



P.O. Box 1749
Halifax, Nova Scotia
B3J 3A5 Canada

Item No. 12.1.3
Transportation Standing Committee
December 13, 2018

TO: Chair and Members of the Transportation Standing Committee

Original Signed

SUBMITTED BY:

Dave Reage, MCIP, LPP, Director, Halifax Transit

Original Signed

Jacques Dubé, Chief Administrative Officer

DATE: October 31, 2018

SUBJECT: **Mumford Transit Terminal – Replacement Assessment Study**

ORIGIN

- The Halifax Transit *Moving Forward Together Plan*, approved by Regional Council in April 2016, identifies the existing Mumford Terminal as over capacity and due for replacement before additional service can be introduced beyond what is described by the *Plan*.
- At the June 21, 2016 meeting of Regional Council, staff were directed to submit 16 proposed transit projects for cost-shared funding approval under the Public Transit Infrastructure Fund (PTIF). One of the projects proposed was the assessment study for the replacement of Mumford Terminal.
- At the February 21, 2017 meeting of Regional Council, Halifax Regional Council authorized the Mayor and Municipal Clerk to sign the fifteen Contribution Agreements with the Minister of Municipal Affairs, to receive funding for public transit projects approved under the Public Transit Infrastructure Fund (PTIF), including one for the replacement study.

LEGISLATIVE AUTHORITY

Transportation Standing Committee Terms of Reference, section 4(a) which states “The Transportation Standing Committee shall oversee and review the Municipality’s Regional Transportation Plans and initiatives, as follows: overseeing HRM’s Regional Transportation Objectives and Transportation Outcome Areas.”

Halifax Regional Municipality Charter, Power to expend money, subsection 79(1): “The Council may expend money required by the Municipality for (o): public transportation services, and (x) lands and buildings required for a municipal purpose.

Recommendation on page 2.

RECOMMENDATION

It is recommended that the Transportation Standing Committee recommend that Halifax Regional Council:

1. Approve the new location of the Mumford Terminal at the Halifax Shopping Centre as generally shown in Attachment A - Mumford Transit Terminal: Replacement Assessment Study – Final Report;
2. Direct staff to continue to negotiate with Cushman and Wakefield, the Halifax Shopping Centre landowners, for commitment to support the location of the new Mumford Terminal as outlined in this report; and
3. Direct staff to proceed with a revised functional plan once an agreement has been reached with Cushman and Wakefield.

EXECUTIVE SUMMARY

Halifax Transit's Moving Forward Together Plan (MFTP), approved by Regional Council in April 2016, identifies the existing Mumford Terminal as over capacity and due for replacement before additional service can be introduced beyond what is described by the MFTP. The adoption of the MFTP resulted in a phased implementation of a revised transit network (including increased service levels at Mumford Terminal) and new and upgraded transit infrastructure (e.g., passenger amenities, transit terminals, and Park & Ride lots).

In addition to the MFTP, a number of other approved and planned initiatives are shaping growth and development in the Halifax Regional Municipality (HRM) including:

- The *Integrated Mobility Plan* includes direction to ensure that any replacement for Mumford Terminal should be sited in a location that is supportive of transit oriented development, with consideration for integration with potential commuter rail;
- The *Regional Centre Secondary Municipal Planning Strategy* and Land Use By-law for Package A land (which will ultimately be consolidated in the *Centre Plan*) identifies the Mumford lands within the Regional Centre as a Future Growth Node, having the potential to accommodate significant growth due to their size, location, and proximity to services;
- The *Bus Rapid Transit (BRT) Study* is anticipated to include Mumford Terminal as a key station in the BRT network as a key transfer hub for two of the proposed BRT routes; and
- A study currently investigating the viability of a commuter rail service that will potentially operate in close proximity to the existing Mumford terminal.

The existing terminal, while situated in a strategic location for the transit network, currently operates in a state of “over capacity” and has no space to accommodate future growth. It has a small footprint with insufficient space to provide the required amenities for passengers, to meet the accessibility needs of pedestrians, cyclists, and those with mobility aids, and to provide for the bus operating requirements (e.g., access, loading, layover, egress) of an evolving network.

The primary objective of the *Mumford Transit Terminal – Replacement Assessment Study* was to determine the location and prepare a conceptual plan for a new transit terminal. This includes a summary report that HRM and stakeholders can use to guide the integration of transportation and land use planning in the terminal's recommended location. Eleven general candidate locations for a terminal, including five on-street and six off-street options, were identified and evaluated. A strong consensus emerged amongst the technical evaluation results and stakeholder consultation that a new terminal be located in the precinct of the Halifax Shopping Centre.

During the subsequent stages of the project, ten layout options for a new terminal in the precinct were prepared by Dillon and reviewed with both Halifax Transit and HRM staff, and with Cushman and Wakefield,

the owners of the Halifax Shopping Centre. The recommended option, Option #10, is located off street, oriented north-south and sited in the general area between the Annex strip mall (identified as building 'B4' by Cushman and Wakefield) and the existing terminal. It incorporates the following key features:

- 11 bus bays in the terminal (seven standard, four articulated) and one on-street bus bay on southbound Mumford Road immediately far-side of the Romans intersection;
- Sufficient roadway space within the terminal to accommodate bus circulation and six bus layover locations along the terminal periphery;
- Bus-only access/egress from/to Mumford Road at the Romans intersection;
- A sufficiently wide platform to accommodate a building, heated shelters, overhead canopies, and other amenities; and
- Integrated mobility connections (e.g. pedestrian and cycling networks, Kiss & Ride, commuter rail, BRT, etc.).

The layout requires that a new, more direct road connection between the Mumford Road & East Perimeter Road intersection and the Walmart parking lot be constructed to replace the existing circuitous one. This would not be an HRM right-of-way. The road would help create a more logical internal roadway network within the shopping centre lands. Moreover, there are excellent opportunities to redevelop the lands on each of the east and west sides of the proposed terminal layout and to add pedestrian and cycling connections across the CN track and Mumford Road. These are consistent with HRM's urban planning objectives to create a Future Growth Node in the area. Importantly, the north-south orientation of the proposed layout lends itself to practical staging; construction of the terminal could proceed in advance of any redevelopment of the adjacent lands.

Capital cost estimates were prepared for the new Mumford Terminal. The capital costs, in 2018 dollars to an accuracy of $\pm 30\%$, include provision for site preparations, civil works, terminal facilities/amenities, utilities, and engineering/professional services, and are estimated at \$15.4 million. Note that property acquisition and/or property leasing costs are excluded from capital cost estimate.

It is recommended that the municipality continue to negotiate with the Halifax Shopping Centre landowners for commitment to support the location of the new Mumford Terminal as outlined in this report. Once an agreement is reached, a revised functional plan for the facility would be recommended, pending budget availability.

BACKGROUND

Halifax Transit's *Moving Forward Together Plan*, approved by Regional Council in April 2016, identifies the existing Mumford Terminal as over capacity and due for replacement before additional service can be introduced beyond what is described by the MFTP. The MFTP describes this terminal as a key facility in the new network, however existing capacity constraints and minimal passenger amenities reduce the desirability of transferring at this location. The adoption of the MFTP will result in a phased implementation of a revised transit network (including increased service levels at Mumford Terminal) and new and upgraded transit infrastructure (e.g., passenger amenities, transit terminals, and Park & Ride lots). The MFTP tentatively schedules the existing Mumford terminal for replacement in 2020/21, with design work starting in 2019/20.

In February 2017, Regional Council directed staff to enter into a contribution agreement with the federal government, under the Public Transit Infrastructure Fund (PTIF), for a project to determine the future site location and requirements in accommodating existing and projected operational demands at the Mumford Terminal.

In March 2017, RFP 17-030 was awarded to Dillon Consulting (contract value: \$258,525) to prepare the Mumford Transit Terminal - Replacement Assessment Study. This was a three-stage approach to: a)

Identifying minimum site requirements and best practices; b) Identifying and evaluating candidate sites; and c) Provision of a high-level functional design and Class D cost estimates.

On December 5, 2017, Regional Council approved the *Integrated Mobility Plan*, which includes direction to ensure that any replacement for Mumford Terminal should be sited in a location that is supportive of transit-oriented development, with consideration for integration with potential commuter rail.

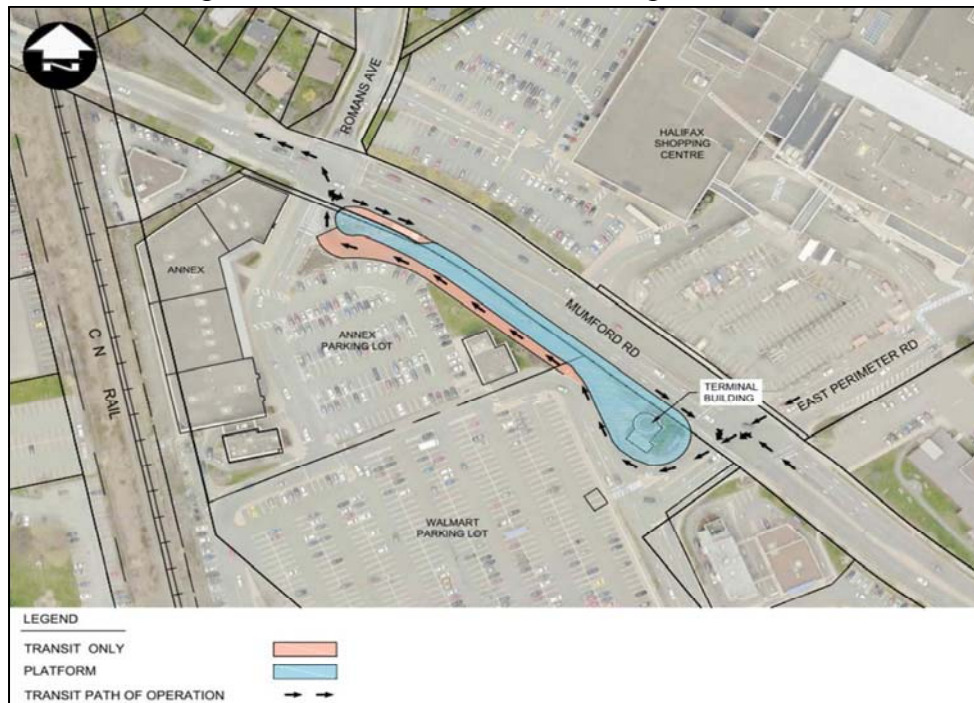
In February 2018, HRM Planning and Development released a draft of the *Regional Centre Secondary Municipal Planning Strategy* and Land Use By-law for Package A lands for public consultation. The Mumford lands were identified within the Regional Centre as a Future Growth Node, which are large sites that are currently largely vacant or contain predominantly single-use development such as shopping centres. These areas have the potential to accommodate significant growth due to their size, location, and proximity to services. These draft documents, which will ultimately be consolidated as the *Centre Plan*, envision these nodes developing in a coordinated manner as complete communities with pedestrian oriented streets, a transportation network that prioritizes pedestrians, cyclists and public transit, a mix of uses and services, a blend of high, mid, and low rise developments, and consideration of on-site transit facilities.

Further, there are two on-going studies being led by Halifax Transit that have implications for Mumford Terminal. The *Bus Rapid Transit (BRT) Study* is anticipated to include Mumford Terminal as a key station in the BRT network as a key transfer hub for two of the proposed BRT routes. The *second* is investigating the viability of a commuter rail service that could potentially operate in close proximity to the existing Mumford Terminal.

Current Mumford Terminal Overview

As shown in *Figure 1: Mumford Terminal – Existing Location*, the existing Mumford Terminal is located on the west side of Mumford Road between East Perimeter Road and Romans Avenue. The Halifax Shopping Centre is located across from the terminal on the east side of Mumford Road. The Annex mall (identified as building 'B4' by Cushman and Wakefield, the owners of Halifax Shopping Centre, and its parking area is located immediately to the west of the terminal. A Walmart store and its parking area are located south of the terminal.

Figure 1: Mumford Terminal – Existing Location



Transit Service

The terminal is currently served by four terminating transit services (Routes 1, 2, 22, and 28) and six flow-through services (Routes 3, 5, 9, 14, 15, and 29). Approximately 350 buses operate through the terminal on weekdays, with 60 buses using the terminal during the busiest hour. Based on available passenger counts, approximately 5,000 boardings take place at the terminal's three bus bays each weekday. Mumford Terminal is the third-busiest passenger activity node in the Halifax Transit network (after the Barrington & Duke terminal in downtown Halifax and the Bridge Terminal in Dartmouth).

Once the MFTP is fully implemented, it is expected that there will be 12 routes using the terminal, including seven terminating routes (Routes 1, 22, 25, 26, 28, 91, 415) and five flow-through routes (Routes 2, 3, 9, 24, 29). When the MFTP is fully implemented, hourly passenger volumes operating through the terminal are expected to be higher than existing.

Limitations of Existing Terminal

For the levels of transit service and accompanying passenger volumes that require accommodation at the facility, the footprint of the existing Mumford Terminal is too small. This has resulted in several challenges:

1. The terminal cannot adequately accommodate bus operations for either the existing network or planned MFTP network. Bus access to the terminal from the Mumford Road and East Perimeter Road intersection is shared with other vehicles. Bus access/egress and bus operations within the terminal are very congested and the number of bus bays (3) is insufficient. For example, unlike in other terminals where there are dedicated bus bays, buses typically have to stop wherever they can which leads to unpredictability for passengers. This is a significant challenge for the provision of an accessible space. There is very limited layover space for buses that terminate at the terminal; these buses are often routed away from the terminal to layover elsewhere;

2. There is insufficient space for passenger waiting amenities at each of the bus bays (e.g. adequate platform widths, heated shelters, information displays, etc.);
3. The terminal building is located some distance away from the passenger boarding areas. Its inconvenient location has resulted in it being underutilized and subject to vandalism. Therefore, the public washrooms have been de-commissioned;
4. Pedestrian access to the terminal is indirect and awkward. Passengers must cross wide vehicular intersections to access the terminal. No hard-surfaced pedestrian link exists between the terminal and the Annex strip mall/parking area on the west side of the terminal;
5. There are poor pedestrian connections between the terminal and existing retail, commercial, and residential developments;
6. The terminal is poorly integrated with other existing or potential transport modes (e.g. cycling, commuter rail link);
7. The landscaping is limited and has deteriorated to the point that tripping hazards exist between the planted areas and the edge of the terminal's concrete platform/sidewalk areas;
8. The level of pedestrian-scale lighting is limited; and
9. There is very little space available to accommodate the needs of transit staff (e.g. bus operator washrooms, supervisor vehicle parking, etc.).

DISCUSSION

The primary objective of the *Mumford Transit Terminal – Replacement Assessment Study* was to determine the location and prepare a conceptual plan for a new transit terminal. The work plan included:

1. A review of the existing Mumford Terminal;
2. Best practices in current bus transit terminal design and a jurisdictional scan;
3. The identification of key attributes required for a new terminal;
4. The development of evaluation criteria for application during the site selection process;
5. The identification and assessment of general location options for a new terminal;
6. A review of the assessment of the general locations and site selection criteria through a public and stakeholder engagement process;
7. The development and assessment of layout options for a new terminal at the recommended general location;
8. The preparation of a high-level functional plan and capital cost estimate for the recommended layout of the terminal at the recommended site; and
9. The preparation of a project report for use by HRM and stakeholders during subsequent planning and development of a new terminal.

The consultant's findings and recommendations are appended to this report in Attachment A – Mumford Transit Terminal: Replacement Opportunities Assessment Study – Final Report. An overview of the methodology and key findings is discussed below under Analysis.

Analysis

Stage 1: Collecting background information, best practice scan, and public engagement – round one. During the initial stages of the project, Dillon reviewed industry best practice, interviewed Halifax Transit and Halifax Regional Municipality staff, and undertook an initial round of public and community stakeholder engagement to identify key attributes desired for a new terminal.

Stage 2: Identification of candidate general locations. In consultation with Halifax Transit and HRM staff, a study area within which a new terminal could be sited was developed. For the new terminal to support both the existing and future MFTP route networks and for it to be integrated with a potential Regional District Growth Centre in the west end, an area that included potential locations within an approximate 1.5 kilometre radius of the existing terminal was defined.

Eleven general candidate locations for a terminal, including five on-street and six off-street ones, were identified and evaluated on the general themes of:

a) Public Transportation Requirements

- Proximity to existing and future *MFTP* transit networks;
- Proximity to potential BRT, Transit Priority, and commuter rail corridors;
- Capacity to accommodate bus operations and passenger facilities; and
- Ease of bus access/egress.

b) Integrated Transportation Modes

- Connections to pedestrian and cycling network; and
- Pedestrian environment, crossing distances, and safety.

c) Urban Development Potential

- Proximity to retail/office/service/residential land uses;
- Potential for redevelopment and intensification;
- Potential for community amenities; and
- Need for property acquisition.

The highest-ranked candidate locations carried forward to the short list analysis included:

- Location 9 – Expansion on Existing Site;
- Location 4 – Mumford Road Opposite Sears; and
- Location 5 – Mumford Road Opposite Sobeys.

These are located in an area that includes the Halifax Shopping Centre immediately east of Mumford Road and the conglomeration of retail stores, offices, and services immediately west of Mumford (see *Figure 2: Highest-Ranked Candidate Locations*). These lands are collectively managed by Cushman and Wakefield (previously 20Vic) the owner of the Halifax Shopping Centre.

Figure 2: Highest-Ranked Candidate Locations



Stage 3: Evaluation by HRM staff. As part of the evaluation, staff from HRM Planning and Development provided qualitative commentary on the general candidate locations for the terminal based on existing policy, plans, and future potential.

From an urban design and planning perspective, the consensus amongst HRM Urban Planning & Development staff is that a new transit terminal is best located in the precinct of the Halifax Shopping Centre. That area currently has a mix of land uses, is designated as a Future Growth Node in the draft *Regional Centre Secondary Municipal Planning Strategy* and Land Use By-law for Package A land (which will ultimately be consolidated in the *Centre Plan*), has high potential for intensification, is well connected to nearby development, and provides a viable site for improved integration with active transportation

Stage 4: Public engagement – Round two. Round two of the project’s public engagement program included two Neighbourhood Open Houses, a meeting with stakeholders, and an online website on HRM’s Shape Your City portal containing project information and a survey tool. Further information is in the Community Engagement section of this report.

Stage 5: Layout options for a new terminal - Short list evaluation. For the evaluation of the short-listed locations, a similar set of themes to the general candidate locations were used, however the evaluation looked at each metric with more detail. The set of criteria used were:

a) Transit Operational factors:

- Provide sufficient bus bay capacity;
- Provide sufficient space for bus layovers;
- Provide efficient access/egress/internal circulation for buses;
- Minimize impacts on bus running times;
- Provide sufficient space for passenger amenities; and

- Consider impacts of grades and elevations on pedestrian and bus movements.
- b) Transportation system factors:
- Provide for safe pedestrian access and safety;
 - Provide connectivity with pedestrian/cycling networks;
 - Consider integration with future BRT/commuter rail services; and
 - Minimize impacts on traffic operations, vehicular access, and parking.
- c) Urban development factors:
- Consider opportunities for intensification and redevelopment;
 - Improve pedestrian environment on Mumford Road;
 - Improve pedestrian connections to existing development; and
 - Provide for logical implementation staging.

A total of ten terminal layout options were developed, with variations in the extent to which each could comply with these factors. Layout options 1 through 6 were initially prepared. After review, Halifax Transit and HRM staff expressed preferences for attributes featured in Options 2 and 5. Dillon further collaborated with the staff and Cushman and Wakefield to iteratively develop Options 7 through 10, with each subsequent option building on the previous ones.

Each of these options is discussed in detail in Attachment A – Mumford Transit Terminal: Replacement Opportunities Assessment Study – Final Report. This includes an overview of each option, location, and strengths and weaknesses.

Recommended Layout Option

Option 10 (see *Figure 3: Recommended Layout Option* below) has been identified as the preferred option.

Figure 3: Recommended Layout Option



This option incorporates the following key features:

- Eleven bus bays in the terminal (seven standard, four articulated which can accommodate 60-foot buses) and one on-street bus bay on southbound Mumford Road immediately far-side of the Romans intersection;
- Sufficient roadway space within the terminal to accommodate bus circulation and six bus layover locations along the terminal periphery;
- Bus-only access/egress from/to Mumford Road to the Romans intersection;
- A sufficiently wide platform to accommodate a building, heated shelters, overhead canopies, other amenities; and
- Integrated mobility connections (e.g. pedestrian and cycling networks, Kiss & Ride, commuter rail, bus rapid transit, etc.).

Some of the key strengths of this option included:

- Provides required capacity for articulated and standard bus operations;
- Provides space for required amenities;
- Efficient bus access/egress paths;
- Improve connections for pedestrians/cyclists;
- Possible integration with commuter rail;
- Provides Kiss & Ride area on Mumford Road;
- Excellent potential for intensification and redevelopment;
- Simpler access/egress for non-transit vehicles at Mumford and East Perimeter Road; and
- Terminal can be constructed in a phased in approach that would mitigate disruption to surrounding area.

Some of the challenges of this option included:

- Lengthy pedestrian crosswalk on south side of Mumford and Romans intersection; and
- Displaces some parking in the Walmart lot.

This layout requires that a new, more direct road connection between the Mumford and East Perimeter Road intersection and the Walmart parking lot be constructed to replace the existing circuitous one. This would help create a more logical internal roadway network within the shopping centre lands.

In line with a number of Council priority areas, including Economic Development, Healthy Livable Communities, and Transportation, there are excellent opportunities to redevelop the lands on each of the east and west sides of the proposed terminal layout and to add pedestrian and cycling connections across the CN track and Mumford Road. These are very consistent with HRM’s urban planning objectives, and the proposed *Centre Plan*, to create a Regional District Growth Centre in the area. Importantly, the north-south orientation of the proposed layout lends itself to practical staging; construction of the terminal could proceed in advance of any redevelopment of the adjacent lands.

Functional Design Specifications

It is important that the new Mumford Terminal exhibit industry best practice in its design, incorporates the specific needs of Halifax Transit, and includes key features identified by transit users. The high-level functional design requirements and the major features of the design are listed in further detail in Attachment C – Functional Design Drawings.

Next Steps

If directed by Regional Council, staff will continue discussions with Cushman and Wakefield, who have thus far participated in all engagement and feedback sessions, as to a preferred design option. Cushman and Wakefield have stated their preference is for the new site to remain on Halifax Shopping Centre property and are open to discussions related to this site.

Staff are recommending direction to continue dialogue with Cushman and Wakefield and enter into an agreement for a preferred option, which will inform an updated terminal functional and detailed design based on the preferred option.

FINANCIAL IMPLICATIONS

Detailed capital costs are found in Attachment A – Mumford Transit Terminal: Replacement Opportunities Assessment Study – Final Report.

Generally, the amounts anticipated for construction of the new terminal are (in 2018 dollars, within 30%):

Item	Cost
Site preparations (Removals, demolitions)	\$314,000
Civil works (Excavations, pavements, retaining wall, concrete foundations)	\$5,919,000
Terminal facilities and amenities (Building and items like signage, tiles, canopies/shelters, benches, etc.)	\$3,363,000
Utilities (Traffic signals, lighting, land drainage, water sewer, etc.)	\$695,000
Total before contingency	\$10,291,000
Contingency (30%)	\$3,087,000
Total after contingency	\$13,087,000
Engineering and Professional services (15%)	\$2,007,000
TOTAL CAPITAL COST ESTIMATE	\$15,385,000

Functional design costs are estimated at \$250,000-\$300,000 and will be budgeted in a future budget year. This would be funded from Project CM90001 – Terminal Recapitalization, subject to Regional Council approval. Capital funding options range from debenture proceeds to federal cost-sharing opportunities and will be evaluated in future budget processes as project specifics and estimates become clearer.

RISK CONSIDERATION

There were no risks identified associated with pursuing the recommendations in this report, specifically, to continue to dialogue with Cushman and Wakefield and prepare a final functional design. Ultimately, if a new terminal is not constructed, there is a risk that the existing terminal will not be able to adequately accommodate future bus operations from service planning and the MFTP network. The current number of bus bays (three) already provides for inefficiencies at the terminal within the existing service.

COMMUNITY ENGAGEMENT

Stakeholder and public consultation was completed to develop an understanding of the preference for the terminal location and amenities, as well as the strengths and weaknesses of candidate sites. An initial round of public and community stakeholder engagement was held to identify key attributes and general locations for the new terminal. Once a short-list of potential sites was developed (*Stage 3* in the Discussion section), Round 2 of the project's public engagement program included two Neighbourhood Open Houses, a meeting with stakeholders, and an online website on HRM's Shape Your City portal containing project information and a survey tool.

There was strong support for the proposed evaluation criteria with over 90% of respondents in agreement with them. Likewise, over 80% of respondents preferred one of the locations in the precinct of the Halifax Shopping Centre as the optimal site location. About half of the respondents preferred an expanded terminal on the existing site.

Full details of the engagement sessions are presented in Attachment B: Mumford Terminal Location Opportunities Study – What We Heard Report.

ENVIRONMENTAL IMPLICATIONS

There are no immediate environmental implications associated with the report.

Generally, the new terminal presents an opportunity to develop the concept of Integrated Mobility and Transit Oriented Development (TOD) at and contiguous to the recommended site. It will intensify development at the site, provide a mix of uses, provide convenient access to and connections amongst sustainable travel modes, and provide a human-scale, walkable, and safe urban environment. As such, Halifax Transit has been working closely with Planning & Development to ensure an integrated approach is taken. TOD can integrate HRM's city-building and intensification objectives with the development of a new transportation facility and potentially serve as an illustrative case study for reference in other locales in the region. Further, it will result in higher ridership and promote less auto dependency, which will reduce greenhouse gas emissions.

ALTERNATIVES

Regional Council could direct staff not to proceed with the negotiations. This is not recommended as this is an important step in the eventual replacement of the terminal. The limitations with the current terminal described in this report would likely become more severe over time including continued operational challenges and increased risk to passenger safety and comfort.

ATTACHMENTS

Attachment A – Mumford Transit Terminal: Replacement Opportunities Assessment Study – Final Report

Attachment B - Mumford Terminal Location Opportunities Study – What We Heard Report

Attachment C – Functional Design Drawings

A copy of this report can be obtained online at or by contacting the Office of the Municipal Clerk at 902.490.4210.

Report Prepared by: Derek Nawrot, Coordinator, Project Planning, Halifax Transit (902-490-5956)

Report Approved by: Patricia Hughes, Manager, Planning & Scheduling, Halifax Transit (902-490-6287)

Financial Approval by: Jerry Blackwood, Acting Director of Finance and Asset Management/CFO, 902.490.6308



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HALIFAX REGIONAL MUNICIPALITY

**Mumford Transit Terminal:
Replacement Opportunities
Assessment Study**

Final Report

July 6, 2018

Derek Nawrot
Coordinator, Project Planning
Halifax Transit
P. O. Box 1749
Halifax, Nova Scotia
B3J 3A5

***Mumford Transit Terminal: Replacement Opportunities Assessment Study
Final Report***

Dear Mr. Nawrot:

Dillon is pleased to submit the Final Report for the *Replacement Opportunities Assessment Study for Mumford Transit Terminal*.

The report includes a review of the existing terminal, the identification of key attributes required for a new terminal, summarizes the identification and evaluation of alternative locations and site layouts, and documents the functional design and estimates the capital costs for a new terminal at the recommended site.

We appreciate the assistance that you and your colleagues at HRM provided our consulting team during the course of the project. We are available at your convenience to respond to any questions you may have.

Yours sincerely,

DILLON CONSULTING LIMITED

Adam Lanigan, P.Eng.
Associate

AL:jes

Our file: 17-5560

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B	Public Engagement Report

Executive Summary

A new Mumford Transit Terminal (or Terminals¹) is a key asset and city-building opportunity identified in various plans and initiatives that are shaping growth and development in the Halifax Regional Municipality (HRM):

- The *Regional Plan* and *Centre Plan* identify a revitalized terminal as a key component in the development of a Future Growth Node in the west end;
- The *Integrated Mobility Plan (IMP)* has recently been adopted to encourage a broader choice of urban mobility options focused on public transit, active transportation, ridesharing, and newly-developing sustainable services, with transit terminals playing a major role in the integration of transportation services and land use planning;
- The adoption of the *Moving Forward Together Plan (MFTP)* will result in a phased implementation of a revised transit network (including increased service levels at a new Mumford Terminal), of new and upgraded transit infrastructure (e.g., passenger amenities, transit terminals, park and ride lots, garage expansions), and of transit priority measures to increase operating speeds and improve service reliability;
- A *Bus Rapid Transit (BRT) Study* has recently been completed that includes Mumford Terminal as a key station in the BRT network;
- A *Commuter Rail Study* is currently investigating the viability of a rail service that will potentially operate in close proximity to the existing transit terminal; and
- The *Making Connections: 2014 – 2019 Halifax Active Transportation Priorities Plan* includes recommendations for improved connectivity between the active transportation network and transit terminals in the region.

The existing terminal, while situated in a strategic location for the new network, currently operates in a state of “over capacity” and has no space to accommodate future growth. It has a small footprint with insufficient space to provide the required amenities for passengers, to meet the accessibility needs of pedestrians, cyclists, and those with mobility aids, and to provide for the bus operating requirements (e.g., access, loading, layover, egress) of an evolving network.

The transit-related requirements for the new terminal, while important, are not the only relevant elements. A new terminal presents a superb opportunity to develop the concept of *Integrated Mobility and Transit Oriented Development (TOD)* at and contiguous to the recommended site. This approach can integrate HRM’s city-building and intensification objectives with the development of a new transportation facility and potentially serve as an illustrative case study for reference in other locales in the region.

¹ While the feasibility of a network of smaller inter-connected terminals was considered during the course of the study, the terminal is referred to in the singular in this report.

The primary objective of the assignment was to prepare a functional plan for a new transit terminal, including a summary report that HRM and stakeholders can use to guide the integration of transportation and development planning in the terminal’s recommended location.

The work plan included a review of the existing Mumford Terminal, the identification of key attributes required for a new terminal, an assessment of general location options, a public and stakeholder engagement process, an assessment of layout options for a new terminal at the recommended general location, and the preparation of a functional plan and capital cost estimate for the recommended layout of the terminal at the recommended site.

During the initial stages of the project, Dillon reviewed industry best practice, interviewed Halifax Transit staff, and undertook an initial round of public engagement to identify key attributes desired for a new terminal (see Table 1 in the report).

In consultation with Halifax Transit and HRM staff, a study area within which a new terminal could be sited was developed. For the new terminal to support both the existing and future MFTP route networks and for it to be integrated with a potential Regional District Growth Centre in the west end, an area that included potential locations within an approximate 1.5 kilometre radius of the existing terminal was defined.

Eleven candidate general locations for a terminal, including 5 on-street and 6 off-street ones, were identified and evaluated.



The candidate general locations for a new terminal were assessed from three perspectives: the Dillon project team undertook a technical analysis using a two-stage evaluation framework; Halifax Transit and

HRM staff (including personnel from Planning & Development and Transportation & Public Works) provided a qualitative assessment of the candidate locations; and, in Round 2 of the public engagement program, members of the public and community stakeholders reported their preferences for the general location of a new terminal.

A strong consensus emerged amongst the technical evaluation results, the judgement of Halifax Transit and HRM staff, and public/stakeholder preferences that a new terminal be located in the Halifax Shopping Centre Precinct.

During the subsequent stage of the project, ten layout options for a new terminal in the precinct were prepared by Dillon and reviewed with Halifax Transit and HRM staff, and with the owners of the Halifax Shopping Centre.

The recommended option, oriented north-south and sited in the general area between the Halifax Shopping Centre Annex strip mall and the existing terminal (Appendix A, Figure 9), incorporates the following key features:

- 11 bus bays in the terminal (7 standard, 4 articulated) and 1 on-street bus bay on southbound Mumford Road immediately far-side of the Romans intersection;
- Sufficient roadway space within the terminal to accommodate bus circulation and 6 bus layover locations along the terminal periphery;
- Bus-only access/egress from/to Mumford Road at the Romans intersection;
- A sufficiently wide platform to accommodate a building, heated shelters, overhead canopies, and other amenities; and
- Integrated mobility connections (e.g. pedestrian and cycling networks, Kiss & Ride, commuter rail, BRT, etc.).

The layout requires that a new, more direct roadway ramp between the Mumford & East Perimeter Road intersection and the Walmart parking lot be constructed to replace the existing circuitous one. This would help create a more logical internal roadway network within the shopping centre lands.

