

**Maple Road Fulton Creek  
Crossing Site Location Study,  
Edmonton, Alberta**



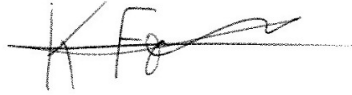
Prepared for:  
Lehndorff Land General Partner  
Inc.

Prepared by:  
Stantec Consulting Ltd.

May 2017  
110219456

## Sign-off Sheet

This document entitled Maple Road Fulton Creek Crossing Site Location Study, Edmonton, Alberta was produced by the following individual(s):

A handwritten signature in black ink, appearing to read 'K Fouquette', written over a horizontal line.

Reviewed by \_\_\_\_\_  
(signature)

**Kurtis Fouquette, P.Ag., P.Biol**  
**Environmental Scientist**

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## **1.0 INTRODUCTION**

Lehndorff Land General Partner (the Proponent) plans to construct a four lane arterial roadway (Maple Road) across Fulton Creek in order to facilitate residential development as part of their approved Neighbourhood Structure Plan for the Maple Neighbourhood (the Project) (Figure 1).

The Project occurs within the North Saskatchewan River Valley and Area Redevelopment Plan area (Bylaw No. 7188; City of Edmonton 1985). Based on the June 4, 2015 scoping meeting, the City of Edmonton has requested that a Site Location Study (SLS) and a Municipal Environmental Impact Assessment (MEIA) be prepared for the Project. As a result, the Proponent has retained Stantec Consulting Ltd. (Stantec) to produce the following SLS; the MEIA will be submitted under separate cover.

### **1.1 BACKGROUND**

The Maple Neighbourhood Structure Plan (NSP) is one of seven neighbourhoods in the Meadows Area Structure Plan (ASP) and is bounded by Whitemud Drive (to the north), Highway 216 (to the east), Canadian National Rail Right-of-Way (CNR ROW) (to the west) and the Transportation and Utility Corridor (TUC) through which 23 Avenue will be aligned (to the south).

The purpose of this Project is to connect 38 Avenue and the future 23 Avenue, via Maple Road, to provide road access to the Maple Neighbourhood. Currently the only vehicular entrance to the neighbourhood is 38 Avenue, crossing the CNR ROW directly south of Fulton Marsh. This extension of 38 Avenue is the first leg of Maple Road, which will eventually branch off to Maple Way, a collector roadway servicing the northeast corner of the Maple Neighbourhood.

### **1.2 SCOPE**

The scope of this SLS will be to examine the financial, social, environmental, and institutional constraints that make the location essential for the construction of Maple Road within the NSRVARP. The study will focus solely on the Maple Road crossing of Fulton Creek does not extend to any other current or future proposed development within the Study Area.

### **1.3 SITE DESCRIPTION**

As noted above, the proposed Project is located within the Maple Neighbourhood which is surrounded by transportation infrastructure. The proposed alignment of Maple Road connects 38 Avenue and the future 23 Avenue, crossing Fulton Creek twice in the process. The westernmost crossing of Fulton Creek has already been constructed in an earlier phase and residential development has been initiated in the northern portion of the Maple Neighbourhood. This second crossing is now required to provide a second entrance and exit to this area as per the approved NSP.



## **1.4 PROJECT DESCRIPTION**

The proposed roadway will extend from the existing Maple Road and Maple Way intersection across Fulton Creek to connect to a future intersection of Maple Road and 8 Street and eventually 23 Avenue. The arterial roadway is designed to facilitate residential development of the Maple Neighbourhood as per the Maple NSP. The proposed crossing structure at Fulton Creek is a modified concrete box culvert, approximately 61.5 m long, 1.8 m high and 1.2 m wide. The roadway will be constructed overtop of the culvert and will sit approximately 2 m above the existing creek elevation (CTA 2015).

