

# West Bench Geotechnical Review (Electoral Area “F”)



# West Bench Geotech Review

## Background:

- Klohn Leonoff Report (1992): development is recommended only with implementation of mitigative measures:
  - *Restriction of development in the study area ... to limit the quantity of water entering the silts and gullies;*
  - *Installation of septic sewers, storm sewers, road curbs and gutters and roof and driveway runoff collection;*
  - *Improvement of water system distribution and maintenance requirements;*

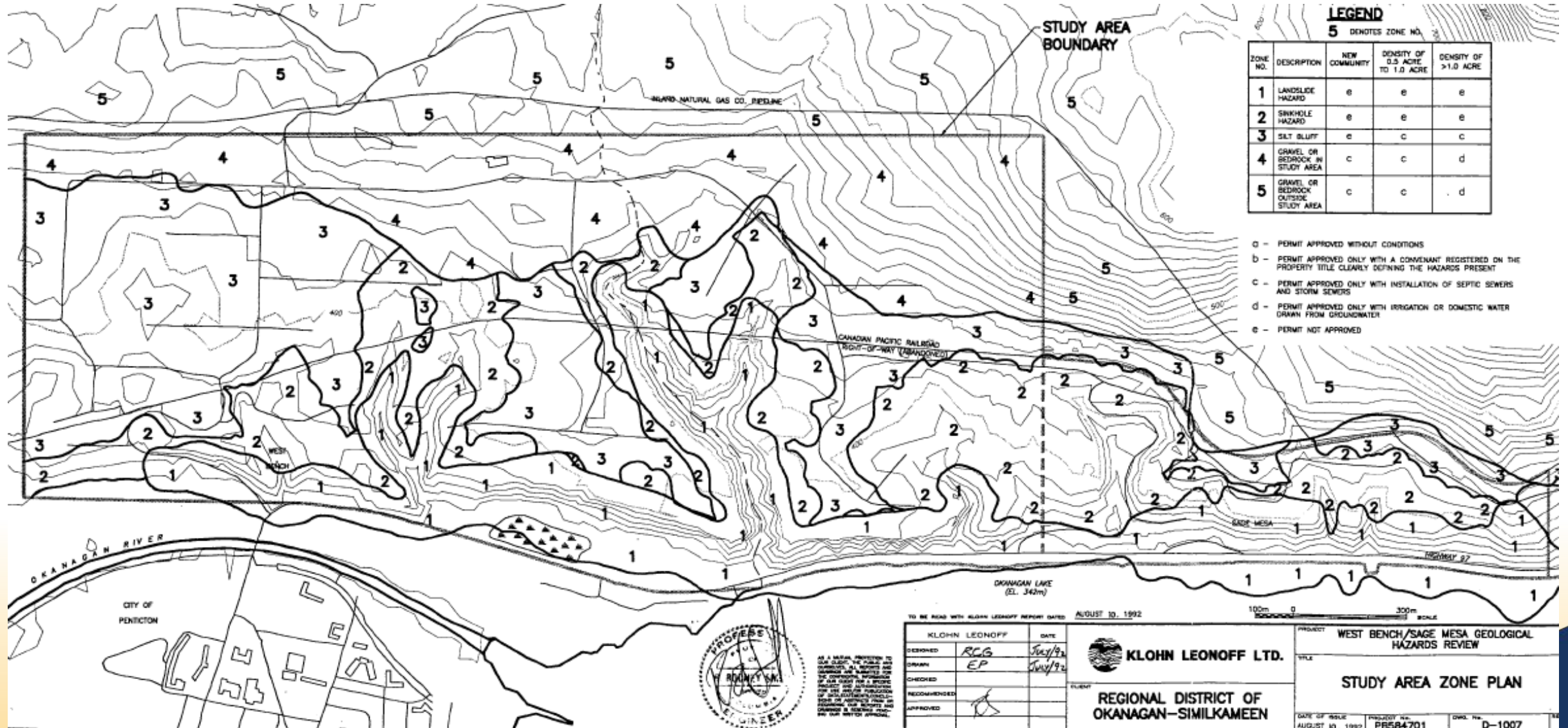
# West Bench Geotech Review

## Background:

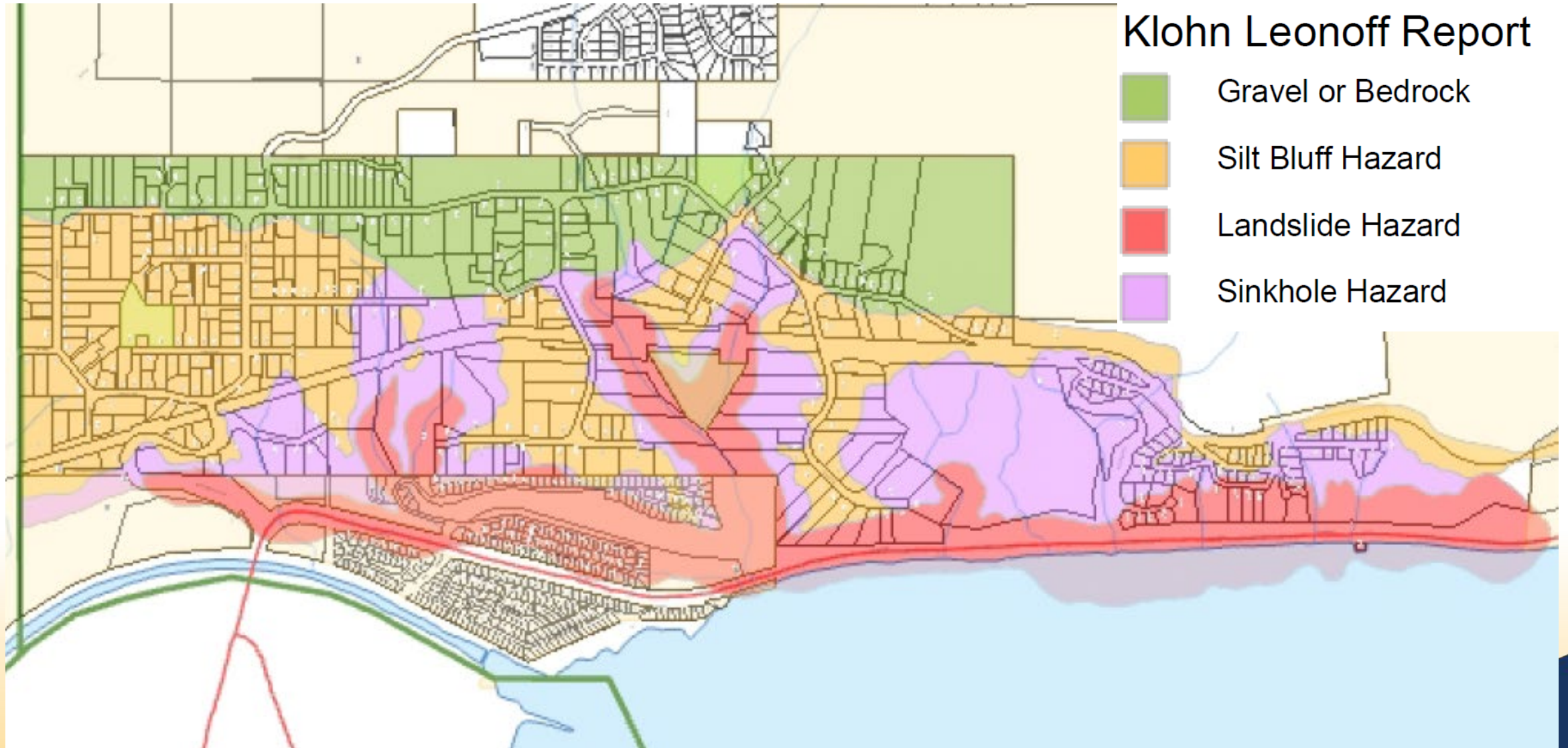
- Klohn Leonoff Report (1992):
  - *Restriction on construction of swimming pools and ornamental pools; and*
  - *Distribution of information to residents ... regarding the potential hazards and associated risks along with methods for mitigating the potential trigger mechanisms.*



# West Bench Geotech Review



# West Bench Geotech Review





# West Bench Geotech Review

## Overview:

- OCP (2018) supports review of geo-tech hazards in GWB;
- Contract to review geo-tech hazards awarded in 2019;
- Review completed throughout 2020-21;
- Report received in July of 2021;
- Report presented to the Board in October of 2021;
- Community Presentation on December 7, 2021.

# West Bench Geotech Review

## **Address Data Gaps:**

- Incidence Tracking and Data Management;
- Subsurface Soils Investigation;
- Additional Groundwater Investigation and Monitoring;
- Update the 1994 Wastewater Management Plan;
- Improve Stormwater Management Practices; and
- Periodic Review of Geohazard Conditions.

# West Bench Geotech Review

## **Develop Land Use Management Policies for Hazard Lands**

- **Incorporate Study Results into Current Bylaws;**
- Develop Geotechnical Report Requirements;
- Soil Removal and Deposition Bylaw;
- Develop Specific Land Use Activity Best Management Practices (BMPs);
- Public Education and Outreach; and
- Periodic Review of Geohazard Conditions.



