DISTRICT OF METCHOSIN
AGENDA

ENVIRONMENTAL ADVISORY SELECT COMMITTEE MEETING

September 26, 2023 at 7:00 p.m.
Council Chambers
Metchosin Municipal Hall

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1. Agenda, Additions, Approval

2. Presentations
a) Alison LeDuc, Bilston Watershed Habitat Protection Association President, Stormwater Management 1

3. Public Participation

4. Adoption of Minutes
a) Environmental Advisory Select Committee, June 27, 2023 13

5. Receipt of Minutes

Council & Standing Committee Minutes
https://www.metchosin.ca/council/council-meetings/agendas-minutes
a) Council Meeting: June 19 and July 17, 2023
b) Finance Committee: July 17, 2023
c) Environment and Natural Areas Committee: July 17, 2023
d) Community Planning Committee: July 17 and Aug 14, 2023
e) Public Works and Protective Services Committee: July 17, 2023

Advisory Committee Minutes
https://www.metchosin.ca/council/advisory-committees
a) Agricultural Advisory Select Committee: June 7, 2023
b) Buffer Land Working Group: July 11, July 26, August 16, 2023
c) Parks & Trails Advisory Select Committee: June 20, 2023

6. Business Arising from the Minutes
a) Metchosin Climate Action Plan
b) Federal Aquatic Invasive Species Prevention Fund
c) Buffer Land Stormwater Management Planning
d) Sue Big Oil Campaign
e) Proposed Rezoning Application, Beckingham Road

7. Reports

8. New Business
a) 2023 Union of BC Municipalities Convention, Resolutions from the District of Metchosin
b) Bilston Creek Watershed Management Planning
c) Riparian Area Regulation

9. Correspondence
a) District of Metchosin July 18, 2023 Letters Regarding MEASC Recommendations 17
- Letter to the Minister of Transport Canada, Tanker Traffic
- Letter to the Trans Mountain Expansion Project, EAO Condition 39, Existing Shoreline Condition Report BC
- Letter to the Provincial Minister of Environment and Climate Change, EAO Condition 38, Human Health Risk Report

10. Adjournment and next meeting



STORMWATER - URBAN DEVELOPMENT - BILSTON WATERSHED

Alison LeDuc, Bilston Watershed Habitat Protection Association

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OUTLINE

Why we're making this presentation

Bilston Watershed Maps & FAQs

Coastal Cutthroat Trout & other Species of Concern

Land Cover & Absorbent Landscapes

Water Quality

Flooding

Evolution of Stormwater Management

Green Infrastructure/Low Impact Development

Groundwater Recharge & Maintaining Summer Base Flows

Thank you!

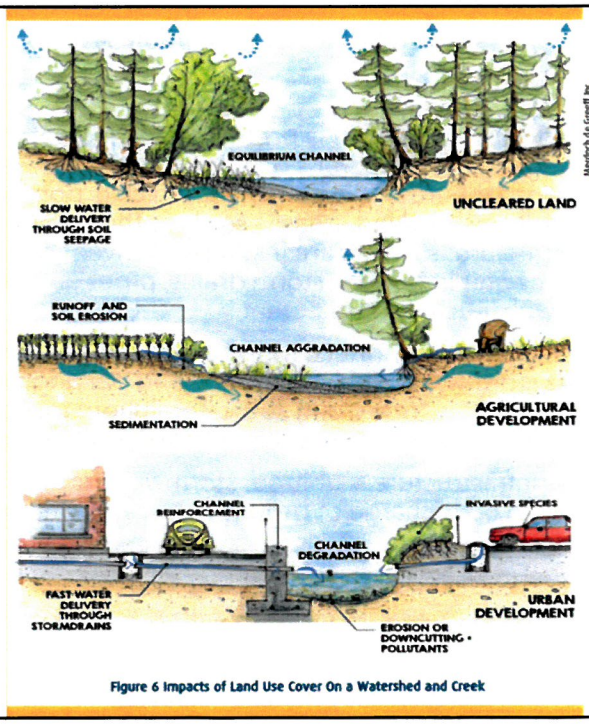


Figure 6 Impacts of Land Use Cover On a Watershed and Creek

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WHY WE'RE MAKING THIS PRESENTATION

You've been asked to provide comments to the District of Metchosin about the stormwater management plan for the residential development under way on Centre Mountain, which involves construction of a stormwater detention pond on the Buffer Land in Metchosin.

Under the terms of the covenant on the Buffer Land, the SWMP requires District of Metchosin approval.

Under the Metchosin Major Stormwater Infrastructure Referral Policy, the Advisory Committees must be given the opportunity to review and provide comment to District staff on the stormwater management plans.

We originally thought you would be commenting on the April 27, 2023 SWMP prepared by engineers for CM developers. However, since that version of the SWMP there has been a desktop review by Jeff Howard of Colquitz Engineering, and the CM developer revised the SWMP in July and August.

We have a copy of the April 27 SWMP but haven't been allowed access to the desktop review or the revisions.

So – this presentation is not specifically about the current SWMP but more generally about stormwater concerns and cumulative effects of urban development in Bilston Watershed, which may provide useful information for your comments on the SWMP.

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OVERVIEW

In urban settings, stormwater is precipitation plus water from activities such as car washing, power washing, irrigation etc. that runs off impervious surfaces. As urban development increases – especially small lot urban development, which is dominated by impervious surfaces such as roof, road, sidewalk and parking areas* - so does the amount of stormwater runoff when conventional "grey infrastructure" systems are installed. Conventional grey stormwater systems are designed to collect stormwater in gutters, storm drains, pipes and culverts and discharge it quickly into waterways with little or no treatment.

The volume and rate of surface runoff are much greater when infiltration is reduced by impervious surfaces. As stormwater sluices off roads and parking areas, it gathers pollutants. According to the BC government, this "non-point source pollution" in stormwater has become "the most common cause of poor water quality in lakes and streams in developed areas". **

Where grey infrastructure is utilized, stormwater is also one of the primary causes of flooding, there is little to no recharge of groundwater, and stream flow in summer is drastically reduced.

*According to a Technical Memorandum on drainage obtained in a FOI to Langford, more than 80% of the residential section closest to the Buffer Lands is planned to be covered by impervious surfaces. Other sections vary. Overall planning for impervious surfaces in CM residential area: about 65%.

