approximate locations or travel routes...

**Possible Remedies...**

- ▶ After payment made, delete mileage reports from data base
- ▶ Minimum amount necessary to compute taxable miles; only aggregated miles are transmitted to avoid possibility of re-tracing travel patterns or locations.
- ▶ “ “
- ▶ Adopt robust data security and access control measures.
- ▶ Adopt laws/policies to protect mileage information from disclosure
- ▶ Prohibit data sharing without express consent of owner
- ▶ Require all location data to be anonymized and aggregated if needed for interstate tax reconciliation;
- ▶ Allow owners ability to delete all in-jurisdiction location data stored within their account after road charges have been paid

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## Approach 3: Accountability Approach

The focus of this approach is to evaluate the Road Charge pilot program's performance against a set of specific privacy protection criteria. At a minimum, evaluation criteria should assess performance of the pilot relative to federal and state laws applicable to privacy, including SB 1077. Additionally, the TAC could adopt other privacy criteria for evaluation, such as those proposed in Section 5 on page 100. Those criteria evaluate:

- ▶ Achievement of privacy goals;
- ▶ The sufficiency of the measures used to protect privacy; and
- ▶ The outcomes from the program – whether motorists perceived their privacy being protected.

If a road charge system were implemented in California in the future, beyond the pilot, this approach could be applied and carried out periodically (e.g., biennially). In a full program, additional evaluation processes might be employed.

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## Approach 4: Legal Protection Approach

The Legal Protection Approach would influence the design, implementation and operations of the Road Charge program primarily through model regulation (agency rules) or legislation (state laws) proposed for enactment. The TAC would develop model administrative rules or state statutes specifically to protect privacy in California's Road Charge program. If the model rules or law is not enacted prior to commencing pilot project activities, the TAC could nonetheless adopt those same provisions as contained in the model rules or laws as privacy protection measures to be simulated during road charge pilot operations. Below are some key provisions the TAC may wish to use as a framework for proposed state legislation:

- ▶ Incorporate key provisions found in the **Electronic Toll Collections law** (see Appendix 2-A for details).
- ▶ Incorporate key provisions found in **SB 34 (2014)** by Sen. Hill, related to **use of locational data** (see Appendix 2-B for details).
- ▶ Incorporate key provisions found in **SB 1077, authorizing the Road Charge pilot program** (pages 22-23 of this section).
- ▶ Incorporate **best practices from other jurisdictions** that have specific privacy protections in a road charge program (to be determined from further research).

If the TAC chooses this approach, model provisions can be drafted and made available for adoption and use by the TAC during the pilot; if proven effective, the model provisions could be proposed for adoption in any future road charge system.



# **Section 4: Introduction to the Business Case Analysis of Road Charging in California**

To be discussed with Agenda item #9

**Briefing Book for TAC Meeting #5**

## **This section provides an introduction to the business case analysis for road charging in California**

This briefing book covers introductory topics related to the business case analysis for road charging. Some of this information is intended as background for a TAC decision point at the May meeting regarding types of vehicles to include in the road charging pilot test. Other information is intended to lay a foundation of knowledge for TAC discussion of other decision points in future months. Below is a summation of the key contents of this section of the briefing book:

- ▶ First, we introduce the business case analysis framework for California’s road charge effort more generally, including a summary of objectives, activities, and expected outputs.
- ▶ Next, we present relevant information to support the question facing the TAC in May: which vehicles to include in the pilot test?
- ▶ Finally, the appendix includes elements of the business case analysis of other utilities, transportation, and road charge systems to provide benchmarks for California’s efforts. It also provides a high-level summary of fuel tax collection mechanism and costs.

**Briefing Book for TAC Meeting #5****The business case analysis will inform several TAC decision points**

The project team will provide outputs from the business case as they become available to inform TAC decision points. We begin in this briefing book with background to inform one question the TAC will address at the May meeting:

▶ **What types of vehicles should be included in the pilot?**

In future months, the business case will provide additional information related to the following TAC decision points:

- ▶ **What mileage measurement and reporting method(s) are most promising?** An initial recommendation was made in April, but the committee can revisit this recommendation at any point up to and including its final recommendations in September. The project team aims to assess the relative costs of the various methods for presentation at the June meeting.
- ▶ **How many participants should be involved in the pilot?** The TAC will address this question in June.
- ▶ **How should participants be distributed throughout the state?** The TAC will address this question in June.

Before delving into background material to help frame this month's questions, in the following pages we begin by first introducing the business case analysis framework.

**Briefing Book for TAC Meeting #5**

## What is a business case analysis?

A business case analysis provides financial information (costs and revenues) to justify or guide a business or policy decision, such as an investment, modernization effort, new procedure, or organizational change. For California's Road Charge pilot program, the business case analysis will produce analytical tools and results to guide technical and policy choices, beginning with the TAC's pilot design recommendations.

- ▶ For the TAC, the business case analysis will provide the following:
  - > Assessment of recent and projected revenues from fuel taxes and weight fees, broken down by vehicle class.
  - > Information about the expected costs to administer the various operational concepts for road charging, including manual and automated alternatives and operational details such as payment types and frequencies.
  - > Other inputs as appropriate to inform TAC decision points.
- ▶ In future phases, the business case will provide the following:
  - > Information about the cost of road charging, including implementation, operational, and administrative costs under various policy, transition, and organizational scenarios.
  - > Analysis of costs and revenues based on the pilot experience.
- ▶ CalSTA can use the information from the business case analysis to provide the California Legislature and Governor with tools and information to generate revenue and cost forecasts to inform decisions beyond the pilot, such as whether and how to transition to road charges, how to set rates, and an organizational framework for implementing the program, which are considerations generally beyond the scope of the TAC..

**Briefing Book for TAC Meeting #5****Business case analysis focuses on *net revenue*, which requires consideration of gross revenues, leakage, and collection costs**

$$\text{Net revenue} = \text{Gross revenue} - \text{leakage} - \text{cost of collection}$$

Given the importance of sustainable revenue as an underlying objective of California's Road Charge pilot program, it is important to speak in terms of *net revenue*. The simple equation above specifies how to calculate net revenue:

- ▶ **Gross revenue** is the total expected collections from road charging, calculated by multiplying the number of miles driven by all subject vehicles the corresponding per-mile rate. Gross revenue is a theoretical value in the sense that a road charging system will never actually *collect* gross revenue due to leakage.
- ▶ **Leakage** represents the portion of expected gross revenue that never materializes due to the following three factors: deliberate evasion, negligence, and system errors.
- ▶ **Cost of collection** is a measure of the total expenditure required to collect road charges.
- ▶ **Net revenue** remains after subtracting leakage and cost of collection from gross revenues. Net revenue is the amount actually available from road charges and should be the value on which to focus when comparing policy alternatives.

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## **Gross revenue depends on the vehicles included in a road charge, how many miles they drive, and the rates they are charged**

Gross revenue depends on the three factors summarized below:

- ▶ **Which vehicles are included in the road charge?** There are many ways to approach this question: include all vehicles, include only gasoline vehicles, include only light vehicles, etc. Fulfilling the objective of road charging – fair, sustainable revenue – is contingent on the types of vehicles charged. Therefore, it is important for the TAC to recommend which types of vehicles the pilot program should focus on. We explore this question in more detail ahead.
- ▶ **How many miles will they drive?** Predicting vehicle miles traveled (VMT) is a challenging task subject to the typical pitfalls of any type of economic forecasting. In future analyses, we propose to adopt a range of VMT scenarios and illustrate the differences between road charging and fuel taxes under each scenario.
- ▶ **What rate should vehicles be charged?** We propose to address this question in future analyses by assuming a range of rates for illustrative and analytical purposes.



**Briefing Book for TAC Meeting #5**

**Leakage includes deliberate evasion, which can take many forms**

Gross revenue must be adjusted downward to reflect “leakage.” The chief source of leakage is evasion, which can be either outright avoidance of charges or attempts to reduce the charges owed. Depending on the operational concept, motorists might attempt to evade road charging in a number of ways. The business case will estimate both revenue losses due to evasion and enforcement costs to reduce evasion (enforcement options are scheduled for discussion at the August TAC meeting).

<b>Operational concept</b>	<b>Potential evasion methods</b>	<b>Example enforcement options</b>
<b>Time permit</b>	▶ Failure to register vehicle in California	Roadside <sup>6</sup>
<b>Mileage permit</b>	▶ Failure to register vehicle in California ▶ Odometer tampering to reduce mileage ▶ Over-running mileage on permit	Roadside, audits, and periodic certified odometer readings
<b>Odometer charge (pre- or post-pay)</b>	▶ Failure to register vehicle in California ▶ Odometer tampering to reduce mileage	Roadside, audits and periodic certified odometer readings
<b>Automated reporting with no location</b>	▶ Failure to register vehicle in California ▶ Device tampering	Roadside, tamper-evident devices, automated fraud event reporting, audits
<b>Automated reporting with general location</b>	▶ Failure to register vehicle in California ▶ Device tampering to reduce mileage or misrepresent location as tax-exempt	

<sup>6</sup> “Roadside” refers to traffic enforcement, during which officers enforce such requirements as vehicle and driver registration and insurance.

**Briefing Book for TAC Meeting #5****Leakage (continued) also includes negligence and system errors**

Negligence can be deliberate or unintentional. For purposes of the business case analysis, we will attempt to categorize and estimate negligence that leads to revenue losses. Examples of negligence could include the following:

- ▶ Failure to register a vehicle in California within the time frame prescribed
- ▶ Failure of a subject vehicle to enroll in road charging and/or select a mileage measurement method
- ▶ Non-functional odometer (under an odometer charge or mileage permit operational concept)
- ▶ Non-functional mileage meter (under an automated operational concept)
- ▶ Failure to report mileage in a manner and time frame prescribed for the motorist's chosen reporting method
- ▶ Errors in reporting the odometer reading (under an odometer charge operational concept)
- ▶ Failure to make a payment on time, including, for example, due to non-sufficient funds



A final source of revenue leakage is system errors. This category of revenue leakage is not the fault of the subject motorist. Examples of system errors include the following:

- ▶ Incorrect odometer reading by a certified agent of the state (under an odometer charge or mileage permit operational concept)
- ▶ Flaws in the mileage meter, mileage information transmittal, or other system features
- ▶ Billing or administrative errors by the commercial or state agency account manager

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## **Collection costs encompass several categories**

As with any metering and billing system, there are several categories of administrative and collection costs to consider for Road Charging. For purposes of developing an internally consistent analysis framework, we propose the following categorization of costs:

- ▶ **Operations** includes all operational aspects of Road Charging, including account management, customer service, invoicing, payment transaction processing, agency oversight of private account managers, private account manager fees paid by the state (if any), inventory management and distribution of technology, and mileage meter telecommunications.
- ▶ **IT** includes information technology costs incurred in the delivery and management of the Road Charging system, including primarily back office equipment and software.
- ▶ **Audit** includes time and materials of staff devoted to auditing Road Charge accounts, including any analytics undertaken to make audits more effective.
- ▶ **Enforcement** includes any direct costs incurred by law enforcement as well as agency enforcement costs for activities such as collections of bad debt and slow pay accounts, administrative hearings, and enforcement of contractual requirements of private account managers.
- ▶ **Communications** includes costs associated with information distribution to the public to raise awareness of the program.
- ▶ **Program management** reflects overall program management costs such as program executive and administrative salaries and other overhead not captured in other categories.

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## Other important costs may not be incurred directly by agencies in the administration and collection of Road Charges

Agency cost of collection and administration, as described above, is a direct and largely measurable cost associated with Road Charging. There are other, less direct costs that are more difficult to measure. Examples include the following:

- ▶ **Cost of compliance** includes the costs in both time and money *incurred by motorists* to fulfill their obligations under a road charge. This includes, for example, the time and cost to install equipment (one-time cost for individuals opting for technology-based reporting methods), review and pay bills, and troubleshoot (e.g., interactions with customer service).
- ▶ **Cash flow cost** is unlikely to be a major cost. However, should California opt to implement a largely post-pay version of road charging, this represents a shift away from the pre-pay nature of fuel taxes. Transitioning from one method (pre-pay fuel tax) to another (post-pay road charge) could result in a one-time gap in cash flow, leading to short-term borrowing, which has measurable costs associated with it. There are ways to avoid such costs, for example, by transitioning slowly to road charging and/or by keeping fuel taxes in place during a transition.
- ▶ **Acquisition/implementation costs** include the one-time startup costs associated with implementing a road charge program. These include acquisition of software and hardware, contracting with account managers, providing public communications to raise awareness of the new policy, and other activities to support a transition toward road charging.

For the TAC's purposes, the latter two cost categories do not imminently figure into pilot design, but they may factor into evaluation considerations for the pilot.

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## **The business case analysis will draw on data and forecasts from California agencies to the extent possible**

California agencies have provided a great deal of useful information thus far, and the project team will continue to work with agencies to gather data for the business case analysis.

- ▶ Department of Motor Vehicles (DMV) has provided vehicle registry data, including a breakdown of vehicles by weight.
- ▶ Board of Equalization (BOE) has provided historical fuel consumption and fuel tax revenues.
- ▶ Air Resources Board (ARB) has provided both historical and projected vehicle fleet, fuel consumption, and vehicle miles traveled (VMT) data.
- ▶ Caltrans has provided forecasts of VMT.
- ▶ Department of Finance has provided economic indicators.

All of the above mentioned agencies are also providing cost data to help the project team estimate administration and collection costs.

National sources of data will be used to validate our assumptions. Sources include the following:

- ▶ U.S. Energy Information Administration (EIA), which is an authoritative source of data on energy consumption, including fuel consumption, fuel economy, vehicle fleet, and VMT data and projections.
- ▶ Federal Highway Administration (FHWA) provides data and forecasts of VMT.

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## The analysis framework accommodates future questions from policy makers

The project team is constructing a flexible modeling tool that will allow analysts and decision makers the ability to assess the impacts of various road charging policy characteristics under various economic assumptions:

- ▶ Policy inputs that the modeler may vary:
  - > **Subject vehicles:** which vehicles are subject to road charges.
  - > **Per-mile rate(s):** the per-mile rate charged to subject vehicles.
  - > **Per-gallon and weight fee rate(s):** rates of existing fuel tax and weight fee mechanisms.
  - > **Rate indexing options:** how the per-mile rate may change over time.
  - > **Enforcement options:** how to enforce road charges against evasion and negligence.
  - > **Methods available:** which operational concepts will be available to motorists with subject vehicles.
  - > **Private account managers:** whether or not to include private account managers.
  - > **Transition strategies:** how to transition the vehicle fleet to road charging.
- ▶ Economic inputs that impact the economic context of the model:
  - > **Scenarios:** varying growth rates of such factors as vehicles, VMT, fuel economy, and inflation.
- ▶ Outputs designed to inform policy choices and road charging technical design:
  - > **Gross revenue by vehicle type:** total revenue and revenue per mile driven.
  - > **Leakage:** rates of road charge evasion as a function of enforcement approaches.
  - > **Cost of collection:** total cost to the state of road charge administration and collection.
  - > **Net revenue by vehicle type:** total net revenue and revenue per mile driven.

