

FLOODPLAIN MANAGEMENT BYLAW

Public Information Session
December 13, 2023

URBAN
SYSTEMS



AGENDA

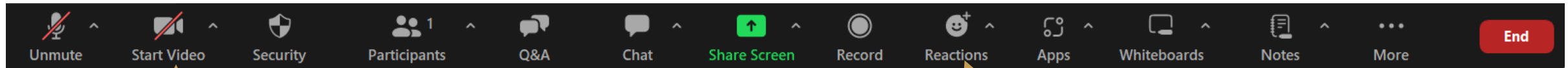
1. Introduction
2. Toby Creek Flood Risk Study Results
3. Overview of the Floodplain Management Bylaw
 - a. Key components of the Bylaw
 - b. Proposed Flood Construction Levels
 - c. Proposed Exemptions
4. Questions



INTRODUCTION

ZOOM HOUSEKEEPING

1. Participants will remain muted until asked to unmute
2. This meeting will be recorded for public viewing

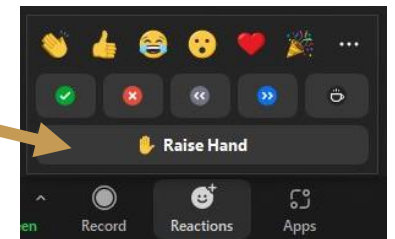


How to unmute
(click here when
asked)

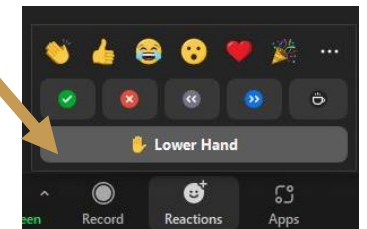
Feel free to keep
your video on or off

Click here to open
'Chat' function

Click here to raise
or lower hand to
ask question
verbally



Click Raise Hand



Click Lower Hand
after called upon

The background of the slide is a light gray map showing a dense network of city streets. The streets are represented by thin gray lines, with some thicker lines indicating major roads or highways. The map is oriented horizontally and covers the entire background of the slide.

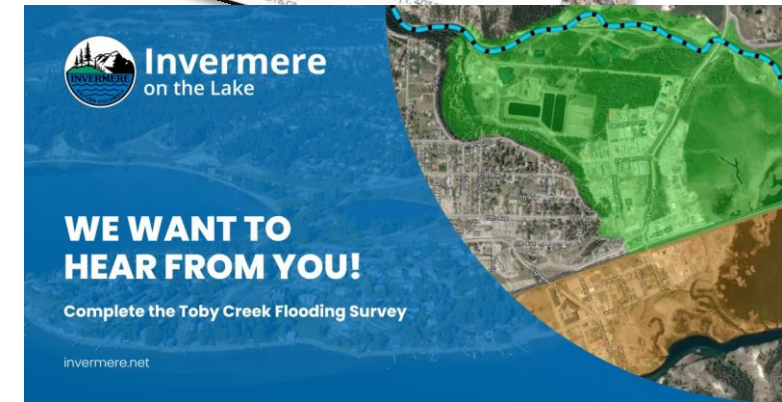
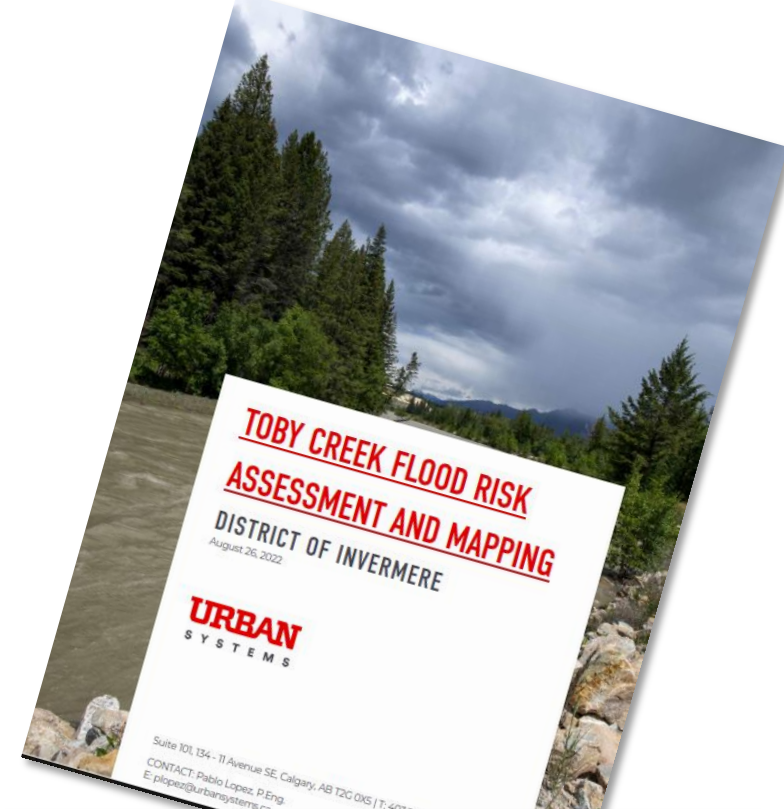
TOBY CREEK FLOOD RISK STUDY OVERVIEW

TOBY CREEK FLOOD RISK STUDY

The purpose the Toby Creek Flood Risk study was to update the Toby Creek and Athalmer area flood mapping incorporating climate change adaptation measures. Project was completed in 2022.

Goal of the study is:

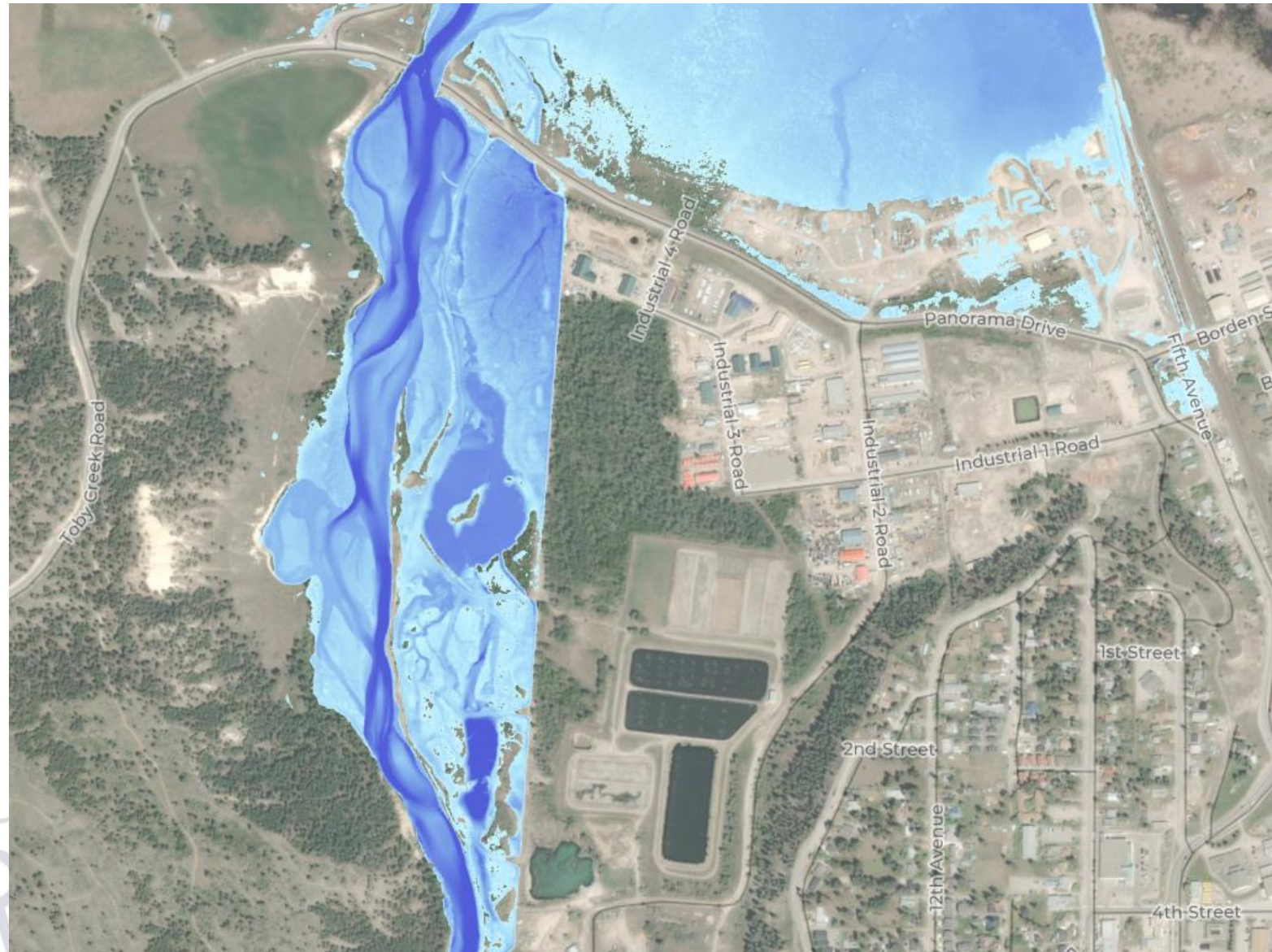
- To assess Toby Creek flood risks.
- To update floodplain mapping and develop a flood management plan for Toby Creek.
- To use the study results to update Invermere Flood Management Bylaw



The background of the slide is a light gray map showing a dense network of city streets. The streets are represented by thin gray lines, with some thicker lines indicating major roads or highways. The map is oriented horizontally and covers the entire background of the slide.

