# Riverside Drive Trail

From City of Windsor to Manning Road



## Riverside Drive Trail

## From City of Windsor to Manning Road

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## Purpose

- To provide a safe and accessible active transportation facility for individuals and families (all ages and abilities).
- 2. To fill "**the gap**" and provide connection between existing multi-use off-road trails to the west and east.

## **Description**

- 2.4m wide asphalt trail
- Along the south side of Riverside Drive from Windsor to Manning Rd.
- Off-road, multi-use trail.
- For use by families- All ages and abilities.

## **Planning History**

- 2011 Parks and Recreation Masterplan
- 2012 County Wide Active Transportation Study
  Plan
- 2016 Tecumseh Endorsed the CWATS Project
- 2017 Tecumseh Transportation Masterplan.

The "Gap"



## Comparison of Issues

Item	North	South
Length of Path	2,050 (m)	2180 (m)
Driveway Crossings	86	68
Road Crossings	0	12
Conflict with trees	7	2
Fire Hydrants to be relocated	18	0
Utility / Light Poles to be relocated	0	0
Catch Basins to be relocated	24	8
Catch Basins to be adjusted	14	1
Manholes to be adjusted	5	5
Water Valves to be adjusted	4	1
Landscape Fence Conflicts	0	6

## Comparison of Issues

Better

Item	North	South
Length of Path	<mark>2,050 (m)</mark>	2180 (m)
Driveway Crossings	86	<mark>68</mark>
Road Crossings	<mark>0</mark>	12
Conflict with trees	7	<mark>2</mark>
Fire Hydrants to be relocated	18	<mark>0</mark>
Utility / Light Poles to be relocated	0	<mark>0</mark>
Catch Basins to be relocated	24	8
Catch Basins to be adjusted	14	<mark>1</mark>
Manholes to be adjusted	5	5
Water Valves to be adjusted	4	<mark>1</mark>
Landscape Fence Conflicts	<mark>0</mark>	6

**Bezaire** 

## **Comparison of Costs**

Comparative Costs	North	South
Removal	131,235	94,644
Adjust/Relocate Site Features	112,100	26,980
New Work	441,999	444,518
Restoration	<u>144,404</u>	110,987
Construction Total	829,738	677,049
Design Contingency	82,973	67,704
Construction Contingency	82,973	67,704
Mobilization and Traffic Control	<u>30,000</u>	30,000
Project Total	1,025,866	842,458
Difference	2017 Estimate	\$183,408

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Mobilization and Traffic Control	<u>30,000</u>	30,000	
Project Total	1,025,866*	<mark>842,458</mark> *	
*Actual costs to vary because of trail width, soil testing/disposal. Inflation & market pressures.			
Difference	2017 Estimate	\$183,408	

# Results of 1<sup>st</sup> Public Open House

- 32 interested stakeholders attended
- Large majority in favour of the trail
- Evenly split whether trail would be on north or south side of Riverside Drive

# Results of 1<sup>st</sup> Public Open House

## **Key Issues**

## North or south side?

- Fewer conflicts, adjustments and relocations
- Fewer drainage issues easier to manage
- Benefit of having walkway on both sides of the roadway
- Less conflict with driveways/more with local roads
- Less costly on south side
- o Filling in the gap between east and west
- Distance from homes to trail is a concern

## Recommendation to 2<sup>nd</sup> PIC

Based on our analysis of the design, the results of the public consultation, and the comparative costs and key issues, we recommend that the proposed multi-use trail be aligned along **the south side of Riverside Drive**, easterly from the Tecumseh Windsor border to the west limit of Manning Rd.

# Results of 2<sup>nd</sup> Public Open House

#### In General

The 2<sup>nd</sup> open house was well attended and residents living on the south side of the road expressed considerable concern over the recommendation.

#### What we heard

- Trail too close to houses
- Alternative Options are available route and configuration
- Drainage and Flooding
- Pedestrian and Vehicular Safety
- Loss of Parking along road
- Financial Issues

# Results of 2<sup>nd</sup> Public Open House

#### In General

The 2<sup>nd</sup> open house was well attended and residents living on the south side of the road expressed considerable concern over the recommendation.

23 comments in favour of trail project including location on south side of the Road.

#### What we heard

- Trail too close to houses
- Alternative Options are available route and configuration
- Drainage and Flooding
- Pedestrian and Vehicular Safety
- Loss of Parking along road
- Financial Issues

#### Support for Trail on South Side

... Additional Study and Review
Bezaire

# Additional Study and Review

## **Questions for Further Study**

- 1. Are there other trails designed this way?
- 2. Is there a **better route**?
- 3. Is there a better configuration?
- 4. Are there **problem areas** that can't be resolved?
- 5. Does the trail **match** up with trails to the east and west.

# Are there other trails that have been designed in this way?

#### **Criteria for Comparative Projects**

- Multiple Driveway Crossings 68 (31/km)
- Multiple Road Crossings 12
- Width of Trail 2.4m
- Distance From Road 0 to 14m
- Distance From Homes 4 to 34m
- Average Daily Traffic 12,098





#### St. Clair Rd. Lakeshore ON

Type: Separated Multi-use Trail

Surface: Asphalt

Length: 5.1km (3.2 miles)

Width: 2.9m ( 9.5 ft.)

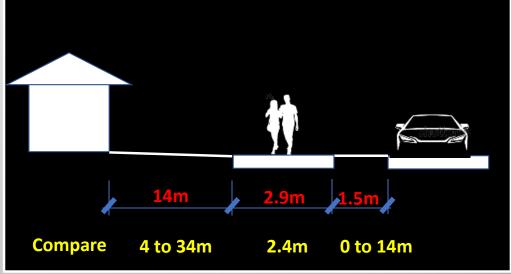
Minimum Separation - Road: 0-1.5m (0-5 ft.) Minimum Separation - Houses: 14m (45 ft.)

Driveway Crossings: 112 (22/km)

**Road Crossings: 7** 

**AADT:** 







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#### Riverside Dr. East, Tecumseh

Type: Separated Multi-use Trail

Surface: Asphalt

Length: 902m (2,959 ft.)

