

DECISION/DIRECTION NOTE

Title: Rennie's River East Traffic Pattern Review
Date Prepared: May 16, 2018
Report To: Committee of the Whole
Councillor/Theme: Debbie Hanlon - Transportation
Ward: 4 and 2

Decision/Direction Required:

Decision is required to adopt the recommendations of the Rennie's River East Traffic Pattern Review.

Discussion – Background and Current Status:

At the direction of Council, a review of current traffic circulation and patterns in the area of Rennie's River between Portugal Cove Road and King's Bridge Road was completed to determine if changes can be made to improve network connectivity. The Rennie's River East Traffic Pattern Review identifies existing area traffic restrictions including current restrictions creating circulation barriers and explores potential options for improvement.

Peak hour traffic and pedestrian data was collected at study intersections to better understand how people currently travel through the area. Traffic restrictions were mapped and barriers to connectivity in the area were identified. Based on a technical analysis of data collected and a review of collision history at study intersections, the following potential changes were developed and presented for public consultation:

- A) Remove the entry restriction onto Winter Avenue to restore the westbound through connection.
- B) Allow off-peak left turns onto King's Bridge Road at the Dominion access.
- C) Construct a sidewalk or trail along the south side of Circular Road between Bannerman Road and King's Bridge Road, adjacent to the Government House property.
- D) Construct curb extensions or upgrade the Empire Avenue/Circular Road intersection to a mini-roundabout to allow turning movements, calm traffic, and improve connectivity.
- E) Upgrade the Circular Road/Rennie's Mill Road intersection to a mini-roundabout and reverse one-way flow along Circular road to improve safety and create a westbound route through the area.

The engagement webpage for the project went live on April 18, 2018 where those interested were invited to complete an online survey to share their opinions of the changes being considered. Two in person drop-in engagement sessions were hosted at the Bannerman Pool House on May 2, 2018 and on May 3, 2018 where participants were invited to ask questions, discuss, and provide feedback on

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the possible area changes. There were over 480 valid survey responses and about 40 people, primarily from the immediate neighbourhood, attended the in-person engagement sessions.

The survey results and feedback received were reviewed to determine which potential changes were generally supported. Based on public support and further technical considerations, the following recommendations are advanced for Council consideration:

- Remove the entry restriction on Winter Avenue at King's Bridge Road and consult with residents of Winter Avenue regarding the installation of permanent speed humps along the roadway.
- Permit eastbound left turn movements at the Dominion Access onto King's Bridge Road outside of morning and evening weekday peak hours.
- Construct a sidewalk connection along the south side of Circular Road between Bannerman Road and King's Bridge Road.
- Construct the proposed curb extension and traffic calming concept along Carpasian Road at the Empire Avenue and the Circular Road intersections and permit left and through movements on Empire Avenue at Carpasian Road outside of morning and evening weekday peak hours.

Key Considerations/Implications:

Budget/Financial Implications

The following recommended changes require additional budget allocation:

- If resident support for the permanent installation of speed cushions along Winter Avenue is received, the cost to construct these traffic calming features will be approximately \$12,000. This can be funded from the existing Traffic Calming Budget.
- The approximate cost to construct the proposed segment of sidewalk along Circular Road is on the order of \$60,000.
- The proposed curb extension and traffic calming treatments along Carpasian Road at the Empire Avenue and Circular Road intersections are estimated to cost on the order of \$100,000 to \$200,000.

Partners or Other Stakeholders

n/a

Alignment with Strategic Directions/Adopted Plans

The attached paid parking management strategy directly acts on the City values of "Continue to Do Things Better" and "Be Innovative" and will contribute to these strategic directions and goals:

Neighbourhoods Build our City:	Promote a safe and secure city
	Create neighbour-focused plans and information

Effective Organization:

Create a culture of engagement

Identify and deliver on projects, strategies, and programs

Legal or Policy Implications

n/a

Engagement and Communications Considerations

Further engagement and communications with are residents and citizens regarding the proposed changes will be completed.

Human Resource Implications

n/a

Procurement Implications

n/a

Information Technology Implications

n/a

Other Implications

n/a

Recommendations:

That council approve the recommendations of the attached Rennie's River East Traffic Pattern Review and that budget identified as required to complete the proposed changes be allocated when available.

Prepared by:

Anna Bauditz, Transportation System Engineer

Signature: _____

Approved by:

Garrett Donaher, Manager - Transportation Engineering

Signature: _____

Attachments:

Rennie's River East Traffic Pattern Review

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Introduction

Follow a request from residents a traffic calming assessment was conducted on Winter Avenue in April, 2016. In 2017 a survey was circulated to Winter Avenue residents to determine if there was sufficient support for a permanent traffic calming installation. In this survey the City received the suggestion of implementing a No Entry restriction at Winter Avenue and King's Bridge Road. A follow up poll was conducted among those who had responded to the original survey and sufficient support for this idea was established.

Through traffic on Winter Avenue was a key concern for residents. Staff identified that this restriction would likely be more effective at reducing through traffic on Winter Avenue than other forms of traffic calming. Staff also identified that this restriction would impact the travel patterns for those that currently use the through route, however quantifying this impact was not feasible at the time. Council considered the possible impacts and, on staff's recommendation, agreed to implement the No Entry restriction. Council did have concern about the unquantified impact and directed staff to conduct a follow up assessment of the restriction to determine the effectiveness and impacts of the change.

Upon implementation in summer of 2017 public feedback regarding the No Entry restriction on Winter Avenue at King's Bridge Road led Council to identify the need to study frustration with restricted turning movements in a broader area of Rennie's River between Portugal Cove Road and King's Bridge Road. Council directed that a review of the existing traffic operations, circulation, and restrictions in the area be completed to determine if changes can be made to improve network connectivity.

Study Area

This review focuses on the primary roadway network within the area surrounding the east portion of Rennie's River. **Figure 1** illustrates the general study area and provides a list of the study area intersections.

Figure 1: Rennie's River East Traffic Pattern Review Study Area**Study Area Intersections:**

- 1) King's Bridge Road & Empire Avenue (Circular Road)
- 2) King's Bridge Road & Lake Avenue
- 3) King's Bridge Road & Memorial Stadium Dominion Access
- 4) King's Bridge Road & Winter Avenue
- 5) Rennie's Mill Road & Empire Avenue
- 6) Rennie's Mill Road & Circular Road
- 7) Carpasian Road & Empire Avenue

Additional Area Intersections:

