

5.0 WEST PROJECT BOUNDARY MODIFICATIONS AT HMEP

5.1 Context

The proposed west project boundary modifications at Henrietta Muir Edwards Park (HMEP) are the result of further planning at a finer scale that better reflects the resources present. The changes protect the valued natural features present, better align with natural topography and better accommodate the previously approved removal of aging picnic area infrastructure that has been deemed to be of low value and available for demolition. The modifications involve exclusion of two small parcels, totaling approximately 1,677 m², from the Project Area, thus reducing the effect of the project on the abandoned Mill Creek reach. The modifications also include the expansion of one area, totaling approximately 800 m², to fully include an aging picnic area that is no longer a desirable park feature. The expanded lands will be available for general construction activities. Post-construction, all lands disturbed in this area will be subject to native forest restoration efforts. Overall, the west project boundary modifications at HMEP represent a net reduction of approximately 877 m² in land disturbed by construction activities.

5.2 Assessment Methods

Valued Ecosystem Components

Several VECs were selected for this assessment, as newly affected lands supporting numerous resources are involved (Table 5.1).

Study Area

The study area for assessment of this project component is shown in Figure 2.1c. Because some lands affected by this project component were included in the 2013 EISA field work, specific studies undertaken for this assessment in 2014 were limited to reconnaissance-level site inspections on 20 June and 15 September 2014 and an examination of site-specific contours to assist in boundary delineation.

Table 5.1. Justification for the selection of VECs – West Project Boundary Modifications at HMEP

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 • Drainage Bylaw 16200
Hydrology Surface Water/ Groundwater	Yes			✓		✓	• Bylaw 7188 • Drainage Bylaw 16200 • <i>Alberta Water Act</i>
Fish and Fish Habitat	No						
Vegetation	Yes		✓	✓		✓	• Bylaw 7188 • <i>Alberta Weed Control Act</i>
Wildlife	Yes		✓	✓		✓	• Bylaw 7188 • <i>Federal Species at Risk Act</i> • <i>Federal Migratory Birds Convention Act</i> • <i>Alberta Wildlife Act</i>
Habitat Connectivity	Yes		✓	✓		✓	• Bylaw 7188
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

5.3 Key Issues

Key issues were identified by: 1) examining the project component location, known conditions and potential project activities; 2) considering concerns raised by the public and city services departments; and 3) applying professional judgement. Following are the key issues identified in association with the west project boundary modifications at HMEP:

- **Will project activities impact the abandoned channel of Mill Creek?**
- **What changes to assessed vegetation impacts, identified in the 2013 EISA, will result from the proposed project boundary modifications?**
- **Will project activities adversely impact recreational infrastructure in the local area?**
- **Will project boundary modifications result in additional impacts to visual resources in the local area?**

