



Scona Road Traffic Safety Initiatives

Scona Road/99 Street/Saskatchewan Drive

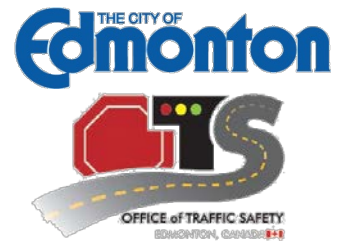
Intersection Improvements

Public Open House Presentation

Shewkar E. Ibrahim

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

Monday January 18th, 2016





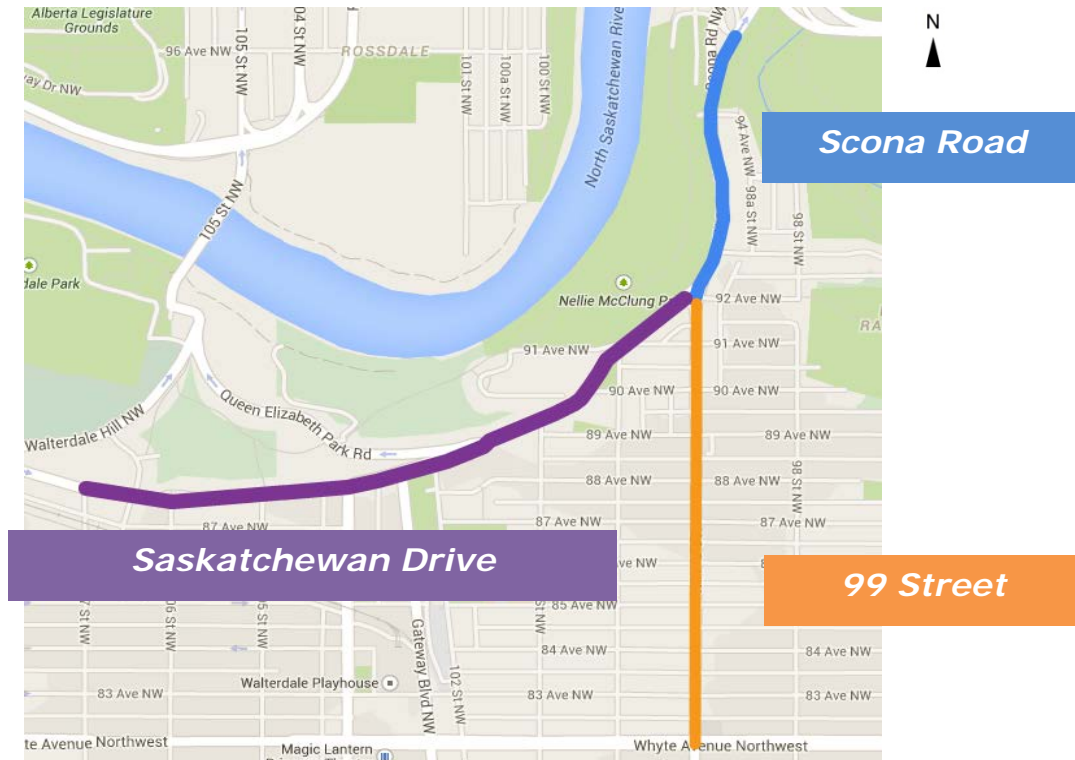
OUTLINE

- 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





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 (<i>timeline is dependent on the countermeasures selected</i>)

