

# Complete Streets: Moving From Vision to Reality

**Shawn Smith**

**York Region Transportation Services**

Wednesday, June 28, 2017

@shawnsmith905

# York Region Context



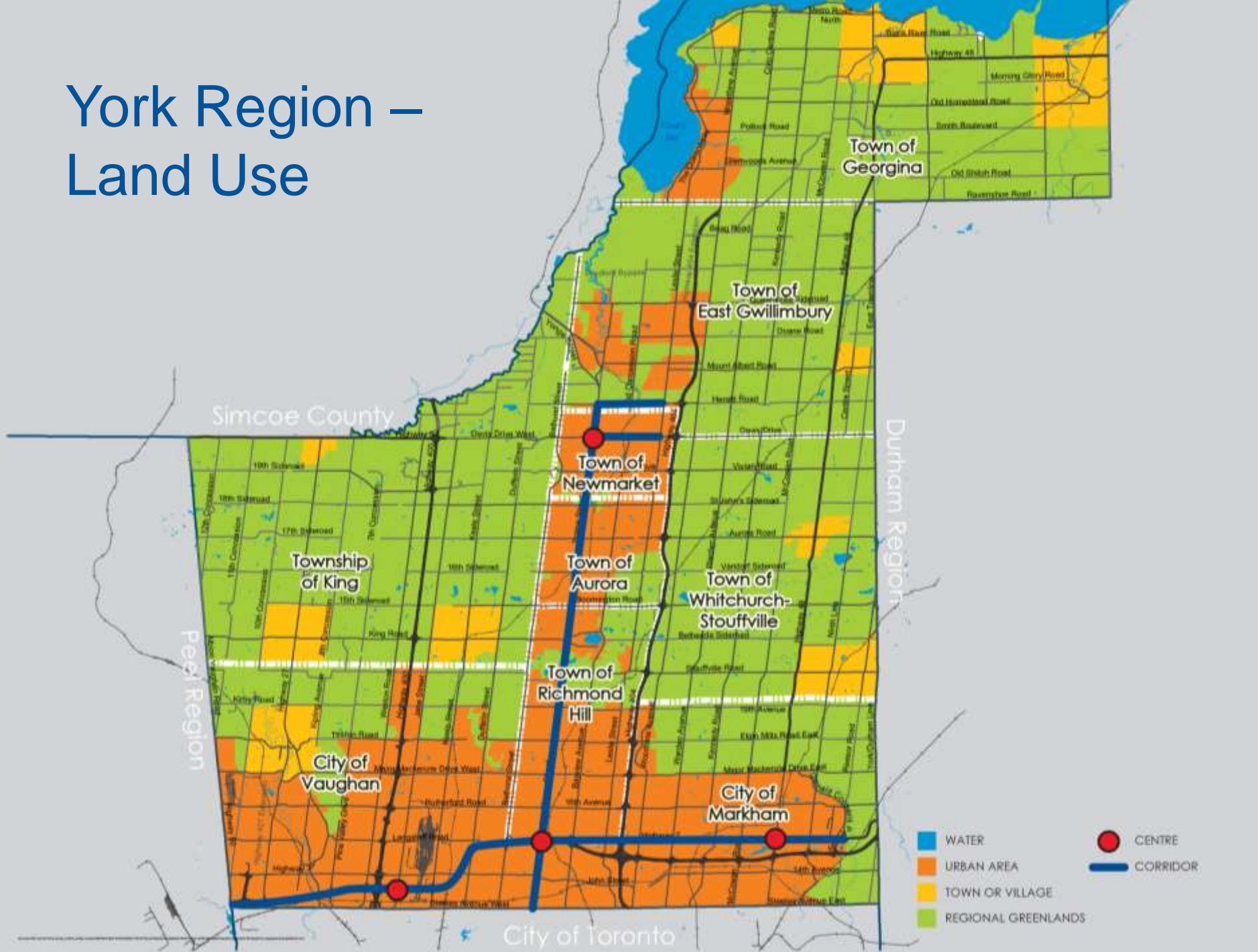
**DESIGNING  
GREAT | STREETS**  
Building Roads that Build Community

# About York Region



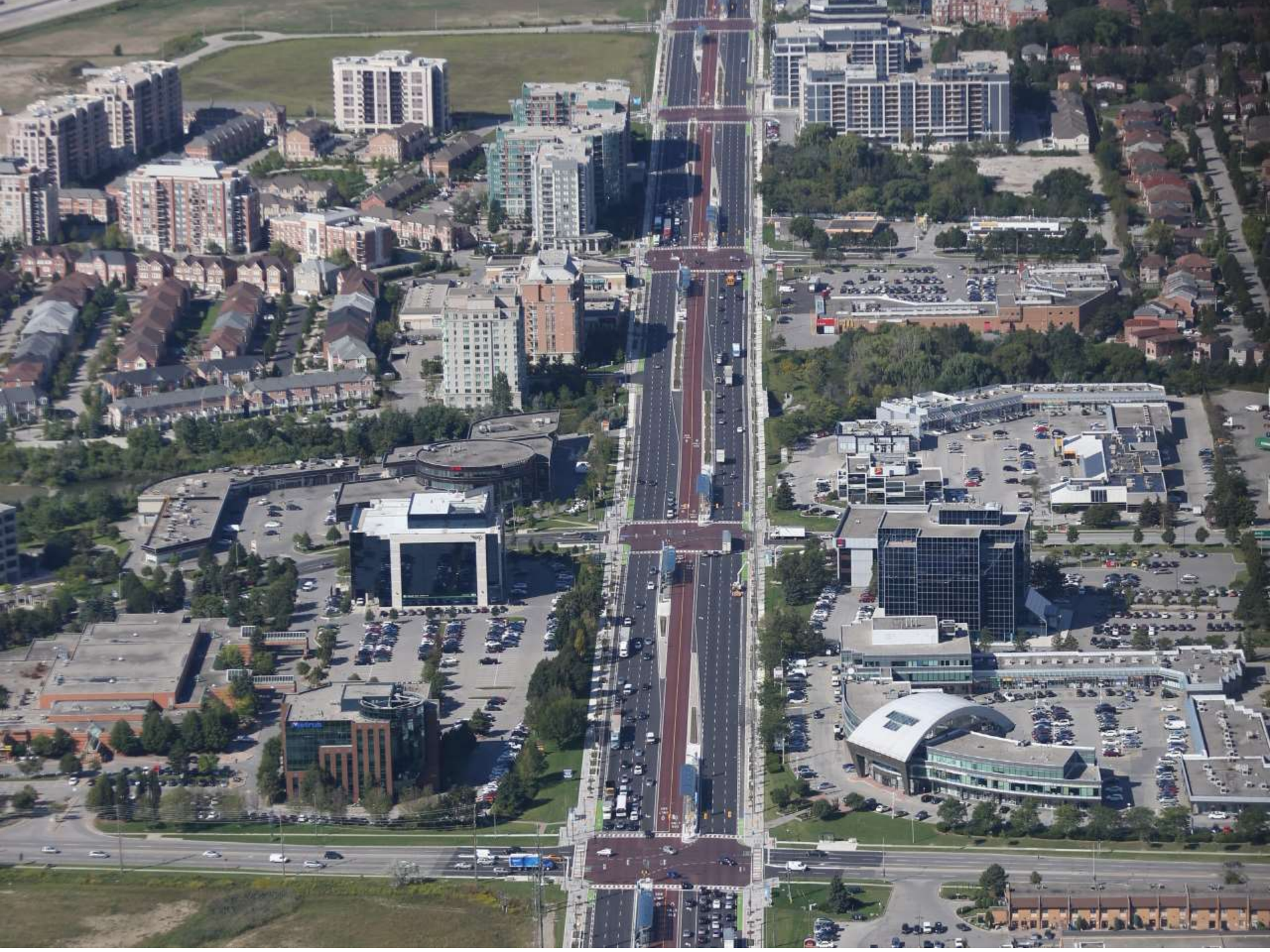


# York Region – Land Use













Bank of Montreal



Two women are walking on the sidewalk. One is wearing a white t-shirt and blue pants, and the other is wearing a grey tank top and black pants.