5.4 Existing Conditions

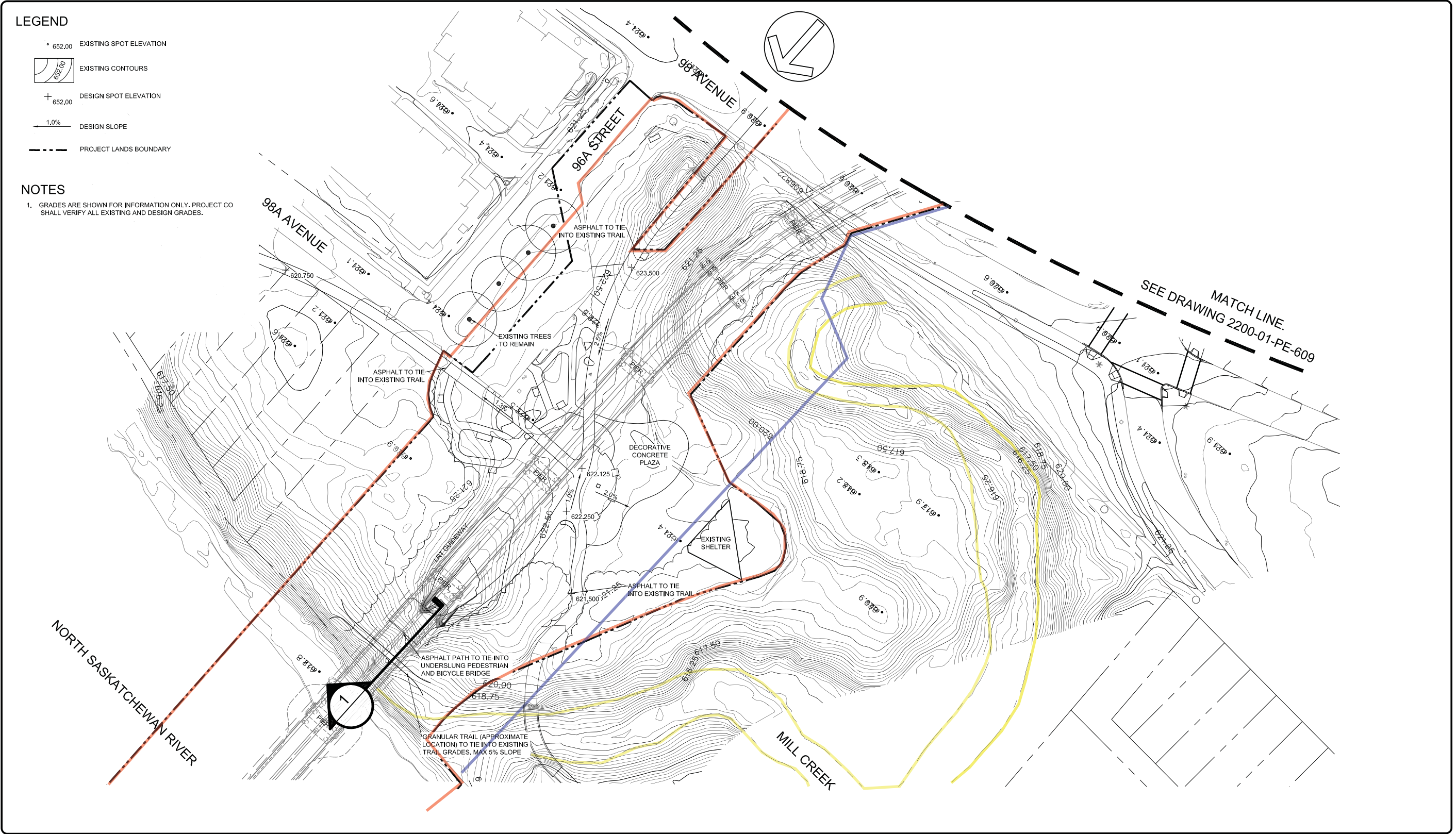
5.4.1 Geology/Geomorphology and Soils

The Project Area situated in HMEP forms part of a wide, low-lying, relatively flat terrace along the south river bank. This project component is bounded on the west by an abandoned reach of Mill Creek and on the north by the bank of the NSR. No known slope stability issues have been documented for these lands by the numerous studies associated with this part of the river valley for the Valley Line project. The geology is well described in the 2103 EISA.

Lands to be removed from the Project Area support mature native forest, suggesting native soils with no recent history of disturbance. These lands slope to the west toward an abandoned reach of Mill Creek (Figure 5.1), and show some slight terracing. This reach of Mill Creek, north of 98 Avenue, was isolated from upstream reaches as a result of a full creek diversion in the 1960s and significant road development. Nevertheless, the abandoned channel remains evident and short sections intersect with these small parcels.

The picnic shelter area, to be added to the Project Area, is much flatter and borders steeper, creek-influenced topography. Development of the park amenities in the 1970s, as evidenced by park plaques, likely require some minor re-grading to flatten the area and assure positive drainage. The modified outer boundaries of this area were drawn with a view to excluding the steeper slopes leading to the creek.

No soil survey or environmental drilling was undertaken for these small areas, but a Phase I ESA undertaken for the Valley Line LRT (ConnectEd Transit Partnership 2013a) did not flag any known soil contamination issues within these particular areas.



