

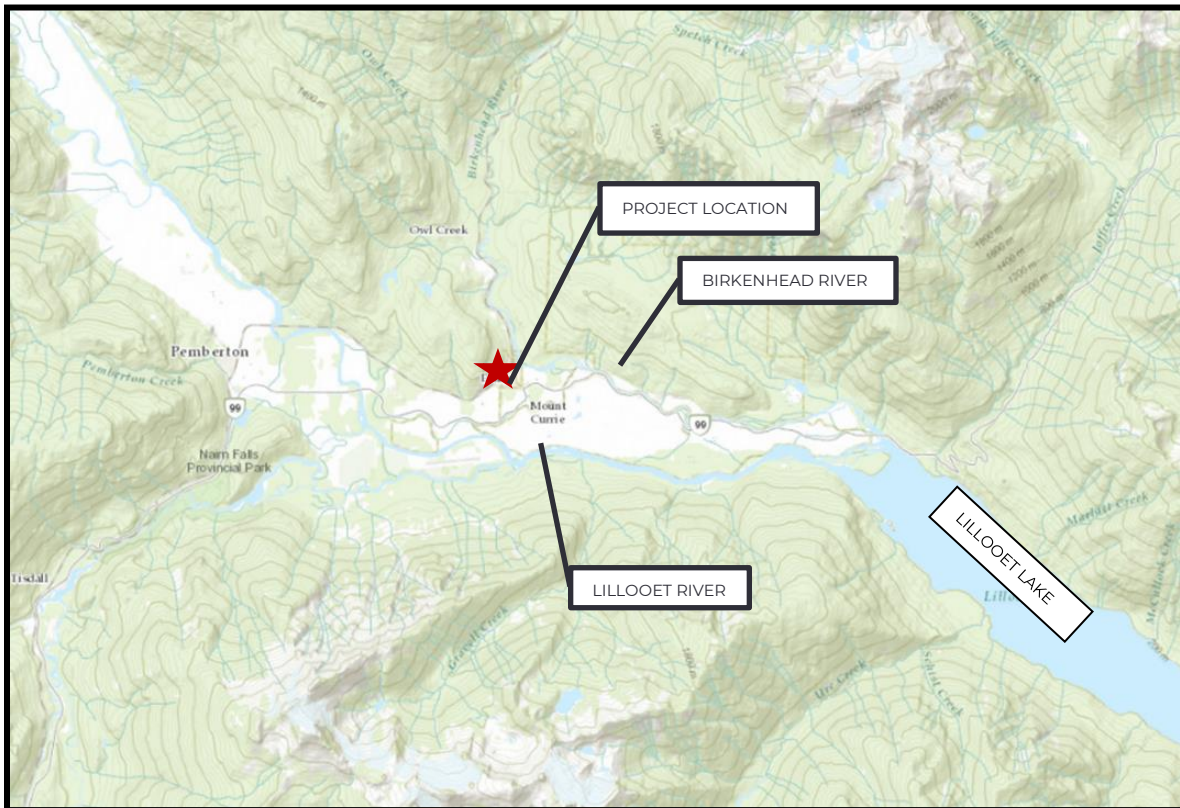
DATE: August 6, 2021
TO: Tom Lavolette, RPP – Lil'wat Nation Director of Infrastructure
FROM: Hazen Todd, P.Eng. – Urban Systems Water Resource Engineer
Cole Becker, EIT – Urban Systems Engineer-In-Training
FILE: 3398.0014.01
SUBJECT: Lil'wat Nation Main Street Development – Stormwater Management Plan

1.0 INTRODUCTION

Lil'wat Nation is proceeding with a mixed use residential and commercial development at a fee simple parcel of land located near the Highway 99 and Main Street intersection in the Mount Currie community. The proposed development includes one 2 story building and one 3 story building along with parking and associated amenities.

The purpose of this memorandum is to provide a summary of the overall drainage plan for the site specifically related to the Ministry of Transportation and Infrastructure (MoTI) letter dated February 8, 2021, which requested a stormwater management plan be prepared for the proposed development. The following memorandum outlines the existing site conditions, proposed development, proposed post-development drainage path, and highway interface recommendations. The site location is shown on Figure 1.1 below.

