The resulting list of horizontal deflection alternatives considered on Riverside Drive includes:

1. **Traffic Circle** – is a round, raised island located in the centre of an intersection, requiring vehicles to travel through the intersection in a counter-clockwise direction around the island. They therefore provide substantial benefits in slowing the speed of traffic through the intersection, according to the Canadian Guide to Traffic Calming. The size of the circle is typically limited by the existing intersection geometrics, so the central feature can be located in the intersection with adequate turning paths. If the resulting turning path for larger vehicles cannot be provided, a larger diameter circle may be required. Traffic circles can also encourage motorists to turn left in front of the circle rather than going around, with associated pedestrian conflict potential. They can be unsightly as a streetscaping feature unless properly landscaped as in the above example from Hamilton.

2. **Modern Roundabout** - is characterized by one or two lane turning paths and a raised centre median island. It facilitates better traffic flow for a variety of vehicle sizes compared to traffic circles, and more opportunities for streetscape treatment, but requires a larger right-of-way that may not be available at most major Riverside Drive intersections without property acquisition. Modern Roundabouts and Traffic Circles are NOT included as appropriate traffic calming devices for Collector Roads in the Windsor Traffic Calming Policy, but are included as alternatives for consideration based on some public suggestions as part of the Riverside Drive VIP.

3. **Raised Median Island** – is included as an appropriate calming devise in the Windsor Policy. It involves a raised median constructed along the centreline of a road approaching an intersection, or at a mid-block location, to narrow the width of the travel lanes. It can help reduce travel speed through the narrowing and associated side friction it creates for vehicles, and can help in protecting pedestrian crossings at intersections and mid-block locations, but generally requires installation of associated speed reduction measures to be effective. On Riverside Drive, raised median islands may be appropriate where excessive travel lane widths are provided, for example between St. Rose and Lauzon. Such applications would have to avoid locations that would restrict left turn movements into abutting driveways (this issue was discussed with residents of Riverside Drive east of Lauzon Road in April, 2005 who suggested installation of centre barriers to mitigate vehicle collisions with abutting property).

4. **Lane Narrowing** – is the result of many types of horizontal deflections, with the intent to slow vehicle speed within the travel lane. The option to use a 3.3 m travel lane for Riverside Drive is a type of lane narrowing through design. In the City's Traffic Calming Policy, it is included as an appropriate traffic calming devise for Level 2 calming on Collector Roads in the City Policy.

5. **Curb Radius Reduction** – involves reconstructing the curb corners of an intersection using a reduced, or tighter curb radius, usually in the 3 to 5 m range. The intent is to slow right-turning vehicles, for example traveling eastbound on Riverside Drive and turning right onto an intersecting street. Since right turns are only available going eastbound on the Drive onto an intersecting street (i.e. no 4-way roadway intersections), curb radius reduction may not have any desired speed reduction on Riverside Drive itself, but could benefit intersecting streets, and improve pedestrian crossings of the Drive where installed owing to the shortened street crossing distance.

5.5.3 ALTERNATIVE #3 - SIGNING

Regulatory and special "Traffic Calming Neighbourhood" signs are typically used as basic traffic calming measures. However, as stated in the *Canadian Guide to Neighbourhood Traffic Calming,* "using regulatory signs for traffic calming purposes can be ineffective, and can create compliance problems".[4] Therefore, the traffic calming alternative for Riverside Drive can include regulatory (i.e. posted speed), warning (i.e. reduced speed) and information (i.e. Traffic Calmed Neighbourhood) signs. However, increased signage on Riverside Drive would have a very limited potential for speed and volume reduction unless installed as part of larger traffic calming programs.