# West Bench Geotech Review

## AREA “F”

OKANAGAN LAKE WEST  
GREATER WEST BENCH



OCP Bylaw No. 2790, 2018 – Regional District of Okanagan-Similkameen

## OFFICIAL COMMUNITY PLAN

This Bylaw has been consolidated for  
convenience only and includes all  
amendments to the text up to  
March 4, 2021

## Electoral Area “F” OCP Bylaw

The “Hazards” section of the OCP Bylaw currently comprises 3 different sections:

- Background
- Objectives
- General “Hazard” Policies
- “Fire Management” Policies

# West Bench Geotech Review

## AREA “F” OKANAGAN LAKE WEST GREATER WEST BENCH



OCP Bylaw No. 2790, 2018 – Regional District of Okanagan-Similkameen

## OFFICIAL COMMUNITY PLAN

This Bylaw has been consolidated for  
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## Electoral Area “F” OCP Bylaw

Proposed to restructure Section as follows:

- Background
- General Objectives & Policies
- Geotechnical Hazard Management
- Flood Hazard Management
- Wildfire Hazard Management\*
- Radon Gas Hazard Mitigation\*

\* NO CHANGE

# West Bench Geotech Review

## Update Geotechnical Hazard Policies – Revised:

Current Policy	Proposed Policy
Encourages an updated technical assessment of geotechnical hazards in the West Bench / Sage Mesa area using procedures such as outlined by APEGBC (2010) and Wise et al (2004).	Supports periodic reviews of geohazard conditions within the Greater West Bench Area every 10-20 years in order to detect and adapt to geotechnical changes such as landslides, sinkhole development or other incidences.



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## Update Geotechnical Hazard Policies - Revised:

Current Policy	Proposed Policy
Will not support further development of swimming pools due to geotechnical hazard areas in the West Bench/Sage Mesa area until further study is provided on the risks and hazards can be adequately mitigated.	Supports amending the zoning bylaw to prohibit the development of swimming pools in the West Bench/Sage Mesa area due to geotechnical hazards.

