

BBTCA REVIEW

URBAN PLANNING & DESIGN ASSESSMENT OF POTENTIAL TRANSPORTATION IMPACTS & MITIGATION MEASURES

December 16, 2013

URBAN
STRATEGIES
INC .



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1.0 Background

The City of Toronto retained BA Group to assess transportation impacts associated with proposed jet activity at the Billy Bishop Toronto City Airport (BBTCA). This memo outlines key findings and recommendations from the BA Group report, and evaluates them from a planning and urban design perspective. This evaluation considers the impact of each BA Group recommendation on area traffic operations, modal split, BBTCA access, open space and parkland, waterfront connectivity and overall placemaking, alongside discussion of planning policy conformity and costs.

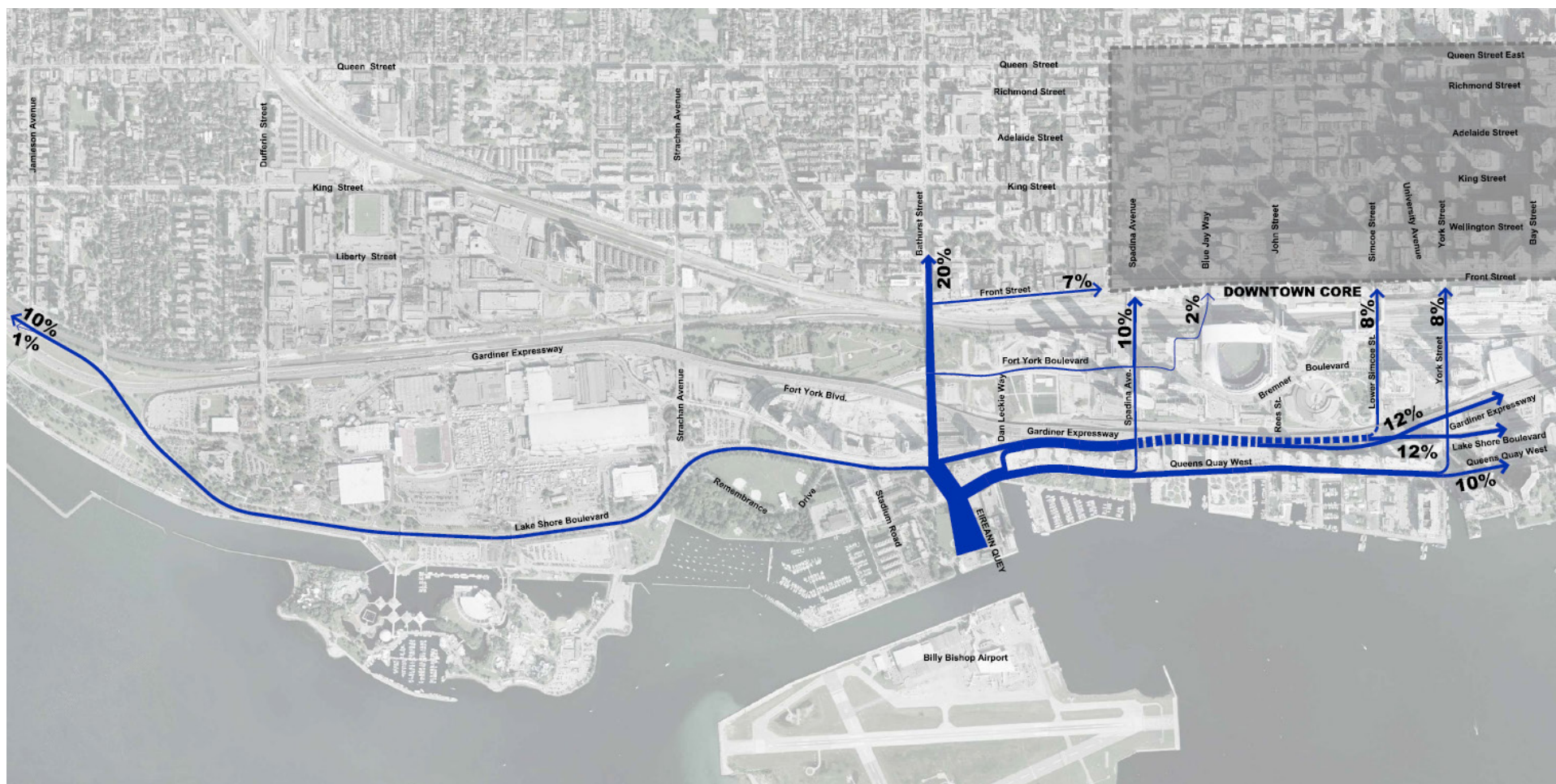


Figure 1: Current Vehicular Traffic Access Routes to BBTCA (BA Group Final Report, November 27, 2013)

2.0 Summary of Key Findings & Recommendations

BA Group's key findings and recommendations occur at three orders of magnitude, beginning with necessary improvements to address existing BBTCA traffic impacts. The second order of magnitude involves the proposed jet activity and associated increase in passengers and traffic impacts. The third order of magnitude stems from the potential for the Airport to approximately double hourly flight activity whether or not jets are approved, resulting in even greater impacts than the introduction of jets at the current level of hourly flight activity. Key findings and recommendations are summarized below.

2.1 Existing Operations

The design of Eireann Quay and the Eireann Quay/Queens Quay intersection coupled with existing levels of activity at the Airport are already resulting in a number of transportation related issues, demonstrating that the existing transportation network is quite constrained. For this reason, BA Group puts forward a number of recommendations to improve existing conditions, regardless of proposed jet activity. These include:

- Retaining the temporary off-street taxi and shuttle facility currently on the Canada Malting lands;
- Improving the Eireann Quay east-west pedestrian

crossing at the Queens Quay intersection;

- Installing a weather protection canopy along the west side of Eireann Quay; and
- Reconstructing the existing TTC streetcar platform to include benches, lighting, transit arrival information and an improved shelter.

2.2 Proposed Jet Activity

The proposed introduction of jet activity would increase traffic volumes by approximately 20% on Eireann Quay if the current number of hourly flights is maintained, and if passenger travel behaviour does not change. To address associated transportation impacts, BA Group recommends:

- Targeting mode shift changes to reduce these impacts, primarily through expanding and improving Airport shuttle services; and
- Reconstructing the westbound left turn from the westbound Lake Shore Boulevard onto Dan Leckie Way, coupled with improved wayfinding and left turn restrictions from the westbound Lake Shore Boulevard onto Bathurst Street to add vehicular capacity and reduce traffic impacts to the immediate area.