KEY IMPACT CONSIDERATIONS – TRAFFIC CALMING:

Positive Impacts	Negative Impacts
• Appropriate traffic calming measures, when used in the appropriate locations, are proven to reduce travel speed and encourage some traffic diversion; • Reduced social impacts on abutting residential properties through noise reduction; • Improved social impacts from speed reduction, volume reduction and conflict reduction on the roadway for all users.	• Potential to shift traffic problems to other streets; • May require changes to street maintenance practices depending on measures used; • Capital cost depending on measures used, ranging from $50,000 to $100,000 for a fully raised intersection, $10,000 to $20,000 for a raised median island and $200 to $300 for a Traffic-Calmed Neighbourhood sign. • Transit Winds or noted concerns about bus manoevability, equipment damage, customer safety and ongoing operational costs if traffic circles or modern roundabout are located on a bus route.

Conclusion – Based on transportation industry practice, Ontario traffic calming experience and Windsor public and agency input on traffic calming on a collector-type road such as Riverside Drive, measures **retained for further consideration** in development of design concepts in Phase 3 of this EA are:

4 *Transportation Association of Canada, December 1998*

Vertical Deflections:	Raised Crosswalks Raised Intersections Textured Crosswalks
Horizontal Deflections:	Traffic Circles Raised Median Islands
Signing	

NOTE: Owing to input provided by Transit Windsor, Windsor Police Service, Windsor Fire and Rescue and Essex-Windsor EMS, horizontal deflection types of traffic calming measures have not been considered east of Lauzon Road. This is due to impacts of some traffic calming measures on transit bus operations, and the lack of an effective east-west alternative route to Riverside Drive east of Lauzon.

5.6 Traffic Management and Operations Alternatives

5.6.1 ALTERNATIVE #1 - IMPROVED INTERSECTION OPERATIONS

Rationale – Improving intersection operations on Riverside Drive can have the benefit of improving traffic flow and potentially improving safety. Reducing the amount of delay on Riverside Drive at critical locations may reduce driver frustration and potential for unsafe manoeuvres to avoid or reduce delay. However, improving intersection operations may also increase the attractiveness of Riverside Drive as a commuter route. Therefore, intersection improvements should focus primarily on the section west of Strabane Avenue, which is more commercial and mixed use in nature, with a higher potential for increased congestion in the future.

The potential impact of improved intersection operations must be considered in the context of existing delay. At present, traffic flows relatively freely on Riverside for most of the day, largely due to the long spacing of signalized intersections. Based on the travel time surveys documented in Section 3, total delay over the entire length of the study corridor (based on a floating car method) is approximately 2 minutes on a total trip time of roughly 20 minutes. Therefore, the maximum time savings that could be achieved through intersection capacity optimization would be less than 10% of the total corridor trip time.

Impact Assessment – Improved intersections operations applies to both signalized and unsignalized intersections as follows:

1. **Improved Signalized Intersection Operations** – The performance of a signalized intersection can be improved by adjusting the allocation of “green-time” between specific movements, increasing the cycle time for the intersection (which increases overall capacity), reducing the cycle time of the intersection (which may reduce average driver delay), or adding protected signal phases for selected movements (e.g. an advance green phase for a left turn). Another option is to restrict certain movements, though this would not likely be feasible for most locations along this Scenic Drive and Civic Way, as previously discussed under Traffic Calming.

Candidate signalized intersections that warrant further investigation for capacity optimization separate from this EA process (based on existing level of service) include:

- Glengarry/Riverside
- Montreuil/Riverside
- Drouillard/Riverside
- Pillette/Riverside

2. Improved Capacity at Unsignalized Intersections – Delay can occur at unsignalized intersections were there is one lane of traffic on the primary street (Riverside Drive) and left turning traffic is delayed by on-coming traffic. An example of this is Riverside Drive at Devonshire Road, which is incidentally also a high collision location. Delay can also occur where there is only one lane and right turn traffic is delayed by pedestrians crossing the side street. In these situations, consideration could be given to:

    - Constructing a left turn lane on Riverside (typically in the westbound direction) so that through vehicles can safely by-pass turning traffic on the right-hand side. This could be implemented in conjunction with a centre left turn lane that serves several closely spaced unsignalized intersections;

    - Constructing a right turn lane;

    - Signalizing the intersection.

