то:	CHAIR AND MEMBERS CIVIC WORKS COMMITTEE MEETING ON MAY 24, 2017
FROM:	KELLY SCHERR, P. ENG., MBA, FEC MANAGING DIRECTOR, ENVIRONMENTAL & ENGINEERING SERVICES AND CITY ENGINEER
SUBJECT:	TALBOT STREET UNDERPASS

### **RECOMMENDATION**

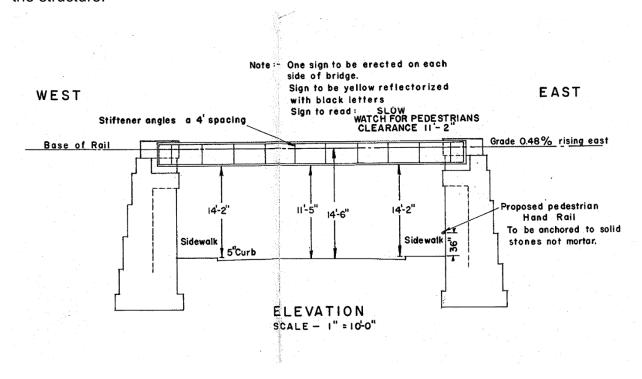
That on the recommendation of the Managing Director, Environmental & Engineering Services and City Engineer, the following report **BE RECEIVED** for information.

#### 2015-19 STRATEGIC PLAN

The following report supports the Strategic Plan through the strategic focus areas of **Strengthening Our Community** and **Building a Sustainable City** by ensuring the safe and efficient movement of traffic, goods and people.

#### **BACKGROUND**

The current Talbot Street railway underpass was constructed by the Canadian Pacific Railway Company (CPR) in 1931 and it has remained largely unchanged. As shown on the following drawing prepared in 1959, the clearance at the centre of the road is 3.48 m (11'-5"). Beams were added by CRP at the same elevation as the underpass in order to provide greater protection to the underpass due to the large number of vehicles that hit the structure.



Each time an oversized truck hits the underpass, traffic in both directions is closed and drivers must find alternative routes. The following report provides a collision history, improvements that were undertaken to reduce the number of collisions and other options that may be considered.

#### DISCUSSION

## **Collision History**

The following table summarizes the collision history at this location since 2008:

Total	5	3	5	3	4	5	7	7	5
Southbound	0	1	4	3	2	3	5	1	3
Northbound	5	2	1	0	2	2	2	6	2
	2008	2009	2010	2011	2012	2013	2014	2015	2016

Table 1: Collision History

While there has been some yearly fluctuation, the number of collisions from northbound and southbound vehicles remain equal. A review of the collision history shows that over 80% of the collisions occur during the day.

#### Signage

Talbot Street is not a designated truck route as per the Traffic and Parking By-law and the regulatory signage can be found on Talbot Street. That being said, trucks are permitted to use non-truck routes if they are in the process of conducting business and they use the shortest route from a designated truck route.

As noted above, the vertical clearance of the Talbot Street underpass is 3.48 m at the centreline of the road which is less than the maximum 4.15 m height of single axle trucks. Vertical clearances must be posted whenever the clearance is less than 4.5 m. The posted clearance height is 3.3 m which takes into account the underpass is located at a low point in the road.

Signage warning drivers of the reduced clearance of the Talbot Street underpass have been in place for many years. On August 20<sup>th</sup>, 2015 enhanced warning signage was installed on either side of the underpass and additional advance warning signs were installed (see Appendix A). As shown on the attached map there are four southbound and nine northbound signs warning drivers that there is a low subway ahead.

# **Potential Mitigating Measures**

# 1. Raising the Railway

Raising of the railway to provide sufficient clearance in the underpass is not a viable alternative due to the close proximity of the Oxford Street railway bridge. Raising of the railway at Talbot Street would require a new bridge over Oxford Street.

# 2. Lowering the Road

As shown in the above underpass cross-section, there is little opportunity to lower the road without impacting the structural stability of the underpass. Additionally there are sewers and other utilities that would interfere with lowering the road. Talbot Street at the CP Rail underpass is at the sag in the road as shown in Figure 1 with Oxford Street at the right of the drawing. Lowering the road to meet the current clearance for new structures of 5.0 m would require the lowering of Oxford Street by approximately 0.7 m in order to meet maximum grade standards.

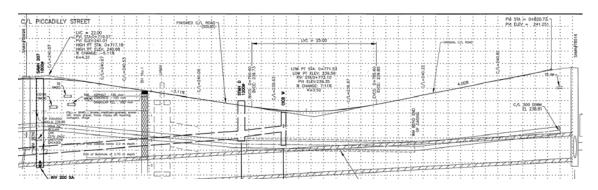


Figure 1: Existing Talbot Street Profile

### 3. Advanced Overhead Signage

As mentioned previously, there are 13 advance warning signs on the approaches to the underpass. City staff are reviewing the possibility of installing additional overhead sign system similar to those used on Eleanor Street at Florence Street. The signs would be installed on Talbot Street immediately north of Piccadilly Street for northbound traffic and south of Oxford Street for southbound traffic. The bottom of the signs would be installed 3.3 m above the road surface. In addition to warning truck drivers of the low underpass, the truck will hit the signs before reaching the underpass giving the driver an opportunity to reverse from the underpass.

# CONCLUSION

From 2008 to 2016, the Talbot Street underpass has been struck by an oversize truck 44 times. The additional signage installed in 2015 has not reduced the number of collisions resulting in a review of other mitigating measures. Raising the railway or lowering the road are not a viable options. In particular lowering the road would have significant impacts on utilities and it would also require the lowering of other roads.

Many of the collisions with the underpass are the result of drivers who are not accustomed to operating a large vehicle (rental moving trucks) and they are not aware of the height of the vehicle. The addition of the advance overhead warning signs should help stop drivers from reaching the underpass and striking the bridge protection beam. Field investigations are currently underway to confirm the location of the signage.

# **Acknowledgements:**

This report was prepared by Doug Bolton and Shane Maguire of the Roadway Lighting & Traffic Control Division.

PREPARED BY:	REVIEWED & CONCURRED BY:			
SHANE MAGUIRE, P. ENG. DIVISION MANAGER ROADWAY LIGHTING & TRAFFIC CONTROL	EDWARD SOLDO, P.ENG. DIRECTOR, ROADS AND TRANSPORTATION			
RECOMMENDED BY:				
KELLY SCHERR, P.ENG., MBA, FEC MANAGING DIRECTOR, ENVIRONMENTAL & ENGINEERING SERVICES AND CITY ENGINEER				

Y:\Shared\Administration\COMMITTEE REPORTS\Civic Works\2017\DRAFT\05-24\CWC - 2017-05-24 - Talbot Street Underpass ver 1.docx May 15, 2017/SM

Attach: Appendix A: Signage Map

# APPENDIX A SIGNAGE MAP

