



**CORE AREA WASTEWATER CONSULTATION  
PHASE 1: SITING**

# WESTSIDE SOLUTIONS SiteSpeak REPORT

## Introduction:

SiteSpeak was the online platform utilized to engage residents allowing them to provide input into possible sites and technologies. This report presents quantitative data as well as some of the overall themes of respondents.

Some important things to note about SiteSpeak:

- only one survey completion was allowed through each computer address,
- respondents were allowed to skip questions if they did not wish to respond,
- provision was made to allow respondents to return to their survey after the Royal Colwood Golf Course site was added to amend their previous answers if needed,
- At the end of the survey respondents could see the statistical results to date (graphs).

A review of the methodology used was conducted and is attached to this report.

## Data Summary:

The following is a brief summary of some of the statistical data collected in SiteSpeak. Graphs on all responses are contained in the body of the report. Percentages here have been rounded to the nearest whole number.

<b>SiteSpeak duration</b>	<ul style="list-style-type: none"><li>• Launched June 24</li><li>• Closed July 22</li><li>• Additional site (Royal Colwood Golf Course) added July 16</li></ul>
<b>Participation</b>	<ul style="list-style-type: none"><li>• 619 respondents</li><li>• ~ 85% Westside residents</li></ul>
<b>Average length of time to complete</b>	<ul style="list-style-type: none"><li>• 1 hour 25 minutes</li></ul>
<b>SiteSpeak promotion</b>	<ul style="list-style-type: none"><li>• Options Launch Delta Hotel</li><li>• Media release</li><li>• Community Newspaper ads</li><li>• Times Colonist online ad</li><li>• Used Victoria online ad</li><li>• CRD Face book ad</li><li>• Westside Solutions website</li><li>• Municipal websites</li><li>• Postal drop across the westside ~27,000 households</li><li>• Social media</li><li>• Twitter</li><li>• Facebook</li><li>• Community events<ul style="list-style-type: none"><li>○ Vic West Fest</li><li>○ Canada Day</li></ul></li></ul>

	<ul style="list-style-type: none"> <li>Fort Rodd Hill <ul style="list-style-type: none"> <li>○ Goldstream Market</li> <li>○ Esquimalt Market</li> <li>○ Neighbourhood Nights – View Royal</li> </ul> </li> </ul>
<b>Priority sites within nodes</b>	<ul style="list-style-type: none"> <li>• Esquimalt Nation - Site 15,</li> <li>• View Royal - Site 16,</li> <li>• Langford - Site 2a/2b,</li> <li>• Colwood - Site 14, and</li> <li>• Colwood - Site 4.</li> </ul>
<b>Number of sites preferred</b>	<ul style="list-style-type: none"> <li>• 4 sites ~20%</li> <li>• 2 sites ~25%</li> <li>• 1 site ~26%</li> <li>• Other/unsure ~ 29%</li> </ul>
<b>Level of Treatment</b>	<ul style="list-style-type: none"> <li>• meet regulatory requirements ~ 12%</li> <li>• exceed regulatory requirements with cost recovery ~ 21%</li> <li>• exceed regulatory requirements to protect environment ~ 15%</li> <li>• all are important ~44%</li> <li>• unsure ~8%</li> </ul>
<b>Technology preferences</b>	<ul style="list-style-type: none"> <li>• Advanced waste water treatment ~42%</li> <li>• Aerobic digestion ~24%</li> <li>• Anaerobic digestion ~25%</li> <li>• Gasification ~33%</li> <li>• Dewatering and transporting ~10%</li> <li>• Unsure/other ~48%</li> </ul>
<b>Willingness to pay more</b>	<ul style="list-style-type: none"> <li>• 0 cents per day ~28%</li> <li>• 25 cents per day ~36%</li> <li>• 50 cents per day ~21%</li> <li>• 75 cents per day ~3%</li> <li>• 1 dollar per day ~11%</li> </ul>

## Commentary Summary:

The majority of comments on SiteSpeak have been constructive. Even those expressing concerns over specific sites or issues have been valuable in contributing to the conversation.

The commentary themes on specific sites and nodes have not changed from what was observed in the Interim Report tabled on July 15, 2015. Some common themes, concerns and priorities include:

- needing to see resource recovery benefits
- concerns over proximity to residential
- proximity to infrastructure
- ownership of potential site
- protection of recreation and environmental values
- future development potential

Again, common themes and conditions expressed throughout the responses, regardless of site location remained similar including:

- ensuring odour control/elimination from any facility
- minimizing traffic
- minimizing noise
- complementing any environment where a facility is built
- ensuring public safety – including taking into account sea level rises
- developing and maintaining trust through on going public involvement

There is also continues to be a need for further detailed information including;

- cost and benefit analysis
- all costs (life cycle and ancillary infrastructure)
- cost comparisons between each option
- potential environmental impacts
- realistic resource recovery benefits and liabilities
- keeping the process open and transparent to the public to ensure sound economic and environmental outcomes

All comments and data received through SiteSpeak or via email pertaining to the questions posed in SiteSpeak will be available through the website at:

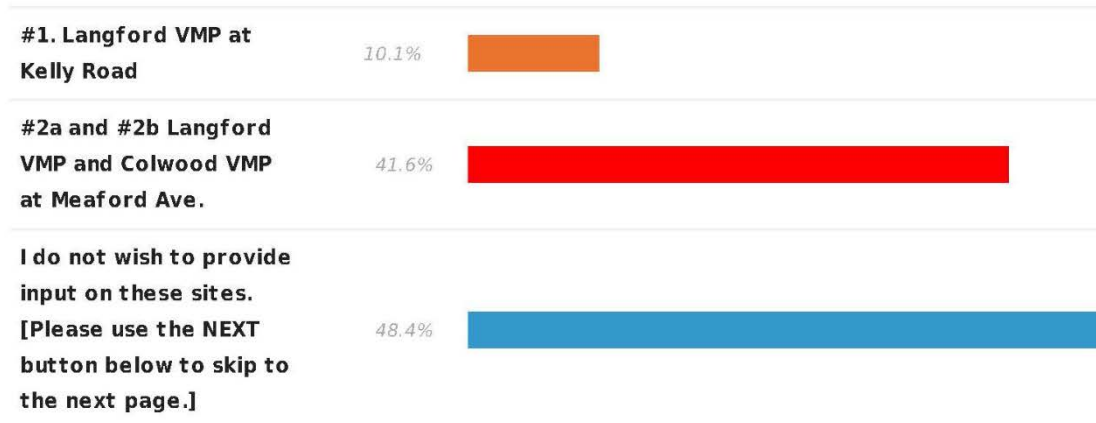
<https://www.crd.bc.ca/westside-solutions>

## Sites:

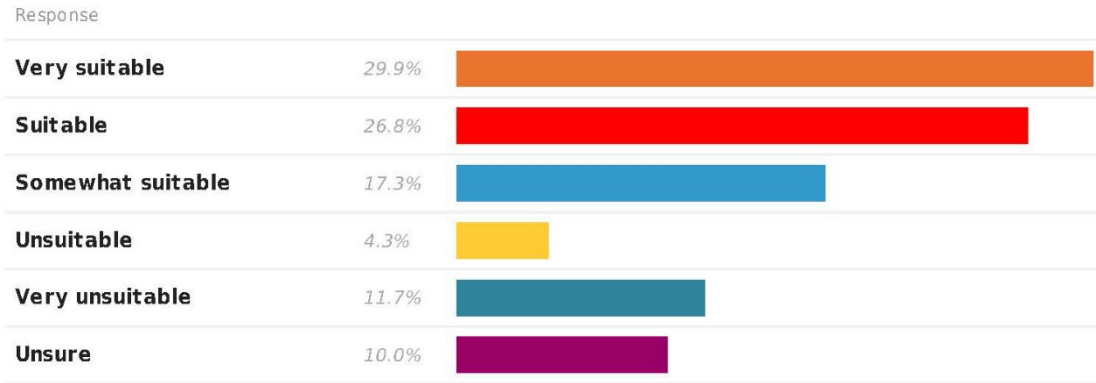
### **LANGFORD SITE NODE:**

#### Preferred site:

The majority of respondents chose THE Langford/Colwood VMP at Meadford (Site #2a/2b)



*How suitable do you consider this site in terms of how the land is currently used, how wastewater resource facility would fit with the surrounding area and future plans for the community?*



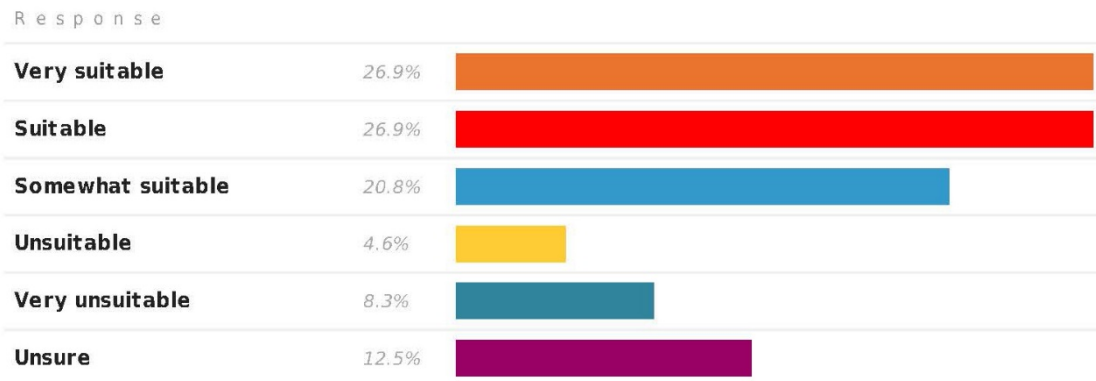
Benefits:

- site not adjacent to residential
- close to infrastructure
- high water reclamation opportunities

Concerns:

- privately owned therefore could increase costs
- conflicts with current zoning
- increased traffic could be a problem

*How suitable do you consider this site in terms of potential for use of reclaimed water and energy recovered from the treatment process?*



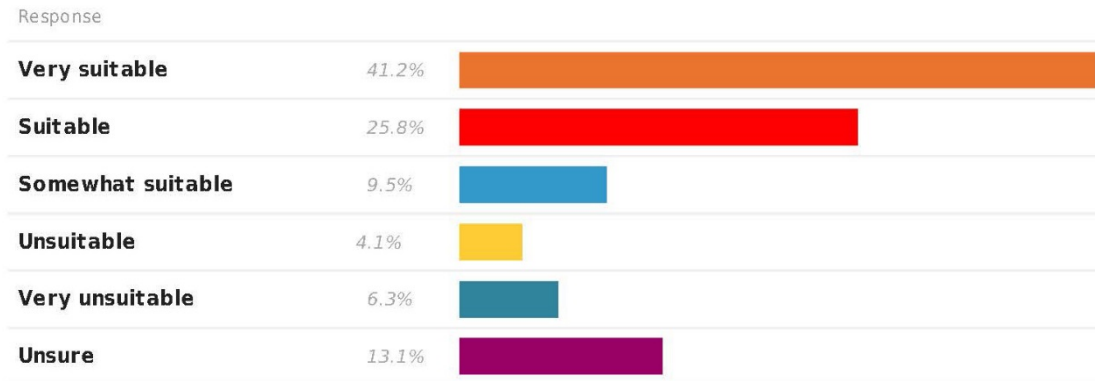
Benefits:

