Scona Road Traffic Safety Initiatives

Scona Road/99 Street/Saskatchewan Drive

Intersection Improvements

Public Open House

Presentation

Presented by:

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Monday January 18th, 2016

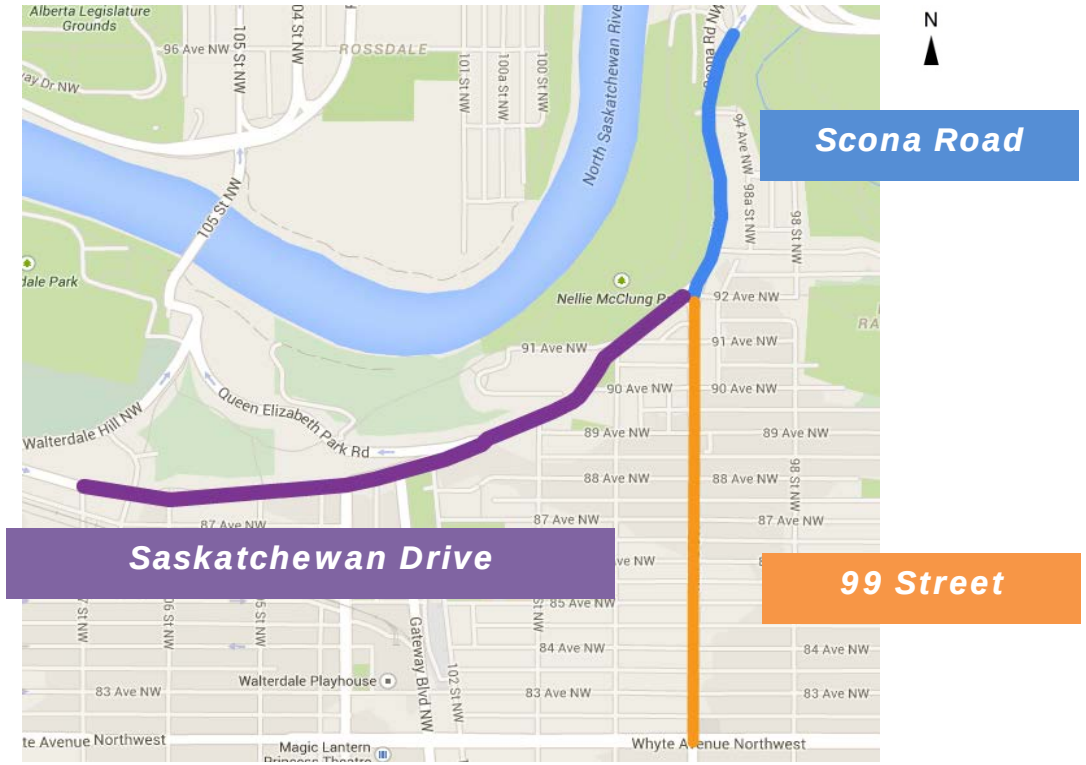
OUTLINE

- 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



BACKGROUND

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)*

BACKGROUND

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

BACKGROUND

Safety Assessments

UNIVERSITY OF ALBERTA

- 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

Speed Profile Consistent ~50 km/h

Average Speed

Speed Profile Consistent ~60 km/h

Speed Profile Consistent ~55 km/h

NB Traffic

CONVENTIONAL APPROACH

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- 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

CONVENTIONAL APPROACH

UNIVERSITY OF ALBERTA

- 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

Collisions

Reactive

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

Moving towards

Traffic Conflicts
(Near-misses)

Proactive

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

Instead of reacting to traffic safety concerns: ***traffic conflicts*** *are advocated in the literature as the new surrogate safety measure*

