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Executive Summaries of Technical Reports

Lott Creek Estates

2023



February 15, 2023

B&A

600, 215 – 9 Avenue SW
Calgary, Alberta
T2P 1K3

Attention: Darby Henshaw, BA, MPlan, Community Planner and Engagement Specialist

Subject: Biophysical Impact Assessment Summary - Lott Creek Phase 1 Subdivision

EMCOR Development Corporation (EMCOR) is proposing the Lott Creek Phase 1 subdivision in the southern portion of SE-5-24-2W5M in Rocky View County, Alberta. CIMA+ was retained to prepare a Biophysical Impact Assessment (BIA) for the development with reference to the Rocky View County Servicing Standards (Rocky View County 2013). The BIA includes a description of existing conditions, identification of potential environmental impacts of the development and recommended mitigation measures to reduce or eliminate potential impacts.

Existing Conditions

Our review of historical aerial photographs indicates that the Project Site, including Lott Creek, has been highly modified since 1949. The Site has been used as agricultural land, a trout farm, a racetrack, a campground and now has several residences, ponds and ditches present throughout.

The natural terrain of the Site has been highly disturbed through development activities including excavation, infilling, berming, and grading. Currently, the Site is relatively flat with various artificial ditches and ponds. Geotechnical investigations found very little surface topsoil in the boreholes drilled throughout the Site. Instead, they observed clay fill mixed with some topsoil, organics, and gravel. These results indicate substantial modifications to existing site surface conditions, historically, with little to no natural landform conditions remaining.

The Site consists primarily of four upland plant communities: disturbed lands, balsam poplar forest, riverine tall shrub, and non-native grassland with invasive plant species, including 10 Noxious weeds and 2 Prohibited Noxious weeds (as listed under the *Alberta Weed Control Act*). An ACIMS (Alberta Conservation Information Management System) database search did not identify any past observations of provincially listed plant species on or in the vicinity of the Project Site. No rare plants or rare ecological communities were observed during surveys of the Site..

We identified multiple artificial water bodies within the Project Site, including various ditches and two ponds/dugouts. Based on our historical review and field observations, we identified five natural wetlands. These include four wetland areas where the original alignment and riparian area of Lott Creek are still present, and one wooded swamp in the southeast corner of the Site. The total wetland area is 0.176 ha in the Project Site as a whole. No wetlands or waterbodies were found to be Crown-claimed under the Public Lands Act.



A range of wildlife may be encountered within the Project given its proximity to natural landscapes of the Tsuut'ina Nation to the south and the Elbow River to the northeast. The Elbow River Valley is considered a regional wildlife corridor. However, the majority of wildlife are likely to favor travelling through areas of the valley that are less developed, such as Lott Creek riparian and forested areas of the Tsuut'ina Nation, directly south of the Site.

The Project Site does not fall within a terrestrial or aquatic Environmentally Significant Area (ESA) as determined through the application of provincial criteria. However, the Project Site is directly adjacent to three provincially identified ESA: SW-4-24-2-W5M (east of the Site), NW-33-23-2-W5M (southeast of the Site) and NE-32-23-2-W5M (south of the Site).

Potential Impacts and Mitigations

The potential impacts of the development on identified biophysical conditions were determined with reference to the concept prepared by B&A. These include potential loss of soil through erosion and admixing, terrain modifications, and the loss or alteration of vegetation, wetlands, artificial water bodies, and local wildlife habitat potential. Individual wildlife may also be lost or disturbed during site clearing and construction. Recommended mitigation measures for these potential impacts are:

- + Erosion and Sediment Control Plan (ESC Plan);
- + Environmental Protection Plan (EPP);
- + Landscape Plan and Weed Management Program;
- + Wetland Mitigation Strategy (in-lieu fee payment);
- + Timing of construction outside critical breeding periods to avoid damage or loss of wildlife;
- + An educational Landowner's Manual; and
- + Monitoring of mitigation implementation.

In addition to the above mitigation measures, it should be noted that riparian restoration and habitat enhancement will occur on the banks of the proposed flood channel that parallels the south property boundary, significantly adding to the overall area of riparian habitat. Instead of moving the creek back to its original historical alignment, the current concept includes the redevelopment of an existing steep-sided flood channel to have shallower side slopes and plantings of riparian vegetation that mimic a more naturalized riparian habitat condition. This restoration work will significantly increase the riparian habitat condition along the south site boundary without altering the current Lott Creek alignment; essentially doubling the available riparian habitat in the area.