- high water re-use opportunities
- potential new opportunities for heat recovery including both private and public buildings

Concerns:

- heat recovery would take more work as there are few at this time
- health concerns over water re-use

*How suitable do you consider this site in terms of how close it is to existing sewer trunk and truck routes?*



Benefits:

- well situated to existing trunk lines and truck routes
- very accessible

Concerns:

- possible increased traffic issues – particularly as it is close to a school

*What conditions would need to be met in order for you to consider this site suitable?*

- must fit in with the community – to the point of being “invisible
- no odour or noise pollution
- cannot comment without more information on design, cost or potential reclamation opportunities

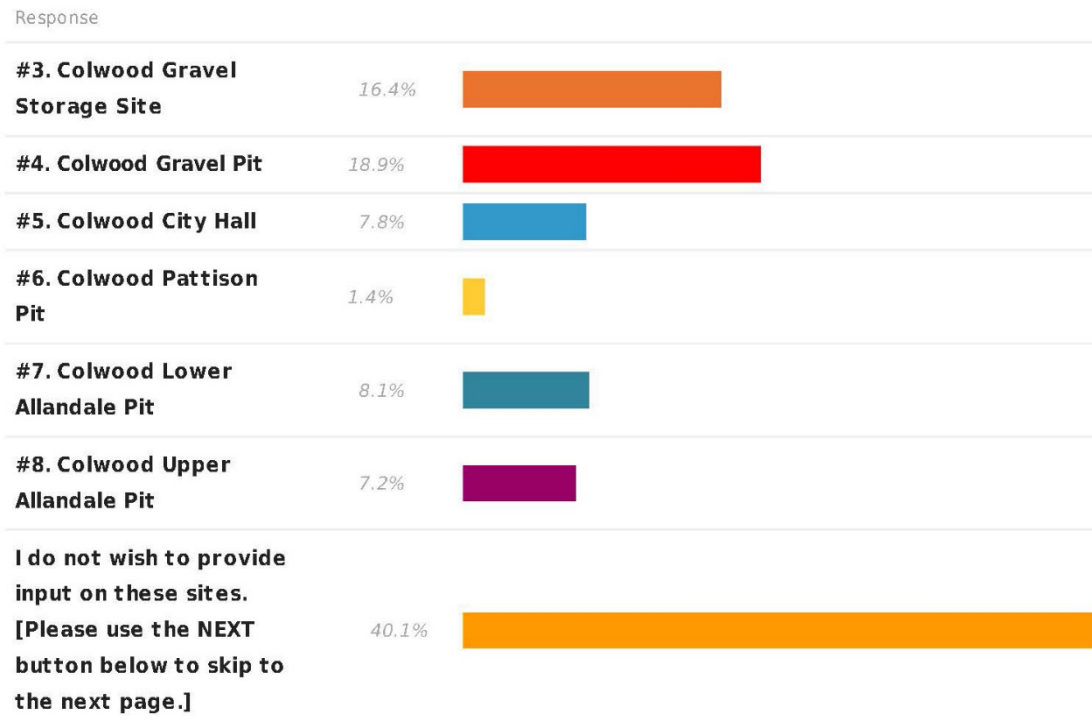
**TECHNCIAL COMMENTS**

- Site 2a:2b is large enough to accommodate liquids and residuals treatment at sub-regional scale
- Public input suggests any facility should tie into existing and future uses and be partly hidden
- A facility at 2a:2b is better suited a distributed-type plant with residuals processing located at an alternate site (to accommodate the input of being partly hidden)
- Site acquisition or assembly requires further study

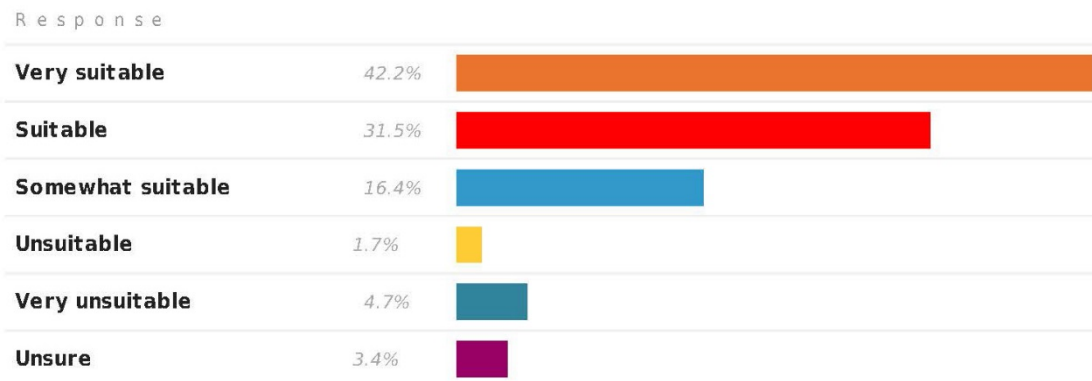
**COLWOOD SOUTH – CENTRAL NODE:**

**Preferred site:**

The majority of respondents chose the Colwood Gravel Pit (Site #4).



*How suitable do you consider this site in terms of how the land is currently used, how wastewater resource facility would fit with the surrounding area and future plans for the community?*



**Benefits:**

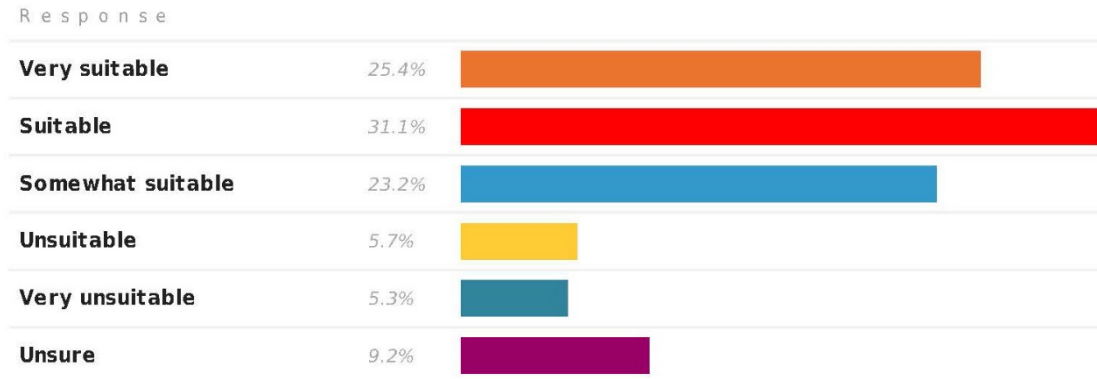
- growth in area could see more resource recovery
- currently undeveloped and available

- expansion possibilities

Concerns:

- could deter future investment and development opportunities
- currently limited resource recovery options

*How suitable do you consider this site in terms of potential for use of reclaimed water and energy recovered from the treatment process?*



Benefits:

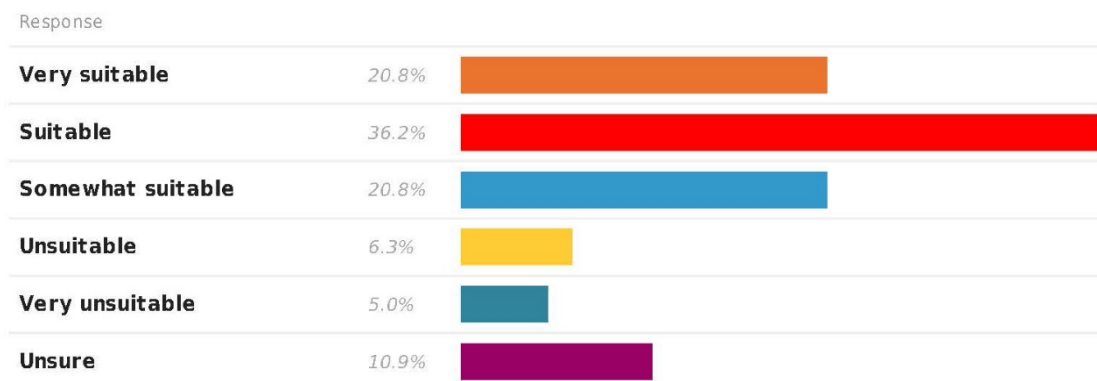
- opportunities for utilizing reclaimed water and energy into future developments

Concerns:

- heat and water reclamation not a priority
- too far from existing facilities

*How suitable do you consider this site in terms of how close it is to existing sewer trunk and truck routes?*

3. How suitable to you consider this site in terms of how close it is to existing sewer trunk and truck routes?



Benefits:



- roads with close proximity
- room for expansion

Concerns:

- too far from existing outfalls
- current access goes through residential neighbour hood

*What conditions would need to be met in order for you to consider this site suitable?*

- no conditions – this is bad for investment
- would require additional consultation with residents in the area
- must be invisible