NEW APPROACH

- 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

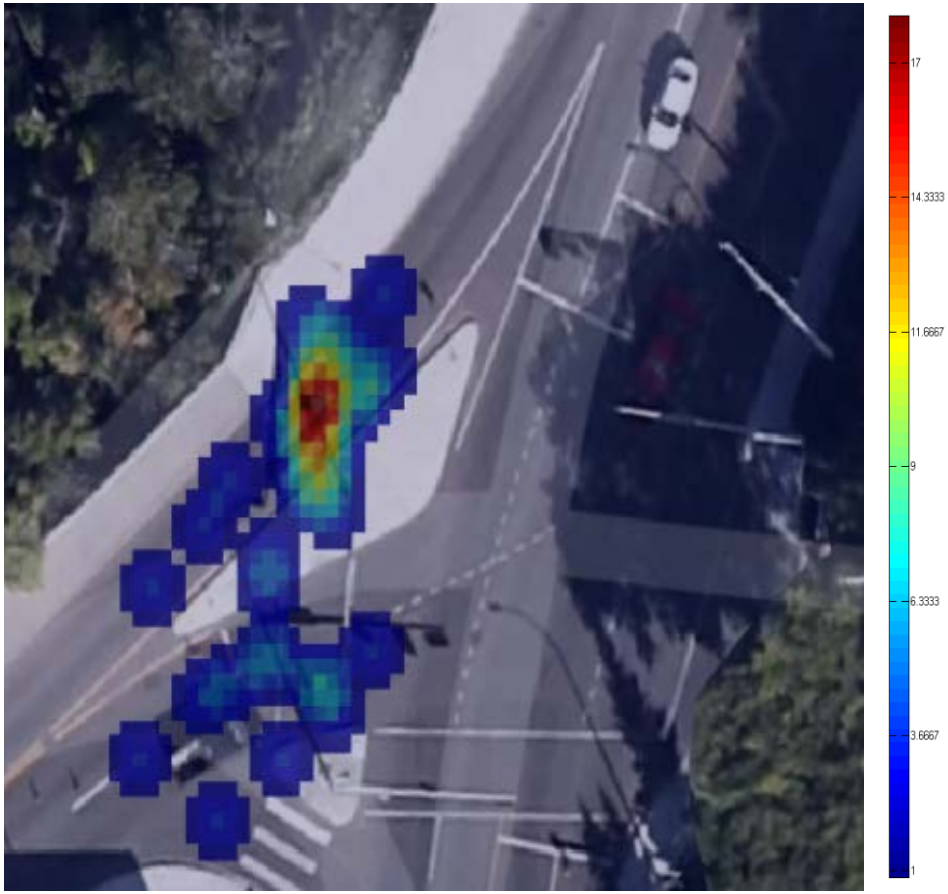
NEW APPROACH