### **1.4.1 Alternatives**

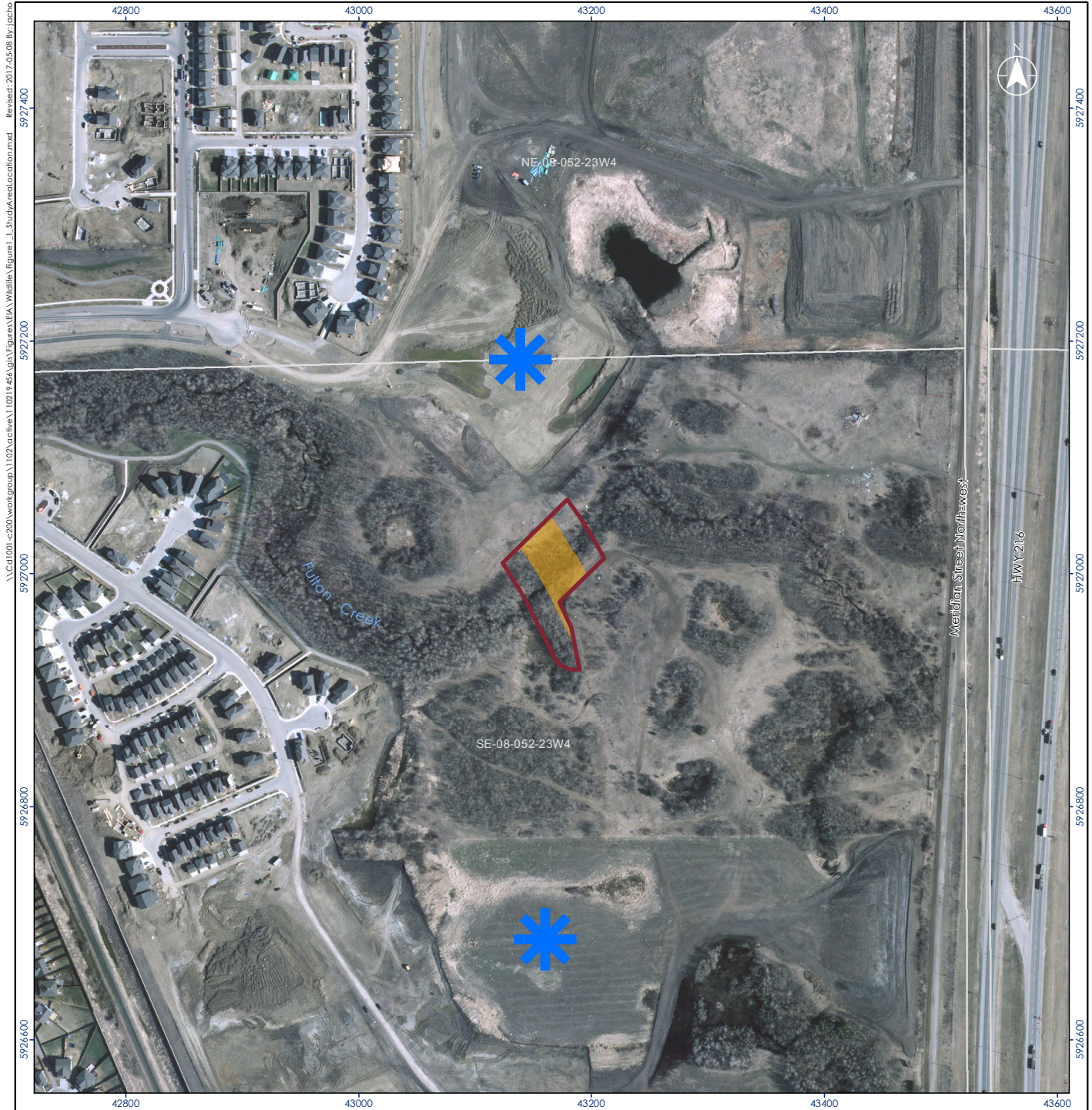
#### Utilize Existing Access Roads

The northern portion of the Maple Neighbourhood is currently accessible by the previously constructed portion of Maple Road, and an existing service road (Meridian Street NW) that originates at 23 Avenue NW and runs north adjacent to Highway 216. This roadway could potentially serve as secondary access to the northern portion of the Maple Neighbourhood as a creek crossing already exists on this roadway. However, this roadway would not likely be able to support the traffic volumes anticipated for the area in its current configuration.

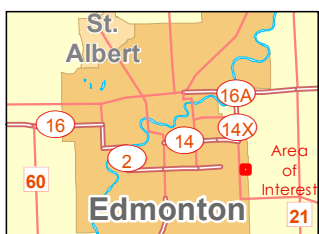
#### Construct an Interchange

Another alternative access to the northern area of the Maple Neighbourhood would be to construct an interchange on either Whitemud Drive, or Highway 216. The proximity of Fulton Marsh, the Whitemud Drive/CN rail overpass and the Whitemud Drive/Highway 216 interchange to each other would most likely require that such an interchange be constructed on Highway 216 rather than Whitemud Drive. However, it is still likely that the Whitemud Drive/Highway 216 interchange would need to be modified to accommodate such an access to this neighbourhood.