The extension of Wyandotte Street east of Riverdale Avenue creates an additional opportunity to divert westbound traffic from Riverside Drive to Wyandotte Street. Several Riverside Drive intersections east of Walker Road have existing westbound left turn lanes, including (from east to west) Riverdale Avenue, Lauzon Road, St. Rose Street, Pillette Road, George Avenue, Pratt Place, Cadillac Street, and Drouillard Road.

Intersection analysis conducted as part of this EA has concluded that the addition of left turn lanes westbound on Riverside Drive is warranted at:

- Strabane Avenue

- Florence Avenue; and

A new future road intersecting Riverdale Drive between Clover Street and Greenpark Blvd. as part of a future plan of subdivision. This new road would cross the Ganatchio Trail and will be designed to eliminate unsafe conditions and minimize road/trail conflicts. It is believed that a left turn lane off Riverside Drive would encourage traffic diversion because of the relatively short distance to the planned Wyandotte Street extention.

Technical backup to this warrant analysis is found in the Specific Traffic Assessment part of **Technical Appendix Volume 1**. Although a new left turn lane from Riverside Drive westbound onto Jefferson Blvd. was found to be marginally warranted, it would also encourage traffic to remain on Riverside Drive since queues would not occur behind westbound left turning vehicles. Also, Jefferson Blvd. was screened out from further consideration for a Riverside Drive left turn lane because it is a low density residential street, and residents noted concerns about increased traffic on Jefferson.

KEY IMPACT CONSIDERATIONS – TRAFFIC MANAGEMENT AND OPERATIONS:

Positive Impacts	Negative Impacts
• Social impacts of improved emergency response capability, traffic management capability and user safety along Riverside Drive; • Relatively low economic impact of traffic management and optimization compared to reduction in travel delays on Riverside Drive; • Conformity to established traffic control warrants; • Social impacts of improved traffic management supporting other improvement measures for Riverside Drive pedestrians and cyclists.	• Social impacts of improving intersection operations on Riverside Drive that may attract additional commuter traffic; • Increased traffic volume on interesting streets where traffic management may encourage traffic diversion.

Conclusion – Given that a primary focus of this study is to improve safety on Riverside Drive, improvements to selected intersection operations should be **retained for further consideration** in the Phase 3 design concepts for Riverside Drive improvements. However, the design and selection of improvements will need to ensure that the measures don't inadvertently attract additional traffic to Riverside Drive or connecting streets as a result of improved level of service.

5.7 Intersection Traffic Control Alternatives

Rationale - Several members of the public have suggested that additional traffic control be introduced at selected locations to introduce delays to traffic on Riverside Drive, thereby potentially diverting Riverside traffic to other routes.

Impact Assessment - This alternative type of solution could consist of adding new signalized intersections (e.g. at Jefferson as suggested by one resident), and new all-way stops or intersection pedestrian signals (which are actuated only when a pedestrian wants to cross Riverside Drive). Traffic control measures could also include introducing "artificial" delay at existing signalized intersections. Extreme caution must be exercised when implementing traffic control measures that are not warranted, or are being implemented for purposes other than their intended use. Additionally, unwarranted traffic control devices may introduce additional safety concerns and driver frustration. For example, a technical memo in the Specific Traffic Assessment part of **Technical Appendix Volume 1** documents why adding a new signalized control at Riverside Drive and Jefferson is not warranted by current traffic conditions.

KEY IMPACT CONSIDERATIONS – INTERSECTION TRAFFIC CONTROL:

Positive Impacts	Negative Impacts
• Social impacts of reducing traffic volume and speed by adding delays to the traffic flow; • Social impacts of enhancing user safety for pedestrians, cyclists and motorists that result from added traffic delays and associated lower speeds and volumes; • Relatively low economic impact to achieve changes to traffic conditions.	• Social impact of added driver frustration, confusion and accident potential caused by travel delays and slower speeds; • Social impact from the change in the visual character of Riverside Drive where additional traffic control measures are located.

