



CITY OF HAMILTON

PUBLIC WORKS DEPARTMENT
Transportation, Energy and Facilities Division

TO: Mayor and Members General Issues Committee	WARD(S) AFFECTED: CITY WIDE
COMMITTEE DATE: August 13, 2012	
SUBJECT/REPORT NO: Rapid Transit Maintenance and Storage Facility and Spur Line (PW11064a) - (City Wide)	
SUBMITTED BY: Gerry Davis, CMA General Manager Public Works Department	PREPARED BY: Justin Readman Manager, Rapid Transit (905) 546-2424, Extension 1473
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RECOMMENDATION(S)

That the General Manager, Public Works, be authorized and directed to proceed with and finalize the Maintenance Storage Facility Transit Project Assessment Process Environmental Assessment, for lands located at 330 Wentworth Street North and spur line routing following the Birch/Cannon/Sanford/Barton alignment, as shown on Appendix A to Report PW11064a.

EXECUTIVE SUMMARY

On April 1, 2009, the City of Hamilton received \$3M from the Province of Ontario (administered by Metrolinx) for the Planning, Design and Engineering (PDE) of the Rapid Transit B-Line and Feasibility Study for the A-Line and in February 2010, Metrolinx released its Benefits Case Analysis (BCA) for the B-Line. The Contribution Agreement states that the B-Line work will be focused on Light Rail Transit (LRT). The

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implementation of the A and B Rapid Transit lines will require a 4.2 to 4.8 ha maintenance and storage facility (MSF) to provide full administration, storage, cleaning, maintenance, overhaul and support services for the Hamilton LRT system. The Contribution Agreement with Metrolinx required the City to identify an MSF site. However, due to challenges of selecting an ideal site and in consultation with Metrolinx, site selection and an associated Environmental Assessment was deferred to 2012. The 2012 Rapid Transit Work Plan requires the siting and completion of an Environmental Assessment for the Maintenance Storage Facility and associated spur line, as outlined in Report CM11016/PW11064/PED11154/FCS11072, which endorsed by Council on October 26, 2011.

Report PW08043c, presented to Public Works Committee on October 6, 2008, proposed the Stuart Street Yard area within the Setting Sail secondary planning area be considered for use as a maintenance facility location. The vision for the Stuart Street area as outlined in the Council approved Secondary Plan (Setting Sail) does not include an LRT maintenance facility at this location. As a result, staff commissioned a study to review a possible alternative to Stuart Street for the Maintenance and Storage Facility.

An evaluation of sites was completed in 2009 resulting in three short-listed sites. On April 6, 2009, the Acting General Manager, Public Works Department was authorized and directed to retain an independent agent and to purchase options on properties that could be used for a Light Rail Transit (LRT) Maintenance and Storage Facility. However, the City was unable to secure options to purchase the preferred site at Parkdale Avenue and Barton Street.

This required the undertaking of a second investigation of suitable sites with a DRAFT report completed in February 11, 2011. The results of the DRAFT evaluation concluded Site 15 - Frid Street North – as the preferred site for an MSF. However, from a planning perspective, there are serious concerns with this site in that the use of the lands for an MSF would result in reduction of area intended for research and development employment as per the West Hamilton Innovation District Secondary Plan (McMaster Innovation Park).

Ultimately, 330 Wentworth Street (see map in Appendix A) meets much of the criteria and is recommended as the preferred site to carry forward in order to complete the 2012 Rapid Transit Work Plan. The site is large enough to facilitate storage of 40 to 45 light rail vehicles; the site is under City ownership; the surrounding land uses are generally compatible, the site (both historically and currently) operates as a maintenance and storage depot; and the building is adaptable to Light Rail Vehicle (LRV) storage and maintenance.

Constraints with this site include the fact that it is located quite a distance from the B-Line main line and the spur line would require routing through a residential neighbourhood. Similarly, each alternative MSF site, that neither conflicts with Secondary Plans nor poses serious technical constraints, is located a similar distance from the main line and would require routing through residential neighbourhoods. In addition, all other sites are either partially or totally in private ownership.

A number of spur line alternatives were developed and evaluated through a screening process to determine the preferred spur line routing. While the results of the screening process did not lead to a strong preference, Option 8 is recommended (following Birch/Cannon/Sanford for outbound travel and Sanford/Barton/Birch for inbound travel (see appendix A for spur line route)). This option is recommended since the routing provides aesthetic improvements to the neighbourhood by burying the existing hydro lines within the hydro corridor; uses roads which have excess capacity available; and provides a high level of protected outbound LRV lanes. This option is also one of the least costly options.

Alternatives for Consideration - See Page 17

FINANCIAL / STAFFING / LEGAL IMPLICATIONS

Financial: The Planning Design and Engineering work estimated the cost of the spur line and Maintenance Storage Facility at \$73 million. The high level preliminary estimates for the recommended site and spur connection are in line with this estimate. Also, Metrolinx is expecting the cost estimate to be revised following the completion of the 2012 work plan. Based on Metrolinx's currently approved eligibility criteria, all capital costs associated with the spur line and maintenance storage facility would be fully funded. However, there are no immediate financial implications with the recommendations in this report, as the project is still pending final approval and funding commitments.

A Consultant has been engaged to assist with the Rapid Transit 2012 work plan and is preparing to commence their work on the EA component on behalf of the City. The consultant cost is an estimated \$475,000.00 and is funded from the Metrolinx Quick Wins reserve (5300855100). The Consultant must begin imminently to complete the work within the timelines prescribed by the *Environmental Assessment Act*, City Council and Metrolinx.

Staffing: There are no immediate staffing implications of this report. Future staffing for the LRT MSF will be determined as plans for funding and future operations progress with Metrolinx and are dependant upon final project approvals.

Legal: There are no legal implications associated with 330 Wentworth Street as an MSF site. Should Council direct staff to complete an Environmental Assessment on a site not owned by the City, there are risks associated with this approach. For example, the location of the MSF will be part of the public consultation process for the Transit Project Assessment Process (Environmental Assessment) for the B-Line and must be made public. Once the location for an MSF becomes public, acquisition of the site may become more difficult (e.g. increased asking prices, need to expropriate, etc.)

HISTORICAL BACKGROUND

In Report PW09007, Council adopted the following vision statement for Rapid Transit:

Rapid Transit is more than just moving people from place to place. It is about providing a catalyst for the development of high quality, safe, sustainable and affordable

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transportation options for our citizens, connecting key destination points, stimulating economic development and revitalizing Hamilton. Rapid transit planning strives to improve the quality of life for our community and the surrounding environment as we move Hamilton forward.

This vision statement has been used to guide decisions made in the development of the Planning, Design and Engineering work for B-Line rapid transit.

At its October 7, 2008 meeting, the Public Works Committee approved a recommendation directing staff to study rapid transit with Light Rail Technology as the preferred option. Hamilton City Council endorsed the report (PW08043D) on October 29, 2008.

On April 1, 2009, the Province of Ontario included \$3 million in the Provincial Budget for the City of Hamilton to study Light Rail Transit on the B-Line and to determine the feasibility of rapid transit (either LRT or BRT) on the A-Line.

On October 13, 2009, Hamilton City Council gave its approval for the City of Hamilton to enter into a Contribution Agreement with Metrolinx for \$3 million in funding for Rapid Transit studies and for the General Manager of Public Works and the City Treasurer to be authorized and directed to negotiate and sign the final terms of the Agreement in a form acceptable to the City Solicitor. (Report PW09088). The Contribution Agreement expired on March 31, 2012 and all works are complete.

On February 19, 2010, Metrolinx presented its Benefits Case Analysis (BCA) for Hamilton rapid transit to its Board of Directors.