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## Update Geotechnical Hazard Policies - New:

Current Policy	Proposed Policy
[Not applicable]	Supports the development of a web-based reporting tool to record geohazard events in the Greater West Bench area.
[Not applicable]	Supports the development of reporting requirements for geotechnical studies submitted in support of new development applications to the Regional District.

# West Bench Geotech Review

## Update Geotechnical Hazard Policies - New:

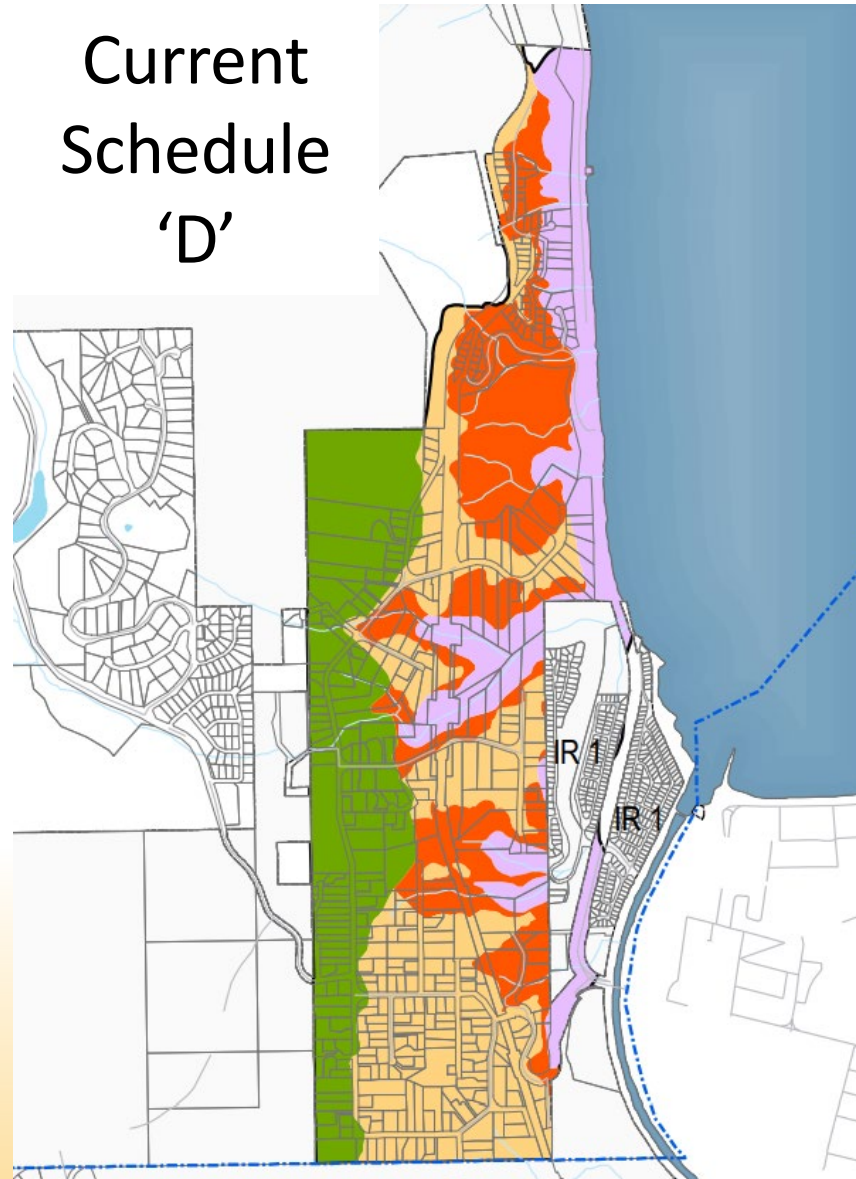
Current Policy	Proposed Policy
[Not applicable]	Supports the preparation of a Soil Removal and Deposition Bylaw to regulate, monitor, and limit the removal and deposition of soil in the Greater West Bench Area.
[Not applicable]	Supports restricting densities in the Greater West Bench area due to geotechnical hazards by prohibiting accessory dwellings, secondary suites and the subdivision of land.*