TOBY CREEK FLOOD RISK ANALYSIS RESULTS AND FLOOD MAPPING

200 YEAR EVENT + CC FLOOD EVENT RESULTS - DEPTH

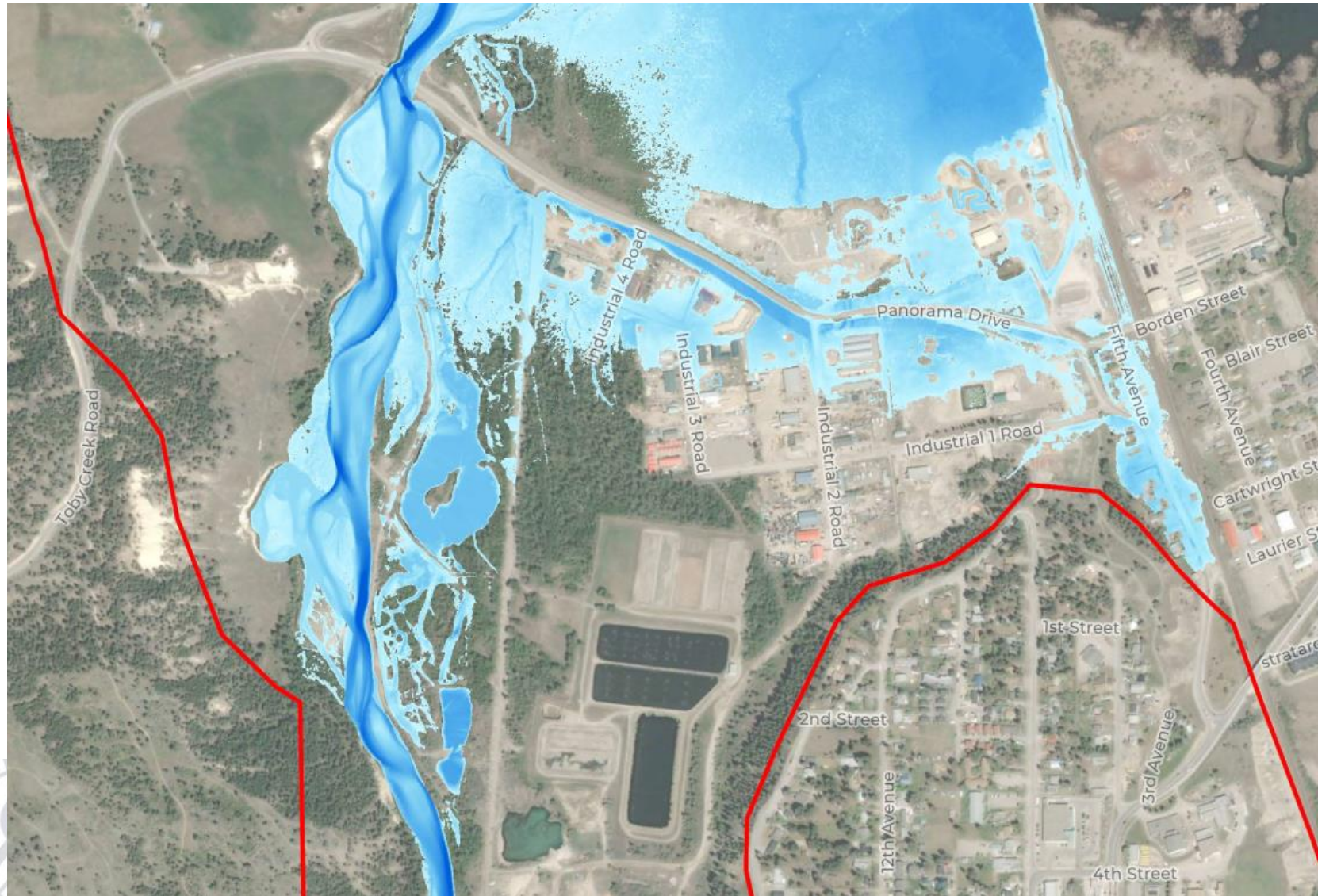


Legend

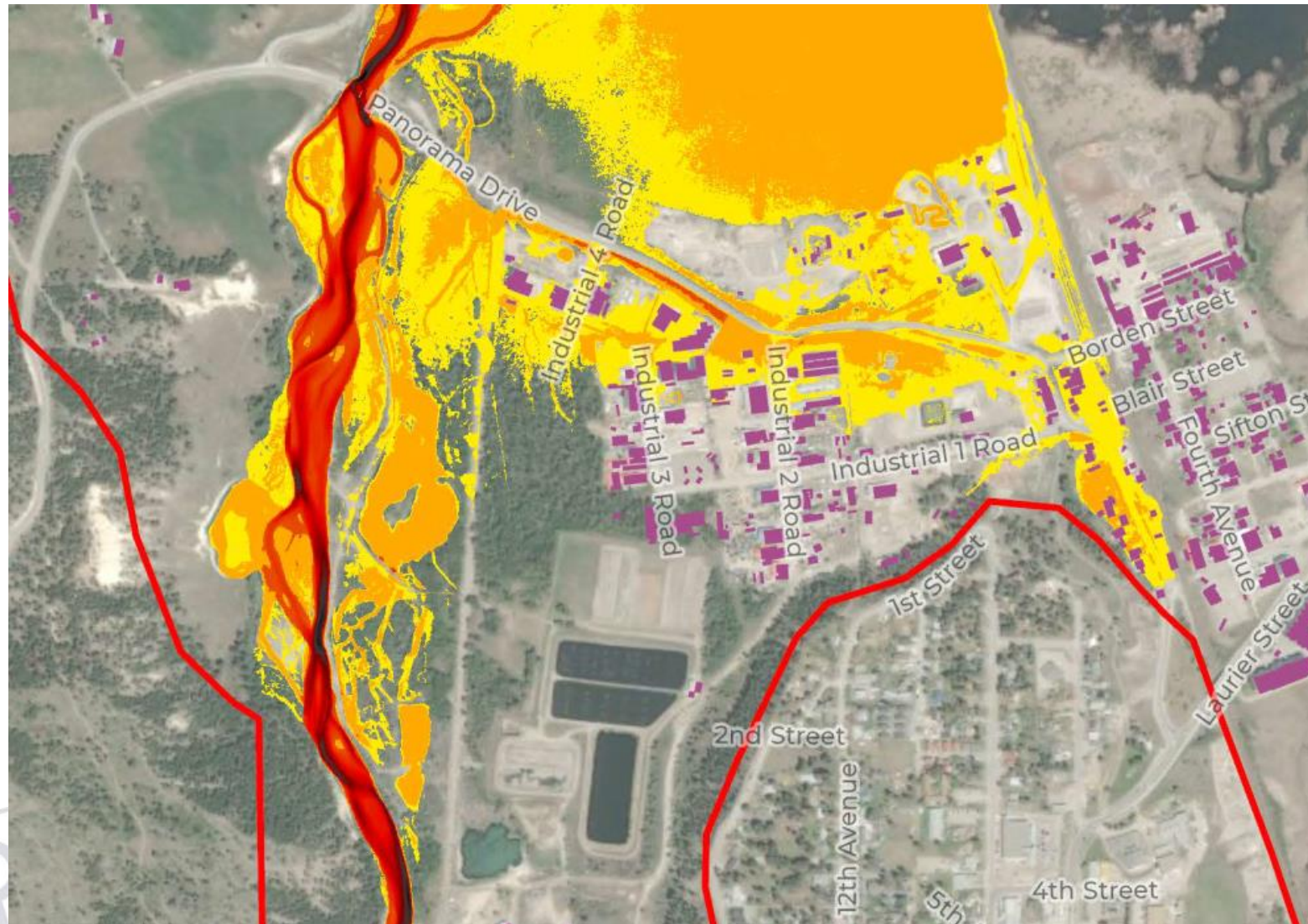
Max Flood Depth: 200yr + CC +801.6



RISK AREAS IN CASE OF DIKE FAILURE - DEPTH



FLOOD HAZARD MAPPING – DIKE FAILURE SCENARIO



Legend

- Study Area
- Buildings