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#### **TECHNICAL COMMENTS**

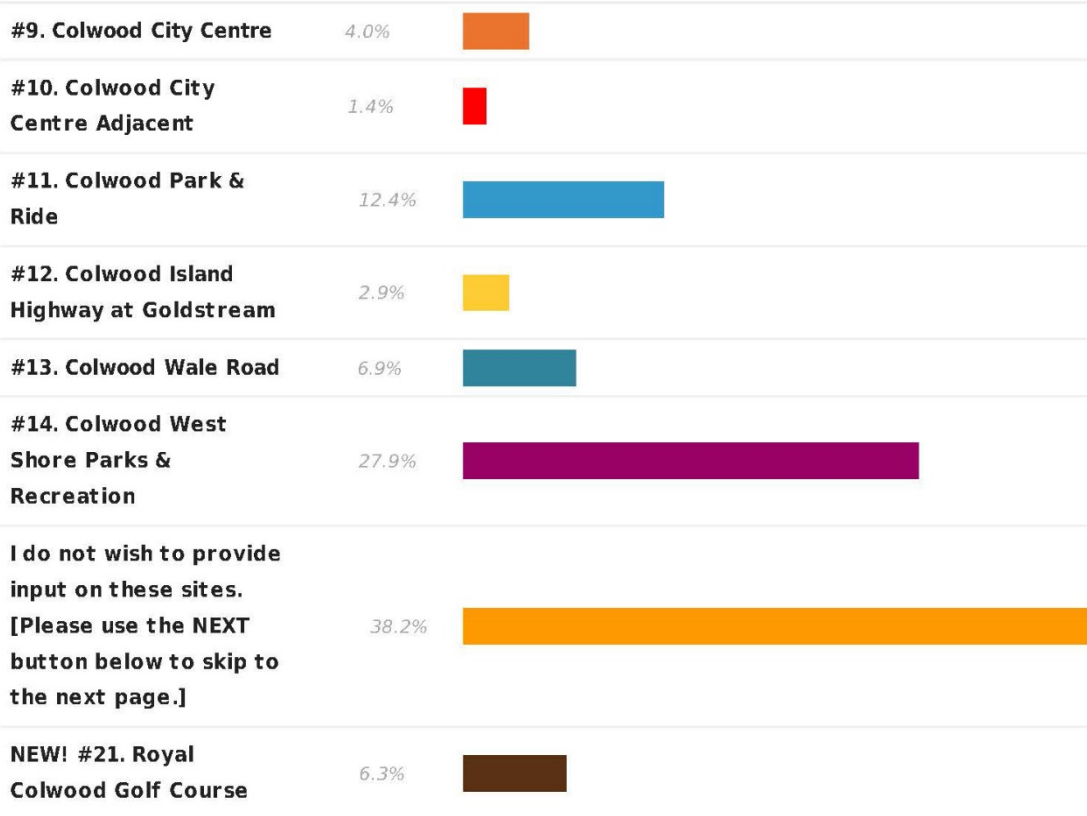
- Servicing Site 4 requires greater infrastructure needs (e.g. length of pipe and new outfall) and a lesser opportunity for resource recovery than sites in other Option Sets
  - Site 4 demonstrates some potential for a satellite facility phased in over time with growth at Royal Bay (e.g. to eliminate cost of rerouting flows across the sub-region)
  - Site acquisition requires further study
  - Note: Similar technical considerations apply to Site 3 (both received public support)
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#### **COLWOOD NORTH NODE:**

Preferred site:

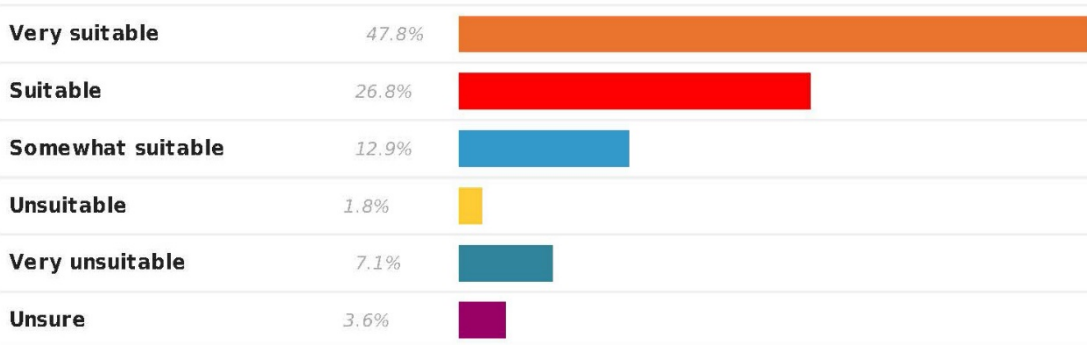
The majority of respondents chose the Colwood West Shore Parks & Recreation (Site #14).

Response



*How suitable do you consider this site in terms of how the land is currently used, how wastewater resource facility would fit with the surrounding area and future plans for the community?*

Response



Benefits:

- high potential for resource recovery
- reasonable distance from residential
- publically owned

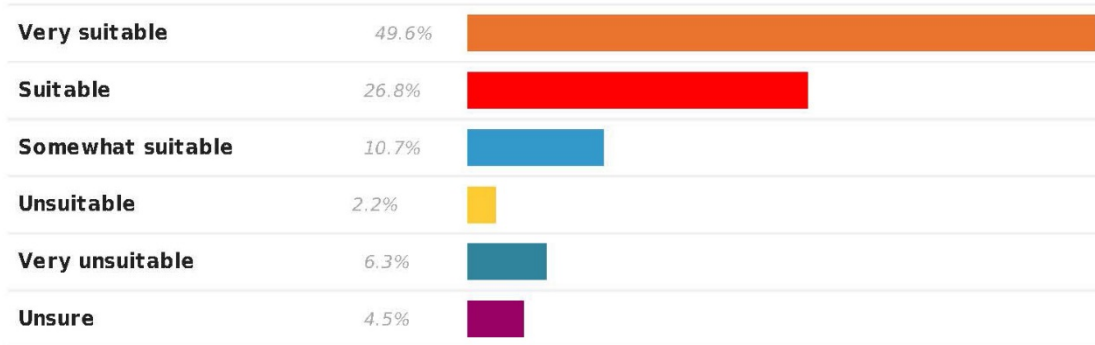
Concerns:

- needs to at least comprise to maintain the park

*How suitable do you consider this site in terms of potential for use of reclaimed water and energy recovered from the treatment process?*

2. How suitable do you consider this site in terms of potential for use of reclaimed water and energy recovered from the treatment process?

Response



Benefits:

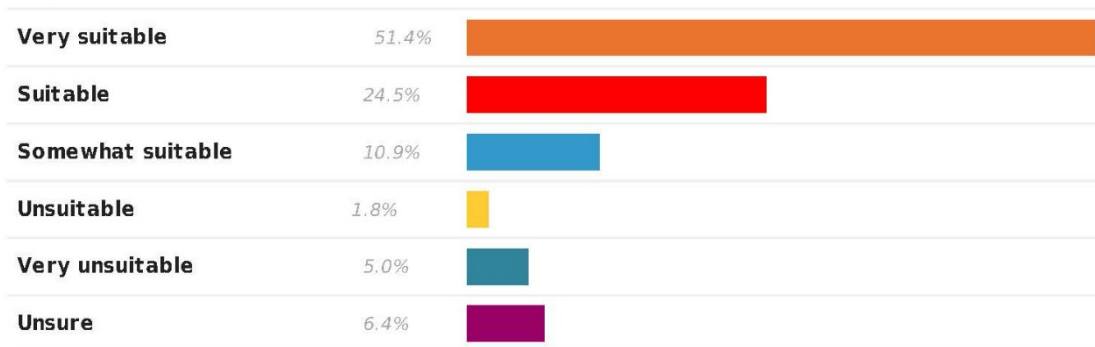
- possible benefits for the recreation centre and surrounding park
- adjacent to other services

Concerns:

- none at this time

*How suitable do you consider this site in terms of how close it is to existing sewer trunk and truck routes?*

Response



Benefits:

- extremely close
- good proximity to highway

Concerns:

- none at this time

*What conditions would need to be met in order for you to consider this site suitable?*

- appropriate amenities
- that enhance park values and recreational use
- maintain park and ride

**TECHNCIAL COMMENTS**

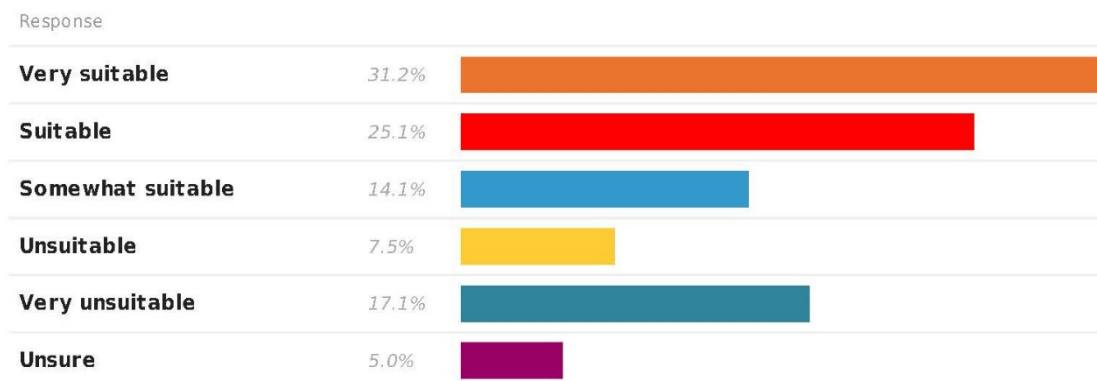
- Site 14 is sufficiently large enough to accommodate a sub-regional facility including liquids and residuals processing
- Site 14 is better suited to a distributed model to prevent directing large flows from the View Royal, Esquimalt and First Nations back up the sewer-shed (e.g. need for significant pipes and pump stations)
- Further study needed on governance for use of the Site 14 (inter-municipal lands) as wastewater facility and identifying the preferred location for any facility (e.g. identifying where there is surplus lands)

**VIEW ROYAL NODE:**

Preferred site:

There is only one site in this node View Royal Burnside & Watkiss (Site #16).

*How suitable do you consider this site in terms of how the land is currently used, how wastewater resource facility would fit with the surrounding area and future plans for the community?*



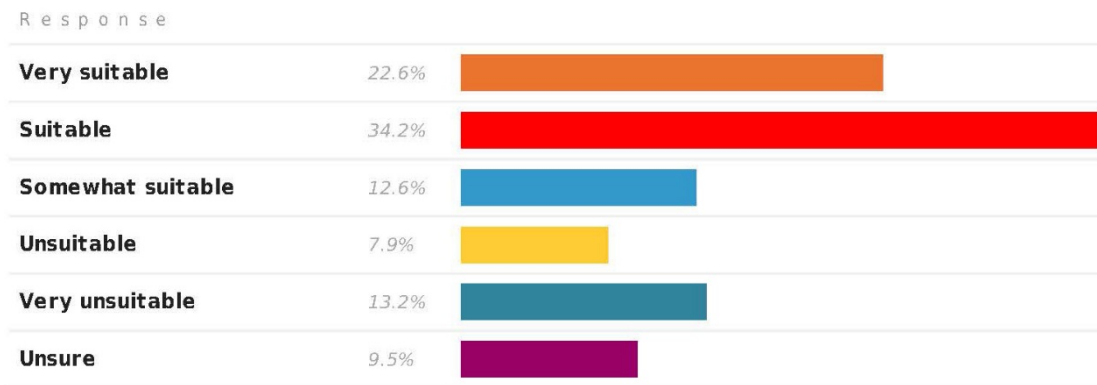
Benefits:

- publically owned and currently vacant
- not too close to residential
- good proximity to transportation and resource recovery opportunities

Concerns:

- parkland/recreation opportunities need to be reserved
- too close to hospital/school/residences
- possible archeological issues

*How suitable do you consider this site in terms of potential for use of reclaimed water and energy recovered from the treatment process?*