Moreover, there are excellent opportunities to redevelop the lands on each of the east and west sides of the proposed terminal layout and to add pedestrian and cycling connections across the CN track and Mumford Road. These are consistent with HRM's urban planning objectives to create a *Future Growth Node* in the area. Importantly, the north-south orientation of the proposed layout lends itself to practical staging; construction of the terminal could proceed in advance of any redevelopment of the adjacent lands.

A functional design and a capital cost estimate were prepared for the new Mumford Terminal. The functional design drawings are contained in Appendix A. The capital costs, in 2018 dollars to an accuracy of $\pm 30\%$, include provision for site preparations, civil works, terminal facilities/amenities, utilities, and engineering/professional services, and are estimated at \$15.4 million. Note that property acquisition and/or property leasing costs are NOT included in this capital cost estimate.

1.0 Introduction and Background

Dillon Consulting Limited (Dillon) was retained by the Halifax Regional Municipality (HRM) to conduct a Replacement Opportunities Assessment Study for the Mumford Transit Terminal.

A new Mumford Transit Terminal (or Terminals²) is a key asset and city-building opportunity identified in various plans and initiatives that are shaping growth and development in the Halifax Regional Municipality (HRM):

- The *Regional Plan* and *Centre Plan* identify a revitalized terminal as a key component in the development of a Future Growth Node in the west end;
- The *Integrated Mobility Plan (IMP)* has recently been adopted to encourage a broader choice of urban mobility options focused on public transit, active transportation, ridesharing, and newly-developing sustainable services, with transit terminals playing a major role in the integration of transportation services and land use planning;
- The adoption of the *Moving Forward Together Plan (MFTP)* will result in a phased implementation of a revised transit network (including increased service levels at a new Mumford Terminal), of new and upgraded transit infrastructure (e.g., passenger amenities, transit terminals³, park and ride lots, garage expansions), and of transit priority measures to increase operating speeds and improve service reliability;
- A *Bus Rapid Transit (BRT) Study* has recently been completed that includes Mumford Terminal as a key station in the BRT network;
- A *Commuter Rail Study* is currently investigating the viability of a rail service that will potentially operate in close proximity to the existing transit terminal; and
- The *Making Connections: 2014 – 2019 Halifax Active Transportation Priorities Plan* includes recommendations for improved connectivity between the active transportation network and transit terminals in the region.

The existing Mumford Terminal is a key facility in both the existing and in the new MFTP network. The new network will require that about a dozen Corridor, Local, and Rural routes be served at the new terminal, with peak bus volumes of 60 buses per hour. A phased implementation of a BRT network may result in further service operating through the terminal.

² While the feasibility of a network of smaller inter-connected terminals was considered during the course of the study, the terminal is referred to in the singular in this report.

³ Part 5 of the MFTP makes specific reference to Mumford Terminal:

The existing Mumford Terminal is over capacity, and needs to be replaced before any additional service can be introduced beyond what is described by this plan. This terminal is a key facility in the new network, and existing capacity constraints and minimal passenger amenities reduce the desirability of transferring at this location. The terminal is tentatively scheduled for replacement in 2020/21, with design work starting in 2019/20.

The existing terminal, while situated in a strategic location for the new network, currently operates in a state of “over capacity” and has no space to accommodate future growth. It has a small footprint with insufficient space to provide the required amenities for passengers, to meet the accessibility needs of pedestrians, cyclists, and those with mobility aids, and to provide for the bus operating requirements (e.g., access, loading, layover, egress) of an evolving network.

The transit-related requirements for the new terminal, while important, are not the only relevant elements. A new terminal presents a superb opportunity to develop the concept of *Integrated Mobility* and *Transit Oriented Development (TOD)* at and contiguous to the recommended site. This approach can integrate HRM’s city-building and intensification objectives with the development of a new transportation facility and potentially serve as an illustrative case study for reference in other locales in the region.

An *Integrated Mobility* approach will intensify development at the site, provide a mix of uses, provide convenient access to and connections amongst sustainable travel modes, and provide a human-scale, walkable, and safe urban environment.

2.0 Report Organization

This remainder of this report is organized as follows:

- **Section 3** outlines the **project objectives** and **approach** used for the study;
- **Section 4** discusses the **existing Mumford Terminal**, including the facility's location and layout, the current and future transit service levels at the terminal, and the current limitations of the facility;
- **Section 5** summarizes **key attributes for a new terminal**, informed by industry best practice, suggestions received during the public and stakeholder engagement conducted during the course of the study, and input from Halifax Transit and HRM staff;
- **Section 6** identifies and summarizes the evaluation of **11 candidate general locations** for a new terminal;
- **Section 7** outlines and assesses **10 terminal layout options** for a new facility in the preferred general location identified in Section 6;
- **Section 8** outlines the **functional design** for the preferred terminal layout option identified in Section 7, including functional design requirements, functional design drawings, and a capital cost estimate; and
- **Section 9** discusses **next steps** for HRM and stakeholders in the planning and development of the new Mumford Terminal.

3.0 Project Objective and Approach

The primary objective of the assignment was to prepare a functional plan for a new transit terminal, including a summary report that HRM and stakeholders can use to guide the integration of transportation and development planning in the terminal's recommended location. The work plan included:

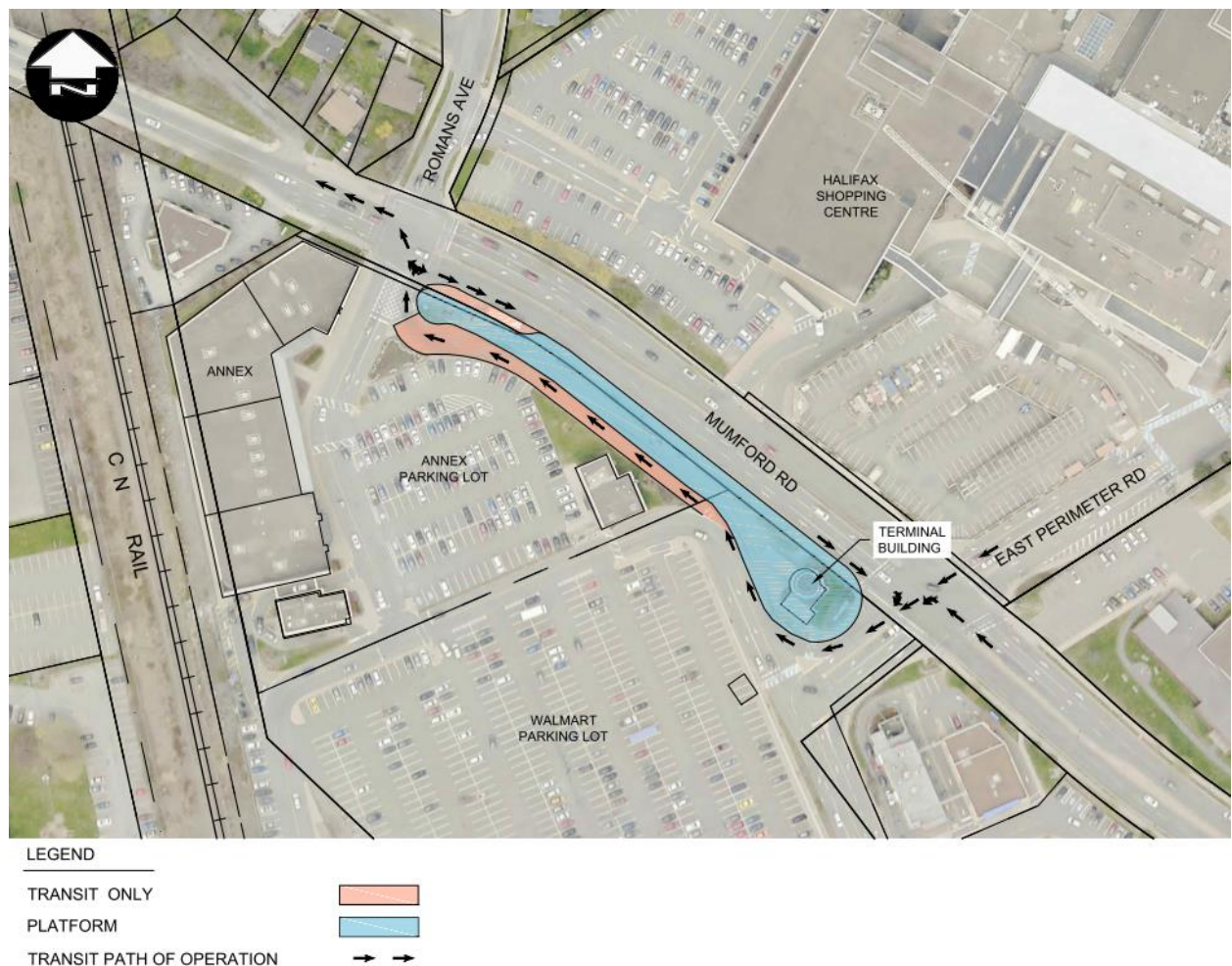
1. A review of the existing Mumford Terminal;
2. The identification of key attributes required for a new terminal;
3. The development of evaluation criteria for application during the site selection process;
4. The identification and assessment of general location options for a new terminal;
5. A review of the assessment of the general locations through a public and stakeholder engagement process;
6. The development and assessment of layout options for a new terminal at the recommended general location;
7. The preparation of a functional plan and capital cost estimate for the recommended layout of the terminal at the recommended site; and
8. The preparation of a project report for use by HRM and stakeholders during subsequent planning and development of the new terminal.

4.0 Existing Mumford Terminal

4.1 Location and Layout

As shown in **Figure 1**, the existing Mumford Terminal is located on the west side of Mumford Road between East Perimeter Road and Romans Avenue. The Halifax Shopping Centre is located across from the terminal on the east side of Mumford Road. The “Annex” strip mall and its parking area is located immediately to the west of the terminal. A Walmart store and its parking area are located south of the terminal.

Figure 1: Mumford Terminal - Existing Location



The terminal includes the following features:

- Three bus bays with bus stop poles/signs (two northbound within the terminal, one southbound on Mumford Road);
- One northbound passenger loading lane and one northbound bypass lane;
- A short southbound passenger loading lane on Mumford Road;
- Four small unheated passenger shelters (each with an interior bench and an exterior waste receptacle);
- Four benches;
- One free-standing transit information display board;
- A building at the south end of the terminal containing an interior waiting area and de-commissioned public washrooms;
- A canopy adjacent to the building that covers benches and recycling receptacles;
- Some pedestrian-scale lighting;
- Some landscaping; and
- A transit priority signal at the Mumford & Romans intersection for buses exiting the terminal.

The photos in **Figure 2**, **Figure 3**, **Figure 4**, and **Figure 5** illustrate features of the existing terminal.

Figure 2: Mumford Terminal - Looking North from East Perimeter Road



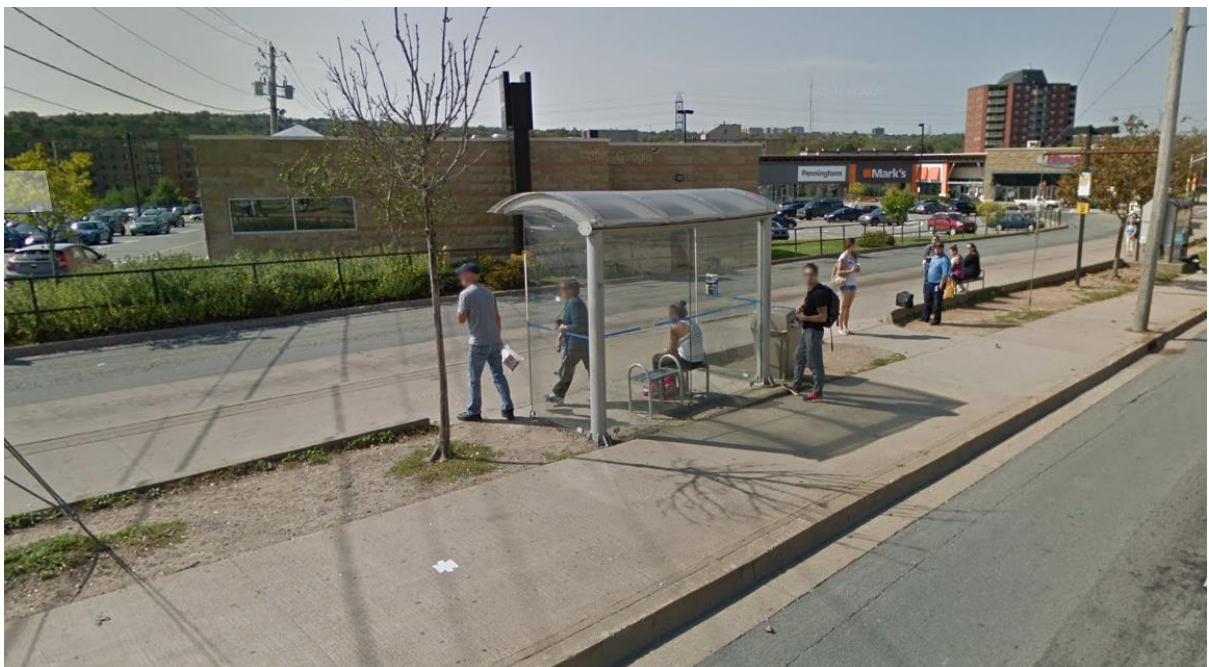
Figure 3: Mumford Terminal - Looking South from Romans Avenue



Figure 4: Building and Canopy Area at South End of Mumford Terminal (looking southeast)



Figure 5: Typical Waiting Area at Bus Stop (looking northwest from Mumford Road)



4.2 Transit Service at Mumford Terminal

The terminal is oriented in a general “south to north” alignment. The bus operating paths are illustrated in Figure 1. Buses enter the terminal from the intersection of Mumford Road & East Perimeter Road via a shared roadway that approaches the south end of the terminal. Buses exit the northbound part of the terminal on a transit priority signal at the Mumford & Romans intersection to proceed either north or south on Mumford Road. Buses access the southbound bus bay that is located on Mumford Road directly from southbound Mumford Road or after exiting the northbound part of the terminal at the Romans intersection.

The terminal is currently served by 2 terminating transit services (Routes 1 and 22) and 9 flow-through services (Routes 2, 4, 5, 9, 14, 15, 23, 29, and 52). Approximately 350 buses operate through the terminal on weekdays, with 60 buses using the terminal during the busiest hour. Based on available passenger counts, approximately 9,300 boardings and alightings take place at the terminal’s three stops each weekday. Mumford Terminal is the third-busiest passenger activity node in the Halifax Transit network (after the Scotia Square Terminal in downtown Halifax and the Bridge Terminal in Dartmouth).

When the MFTP route network is in place, it is expected that 7 terminating transit services (Routes 1, 9, 22, 25, 26, 31, and 91) and 5 flow-through services (Routes 2, 3, 24, 29, and 415) will use the new terminal. Based on the draft recommendations of the *Bus Rapid Transit Study*, two BRT routes would also use the new terminal. Hourly bus volumes operating through the terminal are expected to be somewhat higher than current bus volumes.

4.3 Limitations of Existing Mumford Terminal

For the levels of transit service and accompanying passenger volumes that require accommodation at the facility, the footprint of the existing Mumford Terminal is too small. This has resulted in several difficulties:

1. The terminal cannot adequately accommodate bus operations for either the existing network or the planned MFTP network. Bus access to the terminal from the Mumford & East Perimeter Road intersection is shared with other vehicles. Bus access/egress and bus operations within the terminal are very congested. The number of bus bays (3) is insufficient. There is very limited layover space for buses that terminate at the terminal; these buses are often routed away from the terminal to layover elsewhere. These “out-of-terminal” layovers create scheduling inefficiencies, complicate bus operations, and inconvenience bus operators (e.g. unable to utilize layovers or to attend to personal needs);
2. There is insufficient space to add waiting amenities at each of the bus bays (e.g. adequate platform widths, heated shelters, information displays, etc.) and, at the same time, maintain accessibility for those using mobility aids;

3. The terminal building is located some distance away from the passenger boarding areas. Its inconvenient location has resulted in it being underutilized and subject to vandalism. As a consequence, the public washrooms in the building have been de-commissioned;
4. Pedestrian access to the terminal is indirect and awkward. Passengers must cross wide vehicular intersections to access the terminal. No hard-surfaced pedestrian link exists between the terminal and the Annex strip mall/parking area on the west side of the terminal;
5. There are poor pedestrian connections between the terminal and existing retail, commercial, and residential developments;
6. The terminal is poorly integrated with other transport modes (e.g. cycling, potential commuter rail link);
7. The landscaping is limited and has deteriorated to the point that tripping hazards exist between the planted areas and the edge of the terminal's concrete platform/sidewalk areas;
8. Compliance with the principles of *Crime Prevention Through Environmental Design (CPTED)* is limited. At night, for example, the level of pedestrian-scale lighting is low and the lack of "natural surveillance" can create feelings of isolation amongst customers; and
9. There is very little space available to accommodate the needs of transit staff (e.g. bus operator lounge/washrooms, supervisor vehicle parking, etc.).

5.0 Key Attributes for a New Terminal

During the initial stages of the project, Dillon reviewed industry best practice, interviewed Halifax Transit staff, and undertook an initial round of public engagement to identify key attributes desired for a new terminal.

Table 1 lists the terminal attributes identified as being important for a new terminal facility on the Halifax peninsula.

Table 1: Key Attributes for a New Transit Terminal

Source	Key Attributes
<p>Industry Best Practice</p>	<ul style="list-style-type: none"> • A high standard of design that conveys a sense of permanence (e.g. weather-protected waiting facilities, transit passenger information, wayfinding systems, signage, landscaping, aesthetics, etc.) • A variety of transit service types and destinations • Sufficient space for bus operational requirements (e.g. dedicated bus access/egress, bus bays, layover areas, etc.) • Integration with active transportation modes with bicycle parking and direct pedestrian connections • Integration with existing and future development • Safe and direct pedestrian access, with a high standard of pedestrian-scale lighting • Universal design to provide access for all • Convenient access to bicycle parking
<p>Public Engagement⁴</p>	<ul style="list-style-type: none"> • Indoor (i.e. weather-protected) passenger waiting areas, including information kiosks and public washrooms • Heated shelters, benches, and waste receptacles on the platform • Canopies over the platform • Comprehensive transit information and wayfinding signage (e.g. real-time electronic displays of bus departures, bus bay and route signage, terminal identification signage) • High standard of maintenance and cleanliness
<p>Halifax Transit Staff</p>	<ul style="list-style-type: none"> • A minimum of 10 bays for boarding and alighting of passengers • Separate area within the terminal for bus layovers • Central platform layout with saw tooth bays for efficient bus operations and passenger safety • One single terminal (rather than multiple ones) for ease of operations and scheduling • Canopies over the platform • Transit signal priority for bus egress from the terminal

⁴ Round 1 of the project’s public engagement program included a user-intercept survey (458 respondents) conducted at Mumford Terminal between 7:00 a.m. and 6:00 pm on each of Thursday, June 22 and Saturday, June 24, 2017. Respondents were surveyed about their opinions of the existing terminal and about their preferences for amenities in a new terminal. The public engagement report is attached in Appendix B.

Source	Key Attributes
	<ul style="list-style-type: none"> • Bus operator lounge and washrooms • Indoor customer waiting area, washrooms, drinking fountains, and outlets for charging digital devices • Information kiosks (indoor and on the platform) • Real-time electronic displays of bus departures (indoor and outdoor) • Heated shelters, benches, and waste receptacles on the platform • Space for ticket vending machines on the platform • Bicycle lockers and/or bicycle racks with canopy • Direct convenient pedestrian links to neighbouring development • Landscaping and pedestrian-scale lighting • CCTV video surveillance and emergency telephone • Drop-off area for kiss & ride, taxis, etc.

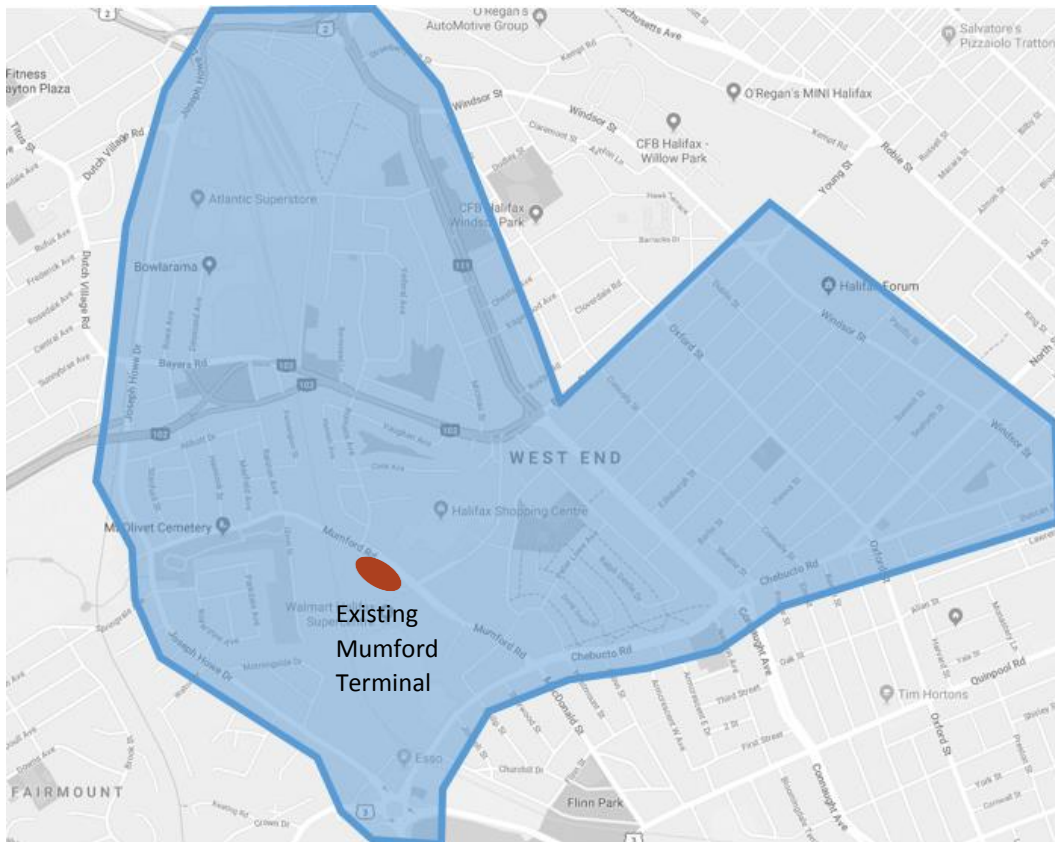
Note that, based on discussions with HRM staff and on input received during the public consultation, the provision of Park & Ride spaces is not considered a key attribute for a new terminal in the central part of Halifax. While Park & Ride can be an effective strategy to intercept automobile travel at transit terminals in lower-density suburban locations, the redevelopment and intensification of lands adjacent to a new transit terminal is considered a higher priority in the Halifax peninsula area.

6.0 Potential Locations for a New Terminal

6.1 Identification of Candidate General Locations

In consultation with Halifax Transit and HRM staff, a study area within which a new terminal could be sited was developed. For the new terminal to support both the existing and future MFTP route networks and for it to be integrated with a potential Future Growth Node in the west end, it was important that it be located within the boundary shown in **Figure 6**.

Figure 6: Study Area for New Terminal



The following general guidelines were used to identify a preliminary list of candidate general locations for the new terminal within the study area:

- Sufficient land area to accommodate the required terminal footprint;
- The potential to re-purpose a portion of the public right-of-way for the terminal;
- Proximity to major transportation corridors;
- Proximity to potential future BRT and commuter rail services;
- Proximity to a mix of land uses (e.g. residential, commercial, retail, services);
- Proximity to existing or planned higher-density development; and

- Ease of servicing by the existing municipal service and utility networks (e.g. water, sewer, electrical, etc.)

The list of candidate general locations for a terminal included 5 on-street ones (where a terminal is located primarily within the public street/boulevard right-of-way) and 6 off-street ones (where a terminal is located primarily on property that is not within the public street/boulevard right-of-way). These are shown in **Figure 7**.

Figure 7: Candidate General Locations for New Terminal



6.2 Evaluation of Candidate General Locations

The candidate general locations for a new terminal were assessed from three perspectives. The Dillon project team undertook a technical analysis using an evaluation framework described below. Halifax Transit and HRM staff provided a qualitative assessment of the candidate locations. In Round 2 of the public engagement program, members of the public and stakeholders reported their preferences for the general location of a new terminal. Each of these assessments is described in turn.

6.2.1 Technical Evaluation

The technical evaluation of the candidate general locations was undertaken in two stages. The initial step assessed the 11 candidate locations to create a short list for further detailed analysis in a second stage.

The evaluation criteria, developed in advance of the assessment of the candidate locations, are shown in the evaluation tables below. In general, however, they focused on the following themes:

1. Public Transit Requirements
 - Proximity to existing and future MFTP transit networks;
 - Proximity to potential BRT, transit priority corridors, and commuter rail corridors;
 - Capacity to accommodate bus operations and passenger facilities; and
 - Ease of bus access/egress.
2. Integrated Mobility
 - Connections to pedestrian and cycling network; and
 - Pedestrian environment, crossing distances, and safety.
3. Urban Development Potential
 - Proximity to retail/office/service/residential land uses;
 - Potential for redevelopment and intensification;
 - Potential for community amenities; and
 - Need for property acquisition.

A three-colour point scale is used in the evaluation tables below to show how each criterion was ranked for each option:

Rating	Colour	Score
Good		2
Acceptable		1
Poor		0

6.2.1.1 Initial Stage Evaluation

Table 2 summarizes the initial stage evaluation of the 11 candidate sites. Note that, for location 6 (Bayers Road & Connaught Avenue), options on both the northwest and southeast corners of the intersection were assessed.

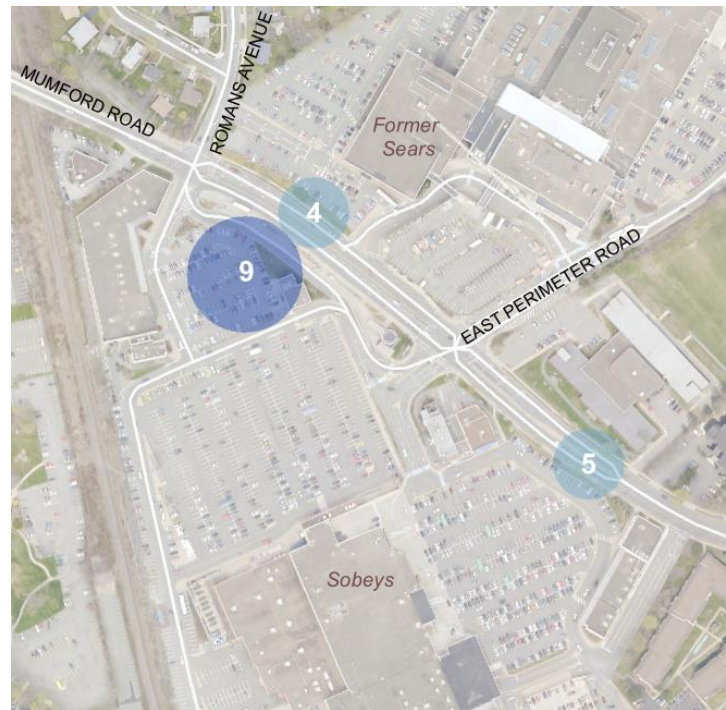
Table 2: Initial Stage Evaluation Results

Initial Stage Evaluation	On-Street Locations					Off-Street Locations						
	1 - Joseph Howe Superstore	2 - Desmond Avenue	3 - Bayers Road (HSC)	4 - Mumford Opposite Sears	5 - Mumford Opposite Sobeys	6 - Bayers / Connaught NW	6 - Bayers / Connaught SE	7 - Bayers / Oxford SW	8 - Bayers Road Centre	9 - Expansion on Existing Site	10 - HSC - Sobeys	11 - Adjacent to Chebucto
Proximity to Existing Routes	Green	Green	Red	Green	Green	Red	Red	Red	Red	Green	Green	Red
Proximity to Moving Forward Together Routes	Green	Green	Red	Green	Green	Red	Red	Red	Red	Green	Green	Red
Proximity to Potential Transit Priority / BRT Corridors	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Red
Proximity to Retail / Office / Service / Residential Land Uses	Green	Green	Yellow	Green	Green	Yellow	Yellow	Yellow	Yellow	Green	Green	Yellow
Requirement for Property Acquisition	Green	Green	Green	Green	Green	Green	Green	Red	Yellow	Green	Green	Yellow
Potential for Redevelopment	Green	Red	Red	Green	Green	Red	Red	Red	Red	Green	Green	Green
Pedestrian Environment	Green	Green	Red	Green	Green	Red	Red	Green	Red	Green	Green	Green
Cycling Environment	Green	Green	Red	Green	Green	Red	Red	Green	Red	Green	Green	Green
Bus Access / Bus Egress	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green
Potential Functionality of Terminal at the Location	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green
Score	15	12	7	17	17	9	8	10	10	18	15	9

The highest-ranked candidate locations carried forward to the short list analysis included:

- Location 9 – Expansion on Existing Site;
- Location 4 – Mumford Road Opposite former Sears; and
- Location 5 – Mumford Road Opposite Sobeys.

These are located in an area that includes the Halifax Shopping Centre immediately east of Mumford Road and the conglomeration of retail stores, offices, and services immediately west of Mumford Road. As these lands are collectively managed by the owner of the Halifax Shopping Centre, this area is referred to as the *Halifax Shopping Centre Precinct* for the purposes of this report.



6.2.1.2

Short List Evaluation

For the evaluation of the short-listed locations, a more detailed set of criteria were used:

1. Improvements to Transit Operations and Service
 - Proximity to existing route network;
 - Proximity to MFTP route network;
 - Proximity to potential transit priority/BRT corridors;
 - Proximity to potential commuter rail;
 - Ease of Bus Access/Egress; and
 - Terminal Capacity for bus operations and passenger facilities.
2. Improved Integration with Sustainable Transportation Modes
 - Connections to cycling network;
 - Connections to pedestrian network;
 - Pedestrian crossing distances;
 - Pedestrian environment; and
 - Pedestrian safety.
3. Improved Integration with the Community
 - Proximity to Residential Areas;
 - Proximity to Retail Stores; and
 - Proximity to Offices and Services.
4. Potential Catalyst for Redevelopment
 - Opportunities for mixed-use intensification; and
 - Opportunities for community features and services.

A variation of location 9, an expanded terminal on the lands currently occupied by the Annex (Moore's, Marks, Pier 1 stores) and labelled as location 9a, was added to the short list because of its proximity to the potential commuter rail line.

Table 3 shows the results of the short list evaluation, including, for comparison, the ratings for the existing Mumford Terminal.

The evaluation showed that two of the off-street locations in the Halifax Shopping Centre Precinct, location 9 – Expansion on Existing Site and location 9a – Expand in Annex Area, were ranked highest. The latter location was ranked slightly higher due to its proximity to the potential commuter rail line.

Table 3: Short List Evaluation Results

Short List Evaluation	Existing	On-Street Locations		Off-Street Locations	
	Existing Mumford Terminal	4 - Mumford Opp Sears	5 - Mumford Opp Sobeys	9 - Expansion on Existing Site	9a - Expand in Annex Area (Moore's, Marks, Pier 1)
Improvements to Transit Operations and Service	7	9	9	11	12
Proximity to Existing Routes					
Proximity to Moving Forward Together Routes					
Proximity to Potential Transit Priority / BRT Corridors					
Proximity to Potential Commuter Rail					
Ease of Bus Access / Egress					
Terminal Capacity for Bus Operations and Passenger Facilities					
Improved Integration with Sustainable Transportation Modes	6	9	8	9	9
Connections to Cycling Network					
Connections to Pedestrian Network					
Pedestrian Crossing Distances					
Pedestrian Environment					
Pedestrian Safety					
Improved Integration with Community	4	5	4	5	5
Proximity to Residential Areas					
Proximity to Retail Stores					
Proximity to Offices and Services					
Potential Catalyst for Redevelopment	1	2	2	4	4
Opportunities for Mixed-Use Intensification					
Opportunities for Community Features and Services					
Score	18	25	23	29	30

6.2.2 Evaluation by Halifax Transit and HRM Staff

As part of the evaluation, Halifax Transit and HRM staff provided qualitative commentary on the candidate general locations for the terminal. Based on existing policy, plans, and future potential, their input is summarized in **Table 4**.