** https://www2.gov.bc.ca/gov/content/governments/local-governments/infrastructure/water-systems/stormwater-infrastructure

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BILSTON WATERSHED & NEIGHBOURING WATERSHEDS

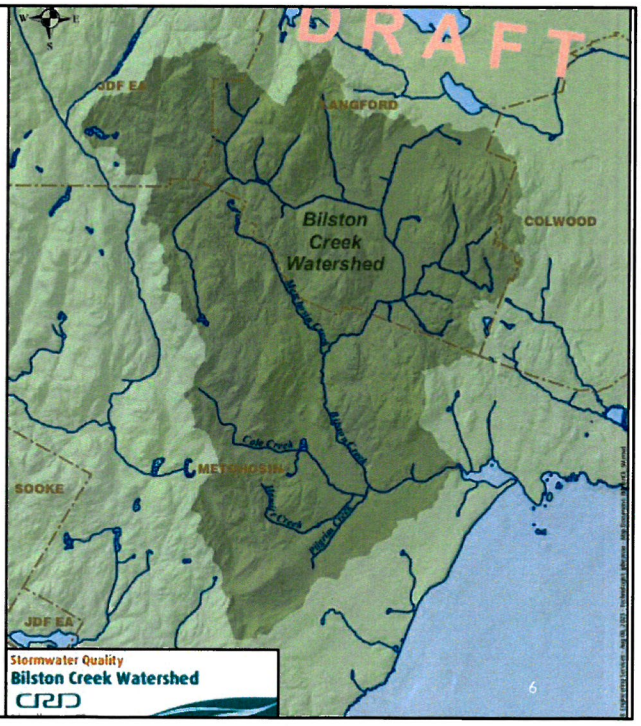


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A BIT ABOUT BILSTON WATERSHED

- Third largest watershed in the CRD (>3000 hectares).
- Ten creeks, two brooks and numerous wetlands – all flow into Bilston Creek and then into Witty's Lagoon.
- Riparian areas provide natural wildlife corridors and feeding areas for heron, kingfishers, otter, mink, muskrats, bats, bears, deer, elk, cougar and wolves.
- Upper half of Bilston Watershed is in Langford and subject to rapid urban development.



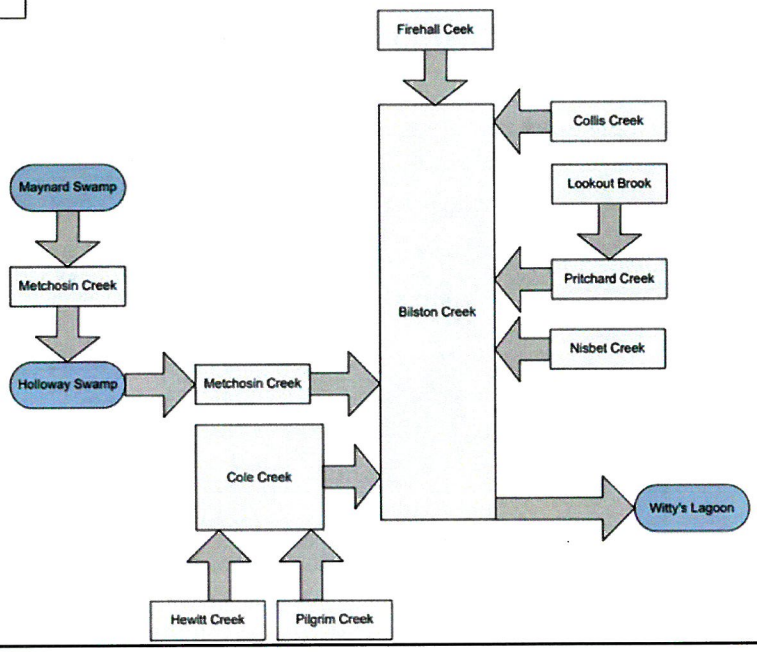
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Name of Watershed	Total Area (ha)	Length of Creek Main Stream (km)
Bilstone Creek Watershed	3129*	11.5

*includes storm drain network drainage area

Making a difference...together



RBC

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COASTAL CUTTHROAT TROUT

- Coastal Cutthroat trout are salmonids
- Reside in much smaller streams than other salmon and trout
- The aquatic equivalent of the "canary in the coal mine" for small-stream health. They need clean, cool, well-oxygenated water. Sediment is extremely detrimental.
- If a small stream provides good habitat for Coastal Cutthroat trout, it is good habitat for everything else that lives in small streams (e.g. other fish, invertebrates and amphibians)

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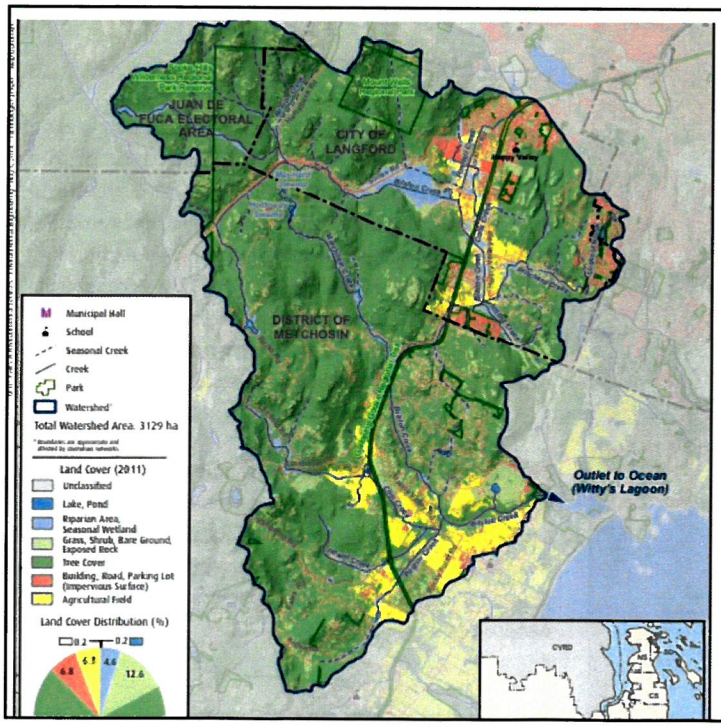
OUR CREEKS AND RIPARIAN AREAS ARE HOME TO MANY SPECIES OF CONCERN



- Coastal Cutthroat trout, Vancouver Island water shrews, red-legged frogs, freshwater clams, giant stone flies and water ouzels are a few of many species of concern who rely on Bilston Watershed for their survival.



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LAND COVER IN BILSTON WATERSHED

This is the most recent CRD map available online showing land cover but it's from 2011 and we all know how much has changed in 12 years. In 2011:

- Tree cover was 69.5%
- Grass, Shrub, Bare Ground, Exposed Rock was 12.6%
- Impervious Surface: Building, Road, Parking Lot, Sidewalk was 6.8 %

Those figures are totally different today.