WALSH

WALSH















Quality WEEPING  
SPRINKLER SYSTEMS  
1234 Main St.  
555-1234

40  
50  
60

GROCERY MARKET



# Vision and Mission



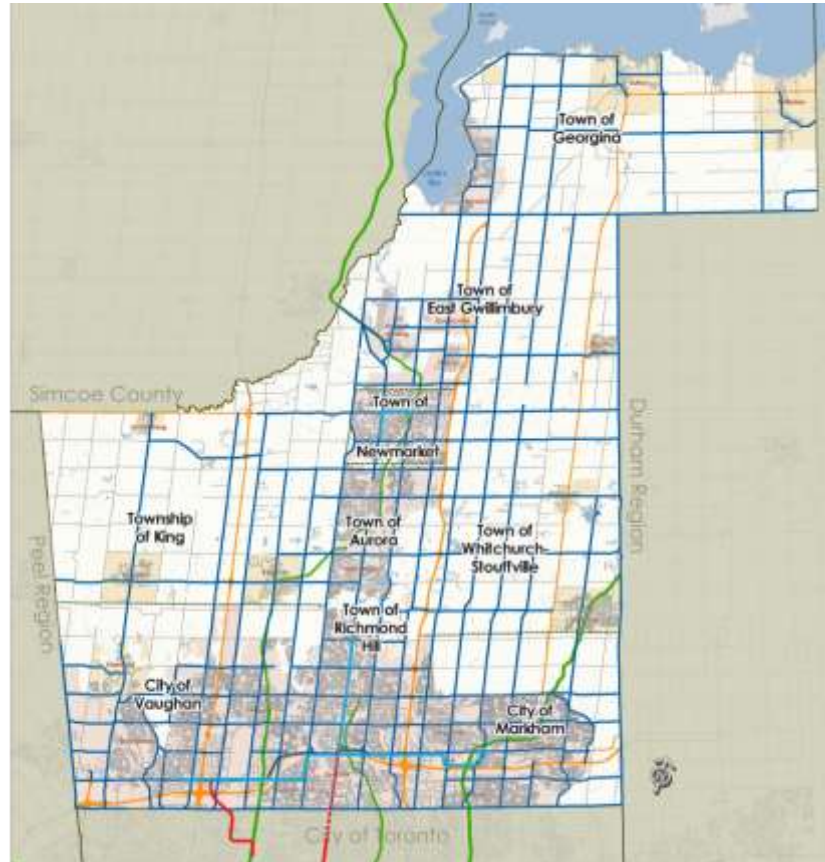
— Provincial Highways



— GO Transit Lines



— Regional Roads



— Rapidways



— Subway



— Local Roads

Transportation is a multi-jurisdictional responsibility



# Designing Great Streets Road Typologies

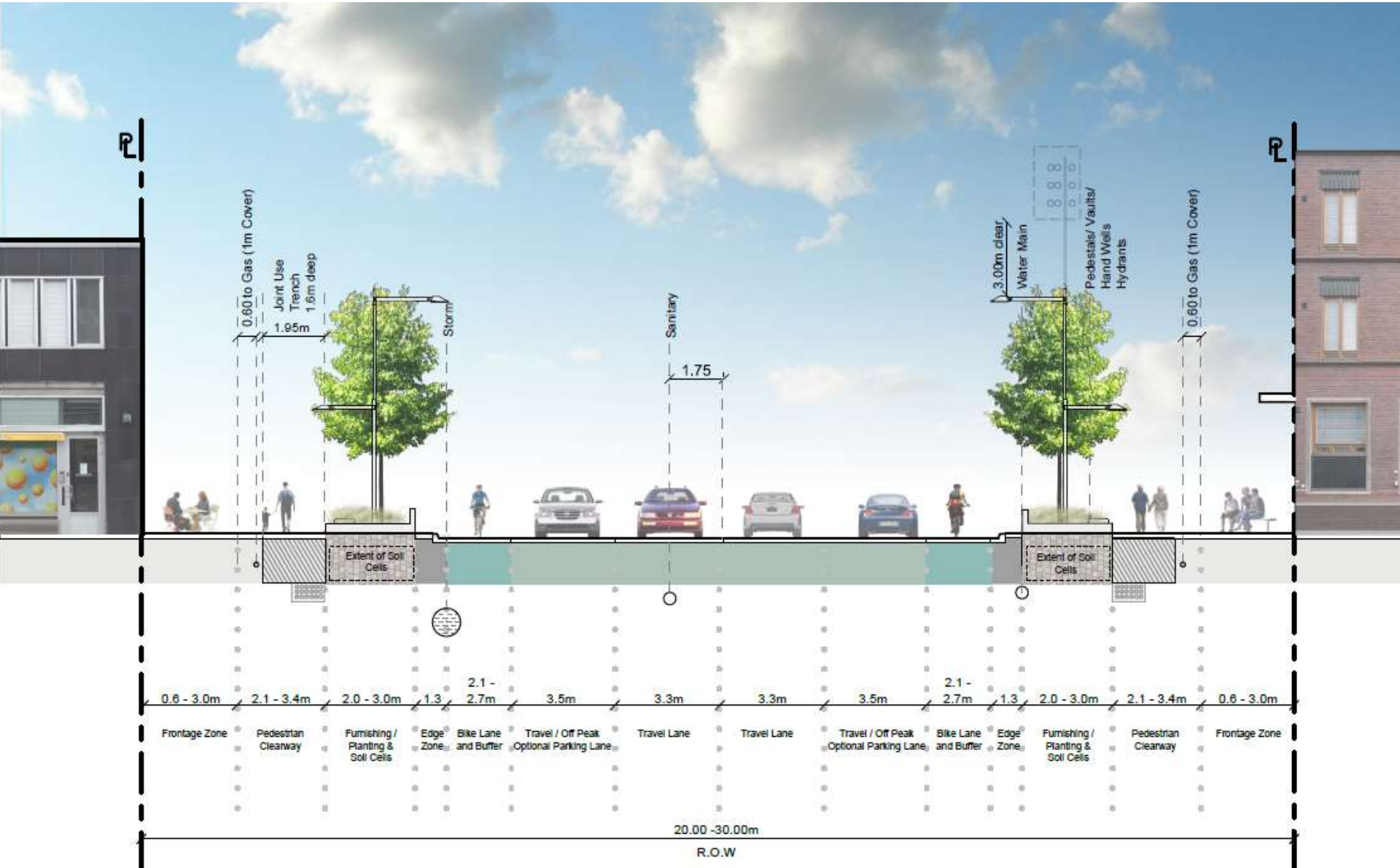




# Designing Great Streets Road Typologies

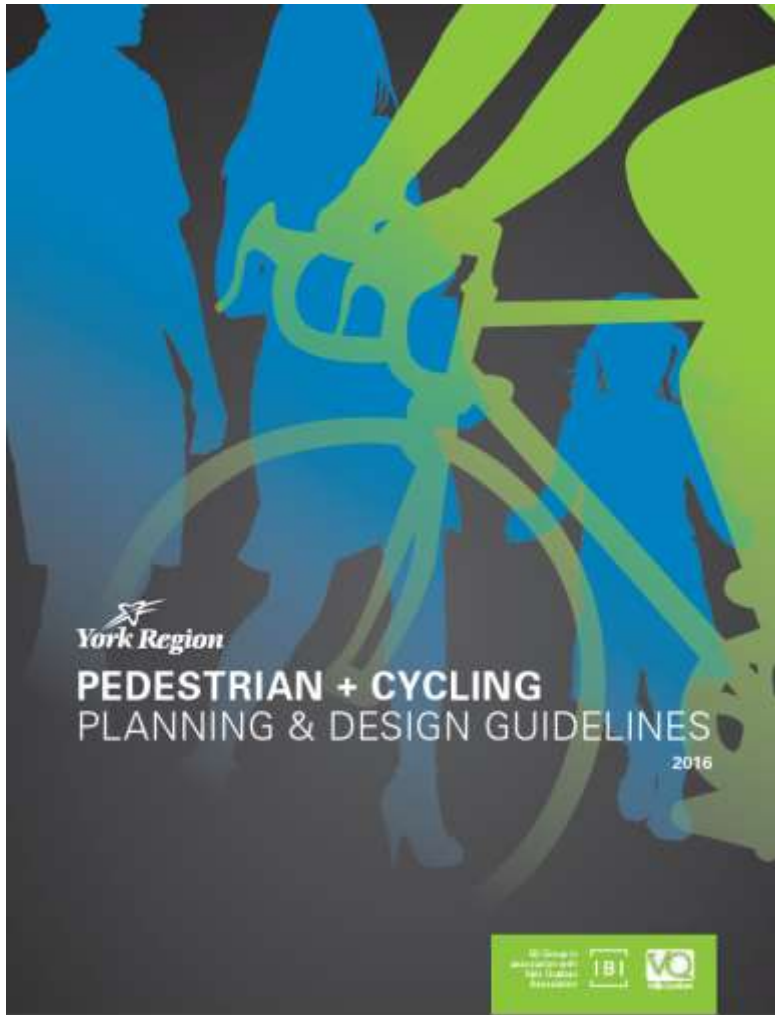


# Toolbox and Cross Sections





# York Region Pedestrian and Cycling Design Guidelines



# Decision Making Process





# VivaNext Rapidways



# Viva



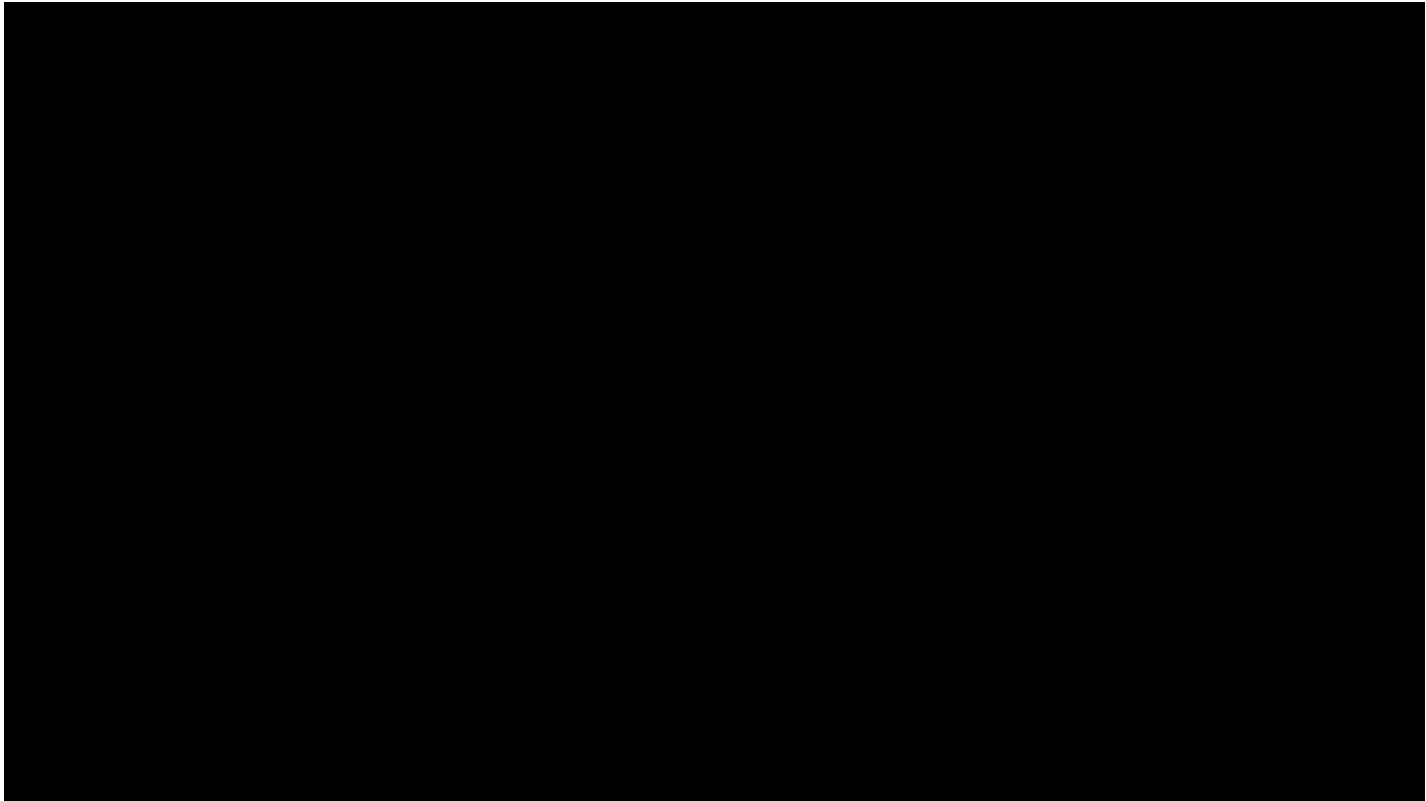
[vivanext.com](http://vivanext.com)



# Highway 7 – The Past



# VIDEO – Rapidway Intersections



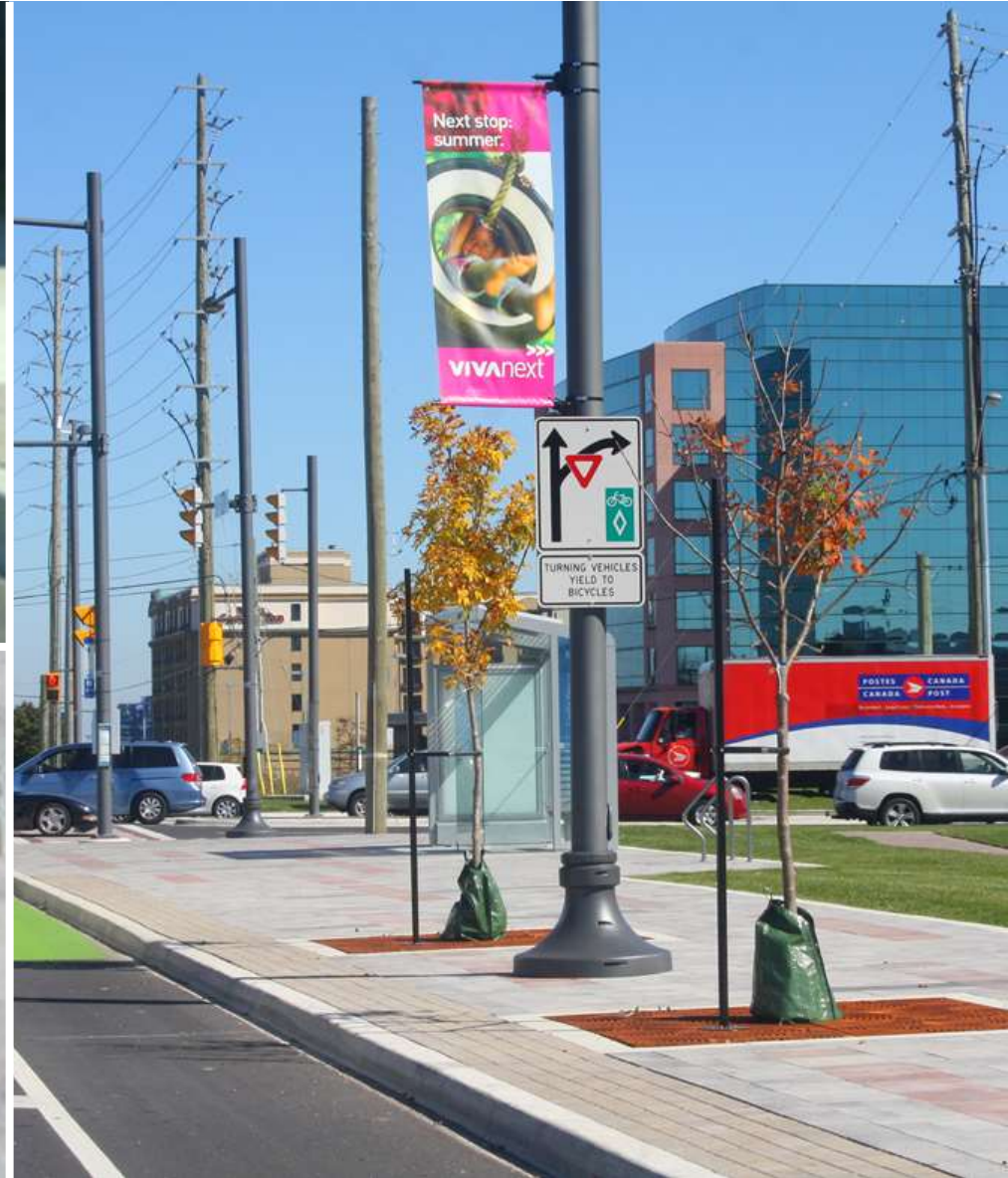
<https://www.youtube.com/watch?v=Zqvlw71CP0>



