

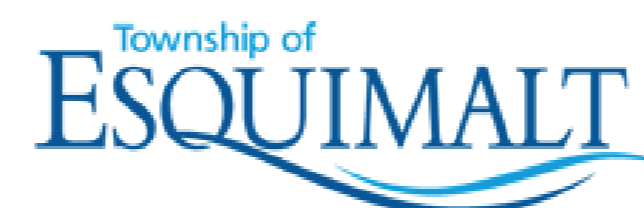
Welcome! A'siém nu schala'cha

Thank you for taking the time to learn more about options for wastewater treatment and resource recovery on the Westside.



WESTSIDE SOLUTIONS

Westside Wastewater Treatment & Resource Recovery



Why have we invited you here today?

The purpose of providing this information is to:

- Inform you about wastewater treatment and resource recovery.
- Keep you involved in the process of creating a successful solution for wastewater treatment for the Westside.
- Give you the opportunity to provide input into what a wastewater treatment and resource recovery facility might look like in your neighbourhood.

How we hope to gather your input:

- Please review the discussion boards.
- Feel free to ask Westside representatives any questions you have.
- Share your thoughts in the questionnaire when you see this icon.



Why are we talking about this now?

A suitable site has not been found for a wastewater treatment plant.

Communities working on Westside Solutions are taking the opportunity to explore options for one or more facilities that will meet the needs of the communities.

Which communities are participating in the Westside Solutions project?

Langford, Colwood, Esquimalt, View Royal, Songhees Nation

For background information please see www.westsidesolutions.ca

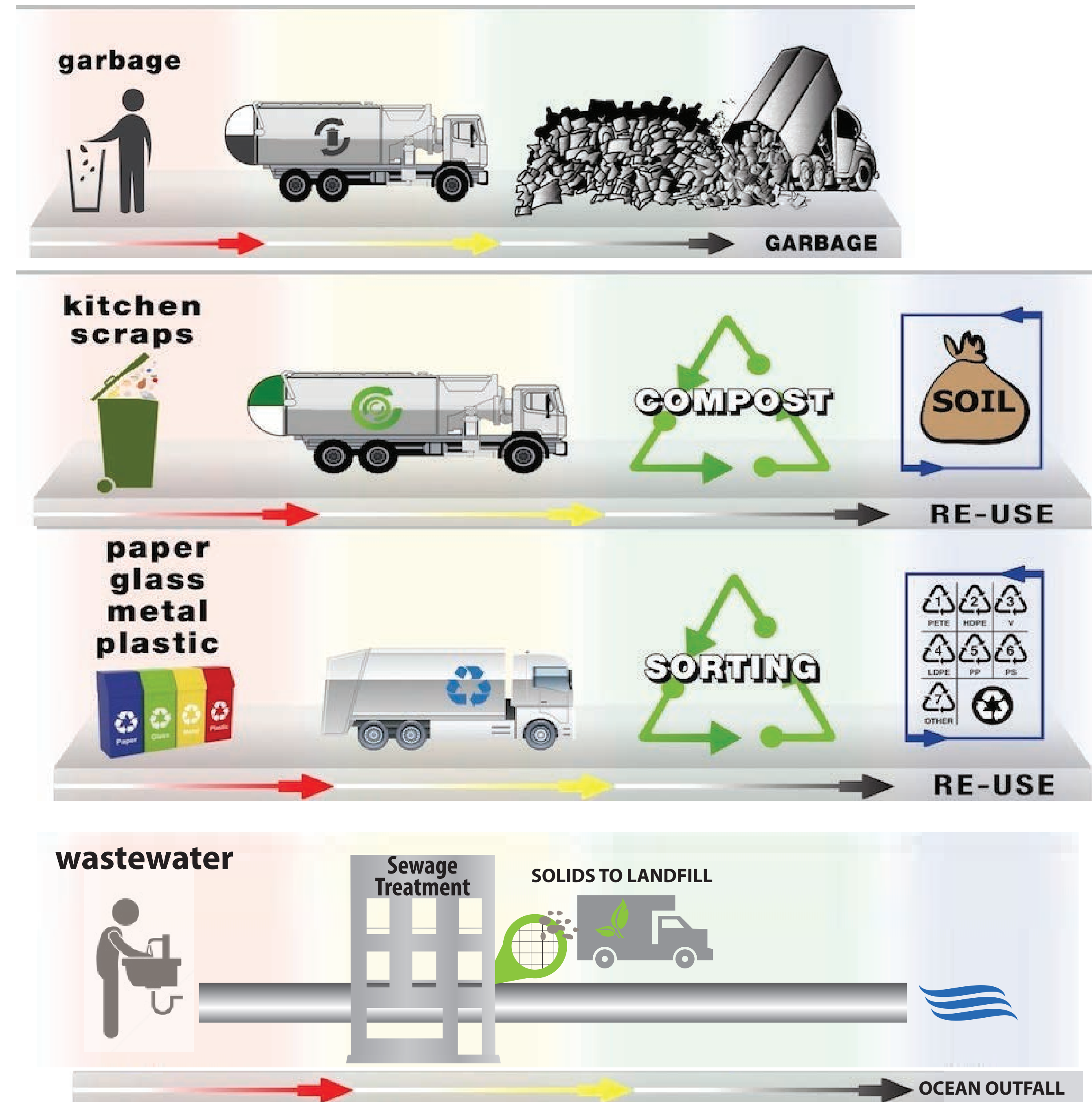


Q1. What community do you live in?