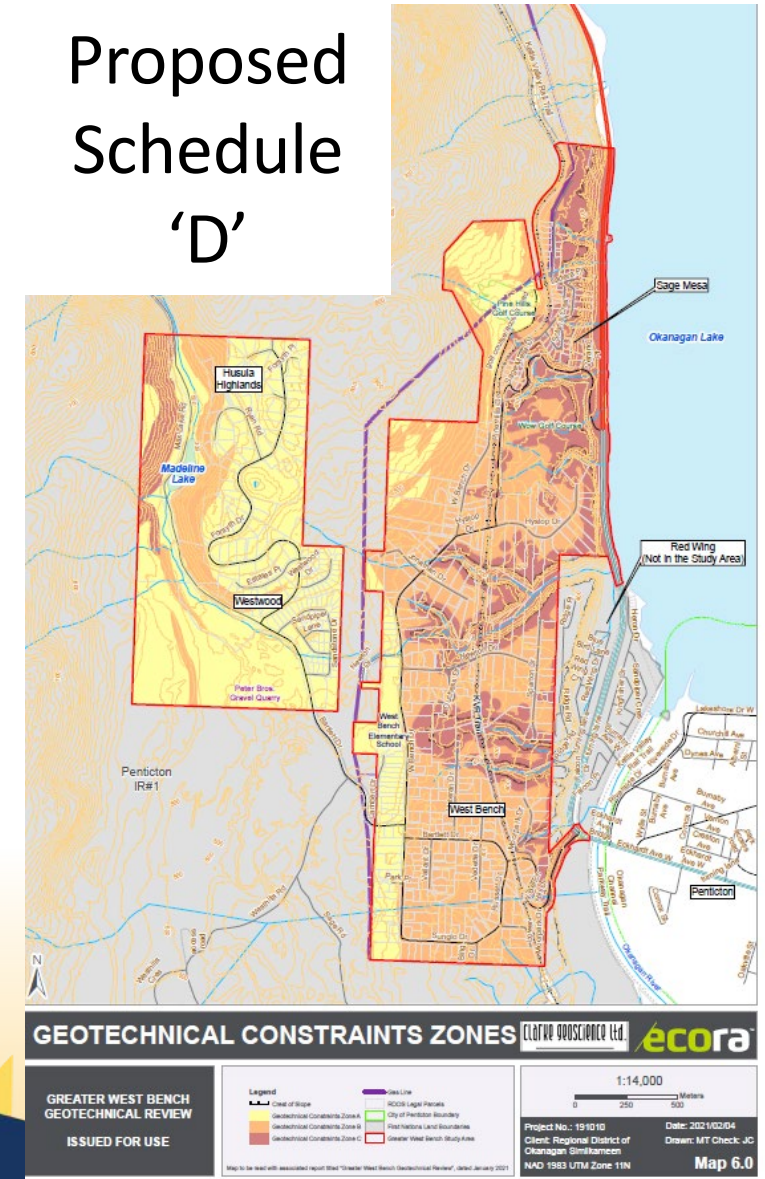
# West Bench Geotech Review

## Update Geotechnical Constraint Zone Mapping:

Current  
Schedule  
'D'



Proposed  
Schedule  
'D'



# West Bench Geotech Review





## Okanagan Mainstem Floodplain Mapping

Prepared for:  
**Okanagan Basin Water Board (OBWB)**

OBWB Project Contacts:  
Nelson Jatel, PhD(c), PAg  
Water Stewardship Director  
Anna Warwick Sears, PhD  
Executive Director

Prepared by:  
**Northwest Hydraulic Consultants Ltd. (NHC)**

NHC Project Contact:  
Piotr Kuraś, MASC, PEng, PE, RPF  
Hydrologist / NHC Associate

Photo credits of the 2017 flood, clockwise from top: District of Summerland, District of Lake Country, City of Kelowna (2) - Michael Hirsinger.  