# 2013 Highway 7 East Rapidway



# Buffered Bike Lane

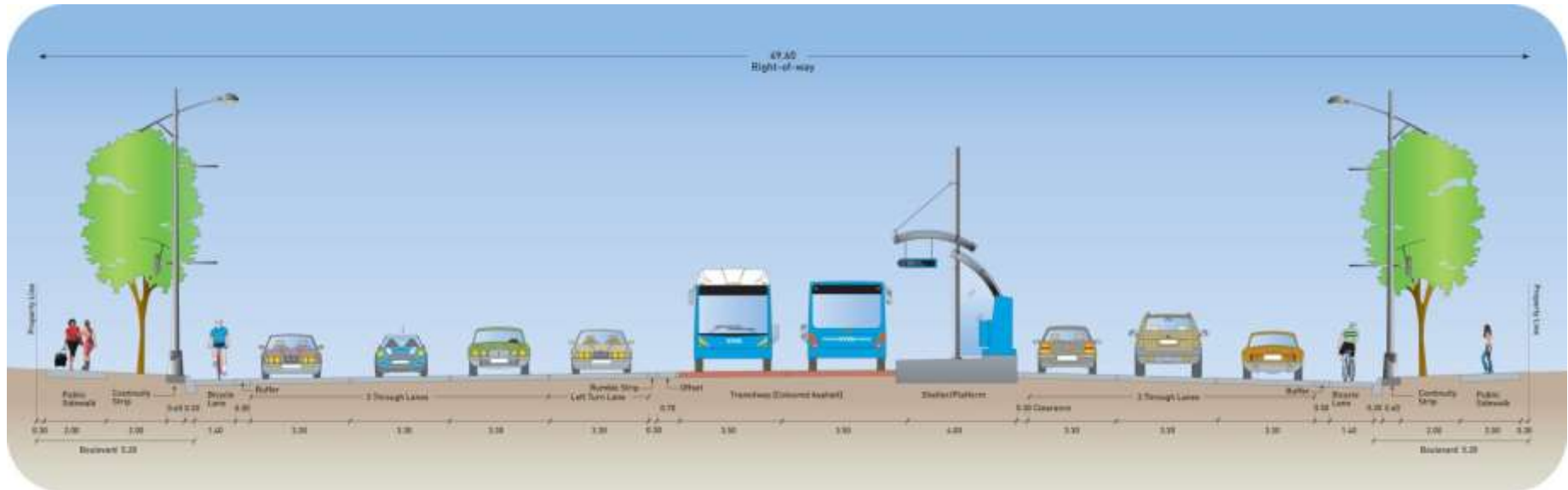




# Left Turn Bike Boxes

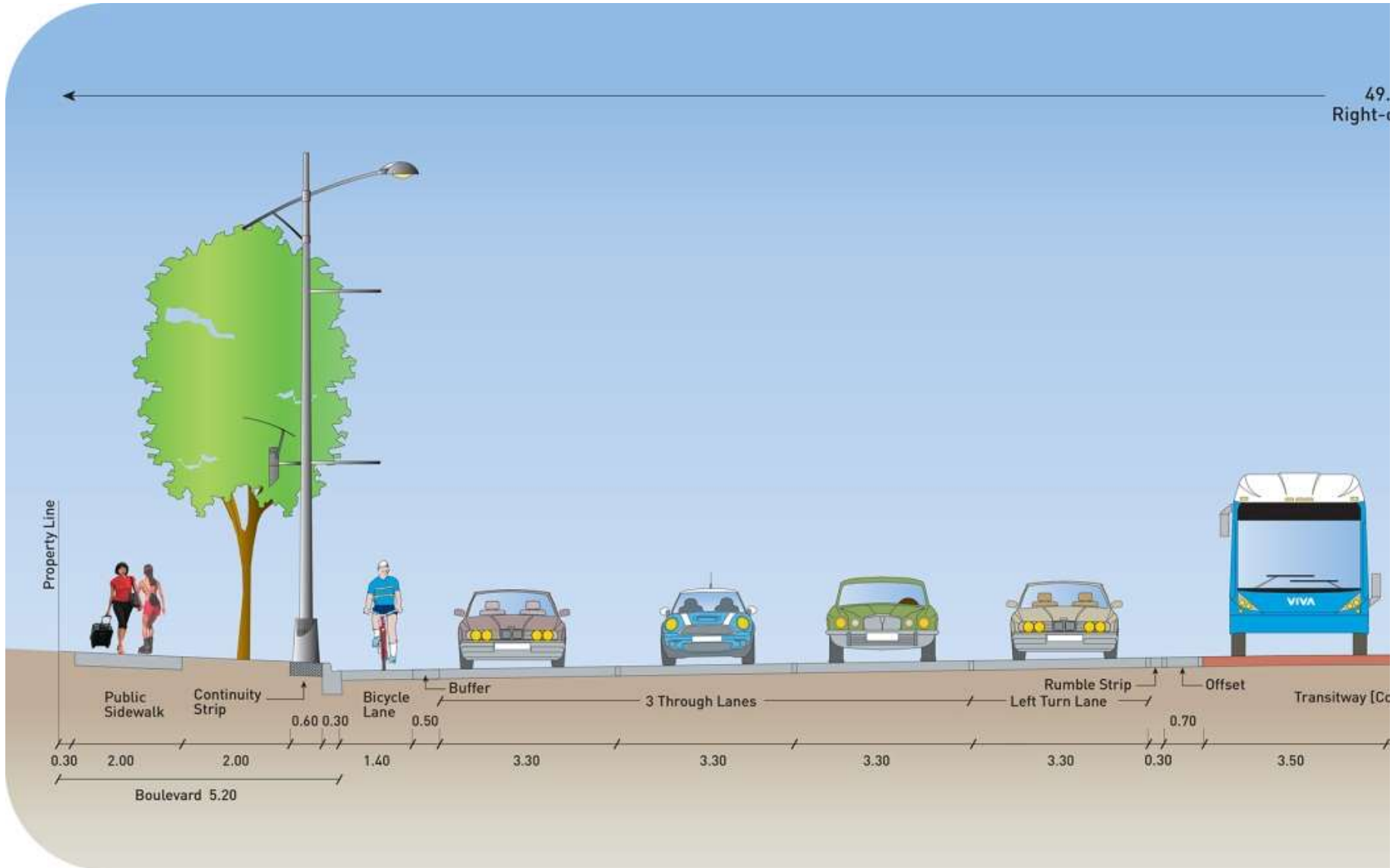


# Highway 7 Cross Section





# Highway 7 Cross Section

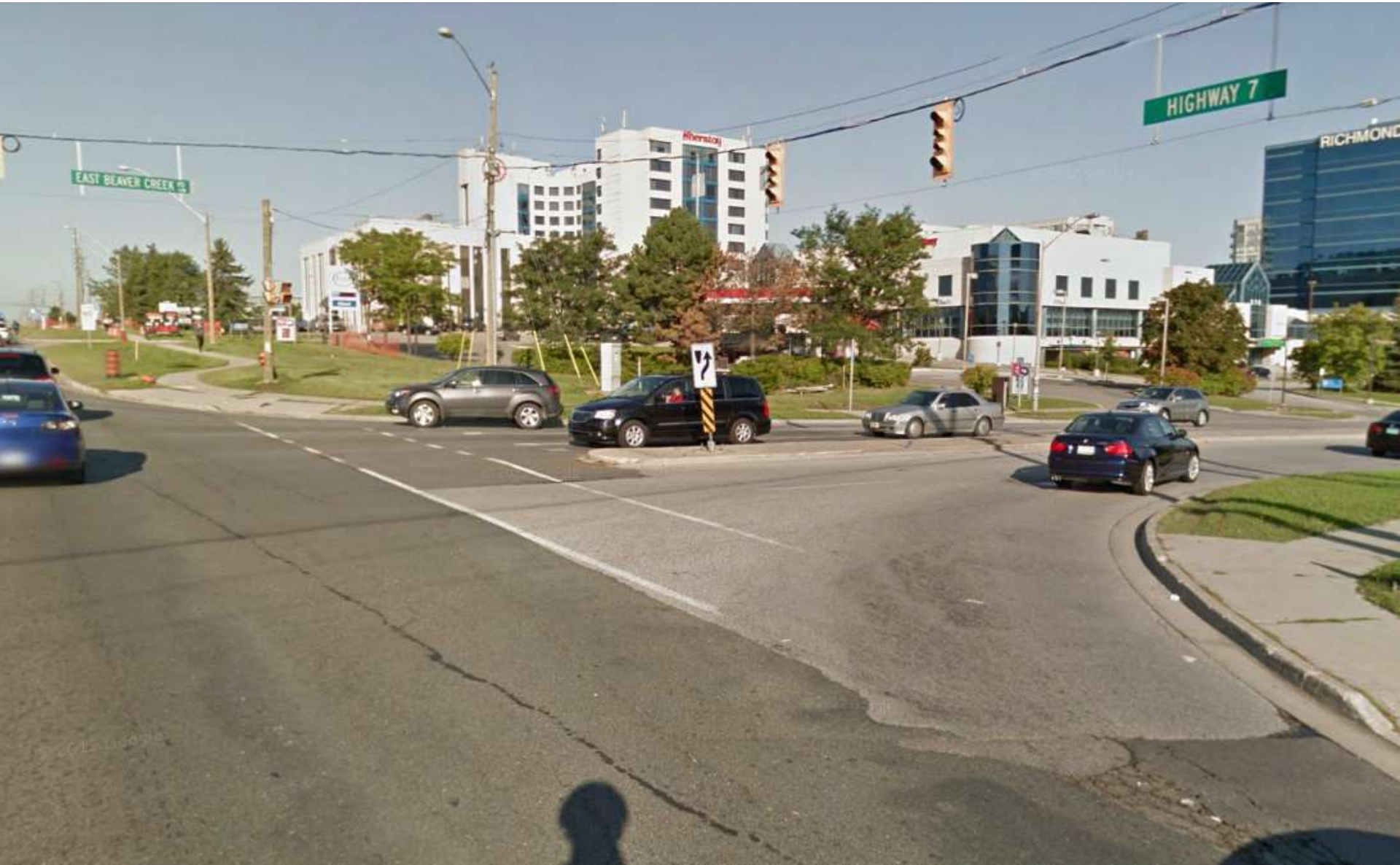


# Highway 7 – The Present





# Before: Highway 7 and East Beaver Creek



# After: Highway 7 and East Beaver Creek





# Before: Highway 7 and Lunar Crescent



# After: Highway 7 and Lunar Crescent





# Highway 7 and Highway 404





York Regional







Before (2011)...



Highway 7 – Markham



...After (2017)...