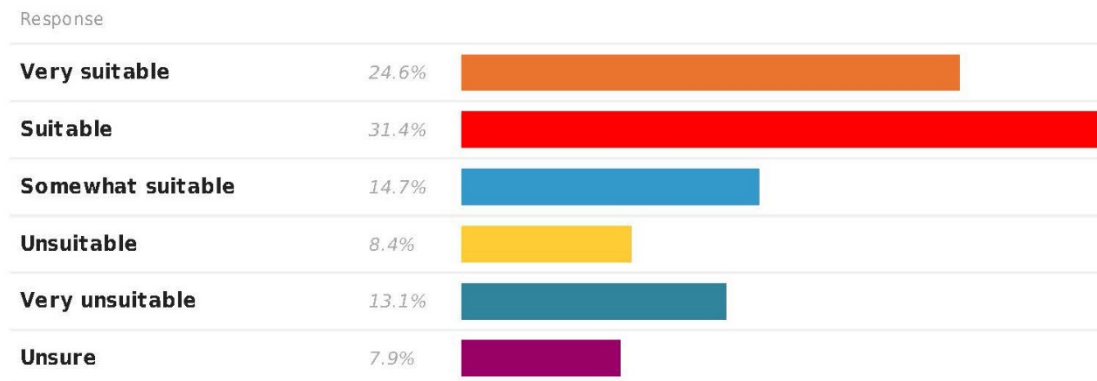
Benefits:

- good recovery opportunities with proximately to hospital and golf course

Concerns:

- size may limit possibilities
- not enough detail to fully comment

*How suitable do you consider this site in terms of how close it is to existing sewer trunk and truck routes?*



Benefits:

- near some truck routes

Concerns:

- not near a main highway
- not at the end of the pipe and may require more infrastructure like pump stations

*What conditions would need to be met in order for you to consider this site suitable?*

- integration into community and current uses including odour and noise control
- for the province to agree to either gift the land or negotiate a fair price
- separate access away from school

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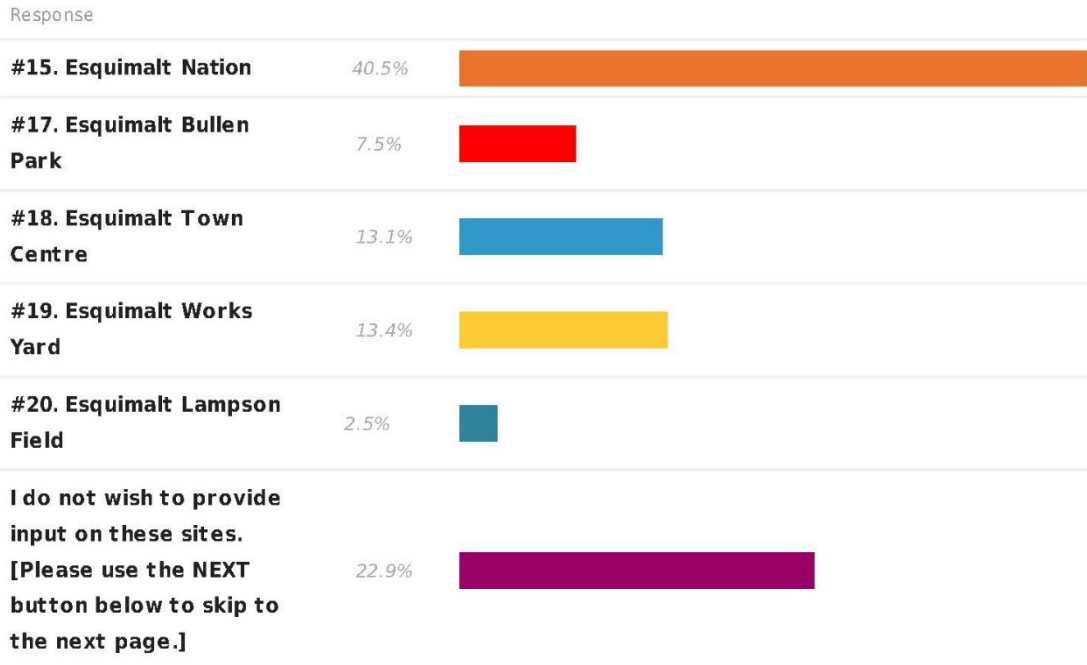
**TECHNCIAL COMMENTS**

- BC Hydro right-of-way should be studied to incorporate any setback/limitations for new works (e.g. may limit site area significantly)
  - Servicing Site 14 in any distributed or dual model requires relatively high amounts of new infrastructure
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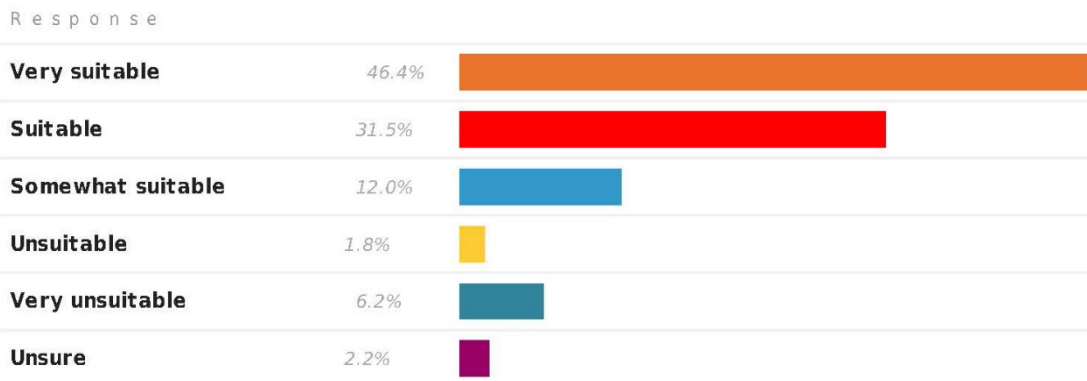
**ESQUIMALT NODE:**

Preferred site:

The majority of respondents chose the Esquimalt Nation (Site #15)



*How suitable do you consider this site in terms of how the land is currently used, how wastewater resource facility would fit with the surrounding area and future plans for the community?*



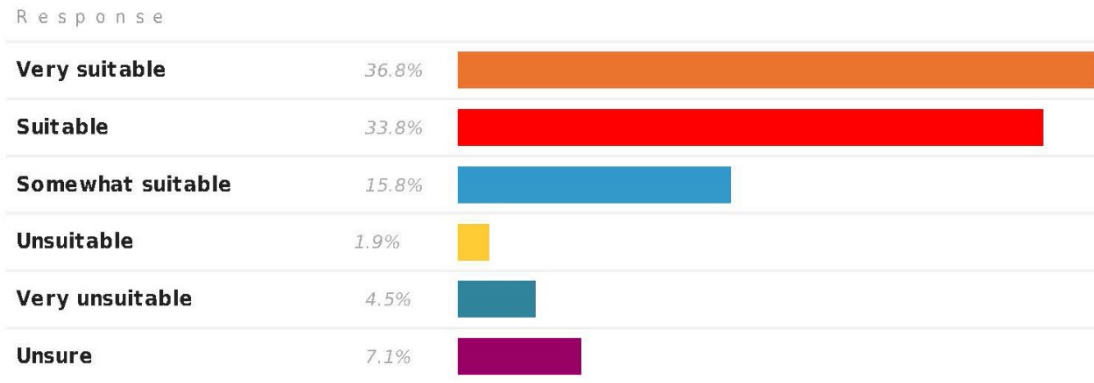
Benefits:

- site currently vacant
- has possibility to allow for expansion

Concerns:

- parkland and recreation opportunities need to be maintained
- must have secure access

*How suitable do you consider this site in terms of potential for use of reclaimed water and energy recovered from the treatment process?*



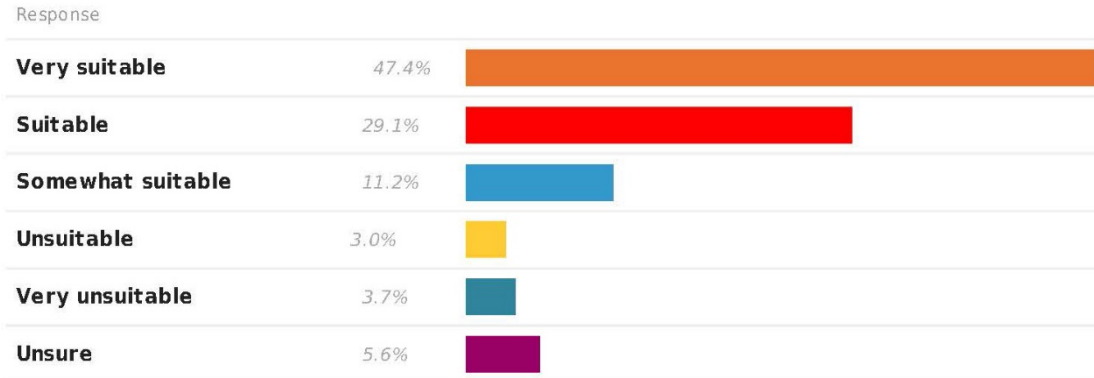
Benefits:

- potential for water reuse such as with the golf course
- future development possibilities for resource utilizations

Concerns:

- better opportunities elsewhere
- not a priority

*How suitable do you consider this site in terms of how close it is to existing sewer trunk and truck routes?*



Benefits:

- close to both sewer mains and truck routes

Concerns:

- could contribute to traffic congestion

*What conditions would need to be met in order for you to consider this site suitable?*

- agreements in place with Esquimalt Nation



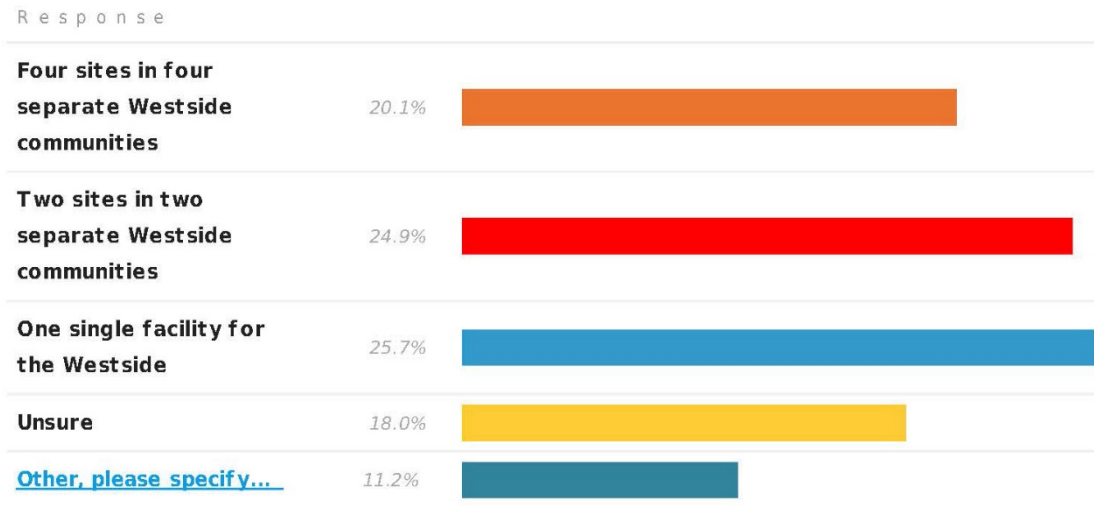
- proper odour, noise and traffic management

