ERLE Project Needs

• Red light running is a significant safety concern

• Despite enforcement efforts, citations can be contested and overturned

• Visual evidence of violations can reduce contested and overturned citations, leading to more efficient use of resources
ERLE Project History

Phase I an ITS Project

- 2011 – Project concept originates with State Patrol
- 2012 – Project planning and design
- 2013 – System Installation with Laser Detector over the stop bar of the intersection
- 2013 / 2014 – Issues with system reliability and false calls of red light violations

Phase II a Traffic Safety Project

- 2016 – Project re-started with MnDOT
- 2017 – System re-installed with Radar Detector to monitor stop bar
- 2017 – System observation through late winter and spring

ERLE Project Goals and Objectives

- **Goal:** Determine the feasibility of a cost-effective and accurate red-light violation video capture system to provide conclusive evidence of red light violations

- **Objectives:**
  - Identify a viable and cost effective system that uses mostly off-the-shelf technologies
  - Design, implement and test a red light violation image capture system that meets system requirements and stakeholder needs
The Logistics

• One camera is pointed toward the intersection indicator for Southbound traffic
• One camera is pointed toward the stop bar at of the two southbound lanes
• Law enforcement officer positioned south of the intersection

ERLE System Violation Record
ERLE Software Interface – Live View

- Live View of Stop Bar
- Live View of Intersection
- Depth of Red Signal Text
- Link to Violation History Page
- Violations from Current Day

ERLE Software Interface – Violation Playback

- 5 second video clip of violation
- Screen captures of violation
ERLE Software Interface – Violation History

Violations by Time of Day

Video Recording of Lane 2 Violation from July 26th at 12:45pm
ERLE System Violation Record

ERLE System Data Analysis

- Data analysis performed based on file names of System Recorded Violations
  - Hour-Minute-Second-Millisecond-Lane of Violation
- Post-processing in MS Excel to review quantity of system recorded violations and actual red light violations by time of day
- Other types of system recorded violations
  - Right Turn on Red
  - Inching past stop bar on red
## Analyses of Violations: Feb. 10 – May 8, 2017

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## Analyses of Violations: July 16 – July 29, 2017

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Benefits of the device

• Eliminates the need for officers to go through a light to pursue a violator
• Provides real-time playback at the roadside
• Provides video and photo evidence for court trials
• Logged data inform most efficient day and times to enforce the intersection

ERLE System Next Steps

• Use of ERLE System by State Patrol and potentially Local Law Enforcement
• Post-Processing of System-Recorded and Red Light Violations After Enforcement
• Evaluation of Potential Changes to Red Light Violations
• Evaluate court challenges where video of citation may be used in court to uphold citation
Thank you again!

Katie Fleming-Vogl, Senior Research Analyst
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