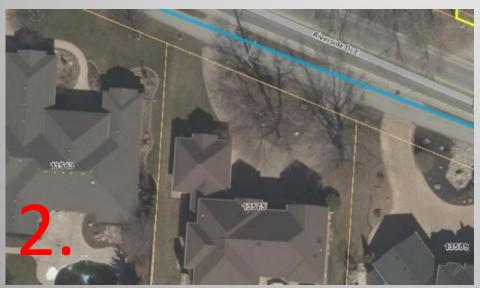
Width: 2.6m (8.5 ft.)

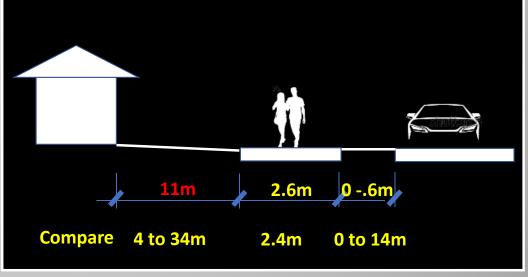
Minimum Separation - Road: 0 - .6m (0-2ft.) Minimum Separation - Houses: 11m (36 ft.)

Driveway Crossings: 22 (24/km)

Road Crossings: 5

**AADT: 6,356** 







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#### Malden Rd. LaSalle ON

Type: Multi-use Trail at Curb along curb

Surface: Asphalt

Length: 1.29km (.80 miles)

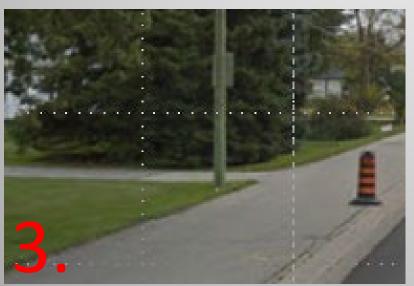
Width: 4m (12 ft.)

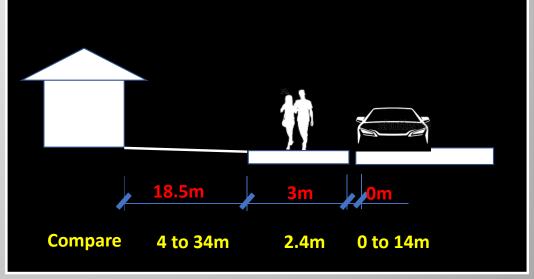
Minimum Separation- Road: 0m (0 ft.)

Minimum Separation – Houses: 18.5m (60.6 ft.)

Driveway Crossings: 29 (22/km)

Road Crossings: 7 AADT: 12 to 19,000









#### Todd Lane LaSalle ON

Type: Bike Lanes + Multi-use Path along curb

Surface: Asphalt

Length: 2.7KM (1.69m)

Width: 4m (12 ft.)

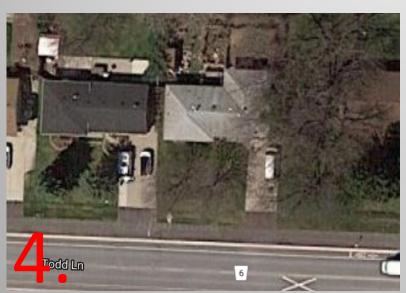
Minimum Separation-Road: 0m (0 ft.)

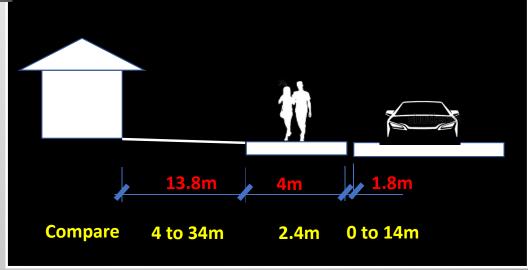
Minimum Separation – Houses: 13.8m (45.3 ft.)

Driveway Crossings: 56 (21/km)

Road Crossings: 5

**AADT: 7,700** 









#### Dougall Rd. WindsorON

Type: Multi-use Path along mountable curb

Surface: Asphalt

Length: 1.0KM (.62 miles)

Width: 2.6m (8.5 ft.)

Minimum Separation- Road: 0m (0 ft.)

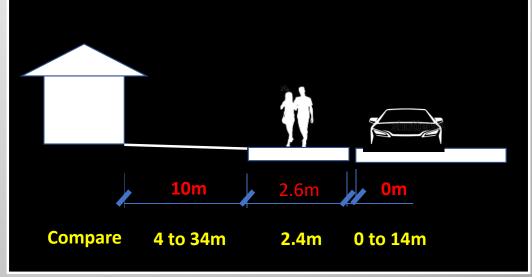
Minimum Separation – Houses: 10m (33.3 ft.)

Driveway Crossings: 34 (34/km)

**Road Crossings: 4** 

**AADT: 29,000** 









#### Reaume Rd. LaSalle ON

Type: Multi-use Path separated from curb

Surface: Asphalt Length: 1.3KM (.8 mi) Width: 3.5m (11.5 ft.)

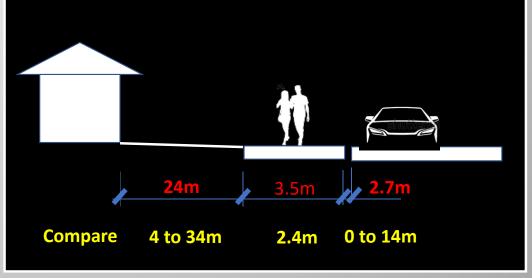
Minimum Separation - Road: 2.7m (8.8 ft.) Minimum Separation - Houses: 24m (78 ft.)