Graphics designer: Christine Perreault

## Updated Flood Hazard Management Section:

*Record-setting high flows and flooding in the Okanagan Valley in 2017, followed by high flows in 2018, prompted the OBWB, the Okanagan Regional Districts, member municipalities, and the Okanagan Nation Alliance and member communities to update floodplain mapping for the Okanagan River and its lakes.*



# West Bench Geotech Review

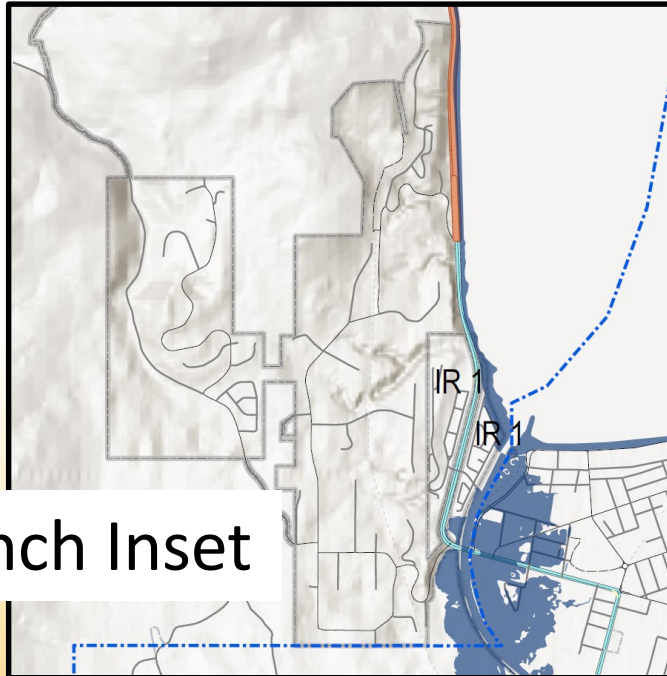
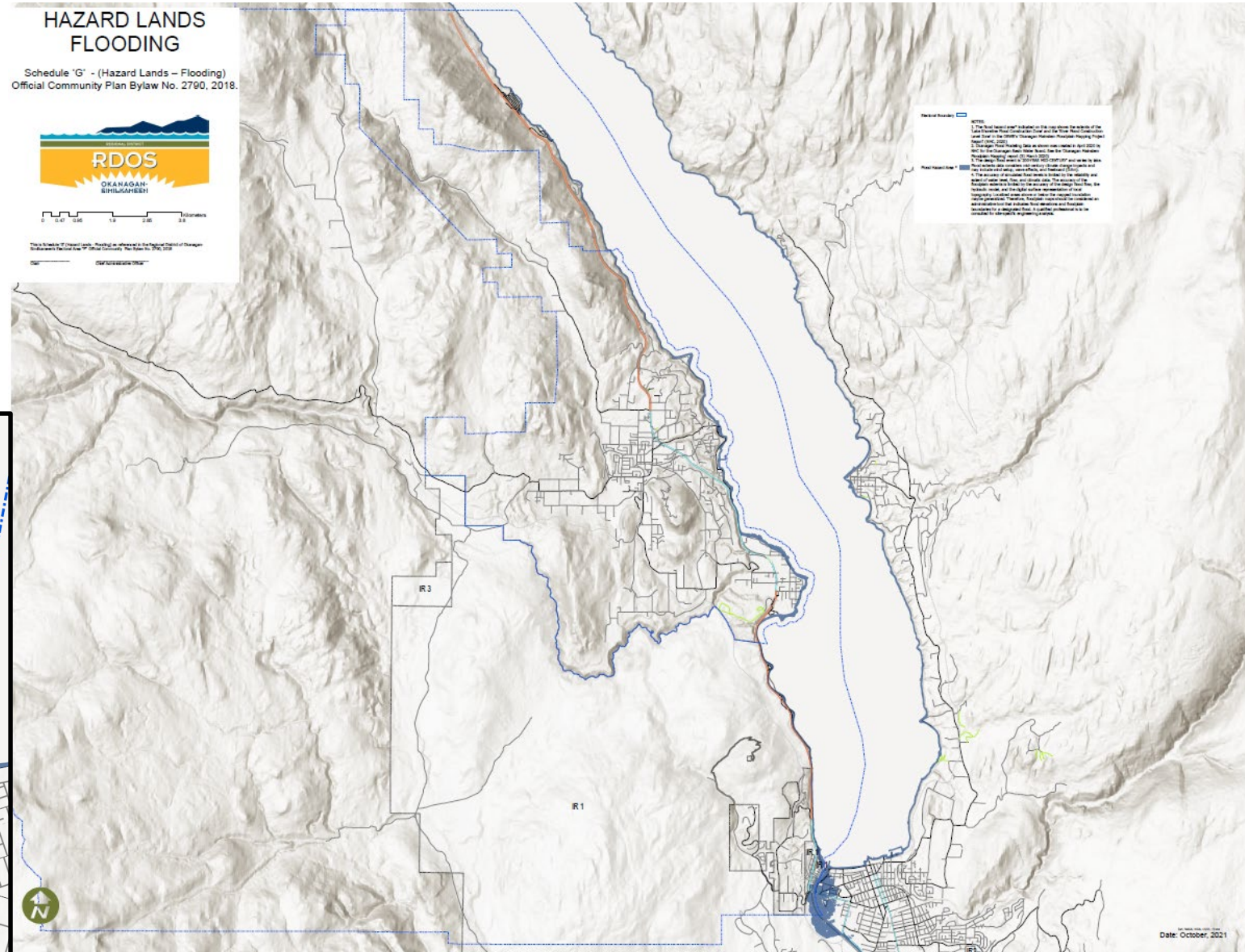
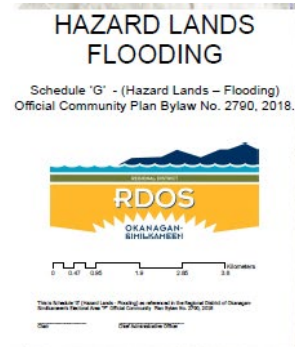
## **Updated Flood Hazard Management Section:**