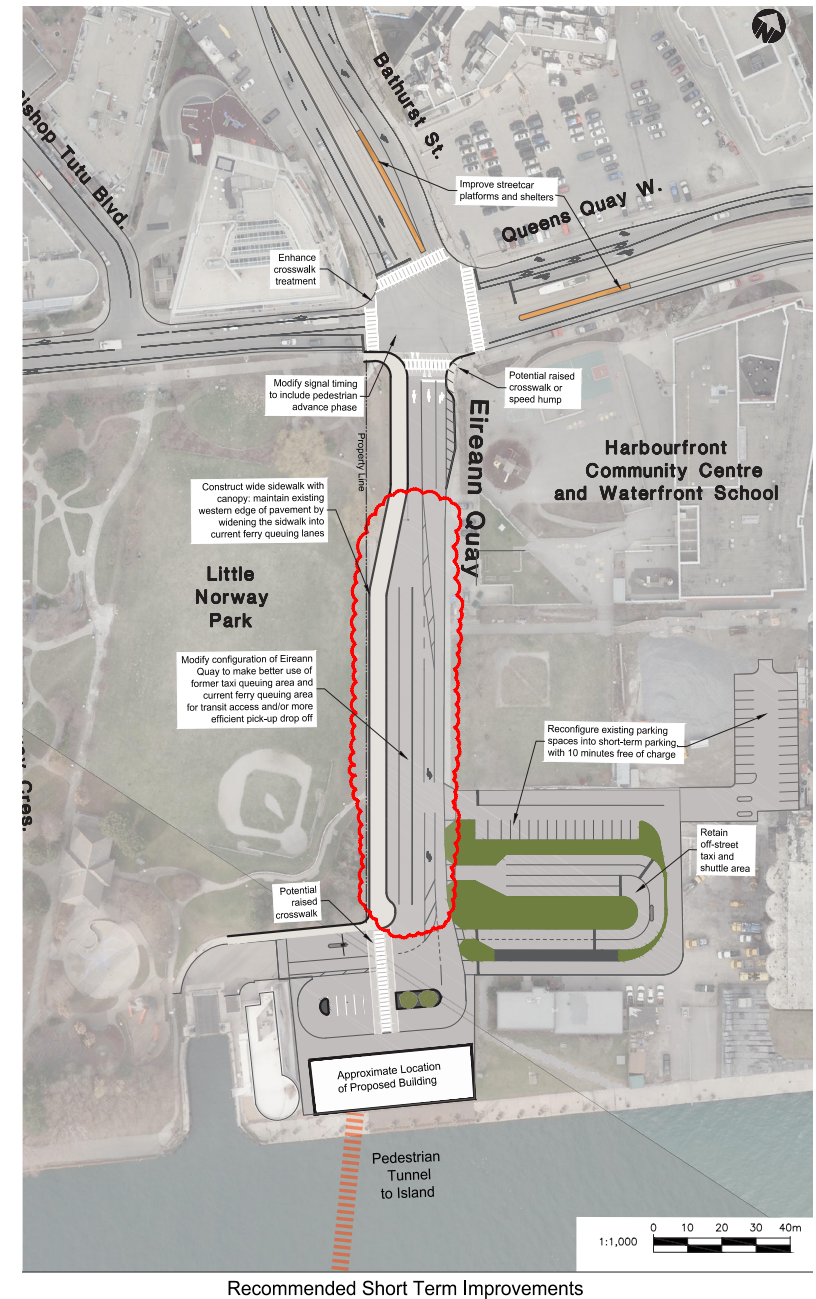
2.3 Expanded Hourly Flight Activity

BA Group found that regardless of the proposed jet activity, the key driver of BBTCA's traffic impacts is the number of hourly flights at the Airport. While BBTCA currently operates 16 flights during its busiest hour under the self-imposed cap of 202 movements per day, the actual capacity of the existing Airport runway infrastructure is significantly higher at approximately 30-36 flights per hour. Whether jets are approved or not, the existing Tripartite Agreement does not specify the number of hourly flights, meaning that over time BBTCA could remove current operational constraints to operate at or near the runway's maximum capacity, providing that the Airport does not exceed noise limits set out in the Tripartite Agreement. If hourly flights are approximately doubled, Airport passengers and associated vehicular traffic would double as well, resulting in the need for significantly increased road and transit capacity with or without jets. BA's analysis indicates that the only possible infrastructure solutions to accommodate transportation impacts associated with worst case hourly passenger volumes include:

- Constructing an extension of Dan Leckie Way southward from Queens Quay over Lake Ontario and around the Waterfront School to connect to Eireann Quay; and
- Extending the pedestrian tunnel from the island

to a new entrance pavilion adjacent to the Harbourfront TTC streetcar line (this option is a supplement to the Dan Leckie Way extension option and does not adequately address transportation impacts alone).

To avoid the cost and urban design implications of these worst case hourly passenger volumes BA group recommends limiting the number of hourly passengers at the Airport.



BA Group

BBTCA: Jet Activity Transportation Assessment
7/17-24 November 2013

Figure 5

Figure 2: Short Term Improvements (BA Group Final Report, November 27, 2013)

3.0 Evaluation of Key Recommendations

BA Group's key recommendations to address transportation issues associated with the BBTCA are discussed in detail below, including evaluation of their:

- Overall effects on area traffic operations;
- Contribution to good urban design and placemaking objectives, including impacts on open space and parkland, waterfront connectivity and the active transportation experience;
- Impact on transportation modal split;
- Balance of benefits to BBTCA users, local neighbourhood residents and the general public;
- Potential costs (where this information is available); and
- Official Plan and Central Waterfront Secondary Plan conformity.

3.1 Existing Operations

BBTCA operations have grown rapidly over the past 7 years, where passengers per year have increased from 26,000 in 2006 to 2.3 million in 2012. This spike in passengers traveling to and from the Airport has resulted in significant transportation impacts that should be addressed regardless of the decision on proposed jet activity. BA Group's recommendations to address existing transportation conditions are discussed in detail below.