Table 4: Summary of Halifax Transit and HRM Staff Commentary on Candidate General Locations

Type	Location	Comments	Rating
On-Street	Location 1: <i>Joseph Howe Superstore</i>	<ul style="list-style-type: none"> • Pedestrian safety issues • Requires intensification of Superstore site to make the location viable for a terminal • Challenging pedestrian/cycling links to existing/planned development 	Acceptable
	Location 2: <i>Desmond Avenue</i>	<ul style="list-style-type: none"> • Poor pedestrian access • Not a visible site • Nearby development is low density only 	Poor
	Location 3: <i>Bayers Road (HSC)</i>	<ul style="list-style-type: none"> • Good pedestrian/cycling links • Future Growth Node, but development is likely long-term 	Acceptable
	Location 4: <i>Mumford Rd Opposite former Sears</i>	<ul style="list-style-type: none"> • Future Growth Node, high potential for development • Mixed use area, although currently automobile oriented • Good connections to surrounding residential areas • High potential to integrate with master plan for the area 	Good
	Location 5: <i>Mumford Rd Opposite Sobeys</i>		Good
	Location 6: <i>Bayers/Connaught</i>	<ul style="list-style-type: none"> • Good pedestrian access from nearby low density residential • Challenging pedestrian/cycling access for others • Some medium density development is nearby • Limited opportunity for high density development 	Acceptable
Off-Street	Location 7: <i>Bayers/Oxford</i>	<ul style="list-style-type: none"> • Located in medium density corridor • Limited opportunity for mixed use, high density development • Poor pedestrian/cycling access • Adjacent land uses are primarily automobile oriented 	Poor
	Location 8: <i>Bayers Road Centre</i>	<ul style="list-style-type: none"> • Future Growth Node, but development is likely long-term • Only low density development is nearby • Poor pedestrian/cycling access due to nature of street network 	Poor
	Location 9: <i>Expansion on Existing Site</i>	<ul style="list-style-type: none"> • Future Growth Node, high potential for development • Mixed use area • Good pedestrian connections to surrounding residential areas, but link to existing high density area across the rail track is needed • Potential to connect with future commuter rail service • High potential to integrate with master plan for the area • Development interest by property owner 	Good
	Location 10: <i>HSC – Sobeys</i>		Good
	Location 11: <i>Adjacent to Chebucto</i>	<ul style="list-style-type: none"> • Somewhat remote from Future Growth Node for the area • Potential to connect with future commuter rail service • Reasonable pedestrian connections to nearby residential areas • Poor pedestrian connections to nearby retail/office/service land uses 	Acceptable

From an urban design and planning perspective, the consensus amongst HRM Planning staff was that a new transit terminal is best located in the Halifax Shopping Centre Precinct. That area currently has a mix of land uses, is designated as a Future Growth Node, has high potential for intensification, is well connected to nearby development, and provides a viable site for improved integration with existing and planned active transportation.

6.2.3 Public Engagement Results⁵

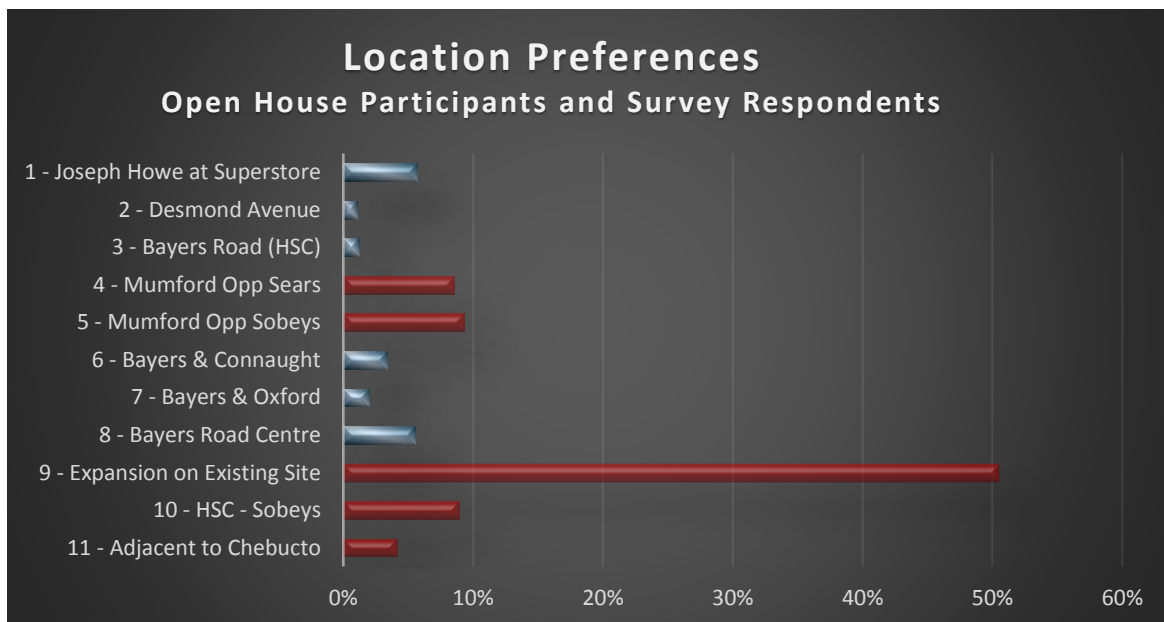
Round 2 of the project’s public engagement program included two Neighbourhood Open Houses (two sessions conducted on September 20th, 2017 with a total attendance of approximately 200 people), a meeting with stakeholders (held on September 21st, 2017), and an online website on HRM’s *Shape Your City* portal containing project information and a survey tool (active during the September 5 to October 4, 2017 time period, with 5,073 visits).

The objectives of the Round 2 engagement were to illustrate the proposed 11 candidate general locations for the new terminal, to obtain feedback on the evaluation criteria proposed to be used for the technical evaluation of the locations, and to garner opinions about the suitability of the candidate locations for a new terminal.

Amongst the Open House participants and the 1,237 online survey respondents, there was strong support for the proposed evaluation criteria; over 90% of respondents were in agreement with them.

When Open House participants and the online survey respondents were queried about their preferred location for a new terminal, over 80% preferred one of the locations in the Halifax Shopping Centre Precinct (percentage of respondents preferring each of those locations is highlighted in red in **Figure 8** below). About half of the respondents preferred an expanded terminal on the existing site.

Figure 8: Public Location Preferences for New Terminal



⁵ The public engagement report is attached in Appendix B.

The meetings with stakeholders also revealed a strong preference for the new terminal being located in the Halifax Shopping Centre Precinct, particularly for the following reasons:

- Expansion on the existing site could be effectively integrated with future development in the area;
- The area has space to build a terminal with a fuller complement of passenger amenities; and
- There would be an opportunity to integrate transit services using a terminal in the area with the commuter rail service that is under consideration.

7.0 Layout Options for a New Terminal

As described in Section 6, a strong consensus emerged amongst the technical evaluation results, the judgement of Halifax Transit and HRM staff, and public/stakeholder preferences that a new terminal be located in the Halifax Shopping Centre Precinct.

During the subsequent stage of the project, a variety of layout options for a new terminal in the precinct were prepared by Dillon and reviewed with Halifax Transit and HRM staff and with the owners of the Halifax Shopping Centre.

This section outlines these layout options, provides a brief commentary on each, and identifies a recommended option that was carried forward for the preparation of a functional design.

7.1 Factors Considered for Terminal Layout Options

While the layout options were conceptual in nature, they were prepared in sufficient detail to ensure that the option ultimately selected for further functional design development would work operationally in practice. Consequently, a number of factors were considered during the development of the layout options. These included:

1. Transit Factors

- Provide sufficient bus bay capacity;
- Provide sufficient space for bus layovers;
- Provide efficient access/egress/internal circulation for buses;
- Minimize impacts on bus running times;
- Provide sufficient space for passenger amenities; and
- Consider impacts of grades and elevations on pedestrian and bus movements.

2. Transportation System Factors

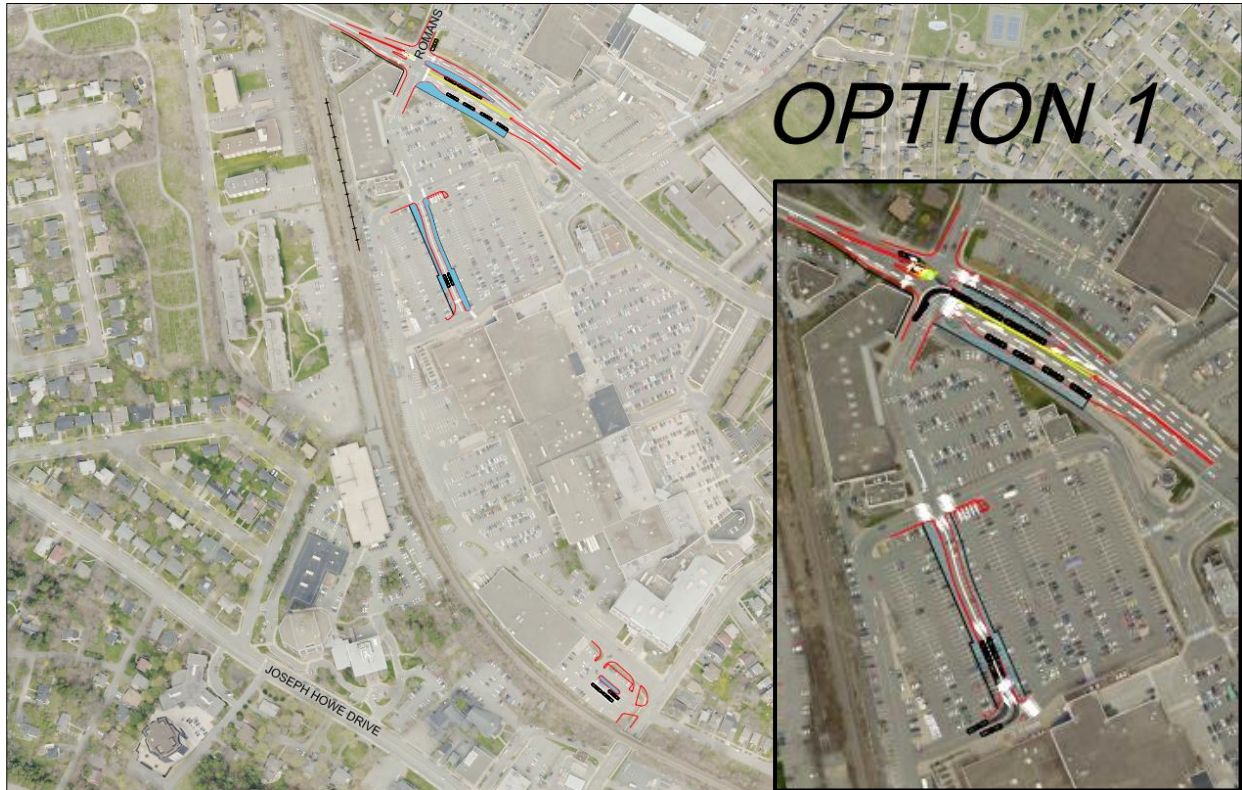
- Provide for safe pedestrian access and safety;
- Provide connectivity with pedestrian/cycling networks;
- Consider integration with future BRT/commuter rail services; and
- Minimize impacts on traffic operations, vehicular access, and parking.

3. Urban Development Factors

- Consider opportunities for intensification and redevelopment;
- Improve pedestrian environment on Mumford Road;
- Improve pedestrian connections to existing development; and
- Provide for logical implementation staging.

A total of 10 terminal layout options were developed, with variations in the extent to which each could comply with these factors. This is discussed more fully below.

7.2 Terminal Layout Options



OPTION 1 - Description:

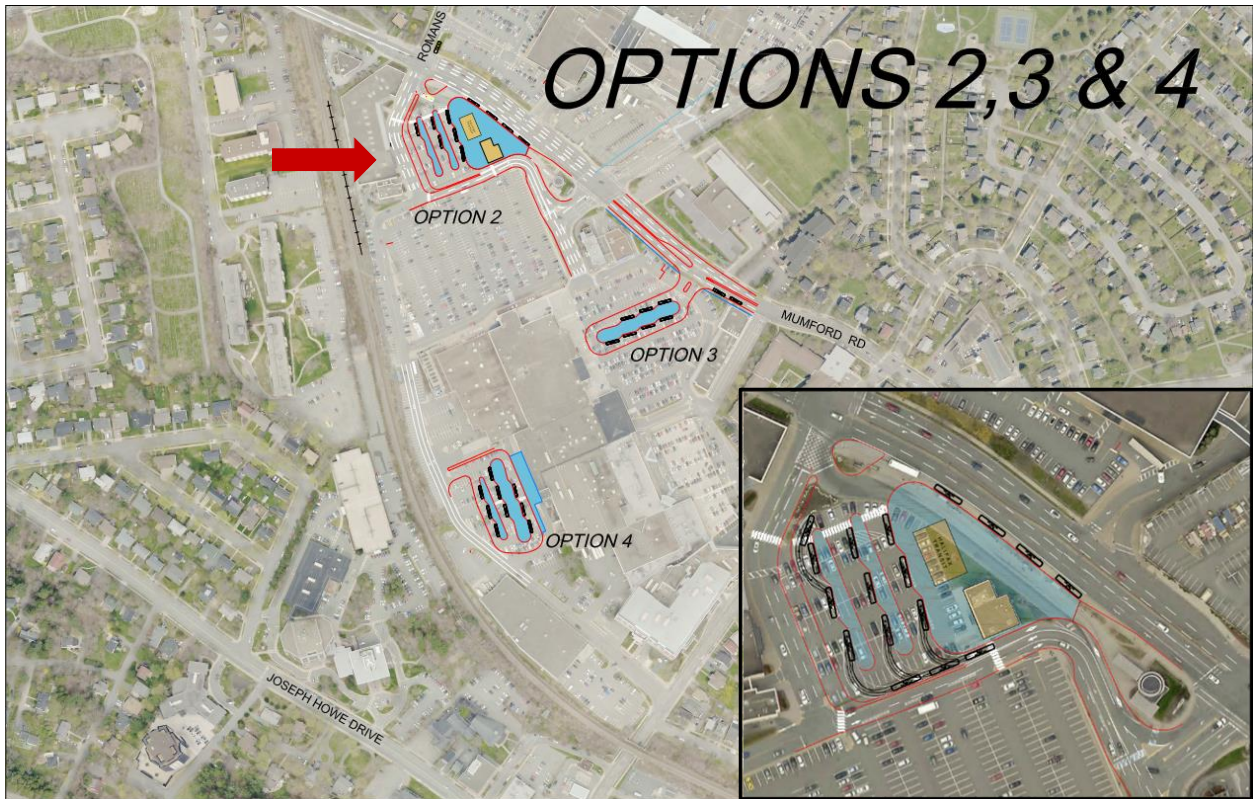
This option includes multiple facilities: a main two-way flow-through facility within the Mumford Road right-of-way immediately south of Romans Avenue, a two-way flow-through facility in the Walmart parking lot, and a bus loop near Chebucto Road. Through routes that do not terminate in the Halifax Shopping Centre precinct would serve only the facility on Mumford Road in each direction. Arriving buses on terminating routes would observe the Mumford Road facility, the Walmart facility, and the loop near Chebucto in turn prior to taking layovers and returning in the opposite direction on their subsequent trips. Passenger transfers amongst all routes would occur in the Mumford Road facility.

Strengths

- Good coverage of Halifax Shopping Centre precinct by terminating routes
- Dedicated layover space for terminating routes
- Possible integration with commuter rail
- Improves pedestrian environment on west side of Mumford Road

Weaknesses

- Does not create a central “focus” for transit
- Limited space available for passenger and staff amenities in Mumford Road facility
- Lengthens bus running times for terminating routes
- Complicates traffic operations on Mumford Road
- May require some property acquisition
- Increases pedestrian crossing volumes on Mumford Road
- Low potential for intensification around the terminal facilities



OPTION 2 - Description:

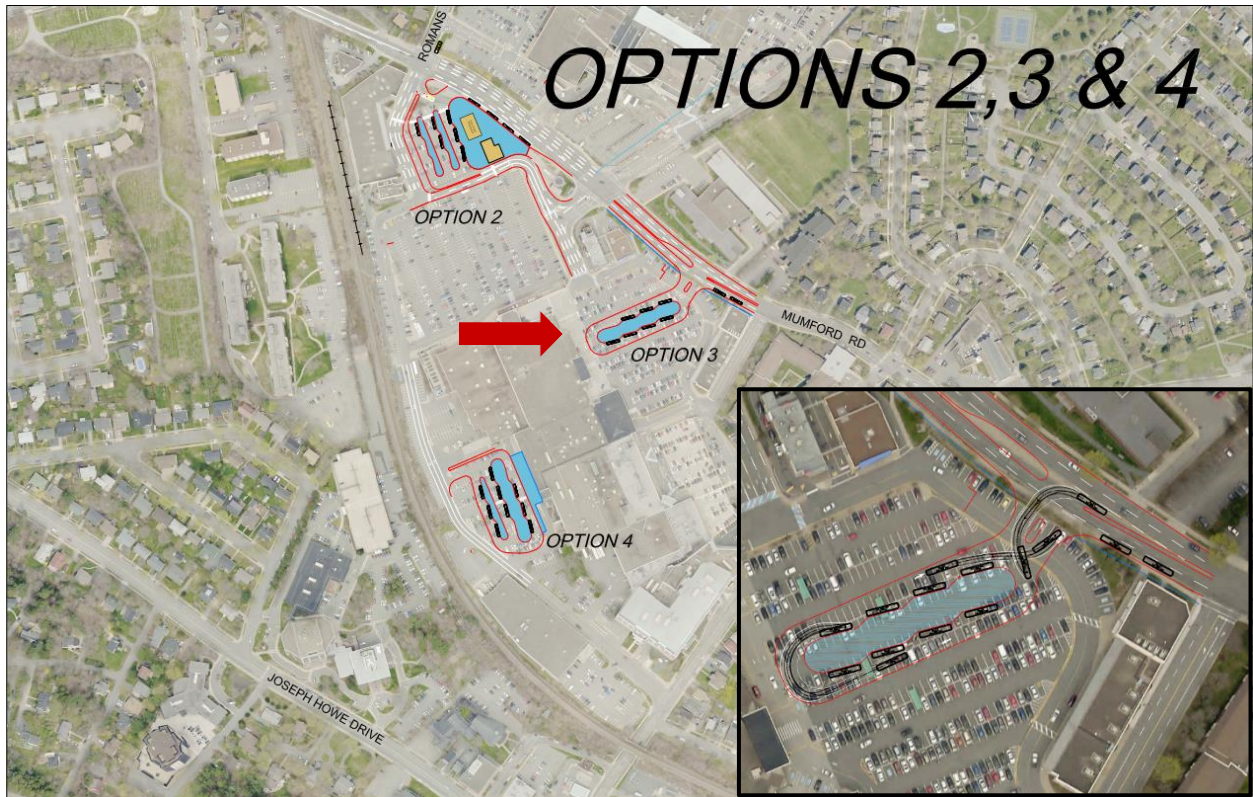
This option is a centralized facility in the vicinity of the existing terminal with 9 off-street bays, 4 on-street bays, a large platform accommodating a small building, and two smaller linear platforms. Buses would access the off-street bays from Mumford & East Perimeter Road via the existing ramp to the Walmart parking lot and operate northbound through the terminal. They would then exit to northbound Mumford Road through the Romans intersection with the aid of a transit priority signal, and to southbound Mumford Road through a separate right-turn egress from the terminal. Buses using the on-street bays would access them directly from southbound Mumford Road or after operating through the off-street terminal.

Strengths

- Provides required capacity for bus operations and amenities
- Efficient bus access/egress paths
- Improves connections for pedestrians/cyclists
- Possible integration with commuter rail
- Excellent potential for intensification and redevelopment around the terminal

Weaknesses

- Linear platforms require passengers to cross in front of buses (pedestrian safety issue, makes access more difficult for persons with mobility devices)
- Lengthy indirect pedestrian path between the two linear platforms and the terminal building (which would have an indoor waiting area)
- Potential for operating conflicts amongst buses exiting the terminal
- Displaces existing parking spaces for customers of Annex businesses



OPTION 3 - Description:

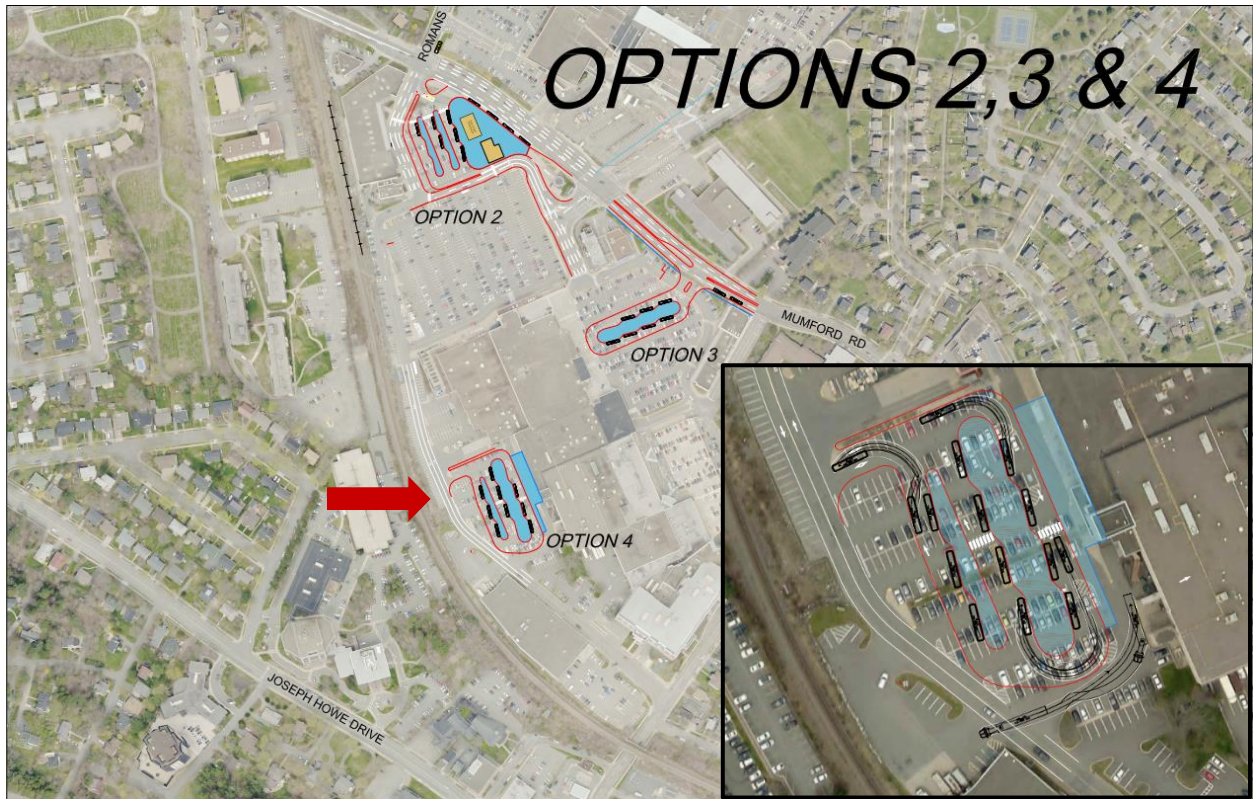
This option is a centralized facility on the east side of Sobeys with 8 off-street bays and a central platform accommodating heated shelters, but no building. Buses would access the terminal directly from Mumford Road via a bus-only approach, operate clockwise through the terminal and exit directly to Mumford Road. A new signalized intersection would be required on Mumford Road at the terminal entrance/exit to permit both southbound and northbound buses to use the terminal.

Strengths

- Provides convenient access to adjacent offices, buildings, services at south end of precinct
- Improves pedestrian link between Mumford Road and Sobeys

Weaknesses

- Insufficient number of bus bays
- Limited space available for passenger and staff amenities
- Complicates traffic operations on Mumford Road
- Design challenge due to difference in elevation grades between Mumford Road and terminal
- Limited opportunity for improved connections to active transportation and commuter rail
- Displaces Sobeys parking lot
- Limited potential for intensification and redevelopment around the terminal



OPTION 4 - Description:

This option is a centralized facility in the southwest quadrant of the precinct with 11 off-street bays, a central platform (8 bays) and a separate linear platform (3 bays). Buses would use the shopping centre's internal roadways to access the terminal from Mumford Road or from Chebucto Road. Buses would operate clockwise through the terminal and exit back to the street system on the shopping centre roadways.

Strengths

- Provides sufficient number of bus bays
- Provides convenient access to adjacent offices, buildings, services at south end of precinct
- Possible integration with commuter rail

Weaknesses

- Isolated location, inconvenient for many destinations, potential personal safety concerns
- Lengthens bus running times; requires bus operations in mixed traffic on shopping centre roadways
- Displaces an existing parking lot
- Limited potential for intensification and redevelopment around the terminal



OPTION 5 - Description:

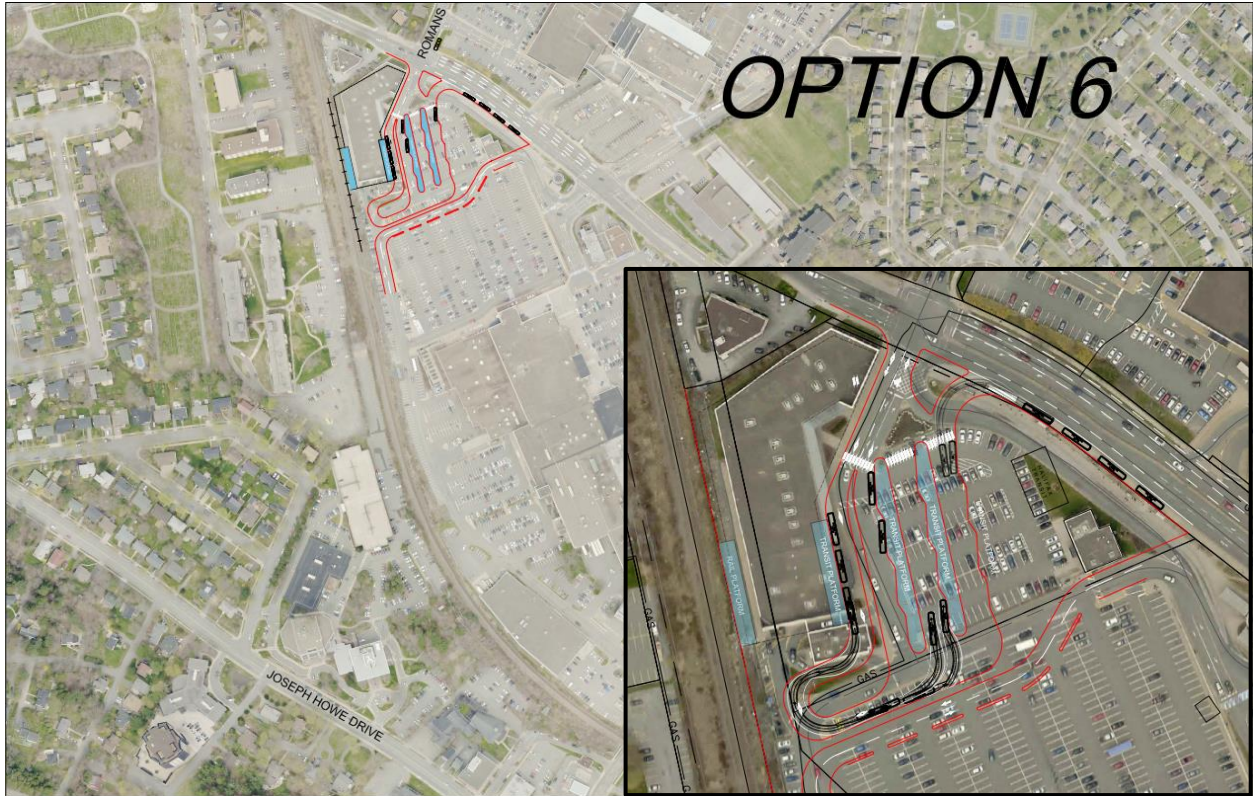
This option is a centralized facility located on the Annex site with 12 off-street bays and a central platform. Buses would access the terminal from southbound Mumford Road via a bus-only approach and from northbound Mumford Road via the Romans intersection. Buses would operate clockwise through the terminal and exit through the Mumford & Romans intersection with the aid of a transit priority signal.

Strengths

- Provides required capacity for bus operations and amenities
- Efficient bus access/egress paths
- Potential integration with commuter rail
- Excellent potential for intensification and redevelopment around the terminal

Weaknesses

- Potential pedestrian safety issues at bus access/egress points
- Requires demolition of Annex retail/commercial building



OPTION 6 - Description:

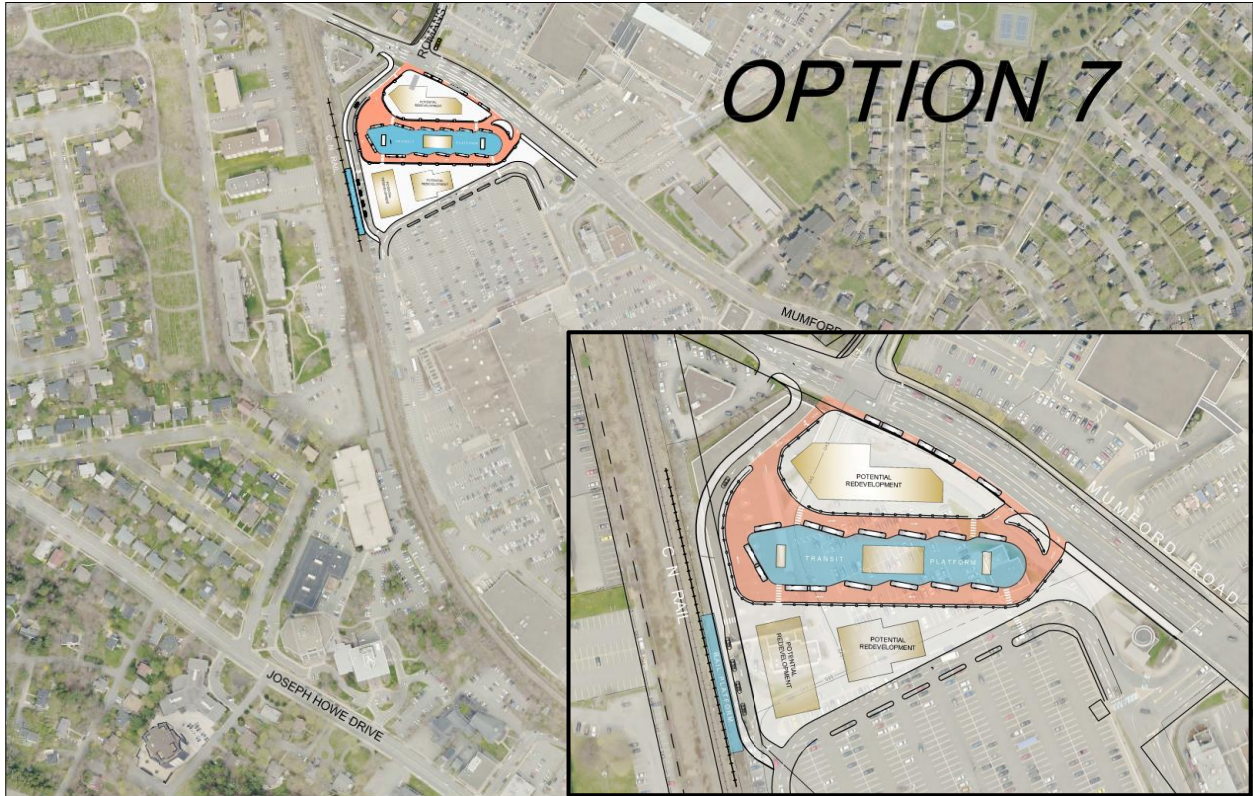
This option is positioned between the existing terminal and the Annex site with 12 off-street bays, 4 on-street bays, a large platform on the east side of the terminal, two smaller linear platforms, and a potential commuter rail platform adjacent to the rail line. Buses would access the transit terminal from the Mumford & Romans intersection and initially operate southbound to a stop beside a potential mixed use development. They would then use the bus loop at the southwest corner of the terminal to turn toward north to access the 12 off-street bays at the bus platforms. They would then exit to northbound Mumford Road through the Romans intersection with the aid of a transit priority signal, or to southbound Mumford Road through a separate right-turn egress from the terminal. Buses using the on-street bays would access them directly from southbound Mumford Road or after operating through the off-street terminal. Note that non-transit vehicles on Mumford Road would be prohibited from making northbound left or southbound right turns at Romans.