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## There are important caveats to the business case analysis

**“All models are wrong, but some are useful.” – George Box, *Empirical Model Building and Response Surfaces***

The most important caveat is stated above. No model of a current or future trend is perfect, but the project team is aiming to build a flexible analysis tool that delivers outputs of high utility to users.

- ▶ Since we cannot predict the future, we propose to use scenarios to create various possible future conditions. Scenarios are combinations of forecasts that allow modelers to do “if, then” analysis.
- ▶ Estimating future cost of collection for road charging depends on a number of policy and technical assumptions such as the type of operational concepts offered, how many of each available concept motorists will choose, what technology will be available in the marketplace, and how California will engage with account managers under an open system framework to implement and operate the road charge system.
- ▶ Cost estimates for the pilot program should not be seen as indicative of operational costs of a live system. Therefore, relatively higher costs for some prospective operational concepts should not necessarily be interpreted to discourage its testing. Likewise, relatively inexpensive operational concepts in a pilot environment do not necessarily indicate low costs to operate in a fully scaled live system.



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## **Key outputs of the business case analysis for the TAC span several months**

- ▶ In this briefing book
  - > Background on vehicle classification frameworks and revenue trends to inform the choice of vehicle types to include in the California pilot program
  - > Benchmarking of collection costs from other transportation and utilities revenue systems in anticipation of next month's presentation and discussion of collection costs
- ▶ June briefing book
  - > Estimated costs associated with various methods of road charge measurement and collection that the TAC is considering
- ▶ August briefing book
  - > Updated estimated costs associated with various methods of road charge measurement and collection that the TAC is considering
  - > Estimated costs associated with various methods of enforcement the TAC is considering for the pilot

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## TAC decision point for May meeting: what type of vehicles should be included in the pilot?

Having introduced the business case analysis framework, we turn now to the particular question of which vehicles to include in the pilot test. There are several reasons the TAC is addressing this question:

- ▶ SB 1077 does not specify which types of vehicles to include in the pilot program, but delegates pilot design to the TAC.
- ▶ With over 30 million registered vehicles in California, there is tremendous diversity in vehicle technology, size, weight, and purpose. Some vehicles may be more appropriate to consider for road charging than others.
- ▶ Many competing vehicle typologies exist such that it is common even for transportation subject matter experts to confuse vehicle types among themselves.
- ▶ There may be limitations on the number of vehicles that can be tested in a pilot program, so narrowing the field will help to focus the resources of the effort on the vehicles for which road charging is most appropriate.
- ▶ In June, the TAC will consider how many vehicles to test and how to allocate participants geographically across California. By first identifying the types of vehicles to include, it will be simpler to take on other questions of narrowing and allocating the pilot dimensions.
- ▶ The decision has implications for other aspects of the project, including technical design, procurement, more detailed business case analyses, evaluation, and communications.



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## **A coherent vehicle classification framework is an important organizing principle for the business case analysis and for the pilot**

Speaking in consistent terms about vehicles is critical to addressing the question of which ones to include in the pilot. There are many ways to classify vehicles, and many classification frameworks available. Below are some examples of the dimensions along which vehicles can be classified:

- ▶ Make – the manufacturer of the vehicle
- ▶ Model – the model name of the vehicle
- ▶ Model Year – the year in which the vehicle was made
- ▶ Engine Size – the size of the engine
- ▶ Fuel Type – the type of fuel the engine uses
- ▶ Fuel Economy – the EPA-estimated combined miles per gallon of the vehicle
- ▶ Weight – gross vehicle weight rating (GVWR), which is the curb weight of the vehicle (empty) plus the maximum allowable load.
- ▶ Commercial – whether or not the vehicle is registered and used for commercial purposes



We propose to focus on five dimensions of interest: weight, fuel type, age, fuel economy, and commercial vs. non-commercial.



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## The 8-class weight classification framework allows us to make best use of data from Caltrans, DMV, and ARB

The 8-class framework is explicitly based on weight, which allows for clear, quantitative distinctions between vehicles that are or are not subject to road charging.

- ▶ LDVs are commonly referred to as “passenger cars” or simply “cars.” LDVs also include the truck sub-categories of light-duty pickup trucks, SUVs, and vans.
- ▶ MDVs include a wide range of vehicles from large vans and heavy-duty pickups to box trucks (e.g., UPS and FedEx delivery vehicles), small buses, and single-unit trucks.
- ▶ HDVs include tractor-trailers, motor coaches, transit buses, dump trucks, and other heavy-duty trucks, many commonly referred to as “trucks” or “semis.”

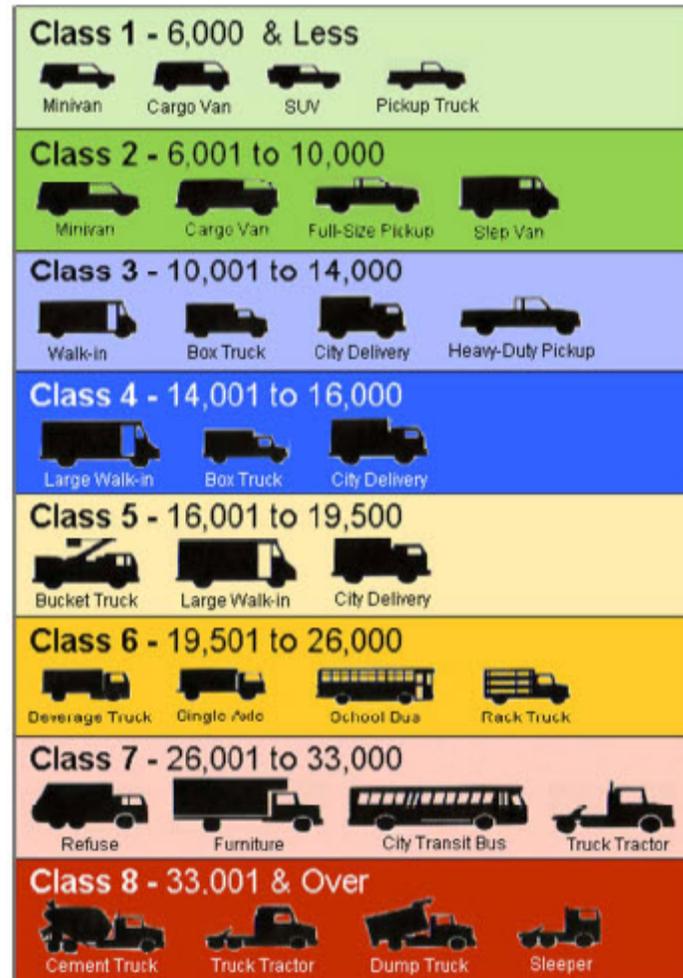
Category	Class	Weight (lbs. GVWR)
<b>Light-duty vehicles (LDVs)</b>	1	<6,000
	2A	6,001-8,500
	2B	8,501-10,000
<b>Medium-duty vehicles (MDV)</b>	3	10,001-14,000
	4	14,001-16,000
	5	16,001-19,500
	6	19,501-26,000
<b>Heavy-duty vehicles (HDVs)</b>	7	26,001-33,000
	8	>33,000



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## Examples of vehicles by weight class

The image below illustrates examples of the types of vehicles within each weight class.

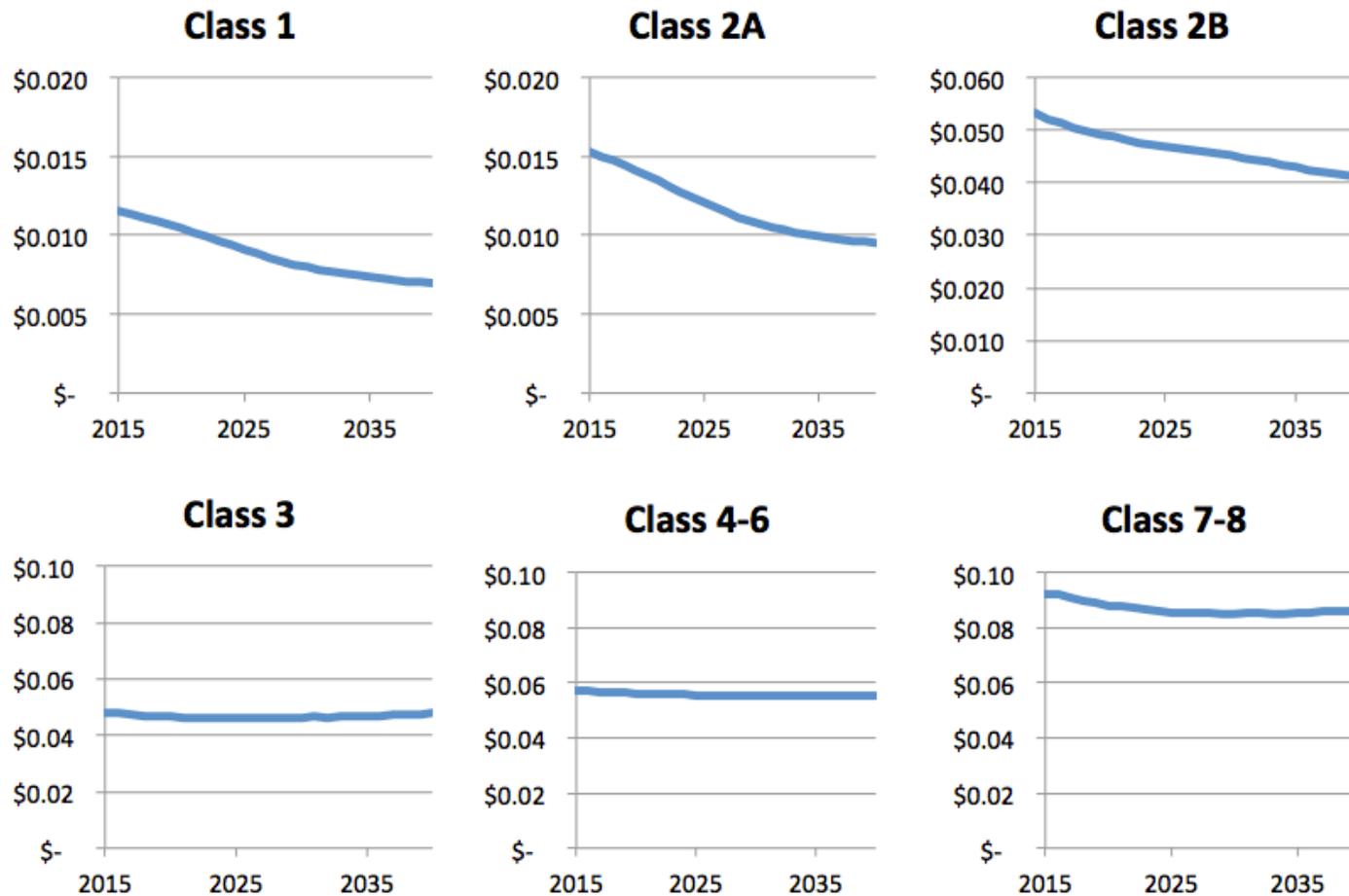




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### 2015-2040 forecast of revenue per mile driven, by vehicle weight class

The tables below summarize revenue per mile driven from existing California state fuel taxes and weight fees, by vehicle weight class, over the period 2015-2040 based on current tax rates and U.S. Energy Information forecasts of national vehicle stock on-road MPG, and mileage.



**Briefing Book for TAC Meeting #5****2015-2040 forecast of revenue per mile driven, by vehicle weight class  
(continued)**

The charts on the previous page reflect several underlying trends that are affecting fuel tax revenues.

- ▶ Federal CAFE standards through Model Year 2025 apply only to LDVs (Classes 1 and 2A). Improvements in fuel economy are the principal driver behind declining fuel tax revenues.
- ▶ The forecasts above are based on national assumptions about improvements in vehicle fuel economy. It is likely that California would outpace national fuel economy averages for several reasons, especially considering that the forecasts above do not account for zero emission vehicle (ZEV) objectives such as those in place in California. In short, for California, the decline on Classes 1 and 2A is likely to be steeper.
- ▶ Although CAFE standards were recently implemented for MDVs and HDVs, they are less aggressive than LDV standards, and they last only through Model Year 2018. This, combined with California's tiered system of weight fees for heavy vehicles, keeps MDV and HDV revenues from fuel taxes and weight fees relatively flat per mile driven over the forecast period.

**Briefing Book for TAC Meeting #5****Weight-related factors to consider**

In addition to the revenue trends under the current system of fuel taxes and weight fees presented above, there are other factors to consider in deciding which vehicles to recommend for inclusion in the road charge pilot test based on weight.

- ▶ Testing operational concepts on LDVs is a distinct proposition from testing operational concepts on MDVs or HDVs, given the variance in operational characteristics, enforcement mechanisms in place, and other regulations that apply. In some respects, mileage reporting for HDVs is actually simpler and less costly than it is for LDVs, given the existence of schemes like the International Fuel Tax Agreement and International Registration Plan, which requires all interstate trucks over 26,000 pounds to report mileage traveled by jurisdiction. In other respects, the technology, operational, and enforcement aspects of HDV road charge tests could be more costly due to the specialized recruitment effort as well as higher equipment, installation, and reporting costs.
- ▶ Given the variance in the effective per-mile rate under fuel taxes between LDVs and HDVs, as well as the generally accepted notion that HDVs incur more cost responsibility per mile driven than LDVs, it would be important to consider whether and how to vary the per-mile rate by vehicle weight class in a pilot program.
- ▶ Other factors unrelated to the business case, such as policy, operations, and communications, may also factor into the decision of whether to include all or some portion of the vehicle fleet in road charge testing based on weight.



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## Classifying vehicles by fuel type is increasingly complex

The majority of vehicles fall into two categories of fuel type: gasoline and diesel. However, the emergence of electric vehicles, alternative fuels, and hybrids complicates the classification.. We propose the following for purposes of the business case analysis:

- ▶ **Gasoline** vehicles encompass most LDVs, some MDVs, and very few HDVs. We also include in this category vehicles that run on closely related fuel types such as ethanol, methanol, E-85, M-85, and gasohol that are similarly taxed.
- ▶ **Diesel**-powered vehicles include very few LDVs, some MDVs, and most HDVs. We also include in this category vehicles that run on closely related fuel types such as biodiesel and other organic oils that are similarly taxed.
- ▶ **Natural gas (liquid or compressed)** is increasingly popular for MDVs and HDVs, and a handful of LDVs, principally trucks.
- ▶ **Battery electricity** is emerging as a popular fuel type, with prominent examples such as the Nissan Leaf and vehicles made by Tesla Motors.
- ▶ **Hybrids** encompass a range of vehicle types that combine two or more fuel types, including the following examples:
  - > Gasoline-electric cars such as the Toyota Prius
  - > Plug-in gasoline-electric cars such as the Chevy Volt.
  - > Diesel-LNG or “dual fuel” trucks.