How is waste handled in our region now?

The Capital Regional District is responsible for the proper disposal of both solid and liquid wastes.

These diagrams show the current process for each waste stream in a simplified format.



Why is wastewater treatment important?

We must meet our legal requirement

The provincial and federal governments have mandated that wastewater must be treated in an environmentally responsible way. **There are other potential benefits:**

✓ Reduce our environmental impact

Ensure we are not polluting our marine environment and take steps to protect our natural resources.

✓ Recover resources

Optimize opportunities to harness heat and water generated through sewage treatment. Explore possibilities for the use of treated solids, such as land application or fuel for burning.

✓ Ensure value for tax dollars

Identify solutions that: maximize cost efficiencies; explore options for revenue generation through resource recovery; and plan for savings that increase over time as water and energy costs grow.



Q2. What aspects are most important to you in planning a wastewater treatment facility?



What's important to you?

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no odour

removal of harmful materials

revenue generation

minimize cost to taxpayers

hidden from sight



use treated water:
- toilet flushing
- irrigation
- groundwater supply

visually appealing

use treated solids:
- compost
- fuel sources
- gasification

noise reduction

reclamation of water

multi-use facility, commercial & residential

minimize trucking traffic

resilient facility built to handle climate events

recovery of heat energy



Q3. If a wastewater facility was built in your community, what features would be most important to you?

What's in wastewater?

Wastewater is all the material that flows from buildings into sewage pipes, including things like:



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See the **“What’s in Wastewater”** Fact Sheet for greater detail about substances that may be present in wastewater.

Learn how to dispose of waste responsibly on the CRD Source Control website.

Environmental impacts and resource recovery options depend upon the treatment methods used. Read on for more info.

How is wastewater treated?

The steps below describe an example of wastewater treatment in simplified terms:



- 1 Wastewater flows from the sewer system into the wastewater treatment facility.
- 2 Large debris is screened out and taken to the landfill.
- 3 Most of the remaining solids settle to the bottom of the tank and are removed.
(Primary Treatment - does not meet regulatory requirements)
- 4 The resulting liquid is often treated with microbes to break down any remaining solids.
(Secondary Treatment)
- 5 The wastewater may be disposed of, or filtered & disinfected and used for non-drinking uses.
(Tertiary Treatment)
- 6 Organic solids can be broken down further in a gasifier or digester, resulting in treated solids. Digestion produces bio-gas, which can be burned to generate power. Treated solids can be dried and used for fuel pellets or soil conditions.

See the fact sheet on Levels of Treatment for greater detail.

Westside Solutions will explore the many options for processing or reusing treated wastewater and treated solids.

What could happen to the treated water?

There are several options for disposing of, or reusing the treated water, all of which would require Ministry approval:

Dispose treated water through an ocean outfall.

Dispose treated water into the ground (if ground is suitable).

Dispose treated water into freshwater lakes and streams.

Reuse treated water for toilet flushing and other non-potable uses.

Reuse treated water for irrigation.



Q4. What methods would you support for handling treated water?

What could happen to the solids?

Solids processing can be built into the sewage treatment facility, or solids can be transported to another location for processing:

Build a sewage treatment facility that will also process the solids.

Construct a pipe to send solids to another location.

Transport dried solids to another location by truck, train, boat or other method.

Treated solids have several potential destinations, if approved by the Ministry:

Compost solids into nutrient rich product for use or sale.

Dry solids into pellets or products that can be used or sold as fuel for burning.

Process solids using gasification or other methods to recover energy.



Q5. What methods would you support for handling of treated solids?

What do treatment plants look like?



Take a look at the size, cost, design and features of the following examples of wastewater treatment plants in other areas.

 Which wastewater facilities could you imagine in your neighbourhood?

 What features would you consider acceptable for a wastewater facility in your neighbourhood?



Q6. What benefits would you like to see if a facility was built in your neighbourhood?

1. Pinewater Creek Wastewater Treatment Plant

Calgary, Alberta



Size: 137.59 hectare site (340 acres)
Population Served: 250,000 (build out 1,750,000)
Full Project Cost: \$430 million