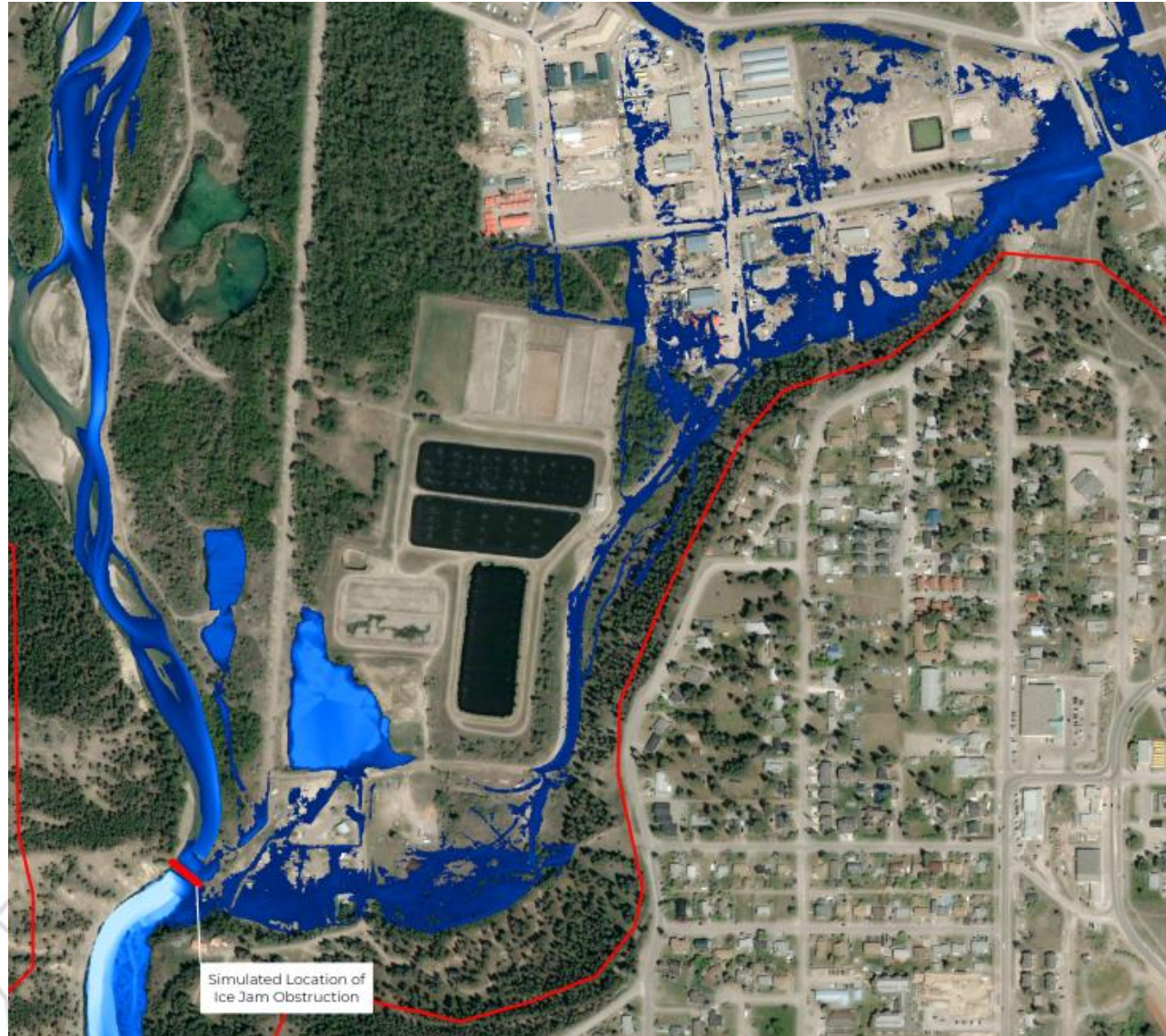
Hazard Rating (HR)

- < 0.75
- 0.75-1.25
- 1.25-2.00
- >2.00

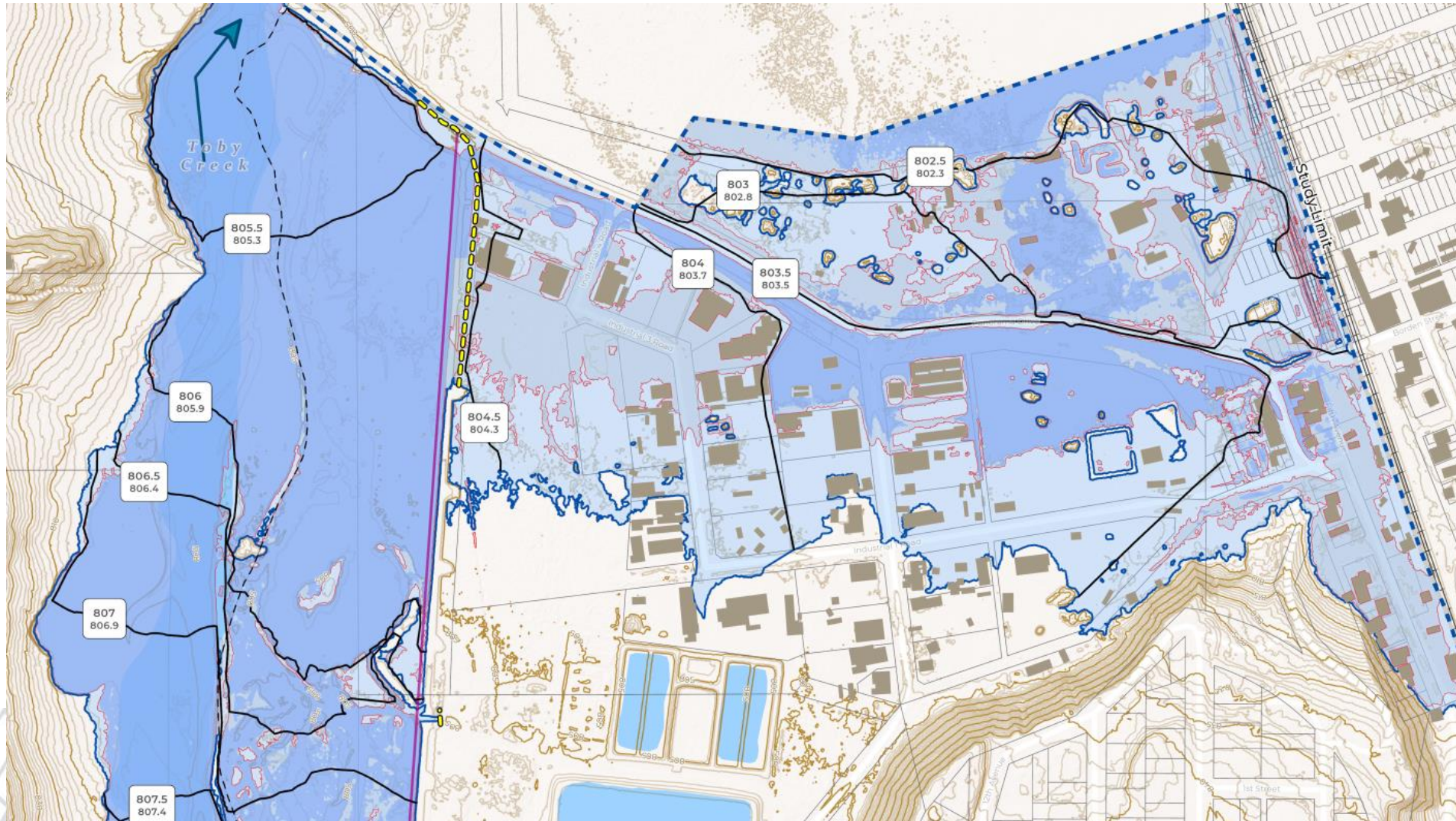
Hazard to People Classification

- Very Low Hazard (Caution)
- Danger for Some (includes children, the elderly, and the infirm)
- Danger for Most (includes the general public)
- Danger for All (includes emergency services)