On October 13, 2011 City staff presented Report CM11016/PW11064/PED11154/ FCS11072 (*Conventional, Rapid and Inter-Regional Transit: Technical, Financial and Land Use Considerations*), which was endorsed by Council on October 26, 2011. This report outlines the work required to allow Metrolinx to make a funding recommendation to its Board of Directors. The significant remaining component is the selection of a Maintenance Storage Facility and spur line connection to the B-Line.

On January 11, 2012 City Staff issued a Notice of Completion for the B-Line Rapid Transit Project, which formally concluded the Environmental Assessment process for the B-Line. A component of the PDE study was the selection and completion of an Environmental Assessment for an MSF and associated spur line. Due to challenges of selecting a suitable site within the timelines established in the contribution agreement, the site selection was deferred to 2012.

Maintenance and Storage Facility (MSF) Requirements

The implementation of the A and B Rapid Transit lines will require a maintenance and storage facility to provide full administration, storage, cleaning, maintenance, overhaul and support services for the LRT system. It should be designed to accommodate the initial needs of the system including both the B-Line from McMaster to Eastgate and the A-Line (should it use LRT technology) and for future network extensions depending on whether space permits.

An eventual fleet of about forty to forty-five, 40m long vehicles is expected with 200 to 350 staff to be employed at the facility (for the A and B Line combined). Ideally, the MSF should be located close to the LRT route to minimize non-revenue (empty) LRT operation and the capital cost of connecting track. This location should also facilitate the introduction of vehicles into service at the beginning of the day and their return to the MSF at the end of the day. The facility is not required to be located along an existing rail corridor as access and delivery are provided by truck and spur connections typically run on rails embedded within the roadway. Ideally, the facility should be located within 500 meters of the main line to reduce the capital cost of the spur line construction, daily operating costs and to reduce the risk of Light Rail Vehicles being impeded from entering into service.

The size of the building needed for the MSF will be determined in more detail as planning and engineering progress. However, initial figures for a maintenance workshop, operations and control centre, and covered vehicle stabling suggest a required building area of at least 8,000 m² for the B-Line, and 14,000 m² for a combined A and B-line. A Site Area of 4.2 to 4.8 ha is needed.

MSF Site Investigations

In Report PW08043c *Rapid Transit Feasibility Study - Phase 2* (presented to Public Works committee on October 6, 2008), it was proposed to locate an MSF at the Stuart Street Yard area (within the Setting Sail planning area). For the purposes of the staging analysis and cost estimates that were used to prepare Report PW08043c, a preliminary maintenance facility location was required and the Stuart Street area was used. The vision for the Stuart Street area (as outlined in the Council approved Secondary Plan Setting Sail) does not include an LRT maintenance facility in this location. As a result, staff commissioned a study to review potential alternatives to Stuart Street for the Maintenance Facility and considered whether amendments to Setting Sail would be required to accommodate this newly proposed use.

Staff retained Urban Strategies Inc. to review the proposed LRT maintenance facility location within Setting Sail and to determine if other reasonable alternative locations existed. A five step approach was used to identify and evaluate potential LRT maintenance, servicing and storage facility sites. The five steps were:

- Step 1: Site plan parameters.
- Step 2: Consistency with City Policy.
- Step 3: Fulfilment of technical requirements.
- Step 4: Performance in relation to primary evaluation criteria.
- Step 5: Preliminary findings and recommendations.

Eleven (11) potential sites for the LRT maintenance facility were originally identified:

- Frid Street (Site 1)
- Stuart Street (Site 2)
- Burlington/Wellington (Site 3)
- Victoria/Ferrie (Site 4)

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- Barton/Gage West (Site 5)
- Barton/Gage East (Site 6)
- Barton/Parkdale West (Site 7)
- Barton/Parkdale East (Site 8)
- Barton/Lake Avenue (Site 9)
- Barton/Grays West (Site 10)
- Barton/Grays East (Site 11)

These sites are illustrated in Appendix B.

Through a screening process based on land use, planning policy and land use designation, these eleven sites were narrowed down to eight. One of the sites screened from further review is Stuart Street (Site 2). The Stuart Street area (Site 2) was not carried forward due to inconsistency with Setting Sail and approved planning policy.

Table 1: Summary of Advantages and Disadvantages of 2009 Sites

Site	Advantages	Disadvantages
Burlington/Wellington (Site 3)	<ul style="list-style-type: none"> • Locating the yard on this site would provide LRT service to the hospital node. • The site is close to the future LRT line along James Street. • There is a publicly owned portion of the site with an EMS Station and the anticipated market value is moderate for the remaining portions. 	<ul style="list-style-type: none"> • An above grade crossing would need to be constructed over the main CN line to access the site, potentially affecting the existing parking facilities at Hamilton General. While this would be expensive, it could be of very significant benefit to the hospital. • Existing railway spur lines would need to be moved to accommodate the proposed facility creating additional construction-related costs. • The current uses would need to be displaced and existing buildings demolished for the proposed use. • Adjacent residential uses require significant buffering and site improvements would be required to mitigate potential noise, vibration and light impacts
Victoria/Ferrie (Site 4)	<ul style="list-style-type: none"> • Locating the yard on this site would provide LRT service to the Hamilton General hospital node. • The site is close to the future LRT line along James Street. • The entire property was for sale in 2009 (although the anticipated market value is comparatively high) therefore no active uses would need to be displaced for the proposed facility. • Adjacent land uses are predominantly commercial/industrial and are compatible with the proposed use although residential use to the south may require some buffering. 	<ul style="list-style-type: none"> • An above grade crossing would need to be constructed over the main CN line to access the site, potentially affecting the existing parking facilities at Hamilton General. While this would be expensive, it could be of very significant benefit to the hospital.

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Site	Advantages	Disadvantages
Barton/Gage West (Site 5)	<ul style="list-style-type: none"> • A significant portion of the site was for sale in 2009 at an anticipated moderate market value. • This site is in close proximity to the main CN line. 	<ul style="list-style-type: none"> • While the cost of the connection from the main LRT line is comparatively low, the yard connection would be along a primarily residential corridor. • The proposed facility will require displacement of exiting uses and significant demolition costs. • Buffering and site improvements may be required to mitigate impacts on adjacent residential uses to mitigate potential noise, vibration and light impacts.
Barton/Gage East (Site 6)	<ul style="list-style-type: none"> • The proposed facility will require some displacement of existing uses; however the existing use is a recycling facility and no demolition is required. • The anticipated market value is comparatively low and annual non-revenue operational costs are low. • There are two potential yard connections. The connection along Ottawa Street, although more costly due to distance from the main LRT line, should be considered as it may be more appropriate given the existing commercial frontage instead of Gage Avenue, which is predominantly low density residential. • This site is in close proximity to the main CN line. 	<ul style="list-style-type: none"> • Buffering and site improvements may be required to mitigate impacts on adjacent residential uses and the existing place of worship to mitigate potential noise, vibration and light impacts.
Barton/Parkdale East (Site 8)	<ul style="list-style-type: none"> • There is significant flexibility and potential for expansion on the site. • While the proposed facility would impact the existing uses (the arena, construction yard or aggregate storage), the size of the site provides sufficient flexibility to allow the most active uses to remain. The layout closest to the CN main line, in the northern portion of the site, will have the least impact on existing uses, require the least demolition and provide direct access to active freight line. • Buffering and site improvements for the surrounding commercial/industrial uses are not required for the yard or along the connection route from the main LRT. • The anticipated market value and cost of connection from the main LRT line are comparatively low, although the annual non-revenue operational costs are comparatively high. 	<ul style="list-style-type: none"> • This site is located near the end of the King-Main LRT line, far from the future James Street line, reducing operational efficiency.