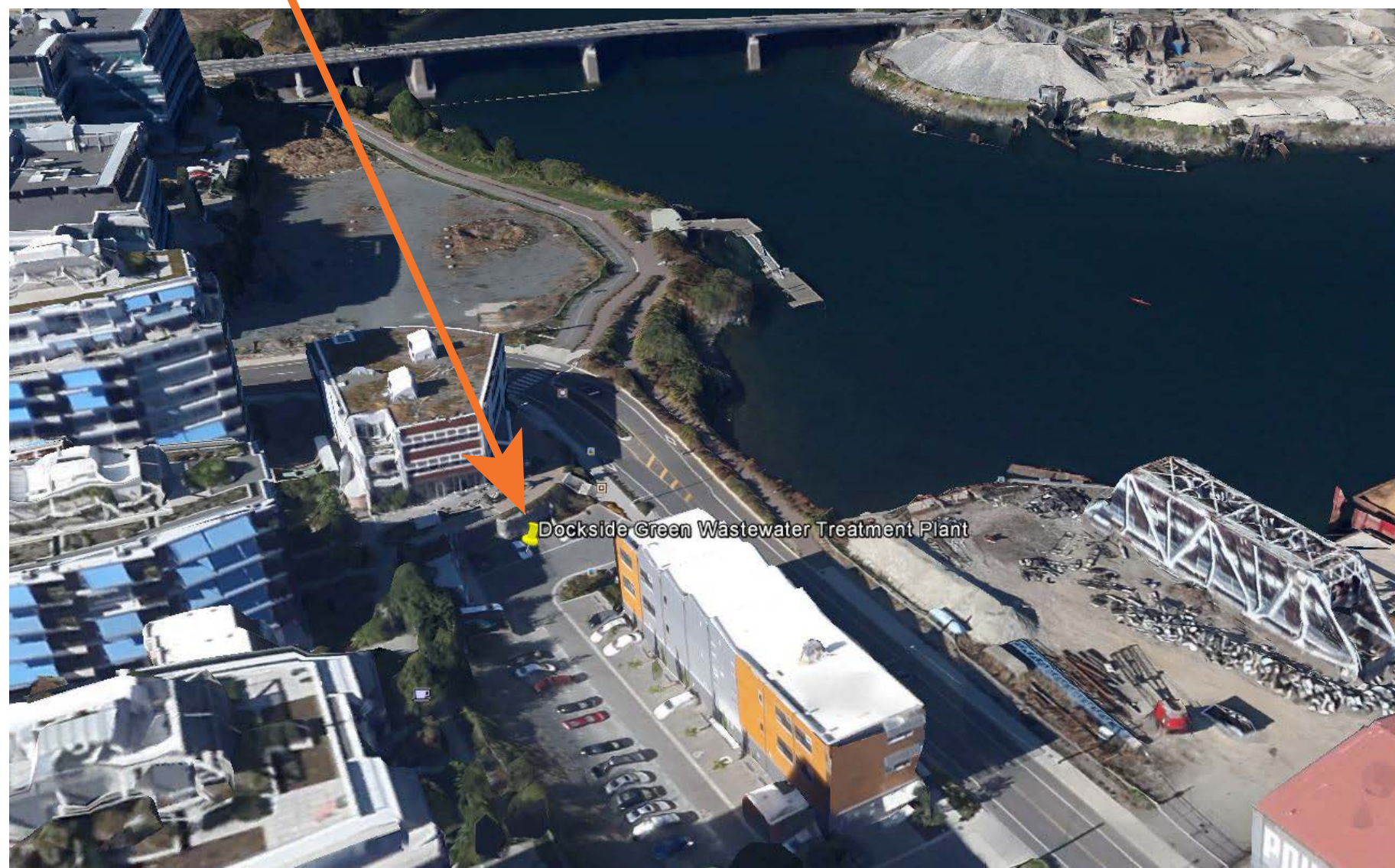
- LEED Gold Certified
- Tertiary Treatment
- 5,500 square metres of green roofs
- Bio-gas used to heat operations
- Provision of bio-solids to farmers and ranchers
- Site designed to blend with neighbourhood



Q6. What benefits would you like to see if a facility was built in your neighbourhood?

2. Dockside Green Wastewater Treatment Plant

Victoria, BC



Size: 11 hectare development site (29 acres)
Population Served: 300 residents and 16 businesses
Treatment Plant Cost: \$4 million

