

Parameters for the Feasibility of Integrating a Transit O&M Facility and Mixed-use Development on the West Langstaff Lands

Greater Langstaff Area Parameters

- The ultimate development capacity of the Langstaff area will be constrained by the capacity of an improved transportation network serving the area.
- The development capacity in the east and west quadrants of Langstaff will be based on the highest modal split to transit and other non auto modes that can be achieved through a mix of uses and transit oriented design.
- A new east west four lane collector road will be required to connect Yonge Street through to Bayview Avenue to provide primary access and major circulation, structure an internal network of streets and blocks and provide address and drop off for buildings . Grade separation will be required at the CN rail corridor (likely an underpass).
- As planned in the provision of a 407 underpass in this location, Cedar Avenue is to be connected north to High Tech Road into Richmond Hill to provide secondary road access and egress alternatives.

West Langstaff Area Parameters

- A restoration plan for Pomona Mills Creek must be prepared and included in the master plan to confirm the area of developable land per the requirements of the agencies having jurisdiction.
- Crossings of the water course should be consolidated where ever possible, so that impacts can be minimized through bridge design and waterway protection measures.
- Sustainable development practices and techniques should be used to minimize storm water impacts and land required for storm water management facilities
- A maximum of two transit stations, but preferably one should be identified east and west of the water course to serve the mixed use development.
- The transitway must be consolidated with the road water course crossing to minimize impact on the flood plain and valley lands.
- The transit way alignment is to be placed in a location to give easy access to O&M facilities and to align with the continuation of the alignment through the west opening of the existing 407 /CN rail underpass.
- Transit stations should be located at the centre of mixed use development to maximize transit modal share from both the west and east sides of CN Rail.
- Direct weather protected access to transit stations from development sites should be considered to maximize transit access convenience.
- Transitway geometry will conform to LRT alignment and clearance requirements and general design standards.

- Parking facilities to serve the mixed use development requirements should be in structure above or below grade but not interfere with envelopes for BRT and/or LRT facilities.
- Parking ratios will reflect Markham downtown standards (based on a 30% transit modal split); maximum 2.5 cars per 1000 office; 1.2 cars per unit residential and 3.0 cars per 1000 retail.
- Commuter parking facilities for transit use should be provided on an interim basis and considered for the long term.
- Surface parking for visitors, retail and drop facilities should be minimized.

Transit O&M Parameters

- BRT and LRT facility requirements are as per the approved EA
- The Langstaff O&M facility serves bus support requirements as well as LRT support for those segments of the regional transit network that are converted to LRT
- BRT facility requirements
 - Bus storage facility (optimal size for 250 (40' equivalent) vehicles);
14,400 sq.m.
 - Bus storage circulation: 7,000 sq.m.
 - Vehicle storage envelope:
storage length: 15 metres
storage width: 4 metres
storage clearance: 5 metres
Note; if combined with LRT the LRT clearance standard will prevail
 - Maintenance and repair facility: 15 service bays; 2268 sq.m.
 - Maintenance /repair bay envelope:
bay length: 13 bays @ 24 metres; 2 bays @ 33 metres
bay width: 6 metres
bay clearance: 5 metres
 - Bus cleaning and refuelling area (indoor): 500 sq.m.
 - Bus washing and drying area (indoor): 2000 sq.m.
 - Bus inspection/staging area (fare recovery):
5500 sq.m.
 - Bus Maintenance Support and Storage: 2000 sq.m.
- LRT facility requirements
 - LRT storage facility (minimum 49 vehicles): 8400 sq.m.
 - Vehicle storage envelope: storage length: 33.5 m
storage width: 5 m
storage clearance: 7.5 m
 - LRT maintenance/repair facility (7 bays): 9200 sq.m

- Maintenance clearance for vehicles: 10 m
- LRT Track Layout in yard: 39000 sq.m.
- LRT maximum gradient in yard 1%
- LRT traction control substation , 600 sq.m.
- Administration and training centre (* employees): sq.m.
- Transit dispatch and control centre (* employees): sq.m.
- Employee parking 500 – 600 spaces

* employee numbers will be confirmed later; their requirements are generally as per standard office space

Transitway geometry parameters

- BRT running and platform characteristics
 - Running requirements:

transitway width:	9 m
vertical clearance:	5 m
min. yard curve radius	30 m
(preferred) 15m absolute	
Access ramp radius	45 m
maximum gradient	3 %
(preferred), 7% absolute	
 - Platform requirements

minimum length:	55 m
width:	4.2 m
height above grade:	0.35 m
right side vehicle loading	
far side platforms at intersections	
- LRT running and platform characteristics
 - Running requirements:

transitway width:	8-9 m
vertical clearance:	5-6 m
min. yard curve radius:	50 m
(preferable), 35m absolute	
maximum gradient:	4.5 %
(preferable), 6% absolute	
 - Platform characteristics:

minimum length:	64 m
width:	4.2 m
height above grade:	0.35m
both sides vehicle loading	
far side platforms at intersections	

Transit O&M facility phasing

- BRT O&M facilities will be required on the Langstaff lands within the 2008-2009 time frame to meet service growth demands and the relocation of

existing bus storage and maintenance facilities currently operating out of leased premises

- LRT O&M facilities will be required at the time of the conversion of BRT to LRT on segments of the transit network.
- Facilities for LRT are to be designed for dual purposes, BRT & LRT and where uses can be economically consolidated over time rather than immediately those lands shall be freed up for additional mixed use development.
- Need to anticipate that there will always be some amount of BRT storage with LRT.