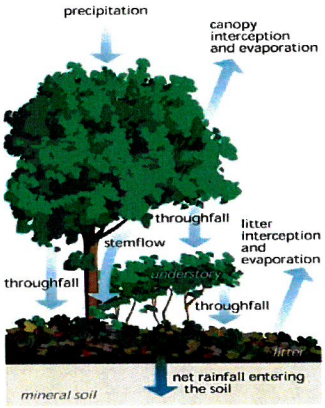
We're waiting for updated map and/or figures from CRD, but it's safe to say there's been large-scale urbanization of natural vegetated areas.

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TREES & OTHER VEGETATION FORM ABSORBENT LANDSCAPES

Trees & vegetation capture, filter & regulate the flow of rainwater; only a small percentage becomes runoff. Rainfall is intercepted, reducing erosion and sediment. Forest duff layer acts as gigantic sponge, gradually releasing water to streams and recharging groundwater.



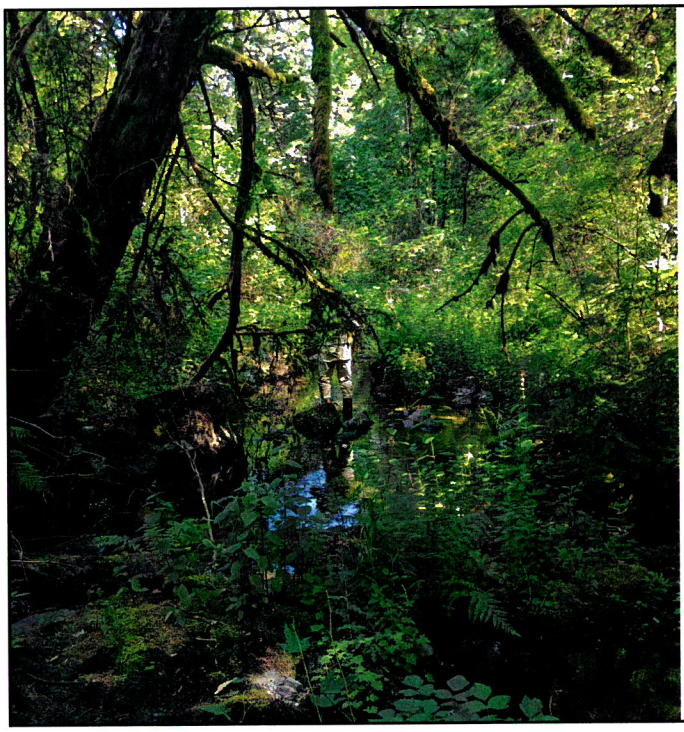
With increasing residential development, trees and vegetation are replaced with impervious surfaces (roads, parking lots, sidewalks and roofs), which prevent rainwater from passing into the soil.

Impermeable surfaces generate 8 –10 times more runoff than absorbent landscapes.

Higher surface runoff volume and velocity can lead to flooding, stream bank erosion, sediment deposited in streams, degraded aquatic habitat, and declining water quality.

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WATER QUALITY

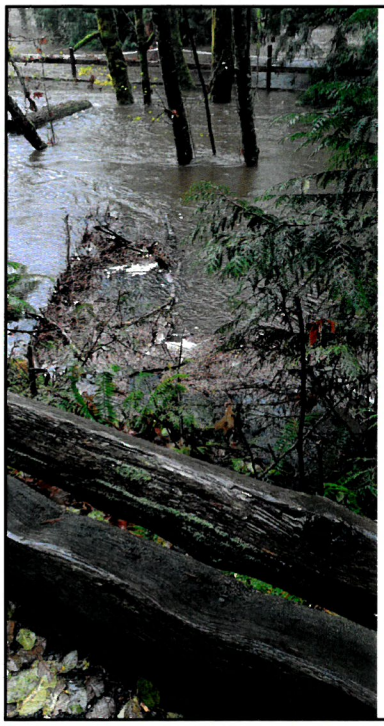
When untreated stormwater is discharged into creeks and streams, water quality is severely degraded. Runoff from roads carries contaminants including oil and grease, polycyclic aromatic hydrocarbons (PAHs), heavy metals, sediment, road salt and de-icing chemicals. A chemical compound that wears off tires (6PPD-Q) was recently confirmed by University of Washington researchers as the cause of mass mortality events in salmonids following storms. Coastal Cutthroat trout are salmonids.

Residential areas contribute the same road-based pollutants but also herbicides, pesticides, biocides that protect building surfaces, flame retardants, nutrients (from fertilizers), bacteria and viruses (from animal waste). Contaminants carry serious impacts for natural waterbodies.

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FLOODING

- Flooding on Bilston has been a matter of concern for at least 100 years. Serious floods that damaged properties along Bilston Creek in both Langford and Metchosin occurred in 1956, 1961, 1990 and 1995 BEFORE extensive deforestation and urban development in the Langford portion of the watershed.
- Due to concerns about flooding if the Centre Mountain area was developed, there was a 22-year development moratorium on the Metchosin side of the Bilston Watershed.
- Infrastructure was updated in the early 1990's between Winter Road and Glen Forest Way , with installation of 4 large culverts and several bypass channels in the Bilston mainstem. However, photo to left is flooding at the site of those culverts in 2021. Not clear the design of that 30-year-old infrastructure is adequate to deal with the cumulative effects of so much upstream development, especially when climate change is almost certain to bring more intense and prolonged rainfall events.
- Photos on the following slide are also from the flood in 2021. Since then, there's been more deforestation and hard surfacing added along Latoria, in Luxton, and on Centre Mountain - with potential for a lot more.
- CRD Discover your Watershed webpage: *residential development brings a lot of new impervious surface to the landscape, and rain water is no longer allowed to soak into the ground as it did in the natural environment.* ***"Rain water flows quickly off these hard surfaces and into our storm drain system, which head straight to our creeks, rivers and streams. The effect on the stream is similar to that of turning a firehose on your garden for short periods of time!"***

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EVOLUTION OF STORMWATER MANAGEMENT

For many years, municipalities used "gray infrastructure" to convey stormwater as quickly as possible to the nearest waterbody.

Large volumes of stormwater were detained in catchments that did little to remove pollutants, and again overflows were often directed to the nearest creek.