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

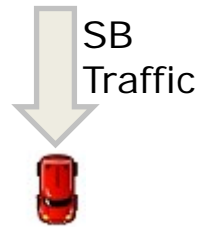
Safety Assessments



- ❑ 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

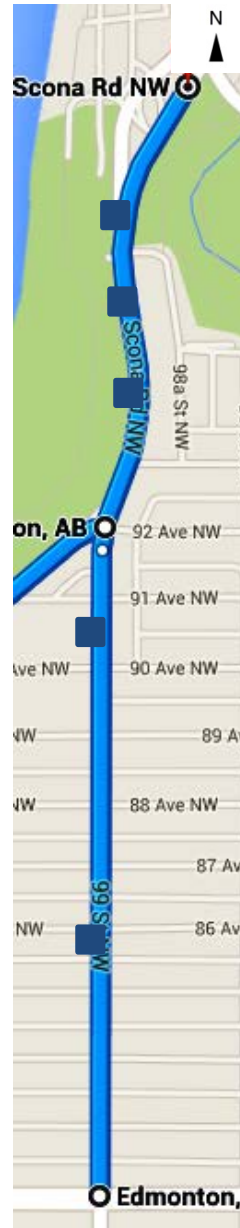


CONVENTIONAL APPROACH



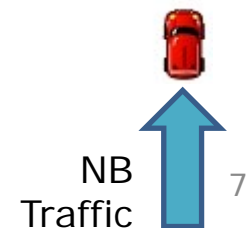
Average
Speed
Speed
Profile
Consistent
~60 km/h