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

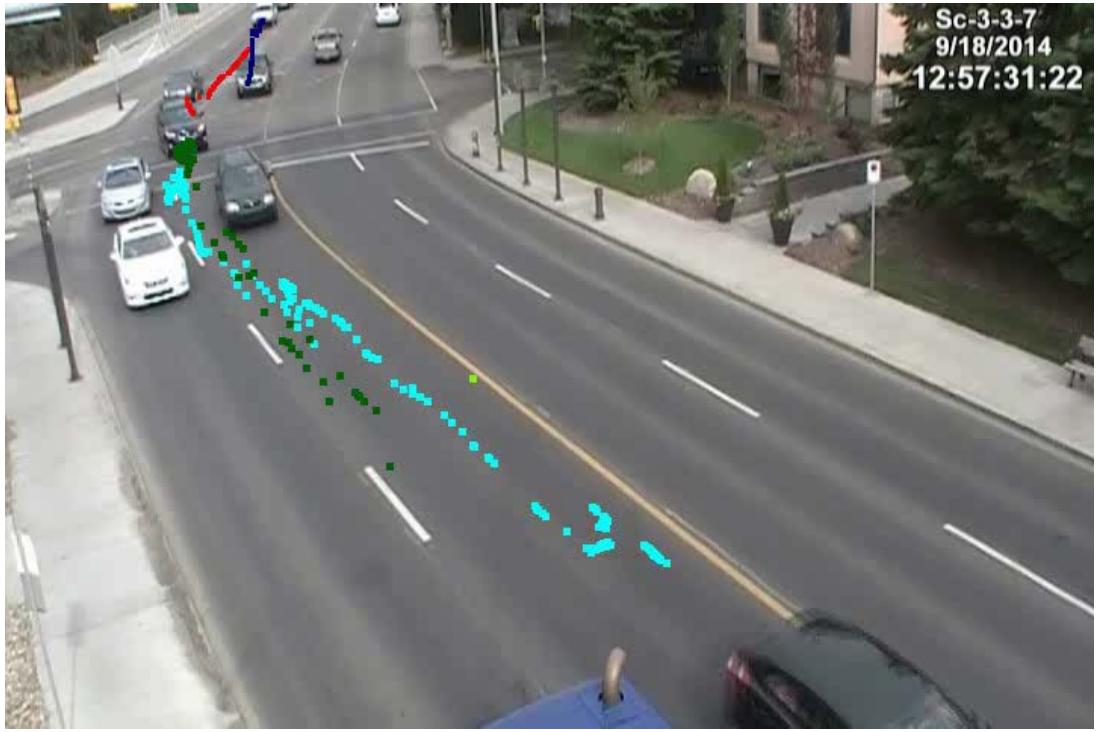
VEHICLE-VEHICLE CONFLICT

(Lane-change)