Highway 7 – Markham



# The Future

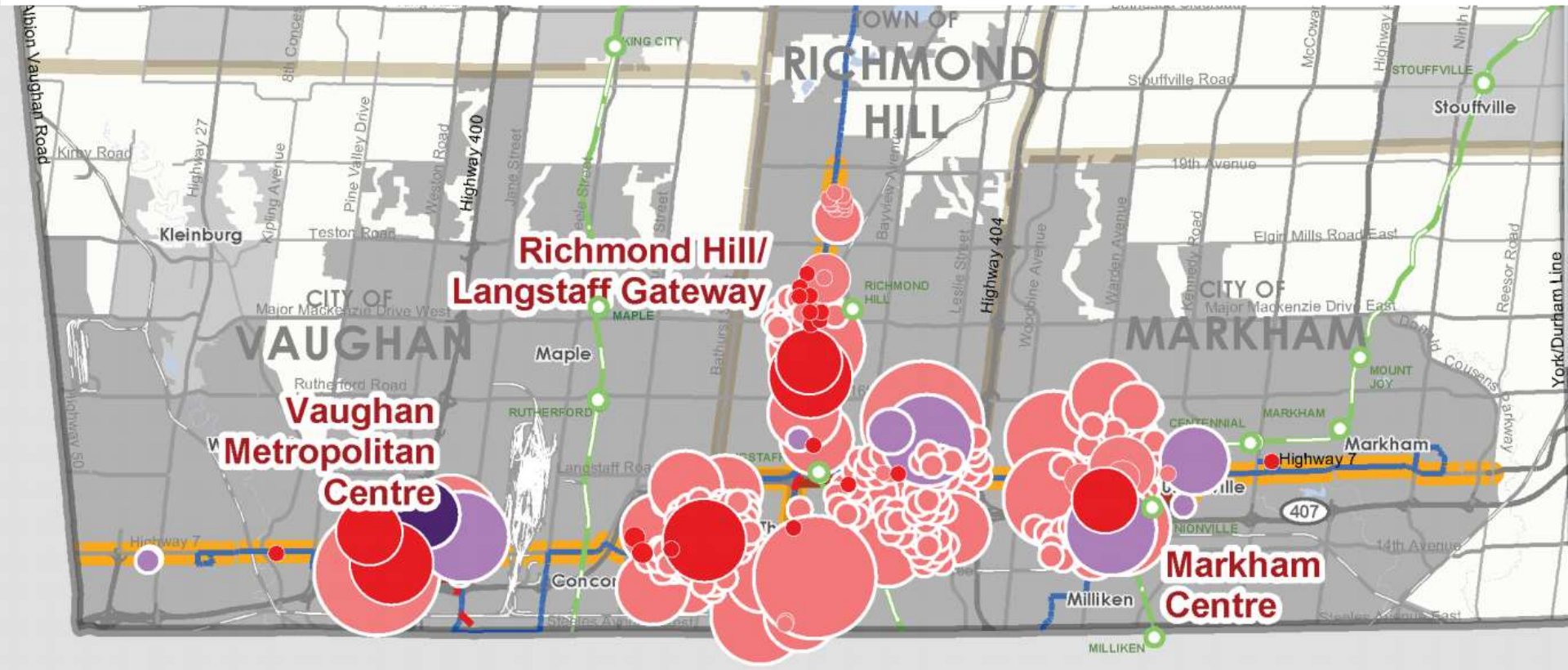






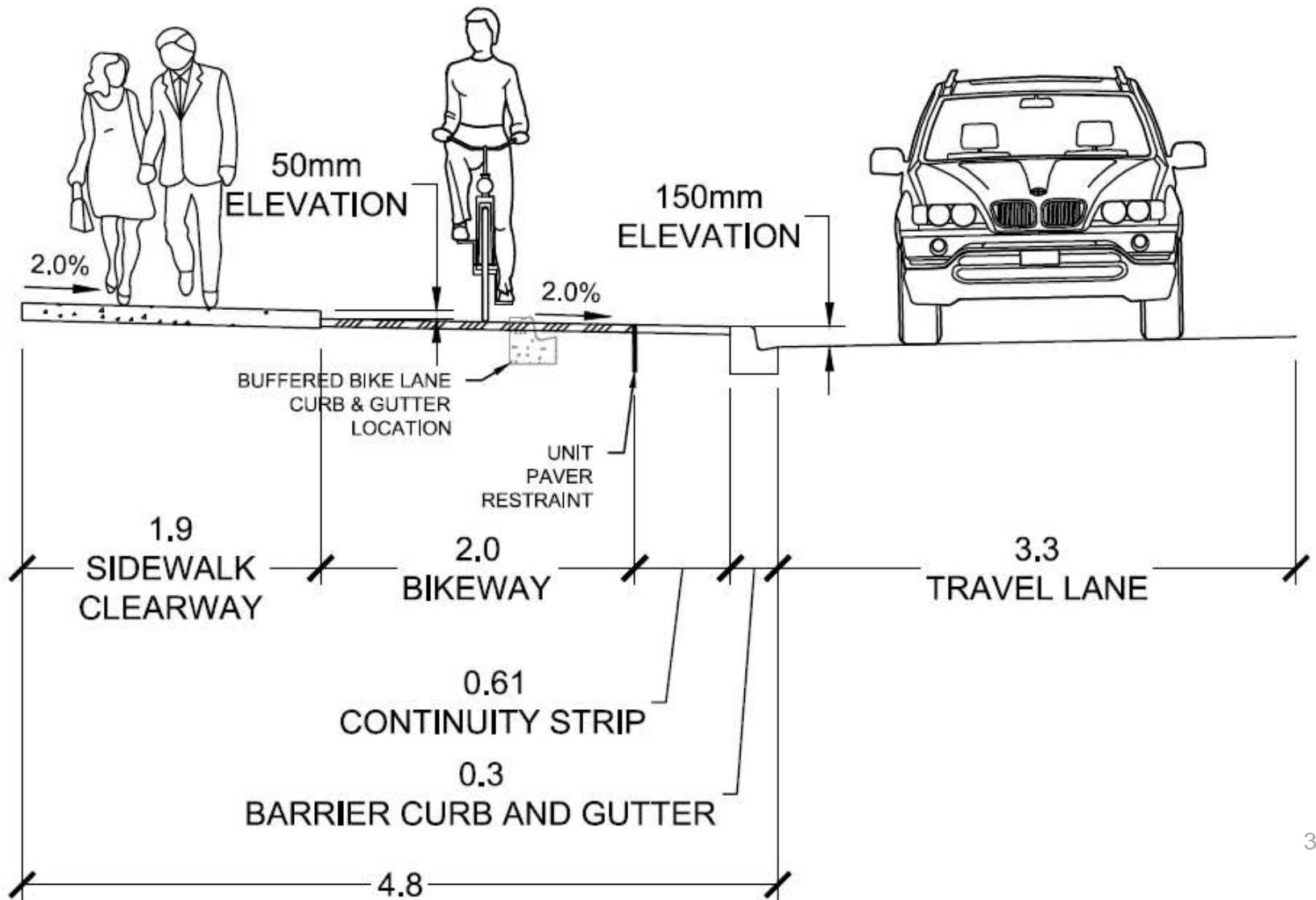


# Development Activity





# Bike Lane v2.0



# Bike Lane v3.0

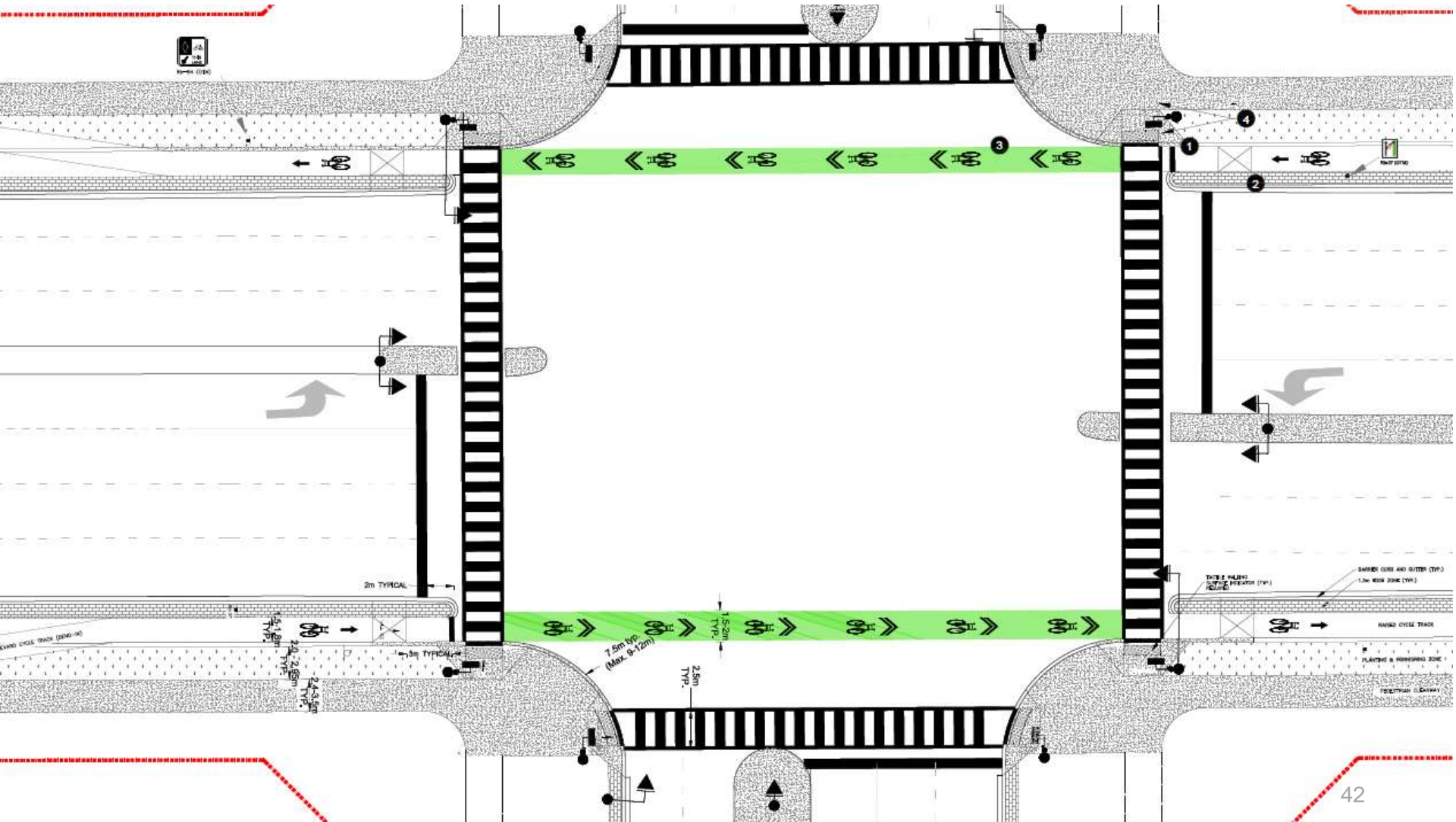




# Bike Lane v3.0



# Intersection Treatment





# Evaluation



# spacingTORONTO

- CANADA
- TORONTO
- VANCOUVER
- MONTREAL
- OTTAWA
- ATLANTIC
- EDMONTON
- CALGARY
- 10th Anniversary
- Architecture
- Bikes
- Cities For People
- Civic Engagement
- Communication
- Community
- Culture
- Curiosities
- Events
- Features
- Film & Video
- Food
- Green Space
- Headlines
- History
- Housing
- Infrastructure
- Maps
- Media
- Neighbourhoods
- Parks
- Photos
- Podcast
- Politics
- Services
- Spacing
- Streetscape



## TRANSIT

Comments 12 Like 20

### York Region's Rapidways: the good, the bad and the ugly

SEPTEMBER 12, 2013 | BY SEAN MARSHALL





# COMPLETE STREET TRANSFORMATIONS



# Outcomes



Shorter transit travel times



More sustainable transportation



A safer street for all



**DECREASED COLLISIONS**  
BETWEEN DRIVERS, PEDESTRIANS & CYCLISTS



**INCREASED TRANSIT RIDERSHIP**  
BETWEEN BAYVIEW AND TOWN CENTRE BLVD

<http://www.tcat.ca/knowledge-centre/complete-street-transformations/>





# Good intentions, bad design make Hwy. 7 a jumble of contradictions: Hume

The redesigned Highway 7 in Markham was remade to accommodate a variety of new users as well as a full complement of cars. For a traffic engineer, this is having your cake and eating it too.