Speed
Profile
Consistent
~50 km/h



Average
Speed
Speed
Profile
Consistent
~60 km/h

Speed
Profile
Consistent
~55 km/h



CONVENTIONAL APPROACH

- ❑ 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

- 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

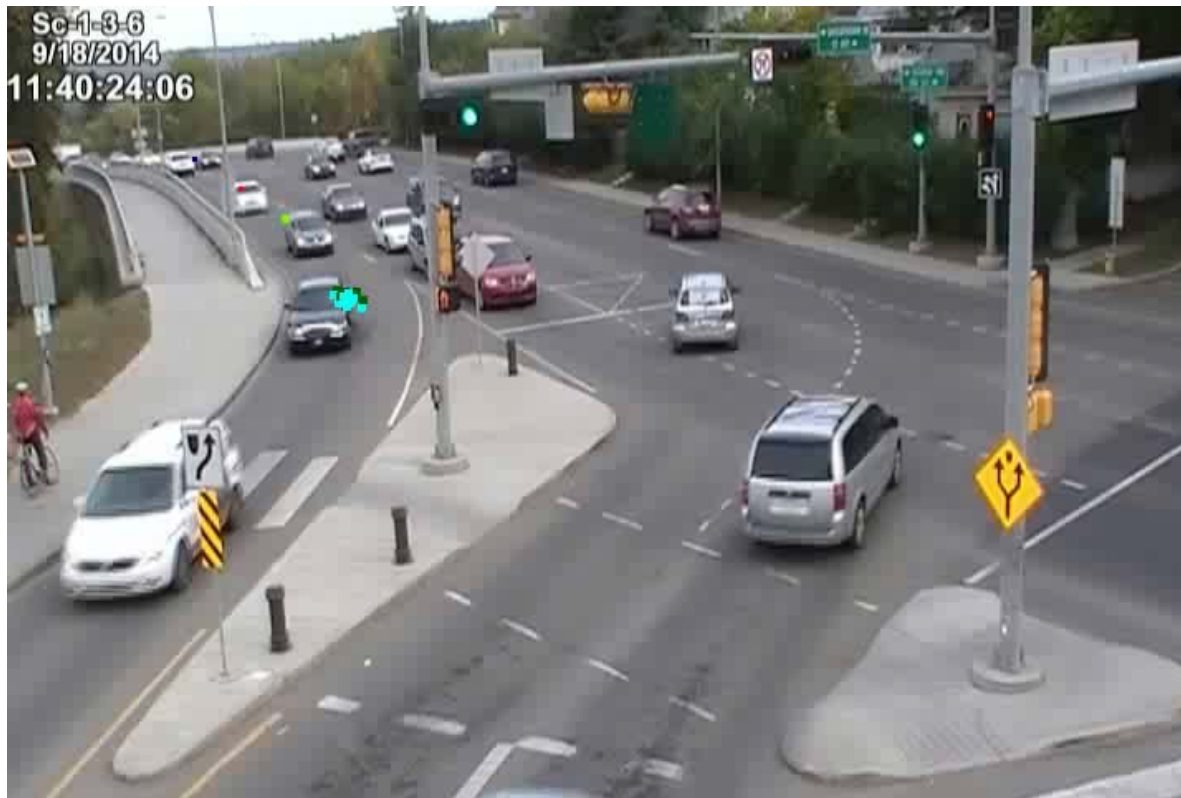


NEW APPROACH