Grey Infrastructure outcomes include:

- Increased volume & flow rate of runoff over land; greater stream velocities; more stream channel erosion and sedimentation
- Flooding
- Declining habitat complexity; natural riffles, pools, gravel bars and other areas are altered or destroyed; spawning areas, particularly those of salmonids, are lost. Fine sediments suffocate fish eggs
- Severely reduced stream flows during the dry season
- Inadequate ground water recharge

Best Management Practices (BMPs) have evolved. Urban landscapes can be designed to filter, absorb, clean and store water.

Green Infrastructure/Low Impact Development/Integrated Stormwater Management employs multiple systems that use/mimic natural processes to capture rainwater where it falls, slow & clean runoff to water bodies and reduce pressure on stormwater systems. Biofiltration cleans the water, which can then replenish groundwater and help maintain summer stream flows. Flood risk is reduced by integrated stormwater management because runoff volume and flow rate is reduced.

Goals:

- Allow as much stormwater as possible to infiltrate into the ground onsite (up to 90%) rather than flowing offsite.
- Filter any water leaving the site to improve water quality in aquatic ecosystems.

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GREEN INFRASTRUCTURE/LOW IMPACT DEVELOPMENT/INTEGRATED STORMWATER MANAGEMENT BMPS

Basic concepts:

Think of rainwater as a resource, not a waste product.

Promote the natural movement of water within an ecosystem or watershed.

Examples:

- Bioinfiltration (rain gardens)
- Tree trenches and tree boxes
- Infiltration trenches and basins
- Infiltration rain planters
- Permeable pavement
- Swales with bioretention bases
- Engineered wetlands

Infiltration and constructed wetlands provide water quality treatment, control peak flows, recharge ground water and improve baseflow to local streams

Other Benefits

- Provides habitat, increases biodiversity
- Trees, constructed wetlands and grassed swales effectively store carbon
- Green infrastructure is more climate resilient than grey infrastructure
- Green infrastructure requires less maintenance over time therefore involves lower maintenance costs

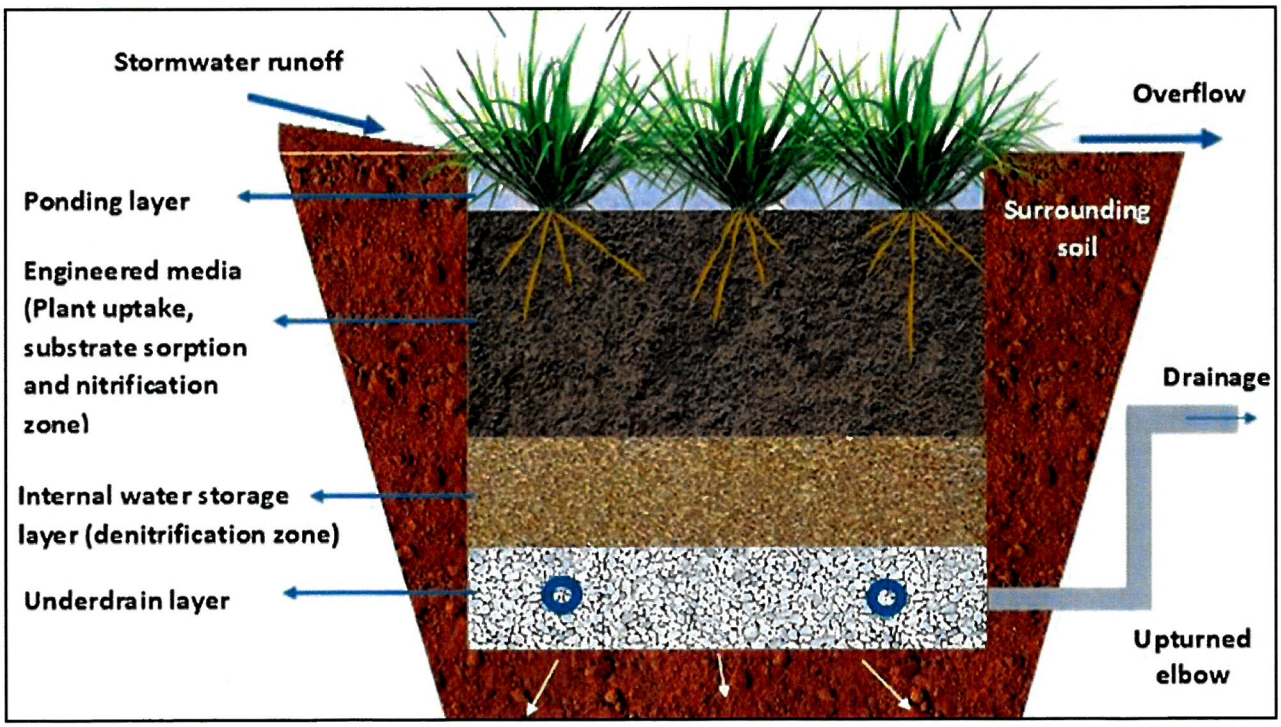
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A rain garden is a landscaped area that collects, absorbs, and filters stormwater runoff from roof tops, driveways, patios, and other hard surfaces that don't allow water to soak in. Rain gardens are sized to accommodate temporary ponding after it rains and are not meant to be permanent ponds. Simply put, rain gardens are shallow depressions that:
• Can be shaped and sized to fit your yard.
• Are constructed with soil mixes that allow water to soak in rapidly, treat runoff, and support plant growth.
• Can be landscaped with a variety of plants to fit the surroundings.
Anatomy of a Rain Garden
INFLOW
PONDING DEPTH (6" or 12" typical)
TOP SURFACE OF PONDING AREA
GRADUAL SIDE SLOPES
MULCH LAYER
OVERFLOW
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Stormwater runoff
Overflow
Ponding layer
Surrounding soil
Engineered media (Plant uptake, substrate sorption and nitrification zone)
Drainage
Internal water storage layer (denitrification zone)
Underdrain layer
Upturned elbow

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GROUNDWATER RECHARGE

- Aquifer 606 supplies over 630 registered domestic wells in Metchosin
- According to a 2004 study of *Aquifers of the Capital Regional District** the productivity of Aquifer 606 is considered low.
- Aquifers are already depleted in many areas across North America. Less-reliable patterns of rain in an era of climate change raise concerns about the ability of aquifers to recharge themselves.
- *Sylvia Kenny, University of Victoria, School of Earth & Ocean Sciences & British Columbia Ministry of Water, Land and Air Protection

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MAINTAINING SUMMER BASE FLOWS

- "Base flow" is water seeping into a stream from groundwater, which helps keep water in streams during droughts. Without base flow recharge from ground water, many streams would not carry a flow of water except during storms.
- Summertime base flows in Bilston Watershed are already severely reduced. Creeks went subsurface or dried up 1 - 2 months earlier than usual this year.
- Periods of summertime low flows are often critical for fish, amphibians and other creatures who depend on stream water for life. Diminished stream flows and higher stream temperatures in summer are particularly stressful for salmonid populations whose rearing periods are in summer.
- During a rainstorm water soaks into the ground where surfaces are permeable.
- Below ground, water moves through layers of soil and rock that are porous enough to allow water movement.
- After a storm, water doesn't move straight down into the ground. It moves both downward and horizontally along permeable layers, which can be seen when a roadway is cut into a hillside. Between storms and runoff events, stream flow is maintained by groundwater discharge, as long as the water table remains above the stream bottom.