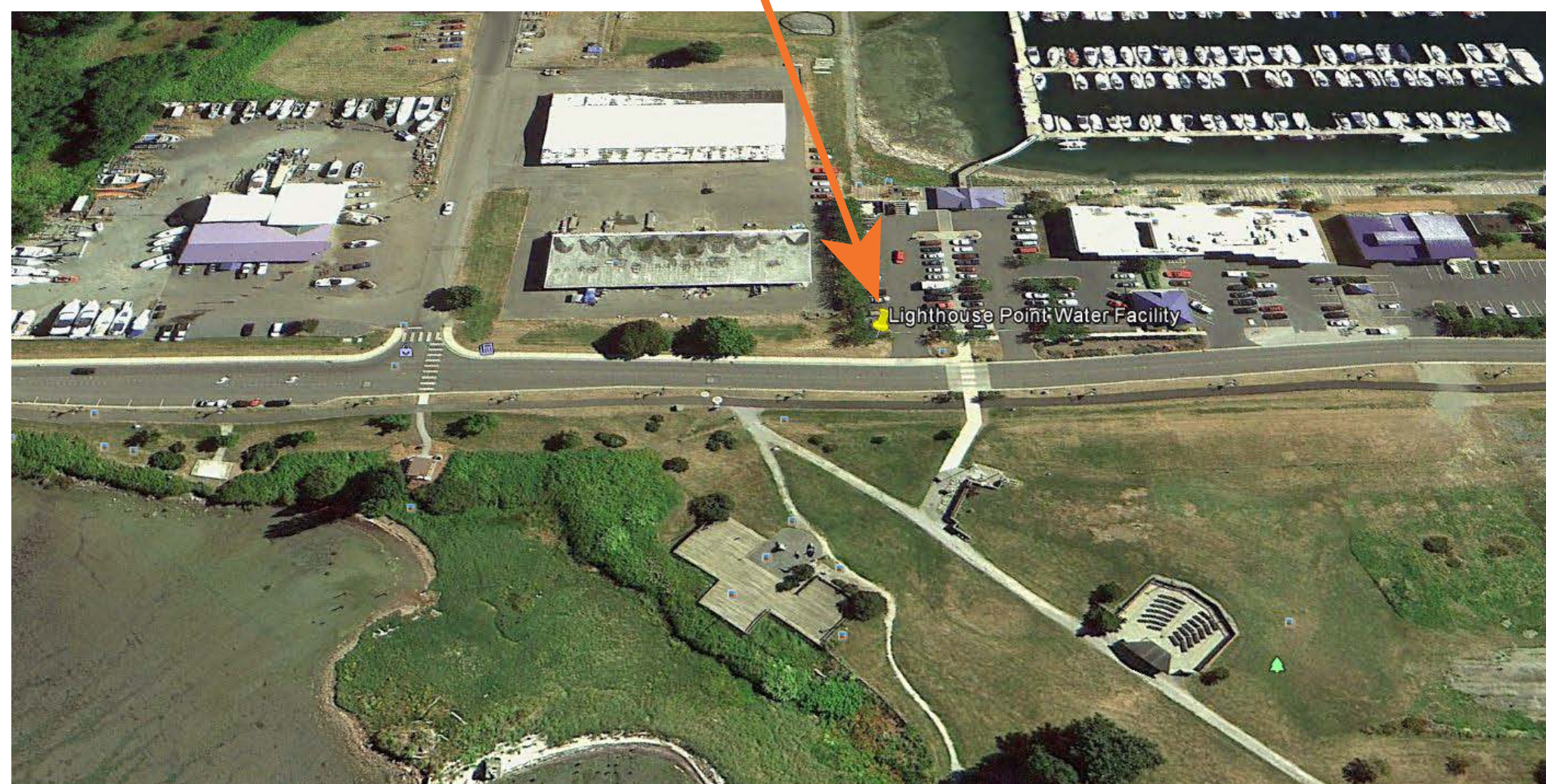
- Tertiary Treatment
- Reclaimed water exceeds potable water requirements
- Reclaimed water used for flushing toilets and irrigation
- Saves 113 million litres of drinking water per year
- Biosolids are dewatered and composted on Vancouver Island for use as a soil supplement.



Q6. What benefits would you like to see if a facility was built in your neighbourhood?

3. Lighthouse Point Water Reclamation Facility

Blaine, Washington



Size: 0.4 hectare facility (1 acre)
Population Served: 5,000 people
Treatment Plant Cost: \$34 million

- Advanced treatment plant with high quality effluent
- Biosolids recycled for use as fertilizer for grass fields
- Reclaimed water used for golf course, street sweeping
- Integrated into public park, pedestrian bridge to beach



Q6. What benefits would you like to see if a facility was built in your neighbourhood?

4. LOTT Regional Services & Budd Inlet Treatment Plant

Olympia, WA



Size: 5.7 hectare facility (14 acres)
Population Served: 108,000 people
Treatment Plant Cost: \$500 million

