Environmental Impact Assessment Pursuant to Bylaw 7188

84 Street Renewal - Shared Use Pathway
Final Report

Prepared for:
City of Edmonton
Integrated Infrastructure Services
Edmonton, Alberta

Project Number EP-934
May 2021

Prepared by:
Spencer Environmental Management Services Ltd.
Edmonton, Alberta

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10 May 2021
File: EP-934

Dear Mr. Rodriguez,

Re: Environmental Impact Assessment Pursuant to Bylaw 7188 for 84 Street Renewal SUP – FINAL REPORT

We are pleased to submit this pdf copy of the above-mentioned final Environmental Impact Assessment (EIA) for your records and future use. This report was finalized upon receipt of EIA and SLS sign-off from Administration (City Planning). Content changes made to the draft report were limited to addition of a final section referring to the Administration sign-off letter, and appending said letter to the report.

The final Site Location Study is also provided, under separate cover.

Please contact either of the undersigned if you require additional information. Thank you for the opportunity to be of service.

Sincerely,

Spencer Environmental
Management Services Ltd.

Stephanie Jean, M.Sc., P.Biol.
Environmental Scientist

Lynn Maslen, M.Sc., P.Biol.
President

Table of Contents

Chapter **Page**

List of Tables

List of Plates

1.0 INTRODUCTION

The City of Edmonton, Integrated Infrastructure Services is proposing to renew 84 Street from 98 Avenue to 106 Avenue to rehabilitate the aging roadway and maximize its asset life. That segment of 84 Street is located at the top of the river valley within the River Valley Riverside Neighbourhood, with the Forest Heights Neighbourhood located immediately to the east (Figure 1, Appendix A). The City has prepared a preliminary design of the rehabilitation of 84 Street. This project, funded by the Arterial Renewal Program, will involve road resurfacing, new curbing, sidewalks, bus pads, upgraded streetlights, signals, pedestrian flashers and installation of a segment of new Shared Use Path (SUP) west of 84 Street, between 101 Avenue and 105 Avenue. The new SUP segment will connect to an existing SUP north of 105 Avenue and to an existing sidewalk south of 101 Avenue (Plates 1.1 to 1.4) (Figures 2a-e, Appendix A).

Plate 1.1. Looking south across 101 Avenue at the existing sidewalk the proposed SUP will connect to (23 February 2021).

Plate 1.2. Looking north from 101 Avenue at proposed location of new SUP segment (23 February 2021).

Plate 1.3. Looking north across 105 Avenue at the existing SUP the proposed new SUP will connect to (23 February 2021).

Plate 1.4. Looking north from 105 Avenue at proposed location of new SUP segment (23 February 2021).

In the project area, the North Saskatchewan River Valley Area Redevelopment Plan (NSRV ARP) (Bylaw 7188) boundary runs along the east edge of 84 Street (Figure 1, Appendix A). All contemplated works are therefore subject to the Bylaw 7188 environmental review process. Roadworks components of the project, those situated within the existing 84 Street right-of-way, are the subject of a separate Bylaw 7188 Project Review Form (PRF), completed by the project proponent. City of Edmonton Ecological Planners have determined that the appropriate level of review for components to the west of 84 Street is an Environmental Impact Assessment (EIA) that will be subject to approval by City Council. Further, they have determined that a Site Location Study (SLS) must also be prepared (under separate cover) for those components. The trigger for an EIA and SLS addressing the SUP is the location of the required lands within two City-owned lots that form part of Forest Heights Park and the need to transfer those lands to road right-of-way. The City has retained Spencer Environmental Management Services Ltd. (Spencer Environmental) to complete the SUP EIA and SLS.

This report comprises the Bylaw 7188 EIA prepared for the new SUP, and associated boulevard and amenities also west of 84 Street. The SLS is provided under separate cover. The EIA format and content follows a project-specific Terms of Reference developed by City of Edmonton Ecological Planners that specifies an assessment based on the preliminary design, focussing on anticipated construction activities. Ecological Planners determined that of the natural resources typically covered, 'environmental sensitivities' was not relevant. All other natural resources to be covered required only desktop analysis. Consideration of environmental monitoring was not required. This EIA addresses all SUP and boulevard components and their construction having potential to affect lands within the NSRV ARP.

2.0 THE PROPERTY

2.1 Project Area Location, Disposition, Zoning

The project assessed by this EIA will be located immediately west of 84 Street between 101 Avenue and 105 Avenue, on tablelands east of the North Saskatchewan River Valley (NSRV) and within Bylaw 7188 lands. In this location, 84 Street is bounded on the west by the manicured lands of Forest Heights Park and the SUP lands are currently part of that park. Forest Heights Neighbourhood is east of 84 Street. Other adjacent development includes McNally High School - located northwest of 84 Street/105 Avenue intersection, the Catholic Archdiocese of Edmonton - located southwest of 84 Street/101 Avenue intersection, and École Michaëlle-Jean - located southeast of that same intersection (Figure 1, Appendix A).

All lands required for the SUP project are currently City-owned and form part of Forest Heights Park. The required lands will be transferred to the 84 Street right-of-way. The proposed new property line is shown in Figures 2a through 2e (Appendix A). Zoning of the affected lands is Metropolitan Recreation Zone (A) (Figure 3, Appendix A). Located on the tablelands, the proposed SUP location does not intersect with the City of Edmonton's Flood Protection Overlay or Alberta's Flood Hazard Mapping.

2.2 Historic Conditions

Historical aerial photograph review was limited to available City of Edmonton pictometry imagery for 2007, 2013 to 2018 and 2020, and Google Earth (2021) imagery that spanned the period 2002 to 2020. Very little development was observed on the available aerial photographs in the proposed SUP location and vicinity during this period as this area of the river valley margin is located in Central Edmonton and has been developed for decades. The imagery series chronicles growth of open space trees in the vicinity of the proposed SUP.

2.3 Summary of Environmental Regulatory Approvals

All typically relevant federal, provincial and municipal environmental legislation, bylaws and policies were reviewed for their application to this project (Appendix B). As is often the case, several provincial and federal statutes prohibiting harm to select resources are relevant to project construction; however, Bylaw 7188 is the only trigger for an environmental assessment. Table 2.1 presents a summary of environmental legislation and bylaws identified as applicable to this project. Additional legislation/bylaw detail is provided in Appendix B.

Several other municipal permits, such as OSCAM, may be required, depending on proponent activity.

Table 2.1. Summary of Applicable Legislation and Bylaws (details in Appendix B)

Legislation or Policy	Regulatory Agency	Authorization/ Approval/Permit Required	Approval Timeline or Potential Schedule Impact
Bylaws Requiring Approvals - Municipal			
North Saskatchewan River Valley Area Redevelopment Plan **(Bylaw 7188)**	City Planning	EIA and SLS required. EIA and SLS must be approved by City Council.	Anticipated Approval in summer 2021.
Corporate Tree Management Policy **(C456)**	City Forestry	Proponent to collaborate with City Forestry regarding City-owned trees and shrubs in the project area.	Proponent responsibility. City Forestry has reviewed the Preliminary Design and indicated that if work is to take place within 3 m from a tree City Forestry must be contacted once the site is staked in order to determine if tree work is needed (i.e., pruning, removal, remediation).
City of Edmonton (Bylaw 18100) - EPCOR Drainage Services Bylaw	EPCOR	Permit to discharge into storm sewer system may be required (e.g., staging area)	Proponent responsibility.
City of Edmonton Parkland **(Bylaw 2202)**	City of Edmonton	Permit required to stage for construction	Proponent responsibility.
Acts Influencing Construction Methods - Provincial			
Wildlife Act	Alberta Environment and Parks	No permit required; however, the Act prohibits disturbing prescribed breeding wildlife such as northern flying squirrels and owls. Nest sweeps may be required to remain compliant.	Proponent responsibility. Vegetation pruning and other nearby activities in direct proximity to trees between 15 February and 20 August may result in the need for nest sweeps; findings have potential to delay construction activities.
Historical Resources Act	Alberta Culture, Multiculturalism and Status of Women (ACMSW)	All projects with potential to disturb historical, archaeological and paleontological resources will require Approval.	~1-3 months for ACMSW to review an Approval application. An application was submitted in early March 2021.
Acts Influencing Construction Methods - Federal			
Migratory Birds Convention Act	Environment and Climate Change Canada	No permit required; however, violation of the Act may result in penalties. Nest sweeps may be required to remain compliant.	Proponent responsibility. Vegetation pruning and other nearby activities between 15 February and 20 August may require a nest sweep; findings have potential to delay construction activities.

2.4 Environmental Site Assessment

An Environmental Site Assessment (ESA) has not been prepared for the proposed project; however, potential contamination issues were addressed by the City through preparation of an Environmental Review for the full 84 Street rehabilitation between 98 Avenue to 106 Avenue (City of Edmonton Engineering Services 2020). Review included information available from the Engineering Services Library and Files, Alberta Environment and Parks Environmental Site Assessment Repository and land use maps. The review determined that as no information was found that indicated contamination is present in the project location, and, since the project should have limited excavation below 0.5 m, the risk of encountering contamination is low. Engineering Services (2020) recommended the project area be walked prior to construction and any observed environmental infrastructure, such as monitoring wells, noted. Finally, in the event that contamination is encountered during construction the Environmental Engineering group should be contacted.

3.0 ENVIRONMENTAL CONTEXT

3.1 Overview of Study Area and Adjacent Lands

At this location, the Bylaw 7188 boundary was generously drawn to include a tableland park between the valley and 84 Street. In this location, the captured tablelands area averages about 130 m in width (Figure 1, Appendix A). The EIA study area was defined at two scales: local and expanded (Figure 1, Appendix A). The local study area was bounded by 84 Street on the east and extended west into the park approximately 20 m to capture all of proposed construction and a buffer. The expanded study area was delineated for the wildlife VEC only and included additional adjacent, manicured lands 50 m to the west that are structurally connected bylaw lands.

Forest Heights Park occupies all of the tablelands between the river valley and 84 Street. Much of the park is manicured and supports grassy areas that merge into an expansive river valley forest community. The expanded study area did not extend as far west as the natural vegetation communities at/on the valley slope. The park also supports tennis courts, a small parking lot, a soccer pitch, baseball diamonds and a paved trail at the margin of the natural vegetation.

3.2 Surface Water and Groundwater

3.2.1 Methods

Surface Water

Surface water within the vicinity of the project was described based on examination of topographic maps and field observations during a site reconnaissance.

Groundwater

Groundwater within the vicinity of the project was described based on a search of the Alberta Water Wells Map (Government of Alberta 2021a) for nearby groundwater wells.

3.2.2 Description

Surface Water

No surface water features are located in the local study area. The nearest surface water feature is the NSR, which is located approximately 300 m west of the local study area. Surface runoff in the area drains overland to storm catch basins or to naturally vegetated areas.

Groundwater

Groundwater depths in the project area are unknown. A search of the Alberta Water Wells Map (Government of Alberta 2021a) found one well located approximately 523 m east of 84 Street at the intersection of 103 Avenue and 79 Street. In 1975, the well was drilled to a depth of 28.3 m below the ground surface and had a static water level of approximately 6.1 m below the ground surface.

3.3 Geology/Geomorphology and Soils

3.3.1 Methods

Regional geology was described using Alberta bedrock geology maps (Prior et al. 2013) and soils were described by referencing the Alberta Soil Information Viewer (Government of Alberta 2021b).

3.3.2 Description

Bedrock geology within the City of Edmonton is of the Horseshoe Canyon Formation (Prior et al. 2013). This bedrock consists of pale grey, fine to very fine grained, feldspathic sandstone interbedded with siltstone, bentonitic mudstone, carbonaceous mudstone, concretionary sideritic layers, and laterally continuous coal seams (Prior et al. 2013). The Alberta Soil Information Viewer (Government of Alberta 2021b) maps the City of Edmonton under the soil series Miscellaneous Disturbed Land. Project-area specific geology and soils information was not available.

3.4 Vegetation

3.4.1 Methods

Vegetation in the local study area was characterized by undertaking the following tasks:

- Desktop delineation of preliminary plant community using high-resolution remote imagery.
- Plant community classification following the Urban Ecological Field Guide for the City of Edmonton, Alberta, Canada (City of Edmonton 2015). Manicured open spaces were classified as such.
- Site reconnaissance on 23 February 2021 to photograph and verify mapped plant communities and look for evidence of weed infestations.
- A search of the Alberta Conservation Information Management System (ACIMS) (AEP 2021a) for all records of special status plant species within the project area.

Site accessed on 12 February 2021. The area searched consisted of legal section 3-53-24-W4M.

Formal weed surveys were not completed for this EIA, owing to time of year.

3.4.2 Description

3.4.2.1 Plant Communities

The local study area comprised manicured park lands (M) with planted open space trees. (Figures 4a and 4b, Appendix A). The local study area is subject to regular mowing or maintenance and supports open space trees (Plate 3.1). Most open space trees were located approximately 10 m from the edge of 84 Street and scattered throughout the local study are, west of centre. Planted open space trees included white spruce (*Picea glauca*), blue spruce (*Picea pungens*), green ash (*Fraxinus pennsylvanica*), Manitoba maple (*Acer negundo*), apple trees (*Malus sp.*), dropmore linden (*Tilia flavescens 'Dropmore'*) and American elm (*Ulmus americana*). Many of these trees were mature but a few were considerably younger/smaller. Turf areas could not be fully observed due to snow cover. Observed turf areas in the City commonly comprise mostly grass species such as Kentucky bluegrass (*Poa pratensis*), quackgrass (*Elymus repens*) and smooth brome (*Bromus inermis*).

Plate 3.1. Typical manicured open space community adjacent to 84 Street (23 February 2021)

3.4.2.2 Special Status Species

In the City of Edmonton, rare plant species are those having an ACIMS conservation rank of S1, S2 or S3. S1 species are known from five or fewer locations in the province. S2 are species known from 6-20 occurrences, and S3 species are known from 21-100 occurrences

in the province. A search of ACIMS data returned no records of special status vascular plant species in the project area. As would be anticipated given the time of year, no special status plant species were observed during the February 2021 site reconnaissance. However, given the manicured nature of the area, species of conservation concern are not anticipated to occur here.