The BIA included an evaluation of potential adverse effects of the development on adjacent wildlife corridors and wildlife movements. There is an important regional habitat for wildlife movements along Lott Creek, south of the Site, which connects to the Elbow River to the east. Several land use considerations when planning to avoid adverse effects on wildlife corridor function are:

1. the landscape position of a proposed new development relative to other developed areas and the corridor; and
2. anticipated human access to wildlife corridor lands.



Landscape Position

The design of wildlife corridors in landscapes planned for development factors-in multiple considerations including corridor width, corridor boundary shape and complexity, steepness of slopes, and availability of security cover and foraging habitat within the corridor. These parameters are particularly significant in landscapes where development is planned to surround corridors with land use activities on either side, for example, the designated wildlife corridors in Canmore, Alberta.

In the case of Lott Creek, the “wildlife corridor” might also be called a regional habitat patch as little or no human land use or development has been or is expected to be established south of the Site on the Tsuut’ina Nation. This land is likely to remain undeveloped in perpetuity; therefore, the corridor “width” in this case is irrelevant as lands to the south are expansive and will support wildlife habitat and movements over the long-term. There is also no foreseeable concerns regarding the steepness of slopes on the adjacent lands or the availability of cover and forage opportunities, all of which are factors that influence wildlife use of habitats and corridors.

The complexity of the corridor boundary can influence wildlife use. For example, a complex boundary, with development jutting into the corridor intermittently, is expected to reduce corridor use when compared to a smooth boundary. The proposed Lott Creek development is positioned within an area of existing developed lands and does not expand or jut-out to the south beyond the existing developed area. Therefore, the proposed development does not introduce any complexity to the corridor boundary that might otherwise potentially deter wildlife use of areas closer to the development. There is also a berm separating the wildlife corridor from the development. This berm is expected to reduce the potential for visual or auditory disturbance to wildlife travelling through the adjacent south lands.

Human Access

By far the most significant impact to wildlife corridors is the sensory disturbance caused by informal undesignated human use of wilderness areas by recreationists. This is the case in Canmore, Alberta, for example, where designated wildlife corridors have been infiltrated with networks of informal pathways where human activity occurs day and night, creating significant sensory disturbance and increasing wildlife-human conflicts.

In the case of the Lott Creek Site, little or no human access to wildlife habitat south of the Site is anticipated given the physical barriers of the storm pond, flood channel, Lott Creek, and the berm, as well as the requirement for access authorization through Tsuut’ina Nation.

Given these considerations, we don’t anticipate that there will be any significant adverse impacts on wildlife use of the adjacent habitat to the south of the property resulting from the proposed development.

Residual Impacts and Significance

The proposed development will result in the permanent loss of some wetlands, the majority of which are artificial. Wetland loss will be mitigated by providing wetland replacement through existing provincial approval processes under the Alberta Wetland Policy. A fee payment for wetland replacement is a provincially accepted approach to managing loss of wetlands within the Site.



Thank you for the opportunity to provide the above BIA summary. Any questions or comments can be directed to Karen Oldershaw – karen.oldershaw@cima.ca

Sincerely,

CIMA Canada Inc.

Karen Oldershaw

Senior Project Manager Urban Planning and Environment

February 10, 2023

(CIMA Canada Inc. signing date)

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RESIDENTIAL SUBDIVISION ACCESS AND UTILITY SERVICING
PRELIMINARY ANALYSIS – ELBOW SPRINGS ESTATES

EXECUTIVE SUMMARY

REPORT PREPARED BY:



