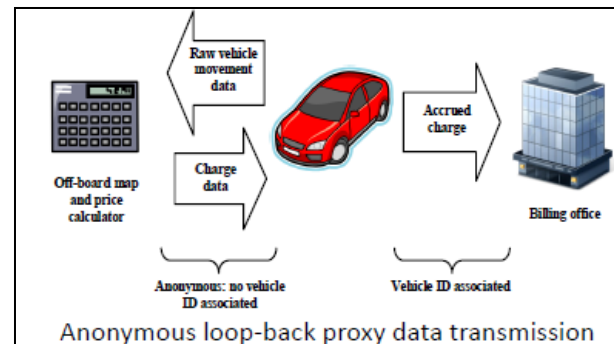
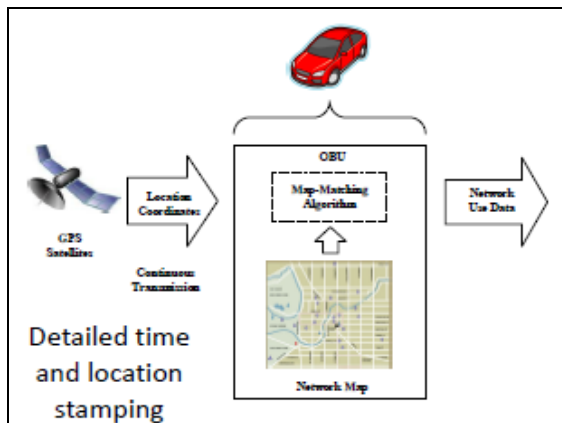
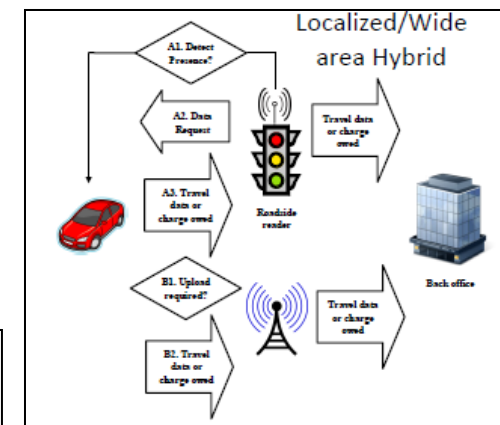
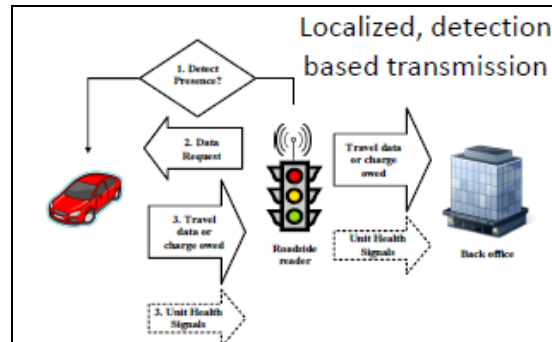
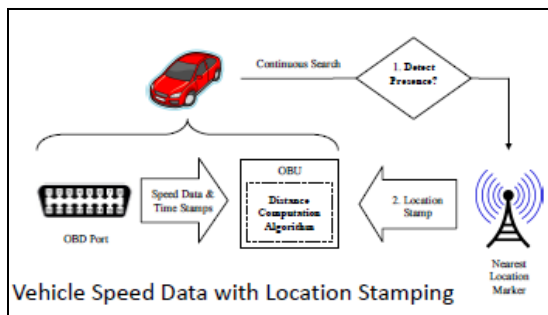


# Vehicle Mileage Fees

## A Framework for Evaluating System Requirements

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System Planning, Policy and Environment  
Austin Office  
March 24, 2010

# There are many technology options and system configurations available for mileage fee implementation



But certain configurations are better at achieving certain policy goals than others.

# What does a vehicle mileage fee system have to do?

## • *Whitty & Svadlenak* • *NCHRP*

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1. Calculate miles driven (distance metering)
  2. Access mileage data (communications)
  3. Apply mileage charge rates (data processing)
- 
4. Provide a bill (invoicing)
  5. Receive and ensure payment (collections)
- 
6. Support effective deterrents and actions against evaders and delinquents (enforcement)

## 1. Metering

## 2. Billing

## 3. Enforcement

# Logical Architecture

*Conversion of data describing vehicular movement into a bill*

1. Roadway Use Assessment
  - Collection of data regarding vehicle movement
2. Charge Computation
  - Data processing to determine amount owed
3. Vehicle-to-back-office communication
  - Data transmission to a billing office

*Discussion of technology options should proceed from clearly defined and prioritized policy objectives.*