3.4.2.3 Weeds

The Alberta *Weed Control Act* defines two categories of weeds: noxious and prohibited noxious. Noxious weeds are generally those that are currently widespread in the province and are considered difficult to eradicate. Provincial legislation requires these species be controlled. Prohibited noxious weeds are those that are currently uncommon or absent in the province but have been identified as noxious due to their potential to invade and damage natural and cultivated systems. Alberta law requires that prohibited noxious weeds be destroyed where they are found.

Prohibited Noxious and Noxious Weeds

No evidence of prohibited noxious or noxious weeds was observed during the February 2021 site reconnaissance.

3.5 Wildlife

3.5.1 Methods

Wildlife resources in the expanded study area were characterized by undertaking the following tasks:

- Assessment of available habitat type, condition and quality through field observations and examination of study area vegetation data and maps.
- A search of FWMIS (AEP 2021b) for all wildlife records for lands within a one-kilometer radius of the local study area centre. FWMIS was accessed on 12 February 2021.
- Generation of a list of potential wildlife species present, including special status species, by considering all of the above and our knowledge of Edmonton wildlife communities and occurrences (Appendix C). The list is generous and allows for even very low probabilities of transient species use. Species on that list having a recognized special status were further considered and assigned a probability of occurrence in the study area (low, moderate or high) and potential habitat use noted.
- Recording of all incidental wildlife and wildlife sign observations made during the site reconnaissance.

3.5.2 Description

3.5.2.1 Available Habitat/Habitat Connectivity

The expanded wildlife study area is located near the top of the east river valley wall and, like the local study area, comprises manicured lands with open space trees. No natural vegetation is present within the expanded study area, and the area is well-used

recreationally. In general, the area represents low quality, urban wildlife habitat. The trees are the most important habitat component. While no wildlife trees or snags were observed in the expanded study area during site reconnaissance, some of the mature, open space trees in the area were judged to be suitable nesting/resting habitat for some commonly occurring passerines and other arboreal urban-tolerant species such as red squirrels.

The province maps the NSRV and ravine system in the City of Edmonton as a Key Wildlife Biodiversity Zone (KWBZ) (AEP 2021b). This mapping is done at a coarse scale using major river corridors, valley topography, valley slope breaks and ungulate winter density data (AEP 2010.) In this location, the KWBZ includes a tableland area that extends east into the local study area. This extension of the KWBZ as far east as the manicured local study area and so near to 84 Street is likely the result of coarse mapping. Designation of the NSR as a KWBZ is consistent with the City of Edmonton's identification of the river valley as a regional biological corridor within the City's ecological network (City of Edmonton 1990 and 2007) and recent identification as a key component of City Plan's green and blue network (City of Edmonton 2020). All of these designations recognize the importance of the river valley as a major wildlife movement corridor having high value habitat, in undisturbed areas. Natural river valley vegetation is absent from the expanded study area but present immediately to the west of it. The expanded study area therefore serves an ecotone and buffer function to the naturally vegetated corridor. Manicured, recreational fields located in the expanded study area are highly permeable to wildlife movement and it is likely that river valley wildlife species occasionally wander into the park from the adjacent shrubby, forested communities, especially between dusk and dawn. For example, skunk and porcupine may be frequent visitors. Coyotes that regularly roam the City are expected to also move through here.

3.5.2.2 Documented and Potential Wildlife

The EIA Terms of Reference did not require any taxa-specific wildlife surveys to be conducted. Based on the habitat present in the local study area, expected species are limited to commonly occurring urban-tolerant species, such as black-capped chickadee (*Poecile atricapillus*), American crow (*Corvus brachyrhynchos*), black-billed magpie (*Pica pica*), coyote (*Canis latrans*), red squirrel (*Sciurus vulgaris*), white-tailed jackrabbit (*Lepus townsendii*) and deer mice (*Peromyscus maniculatus*). During the 23 February 2021 site reconnaissance, a red squirrel was observed in the open space trees. A list of all wildlife species potentially occurring in the expanded study area is provided in Appendix C.

3.5.2.3 Special Status Species

The FWMIS search returned records of four special status species within 1 km of the project area: barred owl, northern leopard frog, northern bat and short-eared owl. However, based on species habitat requirements, provincial species distributions and the character of the available habitat in the local study area, all but northern bat were identified as having no potential to occur in the local study area. Northern Bat and little brown bat, both listed as Endangered on Schedule 1 of the *Species At Risk Act* (SARA) as a result of white nose fungus outbreaks in hibernacula, were assigned a low probability of foraging or roosting in the expanded study area (Appendix C).

Sensitive Species Range Records

FWMIS sensitive species range records indicate that the expanded study area falls within the province's coarsely mapped sharp-tailed grouse (*Tympanuchus phasianellus*) survey area and the bald eagle (*Haliaeetus leucocephalus*) range (AEP 2021). Sharp-tailed grouse are not expected to occur within the study area because suitable grassland/shrubland habitat is not present. Suitable bald eagle perching and hunting habitat is present in the NSRV, but the expanded study area is not attractive eagle habitat.

3.6 Historical Resources

3.6.1 Methods

Circle CRM Group Inc. (Circle CRM) (2021) prepared an application pursuant to the *Historical Resources Act* (HRA) in support of the proposed project, which was submitted to Alberta Culture, Multiculturalism and the Status of Women (ACMSW) on 08 March 2021.

3.6.2 Description

Circle CRM (2021) determined that the proposed project crosses lands assigned a Historical Resources Value (HRV) of 4 (contains a historic resource that may require avoidance) for archaeology owing to the proximity of one known historic resource site approximately 115 m to the west. In addition, the project area is located within a High Archeological and Palaeontological Resource Sensitivity Zone (HRV 5 - high potential to contain a historic resource). Given these designations, Circle CRM determined that HRA approval would be required prior to proceeding with any construction activities that include ground excavation. ACMSW's review is under way. Approval or approval conditional on providing further historical resources information is expected.

4.0 THE PROJECT

4.1 Project Description

A new Shared Use Path (SUP) is proposed for the west side of 84 Street, between 101 Avenue and 105 Avenue (City of Edmonton Integrated Infrastructure Services 2021, Appendix D). The SUP will be a 3 m wide, 750 m long asphalt path separated from 84 Street by a 4 m wide boulevard. The new property boundary will be situated 1 m west of the new SUP edge. Street lighting will be installed within the boulevard to meet pedestrian lighting standards (Rodriguez 2021). Light standard locations are not yet determined (and are not shown on the preliminary drawings, other than indicatively in one cross section). Light standard locations west of 84 Street will be coordinated with light standards east of 84 Street; 8 or 9 new light standards are anticipated for the new boulevard. Lighting installation will require subsurface work within the boulevard. South of 105 Avenue, an 85 m long concrete bus stop pad will be installed within the boulevard. South of that, the boulevard will be turfed and open space trees installed. Surface runoff from the new SUP and boulevard will drain into 84 Street to be collected by catch basins (Rodriguez 2021).

The total construction surface disturbance area will be ~ 750 m long x 8 m wide (4 m boulevard, 3 m SUP, 1 m temporary work area, with potential grading). SUP and boulevard construction will involve stripping of topsoil, compacting subsoil, placing a granular base and installing the asphalt path and bus stop pad. Excavation is anticipated to be limited to within 0.5 m of the ground surface, with some minor exceptions (City of Edmonton Integrated Infrastructure 2021, Appendix D).

4.2 Landscaping

Landscaping will include installation of ~55 open space trees (tree size and species not yet specified) in the newly created boulevard, installation of boulevard turf and turfing of any temporary disturbance west of the SUP.

4.3 Construction Schedule, Phasing, Key Activities

Construction is planned to occur during summer of 2022, phased as follows (Rodriguez 2021):

- Stage 1: Removal of topsoil and subsoil.
- Stage 2: Lay down of conduit and cabling for new streetlights.
- Stage 3: Soil compaction, granular base placement.
- Stage 4: Asphalt laying for path, concrete bus stop pad installation, streetlight standard and open space tree installation.

4.4 Construction Laydown Area and Access

It is likely that the project will require laydown areas on the west side of 84 Street, but the locations of laydown areas have not been identified at this time. Laydown areas are not planned for lands west of the new property boundary. Construction access will be via 84 Street.

5.0 PROJECT IMPACTS AND MITIGATION MEASURES

5.1 Assessing Impacts

5.1.1 Potential Impact Identification and Analysis

Based on the environmental context described in Section 3, and the anticipated project activities, the following Valued Ecosystem Components (VECs) were identified for impact assessment: vegetation, wildlife and historical resources. For each VEC, potential impacts to be examined were identified by overlaying the project drawings on mapped resources, reviewing project activities, and applying our professional experience with impact assessment and construction performance auditing in other, similar, projects. This process resulted in identification of specific potential impacts that warranted assessment.

In addition, we separately examined the potential for the following select project incidents to occur and adversely impact natural resources:

- Release of sediment, hazardous/deleterious substances into the environment.

5.1.2 Impact Characterization

Identified impacts were characterized according to guidance received from the EIA Terms of Reference (Table 5.1). Potential impacts were characterized with respect to nature (positive or negative, direct or indirect), magnitude (negligible, minor, or major), duration and timing (temporary, permanent or seasonal), geographic extent and likelihood. These criteria were defined as shown in Table 5.1:

Table 5.1: Impact Descriptor Definitions.

Nature of Impact	
Positive Impact	An interaction that enhances the quality or abundance of physical features, natural or historical resources.
Negative Impact	An interaction that diminishes the abundance or quality of physical features, natural resources or historical resources.
Direct	An interaction that results in the loss or reduction of a resource/feature.
Indirect	An interaction that results in off-site impacts, such as sedimentation off-site.
Magnitude	
Negligible Impact	An interaction that is determined to have essentially no effect on the resource. (Such impacts are not characterized with respect to direction duration or confidence.)
Minor Impact	An interaction that has a noticeable effect but does not eliminate a local or regional population or physical feature, or affect it beyond a defined critical threshold (where that exists).
Major Impact	An interaction that affects a local or regional population, resource, or physical features beyond a defined critical threshold (where that exists) or beyond the normal limits of natural perturbation.
Duration and Timing	
Temporary Impact	A change that does not persist indefinitely.
Permanent Impact	A change that persists indefinitely.
Seasonal Impact	A change that will terminate or diminish significantly after one season.

Geographic Extent	Extent of area affected. Quantify where feasible.
Likelihood	What is the probability that the impact will occur? Is it likely or unlikely?

When applying these descriptors, we considered the project described in Section 4. No additional mitigation measures were applied at the time of potential impact characterization.

5.1.3 Mitigation Development and Residual Impact Assessment

Mitigation measures were developed for all identified negative impacts. Any impact anticipated to remain following mitigation implementation was termed a residual impact. As with potential impacts, residual impacts were characterized with respect to nature, magnitude, duration and timing, geographic extent and likelihood.

5.2 Impact Assessment Results and Mitigation Measures

5.2.1 Vegetation

The following potential impacts to vegetation were identified as meriting examination:

- Loss/changes to manicured areas/open space trees
- Incidental open space tree damage
- Establishment of invasive or weedy species

5.2.1.1 Loss/Changes to Manicured Areas/Open Space Trees

Impacts

All vegetation changes will be confined to within the proposed new property line boundary. Removal of existing open space trees is not anticipated. Installation of an asphalt trail will result in the permanent loss of sod measuring 3 x 750 m (0.23 ha). Installation of the bus stop pad will also result in the permanent loss of an additional small area of sod. All areas temporarily disturbed during construction will be revegetated with sod.

The project includes installation of 55 new open space trees in the newly created boulevard, representing a net gain in the City's open space tree inventory and a local gain that will amply compensate for the loss of sod. Overall, the change in local vegetation is rated as positive, direct, minor, permanent, local and likely impact. It is rated as minor, in the context of the City's total tree inventory; however, over time it will represent a more significant increase in tree canopy at a local scale.

Mitigation and Residual Impacts

No additional mitigation measures are required. The residual impact remains positive, direct, minor, permanent, local and likely.

5.2.1.2 Incidental Open Space Tree Damage

Impacts

Some of the many existing open space trees are located very close to the new property boundary, particularly near the north project terminus, just north and south of the tennis court parking access road and near the south project terminus (Figures 4a and 4b, Appendix A). Some of these closest trees are tall with a wide canopy that extends over the proposed SUP location (Figure 2a, 2c, 2d, 2e, Appendix A). This proximity creates potential for incidental tree damage and, in the absence of mitigation is rated as a negative, indirect, minor, permanent, local and likely impact.

Mitigation and Residual Impacts

Acknowledging the need for a Tree Protection Plan pursuant to the City's *Corporate Tree Management Policy* and the *City of Edmonton Tree Preservation Guidelines*, the proponent has initiated consultation with the City's urban foresters (City Operations/Parks and Road Services). Communications to date indicate that if construction is to take place within 3 m of an open space tree, City Forestry must be contacted once the site is staked to determine if tree work is needed (i.e., pruning, removal, remediation). The proponent has committed to doing so. In addition, Forestry has requested that an Urban Forester be contacted when any roots over 2 inches or roots that are small but in excess (i.e., over 5 roots <2 inches in diameter) are found. Finally, the contractor will be required to monitor the effectiveness of their tree protection and record and report any incidental damage. With these measures in place, the residual impact to open space trees is anticipated to be negligible.

5.2.1.3 Establishment of Invasive or Weedy Species

Impacts

As with any City project, surface disturbance resulting from construction could create ideal conditions for the establishment and then spread of noxious weed species. The intended placement of sod in all disturbed areas significantly reduces this potential. For this reason, this potential impact is rated as negligible.

Mitigation and Residual Impacts

Some level of weed control may be required until the sod has fully established. The need for such measures could be assessed through regular City protocols.