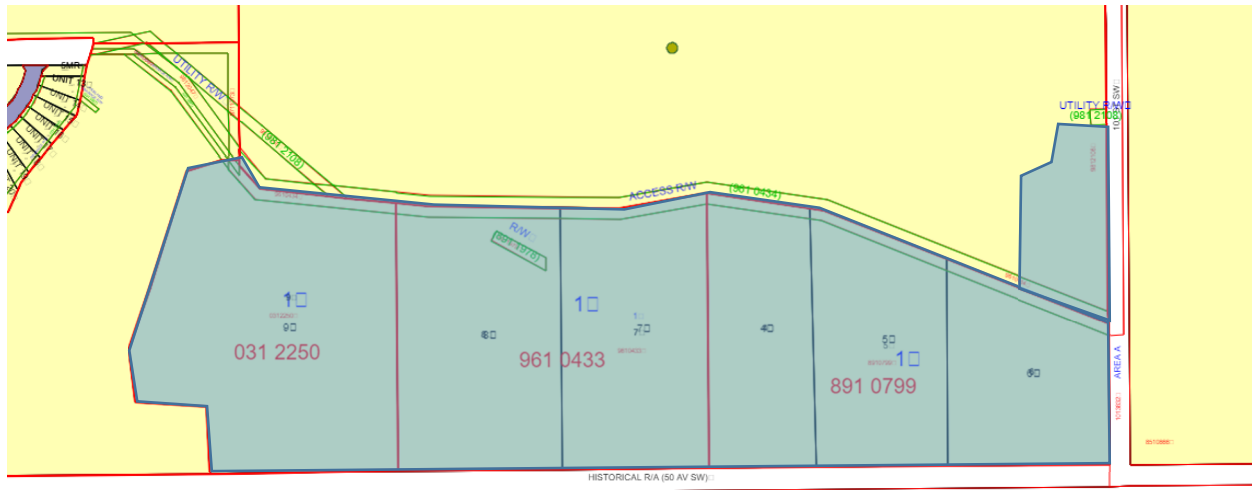
REPORT PREPARED FOR:



FEBRAURY 2023

Introduction

Emcor Development Corporation has submitted an amended ASP application into Rocky View County (RVC) for a +/- 16.5ha parcel of land within Elbow Valley ASP. The subject parcel legal description is described as follows, Lot 9, Block 1, Plan 031 22580, Lots 4 & 5, Block 1 Plan 891 0799, Lots 7 & 8, Block 1, Plan 961 0433 and Lot 2, Block 2, Plan 171 2440.



Sedulous is preparing engineering concepts based on a preliminary subdivision plan that has been prepared by B&A Planning Inc. The subdivision includes 87 single units and 40 semi units for a total of 127 units. The development includes off-site roads, internal roads, deep services, stormwater facilities, and open space.

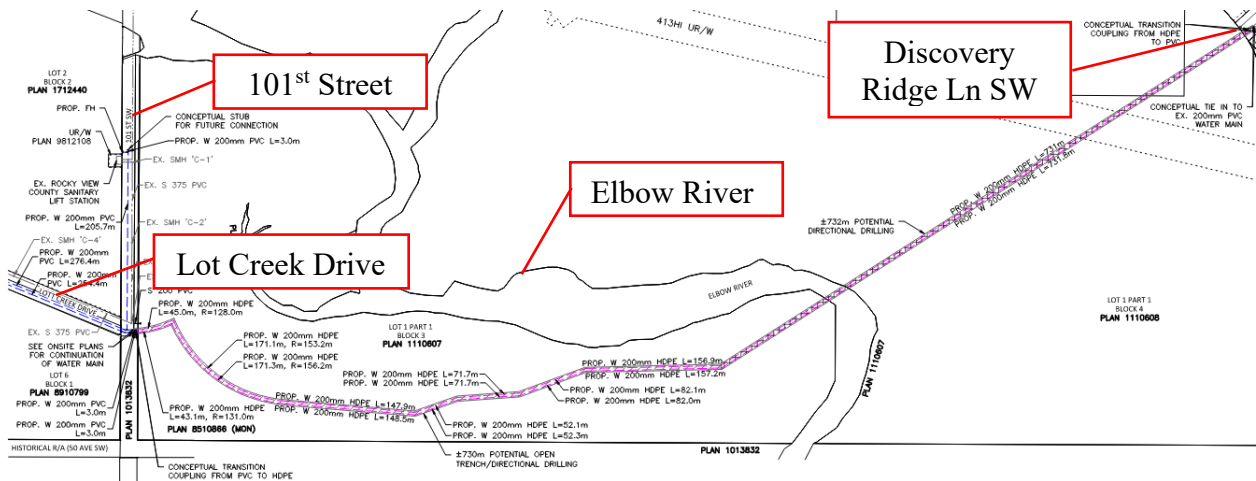
A brief description for a potable water, sanitary sewer, stormwater management and grading design have been broken down below.