VEHICLE-VEHICLE CONFLICT

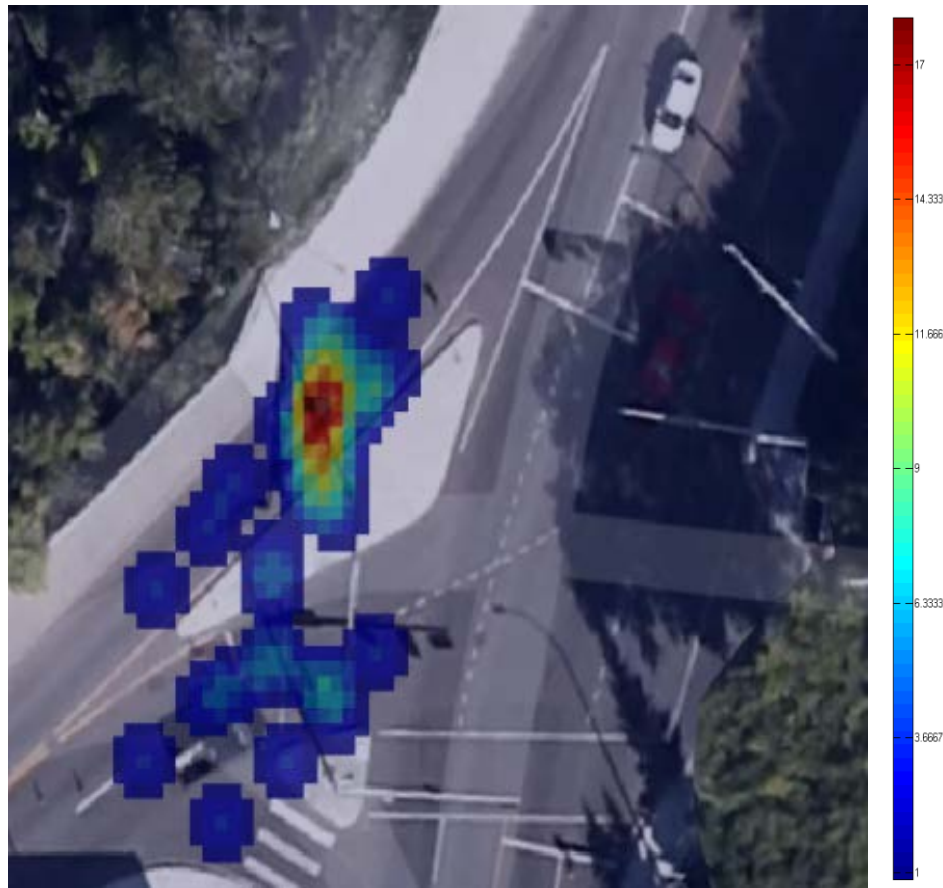
(Rear-end)



NEW APPROACH



VEHICLE-CYCLIST/PEDESTRIAN



NEW APPROACH



VEHICLE-VEHICLE CONFLICT (Lane-change)



NEW APPROACH



VEHICLE-VEHICLE CONFLICT (Lane-change)



NEW APPROACH



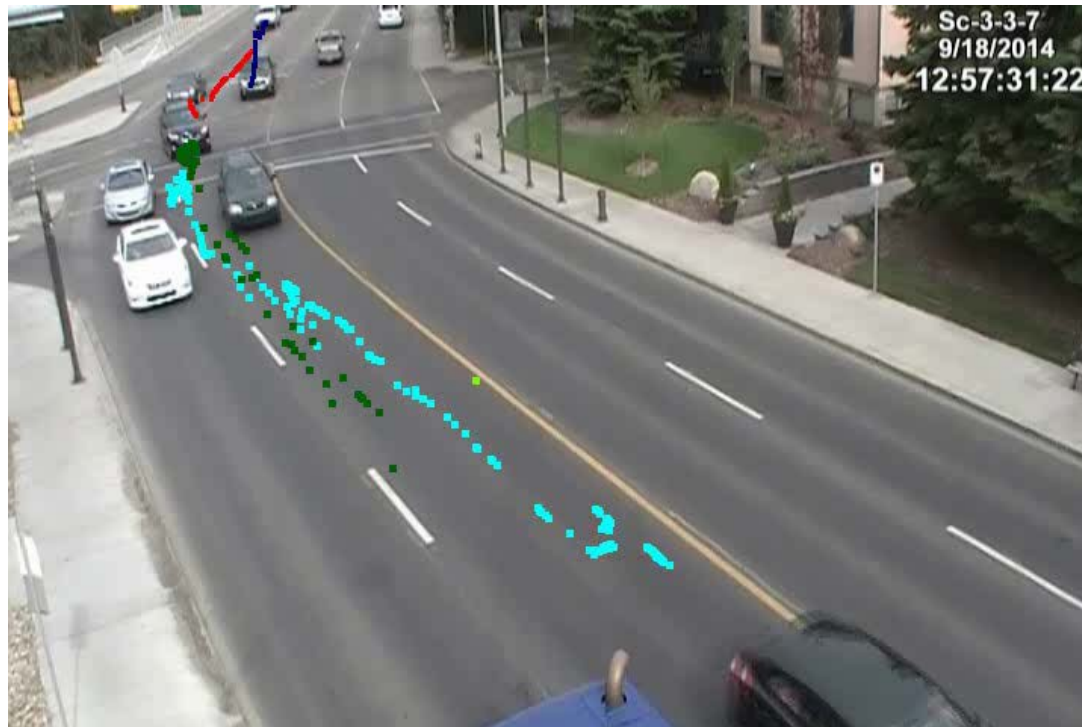
VEHICLE-VEHICLE CONFLICT (Lane-change)



