

REVISED McLoughlin Point Wastewater Treatment Plant

Prepared for the
Capital Regional District

May 2013

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Purpose

Because the Township of Esquimalt's *Official Community Plan* designates the site of the McLoughlin Point wastewater treatment facility as a *Development Permit Area* (in order to address *building form and character* in future development of the land), the purpose of these Design Guidelines is to provide the owner (the CRD), the Township of Esquimalt, and the successful project construction proponent with key design parameters for the facility and the site.

Since the procurement method for this project is *design-build*, the final building design will be prepared by the project proponent. The guidelines introduce a degree of certainty, and understanding over design objectives and expectations regarding the completed design. Recognizing the necessary functional workings of the facility, these guidelines are intended to inform and to guide, but not restrain imagination or appropriate design solutions.

At a later date, the project proponent will submit plans for a Development Permit to the Township of Esquimalt once a specific design solution has been reached.

VISION STATEMENT

A design that reflects enduring and sustainable practices, and meets functional needs while being respectful of the prominent setting.

Guiding Principles

The process for developing the guiding design principles considered input from a workshop and open house attended by architects, landscape architects, Core Area Liquid Waste Management Committee representatives, and the public. These principles, or perhaps more appropriately *design values*, provide *qualitative performance statements* that shape both the intentions of the core area wastewater treatment system, and the specific guidelines for the McLoughlin Point wastewater treatment facility.

1. SUSTAINABILITY

- a) The treatment system will support environmental, social and economic sustainability, and be considered part of CRD climate action initiatives.
- b) Wastewater should be treated as a resource and, wherever possible and practical, provide opportunities for resource recovery and reuse.
- c) The McLoughlin Point facility should meet, or exceed the CRD's and the Township of Esquimalt's policies on sustainability and building excellence.

2. RESPECT FOR THE SITE

- a) Respect the site as a gateway location.
- b) Respect the natural shoreline.
- c) Respect the site context, and respond to the site and its surroundings.



3. PLAN FOR THE FUTURE

- a) Acknowledge and plan for major tsunami events, climate warming effects, and post-disaster resiliency.
- b) Incorporate durable, long-lasting, and timeless materials and design strategies.

4. LIVABILITY

- a) Provide a design solution that meets, or exceeds, Township of Esquimalt and City of Victoria noise by-law requirements.
- b) Provide a design solution that restricts odours to a maximum of five (5) odour units, or less (not detectable by humans).
- c) Respect view impacts from all sides, and from above.

5. SENSE OF PRIDE

- a) Incorporate designs that, while respecting the site, ensure the highest standards of materials and workmanship, and are aesthetically pleasing.
- b) Incorporate public art into the design.



View from Ogden Point

Design Guidelines

SUSTAINABILITY STANDARDS

Treating its wastewater should be viewed as an element of the region’s long-term sustainability objectives. Design considerations to support environmental, social, and economic sustainability include:

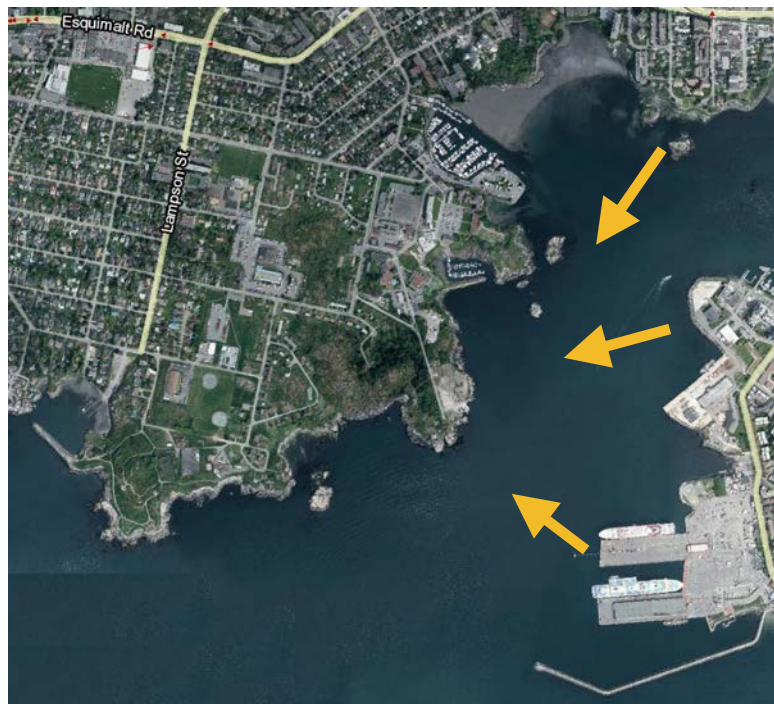
- Design the *Operations and Controls* building to a LEED® Gold standard.
- Where feasible, design for on-site heat recovery, and plan for future, long-term, neighbourhood, heat-resource opportunities.
- Incorporate a green roof system into the *Operations and Controls* building and other buildings, where appropriate.
- While much of the site is impervious rocky shoreline, where possible, introduce methods to clean and reduce stormwater runoff, incorporate rain gardens, and consider practical ways to re-use water.
- Restrict impact on the shoreline, except for those areas where wastewater lines enter or exit the treatment plant.