Water

Two options for a potable water have been proposed to Emcor at this time, including one Connecting into the City of Calgary Water and two Connecting into the Westridge Utilities. Further descriptions for each option are explained below.

1. Connecting into the City of Calgary Water would consist of tying into the two watermains that terminate at the end of Discovery Ridge Lane SW. The Mains would the proceed through Lot 1, Block 4, Plan 111 0608 and Lot 1, Block 3, Plan 111 0607. It is our understanding that Lot 1, Block 3, Plan 111 0607 currently does not have any access to the parcel through the city lands neither does it have access to a city water connection.

Though it is zoned for Special Purpose 'Future Urban Development' (S-FUD). Thus, providing a unique opportunity for an agreement between the City of Calgary and Rocky View County to address water servicing and site access, more on this later.



2. Westridge Utilities Inc. currently provides water to existing developments in Elbow Valley west of the proposed development. There are existing Westridge watermains west of the subject lands that could provide potable water to the development subject to a contract between the Developer and Utility Operators.

Fire Flow

Three documents regarding fire flows have been reviewed as we expect the County will look to these for guidance while reviewing the development applications. Multiple factors apply when reviewing fire flows, for this exercise we focused on the intended minimum setbacks. We anticipate that 3m will be the minimum separation between buildings. The following are the applicable standards/guidelines and the required flow rates:

- 1999 Water Supply for Public Fire Protection (FUS) - 4,000L/M
- 2013 Rocky View County Servicing Standards
- 2013 Rocky View County Fire Hydrant Water Suppression Bylaw – 6,000L/M

Addition flows will be required to meet the Maximum Day Demand (MDD). Further investigation of the supplier's system to verify it will be suitable to provide the fire flows for the proposed development are required once the source of water has been determined.

Sanitary

Two options regarding wastewater servicing have been proposed to Emcor at this time, including first connecting to the regional system and second connection to a decentralized wastewater system. The Elbow Valley ASP requires that as a first step, the County will apply to the City of Calgary for a wastewater servicing. The existing Elbow Valley sewer system ties into the City of Calgary's sanitary sewer system via a lift station off 101st Street. A Master Servicing Agreement (MSA) exists between the County and the City to regulate this system. We understand that the subject lands are not within the current service area of the agreement. Dialogue with the City to discuss amending the MSA is required to add the subject lands to the agreement. If connection to the regional system is denied, an alternative system may be permitted.

Opportunity to connect Lot 1, Block 3, Plan 111 0607, within the Cities limits to the regional sanitary system will be part of the discussion as it could mutually benefit all parties.

The ASP goes on to note an alternate wastewater collection, treatment and disposal system may be permitted, if approval from the City of Calgary is denied. In the County, as per Policy 449, decentralized systems typically consist of a communal system that collects typical wastewater strength effluent from multiple lots, conveys effluent to a wastewater treatment plant for treatment and discharges to an approved discharge location. Treated effluent, from the communal Treatment Plant is typically released back to the environment through a communal septic field, drip irrigation system, spray irrigation system, or an outfall to a receiving water course.

The developer had previously completed a design of a treatment plant and submitted to Alberta Environment (AE). The related Public Lands work and river impact study was completed, though these applications have elapsed therefore will need to be remade should the city deny our service connection. The developer does have an active lease on the Elbow River until 2041 for a diffuser.

Roads and Access

Sedulous has not completed the Traffic Impact Assessments (TIA) rather this review is only intended to address road cross sectional considerations. Watt Consulting has completed the TIA which was submitted separately.

Lot Creek Drive is contained within a 25m road allowance at a +/-11m road surface width. We understand that the road was built extra wide in order to act as a secondary public access for the area. The asphalt currently terminates east of Lott Creek View where Lot Creek Drive transitions into a private access road servicing lands up to 101st Street. Township Road 240 (50th Ave) is an undeveloped road acting as a buffer between Tsuu T'ina Nation and the ASP area. CIMA+ has proposed a flood relief channel to be located in the road allowance.