Cost estimates have not been developed for this alternative; however, it is anticipated that this would be a major capital project, requiring buy in from the provincial government, and not likely to be financially feasible given the number of residents likely to utilize the access. This alternative would also not likely meet minimum safe spacing requirements from the existing interchange.



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- \* Potential Laydown Area
- Study Area
- Area of Disturbance
- Quarter Section



Project Location: SE¼, 08-052-23 W4M, Edmonton, Alberta  
 Prepared by JC on 2015-10-28  
 Review by MK on 2016-12-22  
 Approved by KF on 2017-05-08

Client/Project: Lehndorff Land General Partner Inc., Maple Road Fulton Creek Crossing  
 Environmental Impact Assessment Report

Figure No.: 1-1  
 Title: Study Area Location

- Notes**
- Coordinate System: NAD 1983 3TM 114
  - Base features: Geogratis, ©Department of Natural Resources Canada. All rights reserved.
  - Imagery: City of Edmonton Transportation, 2014

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## **2.0 CONSTRAINTS ANALYSIS**

This section contains a constraints analysis on the selected location for the proposed Project. Financial, social and environmental opportunities and constraints are presented for the Project. Institutional policies and legislation will also be discussed in relation to how they apply to the Project. The constraints and opportunities provided here form the basis for the conclusions presented in Section 3.0.

### **2.1 FINANCIAL OPPORTUNITIES AND CONSTRAINTS**

Financially, the cost of utilizing the existing service road (Meridian Street NW) as a second access to the northern portion of the Maple Neighbourhood would likely be only slightly less, if not the same, as constructing the new proposed roadway if permitted at all. The existing roadway is currently a narrow gravel road, and would require upgrades to service a residential neighbourhood.

The cost of building the proposed road crossing over Fulton Creek is significantly less than the cost of building a major interchange on Highway 216. Costs for constructing such an interchange have not been developed, but the finances involved would likely be in the hundreds of millions of dollars.

Overall, the financial opportunities outweigh the constraints for the proposed site.

### **2.2 SOCIAL OPPORTUNITIES AND CONSTRAINTS**

The 8 m service road adjacent to Highway 216 (Meridian Street NW) would be able to provide a second access to the northern portion of the Maple Neighbourhood, however, this roadway would not be sufficient to meet the needs of the neighbourhood. Daily volumes of the 38 Avenue NW arterial road (Maple Road) are estimated to increase as a result of the proposed development. Meridian Street would not be able to accommodate these traffic volumes, resulting in frequent traffic tie ups, and disgruntled residents therefore, supporting the construction of a four-lane divided arterial road.

Construction of a new interchange would inconvenience thousands of commuters utilizing Whitemud Drive and Highway 216 during the construction process. However, in the long term, it is not likely that this alternative would present any social opportunities or constraints.

The current access to Maple Neighbourhood is via Maple Road (38 Avenue), over the CNR ROW. Construction of the proposed roadway will provide a second entrance to the Maple Neighbourhood across the CNR ROW, allowing better public access to the area and providing secondary emergency access to the proposed development.

Overall, the social opportunities outweigh the constraints for the proposed site.



## **2.3 ENVIRONMENTAL OPPORTUNITIES AND CONSTRAINTS**

The vast majority of Fulton Creek, as it passes through the Maple Neighbourhood, is located within a well vegetated riparian area. The crossing point currently exists as a seasonally flooding channel, containing a mixture of native and agronomic vegetation species. If Fulton Creek is to be crossed, the proposed location provides a logical option as it is in a narrow portion of the riparian area that has been previously cleared, presumably for agricultural reasons.

Little environmental effects to Fulton Creek would likely result from the implementation of any of the alternatives presented.

## **2.4 INSTITUTIONAL OPPORTUNITIES AND CONSTRAINTS**

The City of Edmonton has policies and bylaws that regulate and guide the construction of new facilities below the top-of-bank within the North Saskatchewan River Valley system. These policies are in place to protect Edmonton's natural features from increasing development pressures. Policies that may apply to the Project include, but are not necessarily limited to, Bylaw 15396 (Maple NSP), Bylaw 7188 (NSRVARP), Bylaw 15100 (The Way We Grow), The Way We Green, City Policy C456A (Corporate Tree Management), and City Policy C531 (Natural Area Systems). Each of these pieces of legislation is discussed below in regards to how they relate to construction of the Project.