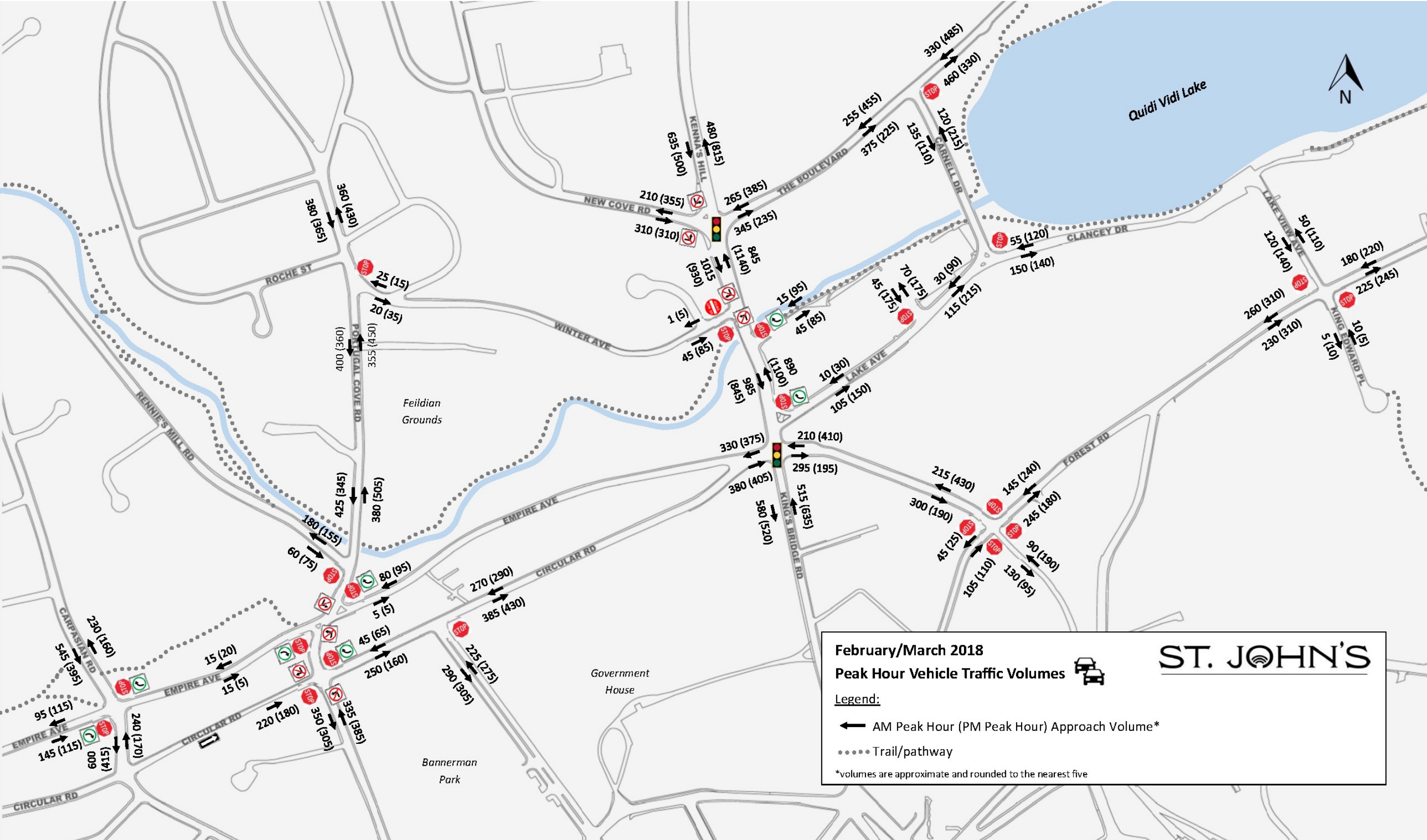
- A) King's Bridge Road & The Boulevard (New Cove Road)
- B) Portugal Cove Road & Winter Avenue
- C) Memorial Stadium Access & Lake Avenue
- D) Carnell Drive & Lake Avenue (Clancey Drive)
- E) Carnell Drive & The Boulevard
- F) Portugal Cove Road & Rennie's Mill Road
- G) Bannerman Road & Circular Road
- H) Lake View Avenue & Forest Road
- I) Forest Road & Empire Avenue

Peak hour pedestrian and vehicle count data was collected at study intersections and additional area intersections to better understand how people currently travel through the area. Counts were completed at each intersection on a typical weekday between February 7, 2108 and March 15, 2018.

It is recognized that due to the time of year pedestrian activity would not be as high as other times of year. This was considered and accounted for in the assessment conducted.

Figure 2 summarizes peak hour vehicle count data and illustrates existing intersection traffic control and turning restrictions in place.

Figure 2: Peak Hour Vehicle Traffic Volumes and Existing Restrictions



Roadway Network Connectivity

Northbound/Southbound

Peak hour vehicle volumes recorded support the understanding that King's Bridge Road functions as the primary north/south corridor through the area while Portugal Cove Road and Carpasian Road also serve as major north/south links. Although congestion along these routes (in particular along King's Bridge Road between The Boulevard and Circular Road) limits traffic flow during time of peak demand, no existing restrictions act as barriers to north/south connectivity.

Signal timing at the intersections of King's Bridge Road & The Boulevard and King's Bridge Road & Empire Avenue (Circular Road) will be reviewed and adjusted to optimize peak hour traffic flow along the King's Bridge corridor.

Eastbound/Westbound

To better understand existing eastbound and westbound circulation through the study area, available route options between major area entry and exit points were mapped. Figure 3 and Figure 4 illustrate existing eastbound and westbound travel patterns through the area respectively and identify existing restrictions that create circulation barriers.

As shown in Figure 3, eastbound travel through the study area is relatively unrestricted. Although the right turn only restrictions on Empire Avenue at Carpasian Road and at Rennie's Mill Road and the southbound left turn restriction on Rennie's Mill Road at Empire Avenue divert eastbound traffic to Circular Road, eastbound connectivity is still maintained.

Westbound travel through the Rennie's River East area is significantly impacted by existing restrictions. As shown in Figure 4, major area westbound exit points along Carpasian Road, Empire Avenue, Circular Road and Rennie's Mill Road cannot be reached within the study area. Travel outside the study area is required to get to these destinations. Right turn only restrictions at Lake Avenue and the Dominion access on King's Bridge Road coupled with the no-entry restriction on Winter Avenue at King's Bridge Road requires westbound traffic to travel along New Cove Road or re-route along Carnell Drive and The Boulevard or along Lake View Avenue and Forest Road. Existing turning restrictions in place at Empire Avenue & Rennie's Mill Road and one-way eastbound travel along Circular Road between Carpasian Road and Rennie's Mill Road requires westbound traffic to divert north along Rennie's Mill Road or south along Bannerman Road.

Pedestrian Activity

Figure 5 illustrates area transit stops and the peak hour pedestrian crossing volumes recorded at study intersections. Because of study timing, counts were completed during winter months. Pedestrian volumes captured therefore represent seasonal off-peak levels. It is noted that a higher concentration of pedestrians is found along area transit routes and in the areas of major employment and commercial development. During summer months, an overall increase in area pedestrian activity is expected with a significant increase in recreational pedestrian activity.

