

# TRANSPORTATION BEYOND TOMORROW 2031

**Sustainable Transportation Master Plan**  
**City Of Niagara Falls Council Meeting, Oct. 24, 2011**



# Project Team

- City of Niagara Falls
- Niagara Region
- Ministry of Transportation
- Niagara Parks Commission

## Consulting Team

- AECOM
- Urban & Environmental Management
- Victor Ford and Associates
- Informa



VICTOR FORD AND ASSOCIATES INC



# This Study & the EA Process

- **Background**

- Study undertaken to update and replace the 1998 TMP (updated, in part, in 2003)

- **Tonight's agenda**

- Discuss the STMP framework and recommendations; this document is a guide for implementing a sustainable transportation system over the next 20 years
- Adoption of STMP

- **Upcoming**

- Presentation to Niagara Region Transportation Strategy Steering Committee (December 2011)
- Study is filed with MOE
- The EA process is then followed as required for individual projects

# The STMP has Four Connected Parts

- Goals & Objectives
- Transit Mode Share Targets
- Financial Indicators
- Policy Regime
- Plan Review / Updates

Monitoring &  
Update Plan

Infrastructure  
Plan

- Active Transportation network improvements
- Transit Network Improvements
- TDM program initiatives
- Road Network Improvements
- Supporting systems

- Development Charges Act
- Provincial / Federal Funding Opportunities
- Alternative Revenue Sources

Financial  
Plan

Policies

- Active Transportation Policies
- Transit Supportive Policies
- TDM policies
- Parking Policies (separate report)

## Goals and Objectives

- **Provide a vision for a multi-modal transportation system that ensures future growth in the City is sustainable, in the context of the Smart Growth Policies**
- **Address operational, planning and policy issues (all modes) in the context of tourism, economics, environment and the community**
- **Goals include (in no particular order):**
  - **Optimize the Transportation System**
  - **Promote Transportation Choice**
  - **Foster a Strong Economy**
  - **Support Sustainable Development and Growth**





# Public/Agency Involvement

- Process leads to better decision making
- Statistically significant public survey indicated:
  - “Roads/Traffic” is the leading local issue
  - Travel by walking, cycling and transit is are very low
  - Cycling is a popular recreational activity; not usually a commuter travel mode
  - Mixed opinions on roadway conditions
- Community Advisory Group provided input
- Public Meetings held:
  - PIC #1 – Sept 15, 2010
  - PIC #2 – January 27, 2011
  - PIC #3 – September 21, 2011



## Multi-Modal Plan

- The multi-modal plan establishes an order of priority
  1. Walking & cycling (active transportation)
  2. TDM, including transit
  3. Smart-commute strategies
  4. Auto use and goods movement
- This priority order contributes to the development of the sustainable transportation system



## **“Getting Around” in the Future**

- **The base assumption for this study is that people will generally choose to travel by walking, cycling and transit more often that they do now**
- **This change could represents an estimated \$7.5 M annual benefit to residents in terms of travel time savings, by 2031**
- **Greater focus on walking and cycling is critical in achieving these targets**





# STMP Recommendations



## STMP Recommendations

- **The preferred alternative is a comprehensive STMP for the City of Niagara Falls, covering the following key elements of the transportation system:**
  - **Signing/Wayfinding**
  - **Parking (recommended this study continue separately)**
  - **Active Transportation (walking and cycling)**
  - **TDM Initiatives**
  - **Road Network**
  - **Supported by**
    - **project costs, policy initiatives and a monitoring program**

# Signing/Wayfinding



# Signing/Wayfinding Strategy

- **Purpose:**
  - Enhances existing transportation network
  - Supports travel by walking, cycling and transit
  - Provides for better managed traffic flow and reduced congestion
  - Identifies key destinations within the community
- **Recommendations:**
  - Create a recognized system for signing based on aesthetics and commonality; ensure signing conforms to appropriate guidelines
  - Complete a regular signing inventory
  - Conduct a sign effectiveness survey to target feedback from tourists and residents (prior to next TMP update)



# Signing/Wayfinding Strategy

## Promote Walking & Cycling; Reduce Congestion

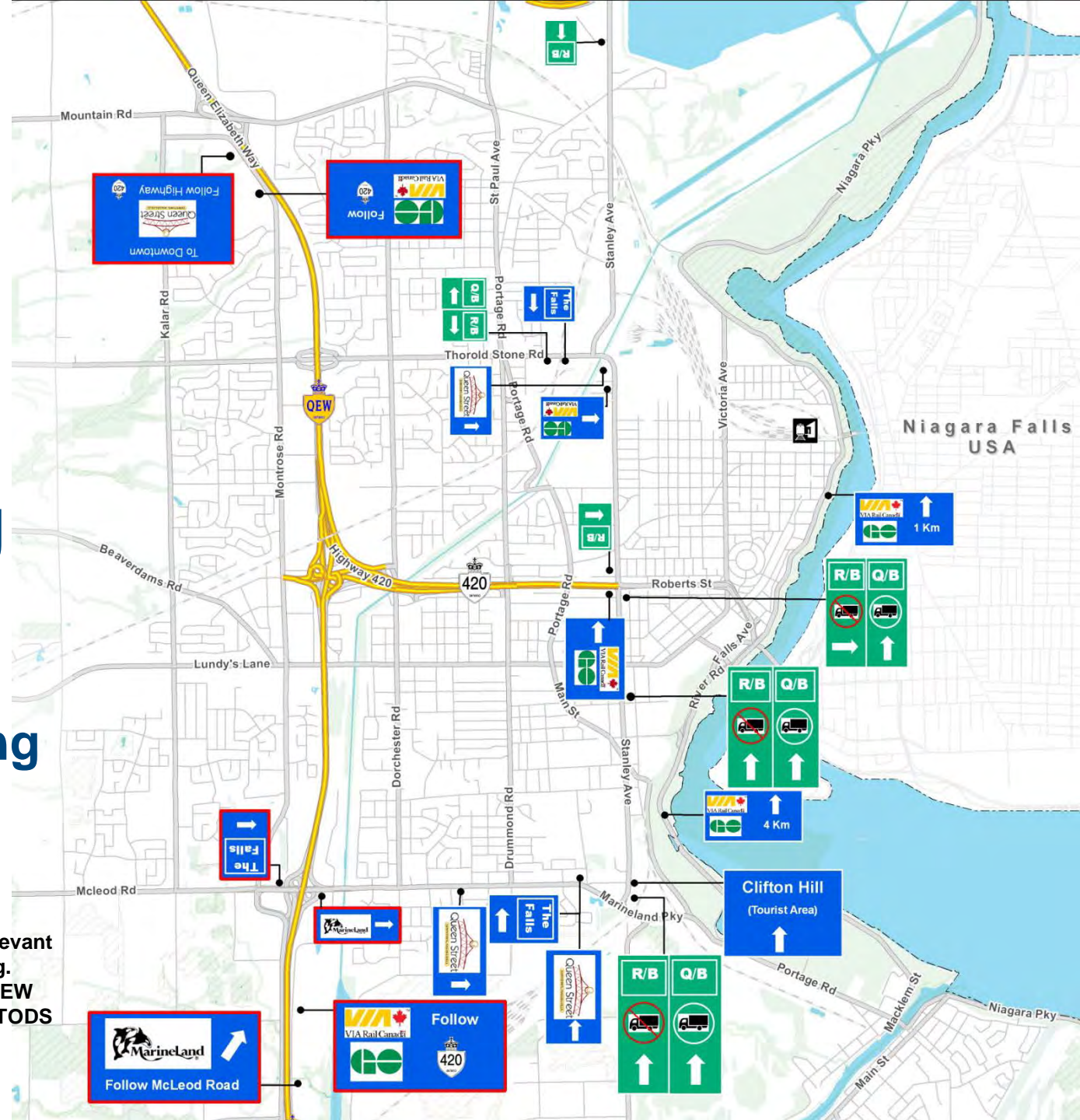
Strategy	Description
Tourist Information Map	<ul style="list-style-type: none"> <li>Map indicating Tourist Districts, parking, transit and walking/cycling information.</li> </ul>
Tourist District Signage	<ul style="list-style-type: none"> <li>Unique signage for the eight Tourist Districts identified in Niagara Falls.</li> </ul>
Parking Signage	<ul style="list-style-type: none"> <li>Signage to direct motorists to parking structures/lots with available spaces.</li> </ul>
On-Street Information Maps	<ul style="list-style-type: none"> <li>“You Are Here” guidance to nearest attractions and transportation routes.</li> </ul>
Visitor Transportation System (VTS) Information/Transit Signage	<ul style="list-style-type: none"> <li>Signage for GO and VIA Rail facilities for both motorists and pedestrians/cyclists.</li> </ul>
Walking/Cycling Wayfinding	<ul style="list-style-type: none"> <li>Walking and Cycling route information, directional signing for bridge crossings and use of specific signing.</li> </ul>
Signage for Public Gathering and Historical/Heritage Locations	<ul style="list-style-type: none"> <li>Minimal signage but clear tourist map provided at key facilities.</li> </ul>
Special Event Signage	<ul style="list-style-type: none"> <li>Specific permanent signing for long-term (repeat) events and temporary signing for one-off events.</li> </ul>

# Signing/Wayfinding Strategy

## Divert and Manage Congestion

Strategy	Description
Variable Message Signs (VMS)	<ul style="list-style-type: none"><li>System of VMS strategically located on the QEW to manage congestion on Highway 420.</li></ul>
Advisory Signs for Canal Crossings	<ul style="list-style-type: none"><li>Strategically located signs (such as at Allensburg crossing/lift bridge) to provide travellers with real time information on crossing closures and alternate routes.</li></ul>
Commercial Vehicles and International Bridge Crossing	<ul style="list-style-type: none"><li>Placement of signing at strategic intersections to route trucks to appropriate bridge crossings.</li></ul>
Border Wait Time Advisory System	<ul style="list-style-type: none"><li>Provision of MTO Border Wait Time Advisory System information at key decision points.</li></ul>
Emergency Detour Routes (EDR)	<ul style="list-style-type: none"><li>Signing of EDR routes in Niagara Falls</li></ul>

- **Note: Signs to be approved by relevant roadway authority prior to posting. Direction signs noted along the QEW may be combined with existing CTODS signage where appropriate**