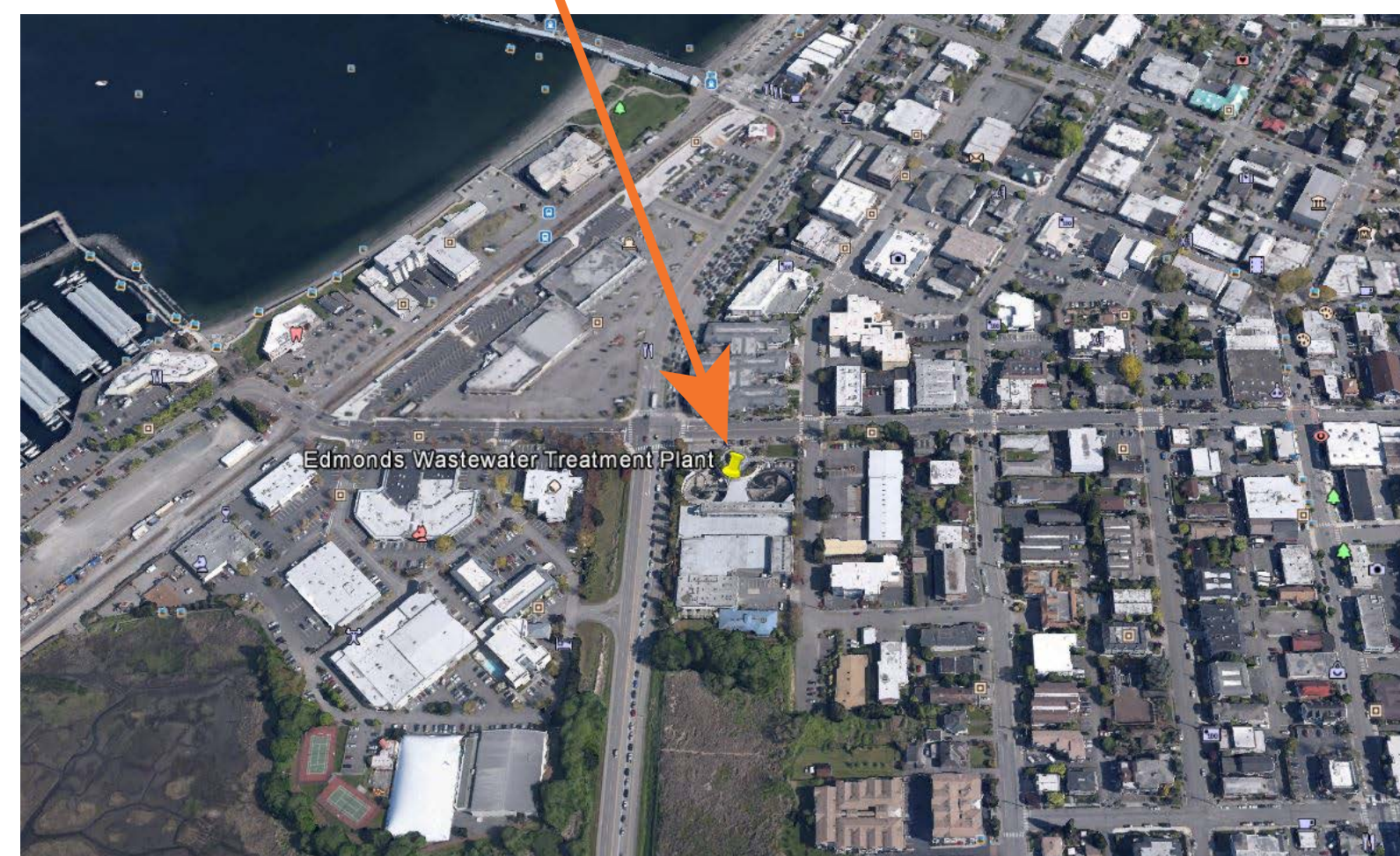
- Biosolids recycled as fertilizer for agriculture industry
- Reclaimed water used for irrigation
- Heat, hotwater and electricity from methane treatment
- Outdoor and indoor ponds and streams use reclaimed water
- Education centre, interpretive exhibits, boardroom, library
- LEED Platinum certified



Q6. What benefits would you like to see if a facility was built in your neighbourhood?

5. Edmonds City Wastewater Treatment Plant

Edmonds, WA



Size: 1 hectare (2.4 acres)

Population Served: 80,000 people

Treatment Plant Cost: \$34 million

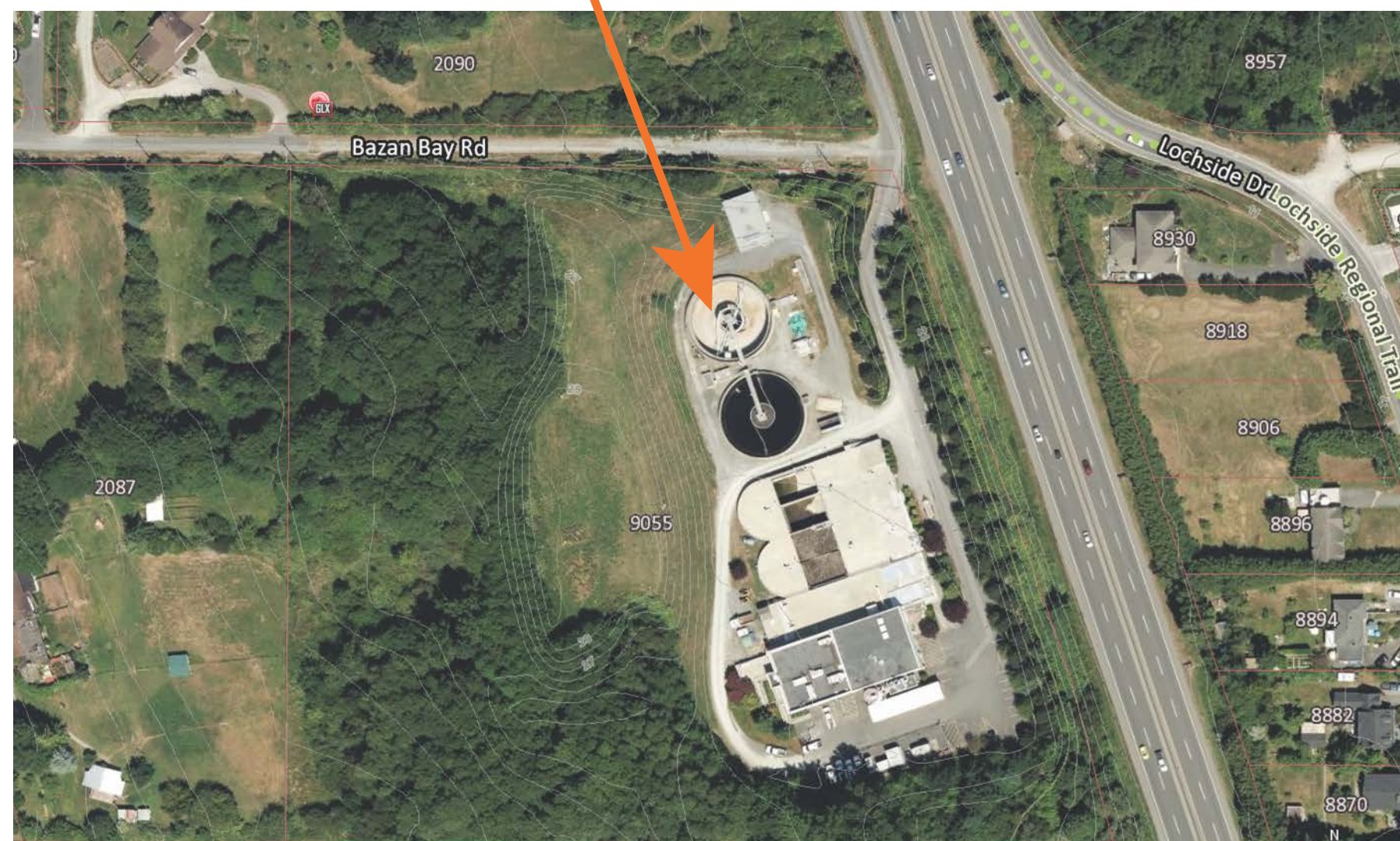
- Secondary treatment plant
- Thermal reduction of solids
- Public plaza, green space, artistic water feature
- Located downtown in close proximity to residences