NEW APPROACH

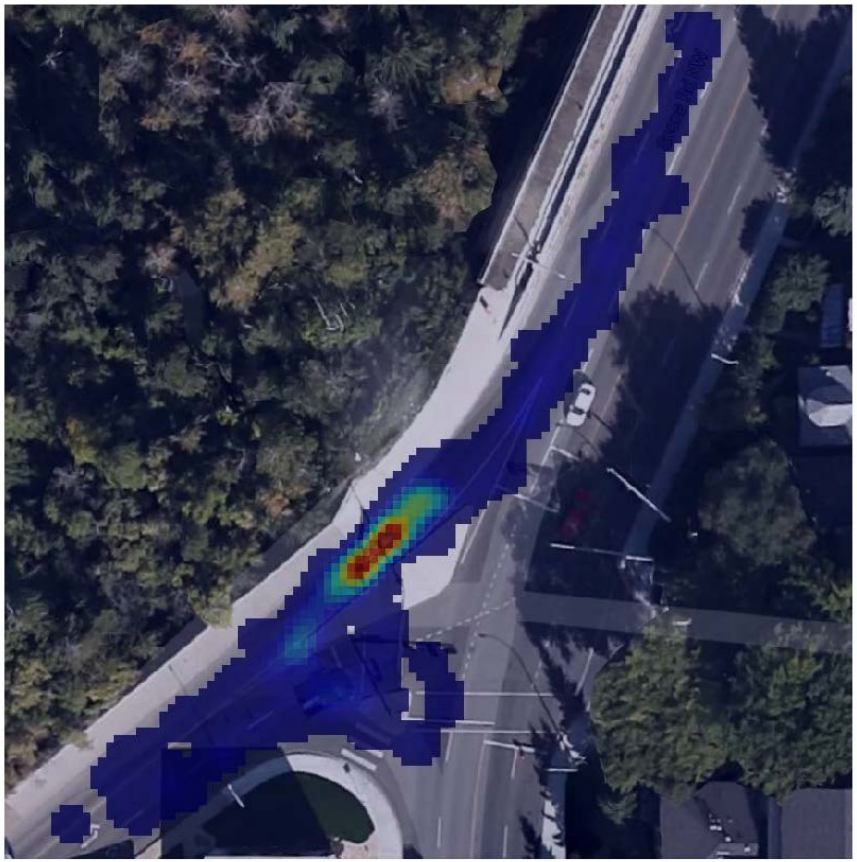
VEHICLE-VEHICLE CONFLICT

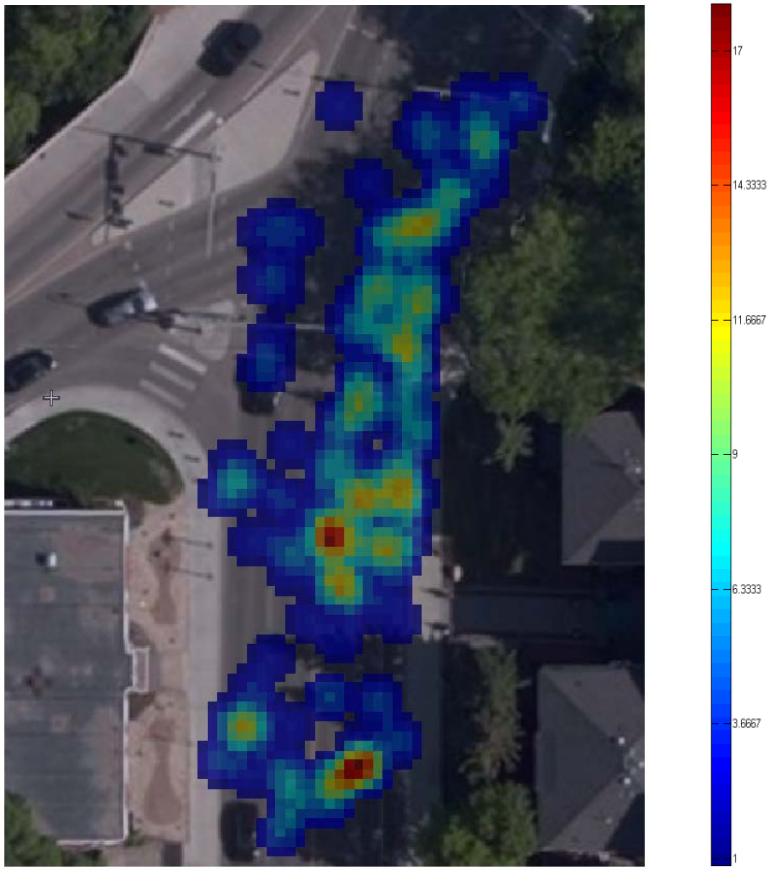
(Lane-change)



NEW APPROACH

VEHICLE-VEHICLE CONFLICT





RECOMMENDATIONS

Results from the two independent studies indicate that

Increasing the Speed Limit

is not recommended

RECOMMENDATIONS

Speeding Concerns:

- Driver feedback signs **(4 installed)**

RECOMMENDATIONS

Signal Visibility:

- Additional signal fixture **(installed)**
- Addition of retro-reflective tape **(planned)**

RECOMMENDATIONS

Improper Lane Change:

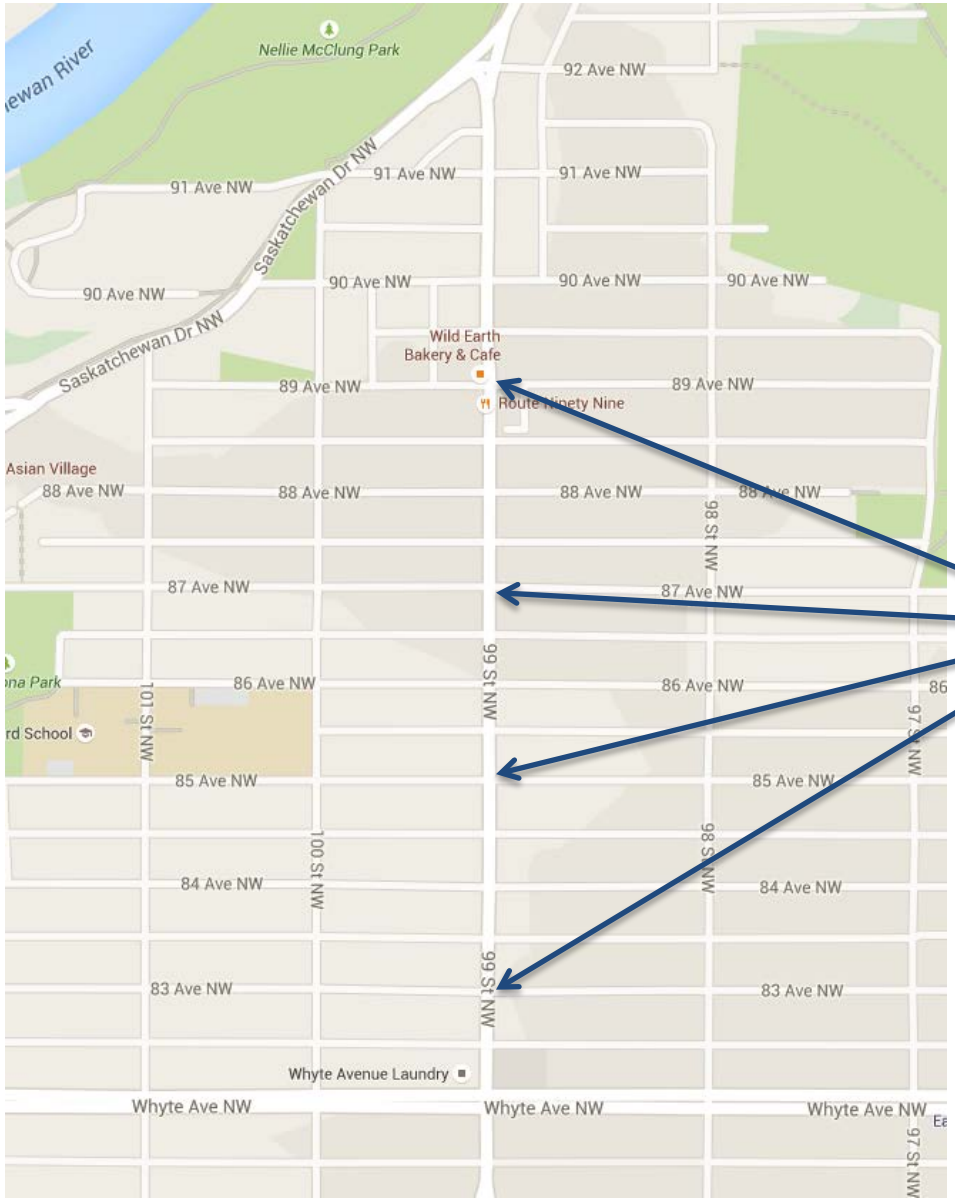
- Bus stop relocation **(completed)**
- Overhead lane use **(Fall 2016)**

