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1. INTRODUCTION AND ISSUE STATEMENT

Oakville Transit services are projected to grow significantly over the next 10 to 15 years both in keeping with the growth of the Town but also in response to an emphasis on greater transit use. A major growth area within the Town will be the Palermo Village located at Dundas Street and Bronte Road. This community will have about 5,200 residents and employ some 3,800 people.

Recent changes to Oakville Transit’s services and route structure feature a grid network with higher frequency services as well as the establishment of major transit focal points, or terminals, at strategic locations throughout the Town. One such focal point has been identified for the Palermo Village area with a general identification of potential terminal facility locations. The terminal would be the focal point for local feeder services, higher frequency services along arterials and the future Dundas and/or Bronte Bus Rapid Transit (BRT) services.

The purpose of this study is to identify a suitable future transit terminal site by assessing potential sites within the study area using a range of evaluation criteria which address transit operations and local community development needs, and to select the most appropriate location. The timeline for the construction of the terminal is 2014-15.

Of key significance in this study is the historic nature of Palermo, one of the three communities which formed the Town of Oakville over 50 years ago. Residents, community groups and Town planners wish to preserve and build upon this cultural heritage and as such, the location and design concepts for the transit terminal should endeavour to compliment this heritage. This can be achieved by selecting a site for the terminal that will help to animate and act as a catalyst to support the regeneration of the older, remaining elements of the community. In addition the relocation and inclusion of a historic Palermo structure in the design of the facility to accommodate waiting areas, tickets and possibly a concession and public washrooms would help to support the community’s heritage objectives as well. If there was a heritage structure, a barn, small house or stable that was part of the history of the community and was in danger of demolition or collapse by neglect there could be an opportunity to relocate and to adaptively reuse it as part of the new Palermo Transit Terminal.

Through the application of solid transit operations and facility planning and design expertise and the use of robust evaluation criteria developed in cooperation with Town transit and planning staff, the various terminal locations have been evaluated, concept designs prepared to confirm the ability to locate a terminal on each site, and a preferred site selected to be carried forward to the design stage.

This report summarizes the process to identify, evaluate and select the most suitable site for a transit terminal in the Palermo Village area.
2. CURRENT AND FUTURE SERVICES

Oakville Transit currently operates one local route within the Palermo area. In future, transit service plans indicate that up to four local routes as well as two major routes connecting Palermo with other sections of Oakville will be operating in the area and would serve a local terminal. These routes would operate as frequent as every 15 minutes in peak hours, potentially more frequent on the major routes further into the future as transit use increases. Off-peak, evenings and weekends service frequencies would be less, averaging every 30 minutes. Four of the six to seven routes serving the terminal would originate predominantly from areas north and east of Bronte and Dundas with the remaining two routes connecting to the west and south. Several of these routes would connect to GO train service.

In addition to Oakville Transit services, the Town, Region of Halton and Metrolinx have developed plans for a Bus Rapid Transit (BRT) service along Dundas Street between Mississauga and Burlington. There would be stations located at the Bronte Road/Dundas Street intersection. This service would be frequent and high volume and would utilize articulated buses. Service frequencies could be 10 minutes or better in peak periods.

Together, the Palermo terminal would not only serve as a primary focal point for the Palermo community but would also be an important transfer point for services between the community, other parts of Oakville including connections to GO train service, but also to the main rapid transit service along the Dundas Street corridor.
3. **LOCATIONS FOR TERMINAL**

The subject area of Bronte Road and Dundas Street consists of a relatively new “Bronte Road” roadway which bypasses the older section of the Palermo community located along what is now “Old Bronte Road”. The new by-pass is located approximately 100 metres west of Old Bronte Road. In the vicinity of the Bronte/Dundas intersection there is a new housing development to the southwest, an older established development along Dundas and the historic district of Palermo located along Old Bronte Road north and south of Dundas. The intersection design of Bronte Road and Dundas Street is such that a centre median extending up to 100 metres east and west of Bronte Road prevents turn movements onto and from Old Bronte Road and Dundas Street.

The area to the east of Old Bronte Road north and south of Dundas is zoned for mixed use and redevelopment is occurring south of Dundas and east of Bronte Road. Lands to the north of Dundas and particularly northwest of new Bronte Road and Dundas are undeveloped but also zoned for mixed use.

From a heritage standpoint, there are a number of houses, churches, a school and several farms in the immediate area located on Dundas, both east and west of new Bronte Road and south of Dundas on Old Bronte Road. These historic, Palermo structures form a concentration of elements in this area.

