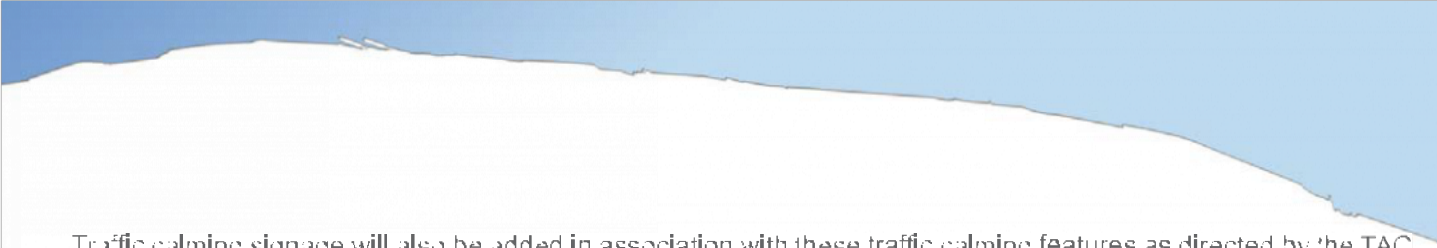


Traffic Calming Treatment	Application/Location on Riverside Drive East
Raised Crosswalks	It was concluded that raised crosswalks would not be used on Riverside Drive based on concerns noted by emergency response officials (Fire, EMS, Police) on the impacts of such crosswalks on response speed and time along Riverside Drive.
Raised Intersections	With the larger flat surface of a raised intersection having a reduced tactile and physical impact on vehicles, these raised intersection "tables" are recommended at all N-1 nodes to enhance visual and physical identification.
Textured Crosswalks	The use of textured and coloured surface materials is recommended in association with N-1 and N-2 nodes, but only at location not in proximity to noise sensitive receivers who may be impacted by crossing noise.
Traffic Circles	<p>This EA determined that six (6) traffic circles would be installed at strategically located intersections along the residential section of Riverside Drive between Strabane and Lauzon. The preferred locations shown in Appendix 1 on Sheets 13, 15, 16, 18 and 19 conform to the traffic circle location criteria of not requiring any private property acquisition, and forming a progression of features along the Drive. The resulting circle locations are at Riverside Drive and:</p> <ul style="list-style-type: none"> Rossini Blvd. Buckingham Dr. St. Louis Ave. Jefferson Blvd. St. Rose Ave. Eastlawn Blvd. <p>These traffic circles, operating in association with the other traffic calming nodes along this section of Riverside Drive, will create a progression of speed reduction features (see Section 7.3 of this ESR). According to the Canadian Guide to Neighbourhood Traffic Calming, motorists will have to yield to vehicles already in the circle, and landscaping in the centre of the circle helps to reduce visibility beyond the circle, thereby encouraging motorists to slow as they approach the circle. The N-2 and especially N-3 nodes with raised medians provide complimentary visual warning, narrowing and calming effects on this section of Riverside Drive.</p> <p>Emergency response agencies at the City (Fire, EMS, Police) support installation of traffic circles only west of Lauzon Road where Wyandotte Street provide a suitable alternative emergency access route. The circle edges will also provide a mountable curb to accommodate large vehicles such as fire trucks passing through. Traffic circles east of Lauzon Road are not supported by the agencies until a suitable alternative emergency access route is available in this area.</p>
Raised Median Islands	Raised median islands are an integral part of each N-3 node proposed for Riverside Drive. Where located at N-3 nodes, islands will reduce the driver perception of the overall width of adjacent travel lanes, thereby encouraging reduced speed through the node. They will also enhance pedestrian crossing safety by creating a refuge in the middle of the street, and are designed wide enough to accommodate the length of a bicycle and provide space for streetscaping within the street.



Traffic calming signage will also be added in association with these traffic calming features as directed by the TAC pavement marking standards, and the ITE's Traffic Calming: State of the Practice

7.3.6. TRAFFIC DIVERSION

Wyandotte Street East

The option of physically diverting Riverside Drive East traffic to Wyandotte Street by installing diverters and directional or full traffic closures on the Drive to force traffic to other routes is not supported by the project Steering Committee, Technical Committee or public input. It is also counter to the project objective to provide safe passage for all users of the Drive, and role of a Scenic Drive as a public thoroughfare, and so was screened out from further consideration in this EA.