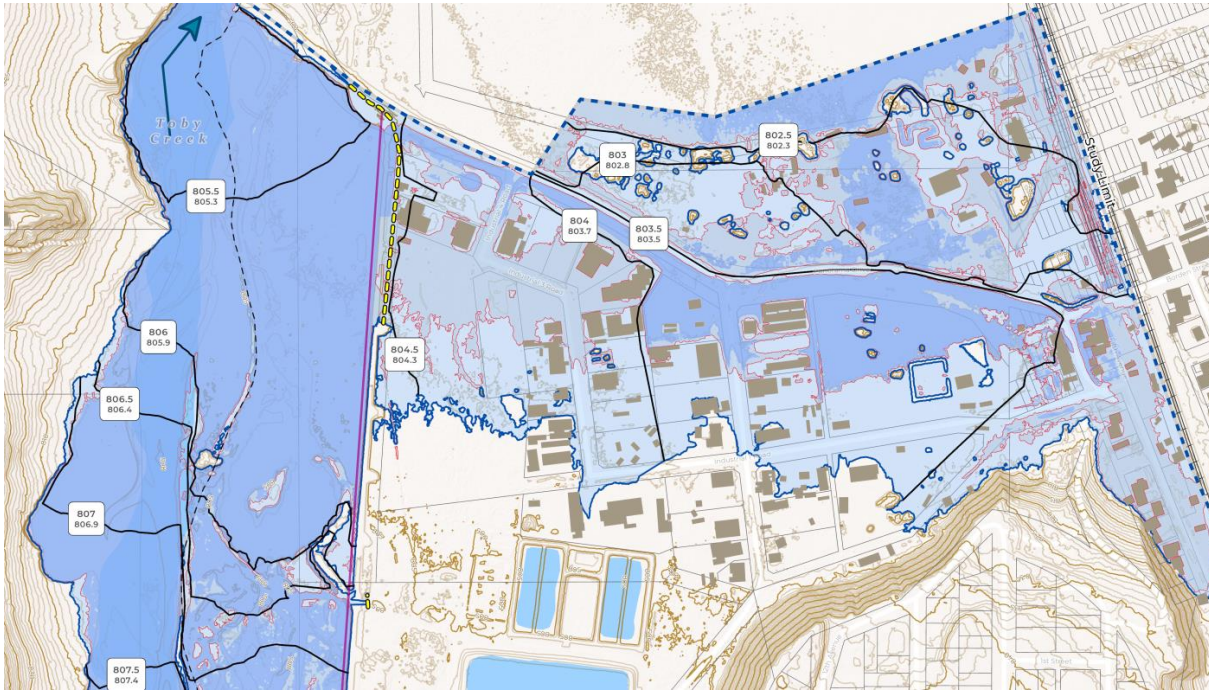
RISK AREAS IN CASE OF ICE JAM - DEPTH



FINAL FLOOD MAPPING



FINAL FLOOD MAPPING



Recommendation from Toby Creek Flood Risk Study

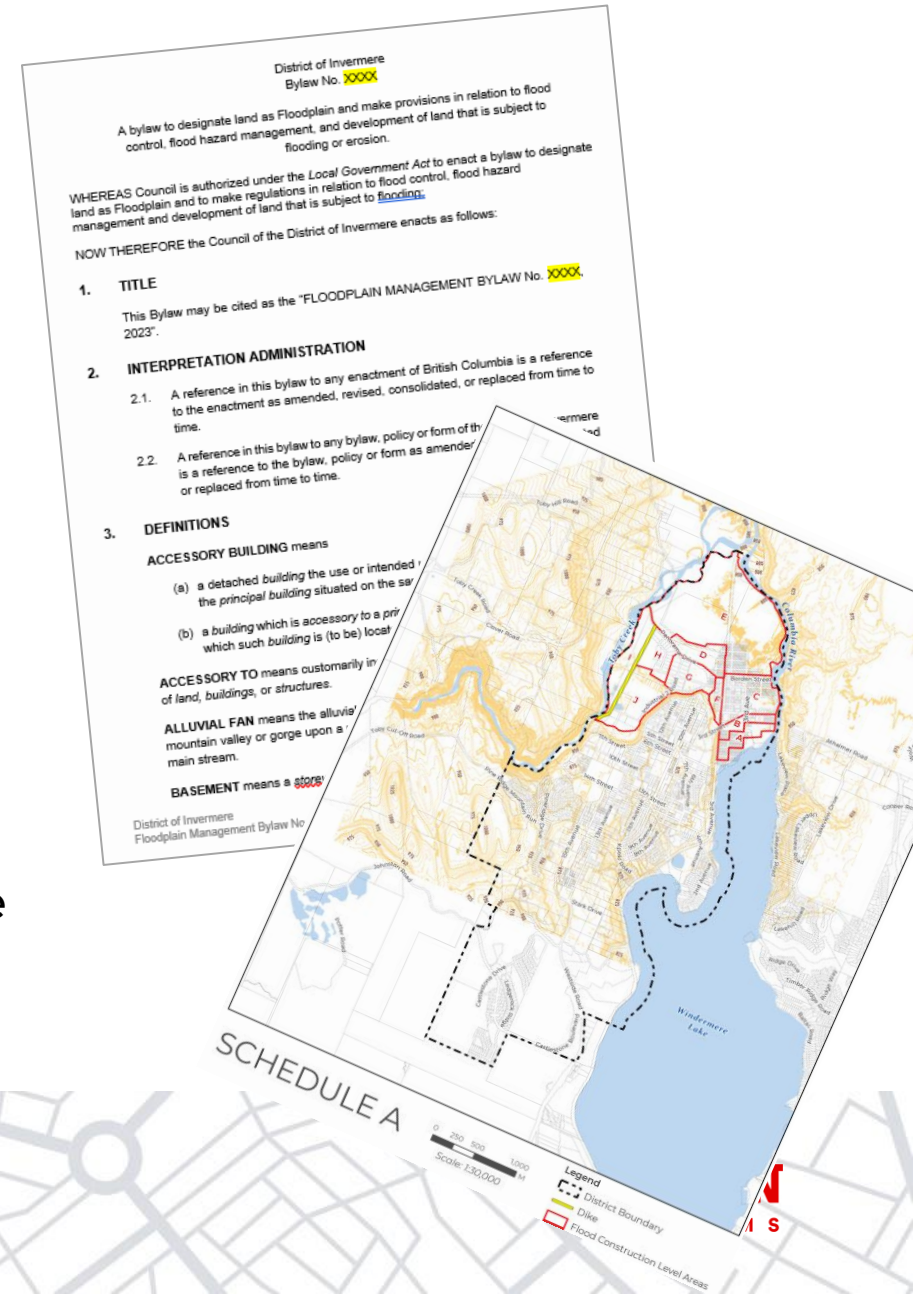
- Draft and formalize the Floodplain Management Bylaw based on the updated flood maps