Strengths

- Provides required capacity for bus operations and amenities
- Efficient bus access/egress paths
- Improves connections for pedestrians/cyclists
- Possible integration with commuter rail
- Good potential for intensification and redevelopment

Weaknesses

- Large footprint may create development challenges
- Pedestrian safety issues: at bus access/egress points and at crossings between platforms
- Prohibited access for non-transit vehicles at Romans
- Requires demolition of Annex retail/commercial building



OPTION 7 - Description:

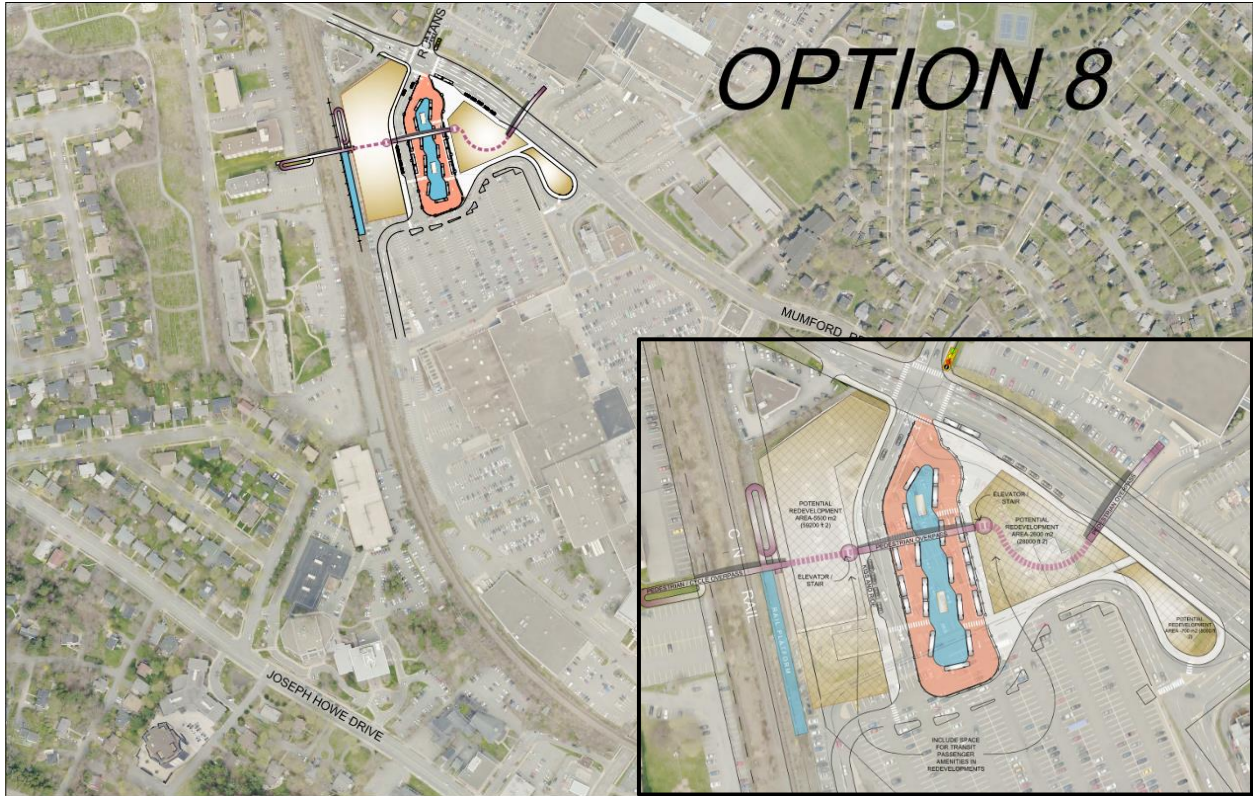
This option is a centralized facility oriented east-west on land currently occupied by the existing terminal, the Annex, and the Annex parking lot. It has 12 off-street bays, 3 on-street bays, and a central platform of a sufficient size to accommodate a building and heated shelters. Potential redevelopment sites exist on the north and south sides of the terminal. A new one-way roadway would provide access to the site from Mumford & Romans for non-transit vehicles. Buses would access the terminal using an approach from the southeast corner of the terminal, operate clockwise through the terminal, and exit to Mumford Road at either of the southeast or northeast corners of the terminal.

Strengths

- Provides required capacity for bus operations and amenities
- Efficient bus access/egress paths
- Improves connections for pedestrians/cyclists
- Possible integration with commuter rail
- Provides Kiss & Ride spots near terminal and rail platform
- Good potential for intensification and redevelopment

Weaknesses

- East-west orientation of terminal may create development challenges
- Pedestrian safety issues at bus access/egress points
- Eliminates egress from site at Mumford & Romans for non-transit vehicles
- Requires demolition of Annex retail/commercial building



OPTION 8 - Description:

This option is a centralized facility oriented north-south on land currently occupied by the Annex parking lot. It has 1 on-street bay, 11 off-street bays and a central platform with space for heated shelters. A new two-way roadway adjacent to the west side of the terminal would provide access/egress to the site from Mumford & Romans for non-transit vehicles. Buses would access the terminal using a bus-only approach at the Romans intersection, operate clockwise through the terminal, and exit to Mumford Road at Romans.

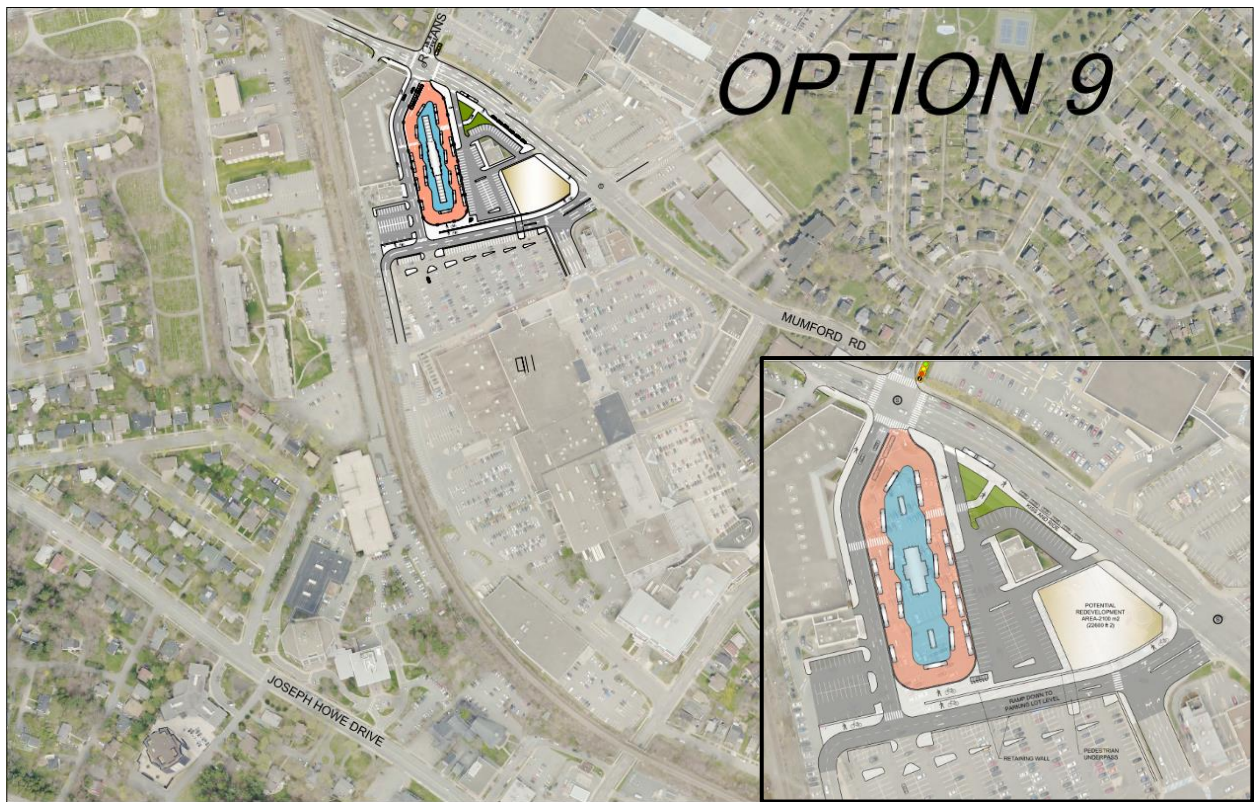
Potential redevelopment is possible on the east and west sides of the terminal. As separate initiatives, a commuter rail connection, a pedestrian/cycling link across the CN track, a pedestrian overpass of Mumford Road, and a Kiss & Ride drop-off area on the south side of Mumford Road could complement this option well.

Strengths

- Provides required capacity for bus operations and heated shelters
- Efficient bus access/egress paths
- Improves connections for pedestrians/cyclists
- Possible integration with commuter rail
- Provides Kiss & Ride area on Mumford Road
- Excellent potential for intensification and redevelopment
- Terminal can be constructed prior to redevelopment of Annex and existing terminal site

Weaknesses

- Platform is too small to accommodate a building; some amenities would have to be accommodated in an adjacent building, the development of which may not be concurrent with the development of the transit terminal
- Lengthy pedestrian crosswalk on southwest side of Mumford & Romans intersection
- More circuitous roadway ramp between Mumford & East Perimeter Road and Walmart parking lot
- Displaces some parking in Walmart lot



OPTION 9 - Description:

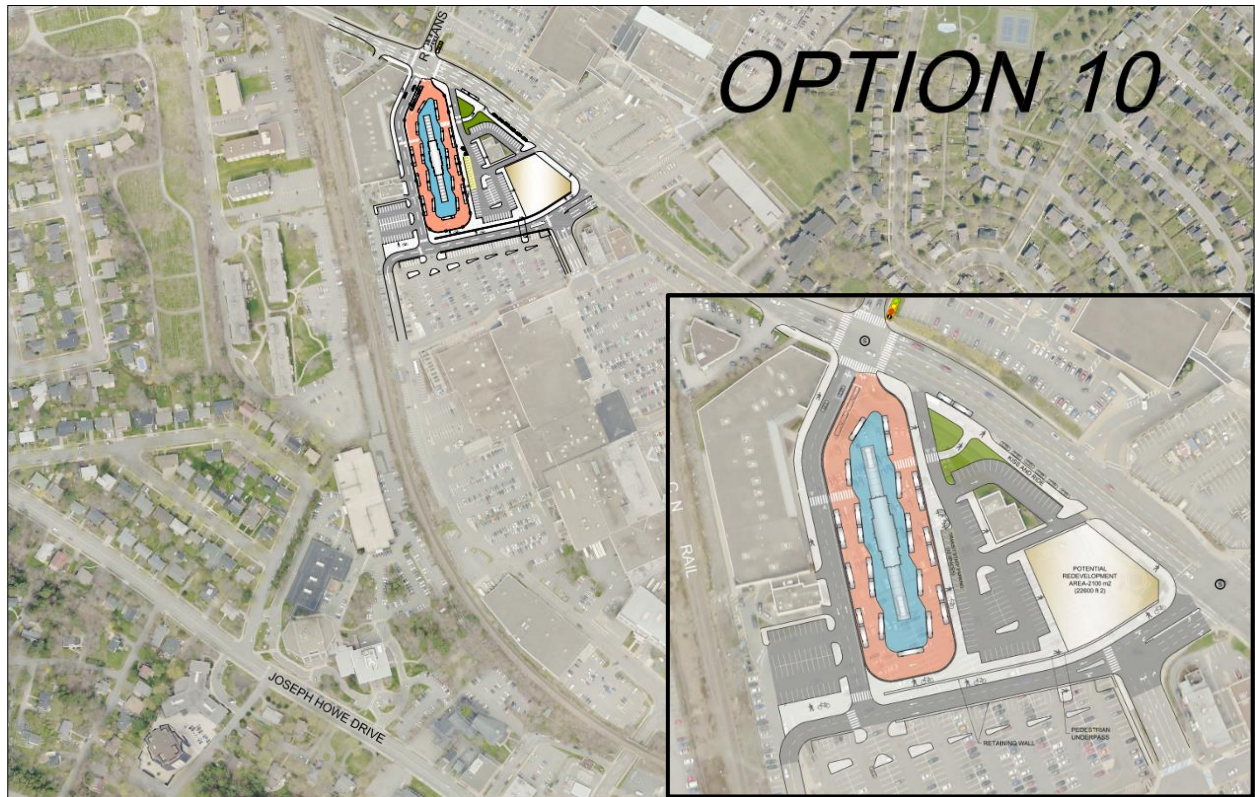
This option is similar to Option 8 (centralized facility oriented north-south; 1 on-street bay; 11 off-street bays) but has a wider platform to accommodate a building. A new, more direct roadway ramp between the Mumford & East Perimeter Road intersection and the Walmart parking lot would replace the existing circuitous one.

Strengths

- Provides required capacity for bus operations and amenities
- Efficient bus access/egress paths
- Improves connections for pedestrians/cyclists
- Possible integration with commuter rail
- Provides Kiss & Ride area on Mumford Road
- Excellent potential for intensification and redevelopment
- Simpler access/egress for non-transit vehicles at Mumford & East Perimeter Road
- Terminal can be constructed prior to redevelopment of Annex and existing terminal site

Weaknesses

- Lengthy pedestrian crosswalk on southwest side of Mumford & Romans intersection
- Displaces some parking in Walmart lot



OPTION 10 - Description:

This option is very similar to Option 9 with a modified layout of 11 off-street bus bays (to accommodate 7 standard buses and 4 articulated buses) and 1 on-street bus bay.

Strengths

- Provides required capacity for articulated and standard bus operations
- Provides space for required amenities
- Efficient bus access/egress paths
- Improves connections for pedestrians/cyclists
- Possible integration with commuter rail
- Provides Kiss & Ride area on Mumford Road
- Excellent potential for intensification and redevelopment
- Simpler access/egress for non-transit vehicles at Mumford & East Perimeter Road
- Terminal can be constructed prior to redevelopment of Annex and existing terminal site

Weaknesses

- Lengthy pedestrian crosswalk on south side of Mumford & Romans intersection
- Displaces some parking in Walmart lot

7.3 Recommended Layout Option

Dillon initially prepared layout options 1 through 6 and, after review, Halifax Transit and HRM staff expressed preferences for attributes featured in Options 2 and 5. Dillon further collaborated with the staff and with the owners of Halifax Shopping Centre to iteratively develop Options 7 through 10, with each subsequent option building on the previous ones.

Through this process, Option 10 evolved to be the recommended design. It incorporates the following key features:

- 11 bus bays in the terminal (7 standard, 4 articulated) and 1 on-street bus bay on southbound Mumford Road immediately far-side of the Romans intersection;
- Sufficient roadway space within the terminal to accommodate bus circulation and 6 bus layover locations along the terminal periphery;
- Bus-only access/egress from/to Mumford Road at the Romans intersection;
- A sufficiently wide platform to accommodate a building, heated shelters, overhead canopies, and other amenities; and
- Integrated mobility connections (e.g. pedestrian and cycling networks, Kiss & Ride, commuter rail, BRT, etc.).

The layout in Option 10 requires that a new, more direct roadway ramp between the Mumford & East Perimeter Road intersection and the Walmart parking lot be constructed to replace the existing circuitous one. This would help create a more logical internal roadway network within the shopping centre lands.

Moreover, there are excellent opportunities to redevelop the lands on each of the east and west sides of the proposed terminal layout and to add pedestrian and cycling connections across the CN track and Mumford Road. These are very consistent with HRM's urban planning objectives to create a Regional District Growth Centre in the area. Importantly, the north-south orientation of the proposed layout lends itself to practical staging; construction of the terminal could proceed in advance of any redevelopment of the adjacent lands.

The functional design for the layout in Option 10 is detailed in Section 8.

8.0 Functional Design

8.1 Functional Design Requirements

It is important that the new Mumford Terminal exhibit industry best practice in its design, incorporates the specific needs of Halifax Transit, and includes key features identified by transit users.

Table 5 lists the key design guidelines that were used to develop the functional design for the new terminal.

Table 5: Functional Design Requirements for the New Mumford Terminal

Item	Description	Quantity	Comments
Transit Operational Requirements			
1	Standard Bus Bays	7	Minimum number
2	Articulated Bus Bays	4	Minimum number
3	Bus Bay Type		Independent pull-in and pull-out of buses at each bus bay
4	Bus Access from Mumford Road	1	Direct; Restricted to transit vehicles only
5	Bus Egress to Mumford Road	1	Direct; Assisted by Transit Signal Priority
6	Bus Layover Spaces	6	Minimum Number; Located on periphery of bus circulation area within the terminal
7	Supervisory Vehicle Parking Spaces	2	To be sited adjacent to the terminal
8	Transit Staff Parking Spaces	10	To be sited adjacent to the terminal
Amenities			
9	Central Boarding/Alighting Platform		Sufficient size to accommodate all platform features, including a barrier-free zone that is a minimum of 2.0 m in width at each bus bay
10	Building on Platform	1	See components below
11	Heated Shelters	2	One at either end of platform, ~ 2.5 m x 9.0 m
12	Benches on Platform	8	
13	Canopies	2	To cover platform area between building and shelters
14	Waste Receptacles on Platform	8	
15	Space for Ticket Vending Machines	4	
Transit Information			
16	Indoor Information Kiosk	1	Located within platform building; Includes space for real-time variable message display, route maps, route schedule pamphlets, fare information, etc.
17	Outdoor Information Kiosks	2	Includes space for route maps, route schedule pamphlets, fare information, etc.
18	Outdoor Variable Message Displays	2	Integrated with information kiosks
Accessibility and Safety			
19	At-Grade Pedestrian Crosswalks	2	On either side of terminal that connect to public sidewalks and/or adjacent development

Item	Description	Quantity	Comments
20	Decorative Fencing		For pedestrian safety; to direct pedestrians to crosswalks
21	Pedestrian-Scale Lighting		
22	Landscaping		
23	CCTV Camera System		
24	Designated Waiting Area on Platform; Emergency Telephone	1	
Integrated Mobility			
25	Bicycle Racks with Canopy	16	Located immediately adjacent to transit terminal
26	Kiss & Ride Parking Spaces	6	Located on Mumford Road; 15-minute Parking Limit
27	Taxi/Car Sharing Parking Spaces	4	Located immediately adjacent to transit terminal
Terminal Building Functional Requirements			
28	Staff Lounge with One Washroom	1	
29	Information Kiosk/Security Desk	1	Includes variable message display board
30	Public Waiting Area with Seating	1	40 seats
31	Public Washrooms	2	
32	Water Fountain / Water Bottle Fill Station	2	
32	Digital Device Charging Station	2	
Utility Services			
33	Land Drainage, Water, Sanitary Sewer Connections		
34	Electrical and Communication Conduits and Connections		
35	Backup Generator	1	

8.2 Functional Design

The major features of the functional design are summarized below and illustrated in the functional design drawings attached in Appendix A.

8.2.1 Transit Terminal Location

- See Appendix A, Figure 9;
- The proposed Mumford Terminal is oriented north-south in the general area between the Annex strip mall and the existing terminal. It is positioned on land currently used for surface parking adjacent to the Annex strip mall, on land used for a portion of the internal roadway that extends west from the Mumford & East Perimeter Road intersection, and on land used for a portion of the Walmart parking lot;
- The north end of the terminal is adjacent to the intersection of Mumford Road & Romans Avenue; and

- The south end of the terminal extends south across the existing internal east-west roadway and into a portion of the existing Walmart parking lot.

8.2.2 Internal Roadway Modifications

- See Appendix A, Figure 9;
- The existing internal north-south roadway that extends south from the Mumford & Romans intersection is required to be realigned so that it is positioned parallel to the existing buildings. This roadway (7.0 m width) would have a traffic lane in each direction, a sidewalk (4.0 m width) on the west side of the roadway, and a 1.0 metre shy distance to the west edge of the transit terminal; and
- The internal east-west roadway that currently extends west, then north, then west from the Mumford & East Perimeter Road intersection requires reconstruction in a direct east-west orientation. This roadway (8.0 m width) would have a traffic lane in each direction and an active transportation path (4.5 m width) on the north side of the roadway. This realignment requires the removal of approximately 120 metres of the existing concrete retaining wall that is oriented north-south on the east side of the Walmart parking lot. This would be replaced by new retaining walls on the north and south sides of the reconfigured roadway/active transportation path to account for the approximately 3.0 metre difference in elevation between the Mumford & East Perimeter Road intersection and the Walmart parking lot. The grade on the roadway will be approximately 5% and will meet the grade of the Walmart parking lot at a new intersection with the proposed internal north-south roadway.

8.2.3 Transit Terminal Layout

- See Appendix A, Figure 9 and Figure 10;
- 11 bus bays within the terminal:
 - 5 sawtooth bays for standard buses,
 - 2 parallel bays for standard buses on the north and south ends of the platform,
 - 4 sawtooth bays for articulated buses,
- One on-street bus stop on southbound Mumford Road, immediately far-side of the Romans intersection (accommodates one standard or one articulated bus);
- Layover space for approximately 6 buses on the periphery of bus circulation area within the terminal;
- A central passenger platform with a terminal building. The platform, exclusive of the building footprint, is approximately 1,740 m². The area of the building on the platform is 215 m²;
- Maximum longitudinal grade of 5% in pedestrian areas (compliant with accessibility standards);
- Two crosswalks, one on each of the west and east sides of the terminal;
- Decorative fencing on the perimeter of the terminal, with openings at the crosswalks;
- A traffic barrier on the west side of the terminal to separate it from the reconfigured internal north-south roadway; and
- A total terminal width of 42.0 metres (platform with of 21.0 m; bus loading/circulation areas of 10.0 to 11.0 metres in width).

8.2.4 Transit and Traffic Operations

- See Appendix A, Figure 9;
- Bus access is at the southwest corner of the Mumford & Romans intersection:
 - Buses operating northbound on Mumford Road access the terminal on the south side of the approach via a signalized shared left turn lane,
 - Buses operating southbound on Mumford Road access the terminal on the south side of the approach from a shared curb lane,
- Motorists enter the reconfigured internal north-south roadway on the north side of the approach;
- Motorists exit onto Mumford Road from the northbound lane of the reconfigured internal north-south roadway on traffic signal control;
- Buses operate clockwise through the terminal; buses can make U-turns around each of the north and south ends of the central platform;
- Buses egress at the Mumford & Romans intersection on transit signal priority control; and
- Right turns on a red signal would be prohibited for motorists exiting the reconfigured north-south internal roadway.

8.2.5 Terminal Building

- Universally accessible, single storey, steel framed building with glazed areas for viewing and seating, clad in masonry or composite metal panels, and durable materials for interior finishes.

Building Function	Accommodations	Area (m ²)
Waiting Areas	<ul style="list-style-type: none"> • Two areas, seating for a total of 40 people • Standing and circulation space 	104
Public Washrooms	<ul style="list-style-type: none"> • Two washrooms 	7
Information/Security Kiosk	<ul style="list-style-type: none"> • Work Station/Information Display 	15
Staff Lounge	<ul style="list-style-type: none"> • Washroom, Closet, Counter with space for sink, microwave oven, and refrigerator • Tables/chairs for 10 staff 	31
Mechanical Room	<ul style="list-style-type: none"> • Water Heater, Mechanical equipment, Sink, Supplies Storage 	6
Electrical Room	<ul style="list-style-type: none"> • Electrical Entrance and Distribution Panels • Telephone, Telecommunications, and Security Panels 	6
Other	<ul style="list-style-type: none"> • Allowance for walls and circulation space 	46
	Total Area	215

8.2.6 Surface Parking

- Surface parking requires configuration in conjunction with the proposed transit terminal and internal roadways; with parking space width of 2.5 metres, circulation isle width of 6.0 metres;
- Existing parking spaces in relation to existing internal east-west roadway:

- 147 spaces north of roadway (Annex parking area),
- 652 spaces south of roadway (Walmart parking area),
- 799 total spaces
- Estimated parking spaces in relation to proposed internal east-west roadway:
 - 141 spaces north of roadway (Annex parking area),
 - 337 spaces south of roadway (Walmart parking area), and
 - 478 total spaces

8.2.7 Pavements

- Bus circulation, bus layover, and bus stopping areas within terminal:
 - Concrete - 250 mm, with tinted concrete at bus entrance to terminal,
- Central platform:
 - Concrete – 100 mm, with decorative paving for guidance for the visually impaired,
- Sidewalks:
 - Concrete – 100 mm,
- Internal roadways and parking areas:
 - Asphalt – 150 mm, with high barrier curbs.

8.2.8 Land Drainage

- See Appendix A, Figure 11 and Figure 12;
- Existing site drainage pattern within the terminal area (northeast to southwest) is maintained;
- The transit terminal and adjacent roadways drain via a new storm water sewer extension into the existing 1050 mm sewer on the west side of the shopping centre property near the CN right-of-way;
- The new internal east-west roadway ramp drains to the new storm water sewer extension;
- Drainage around the central platform is directed away from the platform edge to bus circulation areas; and
- The existing storm water sewer system will require a capacity analysis during the detailed design to confirm the land drainage plan.

8.2.9 Utilities

- See Appendix A, Figure 11 and Figure 12;
- Existing utility locations illustrated in the functional design were provided by HRM, Bell Alliant, and Heritage Gas;
- Based on available records, existing storm water sewers, waste water sewers, or water mains are not located beneath the proposed project works;
- An existing Heritage Gas line (of unknown diameter) is located beneath the proposed reconfigured internal north-south roadway, but is not expected to be affected by the project works;

- A new waste water sewer connects the terminal building to a 450 mm combined sewer that is located beneath Mumford Road;
- A new water service for the terminal building is connected to a 300 mm water main that is located beneath Mumford Road; and
- Three hydro poles and five parking lot lighting poles require relocation.

8.3 Capital Cost Estimate

The capital cost estimate for the Mumford Terminal replacement, based on the functional design documented in this report, is summarized in **Table 6**. The estimate is in 2018 dollars, within $\pm 30\%$.

Table 6: Capital Cost Estimate

Component	Item	Notes	Capital Costs
Site Preparations	Removals	Pavements, Sidewalks, Roadways, Curbs and Gutters	\$150,000
	Demolitions	Existing Terminal Building	\$50,000
		Existing Retaining Wall	\$114,000
			Sub-Total
Civil Works	Excavations	Terminal Area, Sidewalks, Roadways, Parking Lots	\$136,000
	Pavements	Terminal Area, Sidewalks, Roadways, Curbs, Parking Lots, Traffic Barrier	\$2,897,000
	Retaining Wall	Temporary shoring, Structural backfill, Cast-in-Place Retaining Wall Ramp Structure	\$2,355,000
	Concrete Foundations	Transit Shelters, Canopies, Signs	\$531,000
		Sub-Total	\$5,919,000
Terminal Facilities and Amenities	Terminal Building	Waiting Areas, Public Washrooms, Security/IT Room, Staff Lounge, Mechanical/Janitor Room, Electrical/Telecommunications Distribution and Panels,	\$645,000
	Backup Generator	Includes housing for the generator	\$150,000
	Terminal Signage	Identification Signage, Warning and Regulatory Signage	\$43,000
	Detectable Tiles	Warning surface tiles along edge of platform	\$110,000
	Canopies and Shelters	Large Canopies (2) with lighting; Heated Shelters (2) with benches, lighting, door openers	\$1,800,000
	Information Kiosks	Exterior Transit Information Kiosks on platform (2)	\$17,000
	Variable Message Signs	Outdoor Signs (2) on platform Indoor Signs (2) in terminal building	\$230,000
	Bus Stop Poles and Flags	11 bus stops within terminal 1 bus stop on Mumford Road	\$78,000
	Benches	Exterior Benches on platform (8)	\$34,000
	Bicycle Parking	Bicycle Lockers (8), Bicycle Racks (8) with Canopy	\$58,000
	Waste Receptacles	Recycling Stations (4)	\$18,000
	Decorative Fencing	For pedestrian safety; to direct pedestrians to crosswalks	\$80,000

Component	Item	Notes	Capital Costs
	Landscaping	Allowance for sod, trees, planting beds, shrubs	\$100,000
		Sub-total	\$3,363,000
Utilities	Relocations	Hydro Poles (3), Parking Lot Light Poles (5)	\$55,000
	Traffic Signals	Modifications to existing signals	\$250,000
	Site Lighting	Pedestrian-scale lighting in terminal area	\$75,000
	Land Drainage	Land drainage sewer, manholes, catchbasins	\$130,000
	Sanitary Sewer	Service to terminal building	\$43,000
	Water Service	Service to terminal building	\$56,000
	Electrical Service	Service to terminal platform and building	\$86,000
			Sub-Total
		Total Before Contingency	\$10,291,000
		Contingency (30%)	\$3,087,000
		Total After Contingency	\$13,378,000
		Engineering and Professional Services (15%)	\$2,007,000
		Total Capital Cost Estimate	\$15,385,000

9.0 Next Steps

This report, including background information, site analysis, a functional plan, and a capital cost estimate, has been prepared for use by HRM and stakeholders during next steps in the planning and development of the new Mumford Terminal.

The area of the proposed terminal, required to meet existing and future public transportation needs in HRM, is significantly larger than the existing one. While the proposed site allows for construction of the new terminal in advance of any redevelopment of the adjacent lands, there are a number of issues to address in the next stage of planning.

While the owners of the Halifax Shopping Centre are supportive of maintaining such a major transit facility as Mumford Terminal on site, there are a number of issues that require further discussion. Examples include:

- Impact on the number of surface parking stalls (both in the Annex area in the Walmart lot);
- Potential on-site parking credits for the property owner in lieu of provision of land for the new terminal;
- Changes to automobile access/egress to/from the reconfigured parking areas;
- Impacts on the building currently leased by HS Studio Spa;
- Potential nature and timing of redevelopment of the property immediately adjacent to the proposed site; and how best to integrate it with the terminal. Both the *Integrated Mobility Plan* and draft *Centre Plan* include policies that support reduced parking requirements, particularly for Transit Oriented Development (TOD);
- Impacts on pedestrian access and safety;
- Potential pedestrian/cycling links across the CN track and across Mumford Road to Halifax Shopping Centre; and
- Integration of the new terminal and adjacent redevelopment with planned new cycling paths.

This report can provide a basis for those discussions, initially amongst affected departments within HRM, and subsequently in collaborative efforts with the owners of the shopping centre to realize future development that reflects a collective vision for the Halifax Shopping Centre Precinct. It is important that Halifax Transit, HRM, and the shopping centre owners continue to work together to finalize the design and to develop an orderly implementation plan for the new terminal.

Appendix A

Functional Design Drawings

Appendix B

Public Engagement Report



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HALIFAX TRANSIT

Mumford Terminal Location Opportunities Study

What We Heard Report

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C Stakeholder Engagement Material
D Neighbourhood Information Session Poster Boards
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1.0 Overview

The Mumford Terminal Replacement Opportunities Study assesses the opportunities to site and develop a future terminal to replace the existing Mumford Terminal. Included in the process was an engagement program designed to gather informed feedback from the public and stakeholder. The objectives of the engagement strategy were to:

- Inform the public and stakeholders on the project’s scope and anticipated deliverables;
- Understand how existing users use the terminal space;
- Gather input on siting preferences, including evaluation criteria; and,
- Work collaboratively work land owners to discuss siting opportunities.

To achieve the above stated objectives, Halifax Transit sought a multiplatform engagement program consisting of an in-person user intercept survey on the ground at Mumford Terminal, online project portal and survey, a public open house, and stakeholder round tables. As the project progressed, more focused discussions continued with the owners of the Halifax Shopping Centre (Cushman & Wakefield Asset Services, formerly 20VIC). The Engagement was organized into two rounds. The first round was focused on targeted engagement with existing users of Mumford Terminal and a stakeholder idea exchange with invited interest groups and local landowners.

1.1 Engagement Round 1 Overview

1.1.1 User Intercept Survey

A user intercept survey was administered by project staff at Halifax Transit’s Mumford terminal on Thursday June 22, 2017 and Saturday June 24, 2017. The survey was administered during six distinct times:

- Thursday, June 22 2017
 - Morning (7:00 a.m. – 10:00 a.m.)
 - Mid-day (11:00 a.m. – 2:00 p.m.)
 - Afternoon (3:00 p.m. – 6:00 p.m.)
- Saturday, June 24 2017
 - Morning (8:00 a.m. – 10:00 a.m.)
 - Mid-day (11:00 a.m. – 2:00 p.m.)
 - Afternoon (3:00 p.m. – 6:00 p.m.)

