Establishing an Urban Road Safety Assessment (RSA) Program

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Overview

- RSA- Definition
- RSA’s in MAG Region
- RSA Site Selection Process
  - Why Intersections?
  - Network Screening
  - Agency Recommendation
- MAG RSA Process
- Typical Recommendations and Responses
RSA- Definition

- Formal Assessment of Safety Performance
- Proactive Approach
- Independent multidisciplinary Team that consists of:
  - Local Law Enforcement
  - Road Safety Education
  - Road/Traffic Engineering
  - Emergency Medical Response
  - Human Factors Expert
- RSA Start to Finish is about Eleven (11) weeks of work
RSA’s in MAG Region

- Workshop in December 2010
- ADOT RSA Manager Trained the On-Call Consultants by participating in 7 RSAs
- 17 RSA’s were performed at 22 Priority Intersections in the MAG Region in FY2012
- Performed 6 RSA’s in FY2013 at 8 Priority Intersections and One road segment
- DCR’s and PA’s for RSA sites are planned for FY2014
RSA Site Selection Process

Why Did We Select Intersections?

- About 55% of Injury and Fatal Crashes happen at Intersections
- Intersections are the locations with most conflict points
- Intersection Safety is identified as a priority in MAG Strategic Transportation Safety Plan
RSA Site Selection Process

- Step 1: Network Screening *
- Step 2: Agency Requests
- Step 3: MAG Approval of RSA Sites
- Step 4: Perform RSAs based on Intersection Priority – RSA Team

*Presented at 2011 ITE/IMSA Spring Conference
RSA Process

Step 1: Establish the RSA Team

- Develop the RSA Schedule – coordinate with MAG and Team Leader

- Form the RSA Team (5 to 6 members) of experts to perform an RSA. Team includes the Consultant and MAG staff.
RSA Process

Step 2: Collect Site Information

- Collect Crash Data, Volume Data, Prior Safety Studies
  - Gather info on Day/Nighttime Crashes, % of Crashes during peak periods, Severity of Crashes, Type of Crashes

- Prepare handouts for RSA Team to Review
RSA Process

Step 3: Startup Meeting
Location: At a local agency facility
Attendees: Project Owner, RSA Team

Team Leader’s Role
- Explain the RSA process and its outcome
- Present the planned schedule
- Explain the importance Owners response to RSA Report

Project Owner
- Educate the Team on Constraints (Political or ROW)
- Future projects and past improvements
RSA Process

Step 4: Perform Field Reviews

Project Owner: DOES NOT PARTICIPATE

Observation by RSA Team:

- Good things in the field
- Daytime and nighttime risk differences
- Peak and off-peak traffic patterns
- Perspectives from all road users (drivers, pedestrian, etc.,)
RSA Process

Step 5: RSA Team Discussion of Field Review

Purpose:
Following the field review the RSA Team meets to discuss the observations and improvements.

- Consolidate all field observations
- Prepare a PowerPoint with all the suggested Safety Improvements
RSA Process

Step 6: Debriefing for Project Owner

Location: At the local agency or at MAG
Attendees: Project Owner, RSA Team

- Present the PowerPoint with field observations and suggested Safety Improvements to the Owner.

RSA Team
- Mike Blankenship, ADOT – Team Leader
- Kiran Cantugali, MAG
- Leo Luu, MAG
- Margaret Boome-Pixley, City of Avondale Officer
- Billy Sampson, City of Phoenix
- Michael Kuzel, Exponent
- Jim Lee, Lee Engineering
- Yung Koprowski, Lee Engineering
- Andrew Kwasniak, Exponent

Observations, Issues and Recommendations

Things Being Done Well
- Illuminated & Clear View Font Street Names
- Adequate pedestrian crossing times
- Lighting on both sides of the street & at intersection
- Red Light Camera in WB direction appears to reduce crashes

Recommendations to Reduce Left Turn Crashes
- Short Term
  - Increase left turn max for protected phase
  - First vehicle actuation
  - Flashing yellow arrow
- Long Term
  - Protected Only
  - Dual Left Turn Lanes
RSA Process

Step 7: Prepare RSA Final Report

- Coordinate with MAG and Team Leader in developing draft report
- Prepare a Final Report of recommendations ensuring that all comments and concerns are addressed
RSA Final Report

The final report includes the following:

- RSA Team
- The things working well at the site
- Short term safety improvements
- Long term safety improvements
- Crash Modification Factors for the suggested improvements
Next Steps

Project Owner Responsibilities:

The Final RSA Report is provided to the Project Owner by MAG with the following recommendations:

- Develop a comprehensive response to the recommendations in the RSA report within six weeks
- The agency response should address each recommended corrective measure
- Include an estimated timeline for implementation
- Keep the Response on file
An Example RSA Response