However, an important objective of this EA is to also provide opportunities, advantages and features that will help divert mainly through traffic volumes off Riverside Drive to Wyandotte Street East. Traffic analysis conducted as part of this ESR has confirmed that Wyandotte Street East has excess capacity to accommodate increased traffic volumes while maintaining an appropriate level-of-Service along this route (see previous Section 5.3.1). The traffic calming measures and traffic management improvements recommended in the preferred improvement program for Riverside Drive are intended to maintain the Drive as the route of choice for residents and visitors, while creating traffic capacity and flow advantages on Wyandotte Street East that will make it the preferred route for more of the through traffic.

To meet this goal, two types of improvements will have to be made to Wyandotte Street East as part of the City's evolving roadway network improvement program, namely:

Enhance the capacity and Level-of-Service on the existing Wyandotte Street East; and

Extend Wyandotte Street east further east into the East Riverside growth area to serve an extended traffic catchment area

Diverting through traffic off Riverside Drive to alternative routes requires these routes to offer enhanced operational conditions and capacity to accommodate this diverted traffic, and provide a higher level of service compared to Riverside Drive to make the diversion a practical decision for through motorists. In the case of Wyandotte Street East, this will require three key capacity enhancements to be implemented in conjunction with the Riverside Drive Vista Improvement Program:

1. Enact peak period parking restrictions to enhance the carrying capacity of Wyandotte Street (for example, no on-street parking between 7-9 a.m, and between 4-6 p.m.);
2. Analyse the warrants and signal timing of all signalized intersections on Wyandotte Street East to determine where signals may be removed or adjusted; and
3. Other improvements to Wyandotte Street East as planned by the City including improvements to the Wyandotte/Lauzon Rd intersection, and removal of the rail structure at Wyandotte just east of Walker Road. These projects should be maintained and advanced by the City as priorities as improvements are implemented on Riverside Drive.

The second opportunity to accommodate more traffic diversion from Riverside Drive to Wyandotte Street East will be through the planned extension of Wyandotte Street East and McHugh Street to Banwell Road/County Road 43 and Lesperance Road as Class Arterial Roads. These planned extensions already form part of the approved East Riverside Planning Area Secondary Plan, and will be implemented in association with East Riverside development and area transportation needs. In fact, the Secondary Plan includes a complete network of planned improvements in the East Riverside area between Riverside Drive and Tecumseh Road. These connections to the main north-south arterials at Lauzon, Banwell and Lesperance, the Wyandotte and McHugh extensions will provide new opportunities for residents in East Riverside and to the east of the City to use Tecumseh Road, McHugh Street, Wyandotte Street East for east-west travel across the northeastern quadrant of the City.

Further to the east in the Towns of Tecumseh and Lakeshore, the main commuter routes from their designated growth areas to and from Windsor will be via County Road 22, planned for widening to 4-6 lanes onto the E.C. Row Expressway, and from County Road 42 Division Road. As a result, growth in the Towns is not expected to add additional commuter traffic to Riverside Drive.

Other Windsor Area Roadway Improvements

One important conclusion about more passive traffic diversion for Riverside Drive is that the Drive operates as part of the Windsor area roadway network, and other link improvements in this network will also provide viable route options for east-west travel in the northeast part of the City. The planned roadway improvements in this area that will assist in attracting through traffic off Riverside Drive are:

County Road 19/Manning Road Widening being planned by Essex County and the provincial Ministry of Transportation from Highway 401 to the CNR line is part of the border crossing initiatives, and will provide an improved north-south connection to divert some Riverside Drive traffic to the higher capacity Tecumseh Road and EC Row Expressway;

County Road 43/Banwell Road Widening to four travel lanes planned in the Essex-Windsor Regional Transportation Master Plan from Tecumseh Road to County Road 42 will provide a second major north-south link improvement to direct traffic from the Towns of Tecumseh and Lakeshore to Tecumseh Road rather than Riverside Drive; and

County Road 22 Widening is planned to six travel lanes by the County of Essex in the new Regional Transportation Master Plan between County Road 43/Banwell Road and County Road 19/Manning Road, and then to 4 lanes east ultimately to Puce Road. This will greatly enhance east-west roadway capacity from the Towns of Tecumseh and Lakeshore onto the EC Row Expressway as a much higher capacity and more attractive commuter route for Town residents than Riverside Drive.

As a result of these planned roadway network improvements that will provide additional roadway capacity between east Windsor and the Towns to the east, and based on an overall desire to not change the character of Riverside Drive with physical traffic diverters and closures, no further traffic diversion measures are recommended as part of the preferred Riverside Drive improvement program.