Figure 3: Eastbound Study Area Circulation

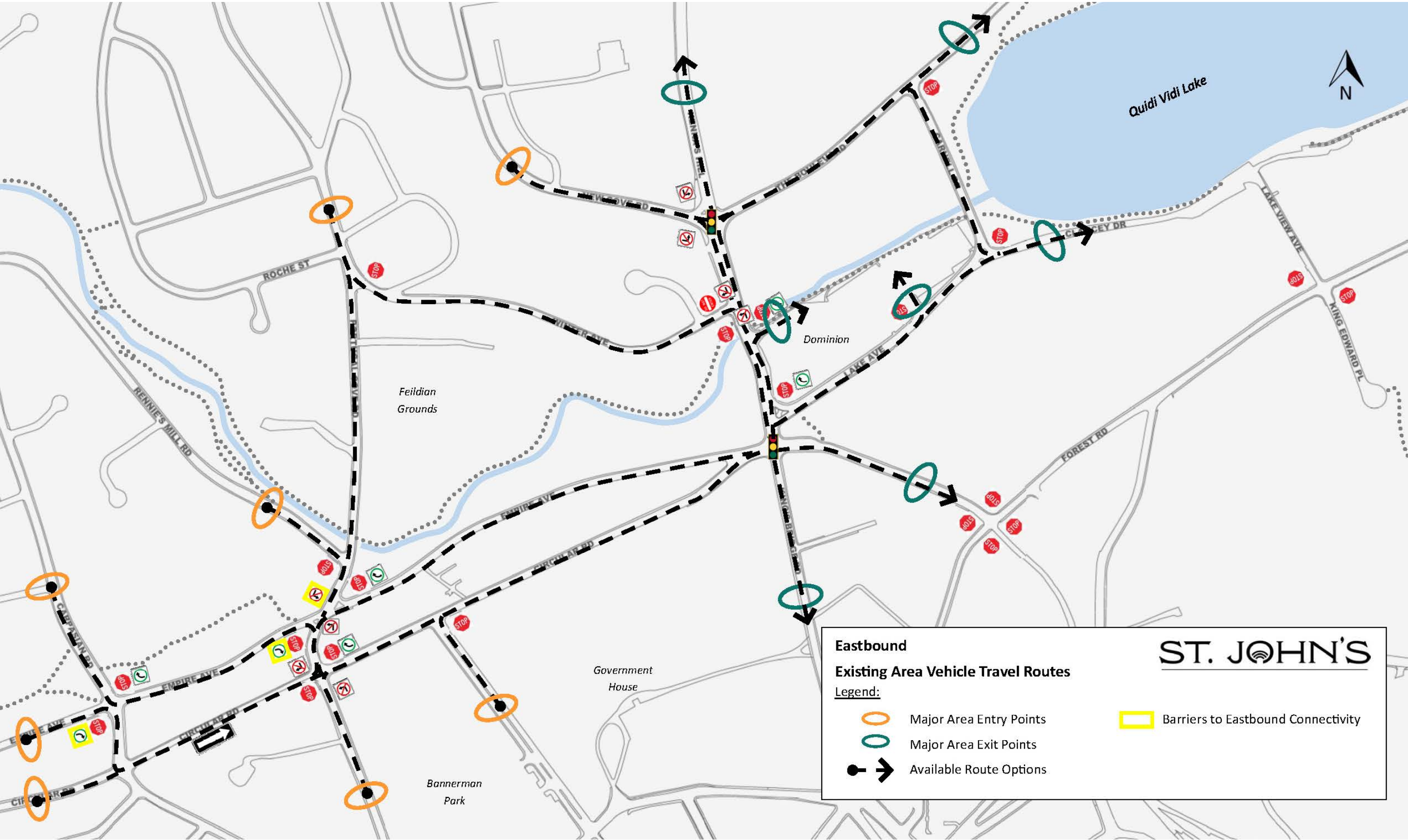


Figure 4: Westbound Study Area Circulation

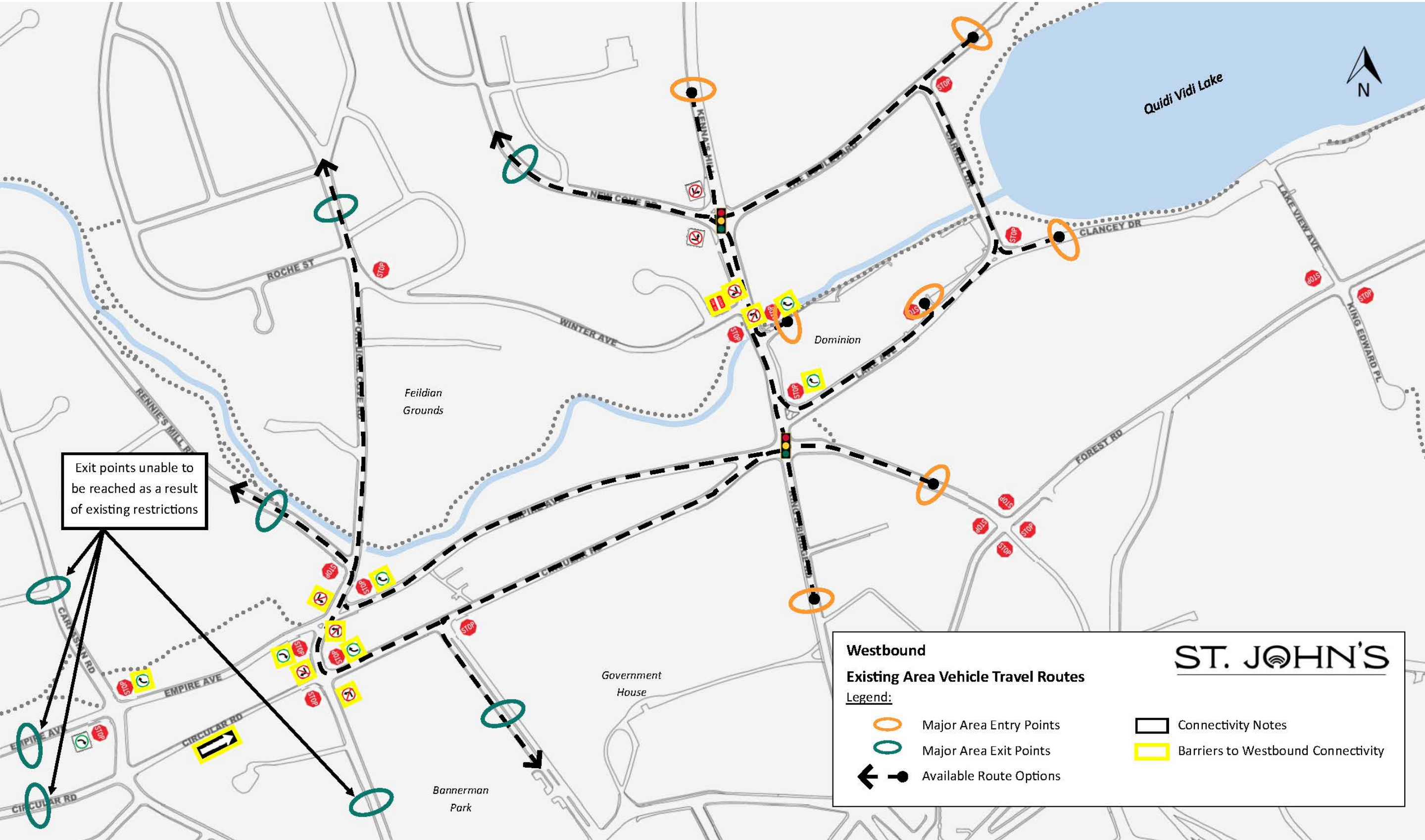
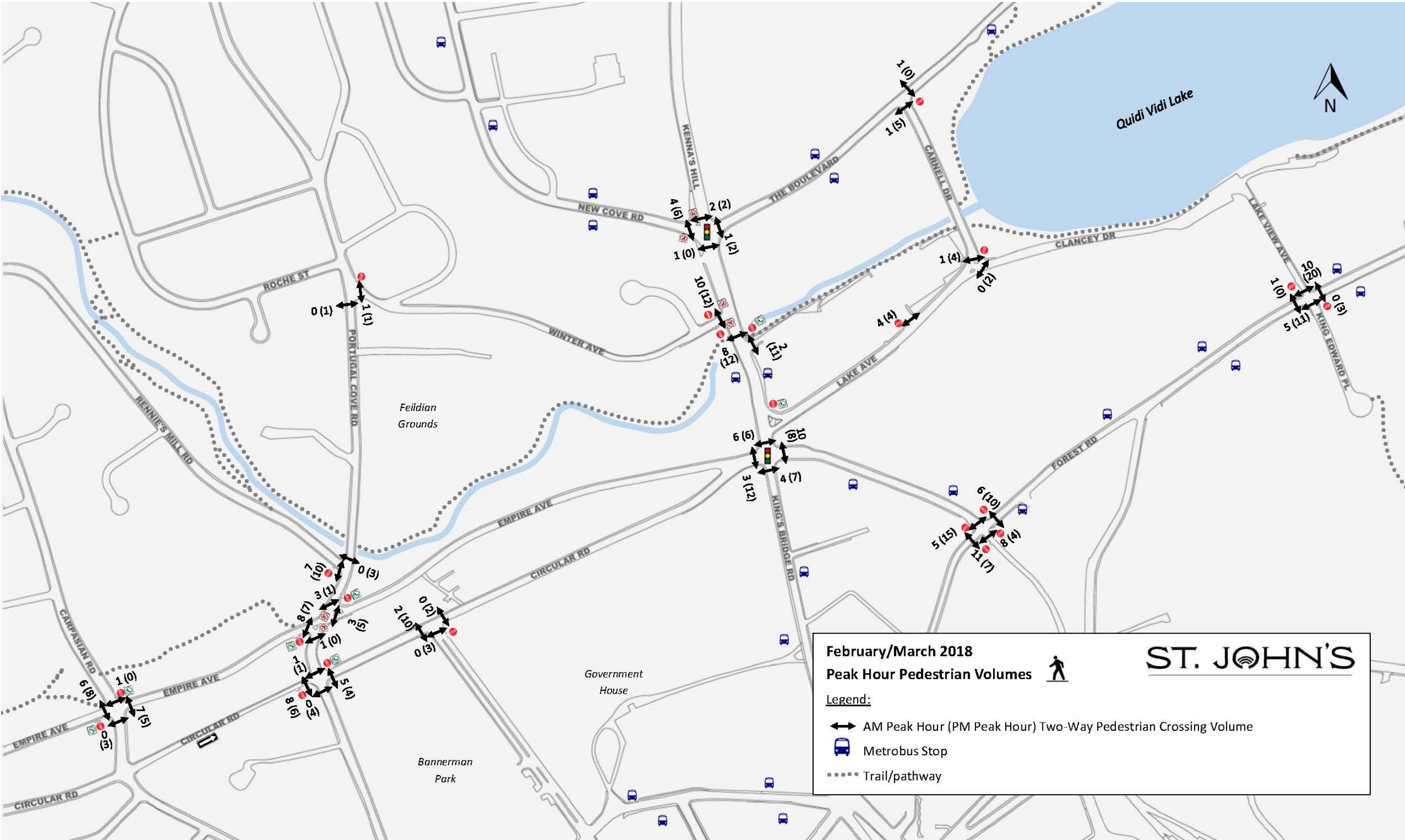


Figure 5: Peak Hour Pedestrian Crossing Volumes



Circulation Barriers and Constraints

A review of each of the restrictions causing circulation barriers in the Rennie's River East area was completed. The rationale behind maintaining these restrictions was explored and possible changes to the restrictions were identified.