### 3.1 Candidate Sites

An initial review of the subject area was conducted to identify potential sites for a transit terminal. This review consisted of research by the Town’s planning and economic development departments as well as contact with the Region’s property department to determine available property or, more importantly, property in the area surrounding the subject location (Bronte Road/Dundas Street). This review concluded that available property existed on the northwest and northeast corners of Dundas and (new) Bronte Road as well as two potential sites south of Dundas, one fronting on Dundas Street between (new) Bronte and Old Bronte Roads and one further south on Old Bronte Road extending through to (new) Bronte Road. There is existing development on the northeast corner consisting of an abandoned former gas station and on the land fronting Dundas Street to the south consisting of a small plaza with three businesses.

In total, four potential sites were identified. These are:

1. Northwest quadrant of Bronte Road and Dundas Street;
2. Southwest corner of Old Bronte Road and Dundas Street;
3. West side of Old Bronte Road south of Dundas Street and extending between Old Bronte and Bronte Roads; and
4. Northeast quadrant of Bronte Road and Dundas Street.

### 3.2 Planning Considerations

The need for a transit terminal in the Palermo community has been identified in several Town of Oakville planning documents including the Town’s existing 2006 Official Plan as well as its new Official Plan, “Livable Oakville”. Some of the current zoning and planning designations are summarized below and would have to be modified to specifically accommodate the specific design characteristics of the proposed transit terminal in the Palermo area.
Existing documents include:

- **Zoning By-Law - C4 (SP 263)** covers commercial designations including height restrictions. It would need to be revised to reflect the new designations under the new “Livable Oakville” plan. Also, a special provision in the Zoning By-law which allows an additional use for a coffee shop and establishes setbacks and parking for the site would need to be removed since parking, in particular, would not be included in a transit terminal.

- The **Palermo Village Centre Community** planning document, Figure “S”, Planning and Design Objectives, includes the following provisions:
  
  - “To facilitate the development and redevelopment of the Palermo Village Centre in a comprehensive manner.”
  
  - “To ensure that the long-term objectives of the Town in establishing the Palermo Village Centre as a “Secondary Transit Node” are maintained and protected…”
  
  - “To ensure that new developments are physically compatible and respect existing conditions and historic buildings.”
  
  - “To identify an appropriate site for the location of a transit hub.”

- **Land Use Policies**, 1.12.4, designate the sites south of Dundas St. are generally within a Mixed Use 1 designation.
  
  - “New development should be designed to be sensitive to heritage buildings. Wherever possible, heritage buildings shall be maintained and integrated with new development.”
  
  - “The existing Bronte Road shall be transformed to reflect a multi-purpose “Main Street” which is a pedestrian oriented place, but that also provides access to adjacent uses. Further opportunities for street parking and off-peak shared parking within this area will be considered…”

- Under 1.12.5, **The Transportation and Transit Network**,
  
  - “Figure “S” identifies a general location for a “Transit Hub”. This facility is expected to provide for local and inter-regional transit transfers. It is also intended that this site incorporate a variety of commercial and community facilities, and become an anchor for the redevelopment of existing Bronte Road as a “Main Street”. The location of the “Transit Hub” facility within the “Mixed Use 1” designation is a fundamental precept of this Plan. The actual location and site size for this facility can be refined without an Amendment to this Plan, if it is maintained within the “Mixed Use 1” designation.”

Within the **North Oakville Heritage Resources Review and Strategy**, the North Oakville East Secondary Plan is quoted:

- Under 7.2.3.7, Cultural Heritage – “To encourage, where appropriate and feasible, the incorporation of cultural heritage resources, including their adaptive reuse, as part of north Oakville East.”

- And under 7.4.14.3, Integration of Heritage Resources – i) “encourage the use or adaptive reuse of cultural heritage resources, or key components of such resources, whenever possible as part of the new development in situ, or on an alternate site…” Also – “The Town may also take additional steps to recognize the heritage of North Oakville East..."
including; iv) provision of incentives to encourage the retention of cultural heritage resources such as the establishment of an area of publicly owned land for their relocation.”

The Town’s new Official Plan, “Livable Oakville”, identifies the area as “Mixed Use - Urban Centre” with buildings of six to eight storeys permitted and would replace existing Land Use Policy 22.4.2 (e), Building Heights, which permits a minimum building height of two (2) storeys in Urban Centre designations and a further policy allowing stand-alone buildings. Mixed Use designations are designed to be transit-supportive but do not specifically accommodate a transit terminal which typically include a single-storey building. In this regard, the transit terminal design contemplated for Palermo would only require a small one-storey building for washrooms and a lunch room for transit employees and thus would not meet the minimum two-storey policy requirement. However, the transit building requirements could be accommodated within a larger building, either a heritage structure or a new mixed-use structure, to meet the minimum two-storey policy objective. Alternatively, an exemption from the two-storey minimum height would be needed.