**TECHNICAL COMMENTS**

- Site 15 is suitable for all Option Set configurations: 1 plant, 2 plant and 4 plant
- Possibilities to utilize other sites in Esquimalt site node for heat recovery or water reclamation
- Site 15 has high public support for both liquid and residuals treatment

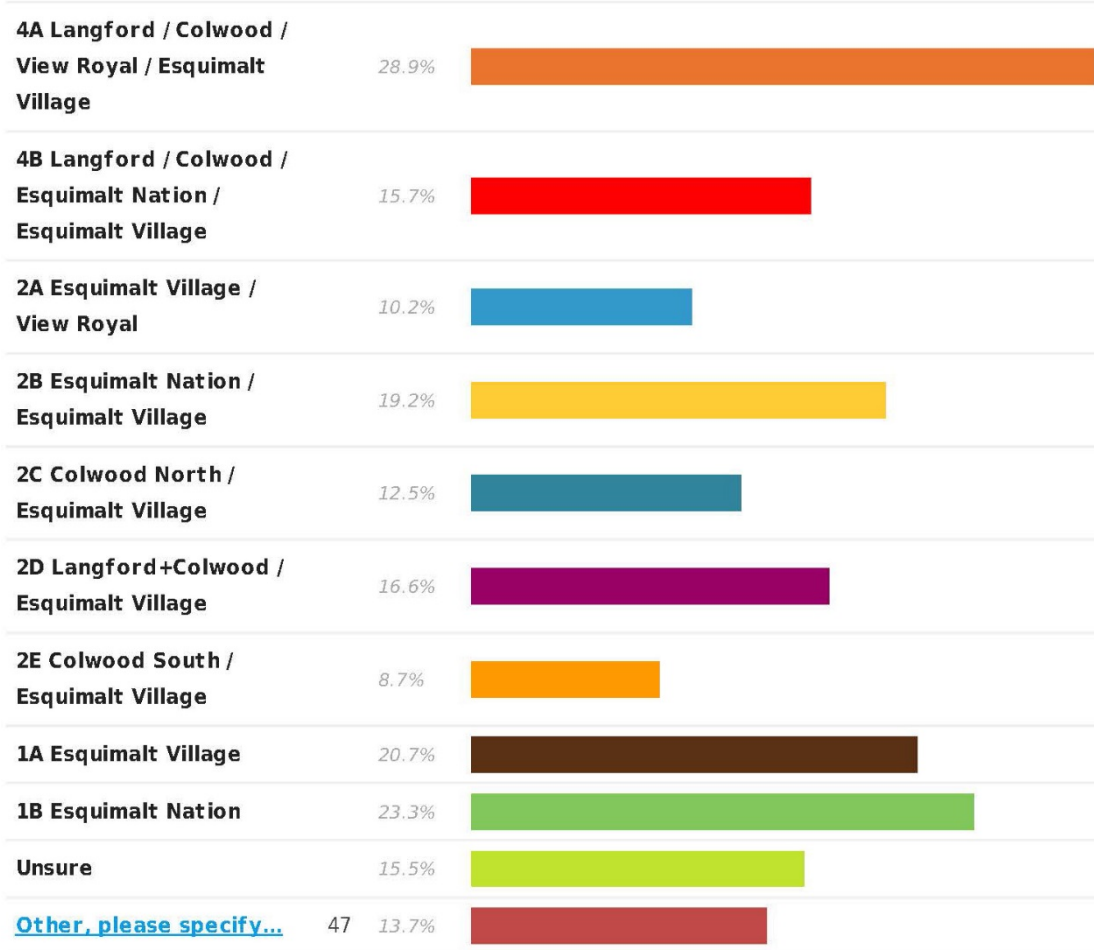
Number of sites:

*What number of westside wastewater resource sites makes the most sense to you?*



*Of the sample option Sets presented, which option (s) do you feel should move forward for further technical analysis?*

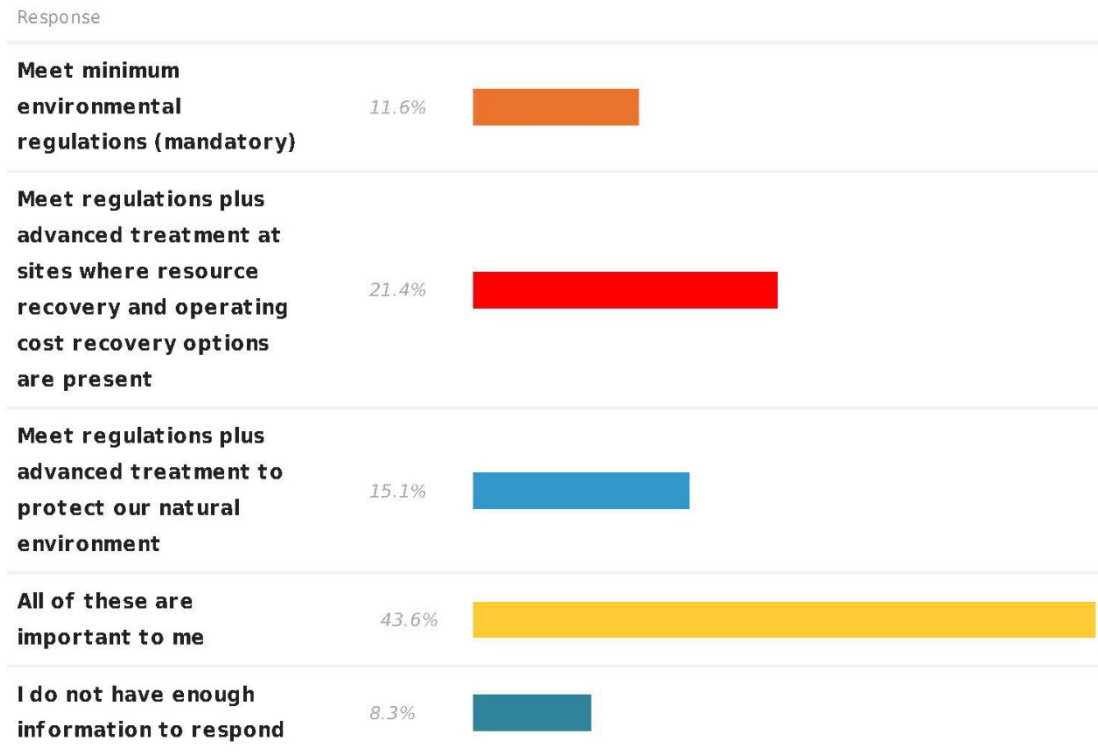
Response



## Level of treatment:

### *Removal of Harmful Substances*

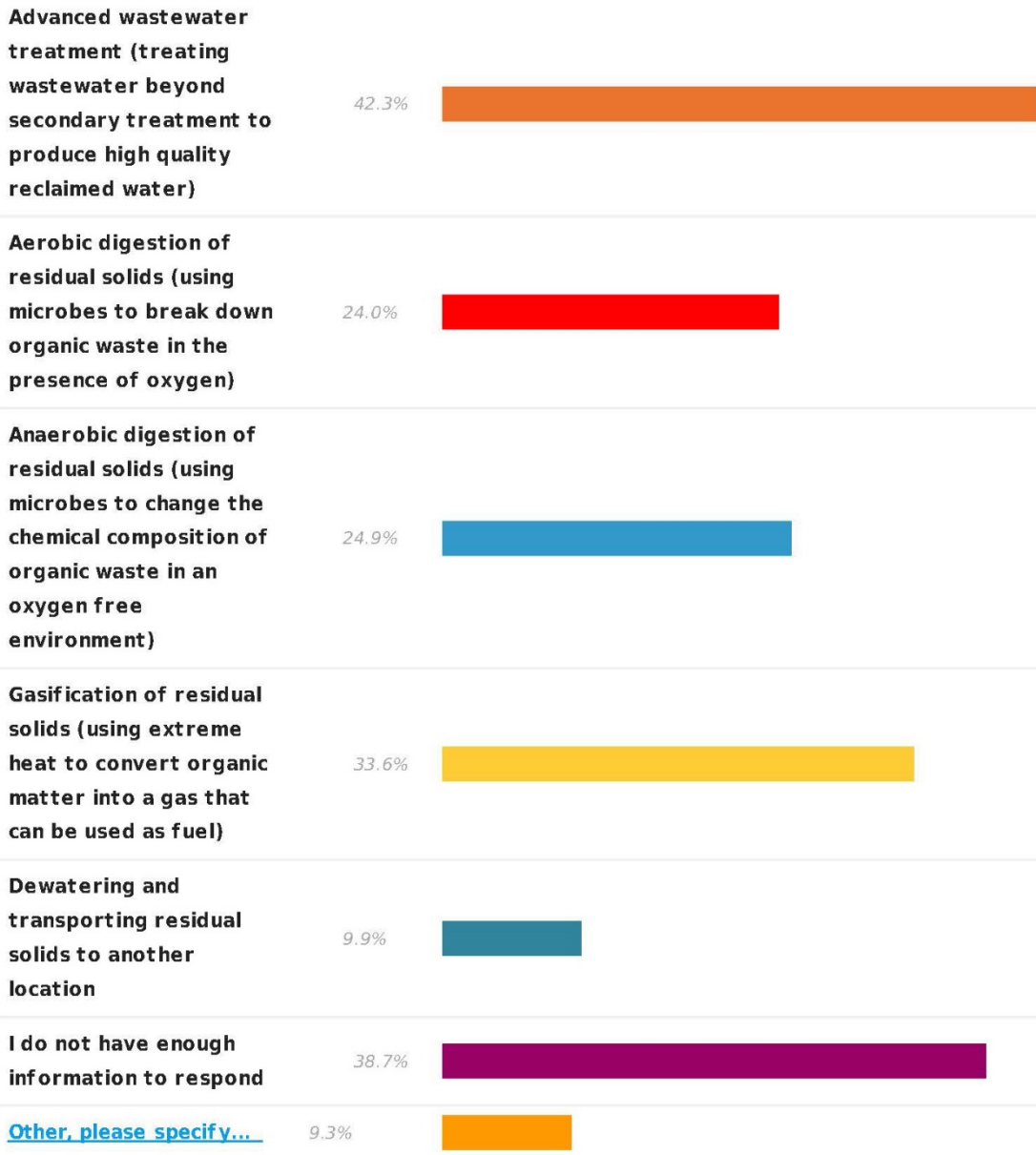
*To what degree do you think a wastewater resource facility should deal with harmful substances?  
(Please select one.)*