VIEW CONSIDERATIONS

View impacts are an important design consideration given that the site is a waterfront property. The impact on views from all sides (including from east and south perspectives, from across the harbour, and from above) need to be considered in the design process.

Building and design view impacts will be evaluated from the following locations:

- Shoal Point and Ogden Point;
- Songhees Walkway to West Bay; and
- From above.

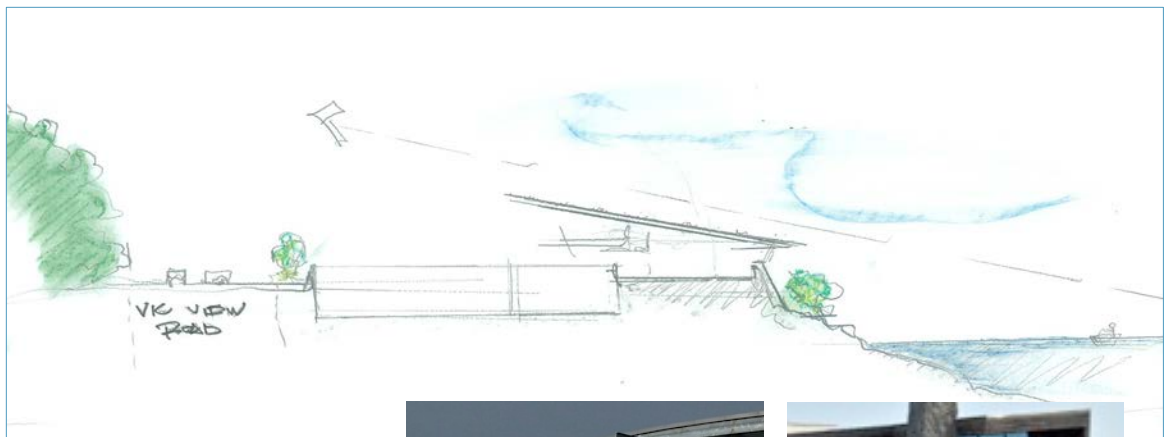


MARINE SHORELINE CHARACTER DESIGN CONSIDERATIONS

- Building forms should respect the site.
- Wall elements, relating to tsunami and associated catastrophic event protection, such as stepped walls that incorporate angled features, projections, wall terraces, and textures, should reflect the character of the rocky shoreline,.

MASSING, SITING & EXTERIOR ARCHITECTURAL ELEMENTS

- The design must demonstrate how the buildings and structures will fit into the site, responding to the shoreline in the forefront, and the evergreen treeline and rocky knoll backdrop.
- Building heights should vary, but not exceed 15 metres, from the finished grade.
- Design aesthetics should be optimized with the use of appropriate, high quality materials.
- Exterior building materials, including exterior details, must be selected to withstand intense weather and sea conditions, and must be of a high standard to ensure low maintenance.
- Doors, overhead doors, and other closures (including hatches, grilles, and louvres) should be durable, thermally resistant, and suitably finished for the marine environment.
- Windows should have high performance glazing, and be capable of providing natural ventilation, where appropriate.
- Roof areas must consider views from above.
- Clarifiers and aerated filters must be covered to meet noise and odour principles.