**Briefing Book for TAC Meeting #5****Fuel-type-related factors to consider**

It is conceivable to limit the road charge to vehicles of a certain fuel type, such as gasoline or diesel. If this approach is taken as a means of approximating LDVs, it should be noted that not all gasoline vehicles are LDVs, and not all diesel vehicles are HDVs. Based on data from ARB, we estimate the following as of 2015:

- ▶ Less than 0.5% of LDVs in Class 1 and Class 2A are diesel, and less than 0.5% are electric. The remainder are gasoline-powered cars.
- ▶ About 80% of LDVs in Class 2B are gasoline, and the remainder are diesel.
- ▶ About 90% of vehicles in classes 3-6 (MDVs) are gasoline, with the remainder running on diesel.
- ▶ About 98% of HDVs run on diesel.

There are relatively few alternative fuel vehicles in California today, including electric and CNG/LNG vehicles. Plug-in hybrid electric (PHEV) and battery electric (BEV) vehicles together make up less than 100,000 of California's registered vehicles.

Due to the ongoing evolution in vehicle fuel types, it is important to choose a vehicle fuel type classification framework that can accommodate major possible shifts in fuel type for a long-term business case analysis.

**Briefing Book for TAC Meeting #5****Classification of vehicles by age is based on Model Year**

Classifying the age of a vehicle by Model Year seems simple and straightforward enough, but the challenge is that manufacturer definitions of Model Year do not coincide necessarily with one another, nor with calendar years, government fiscal years, or other standards.

Historically, Model Year vehicles become available for consumers in the last quarter of the preceding year (e.g., 1970 Model Year vehicles became available on October 1, 1969). In recent decades, however, automakers have begun to introduce vehicles earlier, such that some 2016 Model Year vehicles were available for purchase in the U.S. as early as January 2015.

We propose to adopt the definition in U.S. statute used by the EPA as follows: “the manufacturer's annual production period (as determined under § 85.2304) which includes January 1 of such calendar year, provided, that if the manufacturer has no annual production period, the term “model year” shall mean the calendar year.

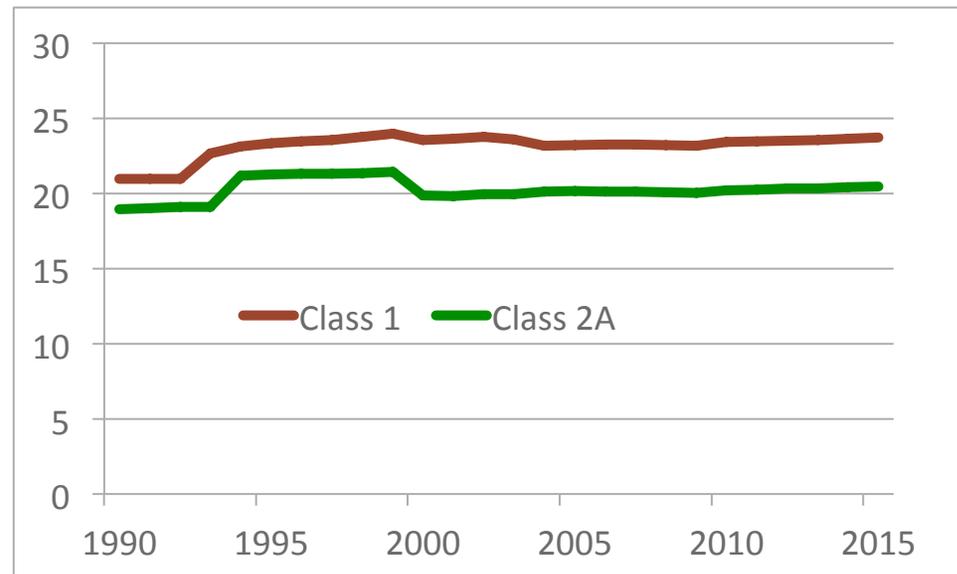




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## Age-related factors to consider

▶ The chart at right illustrates the EPA-rated fuel economy in MPG for new vehicles purchased in California from Model Years 1990 through 2015, for vehicle classes 1 and 2A (passenger cars), based on data from ARB. The overall trend is relatively flat over this time period, in line with the absence of CAFE standards during this time frame. There is no substantial variation in the average MPG of cars over the past 25 years in California.



- ▶ Some operational concepts required an OBD-II port, a special data port only available on cars manufactured after 1996. Vehicles manufactured before 1996 will not be eligible for automated mileage reporting using mileage meters. Including such vehicles could raise the cost of a program by required special dispensation for owners of such vehicles.
- ▶ Almost all operational concepts require an odometer reading at least once, and several required repeated odometer readings. Older vehicles are more likely to have mechanical odometers and/or odometers that have worn with age. This could increase the cost of operating a pilot test (and ultimately a road charging program) due to the need to establish alternative mechanisms for such participants.

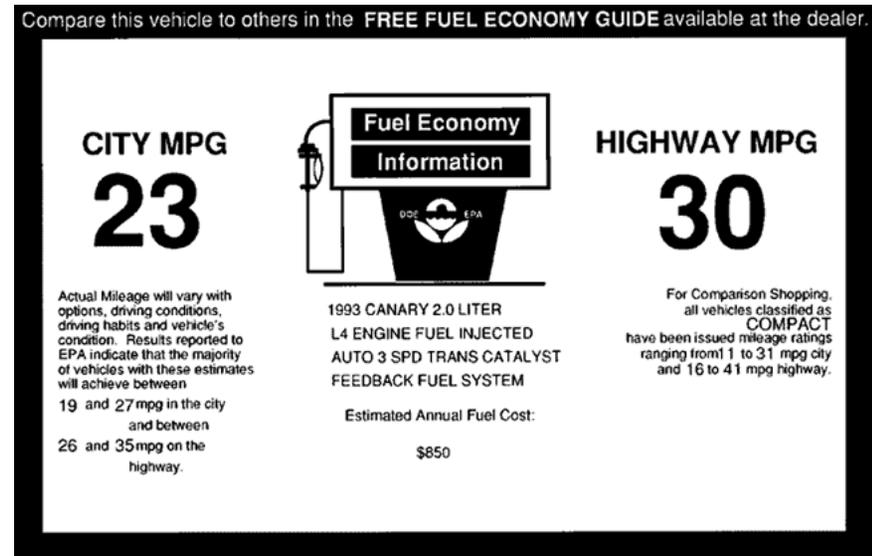


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**EPA’s MPG ratings form the basis of classifying vehicle by fuel economy**

EPA provides the most comprehensive and consistent set of fuel economy estimates for LDVs based on a combination of lab testing and real-world driving conditions. EPA “window sticker” MPG ratings (MPG ratings required to be displayed by auto dealers) provide both a “city” and “highway” estimate, the former based on typical city driving conditions (e.g., low speeds, frequent stops, and congestion) and the latter based on typical highway driving conditions (e.g., higher speeds and infrequent stops). EPA averages the city and highway ratings into a “combined” rating based on information about the actual amount of driving done by motorists across the country.

Note that EPA ratings are distinct from CAFE ratings. CAFE “compliance” values are lab values determined by the National Highway Transportation Safety Administration (NHTSA), responsible for implementing CAFE standards. CAFE compliance MPG values do not translate to “real-world” MPG values estimated by the EPA. For example, NHTSA’s CAFE standard of 60 MPG for “small footprint” passenger cars in 2025 translates to a combined EPA window sticker value of 43 MPG.



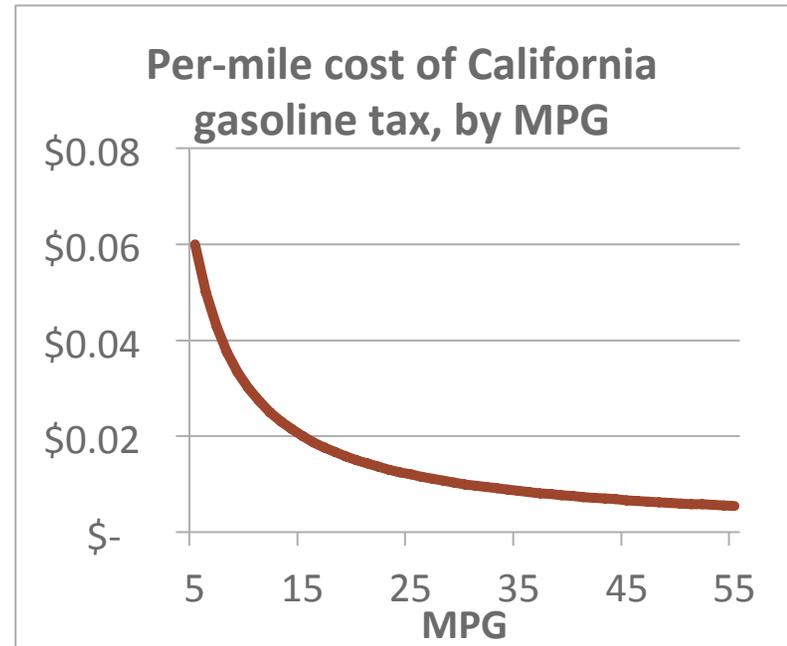


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**Fuel economy-related factors to consider**

The current fuel tax system results in a higher effective per-mile tax on vehicles with low MPG relative to vehicles with high MPG. The chart at right summarizes the relationship between MPG (horizontal axis) and effective cost per mile in gasoline taxes (based on present combined state of California rate of \$0.30 cents per gallon). A vehicle averaging 15 MPG pays 2 cents per mile driven, while a vehicle averaging 50 MPG pays only 0.6 cents per mile driven.

If selecting vehicles based on MPG it is important to relate the current effective rate paid in fuel taxes to any proposed per-mile rate for road charging.





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## **Commercial vs. non-commercial vehicles**

California statutes define commercial vehicles as the following:

- ▶ Buses
- ▶ For-hire passenger cars such as taxis and limousines
- ▶ Any “motor truck” primarily used to transport property
- ▶ Pickup trucks (unless equipped with a permanent camper over the bed), station wagons, SUVs, and truck/SUV crossovers (e.g., Chevy Avalanche) with the ability to transport cargo
- ▶ Tow trucks
- ▶ Truck-tractors
- ▶ Water-well drilling rigs
- ▶ Yard trucks

**Briefing Book for TAC Meeting #5****Commercial vs. non-commercial factors to consider**

There are several constraints that would suggest including all vehicles regardless of commercial status is preferable for the road charge pilot:

- ▶ Many business vehicles are registered as commercials, so should the TAC decide to include businesses as among the participants in the pilot program, it would be difficult to do so unless commercial vehicles are likewise included.
- ▶ Pickup trucks and SUVs in California are technically considered commercial vehicles, so again, should the TAC desire to include such vehicles in the road charge pilot, commercial vehicles should be included.

On the other hand, most commercial vehicles are already required to pay higher registration fees (i.e., weight fees) than non-commercial vehicles.

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## **What type of vehicles should be included in the pilot? Summary of considerations (1/2)**

- ▶ Pilot eligibility based on vehicle weight
  - > Excluding HDVs would recognize that the revenue erosion trend caused by fuel economy is largely an LDV phenomenon, especially given weight fees in California for HDVs.
  - > Including HDVs would require recruitment, communications, technical design, operational, and technology activities tailored to that segment of vehicles (as distinct from LDVs), which could raise the cost of implementing and running a pilot program.
  - > Including HDVs could be an opportunity to examine the impact of road charges on HDVs should policy makers wish to consider it.
  - > Any selection of pilot vehicles by vehicle weight should recognize the precise weight categories used by industry and DMV.
- ▶ Pilot eligibility based on vehicle age
  - > Limiting eligibility to newer vehicles could reduce or remove distinctions between newer and older model vehicles, especially for participants who would prefer to opt for technology-based approaches that require and OBD-II port and/or benefit from a functional digital odometer.
  - > Excluding older model vehicles might reduce opportunities to test how owners of such vehicles would react to and adapt to road charging operational choices, should policy makers desire to include them in a road charging system in the future.

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## **What type of vehicles should be included in the pilot? Summary of considerations (2/2)**

- ▶ Pilot eligibility based on vehicle fuel type
  - > Limiting the pilot to gasoline-only vehicles would make outright elimination of the gasoline tax collection more operationally feasible, thus simplifying the fuel tax credit process.
  - > Because fuel types cut across weight categories, limiting the pilot to certain types of vehicles does not necessarily simplify inclusion or exclusion of vehicles by weight (e.g., many LDVs run on diesel, while some MDVs and HDVs run on gasoline)
- ▶ Pilot eligibility based on vehicle fuel economy
  - > From a purely financial perspective, limited eligibility to higher MPG vehicles would maximize revenues by keeping low MPG vehicles on the fuel tax while transitioning higher MPG vehicles to a higher effective per-mile rate through road charging.
  - > Determining MPG of vehicles as the basis for inclusion or exclusion is inconsistent since actual on-road performance often differs from EPA estimates.
  - > Implementing vehicle registry systems to dynamically determine MPG and assign vehicles to road charges or fuel taxes (one or the other) would be an additional system cost to consider for the pilot.
- ▶ Pilot eligibility based on commercial vs. non-commercial status
  - > Excluding commercial vehicles would technically exclude even light-duty pickups, SUVs, and station wagons from participation.
  - > Including commercial vehicles and

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## What type of vehicles should be included in the pilot? Examples of potential answers

The list below summarizes key dimensions of vehicle classification and several examples of sub-classes within each dimension. At its May meeting, the TAC will have an opportunity to discuss and decide which class or classes to recommend for pilot testing. Note that the TAC can decide on a class for more than one dimension (e.g., all vehicles newer than Model Year 1996).

- ▶ Weight-based pilot eligibility examples
  - > All vehicles except motorcycles
  - > All LDVs (10,000 pounds GVWR or less)
  - > All Class 1 and Class 2A vehicles (vehicles less than or equal to 8,500 pounds GVWR)
- ▶ Age-based pilot eligibility examples
  - > Vehicles newer than Model Year 1996 (year OBD-II standard went into effect)
  - > Vehicles newer than Model Year 2011 (year most recent CAFE standards took effect)
- ▶ Fuel type-based pilot eligibility examples
  - > All vehicles
  - > Gasoline vehicles only
  - > All non-diesel vehicles
- ▶ Fuel economy-based pilot eligibility examples
  - > All vehicles
  - > All vehicles above statewide average MPG
- ▶ Commercial vs. non-commercial status-based pilot eligibility
  - > All vehicles
  - > Non-commercial vehicles only



# Section 5: Introduction to Pilot Evaluation Criteria

To be discussed with Agenda item #10



## Briefing Book for TAC Meeting #5

### TAC's role in evaluation

Evaluation is the measurement and analysis of the performance of a program, system or investment. The TAC's role in the road charging pilot program evaluation is specified in Senate Bill 1077 as follows:

- ▶ Section 3090(b): “The purpose of the technical advisory committee is to guide the development and evaluation of a pilot program to assess the potential for mileage-based revenue collection for California’s roads and highways as an alternative to the gas tax system.”
- ▶ Section 3090(e): “The technical advisory committee shall study RUC alternatives to the gas tax... The technical advisory committee may also make recommendations on the criteria to be used to evaluate the pilot program.”