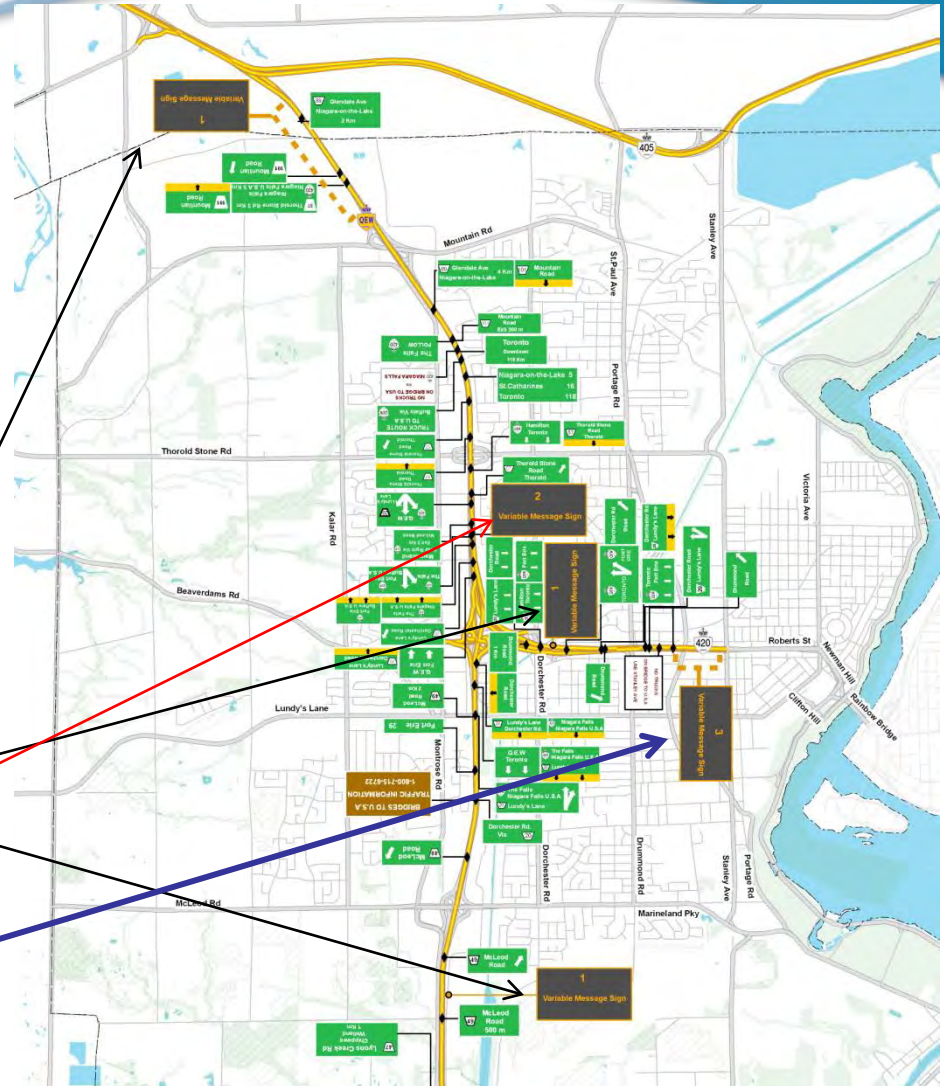




# Signing/ Wayfinding Strategy

## Potential locations for Variable Message Signs

- #1: MTO Proposed
- #2: Existing VMS
- #3: Potential new VMS



- Note: Signs to be approved by relevant roadway authority prior to posting

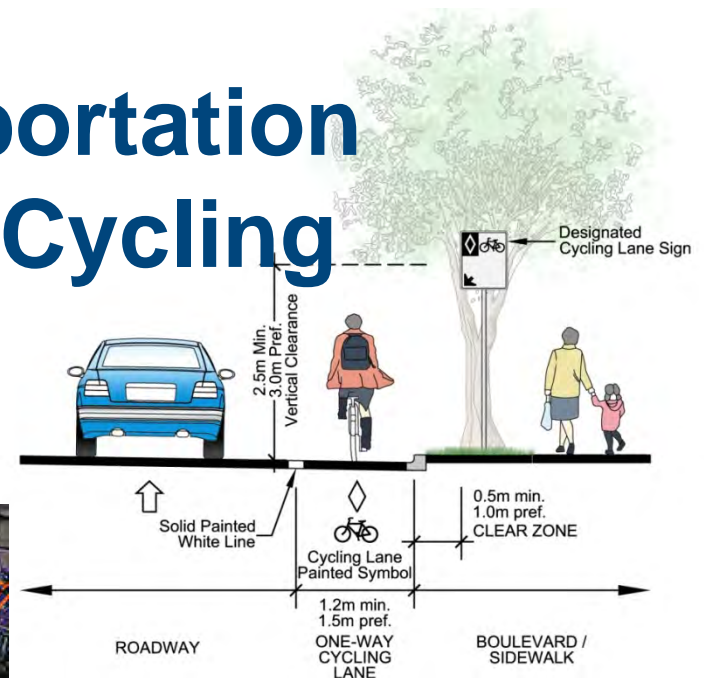


# Parking

# Parking

- **A key element of the City transportation system**
  - Supply and management of parking linked to hotels and other accommodation is an issue which requires significant stakeholder consultation
  - Other parking-related components that require review include on-street vs. off-street parking, commercial parking lots, on- and off-street parking rates, parking structures, future parking demand, etc.
- **The City, therefore, considers this topic to warrant a separate study, conducted as an addendum to the STMP**
- **Going forward, any form of parking considered by the City should be an integral component of a wider TDM strategy and sustainable urban development initiatives**

# Active Transportation Walking and Cycling



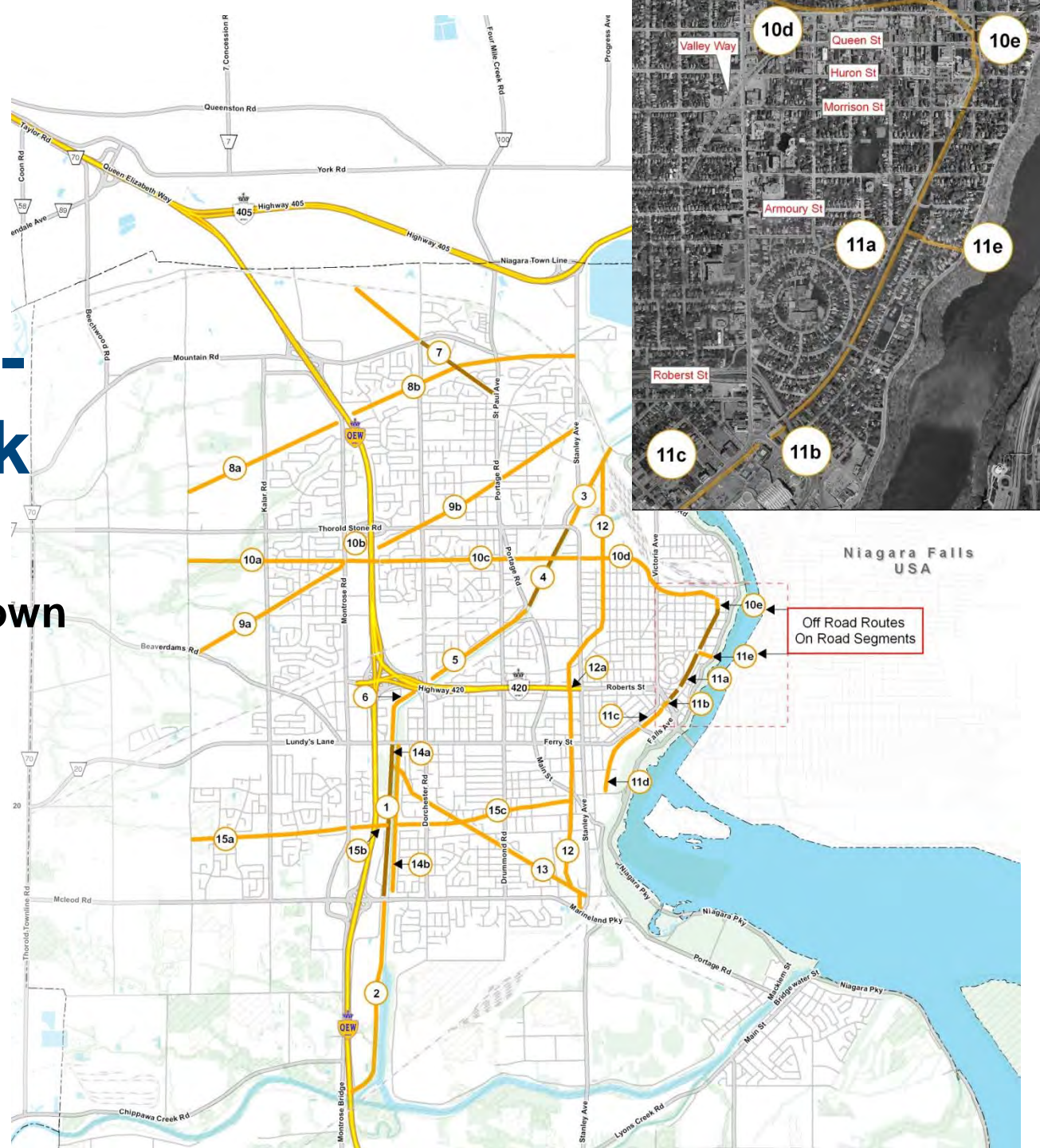
# **Walking and Cycling Assessment of Priorities**

- **Top ranked priorities primarily selected for ease of implementation**
  - **Short Term: provides the City with a base network of useful connected facilities**
  - **Includes off-road facilities for both pedestrians and cyclists**
  - **Based on public feedback, these facilities have potential to attract users, increasing demand for more facilities and encouraging walking and cycling as more sustainable travel modes**
  - **Successive projects then move the City towards a more complex network**