NEW APPROACH



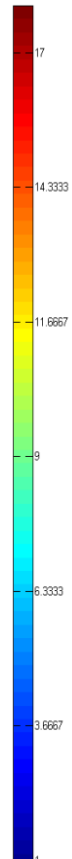
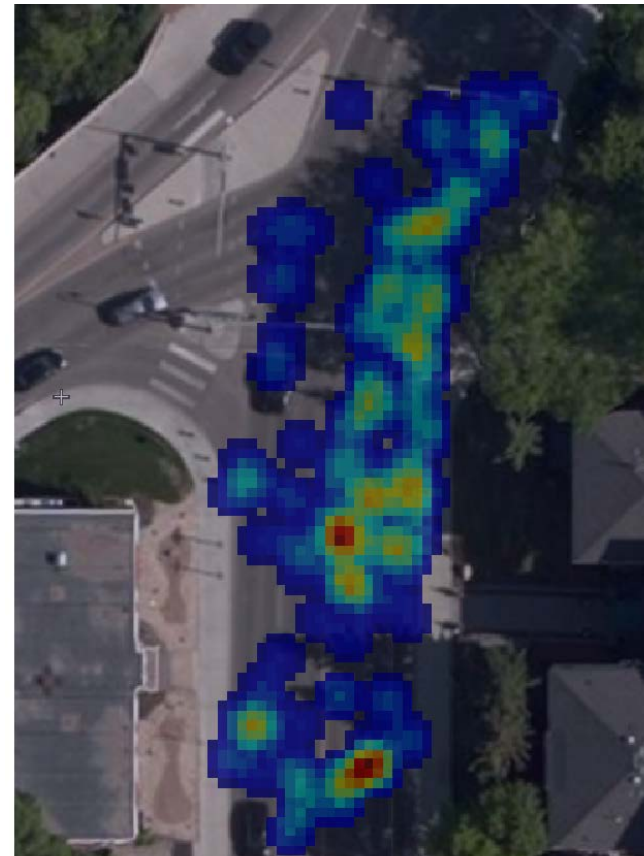
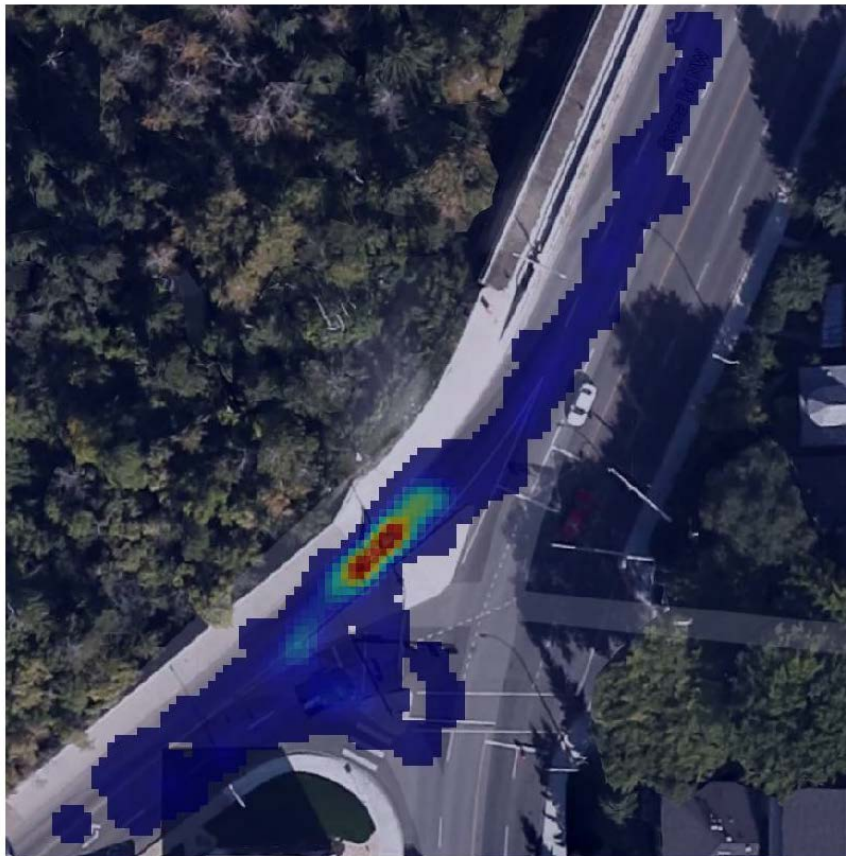
VEHICLE-VEHICLE CONFLICT (Lane-change)