To facilitate the TAC's recommendations on evaluation criteria to be used in the pilot program, the remainder of this section provides background on evaluation guidelines, the process envisioned, and a starter list of criteria to consider. It is important to note that the TAC's process of recommending evaluation criteria for the pilot program is distinct from the TAC's previous efforts to develop and recommend pilot design parameters (such as operational concepts for mileage reporting).

- ▶ In considering operational concepts for mileage reporting, the TAC evaluated concepts against criteria, many of which were specified in SB 1077, in March and April.
- ▶ That earlier activity is separate and distinct from the activity of developing and recommending criteria against which to evaluate the actual pilot program as a whole, which will take place in May, June, and July.

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## **Objectives and outputs of California road charge pilot program evaluation**

For the development of California’s road charging pilot program, the evaluation workstream includes the following objectives and outputs:

### **Objectives of the Road Charging evaluation workstream**

- ▶ Provide the TAC background information and structure for developing and recommending evaluation criteria in accordance with SB 1077, which gives the TAC the opportunity to “make recommendations on the criteria to be used to evaluate the pilot program” [Sec. 3090(e)].
- ▶ Provide CalSTA structure and guidance for implementing the pilot program evaluation and for approaching ongoing program evaluation.

### **Outputs of the Road Charging evaluation workstream**

- ▶ June 2015: Evaluation criteria for the pilot, based on TAC recommendations.
- ▶ September 2015: A strategy for CalSTA for evaluating the road charging pilot program based on the TAC’s recommendations.
- ▶ September 2015: An actionable plan for evaluating the pilot program that forms the basis of a statement of work for an independent evaluator.
- ▶ January 2016: Procurement of an independent evaluator to carry out the evaluation of the pilot test according to the criteria recommended by the TAC and the corresponding strategy and plan.



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## Process for evaluation strategy and planning



- ▶ Criteria are the standards against which the pilot program will be evaluated. Developing these criteria is the focus of TAC evaluation activities from May-July 2015.
- ▶ The strategy incorporates criteria into the overall process for pilot development, implementation, and reporting. The strategy will continue to guide evaluation activities through the end of the pilot program.
- ▶ The plan reflects both the criteria and the strategy. The efforts will culminate in a plan by September 2015 to facilitate procurement of an independent evaluator by January 2016.

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## Evaluation terminology

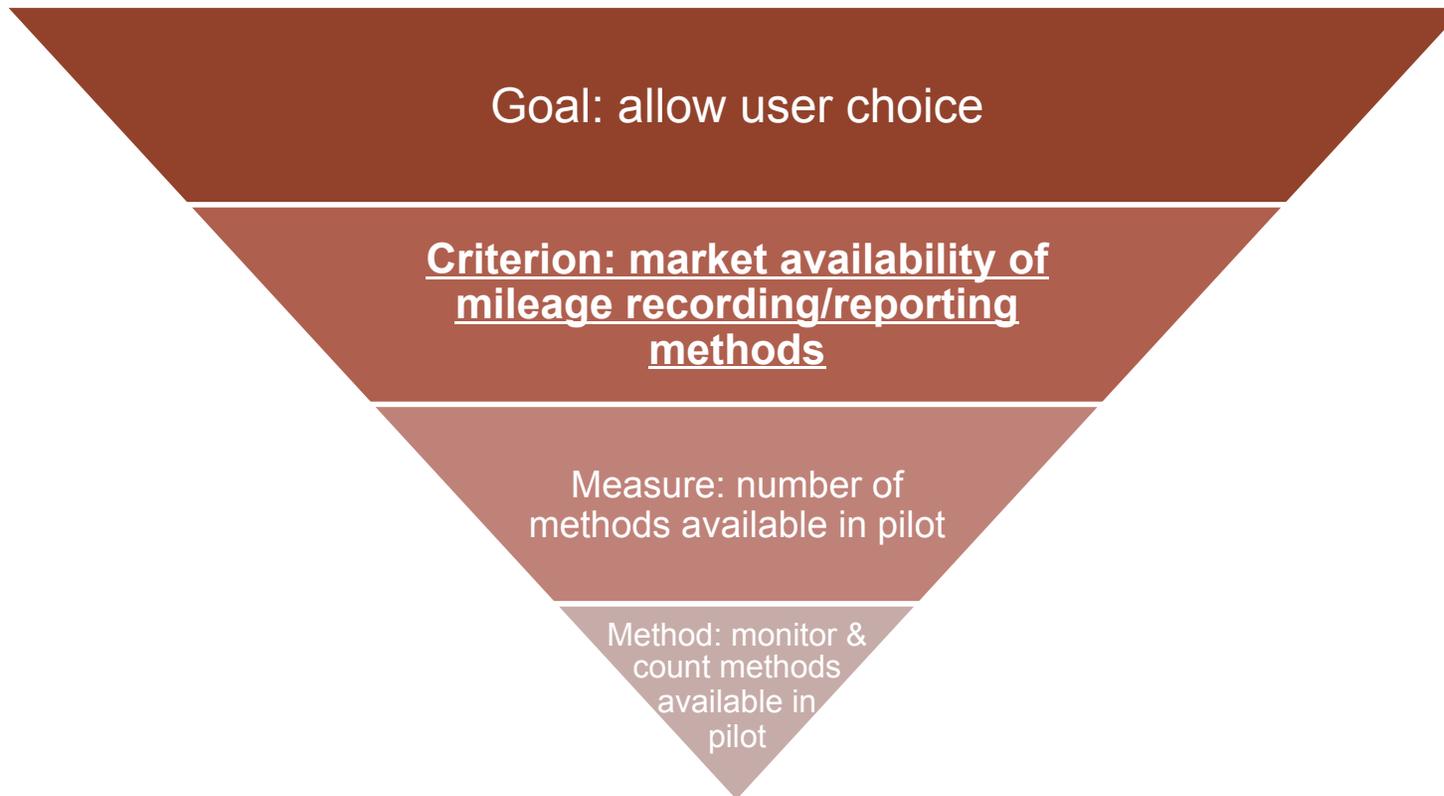
Evaluation terminology is often a source of confusion due to the many words that can describe the same or substantially similar concepts. The list below is intended to clarify terminology, to facilitate discussions about evaluation activities for California's Road Charge pilot program.

- ▶ Goal: intended result or outcome of an effort, program, or project.
  - > Example: a fair, sustainable revenue source for California transportation.
  - > Synonyms: objective, aim, end, purpose, intention, target.
- ▶ Criterion: a standard against which to judge performance (note: can be qualitative or quantitative; precise or vague).
  - > Examples: user friendliness, ease of recording, adequacy of privacy protection.
  - > Synonyms: metric, benchmark, norm, principle.
- ▶ Measure: a calculation, measurement, or observation that indicates the value of a performance parameter (note: can be qualitative or quantitative; binary, discrete, or continuous).
  - > Examples: number of options offered, user opinions of ease of use.
  - > Synonyms: gauge, index, barometer, indicator.
- ▶ Method: the means by which a measure is calculated.
  - > Example: user surveys, interviews, quantitative data collection and analysis, consensus-based discussion.
  - > Synonyms: way, approach.

To summarize: in the pilot test, evaluators will use methods to calculate measures to assess performance against criteria to determine how well the test achieves goals.

**Briefing Book for TAC Meeting #5****Example of the evaluation process (1/2)**

The graphic below illustrates an example of how goals, criteria, measures, and methods relate. For example, if a goal is to “allow user choice” in mileage recording and reporting methods, then a corresponding criterion for that goal could be “market availability of methods.” In order to assess performance against this criterion, a measure could be “number of methods available in the pilot.” Finally, monitoring and counting the reporting methods available at various points during the pilot is a way to calculate the measure.

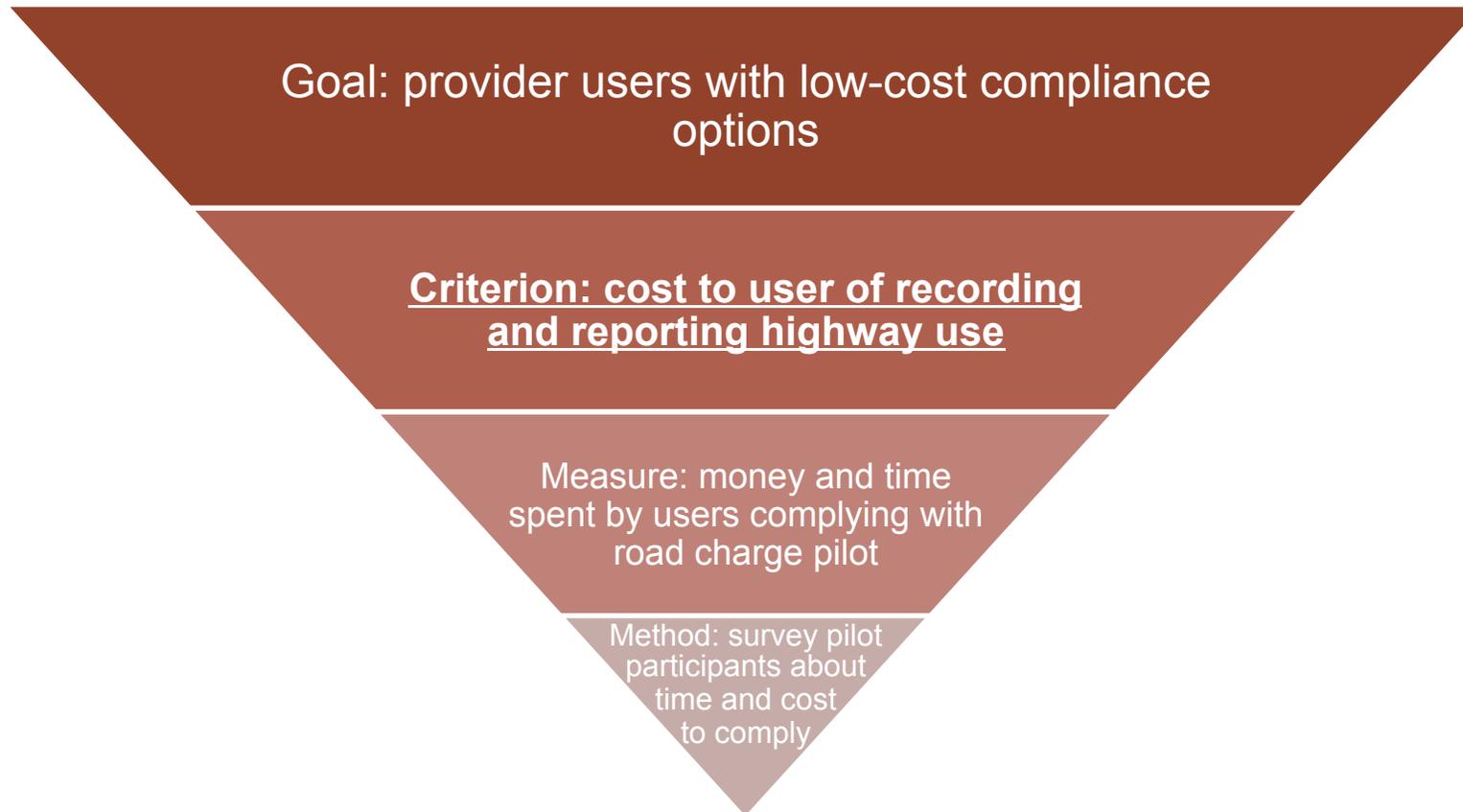




Briefing Book for TAC Meeting #5

## Example of the evaluation process (2/2)

Another example to illustrate the evaluation process is presented below based on the goal of providing pilot participants with low-cost compliance options.



**Briefing Book for TAC Meeting #5**

## **Targets are not part of the road charging pilot evaluation**

Missing from the typology presented above is the concept of targets.

Targets are a desired value for each measure, whether quantitative or qualitative. For example, using the example goal of “allow user choice” and corresponding measure of “number of methods available in the pilot,” one could establish a target for the measure such as “more than 1,” or “4 or more.” If a measure meets or exceeds the target, it indicates successful performance relative to the criterion, thus suggesting that the corresponding goal is being achieved.

For purposes of the pilot program, however, the Legislature has neither established nor delegated the task of establishing performance targets. This is appropriate for an experiment such as the road charging pilot, in which new concepts and policies are being tested. Targets are more appropriate for an operational or permanent system, when policy makers and agencies strive to improve system performance by reaching and exceeding targets.

Therefore, the evaluation effort of the pilot program focuses not on particular targets but rather on establishing an assortment of goals and evaluation criteria, along with corresponding measures and methods to assess them. Policy makers can use the information from the evaluation results in part to assess the desirability of moving forward and, in the future, potentially establishing targets.

**Briefing Book for TAC Meeting #5****Guidelines for developing and selecting evaluation criteria**

Below are several proposed guidelines for developing and selecting evaluation criteria. They are intended to provide a framework for creating and judging prospective evaluation criteria. TAC members are invited to suggest additional guidelines or consider variations on these guidelines. Evaluation criteria should accomplish the following:

- ▶ Meet policy objectives and stakeholder needs,
- ▶ Be measureable (qualitatively or quantitatively) within the scope of the pilot,
- ▶ Provide useful feedback to policy decision makers,
- ▶ Provide useful feedback to potential road charging implementers and administrators, including potential private sector partners,
- ▶ Be useful beyond the pilot phase for potential ongoing evaluation of a live system,
- ▶ Build on criteria used in other innovative transportation policy initiatives, and
- ▶ To the extent possible, avoid conflict or large overlaps, which could cause confusion.

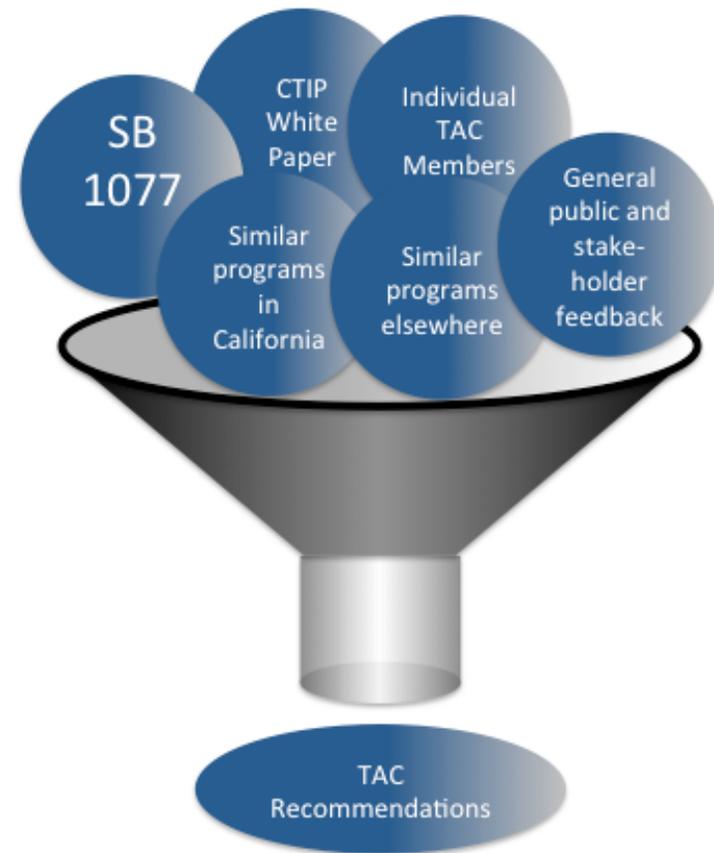


## Briefing Book for TAC Meeting #5

### Sources of evaluation criteria

There are many sources of evaluation criteria. In developing a starter list of criteria, the project team consulted the following sources:

- ▶ **SB 1077.** The legislation suggests a number of evaluation criteria. While none is dictated (rather, the TAC has latitude to recommend criteria), many of the criteria could prove useful.
- ▶ **CTIP White Paper.** The Road Charging “principles” laid out in the California Transportation Infrastructure Priorities working group white paper can also serve as evaluation criteria.
- ▶ **Similar programs in California.** These include Caltrans ongoing agency performance measurement, High Speed Rail, and tolling initiatives.
- ▶ **Similar programs elsewhere.** New Zealand’s ongoing programmatic evaluation of road charging and Oregon’s road charging pilot test evaluation provided useful inputs.