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Site	Advantages	Disadvantages
Barton/Lake Avenue (Site 9)	<ul style="list-style-type: none"> The site is close to Eastgate Mall which may create potential for a future LRT route along Centennial Parkway and encourage transit ridership. The costs are low for anticipated market value for the property, annual non-revenue operational costs and connection to the main LRT line. 	<ul style="list-style-type: none"> The proposed facility requires some displacement and demolition of existing commercial uses. Buffering and site improvements may be required to mitigate impacts on adjacent residential uses. Proposed use may have potential impacts on natural heritage features. This site is not in close proximity to the main CN line. This site is located near the end of the King-Main LRT line, far from the future James Street line, reducing operational efficiency.
Barton/Grays West (Site 10)		<ul style="list-style-type: none"> The site is not in close proximity to the main LRT line resulting in a high cost of connection to the main LRT line. The site is not close to the main CN line restricting freight access. The proposed facility requires displacement and demolition of the existing soft drink distribution centre and the anticipated market value for the property is high. Buffering and site improvements may be required to mitigate impacts on adjacent residential uses along Barton Street. The proposed use may have potential impacts on natural heritage features. This site is located at the end of the King-Main LRT line, far from the future James Street line, reducing operational efficiency. Adjacent properties would need to be acquired to provide 20, 000 square metres of parking.
Barton/Grays East (Site 11)		<ul style="list-style-type: none"> The site is not in close proximity to the main LRT line resulting in a high cost of connection to the main LRT line. A significant portion of the site is for sale at an anticipated moderate market value; however neighbouring properties may also need to be acquired to accommodate the proposed facility. Adjacent commercial/industrial uses do not require buffering and site improvements. The proposed use may have potential impacts on natural heritage features. This site is located at the end of the King-Main LRT line, far from the future James Street line, reducing operational efficiency.

Next, the eight identified sites were evaluated to determine if they could fulfil the technical requirements of an LRT maintenance facility. This resulted in a short list of 3 sites (5 options).

Based on the evaluation outlined in the matrix contained in Appendix C and the summary of advantages and disadvantages outlined above, Sites 4, 6 and 8 were

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brought forward to the conceptual design stage. For each of these sites, additional detail regarding potential impacts on adjacent uses from noise, vibration and light from the proposed facility would need to be undertaken.

As a result, 3 sites were short listed and on April 6, 2009, Council authorized the Acting General Manager, Public Works Department to retain an independent agent and to purchase options on properties that could be used for a Light Rail Transit (LRT) Maintenance Facility. However, the City was unable to secure options to purchase the preferred site (8) at Parkdale Avenue and Barton Street.

As a result, a second investigation of suitable sites was undertaken and a DRAFT report completed on February 11, 2011. This report investigates the following 12 sites (numbering is to account for sites evaluated in the 2009 investigation), as shown on Appendix D:

- Option 1 - Frid Street South
- Option 2 - Stuart Street
- Option 4 - Victoria / Ferrie
- Option 6 - Barton / Gage East
- Option 8 - Barton / Parkdale East
- Option 12 - Aberdeen Yard
- Option 13 - Fortinos Plaza, Dundurn
- Option 14 - Ivor Wynne Stadium / Scott Park
- Option 15 - Frid Street North
- Option 16 - 330 Wentworth Street
- Option 17 - Arrowsmith Road
- Option 18 - Centennial Parkway

These sites were then evaluated based on the following criteria:

- Site Area and Dimensions
- Distance from B-Line, and LRT connection
- Zoning
- Existing Land Use(s)
- LRT Operations
- Opportunity for Expansion
- Street Access
- Above/Below Ground Technical Constraints and Easements
- Site Ownership
- Capital Cost
- Environmental Impacts
 - Contamination
 - Noise
 - Visual Impact
 - Vegetation

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- Wildlife
- Surface and Ground water
- Cultural Heritage Resources
- Road and Traffic Impacts
 - Road traffic
 - Cycles
 - Pedestrians
- Community Effects including:
 - impact to adjacent land uses
 - visual impact (from corridor and adjacent properties)
 - social barriers (physical) - division of community or severance of known community linkages such as routes to schools / parks /community centres)
 - perceived change in community character /satisfaction
 - displacement of community amenities (formal or informal)

The results of the DRAFT evaluation concluded that Site 15, Frid Street North was the preferred site for an MSF. However, when the planning considerations were assessed, it was determined that there are serious concerns with this site because using the lands for an MSF would result in reduction of area intended for research and development employment as outlined in the West Hamilton Innovation District Secondary Plan (McMaster Innovation Park).

The above report was put on hold and, in January 2012, staff reviewed previously unidentified parcels which met the size criteria and were located within one kilometre of the line. Newly identified sites were as follows:

- Montgomery Park (MSF to be located under park) – Ruled out as not allowed through zoning, potential community impacts and disruption to parkland.
- Eastgate Square – Ruled out due to impacts on significant commercial area.
- Zellers Plaza on Queenston Road – Ruled out due to impacts on significant commercial area.
- The West Harbour lands acquired as part of the Pan Am Games site selection – Ruled out due to inconsistencies with the Setting Sail Secondary Plan for West Harbour.

For the reasons stated above, none of the newly identified options was deemed to be viable.

Staff then revisited the previously evaluated sites. Since the alternative sites within an ideal distance from the main line were screened out, the sites located a greater distance (e.g. greater than one kilometre) from the main line were reconsidered based on pros and cons as follows:

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Table 2: Summary of Advantages and Disadvantages of 2011 Sites

Site	Advantages	Disadvantages
Stuart Street (Site 2)	<ul style="list-style-type: none"> • Part of the site is City owned. • Relatively close to the A-Line. 	<ul style="list-style-type: none"> • Conflicts with Council Approved Secondary Plan. • Spur Line would run through existing residential neighbourhood. • Approximately 1 to 1.7 km from B-Line. • City owned portion of the site is too small and irregularly shaped (long and narrow) to accommodate a MSF. • Sensitive (residential) land near the site
Victoria/Ferrie (Site 4)	<ul style="list-style-type: none"> • Locating the yard on this site would provide LRT service to the Hamilton General hospital node. • The site is close to the future LRT line along James Street. • The entire property was for sale in 2009 (although the anticipated market value is comparatively high) therefore no active uses would need to be displaced for the proposed facility. • Adjacent land uses are predominantly commercial/industrial and are compatible with the proposed use although residential use to the south may require some buffering. 	<ul style="list-style-type: none"> • An above grade crossing would need to be constructed over the main CN line to access the site, potentially affecting the existing parking facilities at Hamilton General. While this would be expensive, it could be of very significant benefit to the hospital. • Approximately 1.2 km from the main line • Property is privately owned
Barton/Gage East (Site 6)	<ul style="list-style-type: none"> • A significant portion of the site was for sale in 2009 at an anticipated moderate market value. • This site is in close proximity to the main CN line. 	<ul style="list-style-type: none"> • While the cost of the connection from the main LRT line is comparatively low, the yard connection would be along a primarily residential corridor. • The proposed facility will require displacement of exiting uses and significant demolition costs. • Buffering and site improvements may be required to mitigate impacts on adjacent residential uses to mitigate potential noise, vibration and light impacts. • Approximately 1.2 km from the main line. • Property is privately owned
Barton/Parkdale East (Site 8)	<ul style="list-style-type: none"> • There is significant flexibility and potential for expansion on the site. • While the proposed facility would impact the existing uses (the arena, construction yard or aggregate storage), the size of the site provides sufficient flexibility to allow the most active uses to remain. The layout closest to the CN main line, in the northern portion of the site, will have the least impact on existing uses, require the least demolition and provide direct access to active freight line. • Buffering and site improvements for the surrounding commercial/industrial uses are not required for the yard or along the connection route from the main LRT. • The anticipated market value and cost of 	<ul style="list-style-type: none"> • This site is located near the end of the King-Main LRT line, far from the future James Street line, reducing operational efficiency • Approximately 1.5 km from the B-Line • Site is privately owned. • Staff were unable to acquire the site in the past