Conclusion - It is recommended that in the development of the design concepts for Riverside Drive in Phase 3 of this EA (see Section 7), new traffic control measures be implemented only where City or industry - accepted warrants are satisfied, or where they can be shown to have a positive safety impact and add to the visual character and aesthetics of the street.

5.8 Alternatives for Cycling

Rationale – In approving the Windsor Area Long term Transportation Study (WALTS) in 1999 (CR943/99), City Council passed a resolution that consideration of bike lanes on Riverside Drive would be dealt with in the subsequent Bicycle Use Master Plan (BUMP). In 2001, Council's approval of BUMP (CR554/2001) referred the question of Riverside Drive bike lanes, and specifically between Strabane Avenue and St. Rose Avenue, to a Traffic Calming Study and ESR as provided by this current project.

Since this Riverside Drive VIP EA is the Traffic Calming Study and ESR referred to by Council in CR554/2001, the VIP EA **is required** to consider alternatives for cycling on Riverside Drive. Also, in response to the Class EA process, it is also necessary to consider no or limited addition of cycling facilities on Riverside Drive.

Impact Assessment - The impact of bikeways in the Riverside Drive corridor depends largely on the type of bikeway being considered. Geometric design guidelines are also based on various local, national and international engineering guidelines for planners and engineers, although there are no universally accepted standards to which bicycle facilities must be built. In Canada, there are standards provided by:

- Transportation Association of Canada (TAC) in the "*Geometric Design Guide for Canadian Roads,* the *Bikeway Traffic Control Guidelines for Canada* and *Guidelines for the Design and Application of Bicycle Traffic Pavement Markings";*
- Canadian Institute of Planners *"Go For Green Community Cycling Manual: Planning and Design Guide"; and*
- Velo Quebec provides a very detailed manual called the *Technical Handbook of Bikeway Design, 2nd edition (2003).*

In the United States, bicycle design standards are provided by:

- American Association of State Highway and Transportation Officials (AASHTO) *"Guide for the Development of Bicycle Facilities (1999)*; and
- Federal Highways Administration (FHA).

In addition to Windsor's BUMP report, many bicycle design manuals or guidelines have been developed by other local municipalities, with examples ranging from Waterloo Region, Kingston, Toronto and Vancouver, through to Chicago and Portland in the USA.

In Ontario, cyclists have the same rights and responsibilities as drivers of motor vehicles under the *Highway Traffic Act* (HTA). Bikeway design must reinforce cycling behaviour that is compatible with the regulations of the HTA. Generally, cyclists are to ride as far to the right as practical. This means that there will be circumstances when it is not practical to ride to the right, such as when making left-turns, avoiding hazards on the right, passing slower vehicles and riding in a lane that is too narrow to share with motor vehicles.

Pavement markings and signage for bikeways should follow the Transportation Association of Canada's (TAC) *Bikeway Traffic Control Guidelines for Canada* (December 1998) and the recently update *Guidelines for the Design and Application of Bicycle Traffic Pavement Markings*.

Based on public input provided during the preparation of this VIP EA, the four main issues associated with provision of bikeway facilities on Riverside Drive involve safety, associated property impact, need and cost summarized as follows:

Safety – There are always inherent risks associated with traveling by any mode of transportation. The concept of "safety in numbers" has been examined for vulnerable road users, including cyclists. The likelihood that a given person bicycling will be struck by a motorist varies inversely with the amount of bicycling. This pattern is consistent across communities of varying size, from specific intersections to cities and countries, and across time periods. Policies that increase the numbers of people cycling appear to be an effective approach to improving cyclist safety. [5]

Property Impacts – How the installation of bikeway facilities within a road right-of-way impacts abutting property depends largely on the locations and geometric design guidelines used for the bikeway. It is possible to safely reduce a road cross section with bike lanes, for example, to a width that can be contained within the existing public road right-of-way, thereby requiring no acquisition of abutting property. Similar, impacts on street trees, landscaping and other street features, either public or private, can be minimized or avoided by the geometric guidelines employed, and by special alignment techniques to avoid physical and natural features.