Right Turn Only restriction onto King's Bridge Road from Lake Avenue

The intersection of Lake Avenue & King's Bridge Road is located just north of the signalized intersection of Empire Avenue (Circular Road) & King's Bridge Road. The close proximity of these intersections creates conflict points and safety concerns for left-turning vehicles at Lake Avenue. This constraint coupled with the level of traffic activity at the Empire Avenue/King's Bridge Road intersection supports keeping the current restriction in place. Therefore, no changes to the existing right turn only restriction are recommended.

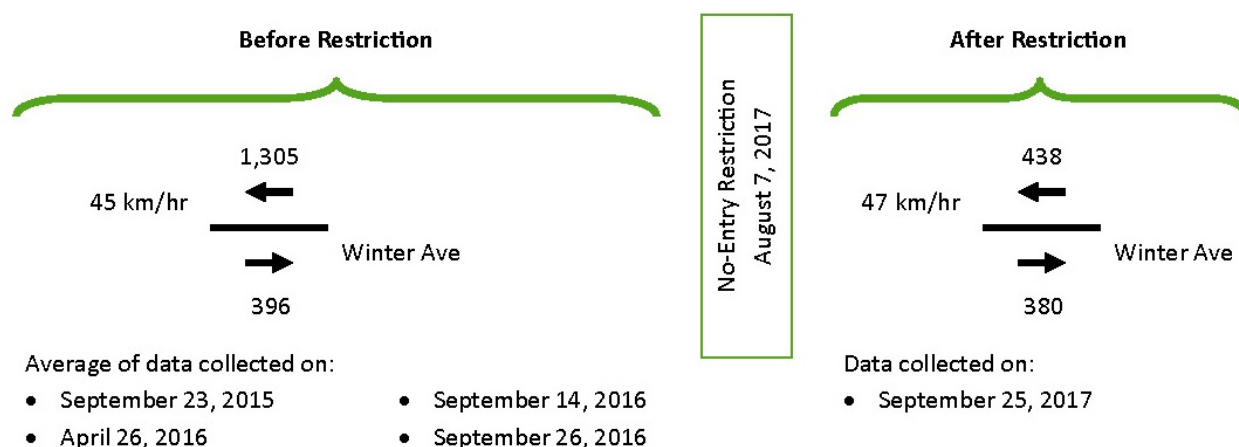
Turning movement restrictions at Empire Avenue & Rennie's Mill Road

The existing turning movement restrictions at the Empire Avenue/Rennie's Mill Road intersection were implemented over 15 years ago in response to safety concerns and the collision history of the intersection. The grade along Rennie's Mill Road and the skewed angles at which Empire Avenue and Rennie's Mill Road intersect create very poor sightlines for vehicles at the intersection. These constraints, the limited right of way available in the area to accommodate changes, and the level of traffic activity along Rennie's Mill Road support keeping the current restrictions in place. Therefore, no changes to the existing turning movement restrictions at the Empire Avenue/Rennie's Mill Road intersection are recommended.

No Entry onto Winter Avenue at King's Bridge Road

Traffic calming along Winter Avenue was requested by residents to address traffic volume and speed concerns. The street qualified for traffic calming in 2016 and the no-entry restriction onto Winter Avenue from King's Bridge Road was chosen through the process outlined in the City's Traffic Calming Policy.

While 85th percentile speeds along Winter Avenue were measured above the posted speed limit of 30 km/hr, the volume of traffic contributed significantly to the traffic calming warrant score. Although placing a no-entry restriction comes with connectivity implications, it is a more effective tool in reducing traffic volumes. The overall extent of the restriction impacts could only be determined through implementation. Given these considerations and resident support for the measure at the time, it was decided that the no-entry restriction onto Winter Avenue from King's Bridge Road would be implemented and the impacts on traffic volumes and speeds would be evaluated. The restriction put in place on August 7, 2017. **Figure 6** summarizes the daily traffic volumes and speeds measured along Winter Avenue before and after the no-entry restriction was implemented. Counts were completed along the midpoint of the street between King's Bridge Road and Portugal Cove Road.

Figure 6: Winter Avenue – Measured 24-hour Traffic Volumes and 85th Percentile Speeds

As shown in Figure 5, implementation of the no-entry restriction resulted in re-routing approximately 870 westbound trips to other area streets in a 24-hour period. It is noted that a portion of these re-routed trips represents local traffic. The magnitude of re-routed local traffic is estimated to be on the order of 350 to 400 daily trips (approximately 40% to 45% of the re-routed traffic) based on the number of homes in the immediate area and the volume of westbound traffic present along Winter Avenue intersection after the restriction was implemented.

Given these assumptions this restriction prevented roughly 500 drivers from travelling through the area. Based on the distribution of vehicles throughout the day roughly 75% of these, or 375, would be on Winter Avenue during the core 8AM to 6PM daytime window. This is an average of 37.5 vehicles in each hour of the core daytime. Further distributing these to the single busiest hour it is estimated to have 60% more traffic than the average: 60 vehicles per hour. Therefor the final estimate for impact to non-local drivers is about 1 vehicle per 60 seconds at the peak, or around 1 vehicle per 90 seconds on average.

It is noted that implementation of the no-entry restriction had no significant effect on travel speeds along the roadway based on speed data recorded before and after the restriction was placed.

The no-entry restriction on Winter Avenue at King's Bridge Road creates an additional barrier to constrained westbound travel through the Rennie's River Area. Given the portion of reassigned westbound traffic local to the area that is impacted by the restriction and that other measures to address speeds along Winter Avenue may be available:

(A) The option to remove the entry restriction onto Winter Avenue to restore the westbound through connection was considered as a possible change.

Left turn restriction onto King's Bridge Road from the Dominion Access

The westbound left turn movement onto King's Bridge Road from the Dominion access intersection is currently banned. Sightlines at this intersection are adequate and queuing space along the access approach is provided, however, traffic volumes along King's Bridge Road during the weekday peak hours represent a constraint. Capacity assessment results indicate that while westbound left turning traffic would experience long delays and a low level of service during the morning and evening weekday peak hours, sufficient capacity exists to permit the movement during off-peak hours.

(B) The option to allow off-peak left turns onto King's Bridge Road at the Dominion access was considered as a possible change.

South Side of Circular Road

While most major study area roadways include sidewalks to accommodate pedestrians, the south side of Circular Road east of Bannerman Road adjacent to the Government House property represents a break in this network. An informal trail has developed from use along this link which suggests demand may support formalizing and improving this connection. Pedestrians travelling along the south side of the street also interact with fewer residential driveways and do not have to navigate the crossing where Empire Avenue and Circular Road meet. A trail rather than a sidewalk could accommodate cycling should a future cycling route be established along this link.

(C) The option to construct a sidewalk or trail along the south side of Circular Road in this area was considered as a possible change.

Turning movement restrictions at Empire Avenue & Carpasian Road

The existing turning movement restrictions at the Empire Avenue/Carpasian Road were implemented over 15 years ago in conjunction with the restrictions implemented at the Empire Avenue/ Rennie's Mill Road intersection. These right-turn only restrictions along Empire Avenue were placed to address safety concerns and high collision rates. Factors contributing to these safety concerns at the intersection include poor sightlines for approaching vehicles along Empire Avenue, the width and exposed eastbound/westbound crossing of Carpasian Road (>15m), and vehicle volumes and speeds along Carpasian Road. At the time, a number of alternative measures including convex mirrors, a four-way stop, traffic signals, and a beacon warning system were considered but the turning movement restrictions were deemed to be the most suitable choice.