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Site	Advantages	Disadvantages
Barton/Parkdale East (Site 8)	connection from the main LRT line are comparatively low, although the annual non-revenue operational costs are comparatively high.	
Barton/Lake Avenue (Site 9)	<ul style="list-style-type: none"> The site is close to Eastgate Mall which may create potential for a future LRT route along Centennial Parkway and encourage transit ridership; however, outside of the scope of the current B-Line route. The costs are low for anticipated market value for the property, annual non-revenue operational costs and connection to the main LRT line. 	<ul style="list-style-type: none"> The proposed facility requires some displacement and demolition of existing commercial uses. Buffering and site improvements may be required to mitigate impacts on adjacent residential uses. Proposed use may have potential impacts on natural heritage features. This site is not in close proximity to the main CN line. This site is located over a kilometre beyond the end of the King-Main LRT line, far from the future James Street line, reducing operational efficiency.
Aberdeen Yard (Site 12)	<ul style="list-style-type: none"> Site is large enough to house an MSF for the B-Line and A-Line. An MSF would be compatible with existing land use. 	<ul style="list-style-type: none"> The site is under active use as a CP Freight Rail Yard. The site is privately owned The site is located 1.6 km from the B-Line following the CP spur line alignment or 0.7 km following Longwood Road. The site could be costly and difficult to acquire if assistance to relocate the CP rail yard is required.
Fortino's Plaza, Dundurn (Site 13)	<ul style="list-style-type: none"> Located adjacent to the B-Line 	<ul style="list-style-type: none"> Site size is limited at 3.5 ha, which would be just large enough for the B-Line fleet. Site is a significant commercial area and is surrounded by sensitive residential land uses.
330 Wentworth (Site 16)	<ul style="list-style-type: none"> Site is large enough to house B- and A-Line Light Rail Vehicles Site is under City Ownership Use is consistent with Industrial designation of the area Located in an industrial area Building could be retrofitted for light rail Site is at the approximate midpoint of the line resulting in approximately equal distances that the LRVs travel when departing and returning from service 	<ul style="list-style-type: none"> Located a distance from the B-Line (1.1 to 1.6 km) Located north of the CN main line (grade separated access at Birch) Spur line will require routing through a residential neighbourhood. Should Council ultimately approve implementation of LRT service on the B-Line, existing programs may require relocation from 330 Wentworth.
Arrowsmith Road (Site 17)		<ul style="list-style-type: none"> Planned Confederation GO station site
Centennial Parkway (Site 18)		<ul style="list-style-type: none"> Site has been redeveloped (Smart Centre) and is no longer available.

Since each remaining site is approximately equal distance from the main line, the distance is no longer a decision factor. Sites requiring grade separation from the main line would be significantly costly and were eliminated from consideration along with sites that conflict with City wide policy. Sites previously attempted for purchase were not considered viable. Sites within city ownership and of a sufficient size were ranked as favourable.

Preferred Maintenance Storage Facility Site

Ultimately, 330 Wentworth Street meets much of the criteria and is being recommended as the preferred site to carry forward in order to complete the 2012 Rapid Transit Work Plan. The site is large enough to facilitate storage of forty to forty-five light rail vehicles; the site is under City ownership; the surrounding land uses are generally compatible; the site is (both historically and currently) operating as a maintenance and storage depot; and the building is adaptable to LRV storage and maintenance.

Constraints with this site include its location – slightly further than the ideal distance from the B-Line main line – and also that the spur line would require routing through a residential neighbourhood. Other shortlisted MSF sites are a similar distance from the main line, would require routing through residential neighbourhoods and are partially or totally in private ownership. Should Council ultimately approve implementation of LRT service on the B-Line, existing programs may require relocation from 330 Wentworth.

Spur Line Routing Requirements

The spur line (line connecting the MSF and the B-Line main line) is required to allow Light Rail Vehicles (LRVs) to enter into service at the beginning of a shift and to return to the MSF for storage, cleaning and routine maintenance. The priority component of the spur line is the outbound track, which ideally is a dedicated lane to allow vehicles to enter in to service expediently and not to be held up in traffic or blocked by stopped/parked vehicles. Local factors may restrict the ability to dedicate an entire corridor to outbound vehicles. This is permissible; however, there is a level of risk and additional mitigation measures may be required (such as towing illegally parked vehicles).

Spur Line Routing Analysis

A series of spur line alternatives (attached as Appendix E) were developed and evaluated to determine the preferred spur line routing as outlined in the following table.

Table 3: Spur Line Routing Summary of Advantages and Disadvantages

Option	Advantages	Disadvantages
1a – Birch/ Barton/ Wentworth	<ul style="list-style-type: none"> Hydro corridor is buried from CN corridor to Barton Street, resulting in aesthetic improvement to neighbourhood. Full time truck route. 	<ul style="list-style-type: none"> High impact to community facilities/features Impacts traffic by reducing Barton Street by additional traffic lane. High cost (including burying hydro corridor (CN to Barton).
1b – Wentworth (into facility via abandoned tracks)	<ul style="list-style-type: none"> Full time truck route. 	<ul style="list-style-type: none"> Not feasible to grade separate at CN rail tracks and access the site.
2a – Birch/ Barton/ Sanford	<ul style="list-style-type: none"> Hydro corridor is buried from CN corridor to Barton Street, resulting in aesthetic improvement to neighbourhood. Full time truck route. Excess road capacity on Birch and Sanford to accommodate spur line 	<ul style="list-style-type: none"> Moderate to high impact to community facilities/features. Impacts traffic by reducing Barton Street by additional traffic lane. High cost (including burying hydro corridor (CN to Barton).

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Option	Advantages	Disadvantages
2b – Birch/ Princess/ Myler/ Sanford	<ul style="list-style-type: none"> • Low impact to community facilities/ features. • Lowest cost option. • Excess road capacity on Birch and Sanford to accommodate spur line 	<ul style="list-style-type: none"> • Tight radius for turning movement resulting in potential for derailment and additional wear and tear. • Parkland impacts to avoid Westinghouse Office Building (designated). • Myler and Princess are not truck routes.
3a – Birch/ Cannon/ Sanford	<ul style="list-style-type: none"> • Hydro corridor is buried from CN corridor to Cannon Street, resulting in aesthetic improvement to neighbourhood. • Low impact to community facilities/ features. • Lower cost option. • Full time truck route. • Excess road capacity on Birch and Sanford to accommodate spur line 	<ul style="list-style-type: none"> • Two lanes would be impacted on Cannon Street, resulting in traffic impacts.
3b – North on Sherman/ West on Cannon/ North on Barton. South on Birch/ West on Cannon/ South on Sanford	<ul style="list-style-type: none"> • Hydro corridor is buried from CN corridor to Cannon Street, resulting in aesthetic improvement to neighbourhood. • Low impact to community facilities/ features. • Full time truck route. • Excess road capacity on Birch and Sanford to accommodate spur line 	<ul style="list-style-type: none"> • Higher cost option.
4a – Birch/ Princess/ Sherman	<ul style="list-style-type: none"> • Low impact to community facilities/ features. • Lower cost option 	<ul style="list-style-type: none"> • Princess is not a truck route • Property required on north east corner of Princess and Birch to accommodate turning movement
4b – Abandoned rail tracks/ Sherman		<ul style="list-style-type: none"> • Grade crossing of CN main line at Sherman is cost prohibitive.
5 – Birch/ Wilson/ Sherman/ Cannon	<ul style="list-style-type: none"> • Hydro corridor is buried from CN corridor to Cannon Street, resulting in aesthetic improvement to neighbourhood. • Low to moderate impacts to community facilities/ features. • Lower cost option. 	<ul style="list-style-type: none"> • Wilson is not a truck route.
6 – Birch/ Wilson/ Cannon/ Sanford	<ul style="list-style-type: none"> • Hydro corridor is buried from CN corridor to Cannon Street, resulting in aesthetic improvement to neighbourhood. • Moderate impacts on community facilities/ features. • Excess road capacity on Birch and Sanford to accommodate spur line 	<ul style="list-style-type: none"> • Wilson is not a truck route. • Medium cost option.