In the new Highway 7 it designed for cars? Buses? Cyclists? Pedestrians? It's all of those things — and none. (STEVE RUSSELL / TORONTO STAR) | [ORDER THIS PHOTO](#)

# Highway 7 Performance Monitoring



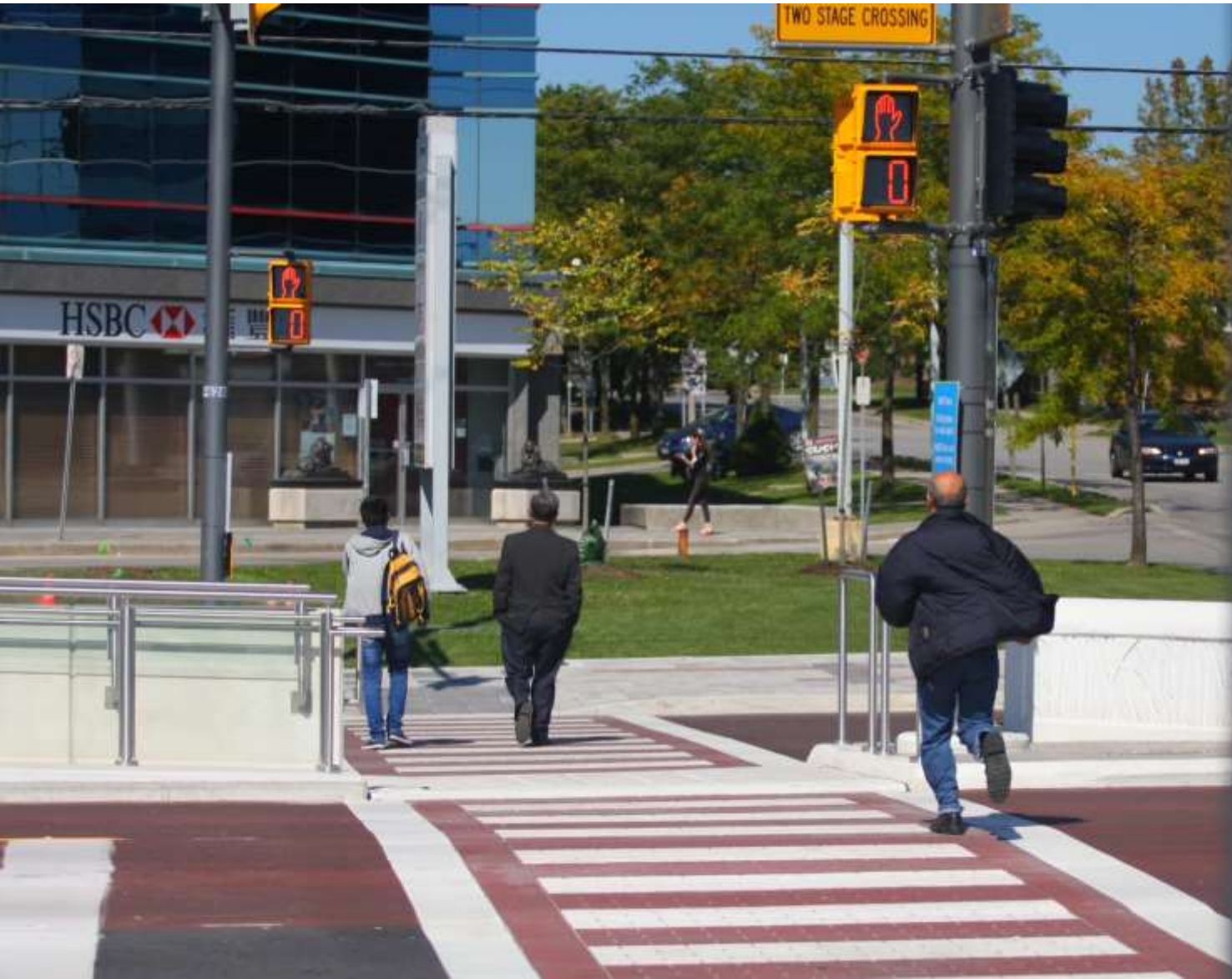
Public Survey



Traffic Camera Video Review



# Two-Stage Pedestrian Crossing



# Left Turn Bike Boxes





# How are cyclists making left turns?

Cyclists are using a variety of techniques to complete a left turn from Highway 7 onto a side street.



**23%** use the in-boulevard bike boxes to make a two-stage left turn



**13%** make a vehicular left by merging across traffic lanes



**31%** use the pedestrian crosswalks to cross in two stages

**33%** use all three techniques

# Highway 7 Westbound at Valleymede



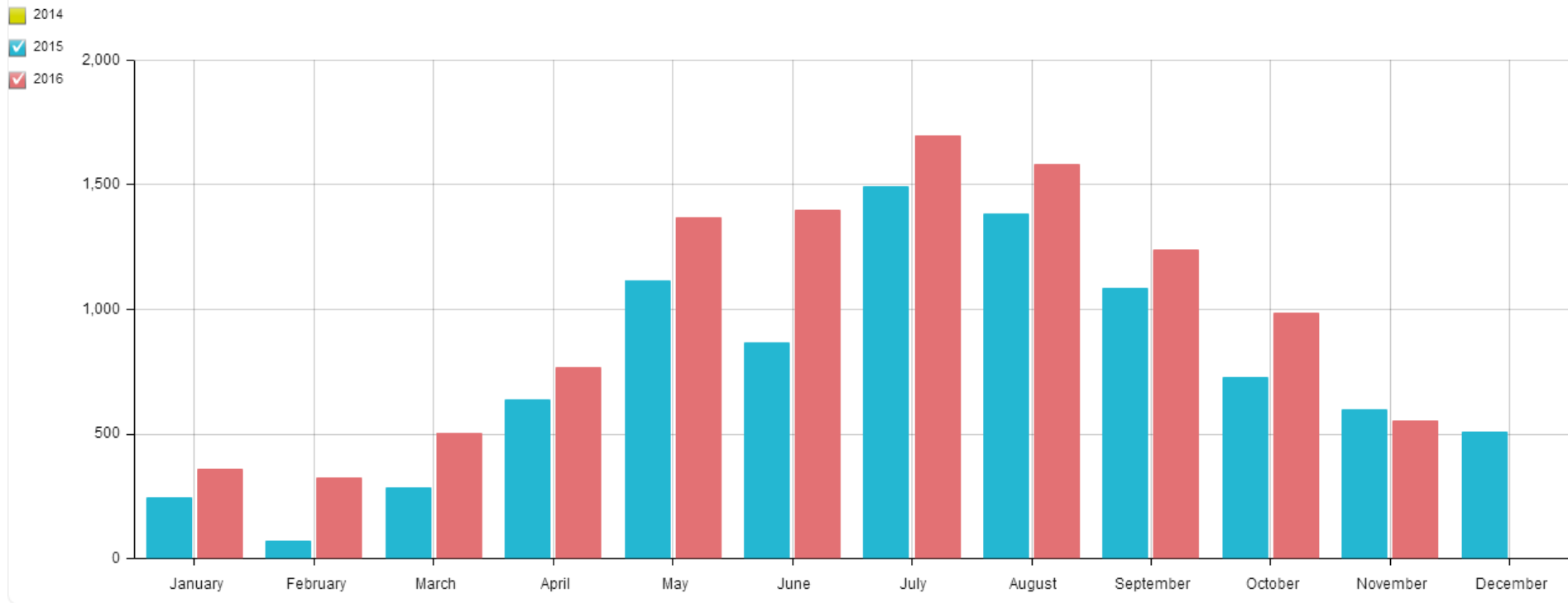


# Urban Post Multi Cyclists

## Highway 7 Westbound at Valleymede

Hwy 7 Westbound - Urban Post Multi Cyclists

10/04/2014 - 17/11/2016



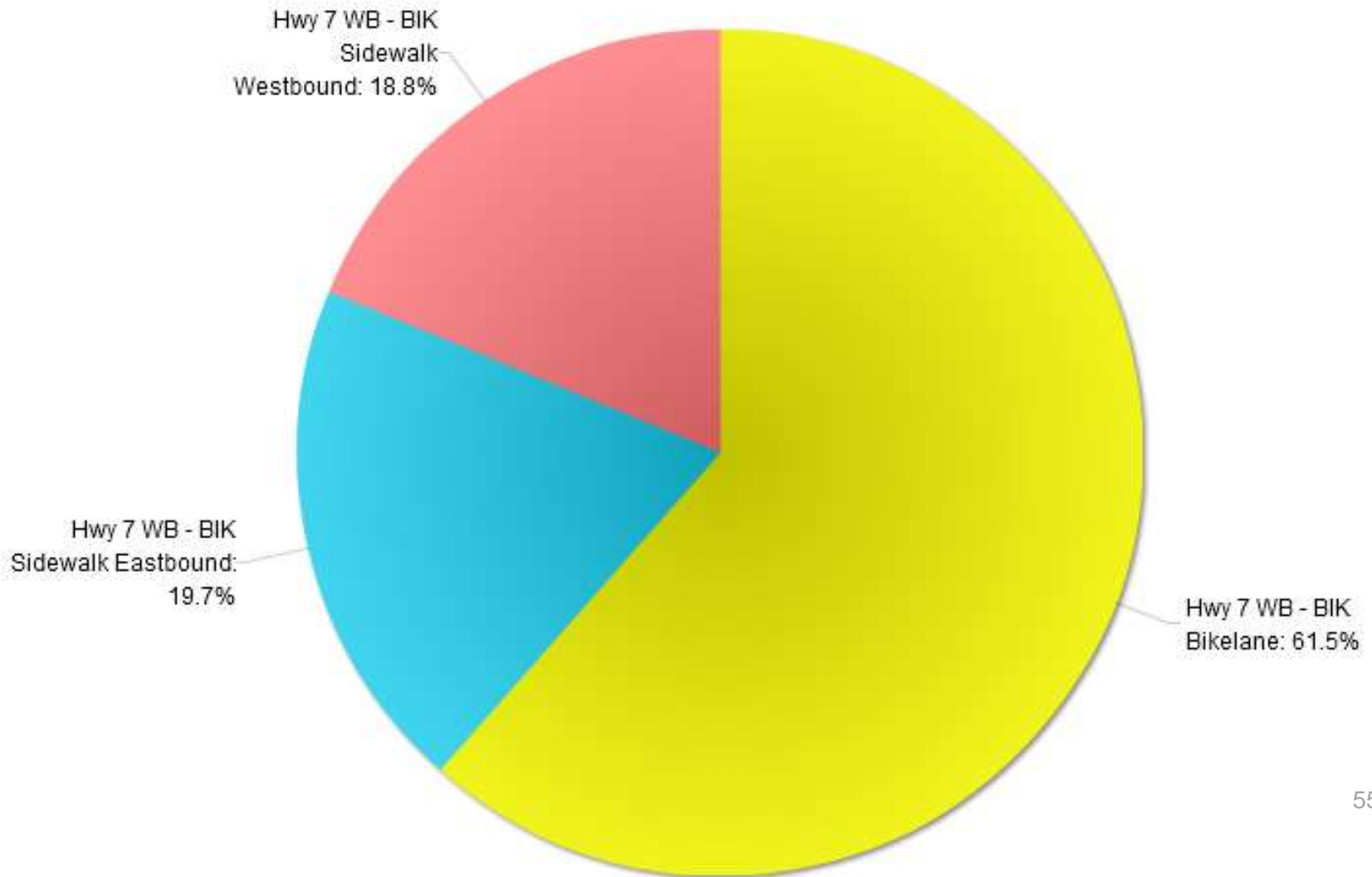
# Sidewalk Riding





# Bike Lane vs Sidewalk Cyclists

## Highway 7 Westbound at Valleymede



# Cyclist comfort

Enhanced separation is needed to improve cyclist perceptions of safety along Highway 7.

**35%** of cyclists do not feel safe riding along Highway 7



**92%** of cyclists indicated better separation would make them feel safer



# Comments from Highway 7 Users

Having a bike lane is a good idea; however, the bike lane does not meet the needs.

I strongly think we should have poles adjacent to the cyclist path. I don't trust many drivers who text and drive.

For the driver it is better if cyclists are separated from cars.

Driving beside the painted line is scary! I'm always so nervous beside cyclists.

# Piloting Enhanced Separation





# Questions/Discussion

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**[york.ca/cycling](http://york.ca/cycling)**



# Davis Drive



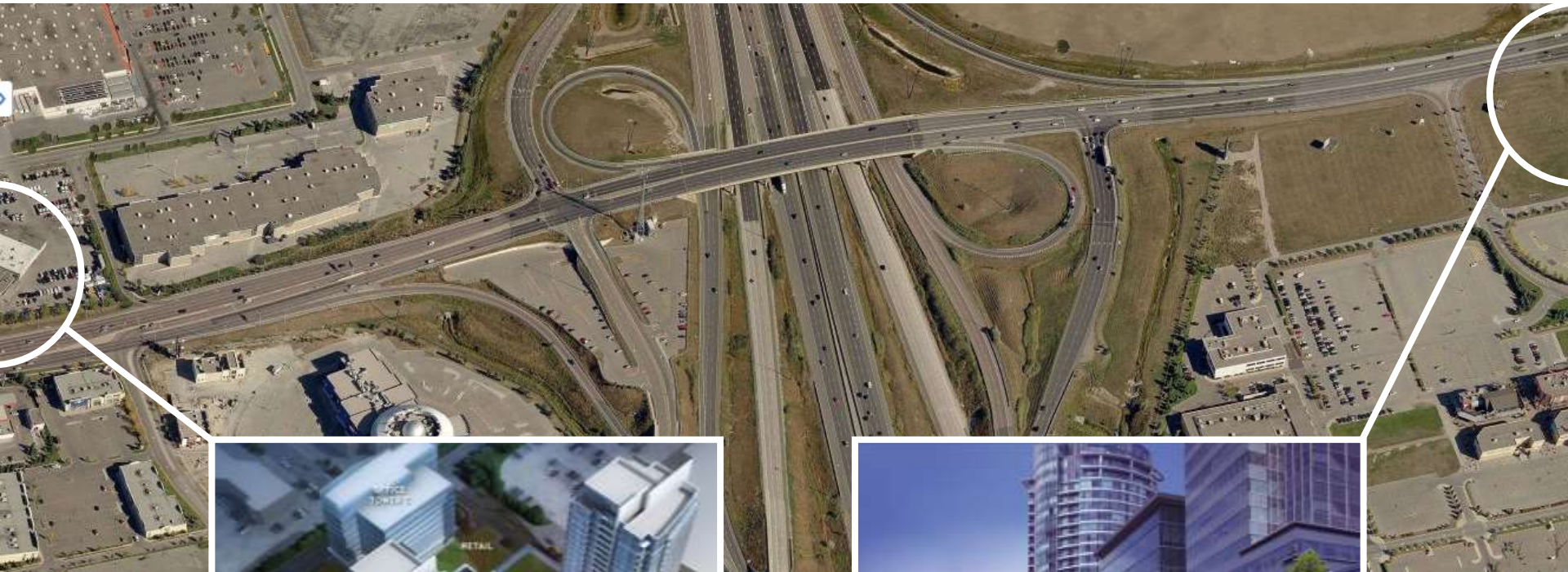


# Highway 7 Vaughan Metropolitan Centre





# Highway 7 at Highway 400 Interchange





# Ramp Crossings



Between Famous Ave & Commerce St (1 km):