RECOMMENDATIONS

Pedestrian & Bicyclist Accommodations

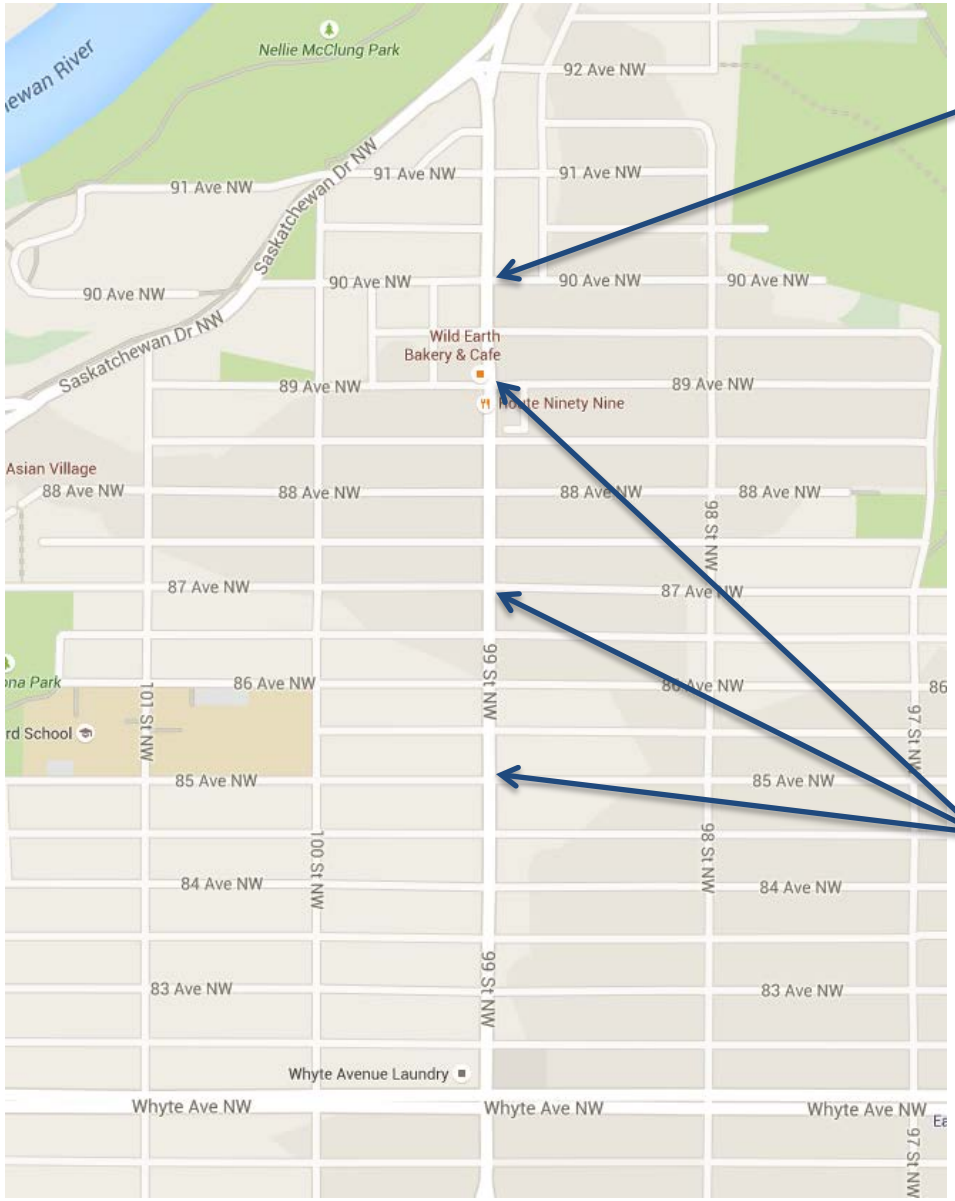
Along 99 St Corridor

RECOMMENDATIONS



<u>Existing</u>
Pedestrian Signals

RECOMMENDATIONS



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

Installed North of the Intersection

Have Your Say: which option do you prefer?
Let us know on the Comment Form!