Figure 1.1 – Location Map

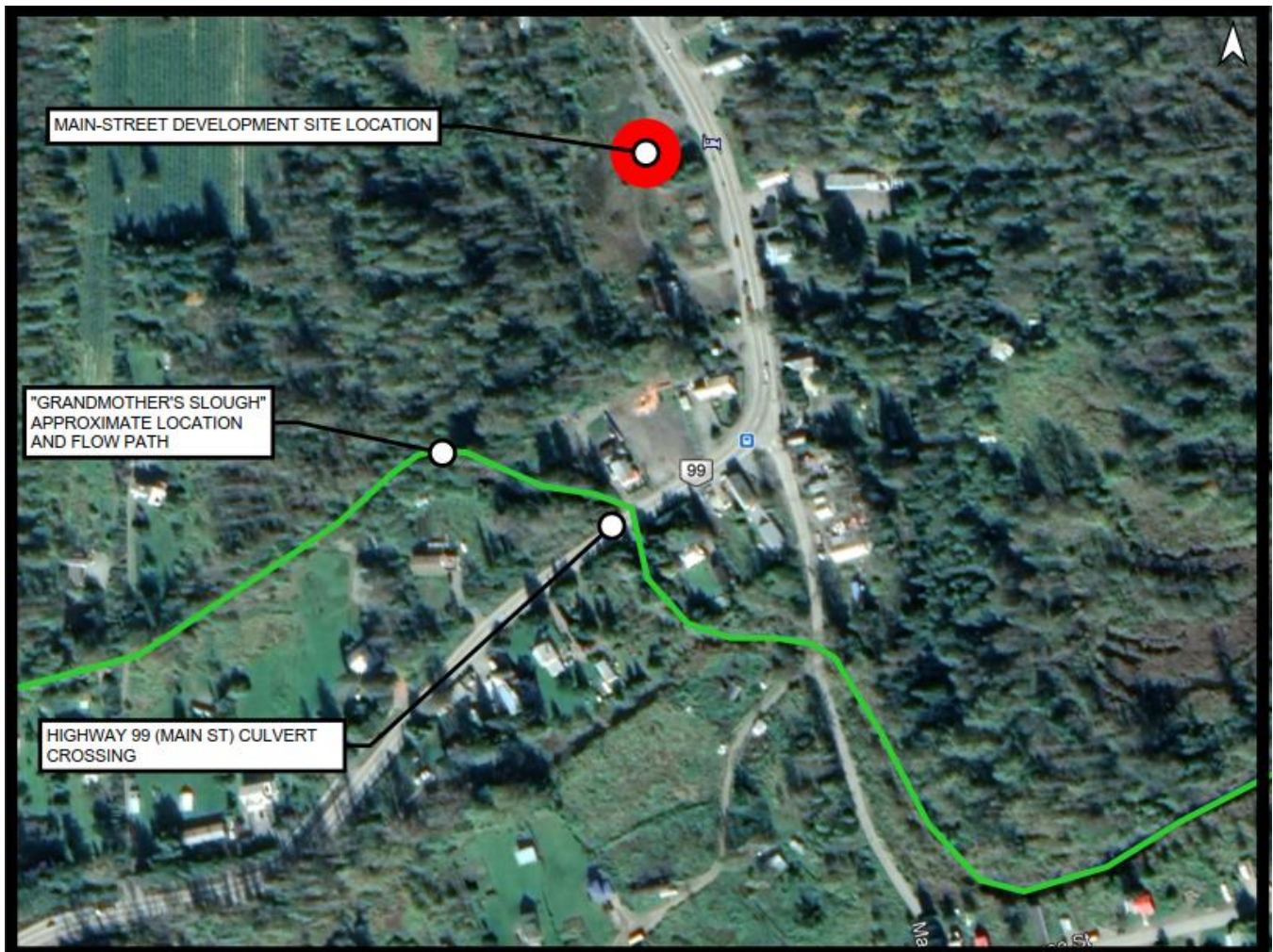


2.0 EXISTING SITE CONDITIONS

The proposed development site is a relatively flat parcel of land that is approximately 1.2 Ha in size. The majority of the site has been cleared of trees, with only minor pockets of vegetation remaining. Based on available survey information, the existing site elevation is approximately $204.5 \pm 0.5\text{m}$.

As noted above, to the east, the site is located adjacent to Highway 99. To the west, a drainage path, which is locally called "Grandmother Slough" travels near the site, and crosses Highway 99. This information is noted on **Figure 2.1** below.

