11.0 LRMP TEMPORARY TRAIL CONNECTOR

11.1 Context

The proposed temporary trail will be 15 m in length and 1.5 m wide, situated within the project component area shown in Figure 2.1b. Construction will disturb a 3 m wide corridor for a total disturbance footprint of approximately 45-50 m^2. Trail construction involves excavation to a depth of 150 mm and the placement of compacted clay and gravel. The connector trail will not be paved. Trail design and construction drawings have accounted for provision of slope stability, impacts to manicured vegetation and mitigation (Figure 2.6). Post-construction, the connector trail will be removed and landscaping will return the area to its pre-disturbance condition. This work will be undertaken directly through Community Services and not by Project Co, in late summer or autumn of 2015.

11.2 Assessment Methods

Valued Environmental Components

Works associated with the temporary connector trail will be undertaken by the City prior to general Valley Line LRT construction and this work has never been assessed. As such, most VECs associated with terrestrial and park resources have been selected (Table 11.1).

Study Area

The study area for this assessment is shown in Figure 2.1b. Because of the manicured nature of the site, field investigations were limited to reconnaissance-level inspections on 15 September 2014 and 06 January 2015.

Table 11.1. Justification for the selection of VECs – LRMP temporary connector trail

Valued Environmental Components	Potential for Additional or Unique Issues[1]	Relative Abundance or Status	Public Concern	Professional Concern	Economic Importance	Regulatory Concern	Relevant Legislation/Bylaw/Policy
Valued Ecosystem Components							
Geology/Geomorphology	**Yes**			✓		✓	• Bylaw 7188
Soils	**Yes**			✓		✓	• Bylaw 7188
Hydrology - Surface Water	**Yes**						• Bylaw 7188 • Drainage Bylaw 16200 • Alberta *Water Act*
Fish and Fish Habitat	**No**						
Vegetation and Wildlife	**Yes**		✓	✓		✓	• Bylaw 7188 • Alberta *Weed Control Act* • Federal *Species at Risk Act* • Federal *Migratory Birds Convention Act* • Alberta *Wildlife Act*
Valued Socio-economic Components							
Land Disposition and Land Use Zoning	**No**						
Residential Land Use	**No**						
Recreational Land Use	**Yes**		✓	✓		✓	• Bylaw 7188
Utilities	**Yes**		✓	✓	✓	✓	• Bylaw 7188
Worker and Public Safety	**No**						
Visual Resources	**Yes**		✓	✓		✓	• Bylaw 7188
Valued Historic Components							
Historical Resources	**No**						

[1] In instances where it was determined that no potential existed for additional or unique issues to arise, no further consideration to that VEC was given

11.3 Key Issues

Key issues were identified by considering the project component location, known conditions, potential project activities not already assessed, concerns raised by the public and city services departments and then applying professional judgement. Many potential issues associated with this component were adequately detailed and mitigated through the

2013 EISA. The following are the key VEC issues identified for this assessment of the LMRP temporary trail connector:

- **Do excavation activities have the potential to result in slope stability concerns or interact with landfill debris?**

11.4 Existing Conditions

11.4.1 *Soils and Geotechnical Stability*

Slope Stability

Slope stability is addressed here because this location is part of the larger valley slope that has been well documented to be unstable as a result of several intrinsic factors (Thurber Engineering 2012). To date, no discussions of trails in this park have suggested surface instability in this locale.

Soils

Within the project component area, soils have been historically disturbed by previous land use, including the Grierson Nuisance Grounds and the subsequent placement of fill and landscaping of LMRP.

Landfill

As noted above, the site of the Grierson Hill landslide was used as a landfill (Grierson Nuisance Grounds) for several decades in the early 20th century and this and the subsequent reclamation is well documented in the 2013 EISA. The approximate boundaries of the landfill were identified in the 2013 EISA and are shown in Figure 4.2. The LMRP connector trail project component is situated within the centre east area of the Grierson Nuisance Grounds. Thurber Engineering (2014) indicates that waste materials remain present in subsurface layers near the ground surface and to depths up to 20 m in the middle of the landfill. Holes were not drilled in lands for this project component but holes drilled slightly east for the Valley Line LRT did intersect with landfill waste (Thurber Engineering 2014). Of the holes drilled by Thurber Engineering in the park, the shallowest waste encountered was at 30 cm depth.

11.4.2 *Hydrology – Surface Water*

The LMRP temporary connector trail project component is situated on terrain sloping towards the NSR, which is located approximately 140 m to the south. As such, surface drainage in the local area is expected to be south, towards the NSR, however, most surface runoff is assumed to percolate into the slope before it reaches the river, except during extreme events.

11.4.3 *Vegetation and Wildlife Habitat*

Vegetation within the lands affected by the temporary trail connector is entirely manicured and consists of lawn and a portion of a planted bed of horticultural shrubs

including juniper, cherry and maple. Wildlife habitat is minimal in both scale and quality.