In addition to these sources, it is anticipated that TAC deliberations as well as and feedback from the outreach to general public and stakeholders will produce additional criteria to consider.



## Briefing Book for TAC Meeting #5

### Process for developing evaluation criteria

The recommendation of evaluation criteria to CalSTA for use in the pilot test is something the TAC may wish to consider. The following pages contain proposed goals and evaluation criteria developed by the project team based on the inputs and guidelines outlined in the preceding pages. The purpose of these criteria is to give the TAC a starting point for discussions and deliberations.

The proposed evaluation criteria are organized into 8 categories:

1. **Revenue.** Criteria related to the ability of road charging to serve as a suitable replacement revenue source for fuel taxes.
2. **Cost.** Criteria related to the costs associated with administering and collecting road charges, both from a user perspective and an agency perspective.
3. **Operations.** Criteria related to how well road charge collections operate, both from customer and agency perspectives.
4. **User Experience.** Criteria related to how users interface with the road charging system.
5. **Privacy.** Criteria related to privacy protection measures built into the road-charging program.
6. **Data Security.** Criteria related to security of data collected, transmitted, stored, and used by the road-charging program.
7. **Equity.** Criteria related to the equity, perceived and real, along several dimensions, of road charging.
8. **Communications.** Criteria related to communications with pilot participants and the public during the test period.



## Briefing Book for TAC Meeting #5

### Categories of goals and evaluation criteria

The table below summarizes the categories of evaluation, including the number of goals and criteria proposed below for each category. The TAC is free to propose new goals and criteria, or to eliminate goals and criteria proposed here.

Category	Number of goals	Number of evaluation criteria
1. Revenue	4	5
2. Cost	4	5
3. Operations	6	12
4. User Experience	6	11
5. Privacy	5	7
6. Data Security	4	6
7. Equity	7	8
8. Communications	1	3
<b>Total</b>	<b>37</b>	<b>57</b>

The pages that follow outline each individual goal and evaluation criterion, organized by category, including a reference to the source of each goal, if derived from CTIP or SB 1077. Goals without a corresponding source were derived from other literature on evaluation.



**Briefing Book for TAC Meeting #5**

**1. Revenue criteria**

Goals	Source	Evaluation Criteria
<p><b>Create a stable revenue stream</b></p>		<p>Revenue stability (at constant rate) over various time periods</p>
		<p>Difference in revenue between Road Charges and fuel tax</p>
<p><b>Generate adequate revenue for infrastructure needs</b></p>		<p>Difference between revenue collected and road use costs imposed, relative to the fuel tax system of revenue collection</p>
<p><b>Avoid double taxation</b></p>	<p>CTIP</p>	<p>Number of taxes or charges paid by motorists</p>



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**2. Cost criteria**

Goals	Source	Evaluation Criteria
<ul style="list-style-type: none"> <li>▶ Administer Road Charges efficiently</li> <li>▶ Incorporate cost efficiencies where available</li> </ul>	<ul style="list-style-type: none"> <li>▶ SB 1077 (f)(4)</li> <li>▶ CTIP</li> </ul>	Cost of administering Road Charge collection <hr/> Difference between expected and realized revenue
<p><b>Provide users with low-cost compliance options</b></p>	<p>SB 1077 (f)(3)</p>	<p>Cost to user of recording and reporting highway use</p>
<p><b>Implement projects on time and on budget</b></p>		<p>Deviation(s) from schedule</p>
		<p>Deviation(s) from budget</p>



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### 3. Operations criteria

Goals	Source	Evaluation Criteria
▶ <b>Be easy to administer</b> ▶ <b>Clearly identify responsibilities</b>	▶ SB 1077 (f)(4) ▶ CTIP	Ease of administering collection of Road Charges
		Adherence to operations responsibility matrix
▶ <b>Maintain compliance</b> ▶ <b>Be enforceable</b>	▶ SB 1077 (f)(5) ▶ CTIP	Effectiveness of methods for maintaining compliance
		Resistance of methods to tampering and fraud
		Quality/accuracy of road use data reported
<b>Have neutral or efficient behavior impacts</b>		Changes in individual road use behavior
		Changes in collective road use behavior
		Changes in individual road use beliefs
		Changes in collective road use beliefs
<b>Integrate with other charges</b>	CTIP	Ease of administering interoperability with other jurisdictions
<b>Collect all charges owed</b>		Difference between expected and realized revenue per mile
<b>Be compliant with financial guidelines</b>		Auditability of accounts
		Auditability of account managers



Briefing Book for TAC Meeting #5

## 4. User experience criteria

Goals	Source	Evaluation Criteria
<b>Administer Road Charges effectively</b>		Ease of recording and reporting highway use
		Quality/accuracy of highway use data reported
<b>Allow user choice</b>	CTIP	User acceptance of methods available
		Market availability of methods
<b>Keep pace with change</b>	CTIP	Adaptability of methods
		Ability of methods to incorporate other services
<b>Provide methods that are available, adaptable, reliable, and secure</b>	SB 1077 (f)(1)	IT availability of methods
		Reliability of methods
		Security of methods
<b>Be transparent about how charge works</b>		User understanding of system, including choices, operations, and invoices
<b>Do not negatively impact safety</b>		Incidence of safety issues related to Road Charging



Briefing Book for TAC Meeting #5

## 5. Privacy criteria

Goals	Source	Evaluation Criteria
Honor personal privacy	CTIP	User perception of privacy protections
Protect personally-identifiable information (PII)	SB 1077 (f)(2)	Sufficiency of PII protection measures
Ensure identify protection using location data even after removal of PII	SB 1077 (f)(6)	Sufficiency of identify protection using location data after PII removal
Ensure privacy protection when using location data with other technologies	SB 1077 (f)(7)	Sufficiency of privacy protection measures when using location data with other technologies
Protect privacy pursuant to Article I Section 1 of the California Constitution with respect to data access by public agencies (including law enforcement) and private firms	California Constitution and SB 1077(f)(8)	Sufficiency of privacy protection measures re: California Constitution
		Appropriateness of data retention
		Compliance of data retention
Respect user privacy trade-offs		User valuation of privacy



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## 6. Data security criteria

Goals	Source	Evaluation Criteria
Honor personal privacy (data security)	CTIP	User perception of data security
<ul style="list-style-type: none"> <li>▶ Ensure data are secure from external breaches</li> <li>▶ Ensure data are secure from internal breaches</li> <li>▶ Ensure data are secure from abuse based on internal process exposure</li> </ul>		Ability of system to withstand breaches of attacks
		Protection of data
		Availability of data for appropriate and necessary uses
		Conformity with relevant ISO 9000 data security standards
		Conformity with relevant ISO 27001 data security standards



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## 7. Equity criteria (with respect to fuel taxes)

Goals	Source	Evaluation Criteria
Be fair and equitable	CTIP	User perception of equity
Preserve or improve horizontal equity (relative to fuel taxes)		Road Charges and compliance costs incurred, by distance traveled
		Road Charges and compliance costs incurred, by vehicle type
Preserve or improve vertical equity (relative to fuel taxes)		Road Charges and compliance costs incurred, by household income
Preserve or improve inter-temporal equity (relative to fuel taxes)		Road Charges and compliance costs incurred, by age
Preserve or improve spatial equity (relative to fuel taxes)		Road Charges and compliance costs incurred, by location: North/South, urban/rural, in-state/out-of-state
Preserve or improve procedural equity (relative to fuel taxes)		Road Charges and compliance costs incurred, by method chosen
Reasonably accommodate all users		Accommodation of all users



Briefing Book for TAC Meeting #5

## 8. Communications criteria

Goals	Source	Evaluation Criteria
Engage the public meaningfully		Opportunities for participant feedback
		Opportunities for general public feedback
		Quality of public interactions

**Briefing Book for TAC Meeting #5****Next steps on evaluation for TAC members: May, June and July**

- ▶ What to expect at the May TAC meeting:
  - > The project team will present proposed evaluation criteria.
  - > TAC members will discuss the material.
  - > TAC members will provide feedback and direction on proposed criteria.
  - > The project team will request any further feedback from TAC members.
- ▶ What to expect at the June TAC meeting:
  - > The project team will present updated evaluation criteria based on TAC member feedback received at the May meeting and through any individual follow-up comments.
  - > TAC members will discuss the material and begin a process to decide the evaluation criteria to recommend.
- ▶ What to expect at the July TAC meeting:
  - > The project team will present recommended evaluation criteria based on TAC discussion and feedback at June meeting.
  - > The TAC will discuss and recommend final evaluation criteria.



**Briefing Book for TAC Meeting #5**

**Next steps for evaluation after the TAC recommends evaluation criteria:  
2015-2016**

- ▶ The project team will develop an evaluation strategy for the project based on the TAC's recommended evaluation criteria.
- ▶ The project team will outline an evaluation plan.
- ▶ Caltrans will begin the process of procuring an independent evaluator for the pilot program, who will execute the evaluation plan using the TAC's recommended evaluation criteria.



# Appendix 1: Detailed Monthly Decision Schedule



**Briefing Book for TAC Meeting #5**

**May: Meeting #5**

FOCUS TOPICS	RELATED SB 1077 STATUTE	TAC DECISION POINTS
<b>Policy:</b> Equity considerations	3090(e): The TAC shall study road charge alternatives to the gas tax...and shall make recommendations on the design of a pilot program...	<ul style="list-style-type: none"> <li>• What types (households, businesses, etc.) of participants should be included in the pilot?</li> <li>• What road usage mileage exemptions does the TAC recommend testing in the road charge pilot?</li> </ul>
<b>Policy:</b> Privacy measures	3090(f) 2, 6, 7, and 8: In studying the road charge alternatives... the TAC shall take the following into consideration: the necessity of protecting all personally identifiable information used in reporting highway use... the ease of re-identifying location data... increased privacy concerns when location data are used in conjunction with other technologies... and public and private agency access.	<ul style="list-style-type: none"> <li>• What specific personal privacy protections should be used for the pilot?</li> </ul>
<b>Business Case Analysis:</b> Introduction and preliminary results	3090(f) 3-4: In studying the road charge alternatives... the TAC shall take the following into consideration: the cost of recording and reporting highway use... and the cost of administering the collection of taxes and fees as an alternative to the current system of taxing highway use through motor vehicle fuel taxes.	<ul style="list-style-type: none"> <li>• What vehicles are included in the pilot—all vehicles or passenger vehicles only?</li> </ul>



**Briefing Book for TAC Meeting #5**

FOCUS TOPICS	RELATED SB 1077 STATUTE	TAC DECISION POINTS
<p><b>Evaluation Strategy:</b> Introduction, alternative approaches, and possible criteria</p>	<p>3090(e): The TAC may also make recommendations on the criteria to be used to evaluate the pilot program.                      3092(a) 1-11: ... The [CalSTA] report [on the results of the pilot program] shall include... a discussion of [various evaluation criteria].</p>	<p>Informational item only</p>



Briefing Book for TAC Meeting #5

June: Meeting #6

FOCUS TOPICS	RELATED SB 1077 STATUTE	TAC DECISION POINTS
<b>Technical Design:</b> Revised draft pilot Concept of Operations	3090(e): The TAC shall study road charge alternatives to the gas tax...and shall make recommendations on the design of a pilot program... 3090(f) 8: In studying the road charge alternatives... the TAC shall take the following into consideration: and public and private agency access... to data collected and stored for purposes of road charging.	<ul style="list-style-type: none"> <li>• What system data security requirements should be used for the pilot?</li> </ul>
<b>Technical Design:</b> Other pilot test design parameters	3090(e): The TAC shall study road charge alternatives to the gas tax...and shall make recommendations on the design of a pilot program...	<ul style="list-style-type: none"> <li>• How many participants should be involved in the pilot?</li> <li>• How should participants be distributed throughout the state?</li> </ul>
<b>Business Case Analysis:</b> Updated results based on initial TAC pilot design recommendations	3090(f) 3-4: In studying the road charge alternatives... the TAC shall take the following into consideration: the cost of recording and reporting highway use... and the cost of administering the collection of taxes and fees as an alternative to the current system of taxing highway use through motor vehicle fuel taxes.	Informational item only
<b>Evaluation Strategy:</b> Evaluation criteria	3090(e): The TAC may also make recommendations on the criteria to be used to evaluate the pilot program. 3092(a) 1-11: ... The [CalSTA] report [on the results of the pilot program] shall include... a discussion of [various evaluation criteria].	<ul style="list-style-type: none"> <li>• What evaluation criteria does the TAC recommend for the pilot?</li> </ul>



Briefing Book for TAC Meeting #5

July: Meeting #7

FOCUS TOPICS	RELATED SB 1077 STATUTE	TAC DECISION POINTS
<b>Communications:</b> Telephone survey update	3090(e): The TAC shall gather public comment on issues and concerns related to the pilot program...	Informational item only
<b>Communications:</b> Focus groups update	3090(e): The TAC shall gather public comment on issues and concerns related to the pilot program...	Informational item only





Briefing Book for TAC Meeting #5

August: Meeting #8

FOCUS TOPICS	RELATED SB 1077 STATUTE	TAC DECISION POINTS
<b>Technical Design:</b> Draft final pilot Concept of Operations	3090(e): The TAC shall study road charge alternatives to the gas tax...and shall make recommendations on the design of a pilot program...	<ul style="list-style-type: none"> <li>• What type of enforcement and compliance activities should be demonstrated during the pilot?</li> </ul>
<b>Business Case Analysis:</b> Updated results based on updated TAC pilot design recommendations	3090(f) 3-4: In studying the road charge alternatives... the TAC shall take the following into consideration: the cost of recording and reporting highway use... and the cost of administering the collection of taxes and fees as an alternative to the current system of taxing highway use through motor vehicle fuel taxes.	Informational item only
<b>Organizational Design:</b> Update from inter-agency work group	3090(f) 4: In studying the road charge alternatives... the TAC shall take the following into consideration: the ease... of administering the collection of taxes and fees as an alternative to the current system of taxing highway use through motor vehicle fuel taxes.	Informational item only



