



300 Dufferin Avenue
P.O. Box 5035
London, ON
N6A 4L9

MEMO

To: Transportation Advisory Committee

From: Trevor Hitchon, CET
Technologist II
Transportation Planning & Design

c: Doug MacRae, Garfield Dales, Karl Grabowski

Date: Nov. 6, 2019

Re: **Wenige Expressway Bridge and Highbury Avenue rehabilitations**

The purpose of this memo is to provide a general overview of the proposed staging and rehabilitation methods involved with the rehabilitation of the Wenige Expressway Bridge and Highbury Avenue, extending from Highway 401 to south of Hamilton Road.

Background

Wenige Expressway Bridge is located on Highbury Avenue, approximately 550 m south of Hamilton Road and spans the South Branch of the Thames River. The bridge was constructed in 1965 and has had one major rehabilitation completed in about 1989. The structure is a continuous two-span reinforced concrete deck supported on six tapered welded steel plate girders are supported on concrete abutments and a centre pier. The structure has a total span length of 76.2 m and an overall width of 18.39 m. The bridge accommodates four lanes of traffic on Highbury Avenue over the South Branch of the Thames River (two northbound and two southbound) and is oriented on an approximate 20 degree skew to the river. Temporary concrete barriers were installed adjacent to the existing metal railings on the east side in 2009 and west side in 2011, after the metal railings were damaged by vehicle strikes. Recent temporary maintenance works have been done to maintain the expansion joints. At roughly 53 years of age, with heavy traffic loading, this bridge is due for a major rehabilitation.

Highbury Avenue within the project limits is a major 4-lane north-south corridor for commuters arriving in London via Highway 401 and neighbouring communities. Highbury Avenue South is classified as a freeway carrying approximately 45,000 vehicles per day, with 15% trucks. This corridor (from south of Power Street to Highway 401) is the only City of London road with a posted speed limit of 100 km/h. Built in the early 1960's under the ownership of the MTO, the roadway is comprised of pavement

sections constructed with concrete; some of which have been replaced with asphalt. Stormwater is conveyed through open ditches on either side of the roadway, as well as within the ditched median that separates the north and southbound lanes. A concrete median wall divides the north and southbound lanes from Hamilton Road to south of the River. In 2008 and 2010 the north and southbound lanes, respectively, were rehabilitated using a diamond grinding technique that restored rideability, surface texture and friction for a safer roadway. Diamond grinding is a pavement holding strategy with a limited life expectancy. Heaving, buckling and pop-outs have been reported by the City's Roadside Operations Staff. In the past ten years records show that there have been 501 collisions with 3 collisions involving fatalities on Highbury Avenue South between Power Street (south of Hamilton Road) and Highway 401. At roughly 53 years old, with the volume of heavy vehicle traffic that uses this roadway daily, this roadway is nearing the end of its service life.

Project Phasing

This corridor will be separated into 3 separate Phases: Wenige Expressway Bridge (Phase 1), Highbury Avenue South-south portion (Phase 2A) and Highbury Avenue South-north portion (Phase 2B). Beginning with the bridge rehabilitation in 2020, each phase is anticipated to last a full construction season.

Phase 1: Wenige Expressway Bridge and approaching road works

Phase 1 (see Fig. 1 below) will consist of the following work:

1. Bridge rehabilitation including:
 - a. Complete deck replacement and widening of the structure to accommodate widened road structure (4 x 3.6m lanes plus shoulders and barriers) complete with waterproofing;
 - b. recoating of structural steel;
 - c. abutment improvements;
 - d. drainage improvements; and
 - e. new street lighting;
2. Storm maintenance hole replacement near Power Street;
3. Removal and replacement of median barrier and street lights from south of the Thames River to near Hamilton Road;
4. Construction of a new parks pathway connection along the south side of the Thames River.

Traffic will be reduced to one lane in both directions for the duration of construction, using temporary median cross-overs constructed north and south of the bridge.