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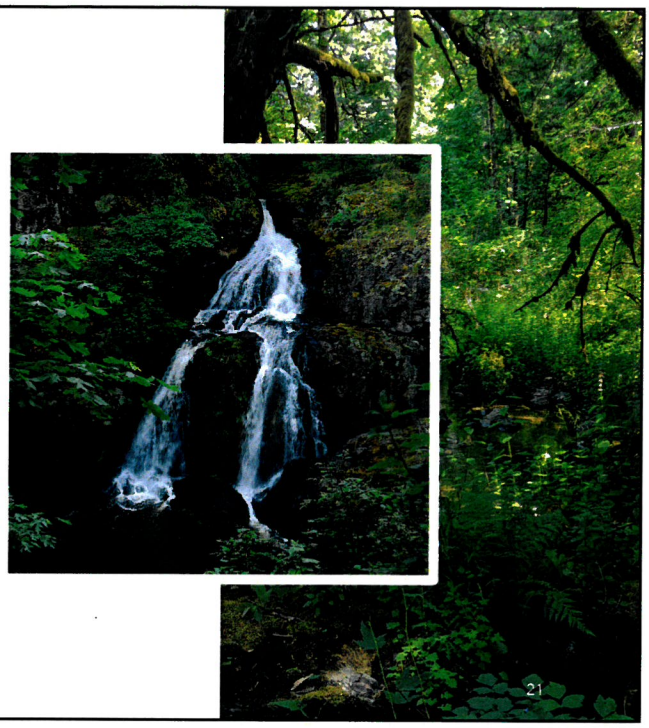
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THANK YOU FOR THIS OPPORTUNITY

Bilston Watershed Habitat Protection Association (BWHPA)

New website: bilstonwatershed.org

My email: arleduc@shaw.ca



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District of Metchosin

Minutes
Environmental Advisory Select Committee Meeting
Tuesday, June 27, 2023 at 7:00 P.M.
Council Chambers
Metchosin Municipal Hall

Present: Garry Fletcher (Chair), Andy MacKinnon, Bill Cave, Merrilee Hoen, Anna Hall, Councillor Steve Gray, Erin Van de Water (Recorder)

Regrets: Ric Perron

The meeting was called to order at 7:05 p.m.

1. Agenda, Additions and Approval

Moved and Seconded by Steve and Bill that the Committee approve the agenda as presented with the addition of "Sue Big Oil Campaign" under item (7c).

Carried

2. Presentations
None

3. Public Participation
Kym Hill, from Bilston Watershed Habitat Protection Association.
Ms. Hill looks forward to collaborating with MEASC, the District, and contractors relating to Bilston Creek Watershed and the effects of the Centre Mountain development on the watershed.

4. Adoption of Minutes

Moved and Seconded by Andy and Bill that the Committee approve the minutes of the Environmental Advisory Select Committee meeting held on May 23, 2023.

Carried

5. Review of Minutes

a) Council and Standing Committee Minutes

Moved and Seconded by Steve and Garry that the Committee receive the Council and Standing Committee Minutes for information.

C**arried**

b) Advisory Committee Minutes

Moved and Seconded by Steve and Bill that the Committee receive the Advisory Committee Minutes for information.

C**arried**

6. Business Arising from the Minutes

a) Metchosin Climate Action Plan

- Steve thanked Andy and Merrilee for their work on this. The plan has been completed and adopted; the Agricultural Advisory Committee is in the process of

creating an agricultural plan with considerations from the Climate Action Plan.
- Some next steps:
    - Zero Carbon Step Code is under consideration by Council – moving to electric instead of natural gas or fossil fuels
    - Investigate membership in Canadian Federation of Municipalities to qualify for certain climate and other grants
    - EV charger – CRD grant request for funding for 2 EV units for Metchosin
    - Further promote the CRD web-based Navigator for energy rebates and grants.

Action Item: Steve and Merrilee will work on an evaluation framework for the Climate Action Plan

Moved and Seconded by Andy and Steve that the Committee recommend that Council not support any extension of natural gas supply to new developments.

Carried

b) Improving Representation of WCMRC's GRS's in Sc'ianew Territory and Metchosin
- Jamie (WCMRC GRS mapper) will look to add sites identified as sensitive. Michael Lowry, WCMRC will call a meeting with Sc'ianew and Metchosin to review the new proposed GRS's in the next few months.

Moved and Seconded by Steve and Garry that the Committee recommend Council send a letter to Transport Canada to follow up on the same points as the April 24, 2023 letter sent to Provincial Minister of the Environment George Heyman.

C**arried**

c) Trans Mountain EAO Condition 39 – Existing Shorelines Conditions Report
- We cannot make the July 6 deadline extension to provide comment, as the next Council meeting is July 17.
- Garry wondered about the inclusion of Race Rocks in their assessment since Race Rocks aren't, technically speaking, in Metchosin. Suggested a statement to address Metchosin shorelines as a whole being at risk.
- Anna added that since we will miss the July 6th deadline for input on the Existing Shoreline Conditions Report, if we submit a letter stating that we will provide more detailed input at a later date, it could be beneficial in having our input considered.

Action Item: Steve to draft a letter with Staff to Trans Mountain stating we will provide more detailed input at a later date.

Action Item: Garry to draft a more detailed response letter.

d) Trans Mountain EAO Condition 38 – Human Health Risk Report
- The proposed correspondence was drafted by local resident Dr. Valerie Jaeger, MDCM, PhD pharmacology & toxicology, MPH. Dr. Jaeger has significant experience managing public health matters in relation to a fossil fuel spill.

In discussion and by consensus, the draft letter was revised as follows:

Delete heading Mitigation and delete final paragraph.
Replace with the following:

RECOMMENDATIONS:

1. The Province to seek the agreement of Transport Canada such that tankers are not permitted to enter our nearby oceans when spill response teams are not permitted to respond due to adverse sea conditions.