5.2.2 Wildlife and Wildlife Habitat

The following potential impacts to wildlife and wildlife habitat were identified as warranting examination:

- Loss of terrestrial habitat due to clearing activities
- Breeding wildlife mortality

5.2.2.1 Loss of Terrestrial Habitat Due to Clearing Activities

Impacts

Permanent habitat loss will be limited to the loss of a small linear area of turf (~0.3 ha) to accommodate the SUP and bus stop pad. As no tree removal is expected, the most valuable existing terrestrial habitat will be retained in the local study area. Planting of 55 new trees in the local study area represents a net increase in urban tree habitat. The habitat value will increase over time as the trees mature. The impact of the SUP project on urban wildlife habitat is rated as positive, direct, minor, permanent, local and likely.

Mitigation and Residual Impacts

No wildlife habitat mitigation is required. The residual impact remains positive, direct, minor, permanent, local and likely.

5.2.2.2 Breeding Wildlife Mortality

Impacts

Although the endangered little brown bat and northern bat were noted as having some (low) potential for using expanded study area habitat, the potential for the project to affect them is negligible. Small numbers of these species could either forage in the area, at night, or occasionally roost in tree bark during the day. In the unlikely event that individuals are found in the project area, they would be able to avoid the area, and any impacts, during construction.

Clearing or pruning of vegetation, can cause bird mortality, particularly during the spring and summer breeding season when the mobility of many species is restricted. During those times, adults remain close to nest sites, and young are restricted to nests or not yet able to move long distances. To protect wildlife, and particularly nesting birds protected by the *Migratory Birds Convention Act* (MBCA) and *Wildlife Act*, current best management practices provided by Environment and Climate Change Canada (ECCC) recommends avoiding vegetation clearing/pruning during the period when there is a high probability of nesting activity (i.e., high risk period). This extends to the pruning of individual ornamental trees. Commonly occurring species such as the American robin, that may use ornamental trees for nesting are covered by the legislation. Nest sweeps and appropriate buffering of nests observed is a commonly used tool for allowing urban work to occur during the spring and summer seasons. When these practices are not adopted and in the absence of other mitigation measures (e.g., nest search), there can be high potential for nest disturbance. Wildlife mortality represents contravention of the law and is typically viewed as a negative, direct, major, permanent, local impact. In this case, considering the setting, this potential impact is unlikely.

Mitigation and Residual Impacts

In this region, wildlife mortality resulting from vegetation disturbance (including tree pruning and work very close to trees supporting nests) is best avoided by scheduling work outside the period 20 April to 20 August. In this case, considering the setting and the construction season, the most suitable mitigation to ensure no impact to wildlife is to a

have a qualified biologist undertake a nest sweep in the week before the scheduled work, particularly before intended tree pruning, followed by appropriately buffering any nests found until the nest is no longer active. With these measures in place, wildlife mortality should be avoided, and the residual impact would be negligible.

5.2.3 Historical Resources

Impacts

The project is anticipated to receive *Historical Resources Act* Clearance and Provincial review of the application for approval is underway. There remains some limited potential for the Province to require some additional effort to protect historical resources. In addition, as with any project, there is always potential for this project, once approved, to intersect with *undiscovered* resources in the area. This potential is rated as low and will be revisited as needed when the Province's response is provided to the City.

Mitigation and Residual Impacts

In accordance with ACMSW Standard Requirements under the "*Historical Resources Act*: Reporting the Discovery of Historic Resources" all work will be immediately suspended and ACMSW contacted should potential historical/archaeological resources be discovered during construction. Appropriate follow-up measures would then be implemented. Considering this, the residual impact to historical resources is rated as negligible.

5.2.4 Project Incidents

5.2.4.1 Release of Sediment or Hazardous/Deleterious Substances

Impacts

Exposed soils, fuels, lubricants and other hazardous materials are anticipated on site. Erosion risk in this location is very low. Hazardous materials spills/releases can occur during refueling, or as a result of equipment failure (e.g., leaking hose), accidents, or improper storage/containment at sites. Incidental, small spills typically occur at most construction sites. Small spills, if uncontrolled, can spread over larger areas. In this case, even localized spills could contaminate soils and plant communities on and off site. There is also some potential for spilled material to enter a catch basin and eventually the North Saskatchewan River.

As with most projects, in the absence of best practices, there is potential for releases to result in a negative, direct, minor, permanent, local and likely impact on local resources such as plants, soils and river water quality.

Mitigation and Residual Impacts

The contractor will be required to comply with City of Edmonton's Enviso system. In this case, this should be effective in reducing the residual impact should be negligible.

5.3 Cumulative Effects (past projects, present projects, future planned projects)

The cumulative effects assessment study area was defined as 84 Street from 98 Avenue to 106 Avenue, extending from the east curb of 84 Street to 50 m west of 84 Street. The assessment considered past projects, known projects and publicly announced future projects.

5.3.1 Past Projects

Based on aerial photograph analysis, the development footprint in the cumulative effects study area has remained essentially the same since at least 2002. This area is largely developed with recreational fields, McNally High School and the Catholic Archdiocese of Edmonton and related buildings located to the west of 84 Street.

5.3.2 Present Projects

There are no current projects taking place in this area.

5.3.3 Future Planned Projects

As mentioned in Section 1, the City is planning on renewing all of 84 Street from 98 Avenue to 106 Avenue to maximize the street's asset life.

5.3.4 Conclusion

This project will not act as a catalyst for additional future development in this area. The proposed project, therefore, has no potential to add to the cumulative impact of past projects, nor contribute to cumulative impacts of present or future projects.

6.0 PUBLIC CONSULTATION

Integrated Infrastructure Services reached out to representatives from École Michaëlle-Jean, McNally High School and the Catholic Archdioceses of Edmonton for feedback on the 84 Street renewal project as a whole, in December 2020. None of the representatives made comments about the new SUP or indicated environmental concerns. Most comments related to access to existing facilities during road construction.

The City plans to continue to liaise with École Michaëlle-Jean, McNally High School and the Catholic Archdioceses of Edmonton as the renewal project advances to the next phases. In addition, the City will be notifying residents in the area about the project closer to the anticipated construction date of April or May 2022.

7.0 CONCLUSIONS

7.1 Impact and Sensitivities

This EIA has shown that with the described mitigation measures applied, all potential environmental impacts related to the construction phase of the new SUP project can be mitigated such that adverse residual impacts are reduced to negligible. In addition, the project will result in a net gain to the City's open space tree inventory. We are of the opinion that the proposed project does not require additional modifications or measures to avoid environmental impacts.

7.2 EIA Limitations

This EIA was founded on preliminary design information and limited construction methodology information.

7.3 Summary of Key Mitigation Measures

The following summarizes mitigation measures identified by this EIA:

- The City must ensure that the construction contractor adheres to all the mitigation measures listed in Section 5.2.1 and distilled here to ensure compliance with the *Corporate Tree Management Policy*:
    - Contact City Forestry if work is to take place within 3 m of an open space tree or if large roots (>2 inches) or excess roots (over 5 roots <2 inches) are discovered.
    - Revegetate exposed soils promptly.

- Tree pruning must be done in a manner that is compliant with wildlife protection legislation.

- The City must ensure that the project obtains *Historical Resources Act* approval and adheres to all mitigation measures/conditions noted in that approval.

- The City must ensure that the construction contractor adheres to Enviso practices.

8.0 CITY OF EDMONTON EIA REVIEW

In March 2021, the draft EIA was submitted to City Planning for administrative review. In April 2021, City Planning forwarded a sign-off letter (Appendix E) confirming that Administration has no further concerns with the proposed development under the North Saskatchewan River Valley Area Redevelopment Plan (NSRV ARP), and, reaffirming that City Council must approve the EIA and SLS. No report revisions were required; however, the sign-off letter included a list of conditions and advisements provided from nine reviewing entities, to be implemented during future project phases, particularly during construction.

9.0 REFERENCES

9.1 Literature Cited

Alberta Environment and Parks. 2010. Key Wildlife and Biodiversity Zones Metadata. file://spnv-srv-01/Projects/GIS%20Material/Unlicensed%20data/AB_KeyWildlifeBioZones/KeyWildlifeAndBiodiversityZones.htm

Alberta Environment and Parks. 2021a. Alberta Conservation Information Management System. https://albertaparks.ca/acims-data/.

Alberta Environment and Parks. 2021b. Fish and Wildlife Management Information System. https://maps.alberta.ca/FWIMT_Pub/Viewer/?TermsOfUseRequired=true&Viewer=FWIMT_Pub

City of Edmonton. 1990. Ribbon of Green: North Saskatchewan River Valley and Ravine System Concept Plan. Prepared for the City of Edmonton. Edmonton, Alberta.

City of Edmonton. 2007. Natural Connections Strategic Plan – City of Edmonton Integrated Natural Areas Conservation Plan. Edmonton, Alberta.

City of Edmonton. 2015. Urban Ecological Field Guide for the City of Edmonton, Alberta, Canada. Edmonton, Alberta.

City of Edmonton. 2020. Edmonton City Plan. Edmonton, Alberta.

City of Edmonton Engineering Services. 2020. Environmental Review of 84 Street Rehabilitation between 98 Avenue to 106 Avenue. Prepared for City of Edmonton Transportation Planning and Design. Edmonton, Alberta.

Government of Alberta. 2021a. Alberta Water Wells. http://groundwater.alberta.ca/WaterWells/d/

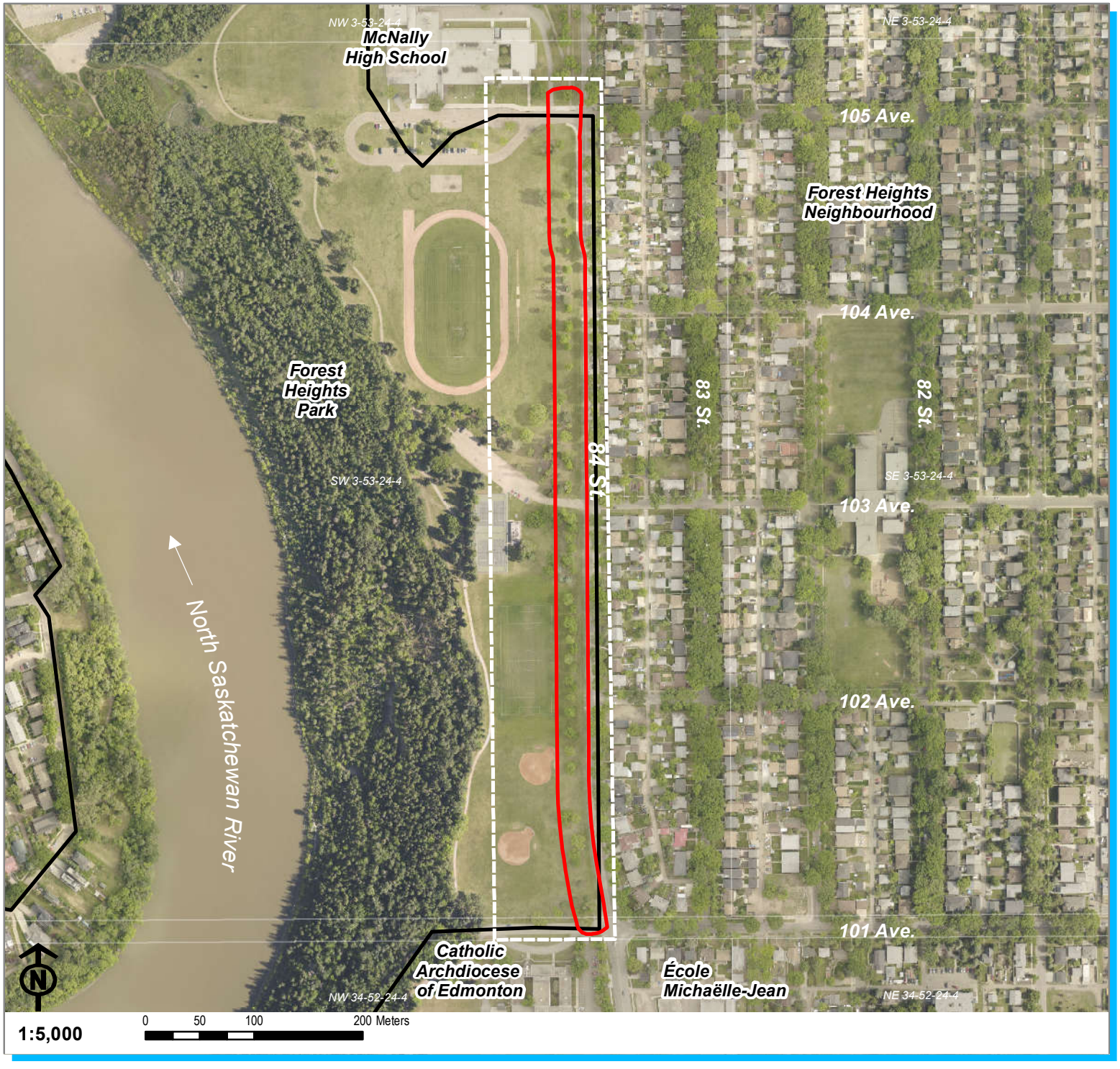
Government of Alberta. 2021b. Alberta Soil Information Viewer. https://soil.agric.gov.ab.ca/agrasidviewer/

Prior, G.J., Hathway, B., Glombick, P.M., Pana, D.I., Banks, C.J., Hay, D.C., Schneider, C.L., Grobe, M., Elgr, R., & Weiss, J.A. 2013. Bedrock Geology of Alberta. Alberta Energy Regulator. AER/AGS Map 600, scale 1:1,000,000.

Rodriguez, I. 2021. North Saskatchewan River Valley ARP Project Review Form: 84 Street (98 Ave to 106 Ave) Rehabilitation. Prepared for the City of Edmonton. Edmonton, Alberta.

