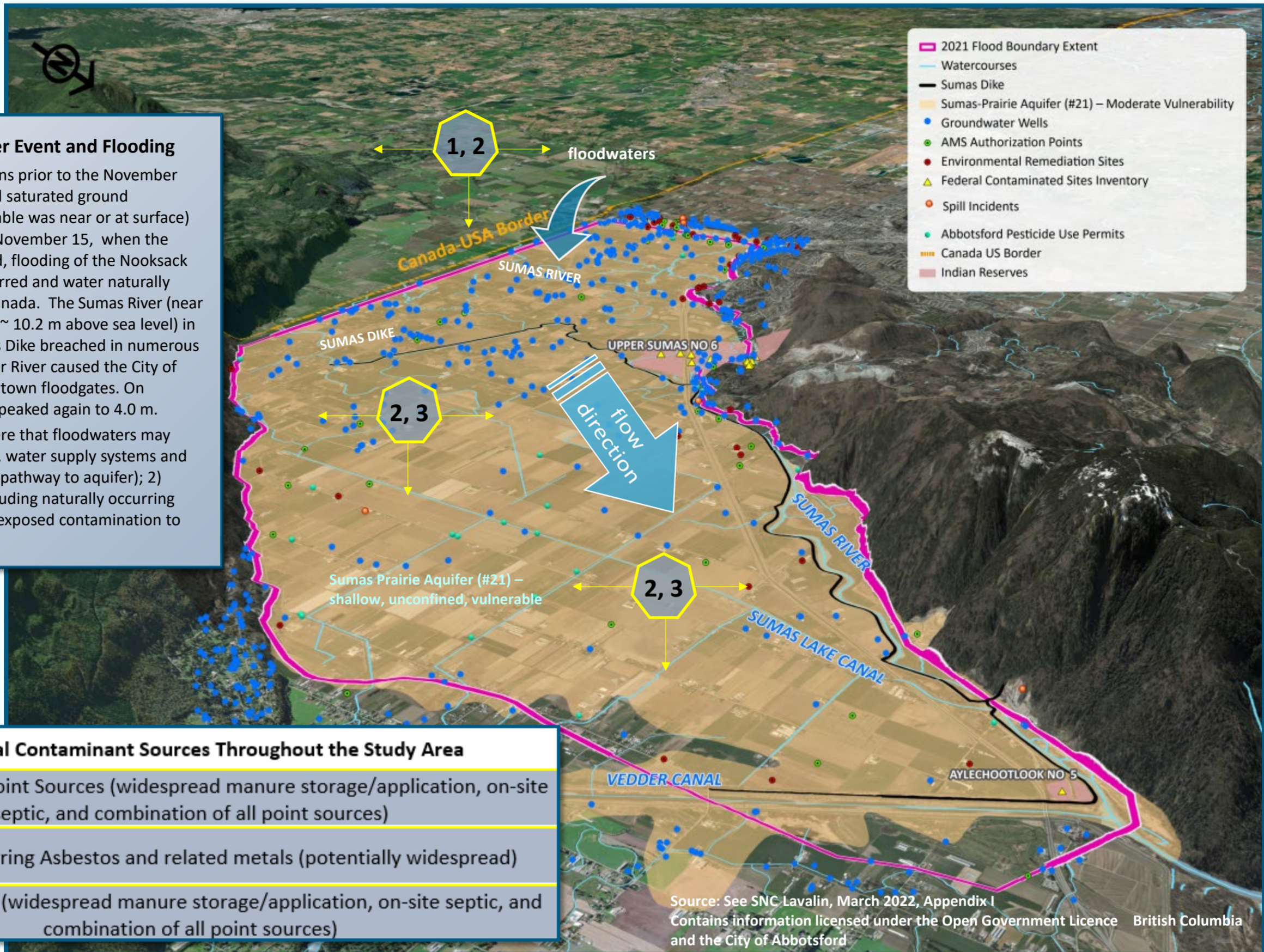


Sumas Prairie Conceptual Site Model (CSM) – 2021 Atmospheric River and Related Potential Contamination Impacts