Driveway Crossings: 39 (30/km)

Road Crossings: 5

**AADT: 2,900** 





# Are there other trails that have been designed in this way?

#### **Comparative Projects**

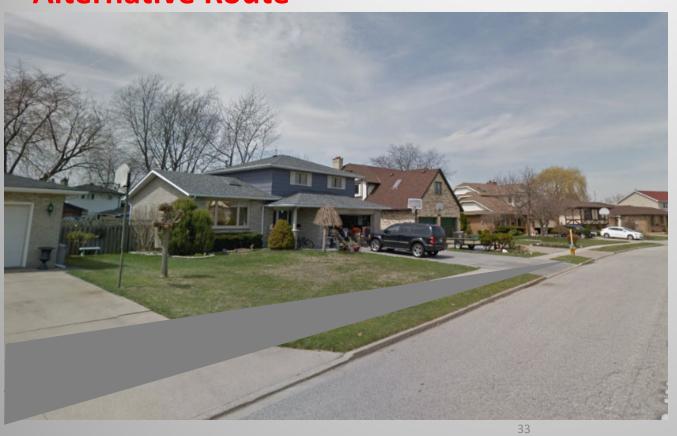
There are good examples of multi-use trails both separated and adjacent to the curb, that cross multiple roads and driveways, and are a similar distance from homes. We recommend increasing the trail width to an average of 2.7m or 9ft (2.4m minimum) wherever possible, with potential for 3m is some areas especially if the trail is adjacent to the road edge.

#### **Suggested Alternative Route**

The alternate route suggested would use Lesperance Rd., Dillon Dr., Little River Blvd. and Manning Rd. for the segment east of Lesperance.



### **Alternative Route**







#### **Alternative Route**

- Doesn't fill the gap
- Perceived inconvenience is the same
- Higher cost
- More driveway crossings

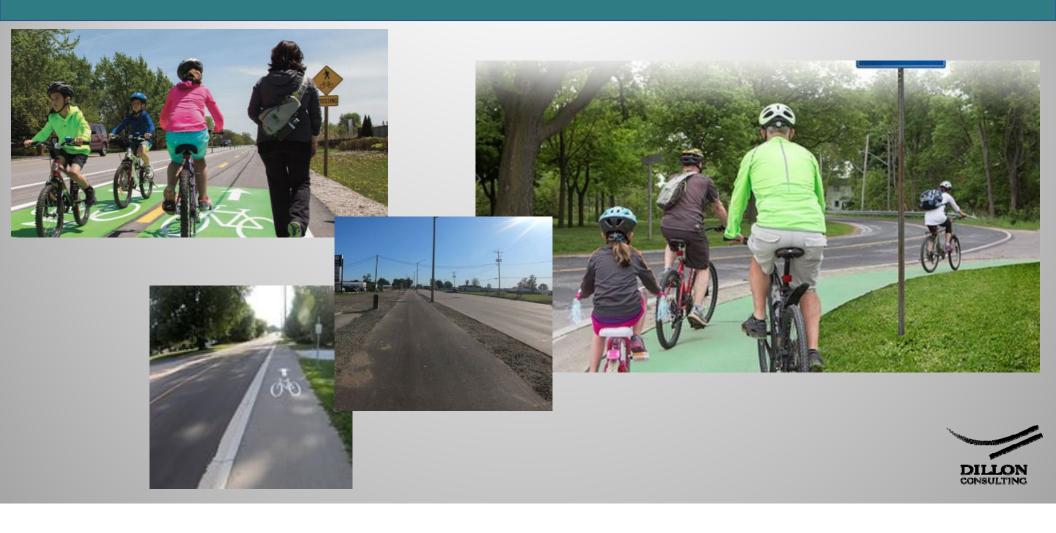
- +/- same number of road crossings
- Longer distance
- Doesn't provide access to Residents on Riverside Drive

Note ... the proposed alternate route consists of low volume residential roads. The road itself would be a viable alternative for recreational use rather than an off road trail.

## **Recommendation Update**

Based on the evaluation of the alternative route (Dillon Drive) and comparable local projects, the multi-use trail along the South side of Riverside Drive remains the preferred option.

# Is There a Better Configuration?



# **More Suitable Option?**

Facility	Description	
Physically Separated Bike Lane	Bike lane separated horizontally and vertically from vehicles through the use of bollards, curbs, or planters. Generally follows road alignment. Exclusively for cyclists.	
Cycle Track	Horizontally and vertically separated from the roadway by a curb and buffer. One directional lane on each side of roadway (one-way) or a two-way facility on one or both sides of the roadway. Exclusively for cyclists.	
Multi-Use Pathway	Two-way pathway horizontally separated from the roadway. Shared by cyclists and pedestrians. Alignment can be independent of roadway to avoid obstruction such as utility poles.	
Bike Lanes	Portion of roadway designated for cyclists through the use of pavement markings (single line or buffer). Exclusively for cyclists. Follows road alignment.	
Paved Shoulder	Portion of roadway used to accommodate stopped vehicles, emergency uses pedestrians and cyclists, and lateral support of pavement structure. Not an alternative to bike lanes in an urban environment.	
Shared Use Roadway	Vehicles and cyclist share operating space. Cycling is permitted on all roadways unless specifically restricted.	



Figure 4.26 - Cast-in-place Concrete Curb Separating a One-way Separated Bicycle Lane,

Toronto
lourse: Ata

Multi-Use Path Separated by Grassy Boulevard, Waterloo



Cycle Track Separated by Mountable Curb, East Gwillimbury

Source: WSP

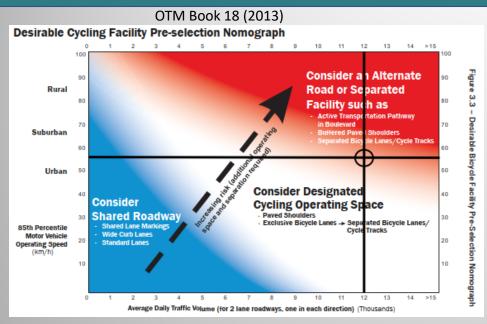


Figure 4.70 - Example of Rural Paved Shoulders, Ottawa

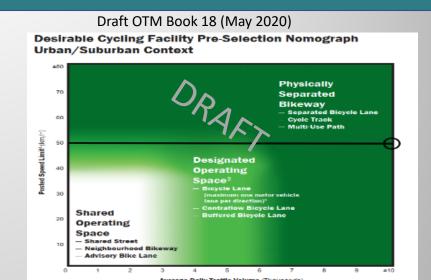
Source: Alta



# **Ontario Traffic Manual Book 18- Cycling Facilities**



- Current standard cycling facility guidelines in Ontario
- Includes facility selection guidelines
- Guideline to promote consistency in facility selection and use.