# Proposed Off-Road Network

All off-road routes shown in orange





# Proposed Off-Road Network

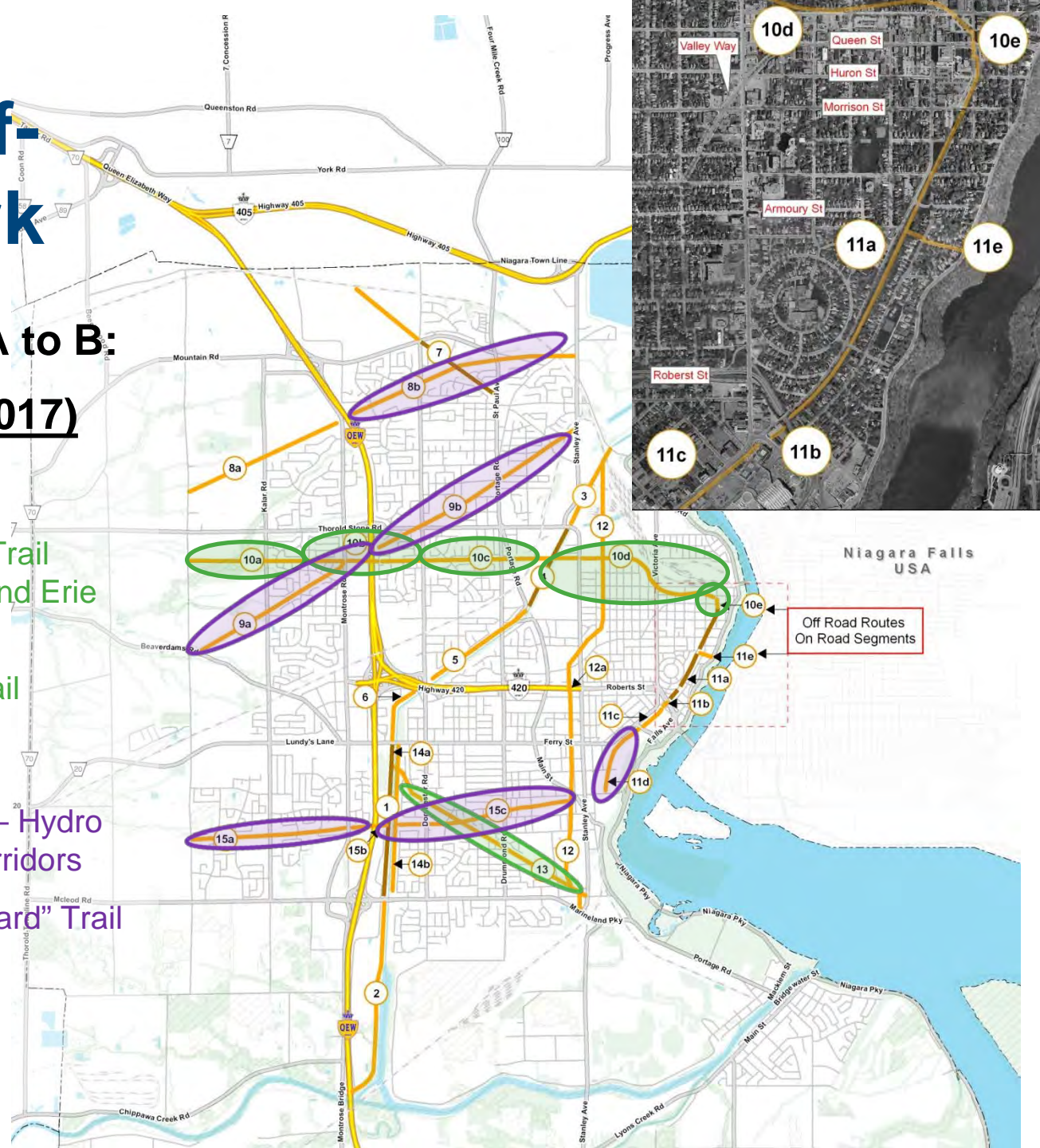
## Four priority Groups A to B: Short-term (2012 to 2017)

### – Group A Routes:

- #10a, c, d, e – NS&T Trail (West, Centre, East, and Erie Ave Connection)
- #13 – Mitchell Line Trail

### – Group B Routes:

- #8b, 9a, 9b, 15a, 15c – Hydro One Transmission Corridors
- #11d – “Grand Boulevard” Trail





# Proposed Off-Road Network

## Four priority Groups C to D: Medium-term (2018 to 2022)

### – Group C Routes:

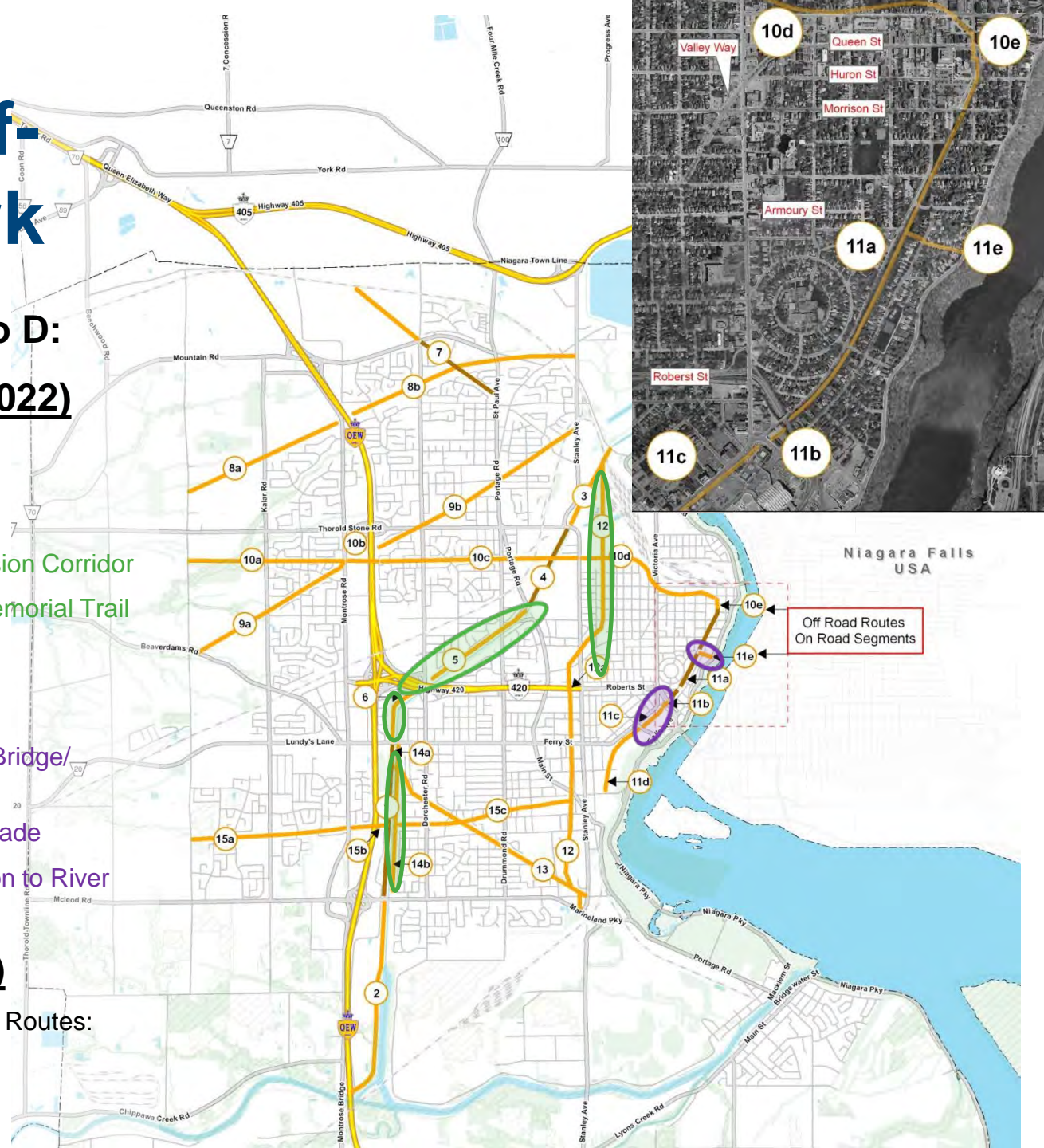
- #5, 6 – Millennium Trail
- #12 – Hydro One Transmission Corridor
- #14b – Gary Hendershot Memorial Trail Extension

### – Group D Routes:

- #11b – Robert St Crossing/Bridge/“Gateway”
- #11c – Victoria Ave Promenade
- #11e – Seneca St connection to River Rd

## Long-term (before 2030)

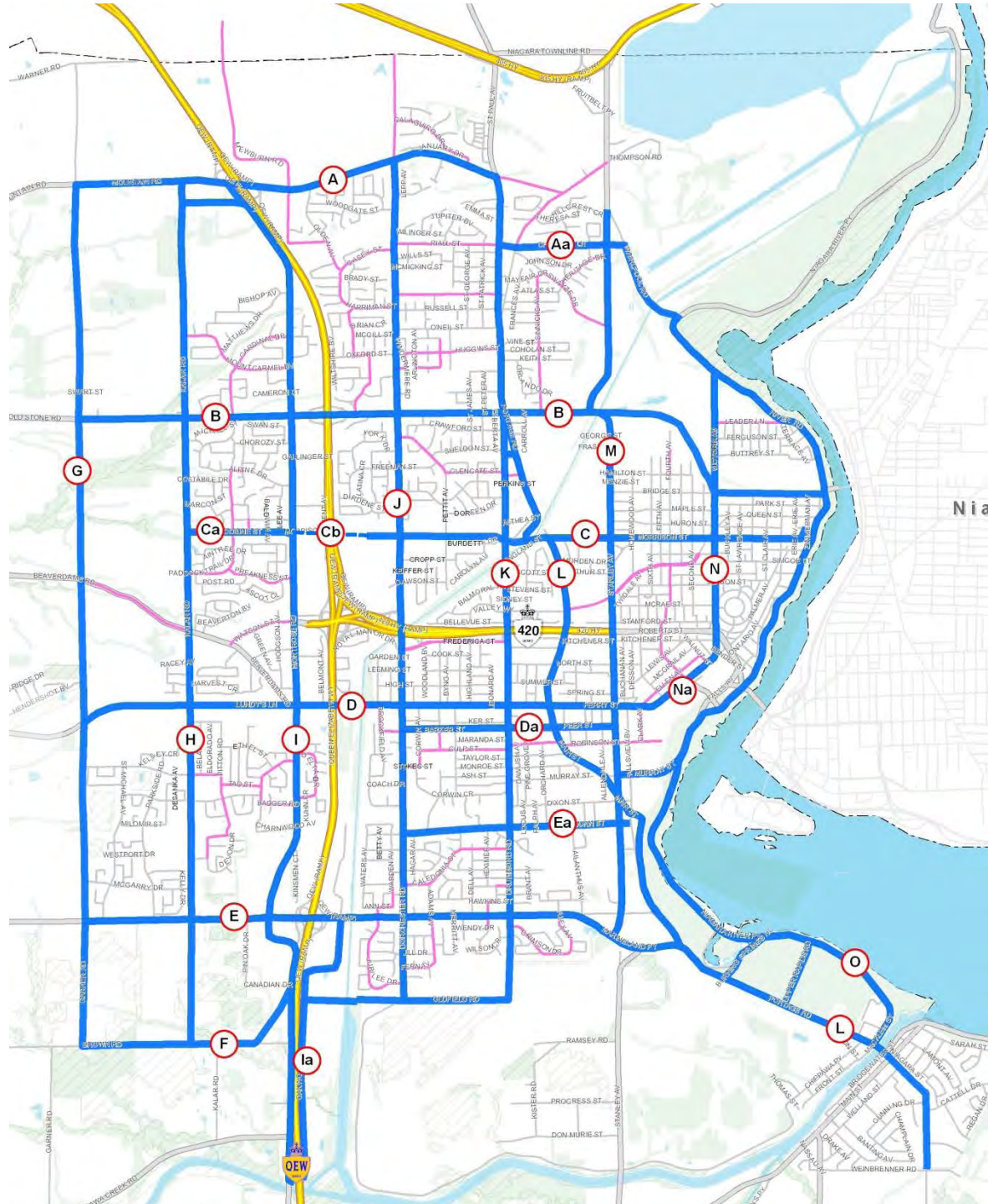
- Remaining Marquee Project Routes: 10b, 12a & 15b
- Routes 2, 3, and 8a