Land Use policy clause 22.4.1 a) permits flexibility in the development of any of the identified sites: “a transit terminal facility is required to serve (the community)…. The facility may be located between Bronte Road and Old Bronte Road. It is also intended that this site incorporate a variety of commercial and community uses, and become an anchor for the redevelopment of Old Bronte Street…”

Terminal site options 1, 4 and 5 are north of the “Mixed Use 1” designations found in Options 2 and 3 south of Dundas St. West. Option 1 site is zoned “A, Agricultural” while Options 4 and 5 are a zoning combination of “C 6, Service Station”, and “A – Agricultural”. The terminal concepts and principles of

In summary, current planning and zoning policies permit the location of a transit terminal in any of the five candidate sites although some minor amendments to zoning and planning documents will be required. The Town’s new Official Plan, “Livable Oakville”, will replace and update current planning designations and similarly permits a transit terminal in the candidate locations although minor amendments are required related to parking and building height. Since the Palermo terminal is not planned until 2014, it is anticipated that the necessary planning foundation through the new OP, will be in place at the time of land acquisition, facility detailed design and construction. Subject to any exemptions granted for a transit terminal, the issues of parking and minimum two-storey building structure would have to be addressed at the detailed design phase of the project.

### 3.3 Heritage Considerations

So much of our heritage in this part of Ontario is rural, characterized by individual farmhouses, barns and out-buildings, fences, tree-lined windbreaks, cross-road hamlets, and villages. As the Golden Horseshoe flourishes, development alters and erases these small-scale, isolated elements of our cultural heritage.

Dundas Street was first proposed in 1793, by Lieutenant John Graves Simcoe as a military link between the Great lakes that would be secure from American invasion. The portion through the Palermo area was partially cleared by 1800 and Dundas Street, with stage coach lines being established in 1820, became one of Upper Canada’s most important east-west roads.

Bronte Road, running north south, connected Milton to the lakeside port of Bronte and originally served to carry agricultural products, such as grain, and later mixed crops and fruit to the lake where it was shipped to larger markets, such as York.

Palermo, settled in 1806 and originally called Hagartown, is located at the intersection of Dundas Street and old Bronte Road. This strategic location fostered the growth of 19th century commercial
developments, such as a foundry, agricultural works, a blacksmith shop, hotel, two general stores, two churches and by 1877 contained 3,000 residents. It was one of the largest cross-roads communities at that time and today it is the only remaining, ‘visible’ village in what is now North Oakville.

Given the intensification of the former rural landscape in North Oakville, so much of this history and the stories of these early communities are in danger of being forgotten. The development of the Palermo Transit Terminal is an opportunity to combine two of these historic themes – moving people and rural Ontario life. Dundas Street and Bronte Road have moved people and goods for 200 years and Palermo was the community focus of a rich and vibrant farming life. The terminal, by relocating and adaptively reusing a local heritage structure, could tell both of these stories.

There are a range of building types that could successfully combine the operational requirements of the transit facility with the urban design and heritage objectives for the community. A locally significant heritage structure, such as a barn or other rural building, could be relocated and restored and adapted which would meet the objective of supporting the heritage character of the former village. The Town’s “North Oakville Heritage Resources Review and Strategy” report illustrates some heritage building examples.
4. **TERMINAL DESIGN CONCEPTS**

The process to finalize a terminal location and terminal design concepts involves four steps:

1. Defining the operational requirements of Oakville Transit and key design principles;
2. Developing terminal concepts based on standard transit industry guidelines to determine the ability of each site to accommodate the necessary terminal design;
3. Assessing the heritage objectives of the Town and local community and identifying opportunities or concepts for enhancing this objective; and
4. Refining the concepts and confirming the suitability of the identified sites.

The following section summarizes the results of these steps.

### 4.1 Operational Requirements

Based on consultation with Oakville Transit staff, analysis of future transit plans for the subject area and overall transit plans developed by the Region and Metrolinx, the basic operational and design requirements for a transit terminal in Palermo were defined and are described below:

**Terminal Design Principles**

- Configuration to be either centre platform or perimeter depending on site size, shape and location;
- Accessibility according to AODA and Built Environment standards;
- Option for a concession/convenience store area;
- Potential to expand terminal in future.

**Transit Operations**

- Terminal to accommodate bus movements from south, west and east; potential from north;
- Area for accommodating two buses laying-over between runs;
- Six routes projected to serve/access the terminal including 5 for Oakville Transit, one for GO Transit. Dundas and/or Bronte BRT routes not projected to access the terminal.

**Platforms:**

- “Saw tooth” design to allow for full independent arrival/departure movement by vehicles;
- Capacity for eight buses/routes (8 bays) with a minimum of two platforms capable of accommodating articulated (18m) buses. Remainder to accommodate 12.2m (40ft) buses;
- Provision to accommodate GO Transit buses (13.5m/45ft) to be considered at two bays (possible shared with articulated bus bays).
Amenities:

- Customer amenities to include benches, sheltered area (either individual shelters or as part of building structure, lighting, information signage, waste receptacles. Washrooms are to be optional;

- Transit/Employees – washroom, small room for lunch/rest break, storage area, room for IT components;

- Security cameras;

- Fare vending machine area.