Need – Some people have argued that there is no proven need to introduce more bike lanes on Riverside Drive, and that the bike lanes currently in place are underutilized. However, according to a statistically valid public attitude survey conducted as part of the BUMP study, 23% of the Windsor population cycle for utilitarian purposes, and 45% for recreational purposes, concluding that "*cycling is a critical mode of transportation and form of recreation for Windsor area residents".* Other statistics show that the rate of cycling in Windsor is comparable to similar sized cities including London and Kitchener, and actually higher than in St. Catharines, Halifax or Oshawa.[6]

This is supported by a large amount of public input provided during this EA in support of cycling on Riverside Drive, ranging from the Windsor Bicycling Committee through to residents across the City as documented in **Technical Appendix Volume 2: Public Consultation**. Others oppose cycling on Riverside Drive, also as reported in **Technical Appendix Volume 2**, making it the largest single issue of public debate in the project. Studies conducted in the transportation planning industry of motor vehicle and bicycle volumes before and after installation of bike lanes shows that motor vehicle volumes generally are unaffected, while bicycle volumes increase by various amounts (see examples of source references below).[7]

Cost – When reconstructing a street, there is an extra incremental cost to add bike lanes estimated in Windsor to be about $140/metre based on local construction costs. The basic cost to reconstruct a road such as Riverside Drive without bike lanes is $900/metre. The cost with 1.5 metre bike lanes added on both sides is

5 *Safety in numbers: more walkers and bicyclists, safer walking and bicycling, P.L. Jacobsen, Injury Prevention 2003, 9:205-209*
6 *Cycling Trends and Policies in Canadian Cities, Victoria Transport Policy Institute, April 23, 2005*
7 *MacBeth, A. (1999) "Bicycle Lanes in Toronto." Institute of Transportation Engineers. ITE Journal.*

New York City Department of Transportation (2003) "Oriental Boulevard: Bicycle Lane Impacts." City of New York.
Sallaberry, M. (2000) "Valencia Street Bicycle Lanes: A One Year Evaluation" Department of Parking and Traffic, City of San Francisco.
San Francisco Department of Parking and Traffic (2001) "Polk Street Lane Removal/Bike Lane: Trial Evaluation" City of San Francisco.

$1,040/metre, resulting in a cost increase of about 15%. This added capital and associated maintenance cost must be compared against the physical health and enjoyment benefits provided to the community of an effective bicycle route system. For example, local health organizations have provided input to this EA on the health benefits of more active living in Windsor.[8]

Seven (7) bikeway alternatives within the Riverside Drive corridor have been assessed as follows:

5.8.1 NO EXTENSION OF ON-ROAD RIVERSIDE DRIVE BIKE LANES

Public response to the preferred Riverside Drive improvement program after PIC #3 on May 24, 2006 showed a strong polarity in the community between those wanting and those objecting to on-road bike lane extensions on Riverside Drive. At the public meeting organized by the Save Our Drive group on October 24, 2006, others felt that on-road bicycle lanes should not be considered on Riverside Drive until improvements to Wyandotte Street have diverted and reduced traffic volumes on Riverside Drive.[9]

This polarity by both Riverside Drive and non-Riverside Drive residents has been well recognized by the entire Project Team, but at the same time a number of existing conditions must also be objectively recognized in order to properly address this difference of opinion. This begins with the premise that irrespective of whether bike lanes or other types of bikeways are provided on Riverside Drive, this route attracts cyclists, and will continue to do so primarily because:

1. Riverside Drive provides direct access to 24 public parks along the riverfront, which is one of the most, if not the most important recreation and open space attraction in the City of Windsor;
2. There are already cycling routes provided within the study area with major sections of on-road bike lanes in the core, the Ganatchio Trail and with off-road multi-use trails located through riverfront parkland;
3. The Ontario Highway Traffic Act designates bicycle as a “vehicle”, with rights and responsibilities to follow the Rules of the Road designed to enhance cycling safety and enjoyment;
4. Awareness of the social, economic and natural environment benefits of cycling as a sustainable form of transportation continues to grow with the evolving demographics in Windsor through the efforts of groups such as the Windsor Bicycle Committee;
5. WALTS includes the cycling mode as an important component of the City’s transportation system, and as one measure to reach its alternative transportation mode target; and
6. The Official Plan requires that appropriate cycling facilities be considered on Scenic Drives, and designates Riverside Drive as a Bikeway.

Irrespective of these present conditions, this EA has assessed the following sub-alternatives to having no cycling facilities added to Riverside Drive, as suggested by some members of the public during the EA process:

Alternative 1.1: No further bikeway facilities would be provided on Riverside Drive between Strabane Avenue and St. Rose Avenue or Lauzon Road based on the argument that this section operates as a residential street, and bike lanes are not compatible with such streets and would change the streets character.

Response: In comparable cities (i.e. Ottawa, Hamilton Cambridge, Kitchener, St. Catharines), on-road bike lanes are

8 Based on comments provided by the Active Living Coalition and Windsor Essex County Active Living Coalition.

9 203 people signed in to the October 24, 2006 residents meeting organized by the Save Our Drive group. Since it was not a mandatory public meeting held by the proponent, notes of the meeting were not taken by the proponent, but an audio record of the meeting was made.

located on minor and major collector residential streets as part of comprehensive bikeway systems. Also, while sections of Riverside Drive serve a residential access/egress role, they are still part of a continuous east-west roadway link across the City, and as such are expected to accommodate a mix of location and regional traffic including cycling.

Alta Vista Blvd, Ottawa

Roseville Road, Waterloo Region

Alternative 1.2: Some residents of Riverside Drive have argued that by definition, cycling on Riverside Drive is commuter cycling, and according to the BUMP study, this type of cycling is intended to use planned bike lanes on Wyandotte Street south and parallel to Riverside Drive.

Response: Riverside Drive cycling takes place along riverfront parkland and residential setting, compared to the commercial setting along most of Wyandotte Street. The BUMP study does not, in its recommended policies, practices and bikeway designations, differentiate between "commuter" and "recreational" bike lanes. Map 4 in BUMP shows the recommended cycling network with 3 designated types of cycling routes; 1) Bike Lane, 2) Multi-Use Trail and 3) Signed Route. Similarly, Maps 5 and 6 show the recommended "primary" and "secondary" cycling networks, once again with no differentiation between commuter and recreational facilities.

5.8.2 RIVERSIDE DRIVE ON-ROAD BIKE LANES EXTENSION

Bike lanes are implemented on the travel portion of the roadway, generally on the right side (curb side) of adjacent motor vehicle lanes. Bike lanes operate one-way and cyclists travel in the same direction as the adjacent travel lane, except in unusual circumstances when a contra-flow bike lane may be implemented on one-way streets. Thus, a bike lane is required on both sides of a two-way street. Bike lanes are generally governed by the same regulations at intersections and driveways as the adjacent travel lane. Therefore, the expected behaviour of the cyclist is that of a driver of a motor vehicle with the same rules of the road.