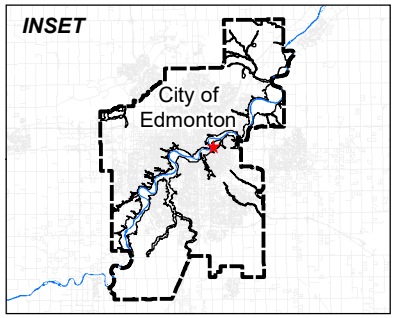
Appendix A: Figures

Figure 1.
Project Area Location
84 Street Renewal - SUP



Legend

- Local Study Area
- Expanded Study Area
- Bylaw 7188 Boundary (COE, 2008)

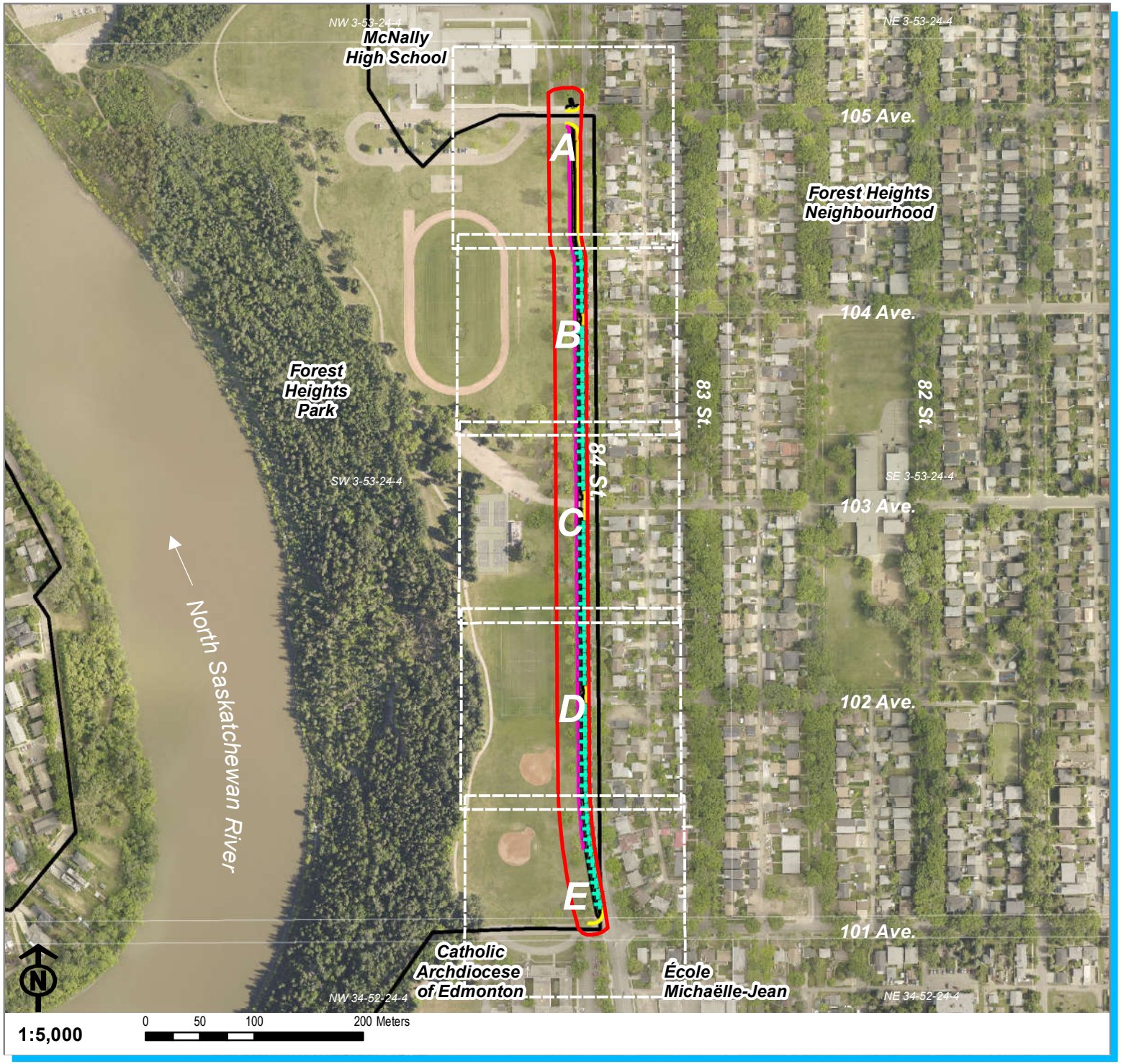


Map Date: 16 March 2021
Imagery Mosaic: May-July 2019 (COE)

SPENCER ENVIRONMENTAL MANAGEMENT SERVICES LTD.

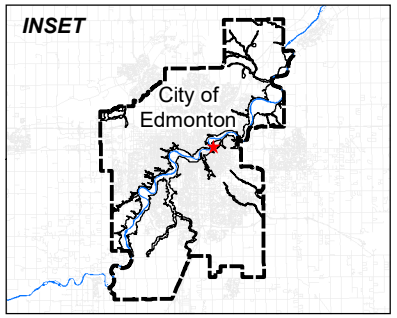
*Preliminary plan provided by the City of Edmonton (2021).

Figure 2.
Enlargement Locations and Proposed SUP Scope of Work
84 Street Renewal - SUP



Legend

- Inset Frame
- Local Study Area
- Bylaw 7188 Boundary (COE, 2008)
- Proposed Shared Use Path*
- Proposed Bus Pad*
- Proposed Trees*
- Proposed Property Line*
- 84 Street Curb*

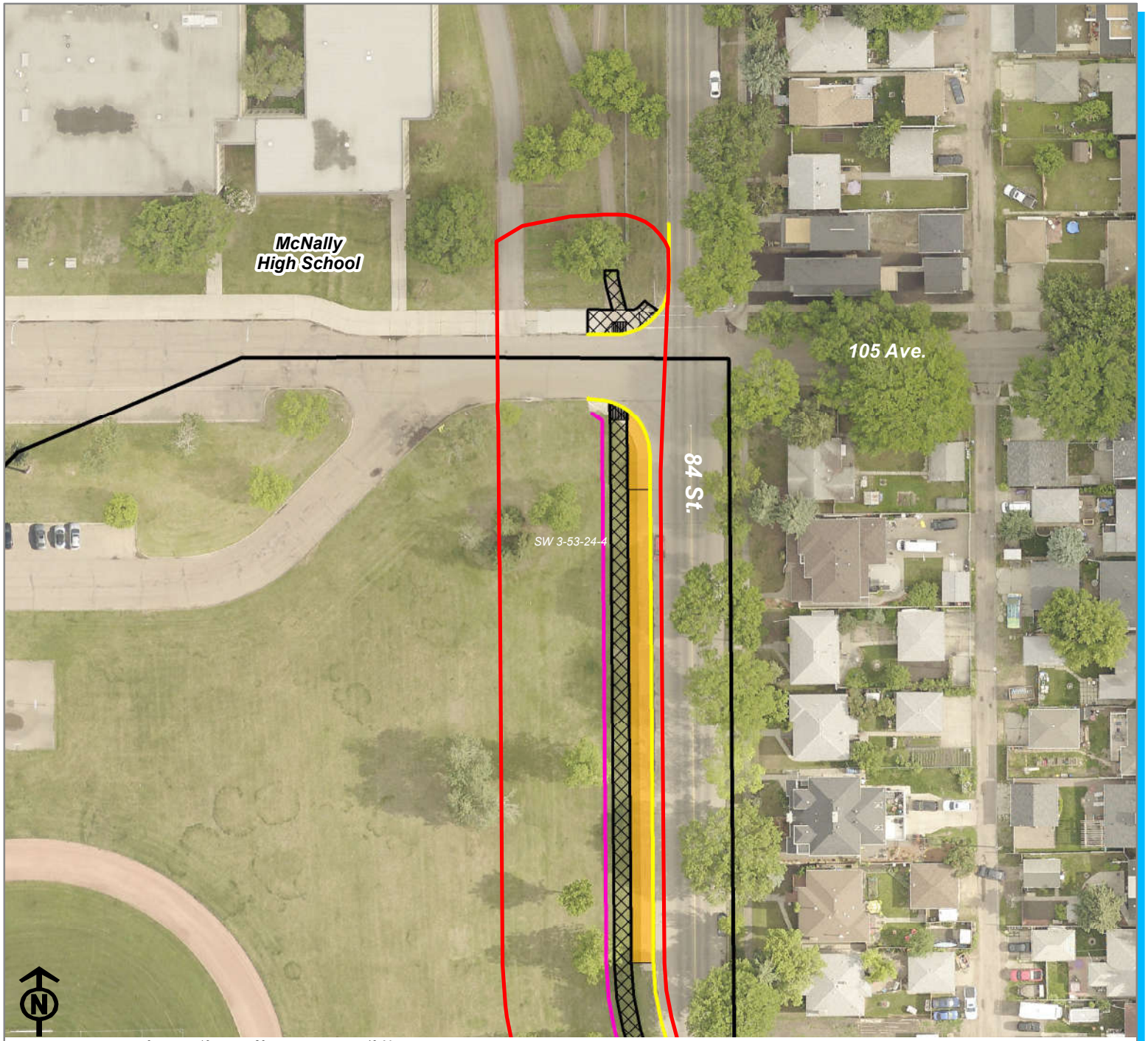


Map Date: 15 March 2021
Imagery Mosaic: May-July 2019 (COE)

SPENCER ENVIRONMENTAL MANAGEMENT SERVICES LTD.

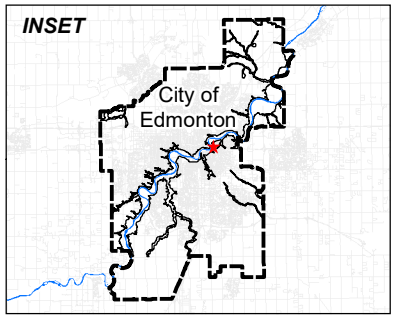
*Preliminary plan provided by the City of Edmonton (2021).

Figure 2a.
Proposed SUP
– Enlargement A
84 Street Renewal - SUP



Legend

- Local Study Area
- Bylaw 7188 Boundary (COE, 2008)
- Proposed Shared Use Path*
- Proposed Bus Pad*
- Proposed Trees*
- Proposed Property Line*
- 84 Street Curb*



Map Date: 15 March 2021
Imagery Mosaic: May-July 2019 (COE)

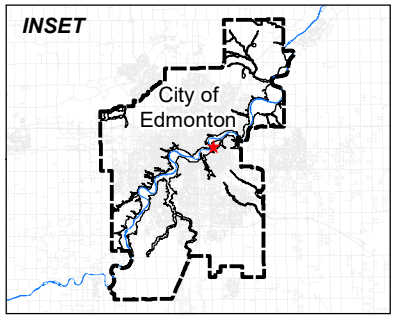
SPENCER ENVIRONMENTAL MANAGEMENT SERVICES LTD.

*Preliminary plan provided by the City of Edmonton (2021).

Figure 2b.
Proposed SUP
– Enlargement B
84 Street Renewal - SUP

Legend

- Local Study Area
- Bylaw 7188 Boundary (COE, 2008)
- Proposed Shared Use Path*
- Proposed Bus Pad*
- Proposed Trees*
- Proposed Property Line*
- 84 Street Curb*



Map Date: 15 March 2021
Imagery Mosaic: May-July 2019 (COE)

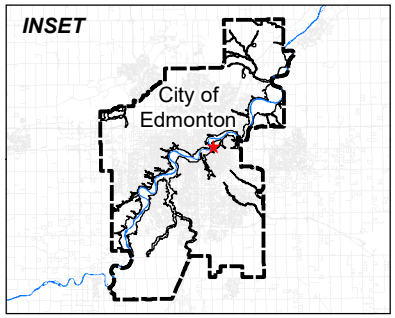
SPENCER ENVIRONMENTAL MANAGEMENT SERVICES LTD.

*Preliminary plan provided by the City of Edmonton (2021).

Figure 2c.
Proposed SUP
– Enlargement C
84 Street Renewal - SUP

Legend

- Local Study Area
- Bylaw 7188 Boundary (COE, 2008)
- Proposed Shared Use Path*
- Proposed Bus Pad*
- Proposed Trees*
- Proposed Property Line*
- 84 Street Curb*



Map Date: 15 March 2021
Imagery Mosaic: May-July 2019 (COE)

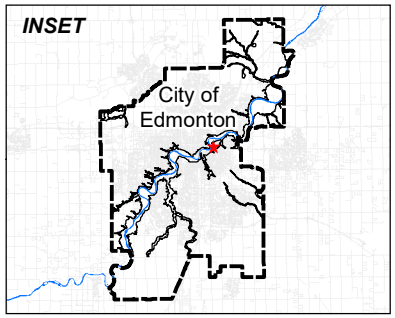
SPENCER ENVIRONMENTAL MANAGEMENT SERVICES LTD.

*Preliminary plan provided by the City of Edmonton (2021).