Evaluation Matrix - City of Phoenix
## ITS & SAFETY PROGRAM

### Road Safety Assessment
at Union Hills Drive 7th Street
Intersection
Evaluation Matrix

<table>
<thead>
<tr>
<th>Number</th>
<th>COP</th>
<th>Priority</th>
<th>Consultant Observation</th>
<th>Consultant Recommendation</th>
<th>Consultant Timing Assessment</th>
<th>COP Area Responsible</th>
<th>COP Decision</th>
<th>COP Comment</th>
<th>Action / Work Order</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1</td>
<td>8-9</td>
<td>Numerous left turn and through vehicles were observed proceeding through the intersection on a yellow signal indication when they could have stopped.</td>
<td>Increase left turn max for protected phase</td>
<td>Short Term</td>
<td>Traffic Signals</td>
<td>Concur</td>
<td>Will adjust LT timing and evaluate.</td>
<td>Ron Doubek</td>
<td>Underway</td>
</tr>
<tr>
<td>2</td>
<td>1</td>
<td></td>
<td></td>
<td>Convert to first vehicle actuation</td>
<td>Short Term</td>
<td>Traffic Signals</td>
<td>Concur</td>
<td>Will convert to first vehicle actuation (presence detection)</td>
<td>Ron Doubek</td>
<td>Underway</td>
</tr>
<tr>
<td>3</td>
<td>1</td>
<td></td>
<td></td>
<td>Add intersection &quot;puppy tracks&quot; for left turn movements</td>
<td>Short Term</td>
<td>Stripping Shop</td>
<td>Concur</td>
<td>Will add intersection &quot;puppy tracks&quot; for left turn movements</td>
<td>Jenny Guzman</td>
<td>Underway</td>
</tr>
<tr>
<td>4</td>
<td>3</td>
<td></td>
<td></td>
<td>Add all-red at end of protected phase</td>
<td>Short Term</td>
<td>Traffic Signals</td>
<td>Not Recommended</td>
<td>Not COP policy - would not address crash history.</td>
<td>None</td>
<td>NA</td>
</tr>
<tr>
<td>5</td>
<td>3</td>
<td></td>
<td></td>
<td>Convert to permissive/protected left turn phase</td>
<td>Short Term</td>
<td>Traffic Signals</td>
<td>Not Recommended</td>
<td>May adversely affect capacity and due to unique nature of this configuration within COP, may create safety concern.</td>
<td>None</td>
<td>NA</td>
</tr>
<tr>
<td>6</td>
<td>3</td>
<td></td>
<td></td>
<td>Consider implementing flashing yellow arrow</td>
<td>Long Term</td>
<td>Traffic Signals</td>
<td>Not Recommended</td>
<td>Not used in COP due to unique nature of this configuration within COP, may create safety concern.</td>
<td>None</td>
<td>NA</td>
</tr>
<tr>
<td>7</td>
<td>3</td>
<td></td>
<td></td>
<td>Convert to protected only left turns</td>
<td>Long Term</td>
<td>Traffic Signals</td>
<td>Not Recommended</td>
<td>Effect on signal timing, capacity and progression may adversely affect safety.</td>
<td>None</td>
<td>NA</td>
</tr>
</tbody>
</table>

### Reduce speed
9-10
Based on a speed radar study in September 2011, 85th percentile speeds approaching the intersection were: 52 mph westbound; 54 mph southbound; 47 mph eastbound; and 48 mph northbound.

<table>
<thead>
<tr>
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<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>8</td>
<td>1</td>
<td></td>
<td>Evaluate speed limits on approaches to be consistent (40 mph or 45 mph)</td>
<td>Evaluate speed limits on approaches to be consistent (40 mph or 45 mph)</td>
<td>Short Term</td>
<td>Safety Section</td>
<td>Concur</td>
<td>Speed limits have been evaluated and determined to be appropriate for current traffic conditions</td>
<td>Kenny Wibben</td>
<td>Complete</td>
</tr>
<tr>
<td>9</td>
<td>1</td>
<td></td>
<td>Increase enforcement</td>
<td>Increase enforcement</td>
<td>Short Term</td>
<td>Police Dept</td>
<td>Concur</td>
<td>Request for increased enforcement submitted to COP Policy</td>
<td>Police Dept</td>
<td>Underway</td>
</tr>
<tr>
<td>10</td>
<td>1</td>
<td></td>
<td>Perform accident reconstruction/research study</td>
<td>Perform accident reconstruction/research study</td>
<td>Short Term</td>
<td>Safety Section</td>
<td>Concur</td>
<td>COP Streets to enhance evaluation of current traffic crash data to evaluate patterns behind speed related crashes</td>
<td>Kenny Wibben</td>
<td>Underway</td>
</tr>
<tr>
<td>11</td>
<td>3</td>
<td></td>
<td>Add &quot;Speed on Green&quot; photo enforcement</td>
<td>Add &quot;Speed on Green&quot; photo enforcement</td>
<td>Long Term</td>
<td>Traffic Signals</td>
<td>Not Recommended</td>
<td>Not used in COP - Photo speed enforcement only used in School Zones per Council directive.</td>
<td>None</td>
<td>NA</td>
</tr>
</tbody>
</table>

### Improve signing and pavement markings
10-11
Observations for signs, signals, and pavement markings:
Questions?