2. It is unrealistic to expect that the time course of response could achieve meaningful containment in the initial phase of air borne COPCs. These are modeled to begin in the first hour. Therefore, eye wash stations and air quality monitoring units should be pre-placed within the community on a proactive basis and community members trained in their use. The cost of the stations and monitoring units and training in their use should not be borne by the municipality.

3. The Province should assist local governments to:

- Stockpile PPE and spill response equipment
- Develop land-based shoreline response plans, and
- Community-wide evacuation plans

Moved and Seconded by Steve and Merrilee that the Committee recommend Council forward the amended draft letter to the Provincial Minister of Environment.

Carried

e) Buffer Lands Stormwater Management Planning

- District has received a storm water management report, review process underway. MEASC will be involved in many steps along the way.
- Any storm water management plan is months away from approval.
- Flow chart received by the Committee
- Detailed design phase prior to approval
- Langford will be drafting an MOU/LOA stating that Langford will assume responsibility and liability for the detention pond
- Langford has confirmed they will not need to build additional access for pond maintenance and the plan is to do as much maintenance manually as possible
- Nicole Shukin has presented her "Trail and Swale" concept to the Buffer Land Working Group and then to Mayor Little with Councillors Shukin and Donaldson.
- Correspondence from Kym Hill dated June 26, 2023 was received by Council members via email. Kym submitted an FOI request to Langford, interested in water quality, quantity and ecosystem condition in the Bilston Creek watershed, she would like to have a hydrologist involved.
- Langford staff and consultants will be meeting with Metchosin in the coming weeks

7. New Business

a) Proposed Rezoning Application Referral – 4696 Beckingham Road

- MEASC members met the owner representative and their biologist to walk the property on June 24th
- MEASC supportive of clustering houses to allow for more parkland and appreciates the approach to preserve important natural assets
- OCP Sec. 6.8 was discussed.
- Developer stated financial hardship of carrying costs while awaiting approval from

District. and costs associated with a quality proposal on the environmental front.
- Observations and recommendations from the tour of the property submitted to the Planner include:
    - Preference for lowest density possible
    - Maximum preservation of wildlife corridors and confirm adequacy of recommended width of corridor at the proposed road crossing
    - Follow all recommendations in the Environmental Overview Report
    - Determine baseline density considering riparian areas and terrain – earlier plans stated 14 minimum 5 acre lots
    - Further evaluate the value proposition of increasing density by 4 lots to cover the costs of piped water
    - Use of restrictive covenants will be important

b) Federal Aquatic Invasive Species Prevention Fund – Possible grant application
- Japanese Knotweed along Bilston Creek, American Bullfrog, Green Crab in Witty's Lagoon, Black Knapweed at Tower Point (funded by CRD), Olympic View, Duke Rd, Cliff Dr.
- Discussed involving Stan Orchard, could be tricky because the need for dedicated boat and crew, might be better to plan for next year
- Metchosin has memorandum with CRD, Jenny Eastman might be able to help

Action Item: Steve to contact Bilston Habitat Watershed Protection Association to gauge interest as a first option, followed by Stan Orchard for Bullfrogs as a second option

c) Sue Big Oil Campaign

Moved and Seconded by Merrilee and Garry that the Committee recommend that Council joins View Royal and other municipalities to pursue this lawsuit if there is enough support from other municipalities.

C**arried**

8. Reports
None

9. Correspondence

a) Jill Peterson, Metchosin Community Day
- Does MEASC want to have a booth on Sept 10th? Yes, MEASC would be happy to set up a booth.

Action Item: Andy will reply to Jill.
Action Item: Bill will organize displays.

10. Adjournment and Next Meeting Date

Moved and Seconded by Erin and Bill that the Committee adjourn the meeting at 9:20 p.m.

Carried

The next meeting will be held at the call of the Chair via Zoom if necessary throughout the summer months, otherwise, the next in-person meeting will occur Tuesday, September 26, 2023

DISTRICT OF METCHOSIN

File No. 0400-08

July 18, 2023

Hon. Omar Alghabra
Minister of Transport Canada
House of Commons
Ottawa, Ontario
Canada K1A 0A6

Dear Minister Alghabra,

On behalf of Council and the District of Metchosin, I am writing to you to relay concerns with regard to the transit of oil tankers off our coast and the important environmental limitations for spill response crews to respond.

We are writing, in part, because of a recent response from Trans Mountain to our concerns about their research into the fate of bitumen. This research and the associated consultation with coastal communities are required to satisfy British Columbia's EAO Condition #35.

As a coastal community with over 50 km of fragile coastline with direct exposure to the effects of a catastrophic spill, Trans Mountain had sought our input. We raised scientific and risk management concerns to do with the quality and direction of their research. We found their response to our input dispiriting and worrying.

Our chief concern is for the Province and Federal Government to understand that any oil spill clean-up will be impossible to achieve along tanker routes in the Strait of Juan de Fuca for much of the year due to winds, waves and current regardless of the behaviour of bitumen in controlled laboratory research.

For safety reasons, spill response teams are not to respond to a marine oil spill if wind speeds are greater than 28 km/hour or Beaufort scale Force 4.

In our oil spill response gap assessment, these conditions occur at least 40% of the time on the ocean near our shores. So, we are unable to affect a world-class response much of the time.

For example, last year, wind velocity in July would have meant no spill response for 69% of the time. In addition, the wind speed was over 28 km/hr. every hour for 11 days. This does not even factor in the added impossibility for response vessels when tidal current speed is considered.

We would appreciate learning of plans to mitigate spill risks during times when wind speed or currents do not allow for an organized spill response.

For your interest, we are actively planning how best to organize an oil spill shoreline response. To this end, members of our Environmental Advisory Select Committee are meeting with the West Coast Marine Response Corporation (WCMRC) to identify our most sensitive shoreline sites in need of special attention in the event of a spill.

We welcome your collaboration on this matter.

Sincerely,

Marie-Térèse Little Ph.D.
Mayor

cc: Hon. George Heyman
Minister of Environment and Climate Change Strategy

DISTRICT OF METCHOSIN

File No. 0110-02

July 18, 2023

Mariah Brusatore
Marine Stakeholder Engagement and Communications Coordinator
Trans Mountain Expansion Project
VIA EMAIL: mariah_brusatore@transmountain.com

Dear Ms. Brusatore,

Re: Existing Shoreline Conditions Data Report- Trans Mountain EAO Condition 39

We are responding to your request for comment related to your Existing Shoreline Condition Report BC Environmental Assessment (EAO) Condition 39.