Figure 2d.
Proposed SUP
– Enlargement D
84 Street Renewal - SUP

Legend

- Local Study Area
- Bylaw 7188 Boundary (COE, 2008)
- Proposed Shared Use Path*
- Proposed Bus Pad*
- Proposed Trees*
- Proposed Property Line*
- 84 Street Curb*

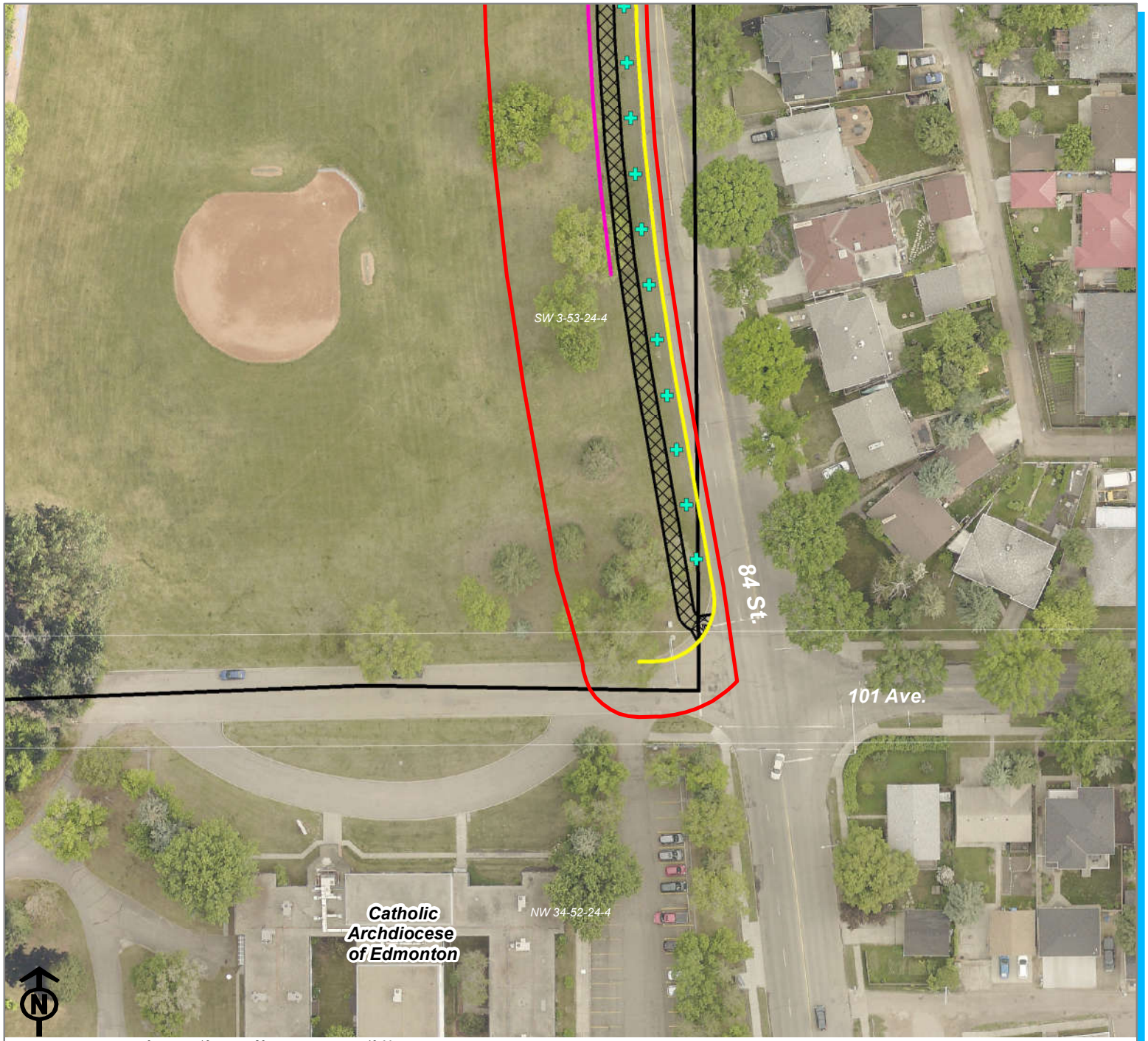


Map Date: 15 March 2021
Imagery Mosaic: May-July 2019 (COE)

SPENCER ENVIRONMENTAL MANAGEMENT SERVICES LTD.

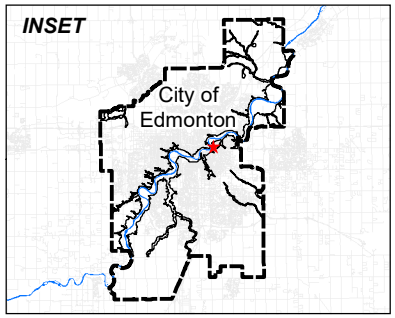
*Preliminary plan provided by the City of Edmonton (2021).

Figure 2e.
Proposed SUP
– Enlargement E
84 Street Renewal - SUP



Legend

- Local Study Area
- Bylaw 7188 Boundary (COE, 2008)
- Proposed Shared Use Path*
- Proposed Bus Pad*
- Proposed Trees*
- Proposed Property Line*
- 84 Street Curb*

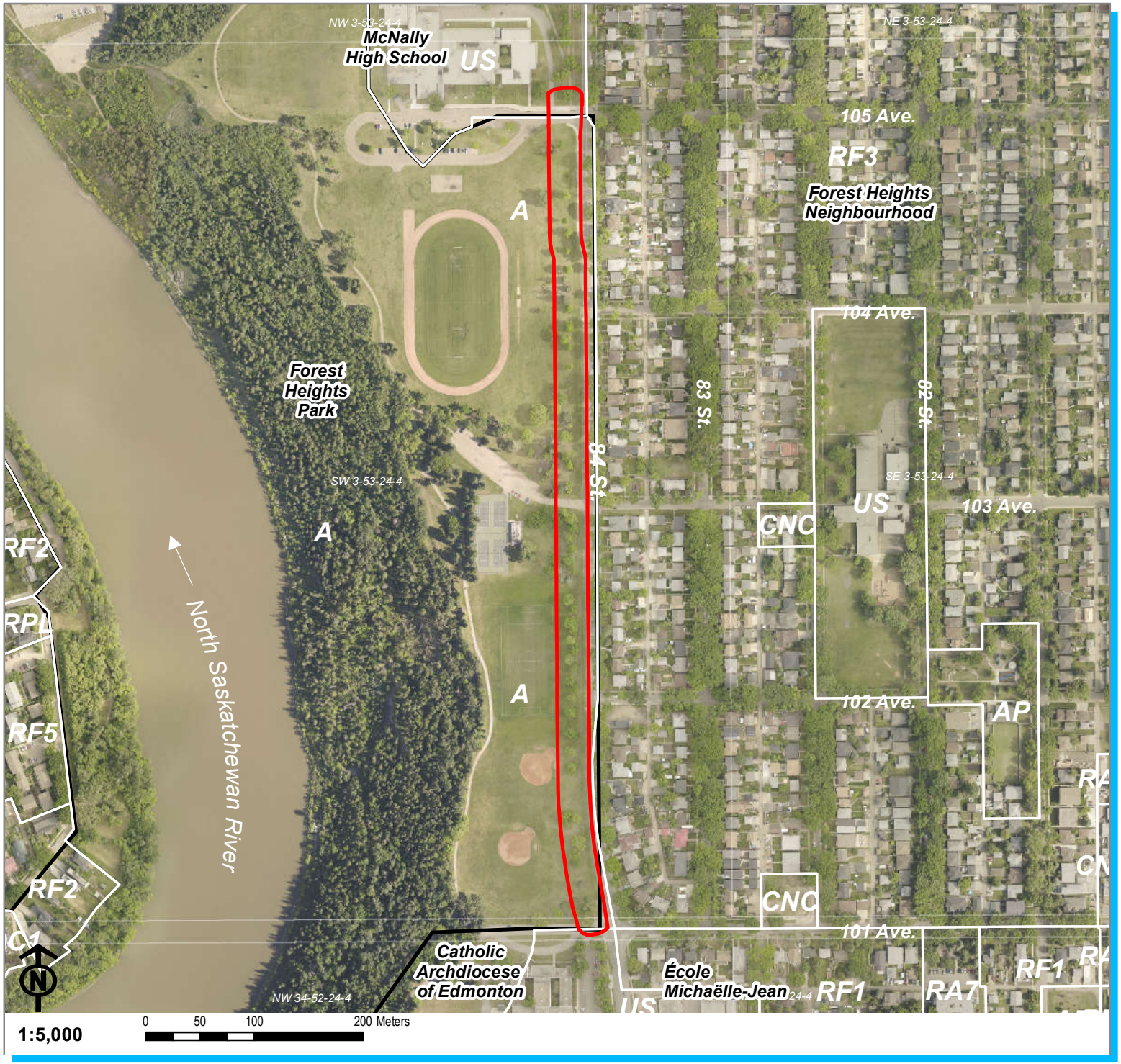


Map Date: 15 March 2021
Imagery Mosaic: May-July 2019 (COE)

SPENCER ENVIRONMENTAL MANAGEMENT SERVICES LTD.

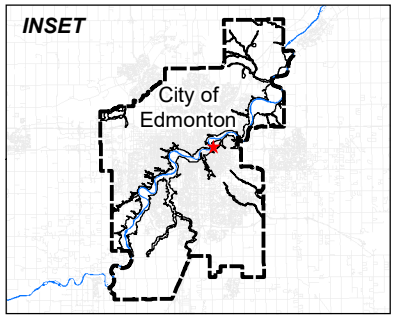
*Preliminary plan provided by the City of Edmonton (2021).

Figure 3.
Land Use and Zoning
84 Street Renewal - SUP



Legend

- Local Study Area
- Bylaw 7188 Boundary (COE, 2008)
- A — Zoning (COE, 2020)
  Zoning A = Metropolitan Recreation Zone

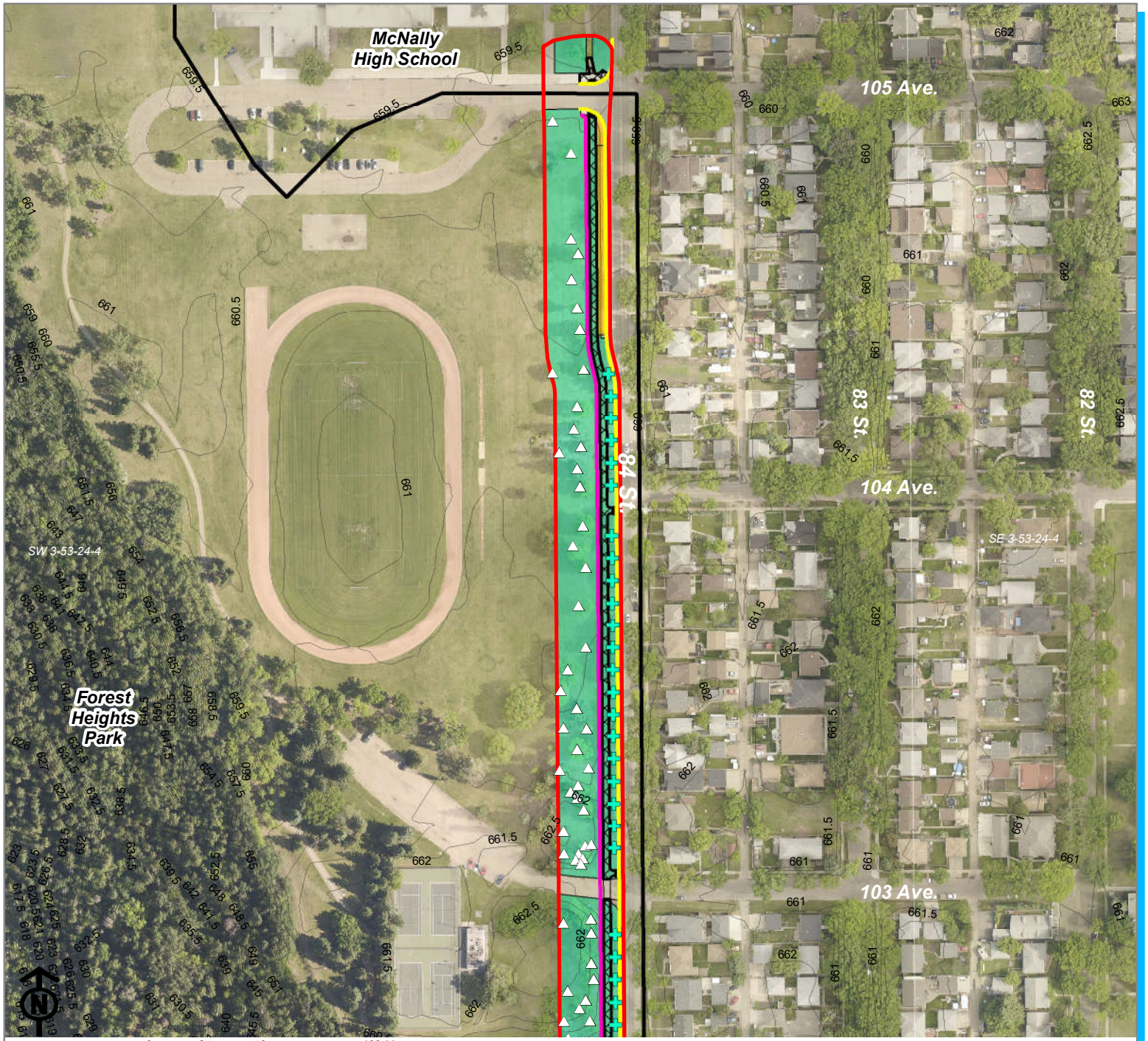


Map Date: 15 March 2021
Imagery Mosaic: May-July 2019 (COE)

SPENCER ENVIRONMENTAL MANAGEMENT SERVICES LTD.

*Preliminary plan provided by the City of Edmonton (2021).

Figure 4a.
Plant Communities
84 Street Renewal - SUP

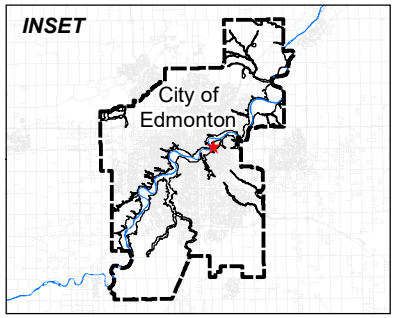


Legend

- Local Study Area
- Bylaw 7188 Boundary (COE, 2008)
- Proposed Shared Use Path*
- Proposed Bus Pad*
- Proposed Trees*
- Existing Trees (COE, 2021)
- Proposed Property Line*
- 84 Street Curb*
- Contour (COE, 2018)

Plant Community (2021)

- Manicured (M)



Map Date: 15 March 2021
Imagery Mosaic: May-July 2019 (COE)

SPENCER ENVIRONMENTAL MANAGEMENT SERVICES LTD.

**Preliminary plan provided by the City of Edmonton (2021).*

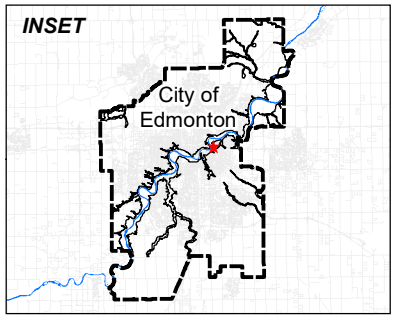
Figure 4b.
Plant Communities
84 Street Renewal - SUP

Legend

- Local Study Area
- Bylaw 7188 Boundary (COE, 2008)
- Proposed Shared Use Path*
- Proposed Bus Pad*
- Proposed Trees*
- Existing Trees (COE, 2021)
- Proposed Property Line*
- 84 Street Curb*
- Contour (COE, 2018)

Plant Community (2021)

- Manicured (M)



Map Date: 15 March 2021
Imagery Mosaic: May-July 2019 (COE)

SPENCER ENVIRONMENTAL MANAGEMENT SERVICES LTD.

