Managing Signals
Managing Expectations

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Managing Signals

• Implementing improved techniques, equipment, and technology for more effective and efficient signal operation. It helps to:
  • Reduce congestion and unnecessary stops and delay
  • Improve travel time
  • Improve air quality
  • Reduce fuel consumption
  • Reduce aggressive driving behavior and violations
  • Improve capacity
Managing Expectations:

- Reliable and Reasonable Travel Time
- Reliable, responsive, and effective signal timing and operation
- Quick and effective response to fluctuation in demand or any other changes impacting trip
- Safe and efficient travel experience

So, goals/focus areas should be directed to addressing these expectations
Focus Areas

- Traffic Signal/ITS
- Traffic Operations & Mobility
- Access Management
- Geometric Improvements
- Safety
Traffic Signal/ITS

- Preventive Maintenance
- Signals responsive/reflective of demand & pattern
- ADA Compliant
- Communication Coverage
- Pan, Tilt, Zoom (PTZ) Cameras
- Utilize technology to improve operation
Traffic Operations & Mobility

- Review & revise timing plans for existing signals
- Provide appropriate signal timing plans for incident management, special events, and roadway closures
- Appropriate left turn phasing
- Turn prohibition by time of day
Traffic Operation & Mobility (con’t)

- Review operational conditions & implement changes to signs & markings to improve traffic operations. Examples include:
  - turn prohibitions
  - street name signs
  - Lane assignment signs
Access Management

- Involves managing access points between roadways and adjacent land parcels
- Good access management promotes safe & efficient use of the transportation network
- Several items include:
  - driveway spacing and design
  - turn lane design and operation
  - median treatments
  - Bus-stop locations
Access Management (con’t)

• Evaluate spacing of signals or other intersection controls, driveway design & spacing, and arterial median treatments
• Recommend changes to improve overall operation and safety on the arterial roadway
• Recommend median treatments to lessen the impact of excessive driveways along a given roadway section
Safety

- Analyze high crash locations to identify potential improvements
- Implement measures to improve safety for pedestrians, bicyclists, transit riders, & vehicle drivers and passengers
- Utilize enhanced technology & techniques to improve safety
- Modify geometry to minimize violations, improve safety & increase capacity
- Proper & visible signage and pavement marking
Geometric Improvements

Identification and analysis of roadway segments (including intersections) for safety, capacity, and/or operational improvements such as:

- Bottleneck elimination
- Left and right turn lanes
- Installation/modification of medians & openings
- Driveways or curb radii modifications
- Elimination of trap lanes
- Downsizing of intersections but not the capacity
Traffic operations & mobility
Movement prohibition by time of day
Geometric Improvements: Proper management of lanes to improve safety w/out compromising capacity
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Geometric Improvement
Access management
Challenge-left turning vehicles wasting green
Dual left & Protected Only
Or Single left & protected/permitted left turn signal
Challenging intersection geometry
Geometric improvements
LOS “F” to “D” &
improved Ped crossings
Improve mobility & safety
Improve mobility & safety
Access Management
Access Management
Challenging intersection geometry
Negative offset = no bueno
Positive offset = muy buen
Conclusion

• Managing Signals is Managing Expectations and managing expectations is more than just signals, it is the network of arterials including:
  
  - signalized intersections
  - Signs & Pavement Marking
  - Access management
  - Median treatment
  - Geometry
Questions ?