Improving Rail Crossing Safety & Accessibility

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Rail Safety

- Railroad
  - Passenger and freight railroads
- Rail Transit
  - Subway, trolley, etc.
- Rail Crossings
  - CPUC reviews safety of rail crossing designs
Rail Crossing Incidents

HIGHWAY — RAIL INCIDENTS
FOR ALL RAILROADS
ALL REGIONS ALL RAILROADS GROUPS CALIFORNIA ALL COUNTIES
CALENDAR YEAR REPORT (January — December)
FOR January — December
Run Date: Wed Jul 5, 2017

Source: Federal Railroad Administration (FRA)
Rail Crossing Funding

• At-grade:
  • safety improvements of existing at-grade crossings

• Grade separation:
  • CPUC grade separation priority list
Diagnostic Team

• Evaluate safety needs
• Roadway Agency, Railroad and CPUC
Safety consideration: Pedestrians
Safety consideration: Driving Around Gates
Safety consideration: Driving Around Gates

Raised median

Exit gates
Safety consideration: Vehicles on Tracks
For additional information

http://www.cpuc.ca.gov/crossings
Traffic Signal Railroad Preemption

• All about managing queues and keeping the track area clear.

• Installed at highway-rail grade crossings located within 200 feet of a signalized intersection or midblock crossing.

• If traffic queues are observed to extend to a crossing more than 200 feet from a signalized intersection; consider installing preemption, a queue cutter signal, or an alternative provision shall be made to clear highway traffic from the grade crossing prior to train arrival.
Queue Management Systems

- Pre-Signals
- Queue Cutter Signals
- Hybrid Pre-Signals
- Hybrid Queue Cutter Signals
- Crossing Area Vehicle Detection
- Signal Consolidation and Coordination
- Preemption Warning Time
- Preemption Interconnect
Pre-Signal Traffic Signal

- A pre-signal provides indications for motorists to stop prior to the tracks. Consider applying to signalized intersections within 75 feet of highway rail grade crossing.
Queue-Cutter Traffic Signal

- Consider applying where the highway-rail grade crossing is located more than 400 feet from the traffic signal and queuing is a concern.
Hybrid Pre-Signal Traffic Signal

- Consider applying where the highway-rail grade crossing is located up to 250 feet from the traffic signal and queuing is a concern.
Hybrid Queue-Cutter Traffic Signal

- Consider applying where the highway-rail grade crossing is located between 200 and 500 feet from the traffic signal and queuing is a concern.
Crossing Area Vehicle Detection

• The crossing area vehicle detection system detects motor vehicles in the Minimum Track Clearance Distance (track area).
Traffic Signal Consolidation and Coordination

• Operate traffic signals as a system to better manage movement of vehicles through the grade crossing and intersections.
Preemption Warning Time

- Simultaneous
- Advance
- Queue Clearance Time
- Right of Way Transfer Time
- Advance Preemption Time
- Advance Time
Preemption Interconnect

- Advance Input (ADV)
- Advance Preemption (TCR)
- Supervisor (SUP)
- Crossing Activation (XR)
- Gate Down/ Island (GD/ ISL)
- Health (HLT)
- Exit Gate (EG)
“You can’t stop the waves, but you can learn to surf.”

- John Kabat-Zinn