- LEGEND**
- 652.00 EXISTING SPOT ELEVATION
 - EXISTING CONTOURS
 - + 652.00 DESIGN SPOT ELEVATION
 - 1.0% DESIGN SLOPE
 - PROJECT LANDS BOUNDARY

NOTES

1. GRADES ARE SHOWN FOR INFORMATION ONLY. PROJECT CO SHALL VERIFY ALL EXISTING AND DESIGN GRADES.

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— Lands (2013), approx.
 — Lands (14Jan15), approx.
 — Mill Creek Channel

Figure 5.1 Boundary Changes to Exclude Mill Creek

5.4.2 Vegetation

Lands involved in the west project boundary modifications at HMEP support manicured and native vegetation (Figure 5.2). Lands to be added to the Project Area are largely manicured and include lawn, large planted trees, hard surfaces (paving stones) and passive recreational infrastructure including a picnic shelter, benches and tables. Within manicured areas, site reconnaissance indicated that in the small parcel to be expanded, vegetation is characterized by manicured lawn with large mature planted poplars interspersed throughout (Plate 5.1). Several planted choke cherry (*Prunus virginiana*) trees are also located in this area (Plate 5.2). Numerous mature Manitoba maple are situated on the edge of the proposed boundary expansion, adjacent to terrain influenced by Mill Creek (Plate 5.3).

Lands to be removed from the Project Area support native balsam poplar communities, surveyed in July 2012. Balsam poplar was the dominant community tree species, with Manitoba maple along the stand edges, adjacent to lawn. In 2012, the shrub layer consisted of red-osier dogwood, European mountain-ash (*Sorbus acuparia*), and snowberry (*Symphoricarpos alba*), while common understory species included wild lily-of-the-valley (*Maianthemum canadense*), Canada anemone (*Anemone canadensis*), and wild sarsaparilla (*Aralia nudicaulis*) and there was no evidence of disturbance in 2014. The northernmost area is immediately adjacent to the south bank of the NSR and the east bank of abandoned Mill Creek (Plate 5.4). The abandoned creek channel supports little vegetation, as it is still influenced by flowing water during periods of snowmelt and precipitation. The southern parcel also contains a section of abandoned Mill Creek, similarly scarcely vegetated (Plate 5.5).



Plate 5.1. HMEP west project boundary modifications looking west; manicured lawn and mature poplars dominate this area, looking west (Sept. 2014).



Plate 5.2. HMEP west project boundary modifications looking east; several planted choke cherry are situated in this area, looking east (Sept. 2014).