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:

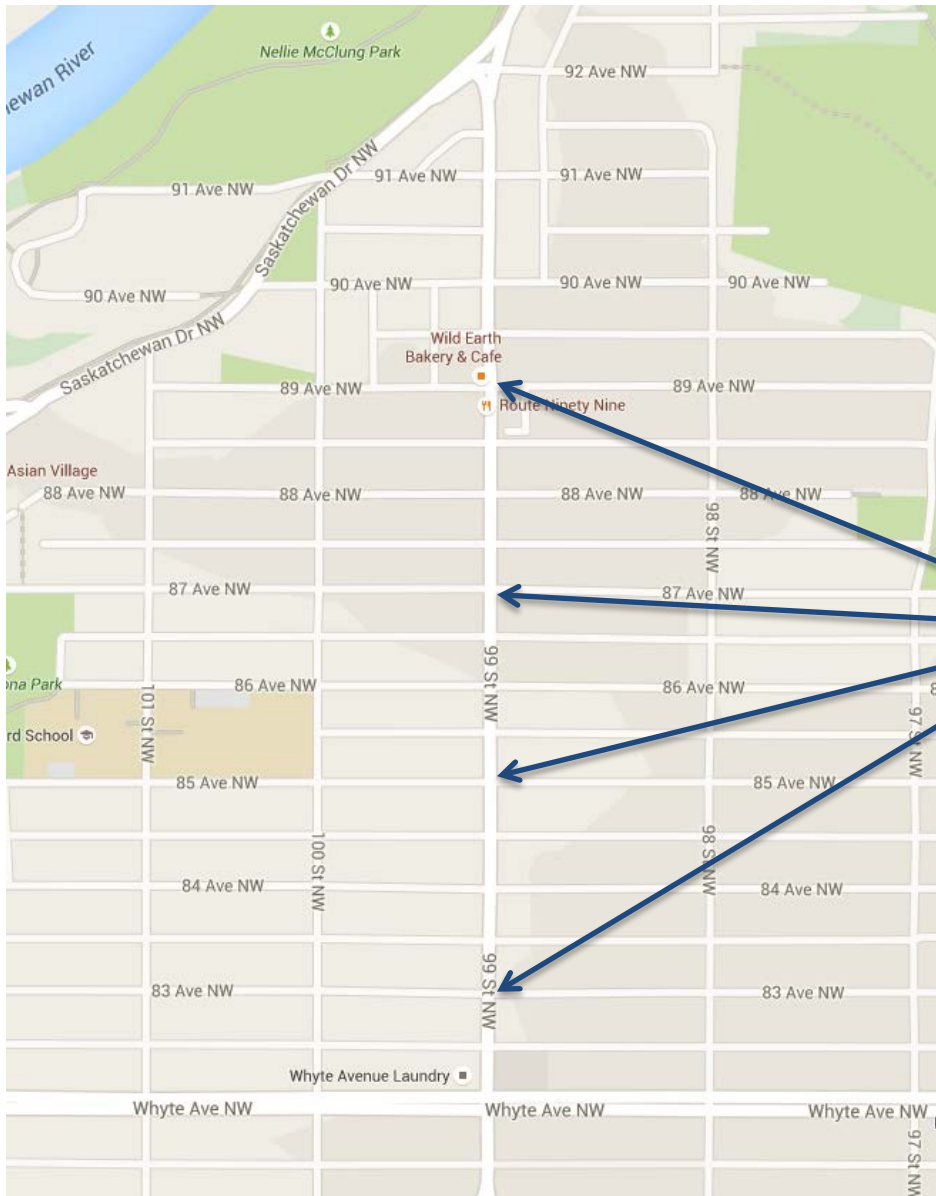
- Bus stop relocation
(completed)
- Overhead lane use (Fall 2016)