# Proposed On-Road Network

All on-road routes shown in blue



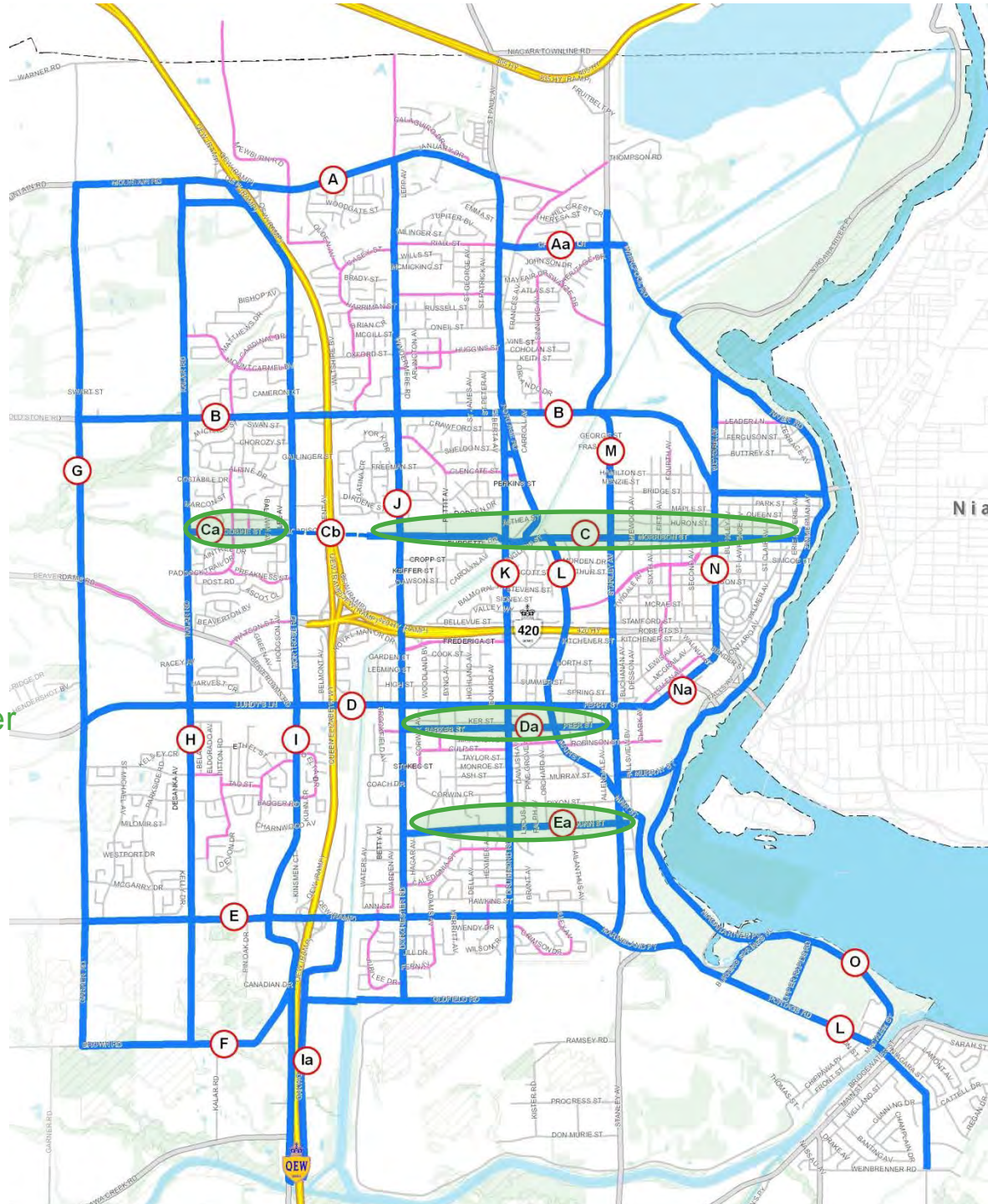


# Proposed On-Road Network

## Priority Groups 1A to 1B: Short-term (2012 to 2017)

### – Group A (East-West):

- Route C – Morrison Street/  
Zimmerman Avenue
- Route Ca – Woodbine Street
- Route Da – Barker Street/Peer  
Street/Peer Lane
- Route Ea – Dunn Street





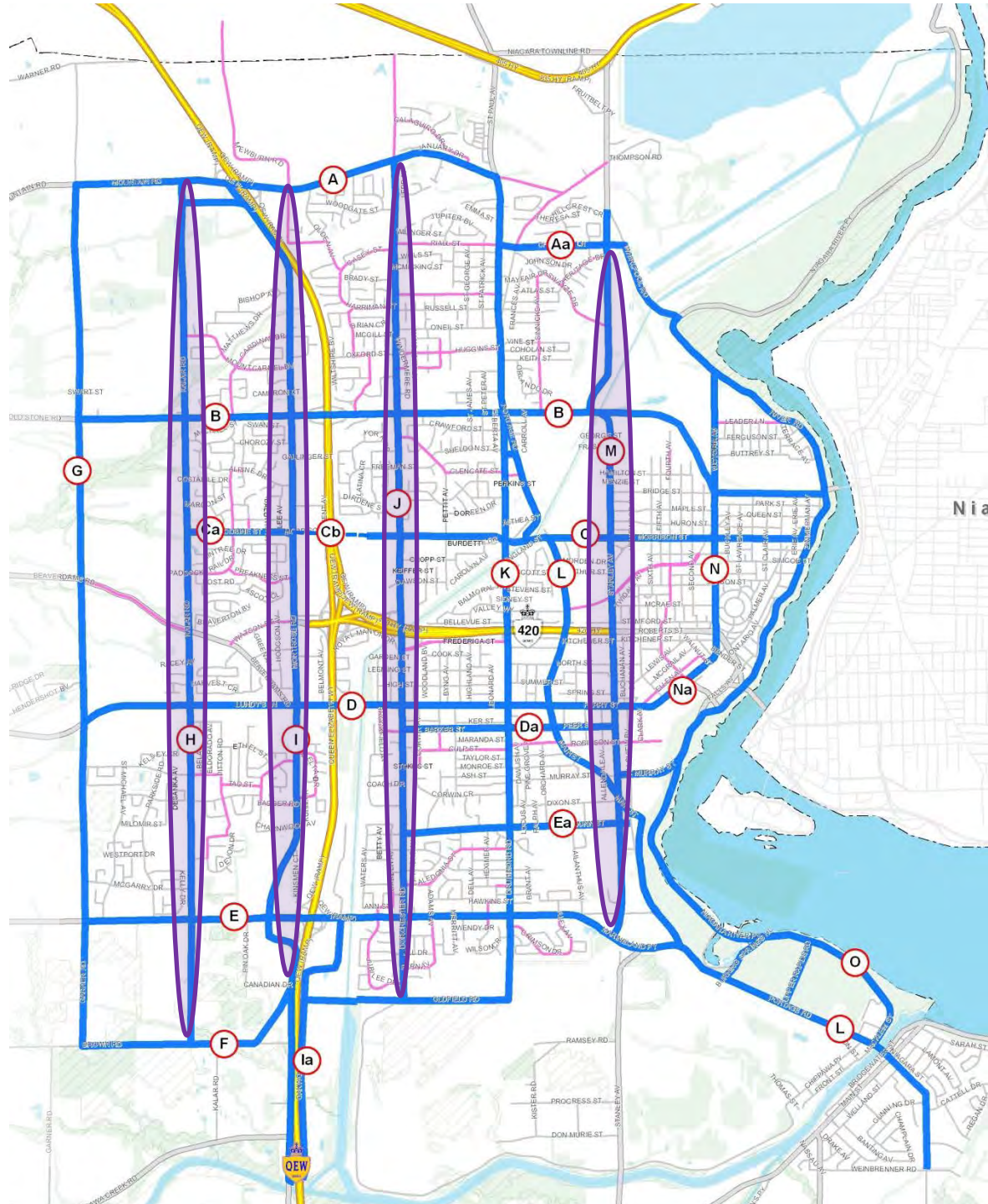
# Proposed On-Road Network

## Priority Groups 1A to 1B:

### Short-term (2012 to 2017)

#### – Group B (North-South):

- Route H – Kalar Road
- Route I – Montrose Road
- Route J – Dorchester Road
- Route M – Stanley Avenue