- Updated to reflect current national and international best practices
- Recommends increasing separation of people cycling and motorists (low stress environment) compared to the 2013 version.
- Encourages cycling facilities to appeal to "all ages and abilities"
- Design for an "Interested but concerned" target user



# Ontario Traffic Manual Book 18- Cycling Facilities

#### OTM Book 18 (2013) Selection Heuristics

Site Characteristic	Design Considerations
Traffic Volume	Physical Separation
Vehicle Speed	Exclusive operating space for both bicycles and vehicles
Road Class	Some form of bicycle facility
Driveway and intersection frequency	Bike lanes may be more appropriate

#### Findings:

- Physically separated facility
- Bike lanes considered

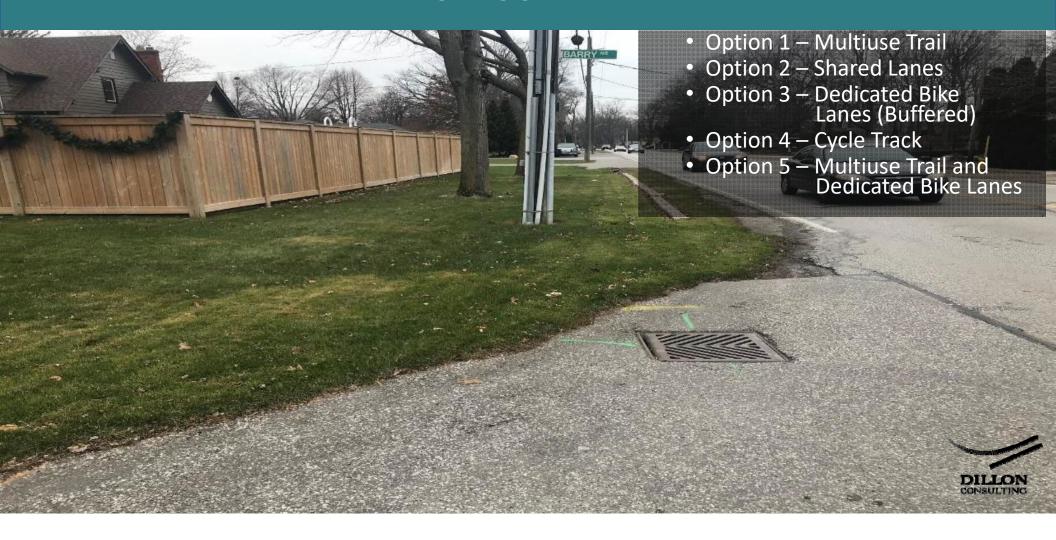
#### Draft OTM Book 18 (May 2020) Selection Heuristics



#### **Findings:**

- Multi-Use Pathway or Cycle Track
- Low volume driveways and intersections considered less of a barrier to in-boulevard facilities.

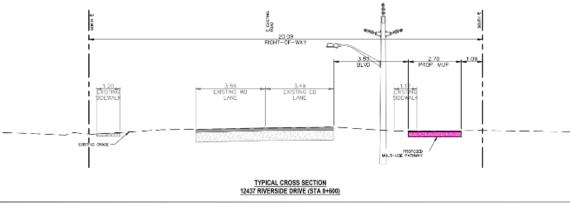
# **Alternative Facility Types**



# **Option 1: Multi-Use Trail**

# **Current Proposal**



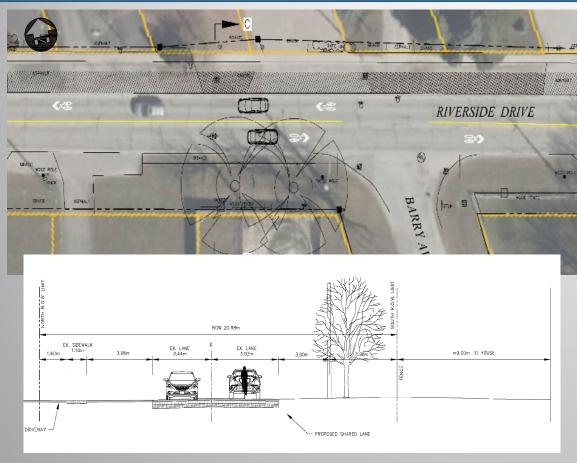


#### **ADVANTAGES**

- Accessible for persons of all ages and abilities
- Physical separation between motorists and pedestrians/cyclists
- Fills the "Gap" and provides consistency between adjacent active transportation facilities (Ganatchio Trail and Lakewood Park)
- Flexibility in alignment to minimize impacts to existing landscaping and utilities within right of way.
- o Provides cyclists on-road and off-road options.
- Does not limit the installation of bike lanes in the future

- Potential commercial parking impacts
- Relocation or removal of existing landscaping, hard surfaces, and utilities within the right-of-way
- Low volume driveway and street crossings.
- Requires **modifications to existing drainage** on the south side of the roadway.
- o Potential property impacts.