Lot Creek Drive is proposed to be extended up to 101st Street and act as the primary and secondary access routes to the site. Considering the current alignment is within Access Right of Way (AR/W) this land will need to be dedicated as an actual road allowance therefore requiring consultations with adjacent landowners.

A regional pathway is to be constructed with the new road, thus restricting space within the allowance. Taking this into consideration, we have proposed a modified County Urban Residential Collector (URC) classification using curb and gutter. Avoiding the use of ditches with the use of storm sewers is more appropriate for the proposed urban style development. Two different cross sections have been proposed, one at 20.4m width, and a second at 25m width.

Proposed upgrades for 101st Street include the use of a Regional Transitional Paved classification with an 8m wide paved surface (3.5m lanes and 0.5m shoulders) in a rural cross section with ditches.

Ideally Lot Creek Drive would provide access to the private land (Lot 1, Block 3, Plan 111 0607) within the City of Calgary limits, as it has no other obvious primary access options. Watt accounted for these lands as part of the TIA, as it was suggested to be included in the discussion with the City.

Internal roads will be based upon RVC standards with a 15m R/W and 9m paved surface with curb and gutter.

As per the ASP, emergency access is intended to be to Hwy 8. There are two options for emergency access to Hwy 8 either at the existing maintenance sheds (which already provides emergency access from the lands east of 101st Street) or by further extension of the existing maintenance road (with is part of the golf course) back to the Lott Creek BLVD entrance at Highway 8. When the Province releases the new Flood Hazard Study, the elevations of the access route relative to the defined floodway/flood fringe elevations will need to be reviewed.

The preferred option is to utilize the existing emergency access to Hwy 8 at the existing maintenance sheds. We understand that the improvements to Hwy 8 include a two way highway access to the existing emergency access locations and note that this will require consent from Alberta Transportation (AT). Again this provides benefit to both the County and the City of Calgary. A Roadside Development Permit will be provided to AT upon detailed design.

Grading and Stormwater Management

CIMA+ has prepared the following reports to address stormwater management and flood relief.

- Lott Creek Subdivision at SE-5-24-2-W5 Flood Assessment and Proposed Flood Hazard Areas.
- Stormwater Management Report for Lott Creek Subdivision.

Grading concepts have been prepared in conjunction with the above reports along with following the County's Land Use Bylaw.

The current DC Bylaw provides instructions to set the building openings 0.6 m above the 1:100 year flood elevations "as shown in the AGRA Elbow River Flood – Municipal District of Rocky View Flood Risk Mapping Study of February 9, 1996, as amended". In this regard, we reference the Background section of the CIMA+ Flood Assessment for details, and we note the results of the AGRA study may be over conservative and as such, are likely outdated.

AE is in the process for a new Bow and Elbow River Flood Hazard Study, to replace the AGRA study. Therefore, we feel using the old AGRA study is not pertinent. CIMA+ has identified that the development is in the flood fringe of Lott Creek and will most likely be in the flood fringe of Elbow River (to be verified upon completion of the Provincial study). In the County's Land Use Bylaw, a freeboard of 0.5 m above the 1:100 year flood level is required. The concept grading design has taken this into account based on CIMA+'s estimation of the new flood lines.

TIA EXECUTIVE SUMMARY

WATT Consulting Group was retained by Emcor Development Corp to prepare a Transportation Impact Assessment (TIA) for the proposed Lott Creek residential development in Elbow Valley. This proposed development is located on Lott Creek Drive which is south of Highway 8 and west of the west boundary of the City of Calgary. The proposed development includes 150 residential units. The development site and study intersections are shown in Figure ES-1.