### *Focusing in on Technology*

*What technology would you support in your community? (Please select all that apply.)*

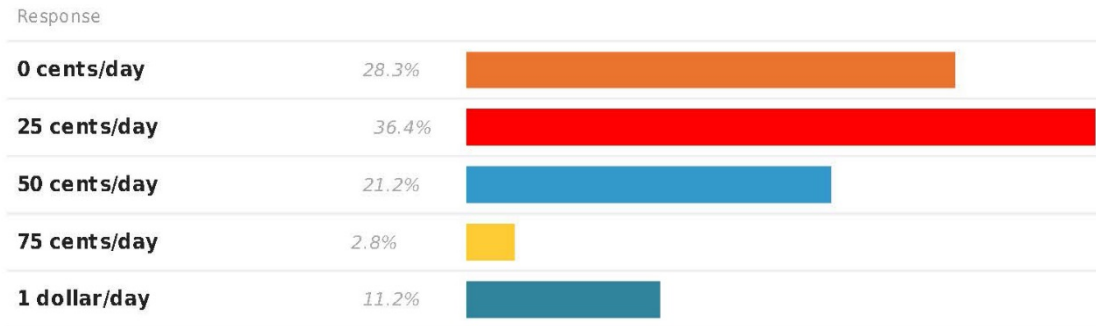
Response



## Costs:

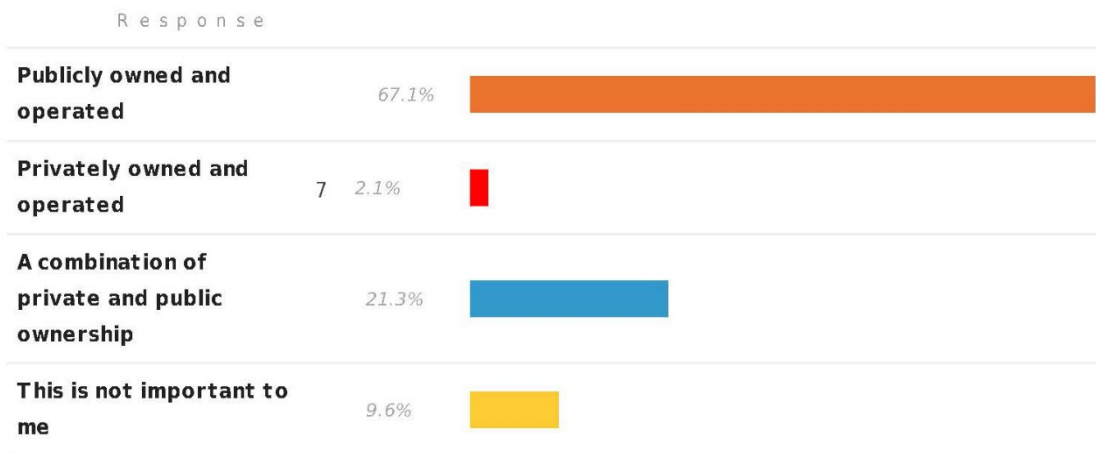
### Breaking down the costs

Regulations require the region to treat wastewater to at least secondary treatment levels. If there were additional costs attached to a higher level of treatment, what would be a reasonable amount for each household to pay per day? (Please select one.)



### Defining Ownership and Governance

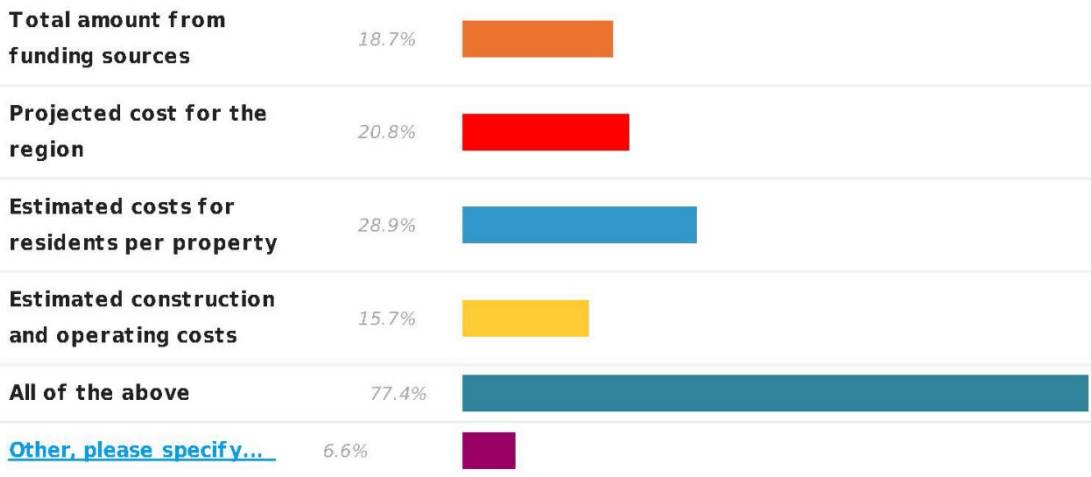
What is your view of the ideal ownership and governance of the site? (Please select one.)



### Reporting on Financial Aspects

What information will you need in order to provide input into cost options over the course of the project? (Please select all that apply.)

Response

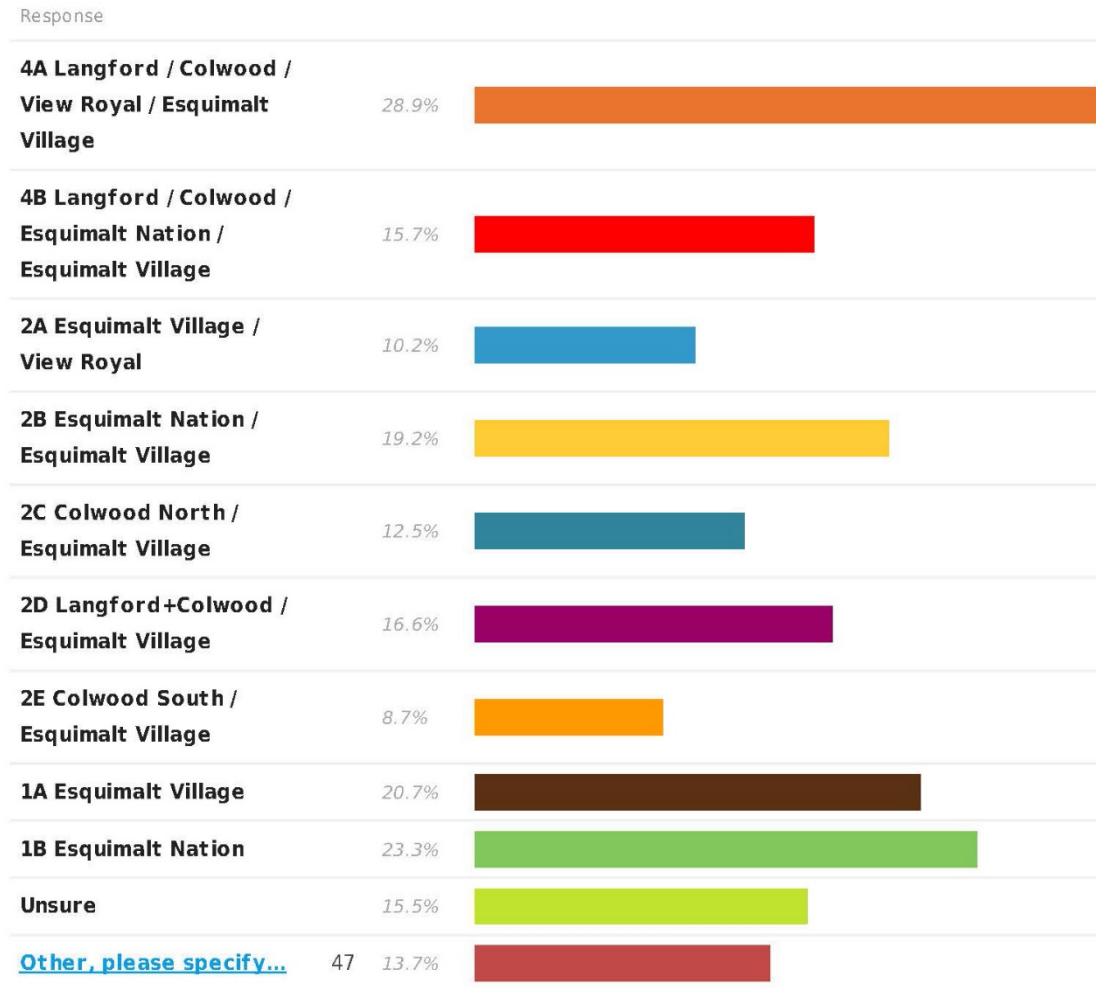


*If your chosen wastewater resource solution would cost significantly more than another option, would that affect your choice?*

Response



## Responses by Community:



## Conclusion:

While SiteSpeak has provided valuable information to help guide decision makers in moving forward in siting, designing, constructing and operating a wastewater treatment – resource recovery facility or facilities it is evident that there is both a need and desire for further public input into the process.

Further engagement activities must first provide clear updated information about options and should consist of a variety of methods and platforms to give the widest number of residents the opportunity to participate including:

- polling with targeted population samples
- continued input via the website
- community outreach activities

Even though this particular round of consultation occurred primarily over the summer it is clear that there is a very real demand by a considerable number of citizens to spend time and effort contributing

constructively to the process. It is important that the trust that is being established is maintained throughout the remainder of the project.





## Westside Roundtable Results

Westside Solutions has now completed its 3 roundtables, with each focused on a different theme. Participants were highly engaged and informed on the issue and their opinions may not necessarily reflect all of the views of the general public.

### Siting and Community Integration, May 6 (40 participants)

High-level Comments:

- Many participants felt that the design of the site and the wastewater treatment system was more important than the proximity to residents.
- There was a focus on what the facility could bring back to the community – make it desirable.

### Resource Recovery, May 9 (26 participants)

High-level Comments:

- High resource recovery, including reuse of water, was favoured by most participants.
- There was a preference noted for the system to be scalable and adaptable in order to incorporate new technologies, and population growth.

### Cost and Level, May 13 (31 participants)

High-level Comments:

- Most of the participants wanted a higher level of treatment rather than what was called “conventional” – or just meeting the current regulations.
- Many felt that life-cycle costs should be considered with a priority towards resource recovery and revenue generation (discussion around the lowest cost over 50 years with lower lifecycle costs due to resource recovery revenue).