While the turning movement restrictions have resulted in an overall reduction in collisions at the intersection, they have created a barrier to eastbound and westbound connectivity. Consideration was therefore given to possible alternative measures that would permit better eastbound/westbound connectivity while still maintaining safe intersection operations.

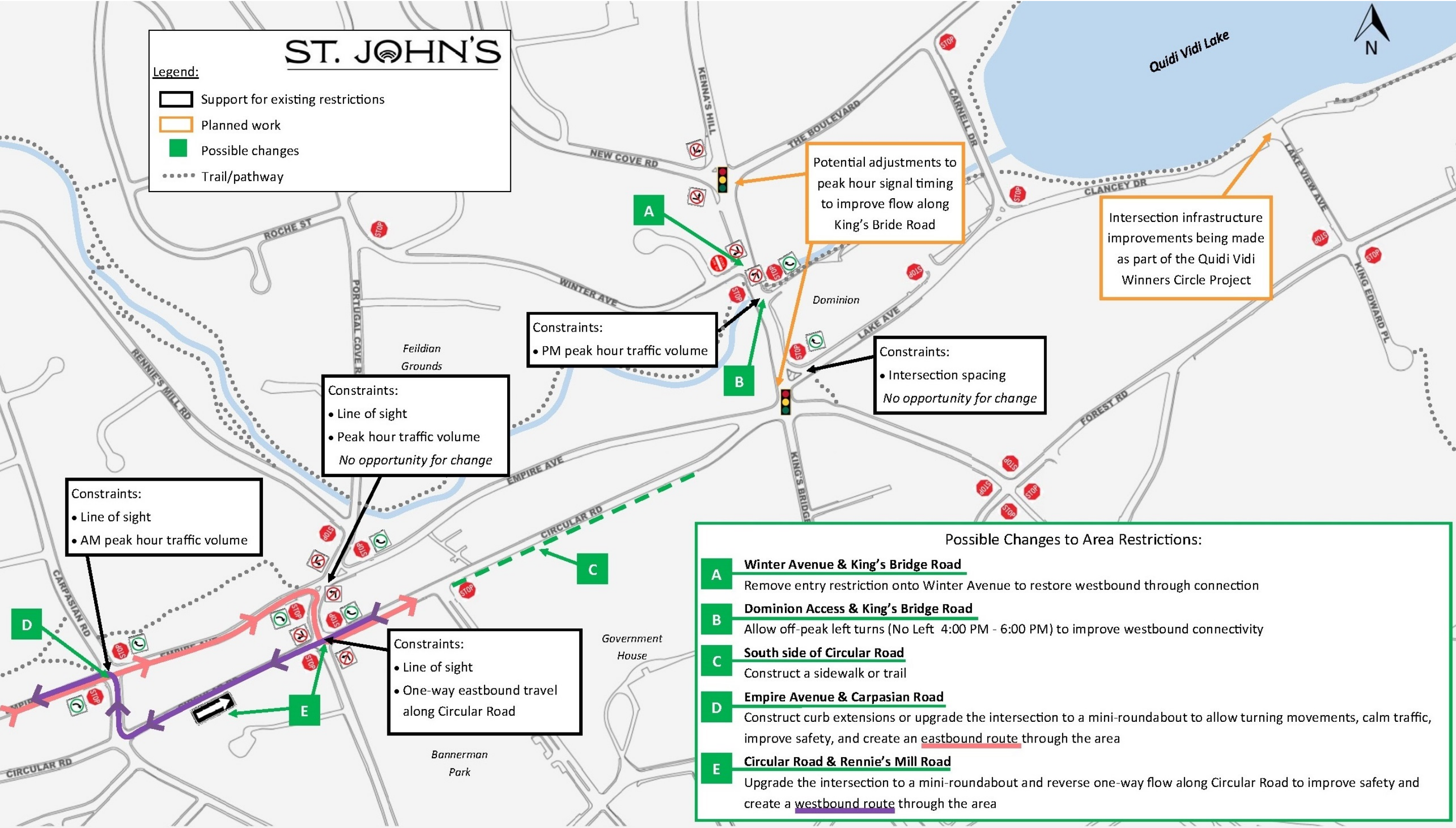
(D) The option to allow construct curb extensions or upgrade the intersection to a mini-roundabout to allow turning movements, calm traffic, and improve connectivity was considered as a possible change.

Turning movement restrictions at Circular Road & Rennie's Mill Road

In the years following implementation of the turning movement restrictions at the Empire Avenue/Rennie's Mill Road and the Empire Avenue/Carpasian Road intersections, Circular Road between Carpasian (Monkstown) Road and Rennie's Mill Road was converted from two-way to one-way eastbound circulation. Eastbound and westbound traffic along Empire Avenue had re-routed to this segment of Circular Road after the turning movement restrictions were placed. The circulation change was made to address this increase in traffic as well as an increase in collisions at the Circular Road/Monkstown Road intersection. While this change was effective in reducing traffic volumes along a portion of Circular Road, westbound connectivity in the area was further constrained.

(E) The option to upgrade the Circular Road/Rennie's Mill Road intersection to a mini-roundabout and reverse one-way flow along Circular road to improve safety and create a westbound route through the area was considered as a possible change.

Figure 7: Rennie’s River East Public Engagement Tool



Public Consultation and Consideration of Potential Area Changes

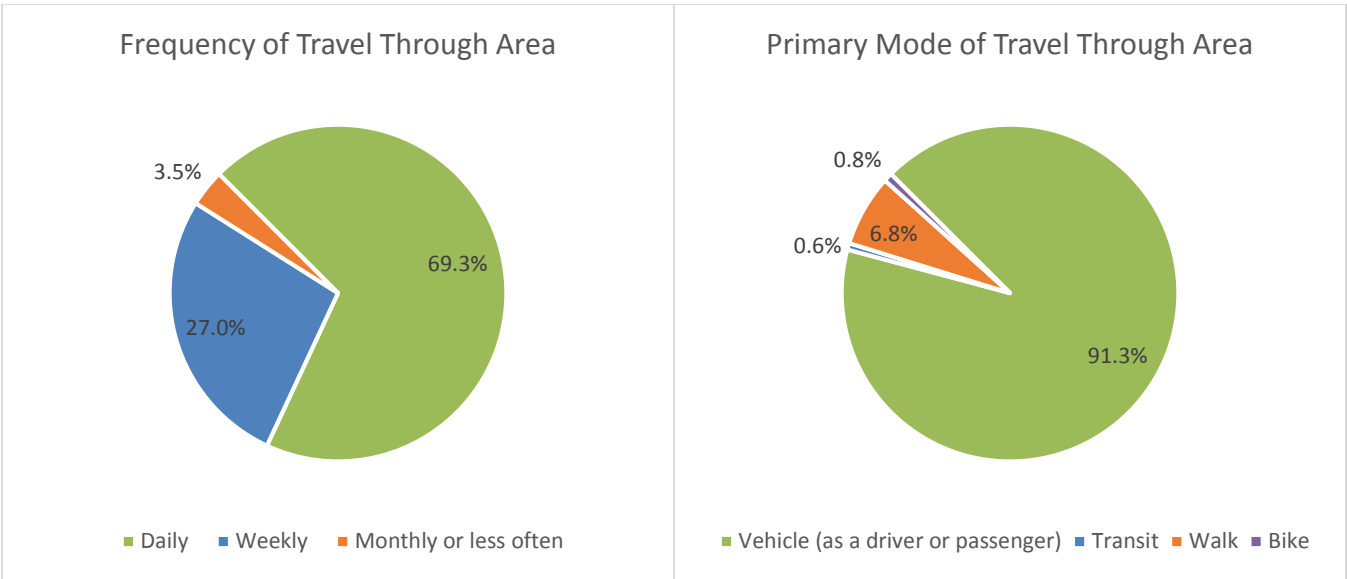
Public consultation formed an important component of the travel pattern review. The possible area changes described above were shared with citizens to gather feedback and determine which changes were supported by the public. The engagement webpage for the project went live on April 18, 2018 where those interested were invited to complete an online survey to share their opinions of the changes being considered. A copy of questions asked through the survey is appended to the report for reference in **Appendix A**.

