

# Traffic Control at 153 Avenue and Victoria Trail

(E. Gibbons)

## Recommendation:

That the September 28, 2016, City Operations report CR\_3863, be received for information.

## Report Summary

This information report highlights actions taken, and future actions to be taken, by Administration in the management of traffic at the intersection of 153 Avenue - Victoria Trail. This report also outlines traffic control upgrade requirements as well as the overall cost of installing traffic signals at the intersection.

## Previous Council/Committee Action

At the July 5, 2016, Transportation Committee meeting, Councillor E. Gibbons made the following inquiry:

The Northeast Anthony Henday Project is on schedule to open in October 2016. In advance of the completion of the project, I am requesting that Administration provide a report on the following:

- The overall costs of installing traffic control lights at 153rd Ave and Victoria Trail
- Projection of the traffic counts necessary to install traffic control lights at 153rd Ave and Victoria Trail
- The costs of installing traffic control lights at 153rd Ave and Victoria Trail in line with the opening of the North East Henday
- The funding options for installing the traffic lights
- The risks if the intersection is not equipped with traffic control lights when the North East Henday is set to open

## Report

The intersection of 153 Avenue and Victoria Trail supports single lane movements in the north, east and westbound directions, commonly referred to as a single lane 'T-intersection' (see Attachment 1 Aerial Photograph of Intersection). This intersection has been frequently monitored since 2007, with the most recent evaluation taking place in August of 2016.

Prior to 2014, the intersection was controlled by a single stop sign in the northbound direction, and east-west movements were unrestricted. In 2014, an evaluation of the intersection found an increase in northbound vehicles. Given the east-west traffic volumes at the time, a 3-way stop was deemed the most appropriate traffic control

mechanism for this location and the intersection was scheduled for a subsequent evaluation in 2016.

The intersection evaluation conducted in June of 2016 revealed similar 2014 vehicle volumes for northbound movements with an increase in volumes for eastbound and westbound movements. Through traffic growth projections, it is anticipated that the opening of Northeast Anthony Henday will result in a further increase of eastbound and westbound traffic, but a reduction in the northbound movements. As such, given the geometry of this intersection, the addition of a traffic signal is anticipated to provide the same overall operational performance as 3-way stop control, with increased risk of cross-path collisions for westbound left vehicles. The primary mechanism to address congestion at this location is intersection widening to accommodate west-to-south left turn traffic volumes with an exclusive left turn bay.

A review of historical collisions from the past two years at this location confirmed there have been no stop or yield collisions reported. Even with an increase in east-west volumes, Administration does not expect to see an increase in these types of collisions under 3-way stop control. Field observations of traffic operations at peak traffic times have been completed a number of times with the most recent in August of 2016 and staff have not observed unsafe behaviors at this location. It is important to note that, with the introduction of a traffic signal there is the potential increased risk for left turn across path collisions, given the shared westbound lane for through and left turning vehicles. This risk can be mitigated through dedicated signal phasing for each direction, the trade-off being delays similar or greater than those expected with three-way stop control for east and west traffic. Due to these factors, this location is scheduled for review in the fall of 2016 to confirm anticipated volumes and observe driver behavior. Following this review, if warranted, staff will begin signal design for an early spring 2017 installation. The primary restricting factor at this location is road geometry.

### **Overall cost of installing a traffic signal:**

A typical estimated cost for a T-intersection traffic signal is \$250,000.

### **The cost of installing traffic lights in line with the opening of the Northeast Anthony Henday Drive:**

In order to support a 2016 installation timeline, a 20 percent contingency for winter work should be added to the estimated cost.

### **Funding options for installing traffic lights:**

The cost to install traffic signals at this intersection is covered by the ARA (Arterial Roadway Assessment) Bylaw.

### **Risks if the intersection is not equipped with traffic control lights when the Northeast Anthony Henday Drive opens:**

Based on traffic analysis, a comparable level of congestion is anticipated if this intersection is equipped with traffic lights when the Northeast Anthony Henday Drive opens in October 2016; this is because of the intersection's geometry (single lane in

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each direction). To reduce delays and add capacity, the intersection needs additional lanes in all directions.

### Policy

*The Way We Move*, Edmonton's Transportation Master Plan:

- Strategic Action 7.1(a): Developing a program to proactively identify, evaluate and design projects to optimize the operation of the roadways in key corridors and areas of congestion using traffic management and transportation supply measures.
- Strategic Action 7.3(e): Undertaking roadway and intersection improvement projects to address safety concerns, transit priority or goods and services movement

### Risk Assessment

Risk Element	Risk Description	Likelihood	Impact	Risk Score	Current Mitigations	Potential Future Mitigations
Traffic Congestion	Current 3-way stop control of intersection may require a full signal in order to reduce congestion.	3	2	6 (low)	November 2016 - staff to conduct a traffic assessment	Widening of intersection. Installation of traffic signals.
Increased Collisions	Increase in traffic may result in increased risk of collisions.	1	2	2 (low)	Current 3-way stop control provides effective mitigation for across path collisions	Signalization in spring of 2017

### Budget/Financial Implications

The estimated cost to install a full traffic signal at this location is \$250,000, which is covered under the ARA (Arterial Roadway Assessment) program.

### Metrics, Targets and Outcomes

Metrics	Number of 311 inquiries regarding this intersection: 2014(1), 2015(5), 2016(1) Number of 'stop/yield' collisions at this intersection: 2014(1), 2015(0), 2016(0) Number of 'left turn across path' collisions at this intersection: 2014(1), 2015(0), 2016(0)
Targets	Combination of 5 'stop/yield' or 'left turn across path' collisions per year, flag for review

Outcomes	Level of safety (reduce collisions)
	Level of service (reduce delays)

### Attachment

1. Aerial Photograph of Intersection

### Others Reviewing this Report

- T. Burge, Chief Financial Officer and Deputy City Manager, Financial and Corporate Services
- R. G. Klassen, Deputy City Manager, Sustainable Development
- A. Laughlin, Deputy City Manager, Integrated Infrastructure Services