Information from these roundtables will be used to inform the conversation with a broader audience.



## Roundtable May 6, 2015 Siting and Community Integration

### Table 1

The concerns and benefits are seen as applying equally to whatever site choice is made. Regardless of the site, tertiary treatment is the preferred operating model. Foremost is respect for and adherence to the triple bottom line (environment, social and fiscal).

Resource recovery to offset life cycle costs was a re-occurring theme and priority for the discussion group.

#### Concerns:

- Noise pollution (from the plant)
- Traffic/transportation issues both in accessing the site
- Odor
- Light pollution
- Appearance/Esthetics (needs to present a welcoming façade and if wholly or partially below ground, provide a public green/recreation space)
- Safe and secure for both an operational needs and from any outside interference (e.g. vandalism)
- Transportation and disposal of bio-solids
- What new infrastructure would be needed – pipes, pumps, right-of-way etc. Use existing infrastructure as much as possible.
- Impact of the site on surrounding property values
- Guarantees that building and operation standards will be at least met and ideally surpassed (LEED platinum)
- If a low proximity site, need to protect the site from future sprawl

#### Benefits:

- Best technology can combine liquid and solid waste treatment at the same site
- Any site must have room for incremental growth/capacity
- Dispersed system need not be on the waterfront opening up public space

The table felt strongly that should concerns and benefits be properly addressed that it would de facto set the conditions of acceptance.

**Table 2**

<b>Siting Integration</b>	<b>Benefits</b>	<b>Concerns</b>	<b>Conditions for Acceptance</b>
<b>Low Proximity</b>	<ul style="list-style-type: none"> <li>• Single large plant might be acceptable</li> <li>• Can integrate municipal solid waste into a large plant</li> <li>• Greater setback to people</li> <li>• Communities can grow around it to use the resource recovery</li> </ul>	<ul style="list-style-type: none"> <li>• Loses resource recovery potential</li> <li>• Infrastructure</li> <li>• One plant needs to have redundancy – we could lose this facility in an earthquake situation and this will be a huge problem.</li> </ul>	<ul style="list-style-type: none"> <li>• single regional plant? Perhaps acceptable if it is low proximity – not entirely agreed upon... potentially but we need to hear about cost and should be compared with distributed – must include full treatment redundancy and address safety issues.</li> <li>• Encourages economic development</li> <li>• Additional direct benefits for host community –</li> <li>• Smaller distributed sites include redundancy</li> </ul>
<b>Medium Proximity</b>		<ul style="list-style-type: none"> <li>•</li> </ul>	<ul style="list-style-type: none"> <li>•</li> </ul>

<p><b>High Proximity</b></p>	<ul style="list-style-type: none"> <li>• Can mitigate cost by utilizing resource recovery</li> <li>• Higher real estate value (if impressive architecture used)</li> <li>• Offset development costs and decrease operating costs with resource recovery</li> <li>• Potentially offset tax loss issues for a municipalities – with smaller sites rather than one larger</li> <li>• Municipal operating costs could be offset by resource recovery (water, heat, energy)</li> </ul>	<ul style="list-style-type: none"> <li>• Odor;</li> <li>• Aesthetics;</li> <li>• Noise;</li> <li>• Construction impacts – temporary /short term;</li> <li>• Traffic;</li> <li>• Above ground might run into odor and other issues depending on technology</li> <li>• Lower property values if taxes go up and other concerns aren't addressed</li> <li>• Safety – methane flare tank near people - could blow up, tsunami</li> <li>• Can't be big and on the water.</li> </ul>	<ul style="list-style-type: none"> <li>• Prefer a smaller distributed plant in order to be high proximity. – each municipality should have it's own</li> <li>• No single regional plant? Perhaps acceptable if it is low proximity – not entirely agreed upon... potentially but we need to hear about cost and should be compared</li> <li>• Has to fit in – doesn't smell, aesthetic (impressive architecture) – must integrate with the community. Fit and compliments the surrounding land use. – integrate into the landscape</li> <li>• Must recovery resources (heat, water, solids, energy, etc.) to mitigate costs – should be done onsite if possible</li> <li>• High quality technology – must last and not break down – if it breaks down it must be easy to repair.</li> <li>• Needs to meet current and future demands. - Should grow with the community. Modular development – land available so that as the demand grows build as you need.</li> <li>• Must be smaller distributed? Each community should treat its own</li> <li>• Don't want to smell it</li> <li>• Don't notice it</li> <li>• Must include cost information. must be good value – not necessarily the lowest cost – includes resource recovery</li> <li>• Compare multiple sites verses single site</li> </ul>
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		<ul style="list-style-type: none"> <li>• How do we make sure the conditions for acceptance will be adhered to by the organization? – accountability.</li> <li>• Must not be privatized. Run the risk of controlling the resource</li> </ul>	<ul style="list-style-type: none"> <li>• Look at land around where the trunk lines are to reduce cost.</li> <li>• Generate economic activity – encourage development</li> <li>• Positive for the community – not a waste an opportunity.</li> <li>• Must be small if it is on the water becomes a safety concern if it is a single site. – tsunami.</li> <li>• No community feels dumped on – must be fair.</li> <li>• Create a situation where the communities want this or at least willing to accept it without being imposed upon.</li> <li>• If it is a PPP the public must not lose control of the facility or the resources</li> <li>• Must be affordable</li> </ul>
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**Questions/Comments:**

- What technology is being used will affect the siting discussion.
- Cost will affect siting discussion.
- How do we make sure the conditions for acceptance will be adhered to by the organization? – Accountability.
- Can we put it on a boat?

**Table 3**

<b>Siting</b>	<b>Benefits</b>	<b>Concerns</b>	<b>Conditions of Acceptance</b>
Low	<ul style="list-style-type: none"> <li>• Not as much disguising of the site</li> <li>• Less of an odour problem</li> <li>• Could cost less</li> <li>• Built above ground</li> <li>• More likely to get acceptance</li> <li>• Central plant</li> <li>• Handle solids and liquid on site</li> <li>• </li> </ul>	<ul style="list-style-type: none"> <li>• Over built</li> <li>• What do you do with the solids – could increase traffic</li> <li>• No back-up if there is a failure</li> <li>• Conveyance system could cost more</li> <li>• Potentially too far from DES or other resource recovery options</li> <li>• Could be in flood plain – climate proofed – or rising sea levels</li> <li>• Back-up redundancy</li> </ul>	<ul style="list-style-type: none"> <li>• Must have back redundancy for any catastrophic event(all)</li> <li>• Each community takes responsibility for their I &amp; I (all)</li> <li>• Source control – reducing I &amp; I</li> <li>• Lowest lifecycle cost (all)</li> <li>• Lowest community impact (all)</li> <li>• Lowest community impact including traffic and construction (all)</li> <li>• Last 50 years (all)</li> <li>• Rigorous triple bottom line (all)</li> </ul>
Medium	<ul style="list-style-type: none"> <li>• Possibility of reusing resources</li> <li>• Size dependent – but could be the tipping point distance</li> <li>• Could work if scaled properly and doesn't negatively impact neighbours</li> </ul>	<ul style="list-style-type: none"> <li>• Solids could be more of an issue</li> <li>• If too big – solids become a real concern – they might have to be treated offsite</li> <li>• Adding costs potentially if it is built to integrate</li> </ul>	<ul style="list-style-type: none"> <li>• Needs to be cost effective for resource recovery including gasification</li> <li>• Equity across the region for high and medium</li> <li>• Need to be a real benefit for community located in like education, environmental remediation, resource recovery – acceptable to community (medium and high)</li> </ul>

	<ul style="list-style-type: none"> <li>• Optimize resource recovery opportunities</li> <li>• Put more into integrating into communities</li> <li>• Could reduce conveyance costs</li> </ul>	<ul style="list-style-type: none"> <li>• Scale</li> <li>• Impact construction</li> <li>• Odour etc. has to be greater</li> <li>• Space greater concern</li> <li>• Disaster proof</li> </ul>	
High	<ul style="list-style-type: none"> <li>• Could be a smaller scale</li> <li>• Discreet</li> <li>• Integrate tighter and maximize resource recovery</li> <li>• Could be located where you have problem waste (e.g. hospital waste) depending on scale and location</li> <li>• Deal with your neighbourhood</li> <li>• Flexibility</li> </ul>	<ul style="list-style-type: none"> <li>• Restrict the type process – technology</li> <li>• Costs go up</li> <li>• Odour</li> <li>• Property values</li> <li>• Space restrictions</li> </ul>	<ul style="list-style-type: none"> <li>• A real balance between upfront costs and long term investment</li> <li>• Natural capital/social</li> <li>• Control for specificity – like resource for recovery specific to the problems in the area</li> <li>• Must fit the zoning</li> <li>• Scale small and technology high</li> <li>• Climate/disaster proof (all)</li> <li>• Must fit OCP</li> <li>• Could be sited anywhere – even close to a school – if it was the right technology</li> <li>• Strategy for expansion</li> <li>• Failure of equipment contingency planning (all)</li> </ul>

**Solutions and Reasons**

- Important – Climate Change
- Resource recovery
- Opportunities for innovation
- Definition of proximity
- Need to build a plant that can reclaim the water
- Solids and/or liquid?

- Site is putting the cart before the horse
- Integrating waste streams
- Get away from one solution mentality and respond to community needs/catchment areas
- One size does not fit all
- Would be will to pay more if there is an environmental benefit
- May build to a higher level if there is opportunity in the future to use the resource – i.e. treating to a higher level with possible resource recovery in the future.
- Adaptability and resilience

## Table 4

### General Concerns

- Safety
- High cost = low impact
- If tertiary, what products are we removing?
- Issue of equity – plants go into poor neighbourhoods  
□ = preferred conditions

### Conditions of Acceptance

- Depends more on design than proximity □□
- Also depends on density of residency
- Needs to be a 100-year plan □□
- Safety -> drinking water/ public safety
- Tertiary could be close
- Secondary can be done close
- Use many smaller plants instead of 1 complex solution – ‘just-in-time’ solutions
  - Could possibly be more costly, need more infrastructure
  - Could multiply siting difficulties and debate
- Could expand to include/incorporate kitchen scraps □□
  - i.e. look higher
- 300m is the same as 500m (proximity)



- Need more information on location and proposed scale
- Safety, danger, threat of exploding anaerobic digesters 
  - No one is talking about this
- After water treatment what do you do with the sewage in and water out? 
  - Conveyance question needs more detail
- Thinking of climate change – maybe we want treated water close to where we want to use it
- What benefits are realized by small-scale treatment like Dockside Green?
- Use the right technology close to people and think creatively
- Building new i.e. Dockside is cheaper/easier than retrofitting
- Cheaper = bigger plant and visa versa
- Don't want bleeding edge technology – needs to be tried and proven elsewhere
- What perks do we offer the community in close proximity
- The size of the available land may dictate the technology used
- How do we get the politicians to take risk, be respectful and not make the same mistakes they've made in the past?
- How do we make this make \$\$ and cost less -> generate heat and power 
  - Social enterprise – Community Contribution Companies
- Once you start this, you cannot turn it off
- Could be a community asset? If so, how?
- Visually attractive = \$\$ ?
- Make it a tourist attraction
- Simple + big + quick + cheap
- Downhill to reduce conveyance costs

### Additional Observations

One thing that didn't get captured because it was technically outside the scope of the discussion was that one person at least was in favour of business as usual, i.e. do nothing and keep dumping at sea. The argument was that up to a secondary treatment level, we're basically spending millions of dollars to replicate what happens naturally in a marine environment. It was acknowledged that this did nothing to remove micro plastics, heavy metals or pharmaceuticals. It was also agreed that was probably no longer an option.