Q6. What benefits would you like to see if a facility was built in your neighbourhood?

6. Saanich Peninsula Wastewater Treatment Plant

North Saanich, BC



Size: 1.9 hectares (4.7 acres)
Population Served: 37,000
Treatment Plant Cost: \$20 million

- Serves North Saanich, Central Saanich, Sidney, the Victoria International Airport, Institute of Ocean Sciences and the Tseycum, Tsartlip & Pauquachin First Nations communities
- Can produce Class A Biosolids for beneficial use
- Recovered heat from effluent heats the water at Panorama Recreation Centre pool
- Tipping fees generate \$115,000/year



Q6. What benefits would you like to see if a facility was built in your neighbourhood?

7. Henderson Wastewater Treatment Plant

Henderson, Nevada



Size: 40+ hectare site (100+ acres)
Population Served: 275,000 people
Treatment Plant Cost: \$4 million

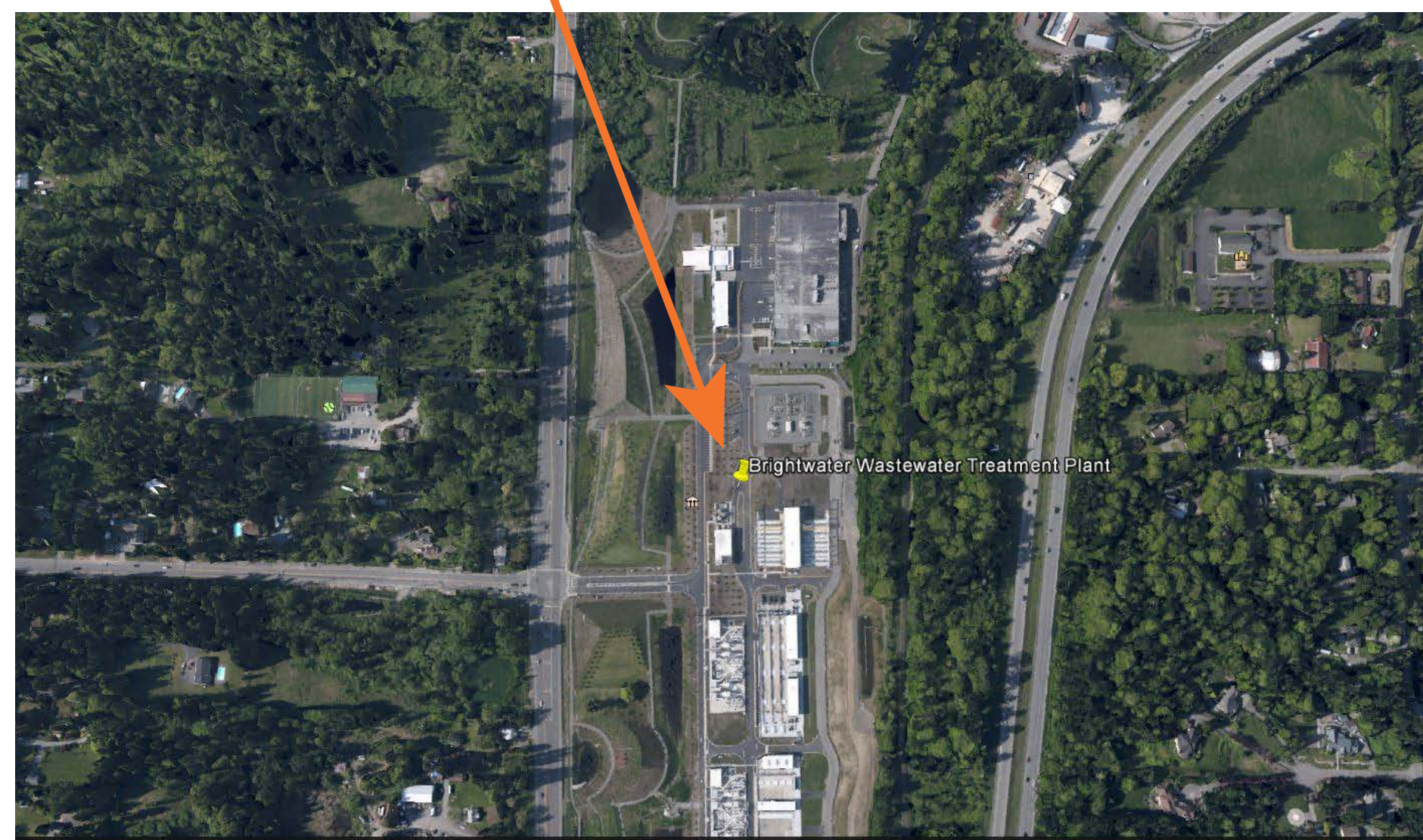
- Originally a percolating pond activated sludge facility
- Updated pre-treatment, equalization, filtration, UV disinfection
- Reclaimed water pumped into public bird preserve ponds
- 7 miles of trails for visitor access