### **2.4.1 Bylaw 15396: Maple Neighbourhood Structure Plan (City of Edmonton 2010)**

Approved by City Council on April 12, 2010, the Maple NSP outlines the land use framework and development objectives for the Maple Neighbourhood which is one of seven neighbourhoods identified under the Meadows ASP.

The NSP Land Use Concept and Development Objectives that apply to the proposed project include:

- Fulton Creek will be preserved and integrated into the neighbourhood.
- The northern drainage channel into Fulton Marsh and the southern drainage channel into Fulton Creek will be preserved and/or enhanced and integrated into the neighbourhood.
- The preserved natural areas (i.e. Creek, tree stand, etc.), Fulton Marsh and park spaces will be designed as key focal points within the neighbourhood.
- Provide parks and open spaces that are located along arterial, collector or local roadways and which are accessible via pedestrian linkages, automobiles and transit.
- The arterial and collector roadways are planned to move vehicular traffic efficiently through the neighbourhood and minimize internal roadway congestion.
- To provide and maintain secondary emergency access for the proposed development.





## MAPLE ROAD FULTON CREEK CROSSING SITE LOCATION STUDY, EDMONTON, ALBERTA

Constraints Analysis  
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- To limit roadway crossings of the CN rail line.

Maple Road is an arterial roadway that will provide direct access to parks and open spaces. It has been designed to provide effective access to the Maple Neighbourhood, including a secondary emergency access, while minimizing the effects on the preserved natural areas (i.e. Fulton Creek). The culvert for the Fulton Creek crossing has been sized to maintain flows and wildlife passage for small mammals and the proposed location of the crossing will result in reduced vegetation and tree clearing compared to other locations along the creek within the neighbourhood.

### **2.4.2 Bylaw 7188: North Saskatchewan River Valley and Area Redevelopment Plan (City of Edmonton 1985)**

NSRVARP (City of Edmonton 1985) was developed to protect the North Saskatchewan River Valley and Ravine System as part of the City of Edmonton's open space heritage. The NSRVARP envisions a major portion of the River Valley and Ravine System used as an environmental protection area. The major goal of the NSRVARP is to ensure preservation of the natural character and environment of the North Saskatchewan River Valley and its Ravine System.

The Environmental Protection Objective that applies to the proposed project is:

*2.4.2 To consider environmental factors when planning for use in the River Valley.*

The Transportation Objective that applies to the proposed project is:

*2.5.1 To support a transportation system which serves the needs of the City and the Plan area, yet is compatible with the parkland development and the environmental protection of the River Valley and its Ravine System.*

Applicable Transportation Policies of this ARP include:

*3.4.1 Direct River and Direct Ravine Crossings by Major Transportation Corridors*

*It is the policy of this Plan that new transportation corridors will not be approved except for direct River and direct Ravine crossings which are deemed essential and approved by City Council as in Policy 3.5.3.*

*3.4.2 Negative Impacts of Existing and Future Transportation Facilities*

*It is the policy of this Plan that existing and future transportation facilities will be reviewed with the objective to eliminate, minimize or mitigate the negative effects of the facilities through design and landscaping measures.*

*3.4.3 Environmental Impact Assessment for Transportation Facility Proposals*



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*It is the policy of this Plan that proposals for the upgrading of approved transportation corridors and attendant facilities be subject to an environmental impact screening assessment (Schedule D) and that the identified adverse impacts be eliminated, minimized or mitigated through design and landscaping measures.*

Applicable Major Facility and Natural Resource Development Policies of this ARP include:

### 3.5.1 Development of Major Facilities

*It is a policy of this Plan that major public facilities shall not be constructed or expanded unless their location within the River Valley is deemed essential and approved by City Council.*

### 3.5.3 Site Location Study and Environmental Impact Screening Assessment

*It is a policy of this Plan that all proposals for the development of a major facility that is publicly owned or is developed on public lands shall be subject to an environmental impact screening assessment as outlined in Schedule D, and a detailed site location study detailing costs, and social, environmental and institutional constraints which make a River Valley location essential must be prepared for Council approval. These studies shall be undertaken prior to Council committing funds for capital expenditure for the development of this proposal.*

Maple Road has been designed to serve the needs of the Maple Neighbourhood residents and to be compatible with the surrounding parkland and with Fulton Creek. The crossing contains design elements that minimize and mitigate potential negative effects of the roadway on the river valley and ravine system. The Maple NSP, and its corresponding infrastructure, was approved by City Council on April 10, 2010. This SLS and the corresponding MEIA have been prepared for the crossing pursuant to Bylaw No. 7188.