As noted earlier, it is a key objective to incorporate heritage features or treatments into the terminal design through the use of a heritage structure or design theme (shelter design, landscaping) for integration into the community.

For the future Bus Rapid Transit (BRT) line on Dundas Street, stops/stations will be located at Bronte Road adjacent to the intersection. It will, therefore, be important that the Palermo Transit terminal be located close to the BRT stations to facilitate transfers between the Oakville Transit routes and the BRT service to minimize customer walking distances. At the same time, upon the selection of the site for the Palermo terminal, the design of the future BRT stations should be co-ordinated and designed to ensure that this accessibility is achieved.

Another key operational design element will be the potential need to consider bus priority/bus-only access to/from Bronte and Dundas Streets for Oakville Transit vehicles in view of the design of the Bronte/Dundas intersection, width of the roadway, volume of traffic and restrictive median designs.

These future changes present an opportunity for streetscaping on Old Bronte Road north and south of Dundas Street to both improve the attractiveness of the general area as well as enhance the heritage nature of the community.

4.2 Layout Concepts

This section identifies the terminal layout concept designs developed according to the foregoing design guidelines together with a discussion of the potential for applying heritage treatments at each site as suggested above.

4.2.1 Concept Options

Three different terminal layout concept design options were developed for application to the candidate sites identified earlier for the purpose of determining if the required terminal design, as defined in section 4.1 above, could be accommodated on the sites. The designs can be described broadly as:

1. A self-contained island platform with buses loading on either side but with buses entering and exiting from the same street;

1. An island platform, as above, but with buses entering and exiting from streets at either end of the site;

2. A linear platform in the form of an “L” extending from one street to the next.
Drawings of these design concepts are included in Appendix A, Exhibits 1 to 3. These concepts are then positioned on aerial photographs of each site, as shown in Appendix B Exhibits 1 to 5, to demonstrate the application of the concept. The process of developing the design concepts and then positioning them on the sites has confirmed, at this design stage, that the designs illustrated for each site can be accommodated on the site.

4.2.2 TERMINAL LOCATION OPTIONS

As noted in section 3.1, four candidate sites were identified as potential locations for the transit terminal, essentially on the northwest, northeast and southeast quadrants of the Dundas Street/Bronte Road intersection. For these sites, five individual terminal locations using the three terminal layout concepts described above were developed. These concepts and locations are:

Option 1 – Northwest quadrant of Bronte and Dundas. Linear platform in the shape of a “L” extending north from Dundas Street and east to Bronte Road.

Option 2 – Southwest corner of Old Bronte and Dundas. A self-contained island platform with buses accessing to/from Old Bronte Road.

Option 3 – South of Dundas. A two-way island platform extending between Bronte Road and Old Bronte Road.
**Option 4** – Northwest corner of Old Bronte and Dundas. A self-contained island platform with buses accessing to/from Old Bronte Road.

**Option 5** – Northeast quadrant of Bronte and Dundas. Linear platform in the shape of an “L” extending easterly from Bronte Road to Old Bronte Road and south to Dundas Street.
5. EVALUATION OF TERMINAL LOCATION OPTIONS

5.1 Operational Analysis

The following section presents an analysis and evaluation of the operational aspects of the five terminal location options identified in section 4.3 and illustrated within this section. Larger views of the sites and location options are included in Appendix B.

**Option 1 - Terminal at Northwest Corner of Bronte and Dundas**

Option 1 provides significant flexibility and priority for transit. Although higher in cost due to the need for two new intersections equipped with signal priority (one on Bronte Road, north of Dundas; one on Dundas Street, west of Bronte Road), these measures insulate transit operations from general traffic, particularly with forecasted traffic levels expected at Bronte and Dundas. This option adequately accommodates the four transit routes that are planned to serve the terminal from the north, while providing priority for the routes from the east and south with a prioritized left turn into the terminal. However, the siting of the terminal requires customers to walk a further distance than the other terminal options, and does not provide integration with Palermo Village.

**Option 2 and Option 4 - Island Terminals North or South of Dundas Street, off Old Bronte Road**

These two options are problematic in the lack of flexibility in operation and the high probability of delay caused by general traffic. They require most buses to travel through the Dundas/Bronte intersection, including a potentially delayed left turn from southbound Bronte Road to eastbound Dundas Street. In addition, these options force all bus operations through a single access point, which creates problems for both transit and general traffic operations, particularly during peak transit operation. As a result, these options are also not recommended.