Two in person drop-in engagement sessions were hosted at the Bannerman Pool House on Wednesday, May 2, 2018 from 6:00 PM to 8:00 PM and on Thursday, May 3, 2018 from 1:00 PM to 3:00 PM. Participants were invited to ask questions, discuss, and provide feedback on the possible area changes.

Figure 7 was used as part of the survey and drop-in session materials to summarize and present the potential area changes to the public.

The online survey was closed one week following the drop-in sessions on Thursday, May 10, 2018 after being open 22 days for participation. It is noted that a large number of duplicate surveys were completed. These spurious responses were removed from the overall survey results before analysis was completed. In total, 482 valid responses to the survey were received.

Overall, 55% of survey participant identified as residents of the area while 45% identified as individuals who travel through the area. Participants were asked how often they travel through the area and by what primary mode. The charts below present the travel habits of survey respondents.



As shown, the majority of survey participants travel by vehicle through the Rennie’s River East area on a daily basis.

The results of the survey and the feedback received was considered alongside the technical merits and constraints of the potential area changes. Recommendations were developed based on a review of this information.

(A) Winter Avenue & King's Bridge Road

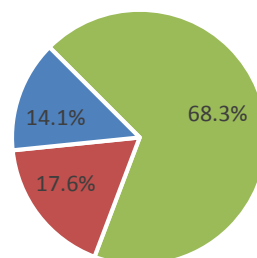
The majority of survey participants indicated their support for removing the entry restriction on Winter Avenue at King's Bridge Road. Furthermore, 66% of survey respondents who identified as residents of the area supported this proposed change.

While restoring westbound connectivity along Winter Avenue is generally supported, residents along the street are very concerned about traffic volumes returning and vehicles continuing to speed along the street.

Construction of permanent traffic calming speed cushions would reduce vehicles speeds along the street (which were not improved by the entry restriction). While removing the entry restriction at King's Bridge Road restores a westbound route along Winter Avenue, speed cushions and appropriate signage indicating entry to a traffic calmed neighbourhood would also help to discourage non-local traffic. As per the City's traffic calming process, residents of Winter Avenue and Judge Place would be consulted further to determine if installation of speed cushions is supported. A notice including the proposed layout of speed cushions along Winter Avenue, as shown in **Appendix B**, would be circulated to residents to gather feedback. With a majority of residents' support, the speed cushions could be installed later this construction season for a cost of approximately \$12,000 and could be funded from the existing Traffic Calming Budget.

It is recommended that the entry restriction on Winter Avenue at King's Bridge Road be removed and that residents of Winter Avenue be consulted as to whether the installation of permanent speed cushions along the roadway is supported.

Remove Winter Avenue
"No Entry"?



■ Yes ■ No ■ Undecided or neutral

(B) Dominion Access & King's Bridge Road

The results of the survey show that a small majority of participants support allowing off-peak left turns onto King's Bridge Road from the Dominion access.

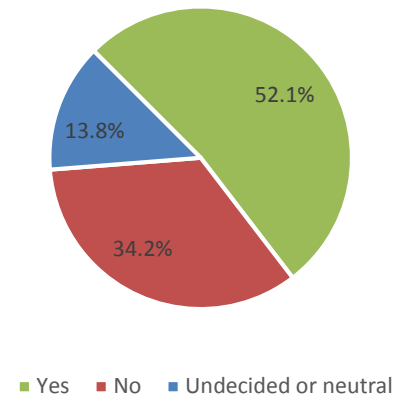
As previously noted, analysis indicates that capacity is available to allow this movement outside of the evening peak hour. While results indicate the left turn movement could be accommodated in the morning peak hour, maintaining the right-turn only restriction during this time would be a more conservative approach. Sightlines at the intersection are adequate and the upstream and downstream signals along King's Bridge Road create additional breaks in through traffic at the intersection.

Permitting this movement would also help accommodate a portion of westbound traffic previously using Winter Avenue.

It is recommended that the existing right-turn only restriction for eastbound movements at the Dominion Access/King's Bridge Road intersection be in effect during morning and evening weekday peak hours (from 7:00 AM to 9:00 AM and from 4:00 PM to 6:00 PM, Monday through Friday) and that the left turn exit to King's Bridge Road be permitted outside these times.

If unforeseen problems arise the full time right-turn only restriction could be reintroduced.

Allow Dominion Left Turn Exit to King's Bridge Road?



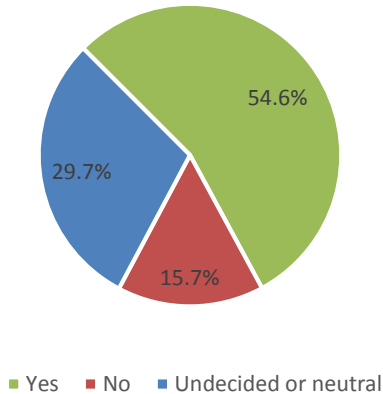
(C) South Side of Circular Road between Bannerman Road & King’s Bridge Road

Most of the survey participants support the construction of a sidewalk or trail along the south side of Circular Road, adjacent to the Government House property. A larger number of respondents indicated that they were neutral or undecided about this change.

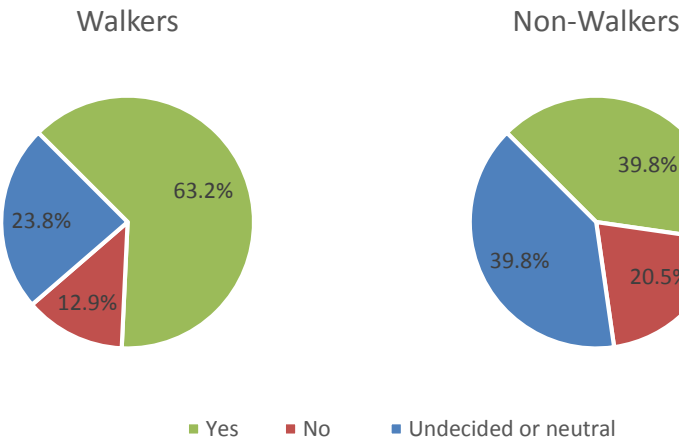
As a large number of participants indicated that walking was not one of their travel modes through the area, results were grouped into responses of “walkers” (participants who listed walking as either their primary or secondary mode of travel) and “non-walkers”.

This breakdown shows that while a larger number of participants who walk through the area support this possible change, a plurality of “non-walkers” also support the construction of a trail or sidewalk in this location.

Build Trail or Sidewalk on Circular Road?



Build a Trail or Sidewalk on Circular Road?



As previously noted, formalizing this link would also help pedestrians travelling along Circular Road avoid crossing the street at Empire Avenue.

A high-level cost estimate for this 300 m link of sidewalk is on the order of \$60,000 including some anticipated utility relocation work.

It is recommended that a sidewalk connection along the south side of Circular Road between Bannerman Road and King’s Bridge Road be constructed as soon as budget is allocated.

(D) Empire Avenue & Carpasian Road

The possibility to remove the existing turning movement restrictions at the Empire Avenue/Carpasian Road intersection received the greatest level of public support with almost 80% of survey participants in favour of the potential change.

A mini-roundabout at this intersection would maintain and calm traffic flow along Carpasian Road while providing right-of-way and additional capacity for side street movements along Empire Avenue. While this treatment may improve intersection operations and safety, grades along Carpasian Road pose a significant technical challenge. Public engagement feedback indicated that while participants were supportive of an intersection treatment that would remove the existing turn restrictions they were hesitant and had concerns about a mini-roundabout. This concern was particularly strong among those who are familiar with the difficulty some drivers have on this hill during slippery conditions.

Curb extensions at this intersection would calm traffic along Carpasian Road while providing improved sightlines for vehicles approaching the intersection along Empire Avenue. While this treatment does not increase the intersection capacity for side street movements, it reduces the exposed crossing distance for both vehicles and pedestrians. While capacity constraints support maintaining the existing right-turn only restriction during weekday peak hours, off-peak left and through movements from Empire Avenue could be permitted at this intersection if curb extensions were developed.