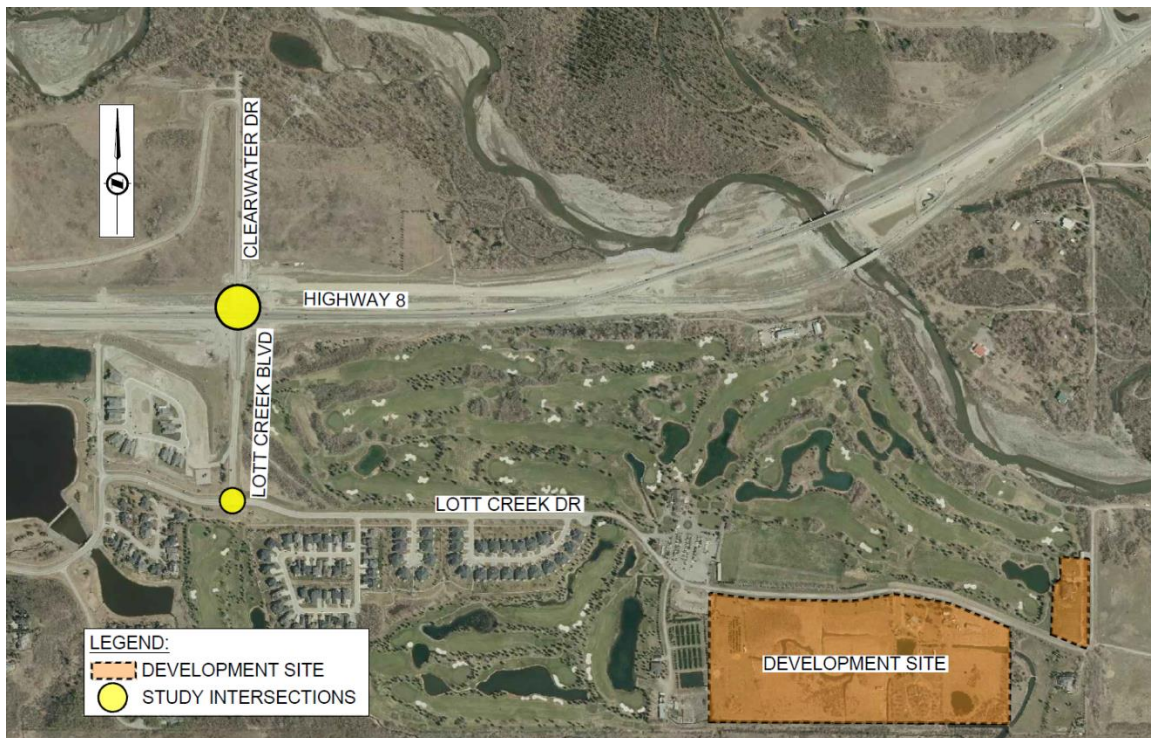


FIGURE ES-1: DEVELOPMENT SITE AND STUDY INTERSECTIONS

The key objectives of the TIA are defined as follows:

- Evaluation and assessment of existing conditions for the following key intersections:
 - Highway 8 and Lott Creek Boulevard / Clearwater Drive
 - Lott Creek Boulevard / Lott Creek Drive
- Analysis of long-term operating conditions for the key intersections

- Estimation of trip generation
- Evaluation and assessment of post development conditions (opening day and long-term)
- Review of active transportation modes and transit service in the study area

Lott Creek Boulevard / Lott Creek Drive is a T-intersection with a two-way stop control. Capacity analysis for the intersection as well as field observations indicate that the intersection is currently operating at a very good level of service (LOS). In the future, with the development in place and accounting for background growth in the area, the intersection is expected to continue operating at an acceptable level of service. No improvements are required at this intersection to accommodate the development.

Highway 8 and Lott Creek Boulevard / Clearwater Drive is a signalized intersection with a four-lane divided cross section. The capacity analysis for the existing conditions indicated that this intersection is operating at a good level of service (LOS B) during the peak periods. Highway 8 is in the process of being twinned as part of the Calgary West Ring Road project and this will change the configuration of Highway 8 / Lott Creek Boulevard / Clearwater Drive intersection to include two eastbound and two westbound through lanes with exclusive left-turn lanes in each direction. This future intersection configuration was used for the long-term analysis in the report. Based on the traffic analysis conducted for the 20-year future horizon, with the development in place and accounting for background growth, the intersection of Highway 8 and Lott Creek Boulevard is expected to operate at acceptable levels of service. An advanced left-turn phase for westbound traffic is recommended for the future horizon to improve overall operations and safety at the intersection.