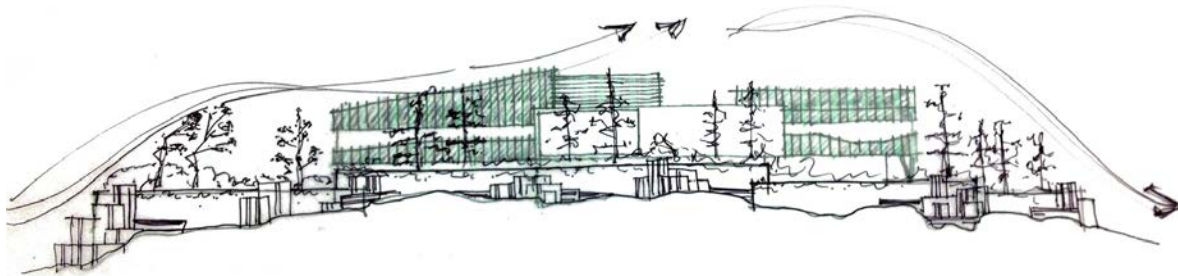
LIGHTING

- Light fixtures should provide no more than the minimum lighting needed for their intended purposes, and not exceed levels recommended by the *Illuminating Engineering Society for North America Recommended Practice Manual: Lighting for Exterior Environments*.
- Light fixture shields should be specified to reduce impacts on other properties, and when seen from the designated viewpoints.
- All lighting should be directed downward, and not into the night sky.
- Energy efficient fixtures should be specified, with consistent colour for all lighting.

LANDSCAPE ELEMENTS

The design concept is based on site conditions, views from the harbour, and a windswept rocky shoreline. With this in mind, landscape elements should include:

- Use of plant species that are designated hardy to harsh, and for salt spray environments; situate plants such that the force of the wind shapes their future forms;
- A retaining wall system designed to reflect the rugged and rough-textured surface of boulders and exposed-rock shorelines;
- Outdoor storage and parking areas screened through the use of berms, fences, landscaping and/or solid noise-absorbing barriers;



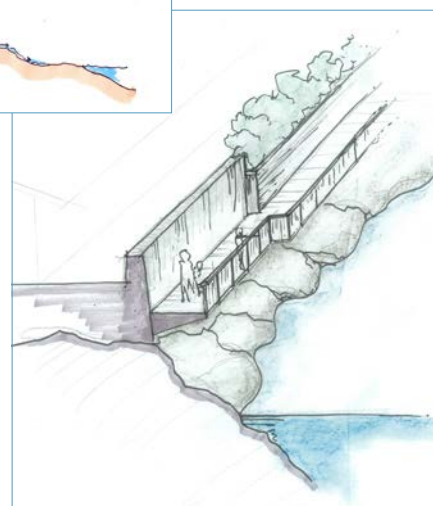
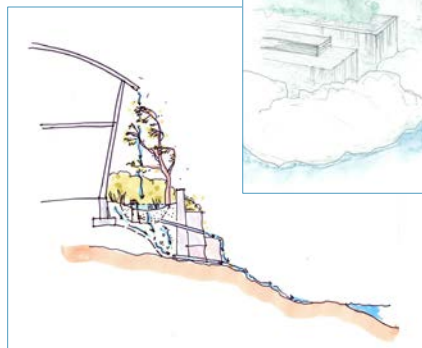
GUIDELINES FOR SEAWALL AND WALLS

The retaining wall system should be designed to reflect the rugged and textured surface of the exposed-rock shorelines. To reduce view impacts for neighbouring communities and water/air traffic, the mass of the wall (combined height and width) will be broken up visually with features such as board form relief, wall projections, vertical elements, and wall protrusions. It should feature both rounded, smooth, and angular surfaces to reflect the natural shoreline.



Walls are divided into two types: 1) primary walls, which are prominent perimeter retaining walls, and feature walls within the plant; and 2) secondary walls, which serve as infill between the primary walls.