**Option 3 - Through Terminal South of Dundas Street, between Bronte Road and Old Bronte Road**

This option provides an adequate level of transit operation by providing priority access through new intersections on Bronte Road, but requires routes from the north to travel the furthest distance. In addition, the main negative effect of this terminal option is the need for buses to cycle through the terminal to return to the transit priority intersection, causing disruptions on Old Bronte Road that are counter to the desire for a pedestrian-friendly street environment. As a result, this option is not recommended.
Option 5 - Terminal at Northeast Corner of Bronte and Dundas

Operationally similar to Option 1, this option provides significant flexibility and priority for transit while being located in proximity to Palermo Village and other developments to the east along Dundas Street. In addition, this option provides the best integration with future bus rapid transit on Dundas Street. It should be noted that this option would require the use of a portion of the Bronte Road right-of-way or, alternatively, would require a setback from Bronte Road with some form of barrier (curb, median) to separate the terminal from regular traffic movements on Bronte Road.

Exhibit 1 provides a summary of the key operational characteristics of each location together with an assessment of the potential delays from general traffic and the overall operational flexibility. Operational “flexibility” refers to the ease with which each site can accommodate the needs of the transit system in terms of directness of travel (fewest left turns, requirement for buses to circulate around or within the terminal, ability to access/exit the site) and potential for delay. Each of the location is then evaluated and ranked.

Exhibit 1: Summary of Operational Analysis for Terminal Options

<table>
<thead>
<tr>
<th>Bus Routing</th>
<th>Option 1</th>
<th>Option 2</th>
<th>Option 3</th>
<th>Option 4</th>
<th>Option 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bus Routing</td>
<td>Uni-directional circulation through terminal</td>
<td>Complex movements through single access point</td>
<td>Bi-directional terminal, requires U-Turn movements on street facing homes</td>
<td>Circuitous routing, unfavourable due to multiple turning movements</td>
<td>Clockwise, uni-directional circulation through terminal</td>
</tr>
<tr>
<td>Transit Signal Priority/ Intersection Reconfigurations Required</td>
<td>2</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Potential delay from general traffic</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>○</td>
<td>●</td>
</tr>
<tr>
<td>Total Left Turn Movements</td>
<td>8</td>
<td>10</td>
<td>11</td>
<td>21</td>
<td>8</td>
</tr>
<tr>
<td>Operational Flexibility</td>
<td>●</td>
<td>○</td>
<td>●</td>
<td>○</td>
<td>●</td>
</tr>
<tr>
<td>Overall Evaluation/Ranking</td>
<td>2nd</td>
<td>4th</td>
<td>3rd</td>
<td>5th</td>
<td>1st</td>
</tr>
</tbody>
</table>

Legend: ● - High  ● - Medium  ○ - Low
Summary

Based on the foregoing operational analysis, Option 5 is rated the best. Although this site would require an additional expenditure for transit signals to provide vehicle priority at two locations, it does provide the best operating environment for transit by minimizing potential delay from traffic as well as offering the potential for a positive pedestrian environment and the ability to integrate into the Palermo Village area.

5.2 Traffic Impact

The following section sets out the results of a high-level qualitative analysis of the impacts of the proposed Palermo transit terminal on adjacent streets, and the relative merits of the five design and location options with respect to the potential for delays for buses entering and exiting the terminal.

5.2.1 PRELIMINARY EVALUATION OF OPTIONS

For the purposes of this preliminary qualitative assessment, it has been assumed that the design bus volumes would be determined by assuming a 15 minute headway on each of the routes, with the assumption that there would be four routes to and from the north on Bronte Road, two routes to and from the east on Dundas Street, and one route to and from the south and west respectively.

Option 1: Terminal at Northwest Corner of Bronte and Dundas

Access to the proposed terminal for Option 1 requires left turns in for one the route to and from the west, and left turns out for the four routes to and from the north. Left turns out would benefit from the installation of a signal to provide a gap for buses to turn north onto Bronte Road. In the PM peak hour, left turns in from the west on Bronte Road will be delayed due to the high volume of opposing vehicles heading west on Dundas Street.

Option 2: Island Terminals North or South of Dundas Street, off Old Bronte Road

Access to the proposed terminal for Option 2 requires left turns in for one the route to and from the east, and left turns out for the routes to and from the north, to and from the west, and to and from the south. Left turns out would benefit from the installation of a signal to provide a gap for buses to turn left onto Dundas Street. However, in the peak hour, westbound queues on Dundas Street at the intersection with Bronte Road would be expected to spill back beyond Old Bronte Road. Signal coordination will be important to ensure that exiting buses are able to turn left onto Dundas Street efficiently.

Option 3: Through Terminal South of Dundas Street, between Bronte Road and Old Bronte Road

Access to the proposed terminal for Option 3 requires left turns in for one the routes to and from the north, east and west, and left turns out for the route to and from the south. Left turns in and out would benefit from the installation of a signal to provide a gap for buses to turn left on and off Bronte Road.