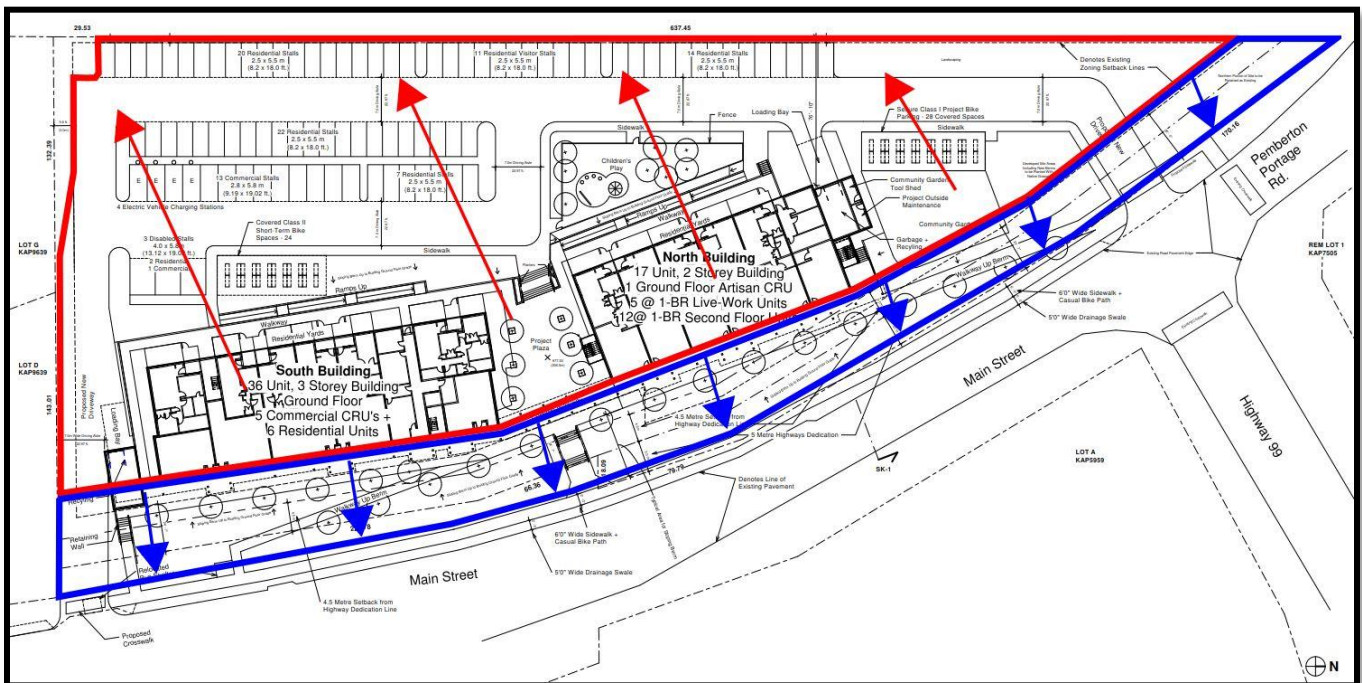
Figure 2.1 – Existing Site Conditions



3.0 PROPOSED SITE

The proposed development includes two buildings, as well as parking areas, and other amenities. The parking, driving, and walking areas will be paved. There are also proposed landscaping areas, as well as a community garden. The proposed buildings will be constructed at a higher elevation than the surrounding area, in accordance with the specified flood construction level (FCL = 206.5m) for the area, which was determined in a separate study. The following figure illustrates the proposed site layout and general overland flow path routes.