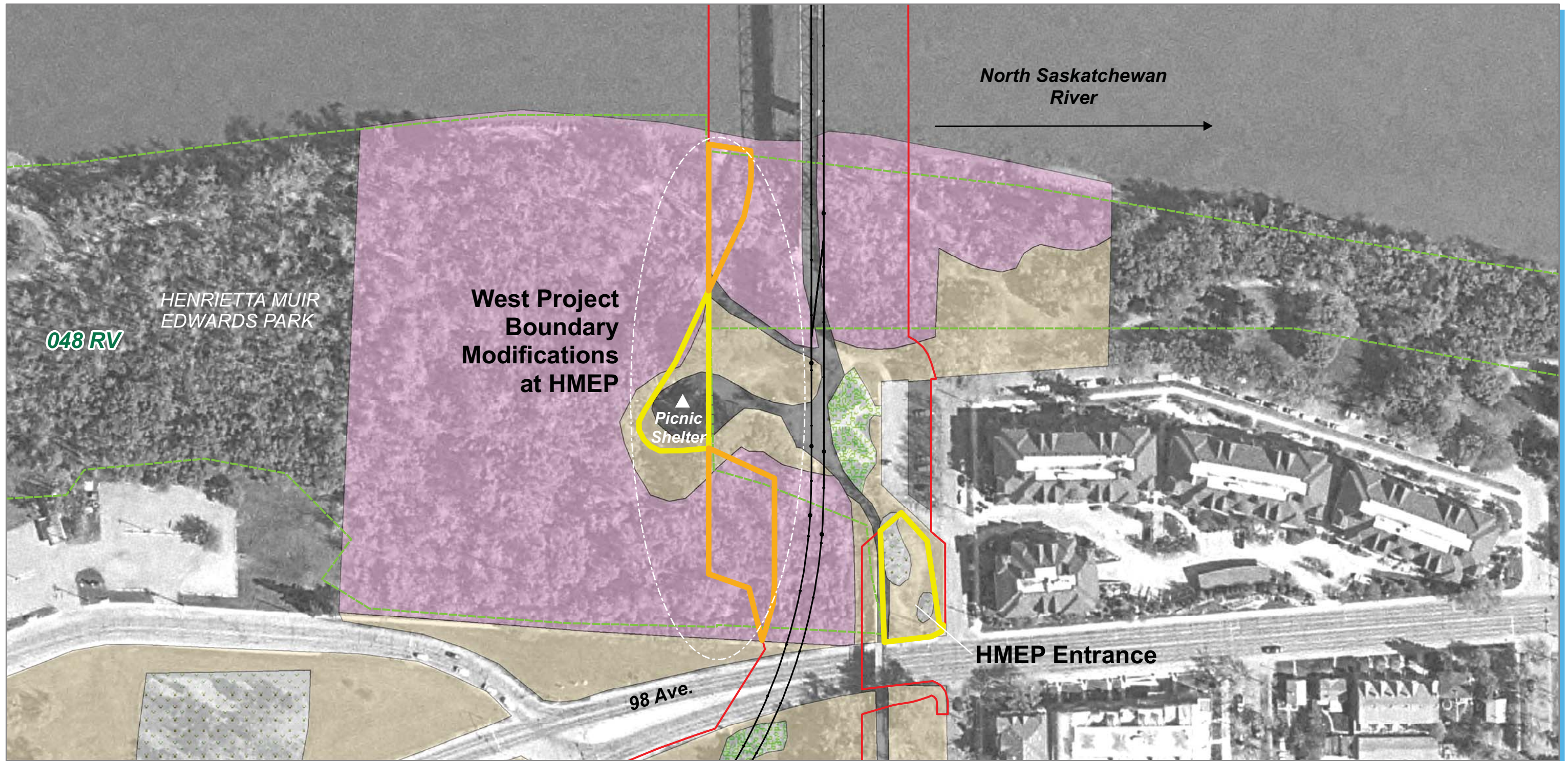
Plate 5.3. HMEP west project boundary modifications looking southwest; Manitoba maple borders the west edge of the project component area and transitions to balsam poplar forest (Sept. 2014).



Plate 5.4. The northernmost area is immediately adjacent to the east bank of abandoned Mill Creek (June 2013).



Plate 5.5. The southern parcel also contains a section of abandoned Mill Creek, with a sparse understory (April 2013).



Legend

Additional Lands

Undertaken by Project Co

Reduced Lands

Areas Removed from Project Lands

Project Area

Valley Line LRT Alignment (Reference Design)

Bylaw 7188 Boundary

City of Edmonton River Valley Natural Areas (2010)

Natural Communities

Balsam Poplar (P1)