3.1.1 Retaining the temporary off-street taxi and shuttle facility

Due to the construction of the new pedestrian tunnel, a large portion of the turn around and pick up/drop off space at the mainland terminal has been closed. To address this lost circulation space, a temporary off-street taxi queue and shuttle bus loop have been constructed on the adjacent Canada malting site, along with a number of short term and long term parking spaces. The short term parking is exclusively for vehicles waiting for arriving passengers or departing passengers to the ferry. BA Group notes that this new facility has been providing a clear benefit to traffic operations on Eireann Quay and that it should be retained until a similar permanent off-street alternative can be developed. Options include:

- An underground facility below Eireann Quay/ Little Norway Park; or
- Incorporating a replacement facility into the redevelopment of the Canada Malting Lands.

Urban Design and Planning Analysis

The primary benefits of a permanent facility would include preventing vehicular congestion on Eireann Quay, improving vehicular access to BBTCA, and

improving the public realm by moving significant vehicle activity underground. From an urban design perspective, it is highly desirable to move extensive vehicular activity associated with Taxis and the BBTCA shuttle below grade and out of sight of pedestrians and other users of Eireann Quay. If the existing facilities on the Canada Malting Silos site are not replaced or relocated in conjunction with the intended redevelopment of the site, taxi and BBTCA shuttle activity would be pushed back on to Eireann Quay, increasing vehicular congestion and negatively impacting pedestrians and drivers alike. The August 2011 Google Street View capture shown in Figure 3 on the following page illustrates traffic conditions on Eireann Quay prior to the introduction of existing temporary facilities on the Canada Malting site, whereas Figure 4, taken at peak a.m. conditions on November 21st, 2013, illustrates a much less congested and less intimidating environment on Eireann Quay, demonstrating the clear benefits the existing facilities are having.

It is unlikely that this recommendation would have significant impacts on the existing modal split of BBTCA passengers, as it involves the relocation of existing facilities. This recommendation largely works to the benefit BBTCA users by improving vehicular access to the Airport, although it does provide some spin-off benefits for local residents and the general public by

alleviating vehicular activity and congestion on Eireann Quay. Costs are unclear at this time, given uncertainty surrounding the design and selection of a location for this recommendation.

While there is not extensive Official Plan or Central Waterfront Secondary Plan policy direction that applies to this recommendation, it does not appear to conflict with any policy direction and does advance some Official Plan objectives:

- Supporting the functionality of the BBTCA shuttle supports a wide range of suitable transportation options that are linked and safe;
- Moving significant vehicular activities underground should improve the pedestrian experience along Eireann Quay; and
- If a replacement facility is incorporated into the redevelopment of the Canada Malting Lands, this supports the general intent of retrofitting transportation terminals for intermodal connections.

Also of note, the Central Waterfront Secondary Plan identifies the Canada Malting Silos as an important landmark and heritage feature, providing some higher level direction towards developing an innovative mix of public and private activities and uses on the site. The



Figure 3: Eireann Quay Pre-Canada Malting Taxi & Shuttle Facilities (Google Street View Capture)



Figure 4: Eireann Quay Post-Canada Malting Taxi & Shuttle Facilities

inclusion of an underground taxi and shuttle facility for the BBTCA in the site's redevelopment seems consistent with this direction. Once more solid plans are put forward for the Canada Malting site, it should be more clear if such a facility is compatible with other desired uses; regardless, the alternative option under Eireann Quay and Little Norway Park would not conflict with the redevelopment of the Canada Malting Silos.

3.1.2 Improving the Eireann Quay east-west pedestrian crossing at Queens Quay

Due to the presence of the Waterfront School and Harbourfront Community Centre (HCC) on the southeast corner of Queens Quay and Eireann Quay, there is a particular interest in improving the perception of safety at the Eireann Quay pedestrian crossing to address significant vehicular traffic associated with BBTCA operations.

Urban Design and Planning Analysis

While the option of constructing a grade-separated pedestrian bridge over Eireann Quay was considered, BA Group determined that the costs associated with such an option ranged anywhere from \$30-60 million dollars depending on the design of the bridge. Given numerous other precedents in Toronto where

elementary schools with higher enrollments safely operate on busier streets, this level of expenditure does not seem warranted. BA Group suggests that the cost of relocating the school and the HCC to another site would actually be comparable to a pedestrian bridge, particularly if the economics of redeveloping the site were considered. Furthermore, from an urban design perspective, the long ramps that would be required to elevate pedestrians over Eireann Quay at a gradual, safe incline would create a visual barrier for the waterfront and Little Norway Park, would have an extensive footprint on the school site and Little Norway Park, and would detract from the experience of pedestrians and cyclists attempting to access BBTCA and/or Little Norway Park from a north-south direction. The physical separation also runs the risk of giving pedestrians the impression that cars are prioritized over pedestrians on Eireann Quay.

As an alternative, BA Group recommends implementing a raised crosswalk or speed bumps along Eireann Quay as a more appropriate and economical option to improve pedestrian safety. It should be noted that current Toronto Port Authority (TPA) emergency vehicle access regulations have to date prevented implementation of speed bumps on Eireann Quay, despite interest in and investigation of this option by City Staff. Re-opening this discussion with TPA would be necessary to implement

this recommendation.

Compared to a pedestrian bridge, a raised crosswalk is a more appropriately scaled intervention and is more desirable from an urban design perspective. Coupled with clear wayfinding and an attractive pavement treatment, this option would force vehicles to slow down and would send a clear message to drivers that they are crossing a busy pedestrian intersection. By prioritizing pedestrian movement and improving the aesthetics of the crossing itself, a raised crosswalk would improve the pedestrian experience and safety. On its own this recommendation is unlikely to have significant impacts on the modal split for BBTCA passengers, but it could have some impact as part of a larger suite of interventions aimed at encouraging pedestrian access to the BBTCA, Little Norway Park, and the Canada Malting Silos. Costs associated with this recommendation are not discussed in the BA Report. Ultimately, this recommendation largely works to benefit the general public by mitigating traffic impacts associated with the BBTCA; given that most BBTCA passengers access the Airport by vehicle, this recommendation provides a greater benefit to local residents and the general public.

This recommendation aligns with general policy direction from the Official Plan and Central Waterfront Secondary plan, and specifically helps to advance

policy objectives that seek to:

- Improve the public realm;
- Enhance and give priority to the active transportation environment;
- Improve safety and encourage active transportation uses;
- Create linkages between key amenities like the waterfront, parks, and schools; and
- Improve the physical and visual continuity of the waterfront corridor and Martin Goodman trail.



Figure 5: Raised Crosswalk Precedent, U of T (Google Street View Capture)

3.1.3 Installing a weather protection canopy along the west side of Eireann Quay

To improve access to public transportation and encourage pedestrian activity between the BBTCa and Harbourfront TTC stop, BA group recommends installing a weather protection canopy along the west side of Eireann Quay.