# Proposed On-Road Network

## Priority Groups 1C to 1D:

### Medium-term (2018 to 2022)

#### – Group C:

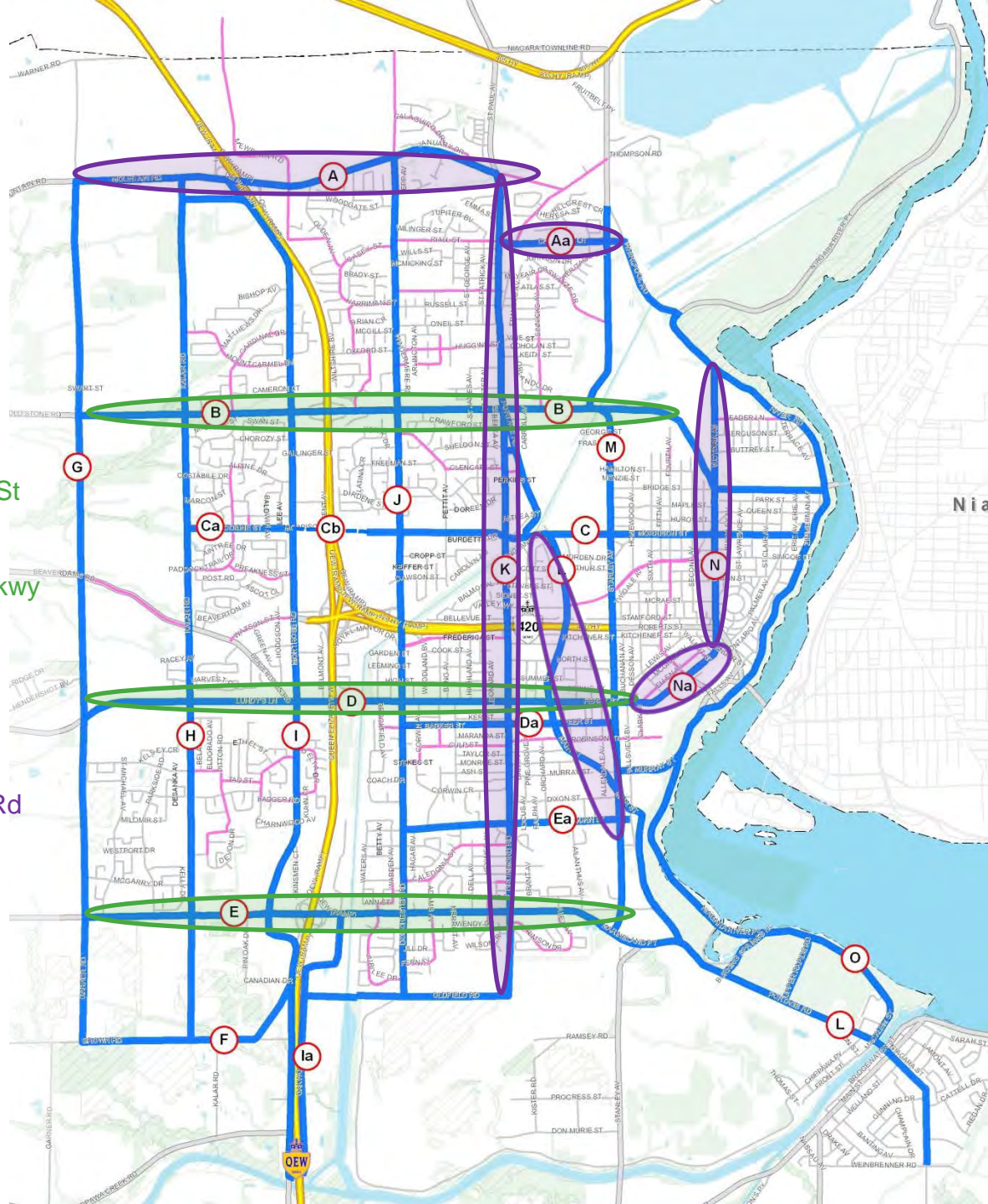
- Route B – Thorold Stone Rd/ Bridge St
- Route D – Lundy's Ln/Ferry St
- Route E – McLeod Rd/ Marineland Pkwy

#### – Group D:

- Route A – Mountain Rd
- Route Aa – Church's Ln
- Route K – St. Paul Ave/Drummond Rd
- Route L – Portage Rd/Main St/ Marineland Pkwy/Willoughby Dr
- Route N – Victoria Ave N
- Route Na – Victoria Ave S

### Long-term (before 2030)

Focus on intensifying on-road network and extending into new development areas



# Encouraging Walking and Cycling

- **To integrate walking and cycling choices into daily life:**
  - **Develop walking and cycling infrastructure initiatives**
  - **Work with surrounding municipalities and Region to integrate cross jurisdictional facilities**
  - **Incorporate pedestrian and cycling friendly design and maintenance standards**
  - **Sign routes through residential neighbourhoods, on major roadways connections and open space trails**
  - **Work with employers/major end user destinations to provide on site amenities (e.g. bike lockers, shower facilities)**
  - **Educational and awareness campaigns**

# Transit Initiatives





## Transit Initiatives

- **Recommendation of the “Transit Strategic Business Plan and Ridership Growth Strategy”:**
  - *Adopt proposed increase in transit ridership targets in the STMP*
- **This recommendation was adopted for the STMP study, and incorporated into the network assessment model**
- **Ultimately, the impact of this recommendation is a reduction in future road network improvements**

## Transit Initiatives

- **To achieve the transit mode share target increase to 3.2% by 2018, Council needs to be committed to a strong investment in transit, including the following:**
  - **Strong financial investment in both Capital and Operating Budgets**
  - **Change to ½ hour service level**
  - **Implement Routing to avoid circuitous and long one-way loops**
  - **Maximize operation of the Visitor Transportation System to help offset operational costs**
  - **Support Accessibility initiatives by meeting AODA Standards and provide 100% accessible buses to the public**
  - **Meet the needs of the employment, educational, medical and recreational sectors**

## **Transit Initiatives**

- **The following initiatives have moved forward towards Council adopting the recommended *“Transit Strategic Business Plan and Ridership Growth Strategy”*:**
  - **Spring 2011: Ad-hoc committee to lead strategy implementation**
  - **Three year Regional Pilot project underway; 3 agencies combine to provide services to connect 5 communities**
    - Agencies: St. Catharines Transit Commission, Niagara Falls Transit, and Welland Transit
    - Communities: St. Catharines , Niagara Falls, Welland, Port Colborne, Fort Erie
  - **Visitor Transportation System (formerly People Mover System) is a premier Bus Rapid Transit service; approved and targeted implementation is May 2012.**
    - There are opportunities to create dedicated transit lanes and provide transit priority signals, especially during peak tourist season.

# Travel Demand Management (TDM) Initiatives





## Specific TDM Recommendations & Priorities

- Recommended TDM strategies are grouped into four areas of action:
  1. Education, Promotion and Outreach
  2. Travel Incentives
  3. Land Use and Transportation Integration
  4. Transportation Supply



## **Specific TDM Recommendations & Priorities**

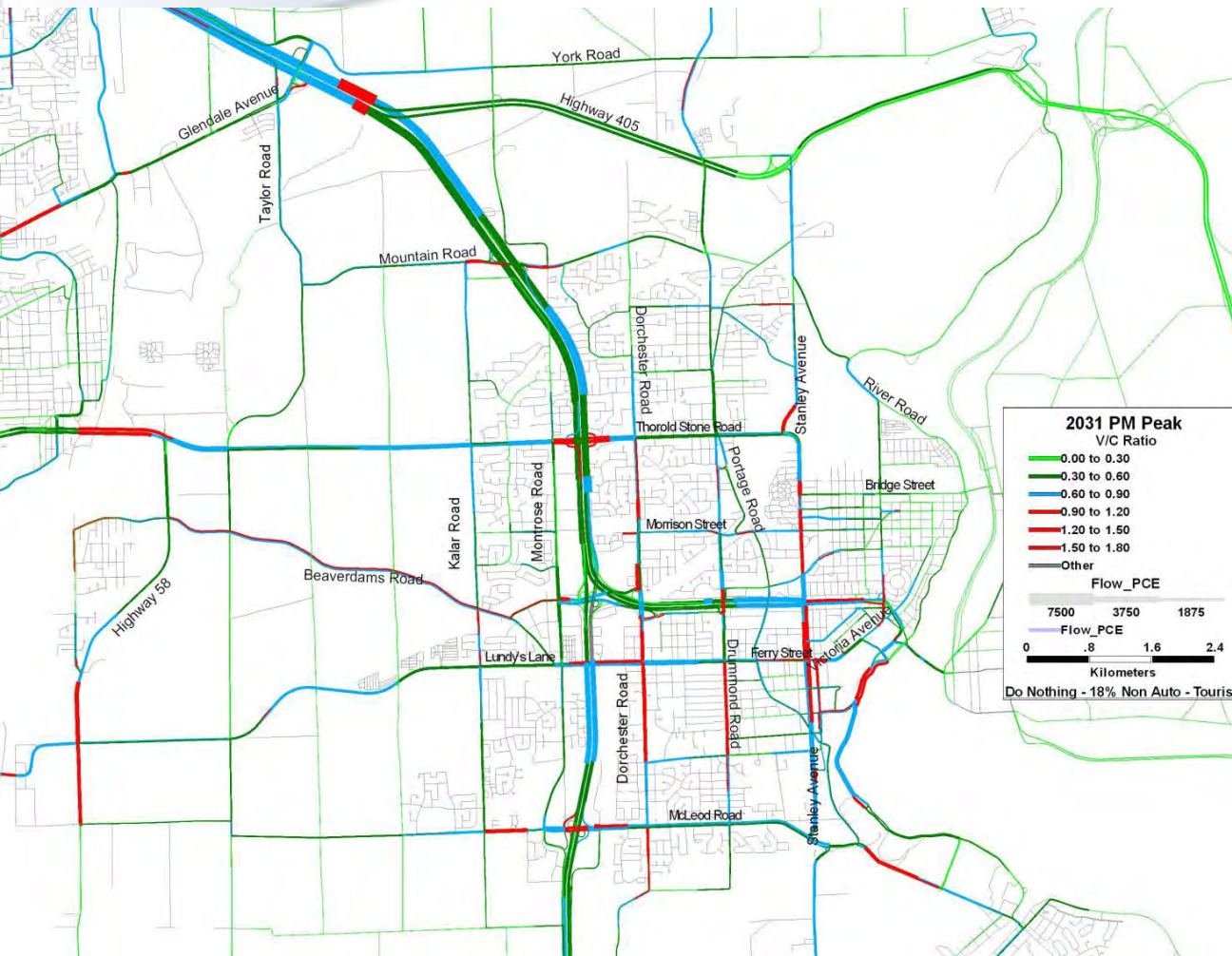
- **57 strategies, grouped by implementation horizon, were recommended and reviewed in Public Meeting #1**
- **Primary recommendation – appoint/hire a dedicated TDM Co-ordinator for the City, and source support resources to:**
  - **Prepare a program business plan**
  - **Co-ordinate program marketing**
  - **Monitor results**
  - **Organize public outreach programs**
  - **Implement TDM strategies**

# Road Network





## 2031 PM Peak Hour Model Results 18% Non Auto Share



- 46 km at LOS E-F
- 46 km at LOS D
- 665 km at LOS A-C
- Veh-km of travel at LOS D or worse = 21%
- Delay = 1,588 veh-hrs
- 107% Increase from 2006