Manicured Communities

Lawn

Garden

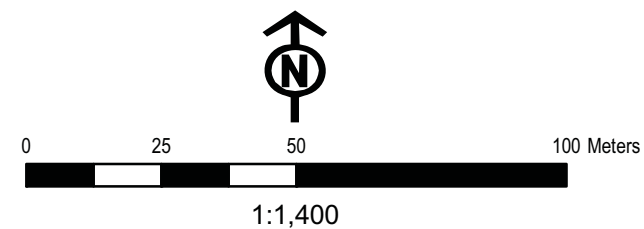
Planted Bed

Pathway/Structure

Figure 5.2 HMEP West Project Boundary Modifications, Existing Plant Communities

City of Edmonton LRT Valley Line - Stage 1 EISA Update

Aerial Photograph Date: May 2012
Date Map Created: 10 February 2015



5.4.3 *Wildlife Habitat and Connectivity*

The wildlife habitat potential of the Project Area to be expanded is limited by its small size, hard surface and frequent human traffic, but would still provide good canopy habitat for birds. The vast majority of lands within the parcels to be excluded from the Project Area are dominated by a native vegetation (balsam poplar forest community), providing excellent breeding habitat for songbirds. This forested area likely also provides some cover and foraging habitat for small and medium-sized mammals. Larger mammals such as coyote and deer and smaller mammals and birds, almost certainly periodically pass through the area while moving through the NSRV. Coyote have recently been documented moving through the project component area (Murray and Cassidy St Clair, unpublished data). Connectivity of lands in this area was assessed in the 2013 ESIA and was identified as part of an important riparian wildlife corridor within the City's central biological corridor.

5.4.4 *Recreational Land Use*

Lands involved in the west project boundary modifications at HMEP include a formerly-important picnic area whose amenities include a large picnic shelter, several benches, picnic tables, garbage cans and one drinking fountain (Plates 5.6, 5.7). A commemorative sign is installed at the entrance to the picnic shelter area. The picnic shelter and hard surfaces (paving stones) appear to be in disrepair and public fireplaces installed as part of the picnic shelter structure have been boarded over (Plate 5.8). According to Community Services, the area is not a bookable space and has no heritage value (S. Buchanan, *pers. comm.*). All of these facilities are situated in the Project Area to be expanded. There are no recreational facilities in the two areas proposed to be excluded from the Project Area.



Plate 5.6. Picnic Shelter situated in the proposed changes to the west boundary of the project area, looking southwest (Sept. 2014).



Plate 5.7. Benches, picnic tables, garbage cans and a drinking fountain are also situated in this area (Sept. 2014).



Plate 5.8. The picnic shelter and hard surface appear to be in disrepair and public fireplaces installed as part of the picnic shelter structure have been boarded over (April 2013).

5.4.5 *Utilities*

The 2013 EISA did not identify any major utility lines within the boundaries of this project component. It is anticipated, however, that subsurface electric cables for light standards and a water line for the existing drinking fountain are situated in the manicured portion of the park that will be added to the Project Area. Utilities will be confirmed prior to initiation of work in the area.

5.4.6 *Visual Resources*

All lands within the HMEP west project boundary modifications provide minimal views of the NSR and the north bank of the NSR, including downtown and LMRP, as their views come from a lower angle and are largely screened by forest vegetation, even in winter. Lands to be removed from the Project Area are naturally vegetated and, thus, contribute to visual resources for the NSRV as a “Ribbon of Green”. For lands to be excluded from the Project Area, the picnic shelter area is highly visible to users of the main spine trail to the Cloverdale Pedestrian Bridge. Nearby residents living at the west end of the condominium complex along 96A Street, with western exposures look out into this park area.

5.5 **Potential Impacts and Mitigation Measures**

5.5.1 *Soils and Geotechnical Stability*

5.5.1.1 *Erosion and Sedimentation of the Abandoned Mill Creek Channel*

Impact and Mitigation Measures

Lands to be added to the Project Area are situated adjacent to the east channel bank of abandoned Mill Creek. General construction activities within this area, assuming cleared vegetation, have the potential to result in some soil erosion and therefore also have potential to result in release of sediment to the abandoned creek channel. Because the channel carries water intermittently, such sediments could then flow into the NSR. If realized, sedimentation would be rated as an adverse, minor short or long-term and predictable impact.

Any construction activities undertaken within these lands in west HMEP will be subject to the contractual obligations of the Valley Line LRT project. For any works within the Project Area, Project Co will be required to develop an EMS and an associated ECO Plan and ESC Plan. The ESC Plan will conform to the City of Edmonton *Erosion and Sedimentation Control Guidelines* and *Erosion and Sedimentation Control Field Manual* and must provide for measures commensurate with the sensitivities of the site conditions a location within the landscape. Effectively developing and implementing these programs will ensure that impacts associated with erosion and sedimentation are reduced to negligible.