Urban Design and Planning Analysis

If a strong design aesthetic is pursued, the canopy would not only provide weather protection and encourage pedestrian access to BBTCa, it could also help to develop a greater sense of place by improving connectivity between Little Norway Park and Eireann Quay. The canopy should help affect a modal shift among BBTCa users by making this walking route between transit and the mainland terminal more obvious and pleasant, drawing people from the terminal to the TTC. Improved lighting and a degree of separation from vehicular traffic would also help to increase the perception of safety. The benefits associated with improved safety, weather protection, and placemaking should equally improve the experience of BBTCa users, local residents, and the general public. Costs associated with the recommendation are largely dependent upon the design of the canopy and are not discussed by BA Group.

This recommendation aligns well with general policy direction from the Official Plan and Central Waterfront Secondary plan, and specifically helps to advance policy objectives that seek to:

- Improve the public realm;
- Enhance and give priority to the active transportation environment and reduce the need

for car use;

- Improve safety and encourage active transportation uses;
- Create linkages between key amenities like the waterfront, parks, and schools;
- Improve the physical and visual continuity of the waterfront corridor;
- Achieve excellence in design and exemplify global best practices;
- Create a coherent framework of viewing areas, walkways, promenades and open space elements; and
- Engage in placemaking along streets.

To supplement BA Group's discussion of this option, some best practice precedents of similar canopies are included in Figures 7-15. These precedents were selected due to their ability to provide protection from the elements and facilitate passenger pick up and drop off along Eireann Quay, while still providing a degree of separation between pedestrians and vehicles. A shielded walkway with improved lighting would create a much more welcoming environment for pedestrians, making walking a more attractive option. In addition, these precedents should improve both Eireann Quay and Little Norway Park, offering improved connectivity and amenity. All of the precedents displayed below should achieve these desired objections; some brief

discussion is included for each to highlight the relative benefits and drawbacks associated with different designs.

The two precedents in Figures 6, 7 and 8 utilize metal support infrastructure with transparent roof material, allowing sunlight through. The center post design of the precedent in Figure 6 supports division of pedestrian traffic moving in opposing directions, and could provide overhang beyond the walkway into the park and passenger drop off area.

The precedent in Figures 7 and 8 depicts a lighter and less bulky design. This type of curvature would allow a more graceful navigation of the Eireann Quay sidewalk where it curves westward to accommodate the passenger drop off area. It should be noted that the stone walls of the walkway are not associated with the canopy structure (this type of barrier would not be appropriate for the subject site).



Figure 6: http://upload.wikimedia.org/wikipedia/commons/6/65/HK_Sheung_Wan_Central_Piers_Man_Kwong_Street_covered_walkway_trees_Oct-2012.JPG



Figure 7: http://www.esi.info/detail.cfm/Macemain-Amstad/Clifton-covered-walkway/_/R-33130_NN175XU



Figure 8: http://www.esi.info/detail.cfm/Macemain-Amstad/Clifton-covered-walkway/_/R-33130_NN175XU

Like the precedents on the previous page, the precedent in Figure 9 utilizes metal support infrastructure with transparent roofing material. The asymmetrical design creates an opportunity to provide overhang beyond the sidewalk, which could be useful for passenger drop off at the curb. However, this design does appear to result in bulkier support posts.

The precedent in Figure 10 utilizes an opaque tensile roofing fabric that is lighter weight and has a greater capacity to provide shade without darkening the walkway significantly. This type of roofing material would likely be less durable than solid, plastic based materials used in the earlier precedents; however, it would also be simpler and less expensive to replace.



Figure 9: <http://www.flickr.com/photos/roddh/6278422756/>



Figure 10: <http://www.auracanopies.com/hospitality-gallery.html>

The two precedents shown in Figures 11, 12 and 13 also use an opaque tensile roofing material, and exhibit more playful, innovative designs. These options may have greater placemaking potential and help present walking as an alternative travel option to and from the Airport.

The circular support infrastructure in Figure 11 creates a nice aesthetic that gracefully navigates the curved walkway; however the supports do protrude beyond the walkway which may pose challenges on the subject site.

The ‘gullwing’ design below in Figures 12 and 13 creates a division between opposing pedestrian traffic with its centre support posts, and could provide overhang beyond the sides of the walkway. Its upward orientation creates an inviting aesthetic, but less wind protection from other precedents with a more concave, downward orientation.

The two examples below demonstrate the gullwing’s capacity to curve or remain straight.



Figure 11: http://sitivi.blogspot.ca/2012_05_01_archive.html



Figure 12: <http://www.auracanopies.com/hospitality-gallery.html>



Figure 13: <http://www.auracanopies.com/hospitality-gallery.html>

This precedent in Figures 14 and 15 is perhaps the most innovative with its irregular shape. Like the precedents in Figures 11, 12 and 13, this precedent has greater potential to provide desired placemaking capable of encouraging BBTCA users to walk to the TTC. The image below illustrates how this design could best be applied to a linear walkway, utilizing centre support posts (dining infrastructure would not be appropriate).

The image to the right illustrates how this fabric can be under-lit to create a very inviting ambiance; this type of lighting could be applied to any of the precedents utilizing opaque tensile fabric for roofing, whereas more traditional nighttime lighting would be appropriate for transparent plastic roofing material.



