



Corporation of the
City of St. Thomas

Report No.
ES 75-17

File No.

Directed to: Mayor Jackson and Members of City Council

Date
Meeting Date: Oct. 16/17
Date Authored: Oct. 4/17

Department: Environmental Services

Prepared By: David Jackson, P.Eng., PMP, Manager of Capital Works

Attachment
Fairview Avenue
3-Lane Cross Section

Subject: Fairview Avenue: Elm Street to Southdale Line Reconstruction

Recommendation:

THAT: Report No. ES 75-17 relating to Fairview Avenue: Elm Street to Southdale Line Reconstruction be received for information.

Origin:

Fairview Avenue between Elm Street and Southdale Line is a major arterial that will experience significant traffic volume growth in the near future from development at the south end of the city. An Environmental Assessment (EA) was completed in 2014 that reviewed widening this section of road to a 3-lane or 4-lane cross section. The EA recommended at least a partial widening was required in the immediate future and full widening by 2028. The City receives regular requests to make improvements to the intersections along this section of Fairview Avenue.

Analysis:

This section of Fairview Avenue currently has 2 lanes with limited turning lanes and limited safe pedestrian crossing locations. The all-way stop at Axford Parkway is the largest capacity limitation and needs to be upgraded to a traffic signal.

Figure 1 – Fairview Avenue (existing Condition): 2 lane cross section



The Environmental Assessment concluded Fairview Avenue should ultimately be widened to 4-lanes but that an interim widening to 3-lanes was a reasonable approach. Based on recent research and practice in the transportation engineering field the 3-lane cross section, including intersection improvements, will be sufficient to accommodate the volume generated from the full build out at the south end of the city.

As was noted in the report to Council in 2016 related to the Elm Street widening planned from Wilson Avenue to First Avenue in 2019, cities have historically widened 2-lane roads to 4-lane roads to increase capacity. More recently a 3-lane cross section has been gaining popularity as a better Complete Streets alternative with similar capacity improvements. Many municipalities are even implementing a road diet and converting existing 4-lane roads into 3-lane roads with studies showing a decrease in overall collisions by 19% - 47% (http://safety.fhwa.dot.gov/road_diets/info_guide/rdiq.pdf). Additional benefits include:

3-Lane vs. 4-Lane Cross Section

	3-Lane Road	4-Lane Road
Property Acquisition	<ul style="list-style-type: none">Minimal near Elm (~100,000)	<ul style="list-style-type: none">Significant between Raven and Elm (~\$400,000)
Utility Concerns	<ul style="list-style-type: none">Minimal near Elm (~50,000)	<ul style="list-style-type: none">Relocate one entire major hydro pole line (~400,000)
Traffic Safety	<ul style="list-style-type: none">One lane to cross for left turnsLess rear end collisions as left turns move out of through lane	<ul style="list-style-type: none">Two lanes to cross for left turnsMore side swipe collisions due to lane changes
Speed	<ul style="list-style-type: none">Lower speeds	<ul style="list-style-type: none">Higher speeds
Pedestrian and Cyclist Benefits	<ul style="list-style-type: none">Less vehicle movements, more cyclist friendlyEasier to accommodate cycle lanesShorter crossing distances	<ul style="list-style-type: none">More vehicle movements, less cyclist friendlyVery long crossings for pedestrians
Aesthetics	<ul style="list-style-type: none">Grass boulevard provide tree planting location and snow storage	<ul style="list-style-type: none">No boulevards, curb face sidewalk

Figure 2 – Typical 4-Lane Cross Section



A great example of a 3-lane cross section is the reconstruction of Manor Road in 2016. The 2-lane road was converted to a 3-lane road with cycle lanes and sidewalks. Fairview Avenue would be an excellent candidate to implement this same cross section. A plan view of the proposed layout is attached to the report.

Figure 4 – Manor Road: 3-Lane Cross Section Example



Reconstruction of Fairview Avenue from Bill Martyn Parkway to Elm Street is a major project and would best be implemented in multiple phases. Phase 1 would address the intersection challenges first. Phase 2 requires additional time for property acquisition, pole relocation, and coordination with other projects in the area.

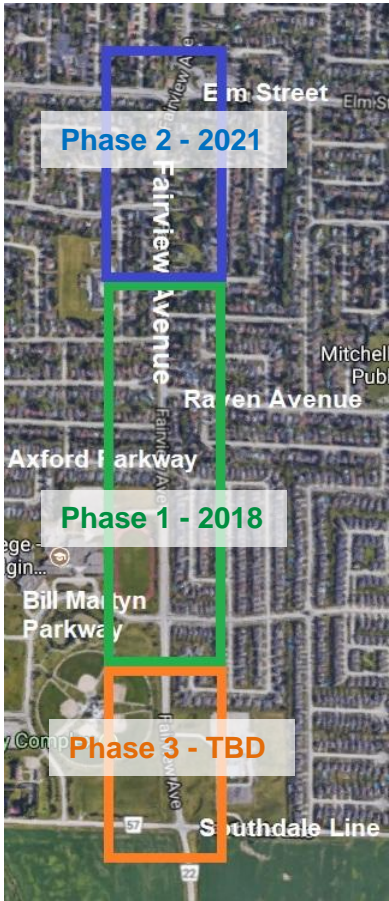
Fairview Avenue Phasing

- Phase 1 (2018) – Caldwell Street to Bill Martyn Parkway

 - Implement three lane cross section throughout including bike lanes and sidewalks on both sides
 - Roundabout at Fairview/Bill Martyn
 - Traffic Signals at Axford Parkway
 - Southbound left turn lane at Raven Avenue
 - Pave wide asphalt shoulders from south limit of Fairview/Bill Martyn intersection to South Path pedestrian crossover
- Phase 2 (2021) – Elm Street to Caldwell Street