Exclusion of the two parcels from the Project Area that contain sections of abandoned Mill Creek has the effect of mitigating impacts on geomorphology and soils. With the exception of a very small area at the east half of the former confluence of the creek and

the river (see Figure 5.1), there will be no need to fill or re-contour Mill Creek channel to allow for working areas or transit nor to get permission from Public Lands, the bed and shore owner. This will greatly reduce potential for sediments to be carried into the NSR. To protect the small intersection with the creek channel at the river confluence, Project Co will be prohibited from re-contouring the bed and shore and required to protect those existing contours.

5.5.2 Vegetation

5.5.2.1 Native Vegetation

Impact and Mitigation Measures

The west project boundary modifications at HMEP include a reduction of Lands dominated by native vegetation, totaling approximately 1,632 m². Areas to be added to the Project Area, and allowed to be cleared, include a very small area of native vegetation, totaling approximately 66 m². These Project Area modifications represent an overall reduction of approximately 1,566 m² of disturbance to native vegetation in the NSRV. Additionally, any lands disturbed within the expanded Project Area will be subject to native forest restoration efforts (Figure 2.2). Such lands will include all manicured and hard surfaces within this project component, totaling approximately 778 m². Based on these considerations, on balance, this boundary modification represents an overall reduction in native vegetation loss to the project and replacement of non-native forest to a native forest. This replacement will in the long-term result in a positive, minor, permanent and predictable vegetation impact.

5.5.2.2 Manicured Vegetation

Impact and Mitigation Measures

The west project boundary modifications at HMEP include approximately 351 m² of area covered by manicured vegetation that will be added to the Project Area and allowed to be cleared. Modifications will also include a very small area of manicured vegetation to be removed from the project area, totaling approximately 36 m². These Lands modifications represent an overall addition of approximately 315 m² of manicured vegetation that will be impacted as part of construction activities.

Much of area to be added to the Project Area is covered in paving stones (Plate 5.4), thus, no impacts to manicured vegetation was calculated for such areas. The 351 m² of manicured vegetation that will be added to the Project Area includes manicured lawn with numerous mature planted poplars and some planted choke cherry. These trees and lawns will be removed for construction. The loss of the trees will be addressed through the City's Corporate Tree Management Policy. Measures to ensure compliance with this policy are already included in the Project Agreement for the entire Project Area, which will include this project component change.

Post-construction, all lands disturbed as part of this project component will be subject to native forest restoration efforts, in a manner similar to that already applied to other affected forested areas of HMEP, and as shown on the 70% Landscape Drawings (Figure

2.2). Within this area, a native balsam poplar riparian forest will be restored on lands previously dominated by manicured vegetation. While the permanent loss of manicured vegetation would typically be considered an adverse impact, its long-term replacement with a native forest community negates such a rating.

5.5.3 *Wildlife Habitat and Connectivity*

The west project boundary modifications at HMEP will result in an overall reduction in adversely affected wildlife habitat, in the amount of approximately 1,566 m², as it reduces the loss of native forest in the NSRV. Additionally, long-term native forest restoration efforts will result in the addition of approximately 778 m² of native balsam poplar riparian forest habitat to the local area. Based on these considerations, no new or unique impacts to wildlife habitat and connectivity have been identified, and the earlier assessment of loss in this area has been mitigated.

5.5.4 *Recreational Land Use*

Work associated with the west project boundary modifications at HMEP will disturb manicured park areas and an existing picnic area.

5.5.4.1 *Loss of Recreational Infrastructure*

Impact and Mitigation Measures

The expansion of the Project Area to accommodate construction activities will result in the permanent removal of the HMEP picnic shelter, several benches, picnic tables, garbage cans and one drinking fountain. The loss of this picnic area has been sanctioned by Community Services and was assessed in the 2013 EISA and rated as a negligible impact because of the derelict nature of the area. Post-construction, all lands disturbed within this parcel will be subject to native forest restoration efforts; no recreational infrastructure will be re-installed in this area.

The net result in the expanded Project Area will be a more pleasing, regenerating natural environment. The open park space to the immediate east will be enhanced according to the 70% Landscape Drawing (Figure 2.2). Construction activity in this area will not result in additional temporary or permanent disruptions to the pathway network in the local area, thus, no new or unique impacts have been identified.