*Preliminary plan provided by the City of Edmonton (2021).

Appendix B: Environmental Approvals Table

Summary of Potential Environmental Approvals for the 84 Street Renewal Shared Use Path (SUP)

Legislation or Policy	Regulatory Agency	Relevance to Project	Authorization/ Approval/ Permit Required	Steps in the Regulatory Process	Approval Timeline or Potential Schedule Impact
Municipal					
North Saskatchewan River Valley Area Redevelopment Plan (Bylaw 7188)	City Planning	Bylaw regulates all activities on City lands in the North Saskatchewan River Valley. The 84 Street Renewal SUP requires an Environmental Impact Assessment (EIA) and Site Location Study (SLS).	EIA and SLS must be approved by City Council	EIA and SLS to be submitted to City Planning for review, then to City Council for review and approval	City Council approval anticipated in summer 2021
Corporate Tree Management Policy (C456C)	City Forestry	Policy provides protection for the City's Urban Forest (boulevard and open space trees/shrubs and natural stands) inventory and a mechanism for monetary compensation for lost canopy. Prior to removal, trees/shrubs are assessed by City's Urban Forestry Department.	None, but compensation for lost canopy must be arranged with CoE	City Forestry has reviewed the Preliminary Design and indicated that if work is to take place within 3 m from a tree, City Forestry must be contacted once the site is staked in order to determine if tree work is needed (i.e., pruning, removal, remediation).	A forestry assessment of affected trees/shrubs and natural stands must be completed and Forestry staff have already been engaged. Contract tender documents will include any special measures required to protect existing trees.
City of Edmonton (Bylaw 18100) - EPCOR Drainage Services Bylaw	EPCOR	Bylaw regulates the use of the sewer and contractor must consult with EPCOR regarding use of sewer to dewater site. Application for a permit of payment of fees	No prohibited, restricted or hazardous waste may be released into the sewage system without written consent from EPCOR	Application for a permit to discharge into the sewer system may be required	Proponent responsibility
City of Edmonton Parkland (Bylaw 2202)	City of Edmonton	Bylaw to protect and preserve natural ecosystems for the benefit of all citizens of the City	Approval required to stage construction equipment or other use in park space	Application for a permit to stage for construction	Proponent responsibility

Legislation or Policy	Regulatory Agency	Relevance to Project	Authorization/ Approval/ Permit Required	Steps in the Regulatory Process	Approval Timeline or Potential Schedule Impact
ENVISO, City Policy C505, City Policy C512	City of Edmonton	Based on the ISO 14001 Standard, ENVISO provides a framework for a strong environmental management system aimed at legal/regulatory compliance, pollution prevention and continual improvement	• Proponent must be compliant with all aspects of ENVISO. An Enviso Design Environmental Permit Approval checklist must be completed for all City projects prior to tender. • Review of the Enviso Proponent's Environmental Responsibility Package and City Policy C512. • Signing Proponent's Environmental Acknowledgement Form	• Process must be implemented as project is underway • checklist must be completed prior to tender	Proponent responsibility
Provincial					
Public Lands Act	Alberta Environment and Parks (Land Management Branch)	Use of crown lands, including the bed and shore of all bodies of water, are regulated under this Act. Act requires proponents wishing to work on, alter or occupy Crown land to obtain a disposition or amend existing dispositions	No project components will be located within the bed and shore of a crown-claimed waterbody or water course. No permission under *the Public Lands Act* is required.	None	None
Water Act and *Wetland Policy*	Alberta Environment and Parks (Water Approvals Branch)	An approval is required for all activities that may impact water and the aquatic environment, including taking water from a watercourse, realigning a watercourse, constructing within a watercourse, and draining filling or altering any permanent or temporary wetland.	The project is not anticipated to trigger the *Water Act*. No project components are anticipated to impact water or the aquatic environment.	None	None

Legislation or Policy	Regulatory Agency	Relevance to Project	Authorization/ Approval/ Permit Required	Steps in the Regulatory Process	Approval Timeline or Potential Schedule Impact
Wildlife Act	Alberta Environment and Parks	This Act applies to most species of wildlife. The willful molestation, disruption, or destruction of a wildlife nest or den is prohibited by this Act. Special provisions provide for the protection of raptors and their nests/habitats. Project requires clearing/pruning of vegetation that may support nesting/denning wildlife.	Although permitting for clearing/pruning is not required under the Act, violations of the Act may result in fines	Avoid vegetation clearing/pruning during the period 20 April to 20 August. Contingent approach is to have a qualified biologist undertake a nest sweep of project area to avoid disturbance of active nests and dens. Abide by findings to ensure compliance. In addition, if clearing *mature* vegetation after 15 February, undertake a sweep for active owl nests	Not applicable if vegetation clearing/pruning is completed before the start of the nesting season (15 February). Nests sweeps undertaken between February 15 and 20 August have potential to result in findings that delay clearing.
Historical Resources Act	Alberta Culture, Multiculturalism and Status of Women (ACMSW)	All projects with potential to disturb historical, archaeological and paleontological resources are regulated under this Act and require approval from ACMSW	The project intersects lands with Historical Resource Values (HRVs) of 4 and 5. Therefore, approval under the *Historical Resources Act* is required.	Submit application for approval to ACMSW.	~3 months for ACMSW to review and approve an application. Schedules could be impacted further if ACMSW requires a Historical Resources Impact Assessment (HRIA) to be completed.
Federal					
Fisheries Act	Fisheries and Oceans Canada (DFO)	Review and/or authorization is required if a project in or near water has potential to cause death of fish and the harmful alteration, disruption or destruction (HADD) of fish habitat. Permits may be sought for aquatic species at risk.	No instream works are proposed. The project is not anticipated to cause death of fish or HADD of fish habitat.	None	None

Legislation or Policy	Regulatory Agency	Relevance to Project	Authorization/ Approval/ Permit Required	Steps in the Regulatory Process	Approval Timeline or Potential Schedule Impact
Migratory Birds Convention Act	Environment and Climate Change Canada	This Act prohibits the disturbance of nests and individuals of most migratory bird species and prohibits the release of deleterious substances into waters or areas frequented by migratory birds. Project requires clearing of migratory bird nesting habitat.	The Act provides guidelines for enforcement only; it is not linked to formal approvals required for construction. Violation of the Act may, however, result in penalties	Avoid vegetation clearing during the period 20 April to 20 August. Contingent approach is to have a qualified biologist undertake a nest sweep of project area and to then avoid disturbance of any noted nesting birds (see related notes for *Wildlife Act* regarding owls)	Nests sweeps undertaken between February 15 and 20 August have potential to result in findings that delay clearing.
Species At Risk Act	Environment and Climate Change Canada	This Act prohibits disturbance to species listed on Schedule 1 of the SARA as endangered, threatened or extirpated and, in some instances, listed species' habitat, on federal lands. On non-federal lands, the Act applies only to disturbance of aquatic species and migratory birds that are listed on Schedule 1 as endangered, threatened or extirpated. No special status species are anticipated to inhabit the habitat in the project area.	Although no approvals or permits are required, violation of the *SARA* may result in penalties	If any federally listed species are identified as present within or adjacent to the project area, best practice is to consider the impact of the project on that species in consultation with Environment and Climate Change Canada	Schedule impacted only if SARA species are found in the area

Appendix C: Wildlife List

List of Species with Potential to Occur in the 84 Street Renewal SUP Expanded Study Area

Common Name	Scientific Name*	Provincial Status (General Status of AB Wild Species 2015)	Wildlife Act Designation and New Species Assessed by ESCC	COSEWIC Designation	SARA Designation	Observed/ Previous Record**	Likelihood of Occurrence	Potential Habitat Use
Common Garter Snake	*Thamnophis sirtalis*	Sensitive					Low	Foraging/ dispersal
Canada Goose	*Branta canadensis*	Secure						
Gray Partridge	*Perdix perdix*	Exotic/Alien						
Sharp-shinned Hawk	*Accipiter striatus*	Secure						
Cooper's Hawk	*Accipiter cooperii*	Secure						
Red-tailed Hawk	*Buteo jamaicensis*	Secure						
American Kestrel	*Falco sparverius*	Sensitive					Low	Foraging
Merlin	*Falco columbarius*	Secure						
Great Horned Owl	*Bubo virginianus*	Secure						
Great Grey Owl	*Strix nebulosa*	Sensitive					Low	Foraging
Boreal Owl	*Aegolius funereus*	Secure						
Northern Saw-whet Owl	*Aegolius acadicus*	Secure						
Barred Owl	*Strix varia*	Sensitive	Special Concern			FWMIS	Low	Foraging
Short-eared Owl	*Asio flammeus*	May Be At Risk		Special Concern	Schedule 1 (Special Concern)	FWMIS	Low	Foraging
Rock Pigeon	*Columba livia*	Exotic/Alien						
Ruby-throated Hummingbird	*Archilochus colubris*	Secure						
Yellow-bellied Sapsucker	*Sphyrapicus varius*	Secure						
Downy Woodpecker	*Dryobates pubescens*	Secure						
Hairy Woodpecker	*Dryobates villosus*	Secure						
Northern Flicker	*Colaptes auratus*	Secure						
Pileated Woodpecker	*Dryocopus pileatus*	Sensitive					Low	Foraging
Alder Flycatcher	*Empidonax alnorum*	Secure						
Least Flycatcher	*Empidonax minimus*	Sensitive					Low	Foraging
Eastern Phoebe	*Sayornis phoebe*	Sensitive					Low	Foraging
Eastern Kingbird	*Tyrannus tyrannus*	Secure						
Northern Shrike	*Lanius borealis*	Secure						
Blue-headed Vireo	*Vireo solitarius*	Secure						
Warbling Vireo	*Vireo gilvus*	Secure						
Philadelphia Vireo	*Vireo philadelphicus*	Secure						
Red-eyed Vireo	*Vireo olivaceus*	Secure						

List of Species with Potential to Occur in the 84 Street Renewal SUP Expanded Study Area

Common Name	Scientific Name*	Provincial Status (General Status of AB Wild Species 2015)	Wildlife Act Designation and New Species Assessed by ESCC	COSEWIC Designation	SARA Designation	Observed/ Previous Record**	Likelihood of Occurrence	Potential Habitat Use
Blue Jay	*Cyanocitta cristata*	Secure						
Black-billed Magpie	*Pica hudsonia*	Secure						
American Crow	*Corvus brachyrhynchos*	Secure						
Common Raven	*Corvus corax*	Secure						
Tree Swallow	*Tachycineta bicolor*	Secure						
Barn Swallow	*Hirundo rustica*	Sensitive		Threatened	Threatened (Schedule 1)		Low	Foraging
Black-capped Chickadee	*Poecile atricapillus*	Secure						
Red-breasted Nuthatch	*Sitta canadensis*	Secure						
White-breasted Nuthatch	*Sitta carolinensis*	Secure						
House Wren	*Troglodytes aedon*	Secure						
Golden-crowned Kinglet	*Regulus satrapa*	Secure						
Ruby-crowned Kinglet	*Regulus calendula*	Secure						
Swainson's Thrush	*Catharus ustulatus*	Secure						
Hermit Thrush	*Catharus guttatus*	Secure						
American Robin	*Turdus migratorius*	Secure						
Gray Catbird	*Dumetella carolinensis*	Secure						
European Starling	*Sturnus vulgaris*	Exotic/Alien						
Bohemian Waxwing	*Bombycilla garrulus*	Secure						
Cedar Waxwing	*Bombycilla cedrorum*	Secure						
Yellow Warbler	*Setophaga petechia*	Secure						
Tennessee Warbler	*Oreothlypis peregrina*	Secure						
Orange-crowned Warbler	*Oreothlypis celata*	Secure						
Chestnut-sided Warbler	*Setophaga pensylvanica*	Secure						
Magnolia Warbler	*Setophaga magnolia*	Secure						
Cape May Warbler	*Setophaga tigrina*	Sensitive					Low	Migrating
Black-Throated Green Warbler	*Setophaga virens*	Sensitive	Special Concern				Low	Migrating
Yellow-rumped Warbler	*Setophaga coronata*	Secure						
Blackpoll Warbler	*Setophaga striata*	Secure						
Black-and-white Warbler	*Mniotilta varia*	Secure						
American Redstart	*Setophaga ruticilla*	Secure						
Ovenbird	*Seiurus aurocapilla*	Secure						
Connecticut Warbler	*Oporornis agilis*	Secure						

List of Species with Potential to Occur in the 84 Street Renewal SUP Expanded Study Area