# **Option 2 – Shared Lanes**



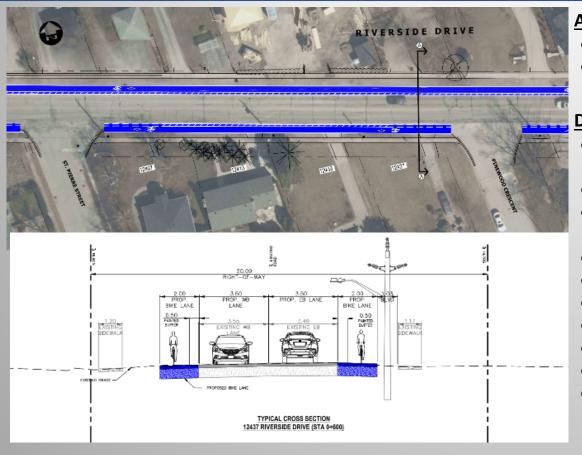
#### **ADVANTAGES**

- Low cost
- Minimize disruption due to construction activities

- Does not fill the "Gap" or provide consistency between adjacent facilities
- O Does not accommodate users of all ages and abilities
- Shared routes are not typically utilized by a variety of users including youth or families due to perceived safety issues
- Increased proximity and interaction with vehicles
- Does not improve the Town's active transportation network as cyclists are currently permitted to use the roadway.
- No pedestrian connection.



# Option 3 – Dedicated Bike Lanes (Buffered)



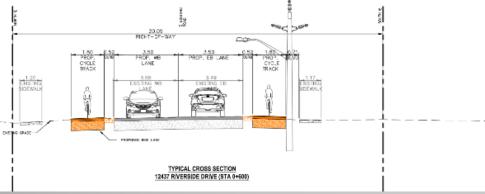
#### **ADVANTAGES**

- Dedicated space for cyclists within the roadway
- Fewer utility relocations and landscaping impacts within right-of-way compared to Multi-Use Trail.

- Does not fill the "Gap" or provide equitable active transportation facilities (all ages and abilities).
- Increased hard surface area compared to other options.
- Significant reconfiguration and widening of the existing Lesperance Road signalized intersection.
- Potential commercial parking impacts
- No physical separation between cyclists and motorists
- o Requires drainage improvements on both sides of roadway
- No benefit to pedestrians
- Increased costs
- No connection to existing bike lanes at project limits
- No connection from north to existing Ganatchio Trail at west limits

# **Option 4 – Cycle Track**



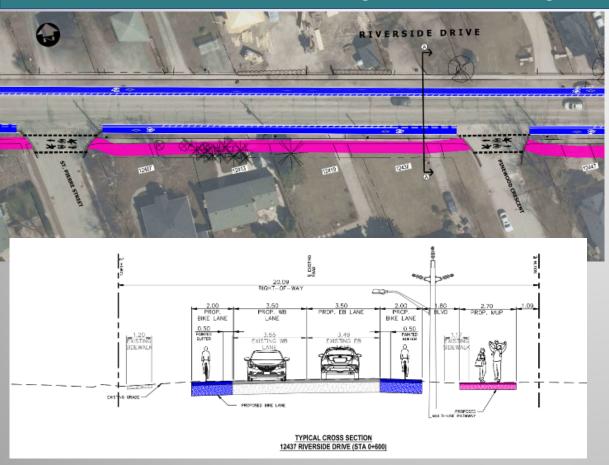


#### **ADVANTAGES**

- Dedicated physically separated space for cyclists
- Fewer utility relocations and landscaping impacts within right-of-way compared to Multi-Use Trail.

- Does not fill the "Gap" or provide equitable active transportation facilities (all ages and abilities).
- Increased hard surface area compared to other options.
- Significant reconfiguration and widening of the existing Lesperance Road signalized intersection including relocation of existing traffic signals.
- Potential commercial parking impacts
- Significant drainage improvements to both the roadway and boulevard (will require additional road reconstruction).
- No benefit to pedestrians
- Increased costs
- No connection to existing bike lanes at project limits
- No connection from north to existing Ganatchio Trail at west limits

# Option 5 – Multi-Use Trail and Dedicated Bike Lanes (Buffered)



#### **ADVANTAGES**

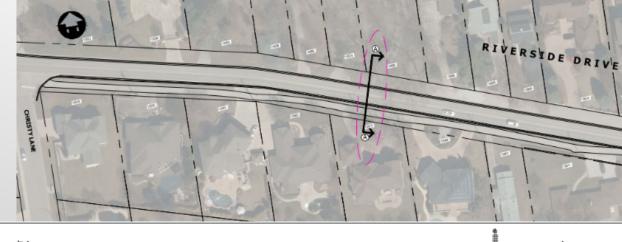
- Dedicated space for cyclists within the roadway and inboulevard
- Accessible for persons of all ages and abilities
- Fills the "Gap" and provides consistency between adjacent active transportation facilities (Ganatchio Trail and Lakewood Park)
- o Provides cyclists on-road and off-road options.

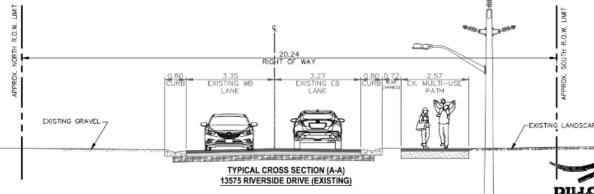
- Increased hard surface area compared to other options.
- Significant reconfiguration and widening of the existing Lesperance Road signalized intersection including relocation of existing traffic signals.
- Potential commercial parking impacts
- Drainage improvements on both sides of roadway
- Significant cost increase
- No connection to existing bike lanes at project limits
- o Potential property impacts.