Figure 14: <http://www.auracanopies.com/hospitality-gallery.html>

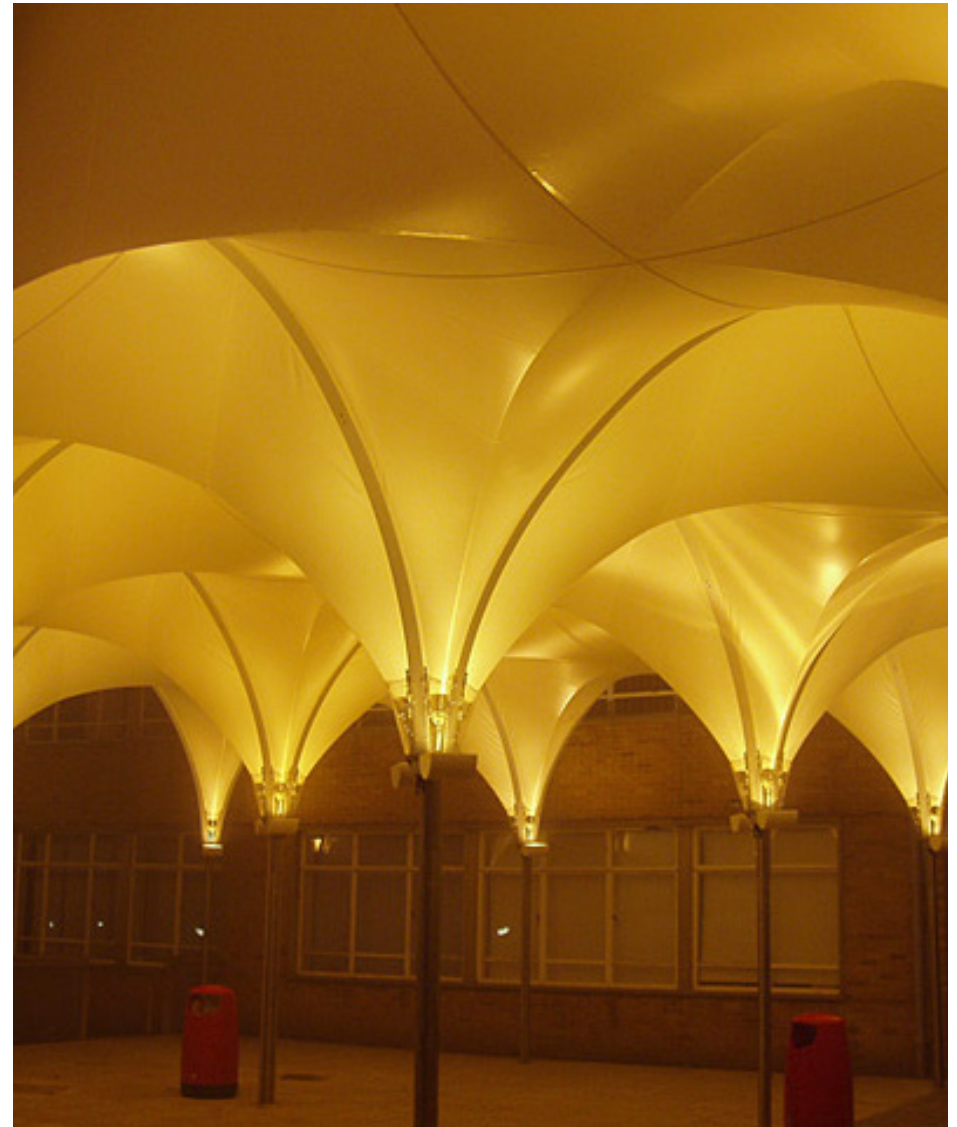


Figure 15: <http://www.auracanopies.com/hospitality-gallery.html>

3.1.4 Reconstructing the TTC streetcar platform for the Harbourfront Streetcar

To encourage public transportation use and affect a modal shift away from car use for BBTCA passengers, BA Group recommends reconstructing the existing TTC streetcar platforms at the Queens Quay/Eireann Quay and Bathurst Street/Queens Quay intersections to improve the public realm. This recommendation includes providing improved shelter, benches, transit arrival information, and lighting.

Urban Design and Planning Analysis

Existing conditions at these two streetcar platforms are fairly uninviting and provide very little amenity to transit users. Aside from a minimal wind shelter and overhang, no lighting, seating, wayfinding or arrival information is present. BA's recommendations would significantly improve the experience of transit users, making transit a much more comfortable and attractive option. For a BBTCA user who has just stepped off a flight, having a place to sit down and wait out of the elements with clear information confirming when the next street car is arriving could be the deciding factor between taking a cab or a street car. Improving these TTC platforms would help to advance placemaking along Queens Quay by providing a new feature with increased amenity and

animation. These improvements would equally benefit BBTCA passengers, local residents, and members of the general public that use these TTC stops. Associated costs are not discussed by BA Group and would be dependent on the design of the new platforms.

This recommendation aligns well with general policy direction from the Official Plan and Central Waterfront Secondary plan, and specifically helps to advance policy objectives that seek to:

- Improve the public realm;
- Prioritize transit improvement over increases in road capacity;
- Encourage public transportation use and walking to reduce the need for car use;
- Improve Queens Quay to meet diverse needs of transit users and pedestrians;
- Engage in placemaking along streets; and
- Develop a sustainable transportation system that gives priority transit and pedestrians.

3.2 Proposed Jet Activity

Given that proposed jet activity would increase traffic volumes by approximately 20% on Eireann Quay as discussed above, BA Group's central recommendation involves significantly expanding the BBTCA shuttle service to reduce car use. This change in the modal

split in transportation choices of BBTCA passengers could potentially offset increased activity at the Airport, and reduce or nullify any transportation impacts on the surrounding area. To add vehicular capacity and reduce any traffic impacts, BA Group also recommends modification to the westbound turn at Dan Leckie Way and Lake Shore Boulevard.

3.2.1. Reconstructing the left turn onto Dan Leckie Way from the westbound Lake Shore Boulevard

BA Group suggests that better aligning this left turn lane with the opposing eastbound left turn would improve sight lines to opposing traffic, allowing for the westbound left turn phasing to be changed to a permissive and protected left turn. This would add additional capacity to inbound traffic movement, accommodating any increased BBTCA traffic associated with the proposed jet activity. BA Group also notes that this reconstruction should be accompanied by improved wayfinding to direct BBTCA users to use the improved Dan Leckie left turn as opposed to making a left onto Bathurst Street from the westbound Lake Shore. To mitigate for any impacts at Bathurst and Lake Shore associated with increased traffic, BA Group further suggests restricting left turns at Bathurst and Lake Shore, providing further incentive for BBTCA passengers to utilize Dan Leckie Way. The costs associated with this option are in the

range of \$1 million but would require further clarification should this recommendation be pursued.

Urban Design and Planning Analysis

This recommendation primarily improves vehicle access to and from the Airport and would likely not have significant impacts on the modal split of BBTCA passengers. The greatest benefit would be derived by BBTCA users accessing the Airport by vehicle, however mitigating traffic impacts and slightly increasing road capacity might also provide some spin-off benefits for local residents and the general public that also use the roads in question.

Given that this is a minor modification to the existing road network, there is not extensive Official Plan or Central Waterfront Secondary Plan policy direction that pertains to this recommendation. The recommendation generally aligns with policy, including:

- Making better use of existing infrastructure; and
- Directing traffic on to Dan Leckie Way, where there is a clear view of the waterfront, aligning with policies that seek to create opportunities to see Lake Ontario from the City.