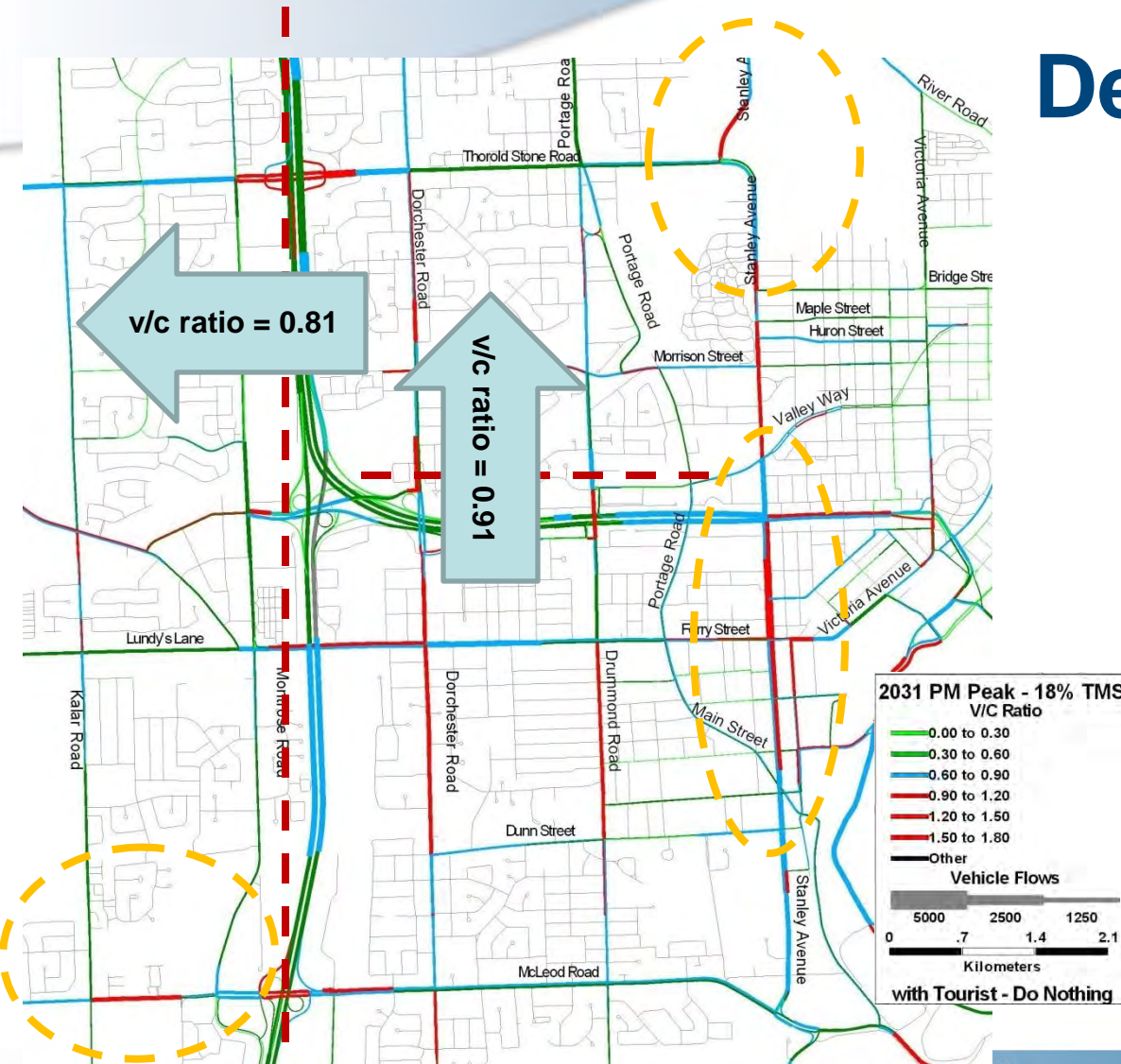
## 2031 Deficiency Areas Road Network

- Even with an increased overall level of non-auto mode use by 2031, the Transportation Demand Modelling exercise identified a number of key road network locations which remain as future areas of congestion in the p.m. peak hour, including:
  - Mountain Road/Highway 405 area
  - Thorold Stone Road/Bridge Street area
  - The QEW and Highway 420 Crossings
- 18 improvements were recommended and presented at Public Meeting #2

2031

# Deficiency Areas (PM Peak Hour)

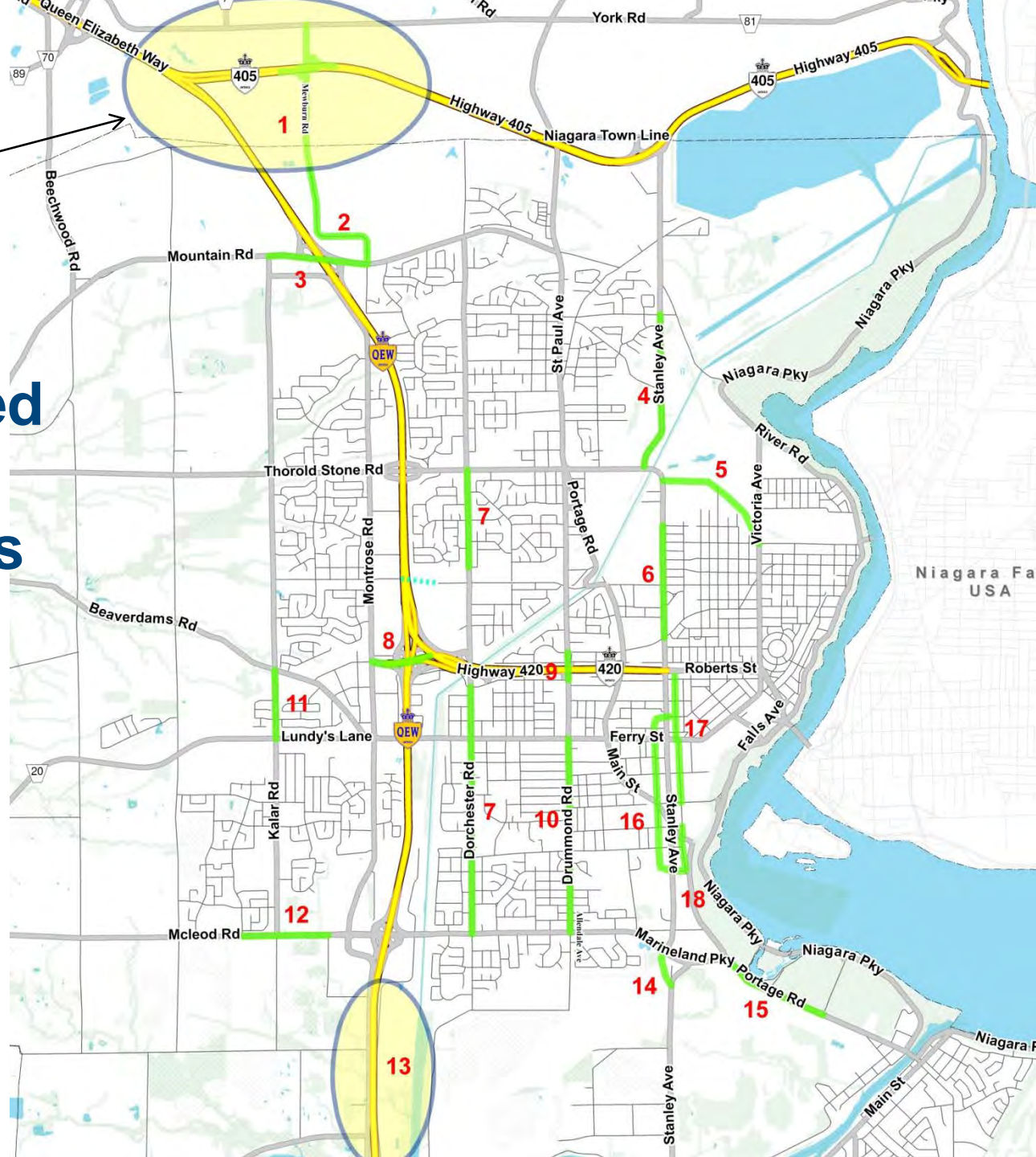
- Most QEW and Hwy 420 Crossings at /over capacity
- QEW Screenline at a volume to capacity (v/c) ratio = 0.80
- Hwy 420 Screenline, v/c=0.91
- North-south arterials south of Lundy's Lane
- Stanley Avenue (yellow circles)
- McLeod Road (yellow circle)
- Mountain Road Interchange / Highway 405 Area (not shown)
- "v/c ratio" is a comparison of the volume of vehicles on the road to the available road capacity
- v/c < 0.9 : volume is less than capacity – OK!
- v/c > 0.9: volume nearing capacity – Congested!





# Recommended Road Improvements

Subject to ongoing Regional Study





# Road Network Implementation

## Short Term Priorities

	Project	Limits
Short Term		
5	Thorold Stone Road Extension	Stanley Ave to Gale Centre
12	McLeod Road Widening	Kalar Road to Hydro Canal
11	Kalar Road Widening	Beaverdams Rd to Rideau St.
18	Livingston St / Fallsview Connection to Portage Road	
9	Drummond Road / Hwy 420 Bridge Widening	Valley Way to Frederica St
15	Portage Road Widening	Marineland Pkwy to Upper Rapids Blvd
17	Buchanan / Fallsview Widening	Roberts to Livingston St
16a	Allendale Avenue Widening	Forsyth St to south of Dunn St