Common Name	Scientific Name*	Provincial Status (General Status of AB Wild Species 2015)	Wildlife Act Designation and New Species Assessed by ESCC	COSEWIC Designation	SARA Designation	Observed/ Previous Record**	Likelihood of Occurrence	Potential Habitat Use
Mourning Warbler	*Geothlypis philadelphia*	Secure						
Common Yellowthroat	*Geothlypis trichas*	Sensitive					Low	Foraging
Wilson's Warbler	*Cardellina pusilla*	Secure						
Canada Warbler	*Cardellina canadensis*	Sensitive		Threatened	Threatened (Schedule 1)		Low	Migrating
Western Tanager	*Piranga ludoviciana*	Sensitive					Low	Migrating
Chipping Sparrow	*Spizella passerina*	Secure						
Clay-colored Sparrow	*Spizella pallida*	Secure						
Savannah Sparrow	*Passerculus sandwichensis*	Secure						
Song Sparrow	*Melospiza melodia*	Secure						
White-throated Sparrow	*Zonotrichia albicollis*	Secure						
White-crowned Sparrow	*Zonotrichia leucophrys*	Secure						
Dark-eyed Junco	*Junco hyemalis*	Secure						
Rose-breasted Grosbeak	*Pheucticus ludovicianus*	Secure						
Brown-headed Cowbird	*Molothrus ater*	Secure						
Pine Grosbeak	*Pinicola enucleator*	Secure						
Purple Finch	*Haemorhous purpureus*	Secure						
House Finch	*Haemorhous mexicanus*	Secure						
Red Crossbill	*Loxia curvirostra*	Secure						
White-winged Crossbill	*Loxia leucoptera*	Secure						
Common Redpoll	*Acanthis flammea*	Secure						
Hoary Redpoll	*Acanthis hornemanni*	Secure						
Pine Siskin	*Spinus pinus*	Secure						
American Goldfinch	*Spinus tristis*	Secure						
Evening Grosbeak	*Coccothraustes vespertinus*	Secure						
House Sparrow	*Passer domesticus*	Exotic/Alien						
Masked Shrew	*Sorex cinereus*	Secure						
Pygmy Shrew	*Sorex hoyi*	Secure						
Red Fox	*Vulpes vulpes*	Secure						
Little Brown Bat	*Myotis lucifugus*	May Be At Risk	None Given	Endangered	Endangered (Schedule 1)		Low	Roosting/ Foraging
Northern Bat	*Myotis septentrionalis*	May Be At Risk	Data Deficient	Endangered	Endangered (Schedule 1)	FWMIS	Low	Roosting/ Foraging
Big Brown Bat	*Eptesicus fuscus*	Secure						

List of Species with Potential to Occur in the 84 Street Renewal SUP Expanded Study Area

Common Name	Scientific Name*	Provincial Status (General Status of AB Wild Species 2015)	Wildlife Act Designation and New Species Assessed by ESCC	COSEWIC Designation	SARA Designation	Observed/ Previous Record**	Likelihood of Occurrence	Potential Habitat Use
Hoary Bat	*Lasiurus cinereus*	Secure						
Snowshoe Hare	*Lepus americanus*	Secure						
White-tailed Jack Rabbit	*Lepus townsendii*	Secure						
Least Chipmunk	*Tamias minimus*	Secure						
Richardson's Ground Squirrel	*Spermophilus richardsonii*	Secure						
Red Squirrel	*Tamiasciurus hudsonicus*	Secure				Spencer 2021		
Northern Flying Squirrel	*Glaucomys sabrinus*	Secure						
Deer Mouse	*Peromyscus maniculatus*	Secure						
Southern Red-backed Vole	*Clethrionomys gapperi*	Secure						
Meadow Vole	*Microtus pennsylvanicus*	Secure						
House Mouse	*Mus musculus*	Exotic/Alien						
Common Porcupine	*Erethizon dorsatum*	Secure						
Coyote	*Canis latrans*	Secure						
Striped Skunk	*Mephitis mephitis*	Secure						
Moose	*Alces alces*	Secure						
Mule Deer	*Odocoileus hemionus*	Secure						
White-tailed Deer	*Odocoileus virginianus*	Secure						

* Scientific names are based on the Cornell Lab of Ornithology's 2018 Clements Checklist (birds) and the Government of Alberta's 2015 Wild Species Status List (mammals, amphibians, reptiles)

** Sources of species records: Spencer 2021 = site reconnaissance (23 February 2021); FWMIS = Fish and Wildlife Management Information System (accessed 12 February 2021, observation dates not known)

Appendix D: Preliminary Design


CAUTION!
UNDERGROUND POWER TRANSMISSION LINE
CAUTION!
OVERHEAD POWER LINE
98 AVENUE
101 AVENUE
102 AVENUE
103 AVENUE
104 AVENUE
105 AVENUE
106 AVENUE
ROWLAND ROAD
ROWLAND RD.
84 STREET
85 STREET
83 STREET
PROPOSED PROPERTY LINE
LIMIT OF CONSTRUCTION
CONSTRUCT 150mm CURB AND 250mm GUTTER
REPLACE TYPE C CURB RAMP WITH 2.5m PAN WIDTH
ADJUST EXISTING MANHOLE TO GRADE
CONSTRUCT 3.0m CONCRETE SHARED USE PATH WITH 150mm CURB AND 250mm GUTTER
REMOVE EXISTING CURB, GUTTER AND MONOWALK
REMOVE EXISTING BUS STOP AND BUS STOP PAD
REMOVE EXISTING CONCRETE WALK AND RELANDSCAPE AS REQUIRED
CONSTRUCT RETAINING WALL
MATCH TO EXISTING 1.75m CONNECTOR WALK
REPLACE PRIVATE CROSSING AND REPAIR ASPHALT AS REQUIRED
MATCH TO EXISTING 1.5m CONNECTOR WALK
RELOCATE EXISTING POWER POLE (BY OTHERS)
MATCH TO EXISTING BUS PAD EXTENSION
CONSTRUCT 4.0m x 12.0m CONCRETE BUS PAD WITH 150mm CURB AND 250 GUTTER
REMOVE EXISTING BUS STOP PAD
CONSTRUCT 3.40m x 21.0m ROAD BUS PAD
CONSTRUCT 11.2m OF 150mm CURB AND 250mm GUTTER
MATCH TO EXISTING 1.5m CONCRETE WALK
CONSTRUCT TYPE A2 CURB RAMP WITH 2.5m PAN WIDTH
REMOVE EXISTING RAMP, CURB AND GUTTER
REMOVE EXISTING CATCH BASIN AND ABANDON EXISTING LEAD
RELOCATE TRAFFIC SIGNAL POLE
INSTALL 600mm Ø CATCH BASIN AND LEAD
CONSTRUCT TYPE C CURB RAMP WITH 2.5m PAN WIDTH
REPLACE 200mm SLAB-ON ISLAND
REPLACE TYPE B CURB RAMP
MATCH TO EXISTING CURB AND GUTTER
REMOVE EXISTING CONCRETE SIGN BASE
REPLACE 150mm CURB AND 250mm GUTTER
REPLACE 57.5m OF 1.50m CONCRETE WALK
CONSTRUCT 2.8m x 9.0m CONCRETE BUS STOP PAD
CONSTRUCT 3.85m x 21.0m ROAD BUS PAD
REPLACE 12.9m OF 1.50m CONCRETE WALK
RELOCATE EXISTING STREET LIGHT (BY OTHERS)
REMOVE EXISTING CONCRETE SIGN BASE
REPLACE ALLEY CROSSING, 1.5m CONCRETE WALK AND REPAIR ASPHALT BEHIND WALK AS REQUIRED
REPLACE PRIVATE CROSSING, 1.5m CONCRETE WALK AND REPAIR ASPHALT BEHIND WALK AS REQUIRED
REPLACE COMMERCIAL CROSSING, 1.5m CONCRETE WALK AND REPAIR ASPHALT BEHIND WALK AS REQUIRED
REPLACE 6.7m OF 1.50m CONCRETE WALK
REPLACE VAIRED WIDTH OF MONOLITHIC WALK AND CURB RAMP FLARE WITH 150mm CURB AND 250mm GUTTER
CONSTRUCT DROP NOSE
REMOVE EXISTING RAMP
REMOVE CONCRETE AND LANDSCAPE AS REQUIRED
REPLACE 2.3m OF 150mm CURB AND 250mm GUTTER
CONSTRUCT 1.5m CONNECTOR WALK AND TYPE B CURB RAMPS
REPLACE 150mm CURB, AND 250mm GUTTER
CONSTRUCT TYPE A2 RAMP WITH 2.5m PAN WIDTH
CONSTRUCT 3.0m ASPHALT SHARED USE PATH
REPLACE 150mm CONCRETE SLAB-ON ISLAND
REPLACE 150mm CURB AND 250mm GUTTER
REPLACE DROP NOSE
REMOVE EXISTING CURB RAMP
CONSTRUCT 2.5m WIDE CONNECTOR WALK
CONSTRUCT TYPE B CURB RAMP WITH 2.5m PAN WIDTH
REPLACE PRIVATE WALK CONNECTOR AS REQUIRED
REPLACE PRIVATE CROSSING AND REPAIR ASPHALT BEHIND WALK AS REQUIRED
REGRADE EXISTING GROUND INTO SWALE AND LANDSCAPE WITH SOD
RELOCATE EXISTING SIGNAL
CONSTRUCT TYPE B RAMP WITH 2.5m PAN WIDTH
REPLACE PRIVATE CROSSING AND REPAIR CONCRETE BEHIND WALK AS REQUIRED
CONSTRUCT 150mm CURB AND 250mm GUTTER
REPLACE 1.50m CONCRETE WALK
REPLACE TYPE B CURB RAMP
CONSTRUCT TYPE B CURB RAMP
REPLACE 3.1m OF 150mm CURB AND 250mm GUTTER
CONSTRUCT COMMERCIAL CROSSING AND REPAIR ASPHALT BEHIND CROSSING AS REQUIRED
CONSTRUCT 2.0m WIDE CONNECTOR WALK
NOTE:
OVERHEAD AMBER FLASHER SIGNAL TO BE ADDED
NOTE:
IN ORDER TO PREVENT BACK DRAINAGE ONTO EXISTING PRIVATE PROPERTIES WITHIN PROJECT LIMITS, NEW CONCRETE BOULEVARD WALKS TO BE CONSTRUCTED AT EXISTING BACK OF WALK ELEVATIONS ADJACENT TO THESE LOTS.
CONSTRUCT 168.34m OF 150mm CURB AND 250mm GUTTER
CONSTRUCT 4.0m X 85.0m CONCRETE BUS STOP PAD WITH 150mm CURB AND 250mm GUTTER
CONSTRUCT 3.50m x 91.0m ROAD BUS PAD
REMOVE EXISTING BUS STOP PAD
CONSTRUCT 150mm CURB, AND 250mm GUTTER
REMOVE EXISTING CONCRETE WALK
CONSTRUCT TYPE A1 CURB RAMP WITH 2.5m PAN WIDTH
REMOVE WALK AND LANDSCAPE WITH SOD
REPLACE 26.8m OF 150mm CURB AND 250mm GUTTER
REPLACE 6.2m OF 150mm CURB AND 250mm GUTTER
REPLACE 7.9m OF 150mm CURB AND 250mm GUTTER
REPLACE TYPE A2 CURB RAMP WITH 1.8m PAN WIDTH
MATCH TO EXISTING 4.5m CONCRETE WALK
CONSTRUCT 4.5m MONOLITHIC WALK WITH 150mm CURB AND 250mm GUTTER
REMOVE EXISTING BOLLARDS
REMOVE EXISTING 2 RAMPS, CURB AND GUTTER
RELOCATE AMBER FLASHER POLE
CONSTRUCT 2.3m ASPHALT SHARED USE PATH
MATCH TO EXISTING SHARED USE PATH
RELOCATE SECTION OF CHAIN LINK FENCE
CONSTRUCT TYPE A2 CURB RAMP WITH 1.8m PAN WIDTH
CONSTRUCT 3.0m OF 1.50m CONCRETE WALK
MATCH TO EXISTING 1.50m CONCRETE WALK
REPLACE PORTION OF TYPE A2 RAMP
BUS STOP
SECTION A-A
SCALE: H=1:100 V=1:20
NOTE:
RETAINING WALLS 1.20m OR TALLER TO BE DESIGNED AND APPROVED BY A STRUCTURAL ENGINEER
EXISTING TREE
EXISTING STREETLIGHT TO REMAIN
SHARED USE PATH
SOUTHBOUND
NORTHBOUND
LANE LINE
CENTER LINE
CONSTRUCT NEW RETAINING WALL
REGRADE AND LANDSCAPE WITH SOD
120mm CONCRETE 150mm 3-20A GRAVEL
REMOVE EXISTING CURB AND GUTTER
REMOVE ROAD BASE IN THIS AREA
CONSTRUCT 150mm CURB AND 250mm GUTTER
INSTALL WICK DRAIN
50mm COLD MILLING 50mm± OF 10mm HT ASPHALT
50mm OF 10mm-HT 50mm OF 20mm-B 220mm CONCRETE CLASS B 200mm GRANULAR BASE
EXISTING WALK TO REMAIN
RELANDSCAPE AS REQUIRED
150mm SOIL CEMENT
CONCRETE FILL
SECTION B-B
SCALE: H=1:100 V=1:20
PROPOSED TREE
NEW STREETLIGHT
EXISTING TREES TO REMAIN
75mm 10mm-LT 300mm 3-20 GRAVEL 150mm COMPACTED SUBGRADE
CONSTRUCT 150mm SLAB-ON ISLAND
REMOVE EXISTING SLAB-ON ISLAND
50mm COLD MILLING 50mm± OF 10mm HT ASPHALT
CONSTRUCT SWALE 1.25m FROM FACE OF CURB (WHERE REQUIRED)
120mm CONCRETE 150mm 3-20A GRAVEL
SECTION C-C
SCALE: H=1:100 V=1:20
REMOVE EXISTING CURB, GUTTER AND MONOWALK
CONSTRUCT 4.0m MONOWALK WITH 150mm CURB AND 250mm GUTTER
ROAD BUS PAD 100mm 10mm HT 200mm CLASS A CONCRETE 200mm 3-20 OR 3-63 GRANULAR BASE
SURFACE UTILITY LEGEND
TROLLEY POLES
WOODEN POWER POLE
POWER POLE
STREET LIGHT POLE
DECORATIVE STREET LIGHT POLE
POWER MANHOLE
POLE ANCHOR
TRAFFIC POLE
TELEPHONE MANHOLE
TELEPHONE POLE
DRAINAGE MANHOLE (SANITARY)
DRAINAGE MANHOLE (STORM)
CATCH BASIN MANHOLE
CATCH BASIN
FIRE HYDRANT
WATER VALVE
WATER TEE
ANODE
DETAIL LEGEND
NEW BASE 50mm OF 10mm-HT 50mm OF 20mm-B 220mm CONCRETE CLASS B 200mm GRANUALR BASE
ROAD BUS PAD 50mm OF 10mm-HT 50mm OF 20mm-B 220mm CONCRETE CLASS A 200mm GRANUALR BASE
CONCRETE CONSTRUCTION 120mm CONCRETE 150mm 3-20A GRAVEL
50mm COLD MILLING 50mm OVERLAY
ASPHALT
LANDSCAPE WITH SOD
REMOVE BASE
PROPOSED 150mm CURB AND 250mm GUTTER
NEW CURB RAMP
PROPOSED TREES
NEW SWALE
REFER TO 84 STREET PAVEMENT DESIGN MEMO (BY THURBER ENGINEERIMG, MARCH 12, 2020) FOR PAVEMENT DESIGN DETAILS
PERMIT TO PRACTICE
CITY OF EDMONTON
RM SIGNATURE:
RM APEGA ID #: 0101421
DATE:
PERMIT NUMBER: P005038
The Association of Professional Engineers and Geoscientists of Alberta (APEGA)
APPROVED FOR CONSTRUCTION
PROFESSIONAL ENGINEER
PATRICK MCDONOUGH
ALBERTA
2020-12-21
TRANSPORTATION PLANNING & DESIGN
January 11, 2021
TRANSPORTATION INFRASTRUCTURE DELIVERY SUPERVISOR
January 11, 2021
TRANSPORTATION PLANING AND DESIGN SUPERVISOR
January 11, 2021
DEPARTMENT / BRANCH
APPROVAL
DATE
SURVEY
JOB NO. z18
SCALE 1:500
DRAWN RF DEC 09, 2020
DESIGNED JA DEC 09, 2020
CHECKED PM DEC.21, 2020
DETAIL NOTES
1. STREETLIGHTING WITHIN PROJECT LIMITS TO BE UPGRADED TO LED.
2. TREE ADDITIONS IN WEST BOULEVARD ARE UNDER REVIEW.
FIELD REVIEW ATTENDEES
DATE OF FIELD REVIEW: JULY 6, 2020
1. JAMIE BARTSCH
2. PATRICK MCDONOUGH
3. JENELLE ANDERSON
4. DAVID HA
5. RANDY FESTER
6. KELLY CALVEZ
7.
POSTED SPEED: 50km/hr
DESIGN SPEED: 50km/hr
THE CITY OF Edmonton
INTEGRATED INFRASTRUCTURE SERVICES
INFRASTRUCTURE PLANNING AND DESIGN BRANCH
PROJECT
84 STREET
98 AVENUE TO 106 AVENUE
PRELIMINARY
DRAWING
S084 P201 D01