- Include additional background context from 2020 Okanagan Basin Water Board (OBWB) floodplain mapping project;
- Incorporate 3 new policy statements regarding flooding, including encouraging OBWB to prepare model floodplain regulations to support their Okanagan Mainstream Floodplain Mapping (2020); and
- Adding a new Hazard Map for Floodplain as Schedule 'G' to the OCP Bylaw.



# West Bench Geotech Review

## Proposed Floodplain Mapping:

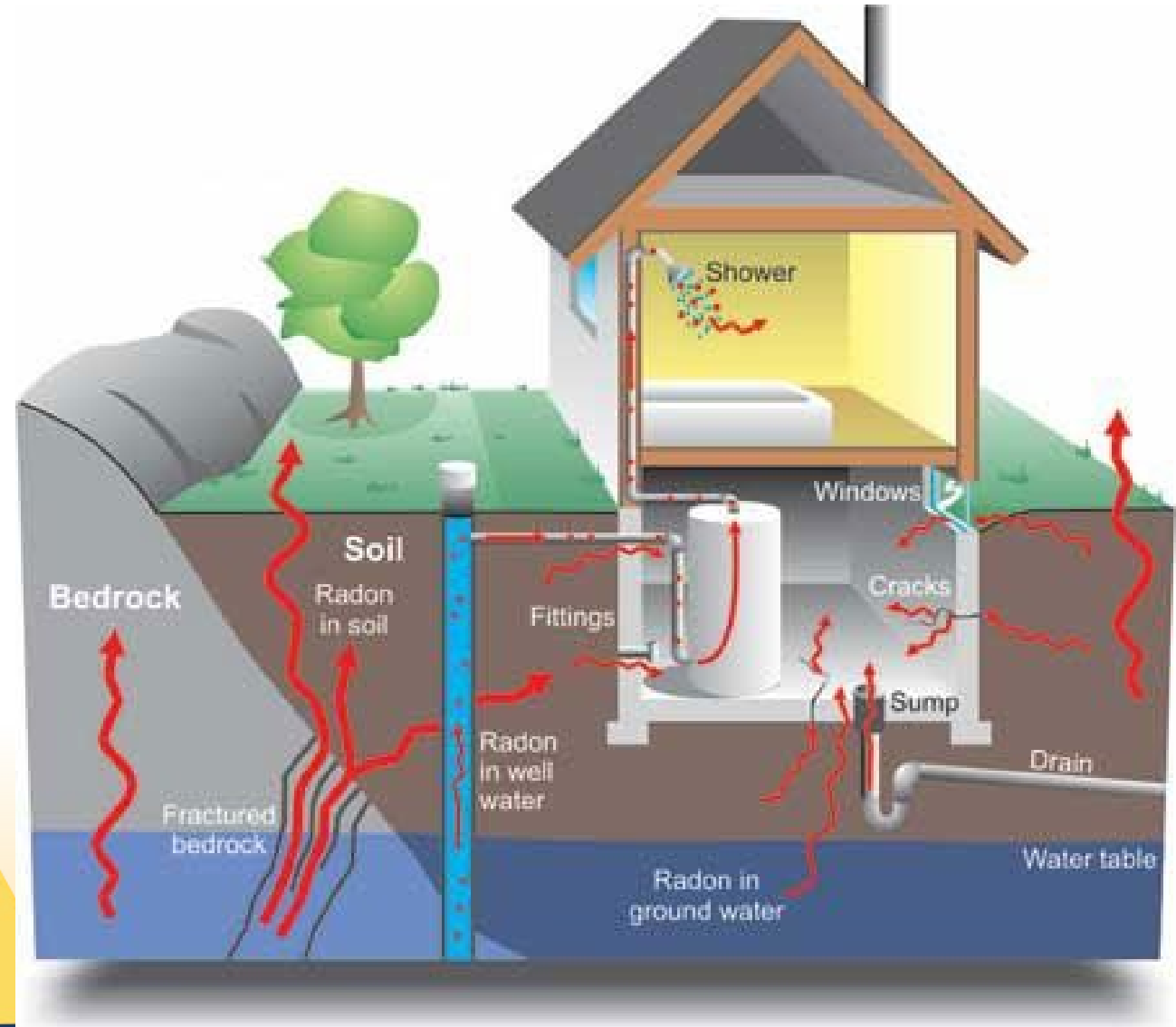


West Bench Inset

# West Bench Geotech Review

## Updated Radon Gas Hazard Mitigation Section:

- Include additional background context;
- Policies remain unchanged.



# West Bench Geotech Review

## Wildfire Hazard Management Section:

- Policies remain unchanged.





# West Bench Geotech Review

## Proposed Zoning Amendments:

- introduce a restriction on new swimming pools;
  - it is understood that there are dozens of pools in the Greater West Bench area currently (e.g. 40+ based on a review of aerial photos).
  - existing pools would become legally non-conforming (i.e. “grandfathered”) under Section 529 of the *Local Government Act*.
  - New pools would likely require a variance approval from RDOS Board.

# West Bench Geotech Review

## Subdivision Overview:

- Limited subdivision activity in the Klohn-Leonoff study area since early 1990s;
- New parcels less than 1.0 ha in area are required to connect to a community sewer system;
- At present, there is no community sewer system serving properties in the Greater West Bench area.



# West Bench Geotech Review

## Subdivision Overview:

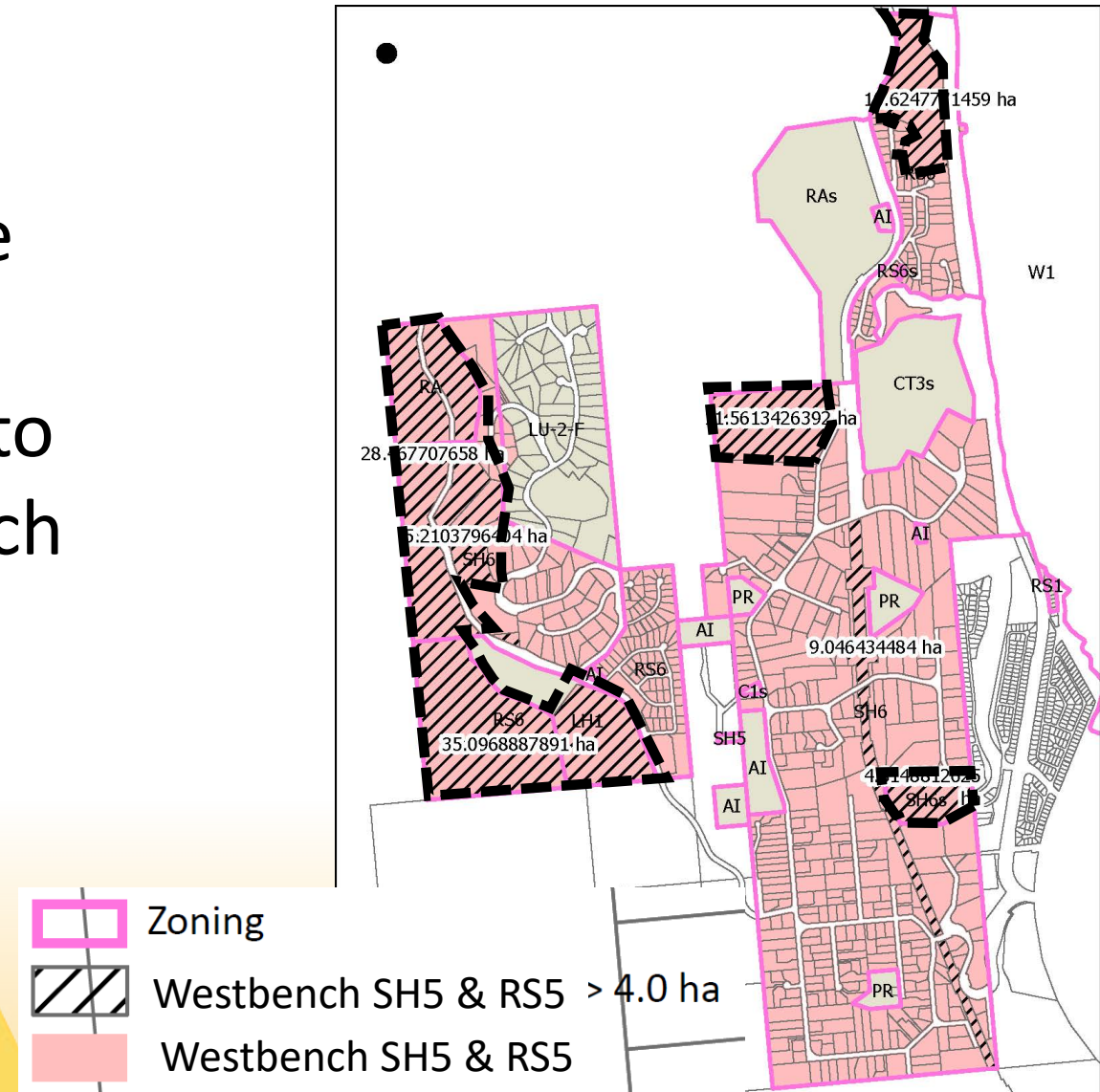
- Default parcel size for subdivision is 1.0 ha;
- West Bench Small Holdings (SH5) Zone establishes a minimum parcel size for subdivision of 0.25 ha (0.62 acres).
- West Bench Low Density Residential (RS5) Zone establishes a minimum parcel size for subdivision of 500 m<sup>2</sup> (0.12 acres).



