Gateway Treatment Research Project for Pedestrian Crossings
Project Goals

• Determine driver yielding compliance rates

• Determine how, when and where treatment should be used
  – Multilane uncontrolled
  – Multilane uncontrolled at minor street intersections
  – Roundabouts
  – Crosswalks at exit ramps
  – Crosswalks at trails
  – Crosswalks with islands at traffic signal

• Determine the cost benefits of the treatment compared to other treatments
  – RRFB installations
  – PHB installations

• Determine the effect the treatment has on speed reductions
Project Specifics

• 20+ Locations
• City Post
• Qwick Kurb
• Permission to experiment – Installations on top of the curb

Schedule
- Project began: 2013
- Sites chosen: 2014
- Installation: 2015
  - Project extended in 2016
- Final results: 2017
Some Examples from the Study:

• Following are locations with:
  – Initial collected data (compliance rates)
  – Study findings on yielding compliance
  – Installation guidance from the Final User Guide
#1 - The Initial Data

Rose Street at KVCC – Uncontrolled Midblock Crossing

Full Gateway treatment

Gateway treatment with City Post
#1 - The Initial Data

Baseline

[Graph showing data points for different conditions over sessions.]
#1 - The Initial Data

Gateway Treatment

![Gateway Treatment Graph](image-url)
#1 - The Initial Data
Gateway with City Post
Between 70% and 90% compliance rate on roads with posted speeds of 30 mph or lower with ADT up to 25,000
#2 - The Initial Data

Westnedge Avenue and Ranney Street – T-Intersection
#2 - The Initial Data

Westnedge Avenue and Ranney Street – T-Intersection
Between 70% and 80% if posted speed limit is 30 mph

Gateway Treatment, Three-Lane Configuration, T-Intersection with Offset Installation
#3 - The Initial Data
West Michigan Avenue and Grand Street – Full Intersection

- Four lane undivided
- Parking on both sides
- Two-way STOP controlled
#3 - The Initial Data
West Michigan Avenue and Grand Street – Full Intersection
Between 55% and 80% compliance rate on roads with posted speeds of 30 mph or lower with ADT up to 25,000
Other Site Types in Final User Guide:

- Three-Lane Configuration with Refuge Island
- Three-Lane Configuration w/out Refuge Island
- Two-Lane Configuration with Median Island and Bike Lanes
- Two-Lane Configuration with Curb Extensions
Speed Data Summary:

<table>
<thead>
<tr>
<th>Location</th>
<th>Speed Reduction at Crosswalk</th>
<th>Speed Reduction Dilemma Zone</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>Jun</td>
<td>Aug</td>
</tr>
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<tr>
<td>Nixon</td>
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<tr>
<td>Division</td>
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<tr>
<td>Cherry</td>
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<tr>
<td>Mean</td>
<td>4.5</td>
<td>4.7</td>
</tr>
</tbody>
</table>
What We Learned

• Effectiveness:
  – Driver yielding compliance increases
  – Speed reductions were realized – traffic calming effect
    – Drivers began slowing at the dilemma zone
    – The speed reduction at each site persisted over time

• Factors contributing to effectiveness:
  – Gap Size
  – Speed Limit
  – The yielding rates are much higher for gateways than just placement on centerline or just placement on curbs
  – R1-6 signs installed with a removable curb type base seem to survive better than those bolted to a flush base
What We Learned

• General Guidance:
  – Signs and delineators should be installed between 1.5 feet and 50 feet in advance of the crosswalk
  – Sign shall follow local law
  – At locations with a median or pedestrian refuge island, in-street signs on top of the median or refuge island are allowed
  – If two crosswalks exist at an intersection, the gateway need only be placed on the approach legs of the roadway.
  – No portion of the sign or sign base shall be in the crosswalk or on the crosswalk lines.
    – In many cases placing signs further back will increase survival
  – A refuge island and advance yield lines are recommended where AADT is 12,000 or greater.
Questions??