Q6. What benefits would you like to see if a facility was built in your neighbourhood?

8. Brightwater Wastewater Treatment Plant

Snohomish County, WA



Size: 17.4 hectares (7 acres)

Population Served: 189,000 people (future 435,000)

Treatment Plant Cost: \$896.3 million

- Hybrid Advanced Treatment System
- Recovery and Recycling of plant resources
- Biosolids recycled as fertilizer for agriculture and forestry
- Biosolids composted by private company for landscaping
- Reclaimed water for landscaping, heating/cooling, irrigation
- LEED Platinum Certified



Q6. What benefits would you like to see if a facility was built in your neighbourhood?

9. Sooke Wastewater Treatment Plant

Sooke, BC



Size: 2.37 hectare lot (5.8 acres)
Population Served: 11,000 people
Treatment Plant Cost: \$23 million

- Provides secondary treatment with UV disinfection
- The District of Sooke and EPCOR received the Chuck Wills Award for Innovation and Excellence in Public-Private Partnerships in 2007
- Marine discharge through a 500 mm diameter pipeline
- Biosolids are hauled to Hartland landfill



Q6. If there was a sewage treatment plant in your neighbourhood, which designs would you prefer?

What about the budget?

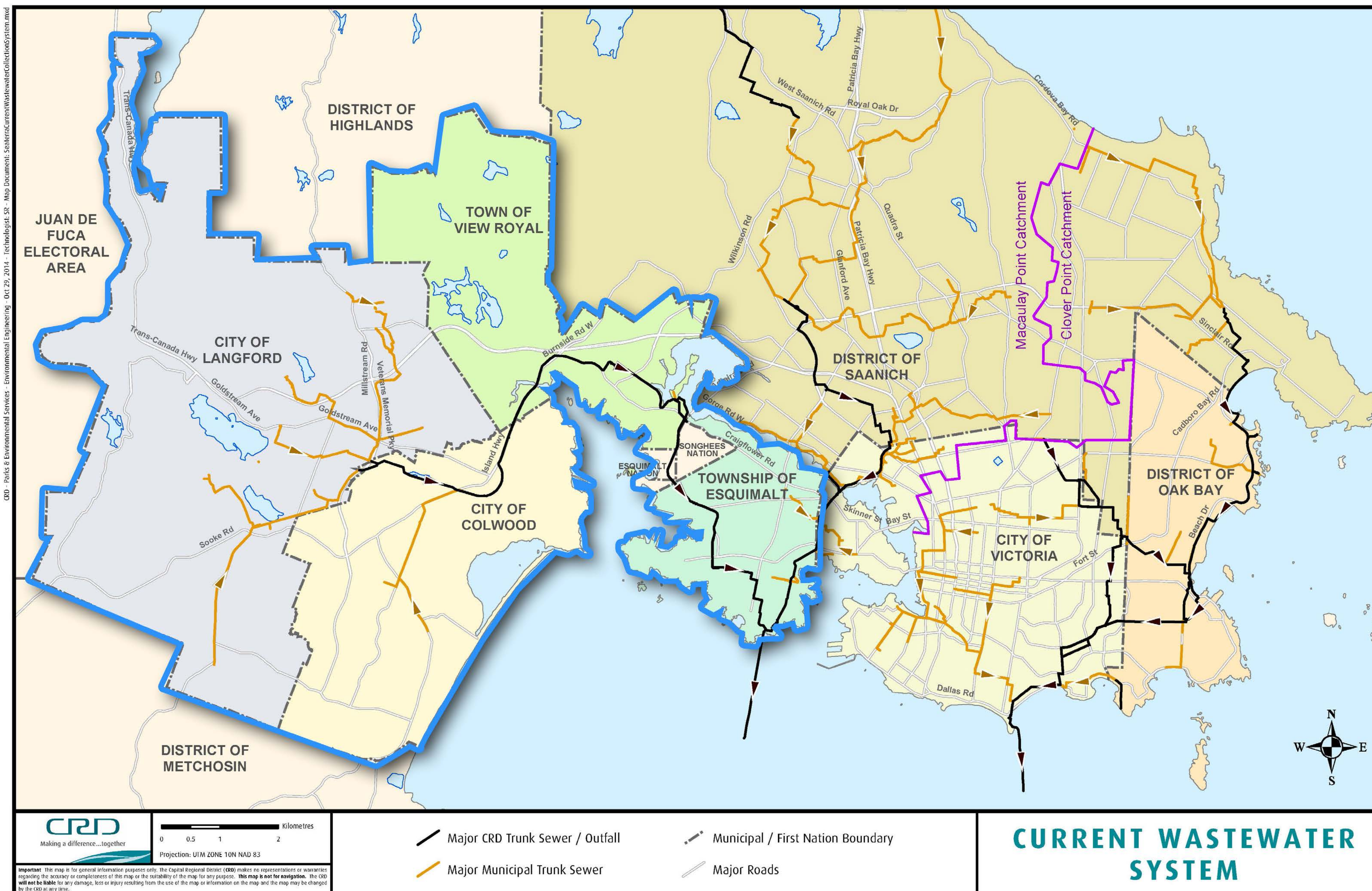


A funding agreement with the Capital Regional District will need to be based on a well developed conceptual plan for wastewater treatment on the Westside.

- The first step is to gather input from you, from industry experts and from environmental assessments that will narrow down the options for Westside sites and technology.
- With a conceptual plan in place, Westside communities will work with the Capital Regional District and the federal and provincial governments to cost out options and align funding for the project.
- Your input will be needed to fine tune conceptual plans once the various options have clear costs associated with them.

Where are existing sewage trunk lines?

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The blue boundary shows the Westside communities.

Could your community benefit?