- Walls must not protrude beyond the High Water Mark (HWM 1.804m geodetic).
- The site must be protected by a continuous tsunami protection wall that has a top elevation of not less than 6.5 metres above the High Water Mark.
- The appearance of wall heights greater than 4.0 metres must be minimized by placing step walls in the tsunami protection wall.
- Planted stepped walls should be a minimum depth of 1.0 metre horizontally to allow for landscape elements to be introduced. Where this is not possible, shallower multiple steps may be used.
- All surfaces of the primary perimeter retaining walls must be finished with random board-formed recesses or other suitable architectural treatment. Vertical recesses should be spaced randomly. A smooth finish should be considered for secondary walls.
- The design should plan for development of a pedestrian pathway along the waterfront side of the site.



GUIDELINES FOR PLANTING – GENERAL

- Distribution of plants will be limited due to salt spray and wind exposure, particularly on the south side of the site
- Planting will exclude lawns.
- Mature plant heights must be at least 60 cm tall for all planted areas to shade undesirable weed species.
- Planting densities must ensure that vegetated areas will have 100% plant coverage after two full growing seasons.
- Planted areas will be irrigated with a high efficiency irrigation system.
- Plants should be drought tolerant and require minimal water after the two-year establishment period.
- Green roofs must be installed fully established to minimize wind erosion and maintenance.
- All planting will be to BCNLA/BCSLA Landscape Standards.

GUIDELINES FOR PLANTING ALONG SEAWALLS

- Distribution of plants will be limited due to salt spray and wind exposure.
- Trees must be situated more than 10 metres from the south facing wall, as this will be a high wind velocity area.
- The following species are considered appropriate for use along the waterfront:
 - *Pinus contorta* var. *Contorta* (Shore Pine)
 - *Arbutus menzesii* (Pacific Madrone)
 - *Rosa nutkana* (Nootka Rose)
 - *Symphoricarpus albus* (Snowberry)
 - *Arbutus unedo* (Strawberry Tree)
 - *Myrica californica* (Sweet Gale)
 - *Lonicera pileata* (Privet Honeysuckle)
 - *Mahonia aquifolium* (Oregon Grape)

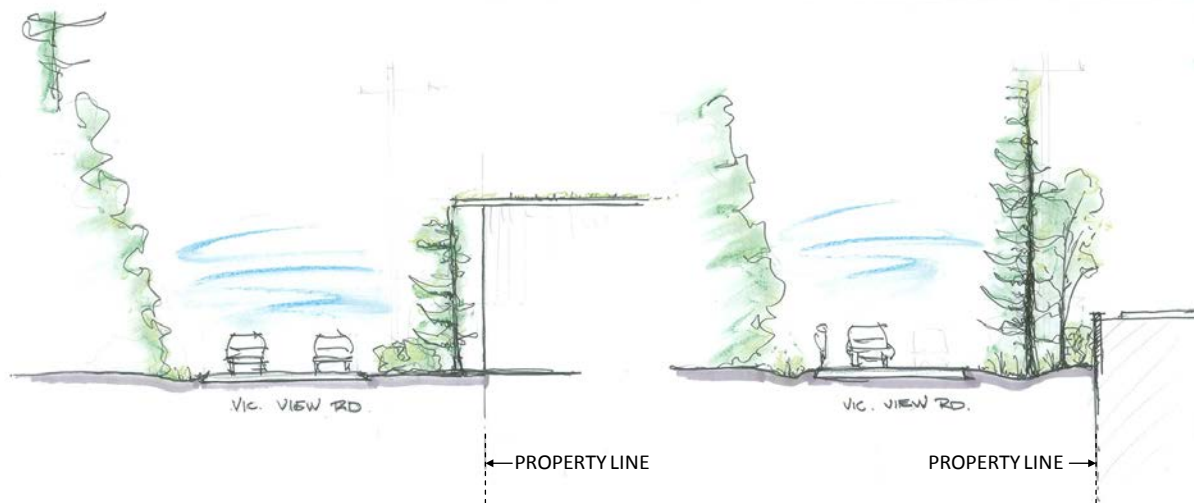


GUIDELINES FOR PLANTING ADJACENT TO BUILDING ENTRANCES

Planting around the building entrances can be more design driven, and specific hard and soft landscaping should complement the building architecture.