The survey was not advertised, due to the nature of an intercept survey being ‘on-the-spot’. The survey was administered by project staff and terminal users were approached on-site and asked if they could participate in a brief survey by Halifax Transit



Figure 1 – Staff administering an intercept Survey

in regards to the future of Mumford Terminal. The survey was designed to take approximately 2 -3 minutes to complete, to be mindful of people’s schedules at the terminal. The survey was administered on one weekday and one weekend day at various hours to capture a wide demographic. The survey was designed to gather information on trip origin and destination and also key attributes related to Mumford terminal. The survey is provided in Appendix A. The findings from the survey data are presented in Appendix B.

1.1.2 Stakeholder Engagement

A stakeholder engagement session was held between the consulting team, Halifax Transit and local interest groups. The sessions were held on June 23, 2017 from 10:00 a.m. – 11:30 a.m. and 2:00 p.m. - 3:30 p.m. at HRM’s Bayers Road office. Participants were invited to the session directly by Halifax Transit. The session included a brief presentation providing an overview of the project. Following the presentation, the attendees were split into two groups, where a facilitated discussion was held with the aid of maps and facilitation by members of the project team. The intention of the session was to gather high level input on the strengths, weaknesses, opportunities, and threats facing the potential redevelopment of Mumford Terminal. The Materials for this session are provided in Appendix C.



Figure 2 – Stakeholder Engagement Session

1.1.3 Key Staff Engagement

In addition to public and stakeholder feedback, Halifax Transit sought input from Halifax planning and development staff. A one hour session was held between the project team and key staff. The session was relatively informal and was a round table discussion to gather potential opportunities related to the project.

1.2 Engagement Round 2 Overview

1.2.1 Neighbourhood Open Session

The session was advertised via promoted social media postings, including Twitter, Instagram and Facebook. The session was held on September 20, 2017 from 2:00 p.m. – 4:00 p.m. and 6:00 p.m. to 8:00 p.m. at St. Agnes Parish Hall on Mumford Road. The session was designed to be ‘open house’ style, with the information presented on poster boards around the room, rather than a formal presentation. Halifax Transit staff and project consultants were on hand to walk participants through the material and engage in-person. Input was sought on specific boards and participants were encouraged to share their



Figure 3 – Neighbourhood Open House

considerations on the boards or with project staff. Twelve information boards were presented and are provided in Appendix C. The boards consisted of the following information:

- A welcome poster, introducing the project and intent of the session;
- Project goal;
- What we heard (Round 1 engagement);
- Terminal comparison;
- Sample terminals from across Canada;
- On-Street vs. Off-Street transit terminals;
- Evaluation criteria; and,
- Location opportunities.

Additionally, three of the boards were designed to be interactive and encouraged the following input:

- Do you agree with our long list of evaluation criteria?
- Are there other criteria that should be included?
- Do you agree with our location opportunities?
- Are there other locations that should be included?
- Place a sticker on the location you prefer or location(s) you believe Halifax Transit should investigate further.

In addition to the public, a number of media outlets were present and produced stories on the project.

1.2.2 *Online Project Portal and Survey*

A project website and online survey was setup on Halifax’s civic engagement platform, ‘Shape Your City’. The project portal provided an overview of the project, the project’s objectives, links to relevant strategic planning documents (Halifax Regional Municipality’s Integrated Mobility Plan and Halifax Transit’s Moving Forward Together Plan), key project milestones, a link to the information posters provided at the public open house, and an online survey. The online survey was active from September 22nd – October 4, 2017. The online survey was designed to replicate the feedback requested at the Neighbourhood Open House and featured the following questions:

- What is your preferred location for the new Mumford Terminal?
- After reviewing the long list of evaluation criteria, do you agree with our considerations?
- Do you have any criteria to add to the list of considerations?
- Do you have any other feedback to share on this project?

1.2.3 *Stakeholder Engagement*

A stakeholder engagement session was held between the consulting team, Halifax Transit and local interest groups. The session was held on September 21, 2017 from 1:30 p.m. – 3:00 p.m. at HRM’s Bayers Road office. Participants were invited to the session directly by Halifax Transit. The session included a brief presentation providing an overview of the project. Following the presentation, the attendees were split into two groups, where a facilitated discussion was held with the aid of maps and facilitation by members of the project team. The intention of the session was to gather feedback on the twelve location opportunities as well as the draft evaluation criteria.

1.2.4 *Halifax Key Staff Engagement*

In addition to public and stakeholder feedback, Halifax Transit sought input from Halifax planning and urban design staff. An email memo went out presenting the twelve location opportunities as well as the evaluation criteria. A memo from Jacob Ritchie, Urban design program manager was received on October 11, 2017 with an analysis of the proposed options.

2.0 Results

2.1 *Round 1 Engagement*

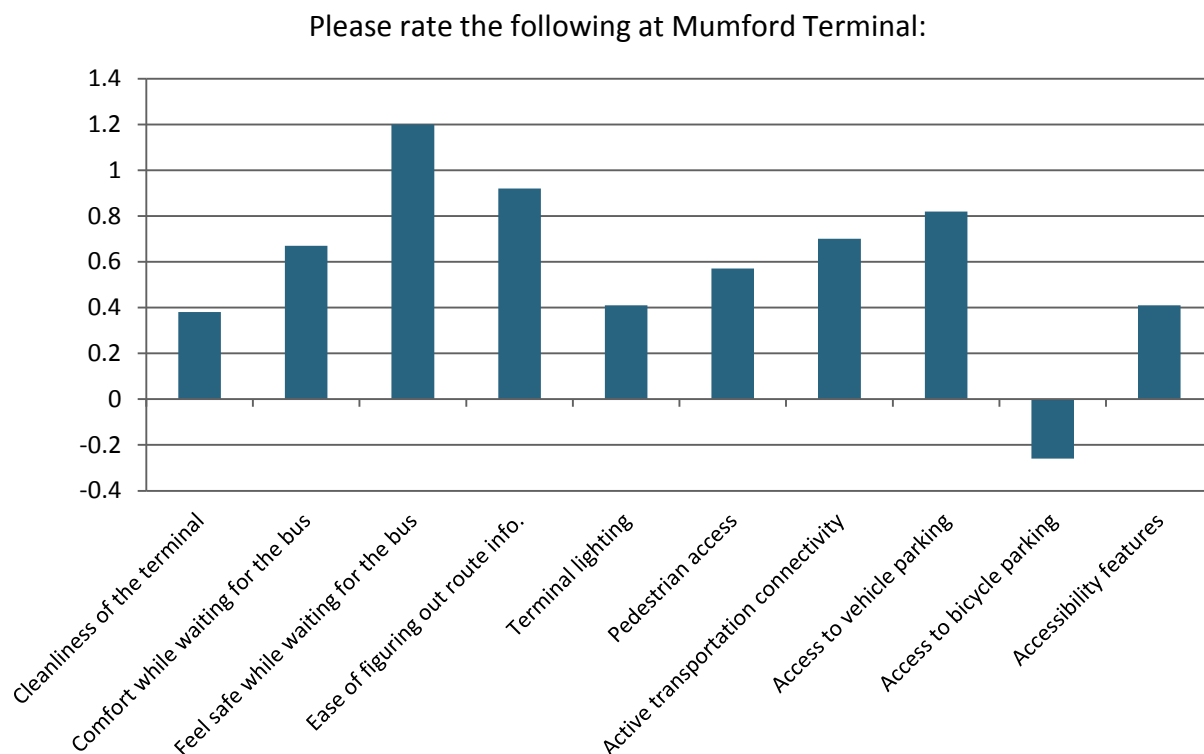
The following section outlines the results of the Round 1 engagement.

2.1.1 *User Intercept Survey*

There were a total 458 participants in the user intercept survey. The weekday survey had 332 respondents; whereas, the weekend survey had 126. Survey respondents were split relatively evenly across all three time frames: morning, mid-day, and afternoon (35%, 34%, and 29% respectively). Origin and destination data is presented in Appendix B.

Figure 4 shows the average responses to the question “Please rate the following at Mumford Terminal” regarding amenities at the existing terminal. (2 = Excellent, -2 = Poor)

Figure 4 – Mumford Terminal Existing Amenity Ratings

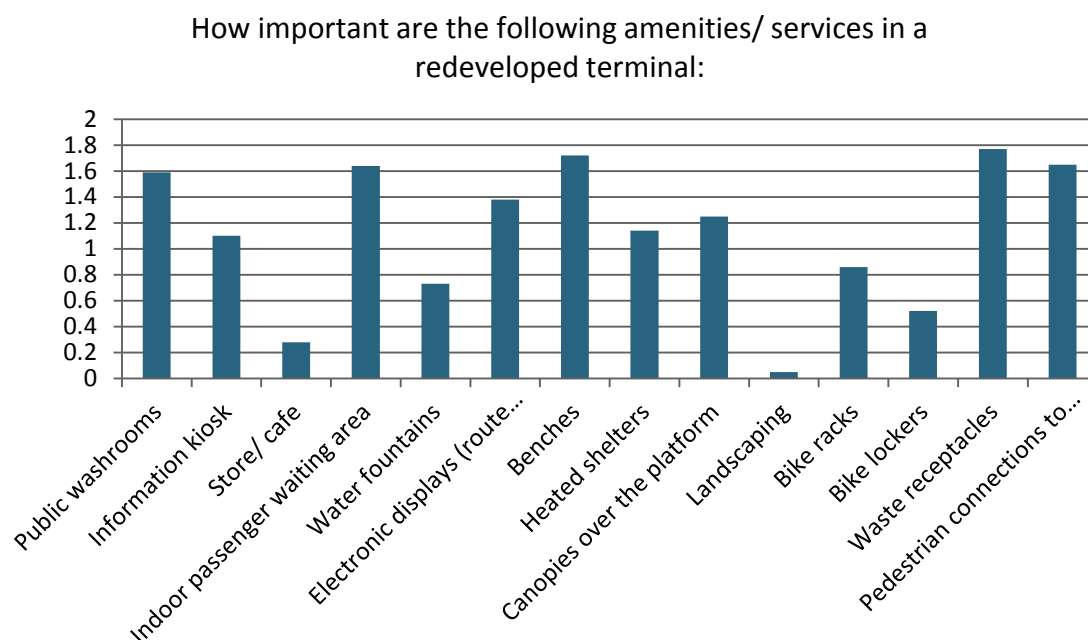


When asked to rate existing amenities at the current Mumford Terminal, the following list shows the average response, ranked from highest to lowest:

1. Feel safe while waiting for the bus;
2. Ease of figuring out route information;
3. Access to vehicle parking;
4. Active transportation connectivity;
5. Comfort while waiting for the bus;
6. Pedestrian access;
7. Accessibility features;
8. Terminal lighting;
9. Cleanliness of the terminal; and,
10. Access to bicycle parking

Figure 5 shows the average responses to the question: “How Important are the following amenities / services in a redeveloped terminal?” (2 = Important, -2 = Not Important)

Figure 5 – Mumford Terminal Future Amenity Importance



When asked to rank how important future amenities at a redeveloped terminal, results indicate the following amenities are ranked from most important to least important:

1. Waste receptacles;
2. Benches;
3. Pedestrian connections;
4. Indoor passenger waiting area;
5. Public washrooms;
6. Electronic displays;
7. Canopies over the platform;
8. Heated shelters;
9. Information kiosk;
10. Bike racks;
11. Water fountains;
12. Bike lockers;
13. Store/café; and,
14. Landscaping.

Other Feedback

While at Mumford Terminal, we also heard the following in regards to Mumford Terminal:

- Needs more space (too crowded);
- Too congested with buses (leading to missed connections and buses not stopping at the appropriate bays);
- Current location is good;

- Difficult to get to Walmart on foot;
- WiFi would be good;
- Lacewood terminal is ideal;
- More seating is required;
- More shelters are required;
- Requires security;
- Feels unsafe at night; and,
- Requires more lighting.

2.1.2 Summary

Overall, the results from the user intercept survey provided good information on what users prefer in a terminal. By analyzing the origin and destination data, we were able to uncover that the majority of terminal users get to the terminal and leave the terminal by bus. Additionally, the Halifax Shopping Centre is a significant trip destination and origin, highlighting its demand on the transit network. When analyzing users' perception of the existing terminal, it was revealed that users believe the current terminal is too small, too congested, has limited amenities, and is poorly connected to adjacent areas (via pedestrian connections).

2.1.3 Stakeholder Engagement

The results of the stakeholder engagement for Round 1 revealed the following strengths, weaknesses, opportunities and threats associated with Mumford Terminal:

	Considerations/Comments
Strengths	<ul style="list-style-type: none"> • Location relative to shops and services • Central location within the Halifax peninsula and connected to routes outside the peninsula; • Nearby newcomer and immigrant services; • Lots of parking (available land); • Adjacent to rail bed (potential for future rail connection); and, • Growth area as per HRM's planning policies.
Weaknesses	<ul style="list-style-type: none"> • Overcrowded • Not enough room for buses; • Pedestrian connections • Hostile environment for pedestrians; • Lack of facilities for bicycles; • Lack of route information (signage, directional wayfinding); • Lack of adequate amenities; • Poor lighting; • Grade is steep for accessibility concerns; and, • Buses often can't load in their assigned bay.

	Considerations/Comments
Opportunities	<ul style="list-style-type: none"> • Create a more urban, integrated facility; • Can be a catalyst for development; • Potential to link to future rail terminal; • Expand facility in existing location (get rid of some parking); • Create better wayfinding, especially for newcomers; • Better integrate the terminal with the adjacent shopping areas; and, • Potential to split terminal up into two terminals in the area (i.e., one at Mumford one at Joseph Howe or Bayers Road).
Threats	<ul style="list-style-type: none"> • Requirement for a large land area in an urban area; • Not being considerate of the potential for this to be a catalyst for future development; • Halifax Shopping Centre not wanting to give up parking areas; and, • Not considering future initiatives (such as rail link).

2.1.4 **Key Staff Feedback**

When discussing the project with key staff from Planning and Development, staff was interested in the project and noted that the project team should consider the opportunity to link this terminal to a potential future rail station. Additionally, urban design noted that this redevelopment could be a catalyst to urbanize the area and reintroduce a local, small street grid in the existing West End mall area.

2.1.5 **Summary**

Overall, the results from the stakeholder and key staff feedback indicate that the Halifax Shopping Centre area brings many opportunities to the project, including a single landowner, large parking lots (i.e., undeveloped land), and the opportunity to introduce transit-oriented development to Halifax. Additionally, staff and stakeholders noted that the time is right for this project, as the existing Mumford Terminal is operationally over capacity with tired amenities and a congested platform. Key themes that emerged during the Round 1 engagement included: the opportunity for a connection with a future rail terminal at the Halifax Shopping Centre location, the existing location being adjacent to shops and services and well-connected to transit routes, and the ability to redevelop at its current location due to undeveloped land (parking).

2.2 **Round 2 Engagement**

The following section outlines the results of the Round 2 engagement.

2.2.1 *Neighbourhood Open House*

The neighbourhood open house saw approximately 200 participants over the two sessions. The sessions featured face-to-face interaction between residents and project staff as well as interactive poster boards. The interactive boards sought feedback on the location opportunities and evaluation criteria. When participants were asked to place a green sticker on their preferred location, overwhelmingly, the vast majority of stickers were placed over the existing terminal (Figure 4). When asked to elaborate on post it notes the following key themes emerged:

- Expand on the existing site;
- Move the existing hair studio adjacent to the terminal and expand the site;
- The terminal should be located off-street and close to amenities with good pedestrian connections; and,
- The former Sears bargain basement site presents an opportunity.

Additionally, participants were asked to comment on the long list of evaluation criteria. The following key themes were noted:

- Safety and security;
- Accessibility;
- Bus access and egress;
- Pedestrian connections;
- Shelter from weather;
- Alignment with the Integrated Mobility Plan; and,
- Park and Ride services.

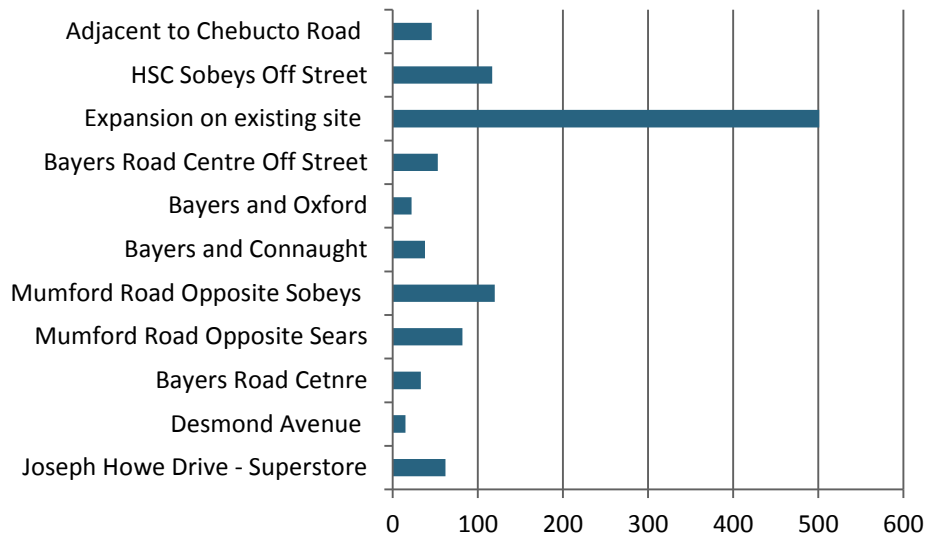


Figure 6 – Location preference poster board

2.2.2 *Online Survey*

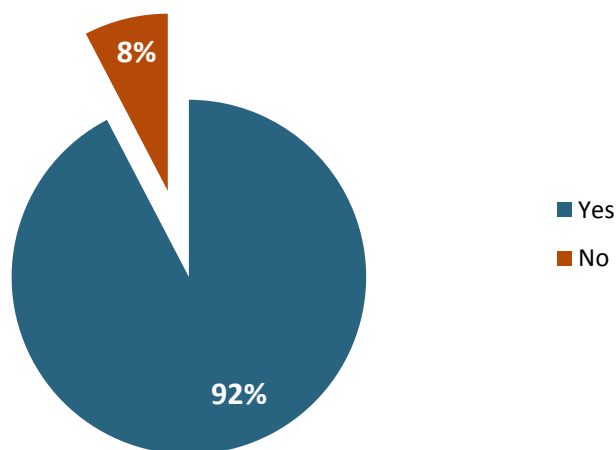
The online survey was active for approximately two weeks and was completed by 1,146 respondents. The results are presented below.

Q. What is your top location preference for a new Mumford Terminal?



As presented in the chart above, the most common response was overwhelmingly “expansion on existing site” as the preferred location for a future Mumford terminal. Additional locations in the immediate area (close to Sobeys and on-street terminals on Mumford adjacent to Sears and Sobeys) were also ranked higher than others; however, not nearly as favourably as an expansion on the existing location. When prompted why this is their preferred location, respondents noted that the existing location is central, it’s close to shopping and services, and there is room to expand as rationale for their preference choice.

Q. Do you agree with our long list of evaluation criteria?



1,147 respondents agreed with the evaluation criteria presented versus 95 respondents, or 8% did not. When prompted why they did not agree with the evaluation criteria, respondents cited accessibility, not including land acquisition, assessing impact to local traffic and total travel times, personal safety, and improved pedestrian environments as additional criteria that should be considered.

Q. Do you have any other feedback you would like to share on this project?

When prompted to answer this open-ended question, key themes emerged that are summarized below:

- The terminal should be off-road like Lacewood and Bridge;
- Keep the new terminal near the existing terminal at HSC;
- The terminal should be adjacent to shops and services;
- Improve the pedestrian connections between the terminal and HSC;
- Improve routing to the Mumford Terminal;
- Build for the future, be progressive;
- Criteria should put people and safety first; and,
- Use this potential development as a catalyst to the redevelopment of the HSC Annex area.

2.2.3 Stakeholder Engagement

The Round 2 stakeholder session featured approximately 15 participants from a variety of interest groups and local landowners in the area. The session featured a presentation followed by a facilitated discussion on the location options and evaluation criteria, the results are presented below:

Location	Comments
Joseph Howe Drive	<ul style="list-style-type: none"> • Lower population density adjacent to terminal; • Potential for growth (should be a criteria); • Could be considered as part of a two terminal solution; • Not bicycle or pedestrian friendly; • Heavy local traffic; and, • No secondary plan for area in place.
Desmond Avenue	<ul style="list-style-type: none"> • Little room for growth; • Low residential density in area; • Feels unsafe; and, • Pedestrian and cycling connections aren't great.
Connaught/Bayers	<ul style="list-style-type: none"> • Pedestrian and cycling connections are good; • Good connection to Bayers Road TPM; • Less opportunity for densification (stable neighbourhood); • Potential to complement a station at existing site; • Could be on-street with platforms at either side of Bayers; • High traffic area; and, • Low potential for redevelopment.
Existing Terminal Location	<ul style="list-style-type: none"> • Opportunity to do something world class; • Centre Plan identifies this area as a growth node;

Location	Comments
	<ul style="list-style-type: none"> • Needs to be designed for cold weather; • Potential to be a neighbourhood centre; • Close to rail link; • Job density is key driver for transit use, not just residential; and, • Big opportunity to create a transit-oriented development.
Mumford On-street and Off-street at Sobeys	<ul style="list-style-type: none"> • Off-street is preferred; • Opportunity to create two on-street platforms in either direction with a pedestrian bridge connection; • Further from rail; and, • Would require better bike and pedestrian connections.

Additionally, there was discussion at the session about adding an additional location potential within the space occupied by the former Sears bargain basement at the back side of the HSC annex. Additional evaluation criteria that were discussed at the session included: opportunity to integrate with a mixed use development, the grade of the terminal, accessibility, and catalyst for growth in the area.

2.2.4 *Key Staff Feedback*

Jacob Ritchie, Urban Design Program Manager for HRM, submitted a memo to Halifax Transit with an analysis of each location opportunity (Appendix E). The locations were reviewed with respect to local land use policies, plans and priorities. It was identified that expanding the existing site presents the best opportunity to create a transit-oriented development, supported by high density growth in the immediate area. Additionally, it was noted that the property owner is interested in redeveloping the site and that further engagement should continue with the property owner toward an eventual master plan for the area.

2.2.5 *Round 2 Engagement Summary*

The results from the Round 2 engagement clearly demonstrate a preference toward developing a new terminal at the existing location, using adjacent parking and buildings (HSC hair studio) for development. The entire HSC site was preferred; however, off-street options were generally favoured over on-street alternatives. Additionally, the existing location is seen as the greatest opportunity to develop a transit-oriented development by HRM planning staff and stakeholders. It was also noted that the evaluation criteria should include passenger safety, ability to meet accessibility standards, the ability to provide for safe and convenient pedestrian and cycling connections, and the ability for the chosen location to be a catalyst for growth and development in the immediate area.

2.2.6 *On-going Engagement*

Although the formal community and stakeholder engagement program for the project was completed in October, 2017, additional conversations have been occurring between the property owners (20VIC/ Cushman Wakefield, Halifax Transit, and Halifax Planning and Development) and these conversations are expected to continue during the concept development and design stages of the project.

Appendix A

User Intercept Survey

Appendix B

User Intercept Survey Results



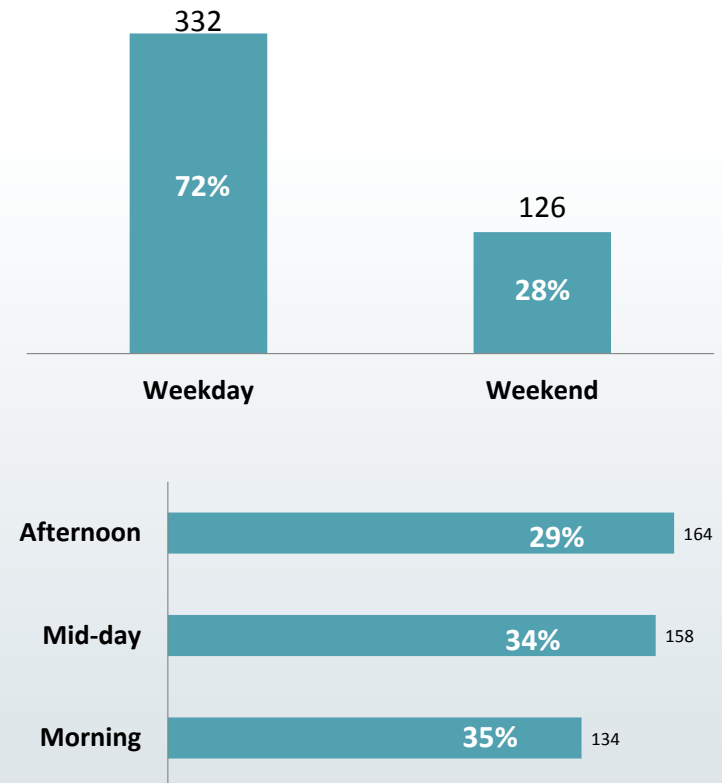
User-Intercept Survey

Preliminary findings

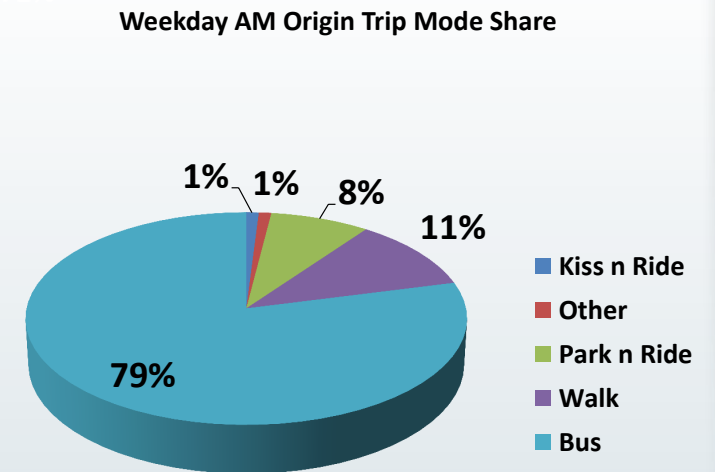
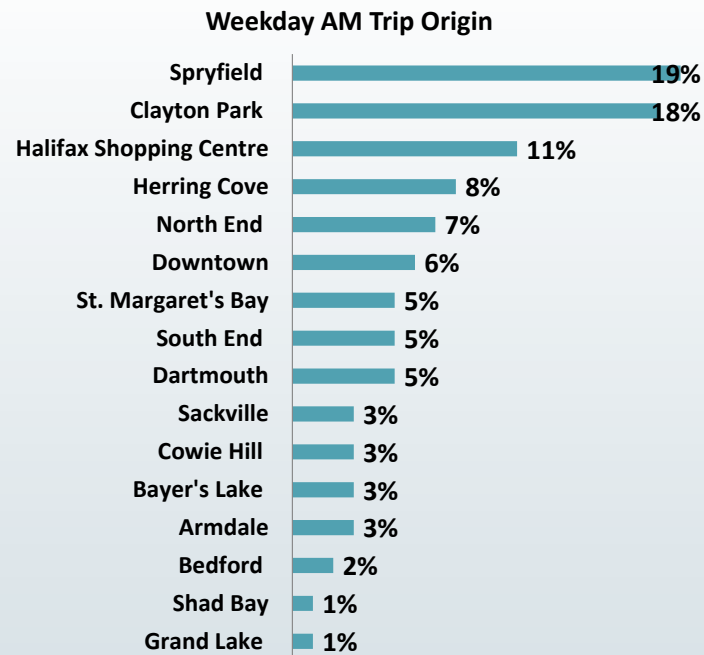
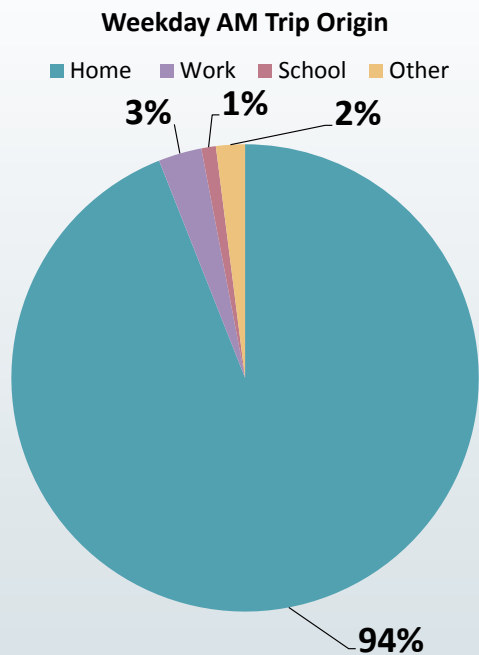
July 10, 2017

Survey Results

- **Thursday, June 22nd**
 - Morning (7:00 a.m. – 10:00 a.m.)
 - Mid-day (11:00 a.m. – 2:00 p.m.)
 - Afternoon (3:00 p.m. – 6:00 p.m.)
- **Saturday, June 24th**
 - Morning (8:00 a.m. – 10:00 a.m.)
 - Mid-day (10:45 a.m. – 1:00 p.m.)
 - Afternoon (1:45 p.m. – 3:15 p.m.)