# Recommended Short-Term Road Improvements



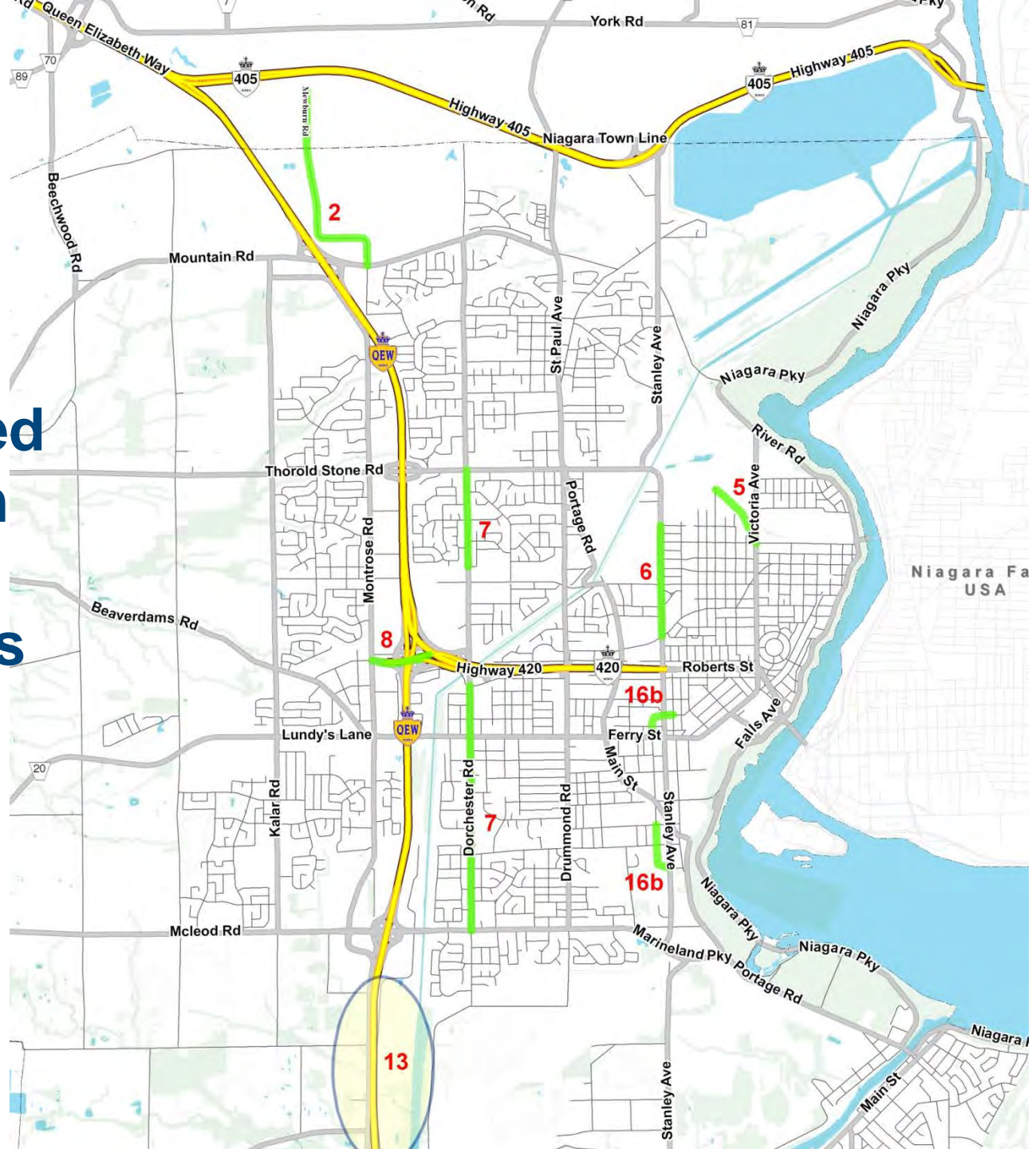
# Road Network Implementation

## Medium - Long Term Priorities

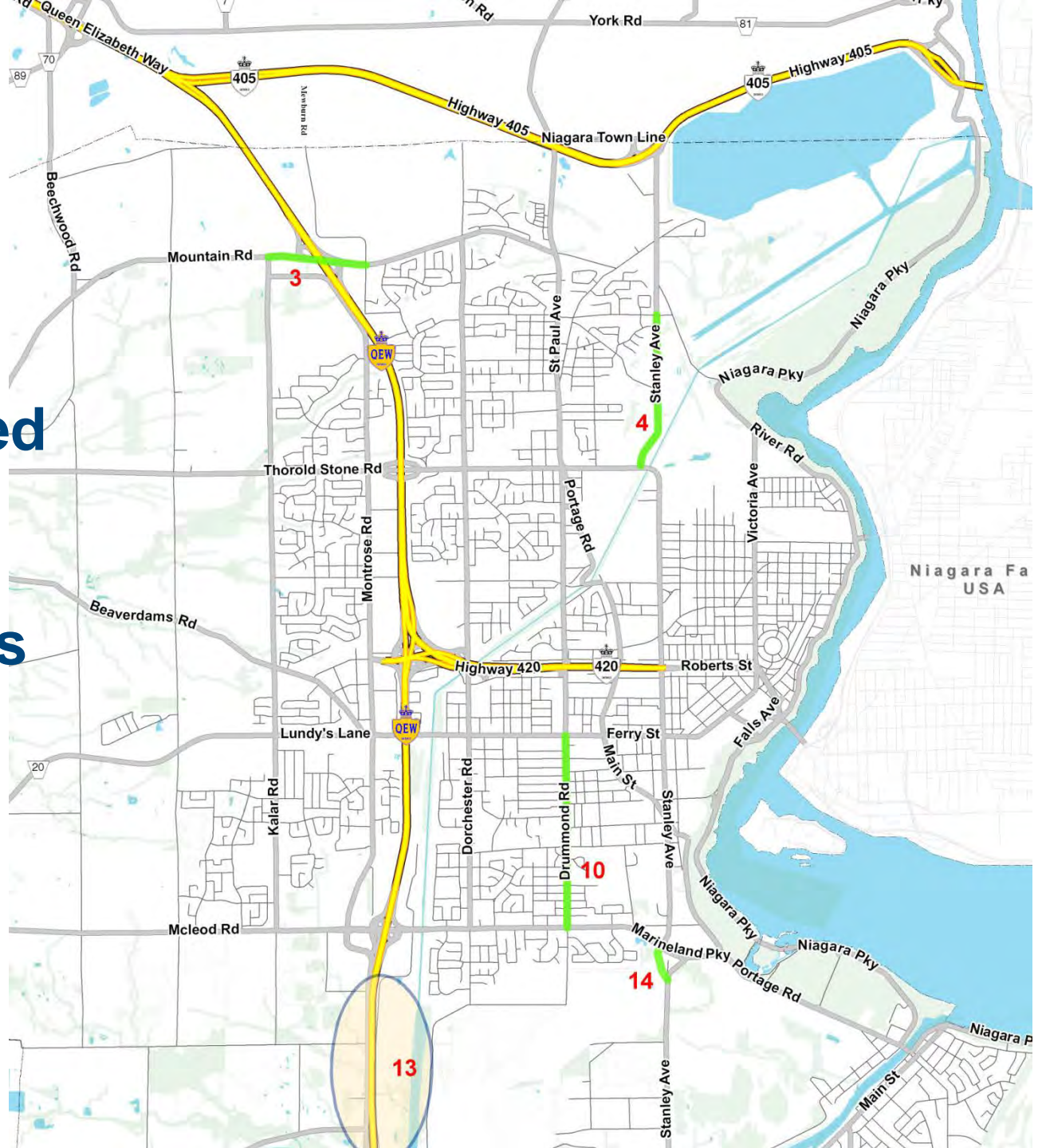
	Project	Limits
<b>Medium Term</b>		
5	Thorold Stone Road Extension	Gale Centre to Bridge
7a	Dorchester Road Widening	Thorold Stone Rd to Pinedale
16b	Allendale Ave New Connections to Stanley	Dixon St to Stanley Ave & Ferry St to Forsyth
6	Stanley Ave Widening	Hamilton St to Valley Way
8	Hwy 420 / Montrose Road Improvements	Widening Ramps and Improve Intersection
13a	New Hydro Canal Crossing	Dorchester to Oakwood
7b	Dorchester Road Widening	Frederica St to McLeod Rd
2	Mewburn Rd Reconstruction	Mountain Rd to York Rd
<b>Long Term</b>		
3	Mountain Road Widening	Kalar Rd to Olden Ave
4	Stanley Ave Widening	Church's Ln to Thorold Stone Rd
14	Stanley Ave / Marineland Pkwy Intersection	Jog Elimination or Intersection Improvement
13b	New QEW Crossing	Oakwood to Montrose
10	Drummond Road Widening	Lundy's Ln to McLeod Rd



# Recommended Medium-Term Road Improvements



# Recommended Long-Term Road Improvements





# Road Network Recommendations

- **Based on comments and input gathered throughout the study, additional analysis was conducted, resulting in recommendations for the following initiatives:**
  - **Region to consider protection for Extension of Highway 420**
  - **Morrison Street Flyover Corridor Protection**
  - **Dorchester/Morrison – Rail Crossings Review**
  - **Main Street connectivity between Fallsview and Drummondville areas**



## Extension of Highway 420

- **Currently under MTO jurisdiction – protected corridor**
- **MTO does not foresee need for future highway extension**
  - This is based on their Draft NGTA study released early 2011; however, the corridor will not be released until the EA is complete
- **STMP study identified a need for additional network capacity in the area of Beaverdams Road (a City road) to Thorold Stone Road tunnel for the 2031 horizon year**
- **Niagara Region should consider protecting the Highway 420 corridor (outside of City jurisdiction)**

## Morrison Street Flyover Corridor Protection

- Even with a new QEW crossing south of McLeod Road, between Oldfield Road and Chippawa Parkway, additional crossing capacity may be required in the future
- Morrison Street Flyover provides the greatest level of relief to the future crossing capacity issues on the network (beyond horizon year 2031)

# Morrison Street Flyover Corridor Protection

- Could take the form of a grade separated bridge crossing, connecting to the existing Morrison Street/Dorchester Road intersection and the existing retail development on the south side of Morrison Street





## Morrison Street Flyover Corridor Protection

- As a minimum, the flyover could provide a new link over the QEW for pedestrians and cyclists
- This option better relieves future congestion along Thorold Stone Road than an extension of Highway 420
- The absence of this corridor could result in a need to widen Thorold Stone Road to six lanes, which is not suitable from a number of environment, social and economic perspectives

## Rail Crossings Review

- **Recommend that the City initiate a thorough review of all existing railway corridors in the city, in discussion with the railroads and Transportation Canada**
- **Determine future needs and opportunities**
- **Develop a process to prioritize where new railway grade separations would provide the most benefit**
- **Review should include consideration of future rail traffic demands and opportunities to divert rail traffic around the City**

## **Main Street Connectivity**

- **Existing alignment of intersection does not presently allow traffic from the Fallsview Tourist Area to access Main Street towards Historic Drummondville**
  - Raised median prevents left turns
- **Recommend the City conduct an EA to investigate the following improvements**
  - **A couplet system with Allendale Avenue and Buchanan Avenue / Fallsview Boulevard, rather than widening Stanley Avenue**
  - **Connectivity from the Fallsview Tourist Area towards the Historic Drummondville Area, such as feasibility of improving Dixon Street to join up with an improved Allendale Avenue**