# **Consistency With Adjacent Facilities**

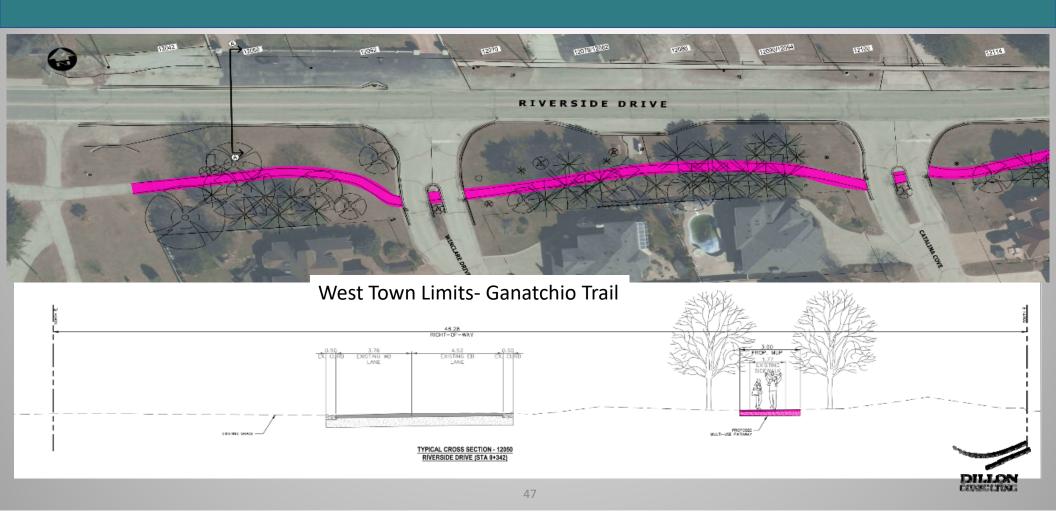








# **Consistency With Adjacent Facilities**



# Is there a better configuration?

### The Alternatives:

- Do not serve the target audience (all ages and abilities)
- Do not align with the current and proposed best practices.
- Require major road reconstruction and intersection improvements
- Require significant drainage improvements
- Increase hard surface area
- Increase costs
- Are inconsistent with adjacent facilities... i.e. doesn't fill the gap.

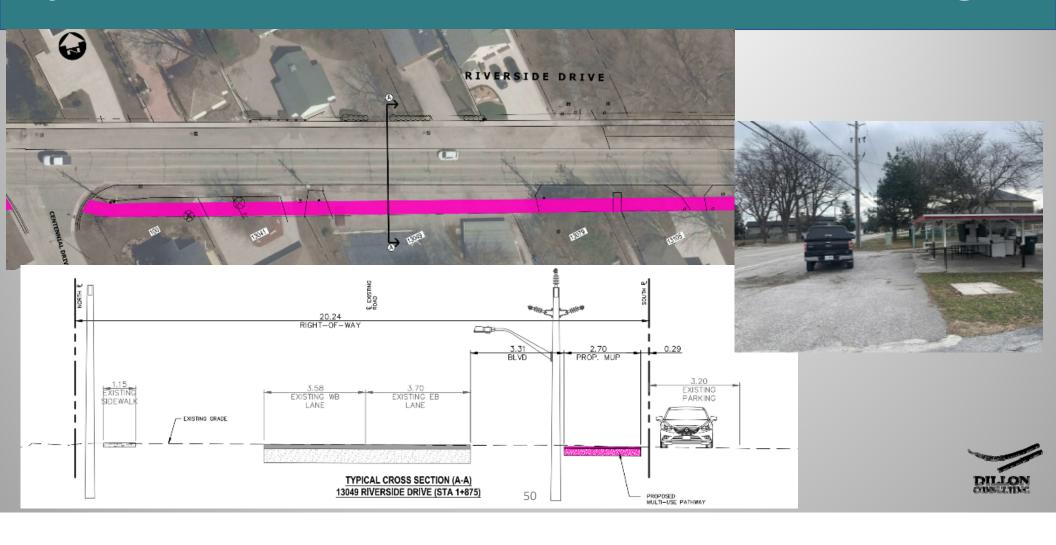
**Current Recommendation: Multi-Use Trail** 



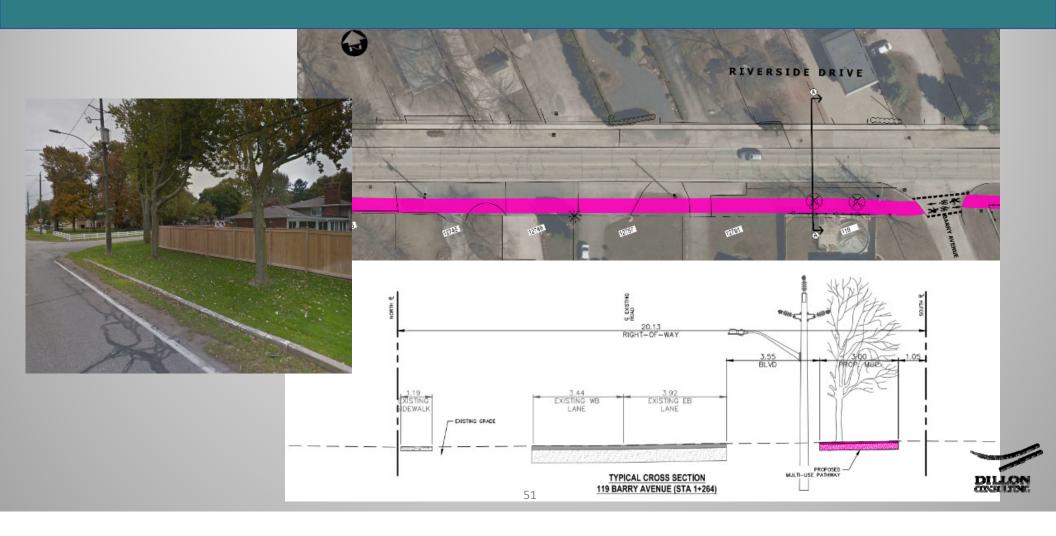
# **Special Consideration – Commercial Parking**