 - Extend three lane cross section northerly from Caldwell Street widening to five lane cross section before Elm Street, includes bike lanes and sidewalks on both sides
 - Reconstruct the intersection of Fairview/Elm
- Phase 3 (TBD) – Bill Martyn Parkway to Southdale Line

 - Implement three lane cross section throughout including bike lanes and sidewalks on both sides
 - Roundabout at Fairview/Southdale
 - Timing to be determined as traffic volumes dictate, likely beyond ten year time frame
 - Fairview/Southdale intersection shared ownership with Elgin County



Financial:

The construction estimate for phase 1 is \$2.9M of which 75% will be covered by Development Charges. A request to fund this project will be included with the 2018 capital budget submission.

The construction estimate for phase 2 is \$2.5M of which 75% will be covered by Development Charges.

There is a costs savings of approximately \$1.5M to construction a 3-lane vs. a 4-lane cross-section due to reduced need for property acquisition, hydro pole relocation, and road width.

This report was prepared by Peter Kavcic, E.I.T. in Capital Works.

Respectfully Submitted,

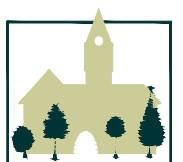
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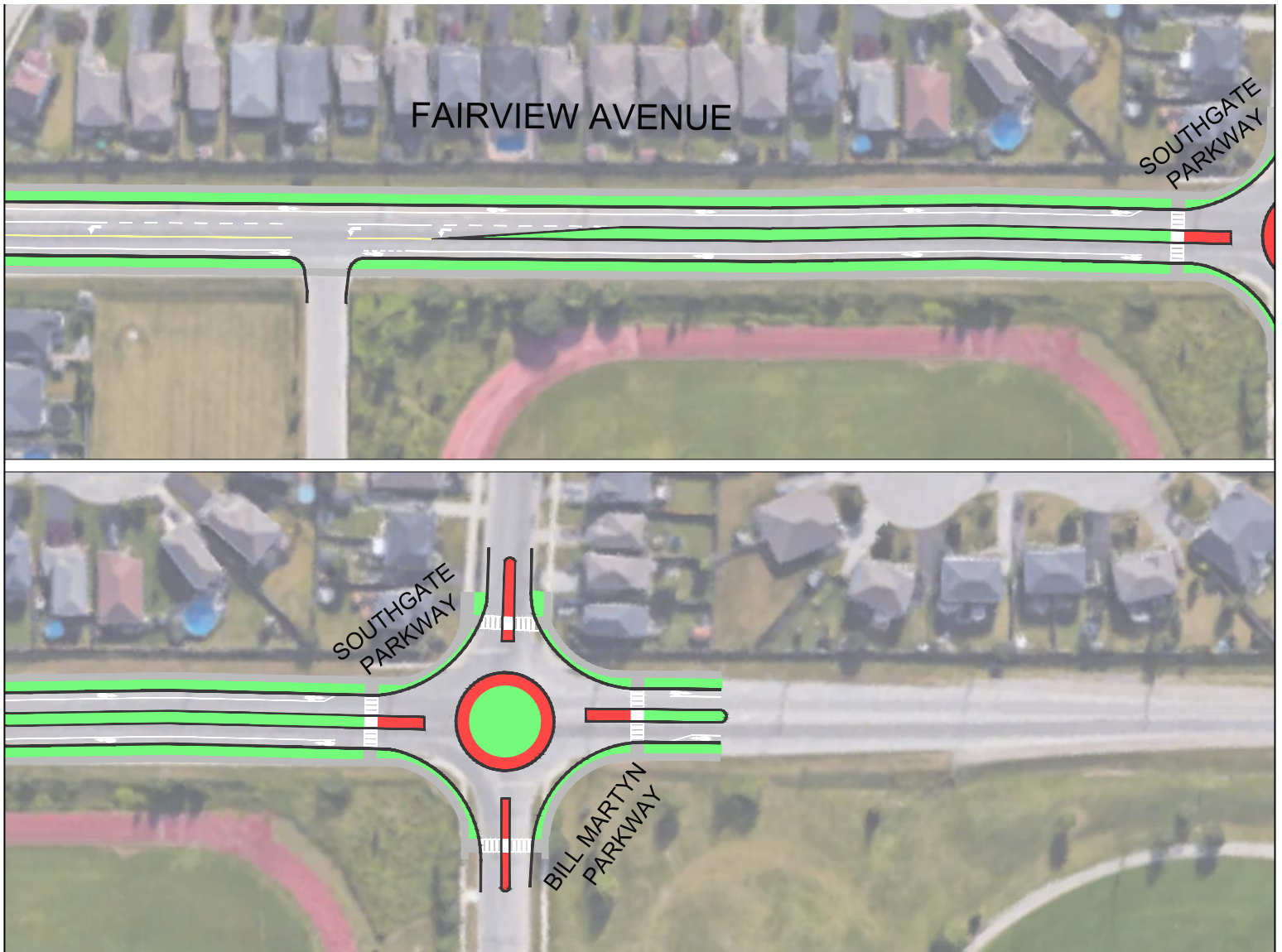
Reviewed By:							
	Treasury	Env. Services	Planning	City Clerk	HR	Other	



**FAIRVIEW AVENUE:
THREE LANE WITH BIKE LANES CROSS SECTION**

DRAWING #: 01





**FAIRVIEW AVENUE:
THREE LANE WITH BIKE LANES CROSS SECTION**

DRAWING #: 02