Participants at the drop-in engagement sessions indicated that the existing marked crosswalk on Carpasian Road is underutilized given less than optimal placement. Curb extensions at the Empire Avenue/Carpasian Road intersection would provide an opportunity to locate a marked crosswalk on Carpasian Road across the north approach of the intersection.

Public feedback also raised the concern of vehicles speeding along Carpasian Road. The wide cross-section of Carpasian Road in combination with roadway grades in this location are likely contributing to this issue. By incorporating curb extensions at the Circular Road/Monkstown (Carpasian) Road intersection to the south and developing a traffic calming centre island on Carpasian Road to the north, this issue should be significantly improved.

Figure 8 illustrates a curb extension and traffic calming concept for Carpasian Road in the subject area. It is anticipated that design and construction of this project may cost between \$100,000 and \$200,000.

Remove Turn Restrictions at
Empire & Carpasian?

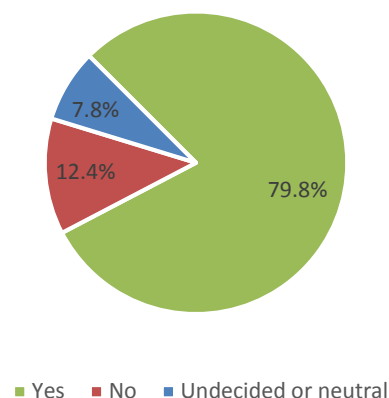
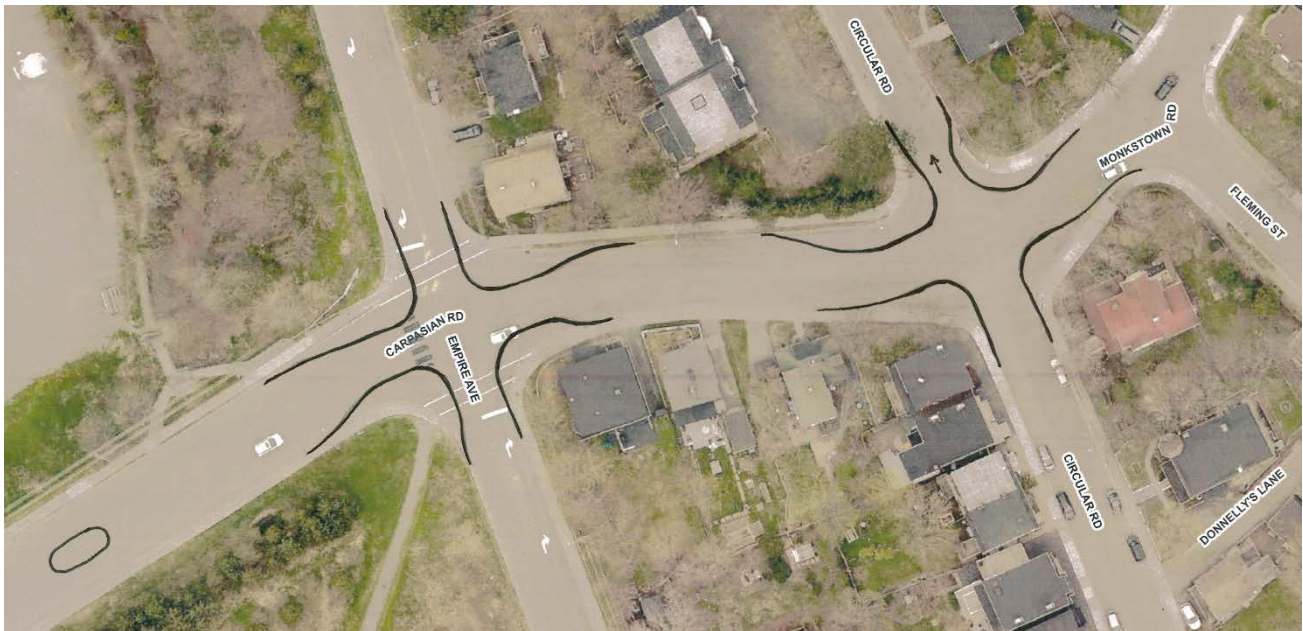


Figure 8: Carpasian Road Curb Extension and Traffic Calming Concept Plan

It is recommended that the proposed curb extension and traffic calming concept along Carpasian Road at the Empire Avenue and the Circular Road intersections be constructed as soon as funds are allocated. Once complete, left and through movements on Empire Avenue at Carpasian Road will be permitted outside of the morning and evening weekday peak hours.

(E) Circular Road & Rennie's Mill Road

Survey feedback regarding the potential to create a westbound route along Circular Road was generally positive. It is noted that when survey participants were separated into daily and weekly travel habits, daily users of the area were 62% in favour of the possible change while weekly users were 78% in favour. This indicates that a greater portion of those supporting the proposed change would use the route less often.

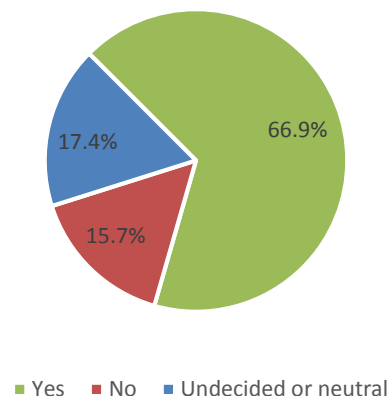
Concern was also expressed regarding how a mini-roundabout at the Circular Road/Rennie's Mill Road intersection would operate, especially in winter. Some residents of Circular Road were also concerned about a potential increase in vehicle volumes along the roadway.

A number of technical constraints including grades, sightlines, and traffic volumes pose a challenge to implementing a mini-roundabout treatment at this location. In addition, by creating the described westbound route, an increased number of vehicles may wish to travel along Empire Avenue through the King's Bridge Road intersection. The King's Bridge Road intersection represents a pinch point for capacity in the existing road network and an increase in westbound traffic would oppose the existing high volume of eastbound left turns at the intersection.

Reversing eastbound flow along this segment of Circular Road would also eliminate the existing route that allows eastbound vehicles on Circular Road to make a left turn onto Rennie's Mill Road to head north on Portugal Cove Road.

Given the technical considerations and constraints, no changes to the Circular Road/Rennie's Mill Road intersection restrictions or travel direction along Circular Road are recommended at this time.

Create Westbound Route on Circular Road?



Bicycle Considerations

The City of St. John's is currently in the process of retaining a consultant to complete an updated Bike St. John's Master Plan. This new master plan will consider existing and future bike routes and facilities in the City and will make specific recommendations for priority projects.

While no recommendations specific to cycling are made as part of this traffic pattern review, consideration will be given when implementing any proposed changes to ensure cycling in the area is not negatively impacted. Any planned infrastructure changes will be reviewed to determine if cycling routes and accommodation should be coordinated and incorporated as part of the project work.

As part of the possible Quidi Vidi Winners Circle project, improvements could be made to the intersection of Lake Avenue & Clancey Drive. These changes would clarify right of way, improve pedestrian connectivity, and reduce conflicts at this location.

[illegible]

King's Bridge Road & Empire Avenue Intersection Configuration

A technical review of signal timing plans in place at the Empire Avenue/King's Bridge Road and New Cove Road (The Boulevard)/King's Bridge Road was completed. While small adjustments may be made to optimize signal operations, the presence of the enhanced crosswalk on King's Bridge Road between the intersections creates an interruption in coordination along King's Bridge Road.

Some movements at the intersection, including the eastbound left turn, are approaching capacity during the AM and PM peak hours and may experience longer delays and queues. While operations are constrained during times of peak demand, none of the movements at the intersection are over capacity. It is also noted that traffic volumes at the intersection have remained relatively stable over the past 15 years. Therefore, large scale capacity upgrades are not currently warranted.

Possible changes to the existing intersection configuration that would not require adjustment of the existing roadway cross-section or right-of-way were explored. The opportunity to convert the existing left turn lane and shared through/right lane on the southbound approach of the intersection to a shared left/through lane and a shared through/right lane was considered. This would require banning the northbound left turn movement and removing the dedicated arrow for the southbound left turn movement at the intersection. In addition, the two southbound through lanes would be required to merge downstream to a single lane.