Briefing Book for TAC Meeting #5

September: Meeting #9

FOCUS TOPICS	RELATED SB 1077 STATUTE	TAC DECISION POINTS
<b>Evaluation Strategy:</b> Evaluation criteria selection and strategy guidance	3090(e): The TAC may also make recommendations on the criteria to be used to evaluate the pilot program. 3092(a) 1-11: ... The [CalSTA] report [on the results of the pilot program] shall include... a discussion of [various evaluation criteria].	<ul style="list-style-type: none"> <li>Finalize evaluation criteria</li> </ul>
<b>Policy:</b> Review of parking lot items	3090(e): The TAC shall study road charge alternatives to the gas tax...and shall make recommendations on the design of a pilot program...	<ul style="list-style-type: none"> <li>Address additional questions raised during course of TAC meetings</li> </ul>
<b>Communications:</b> Review of TAC public engagement efforts	3090(e): The TAC shall gather public comment on issues and concerns related to the pilot program...	<ul style="list-style-type: none"> <li>Has the TAC adequately gathered and considered public comment on issues related to the pilot program and addressed them?</li> </ul>
<b>Report to CalSTA:</b> Outline of recommendations report to CalSTA	3090(e): The TAC shall study road charge alternatives to the gas tax...and shall make recommendations on the design of a pilot program. The TAC may also make recommendations on the criteria to be used to evaluate the pilot program.	Informational item only



Briefing Book for TAC Meeting #5

**October: Meeting #10**

FOCUS TOPICS	RELATED SB 1077 STATUTE	TAC DECISION POINTS
<b>Report to CalSTA:</b> Review of draft recommendations report to CalSTA	3090(e): The TAC shall study road charge alternatives to the gas tax...and shall make recommendations on the design of a pilot program. The TAC may also make recommendations on the criteria to be used to evaluate the pilot program.	<ul style="list-style-type: none"> <li>• Feedback on report outline</li> </ul>
<b>Policy:</b> Review of parking lot items	3090(e): The TAC shall study road charge alternatives to the gas tax...and shall make recommendations on the design of a pilot program...	<ul style="list-style-type: none"> <li>• Address additional questions raised during course of TAC meetings</li> </ul>

**November: Meeting #11**

FOCUS TOPICS	RELATED SB 1077 STATUTE	TAC DECISION POINTS
<b>Report to CalSTA:</b> Draft final recommendations report to CalSTA	3090(e): The TAC shall study road charge alternatives to the gas tax...and shall make recommendations on the design of a pilot program. The TAC may also make recommendations on the criteria to be used to evaluate the pilot program.	<ul style="list-style-type: none"> <li>• Feedback on draft report</li> </ul>



Briefing Book for TAC Meeting #5

**December: Meeting #12**

FOCUS TOPICS	RELATED SB 1077 STATUTE	TAC DECISION POINTS
<p><b>Report to CalSTA:</b> CalSTA review and comments on recommendations report</p>	<p>3090(e): The TAC shall study road charge alternatives to the gas tax...and shall make recommendations on the design of a pilot program. The TAC may also make recommendations on the criteria to be used to evaluate the pilot program.</p> <p>Section 3091: Based on the recommendations of the [TAC], [CalSTA] shall implement a pilot program to identify and evaluate issues related to the potential implementation of a [road charge] program.</p>	<ul style="list-style-type: none"> <li>• Adopt final report on recommendations to CalSTA</li> </ul>



**Briefing Book for TAC Meeting #5**

**Summary of Topics that Satisfy Statutory TAC Requirements**

3090 SECTION	TOPICS THAT WILL INFORM TAC DISCUSSION AND DECISIONS
(e) Study road charge alternatives	Policy, Technical Design, Business Case Analysis, Organizational Design
(e) Recommend pilot design alternatives	Policy, Technical Design, Report to CalSTA
(e) Gather public comment on issues & concerns	Communications and Public Involvement
(e) Recommend evaluation criteria	Evaluation Strategy, Report to CalSTA
(f) (1) Availability	Technical Design
(f) (1) Adaptability	Technical Design
(f) (1) Reliability	Technical Design
(f) (1) Security	Technical Design
(f) (2) Necessity of protecting PII	Policy, Technical Design
(f) (3) Ease of recording & reporting highway use	Technical Design
(f) (3) Cost of recording & reporting highway use	Business Case Analysis
(f) (4) Ease of administering collection of charges	Organizational Design, Technical Design
(f) (4) Cost of administering collection of charges	Business Case
(f) (5) Effective methods of maintaining compliance	Technical Design, Organizational Design
(f) (6) Ease of re-identifying location data	Technical Design, Policy
(f) (7) Privacy concerns when using location data with other technologies	Technical Design, Policy
(f) (8) Public & private agency access to data	Organizational Design, Technical Design, Policy



# Appendix 2: Relevant Driver Privacy Laws and Legislation



**Briefing Book for TAC Meeting #5**

## **Appendix 2-A: California’s landmark automotive “black box” law, California Vehicle Code section 9951**

[Click here for link to law](#)

### **VEHICLE CODE - VEH**

**DIVISION 3.6. VEHICLE SALES [9950 - 9993] ( Division 3.6 added by Stats. 1970, Ch. 1246. )**

**CHAPTER 1. Advertising, Brochures, and Manuals [9950 - 9955] ( Chapter 1 added by Stats. 1970, Ch. 1246. )**

9951.

(a) A manufacturer of a new motor vehicle sold or leased in this state that is equipped with one or more recording devices commonly referred to as “event data recorders (EDR)” or “sensing and diagnostic modules (SDM),” shall disclose that fact in the owner’s manual for the vehicle.

(b) As used in this section, “recording device” means a device that is installed by the manufacturer of the vehicle and does one or more of the following, for the purpose of retrieving data after an accident:

- (1) Records how fast and in which direction the motor vehicle is traveling.
- (2) Records a history of where the motor vehicle travels.
- (3) Records steering performance.
- (4) Records brake performance, including, but not limited to, whether brakes were applied before an accident.
- (5) Records the driver’s seatbelt status.
- (6) Has the ability to transmit information concerning an accident in which the motor vehicle has been involved to a central communications system when an accident occurs.



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(c) Data described in subdivision (b) that is recorded on a recording device may not be downloaded or otherwise retrieved by a person other than the registered owner of the motor vehicle, except under one of the following circumstances:

(1) The registered owner of the motor vehicle consents to the retrieval of the information.

(2) In response to an order of a court having jurisdiction to issue the order.

(3) For the purpose of improving motor vehicle safety, including for medical research of the human body's reaction to motor vehicle accidents, and the identity of the registered owner or driver is not disclosed in connection with that retrieved data. The disclosure of the vehicle identification number (VIN) for the purpose of improving vehicle safety, including for medical research of the human body's reaction to motor vehicle accidents, does not constitute the disclosure of the identity of the registered owner or driver.

(4) The data is retrieved by a licensed new motor vehicle dealer, or by an automotive technician as defined in Section 9880.1 of the Business and Professions Code, for the purpose of diagnosing, servicing, or repairing the motor vehicle.

(d) A person authorized to download or otherwise retrieve data from a recording device pursuant to paragraph (3) of subdivision (c), may not release that data, except to share the data among the motor vehicle safety and medical research communities to advance motor vehicle safety, and only if the identity of the registered owner or driver is not disclosed.

(e) (1) If a motor vehicle is equipped with a recording device that is capable of recording or transmitting information as described in paragraph (2) or (6) of subdivision (b) and that capability is part of a subscription service, the fact that the information may be recorded or transmitted shall be disclosed in the subscription service agreement.

(2) Subdivision (c) does not apply to subscription services meeting the requirements of paragraph (1).

(f) This section applies to all motor vehicles manufactured on or after July 1, 2004.

(Amended by Stats. 2004, Ch. 183, Sec. 350. Effective January 1, 2005.)

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## **Appendix 2-B: California's Electronic Toll Collection law, Streets and Highways Code section 31490**

[Click here for link to law](#)

### **STREETS AND HIGHWAYS CODE SECTION 31490**

31490 (a) Except as otherwise provided in this section, a transportation agency may not sell or otherwise provide to any other person or entity personally identifiable information of any person who subscribes to an electronic toll or electronic transit fare collection system or who uses a toll bridge, toll lane, or toll highway that employs an electronic toll collection system.

(b) A transportation agency that employs an electronic toll collection or an electronic transit fare collection system shall establish a privacy policy regarding the collection and use of personally identifiable information and provide to subscribers of that system a copy of the privacy policy in a manner that is conspicuous and meaningful, such as by providing a copy to the subscriber with the transponder, electronic transit pass, or other device used as an electronic toll or transit fare collection mechanism, or, if the system does not use a mechanism, with the application materials. A transportation agency shall conspicuously post its privacy policy on its Internet Web site. For purposes of this subdivision, "conspicuously post" has the same meaning as that term is defined in paragraphs (1) to (4), inclusive, of subdivision (b) of Section 22577 of the Business and Professions Code.

The policy shall include, but need not be limited to, a description of the following:

- (1) The types of personally identifiable information that is collected by the agency.
- (2) The categories of third-party persons or entities with whom the agency may share personally identifiable information.
- (3) The process by which a transportation agency notifies subscribers of material changes to its privacy policy.
- (4) The effective date of the privacy policy.
- (5) The process by which a subscriber may review and request changes to any of his or her personally identifiable information.

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(c) A transportation agency may, within practical business and cost constraints, store only personally identifiable information of a person such as, to the extent applicable, the account name, credit card number, billing address, vehicle information, and other basic account information required to perform account functions such as billing, account settlement, or enforcement activities. All other information shall be discarded no more than four years and six months after the billing cycle has concluded, the bill has been paid, and all toll or fare violations, if applicable, have been resolved.

(d) A transportation agency shall make every effort, within practical business and cost constraints, to purge the personal account information of an account that is closed or terminated. In no case shall a transportation agency maintain personal information more than four years and six months after the date an account is closed or terminated.

(e) (1) A transportation agency may make personally identifiable information of a person available to a law enforcement agency only pursuant to a search warrant. Absent a provision in the search warrant to the contrary, the law enforcement agency shall immediately, but in any event within no more than five days, notify the person that his or her records have been obtained and shall provide the person with a copy of the search warrant and the identity of the law enforcement agency or peace officer to whom the records were provided.

(2) This section does not prohibit a peace officer, as defined in Section 830.1 or 830.2 of the Penal Code, when conducting a criminal or traffic collision investigation, from obtaining personally identifiable information of a person if the officer has good cause to believe that a delay in obtaining this information by seeking a search warrant would cause an adverse result, as defined in subparagraphs (A) to (E), inclusive, of paragraph (2) of subdivision (a) of Section 1524.2 of the Penal Code.

(f) This section does not prohibit a transportation agency in subdivision (a) from providing aggregated traveler information derived from collective data that relates to a group or category of persons from which personally identifiable information has been removed.

(g) This section does not prohibit a transportation agency, with respect to an electronic toll collection system, from providing the license plate number of an intermodal chassis to the owner of the chassis for purposes of locating the driver of the chassis in the event the driver fails to pay a toll.

(h) This section, with respect to an electronic toll collection system, does not prohibit a transportation agency from sharing data with another transportation agency solely to comply with interoperability specifications and standards adopted pursuant to Section 27565 regarding electronic toll collection devices and technologies. A third-party vendor may not use personally identifiable information obtained under this subdivision for a purpose other than described in this subdivision.

**Briefing Book for TAC Meeting #5**

(i) Subdivision (d) shall not prohibit a transportation agency, or its designee, from performing financial and accounting functions such as billing, account settlement, enforcement, or other financial activities required to operate and manage the electronic toll collection system or transit fare collection system. This section, with respect to electronic transit fare collection systems, does not prohibit the sharing of data between transportation agencies for the purpose of interoperability between those agencies. A third-party vendor may not use personally identifiable information obtained under this subdivision for a purpose other than as described in this subdivision.

(j) This section does not prohibit a transportation agency from communicating, either directly or through a contracted third-party vendor, to subscribers of an electronic toll collection system or an electronic transit fare collection system about products and services offered by, the agency, a business partner, or the entity with which it contracts for the system, using personally identifiable information limited to the subscriber's name, address, and electronic mail address, provided that the transportation agency has received the subscriber's express written consent to receive the communications.

(k) A transportation agency may not use a nonsubscriber's personally identifiable information obtained using an electronic toll collection or electronic transit fare collection system to market products or services to that nonsubscriber. This subdivision shall not apply to toll-related products or services contained in a notice of toll evasion issued pursuant to Section 23302 of the Vehicle Code.

(l) For purposes of this section, "transportation agency" means the Department of Transportation, the Bay Area Toll Authority, any entity operating a toll bridge, toll lane, or toll highway within the state, any entity administering an electronic transit fare collection system and any transit operator participating in that system, or any entity under contract with any of the above entities.

(m) For purposes of this section, "electronic toll collection system" is a system where a transponder, camera-based vehicle identification system, or other electronic medium is used to deduct payment of a toll from a subscriber's account or to establish an obligation to pay a toll, and "electronic transit fare collection system" means a system for issuing an electronic transit pass that enables a transit passenger subscriber to use the transit systems of one or more participating transit operators without having to pay individual fares, where fares are instead deducted from the subscriber's account as loaded onto the electronic transit pass.

(n) For purposes of this section, "person" means any person who subscribes to an electronic toll collection or electronic transit fare collection system or any person who uses a toll bridge, toll lane, or toll road that employs an electronic toll collection system.

**Briefing Book for TAC Meeting #5**

(o) For purposes of this section, "personally identifiable information" means any information that identifies or describes a person including, but not limited to, travel pattern data, address, telephone number, email address, license plate number, photograph, bank account information, or credit card number. For purposes of this section, with respect to electronic transit fare collection systems, "personally identifiable information" does not include photographic or video footage.

(p) For purposes of this section, "interoperability" means the sharing of data, including personally identifiable information, across multiple transportation agencies for the sole purpose of creating an integrated transit fare payment system, integrated toll payment system, or both.

(q) (1) In addition to any other remedies provided by law, a person whose personally identifiable information has been knowingly sold or otherwise provided in violation of this section may bring an action to recover either actual damages or two thousand five hundred dollars (\$2,500) for each individual violation, whichever is greater, and may also recover reasonable costs and attorney's fees. (2) A person whose personally identifiable information has been knowingly sold or otherwise provided three or more times in violation of this section may bring an action to recover either actual damages or four thousand dollars (\$4,000) for each individual violation, whichever is greater, and may also recover reasonable costs and attorney's fees.

(r) Nothing in subdivisions (c) and (d) shall preclude compliance with a court order or settlement agreement that has been approved on or before April 25, 2010.

(s) A transportation agency that employs an electronic toll collection or electronic transit fare collection system may impose an administrative fee on persons who use those systems in an amount sufficient to cover the cost of implementing this section.



**Briefing Book for TAC Meeting #5**

## **Appendix 2-C: California SB 34 (2014), relating to ensuring locational privacy**

[Click here for link to law](#)

**BILL NUMBER: SB 34 INTRODUCED**

**BILL TEXT**

**INTRODUCED BY** Senator Hill

**DECEMBER 1, 2014**

An act to amend Sections 1798.29 and 1798.82 of, and to add Title 1.81.23 (commencing with Section 1798.90.5) to Part 4 of Division 3 of, the Civil Code, relating to personal information.

