

MEMORANDUM

Date: July 27, 2015
To: Eastside Select Committee
cc: Larisa Hutcheson
From: Urban Systems – Ehren Lee
File: 1692.0034.01
Subject: Primer: Site Reprioritization and Option Set Development

Introduction

At the July 15, 2015 Eastside Select Committee on Wastewater Treatment and Resource Recovery, Urban Systems was requested to return to the Committee on July 28, 2015 with an updated Eastside Option Set based on a reprioritized list of sites. This primer introduces the approach to reprioritization as well as provides an overview of findings.

Approach

An effective decision making process for regional wastewater includes direct links to public and technical priorities. While largely a technical exercise, the reprioritization of sites is based on a matrix-approach incorporating engineering aspects of the Project Commitments, public priorities and wastewater performance. The intent is to apply a deeper layer of technical analysis to evaluate the potential for any site to host a facility and to identify a short list of sites, with evidentiary advantages, per site node.

The matrix-approach includes six (6) criteria:

- *Current and Future Water Reuse* e.g. rating potential from opportunities for stream augmentation, irrigation and growth centers
- *Current and Future Heat-Solids Recovery* e.g. rating potential through site size, growth centers, proximity to boiler demands (acknowledging syngas flexibility)
- *Proximity to Infrastructure* e.g. rating potential by distance to CRD trunks and reuse-outfall infrastructure
- *Land use* e.g. rating potential through ownership, growth centers, industrial, commercial and civic buildings and uses
- *Environmental* e.g. rating potential through managing risk from sea level rise, seismic, archaeology, ecology

Site potential varies across the Eastside with certain site nodes demonstrating relatively higher potential than others but generally, each site node emerges with one or more possible sites for a distributed model. Engineering analysis focuses on the functional opportunities near each site in a systematic way including incoming flows, site size, need for pumping, outfalls and consideration to integrating flows across for the whole Core Area.

Summary of Findings

The matrix-approach to technically evaluate sites was effective in identifying locations of evidentiary advantage for wastewater treatment and resource recovery centers. On a site node basis, the results include:

- *Core Saanich*: five (5) prioritized sites with notable advantages including environmental, water reuse and land use (including one private site), as well as a range of possibilities to integrate

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Westside flows - Municipal Precinct, Saanich Public Works, Marigold Pumpstation, Rudd Park and Core Saanich Private.

- *Validate with public input: Saanich Public Works is 'green', three are 'yellow' and Marigold Pumpstation is yet to be evaluated.*
- **East Saanich: two (2) prioritized sites with varying technical advantages (includes private sites) - Shelbourne and Gordon Head.**
 - *Validate with public input: Shelbourne is 'yellow' and Gordon Head is 'green'.*
- **Oak Bay: two (2) prioritized, adjacent sites with proximity to water reuse as well as proximity to infrastructure - Trent-Jubilee Hospital.**
 - *Validate with public input: both of these sites are yet to be evaluated.*
- **Rock Bay: three (3) prioritized sites with similar recovery opportunities but varying environmental advantages; possibilities to integrate Westside flows - Victoria Public Works, BC Hydro-Transport Canada, Central Park.**
 - *Validate with public input: two sites are 'green' and Central Park is 'yellow'.*
- **Victoria Outer Harbour: two (2) prioritized sites with varying functional opportunities; possibilities to integrate Westside flows - Ogden Point and Clover Point.**
 - *Validate with public input: Clover point is 'green' and Ogden Point is 'yellow'.*

Option Set Development

Fourteen sites out of 30+ locations provide elevated technical advantages and became the basis for a revised Eastside Option set. Technical fundamentals include tertiary-focused treatment, distributed solids recovery (multiple sites), neighborhood-scale facilities, maximizing reuse and maintaining sites in key areas for possible integration with the Westside flows.

The proposed Option Set utilizes the site reprioritization, incorporates the technical fundamentals and includes five to seven treatment facilities covering each of the five site nodes. Facility sizes range to suit sub-regional flows, infrastructure and site size as follows: Rock Bay (60% of flows), Saanich Core (20%), East Saanich (10%), Trent-Jubilee (<5%), and Ogden (~5%). Multiple facilities on the identified sites may be considered in Saanich Core or East Saanich as future study or direction warrants.



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Phase 2 analysis may continue to evaluate the list of sites and Option Sets and optimize the configuration for cost, recovery and amenity possibilities.

The contents of this primer as well as the appended presentation will be brought forward to the Eastside Select Committee on July 28, 2015.

URBAN SYSTEMS LTD.

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