5.5.5 *Utilities*

Removal of the picnic shelter and associated recreational infrastructure by Project Co will include decommissioning or removal of associated power and water connections. Any such utility works will be subject to the contractual obligations of the Valley Line LRT project. Based on these considerations, no new or unique impacts as a result of utility removal have been identified.

5.5.6 *Visual Resources*

The west project boundary modifications at HMEP will result in the retention of approximately 1,566 m² of naturally vegetated lands within the NSRV and the removal of approximately 315 m² of manicured park lands and numerous, leafy mature planted trees. Although disturbances to this specific area of manicured park areas may be visible to nearby residents situated at the west end of the condominium complex along 96A Street with western exposures, this impact was addressed in the 2013 EISA, as part of the general construction activity visible in this area.

On a longer term basis and from more distant vantage points, the reduction of disturbance to native vegetation will also reduce the overall impact of the project to visual resources in HMEP. This project change does not, therefore, represent any short-term new or unique impacts to visual resources during construction activities. As works will ultimately result in increased natural vegetation in the NSRV “Ribbon of Green”, long-term impacts related to this boundary change are considered to be positive and minor.

5.6 **Summary Assessment**

5.6.1 *Summary of Residual Impacts*

This assessment identified no residual adverse impacts or outstanding issues and two positive impacts. Positive residual impacts were related to overall improvements to visual resources and the net small increase in native balsam poplar forest. Furthermore, the proposed reduction of the Project Area would serve to avoid disturbance native forest and the abandoned Mill Creek channel.

5.6.2 *Monitoring Requirements*

There are no monitoring requirements unique to this project component. Monitoring requirements specific to erosion and sediment control, general construction activities and the native forest restoration efforts were committed to in the 2013 EISA and are now well described in the general Project Agreement.

5.6.3 *Resolution of Key Environmental Issues*

The following are brief answers to the questions initially posed in *Section 5.3*.

Will works impact the abandoned channel of Mill Creek?

No. Construction activities will be undertaken immediately adjacent to the abandoned east channel bank of Mill Creek, but not within the creek bed itself. Any construction activities undertaken within these lands in west HMEP will be subject to the contractual obligations of the Valley Line LRT project. For all Lands, Project Co will be required to develop an ECO Plan and ESC Plan. The ESC Plan will conform to the City of Edmonton *Erosion and Sedimentation Control Guidelines* and *Erosion and Sedimentation Control Field Manual* and must provide for measures commensurate with the sensitivities of the site conditions at the location within the larger landscape.

What changes to assessed vegetation impacts, identified in the 2013 EISA, will result from the proposed project boundary modifications?

Modifications to the project boundaries will result in the retention of approximately 1,566 m² of natural vegetation and the removal of approximately 351 m² of manicured vegetation, including some planted mature trees. Additionally, any lands disturbed as part of this project component will be subject to native forest restoration efforts that will result in the creation of approximately 778 m² of native balsam poplar riparian forest.

Will project activities adversely impact recreational infrastructure in the local area?

Yes. The expansion of lands to accommodate construction activities will result in the permanent removal of the HMEP picnic shelter, several benches, picnic tables, garbage cans and one drinking fountain. The loss of these picnic facilities has been sanctioned by Community Services and was assessed in the 2013 EISA and rated as a negligible impact because of the derelict nature of the area. No recreational infrastructure will be re-installed in this area. Any lands disturbed as part of this project component will be subject to native forest restoration efforts, the net result of which will be a more pleasing, regenerating natural environment.

Will project boundary modifications impact visual resources in the local area?

Yes. Although disturbances to manicured park areas may be visible to nearby residents situated at the west end of the condominium complex along 96A Street with western exposures, this impact was addressed in the 2013 EISA, as part of the general construction activity visible in this area. On a longer term basis and from more distant vantage points, the reduction of disturbance to native vegetation will reduce the overall impact to visual resources in HMEP. As works will ultimately result in increased natural vegetation in the NSRV “Ribbons of Green”, long-term impacts related to this boundary change are considered to be positive and minor.