### **LEGISLATIVE COUNSEL'S DIGEST**

**SB 34, as introduced, Hill. Automated license plate recognition systems: use of data.**

(1) Existing law authorizes the Department of the California Highway Patrol to retain license plate data captured by license plate recognition (LPR) technology, also referred to as an automated license plate recognition (ALPR) system, for not more than 60 days unless the data is being used as evidence or for the investigation of felonies. Existing law prohibits the department from selling the data or from making the data available to an agency that is not a law enforcement agency or an individual that is not a law enforcement officer.

Existing law authorizes the department to use LPR data for the purpose of locating vehicles or persons reasonably suspected of being involved in the commission of a public offense, and requires the department to monitor the internal use of the data to prevent unauthorized use and to submit to the Legislature, as a part of the annual automobile theft report, information on the department's LPR practices and usage.

**Briefing Book for TAC Meeting #5**

This bill would impose specified requirements on an "ALPR operator" as defined, including, among others, ensuring that the information the ALPR operator collects is protected with certain safeguards, and implementing and maintaining specified security procedures and a usage and privacy policy with respect to that information.

The bill would require an ALPR operator that accesses or provides access to ALPR information to maintain a specified record of that access.

This bill would also require an "ALPR end-user," as defined, to implement and maintain a specified usage and privacy policy.

The bill would, in addition to any other sanctions, penalties, or remedies provided by law, authorize an individual who has been harmed by a violation of these provisions to bring a civil action in any court of competent jurisdiction against a person who knowingly caused that violation.

The bill would require a public agency that considers implementing a program to gather information through the use of an ALPR system to provide an opportunity for public comment at a regularly scheduled public meeting of the governing body of the public agency before it implements the program.

(2) Existing law requires any agency, and any person or business conducting business in California, that owns or licenses computerized data that includes personal information, as defined, to disclose in specified ways, any breach of the security of the system or data, as defined, following discovery or notification of the security breach, to any California resident whose unencrypted personal information was, or is reasonably believed to have been, acquired by an unauthorized person. Existing law defines "personal information" for these purposes to include an individual's first name and last name, or first initial and last name, in combination with one or more designated data elements relating to, among other things, social security numbers, driver's license numbers, financial accounts, and medical information.

This bill would include information or data collected through the use or operation of an automated license plate recognition system, when that information is not encrypted and is used in combination with an individual's name, in the definition of "personal information" discussed above.

Vote: majority. Appropriation: no. Fiscal committee: yes.

State-mandated local program: no.

**THE PEOPLE OF THE STATE OF CALIFORNIA DO ENACT AS FOLLOWS:**

**SECTION 1. Section 1798.29 of the Civil Code is amended to read: 1798.29.**

**Briefing Book for TAC Meeting #5**

(a) Any agency that owns or licenses computerized data that includes personal information shall disclose any breach of the security of the system following discovery or notification of the breach in the security of the data to any resident of California whose unencrypted personal information was, or is reasonably believed to have been, acquired by an unauthorized person. The disclosure shall be made in the most expedient time possible and without unreasonable delay, consistent with the legitimate needs of law enforcement, as provided in subdivision (c), or any measures necessary to determine the scope of the breach and restore the reasonable integrity of the data system.

(b) Any agency that maintains computerized data that includes personal information that the agency does not own shall notify the owner or licensee of the information of any breach of the security of the data immediately following discovery, if the personal information was, or is reasonably believed to have been, acquired by an unauthorized person.

(c) The notification required by this section may be delayed if a law enforcement agency determines that the notification will impede a criminal investigation. The notification required by this section shall be made after the law enforcement agency determines that it will not compromise the investigation.

(d) Any agency that is required to issue a security breach notification pursuant to this section shall meet all of the following requirements:

(1) The security breach notification shall be written in plain language.

(2) The security breach notification shall include, at a minimum, the following information:

(A) The name and contact information of the reporting agency subject to this section.

(B) A list of the types of personal information that were or are reasonably believed to have been the subject of a breach.

(C) If the information is possible to determine at the time the notice is provided, then any of the following: (i) the date of the breach, (ii) the estimated date of the breach, or (iii) the date range within which the breach occurred. The notification shall also include the date of the notice.

(D) Whether the notification was delayed as a result of a law enforcement investigation, if that information is possible to determine at the time the notice is provided.

(E) A general description of the breach incident, if that information is possible to determine at the time the notice is provided.

**Briefing Book for TAC Meeting #5**

(F) The toll-free telephone numbers and addresses of the major credit reporting agencies, if the breach exposed a social security number or a driver's license or California identification card number.

(3) At the discretion of the agency, the security breach notification may also include any of the following:

(A) Information about what the agency has done to protect individuals whose information has been breached.

(B) Advice on steps that the person whose information has been breached may take to protect himself or herself.

(4) In the case of a breach of the security of the system involving personal information defined in paragraph (2) of subdivision (g) for an online account, and no other personal information defined in paragraph (1) of subdivision (g), the agency may comply with this section by providing the security breach notification in electronic or other form that directs the person whose personal information has been breached to promptly change his or her password and security question or answer, as applicable, or to take other steps appropriate to protect the online account with the agency and all other online accounts for which the person uses the same user name or email address and password or security question or answer.

(5) In the case of a breach of the security of the system involving personal information defined in paragraph (2) of subdivision (g) for login credentials of an email account furnished by the agency, the agency shall not comply with this section by providing the security breach notification to that email address, but may, instead, comply with this section by providing notice by another method described in subdivision (i) or by clear and conspicuous notice delivered to the resident online when the resident is connected to the online account from an Internet Protocol address or online location from which the agency knows the resident customarily accesses the account.

(e) Any agency that is required to issue a security breach notification pursuant to this section to more than 500 California residents as a result of a single breach of the security system shall electronically submit a single sample copy of that security breach notification, excluding any personally identifiable information, to the Attorney General. A single sample copy of a security breach notification shall not be deemed to be within subdivision (f) of Section 6254 of the Government Code.

(f) For purposes of this section, "breach of the security of the system" means unauthorized acquisition of computerized data that compromises the security, confidentiality, or integrity of personal information maintained by the agency. Good faith acquisition of personal information by an employee or agent of the agency for the purposes of the agency is not a breach of the security of the system, provided that the personal information is not used or subject to further unauthorized disclosure.

(g) For purposes of this section, "personal information" means either of the following:

**Briefing Book for TAC Meeting #5**

(1) An individual's first name or first initial and last name in combination with any one or more of the following data elements, when either the name or the data elements are not encrypted:

(A) Social security number.

(B) Driver's license number or California identification card number.

(C) Account number, credit or debit card number, in combination with any required security code, access code, or password that would permit access to an individual's financial account.

(D) Medical information.

(E) Health insurance information.

*(F) Information or data collected through the use or operation of an automated license plate recognition system, as defined in Section 1798.90.5.*

(2) A user name or email address, in combination with a password or security question and answer that would permit access to an online account.

(h) (1) For purposes of this section, "personal information" does not include publicly available information that is lawfully made available to the general public from federal, state, or local government records.

(2) For purposes of this section, "medical information" means any information regarding an individual's medical history, mental or physical condition, or medical treatment or diagnosis by a health care professional.

(3) For purposes of this section, "health insurance information" means an individual's health insurance policy number or subscriber identification number, any unique identifier used by a health insurer to identify the individual, or any information in an individual's application and claims history, including any appeals records.

(i) For purposes of this section, "notice" may be provided by one of the following methods:

(1) Written notice.

(2) Electronic notice, if the notice provided is consistent with the provisions regarding electronic records and signatures set forth in Section 7001 of Title 15 of the United States Code.

(3) Substitute notice, if the agency demonstrates that the cost of providing notice would exceed two hundred fifty thousand dollars (\$250,000), or that the affected class of subject persons to be notified exceeds 500,000, or the agency does not have sufficient contact information. Substitute notice shall consist of all of the following:

**Briefing Book for TAC Meeting #5**

- (A) Email notice when the agency has an email address for the subject persons.
- (B) Conspicuous posting of the notice on the agency's Internet Web site page, if the agency maintains one.
- (C) Notification to major statewide media and the Office of Information Security within the Department of Technology.
- (j) Notwithstanding subdivision (i), an agency that maintains its own notification procedures as part of an information security policy for the treatment of personal information and is otherwise consistent with the timing requirements of this part shall be deemed to be in compliance with the notification requirements of this section if it notifies subject persons in accordance with its policies in the event of a breach of security of the system.
- (k) Notwithstanding the exception specified in paragraph (4) of subdivision (b) of Section 1798.3, for purposes of this section, "agency" includes a local agency, as defined in subdivision (a) of Section 6252 of the Government Code.

**SEC. 2. Section 1798.82 of the Civil Code is amended to read:**

1798.82. (a) A person or business that conducts business in California, and that owns or licenses computerized data that includes personal information, shall disclose a breach of the security of the system following discovery or notification of the breach in the security of the data to a resident of California whose unencrypted personal information was, or is reasonably believed to have been, acquired by an unauthorized person. The disclosure shall be made in the most expedient time possible and without unreasonable delay, consistent with the legitimate needs of law enforcement, as provided in subdivision (c), or any measures necessary to determine the scope of the breach and restore the reasonable integrity of the data system.

(b) A person or business that maintains computerized data that includes personal information that the person or business does not own shall notify the owner or licensee of the information of the breach of the security of the data immediately following discovery, if the personal information was, or is reasonably believed to have been, acquired by an unauthorized person.

(c) The notification required by this section may be delayed if a law enforcement agency determines that the notification will impede a criminal investigation. The notification required by this section shall be made promptly after the law enforcement agency determines that it will not compromise the investigation.

(d) A person or business that is required to issue a security breach notification pursuant to this section shall meet all of the following requirements:

- (1) The security breach notification shall be written in plain language.



**Briefing Book for TAC Meeting #5**

(2) The security breach notification shall include, at a minimum, the following information:

(A) The name and contact information of the reporting person or business subject to this section.

(B) A list of the types of personal information that were or are reasonably believed to have been the subject of a breach.

(C) If the information is possible to determine at the time the notice is provided, then any of the following: (i) the date of the breach, (ii) the estimated date of the breach, or (iii) the date range within which the breach occurred. The notification shall also include the date of the notice.

(D) Whether notification was delayed as a result of a law enforcement investigation, if that information is possible to determine at the time the notice is provided.

(E) A general description of the breach incident, if that information is possible to determine at the time the notice is provided.

(F) The toll-free telephone numbers and addresses of the major credit reporting agencies if the breach exposed a social security number or a driver's license or California identification card number.

(G) If the person or business providing the notification was the source of the breach, an offer to provide appropriate identity theft prevention and mitigation services, if any, shall be provided at no cost to the affected person for not less than 12 months, along with all information necessary to take advantage of the offer to any person whose information was or may have been breached if the breach exposed or may have exposed personal information defined in subparagraphs (A) and (B) of paragraph (1) of subdivision (h).

(3) At the discretion of the person or business, the security breach notification may also include any of the following:

(A) Information about what the person or business has done to protect individuals whose information has been breached.

(B) Advice on steps that the person whose information has been breached may take to protect himself or herself.

(4) In the case of a breach of the security of the system involving personal information defined in paragraph (2) of subdivision (h) for an online account, and no other personal information defined in paragraph (1) of subdivision (h), the person or business may comply with this section by providing the security breach notification in electronic or other form that directs the person whose personal information has been breached promptly to change his or her password and security question or answer, as applicable, or to take other steps appropriate to protect the online account with

**Briefing Book for TAC Meeting #5**

the person or business and all other online accounts for which the person whose personal information has been breached uses the same user name or email address and password or security question or answer.

(5) In the case of a breach of the security of the system involving personal information defined in paragraph (2) of subdivision (h) for login credentials of an email account furnished by the person or business, the person or business shall not comply with this section by providing the security breach notification to that email address, but may, instead, comply with this section by providing notice by another method described in subdivision (j) or by clear and conspicuous notice delivered to the resident online when the resident is connected to the online account from an Internet Protocol address or online location from which the person or business knows the resident customarily accesses the account.

(e) A covered entity under the federal Health Insurance Portability and Accountability Act of 1996 (42 U.S.C. Sec. 1320d et seq.) will be deemed to have complied with the notice requirements in subdivision (d) if it has complied completely with Section 13402(f) of the federal Health Information Technology for Economic and Clinical Health Act (Public Law 111-5). However, nothing in this subdivision shall be construed to exempt a covered entity from any other provision of this section.

(f) A person or business that is required to issue a security breach notification pursuant to this section to more than 500 California residents as a result of a single breach of the security system shall electronically submit a single sample copy of that security breach notification, excluding any personally identifiable information, to the Attorney General. A single sample copy of a security breach notification shall not be deemed to be within subdivision (f) of Section 6254 of the Government Code.

(g) For purposes of this section, "breach of the security of the system" means unauthorized acquisition of computerized data that compromises the security, confidentiality, or integrity of personal information maintained by the person or business. Good faith acquisition of personal information by an employee or agent of the person or business for the purposes of the person or business is not a breach of the security of the system, provided that the personal information is not used or subject to further unauthorized disclosure.

(h) For purposes of this section, "personal information" means either of the following:

(1) An individual's first name or first initial and last name in combination with any one or more of the following data elements, when either the name or the data elements are not encrypted:

(A) Social security number.

(B) Driver's license number or California identification card number.

**Briefing Book for TAC Meeting #5**

(C) Account number, credit or debit card number, in combination with any required security code, access code, or password that would permit access to an individual's financial account.

(D) Medical information.

(E) Health insurance information.

*(F) Information or data collected through the use or operation of an automated license plate recognition system, as defined in Section 1798.90.5.*

(2) A user name or email address, in combination with a password or security question and answer that would permit access to an online account.

(i) (1) For purposes of this section, "personal information" does not include publicly available information that is lawfully made available to the general public from federal, state, or local government records.

(2) For purposes of this section, "medical information" means any information regarding an individual's medical history, mental or physical condition, or medical treatment or diagnosis by a health care professional.

(3) For purposes of this section, "health insurance information" means an individual's health insurance policy number or subscriber identification number, any unique identifier used by a health insurer to identify the individual, or any information in an individual's application and claims history, including any appeals records.

(j) For purposes of this section, "notice" may be provided by one of the following methods:

(1) Written notice.

(2) Electronic notice, if the notice provided is consistent with the provisions regarding electronic records and signatures set forth in Section 7001 of Title 15 of the United States Code.

(3) Substitute notice, if the person or business demonstrates that the cost of providing notice would exceed two hundred fifty thousand dollars (\$250,000), or that the affected class of subject persons to be notified exceeds 500,000, or the person or business does not have sufficient contact information. Substitute notice shall consist of all of the following:

(A) Email notice when the person or business has an email address for the subject persons.

(B) Conspicuous posting of the notice on the Internet Web site page of the person or business, if the person or business maintains one.

(C) Notification to major statewide media.