Future traffic volumes along Lott Creek Drive, east of Lott Creek Boulevard are expected to be less than the threshold for collector roads and therefore no upgrades to Lott Creek Drive are required to support the development. It is understood that there are current speeding issues along Lott Creek Drive. Suggestions for potential traffic calming measures have been provided to the County for their consideration.



EXECUTIVE SUMMARY – Stormwater Management Report for Elbow Springs Estates

EMCOR is proposing the Elbow Springs Estates Subdivision within quarter Section SE-5-24-2W5M in Rocky View County (RVC). The proposed development comprises 16.4 ha of land, bounded by Lott Creek Drive to the north, 101 Street to the east, the 50 Avenue Road Allowance to the south, and the Allen's Trout Farm to the west.

The proposed drainage concept for the subdivision addresses fundamental design criteria developed by Rocky View County. Low Impact Development (LID) technologies are incorporated into the development to accomplish regional stormwater targets. The most western portion of the site, containing Allen's Trout Farm, is to be developed at a later time; therefore, this report contains stormwater management strategies for the eastern portion (Phase 1), approximately 16.4 ha in size.

Nine lined dry ponds and one wet lined pond are proposed to collect runoff from residential areas. Runoff from roads will be drained directly into the lined ponds to prevent infiltration and potential contamination of the aquifer. Water released from the stormwater dry ponds into the wet pond will be treated with oil-grit separators (OGS) to treat the stormwater before it releases into the Lott Creek. OGS units are sized to comply with The City of Calgary sediment removal requirements. Control of the maximum release rate from the subdivision will be conducted with an orifice outflow structure at the wet pond. Control of annual runoff volumes is conducted by applying irrigation to green areas within the subdivision. Runoff from Lott Creek Drive will be collected in roadside ditches and discharged into Dry Pond 1, 2 and 3 and the Wet Pond. All green areas in the subdivision shall have a layer of soil of minimum 300 mm and shall include vegetation with roots extending to the bottom of the topsoil layer.

Dry ponds have a maximum depth of 0.5 m. and side slopes are 3:1. The wet pond has a maximum depth of 4.0 m (including 2 m of active storage) and side slopes of 3:1. 2.58 hectares of public green areas (including the dry ponds) are required to be irrigated using stormwater collected at the wet pond to comply with annual runoff targets.

For the eastern portion of the development (sub-catchment area SC-11) lot level LIDs are proposed. Excess runoff will be directed to Lott Creek. Runoff will not be directed to the proposed wet pond. At each lot impervious areas will drain to pervious areas around the future houses and driveways. Pervious areas will have a 300 mm thick layer of topsoil. The grading of pervious areas will be designed to direct runoff into a storage area that will provide the volume to comply with the pre-development release rate of 2.7L/s/ha. The storage area will also have a thick topsoil layer (min 300 mm) and special vegetation to allow the reduction of runoff to 45 mm per year.

The proposed system was analyzed using computer models for both single event (PCSWMM model) and continuous simulation (Westhoff Water Balance Model). The results of the PCSWMM model shows that the provided storage is sufficient to contain the 1:100 year, 24 hours single storm event, with a maximum release rate of 37 L/s (2.52 L/s/ha), which is smaller than the permissible release rate (2.7 L/s/ha). The required diameter for the orifice at the control structure is 110 mm. Annual median runoff from the subdivision is computed at 39 mm which is lower than the maximum annual target of 45mm.



EXECUTIVE SUMMARY – Flood Assessment for Elbow Springs Estates

EMCOR is proposing the Elbow Springs Estates Subdivision within quarter Section SE-5-24-2W5M in Rocky View County (RVC). The proposed development comprises 16.4 ha of land, bounded by Lott Creek Drive to the north, 101 Street to the east, the 50 Avenue Road Allowance to the south, and the Allen's Trout Farm to the west.

Considering that the proposed development and flood mitigation measures are within the flood prone areas of Lott Creek and Elbow River, a flood assessment is required to determine the feasibility of the development in terms of flood management.

CIMA+ (Westhoff Engineering Resources, Inc.) has been retained by EMCOR to complete the flood assessment for Lott Creek and Elbow River. The study area includes the Lott Creek and adjacent floodplain between the Elbow Valley subdivision and the confluence with the Elbow River.