# West Bench Geotech Review

## Proposed Zoning Amendments:

- introduce a minimum parcel size for subdivision of 2.0 ha in the SH5 and RS5 zones that applies to parcels in the Greater West Bench area.
  - approximately 7 parcels greater than 4.0 ha in area.





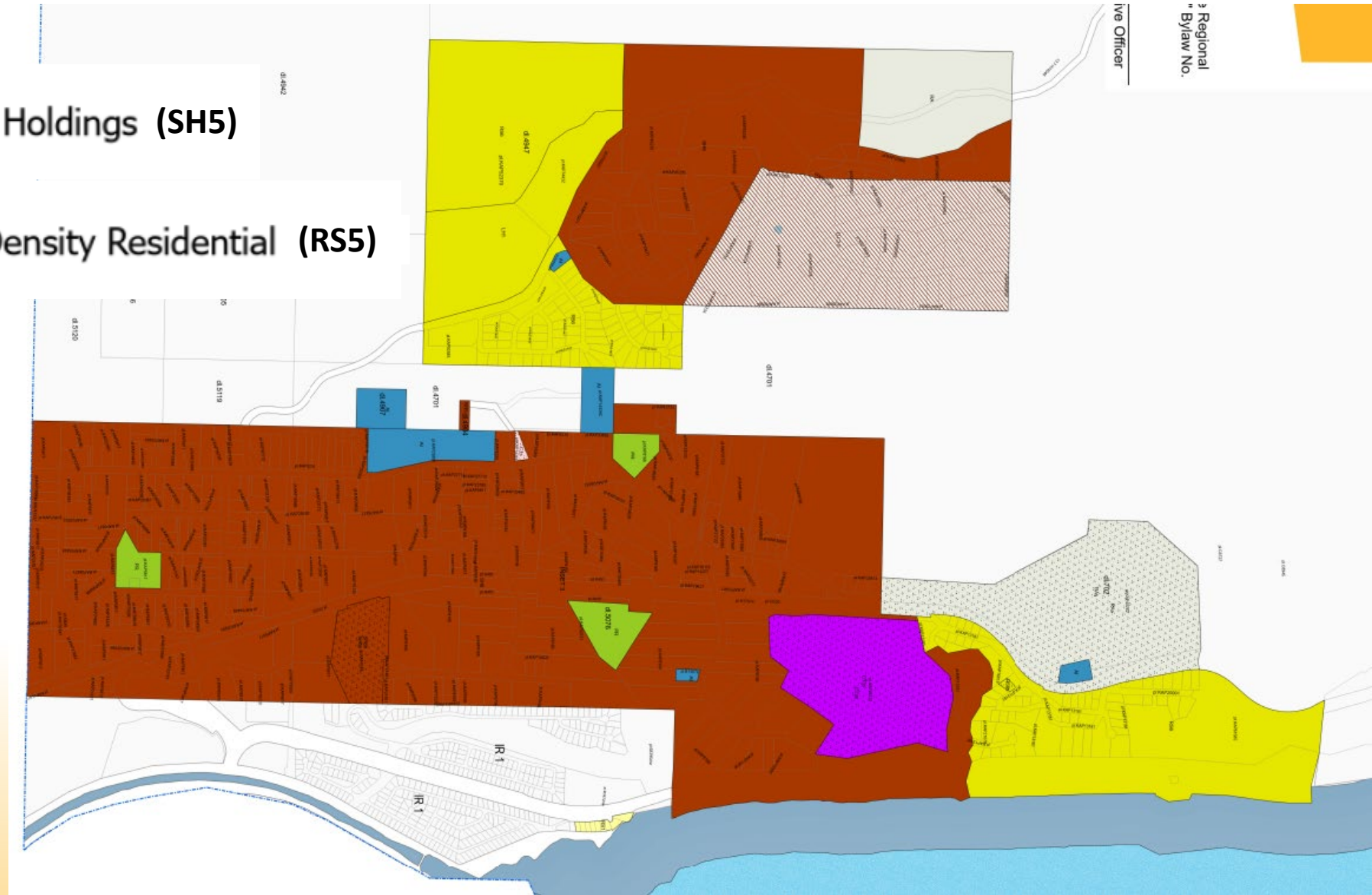
# West Bench Geotech Review



West Bench Small Holdings (SH5)



West Bench Low Density Residential (RS5)



# West Bench Geotech Review

## Other Initiatives:


- Preparation of Soil Removal & Deposition Bylaw for the Greater West Bench Area is planned for 2022;
- Preparation of Minimum Report Standards for Geotechnical Reports is planned for 2022:
  - will primarily be applied at Building Permit stage;
  - will replace existing Board Policy requiring geo-tech reports at BP stage in West Bench.