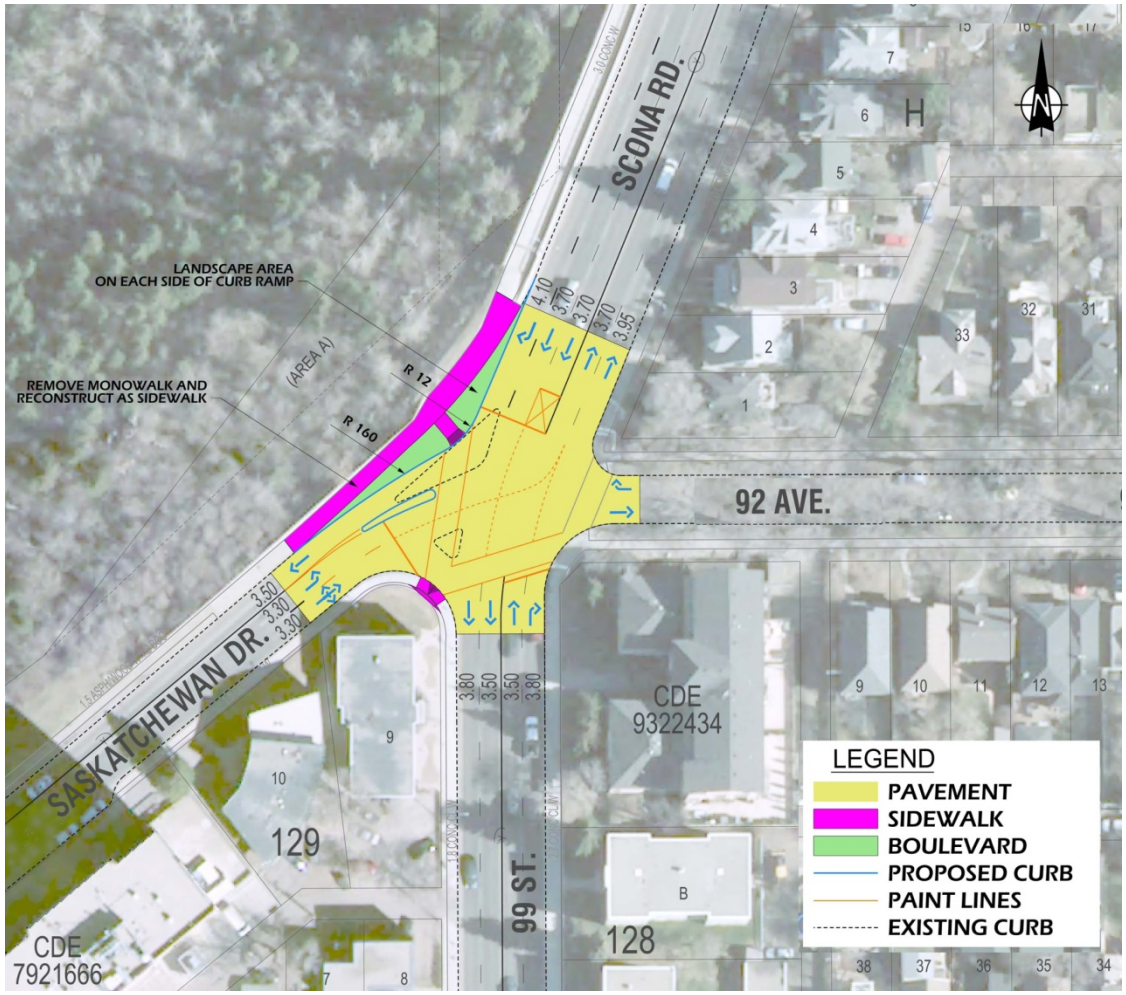
RECOMMENDATIONS

- 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!

CONCLUSION

Safety Concern	Measure	Timeline
Speeding	Driver feedback signs	**Installed**
Signal visibility	Additional signal head	**Installed**
	Retro-reflective tape*	2016-2017
Improper lane change	Bus stop relocation	**Moved**
	Overhead lane use sign	Fall 2016
Pedestrian crossing (91 Ave and 99 St)	Pedestrian signal	Fall 2006
Pedestrian crossing (Along 99 St at 85 Ave, 87 Ave and 89 Ave)	Reduce pedestrian wait times during all hours of the day (including off-peak periods)	**Implemented**

CONCLUSION

Measure	Timeline
Option A Install a pedestrian flasher and link to existing flashing beacon	**Fall 2016**
Option B Redesign the right turn in the north-west corner of the intersection	**2016-2017**

Let Us Know Which Option You Prefer!

www.edmonton.ca/SconaRoad

CONCLUSION

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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