The background of the image is a light gray map of a city street grid. The grid consists of numerous thin, light gray lines representing streets, with some thicker lines indicating major thoroughfares. The pattern is dense and covers the entire background.

FLOODPLAIN MANAGEMENT BYLAW

FLOODPLAIN MANAGEMENT BYLAW

- Floodplain Bylaw designate areas where local government considers flooding may occur. The main purpose of the bylaw is to help **protect buildings and structures** from flood hazards and **ensure public safety**.
- A Floodplain Bylaw can :
 - Identify flood hazard areas
 - Grant flood hazard area land development exemptions
 - Establish requirements for subdivision in flood prone areas



FLOODPLAIN MANAGEMENT BYLAW

District of Invermere Floodplain Management Bylaw Overview

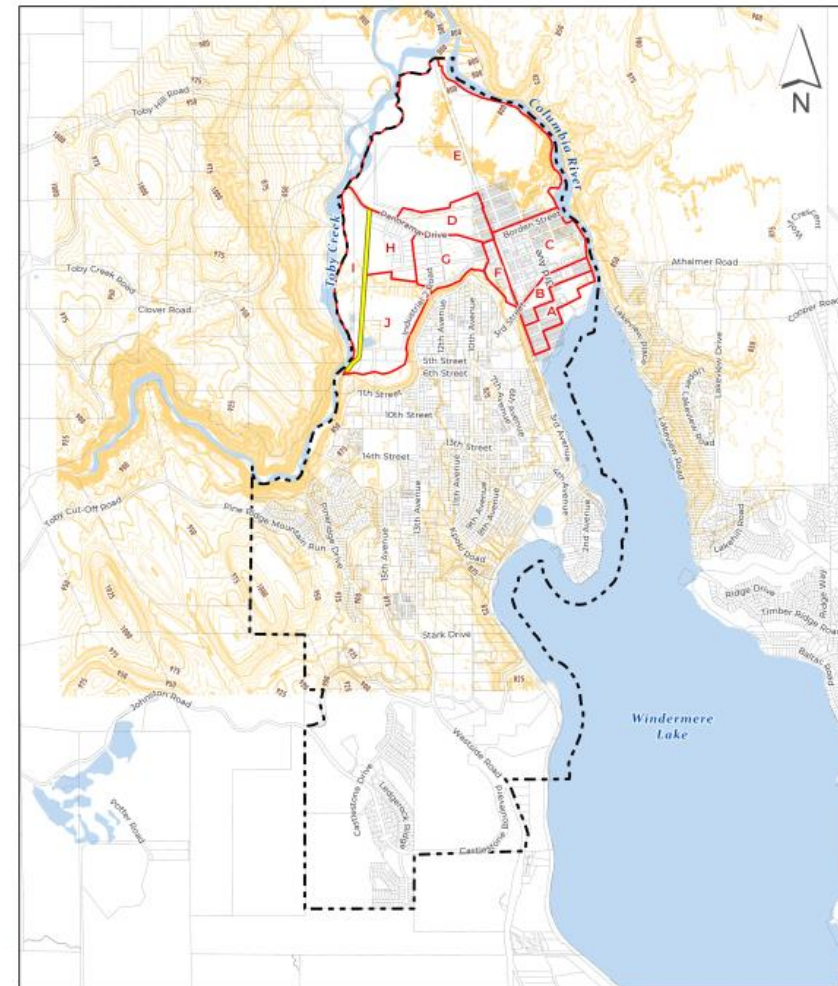
- Updated Flood Construction Levels (FCL) effected by the Toby Creek Flood Risk Study
- Maintained Provincial Flood Construction Levels in areas not effected by the Toby Creek Floodplain Study
- Maintained existing guidance on setbacks from rivers, creeks, lakes following provincial guidelines (i.e., Abel Creek, Columbia River, Lake Windermere)
- Updated floodplain specifications to reflect current legislation and municipal government authority

FLOODPLAIN MANAGEMENT BYLAW

District of Invermere Floodplain Management Bylaw Overview (continued)

- Updated definitions to improve interpretation and alignment with other District Bylaws
- Updated exemptions to reflect Invermere's context and be consistent with provincial government guidelines