**Briefing Book for TAC Meeting #5**

(k) Notwithstanding subdivision (j), a person or business that maintains its own notification procedures as part of an information security policy for the treatment of personal information and is otherwise consistent with the timing requirements of this part, shall be deemed to be in compliance with the notification requirements of this section if the person or business notifies subject persons in accordance with its policies in the event of a breach of security of the system.

**SEC. 3. Title 1.81.23 (commencing with Section 1798.90.5) is added to Part 4 of Division 3 of the Civil Code, to read:**

**TITLE 1.81.23. COLLECTION OF LICENSE PLATE INFORMATION**

**1798.90.5.** The following definitions shall apply for purposes of this title:

(a) "Automated license plate recognition end-user" or "ALPR end-user" means a person that accesses or uses ALPR information, but does not include a transportation agency when subject to Section 31490 of the Streets and Highways Code.

(b) "Automated license plate recognition information," or "ALPR information" means information or data collected through the use of an ALPR system.

(c) "Automated license plate recognition operator" or "ALPR operator" means a person that operates an ALPR system, or that stores or maintains ALPR information, but does not include a transportation agency when subject to Section 31490 of the Streets and Highways Code.

(d) "Automated license plate recognition system" or "ALPR system" means a system of one or more mobile or fixed cameras combined with computer algorithms to read and convert images of registration plates and the characters they contain into computer-readable data.

(e) "Person" includes a law enforcement agency, government agency, private entity, or individual.

(f) "Public agency" means and includes every state agency and every local agency.

**1798.90.51.** An ALPR operator shall do all of the following:

(a) (1) Ensure that ALPR information is protected with reasonable operational, administrative, technical, and physical safeguards to ensure its confidentiality and integrity.

(2) Implement and maintain reasonable security procedures and practices in order to protect ALPR information from unauthorized access, destruction, use, modification, or disclosure.

**Briefing Book for TAC Meeting #5**

(b) (1) Implement and maintain a usage and privacy policy in order to ensure that the collection of ALPR information is consistent with respect for individuals' privacy and civil liberties. The usage and privacy policy shall be available in writing, and, if the ALPR operator has an Internet Web site, the usage and privacy policy shall be posted conspicuously on that Internet Web site.

(2) The usage and privacy policy shall, at a minimum, include all of the following:

(A) The authorized purposes for using ALPR systems and collecting ALPR information.

(B) A description of the employees and independent contractors who are authorized to use ALPR systems, to collect ALPR information, and to access ALPR information. The policy shall identify the training requirements necessary for those authorized employees and independent contractors.

(C) A description of how the use of ALPR systems will be monitored to ensure compliance with all applicable privacy laws and a process for periodic system audits, including audits of the access log required by Section 1798.90.52.

(D) A description of reasonable measures that will be used to ensure the accuracy of ALPR information and a process to correct data errors.

(E) A description of how the ALPR operator will comply with the security procedures and practices implemented and maintained pursuant to subdivision (b).

(F) The length of time ALPR information will be stored or retained.

(G) The official custodian, or owner, of ALPR information and which employees and independent contractors have the responsibility and accountability for implementing subdivision (b) and this subdivision.

(H) The purpose of, and process for, sharing or disseminating ALPR information with other persons.

**1798.90.52.** If an ALPR operator accesses or provides access to ALPR information, the ALPR operator shall maintain a record of that access. At a minimum, the record shall include all of the following:

(a) The date and time the information is accessed.

(b) The license plate number or other data elements used to query the ALPR database or system.

(c) The person who accesses the information.

(d) The purpose for accessing the information.

**1798.90.53.** (a) An ALPR end-user shall implement and maintain a usage and privacy policy in order to ensure that the access and use of ALPR information is consistent with respect for individuals' privacy and civil liberties. The usage and privacy policy shall be available in writing, and, if the ALPR end-user has an Internet Web site, the usage and privacy policy shall be posted conspicuously on that Internet Web site.

**Briefing Book for TAC Meeting #5**

(b) The usage and privacy policy shall, at a minimum, include all of the following:

(1) The authorized purposes for accessing and using ALPR information.

(2) A description of the employees and independent contractors who are authorized to access and use ALPR information. The policy shall identify the training requirements necessary for those authorized employees and independent contractors.

(3) A description of how the access and use of ALPR information will be monitored to ensure compliance with all applicable privacy laws and a process for periodic system audits.

(4) The length of time ALPR information will be retained by the ALPR end-user and the process the ALPR end-user will utilize to determine if and when to destroy the retained ALPR information.

(5) The official custodian of ALPR information.

(6) The purpose of, and process for, sharing or disseminating ALPR information with other persons.

(7) A description of how the end-user will implement reasonable security measures to secure ALPR information from unauthorized access, destruction, use, modification, or disclosure.

**1798.90.54.** (a) In addition to any other sanctions, penalties, or remedies provided by law, an individual who has been harmed by a violation of this title may bring a civil action in any court of competent jurisdiction against a person who knowingly caused that violation.

(b) The court may award a combination of any one or more of the following:

(1) Actual damages, but not less than liquidated damages in the amount of two thousand five hundred dollars (\$2,500).

(2) Punitive damages upon proof of willful or reckless disregard of the law.

(3) Reasonable attorney's fees and other litigation costs reasonably incurred.

(4) Other preliminary and equitable relief as the court determines to be appropriate.

**1798.90.55.** Notwithstanding any other law or regulation, a public agency that considers implementing a program to gather information through the use of an ALPR system shall provide an opportunity for public comment at a regularly scheduled public meeting of the governing body of the public agency before it implements the program.



# Appendix 3: References for Evaluation

**Briefing Book for TAC Meeting #5****References**

- ▶ CTIP Road Charging White Paper:  
[http://www.calsta.ca.gov/res/docs/pdfs/2015/Agency/CTIP\\_RUCWhitepaper01122015.pdf](http://www.calsta.ca.gov/res/docs/pdfs/2015/Agency/CTIP_RUCWhitepaper01122015.pdf)
- ▶ 1077: [http://leginfo.legislature.ca.gov/faces/billNavClient.xhtml?bill\\_id=201320140SB1077](http://leginfo.legislature.ca.gov/faces/billNavClient.xhtml?bill_id=201320140SB1077)
- ▶ New Zealand: Since implementing road user charges in 1978, New Zealand government has periodically evaluated the program to assess performance and recommend reforms. A 2009 Independent Review Group recommended many changes subsequently adopted as reforms in the 2012 RUC Act. Currently, the government is reviewing implementation of reforms.
  - > 2009 Independent Review Group report: <http://www.nzta.govt.nz/resources/road-user-charges/docs/ruc-final-report.pdf>
  - > 2012 Act: <http://www.legislation.govt.nz/act/public/2012/0001/latest/DLM3394830.html>
  - > Evaluation of the New Road User Charges System:
    - Cycle 1 of 3: <http://www.transport.govt.nz/assets/Uploads/News/Documents/RUC-evaluation-report-cycle-one-2013.pdf>
    - Cycle 2 of 3: <http://www.transport.govt.nz/assets/Uploads/Our-Work/Documents/RUC-Evaluation-Cycle-Two-Report.pdf>
- ▶ Oregon's road user fee test (2006-2007) and road usage charge pilot program (2012-2013) both were evaluated to measure performance against policy and technical goals:
  - > 2007 final report: <http://www.bigwobber.nl/wp-content/uploads/2009/12/071100-Oregon%E2%80%99s-Mileage-Fee-Concept-and-Road-User-Fee-Pilot-Program.pdf>
  - > 2013 RUCPP evaluation report:  
<http://www.oregon.gov/ODOT/HWY/RUFPP/Road%20Usage%20Charge%20Program%20Documents/06-Pilot%20Evaluation%20Report%202013.pdf>



# Appendix 4: Elements of Utility Metering and Billing Systems

**Briefing Book for TAC Meeting #5****In anticipation of next month's discussion of collection costs, analysis of comparable utility metering and billing systems provides useful benchmarks for road charging**

All revenue collection systems, whether for taxes, utilities, or consumer products, require effort and cost to build, operate, and maintain.

Although imperfect, one of the best analogies for road charging is to consider the activities and costs associated with revenue collection for utilities such as water, electricity, and telecommunications. The benchmarks below reflect the cost of billing and customer service for several California utility system providers, as a percentage of total revenue collected:

- ▶ City of San Diego water utility: about 5-7% (includes meter services)
- ▶ City of Fresno water utility: ~3% (does not include meter services)
- ▶ Pasadena Light & Power: 6.5%



## Briefing Book for TAC Meeting #5

## Transportation and tax revenue systems also provide cost benchmarks

There are several benchmarks for cost of collection in transportation, including tolling and road charging. Figures below reflect the cost of agency collection as a percent of total revenues collected:

Revenue source	Costs as a % of revenues	Source
Fuel tax (average across U.S.)	0.9%	FHWA <i>Highway Statistics</i> , 2006, Table MF-3
Sales tax (Washington State & Illinois)	2%	Washington Department of Revenue, <i>Washington State Tax Structure</i> , 2002 and Hubbard, C. <i>CCH</i> , "Cost of Sales Tax on the Rise for Businesses," 2008
U.S. income tax	5-7%	Friedman and Waldfogel, "The Administrative and Compliance Cost of Manual Highway Toll Collection," <i>National Tax Journal</i> , Vol. 47, No. 2., 1994.
Toll collection (manual and mixed manual/electronic examples from CA, MA, NJ, and TX)	11-20%	Ibid.; Poftak, "Manual collection takes its tolls," <i>Boston Globe</i> , 2008; Washington State DOT <i>Comparative Analysis of Toll Facility Operational Costs</i> , 2007
New Zealand road user charge (includes user compliance costs)	4%	NZ Ministry of Transport, remarks, IBTTA Road Usage Charge Conference, 2015
Oregon weight-mile tax	<5%	Oregon DOT, <i>Comparative Costs of Mileage Tax Operations</i> , 2012

**Briefing Book for TAC Meeting #5**

## **The current fuel tax collection processes varies depending on the type of vehicle**

As will be discussed in the following pages, the current fuel tax collection process is similar across most jurisdictions in North America. The key distinction is the following:

- ▶ Fuel taxes are collected upstream of the retail customer, either at the refinery, terminal rack, or other points.
- ▶ All vehicles under 26,000 pounds (Classes 1-6), regardless of where they operate, and all vehicles above 26,000 pounds (Classes 7-8) that strictly operate within California are not required to file and pay fuel taxes. It is assumed that all fuel purchased has already had taxes assessed.
- ▶ All vehicles over 26,000 pounds (Classes 7-8) that operate across two or more jurisdictions (states and/or Canadian provinces) are required to file a quarterly tax return with the agency in their home state responsible for administering the International Fuel Tax Agreement (IFTA). IFTA is the mechanism by which interstate motor carriers apportion their fuel taxes to the 58-member jurisdictions in the U.S. and Canada based on actual distances driven in each jurisdiction.

**Briefing Book for TAC Meeting #5**

## California state fuel tax is collected by the Board of Equalization, while federal fuel taxes are collected by the IRS

State fuel taxes are imposed principally at the “terminal rack” in California, but otherwise upon import or sale.

- ▶ Terminal racks are refineries or other storage facilities served by pipeline from which refined fuel can be removed to tanker trucks or rail cars for subsequent delivery to fueling stations. Fuel is taxable at removal from a terminal rack in California.
- ▶ Any fuel imported to the state by means other than pipeline to a terminal rack is taxable upon importation.
- ▶ Fuel that is neither removed from a terminal rack nor imported is taxable upon sale.
- ▶ The Board of Equalization collects fuel taxes from subject taxpayers monthly.



The IRS collects federal fuel taxes (\$0.184 per gallon on gasoline, \$0.244 on diesel) in similar fashion, either at removal from the terminal rack or removal from the refinery directly.



**Briefing Book for TAC Meeting #5**

## For heavy interstate vehicles, the International Fuel Tax Agreement ensures fuel tax revenues are allocated to jurisdictions properly

Fleets with qualified motor carriers (3 or more axles or greater than 26,000 pounds in any combination, operating across state borders) must file IFTA returns with BOE each quarter. IFTA returns include the following:

- ▶ Total taxable miles of travel in each of the 58 IFTA jurisdictions (all U.S. states and Canadian provinces, except Alaska, Hawaii, and the District of Columbia) for all vehicles in the fleet.
- ▶ All gallons of fuel purchased by jurisdiction, including tax paid on each purchase, for all vehicles in the fleet.
- ▶ Estimate of fleet-wide miles per gallon (MPG), based on total miles and gallons.



Using the mileage driven in each jurisdiction and fleet-wide MPG, the IFTA return converts the miles to the number of gallons that should have been consumed in each jurisdiction and, therefore, how much fuel tax should have been paid to each jurisdiction. The end result of each quarterly IFTA tax return is a reconciliation of taxes paid and taxes owed between the motor carrier and all jurisdictions. By filing the IFTA return with a single “base” jurisdiction, the carrier can make a single transaction. Each base jurisdiction, in turn, sends all IFTA returns to a clearinghouse operated by IFTA, Inc. in Arizona, which aggregates the data and determines a funds netting for each jurisdiction.

IFTA is a multi-jurisdictional agreement with no federal agency involvement. As of 2013, California had nearly 20,000 IFTA accounts representing about 80,000 qualified vehicles. There is no analogous entity for light vehicle fuel tax reconciliation.

**Briefing Book for TAC Meeting #5****Fuel tax refunds are administered by several agencies**

Because most fuel is taxed at the refinery or terminal rack level, it is difficult to avoid paying tax on fuel used for non-taxable purposes. The following is a list of non-taxable fuel uses for which motorists may claim refunds (through BOE and/or the state Controller's office):

- ▶ Use of a motor vehicle on USDA-owned and –maintained roads
- ▶ Off-highway use in a motor vehicle
- ▶ Use in a motor vehicle on a federal military base
- ▶ Use in public transit vehicles (6 cents per gallon is refundable)
- ▶ Foreign consulate fuel purchase, if paying by credit card
- ▶ Use in a vessel on waters located on private property owned or controlled by the vessel owner
- ▶ Use in a U.S. ship or aircraft in California or any military vehicle outside of California

**Briefing Book for TAC Meeting #5****Relative to other taxes, fuel taxes are inexpensive to administer and collect**

BOE's total cost of administering and collecting fuel taxes in California is presently between \$25-30 million per year, or just under 1% of the revenue collected. Despite its complexity, particularly for motor carriers, fuel taxes are among the most efficient methods of taxation due to the relatively small number of payers that the system impacts.

Fuel taxes leakage is more difficult to assess than collection costs, as rates of evasion and negligence are not reported and are difficult to estimate. Due to the collection upstream at terminal rack, it is likely that leakage on gasoline taxes is very low. However, leakage from diesel taxes is likely higher due to the potential for errors, omissions, and fraud through the refunds and IFTA processes.

No state agencies have formally estimated leakage rates. At the federal level, the most recent estimate of fuel tax evasion provided by FHWA was in 1994, at 3-7% for gasoline taxes and 15-25% for diesel taxes. However, subsequent reforms, particularly moving the point of tax collection to the terminal rack, have likely reduced the amount of evasion.