11.4.4 *Recreational Land Use*

The project component is situated in a highly-used manicured area of LMRP. The area currently supports no programmed recreational opportunities, but us close to several trails and the Chinese Gardens.

11.4.5 *Visual Resources*

The LMRP temporary connector trail project component area forms one small component of the overall park landscape and includes planted shrubs and manicured lawn. It serves as a backdrop to the nearby Chinese Garden infrastructure.

11.4.6 *Utilities*

One buried electric street light cable, associated with light standards, is situated in the northern half of the project component area, very close to the portions of the new trail. One more distant water line is situated on the south boundary of the project component area. Please refer to Appendix F for maps of all subsurface utilities within the project component area.

11.5 Potential Impacts and Mitigation Measures

11.5.1 *Geotechnical Stability and Soils*

11.5.1.1 Slope Stability and Landfill Debris

Impacts and Mitigation Measures

Construction of the LMRP temporary connector trail will include some sub-excavation, but only to a depth of 150 mm. Although slope stability is considered to be marginal in the local area, slope stability is not anticipated to be a concern for this project, considering the shallow nature of the excavation, which essentially involves stripping the topsoil layer. Similarly, this shallow excavation is viewed as unlikely to intersect landfill materials. The ECO Plan to be developed by Community Services, or their contractor, will note measures to be taken in the event that landfill debris is uncovered during excavation activities. Disposal will comply with all environmental standards and laws. Implementing such measures will ensure that impacts are negligible.

11.5.1.2 Impacts to Soils during Construction

Impacts and Mitigation Measures

Mitigation measures designed to minimize erosion, topsoil/subsoil stripping and stockpiling, compaction, contamination or other degradation to soil resources will be developed as part of the site-specific ECO Plan, to be prepared by Community Service, or their contractor, as required by the City of Edmonton's ENVISO program and guideline documents. Construction drawings include placement of riprap at the downslope edge as an erosion and sedimentation control measure. Implementing such measures, and

associated notes developed for the construction drawings, will ensure that impacts to soils are negligible.

11.5.2 *Hydrology – Surface Water*

Construction of the LMRP temporary connector trail will include excavation, the placement of backfill materials and associated grading activities. Such activities have the potential to alter local surface drainage patterns, although in this case, on a very local scale. Temporary trail connector work will include the installation of topsoil and sod on all disturbed grounds adjacent to the new trail; once installed, positive drainage will be confirmed. The trail will be granular, with a granular base, allowing some runoff to percolate into subsoils. There are currently no drainage issues on the trails to be connected by this temporary trail, further suggestion that this will not be an issue. Based on these considerations, no impacts to hydrology have been identified.

11.5.3 *Vegetation, Wildlife Habitat and Connectivity*

11.5.3.1 Loss of Manicured Vegetation

Work associated with the LMRP temporary connector trail will result in the removal of manicured vegetation, including lawn and approximately 30 m^2 of an existing planted bed. All potential vegetation impacts have already been addressed by specifications included in the construction drawings. Shrubby vegetation within the planted bed, including one juniper, one cherry and one maple, will be transplanted prior to disturbance activities. Sod and soils are to be re-used on site. Post-construction landscaping will return the project component area to its pre-disturbance condition ensuring that no residual impacts to manicured vegetation will occur as part of this work.

11.5.4 *Recreational Land Use*

11.5.4.1 Impacts to the Pathway Network

The construction of this connector trail, prior to on-site disturbance by Valley Line construction, will connect the western portion of the primary north-south SUP to an established trail in the Chinese Gardens, allowing pedestrians and cyclists to circulate through the broader network of park trails situated west of the LRT project and avoiding trail dead ends. This project component is proposed as part of the City's mitigation measures for Valley Line impacts on LMRP. The connector trail will be shown on all communication and way-finding tools associated with detour plans to be developed by Project Co in support of the Valley Line LRT. Based on these considerations, no additional or unique impacts have been identified.

11.5.5 *Utilities*

Utility locations will be confirmed in the field closer to construction and required protection provided, likely focusing on the electrical subsurface and surface utilities. There is no reason to anticipate that utility work has potential to result in additional impacts to park resources within or outside the component study area.

11.5.6 *Visual Resources*

Any construction activities to be undertaken in this small (303 m^2) project component area will be present for only a few weeks and because of the small scale will resemble routine park landscaping. For those reasons, this is not expected to adversely affect larger park viewscapes. Post-construction, all lands associated with this project component will be returned to their pre-disturbance conditions.

11.6 Summary Assessment

11.6.1 *Summary of Residual Impacts*

This assessment identified no residual impacts or outstanding issues.

11.6.2 *Monitoring Requirements*

There are no monitoring requirements for this project component.

11.6.3 *Resolution of Key Environmental Issues*

One issue was identified for this component:

Do excavation activities have the potential to result in slope stability concerns or interact with existing debris?

Very little potential exists. Excavation in support of the temporary trail connector will be shallow (150 mm depth) and is not expected to impact slope stability or interact with landfill debris in the local area. The contractor's ECO Plan will include a plan for dealing with the eventuality of unearthing debris.