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Option	Advantages	Disadvantages
7 – Birch/ Wilson/ Sherman/ Sanford	<ul style="list-style-type: none"> Hydro corridor is buried from CN corridor to Cannon Street, resulting in aesthetic improvement to neighbourhood. Low impacts on community facilities/features. Excess road capacity on Birch and Sanford to accommodate spur line 	<ul style="list-style-type: none"> Wilson is not a truck route Medium cost option.
8 – Birch/ Cannon/ Sanford/ Barton	<ul style="list-style-type: none"> Hydro corridor is buried from CN corridor to Cannon Street, resulting in aesthetic improvement to neighbourhood. Low to moderate impacts on community facilities/features. Excess road capacity on Birch and Sanford to accommodate spur line 	<ul style="list-style-type: none"> Low to Medium cost option.

Preferred Spur Line Route

The screening process does not indicate a strong preference for one of the route options. However, option 8 is recommended since the routing provides aesthetic improvements to the neighbourhood (i.e. burying of hydro lines), uses roads that have excess capacity available, follows designated truck routes and provides a high level of protected outbound LRV lanes. By splitting the outbound and inbound routes, there is less impact on individual streets (i.e. morning impact on Birch/Cannon and evening impact on Sanford/Barton). Running the track on the west side of Birch also allows for more spacing from residential properties, reducing overall vibration impacts. This option is also one of the least costly options.

Option 8 consists of LRVs travelling south from 330 Wentworth, along Birch Avenue, west on Cannon and South on Sanford, all in protected lanes. Returning vehicles travel north on Sanford, east on Barton and north on Birch. The returning travel is shared running (i.e. operates in mixed traffic).

POLICY IMPLICATIONS

The City of Hamilton has numerous policies and plans in place that support Rapid Transit in Hamilton. A few of the key documents are outlined below. A full list and description of supporting policies can be found as part of previous staff reports, including PW08043d, which was endorsed by Council on October 29, 2008.

Provincial Policies

- *Regional Transportation Plan (November 2008) for the GTHA – The Big Move*
- *MoveOntario 2020*
- *Places to Grow*

Hamilton Plans/Policies/Visions

- *Corporate Strategic Plan*
- *Rapid Transit Vision Statement*

- *Transportation Master Plan (TMP)*
- *Growth Related Integrated Development Strategy (GRIDS)*
- *Urban Official Plan*
- *Vision 2020*
- *Hamilton Transit Ridership Growth Plan*
- *Public Works Business Plan*
- *Air Quality and Climate Change Strategic Plan*

With respect to the Corporate Strategic Plan, this proposal complies with Strategic Objective 1.4 – Improve the City’s transportation system to support multi-modal mobility and encourage inter-regional connections. This includes Strategic Actions (i) Complete the design and develop an implementation and financial plan for the delivery of higher-order transportation and enhanced transit service, including all-day GO Transit service and rapid transit and (iii) Develop an integrated, multi-modal, public transportation program, including implementation of rapid transit, conventional transit, active transportation (e.g. pedestrian, cycling) and the associated transportation demand management (TDM) plan

This proposal aligns with the Corporate Vision “to be the best city in Canada to raise a child, promote innovation, engage citizens and provide diverse economic opportunities” and our Mission (we provide quality public services that contribute to a healthy, safe and prosperous community, in a sustainable manner).

RELEVANT CONSULTATION

The following City of Hamilton Departments and Divisions were involved in the 2009, 2011 and 2012 review of alternative MSF sites:

- City Manager’s Office
- Public Works (Environment and Sustainable Infrastructure Division)
- Planning and Economic Development (Economic Development and Real Estate, Community Planning and Design, Strategic Services and Special Projects, Tourism)
- Corporate Services (Legal)

For the Spur Line analysis, a work shop was held on May 24, 2012 to review spur line routing options. Staff from Public Works; Emergency Medical Services and Planning and Economic Development attended.

Further consultation is to occur with staff, agencies and the public as the Environmental Assessment process proceeds.

ANALYSIS / RATIONALE FOR RECOMMENDATION

Based on the above Chronology of events, there have been two comprehensive site screening processes for the MSF. In October, 2011, Council directed staff to complete a Maintenance and Storage Facility analysis and Environmental Assessment.

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For the analysis, sites that meet the technical needs for an MSF but do not meet the City's planning objectives for the area in which they are located were not considered as viable locations.

This resulted in 330 Wentworth Street meeting much of the criteria and is recommended as the preferred site to carry forward. The site is large enough to facilitate storage of 40 to 45 light rail vehicles; the site is under City ownership; the surrounding land uses are generally compatible; the site has historically and is currently operating as a maintenance and storage depot; and the building is adaptable to LRV storage and maintenance.

As noted previously, there are constraints with the site including the fact that it is located greater than the ideal distance from the B-Line main line and that the spur line requires routing through a residential neighbourhood. Other shortlisted MSF sites are a comparable distance from the main line, would require routing through residential neighbourhoods and each is partially or totally in private ownership.

Choosing a site, such as 330 Wentworth Street, which is already publicly owned, has the following advantages.

- As there is currently no confirmed funding for the project, the site can continue to be utilized for its current purposes until final funding and project approvals are in place.
- Should an alternative preferable site become available when funding is confirmed a new EA, or EA amendment, could be undertaken at that time.
- Eliminates the risks associated with identifying a private site, with no funding in place to secure that site in the short term.

It is recommended that staff be directed to proceed with and finalize the Environmental Assessment process for 330 Wentworth Street, and the Birch/ Cannon/ Sanford/ Barton spur line routing. This will result in a complete, comprehensive package for the B-Line Rapid Transit planning work in order to allow Metrolinx staff to make a funding recommendation to its Board members.

ALTERNATIVES FOR CONSIDERATION

Alternative 1a – Direct staff to investigate and review additional sites for the MSF

This alternative would involve a new process to identify and evaluate potential new sites and spur lines. As stated above, two comprehensive site screening processes have been completed for the MSF, evaluations have been conducted and, to date, an ideal alternative site has not been identified. Sending staff back to conduct additional evaluations would likely result in the same outcome and would pose further delays to the completion of the Environmental Assessment. This alternative is not recommended.

Alternative 1b – Direct staff to conduct the Environmental Assessment on an alternative.

Under this alternative, Council could direct staff to proceed with the EA for any of the alternative sites identified in this report. A spur line may also have to be identified for the alternative site. However, as stated above, two comprehensive site screening processes have been completed for the MSF, evaluations have been conducted and, to date, an ideal alternative site has not been identified. The site at 330 Wentworth is a City owned property, which reduces risk in acquisition and is generally located within the same distance as other alternative properties. Selection of an alternate property could also increase costs in terms of land acquisition and potential increases in assisting with business relocations.

Alternative 2a – Direct staff to review additional spur line routing options

This alternative would direct staff to identify new spur line routes for 330 Wentworth Street. However, a screening process was completed of over eight alternative spur lines leading to the recommended spur line routing. Sending staff back to conduct additional evaluations would likely result in the same outcome and would pose further delays to the completion of the Environmental Assessment. This alternative is not recommended.

Alternative 2b – Direct staff to conduct the Environmental Assessment on an alternate spur line route

Under this alternative, Council could direct staff to proceed with the EA for any of the alternative spur lines identified in this report, as shown on Appendix D. However, as stated above, a screening process was completed leading to the recommended spur line routing. Sending staff back to complete an Environmental Assessment, following an alternate spur route, could have additional neighbourhood/community impacts. This alternative is not recommended.