Option 4: Island Terminals North or South of Dundas Street, off Old Bronte Road

Access to the proposed terminal for Option 4 requires left turns in for one the routes to and from the north, south and west, and left turns out for the route to and from the east. Left turns in and out would benefit from the installation of a signal to provide a gap for buses to turn left on and off Dundas Street. However, in the peak hour, westbound queues on Dundas Street at the intersection with Bronte Road would be expected to spill back beyond Old Bronte Road. A signal for access to
the proposed terminal will be essential to ensure that entering buses are able to turn left into the site efficiently.

**Option 5: Terminal at Northeast Corner of Bronte and Dundas**

Access to the proposed terminal for Option 5 requires left turns in for one the routes to and from the north, and left turns out for the route to and from the east. Left turns in and out would benefit from the installation of a signal to provide a gap for buses to turn left on and off Dundas Street. However, in the peak hour, westbound queues on Dundas Street at the intersection with Bronte Road would be expected to spill back beyond Old Bronte Road. A signal for exit from the proposed terminal will be important to ensure that entering buses heading east are able to turn left out of the site efficiently.

**5.2.2 SUMMARY OF OPTIONS**

Exhibit 2 below presents a comparative summary of the estimated delays to buses for each of the design options. The comparative analysis of delays entering or exiting each of the locations and through the intersection of Dundas Street and Bronte Road indicates that Option 5 would have the lowest overall delay to buses.

**Exhibit 2: Comparison of Estimated Bus Delays**

<table>
<thead>
<tr>
<th>Design Option</th>
<th>Estimated Bus Delays</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>In and out of terminal</td>
</tr>
<tr>
<td>1</td>
<td><img src="image" alt="Legend: Least Delay" /></td>
</tr>
<tr>
<td>2</td>
<td><img src="image" alt="Legend: Least Delay" /></td>
</tr>
<tr>
<td>3</td>
<td><img src="image" alt="Legend: Least Delay" /></td>
</tr>
<tr>
<td>4</td>
<td><img src="image" alt="Legend: Least Delay" /></td>
</tr>
<tr>
<td>5</td>
<td><img src="image" alt="Legend: Least Delay" /></td>
</tr>
</tbody>
</table>

**Legend:**  
Least Delay ![Legend: Least Delay](image)  
Most Delay ![Legend: Most Delay](image)

**5.2.3 REQUIREMENTS FOR CHANGES TO THE EXISTING STREET NETWORK**

All options will require allowing left turns to and from the proposed terminal in locations where left turns are currently prevented by raised medians. Where access is through a road link where the opposing movement is not affected by significant queueing, and where bus volumes are projected to be low, it will be possible to provide an un-signalized access, such as for the entry to Option 1, and
possibly the entry for Option 5. In all the other cases, signalization would be beneficial due to the conflicting traffic volumes and queuing of other traffic on Bronte Road and Dundas Street. Overall, preliminary analysis indicates that each of the design options would require one signalized entry and/or exit point.

5.2.4 SUMMARY OF PRELIMINARY ANALYSIS

Based on the above qualitative analysis, Site Option 5 represents the best alternative in terms of minimum delays to buses and the extent of road improvements/alterations that would be required. With each site option, however, it is judged that a traffic signal will be required to assist buses to exit or enter the facility from either Bronte or Dundas.

5.3 Pedestrian Access

From a pedestrian access point-of-view, accessibility to each of the sites is constrained by the design of the Bronte Road/Dundas Street/Old Bronte Road intersection. As such, each of the terminal site locations requires some degree of walking distance and requirement to cross the Dundas/Bronte Road intersection, depending from where the pedestrian is originating or destined. On this basis, each of the sites ranks equally.

In terms of pedestrian access to and from buses and for transit users transferring between buses within the terminal, site options 2, 3 and 4 which feature the use of an island platform, offer the shortest walking distance.

For site options 1 and 5 which feature the “L” shape linear terminal design, walking distance for passengers transferring between buses is potentially longer depending on which routes they are transferring between. However, this walking distance can be minimized by locating routes with the highest level of transferring close together. Also, the final design of the terminal could minimize walking distances between buses by providing a diagonal pathway through the site.

5.4 Heritage Potential

As noted previously, complimenting the heritage attributes and objectives of the Palermo community is a key objective for the Palermo transit terminal. The following is a discussion of the potential to achieve this objective for each location.

Option 1- Northwest Quadrant of Bronte/Dundas

Located in the north-west quadrant of the intersection between Regional Road 25 and Dundas Street W, the site and the terminal building, whether a new purpose-built structure or a local heritage structure that has been relocated, should have the following attributes;

- Locate the transit station structure equidistant along the platforms at the right-angle bend of lay-by and aisles parallel to Dundas St. W.
- The station should be clearly visible from the main intersection for access by approaching passengers, and recognizable as the transit station.
- The station should provide weather protected waiting areas and other appropriate amenities as determined.
- Develop a public greenspace fronting onto the two major roads that acts as a community amenity and as an appropriate setting for the station.
Provide appropriate levels of night time illumination to promote safety and visibility.