We draw your attention to the following data and resources to expand the information to be included in your report on existing shoreline conditions in the area of interest nearby Metchosin (Location G - Strait of Juan de Fuca - south of Race Rocks).

1. The Final Evidence Report prepared for NEB hearings on the Trans Mountain Pipeline Expansion Project by the Board of Friends of Ecological Reserves lists species of several marine ecological reserves. The Report is found here: https://apps.cer-rec.gc.ca/REGDOCS/Item/View/2786560

Race Rocks is included with examples.

page 48 - page 54 : Marine mammals
page 52 and pages 55 - 61 Birds
page 63- 67 Fish (including forage fish on our beaches)
page 67- 71 Invertebrates and page 72- 74 Macro algae
page 75- Terrestrial plants in upper foreshore areas

2. The Direct Evidence Report also prepared for the NEB hearings found here: https://apps.cer-rec.gc.ca/REGDOCS/Item/Filing/A96487

Biological resources along the Strait of Juan de Fuca, Section: 3.5
SARA-Listed Species in Two Ecological Reserves and Appendix page 139

3. The Risk Assessment for Marine Spills in Canadian Waters: Phase 1, Oil Spills South of the 60th Parallel, Final Report found here: https://wcel.org/sites/default/files/file-downloads/131-17593-00_ERA_Oil-Spill-South_150116_pp1-124.pdf

page 67 Pacific Coast physical, biological and human features

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4. Listing of significant species found in this area. https://ecoreserves.bc.ca/2015/11/30/significant-species-table/

Table 5 Marine Ecological Reserve #97 Race Rocks

5. The exceptionally high biodiversity of the area and high level of protection since 1980 as a Provincial Ecological Reserve at Race Rocks are not reflected at all in the map and information presented in your report at page 25. We also note that the Rock Cliff Beach designation at Fig 18 is inaccurate. There is a pebble beach and Intertidal areas with tide pools on much of the shorelines of the 9 islands in the archipelago. Several surge channels are also located around the main island.

- For a more complete description of the natural capital of this area for inclusion in your report, see the Race Rocks Taxonomy presented at https://racerocks.ca/race-rocks-animals-plants/taxonomy-image-gallery/ where you will find photographs, videos and descriptions of species identified in the reserve including:
  197 species of invertebrates
  28 species of fish
  91 species of birds
  14 species of marine mammals
  14 species of plants
  6 species of lichens
  4. species of diatoms
  40 species of marine algae

6. Other deficiencies in the report requiring correction include the following:

- Bird Colonies:
  - No mention is made of four species of nesting seabirds found here.
  - No mention is made of the fact this is a winter roosting area for thousands of seabirds.
  - No mention of the fact that the archipelago of islands is an important migratory stopover for marine and terrestrial migratory birds.
- Marine Mammals:
  - No mention is made of the fact this is the most northerly haul-out and pupping colony for Elephant seals — no mention of the fact that California and Northern sea lions haul out in numbers over 1000 in the fall of the year.
  - No mention that the haul-out locations for harbour seals are also pupping colonies.
  - No mention of the occurrence of river otters and sea otters on and within the islands.
  - No mention of the fact that it is an important feeding area for Biggs killer whales. https://racerocks.ca/humpback-and-orca-sightings-race-rocks/
  - No mention of the fact that the surrounding waters have had a rapid increase in the past few years of Humpback whales
- Invertebrates:
  - The extremely high biodiversity of invertebrate species both inter-tidally and sub-tidally is not mentioned.
  - Several rare species of invertebrates are found here and are not acknowledged
- Fish:
  - This is a rockfish protection area, and all species of BC Rockfish are represented and a high diversity of other fish is represented here including sturgeon.

- Marine Algae:
  - There is a much higher species diversity of marine algae found in the ecological reserve than is found in surrounding areas.
  - The indication of kelp beds on the map presented here is totally inaccurate and insufficient. Given the decline of kelp beds in our coastal water, this is highly relevant. The mapping should be corrected
- Indigenous and Historical Significance:
  - The presence of archaeological sites and the significance of the historic structures must not be minimized. All are sprayed with seawater and therefore subject to immersion in pollutants during intense winds which occur regularly.

7. Figure 19 CWQK: Race Rocks Automatic Weather Reporting System at page 26 of the report does not provide complete information. The report should be revised accordingly.

- Wind speed from observations of the hourly data provided by Environment Canada show a completely different picture **https://racerocks.ca/race-rocks-lightstation-weather-conditions-environment-canada-problems-for-oil-spill-cleanup/**
- Some salient data: In July of 2022, there were 11 days when the wind speed every hour was 28 km/hour or greater and 69.5% of the hours in the month, clean up equipment could not be deployed due to high velocity wind conditions. In March of 2023, the wind speed was 28 km/hr or greater 37% of the time. In February of 2023, the wind speed was 28 km/hr or greater 43 % of the time. In January of 2023, the wind speed was 28 km/hr or greater 36% of the time

8. Figure 20 Current rose for Location G at page 27 provides incomplete information. The report should be revised accordingly.

- The reality of current speed is that there is a very small window of time during the day that the waters around Race Rocks are not over three knots. This means that only in a few hours a day could any spill recovery boom placement be established.
- This is aggravated by the small windows of time when the wind speed is less than 28 km per hour placing even greater restrictions on spill response.

We trust that Trans Mountain will adjust the Existing Shoreline Condition Report- Trans Mountain EAC 39 with the information provided here.

Sincerely,

Marie-Térèse Little, Ph.D.
Mayor

cc: Sc'ianew First Nation
Capital Regional District
Township of Esquimalt
City of Colwood
District of Sooke

DISTRICT OF METCHOSIN

0400-08

July 18, 2023

Honourable George Heyman
Minister of Environment and Climate Change Strategy
PO Box 9047
Room 112, Parliament Buildings
Victoria, BC V8W 9E2

Dear Hon. Heyman,

Re: Human Health Risk Report - Trans Mountain
Environmental Assessment Certificate (EAC) Condition 38

Please find enclosed a letter signed by Mayor Marie-Térèse Little July 18th, 2023 on behalf of the District of Metchosin in response to the Trans Mountain Environmental Assessment Certificate (EAC) Condition 39.

This letter was drafted by the District of Metchosin's Environmental Advisory Select Committee (MEASC) in consultation with its special advisor, Metchosin resident Dr. Valerie Jaeger, MDCM, PhD (Pharmacology and Toxicology), MPH and forwarded to Council for discussion at its meeting of July 17th where it was passed unanimously.