Alternative 3 – Take no action at this time

Under this alternative an Environmental Assessment would not be undertaken and no MSF site would be identified. However, an original requirement of the Planning and Design work was to site a Maintenance and Storage Facility. Due to challenges in finding an ideal site, this work had to be deferred to 2012. By not carrying a site through the Environmental Assessment process, planning for the B-Line project will not be complete and Metrolinx will be unable to make a funding recommendation to its Board of Directors. This alternative is not recommended.

CORPORATE STRATEGIC PLAN

Focus Areas: 1. Skilled, Innovative and Respectful Organization, 2. Financial Sustainability, 3. Intergovernmental Relationships, 4. Growing Our Economy, 5. Social Development, 6. Environmental Stewardship, 7. Healthy Community

Financial Sustainability

- ◆ Delivery of municipal services and management capital assets/liabilities in a sustainable, innovative and cost effective manner

Intergovernmental Relationships

- ◆ Acquire greater share of Provincial and Federal grants (including those that meet specific needs)

Growing Our Economy

- ◆ Newly created or revitalized employment sites
- ◆ An improved customer service

Social Development

- ◆ Residents in need have access to adequate support services

Environmental Stewardship

- ◆ Aspiring to the highest environmental standards

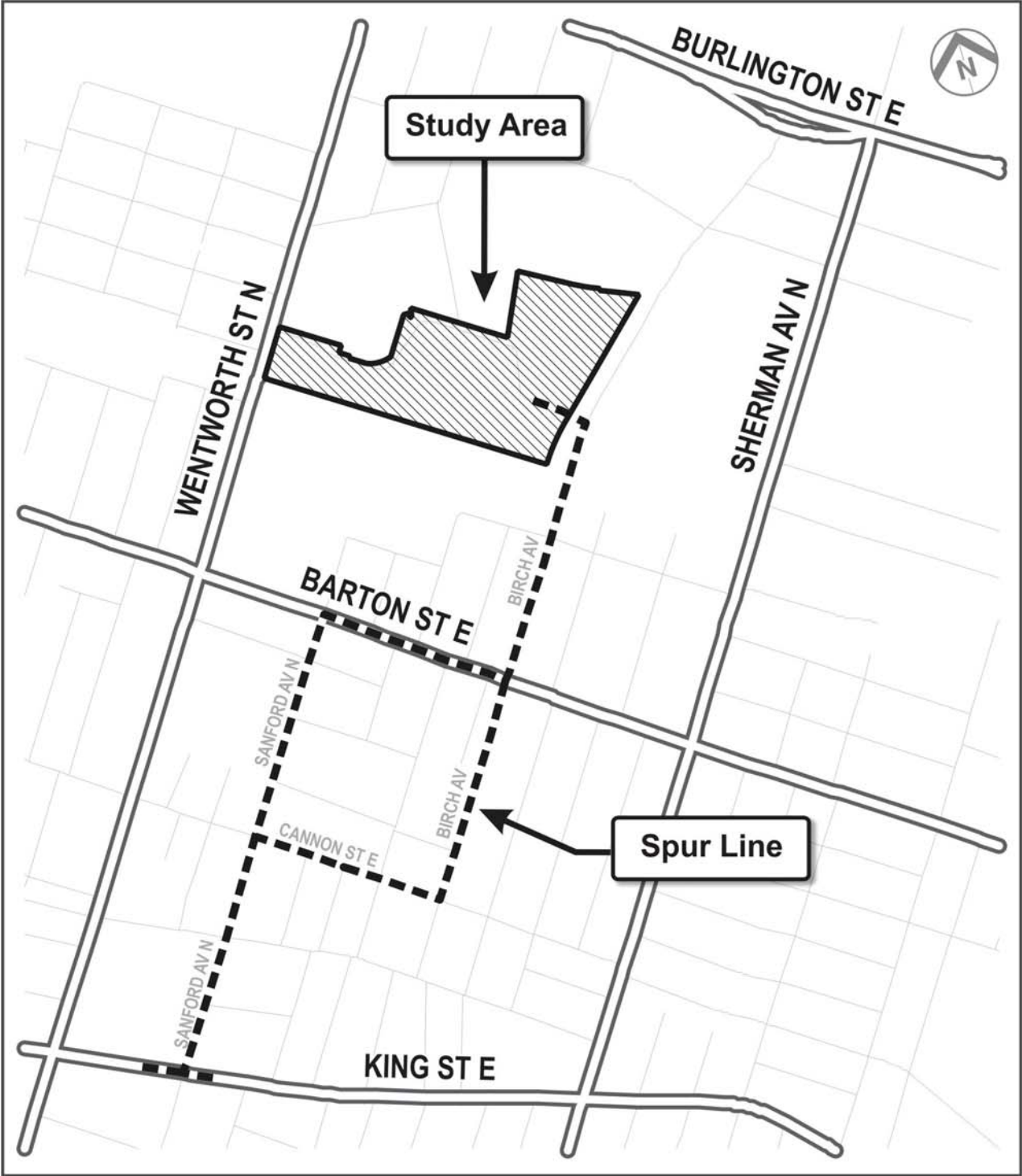
Healthy Community


- ◆ Plan and manage the built environment
- ◆ Adequate access to food, water, shelter and income, safety, work, recreation and support for all (Human Services)

APPENDICES / SCHEDULES

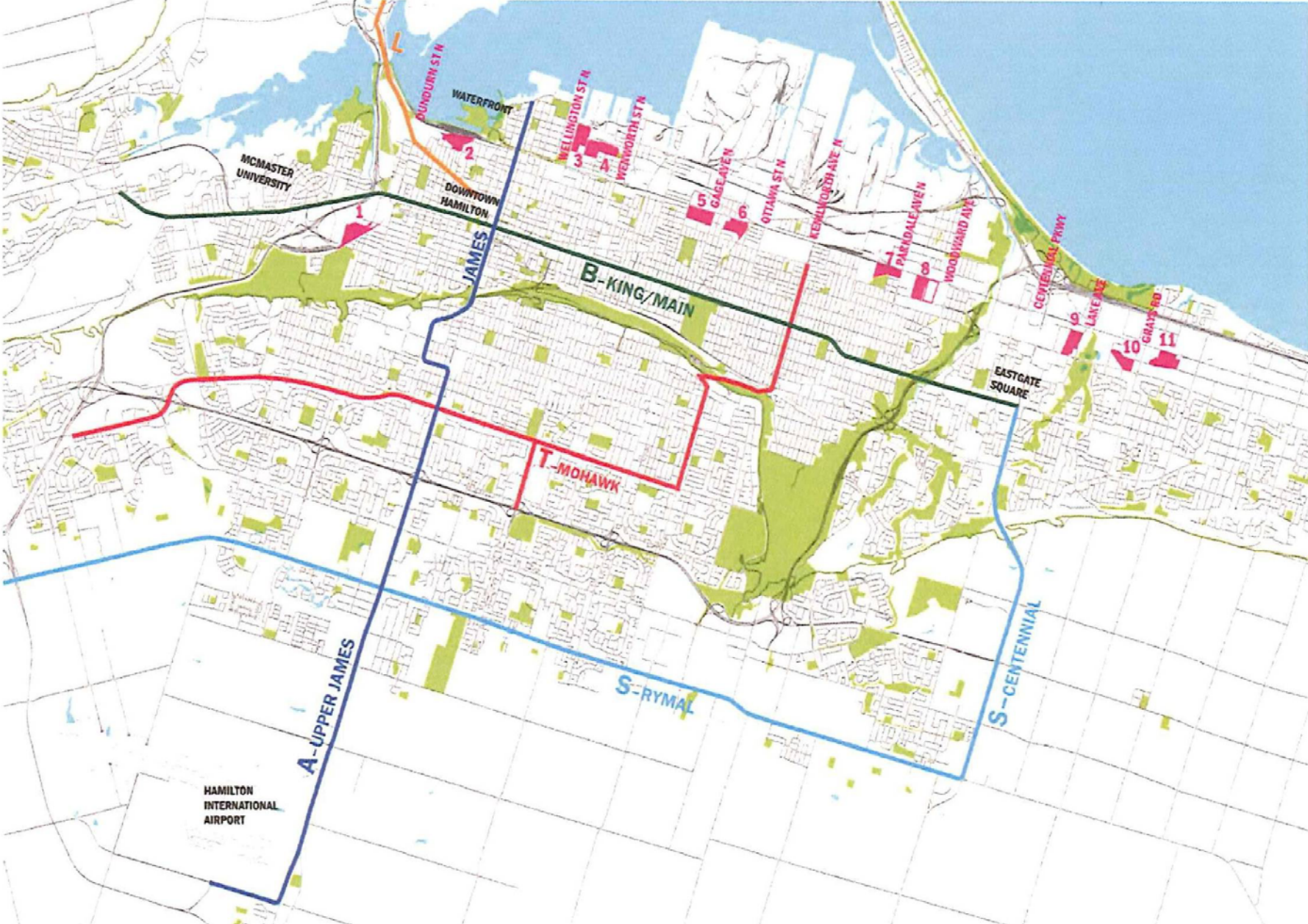
- Appendix "A" - Location Map 330 Wentworth Street and Spur Line
- Appendix "B" - Preliminary 11 Sites from Hamilton LRT Site Assessment Study, January 2009
- Appendix "C" - Preliminary 11 Sites from Hamilton LRT Site Assessment Study Evaluation Matrix, January 2009
- Appendix "D" - MSF Site Alternatives Considered from Maintenance and Storage Facility Requirements and Location Draft February, 2011
- Appendix "E" - Spur Line Routing Options

