Garland & Richardson’s Red Light Running Experience

TexITE Fall Meeting
September 15, 2011

Presented by:

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Presentation Outline

- History in Each City
- Locations Chosen
- Violation Rate Decline
- Analysis of Crash Rates
- Results in Each City
- Conclusions
History: Garland

- First cameras in September 2003
- First in State –
  - Don’t ask for permission if it’s not prohibited !!
- Initial Four intersections
  - Two on arterial at arterial
  - Two on arterial at frontage road
- Program expanded in 2006 and again in 2009 to 12 cameras at 11 intersections
- Two cameras were removed due to intersection reconstruction projects
History: Richardson

- **First cameras installed in 2006**
  - Three Intersections Initially, Four Cameras (All Arterial/Arterial)
    - Campbell Rd & Coit Rd (2 approaches)
    - Centennial Blvd & Greenville Ave
    - Plano Rd & Arapaho Rd

- **Second set of cameras installed in 2008**
  - Added Three additional intersections, Five Cameras
    - Belt Line Rd/N Central Expressway (2 approaches)
    - Campbell Rd/N Central Expressway (2 approaches)
    - Jupiter Rd/SH 190 Frontage Road
Locations Chosen

- Safety First – It's not for the money!!
- Intersections in both cities chosen based on:
  - Crash rates
  - Traffic volumes
  - Observed violation rates
  - Engineering solutions exhausted
Violations

- Violation point initially set at curb extension, changed to stop bar (per Legislation in 2007)
- Two photographs of violations
  - Advance of stop bar
  - Within intersection
- Video online of violation
- Violations significantly reduced over time
Violation Decline in Garland

Recorded Violations
Violations Paid
Trend Line
Analysis: Garland

- Initial Analysis
- First update
- Second update
- Program expansion
  - Data reported to TxDOT
- Rear End analysis
Initial Analysis

- Between May 2002 and January 2005
- 16 months of data both before and after
- Crashes also studied at a control group of six similar intersections
Initial Results

First 4 Locations
16 Months, before and after
<table>
<thead>
<tr>
<th></th>
<th>4 Intersections WITH Red Light Cameras</th>
<th>Control Group of 6 Intersections</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Crashes</td>
<td>Decrease 30%</td>
<td>Decrease 6%</td>
</tr>
<tr>
<td>Crashes Caused by Red Light Runners</td>
<td>Decrease 55%</td>
<td>Decrease 17%</td>
</tr>
</tbody>
</table>
First Update

- Between February 2001 and April 2006
- 16 months expanded to 31 before and after
- Same camera and control intersections
Results of First Update

First 4 Locations
31 Months, before and after
## Crashes at Intersections

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</thead>
<tbody>
<tr>
<td>Total Crashes</td>
<td>Decrease 25%</td>
<td>Decrease 10%</td>
</tr>
<tr>
<td>Crashes Caused by Red Light Runners</td>
<td>Decrease 56%</td>
<td>Decrease 38%</td>
</tr>
</tbody>
</table>
Second Update Analysis

- Updated through December 31, 2007
- Same 31 month before data
- 51.5 months of after-data
- Same camera and control intersections
Second Update Analysis

- Arterial/Arterial intersections 51.5 months after data with camera
- Arterial/Frontage Road intersections 29 months after data with cameras
- Arterial/Frontage Road intersections 22.5 months after camera removal
- Annualized crash rates
With Cameras in Place

First 4 Locations
31 Months before and 51 after
Annualized Crash Rate
# Crashes at Intersections

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<td>Decrease 60%</td>
<td>Decrease 46%</td>
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First 4 Locations
31 Months before and 51 after
Annualized Crash Rate
2 Locations removed due to construction

Annualized Crash Rate
Program Expansion

- Six additional intersections added Summer 2006
- Data reported to TxDOT
  - No before data required by Legislature on existing systems
- Eight intersections, with a total of nine cameras
  - Does not include intersections added in 2009
Results of Program Expansion


6 New Locations added in 2006
Program Expansion

- Three additional intersections added Spring 2009
- Data Reported to TxDOT
  - 18 months before data required
  - 14 months after data
Results of Program Expansion

21.3 12.9 8 5.1 4.7 2.6 14 9.4

3 New Locations added in 2009
18 Months before and 14 after
Annualized Crash Rate
Rear End Analysis

- Eight intersections reviewed
- July 1, 2007 to June 30, 2008
  - Does not include 3 intersections added in 2009
- Rear End Crashes are 35.4% of all crashes
- Only 17.8% of Rear End crashes occurred during signal change
Analysis: Richardson

- Started studies with required TxDOT reporting data in 2008
  - Expanded study to included additional data in City analysis to evaluate more before and after data
- Worked with Police Department to determine what was considered an “Intersection Crash”
  - Anything within 100’ of the intersection
- Collected as much data from the state crash report forms as possible
Richardson RLC Enforcement Results
(All Intersections, Annualized)

- Total Crashes: Before 97.3, After 71.6 (26% Decrease)
- Red Light Violation Crashes: Before 22.1, After 9.3 (58% Reduction)
- Rear End Crashes: Before 39.0, After 26.0 (33% Reduction)
- Injury Crashes: Before 47.2, After 26.3 (44% Reduction)

All 6 Locations
36 Months before data and all after data through May 2011
Annualized Crash Rate
Results for RLC Enforcement

- Total crashes reduced
- Red light running crashes reduced
- Injuries reduced
- Results consistent over time
- Crashes increased when cameras removed
- A small percentage of rear end crashes are due to signal change
Conclusions

- Overall, reductions in every crash category, red light violation, rear end, and injury crashes make RLC Enforcement an important tool for public safety.

- Don’t do it for the money – As violations drop consistently, so does the revenue. Don’t count on a continuing stream of funds.

- Think twice before removing individual locations just because they don’t support the administrative cost any longer – violations and crashes will rise again.

- Pray that the majority of your locations allow the overall system to cover its long term costs.

- Safety First !!!
Garland & Richardson’s Red Light Running Experience

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