This recommendation is not consistent with policies that seek to:

- Create a sustainable transportation system that gives priority to public and active transportation and reduces the need for auto use; or
- Advance new traffic management approaches to accommodate non-auto modes of transportation.

Auto-use represents a large portion of Toronto's transportation modal split and this modification to the existing intersection is minor in nature, so this recommendation is generally consistent with policy direction beyond its failure to advance policy objectives on reducing auto use.

From an urban design perspective, this modification should not have significant impacts on the public realm. It involves the reconfiguration of an unprogrammed median bordered by multiple lanes of high speed vehicle traffic. It does not appear that the modification would significantly affect the size of the median, so the only notable impact involves the displacement of a number of street trees that would be affected by the reconfiguration. Some of these trees appear to have been recently planted, while others appear more mature. Depending on the alignment of the new left turn, requiring any of the trees that are impacted be moved or

replaced would ensure that this recommendation does not negatively impact the public realm and existing amenities.

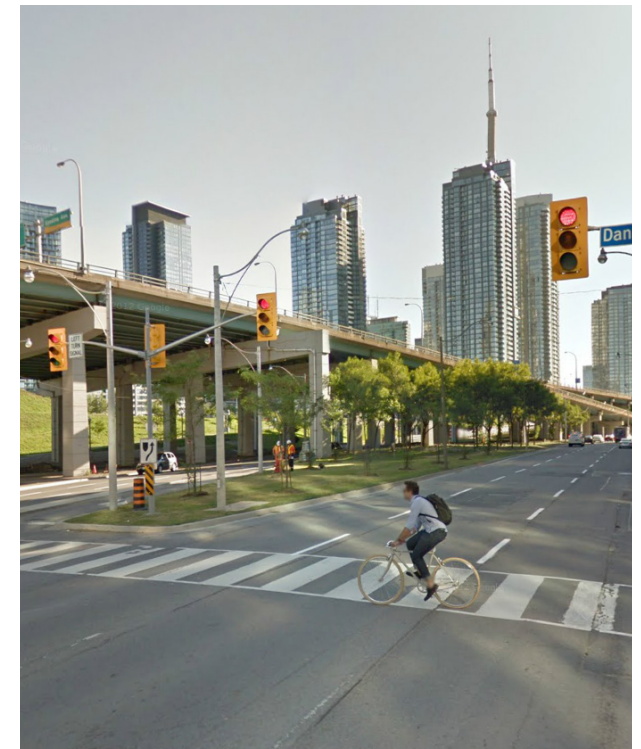
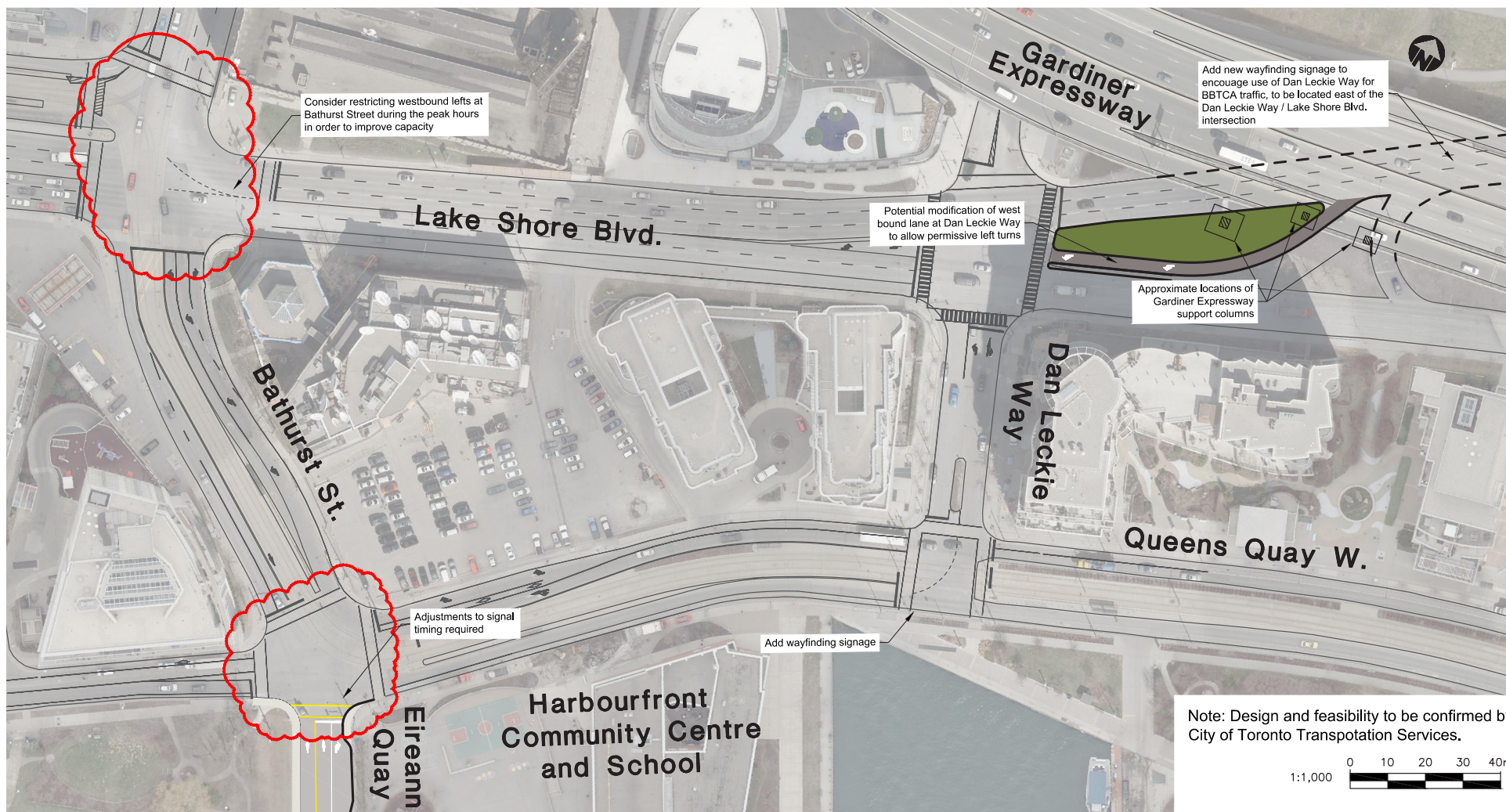