# West Bench Geotech Review

## Next Steps:

- Electronic Public Information Meeting to be held via Webex on **Tuesday December 7, 2021, at 7:00 pm.**
- Feedback can be submitted up until January 14, 2022:
  - email [planning@rdos.bc.ca](mailto:planning@rdos.bc.ca)
  - fax to 250-492-0063
  - drop-off at RDOS office (101 Martin Street, Penticton).
- RDOS Board consideration of public comments received and to provide direction on bylaws.

# West Bench Geotech Review



The screenshot shows the RDOS website with a navigation bar at the top containing links for Agenda & Minutes, Regional Bylaws, Employment/Volunteer Opportunities, Notifications, and I Want To... Below this is a secondary navigation bar with links for Programs & Services, Property & Development, Parks & Recreation, Permits & Licences, and Local Government. The main content area is titled 'West Bench Geotechnical Review' and includes an 'Overview' section with text about a meeting on October 7, 2021, and a link to the report. A video presentation from the same date is also featured. A left sidebar lists various development services, with 'West Bench Geotechnical Review' highlighted. The 'Background' section at the bottom mentions the adoption of a new Electoral Area 'F' Official Community Plan (OCP) Bylaw in 2018.

## Status Updates:

[www.rdos.bc.ca](http://www.rdos.bc.ca):

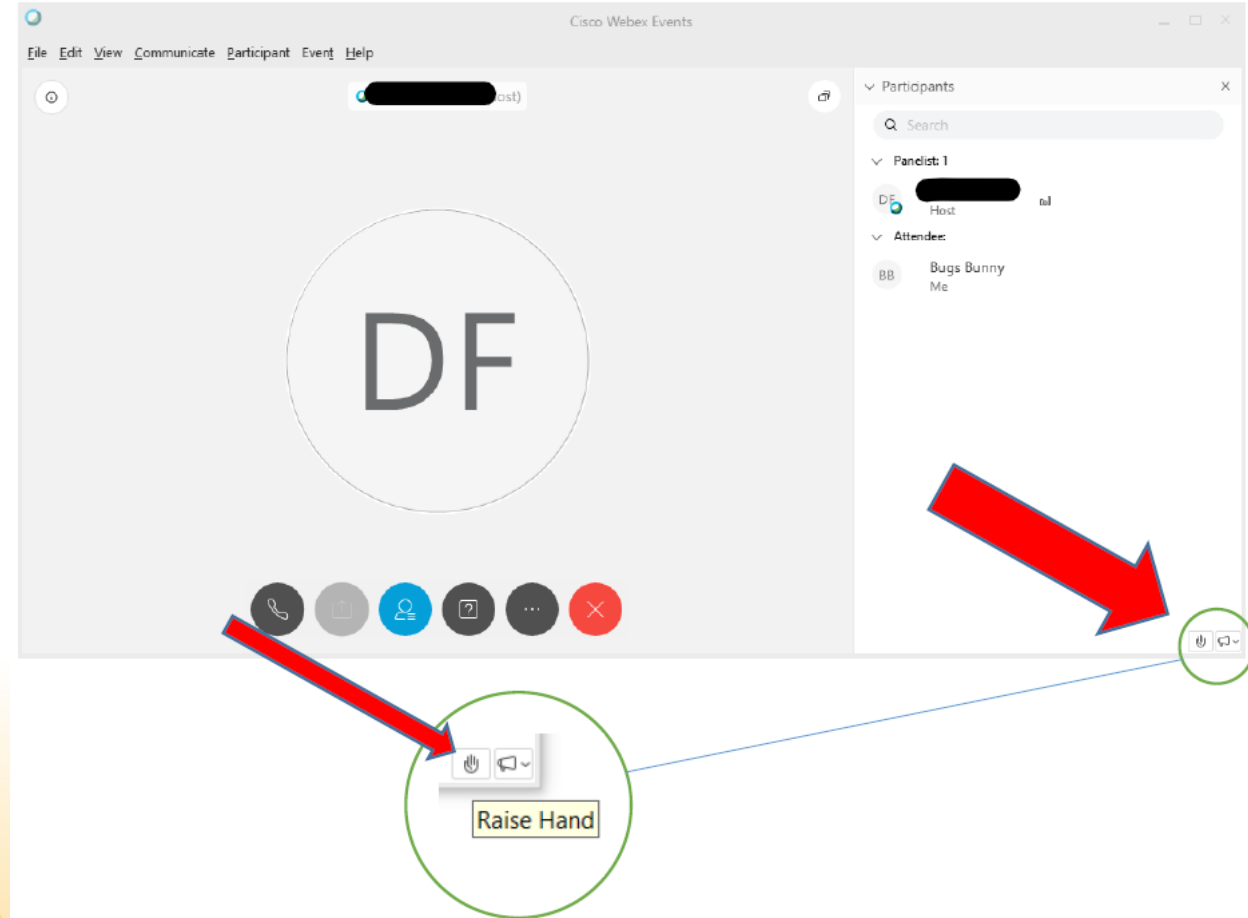
- Property & Development →
- Planning, Zoning & Subdivision →
- Strategic Projects →
- West Bench Geotechnical Review.



# West Bench Geotech Review

- Will take questions in turn;
- To indicate you want to speak, raise your hand;
- If you called in, press \*3 to “raise hand”;
- If using a computer, press the “raise hand” button on the right hand side of your screen in Webex;
- You will be unmuted when it is your turn to speak; and
- After you are done, press \*3 or the raise hand button to take your hand down.

In order to speak, click the “Hand” button in the Participants panel on the right hand side of your computer screen.



# West Bench Geotech Review

## QUESTIONS?