Scona Road Traffic Safety Initiatives
Scona Road/99 Street/Saskatchewan Drive
Intersection Improvements

Public Open House
Presentation

Presented by: Shewkar E. Ibrahim
Traffic Safety Engineer, E.I.T.

Monday January 18th, 2016
OUTLINE

• Background

• Conventional Traffic Safety Measures
  ➢ Speed Analysis
  ➢ Collision Analysis
  ➢ Results

• New Traffic Safety Measures
  ➢ Conflict Analysis
  ➢ Results

• Recommendations

• Conclusion
**BACKGROUND**

Scona Road / 99 Street / Saskatchewan Drive

- Major routes entering and leaving downtown
- Current Speed Limit: 50 km/h
- Part of Rehabilitation and Reconstruction Project (2011-2012)
- Scona Road widened - addition of one lane SB
Timeline

2011-2012  Reconstruction and rehabilitation along Scona Road and 99 Street

2013-2014  Review of speed limit and pedestrian accommodations

2014-2015  City initiated two independent traffic safety assessments at the intersection

Initial required countermeasures were implemented

Initial meetings with community regarding safety measures

2015-2016  Concept plans for intersection redesign

2016  Presentation to community - WE ARE HERE

2016-2017  Additional intersection improvements to be implemented (timeline is dependent on the countermeasures selected)
Safety Assessments

An evidence-based analysis was conducted using new and conventional traffic safety approaches to identify potential safety improvements

- University of Alberta (conventional approach)
  Investigated the traffic volume, traffic speed and collision pattern along three stretches of road

- University of British Columbia (new approach)
  Used state-of-the-art video based tool to identify factors that may be contributing to safety concerns
Safety Assessments

- Applied conventional traffic safety methodology
- Analysis was conducted using data before/after the reconstruction
- Scope: Scona Road, 99 Street and Saskatchewan Drive corridors
- Data investigated: traffic volume, speed and collisions
CONVENTIONAL APPROACH

- **SB Traffic**
  - **Average Speed**
    - **Speed Profile Consistent**
      - ~60 km/h

- **Average Speed**
  - **Speed Profile Consistent**
    - ~50 km/h

- **NB Traffic**
  - **Average Speed**
    - **Speed Profile Consistent**
      - ~55 km/h

**Speed Profile**
- ~60 km/h
- ~55 km/h
Collision analysis was conducted before and after reconstruction was completed

**Before** Period: January 2008-June 2010  
**After** Period: January 2012-June 2014

**Scona Road Analysis:**
- No change in intersection collisions
- Collisions at midblock sections decreased in the ‘after’ period
  
  Note: collision numbers were very small

**99 Street Analysis:**
- Collisions increased at intersections closest to Scona Road
- Collisions at midblock sections decreased in the ‘after’ period
  
  Note: collision numbers were very small
The conventional safety analysis revealed the following safety concerns:

- Drivers were traveling at least 10 km/h over the speed limit along Scona Road

- Drivers were traveling at higher speeds as they approached Scona Road

- Low collision frequencies meant that the data was insufficient to provide an overview of the collision patterns and trends along the corridors
NEW APPROACH

Reactive
- Lack of insight into user behavior
- Requires waiting for 3+ years

Moving towards

Proactive
- Shorter time to evaluate safety
- Provides actual insight into user behavior
- Occurs more frequently → more data

Traffic Conflicts (Near-misses)

Instead of reacting to traffic safety concerns: traffic conflicts are advocated in the literature as the new surrogate safety measure
The following conflict scenarios were detected by the system:

- Vehicle-Cyclists/Pedestrians Conflict
- Rear-end Conflict
- Lane Change Conflict
NEW APPROACH