Policy  
Objectives

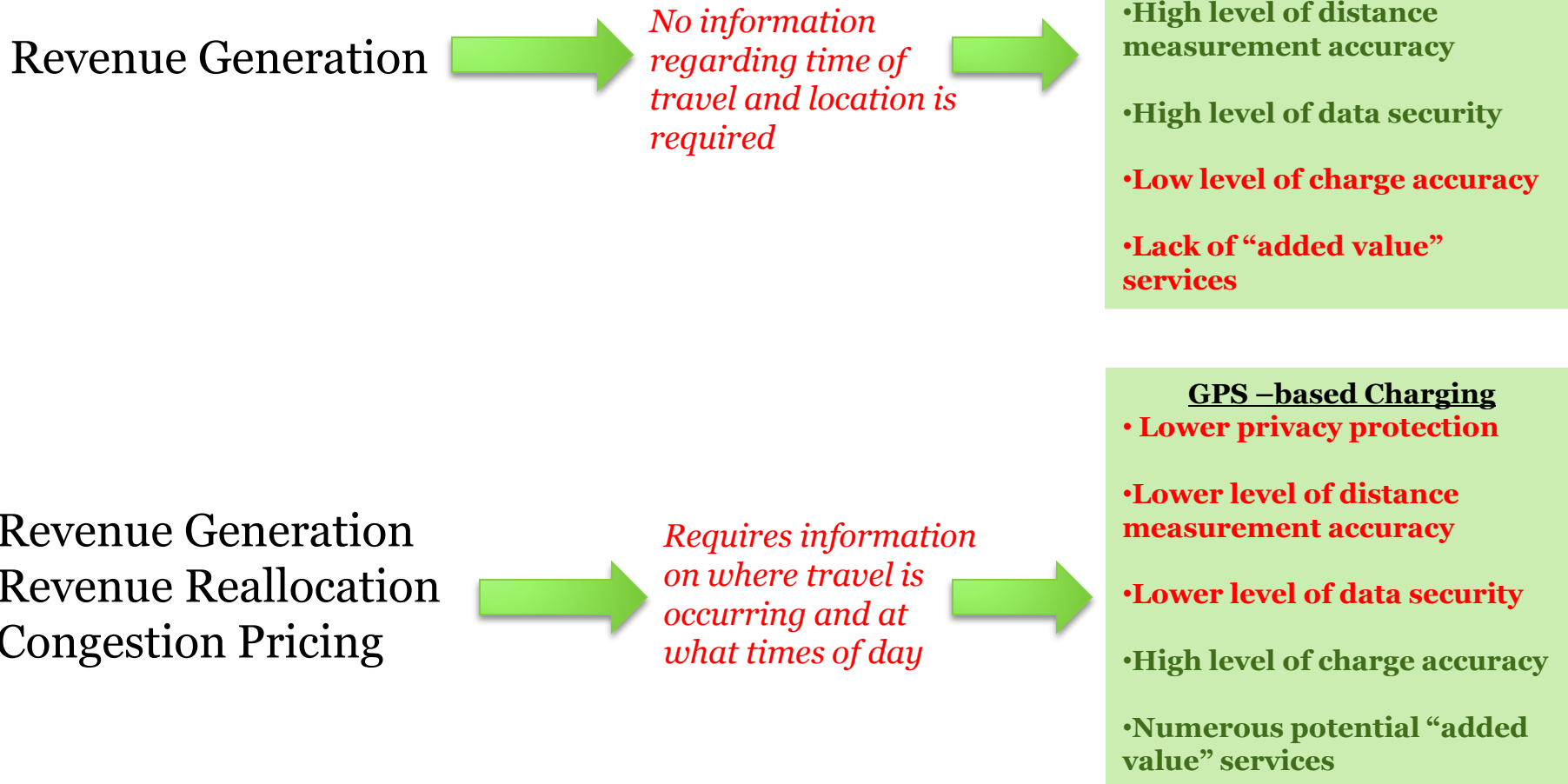
Logical  
Architecture

Physical  
Architecture

*Discussion of technology options should proceed from clearly defined and prioritized policy objectives.*

1. Clear policy objectives are needed to determine the level of technological sophistication required
2. Many policy objectives may be in competition

# For example....































# The Framework

- An assessment of which technology options best support stated policy goals at each stage in the logical architecture
- Policy goals are not necessarily influenced at every stage in the logical architecture
- Not meant as a definitive guide to system development
  - Not empirical
  - Lots of *ifs* and *buts*
  - Policy goals not completely captured























# Roadway Use Assessment

	Manual Odometer Reading	Speed-Based Measurement (OBD Port)	Speed-Based Measurement w/ Location Stamping	Detailed Time and Location Stamping
Local retention of revenue				
Driver privacy				
Congestion pricing				
Fee accuracy (fairness)				
Data security				
Administrative/Operating cost				
Value added services				
Enforcement				
User ability to audit charges				
Revenue allocation by facility				
System flexibility				

# Charge Computation

	Thin Client (Upload of raw data)	Thick Client (Upload of processed data)	Third-Party Data Upload	Optional Third Party Data Upload	Anonymous Loop-Back Proxy
Local retention of revenue					
Driver privacy					
Congestion pricing					
Fee accuracy (fairness)					
Data security					
Administrative/Operating cost					
Value added services					
Enforcement					
User ability to audit charges					
Revenue allocation by facility					
System flexibility					

# Vehicle to Back Office Communication

	Manual Odometer Reading	Localized, Detection-Based	Wide-Area, Constantly Online Data Transmission	Localized/Wide-Area Hybrid Data Transmission
Local retention of revenue				
Driver privacy				
Congestion pricing				
Fee accuracy (fairness)				
Data security				
Administrative/Operating cost				
Value added services				
Enforcement				
User ability to audit charges				
Revenue allocation by facility				
System flexibility				

# Summary

- Serves as a tool for evaluating potential mileage fee system configurations with a focus on policy
  - *Policy must drive the discussion of technology*
- Framework is under continual refinement
  - Technology applications still being developed and tested
  - Not all potential policy goals have been captured
  - Texas based focus groups are currently being conducted

# Other system considerations...

- Payment options
  - Pay at the pump
  - Pay by mail
  - Online travel accounts
  - Accommodation of cash payments
- Phase-in
  - Immediate or gradual
  - Voluntary or compulsory
- Interoperability with other systems

# For more information...

<http://utcm.tamu.edu/mbuf>

- Mileage-based User Fee Symposium documents
- Primer
- TTI research
- Links to news, pilot studies and other resources
- Listserv

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