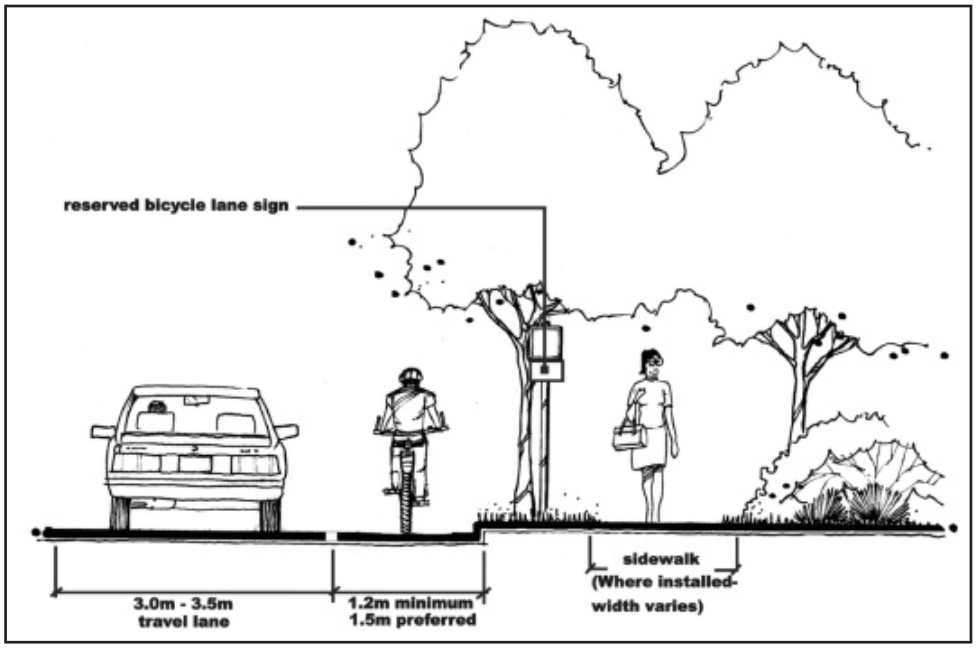
The US Federal Highway Administration has identified consistent quality and extent of bike lanes as important characteristics of bicycle- friendly cities, and that there were three times more commuter cyclists in cities with higher proportions of bike lanes.

As shown on Exhibit 5.1 from the BUMP study, bike lanes should be at least 1.5 m wide measured from the lane stripe to the curb face. In addition, there should be at least 1.2 m between the bike lane stripe and the joint between the pavement and the gutter pan.

Bike lanes should be 1.8 m wide when adjacent to travel lanes carrying motor vehicles traveling at speeds greater than 60 km/h, or if there is a high percentage of trucks or buses (10% or more). If adjacent to on-street parking lanes, the bike lane should be at least 1.6 m wide and the parking lane 2.4 m wide so that the cyclist will not be hit by a car door opening.

Adjacent motor vehicle lanes should be a minimum of 3.0 m wide for local and collector roadways with low volumes of truck and bus traffic, and at least 3.5 m wide for arterial roadways. TAC's *Geometric Design Guide for Canadian Roads* (1999) can be referred to for more information on width of motor vehicle lanes. Parking in bike lanes should be signed as prohibited.

EXHIBIT 5.1 – ON-ROAD BIKE LANES



Response: Bike lanes have the advantage of providing a continuous, visible designated space for cyclists. Bike lanes broadcast to the community that bicycles are an important part of traffic, sending a message of welcome for both those who ride now and those who would like to ride. Communities have demonstrated that a connected network of on-road bike lanes increases the number of cyclists, and with an increasing number of cyclists comes further improvements in their safety. Individual roadway corridors have seen an increase in the cycling volumes by 50% to 150% after bike lanes have been installed (various sources).

As an example, in 1999 a study of traffic condition changes on six (6) Toronto streets two years after on-road bike lanes had been installed showed that in all cases bicycle traffic had increased by up to 42%, while motor vehicle traffic volumes remained largely unchanged.[10]

Bike lanes have an advantage over wide, shared-use lanes in that they have been shown to reduce motor vehicle speeds in adjacent lanes. The pavement markings for the exclusive bike lanes visually narrow the street and calm traffic, creating a safer environment for motorists, cyclists and pedestrians.