Although capacity assessments indicate this revised intersection configuration would increase capacity for southbound through traffic and provide improved levels of service for some movements, results assume that southbound traffic will use both lanes roughly equally. This assumption is likely unreliable given existing travel habits and the required downstream lane merge. In addition, the permissive southbound left turn movement under the revised scenario would change established patterns for this left turn at the intersection. Therefore, no changes to the existing configuration of the Empire Avenue/King's Bridge Road are recommended at this time.

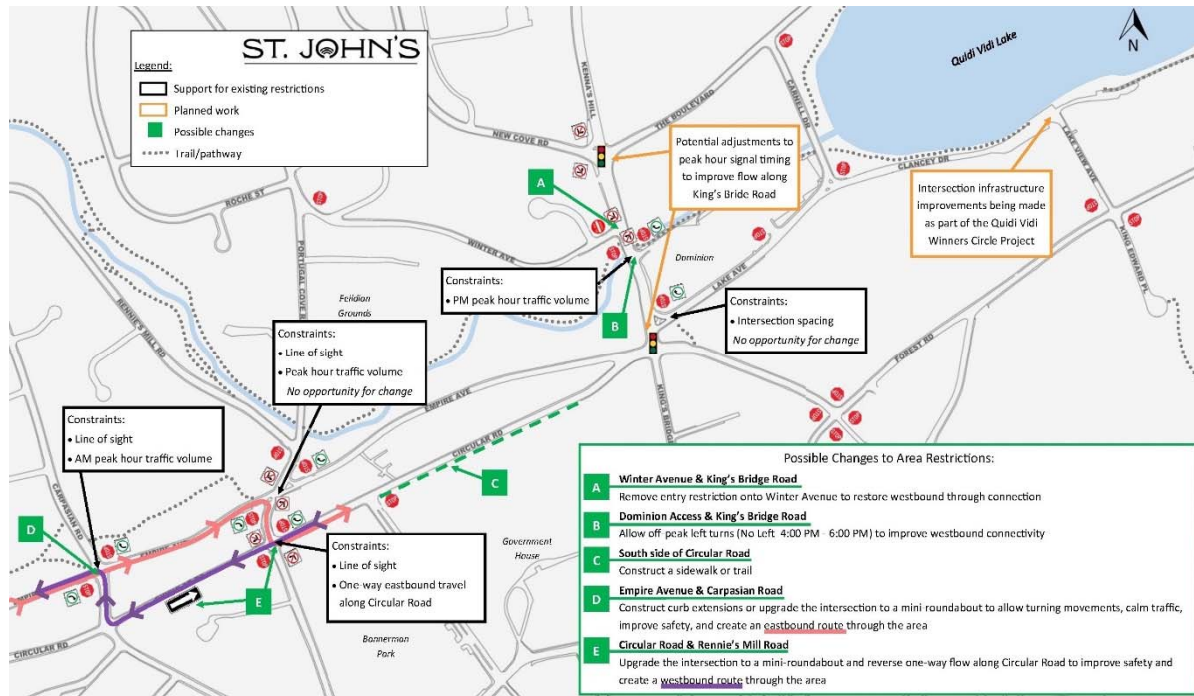
Summary of Recommendations

Based on the traffic pattern review completed for the Rennie's River East Area, the following recommendations are made:

- Remove the entry restriction on Winter Avenue at King's Bridge Road and consult with residents of Winter Avenue regarding the installation of permanent speed cushions along the roadway.
- Permit eastbound left turn movements at the Dominion Access onto King's Bridge Road outside of morning and evening weekday peak hours.
- Construct a sidewalk connection along the south side of Circular Road between Bannerman Road and King's Bridge Road.
- Construct the proposed curb extension and traffic calming concept along Carpasian Road at the Empire Avenue and the Circular Road intersections and permit left and through movements on Empire Avenue at Carpasian Road outside of morning and evening weekday peak hours.

APPENDIX A – Rennie’s River East Traffic Pattern Review Survey Questions

Let us know how you get around this area and what you think about the five possible changes we have identified for this area. Visit the [project engage page](#) for more information or to leave comments or suggestions.



Click to [view full size image](#).

[Download a pdf copy](#) of this map.

How often do you travel through the area shown above?

- ☐ Daily
- ☐ Weekly
- ☐ Monthly or less often

How do you usually travel through the area?

- ☐ Vehicle (as a driver or passenger)
- ☐ Transit
- ☐ Walk
- ☐ Bike

How else do you travel through the area?

- ☐ Vehicle (as a driver or passenger)
- ☐ Transit
- ☐ Walk
- ☐ Bike
- ☐ Not applicable, I only use my primary mode of transportation through the area

Do you live in the area?

- ☐ Yes
- ☐ No

(A) Would you like the "No Entry" restriction onto Winter Avenue removed?

This would restore the westbound through connection.

- ☐ Yes
- ☐ No
- ☐ Undecided or neutral

(B) Would you like to be permitted to make a left turn exit from Dominion onto King's Bridge Road?

An afternoon restriction (No left 4:00 PM - 6:00 PM) would remain.

- ☐ Yes
- ☐ No

☐ Undecided or neutral(C) Would a sidewalk or trail constructed along the south side of Circular Road next to the Government House property make it easier for you to get around?

- ☐ Yes
- ☐ No
- ☐ Undecided or neutral

(D) Would you like to lift the "Right Turn Only" restriction when coming off Empire Avenue onto Carpasian Road?

This would require the construction of curb extensions or a mini-roundabout.

This change would also calm traffic and improve safety.

- ☐ Yes
- ☐ No
- ☐ Undecided or neutral

(E) Would you like to be able to follow a westbound route along Circular and Empire?

This would require upgrading the intersection with a mini-roundabout and reversing one-way flow along Circular Road.

This change would also calm traffic and improve safety.

- ☐ Yes
- ☐ No
- ☐ Undecided or neutral

APPENDIX B – Draft Winter Avenue Speed Cushion Installation Support Survey

Traffic Calming Installation Support Form

Dear Resident:

Please be advised that as per the approved recommendations of the Rennie's River East Travel Pattern Review, the "no-entry" restriction on Winter Avenue at King's Bridge Road will be removed.

To address resident concerns regarding speeding and help deter short-cutting, permanent traffic calming speed cushions are being considered for **Winter Avenue**. Four sets of permanent speed cushions would be installed between Glenridge Crescent and Judge Place at intervals of approximately 120 metres along with sign posts where necessary and Speed Cushions signs. The figure below illustrates the locations of the proposed speed cushions:



These cushions are designed to allow emergency vehicles to pass through unimpeded by providing space between the cushions for the width of emergency vehicle tires. This spacing will allow motorcycles to pass through without any calming effect.

While the installation of speed cushions will address vehicle speeds along Winter Avenue, some vehicles may accelerate between each set. Noise created by this acceleration in combination with noise generated by vehicles passing over the cushions is important to consider. In most applications of speed cushions, noise related complaints are received after they are installed.

In accordance with the City of St. John's Traffic Calming Policy, a survey of residents is required before proceeding with this traffic calming plan. **Please note that a minimum 60% of all affected residents on your street must be in favour in order to proceed.**

Thank you for your cooperation and participation. We will advise you of the outcome of this enquiry. If the project proceeds, you will be provided with further details on any future public meetings regarding this project.

For more information on Traffic Calming and the Rennie's River East Traffic Pattern Review go to the City of St. John's website or call Access St. John's at 311.

DRAFT

Traffic Calming Request Support Form

Please fax, mail, or e-mail your response to the Traffic Division no later than **DATE**

Please ensure only one response per household.

Name (required): _____

Address (required): _____

Phone: _____

Email Address: _____

Do you support the proposed installation of permanent speed cushions on **Winter Avenue?**

☐ Yes

☐ No

If No, please explain:

Return to:

Transportation Engineering –
Department of Planning, Engineering & Regulatory Services
P.O. Box 908
St. John's NL A1C 5M2

trafficcalming@stjohns.ca

Fax: (709) 576-8305