## 2.4.3 Bylaw 15100: The Way We Grow (City of Edmonton 2010)

The Way We Grow (City of Edmonton 2010) is the City of Edmonton's Municipal Development Plan, and is designed to guide the City's growth and development until 2020. This bylaw includes the following policies that are relevant to the proposed construction the proposed Project:

3.6.1 *Focus efforts to provide public infrastructure, utilize existing infrastructure and achieve population thresholds necessary to support community facilities in developing neighbourhoods in order to create livable neighbourhoods and proactively manage Edmonton's tax burden.*

3.6.1.6 *Support contiguous development and infrastructure in order to accommodate growth in an orderly and economical fashion.*

## MAPLE ROAD FULTON CREEK CROSSING SITE LOCATION STUDY, EDMONTON, ALBERTA

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7.1.1 *Protect, preserve and enhance a system of conserved natural areas within a functioning and interconnected ecological network.*

7.1.1.7 *Public projects, new neighbourhoods and developments will protect and integrate ecological networks, as identified in the Natural Connections Strategic Plan, by adopting an ecological network approach to land use planning and design.*

7.1.1.11 *Require new developments, adjacent to natural areas, to demonstrate that they have incorporated ecological design best-practices to mitigate negative consequences.*

7.3.2 *Protect, preserve, promote and improve the North Saskatchewan River Valley and Ravine System as an accessible year round place for recreation and activity for people of all age.*

7.3.2.5 *Provide pedestrian and bicycle connections to increase movement and accessibility.*

7.3.3 *Mitigate the impact of development upon the natural functions and character of the North Saskatchewan River Valley and Ravine System.*

7.3.3.1 *New development within the North Saskatchewan River Valley and Ravine System will be planned according to, and will demonstrate that it embodies, the following priorities:*

- *Conservation and protection of natural areas and the connections that link them, from and within the North Saskatchewan River Valley and Ravine System.*
- *Public utilities installations, services and facilities.*

7.3.3.3 *Require development projects within the North Saskatchewan River Valley and Ravine System to undertake an Environmental Impact Assessment as specified in the North Saskatchewan River Valley Area Redevelopment Plan (Bylaw No. 7188).*

7.3.3.4 *When City owned facilities must be located within or adjacent to the North Saskatchewan River Valley and Ravine System they will be located, designed and operated in a way that mitigates ecological impacts.*

Maple Road currently exists as the only entrance into the neighbourhood until such time that a southern connection to the future extension of 23 Avenue NW is constructed. Based on the existing geometry of the roadway, 38 Avenue NW into the Maple Neighbourhood (Maple Road) must traverse across a portion of Fulton Creek before it connects to the future 23 Avenue. The proposed crossing will facilitate vehicular, pedestrian, and transit movement from the Maple Neighbourhood outward to services provided in the Tamarack Neighbourhood and beyond.



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Constraints Analysis  
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The location of the road crossing has also been chosen to minimize the environmental effects to Fulton Creek. In order to mitigate the environmental effects of this development, a MEIA is being prepared pursuant to Bylaw No. 7188.

### 2.4.4 The Way We Green (City of Edmonton 2011)

The Way We Green: the City of Edmonton's Environmental Strategic Plan (City of Edmonton 2011), outlines the principles, goals, objectives and strategic actions and approaches for Edmonton to live in balance with nature. The focus of the plan is to address the sustainability and resilience challenges related to the ecosystem (land, water and air), energy/climate change, food and solid waste.

The main objective of this plan that is relevant to the proposed Project is outlined below. Objectives from The Way We Grow that have been identified in The Way We Green are not included in this section.

- The North Saskatchewan River and its tributaries are protected from pollution and erosion caused by stormwater runoff from Edmonton's built areas.