- 4 free-flow ramps to cross at grade
- North side 360 m long conflict zones (36%)
- South side 400 m long conflict zones (40%)



E-S free-flow ramp  
with 300 m right-  
turn lane and taper

E-N free-flow ramp  
60 m direct taper

W-S free-flow ramp  
with 100 m right-  
turn lane and taper

W-N free-flow ramp  
with 300 m right-  
turn lane and taper

imagery ©2013 Ches Spot Image, DigitalGlobe, Earth Base Solutions - Edit

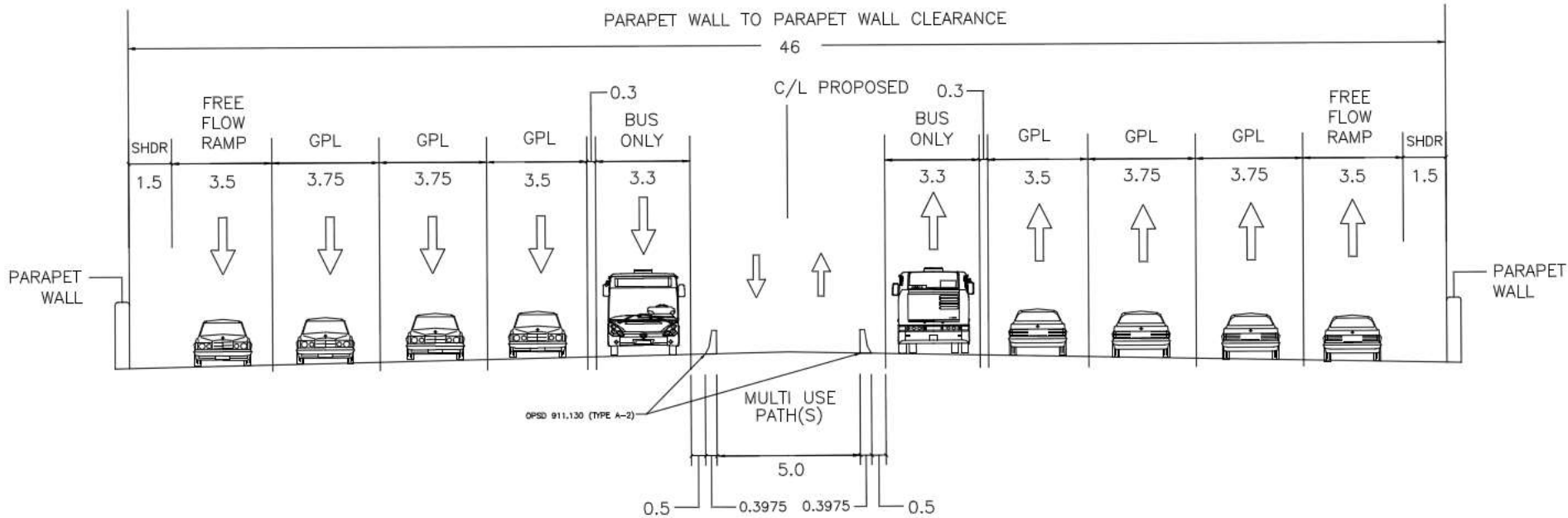
# Centre Median Multi-Use Path



**New York City Sands  
Street Bikeway**



# Centre Median Multi-Use Path

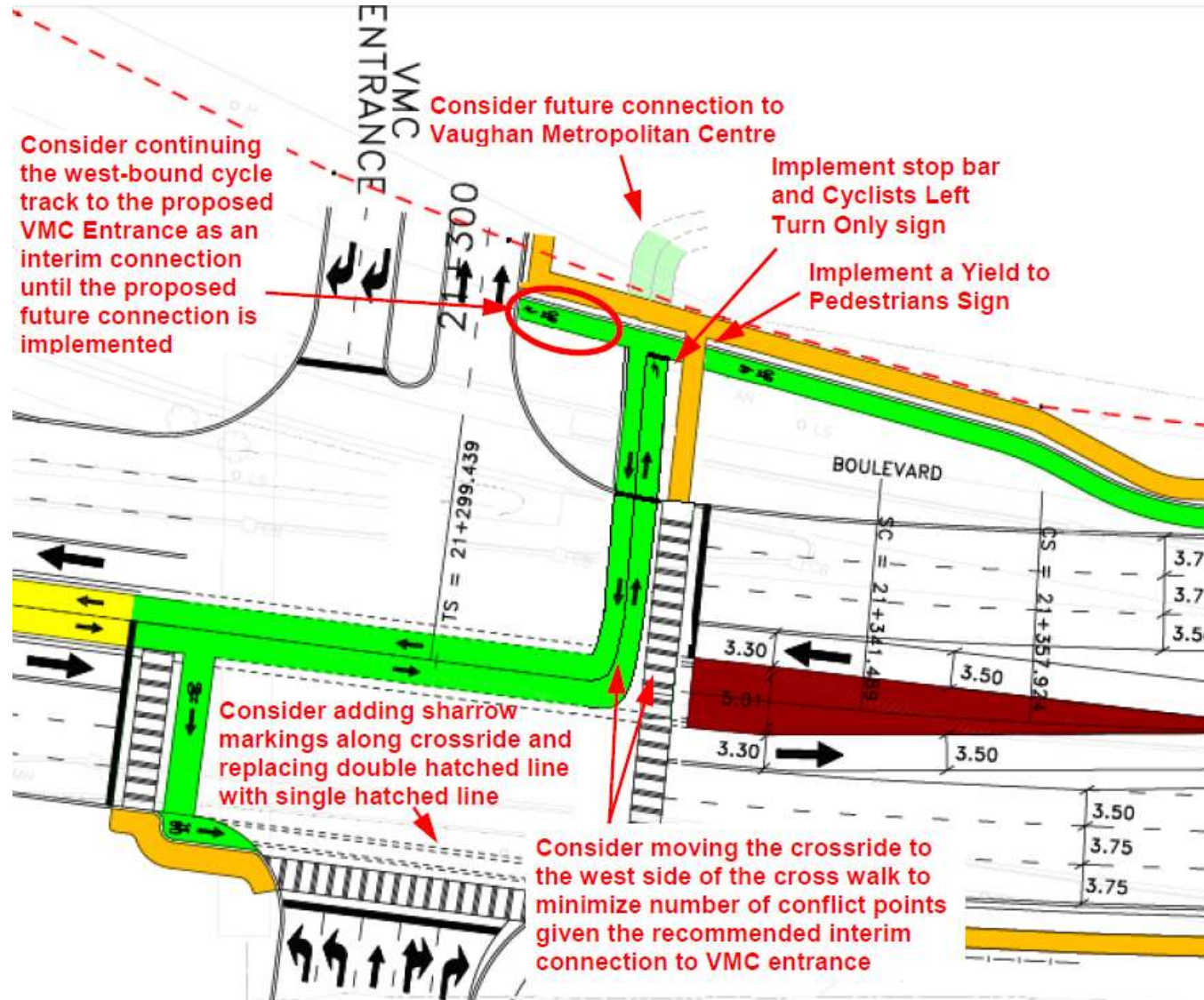


# Canopy – Conceptual Design

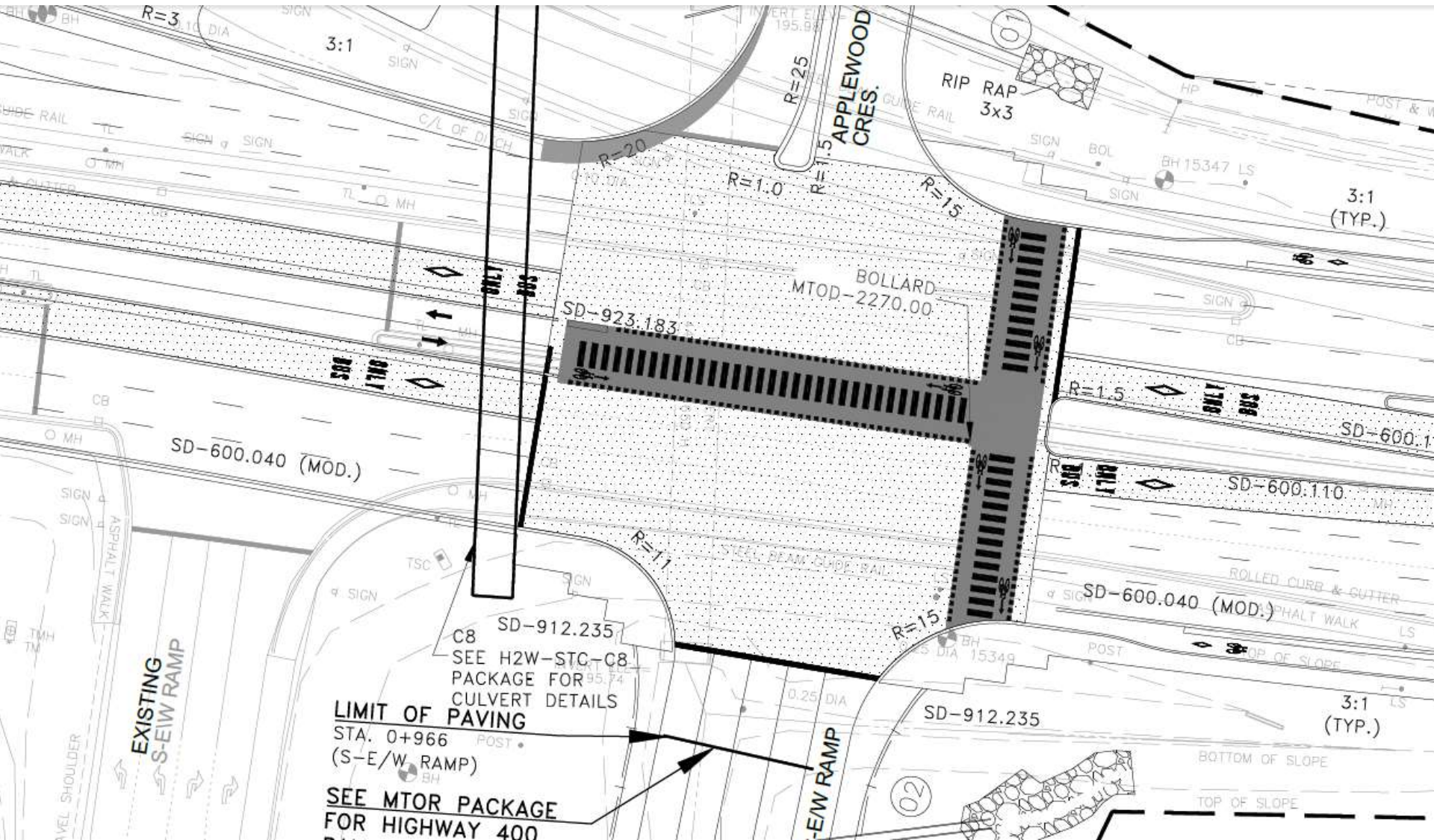




# Transition to Centre Median



# Transition to Centre Median







# Left Turn Bike Boxes

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**York Region Transportation Services**