10 *MacBeth,A. (1999) "Bicycle Lanes in Toronto," Institute of Transpportation Engineers, ITE Journal.*

5.8.3 OFF-ROAD SIDE PATHS

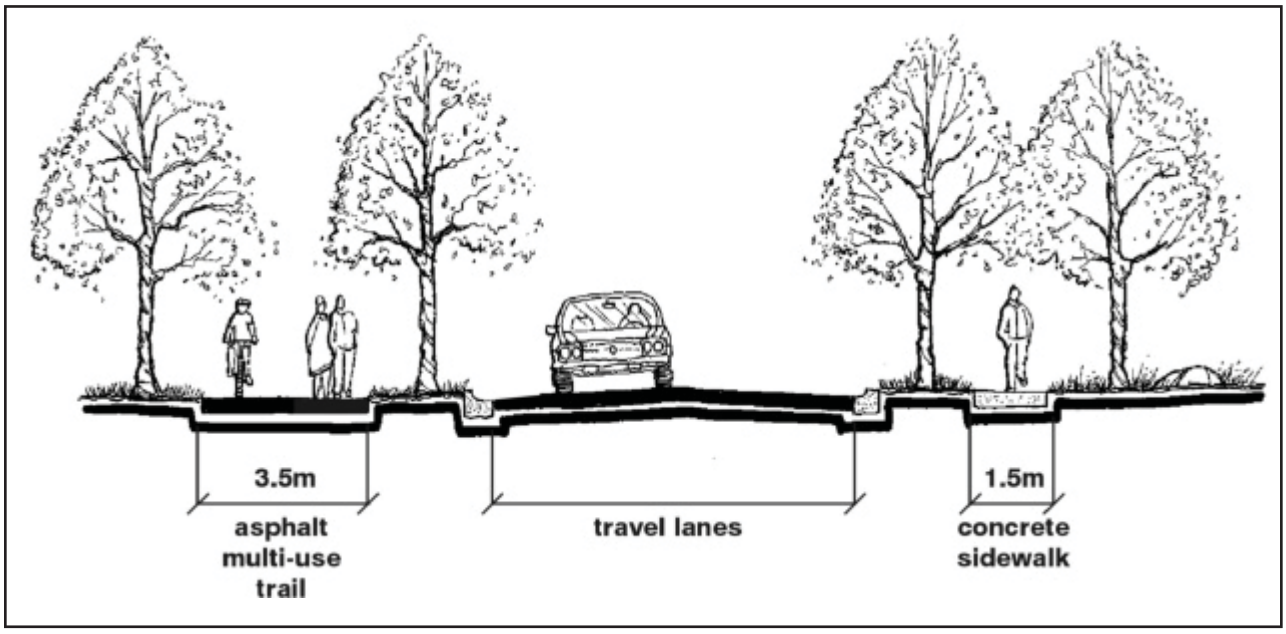
Side paths, also known as boulevard bikeways or sidewalk-level bike paths, are essentially bikeways provided on a widened sidewalk beside the road surface to accommodate cyclists and pedestrians, although physical separation of these two modes is not always desirable. Two sub-options for side paths have been considered for Riverside Drive:

Alternative 3.1: South Side Path - Some residents of Riverside Drive have asked that this EA select a widened side path on the south side of the Drive as the best way of accommodating cyclists. In evaluating this alternative, it is important to note that bicycles on a side path can be impacted by multiple conflict points between bikes and autos at each driveway and side street intersection crossings, as found along the south side of Riverside Drive from Strabane Avenue to east of Lauzon Road where there are 141 such conflict point. Another 189 points are counted from Lauzon to the east City boundary for a total of 206 bicycle/auto conflict points along the south side of Riverside Drive.

Alternative 3.2: North Side Path – This option would construct a side path along the north edge of the Riverside Drive right-of-way with the benefit of no intersecting streets, but crossing 101 residential driveways between Strabane and Lauzon and another 175 driveways to the east City border for a total of 276 conflict points.

In either option, an off-road side path would have the geometrics shown on Exhibit 5.2 from the BUMP study.

EXHIBIT 5.2 – OFF-ROAD SIDE PATH



Response: With the cyclist operating on a “sidewalk” type facility that is not governed by the HTA Rules of the Road, it is usually unclear to the cyclist and the motorist who has right-of-way.