Option 2 – Southwest Corner of Old Bronte and Dundas

Located on the west side of the Old Bronte Road, this option consists of a one way loop that enters and exits onto Old Bronte Road. The site and the terminal building, whether a new purpose-built structure or a local heritage structure that has been relocated, should have the following attributes;

- Given the width of the island between aisles the station structure should be located on the north side of the north aisle, parallel to Dundas St. W.
- The existing parking area could be re-configured for drop-off and some park and ride functions.
- The station should be clearly visible from the two main intersections for access by approaching passengers, and recognizable as the transit station.
- The station should provide a weather-protected waiting area and other amenities as determined to be appropriate. Secondary covered waiting areas should be located along the island.
- Develop a public green space fronting onto Dundas St. W. that could act as a community amenity and as an appropriate setting for the station.
- Provide appropriate levels of night time illumination to promote safety and visibility.

Option 3 – West Side of Old Bronte Road South of Dundas – Two-way Island

Given the distance from Dundas St. W. and the residential development on the west side of Regional Road 25, the visible presence for a new terminal structure should be located as close to Regional Road 25, on the north side of the entrance to the through aisle as possible. This would support the visibility and recognition of the facility from the heaviest traffic areas, both pedestrian and vehicular. This location for a new station would also minimize the impact on the heritage objectives of the community, along Old Bronte Road.

In the case of a relocated heritage structure, the reverse is more appropriate. The adaptive reuse structure should be located along the Old Bronte Road frontage of the terminal site, with a set-back and relationship to the road similar to the existing heritage buildings. This location would support the heritage objectives of the community and intensify the activity base within the Palermo Village area.

- The station should provide weather-protected waiting areas and other amenities as determined to be appropriate.
- With the transit structure located as part of the village, complimentary uses within the reused heritage structure should be considered.
- A secondary waiting structure and signage should located at the new regional road end of the site for visibility, recognition and ease of access by approaching passengers.
- Develop a public green space that could act as a community amenity and as an appropriate setting for the station.
Provide appropriate levels of night time illumination to promote safety and visibility

Option 4 – Northwest Corner – Old Bronte/Dundas – Island Platform

Whether a new or relocated heritage structure is developed for this site, the station building should be located parallel to and midway along the south aisle of the terminal. As a closed loop, island configuration that uses Old Bronte Road north of Dundas St. W. for entry and exit, the terminal can address both the bus waiting loop as well as a public green space that fronts onto Dundas and should have the following attributes:

- Given the width of the island between aisles the station structure should be located on the south side of the south aisle, parallel to Dundas St. W.
- The existing parking area could be re-configured for drop-off and some park and ride functions.
- The station should be clearly visible from the two main intersections for access by approaching passengers, and recognizable as the transit station.
- The station should provide weather-protected waiting areas and other amenities as determined to be appropriate. Secondary covered waiting areas should be located along the island.
- Develop a public green space fronting onto Dundas St. W. that could act as a community amenity and as an appropriate setting for the station.
- Provide appropriate levels of night time illumination to promote safety and visibility.

Option 5 – Northeast Quadrant Bronte/Dundas – L Shape Terminal

Located in the north-east quadrant of the intersection between Regional Road 25 and Dundas Street W, the site and the terminal building, whether a new purpose-built structure or a local heritage structure that has been relocated, should have the following attributes:

- Locate the transit station structure equidistant along the platforms at the right-angle bend of lay-by and aisles parallel to Dundas St. W.
- The station should be clearly visible from the main intersection for access by approaching passengers, and recognizable as the transit station.
- The station should provide weather protected waiting areas and other appropriate amenities as determined.
- Develop a public green-space fronting onto the two major roads that acts as a community amenity and as an appropriate setting for the station.
- Provide appropriate levels of night time illumination to promote safety and visibility.

In summary, varying levels and concepts for heritage integration with a transit terminal on each of the sites is possible although Site Option 2 offers the greatest potential given its location within the Palermo community proper.
5.5 Cost Estimates

Each of the terminal options are similar in scope and scale in terms of platforms, bus roadways, potential intersection changes, customer and employee amenities and related infrastructure. At this pre-detailed planning stage, no assessment or estimate for utilities or general site preparation costs can be made although an allowance should be provided for. Land cost would be additional. No estimate has been prepared.

Therefore, a high-level cost estimate for the terminal for budgeting purposes is $3.2 million plus land comprised of the following elements:

- Design, construction including paving, platforms, lighting, provision of washroom/lunchroom for transit personnel, and general allowance of 25% for contingencies - $2.5 million
- Customer amenities (shelters, VMS electronic displays, benches, static signage, wayfinding) - $500,000
- Transit priority measure – two signals - $200,000
- Heritage feature – depends on scope of work.