Figure 16: Lake Shore/Dan Leckie Median Street Trees (Google Street View Capture)



Recommended Road Improvements if Jets are Permitted:
 Modifications to Left Turn Lane Providing Access from
 Lake Shore Boulevard to Dan Leckie Way

BBTCA: Jet Activity Transportation Assessment
 7017-24 November 2013

Figure 17: Conceptual Lake Shore/Dan Leckie Left Turn Reconfiguration (BA Group Final Report, November 27, 2013)

3.3 Expanded Hourly Flight Activity

As discussed above, the key driver of BBTCA's traffic impact is the number of hourly flights at the Airport, which have the potential to approximately double under the existing Tripartite Agreement regardless of proposed jet activity. BA Group recommends limiting the number of hourly passengers to 1100-1200 to avoid traffic impacts associated with this hourly passenger worst case scenario (peak hourly passenger traffic is currently 775 passengers per hour between 9 and 10 a.m. and 910 passengers per hour between 5 and 6 p.m.). Should hourly passengers approximately double, BA Group identified the following two recommendations as the best options to address the transportation impacts that would be associated with an increase of this level.

3.3.1 Extending Dan Leckie Way southward from Queens Quay over Lake Ontario and around the Waterfront School to connect to Eireann Quay

This recommendation is presented as the only way to significantly increase road capacity and improve vehicular access to the Airport, to accommodate increased traffic associated with worst case hourly passenger scenarios.

Urban Design and Planning Analysis

The extension of Dan Leckie Way over Lake Ontario is a fairly drastic option. It demonstrates that there is physically no place to accommodate increased road infrastructure for the Airport. From an urban design perspective, the impacts associated with this recommendation would be severe, including the interruption of the Martin Goodman/Waterfront Trail, the loss of a portion of the Toronto Music Garden, lake filling and a loss of usable dock wall, loss of boating opportunities and the interruption of views and enjoyment of the Portland Slip from the Canada Malting Silos, Waterfront School and HCC sites. It is not entirely clear where the Dan Leckie extension would connect to Eireann Quay; the conceptual drawing in Figure 19 depicts the extension between the Waterfront School and the Canada Malting Silos, which would sever the school's access to a regularly used adjacent park. Depending on the exact placement of the new connection between Dan Leckie Way and Eireann Quay, some combination of unacceptable negative impacts to the Waterfront School, HCC, Canada Malting Silos, and/or Ireland Park would occur, displacing existing land uses.

This recommendation would likely solidify or even skew the existing modal split of BBTCA users towards auto use. The balance of benefits would be largely towards

BBTCA passengers accessing the Airport via car, with negative impacts borne by the general public and local residents. Estimated costs range from \$50-60 million.

This recommendation does not align with Official Plan and Central Waterfront Plan policy direction, specifically conflicting with policies that seek to:

- Promote a beautiful waterfront;
- Provide a wide range of sustainable transportation options that reduce the need for auto-use;
- Prioritize transit over expanding road capacity and balance the needs of motorists with other forms of transportation;
- Only allow road capacity to be expanded for local traffic needs;
- Enhance the view of the Lake at the terminus of streets that extend to the water's edge;
- Improve the public realm and increase public enjoyment of lands along the water's edge;
- Enhance and give priority to the active transportation environment and reduce the need for car use;
- Create linkages between key amenities like the waterfront, parks, and schools;
- Improve the physical and visual continuity of the waterfront corridor;
- Generally prohibit lakefilling;
- Increase recreational opportunities including

- boating, walking, and cycling; and
- Remove barriers and reconnect the City with Lake Ontario.

This lack of conformity to the existing policy framework underlines BA Group's alternative recommendation that hourly passengers at BBTCA should be limited to avoid a scenario where traffic impacts would require this scale of intervention.