7.4 Program Section 4: Lauzon Road to Riverdale Avenue

The character of Riverside Drive in Program Section 4 east of Lauzon Road is also primarily that of a residential street, but with the inclusion of Lakeview Park Marina as a major traffic attraction and proposed as a Special Streetscape Improvement Area. The section also includes the abutting Ganatchio Trail starting at Brumpton Park (the Trail actually begins to the west at Isabelle Place and Wyandotte Street but does not run adjacent to Riverside Drive until Brumpton Park). This section is also characterized by a curvilinear Riverside Drive route following the historical waterfront alignment that has in part resulted in a relatively high vehicle and property collision history that has been reported in previous project interim reports and public meetings.

741 NODES

After the N-2 node proposed at Lauzon Road, only two additional nodes are recommended in Program Section 4 at the following prominent crossing locations. The remainder of the section involves low and higher density residential property on both sides of Riverside Drive, with no opportunities for riverfront vistas or access:

Location	Stop Control Type	Node Type & Associated Crossing Requirement
Brumpton Park/Ganatchio Trail/Marina	None	N-2 requiring an IPS pedestrian signal
Riverdale Avenue	Signal	N-

742 NORTH SIDE SIDEWALK

Construction of a new sidewalk on the north side of Riverside Drive is recommended along the Lakeview Park Marina between the N-2 node at Brumpton Park and east edge of the Shanfield Shores Park. This is calculated to involve only 469 m² or **0.4 hectares** of parkland. It would require a cantilever widening of the existing Little River Bridge to accommodate the sidewalk and bike lanes. Contacts made at the Department of Fisheries and Oceans Canada confirm that as long as the bridge remains a clear span, widening to accommodate a north sidewalk and bike lanes will not trigger a CEAA review. Transport Canada confirmed that a Navigable Waters Protection Act permit would be required for such bridge improvements.

743 ON-ROAD BIKE LANES

It is recommended that exclusive on-road bike lanes extend through Program Section 4 based on the same rationale and with the same shared lane option as described previously in Section 7.3.3. The off-road Ganatchio Trail located parallel to the eastern portion of Riverside Drive in Section 4 will continue to serve slower mixed use recreational cycling, while the new on-road bike lanes will serve higher speed cyclists.

7.4.4 ROADWAY SAFETY IMPROVEMENTS

Traffic safety issues and potential solutions along Riverside Drive in Program Area 4 have been previously studied as part of the Drive Vista improvement Project, with results reported to City Council on September 26, 2005 that resulted in the installation of further temporary safety improvement measures, more specifically concrete bumper blocks and higher friction asphalt.

Since these and other safety improvements on Riverside Drive east of Lauzon Road were intended as temporary measures, the existing roadway surface condition is rated as poor along the entire Drive section from Lauzon Road to the Tecumseh border. required road reconstruction will provide an opportunity to install permanent safety improvements on Riverside Drive. The following described the types of improvements recommended for in the detailed design and construction phase as part reconstruction. Design treatments screened out from further consideration in the improvement program are also sum

Recommended	Not Recommended
<p>Install high barrier curbs (i.e. maximum 8") along the curved sections of Riverside Drive between Lauzon Road and Riverdale Avenue, and standard barrier curb on the remainder of the Drive, all with driveway curb cuts;</p> <p>In the detailed design, include the re-grading of the curved sections of Riverside Drive to create superelevations that better contain vehicles on the roadway surface;</p> <p>Re-apply higher friction asphalt pavement as part of the Riverside Drive reconstruction; and</p> <p>Continue the use of pavement markings and signage to warn of the curves on Riverside Drive.</p>	<p>Install landscaped centre medians within the Riverside Drive curves to prevent vehicles from crossing the centerline. While pedestrian refuge medians are included as part of N-3 nodes, these are not recommended for installation within Program Section 4 owing to the relatively narrow right-of-way and resulting property impacts. Centre medians would also obstruct access to the multiple driveways located along this section;</p> <p>Reconstruct the road to reduce curve radii. This is not recommended because; 1) extensive property acquisition would be required, 2) there are other effective options available and 3) it would significantly change the historical alignment of Riverside Drive along the Detroit River;</p> <p>Installing STOP control at Dieppe intersection is not currently warranted;</p> <p>Diversion of some traffic to Wyandotte Street is already being encouraged by other area roadway enhancement projects (see Section 7.3.6).</p>