Phase 1 will be awarded to a contractor early in 2020 through the City of London's procurement process.

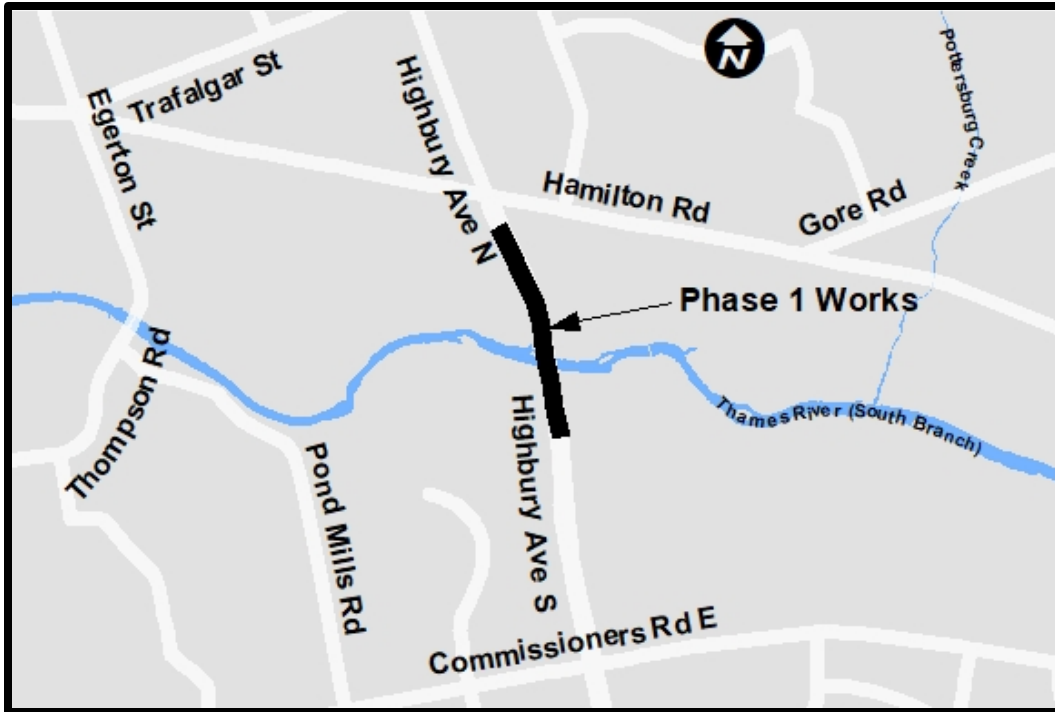


Figure 1: Phase 1 location map

Phase 2: Highbury Avenue South (Highway 401 to Wenige Expressway Bridge)

Phase 2 of this project will involve the following work:

1. Complete road reconstruction of Highbury Avenue South;
2. Culvert replacements;
3. Pending further investigation, corrosion protection for watermains that cross the corridor;

Rehabilitation of Highbury Avenue South will be separated into 2 sub-phases, 2A and 2B, with each sub-phase anticipated to last one full construction season. Phase 2A will extend from near Highway 401 to south of Commissioners Road. Phase 2B will continue from south of Commissioners Road East to south of the Wenige Expressway Bridge.

Traffic will be reduced to one lane in each direction for the duration of construction, utilizing temporary median cross-overs strategically placed, similar to Phase 1. Temporary closures of on-ramps that approach Highbury Avenue South on Bradley Avenue and Commissioners Road East will be required to accommodate the staging, as shown on the staging plan (see Appendix I).

The design of Phase 2 is still in the early stages. The City has yet to decide whether the existing road will be reconstructed with concrete or asphalt. Phase 2A and 2B will be tendered separately in consecutive years due to budget constraints.

We appreciate any and all feedback related to this Memo.

Appendix I
Highbury Avenue South Staging