Figure 18: Dan Leckie Way Extension Location

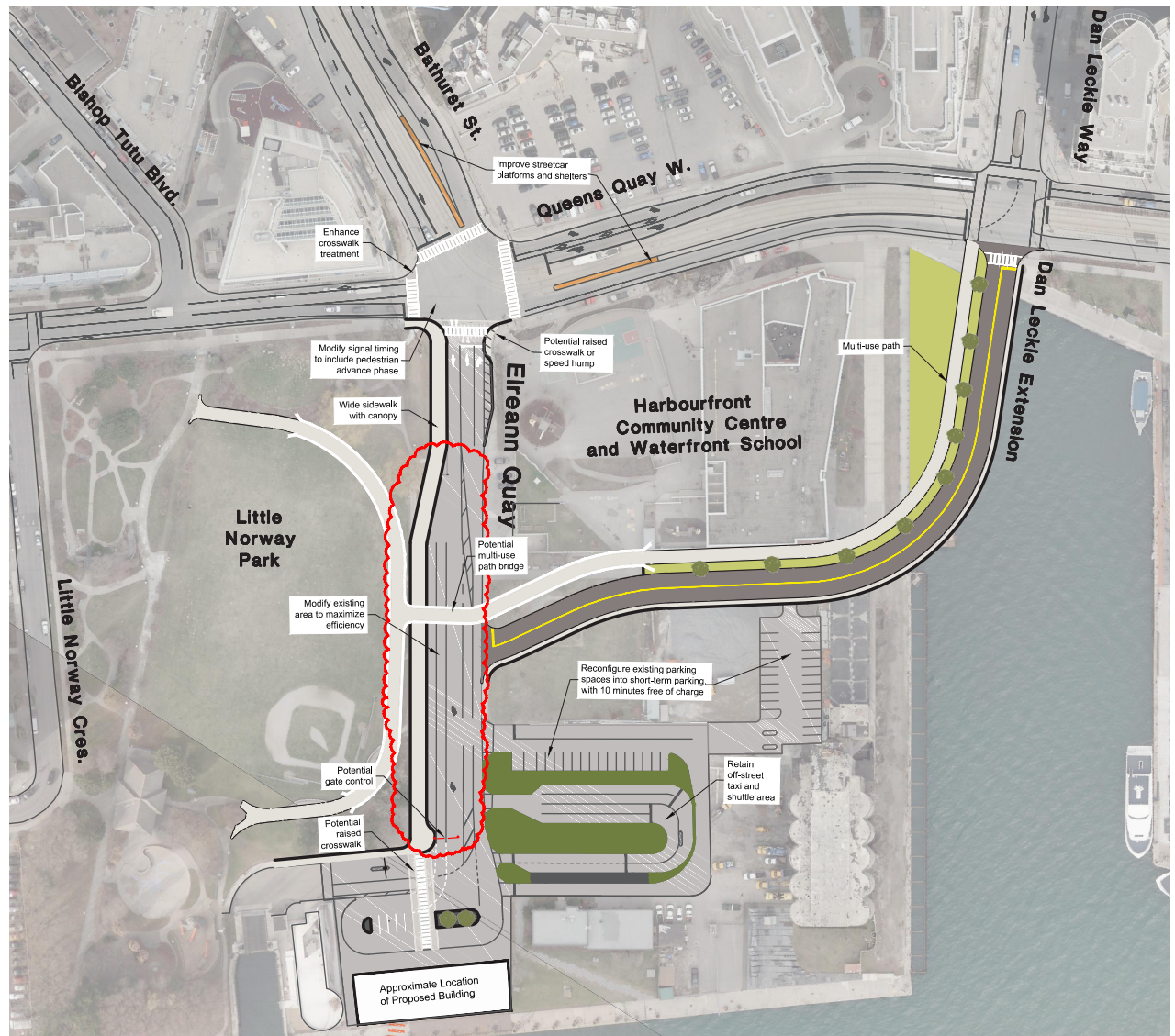


Figure 19: Conceptual Dan Leckie Way Extension (BA Group Final Report, November 27, 2013)

3.3.2 Extending the pedestrian tunnel from the Toronto Islands to a new entrance pavilion adjacent to the Harbourfront TTC streetcar line

This recommendation seeks to improve transit and pedestrian access to BBTCA to facilitate a significant modal shift away from car use. While it represents a significant improvement in this direction by providing a direct underground pedestrian connection from the Airport to the TTC, it should be noted that on its own it would not sufficiently address the transportation impacts associated with a doubling of hourly passenger scenario. It is instead recommended as a supplement to the extension of Dan Leckie Way over Lake Ontario, should a significant increase of hourly passenger scenario be realized.

Urban Design and Planning Analysis

As the tunnel is by nature underground and for the private use of BBTCA passengers, it would not provide any significant benefit to local residents or the general public beyond mitigating traffic impacts associated with increased Airport activity. From an urban design perspective, it would generally be more desirable to keep pedestrian activity above ground to assist with animation and placemaking in the public realm.

For example, as a similar way to encourage pedestrian activity and create a linkage between transit and the BBTCA terminal, the weather protection canopy discussed in section 3.1.3 does a better job of improving the public realm and advancing placemaking, ultimately achieving a better balance of benefits between BBTCA users, local residents, and the general public. However, it should be noted that, when compared to the above ground weather canopy, this below grade tunnel option would provide greater amenity to pedestrian BBTCA users during inclement weather. A tunnel would likely provide a stronger incentive to users to use transit, and, have a greater potential to impact modal shift.

Ultimately, the modal shift benefits associated with this recommendation far outweigh any urban design shortcomings. If pursued, plans should ensure that significant attention is paid to the new entrance/exit to the pedestrian tunnel to ensure that it improves the surrounding public realm and street level animation and placemaking. Estimated costs range from \$30-45 million.

This recommendation generally aligns with Official Plan and Central Waterfront Plan policy direction, specifically advancing policy objectives that seek to:

- Make better use of existing infrastructure and services;

- Provide a wide range of sustainable transportation options that reduce the need for auto-use;
- Prioritize transit over expanding road capacity;
- Encourage an urban environment and infrastructure that supports walking; and
- Direct transportation terminals to be retrofitted for intermodal connections when redevelopment occurs.



Figure 20: New Tunnel Pavilion Approximate Location

4.0 Conclusion

The BA Group report identifies a number of existing transportation issues, and recommendations to address these issues that should be considered regardless of the proposed jet activity. If implemented, these improvements would mitigate BBTCA's existing traffic impacts. In combination, they also provide an opportunity to advance planning and urban design and Official Plan policy objectives that generally seek to:

- Improve the public realm;
- Enhance and give priority to the active transportation environment and reduce the need for car use;
- Improve safety and encourage active transportation uses;
- Create linkages between key amenities like the waterfront, parks, and schools;
- Improve the physical and visual continuity of the waterfront corridor;
- Engage in placemaking along streets;
- Prioritize transit improvements over increases in road capacity;
- Improve Queens Quay to meet diverse needs of transit users and pedestrians; and
- Engage in placemaking along streets.

It appears that if existing transportation issues are addressed as recommended by BA Group, proposed jet

activity can reasonably be accommodated by increasing BBTCA shuttle service and a minor modification to the left turn onto Dan Leckie Way from Lake Shore Boulevard (westbound). These recommendations are generally consistent with the City's planning and urban design policy direction. Specifically, expansion of the BBTCA shuttle service would advance policy objectives that seek to prioritize transit improvements over increases in road capacity; and create a sustainable transportation system that gives priority to public and active transportation. Expanding road capacity by improving the left turn onto Dan Leckie Way from the westbound Lake Shore Boulevard does not advance these two objectives but otherwise is consistent with policy direction. Accompanied by pedestrian prioritization initiatives such as improved crossings, modified signal timing, and sidewalk improvements such as a pedestrian colonnade, the groundside transportation context around BBTCA could be improved for airport users and the Bathurst Quay community.

BA Group determined that, ultimately, the key driver of the Airport's transportation impact is the number of hourly flights. Under the existing Tripartite Agreement, which does not specify a permitted number of hourly flights, BBTCA's existing runway could accommodate approximately twice as many flights per hour if other operational constraints are removed. Regardless of the

outcome of current discussions on proposed jet activity, this worst case hourly flight/passenger scenario would result in extensive transportation impacts that could only be accommodated by expanding existing road capacity. The extension of Dan Leckie Way over Lake Ontario to connect to Eireann Quay between the Canada Malting and Waterfront School sites is the only identified infrastructure solution should this undesirable scenario unfold, underlining that the existing transportation network is very constrained and no realistic options exist to expand road capacity. The extension of Dan Leckie over the Lake would directly conflict with a number of City planning and design policy objectives, and would have extensive negative impacts on the public realm and waterfront surrounding BBTCA. Given the costs and magnitude of this scale of intervention BA Group alternatively recommends limiting the number of hourly passengers at the Airport to ensure that transportation impacts can be adequately mitigated with more appropriate and less costly interventions.