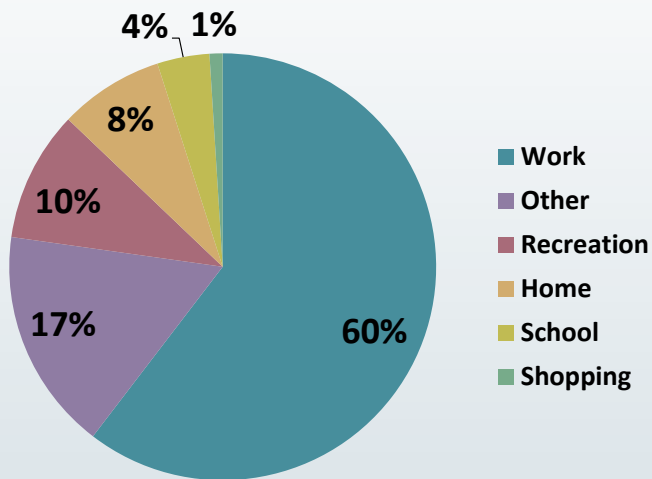


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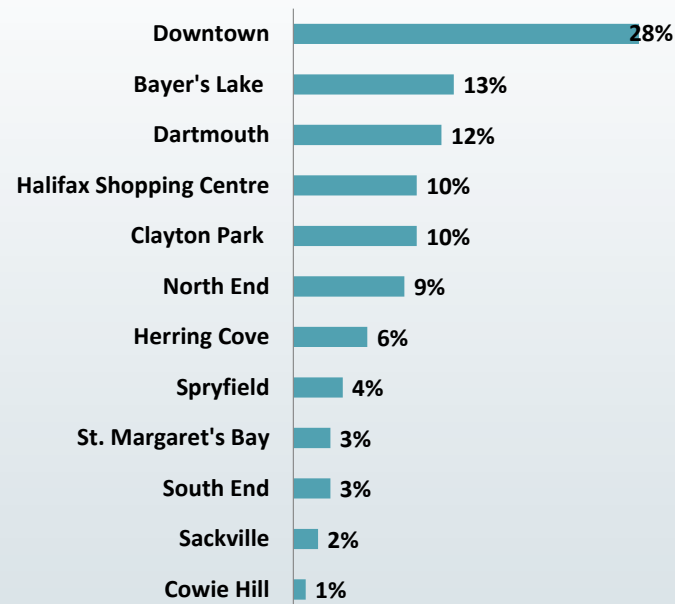


Weekday a.m. Destination Details

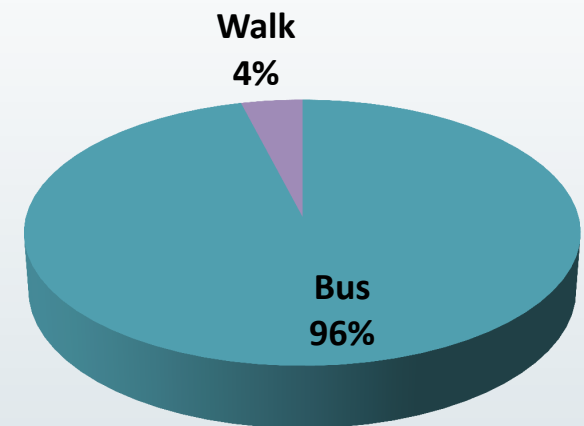
Weekday AM Destination



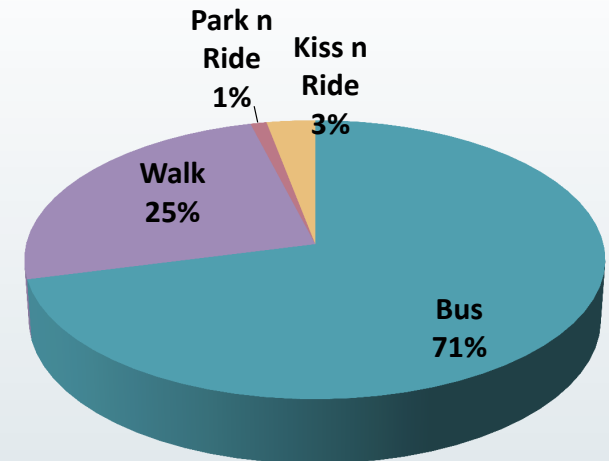
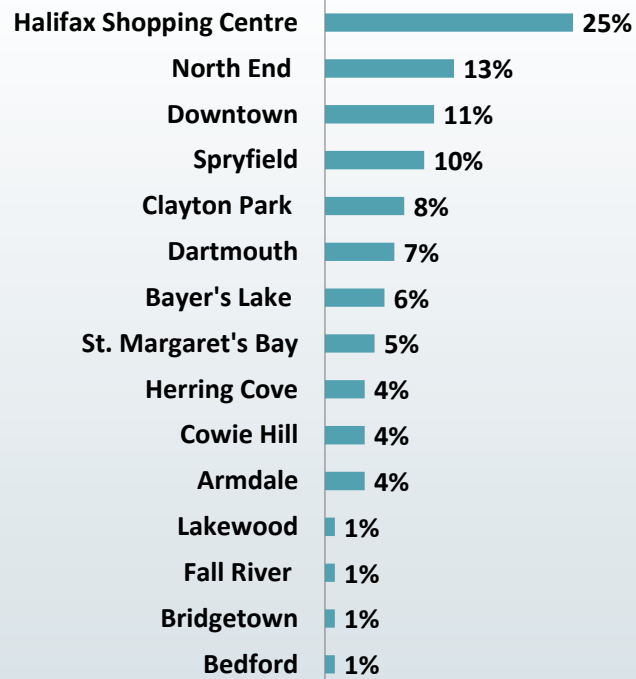
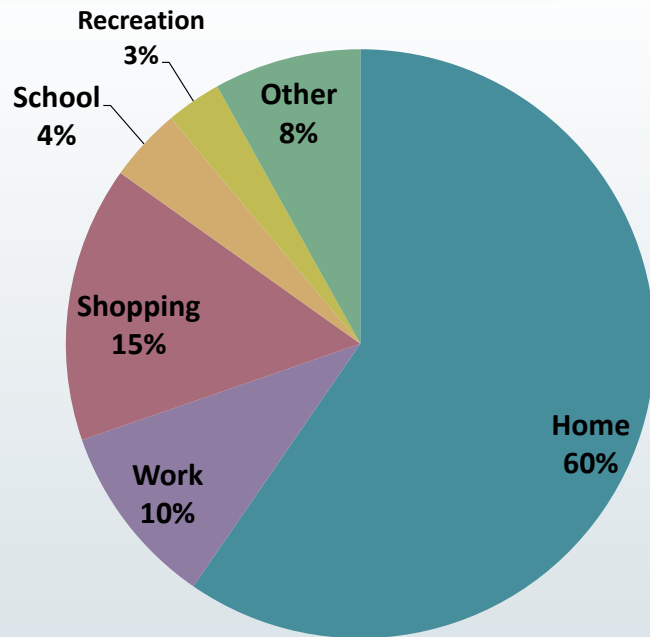
Weekday AM Destinations



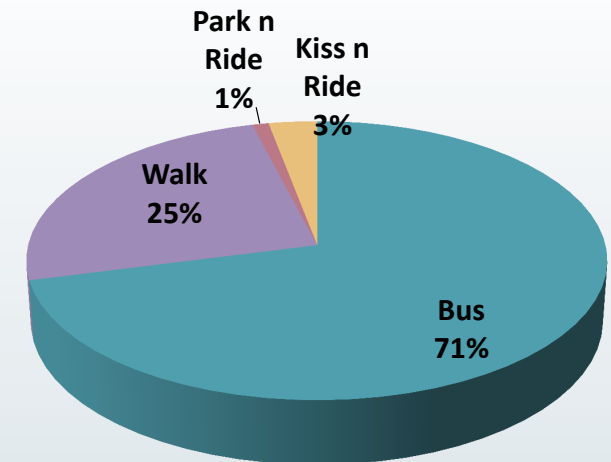
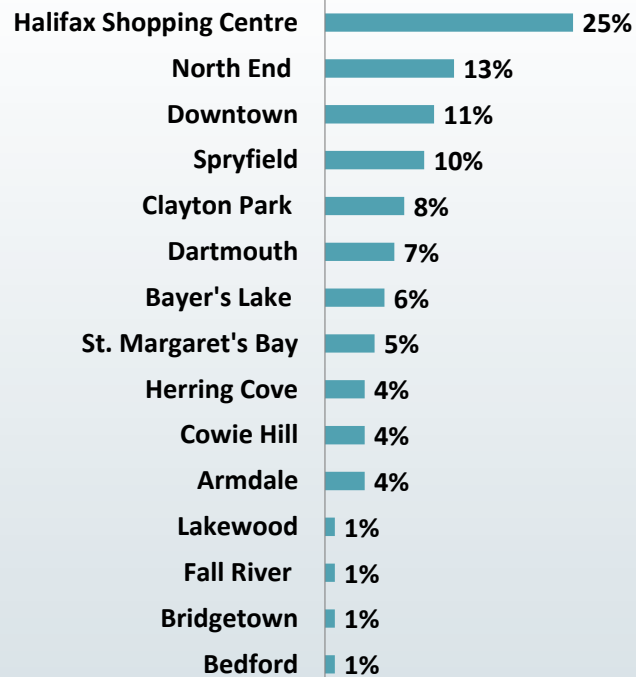
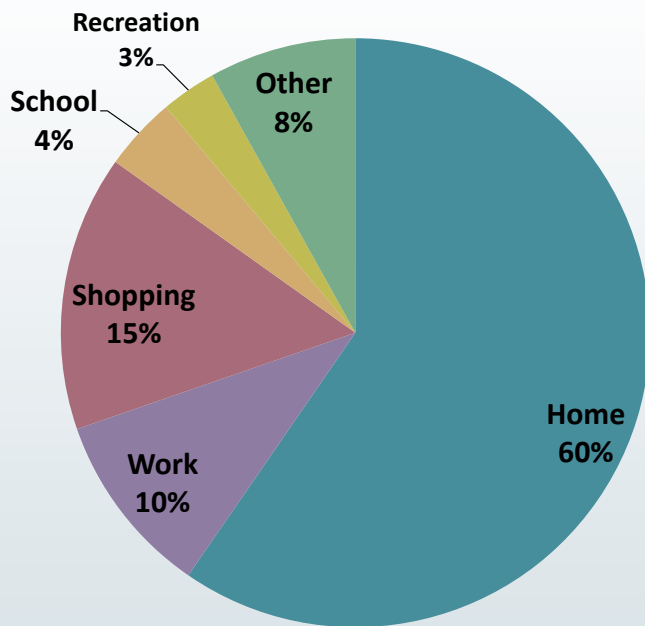
Weekday Destination Mode Split



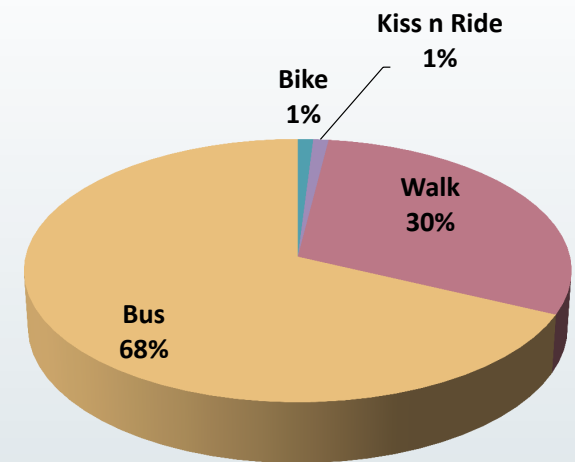
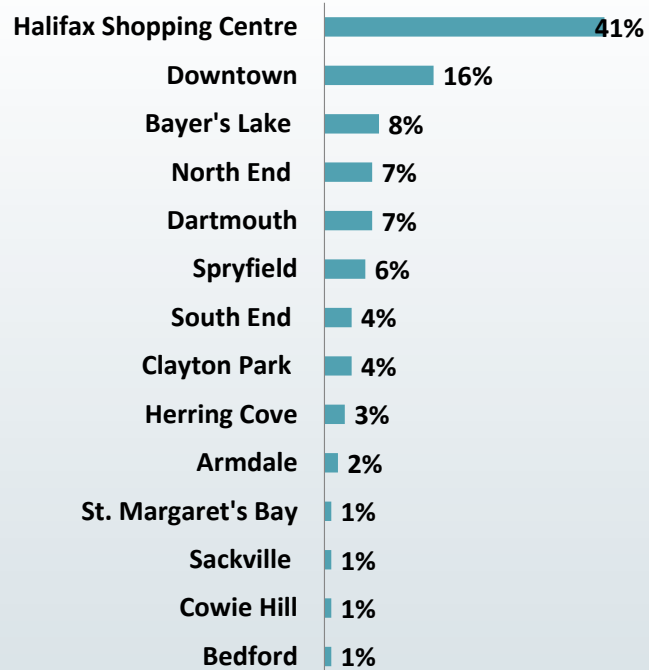
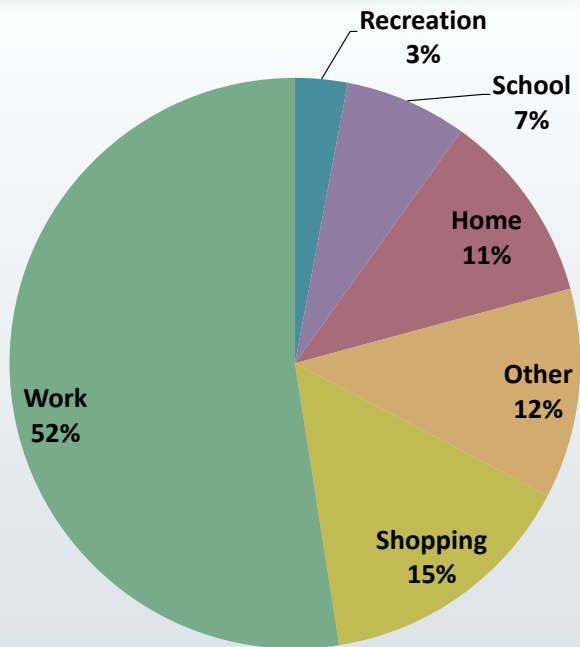
Weekday Mid-day Origin Details



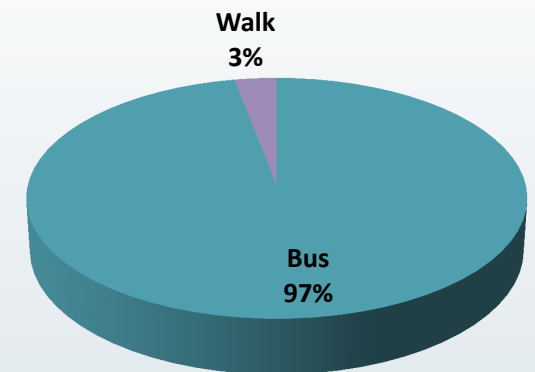
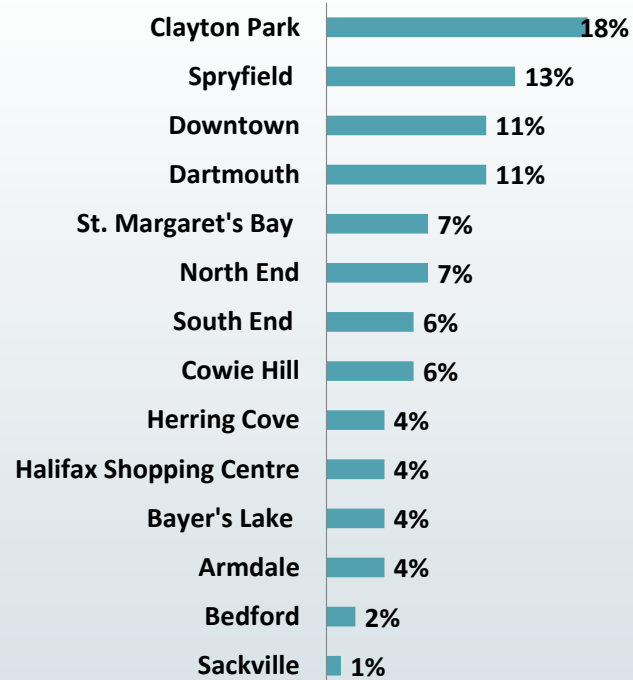
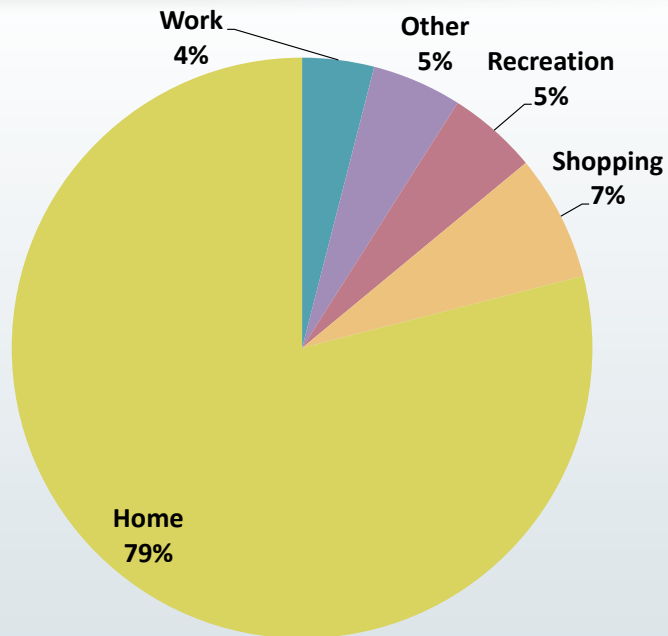
Weekday Mid-day Destination Details



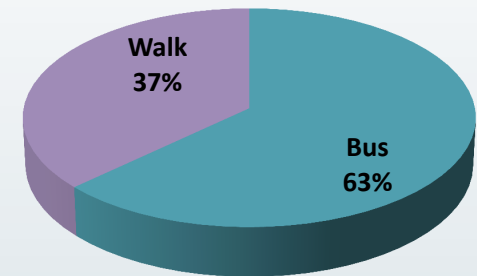
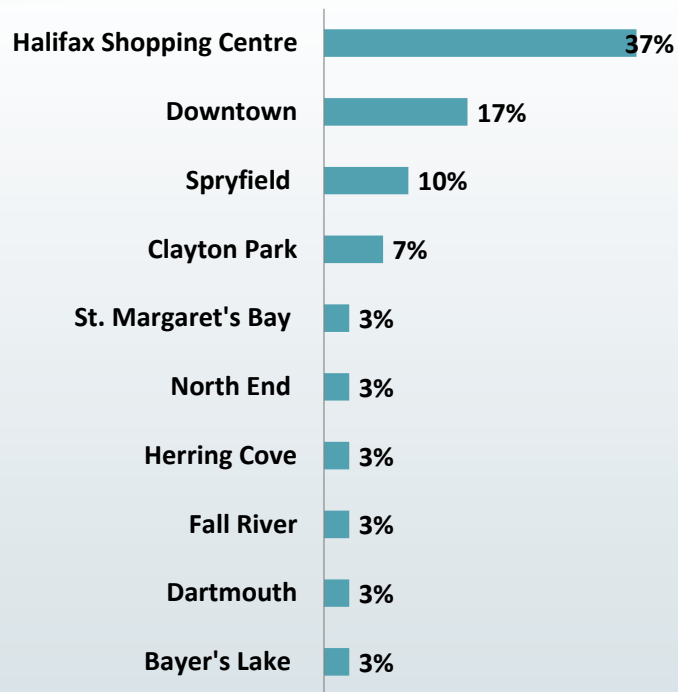
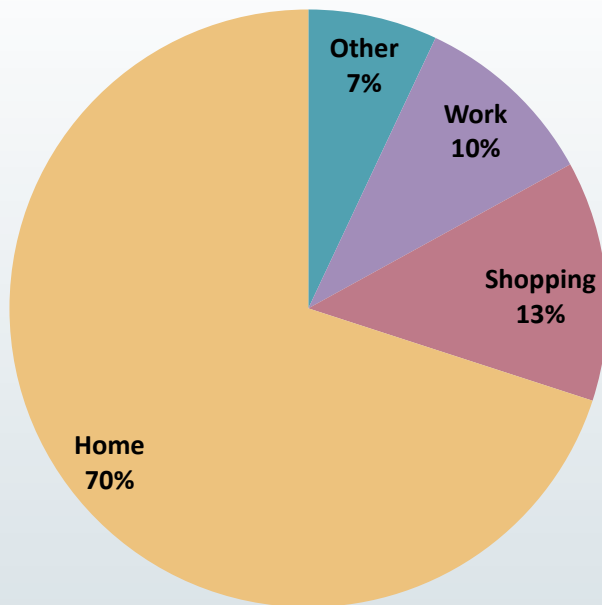
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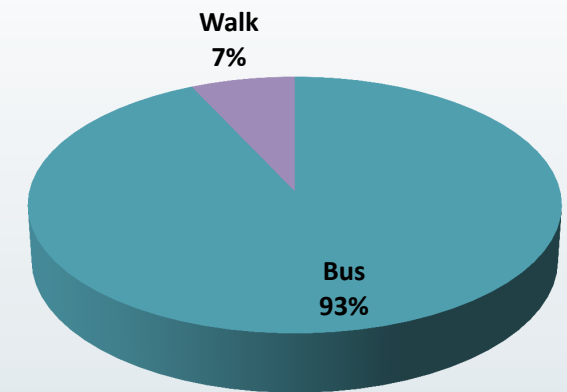
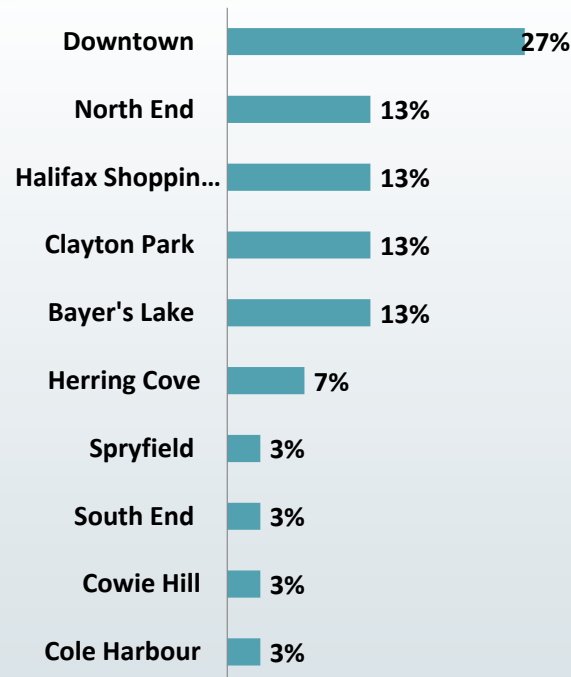
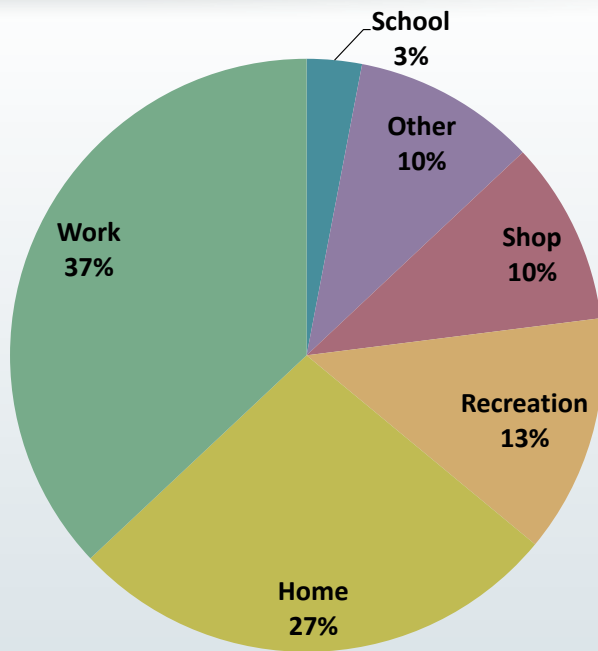
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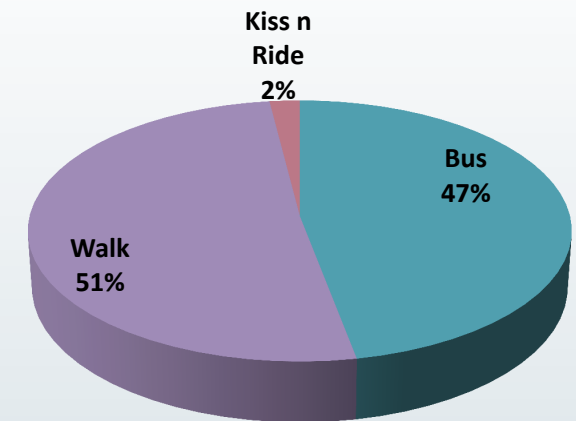
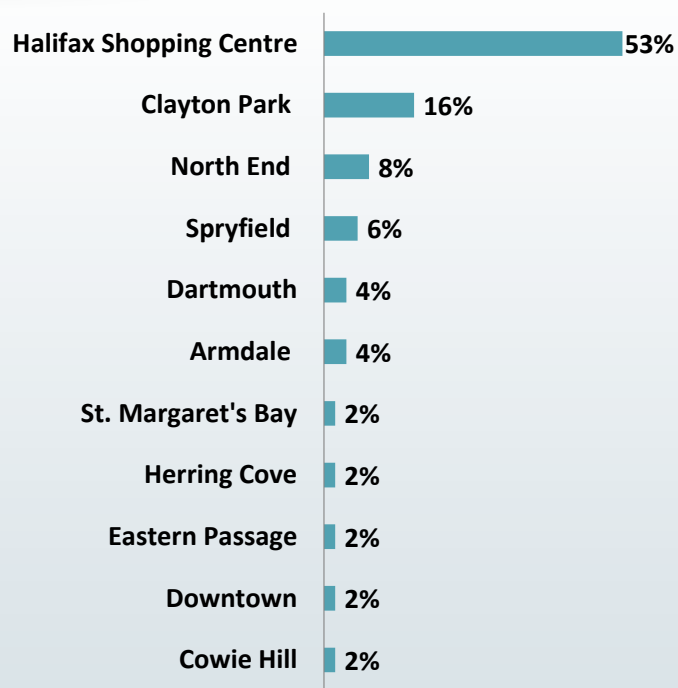
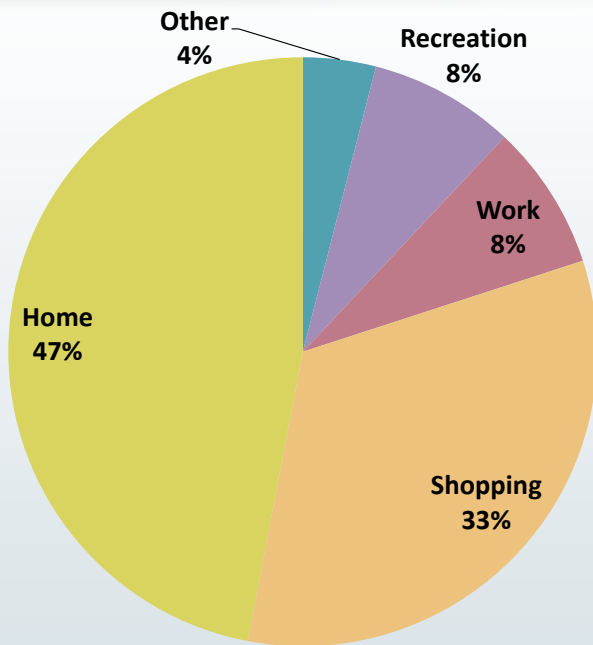
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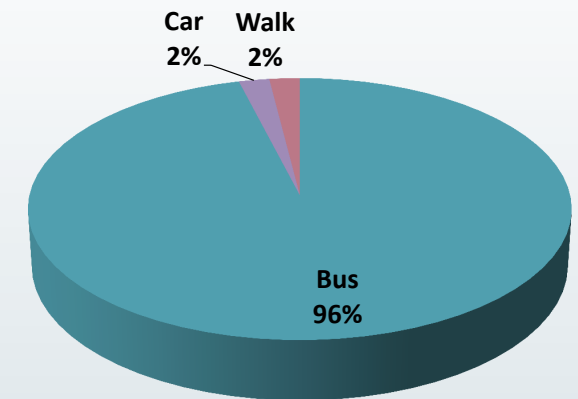
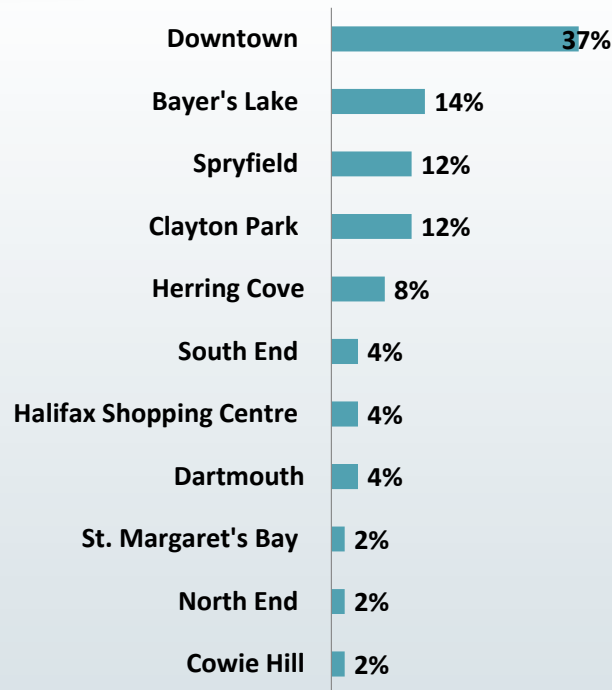
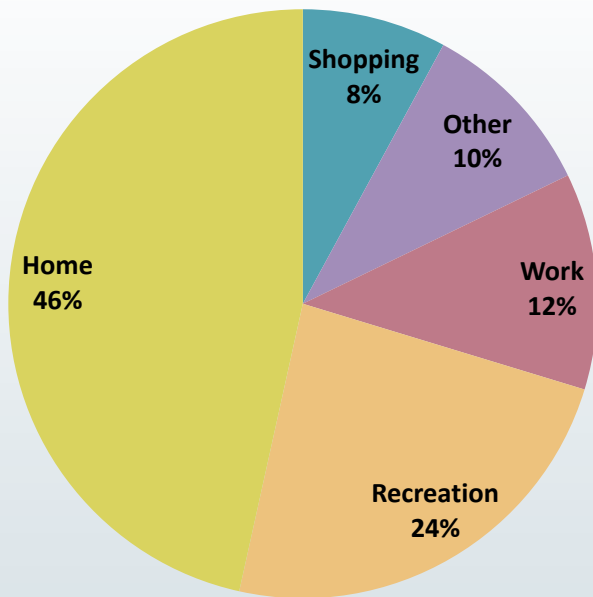
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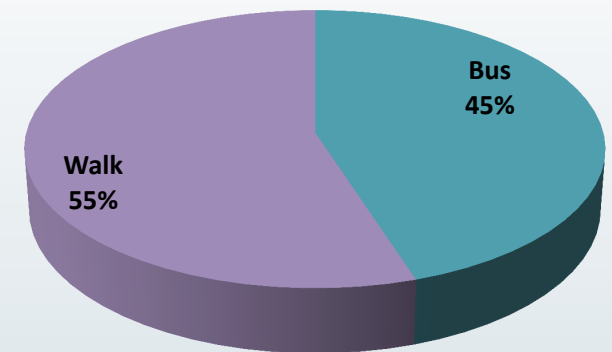
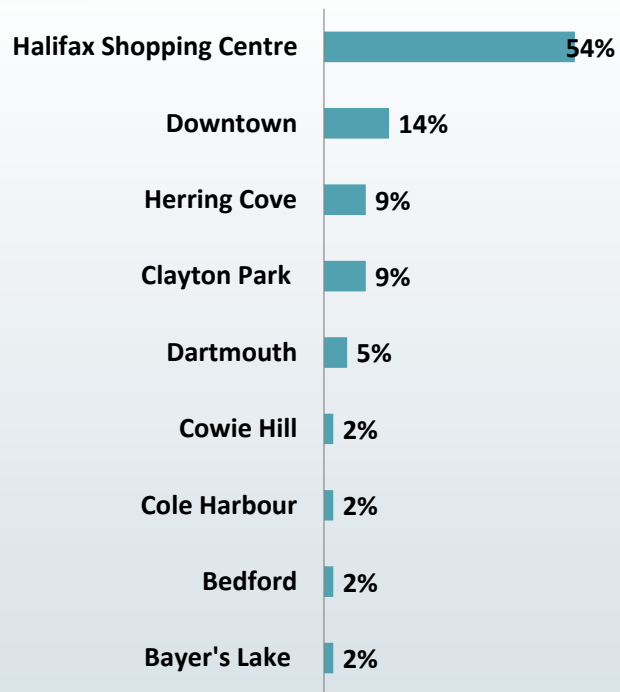
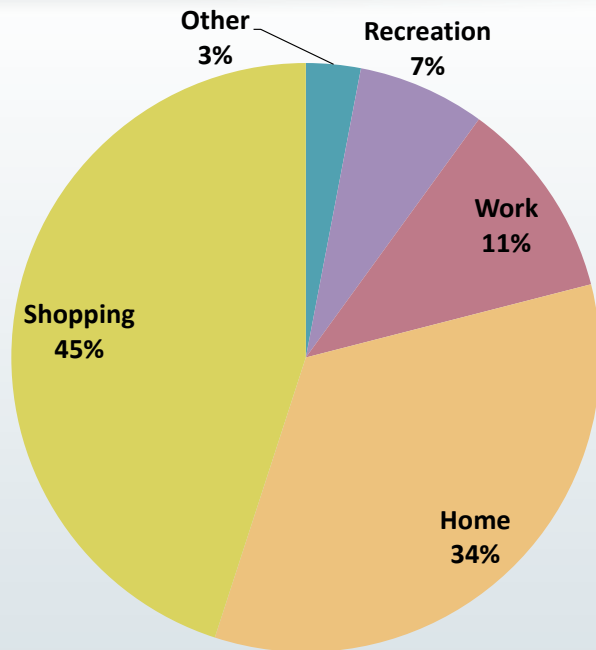
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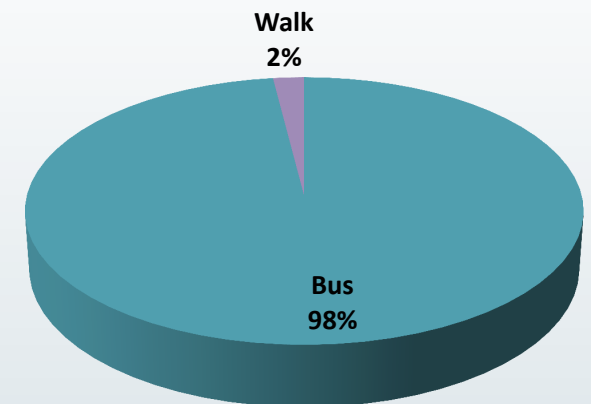
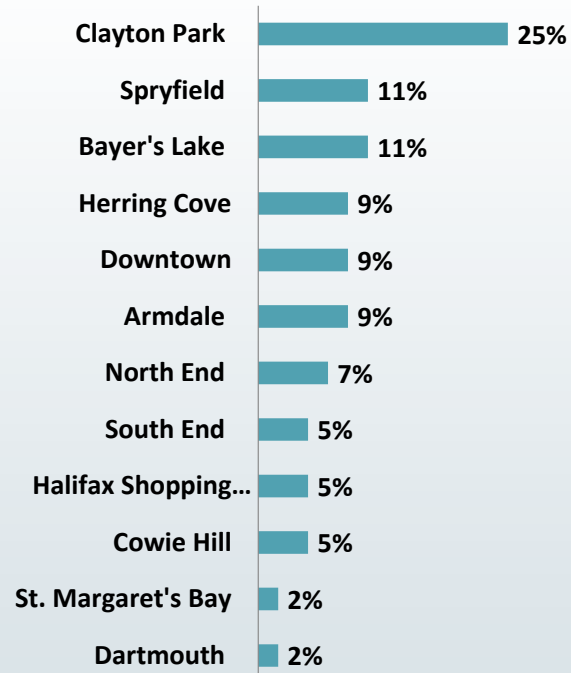
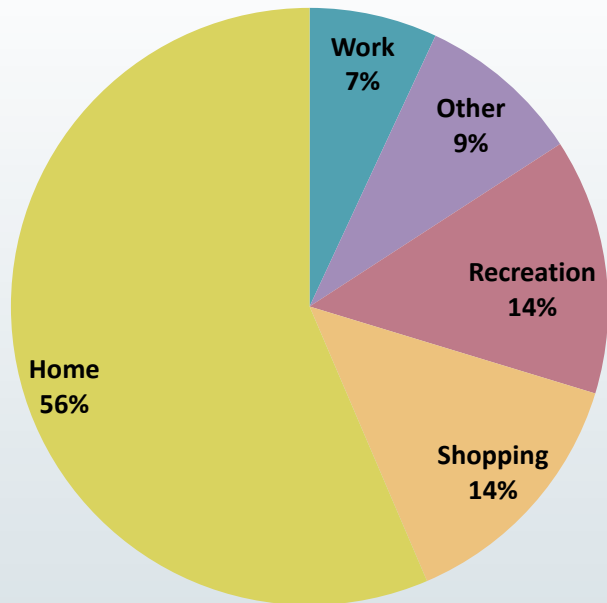
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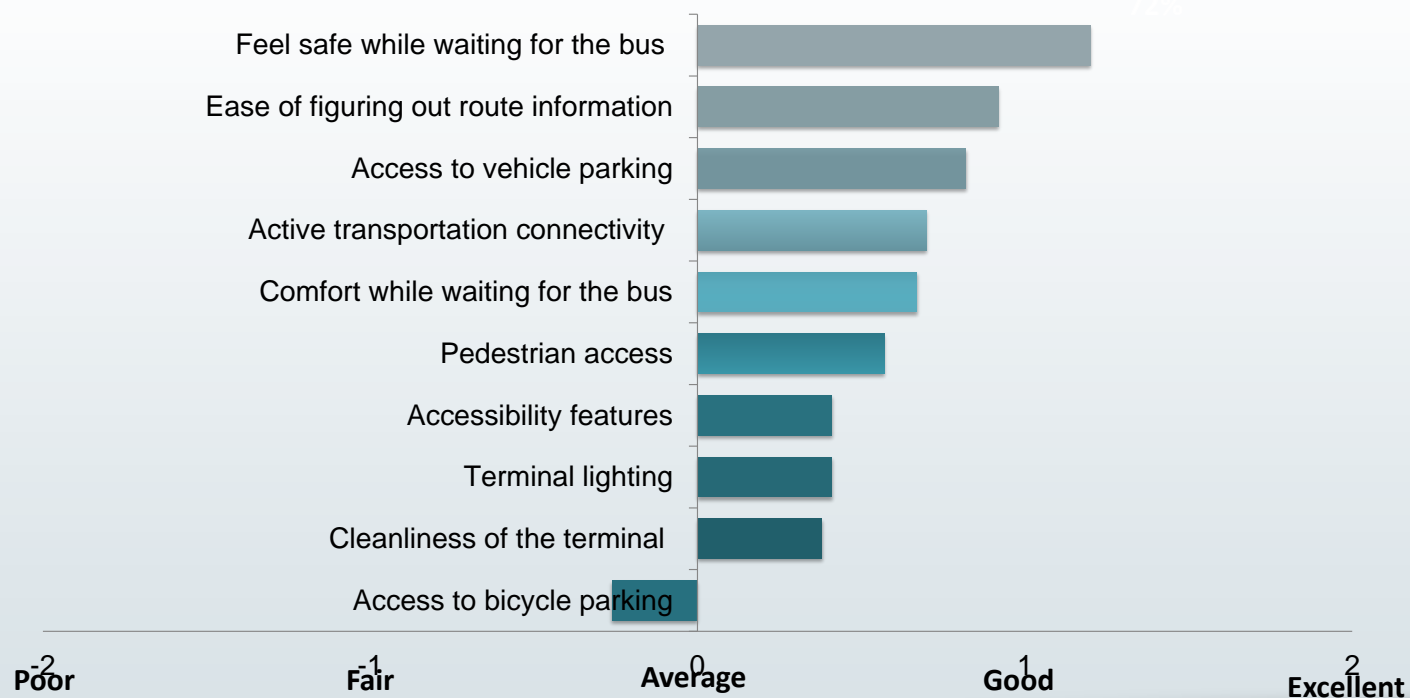
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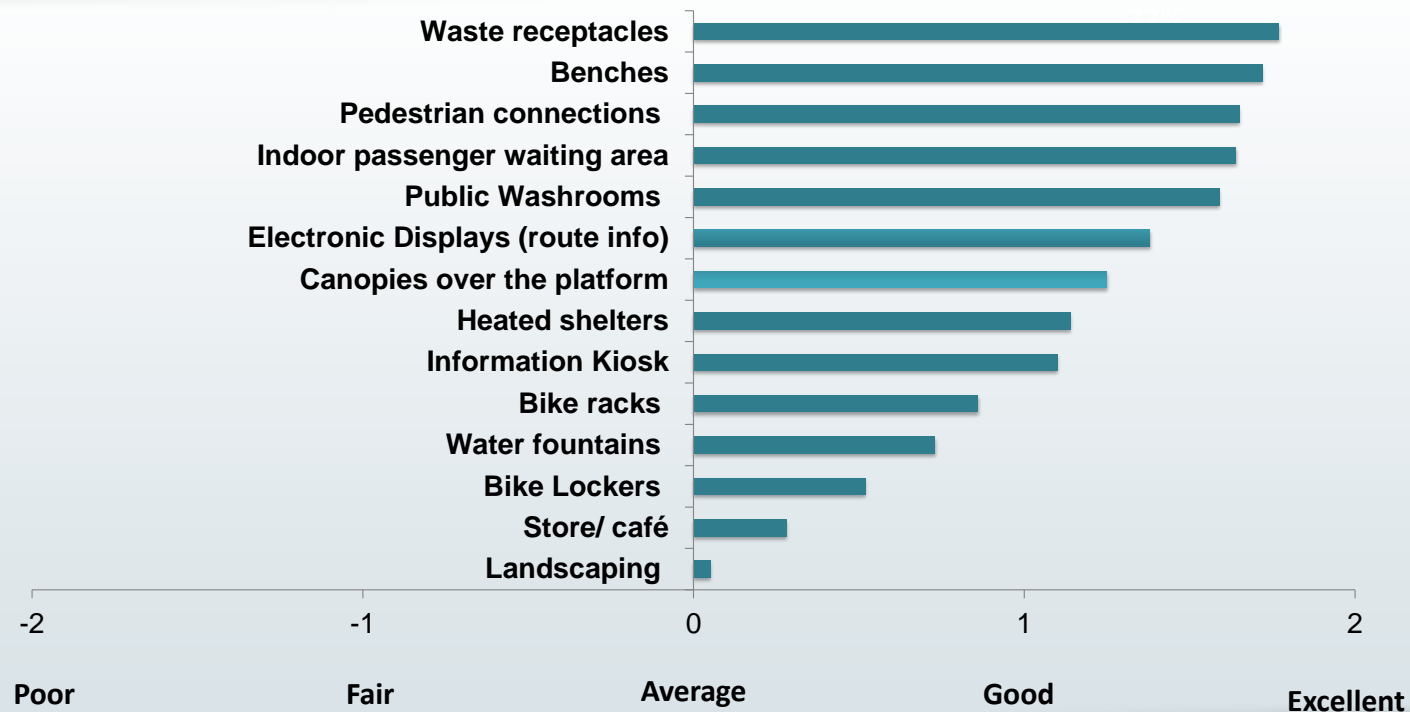
Weekend Afternoon Destination Details