Wednesday, June 28, 2017

# Painted Bike Box





# Painted Bike Box

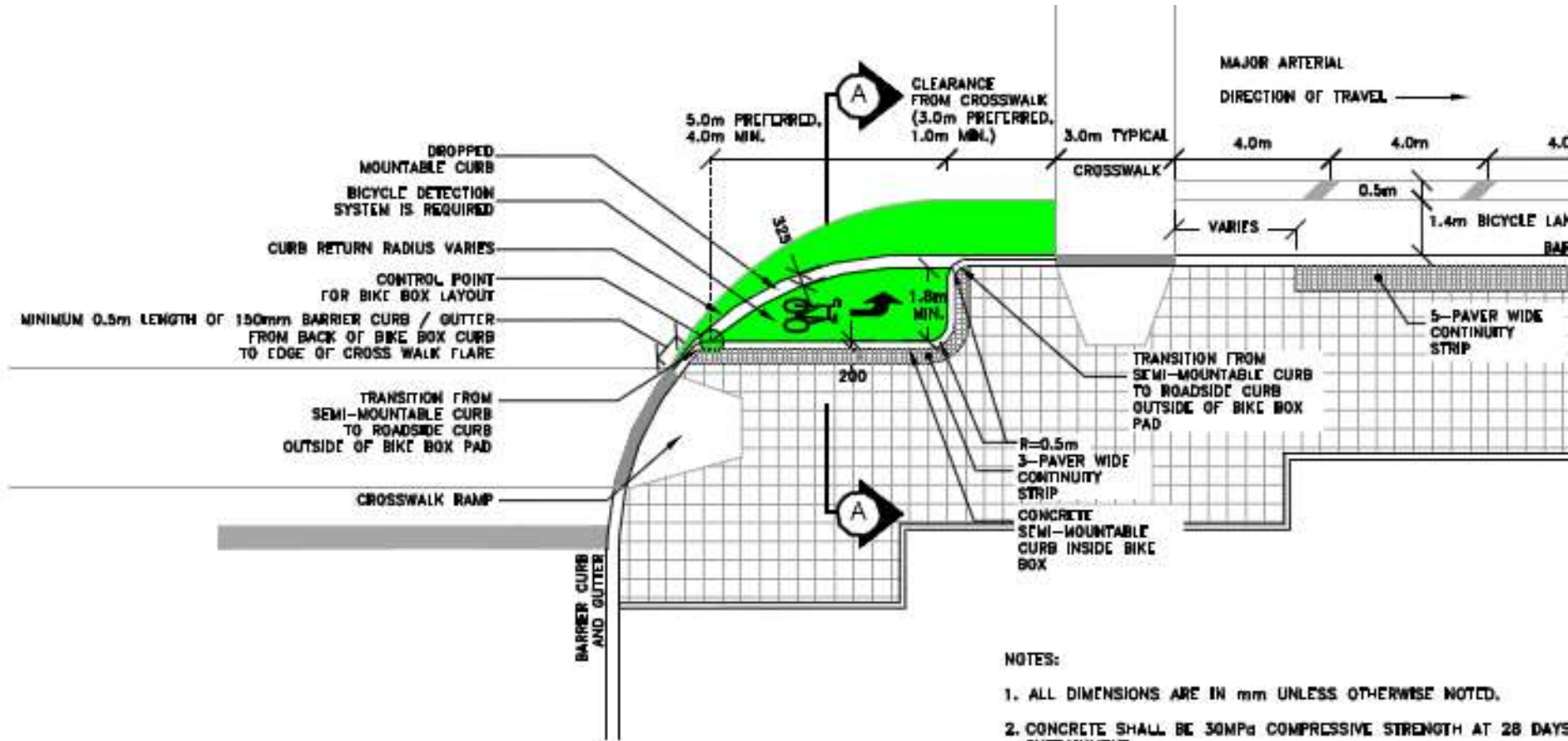


# Early Concept



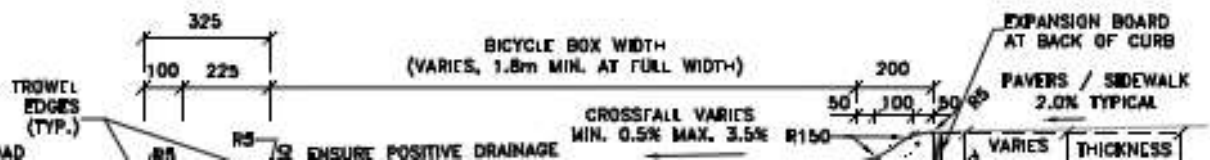


# Version 1.0



**NOTES:**

1. ALL DIMENSIONS ARE IN mm UNLESS OTHERWISE NOTED.
2. CONCRETE SHALL BE 30MPa COMPRESSIVE STRENGTH AT 28 DAYS ENTRAINMENT.
3. PAVER FOR CONTINUITY STRIP:  
MANUFACTURER: UNLOCK, ECO-PRIORA  
SIZE: 120X120X80mm  
OR APPROVED EQUAL
4. BIKE DETECTION SYSTEM IS REQUIRED
5. INCLUDE TRANSVERSE CONTRACTION JOINTS ACROSS BIKE BOX PAD
6. BIKE BOX PAD TO HAVE LIGHT BROOM FINISH PERPENDICULAR TO



# Left Turn Bike Boxes - New





# Left Turn Bike Boxes - Retrofit



# Construction

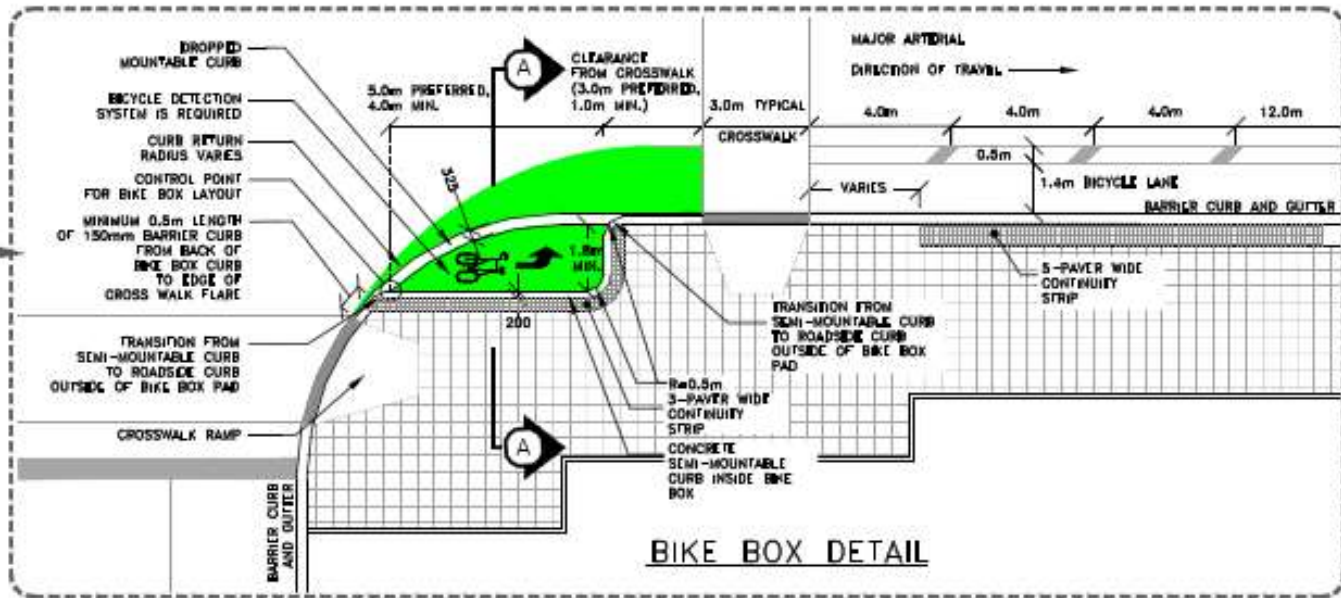
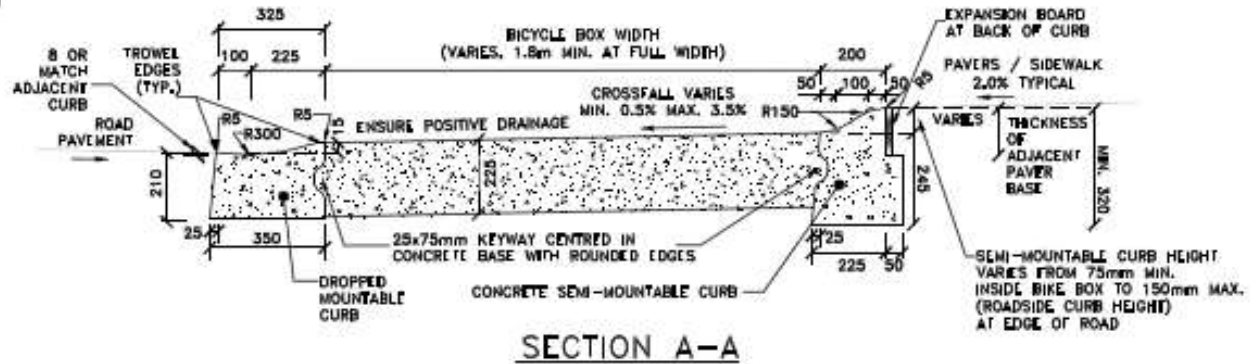
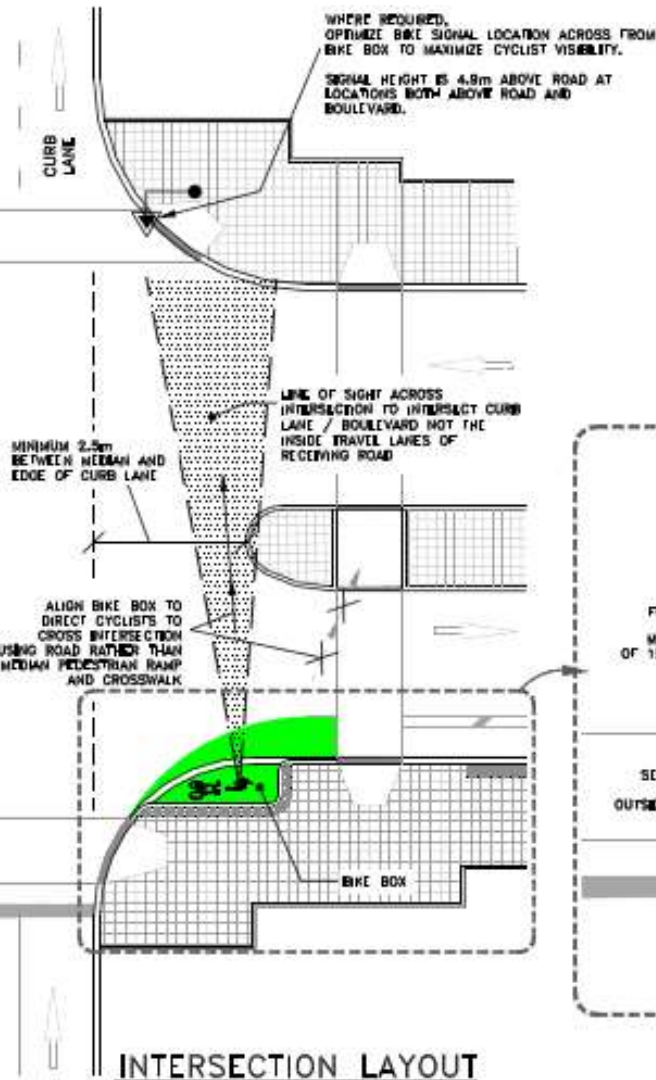




# Intersection Crossing



# Version 1.1



N.T.S.

NOTES:  
1. ALL DIMENSIONS ARE IN mm UNLESS OTHERWISE NOTED.