5.6 Evaluation of Terminal Location Options

The selection of the optimum, or preferred, location for the Palermo terminal should reflect the key design and operational elements including customer access discussed previously as well as the best potential to incorporate heritage treatment. In order to select a site objectively, a set of evaluation criteria have been prepared as defined below. Using this criteria, each of the candidate terminal site locations have been evaluated by the study team with the results summarized in Exhibit 3.

The evaluation criteria are as follows:

- **Terminal Design** – this criteria assesses the overall functional layout of the terminal in terms of user convenience. A compact terminal design, such as centre island, facilitates transfers between routes for users by minimizing internal walking distance.

- **Interface with BRT** – is access to the future BRT station convenient for transit users?

- **Land availability** - is the identified site available, or able to be purchased, and zoned for a transit terminal. In general, each of the five sites identified are available for purchase, although land costs have not been determined. Zoning can be modified for each site.

- **Transit Operations** - this assesses the ease with which buses can access/exit the site and general access to the site for various transit routes from their origin.

- **Terminal Visibility** – the degree to which the terminal is visible to the community and transit users.

- **Traffic Impact** – assessment of the impact on neighbouring streets of bus movements. Also includes need for traffic signal to access/exit terminal. Since each location is judged to require a signal for buses, this element is neutral between the sites.
• **Transit User Access** – this assesses walking distance for users from the surrounding area. Is the distance long or short?

• **Heritage Potential** – Assesses the potential for heritage treatment and integration with community.

• **Urban Design Contribution** - how the site and proposed Transit Terminal contributes to the planning objectives as summarized in the Planning Considerations Section of the report, i.e. to ensure that new developments are compatible, the hub becomes an anchor for the re-development of the main street, etc

• **Facility Cost** (construction) – assesses estimated construction cost for facility. Does not include land cost. As discussed above, the cost estimates developed for the terminal options are high level and are subject to detailed design and engineering assessment of each site. Since the budget is the same for each site, there is no differentiation.

Scoring is based on a 4-point scale of:

0 – **Unacceptable**. Does not meet minimum requirements.

1 – **Low**. Minimal potential. Least desirable.

2 – **Medium**. Average, moderate potential.

3 – **High**. Fully meets requirements. Optimum.

The operations and traffic impact analyses and ratings conducted in the previous sections form the basis for the scoring under these two criteria below according to the above scoring system.
Exhibit 3: Summary of Terminal Location Evaluation

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Option 1</th>
<th>Option 2</th>
<th>Option 3</th>
<th>Option 4</th>
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5.7 Preferred Location

On the basis of the foregoing evaluation, the optimum, or preferred location for the Palermo Community Transit terminal is Site Option 5.
6. CONCLUSIONS

A new transit terminal in the historic Palermo community has been identified by the Town in its long range transit service plan for Oakville Transit for construction in the time period 2014 – 2015. This study was undertaken to identify candidate sites and select the most suitable, or optimum, site. The study process included identification of candidate sites in the Bronte Road/Dundas Street area; preparation of concept designs for the potential terminal; development of concepts for applying heritage treatment to enhance the community’s history; assessment of the operational and traffic impact of each site; and finally, selection of the most suitable location according to a set of evaluation criteria.

From the analysis of the candidate sites and the application of evaluation criteria, the preferred location for the terminal is Site Option 5, located on the northeast corner of old Bronte Road and Dundas Street. The estimated cost for the terminal is $3.2 million plus land, subject to detailed design and any related road infrastructure and utilities (water, sewer) requirements.

The Town should proceed to acquire land for the terminal including ensuring compatible zoning for the site.
7. RECOMMENDATIONS

Based on the review, assessment and evaluation of Oakville Transit terminal requirements for the Palermo community area, it is recommended that:

1. The location on the northeast quadrant of Bronte Road and Dundas Street be the preferred location for the Palermo transit terminal and the Town proceed to acquire the necessary property and arrange for the appropriate zoning;

2. An amount of approximately $3.2 million, subject to detailed design and land acquisition, be set aside in the Town’s transit capital budget for the construction of the Palermo terminal in 2014 - 2015 as identified in this report;

3. Detailed design of the Palermo terminal be undertaken in 2014 and that the Town and local heritage groups identify a suitable heritage structure to be relocated to the Palermo terminal site to compliment the Palermo terminal design; and

4. The Region and Metrolinx, in planning the BRT service for Dundas Street in Oakville, be requested to plan the future BRT station at Bronte Road to integrate with the selected Palermo terminal site.
APPENDIX A

TERMINAL DESIGN CONCEPTS
APPENDIX B

OPERATIONS ANALYSIS AND SITING OPTIONS
Oakville Palermo Transit Terminal Operational Analysis

Design Option 3

- Transit Signal Priority/Intersection Reconfiguration

Oakville Palermo Transit Terminal Operational Analysis

Design Option 4

- Transit Signal Priority/Intersection Reconfiguration
Oakville Palermo Transit Terminal Operational Analysis

Design Option 5

- Transit Signal Priority
- Intersection Reconfiguration