Location Map: 330 Wentworth Street



 Hamilton Public Works	Rapid Transit Maintenance and Storage Facility (MSF) 330 Wentworth St. N. (Ward 3)		
	General Manager Gerry Davis, CMA	June 2012	Map Not to Scale

Preliminary 11 Sites from Hamilton LRT Site Assessment Study, January 2009



Preliminary 11 Sites from Hamilton LRT Site Assessment Study Evaluation Matrix, January 2009

Criteria	Site 3		Site 4		Site 5		Site 6		Site 8		Site 9		Site 10		Site 11		Comments
	Assessment	Comment	Assessment	Comment	Assessment	Comment	Assessment	Comment	Assessment	Comment	Assessment	Comment	Assessment	Comment	Assessment	Comment	
Economic																	
1. Publicly owned land	+	EMS facilities are publicly owned	O		O		O		O		O		O		O		Sites are given a positive rating if they include publicly owned lands on the site.
2. General cost of land	-	\$5.225M	--	\$8.800M	-	\$5.315M	+	\$3.520M	+	\$3.500M-\$4.500M	+	\$4.330M	--	\$10.100M	--	\$7.350M	Anticipated market values of the subject properties were assessed resulting in the following range: < \$3.5M = ++ \$4.0M-\$5.0M = + \$5.2M-\$7M = - >\$7M = --
3. Property is for sale	O		++	The entire property is currently for sale	+	Approximately 2/3 of site is for sale	O		O		O		O		+	Approximately 2/3 of site is for sale	Based on current information of properties for sale.
4. Minimize annual non-revenue operating costs	--	1.50	--	1.50	--	1.50	++	1.00	-	1.15	+	1.08	--	1.31	--	1.31	The indicator of operating cost is an index based on the relative distance from King/Main Street to the site. The shortest access distance would be given an index of 1.0 with the other sites pro-rated relative to the shortest access distance.

Legend:

- ++ a site meets the intent of the criteria significantly better than other sites
- + a site meets the intent of the criteria better than the other sites
- O sites equally meet the intent of the criteria
- a site does not meet the intent of the criteria compared to the other sites
- a site does not meet the intent of the criteria compared to the other sites and there are significant challenges to meeting the criteria

Preliminary 11 Sites from Hamilton LRT Site Assessment Study Evaluation Matrix, January 2009

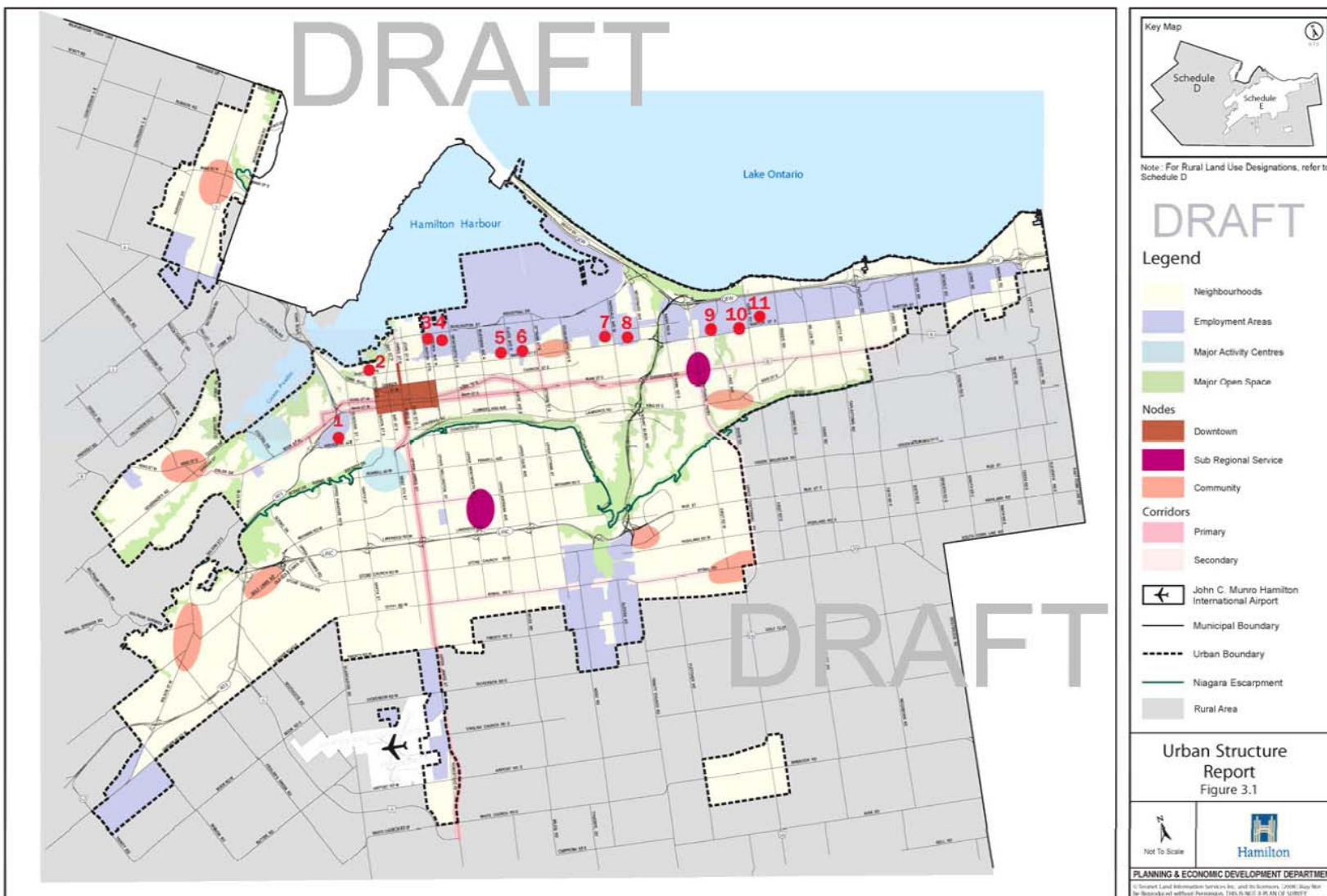
Criteria	Site 3		Site 4		Site 5		Site 6		Site 8		Site 9		Site 10		Site 11		Comments
	Assessment	Comment	Assessment	Comment	Assessment	Comment	Assessment	Comment	Assessment	Comment	Assessment	Comment	Assessment	Comment	Assessment	Comment	
Environment																	
5. Impacts on wildlife corridors	○	No identified features	○	No identified features	○	No identified features	○	No identified features	○	No identified features	-	An ESA is located within 120m of the site	-	Draft Urban OP identifies a potential linkage area adjacent to the site	-	Draft Urban OP identifies a potential linkage area adjacent to the site	Sites are given a negative rating if existing or potential natural heritage features are found on or in close proximity to the site.
6. Potential for LEED certification	○		○		○		○		○		○		○		○		All new City buildings are required to be investigated for LEED.