# Winter Maintenance



# Winter Maintenance

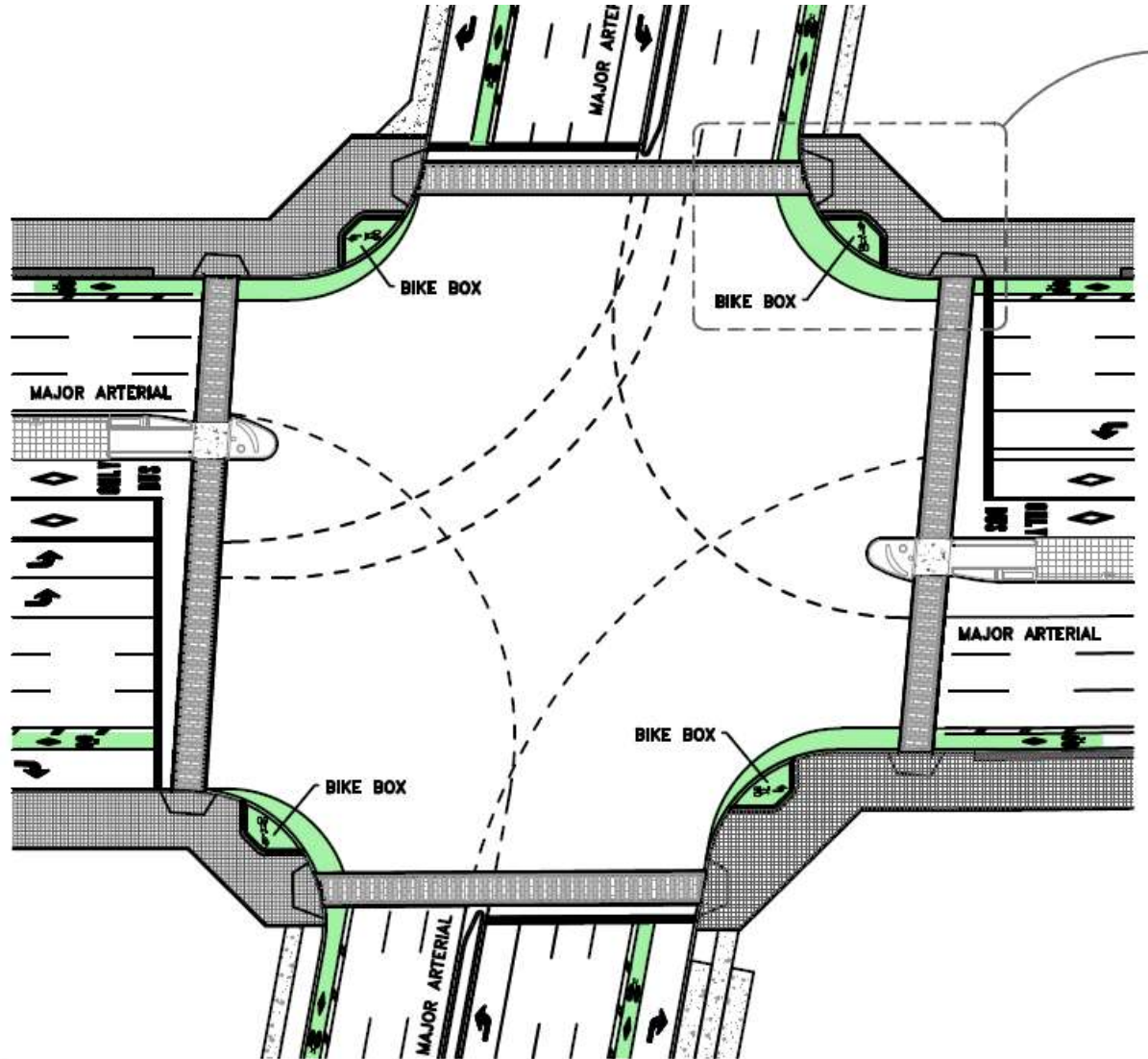




# Tire marks

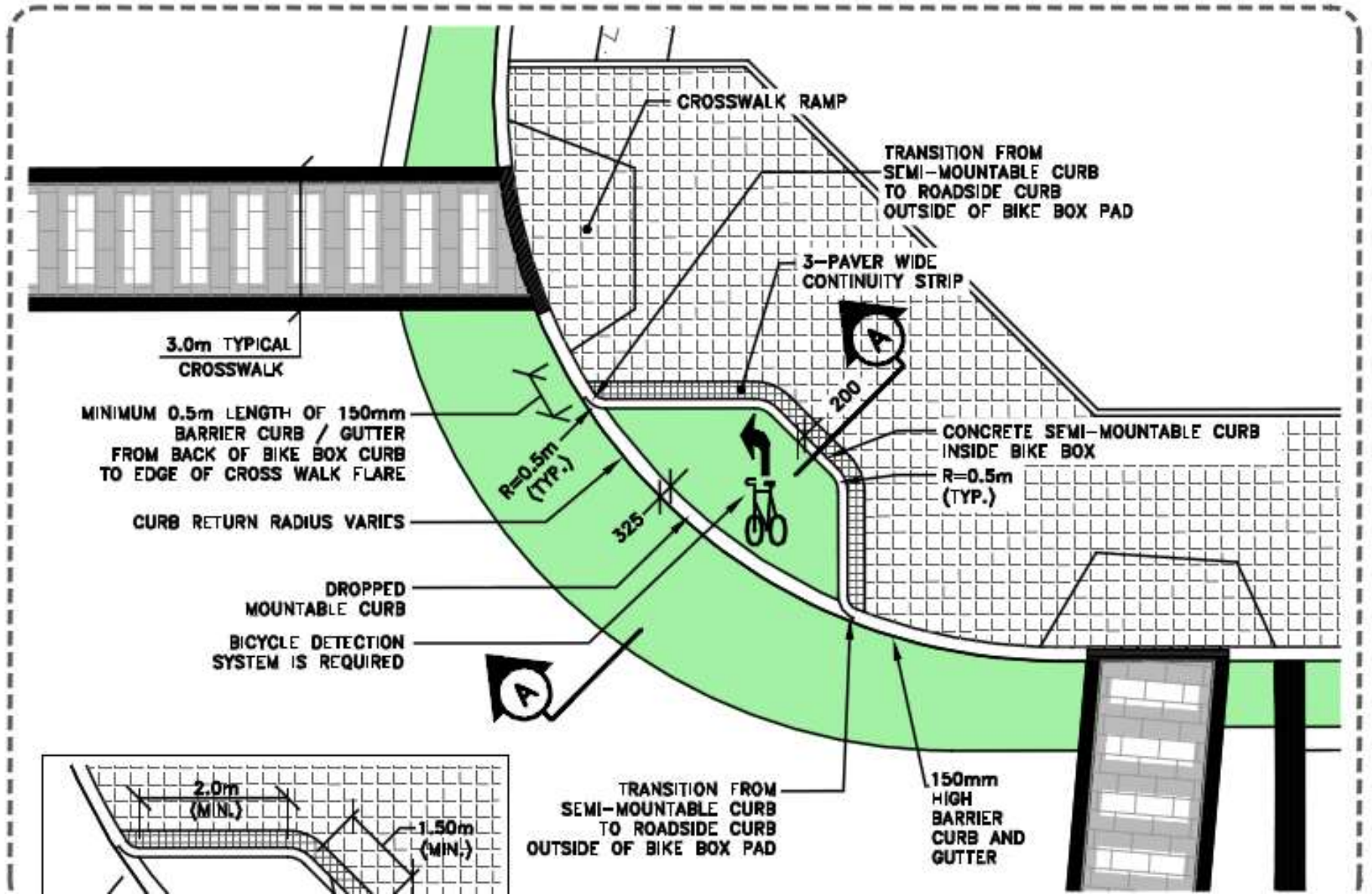


# Version 2.0





# Version 2.0

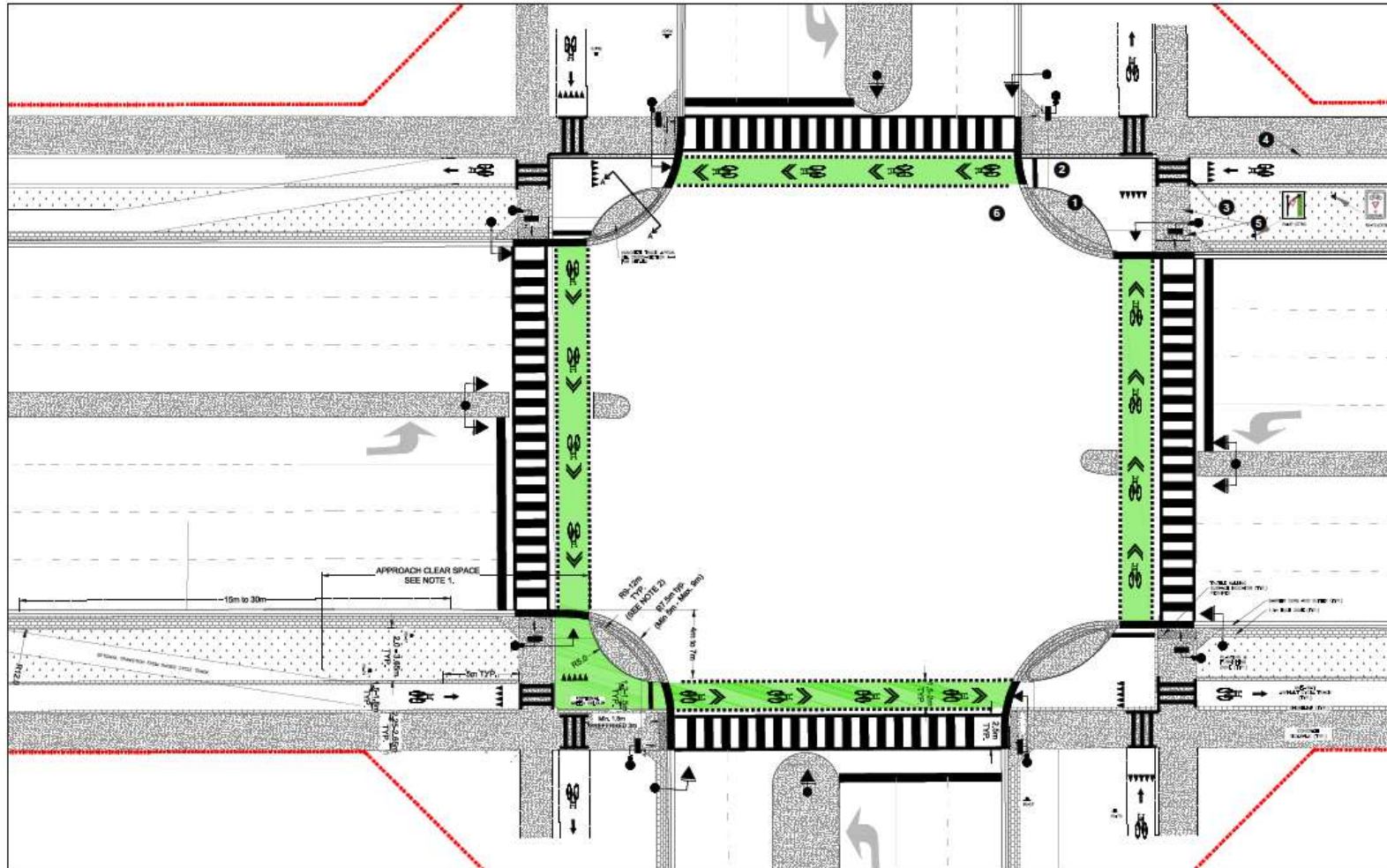


# Version 2.0





# Version 3.0 – Protected Intersection



## KEY DESIGN FEATURES

- 1 CORNER REFUGE ISLAND TO PROVIDE PHYSICAL PROTECTION TO PEDESTRIANS & CYCLISTS
- 2 BICYCLE QUEUING AREA
- 3 PEDESTRIAN CROSSING OF CYCLE TRACK - SIDEWALK CARRIED ACROSS CYCLE TRACK TO EMPHASIZE PEDESTRIAN PRIORITY WITH YIELD MARKINGS FOR CYCLISTS
- 4 VISUAL/TEXTURED SHORELINE SEPARATION
- 5 PEDESTRIAN-CYCLIST ADA CURB RAMP AND LEVEL LANDING
- 6 MOTORIST YIELD ZONE - MINIMUM 4M WHICH ALLOWS A DRIVER TO YIELD WITHOUT RISK OF REAR-ENDING

## NOTE 1

| RIGHT-TURN TRAVEL SPEED | APPROACH CLEAR SPACE | CORNER RADIUS                    |
|-------------------------|----------------------|----------------------------------|
| 18 km/h                 | 13m                  | 5m (MIN. YR URBAN AVENUE)        |
| 20 km/h                 | 14m                  | 7.5m (DESIRABLE YR URBAN AVENUE) |
| 24 km/h                 | 15m                  | 13m (TAC BUS)                    |

## NOTE 2

DETERMINE TRUCK APRON CORNER RADIUS (R9-12m OR TWO-CENTRED CURVE) TO SUIT THE FREQUENT USER, CONTROL (HEAVY) VEHICLE. ENSURE CONTROL VEHICLE AT "CRAWL SPEED" DOES NOT TRACK BEYOND THE CROSS CURB OF THE CYCLE TRACK / SIDEWALK RAMP ON THE DEPARTURE LEG OF THE INTERSECTION.