Users' Perception of Mumford's Existing Conditions



Amenity Preference in Redeveloped Terminal



Other Comments

- Needs more space (too crowded)
- Too congested with buses (miss connections; buses don't stop at appropriate bays)
- Location is good (HSC)
- Difficult to get to Walmart
- WIFI
- Lacewood terminal is great
- More seating
- More shelters
- Security
- Unsafe at night
- More lighting
- WIFI

Appendix C

Stakeholder Engagement Material

MUMFORD TERMINAL'S STRENGTHS



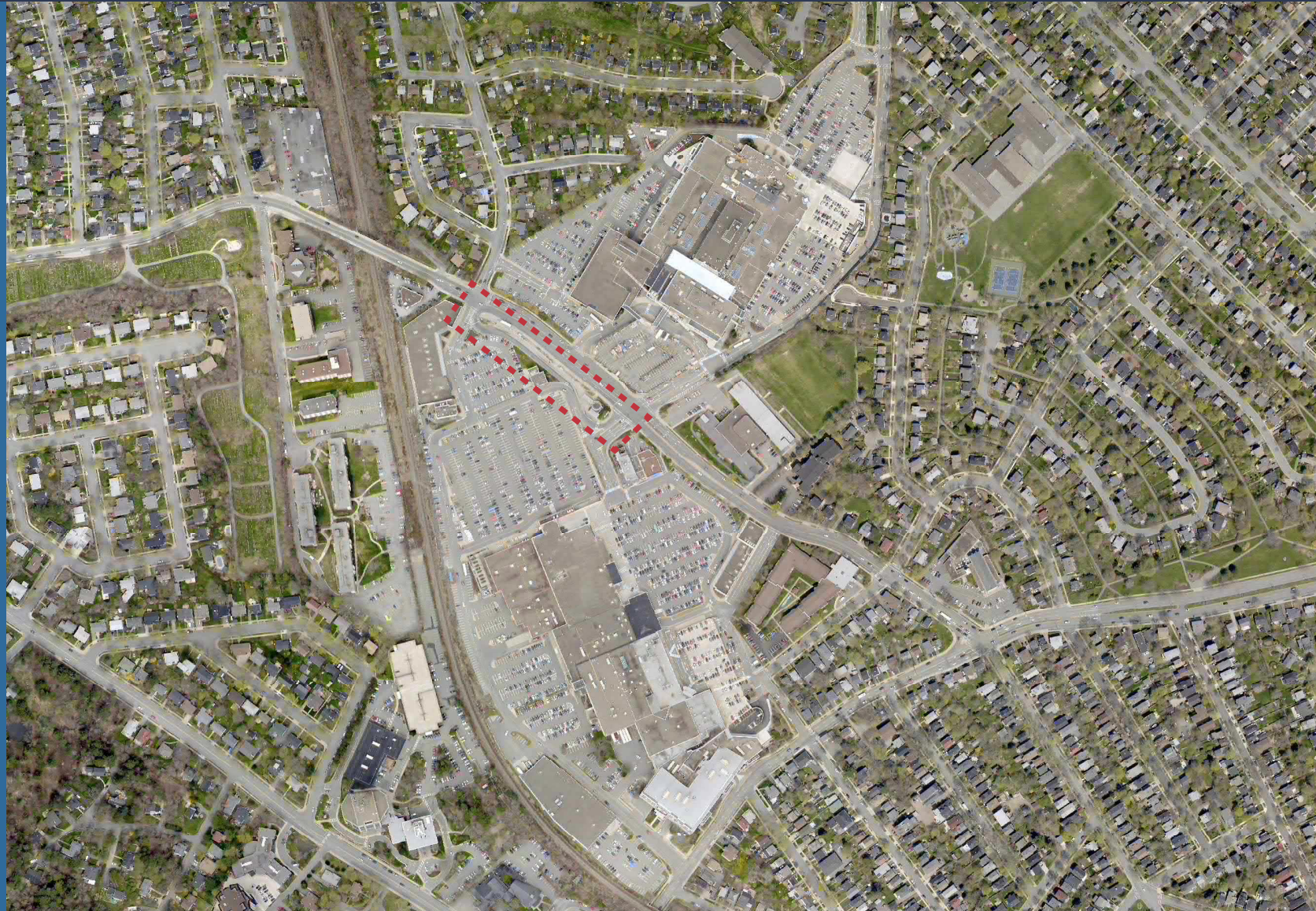
Post Your Thoughts!

What are the **STRENGTHS** associated with the surrounding land uses?

What are the **STRENGTHS** associated with active transportation connections to/ from the terminal?

What are the **STRENGTHS** associated with Mumford's location within Halifax Transit's existing route network?

What are the **STRENGTHS** associated with the passenger amenities featured at Mumford Terminal?



MUMFORD TERMINAL'S WEAKNESSES



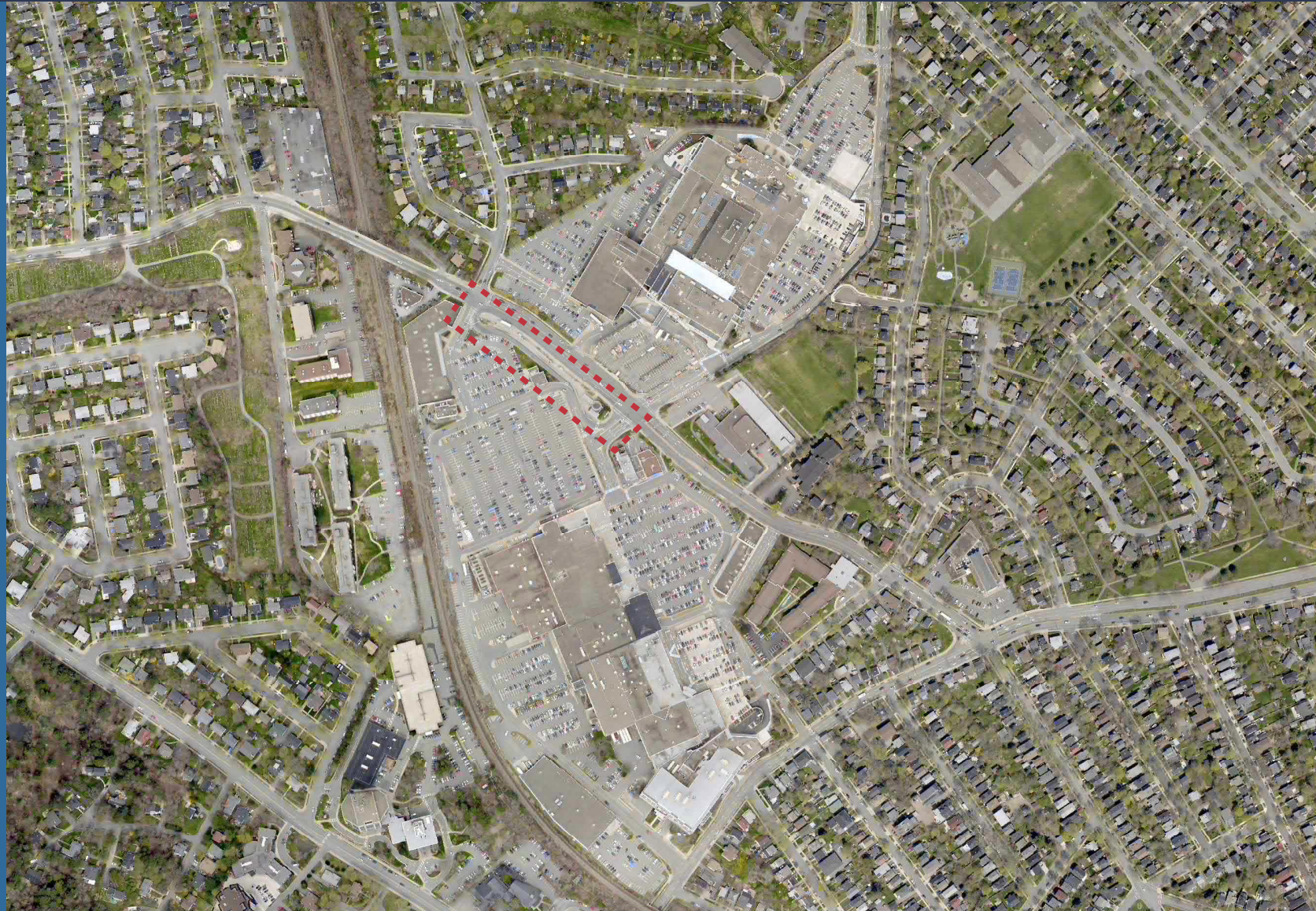
Post Your Thoughts!

What are the **WEAKNESSES** associated with the surrounding land uses?

What are the **WEAKNESSES** associated with active transportation connections to/ from the terminal?

What are the **WEAKNESSES** associated with Mumford's location within Halifax Transit's existing route network?

What are the **WEAKNESSES** associated with the passenger amenities featured at Mumford Terminal?



MUMFORD TERMINAL'S OPPORTUNITIES



Post Your Thoughts!

Where are possible replacement **OPPORTUNITIES** for a redesigned Terminal?

What are the design **OPPORTUNITIES** that Halifax Transit should consider as part of this study?

What **OPPORTUNITIES** exist with active transportation connections in a redesigned terminal?



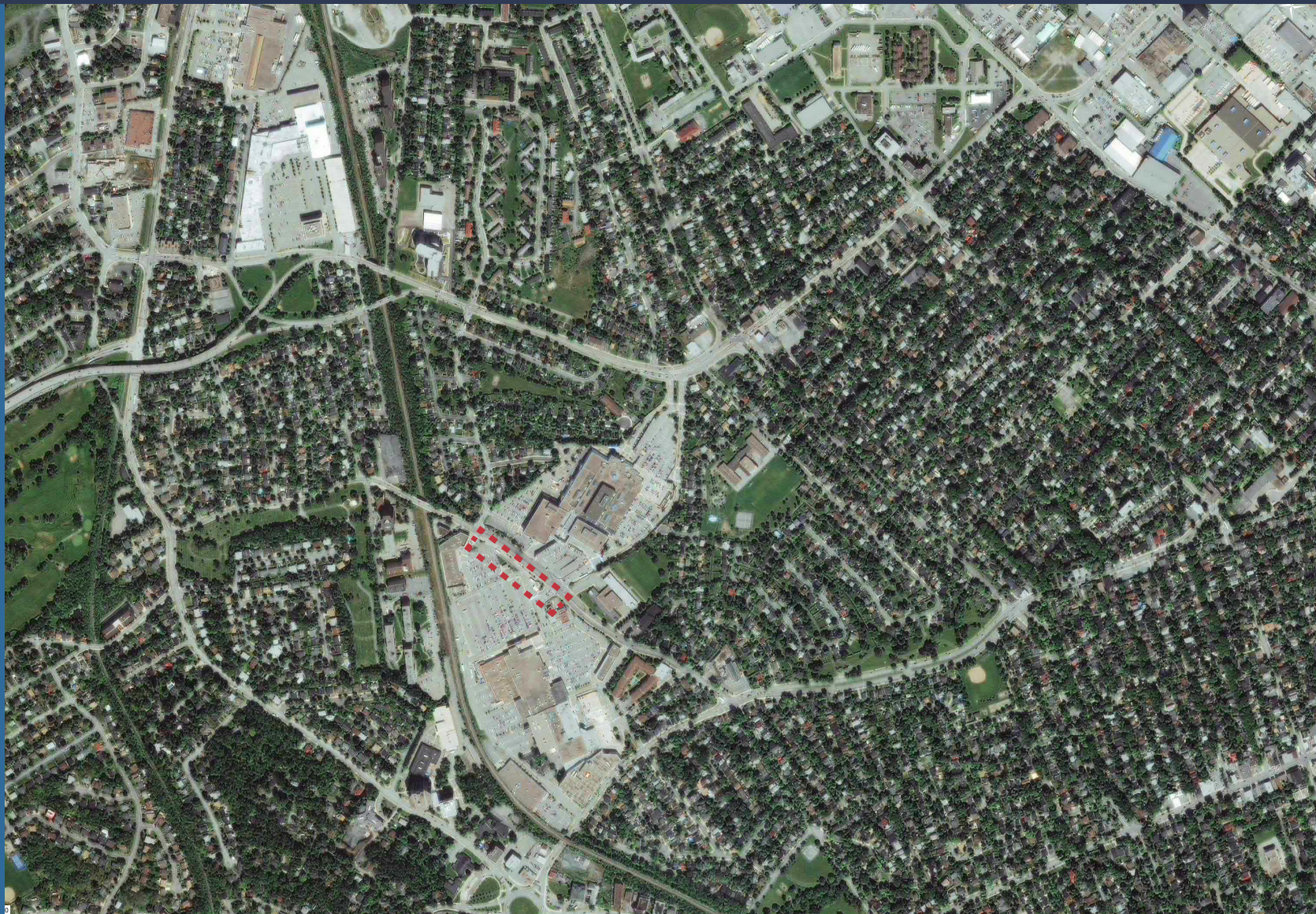
MUMFORD TERMINAL'S THREATS



**Post Your
Thoughts!**

What **THREATS** exist with possible replacement options for Mumford Terminal?

Do any of Mumford Terminal's existing weaknesses act as a **THREAT** to the success of a redesigned terminal?



Appendix D

Neighbourhood Information Session Poster Boards

Welcome

Mumford Terminal Replacement Opportunities Neighbourhood Open House.

AGENDA

- 1. REVIEW** the information boards
- 2. DISCUSS** aspects of the project with the project team
- 3. SHARE** your thoughts on replacement opportunities for Mumford Terminal on the poster boards
- 4. STAY INVOLVED** as the project progresses on the project portal:
shapeyourcityhalifax.ca/mumford-terminal

PURPOSE

At today's open house we would like to get your thoughts on:

CRITERIA USED TO IDENTIFY CANDIDATE SITES

TERMINAL SITE OPTIONS

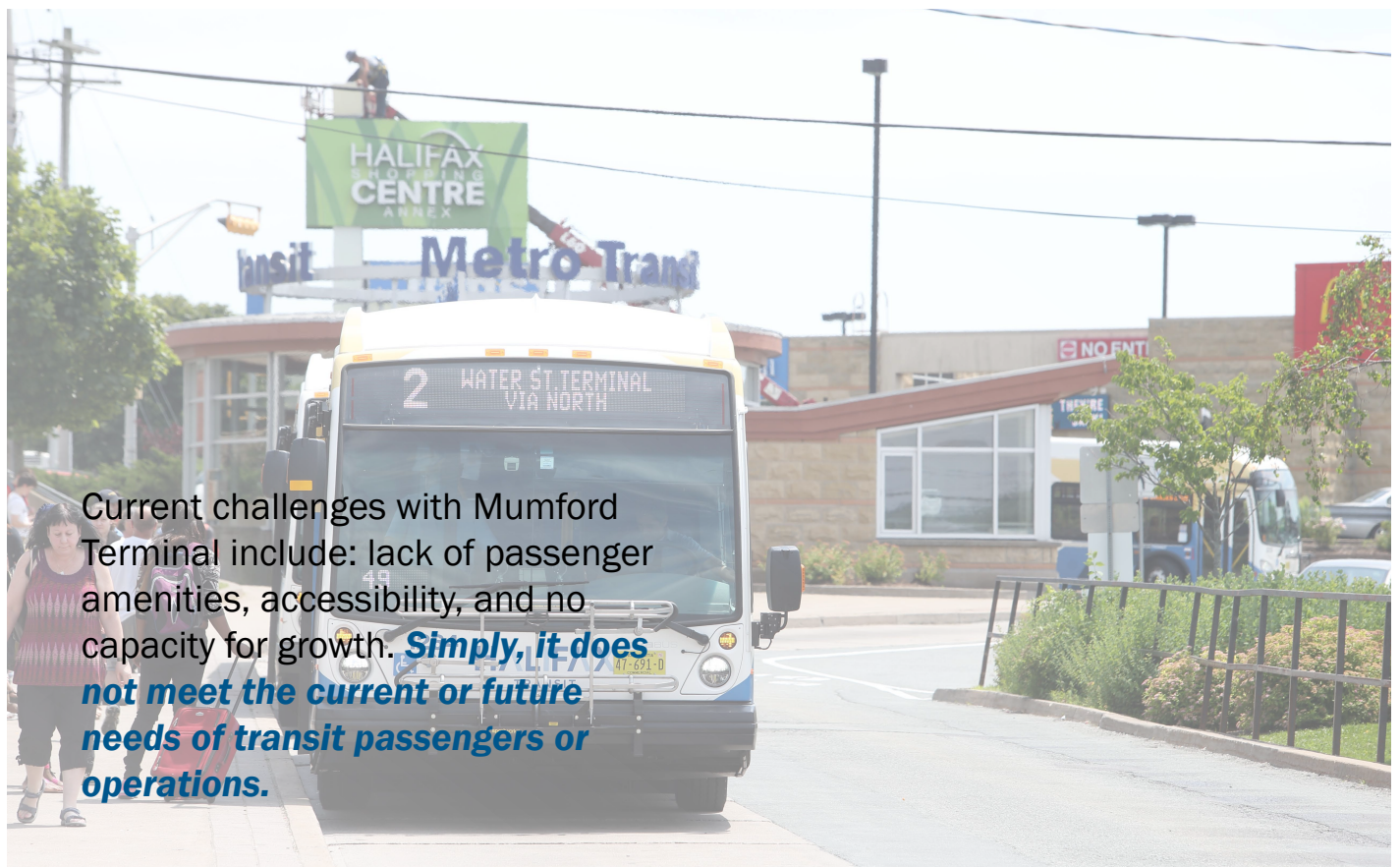
PROJECT SCHEDULE



Project Goal

Halifax Transit is currently working to identify a new terminal location and design to replace the existing Mumford Terminal.

- In 2016 Council approved the **Moving Forward Together Plan**, which found Mumford Terminal to be over-capacity and in need of replacement.
- The new facility requires a larger footprint than the existing terminal and will feature improved amenities for passengers and Halifax Transit bus operators.
- The new facility needs to be state-of-the-art, incorporate sustainable design, and have an effective lifespan of 50 years.

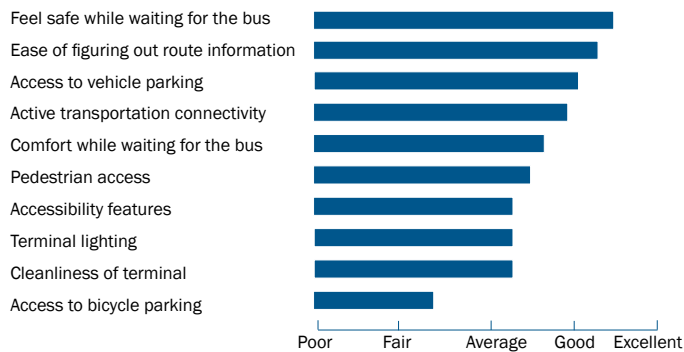


Current challenges with Mumford Terminal include: lack of passenger amenities, accessibility, and no capacity for growth. **Simply, it does not meet the current or future needs of transit passengers or operations.**

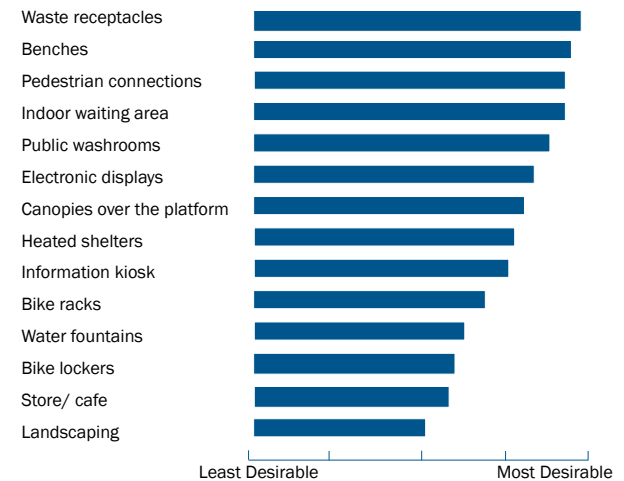
What We Heard

In June, we surveyed transit users at Mumford Terminal and met with community groups. This is what we heard.

Transit Users' Perception of Mumford's Existing Conditions



Users' Amenity Preference within New Terminal



Community groups told us...

"Mumford terminal is confusing. There are no route directions displayed"

"Mumford Terminal is too crowded, buses can't park at proper bays, which causes missed connections"

"There is a lack of seating and shelter at Mumford Terminal"

"The Location of Mumford Terminal is a big strength"

"The road at Mumford Terminal is too narrow for buses"

"Mumford Terminal is not safe at night"

"The existing terminal is too congested"

"There is an opportunity to further develop land around the existing Mumford Terminal"

"The Terminal needs better pedestrian access"

Terminal Comparison

Here are how amenities and features of our other terminals compare.

Terminal	Area	Stops	Connections					Comfort				Convenience			
			Electronic Displays	Ticket Sales	Bike Racks	Bike Lockers	Bike Repair Station	Washrooms	Indoor Waiting Area	Benches	Heated Shelters	Platform Canopy	Store/Cafe	Water Fountains	Waste Receptacles
Lacewood	█	14	Green	Green	Green	Red	Green	Green	Green	Red	Red	Red	Green	Green	Green
Bridge	█	16	Green	Green	Green	Green	Red	Green	Green	Green	Green	Green	Green	Green	Green
Mumford (existing)	█	4	Red	Red	Red	Red	Red	Green	Red	Red	Red	Red	Green	Red	Red
New Terminal	█	10													



Sample Terminals from Across Canada

West Edmonton Mall | Edmonton, AB



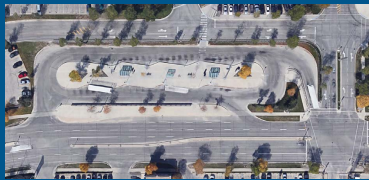
- ✓ Large weather protected shelter
- ✓ High standard of design
- * Bicycle parking facilities
- * Direct pedestrian connections (to West Edmonton Mall only)
- * Park-and-ride spots
- ✓ Integration with surrounding development

Bethel Transit Terminal | Strathcona County, AB

- ✓ Large weather protected shelter
- ✓ High standard of design
- ✓ Bicycle parking facilities
- ✓ Direct pedestrian connections
- ✓ Park-and-ride spots
- * Integration with surrounding development



St. Vital Centre Transit Terminal | Winnipeg, MB



- ✓ Heated shelters
- ✓ High standard of design
- ✓ Bicycle parking facilities
- ✓ Direct pedestrian connections
- * Park-and-ride spots (Stadium events only)
- * Integration with surrounding development

Sudbury Transit Centre | Sudbury, Ontario

- ✓ Large weather protected shelter
- ✓ High standard of design
- ✓ Bicycle parking facilities
- ✓ Direct pedestrian connections
- * Park-and-ride spots (located downtown)
- ✓ Integration with surrounding development



St. Laurent Station | Ottawa, ON



- ✓ Large weather protected shelter
- ✓ High standard of design (currently under renovation)
- * Bicycle parking facilities
- * Direct pedestrian connections (to St. Laurent Shopping Centre only)
- * Park-and-ride spots
- ✓ Integration with surrounding development

King's Place Transit Terminal | Fredericton, NB

- ✓ Large weather protected shelter
- * High standard of design
- * Bicycle parking facilities
- ✓ Direct pedestrian connections
- * Park-and-ride spots
- ✓ Integration with surrounding development



On Street vs. Off Street Transit terminals

When evaluating potential locations for a new terminal, we looked at potential On Street and Off Street options. Here is the difference.

On Street Terminals

An on street terminal is defined as a transit terminal that is located within a street right-of-way. This right-of-way through the terminal can be restricted to transit vehicles or used by all traffic; however, generally the lane closest to the curb is reserved for transit use

Advantages of On Street Terminals:

- Reduces the need for property acquisition;
- Direct access to the pedestrian network;
- Reduces bus running times;
- High visibility for the transit system; and
- Enhances the ability for area intensification/development

Disadvantages of On Street Terminals:

- Hard to accommodate through-routes (without layovers) and terminating routes (with layovers)
- Passengers can be required to cross the street to make connections with other routes;
- Higher potential for conflict between buses and traffic and pedestrians and vehicles; and
- Often limited space within right-of-way to accommodate station needs.