GUIDELINES FOR SCREENING ON VICTORIA VIEW ROAD

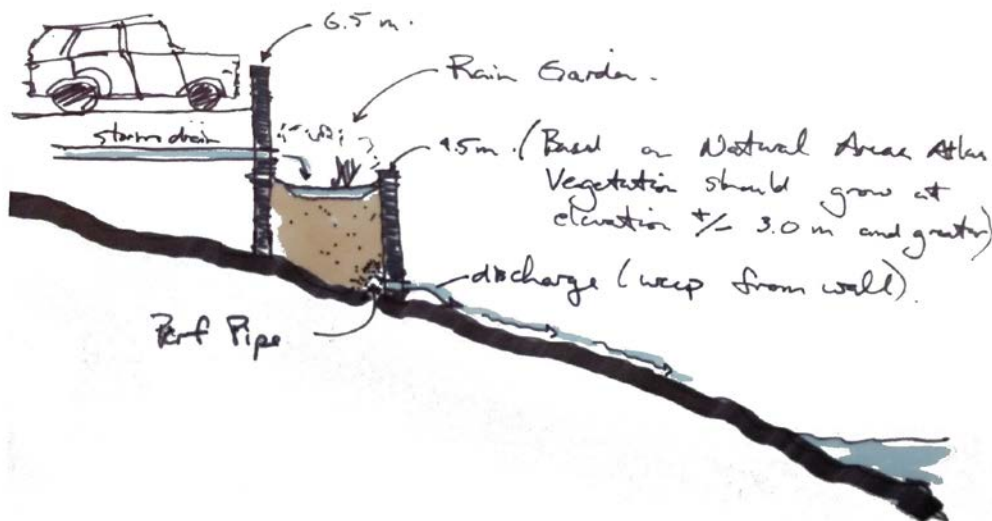
- To break up the mass of concrete walls, introduce screening (mostly of coniferous tree plantings) along the road frontage and adjacent property lines. The CRD should work with the Department of National Defence to allow for landscaping along the road frontage adjacent to the site. Cluster trees to provide clear 8-metre wide gaps to allow for future maintenance access (from a crane).
- A continuous shrub border will be required at the base of the wall to screen the lower retaining wall, and reduce the risk of vandalism. Shrubs in this area are to be native species only, with the exception of those adjacent to the two entrances, where lower evergreen screening is desirable.
- In situations with larger retaining walls, vines can be considered, but must be supported by cable systems.
- The following species are considered appropriate for use in screening applications:
 - *Pseudotsuga menziesii* (Douglas Fir);
 - *Rosa nutkana* (Nootka Rose);
 - *Symphoricarpus albus* (Snowberry); and
 - *Parthenocissus tricuspidata* (Boston Ivy).



STORMWATER MANAGEMENT

The following stormwater management measures should be considered for the site:

- Stormwater from the internal roadways and parking areas will be treated to remove 80% of TSS from a 6-month rain event prior to discharge.
- Treatment of roadway and parking run-off can come in the form of:
 - A combination of rain gardens and bioswales adjacent to the parking and roadways, complete with raised overflow basins, and under drains connected to the storm drain system;
 - Aqua-pave permeable paving, complete with an under drain system in discrete areas where direction of run-off to a bioswale is not feasible; or
 - A combination of these.
- A conventional storm drain will be installed with an outfall to the ocean. All drainage from the site will eventually be discharged through this pipe.
- The buildings will connect directly to the piped storm drain system. Building drainage will bypass the treatment system. However, a rain garden, stormceptor, or similar end-of-pipe treatment device could be installed if treatment of roof drainage is required.



PARKING AND SERVICES

- Parking for visitors, plant and system operation staff, and CRD maintenance vehicles should be suitably screened through the use of berms, fences, landscaping, and/or solid noise-absorbing barriers to minimize visual impact.

SIGNAGE

- Limit signage to directional and identification as required for wayfinding.

PUBLIC ART AND EDUCATION

- Public art shall be provided. The CRD and Township of Esquimalt will work together to confirm the process and requirements.
- Plans should include capacity for organized, educational site visits to learn about the functioning of the treatment system, the regional liquid waste management program, resource recovery, etc.





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