



## STAFF REPORT ACTION REQUIRED

### U-Turn Prohibition - Warden Avenue and Cloverleaf Gate/Arkona Drive

<b>Date:</b>	December 19, 2012
<b>To:</b>	Scarborough Community Council
<b>From:</b>	Director, Transportation Services, Scarborough District
<b>Wards:</b>	Ward 40 – Scarborough-Agincourt
<b>Reference Number:</b>	P:\2013\Cluster B\TRA\Scarborough\sc1308 D12-4849591 - U-Turn Prohibition, Warden Avenue

#### SUMMARY

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This report responds to a concern about a collision hazard within the intersection of Warden Avenue at Cloverleaf Gate/Arkona Drive and recommended mitigating measures.

It is recommended that Transportation Services rescind the Northbound U-Turn Prohibition at the subject intersection and install a northbound fully protected left-turn signal to mitigate the collision hazard.

#### RECOMMENDATIONS

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##### Transportation Services recommends that:

1. City Council rescind the U-turn prohibition, as identified in Appendix 1 of this report, subject to the installation of a northbound fully-protected left-turn phase.
2. City Council pass or amend the appropriate by-law(s) accordingly.

##### Financial Impact

The financial cost of removing the U-turn prohibition signs is approximately \$500.00. Funding for the removal has been requested in the Transportation Services 2013 Operating Budget, within Cost Centre TP0397. The left-turn phase itself will be approximately \$40,000.00. Funding for which has been requested in the Transportation Services 2013 Capital Budget.

## **ISSUE BACKGROUND**

As a result of a request from Councillor Norm Kelly, Transportation Services staff reviewed the feasibility of providing a northbound fully-protected left-turn signal on Warden Avenue at Cloverleaf Gate/Arkona Drive. The removal of the northbound U-turn prohibition is to coincide with the installation of the northbound fully-protected signal phasing. In order to mitigate an ongoing collision hazard involving northbound left-turning and U-turning vehicles with southbound traffic, a fully protected phase is to be installed that will allow U-turns.

## **COMMENTS**

Several characteristics describing the intersection include:

- The land use to the north, east and west of this intersection is primarily single-family residential.
- Warden Avenue is a five-lane north-south arterial road with a speed limit of 60 kilometres per hour and a traffic volume of approximately 38,000 vehicles per day.
- The signalized intersection of Warden Avenue at Cloverleaf Gate/Arkona Drive is located immediately north of Highway 401.
- Southbound Warden Avenue traffic has direct access, via a slip-lane, onto Westbound Highway 401; this access is just south of the intersection of Warden Avenue and Cloverleaf Gate/Arkona Drive.
- A previous investigation revealed that some motorists who are experiencing northbound left-turn delays at the Westbound 401 left-turn access (just south of Cloverleaf Gate/Arkona Drive), attempt to use Cloverleaf Gate as an alternate means of accessing Highway 401.
- A northbound U-Turn Prohibition was previously enacted on Warden Avenue at Cloverleaf Gate/Arkona Drive in an attempt to mitigate collisions occurring at this intersection between northbound U-turning vehicles and southbound Warden Avenue traffic.
- The current protected-permissive northbound left-turn phase would not completely mitigate the potential conflict between southbound traffic and northbound left-turning/U-turning traffic.
- The next incremental step to mitigate this collision hazard is to install a fully-protected northbound left-turn/U-turn phase, removing the opportunity for motorists proceeding on a southbound green signal to conflict with northbound left-turning or U-turning traffic.

## Toronto Police Collision Records

A review of the Toronto Police Service collision records, revealed a number of reported northbound left turn motorists colliding with southbound through motorists. This collision type has been consistent. Staff have previously implemented a northbound left turn feature during peak periods and extended the duration of the feature; in 2008 a change was made to operate the northbound left turn feature 24 hours a day.

The recommended northbound fully-protected left-turn/U-Turn phase will mitigate these conflicting movements.

In reviewing the collision pattern at this intersection, we specifically considered angle collisions. A pattern of these collisions could be indicative of motorist frustration or impatience as intersection delays increase.

Below is the five-year review period for which we have complete data: January 1, 2007 to December 31, 2011

Year	(Collisions Involving Northbound Left Turning Motorists)		
	Morning Peak Period	Off Peak Period	Afternoon Peak Period
2007	1	2	4
2008	1	1	4
2009	1	1	6
2010	0	2	4
2011	1	0	2
5 year Totals	4	6	20

Our observations reveal that during peak periods southbound queues extend north past the intersection of Warden Avenue and Cloverleaf Gt./Arkona Drive from time-to-time.

We anticipate that the northbound fully-protected left-turn/ U-Turn phase will mitigate the collision hazard at this intersection while still providing residents an access to the neighbourhood.

## **CONTACT**

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## **SIGNATURE**

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## **ATTACHMENTS**

1. Appendix 1 – By-law Amendment (Rescind)
2. Location Plan – U-Turn Prohibition - Warden Avenue and Cloverleaf Gate/Arkona Drive

Appendix 1

"Prohibited Turns"  
Regulation to be Rescinded

(From Column 1 Intersection of Portion of Highway)	(From Column 2 Direction)	(From Column 3 Turns Prohibited)	(From Column 4 Times or Days)
Warden Avenue and Cloverleaf Gate	Northbound	U-Turns	Anytime