Scotia Square on Barrington is an example of an on street terminal

Off Street Terminals

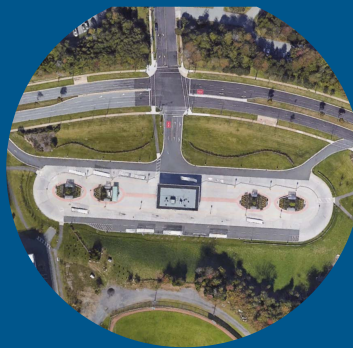
An off street terminal is defined as a transit terminal that is located on a parcel of land not within the street right-of-way.

Advantages of Off Street Terminals:

- Reduces conflict between vehicles, transit vehicles, and passengers;
- Provides a sense of permanence;
- Provides an amenity to the adjacent neighbourhood;
- High visibility for the transit system; and
- Enhances the ability for area intensification/development

Disadvantages of Off Street Terminals:

- Diminished visibility of the transit system if the station is located too far from the surrounding community of if it is hidden;
- Additional security measures may be required;
- Additional costs if property acquisition is required; and
- Increased operating costs to maintain the terminal.



Lacewood Terminal is an example of an off street terminal

Evaluation Criteria

To help us identify candidate sites for the new terminal, the following criteria have been developed.

we are here

next steps

Step 1.

Step 2.

Step 3.

Creating the Long List

Determining initial locations, which are shown on the map today.

Initial Criteria:

- **Open commercial space** - Significant space for parking provides good opportunities for a new transit terminal.
- **Municipal road right-of-way** - Repurposing parts of Halifax's roads can provide advantages for land acquisition, cost, and maintenance versus buying or leasing from a property owner.
- **Close to major road corridors** - The access and mobility provided by these is essential to an efficient and convenient transit network.
- **Close to potential higher order transit** - Halifax is investigating the feasibility of Bus Rapid Transit and Commuter Rail. Integration with these services will be important.
- **Close to mixed land uses** - Transit is improved when stations are located within walking distance to varied land uses (e.g., residential, shopping, schools).
- **Single facility not located in an area zoned R-1** - These areas are typically lower density residential with little variety in land use, which reduces the attractiveness for the terminal.



Complete

Outcome:

A long list of potential on and off-street terminal locations (shown on map).

Evaluating the Long List

Narrowing down the options.

Long List Criteria:

- **Number of Existing Routes Served** - How well does the location serve existing transit routes?
- **Number of Moving Forward Together Plan Routes Served** - How well does the location serve the future transit routes?
- **Proximity to Mixed Land Uses** - Is the station location surrounded by a mix of land uses?
- **Land Acquisition** - How difficult will it be to acquire the land or work with the land owner?
- **Pedestrian Environment** - What is the quality of the pedestrian experience in the area surrounding the station?
- **Cycling Environment** - What is the quality of the cycling experience in the area surrounding the station?
- **Bus Access/ Bus Egress** - How easy will it be for buses to enter and exit the location?
- **Layout and function of terminal facilities** - Does the location provide enough space in such a way that the terminal can be well laid out?

We are looking for your feedback on this evaluation criteria today!

Outcome:

A short list of potential on and off-street terminal locations.

Evaluating the Short list

Choosing the best location for the new terminal.

New Terminal Design Goals:

- **Improve Transit Operations** - It is important that the new station improve upon the reliability and convenience of the transit network.
 - Number of existing routes served
 - Number of *Moving Forward Together Plan* routes served
 - Proximity to transit priority/ Bus Rapid Transit corridors
 - Proximity to potential commuter rail
- **Reduce Barriers for Sustainable Modes** - Reducing barriers to walking and biking is critical to making transit a more attractive and integrated part of the transportation network.
 - Connections to cycling network
 - Connections to walking network
 - Pedestrian crossing distance
 - Walking environment
 - Pedestrian safety
- **Better Integration with Community** - Placing the station in an area surrounded by a mix of land uses will make it useful to more people for more reasons throughout the day.
 - Proximity to residential
 - Proximity to retail
 - Proximity to office/ institutional
- **Catalyst for Redevelopment** - Investment in a new, high quality terminal will allow the community to grow around it.
 - Ability to intensify
 - Opportunity for improved community features

Outcome:

A final recommended Terminal location and design

Evaluation Criteria

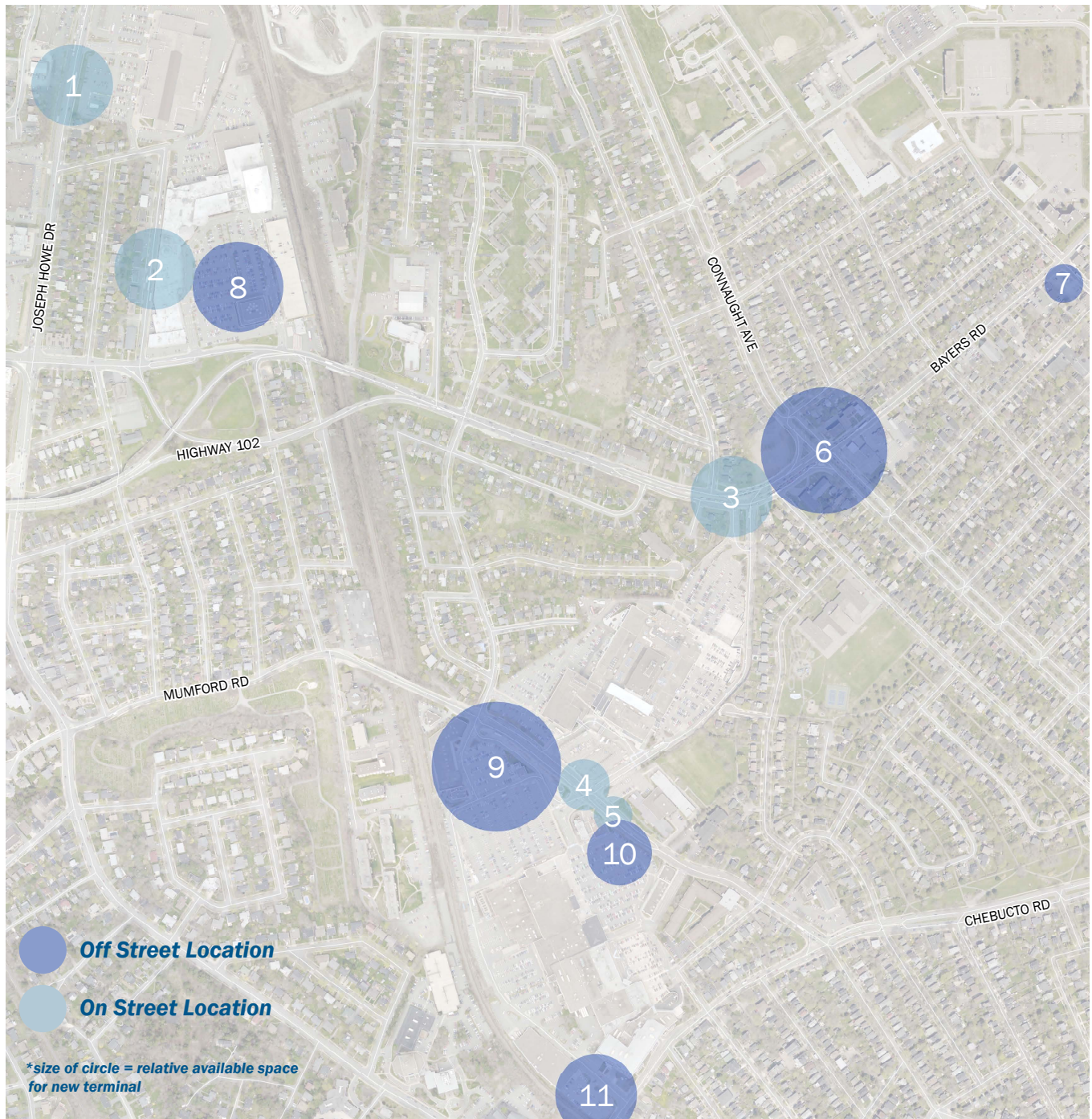


Post your thoughts!

- Do you agree with our long list of evaluation criteria*
- Are there other criteria that should be included?*

Location Opportunities

Following our initial criteria, we have selected the following as potential locations for a new terminal to replace Mumford.



Location Opportunities

On Street Opportunities



1
*Joseph Howe Drive
at Superstore*



2
*Desmond
Avenue*



3
*Bayers Road
Centre*



4
*Mumford Road
Opposite Sears*



5
*Mumford Road
Opposite Sobeys*

Off Street Opportunities



6
*Bayers Road &
Connaught Avenue*



7
*Bayers Road &
Oxford Street*



8
*Bayers Road
Centre*



9
*Expansion on
Existing Site*



10
*HSC - Sobeys
Off-street*



11
*Adjacent to
Chebucto Road*

Location Opportunities

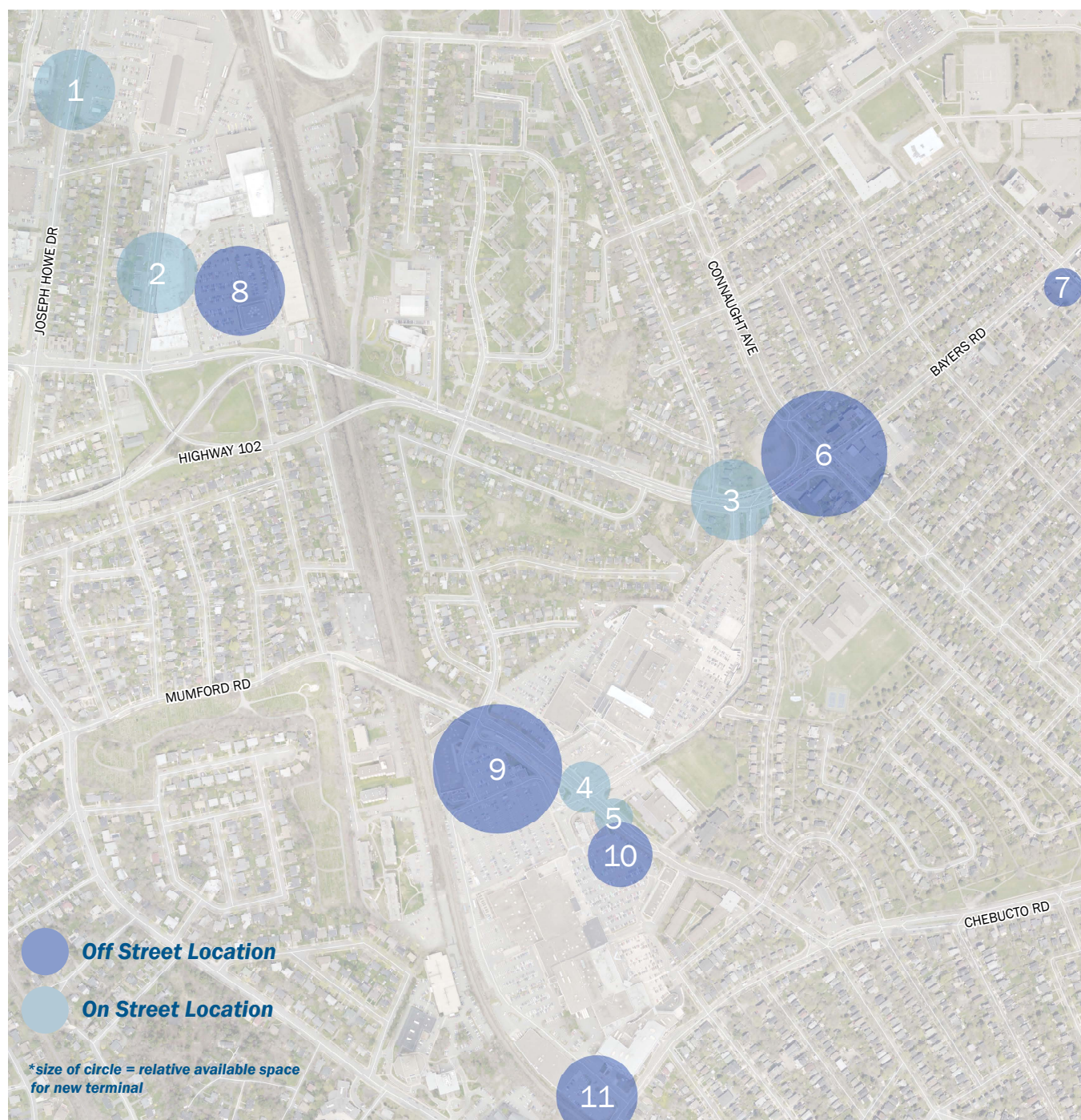


Post your thoughts!

- *Do you agree with our location opportunities?*
- *Are there other locations that should be included?*

Location Preference

Place a sticker on the location you prefer for a new Terminal or location(s) you believe Halifax Transit should investigate further



Appendix E

Memo from Halifax Urban Design



PO Box 1749
Halifax, Nova Scotia
B3J 3A5 Canada

MEMORANDUM

TO: Erin Blay, Derek Nawrot – Halifax Transit
CC: Hanita Koblents, Elora Wilkinson – Planning & Development
FROM: Jacob Ritchie – Planning & Development
DATE: 2017-10-06
SUBJECT: **Mumford Terminal**

Attention Colleagues,

We've worked up a small memo with some thoughts about the site selection for a replacement for the Mumford terminal. These reflect our thoughts considering major land use policy projects (Dutch Village Road, Centre Plan) we've pursued over the past few years as well as approved Priorities Plans that we are familiar with.

Mumford Terminal Relocation Urban Design Team Comments

Note: Comments with respect to future land use reflect either adopted plans (Dutch Village Road) or designations in the Centre Plan document.

1. Joseph Howe Drive (JHD):
 - Dutch Village Rd (DVR) has been rezoned for a significant increase in density however there is only one pedestrian connection (on Percy Street) between JHD and DVR between the two intersections of JHD with DVR, as such this location will be difficult to access on foot from the new development that is taking place off DVR. The AT Plan proposes a new sidewalk and bike lane on DVR, but connection to JHD will remain challenging without significant property acquisition. Any transit facilities should connect pedestrians and cyclists to the area surrounding Dutch Village Rd and the new density.
 - Considering how often people cross JHD, pedestrian crossings will need to be prioritized. It is not clear how crossing a major arterial to make a bus connection would be desirable.
 - A terminal at this location should be integrated with private development
 - Without the redevelopment of the Superstore site and better connections to DVR, this site is not ideal from a land-use perspective. Has there been any discussion with the land owner of the superstore property on the likeliness of re-development?

Urban Design Program Area

Tel: 902.209.4500
Email: ritchij@halifax.ca halifax.ca

2. Desmond Avenue:
 - This area is not well connected to the surrounding area as it is tucked away on a less major street.
 - The density in the neighbourhood abutting is not very high, and this area is not connected to any other neighbourhoods. There is no crossing of Bayers at Desmond.

3. Bayers Road at MicMac St
 - This area is well connected to the surrounding low density residential neighbourhood, but there is not much support for high-density development surrounding this node.
 - The area is near a Future Growth Node that may redevelop, though this portion of the FGN with the shopping centre is less likely to redevelop.
 - Plans for bike route connections include 3m trail in place of sidewalk between George Dauphinee and Vaughn on south side of Bayers. This is part of a critical link between peninsular Halifax and Chain of Lakes Trail. Proximity to this bike route is good on the one hand, but risks the creation of conflicts between the bicycle trail and pedestrians waiting on the sidewalk for the bus.

4. Mumford Road Opposite Sears & Sobeys
 - This area has the potential for redevelopment as a future growth node, and active interest from the abutting property owner to redevelop
 - Reasonably well connected to the surrounding low density neighbourhood
 - Good existing supply of retail, services and jobs, parks and schools to support a TOD, but they are in a car-oriented setting. Terminal location in this area (4,5,9,10) should be integrated with a masterplan for redevelopment of the malls, particularly the one on the west side of Mumford, that includes pedestrian oriented urban design, new public streets, and AT connections over the tracks and southwards as well (Halifax Urban Greenway to connect to Dal and SMU and QE Hospital (via Norwood/ Shirley Local Street bikeway)
 - Plans for AT Connections close by, including the potential to connect to high density on the west side of the rail. Any redevelopment near the existing Mumford Terminal must find a way to integrate a public connection over the tracks from Olivet Street (the existing high density residential area)

5. Connaught & Bayers Rd
 - This area is well connected to the surrounding low density residential neighbourhood. It is at the end of a Centre Plan corridor, so there may be some medium density development in proximity, but not much opportunity for high density development around the site.
 - The area is near a Future Growth Node (Halifax Shopping Centre) that may redevelop, though this portion of the FGN with the shopping centre is less likely to redevelop.
 - This area seems to be well connected for vehicles, but less well connected for pedestrians and cyclists other than neighbourhood streets.

6. Bayers Road and Oxford St

- In the middle of a medium density corridor in the proposed Centre Plan, and well connected to the surrounding low density area, but no opportunity for high-density mixed use hub to support the transit station
- Not much for bike connections in this area, other than neighbourhood streets
- Predominantly low density development in immediate vicinity today. One out of four corners of this intersection includes some office uses, but they are car-oriented with ample off street parking and buildings set back from the road.

7. Bayers Road Shopping Centre

- This site is a Future Growth Node and has policy support for a high-density hub, however redevelopment is not expected in the next 5 – 10 years
- The on-ramp to the highway across the street, and the disjointed road network in this area disconnects this centre from the surrounding neighbourhoods,
- The surrounding area is predominantly low density residential, though there are some apartment buildings near by.

8. Mumford station

- This area has the potential for redevelopment as a future growth node, and active interest from the property owner to redevelop
- Near the surrounding low density neighbourhood
- Has existing connection to commercial and jobs, parks and schools
- Plans for AT Connections across the tracks and southward along the tracks would need to be implemented to maximize success
- Connection to possible commuter rail
- Best opportunity for a good example of quality design and transit-oriented development, supported by high density on the site. Would be good to work with property owner on a Master Plan.

9. Sobey's off-street

- Near the surrounding low density neighbourhood
- Potential to connect to high density on West side of rail. Terminal development would need to be integrated with the development of the AT rail crossing to maximize success.
- This area has the potential for redevelopment as a future growth node, and active interest from the property owner to redevelop

10. Adjacent to Chebucto Road

- Area is connected to the low density residential area surrounding, though not as well as other sites. It would be hard to cross Chebucto from the residential area to the south. A new at grade crossing would risk bunging up the roundabout, so this location should be integrated with the idea of a ped/ bike bridge over Chebucto beside the rail corridor (Halifax Urban Greenway Concept Plan).
- Would benefit from high-density development on the Mumford site, though less so as it less central to where the bulk of the redevelopment opportunity seems to be
- Not well connected for pedestrians to the commercial aspects of the site
- Connection to possible commuter rail

Priority Factors

The consideration of the potential for future high density, mixed use, redevelopment opportunities that can integrate well with the existing Urban Structure of the West End needs to be considered as a top priority. Without this consideration being paramount we risk taking lesser details as deciding factors in the long-term redevelopment of private lands and the provision of public services.

Thank you for the opportunity to contribute, please let us know if you have any questions.

Regards,
Jacob

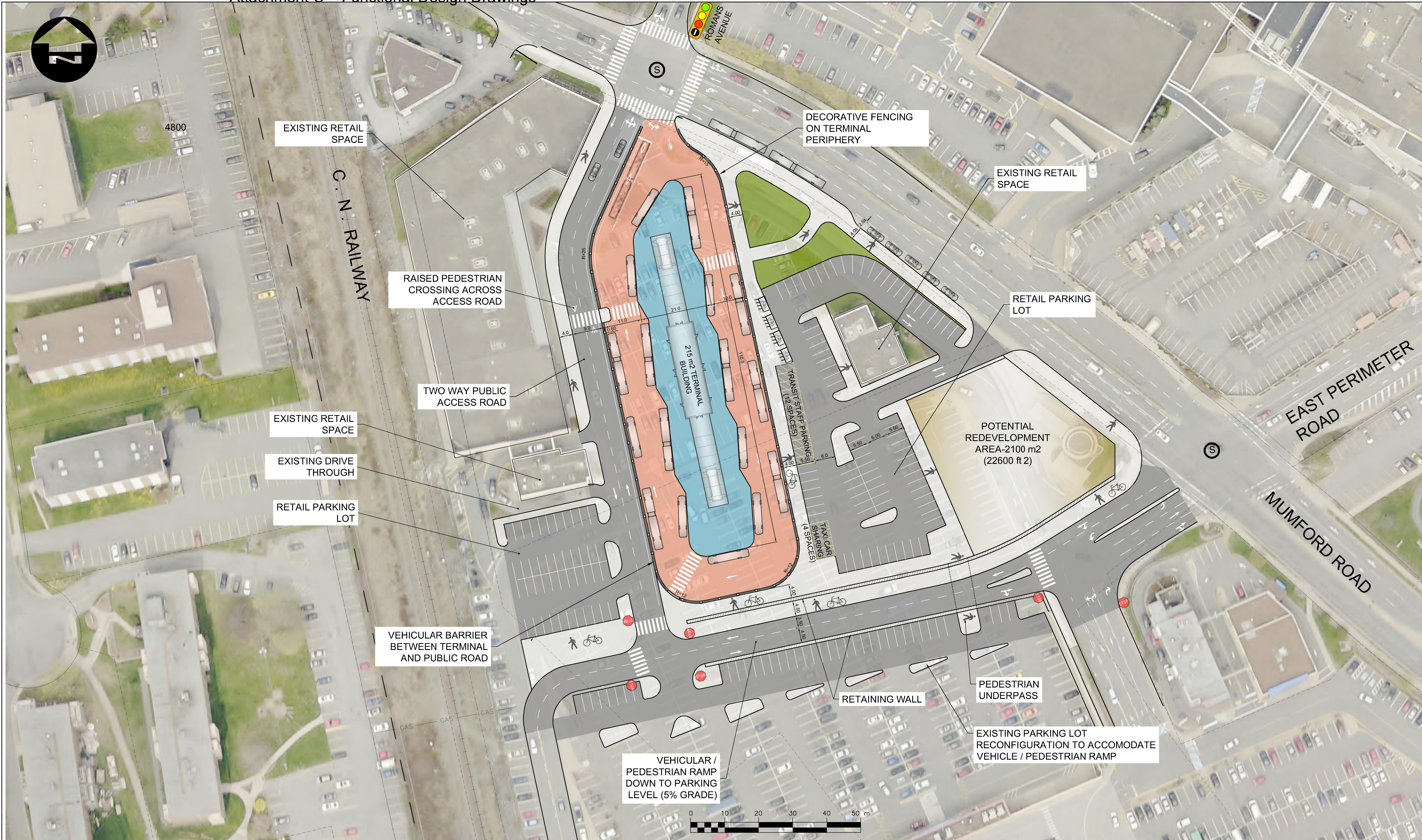
JACOB RITCHIE MCIP, LPP
URBAN DESIGN PROGRAM MANAGER
PLANNING & DEVELOPMENT

HALIFAX

PO BOX 1749
HALIFAX NS B3J 3A5
C. 902.209.4500
HALIFAX.CA

Urban Design Program Area

Tel: 902.209.4500
Email: ritchij@halifax.ca halifax.ca



LEGEND	
TRANSIT ONLY ZONE	
PASSENGER PLATFORM	
PARKING LOT RECONFIGURATION	

LEGEND	
PEDESTRIAN CROSSWALK	
HEATED SHELTER	
PLATFORM CANOPY	

LEGEND	
TRANSIT PRIORITY SIGNAL	
BIKE PARKING	
PEDESTRIAN FENCING	

LEGEND	
SIGNALIZED INTERSECTION	
LOT LINES	

DILLON CONSULTING
SCALE 1:500

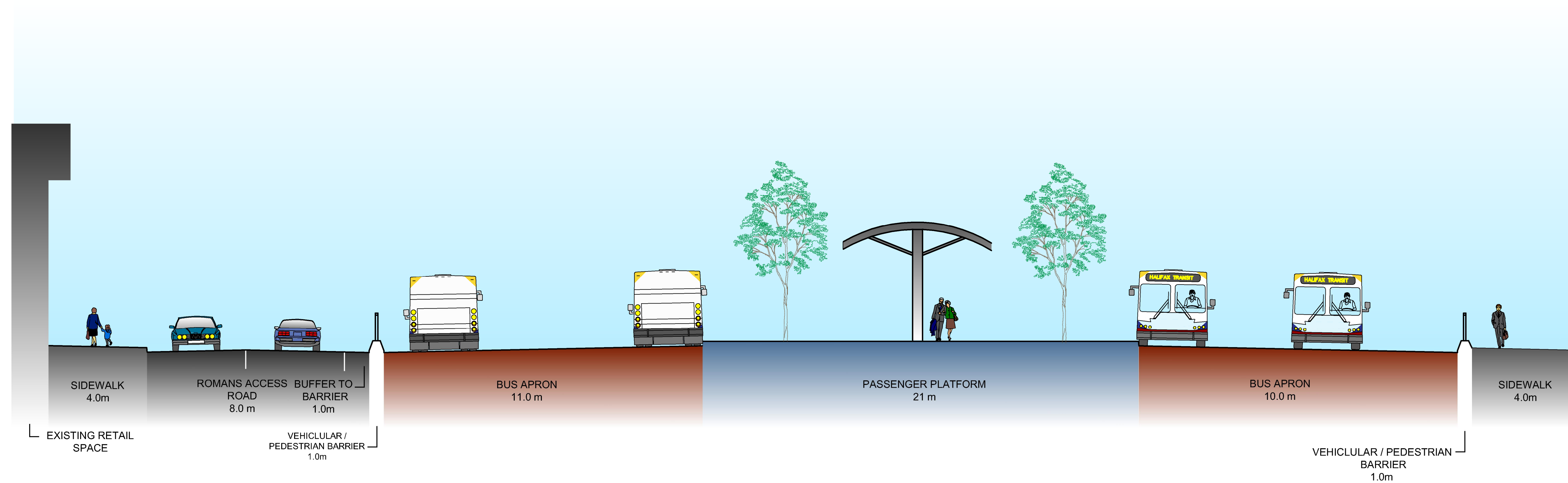
TITLE **HALIFAX REGIONAL MUNICIPALITY**
MUMFORD TRANSIT TERMINAL REPLACEMENT
RECOMMENDED OPTION

DRAWING NO. **FIGURE 9**

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WEST

EAST



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MUMFORD TRANSIT TERMINAL REPLACEMENT

CROSS SECTION

DRAWING NO.

FIGURE 10



LEGEND EXISTING			
C.S.	COMBINED SEWER	—●—	GAS
W.W.S.	WASTEWATER SEWER	—●—	OVERHEAD HYDRO
S.S.	STORM SEWER	●	HYDRO POLE
W.M.	WATER MAIN	■	CATCH BASIN
		---	LOT LINES
		—	BELL



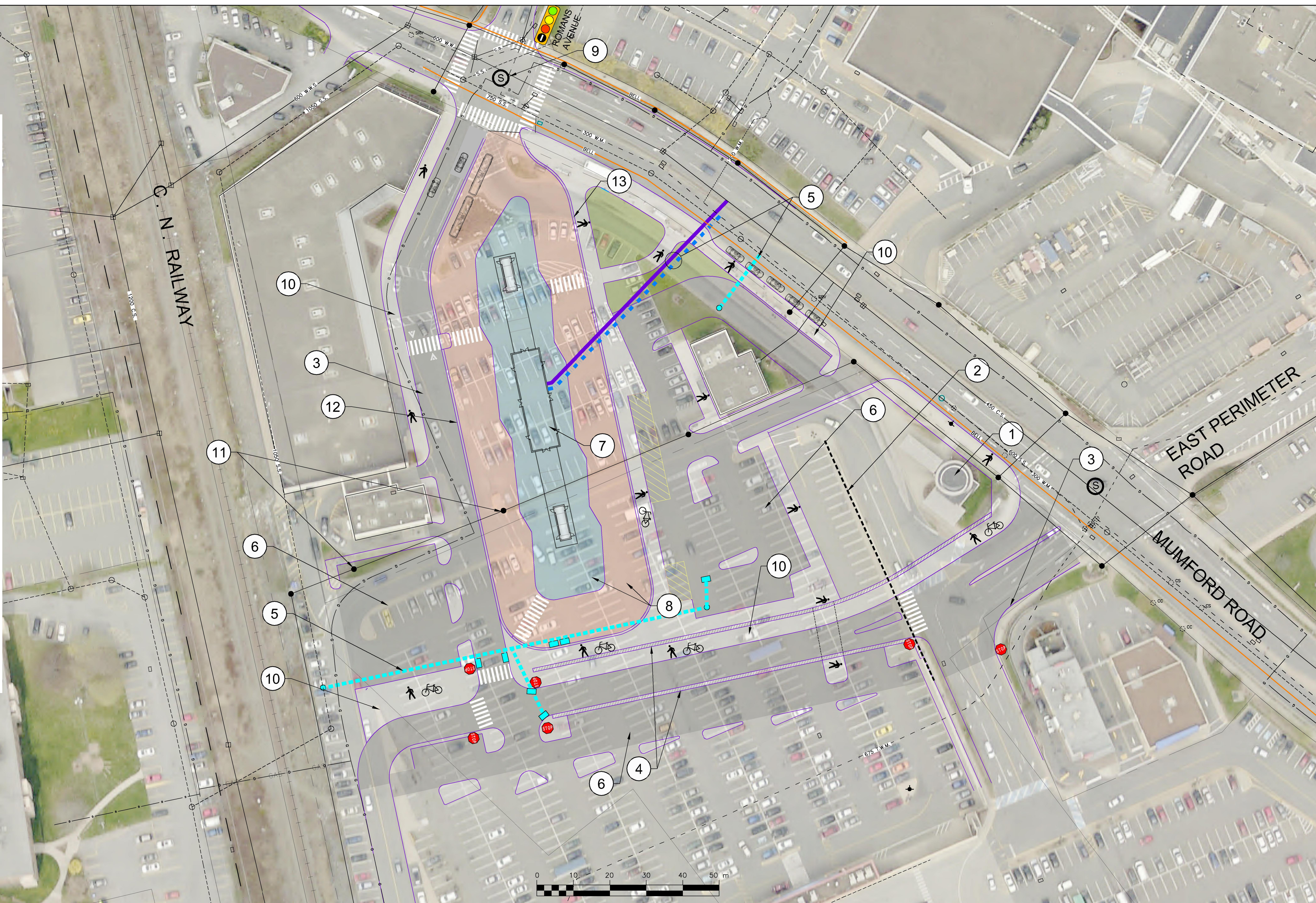
TITLE
HALIFAX REGIONAL MUNICIPALITY
MUMFORD TRANSIT TERMINAL REPLACEMENT
 EXISTING UTILITIES PLAN

DRAWING NO.
 FIGURE 11



NOTES

- 1) DEMOLITION OF EXISTING TERMINAL BUILDING
- 2) DEMOLITION OF EXISTING RETAINING WALL
- 3) REALIGNMENT OF ROMANS AVE AND EAST PERIMETER ENTRANCES
- 4) CONSTRUCTION OF PARKING LOT ACCESS RAMP AND RETAINING WALL
- 5) CONSTRUCTION OF STORM SEWER AND TERMINAL BUILDING SEWER AND WATER
- 6) PARKING LOT RECONFIGURATION
- 7) CONSTRUCTION OF TERMINAL BUILDING
- 8) CONSTRUCTION OF TERMINAL ROADWAY, PASSENGER PLATFORM AND AMENITIES
- 9) SIGNAL MODIFICATIONS TO INCLUDE TRANSIT PRIORITY
- 10) CONSTRUCTION OF SIDEWALKS
- 11) RELOCATION OF EXISTING HYDRO DISTRIBUTION POLES
- 12) CONSTRUCTION OF VEHICULAR / PEDESTRIAN BARRIER
- 13) CONSTRUCTION OF DECORATIVE FENCE AROUND TERMINAL



LEGEND EXISTING

C.S.	COMBINED SEWER	—●—	GAS
W.W.S.	WASTEWATER SEWER	—	LOT LINES
S.S.	STORM SEWER	---	
W.M.	WATER MAIN	---	

LEGEND PROPOSED

	WASTEWATER SEWER		PROPOSED WORKS
	WATER MAIN		
	STORM SEWER		
	CATCH BASIN		



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MUMFORD TRANSIT TERMINAL REPLACEMENT**
ANTICIPATED WORKS

DRAWING NO. **FIGURE 12**