The District of Metchosin welcomes your collaboration on this matter.

Sincerely,

Sue-Lin Tarnowski, CPA, CMA
Interim Chief Administrative Officer

DISTRICT OF METCHOSIN

File No. 0400-08

July 18, 2023

Honourable George Heyman
Minister of Environment and Climate Change Strategy
PO Box 9047
Room 112, Parliament Buildings
Victoria, BC V8W 9E2

Dear Hon. Heyman,

Re: Human Health Risk Report - Trans Mountain
Environmental Assessment Certificate (EAC) Condition 38

The District of Metchosin has opposed and continues to oppose projects furthering the increase in traffic of petroleum products through the Strait of Juan de Fuca.

We have reviewed the Human Health Risk Report (HHRR) report prepared by Intrinsik for Trans Mountain Pipeline L.P. and appreciate the opportunity to comment. We have considered the report's modelling for Burrard Inlet in the context of a spill in the Strait of Juan de Fuca. Assuming a spill occurs in the most likely areas in the Strait of Juan de Fuca, Metchosin would lie within a Local Assessment Area as defined in the report.

The report is extremely dense and detailed. We make no claim to assess the veracity of the data contained therein. Our comments lie in the conclusions that are drawn from that data as they apply to a shoreline community such as the District of Metchosin.

The **chosen language** of the report itself serves to diminish the significance of a spill in the mind of the reader and diffuses the responsibility for it.

- Consider the word 'sensitive'. Various segments of the population, such as infants, toddlers, young children, the elderly, and those with co-morbidities, are described as 'sensitive' which subtly implies that there is something not quite robust enough in their nature. In fact, they are just normal people who together compromise over 50% of our population.

- A phrase such as 'in the highly unlikely event of a spill' makes it easy to dismiss what immediately follows as being not worthy of our full attention. Similar phrases appear throughout the report. Consider the change in tone if those phrases were replaced by 'in the rare but entirely plausible event of a spill'. The population does not have unreasonable anxiety that needs to be assuaged.

Burden of illness in a community is a function not just of the severity of symptoms but also of the percentage of people experiencing them. Eye irritation and respiratory symptoms are not minor to individuals who are experiencing them, and they are never minor if everyone is experiencing them.

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When almost all members of a community are impacted, eye irritation, nausea, and minor central nervous system depression are not minor symptoms: they cause great individual, family and community stress and would overwhelm current community capacity to care for and mitigate them.

The whole is often greater than the sum of the parts. The report uses common endpoints, such as eye irritation or nerve depression, as a means to group the contaminants to assess possible additive effects. This is rational and measurable but there is an equally important issue to consider. The contaminants, whether petroleum hydrocarbon fragments, polycyclic aromatic hydrocarbons, or volatile organic compounds, will all be competing for the same metabolic pathways, primarily Cytochrome P450 and glutathione S-transferase, in the human body as it tries to break down the toxins. The aggregate biochemical effect of this is very complex and difficult to predict but is almost always more problematic than a simple sum of the individual doses.

Difficulty in dosing medications. The same Cytochrome P450 and glutathione S-transferase pathways are crucial for metabolizing many very common medications including statins, anti-depressants, blood thinners, anti-epileptic drugs and others. There is a rational basis to expect that people in shoreline communities who are taking any of these medications may experience negative effects from blood levels of their medications that could be higher or lower than expected. With statins and anti-depressants being among the most frequently prescribed medications, this amounts to over 10% of the adult Metchosin population.

Data from Burrard Inlet is not necessarily translatable to the Strait of Juan de Fuca. In the analysis of the potential risks from heavy metal exposure, the report states that since the concentration of most of the metals in the sediment of the Burrard Inlet is greater than that in the potential spill, there would likely be no incremental negative effect from heavy metals from the spill. However, one cannot assume that the concentration of heavy metals in the sediment of the Juan de Fuca strait is the same as that in the Burrard Inlet and therefore it may be relevant to consider the potential impact of heavy metals on shoreline communities along Juan de Fuca.

Given the weather and currents in the Strait of Juan de Fuca, it is likely that a response fleet may not be deployable at all at some times of the year. This makes the concluding statement that "the rapid deployment of a response fleet to the spill location (2 hours or less) would reduce the predicted impacts to human health from those described in the HHRR" a misdirection.

Subsistence food is necessary for life – that is what subsistence means. From the HHRR, "The people who live in the LAA could experience adverse health effects from exposure to the larger aromatic hydrocarbons, including PAHs, through the consumption of impacted marine country foods, if subsistence consumption continues unabated." Subsistence food is by definition a necessity of life. The food itself and the harvesting, cooking and eating of that food are defining elements of a culture. Subsistence consumption should not have to be abated in response to external trauma to the environment that need not have occurred.

The chemicals of concern in dilbit are numerous and toxic. Scientific data on them, especially in combination, is incomplete but some things are known for certain. They are known carcinogens, mutagens, destroyers of liver cells, depressors of central nervous system function, and disruptors of DNA. Whenever they have been studied in combination their combined actions are worse than the sum of the parts. They have no known safe levels. They have only 'guideline levels' and 'exposure limits' which differ from country to country and which change over time as societies grapple with a calculus -

the risks of these chemicals weighed against the benefits they purport to bring. When the risks and benefits are not borne by the same community or even the same province, the ethics of the calculus are inherently problematic.
In the case of the transport of dilbit through the Strait of Juan de Fuca, such a calculus exists but is not openly expressed as such. The economic benefits in distant places are being weighed against the detrimental short term and long-term effects on the health and happiness of shoreline communities including Metchosin.

RECOMMENDATIONS:

1. The Province to seek the agreement of Transport Canada such that tankers are not permitted to enter our nearby oceans when spill response teams are not permitted to respond due to adverse sea conditions.

2. It is unrealistic to expect that the time course of response could achieve meaningful containment in the initial phase of air borne COPCs. These are modeled to begin in the first hour. Therefore, eye wash stations and air quality monitoring units should be pre-placed within the community on a proactive basis and community members trained in their use. The cost of the stations and monitoring units and training in their use should not be borne by the municipality.

3. The Province should assist local governments to:

    - **Stockpile PPE and spill response equipment**
    - **Develop land-based shoreline response plans, and community-wide evacuation plans**

We welcome your collaboration on this matter.

Sincerely,

Marie-Térèse Little Ph.D.
Mayor

cc: Sc'ianew First Nation
Capital Regional District
Township of Esquimalt
City of Colwood
District of Sooke