Figure 3.1 – Proposed Site Plan and Overland Flow Paths



Design Flow Review

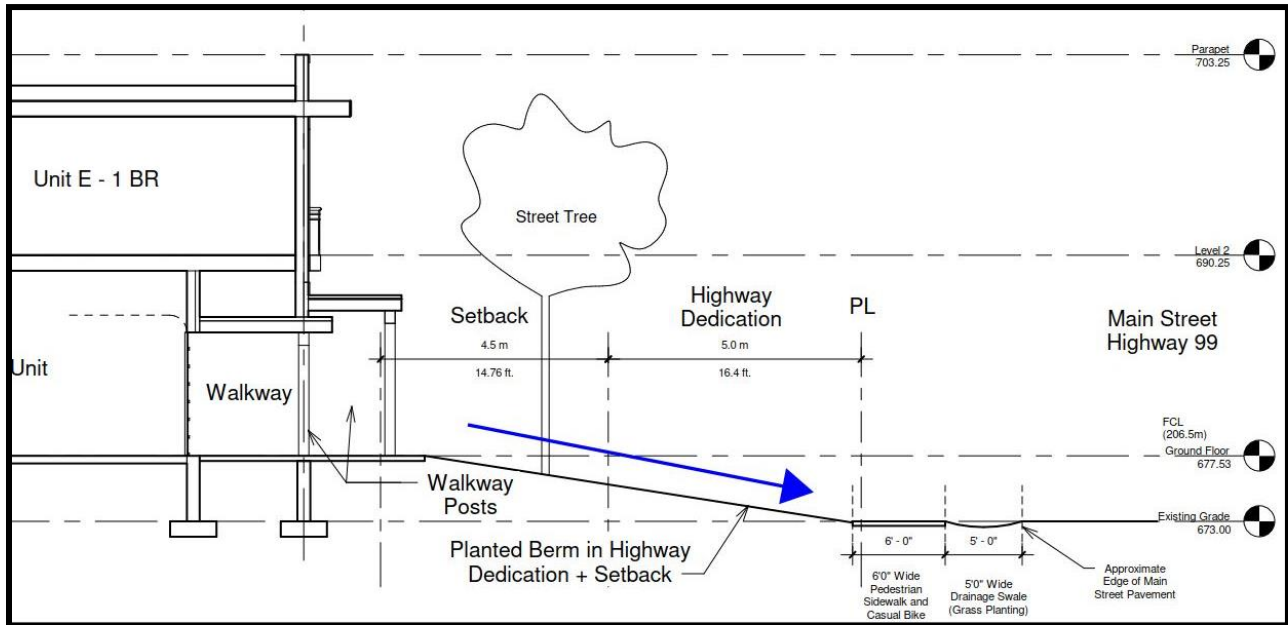
In accordance with BC Supplement to TAC (2019) the Rational Method analysis has been used to compare the pre and post-development design flow at the project site. Due to the site’s relatively small size, and the fact that the predevelopment site is largely cleared of vegetation, it was found that the change in design flow due to the addition of impervious areas, was relatively minor. There would be minimal difference in flow at the MoTI culvert crossing of Highway 99. For this reason, we have not recommended on-site detention or retention for the project site.

Flow Management

Drainage on-site will be directed in two separate directions. Drainage from the front (east) side of the site, will be directed towards Highway 99, and will be captured in a ditch adjacent to the proposed pedestrian pathway. Drainage from the back (west) side of the site will be directed to the west limit of the site, and eventually into Grandmother Slough.

This is illustrated in Figure 3.2 below. The figure shows a proposed preliminary site plan, completed by S.R. McEwen Architect, April 2020. The figure notes the approximate proposed site grading, and proposed flow paths.

Figure 3.2 – Proposed Site Cross Section



4.0 HIGHWAY INTERFACE RECOMMENDATIONS

As discussed, a small portion of site drainage, is proposed to be directed to the Highway 99 ditch. It is recommended that a ditch is constructed within the highway dedication, which captures this flow. This ditch should be kept clear from debris and should not be utilized for snow storage. This has been outlined in the figure on the next page. As noted above, the area is relatively flat however based on review of Google Earth topography, it is understood that the Highway 99 ditch drains to the south towards the Grandmother Slough crossing.

5.0 CLOSING

The above outlines the stormwater management plan for the Main Street development site. It is recommended that Lil'wat Nation review this plan with MoTI, in order to confirm the drainage solutions on site. Urban Systems is available to assist as necessary with these conversations.

If there are any questions, or comments regarding this memorandum, please do not hesitate to contact the undersigned.

URBAN SYSTEMS MEMORANDUM

DATE: August 6, 2021

FILE: 3398.0014.01

PAGE: 5 of 5

SUBJECT: Lil'wat Nation Main Street Development – Stormwater Management Plan

Sincerely,

URBAN SYSTEMS LTD.



Hazen Todd, P.Eng.
Water Resource Engineer

Cole Becker, EIT
Engineer-In-Training

cc:

/cb
Enclosure

U:\Projects_KAM\3398\0014\01\R-Reports\2021-07-01-Main Street Development Stormwater Management Plan.docx