**Intersection Conflict Warning Systems**

**ICWS Overview**

**ICWS Installation**

**Needs**
- There are many intersections with a crash history that do not warrant signalization.
- ICWS could be a good intermediate solution between low cost options and a Capital Improvement Project.
- ICWS need to integrate with the Traffic Management Center (TMC) for monitoring and malfunction alerts.
- Pilot testing of systems to ensure reliability and effectiveness.

**Goals**
- Reduce the number of crashes at each selected intersection.
- Install 3 pilot ICWS sites in Spring/Summer 2021.
- 3-Year evaluation of pilot sites.
- Establish criteria for future site selection.

**Challenges**
- If the system is not working properly drivers may interpret beacons not flashing as a “go ahead.”
- ICWS should not be the “solution for everything.”
- ICWS increases workload for an already stretched maintenance staff.

**How it works**
1. Vehicles approaching on the minor road are detected.
2. A signal is sent to the controller and then to the beacons causing them to activate.
3. An additional signal is sent to the TMC to verify the system is working properly.
4. Operators of vehicles on the major road will be warned to proceed with caution.

**Where ICWS will be installed**
- Installed at rural intersections that do not warrant a traffic signal.
- Installed at intersections that typically have poor sight distances and a history of crashes.
- Detection is located prior to the intersection near the stop bar (line) on the minor approaches.
- Sign/beacon assemblies are located prior to intersection on the major approaches.

"There is currently an unacceptable number of crashes at New Hampshire’s rural intersections. ICWS are critical for improving roadway user safety."
- Bill Lambert, State Traffic Engineer
Developing ICWS in New Hampshire

ICWS Statistics

**147***
ICWS sites evaluated by FHWA nationally

**$143,792.50**
Average installation cost per NH intersection

8:1
Estimated cost benefit ratio** for single lane intersections

3
New Hampshire intersections identified as candidates for pilot deployment

Selection of Three Pilot Sites in New Hampshire

![Map of New Hampshire with selected intersections]

Schedule

<table>
<thead>
<tr>
<th>Time</th>
<th>Task</th>
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<tbody>
<tr>
<td>2021 Spring</td>
<td>Develop Pilot Study Work Plan</td>
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<tr>
<td>2021 Summer</td>
<td>Install ICWS (3 Intersections)</td>
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<td>2021 Fall</td>
<td>Field Testing</td>
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<td>2021 Winter</td>
<td>Begin to Monitor Systems</td>
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<td>2024 Winter</td>
<td>Complete Pilot Study Data Collection</td>
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<tr>
<td>2025 Summer</td>
<td>Finalize Pilot Study Report &amp; Recommendations.</td>
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*From Federal Highway Administration (FHWA) Safety Evaluation of ICWS, June 2016
** The economic value of crashes prevented by the safety improvement divided by the cost of the improvement

To participate in a brief survey, please navigate to https://www.surveymonkey.com/r/55SSSZM