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Preliminary 11 Sites from Hamilton LRT Site Assessment Study Evaluation Matrix, January 2009

PRELIMINARY 11 SITES WITHIN THE URBAN STRUCTURE



Preliminary 11 Sites from Hamilton LRT Site Assessment Study Evaluation Matrix, January 2009

Criteria	Site 3		Site 4		Site 5		Site 6		Site 8		Site 9		Site 10		Site 11		Comments
	Assessment	Comment	Assessment	Comment	Assessment	Comment	Assessment	Comment	Assessment	Comment	Assessment	Comment	Assessment	Comment	Assessment	Comment	
Economic																	
5. Maximize benefit of revenue service from yard connection	TBD		TBD		TBD		TBD		TBD		TBD		TBD		TBD		Requires further investigation in future more detailed evaluations. The investigation would involve estimating the population and employment within the 500m catchment area of the LRT stops/stations as a proxy for the passenger demand potential.
6. Cost of connection from B-Line corridor	--	\$108M	--	\$106M	+	\$47M	-	\$64M	+	\$50M	+	\$50M	--	\$106M	--	\$106M	The range of cost for connection was evaluated as follows: \$45M-60M = + \$60M- \$80M = - > \$80M = --
7. Cost of yard construction	--	Spur line will have to be moved. Grade separation and Hamilton General Hospital parking re-configuration	-	Grade separation and Hamilton General Hospital parking re-configuration	O		O		O		O		O		O		The cost of yard construction is assumed to be equal for all sites at \$75M except for Site #3 and #4 where there are additional cost implications.
8. Site preparation cost - remediation	TBD		TBD		TBD		TBD		TBD		TBD		TBD		TBD		Remediation cost will need to be studied further

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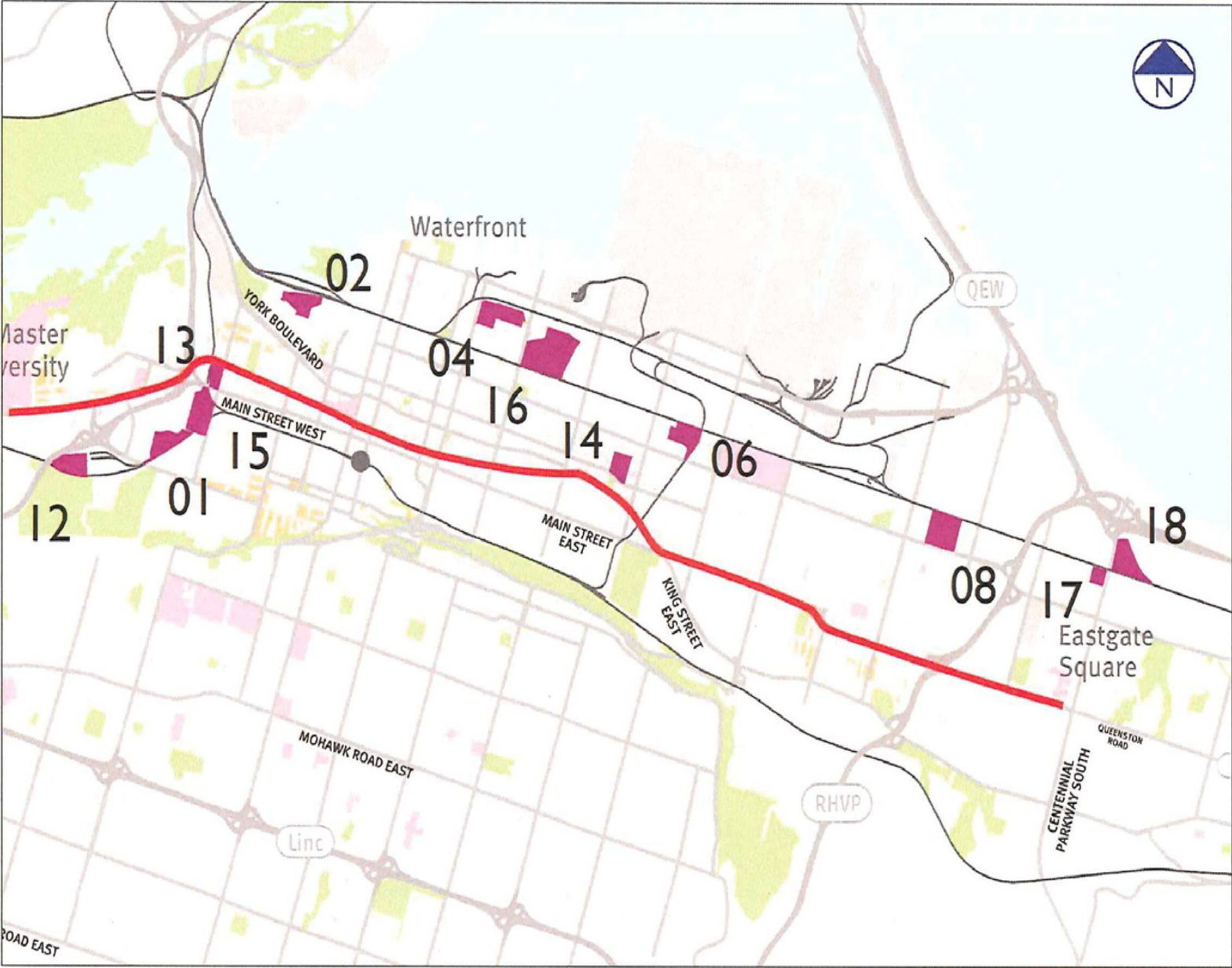
Preliminary 11 Sites from Hamilton LRT Site Assessment Study Evaluation Matrix, January 2009

Criteria	Site 3		Site 4		Site 5		Site 6		Site 8		Site 9		Site 10		Site 11		Comments
	Assessment	Comment	Assessment	Comment	Assessment	Comment	Assessment	Comment	Assessment	Comment	Assessment	Comment	Assessment	Comment	Assessment	Comment	
Economic																	
9. Site preparation – demolition	-	There are a number of buildings on site	--	There are a significant number of buildings on site	--	There are a significant number of buildings on site	++	There are no buildings on site	-	There are a number of buildings on site	+	There are some buildings on site	-	There are a number of buildings on site	-	There are a number of buildings on site	Sites are given a negative rating if there are existing buildings on site that need to be removed.
10. Minimal site infrastructure requirements	TBD				TBD		TBD		TBD		TBD		TBD		TBD		Requires further investigation in future more detailed evaluations.
11. Site improvements required to buffer adjacent sensitive land uses	--	Adjacent residential uses	-	Adjacent residential uses	-	Adjacent residential uses	-	Adjacent residential uses	O	Adjacent commercial and industrial uses	O	Adjacent commercial and industrial uses	-	Adjacent residential uses	O	Adjacent commercial and industrial uses	Sites are given a negative rating if there are residential or institutional uses adjacent to the site which may require buffering.

Legend:

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MSF Site Alternatives considered from Maintenance and Storage Facility Requirements and Location Draft, February 2011



Spur Line Routing Options