7.4.5 SIDEWALK AND BARRIER CURB RECONSTRUCTION

Program Section 4 includes a south side sidewalk that would be rebuilt as part of the road reconstruction, within the 13.6 m right-of-way proposed for the Drive. It is recommended that a full north side sidewalk in Program Section 4 be included as part of the road reconstruction along the south edge of the marina area from the N-2 node at the west marina entrance, extending to the southeast edge of Shanfield Shores Park as shown on Sheets 22-23 in **Appendix A**, and removing about **0.6 hectares** of land from the south edge of the marina area. This will require a clear span widening of the Little River Bridge. The installation of high barrier curbs along the curved sections of the Drive, with standard barrier curbs elsewhere are important traffic safety measures.

7.4.6 TRAFFIC CALMING

In association with the roadway safety improvement recommended in Section 7.4.3 for Program Section 4, and based on the evaluation of optional treatments, a raised intersection treatment is proposed at the N-1 Riverdale Avenue node.

7.5 Program Section 5: Riverdale Avenue to East City Limit

This most easterly Program Section is characterized by abutting single family residential property along the north side, along with a portion of the Lakeview Park Marina, a block of vacant industrial properties currently used for aggregate storage in the vicinity of Little River Corridor Park and the Sandpoint Beach, Ganatchio and Stop 26 Parks. The south side is characterized by the parallel Ganatchio Trail with associated off-street parking lots abutting low, medium and high density residential developments. The eastern gateway at the City border with the Town of Tecumseh is proposed as a Special Streetscape Improvement Area – East End.

7.5.1 NODES

East of the proposed N-1 node at Riverdale Avenue, Program Area 5 includes the following five (5) nodes:

Location	Stop Control Type	Node Type & Associated Crossing Requirement
Flora Avenue	Existing Intersection Pedestrian Signal	N-2
Florence Avenue	Signal	N-2
Clover Street	None	N-2 requiring IPS Pedestrian Signal to connect to the Stop 26 Park
Greenpark Boulevard	None	N-2 requiring IPS Pedestrian Signal
Shoreview Circle/Lakeview Avenue	None	N-2 requiring IPS Pedestrian Signal

7.5.2 EXCLUSIVE BIKE LANES

It is proposed that exclusive bike lanes extend through Program Section 5 within the 13.6 m minimum right-of-way, terminating at the Shoreview/Lakeview node, primarily to serve faster utilitarian cycling. The off-road Ganatchio Trail to the south will continue to accommodate mixed types of users at slower recreational speeds and cycling capabilities.

7.5.3 SIDEWALK AND BARRIER CURB RECONSTRUCTION

Providing a continuous sidewalk along the south side of Riverside Drive in Program Section 5 is recommended as an alternative pedestrian route to the nearby mixed use Ganatchio Trail. As a result, adding a new north sidewalk east of the Marina was also evaluated, but screened out from further consideration owing to the lack of need for a sidewalk on this side of Riverside Drive. However, since the reconstruction and improvement of Riverside Drive will be staged (see Section 8.2), the sidewalk along the south side road right-of-way may be moved to the north side along the residential properties extending from the east edge of Lakeview Park Marina, east to Shoreline Circle/Lakeview Avenue. The Ganatchio Trail would then serve all pedestrian movement needs on the south side, and a north side sidewalk would serve only the Riverside Drive residents on that side. This option can be finalized at the detailed design stage.

Program Section 5 also exhibits Riverside Drive surface conditions rated as poor and requiring reconstruction. As in Sections 3 and 4, this reconstruction will provide the opportunity to install standard barrier curbs on both sides of Riverside Drive, resulting in a consistent edge treatment along the entire 16 km alignment. Also, as in Sections 3 and 4, barrier curbs will restrict any encroachment of private property activities, such as parallel parking and landscaping.

7.5.4 TRAFFIC CALMING

Four types of traffic calming measures are recommended at the following nodes in Program Section 5 based on the evaluation of optional treatments in Section 7.3.5:

- Raised intersection as part of the N-1 node treatment at Riverdale Avenue;
- N-2 node treatment with Intersection Pedestrian Signals at the Florence Avenue, Clover Street, realigned Greenpark Boulevard intersection and at Shoreline Circle/Lakeview Avenue; and
- Textured crosswalk surface treatments at these nodes owing to distance from noise sensitive residential receptors.