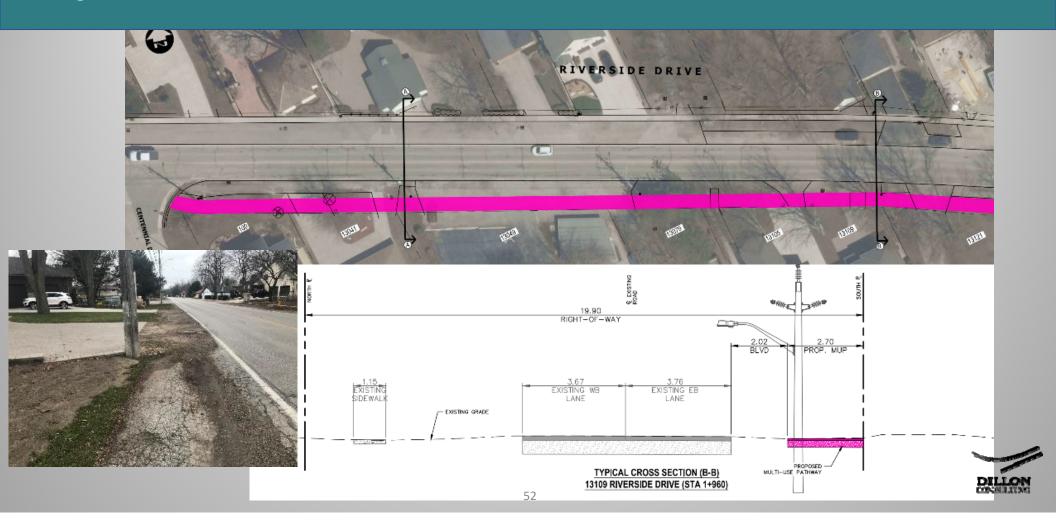
# Special Consideration – Commercial Parking



# **Special Consideration – Trees**



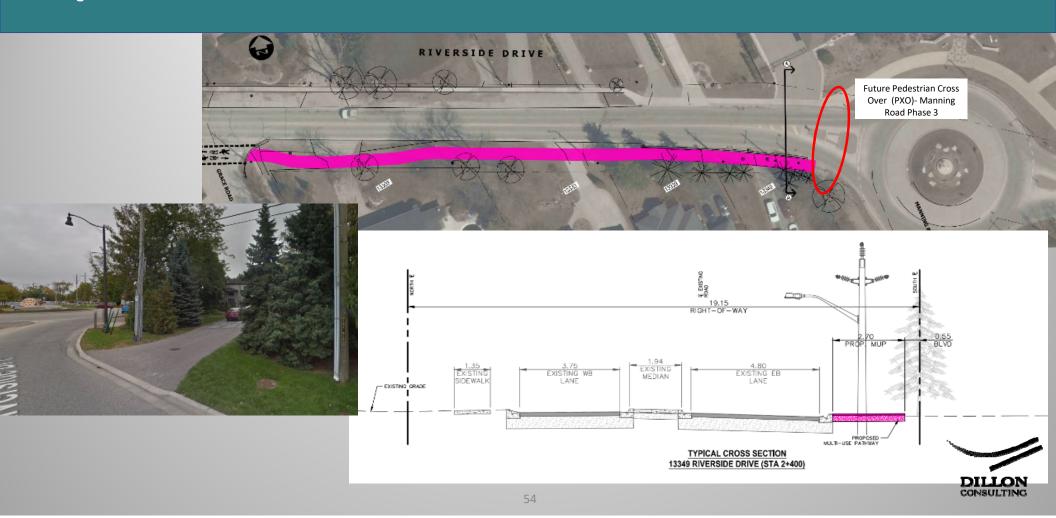
# **Special Consideration – Utilities**



# **Special Consideration – Property**



# **Special Consideration – Various**



### Safety

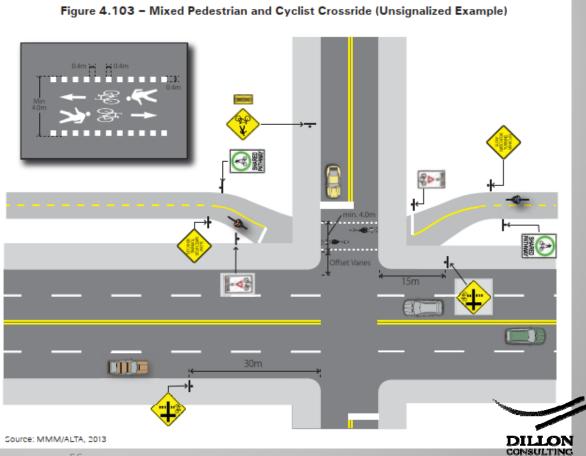
- Sightlines:
  - Road geometry allows for adequate sightlines
    - Large horizontal curve radius >320m
    - No perceptible vertical curves
    - May require relocation/removal of landscaping within right of way.
- Obstructions:
  - Separation of 0.3 to 0.5m to be provided between proposed trail and vertical obstructions (utility poles, fences, trees, etc.) per the Transportation Association of Canada Geometric (TAC) Geometric Design Guidelines for Canadian Roads (2017).
  - Landscaping features within the right of way may be removed or relocated to alleviate conflict with proposed trail.





### Safety

- Road Crossings:
  - Crossrides to be installed at road crossings including pavement markings and signage.
  - Cyclists and Pedestrians have right-ofway at stop controlled intersections.
  - Cyclist permitted to ride through crossride (no dismount and walk)
- "Research shows that the most effective measure for improving overall cyclist safety within a road network is increasing the number of cyclists using the system." – OTM Book 18 2013



### **Heavy Traffic & High Speed**

- The volume of vehicles (AADT of 8,000 to 12,000) along the route further show the need for a physically separated facility to improve the safety and accessibility for users of all ages and abilities per the Draft OTM Book 18 (2020).
- Traffic Speed classified as moderate per OTM Book 18 (2013) (50-69km/h)
  - Speed radar statistics (2017-2020)
    - Average speed: 48 to 55km/h
    - 85<sup>th</sup> percentile speed: 57 to 62km/h
- Proximity to Roadway:
  - Buffer between the roadway and proposed trail will be within the "Desired Width" of 1.5 to 2.5m per draft OTM Book 18 (2020).
  - A small portion (~130m) of the path is proposed to be adjacent to the curb (Lesperance Intersection and Manning Road).