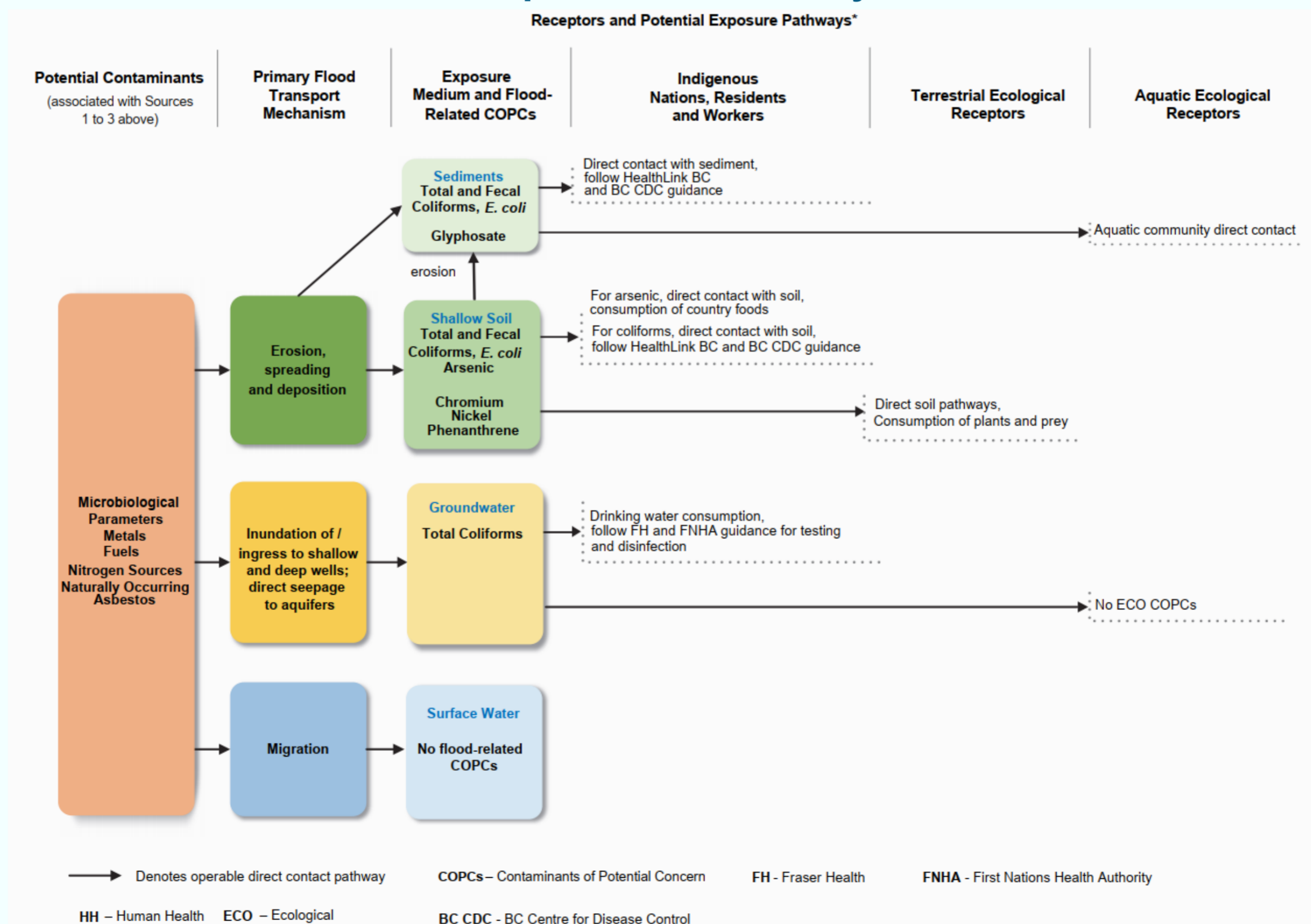
2021 Atmospheric River Event and Flooding
Above average rainfall conditions prior to the November 2021 Atmospheric River caused saturated ground conditions (i.e., groundwater table was near or at surface) in the Sumas Prairie area. On November 15, when the 2021 Atmospheric River arrived, flooding of the Nooksack River in Washington State occurred and water naturally flowed north/northeast into Canada. The Sumas River (near Huntingdon) peaked at 4.25 m (~ 10.2 m above sea level) in a span of 4 days and the Sumas Dike breached in numerous locations. Flooding of the Fraser River caused the City of Abbotsford to close the Barrowtown floodgates. On November 29 the Sumas River peaked again to 4.0 m. The key findings of the CSM were that floodwaters may have; 1) inundated water wells, water supply systems and underlying aquifers (i.e., direct pathway to aquifer); 2) distributed contamination (including naturally occurring asbestos); and 3) receded and exposed contamination to receptors.



General Potential Contaminant Sources Throughout the Study Area	
1	Upgradient Non-Point Sources (widespread manure storage/application, on-site septic, and combination of all point sources)
2	Naturally occurring Asbestos and related metals (potentially widespread)
3	Non-Point Source (widespread manure storage/application, on-site septic, and combination of all point sources)

Source: See SNC Lavalin, March 2022, Appendix I
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CSM Flowchart: Contaminants of Potential Concern, Exposure Media, Receptors and Pathways



* Exposures and associated risks to receptors from the flood-related COPCs were evaluated in the Preliminary Regional Risk Assessment for the Sumas Prairie Study Area (SNC-Lavalin, June 2022)