FLOODPLAIN MANAGEMENT BYLAW



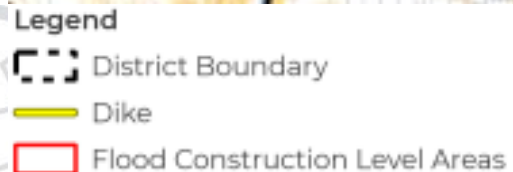
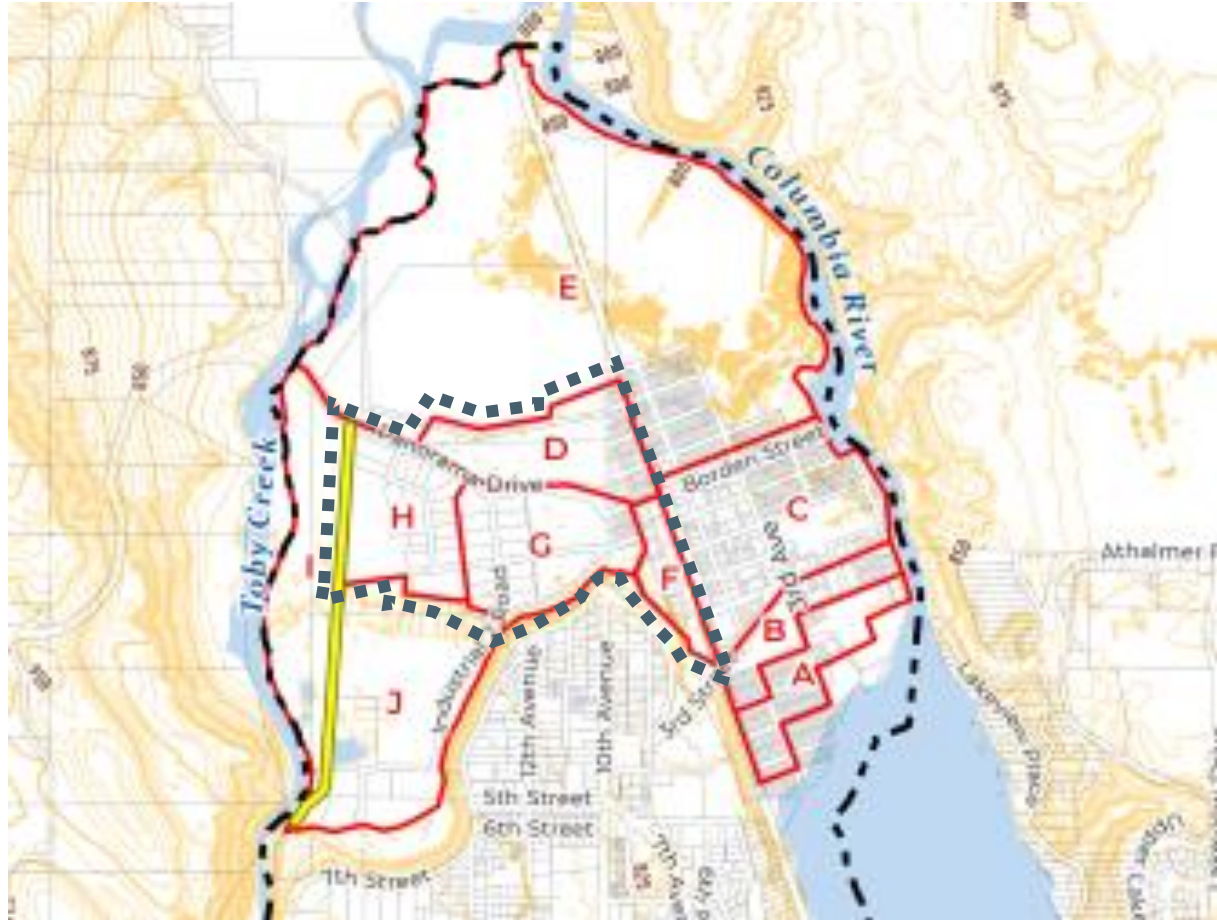
SCHEDULE A

0 250 500 1,000
M
Scale: 1:30,000

FLOODPLAIN MANAGEMENT BYLAW



FLOODPLAIN MANAGEMENT BYLAW



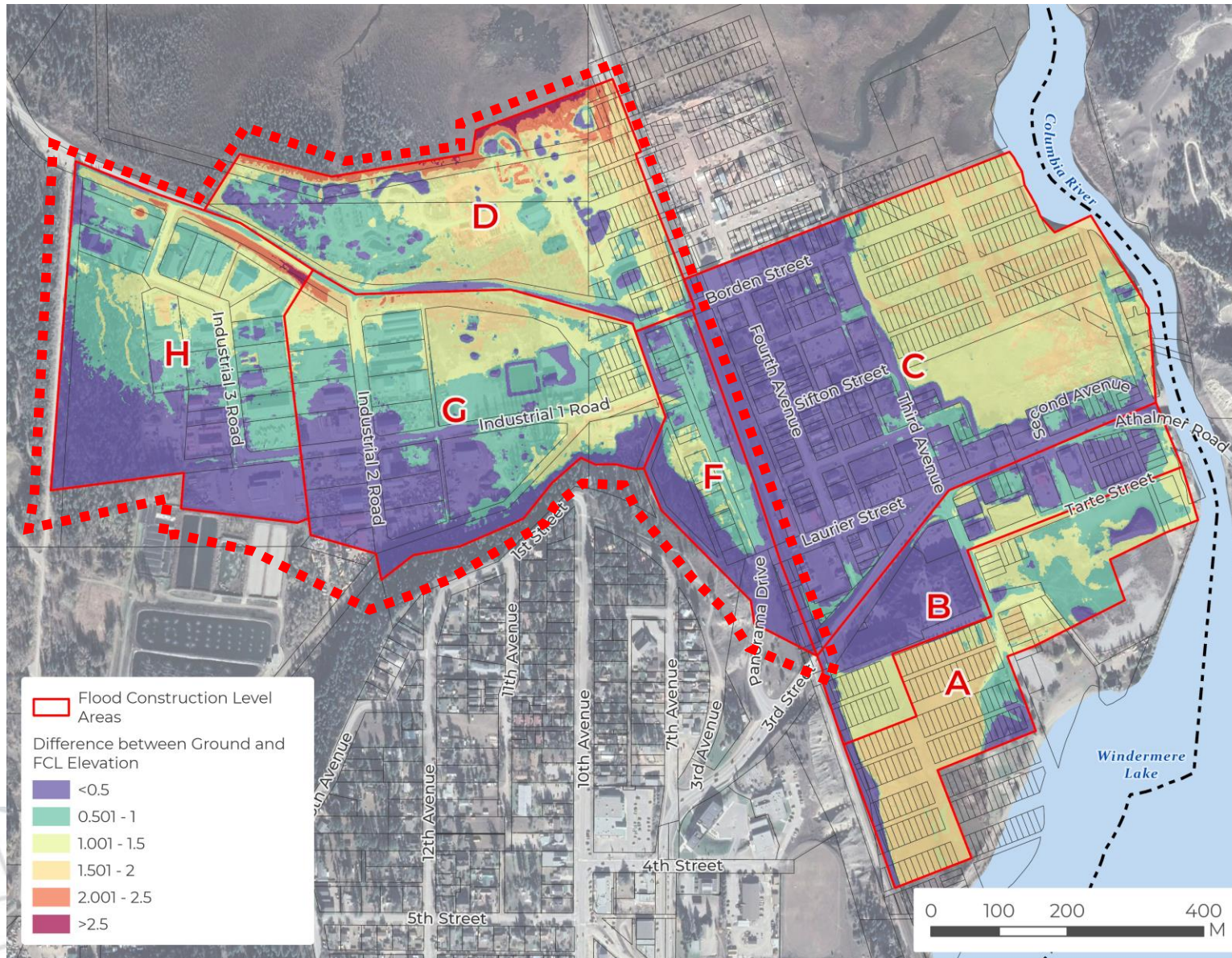
Flood Construction Levels

- 802.2 metres for Area A
- 801.9 metres for Area B
- 801.6 metres for Area C
- For land adjacent to Lake Windermere a G.S.C. of 802.5 metres is applicable