Cycle Track Separated by Mountable Curb, East Gwillimbury

Source: WSP



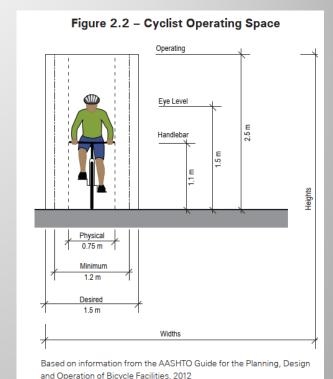
Multi-Use Path Separated by Grassy Boulevard, Waterloo

Source: Alta



### Location and Design

- Multi-use path width:
  - Minimum recommended:
    - TAC- Bicycle Integrated Design (2017) 3.0m
      - Practical Lower Limit 2.7m
      - 1.2m (cyclist) and 1.5m (two pedestrians walking abreast)
    - OTM Book 18 Cycling Facilities (2013) 3.0m
      - May be reduced to 2.4m over very short distances to avoid utility poles or other infrastructure.
    - OTM Book 18 Cycling Facilities (Draft 2020) 3.0m
      - May be reduced to 2.4m over very short distances to avoid utility poles or other infrastructure.
- Existing multi-use trail east of Manning Road (2.4 2.8m)
  - No incidents between cyclists/pedestrians and vehicles have been noted.
- A multi-use trail width of 2.7m (practical lower limit) has been proposed.
   Opportunities to increase the width to 3.0m exist and can be considered during detailed design.





### **Accessibility Concerns**

- Operating Space:
  - The proposed multi-use trail provides additional operating space when compared with a traditional sidewalk (2.7-3.0m vs 1.2-1.5m).
  - 2.7m trail width provides:
    - 1.5m width (typical sidewalk width)
    - 1.2m for an oncoming cyclist (1.2m) or pedestrian (0.75m)
    - Potential to increase to 3.0m through detailed design
- Sightlines:
  - The existing topography (flat) and road alignment (large radius) do not pose significant sightline concerns
  - Existing landscaping within the Town's right of way may need to be removed/relocated to address any in-boulevard sightline issues
  - Tactile surface indicators to be provided at all roadway crossings.
- Conflict with vehicles entering/exiting driveways:
  - Adequate sightlines from the road and trail will be maintained
  - Vehicle operators are responsible for ensuring the way is clear prior to entering/exiting the roadway. This is the same responsibility regardless of the adjacent facility (sidewalk, bike lane, cycle track, etc.)



### Added Pollutants to Lake St. Clair & Area Watersheds

- Increased Hardscape and Stormwater Runoff:
  - Trail installation would result in a **negligible** net hard surface area increase in context of the overall stormwater drainage boundaries.
  - Construction of the multi-use trail would include the removal of existing hard surfaces within the right of way (paved shoulder, paved parking areas, etc.) and restoration with permeable surface material (grass, granular).
- Increased Salt and Chemicals:
  - The proposed trail would require snow clearing efforts however, application
    of de-icing materials would be limited (similar to existing sidewalks). The
    impacts of the limited de-icing procedures could be considered negligible in
    comparison to the existing de-icing efforts of the roadway.



### Impact on Trees and Environment

- The alignment of a multi-use trail has flexibility to be adjusted to avoid trees where possible during detailed design.
- Existing trees have undergone significant trimming due to proximity to overhead power and telecommunications infrastructure.
- The Town has allocated approximately \$30,000 annually to plant new trees within the Town boundary.
- Construction of multi-use trails are considered to have minimal adverse environmental impacts (Schedule A/A+) and are preapproved under the Municipal Class Environmental Assessment.



### Flooding Issues

- The Essex Region Conservation Authority (ERCA) Policies, Guidelines and Procedures note:
  - Open type public or private recreation areas may be permitted within the floodway of a watercourse.
- Sidewalks currently exist along the north and portions of the south side of Riverside Drive.
- The addition of hard surface will produce a negligible increase in stormwater runoff in the context of the stormwater drainage areas.
- No impacts to localized or lake flooding are anticipated.
- Existing hard surfaces (paved shoulders, parking areas, etc.) within the project area (south side) will be removed and replaced with permeable materials (grass/granular) to improve infiltration.



### Summary

The proposed multi use trail provides a safe and accessible active transportation facility with minimal impact to the environment.





# Budget Update (2021)

	Trail Construction	
A.	Previous Estimated Total Project Cost (2017)	\$842,458
В.	Updated Estimated Total Project Cost (2021)*	\$1,239,300

<sup>\*</sup>includes engineering, contract administration, excess soil testing, construction (2.7m wide trail), and contingency

### The Proposed Multi-Use trail:

- 1. Fills the "Gap" providing continuity between the existing facilities to the east (Lakewood Park) and west (Ganatchio Trail).
- 2. Serves the **Target Population** and promotes **Equity** and Inclusiveness within the Towns active transportation network (All Ages and Abilities).
- 3. **Provides Separation** from motorists increasing safety and security for users.

- 4. Improves **Pedestrian Connectivity** along the south side of Riverside Drive.
- While there are road crossings, the trail is highly
  visible and appropriate crossing treatments will be
  implemented.
- 6. More room to handle drainage on south side.
- 7. Doesn't require relocating fire hydrants.
- 8. We recommend constructing the trail a bit wider 2.4 to 2.7m (9 ft.).

- 9. Crosses fewer driveways than north and alt. route
- 10. Fewer catch basins to relocate or adjust.
- 11. Allows residents on south side to move along the road to get to a **safe crossing point**.
- 12. Doesn't require major road reconstruction.
- 13. Doesn't require **removal of existing sidewalk** infrastructure on north side.

- 14. There are good **comparative examples** of local trails designed in the same manner as this.
- 15. Alternate **routes** are longer and don't resolve issues.
- 16. Alternative facility types do not serve the intended purpose.
- 17. There are no situations along the route where the trail could not be accommodated.
- 18. The proposal is a **good match** to existing trails to the east and west.

### **Current Recommendation**

Based on our further review and analysis including the results of public consultation, and the comparative costs and key issues, we recommend proceeding with the detailed design and construction of a 2.4-2.7m wide asphalt, off-road multi-use trail along the south side of Riverside Drive between Windsor and Manning Road.

A Safe active transportation facility which is Accessible for persons of All Ages and Abilities



# Questions?