The area where the subdivision is proposed is currently labeled as “Under Review” in the flood hazard maps available at the Alberta Environment and Parks (AEP) website. Flood hazard maps typically identify the flood prone areas divided in two subareas called Floodway and Flood Fringe. The formal definitions by AEP are presented below in *italic text*.

Flood Hazard Area – *The flood hazard area is the area of land that will be flooded during the 1:100 design flood. The flood hazard area is typically divided into two zones, the floodway and the flood fringe.*

Floodway – *The portion of the flood hazard area where flows are deepest, fastest and most destructive. The floodway typically includes the main channel of a stream and a portion of the adjacent overbank area. New development is typically discouraged in the floodway.*

Flood Fringe – *The portion of the flood hazard area outside of the floodway. Water in the flood fringe is generally shallower and flows more slowly than in the floodway. New development in the flood fringe may be permitted in some communities and should be flood-protected.*

In 2015 a multi-year “Bow and Elbow River Hazard Study” was started by AEP, which will define the flood hazard areas currently “Under Review”. In 2020 and for public consultation purposes, AEP released draft reports for the Bow and Elbow River Hazard Study being completed by Golder. The reports included description of surveys, preliminary inundation maps, model description and calibration. The HEC_RAS model was also released. Flood hazard maps have not been released yet. The released documentation confirmed that an original assumption of a potential spill in the amount of 80 m³/s from the Elbow River over Highway 8 at the Lott Creek Boulevard intersection and during the 1:100 year flood event was incorrect.

Several analyses have been completed in the past for this area. In 2013 the report “Lott Creek Flood Hazard Mapping Study” was submitted to AEP. The report and analyses were accepted by AEP, with formal approval pending the construction of a flood relief channel that was included in the project.

During the process of completing detailed designs of the channel to obtain approvals from the Rocky View County (RVC), a significant modification was required for the subdivision that requires modification for the flood relief channel. In addition, the design flow for the flood relief channel was reduced from 108 m³/s to 28 m³/s due to the elimination of the 80 m³/s spill originally considered from the Elbow River during the 1:100 year flood.

The proposed flood relief channel has a total length of 560 metres and will be located immediately south of the subdivision and partially within the Right of Way (ROW) for 50th Avenue. Lands south of the 50th Avenue ROW belong to the Tsuut'ina Nation. The proposed flood relief channel is essentially an upgrade of an existing channel, is trapezoidal in shape, 1.5 to 2.4 m deep, with a bottom width of 2 m and 3:1 side slopes. Normal flows from the Lott Creek and the existing Lott Creek main channel will not be affected by the proposed relief channel.

The HEC-RAS model used for the “Bow and Elbow River Hazard Study” and released by the province, was used to complete a hydraulic analysis to quantify the hydraulic effects of the proposed flood relief channel. The analysis focused on the determination of changes to the flood water levels not only at the proposed subdivision location but for up and downstream areas. The overall effect is a reduction in Lott Creek flood water levels at the subdivision location and zero changes to water levels for upstream and downstream areas. A very small increase in Elbow River flood water levels was predicted at three cross sections, but this increase is expected to be smaller than the increase to be reported in the final “Bow and Elbow River Hazard Study” due to the definition of flood fringe areas. It is noted that, informally, the province confirmed that the proposed lots of the proposed subdivision are outside of the floodway but within the flood fringe of the Elbow River and Lott Creek.

The following conclusions were drawn from the flood assessment completed for the proposed subdivision:

- During the 1:100-year flood event the proposed flood relief channel is expected to produce no negative impacts to water levels on Tsuut'ina Nation lands as compared to existing conditions. Water elevation is expected to be lower except at one cross section where the increase is only of 0.02 m.
- The effect of the subdivision on the water levels of the Elbow River during the 1:100 year event is of an increase of up to 0.08 m.
- Maximum velocity increase in the Lott Creek is 0.31 m/s as compared to natural conditions. For the Elbow River the maximum increase is 0.20 m/s. No erosion issues are expected by these changes in flow velocity.
- The development is within flood fringe areas that are developable providing they are flood proofed. The grading shall be designed adequately for the subdivision to be flood proofed. Specifically, sections 201 to 203 of the Rocky View County Land Use Bylaw are required to be applied.



lott creek
ESTATES