The proposed roadway has been designed such that stormwater runoff will be captured in the minor drainage system, and routed to the Fulton Marsh Storm Water Management Facility for treatment. Major flows will be contained within the roadway and routed north along Maple Road to Fulton Marsh as surface flows, and will not be permitted to enter Fulton Creek.

### 2.4.5 City Policy C456A: Corporate Tree Management (City of Edmonton 2010)

The purpose of the Corporate Tree Management Policy (City of Edmonton 2010) is to ensure that all trees on City owned property are adequately protected from destruction, loss or damage. Where damage to or loss of City trees occurs, as a result of not complying with the City Guidelines, equitable compensation for that loss will be recovered from the civic or private entity causing the damage or loss and applied to future tree replacements.

It is assumed that all tree clearing will be completed on privately owned land, however, if that is not the case then this policy will apply and will be complied with.

### 2.4.6 City Policy C531: Natural Area Systems (City of Edmonton 2007)

The Natural Area Systems Policy (City of Edmonton 2010) was developed to help conserve, protect, and restore the natural wetlands, uplands, water bodies and riparian areas within the City of Edmonton to safeguard the City's natural capital and associated ecological services. As per this policy, the City of Edmonton will balance ecological and environmental considerations with economic and social considerations in its decision making and demonstrate that it has done so.

The main purposes of this policy that are relevant to the proposed Project include the following:



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- Enhance and sustain the quality of life for Edmontonians.
- Conserve, protect and restore natural area systems through the physical planning and development process; according to the provisions of municipal, provincial and federal policy and legislation.
- Encourage voluntary conservation and corporate and private sponsorship of natural sites.
- Ensure consistent, uniform and equitable conservation practices that are based on the best available science.

The proposed alignment was chosen to minimize environmental disturbance. Design elements, such as a box culvert conducive to wildlife passage, have also been included to maintain connectivity through Fulton Creek, thereby maintaining the existing natural area system. Maple Road, via the Fulton Creek crossing, will provide direct access to parks and open spaces contributing to enhancing and sustaining the quality of life for Edmontonians.

Conclusions  
May 2017

## **3.0 CONCLUSIONS**

This Site Location Study was conducted pursuant to the North Saskatchewan River Valley ARP (Bylaw No. 7188) to evaluate the proposed construction of a roadway (Maple Road) and that will cross Fulton Creek within Edmonton, Alberta.

An analysis of the financial opportunities and constraints revealed that significant costs and safety concerns are associated with all of the alternatives presented, whether they be direct financial costs to the City of Edmonton or the developer, or opportunity costs to the developer. From a social perspective, the proposed Maple Road construction will provide enhanced and safer access to the Maple Neighbourhood that meet City of Edmonton design standards.

Environmentally, the proposed project is located in a strategic location to minimize effects. The design of the crossing has also incorporated measures to mitigate reduced ecological connectivity due to the roadway. The policy analysis did not identify any contraventions that would prevent the proposed project from moving forward, and in fact support the construction of this roadway in accordance to the NSP. It is therefore the conclusion of this Site Location Study, that the proposed location within the ARP area is the ideal site to provide the required neighbourhood access, and deems this site as essential for the proposed project.

## **4.0 LIMITATIONS AND QUALIFICATIONS**

In conducting the investigation and rendering our conclusions, Stantec gives the benefit of its best judgment based on its experience and in accordance with generally accepted professional standards for this type of investigation. This report was submitted with the best information to date and on the information provided. The conclusions made within this report are a professional opinion, not a certification of the site's environmental condition, or analysis of the environmental effects of the project, no other warranty, expressed or implied is made. This report has been prepared for the exclusive use of the Lehndorff Land General Partner Inc. for the purposes of assessing the suitability of the proposed Project at the proposed location. Any use which any third party makes of this report, or any reliance on or decisions to be made on it, are the responsibility of such third parties. Stantec accepts no responsibility for damages, if any, suffered by any other third party as a result of decisions made or actions based on this report. Our conclusions are limited by the following:

- The information contained within this report is based on the information provided to date by various agencies and the design figures available at the time of report preparation. Should the figures be amended in the future, revisions to the report may be required.
- The investigation was limited to those parameters specifically outlined in this report.
- The findings of this report were based off a desktop review of current information. No fieldwork was conducted.

## MAPLE ROAD FULTON CREEK CROSSING SITE LOCATION STUDY, EDMONTON, ALBERTA

References  
May 2017

### 5.0 REFERENCES

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