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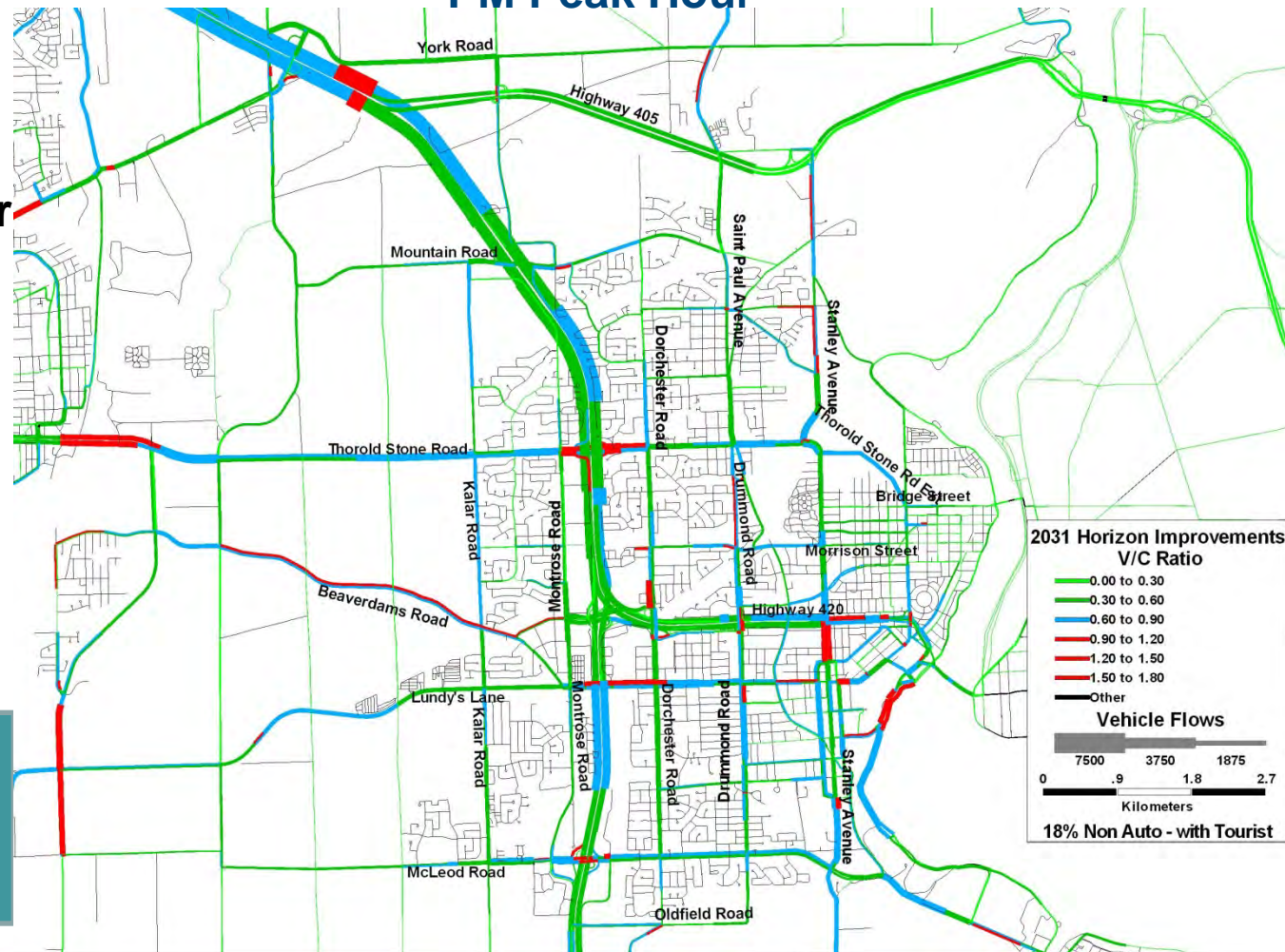


## Main Street Connectivity

- Improvements the existing Allendale Avenue/Main Street/Murray Street intersection to improve traffic operation, including the feasibility of a roundabout or connecting Main Street to Allendale Avenue south of this location
- Introduce a couplet on the east side of Stanley Avenue via an improved Livingston Street connection to Fallsview Boulevard
- Eliminate the jog at Fallsview Boulevard and Buchanan Street to create a continuous north-south route across Ferry Street
- Upgrade Buchanan Avenue between Ferry Street and Forsythe Street
- Consider opportunities to connect Buchanan Street directly to Roberts Street using a right-in / right out entrance design to provide some relief to the Highway 420 / Stanley Ave intersection

## Resulting Levels of Service (LOS)

PM Peak Hour

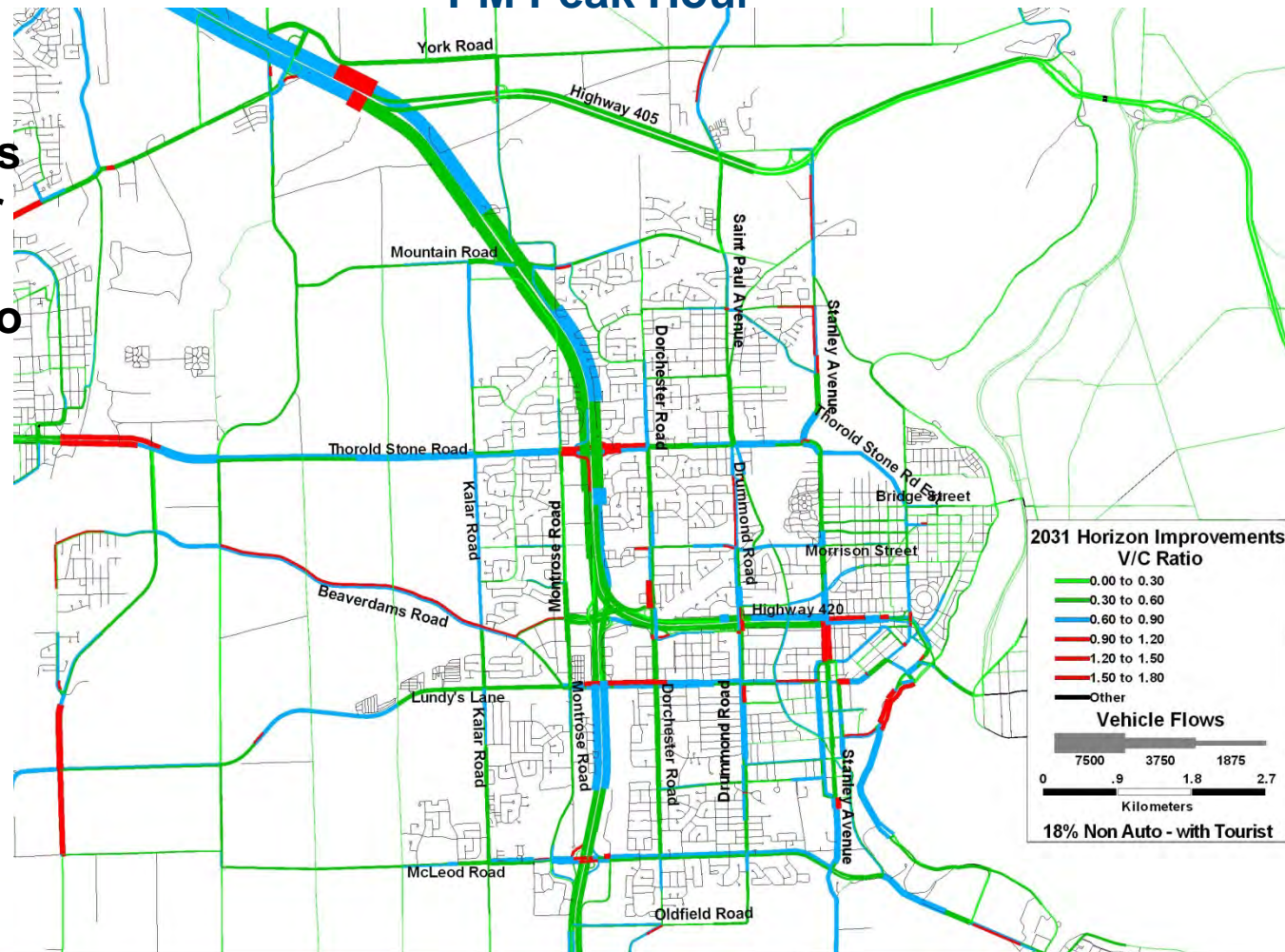


- Recommended Improvements will reduce 2031 peak hour delays by 17% (275 veh-hrs)
- With improvements total peak hour travel at LOS D or worse reduces from 21% to 16%
- Length of network at LOS E-F reduces from 46 km to 27 km (-41%)



## Resulting Levels of Service (LOS)

PM Peak Hour



- With the improvements in place, 2031 summer weekday peak hour delays are anticipated to be reduced by about 715,000 vehicle-hours
- This represents a societal benefit of approximately \$8.6 million per year (assuming an average value of travel time of \$12/hr)



# Other Recommendations

## Other Recommendations

- **Undertake a Roadway Standards review**
  - Establish opportunities for context sensitive solutions within roadway designs to accommodate all modes of transportation
- **Monitor progress; the STMP outlines a monitoring program that links the key performance indicators to the STMP goals and objectives**
- **Undertake on-board transit surveys**
  - assist in monitoring how improvements in service have resulted in shifts in user behaviour

## Other Recommendations

- **Partner with MTO to collect data on influence of external traffic**
  - Additional data collection would assist the City in updating their transportation model
  - Collected data would be used to forecast future travel demands in the outlying areas of the City
- **Introduce a Sustainability Report Card (Greenroads™)**
- **Work with Niagara Region, providing data to update the Region's transportation model every 5 years**
  - traffic and transit count data from a screenline count program



## Other Recommendations

- **Prepare a Transportation Perspective Report for Council every 5 years**
  - Scheduled for 6 months following the release of TTS data, to advise Council on recent trends with respect to transportation patterns within the City and the need to update the STMP
- **Review and/or update the STMP every 5 years, including public input**

## Strategy to Tactical Plans

- **Policy recommendations should be incorporated into the relevant policy documents within future Official Plan updates, to be implemented through the Planning Act**
- **Follow the Municipal Class EA planning process for recommended infrastructure projects**

# Financing/Funding



## Other Initiatives

- **Create a TDM administrator/coordinator position**
  - Budget \$30 to \$40k for a part-time position with an additional \$50k to assist with initial marketing and promotional activities, to begin the program
- **Lobby/petition Provincial government to amend DC Act**
  - To enable municipalities to levy charges for all transportation infrastructure, especially transit
- **Ongoing: program all initiatives to reflect the City's capability to finance the infrastructure needs**

# Thank you!

## Questions?

