El Camino Real Peer to Peer (P2P) Coordination Evaluation

SESSION 7A: ARTERIAL SIGNAL TRAFFIC CONTROL
2017 ITE WESTERN DISTRICT ANNUAL MEETING
MAY 19, 2017
City of Carlsbad

- North County City
- Population: 112K
- Linear Commercial/ Business Park in the North
- Residential in the South
- I-5 to the West
Case Study Corridors

- Avaira Parkway
  - Large left turn movement NB from
  - Phase 7 at southerly intersection controls

- El Camino Real
  - Two End intersections are coordinated
  - Three intersections in the middle were P2P
What is P2P?

Upstream Controller
“I have identified a platoon. It will be arriving in 35 seconds. Hold your green light”

Downstream Controller Responds
“I hear you. If I have enough time, I’ll hold the green. If I have more time, I’ll serve the side street and come back in time.”
How does it work?

- ATC Controller Running OMNI software
- Identified in the coordination table as a feature
- Setup master/slave configuration
- Input “ETA” or travel time to each downstream location
- Divide travel time into hold/ETA
Why P2P?

- Why P2P? It’s new and different but is it better?
- Fixed time/Coordination/Traffic Adaptive Alternatives
- It allows minor intersections to operate free with no uniform cycle length
- This works on roadways with 2 signals. Very small applications
- Volume Density /Actual Platoon
- “This cycle” information
El Camino Real

Results

Travel Time Comparison - TruTraffic Data
El Camino Real from Palomar Airport Road to Aviara Parkway/Alga Road

Average Wait Time by Phase
El Camino Real and Cassia Road

Phase
1 2 3 4 5 6
Average Wait Time (Sec)
0 50 100
Adaptive
Coordinated
Free
Aviara Parkway

Results

Aviara North Arrivals on Green
(Peak Hour)

Aviara @ Laurel Tree  Aviara @ Cobblestone  Aviara @ Plum Tree  Aviara @ CDLO

Where to from here?

- Of course, Study more
- Expand the Data Analysis utilizing HiRez Data
- Explore true Platooning

Questions?