Innovative wastewater treatment and resource recovery facilities in other areas have demonstrated many community benefits.

For example:

- Bringing green technology industry and research opportunities to the community
- Boosting economic development by providing affordable heat and water to nearby buildings
- Reducing the community's water consumption by using reclaimed water for irrigation, stream augmentation, ice rinks etc.
- Revitalizing an area by including residential, commercial and recreational amenities to the treatment facility

What are the next steps in the consultation?



This is the *first* step in a multi-part community consultation to develop a conceptual plan for Westside Wastewater Treatment & Resource Recovery.

community engagement one *(this opportunity)*

Provide information, answer questions and invite your input into determining the most important priorities in planning a Westside Wastewater Treatment & Resource Recovery Facility.

community engagement two *(the next opportunity)*

Provide information, answer questions and invite your input into fine tuning those priorities after gathering more information about costs, potential sites and feasibility of preferred treatment methods.

Input is also being gathered from:

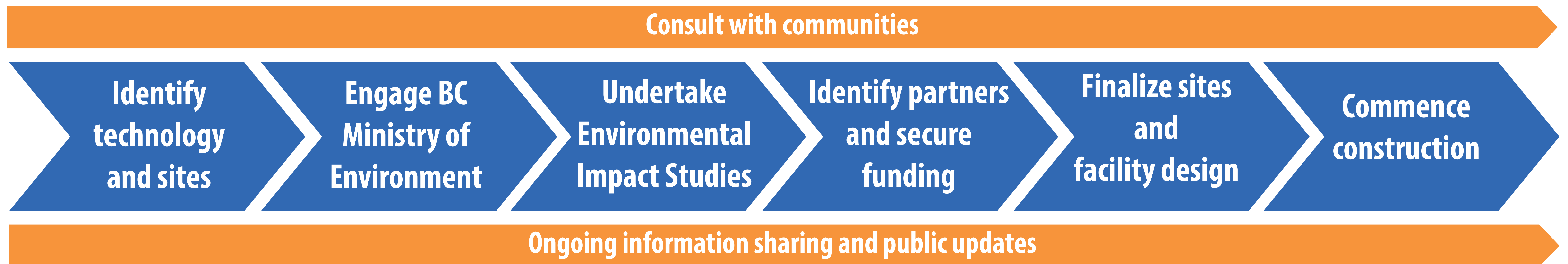
- ≡ industry experts
- ≡ communities with successful facilities
- ≡ extensive research

What are the next steps in the process?

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There are many steps involved in planning, designing and getting approval to go ahead with a facility.

Below is an overview of some of the steps required:



Thank you!

Hay'sxw'qa gwn âne'techul Lkwungen Tungéx^w

*We appreciate you taking the time to
learn more and offer your input.*

Don't hesitate to get in touch if you have additional
comments, questions and ideas.

www.WestsideSolutions.ca

Your input will help to shape plans for this important project.

Watch for an update on feedback from this engagement process and
more opportunities to be involved in moving the project forward.

Subscribe for updates at www.WestsideSolutions.ca