Request to Experiment with Internally Illuminated Raised Pavement Warning Lights along Metro Gold Line Eastside Extension

2016 Western ITE Annual Meeting
July 12th, 2016
Topics

- Metro Gold Line Eastside Extension
- Quadrant Gate Study
- Incident History
- Details of Experiment
- Illustrations
- Construction
- Update
Metro Gold Line

- **Original Segment:** Pasadena to Union Station (13.7 miles) July 2003

- **Eastside Extension:** Union Station to Atlantic Station (6.0 miles) November 2009

- **Phase 2A - Foothill Extension:** (11.5 miles) March 2016
Overview

- Metro Gold Line Eastside Extension (MGLEE)
- Opened November 15, 2009
  - 6 mile alignment (2 miles underground)
  - Operates in center median for approx. 4 miles
  - 24 at-grade intersection crossings
  - Controlled by traffic signals, train signals, signage & striping
  - Trains operate at posted speed limits (<35 mph) and do not receive full preemption
Overview

- **Quadrant Gate Study**
  - Conducted 18-month evaluation of MGLEE
  - Analyzed impacts of installing crossing gates and determined that impacts were substantial to traffic, property and emergency response times
  - Reviewed monthly incident and left turn violation rates
  - Found that existing countermeasures were operating effectively
  - Identified Left Turn Violations as main cause of train-vehicle incidents
  - Recommended alternatives in lieu of crossing gates that focused on reducing left turn violations
Incident History (Nov 2009 to 2012)

Characteristics
- 14 of 17 incidents caused by Illegal Turns (Left and Right)
- 1 cross traffic violation
- All times of the day
Improvement Strategy

- Focused on Reducing Left Turn Violations
  - Adjust Traffic Signal Heads
  - Improve Advance Train Detection
  - Refine Pedestrian Signal Timing and Install Audible Pedestrian signals at selected locations, and
  - Conduct trial demonstrations of Internally Illuminated Raised Pavement Warning Lights at 10 intersections to supplement existing traffic control devices
Progress as of 2012

- **Incident Rate** - down 60% from first 2 years
- **Violation Rate** - down 34% from first 2 years
  - Monthly Violations reduced from 79 to 52 on average for the photo enforced intersections

- **Present Data...**
Proposed Application

Assumptions:
2 – 11’ Travel Lanes East-West Directions
20’ Travel Lanes North-South Direction
10’ Sidewalks
20’ Crosswalks
3rd Street & Mednik - No Train
3rd Street & Mednik
3rd Street & Mednik - Train Crossing
Proposed Application

Internally illuminated raised pavement warning lights

- (Warning lights vs. pavement markers)
- Parallel to the light rail train tracks
- Steady red light for period of 35-45 seconds
- Not illuminated when a train is not in the area
- Angled towards left turn lanes as well as north-south cross traffic and pedestrians using north-south crosswalks
- Reinforces the existing traffic control measures
- History of working with LADOT & LADPW to implement effective countermeasures
# Measuring Effectiveness

- Photo Enforcement Camera Data - Xerox
- Other Data Sources

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Construction

- Contract award value: $1,844,695
- Construction Duration: 180 Calendar days
  - Start Date: 10/30/2014
  - End Date: 4/28/2015
Construction
Construction
Demonstration Update

• Data inconclusive.....
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