RECOMMENDATIONS

Pedestrian & Bicyclist Accommodations *Along 99 St Corridor*

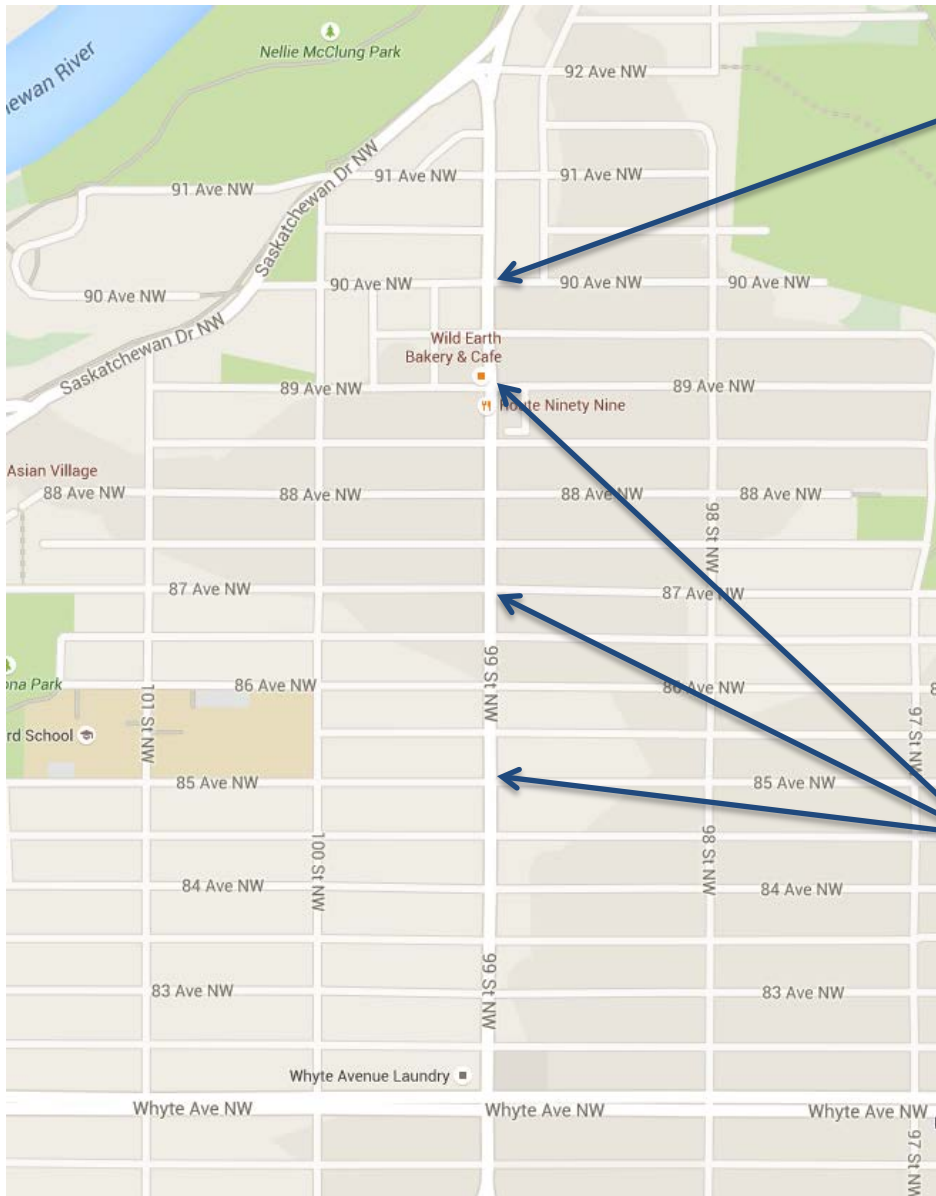
RECOMMENDATIONS



Existing 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!*

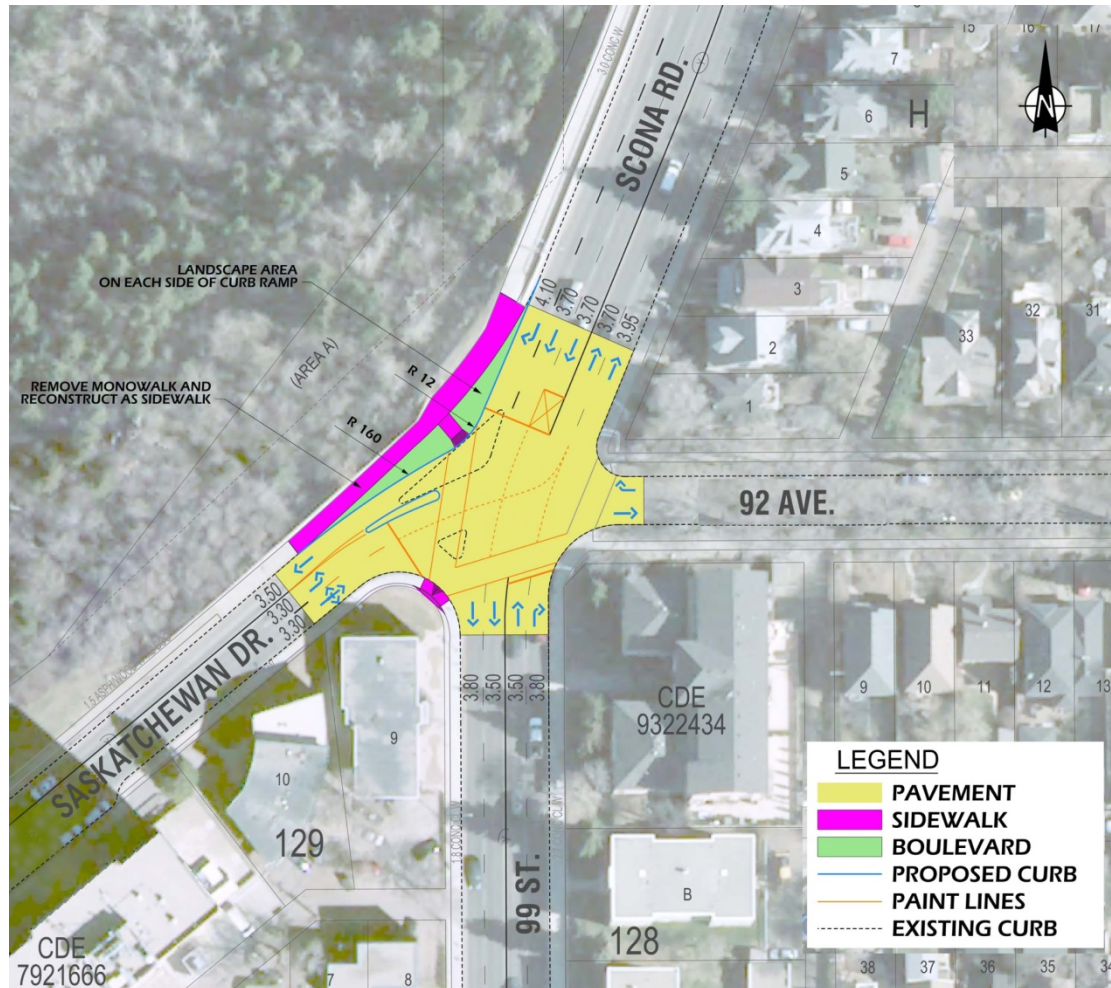


RECOMMENDATIONS

- 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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