Proposed Flood Construction Levels

- 803.5 metres for Area D
- 803 metres for Area F
- 804 metres for Area G
- 804.5 metres for Area H

FLOODPLAIN MANAGEMENT BYLAW



Flood Construction Levels

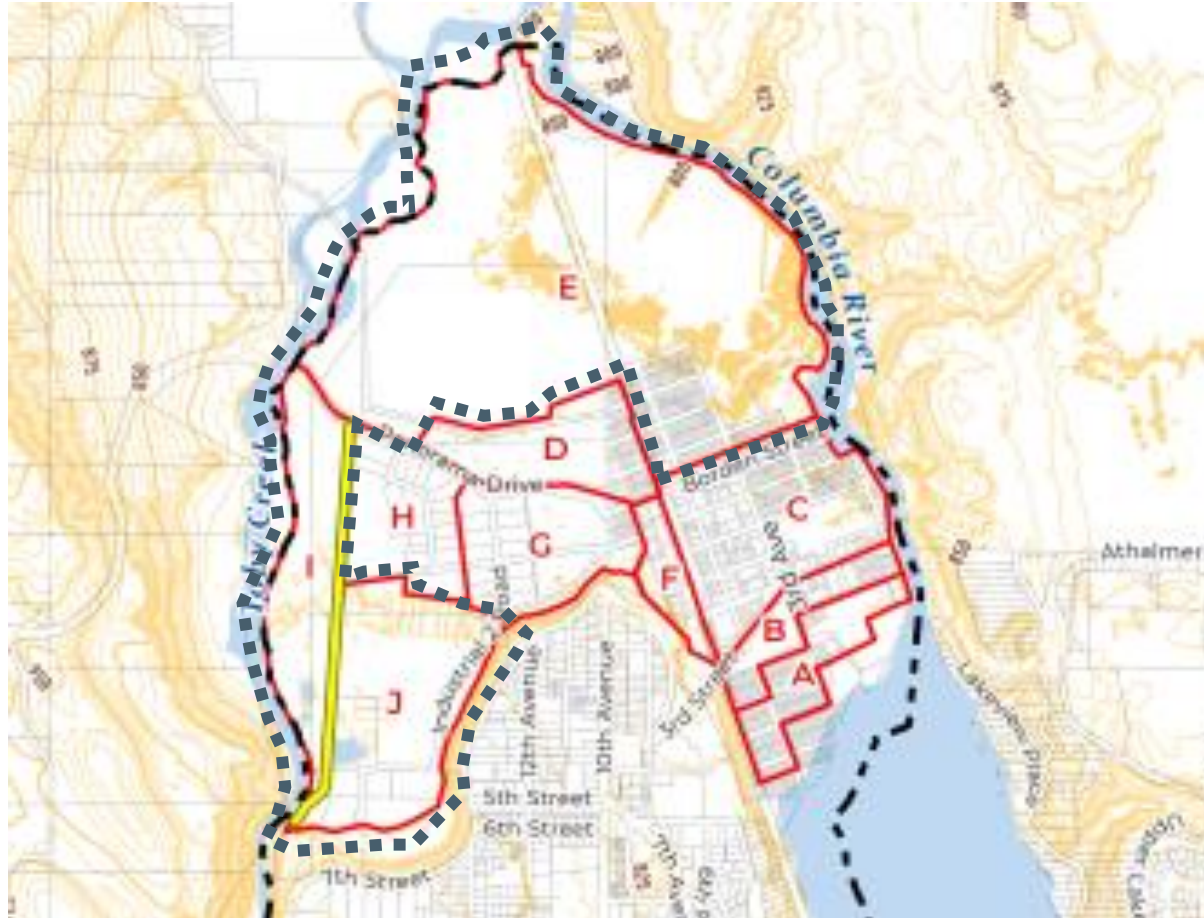
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Proposed Flood Construction Levels

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FLOODPLAIN MANAGEMENT BYLAW

Proposed Flood Construction Levels & Regulations



- Legend
- District Boundary
 - Dike
 - Flood Construction Level Areas

- **Area E** – 801.6 metres or 1.0 metres above natural ground level or 0.6 metres above an obstruction that could cause ponding. Any building proposed will require the assessment of a Professional Engineer
- **Area I** and land adjacent to Toby Creek – 3.0 metres above the natural boundary;
 - No habitable area shall be constructed, reconstructed, altered moved or extended in Area I.
- **Area J** – industrial switchgear or other equipment that can be damaged by floodwaters are required to be located 1.0 metres above the natural ground elevation

FLOODPLAIN MANAGEMENT BYLAW

Proposed Exemptions from the Flood Construction Level

General Exemptions

- (a) Retaining walls and fences;
- (b) Structures accessory to the principal use on the property, that are for non-habitable uses such as a gazebo or patio, storage buildings, porches, and domestic greenhouses.
- (c) A renovation of an existing building or structure that would not increase the gross floor area of the building or structure by more than 25% of the existing gross floor area;
- (d) The base of a staircase that provides external access to a building or structure;
- (e) A building, portion of a building or accessory building that will be used for non-habitable uses, such as a garage, storage area, crawl space, or foyer, provided that no heavy equipment is stored that could be damaged by floodwaters and the building, portion of the building, or accessory building does not include fixed equipment;

- (f) Municipally built trails and construction of those trails;
- (g) Installation of municipal infrastructure not requiring a building permit;
- (h) Hot water tanks and furnaces, if the development is protected by a standard dike.

Conditional Exemptions

- Certain types of public recreation and industrial development subject to the specified conditions as provided in Provincial Guidelines

Site Specific Exemptions

- Site specific exemptions with a submission of a report by a Professional Engineer that certifies the land may be used safely for its intended purpose with a condition that the owner enter into a Section 219 covenant on title.



QUESTIONS?