1 Freeway
Freeway Sensor Locations

- Mainline sensors
Freeway Sensor Locations

- On-ramps and off-ramp sensors

![Map of Freeway Sensor Locations](image)
Sensor Layout

- Typical mainline and ramp sensor layouts
Sensor Layout - Example

- Sensors at I-210 WB Huntington On-Ramp

  Queue sensor

  Meter sensors

  Traffic count sensor
Collected Data

- Typical mainline and ramp sensor layouts

- Mainline Sensors
- HOV Lane Sensor
- Vehicle Counts
- Loop Occupancy
- Speed (estimated)

- Off-ramp Count Sensor
- Ramp Meter Controller
- On-ramp Count Sensor
- Queue Sensor
- Metering Passage (Check Out)
- Metering Demand (Check In)

Vehicle Counts
Loop Occupancy

Loop Occupancy (Local use only – Not available in PeMS)
Collected Data

- All collected data from freeway sensors stored in PeMS
Arterials
Arterial Traffic Detection

- **Caltrans Intersections**
  - Sensors used at most Caltrans intersections to support vehicle actuated control
  - No data currently sent to a central system

- **City of Pasadena**
  - Sensors at approximately 2/3 of city-operated intersections to support vehicle-actuated control
  - 5-min flow data from select intersections archived once a day *(still discussing with city to obtain access to data)*

- **City of Arcadia**
  - Sensors at most of the 52 city-operated intersections
  - Cycle-by-cycle count data available in real-time through the city’s TransSuite suite *(ability to see current and past cycle only)*
  - 5-min count data continuously archived throughout the day *(Data from 12/23/2013 to Present currently available)*
Arterial Traffic Detection

- **City of Duarte**
  - Sensors used at most intersections to support vehicle actuated control
  - No data currently sent to a central system

- **City Monrovia**
  - Sensors used at most intersections to support vehicle actuated control
  - No data currently sent to a central system

- **Los Angeles County**
  - Sensors used at most intersections operated by LA County in unincorporated county areas to support vehicle actuated control
  - No data currently sent to a central system
Arterial Detection Layout - Examples

- **Stopline Only**
- **Advance + Stopline**
- **Advance + Left Turn Bay (Advance Option 1)**
- **Advance + All Lanes at Stopline**
- **Advanced + Left Turn Bay (Advance Option 2)**
- **Advanced + Left Bay + Right Bay**
Arterial Sensors – Detection Type

- Video Detection
- Inductive Loops
- Video & Inductive Loops
- No Detection/ Unknown
- None (Stop Sign)
Data Collection – Approach Volumes

Coverage:
- All approaches
- Some approaches
- No approach / Not determined

- Pasadena – McCain QuickNet Pro
- Pasadena – Siemens i2tms
- Pasadena – SCATS
- Pasadena – Transcore Series 2000
- Arcadia – Transcore TransSuite
- Monrovia – No central system
- Duarte – No central system
- LA County – KITS
- Caltrans – No central system
- Stop Controlled Intersection
Signal Operations

- **Caltrans**
  - Timing sheets available
  - Predominantly vehicle-actuated control
  - No capability to observe signal timings from a central location (no connection to Caltrans TMC)

- **City of Pasadena**
  - Timing sheets available
  - Predominantly coordinated vehicle-actuated control
  - Signal operations can be observed from TMC in real-time
  - Do not know if the various traffic control systems used by the city archive signal timings

- **City of Arcadia**
  - Timing sheets available
  - Predominantly coordinated vehicle-actuated control
  - Signal operations can be observed from TMC in real-time
  - Actual phase timings archived by traffic control system (*cycle-by-cycle timings available from 04/20/2014*)
Signal Operations

- **City of Monrovia**
  - Timing sheets available
  - Predominantly coordinated vehicle-actuated control
  - No capability to observe timings from a central location (no TMC)

- **City of Duarte**
  - Timing sheets available
  - Predominantly coordinated vehicle-actuated control
  - No capability to observed timings from a central location (no TMC)

- **Los Angeles County**
  - Timing sheets available
  - Predominantly coordinated vehicle-actuated control
  - Signal timing operations can be observed from TMC in real-time
  - Not sure if implemented phase timings are archived
Traffic Control Systems

- McCain - QuickNet Pro
- Siemens - i2tms
- SCATS
- Transcore - Series 2000
- Transcore - TransSuite
- KITS - LA County
- KITS - Duarte
- KITS - San Marino
- No central control (Caltrans)
- No central control (cities)
- Not determined
- Stop Controlled