Appendix E: City Planning EIA and SLS Sign Off

Urban Form and Corporate Strategic Development
City Planning

City of Edmonton
7th Floor, 10111 - 104 Avenue NW
Edmonton, AB T5J 0J4

Email: sdrivervalleybylaw@edmonton.ca

April 21, 2021 Reference No. 390431716-001

To: Isaac Rodriguez, Transportation Planning and Design, IIS
Lynn Maslen, Spencer Environmental Management Services Inc.

From: Achyut Adhikari, City Planning

Subject: AA21-28 Road Renewal at 84 Street and Shared Use Pathway Project EIA and SLS-Sign Off

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We have completed our review of the Road Renewal at 84 Street and Shared Use Pathway Project EIA and SLS reports. This letter confirms that Administration has no further concerns with the proposed development under the North Saskatchewan River Valley Area Redevelopment Plan (NSRV ARP). Please adhere to the following conditions and advisements provided by reviewers.

Please note the proposed development meets the definition of a major facility, and as such, City Council must approve the EIA and SLS, and must deem the proposed location in the River Valley as essential, to ensure the policy requirements of the NSRV ARP are satisfied.

Comments from EPCOR Water:
The Water and Sewer Servicing Section of EPCOR Water Services has reviewed the proposal and have the following comments:
1-150mm water service exists on 84th St at 7.0m S of N PL of 103rd Ave.
Note: Epcor Drainage infrastructure exists within the proposed project area.

If you have any questions about this reply, or if you require exact locations of the water services, please contact this office at 780 496-5444, or e-mail us at wass.drainage@epcor.com.

Comments from EPCOR Drainage:
No concerns regarding 84 Street road renewal and SUP.

Comments from Business Planning and Support (Engineering Services):
I reviewed the draft Environmental Impact Assessment (EIA) and draft Site Location Study (SLS) for the proposed Road Renewal at 84 Street NW and Shared Use Pathway (SUP) project. The draft EIA and SLS documents were prepared by Spencer Environmental Management Services Ltd. (Spencer) and dated March 19, 2021. No geotechnical information was included with this circulation.

Based on the information provided, it is understood that 84 Street NW, between 98 to 106 Ave NW, in the Forest Heights neighbourhood, will be rehabilitated. This project, funded by the Arterial Renewal Program, will involve road resurfacing, new curbing, sidewalks, bus pads, upgraded streetlights, signals, pedestrian flashers and installation of a segment of new Shared Use Path (SUP) west of 84 Street, between 101 Avenue and 105 Avenue. The new SUP segment will connect to an existing SUP north of 105 Avenue and to an existing sidewalk south of 101 Avenue and will be separated from 84 Street by a 4 m landscaped boulevard.

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Edmonton, AB T5J 0J4

Email: sdrivervalleybylaw@edmonton.ca

Based on a review of aerial photographs and topographic information from the City's files, the project site is located within proximity to the top-of-bank of the North Saskatchewan River valley slopes with anticipated risk of slope instability. However, the anticipated risk of the project impacting instability of the adjacent valley slopes is relatively low, provided that appropriate design considerations and construction methods are implemented.

The proposed elements of the neighbour renewal project must be designed and constructed in accordance with City Specifications and using good local construction techniques. Grading of the proposed SUP along the top-of-bank should provide positive drainage away from the slopes and into catch basins where possible. Where it is not practical to provide drainage along the SUP away from the slopes, the grading must ensure that concentrated drainage flow does not occur toward the slope.

Precautions should be taken to avoid any construction methods that may adversely disturb or destabilize the valley slopes. In general, construction should minimize any disturbance along slopes and/or fill placement near the top of slopes. Retention of existing vegetation at the top of the bank is highly desirable and every attempt should be made to preserve existing vegetation and any proposed vegetation clearing, excavation, and grading activities should be minimized. An Erosion and Sedimentation Control (ESC) Plan must be prepared for the project and implemented prior to the work commencing. It must also be ensured that all erosion and sediment control systems are continually inspected and maintained during the construction process.

Should any excavation works be required for subgrade preparation, it is recommended that all excavation work must be in accordance with the Alberta Occupational Health and Safety Act and Regulations. Upon completion of the excavation works, the excavations will be backfilled and restored to their original conditions. It is recommended that appropriate backfill material is utilized, and the material is moisture conditioned and compacted into place properly (meeting the City of Edmonton Design and Construction Standards).

Provided that good local construction techniques and practices are employed, with due consideration for environmental sensitivity, I would anticipate that the work may be carried out without any adverse impacts to the North Saskatchewan River valleys or surrounding lands. Suitable cleanup and restoration of disturbed areas (e.g. damaged turf) must be carried out in accordance with City requirements.

Should you have any questions regarding these comments, please call me at(780) 868-3951.

Comments from Urban Growth and Open Space Strategy (City Planning)
As the proposed project involves renewal activities broadly within the existing road right of way and only a minimal extension of the existing road right of way is proposed that required river valley land for maintaining pedestrian connectivity through the new SUP expansion. It appears that there are no major environmental impacts as the location is within the tableland area including no impacts to the natural vegetation and habitat and no impacts along the environmentally sensitive locations.

As long as this project is considered best construction practices and promotes tree plantation, we have no major concerns with the project as proposed. However, please incorporate the following considerations into further design work:

Please incorporate green infrastructure or naturalized landscaping/low impact development features to the extent possible and feasible, in accordance with City standards and guidelines.
The project could integrate bioswale or other LID measures to lessen the stormwater generated through the additional paving surface that will be resulted from additional trail connectivity.

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Please consider native plant species as part of the tree plantation proposed along the SUP.

Comments from Community and Recreation Facilities (Civic Events and Festivals):
No comments

Comments from Community and Recreation Facilities (Partnership and Event Attraction Strategy):
No comment.

Comments from Community and Recreation Facilities (River Valley Parks and Facilities):
No comments and concerns.

Comments from Parks and Roads Services (Natural Area Operations):

- It is great to see tree planting is included in this project. Please ensure to work with Urban Forestry (treepreservation@edmonton.ca) throughout the length of the project to preserve the trees along the proposed SUP. Please adhere to all mitigation measures outlined in the EIA throughout the construction period. Natural Area Operations does not need to be involved in this project as Urban Forestry will oversee all tree work.

Comments from Parks and Roads Services (Resource Planning and Land Development):

1. A pre-construction inspection prior to accessing the site and a post-construction inspection once parkland restoration has occurred will be conducted by Land Development on each area of redevelopment in this project. Email: parkslandscapeinventory@edmonton.ca to request inspections.
2. Any lay down, staging or haul route area on Parkland in all areas of redevelopment in this project must be approved and fenced, with no vehicular or project activity outside of the fenced area. There should be no access to the lay down, staging or haul route area to ensure public safety. The restoration of the entire area must be repaired to the existing turf conditions (sod). Soil compaction protection, aeration and re-sodding; including the maintenance (watering, mowing and weed control) of restored turf areas will be the responsibility of the proponent until the sod is established and accepted by PARS. Email: parkslandscapeinventory@edmonton.ca to request laydown site meetings.
3. This area is near the top of bank River Valley Natural Area. If shrub beds are designed please incorporate naturalized shrub beds in lieu of any ornamental beds. Note: The required manual mechanical maintenance cannot be performed efficiently or effectively on highly ornamental landscapes at the current CoE service levels. Please ensure that the vegetation used is native to the Central Parkland Ecoregion. Vegetation will need to be sufficiently established prior to the park opening to help ensure survival..
4. Any planned Litter Receptacles with opening doors must be installed with the doors opening towards the turf area OR away from the hard surface side. These doors can not be opened in the winter if the sidewalk is being plowed.
5. The finished surface of the shared path must be level with the existing turf grade level. [3.7.2] Where sod butt joins surface paving, i.e. manhole, sidewalk or curb, position sod turf crown flush with finished hard surface.
6. Any damaged turf areas shall be re-sodded (not top dress and seed) as required and maintenance (watering, mowing and weed control) of restored turf areas will be the responsibility of the project/proponent until the sod is established and accepted by PARS.

City of Edmonton
7th Floor, 10111 - 104 Avenue NW
Edmonton, AB T5J 0J4

Email: sdrivervalleybylaw@edmonton.ca

7. The project/developer/contractor is responsible for all turf mowing and weed control within all construction areas on this site and/or laydown areas during construction and until FAC and accepted by PARS.
8. Site drainage in any redeveloped area must not be affected in any area by this project. Any overland drainage correction required on Parkland that is a result of any redevelopment in this project will be corrected by the proponent.
9. Any chain-link fence installed on CoE property must have 9 gauge wire, before any plastic coating as per Standard [2.1.2] - Nominal wire diameter: 3.5mm (9-gauge). Note: Any fence with a coating must have a sample provided and be pre-approved prior to installation by PARS.
10. All other damages to parkland inventory or any existing infrastructure must be restored to current City of Edmonton Construction Standards and PARS acceptance.

General Conditions Regarding Vegetation Removal:

1) Upon approval of the plan, a site meeting with Natural Areas will be required to review construction plans and tree protection. This meeting will need to be scheduled a minimum of four weeks in advance of the construction start date. This is to review access points, placement of all permanent or temporary construction material required for this project, and to determine tree protection requirements for construction within 5 meters of any City tree. For any vegetation removal, please ensure the area has been clearly staked. Note the laydown area fencing must be installed outside the dripline of any adjacent trees.
2) Please be advised that all costs associated with pruning, removal, tree damage, or replacement shall be covered by the Proponent as per the Corporate Tree Management Policy. Natural Areas will schedule and carry out all required tree work involved with this project. Please contact naturalareaoperations@edmonton.ca to arrange this meeting.
3) Any soil damage or compaction compromising the tree's root system within the parkland space shall be corrected by and at a cost to the Proponent. Please be advised that all costs associated with soil remediation, watering, and tree protection shall be covered by the Proponent as per the Corporate Tree Management Policy.
4) Please note that the removal of vegetation has the opportunity to impact birds and bird habitat. Protection of migratory and non-migratory birds is legislated federally and provincially and enforceable regardless of whether or not individual environmental reviews conducted in accordance with the River Valley Bylaw include discussions of these topics. The onus is on the individual or company conducting habitat disturbance or construction activities to ensure that due diligence has been exercised to avoid harm to migratory and non-migratory birds. Individuals or companies that do not avoid harm to most wildlife species risk prosecution under the *Wildlife Act* and, in some cases, the *Species at Risk Act*. In the case of migratory birds, prosecution under the *Migratory Birds Convention Act* is also possible.

General Conditions:

1) All mitigation measures and commitments outlined by City reviewers must be incorporated into the construction work plan.
2) The proponent is responsible for seeking approval for any other regulatory permits from provincial and federal agencies.
3) Please contact the Neighbourhood Resource Coordinator Tyler Pollock (780-496-1436) in the area to ensure appropriate community notification.
4) For potential impacts to City parks and facilities:
    a) Please ensure restoration of the site occurs and meets existing site conditions. All damages to parkland must be restored to City of Edmonton Construction Standards and City Operations' satisfaction.

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Email: sdrivervalleybylaw@edmonton.ca

b) Noxious weeds shall be managed and controlled as required within any fenced area and should be the responsibility of the contractor/department during construction.
c) Signage must be posted indicating a project contact person and phone number for inquiries.

5) All trail closures shall adhere to the City's Trail Closure Procedures. All trail closure activities must be approved through River Valley Operations prior to construction and closure of trails. Please contact **Braeden Holmstrom** (Team Leader, River Valley & Horticulture) at **587-986-2841** to obtain the necessary trail closure approvals. This shall be done a minimum of two weeks in advance of planned construction.
6) Please attach this letter for any further City of Edmonton approvals.

Should you have any questions or concerns, please contact me by e-mail or by phone at 780-496-4846.

Regards,

Achyut Adhikari