VEHICLE-CYCLIST/PEDESTRIAN
NEW APPROACH

VEHICLE-CYCLIST/PEDESTRIAN
NEW APPROACH

VEHICLE-VEHICLE CONFLICT
(Rear-end)
NEW APPROACH

VEHICLE-CYCLIST/PEDESTRIAN
NEW APPROACH

VEHICLE-VEHICLE CONFLICT
(Lane-change)
NEW APPROACH

VEHICLE-VEHICLE CONFLICT
(Lane-change)
NEW APPROACH

VEHICLE-VEHICLE CONFLICT
(Lane-change)
NEW APPROACH

VEHICLE-VEHICLE CONFLICT
(Lane-change)
NEW APPROACH

VEHICLE-VEHICLE CONFLICT
Results from the two independent studies indicate that increasing the Speed Limit is not recommended.
RECOMMENDATIONS

Speeding Concerns:
• Driver feedback signs (4 installed)
Signal Visibility:
- Additional signal fixture (installed)
- Addition of retro-reflective tape (planned)
RECOMMENDATIONS

Improper Lane Change:
- Bus stop relocation (completed)
- Overhead lane use (Fall 2016)
Pedestrian & Bicyclist Accommodations
Along 99 St Corridor
RECOMMENDATIONS

**Existing Pedestrian Signals**
**RECOMMENDATIONS**

- **New**
  - Decreased pedestrian wait times during all times of the day
    *(Implemented Dec 22, 2015)*

- **New**
  - Pedestrian Signal (at 90 Ave)
    *(Fall 2016)*

- **New**
  - Decreased pedestrian wait times during all times of the day
    *(Implemented Dec 22, 2015)*
RECOMMENDATIONS

Pedestrian & Bicyclist Accommodations

Scona Road/ 99 Street/ Saskatchewan Drive Intersection
RECOMMENDATIONS

OPTION A

Have Your Say: which option do you prefer? Let us know on the Comment Form!
During initial conversations – community residents raised concerns over pedestrian/bicyclist crossing at Scona Road/ 99 Street/ Saskatchewan Drive intersection

Geometric changes were considered to better accommodate pedestrian/bicyclist crossings by:

- Redesigning the southbound right turn
- Removing the multi-stage crossing
RECOMMENDATIONS

OPTION B

Have Your Say: which option do you prefer?
Let us know on the Comment Form!
<table>
<thead>
<tr>
<th>Safety Concern</th>
<th>Measure</th>
<th>Timeline</th>
</tr>
</thead>
<tbody>
<tr>
<td>Speeding</td>
<td>Driver feedback signs</td>
<td>Installed</td>
</tr>
<tr>
<td>Signal visibility</td>
<td>Additional signal head</td>
<td>Installed</td>
</tr>
<tr>
<td></td>
<td>Retro-reflective tape*</td>
<td>2016-2017</td>
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<tr>
<td>Improper lane change</td>
<td>Bus stop relocation</td>
<td>Moved</td>
</tr>
<tr>
<td></td>
<td>Overhead lane use sign</td>
<td>Fall 2016</td>
</tr>
<tr>
<td>Pedestrian crossing (91 Ave and 99 St)</td>
<td>Pedestrian signal</td>
<td>Fall 2006</td>
</tr>
<tr>
<td>Pedestrian crossing (Along 99 St at 85 Ave, 87 Ave and 89 Ave)</td>
<td>Reduce pedestrian wait times during all hours of the day (including off-peak periods)</td>
<td>Implemented</td>
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### CONCLUSION

<table>
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<tr>
<th>Measure</th>
<th>Timeline</th>
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<tbody>
<tr>
<td><strong>Option A</strong>&lt;br&gt;Install a pedestrian flasher and link to existing flashing beacon</td>
<td>Fall 2016</td>
</tr>
<tr>
<td><strong>Option B</strong>&lt;br&gt;Redesign the right turn in the north-west corner of the intersection</td>
<td>2016-2017</td>
</tr>
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Let Us Know Which Option You Prefer!<br>[www.edmonton.ca/SconaRoad](http://www.edmonton.ca/SconaRoad)
Next Steps

- Comment Form will be live on the City of Edmonton website (www.edmonton.ca/SconaRoad) January 18th to February 1st, 2016

- Results will be summarized and presented to Transportation Committee at the end of March 2016

- Countermeasures will be implemented starting Fall 2016

- Any questions or concerns – please contact the Project Engineer
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