There was also a general agreement that a) the final solution would make someone annoyed, and b) we've waited too long for this to happen and communities/politicians just need to get on with it.

**Table 5**

<b>Siting</b>	<b>Benefits</b>	<b>Concerns</b>	<b>Conditions</b>
<b>Low Proximity (5+ blocks from residence)</b>	More support Less impacts, could be visible Less traffic and impact during construction	Underground and piping proximity Infrastructure	<ul style="list-style-type: none"> <li>• Conditions for acceptance apply to all three siting proximities (see below)</li> </ul>
<b>Medium Proximity (3-5 blocks from residence)</b>	Less costly for infrastructure	Neighbours more concerned Appearance Odours Traffic (during construction and maintenance)	
<b>High Proximity (Inside 3 blocks)</b>	<ul style="list-style-type: none"> <li>• Build smaller plants</li> <li>• (in fact should be smaller plants) – Dockside Green small scale</li> <li>• Community ownership of decisions</li> <li>• Tertiary in smaller plants. Lower costs of final treatment and water</li> <li>• Discharge</li> <li>• No piping</li> </ul>	<ul style="list-style-type: none"> <li>• High construction impacts</li> <li>• Public concern</li> <li>• Not in my backyard</li> </ul>	

### **Initial discussion –what do you come with to the table? What are your ideas and initial thoughts?**

- Value for the money is key as long as there is environmental consideration; integrate with what's already there. Don't care so much about money and contributions – we need the land in place
- Don't care so much about proximity – plants have been built in communities – can be attractive – tertiary treatment can mean many smaller plants – this is fine
- Proximity issue with my neighbours – they have an empty lot big enough for a facility – big concern with smell, trucking traffic, not attractive – some sites can be integrated well with no smell – neighbour says “we were here first!”
- Future important, not just current regulations, think about the best technologies available – eg, a plant that went straight down underground – look at the best tech available – too much for one plant in one community – easier to integrate if more of them, smaller ones, don't need to be on the water, shoreline is too valuable
- Environmentally wholesome. Come to an understanding. There are so many questions. Is it more expensive to have many plants? I want to know.
- Make our dollars work hard.
- Royal roads presentations way too complex for the layman.
- How can we interpret all of this info?
- Where are the young people? Why aren't they here? They may be front and centre when it comes to “not in my back yard.”
- Royal Roads presentations: BC plants – talk to the citizens of these communities that have existing plants.
- Modular and stacked facilities very interesting

### **Other comments at table (before facilitation)**

- Tertiary treatment is the way to go – will be required at some time anyway – makes sense from discharge point of view – discharged many places
- I became interested during the McLoughlin episode
- Tertiary is the future

### **Conditions for acceptance (facilitation)**

- No odour
- Pleasant to look at if above ground (trees, plants)
- Low noise
- Low emissions from plants (air pollution)
- Adhere to air quality standards
- If community takes ownership and is proud of the facility, more acceptance
- Education of the local residents of all issues important
- Therefore need to be able to explain the technology in simple terms
- We need to know we are getting good value for money

- Not very keen on PPP partnerships – should be under control of region (running it, not building it)
- Running for profit maybe not best approach
- Parity of payments across all communities (everybody pays fair share)
- Financial contributions must continue from federal and provincial sources
- Contribution of land from federal government?
- If visible, must be aesthetically acceptable?
- Incorporate tennis courts or sporting facilities.
- Interpretive aspect to the facility? Tours.
- Everything underground
- Close, but not a regional plant at my home
- Facility with a purpose
- Not on ocean property, this is a valuable resource
- Minimize pumping
- Resource recovery including heat
- Create modular facilities that can be added to over time as population increases
- Need to think of the scale that fits the neighbourhood
- Other technologies including solar panels
- Efficiently powered
- Any revenues from facility must stay in region

**More comments during facilitation**

- These can be beautiful buildings – Sechelt for instance
- They can be underground, incorporating other things.
- Close, but not a regional plant at my home
- District heating common in Scandinavia, heat is used from facility to heat homes
- Not about meeting minimal standards with one giant plant – look at state of the art systems
- Not secondary, need tertiary. Smaller plants don't need to have individual pipelines for each small plant
- CRD can operate a plant not for profit (not for shareholders profit)
- Look ahead 50-75 years, modular approach and upgradable, flexible
- Integration with parks
- Need to remove chemicals, etc from the water
- Significant footprint even if below ground
- Stricter regulation of industrial effluent and pollutants
- Treat runoff as well

### **Additional questions and comments**

- Tertiary water can be used for other things – like irrigation
- Is DND land on the table? Can it be made available for siting?
- How should the community interact with the facility? On an ongoing basis?
- What do we want removed in tertiary treatment?
- We should try to get grants – not just hitting the homeowner with more taxes

### **Comments on the engagement process (at table and around the room)**

- This is a treat tonight, working together like this.
- A variety of energetic contributions.
- Thanks for resetting the process
- We're contributing and being listened to – not being told
- Working from the bottom up
- Creative magic.
- What an opportunity.
- Much more respectful process
- Anecdote about previous engagement in 2006 regarding siting and technology decision being imposed: "What colour facility would you like?"
- Good to see this happening now after the past process
- Last process was imposing a decision.

## **Table 6**

The group began by questioning what was meant by the proximity indicators. Close to home? What if it was close to work or day care? Also they felt that all three indicators were relatively close. Initially the group decided 3-5 blocks, 1 mile and 5+ miles made more sense, but then explored the idea that what really mattered was the density and character of the neighbourhood. Eventually proximity was abandoned altogether as conditions for acceptance in any location became the focus.

### **The group generated and scored the following list of principles:**

- 7 No negative input on neighbours
- 8 Optimise resource recovery – current and future
- 9 Create economic opportunity

- 2 Create local jobs
- 1 Community pride
- 6 Lifecycle costing
- 3 Be climate proof
- 1 Mitigate climate change
- 2 Keep resources local
- 2 Use existing infrastructure
- 7 Tertiary treatment
- 8 Distributed
- 5 Cheaper lifecycle cost than original option = buy in
- 1 design matters

**Several nuances/tensions arose during the dialogue.**

1. Space requirements for multiple materials & future proofing may need a larger land base, meaning a low proximity scenario
2. Closer to communities with increased density may be cheaper with more effective waste to energy capture
3. Harder to integrate into established neighbourhoods rather than ‘build it and they will come’ or at least have a choice
4. Don’t be afraid to think widely around technology and all residual benefits...how about not on land? Economic, employment, tech and other benefits. Use those dollars to generate many outcomes and benefits.

**Participant comments are noted in the table below:**

Benefits	Concerns	Conditions for Acceptance
<ul style="list-style-type: none"> <li>• Opportunities to benefit from energy and resources</li> <li>• Housed in building that is modern, high tech, an economic benefit</li> <li>• Distance would lessen impact from smells, noise or low aesthetic appeal of the building</li> <li>• Closer to communities, increased density =</li> </ul>	<ul style="list-style-type: none"> <li>• Trucking through community</li> <li>• Odour (particularly during maintenance schedule)</li> <li>• Noise</li> <li>• Distance from trunk line may increase cost</li> <li>• Merge waste streams?</li> <li>• Need certain amount of land to maximize energy</li> </ul>	<ul style="list-style-type: none"> <li>• Do something to lever the economy,</li> <li>• Consider community plans</li> <li>• Recover resources</li> <li>•</li> <li>• No negative impacts</li> <li>• Different neighbourhoods require different approaches</li> <li>• Consider Penner’s letter 2007 – keep cost low, secondary sewage or better, optimize resource recovery...</li> </ul>

<p>cheaper, more effective waste to energy capture</p> <ul style="list-style-type: none"> <li>•</li> </ul>	<p>and resources in that waste</p> <ul style="list-style-type: none"> <li>• Operational cost of pumping (counterpoint ... is piping that big a deal?)</li> <li>• Ensure reuse makes financial sense</li> <li>• Carbon cost</li> <li>• What can you do with sludge...don't want to truck over malahat, can't apply to land</li> <li>• Perception of fairness – a number of smaller plants in a distributed system</li> <li>• Harder to integrate into established neighbourhoods rather than build it and they will come or at least have choice.</li> <li>• Lower lifecycle cost than what the CRD is proposing increases buy-in</li> <li>• Space requirements for multiple materials &amp; future proofing may need a larger landbase</li> </ul>	<ul style="list-style-type: none"> <li>•</li> <li>• Existing neighbourhood or new build</li> <li>• Optimizing resource recovery</li> <li>• Minimum impact on environment</li> <li>• Cost benefit analysis of resource recovery</li> <li>• Future proofing – the value of water may increase over time – design for expansion</li> <li>• Do future thinking as well as current thinking – create a plant that has the capability even if you don't use it right away</li> <li>• Smart design</li> <li>• Life cycle costing - operational cost and capital cost</li> <li>• Use this as an opportunity to solve other problems as well, energy, employment, economic development</li> <li>• Leverage the opportunity \$ = many outcomes</li> <li>• Connect to community plans</li> <li>• Modular – build for today's population with space to expand as population grows</li> <li>• Potential for growth either in one plant or with a plan for an additional site.</li> <li>• Not kindergarten</li> <li>• Near to work may be ok</li> <li>• Density and character of neighbourhood matters</li> <li>• Depends on the type and definition/design of the plant</li> </ul>
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		<ul style="list-style-type: none"> <li>• Wastewater treatment may be acceptable while the biosolids/sludge are less so</li> <li>• High tech building built on plant sludge piped away</li> <li>• Be open - Ocean based facility – serve cruise ship industry</li> <li>•</li> </ul>
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**How did people feel about the process?**

- Very appreciative, much more respectful process
- Beth’s story, previous conversations where the public was told the facility will be placed in this location, what colour should it be?
- Bottom up decision making – thankful
- Previous process seemed exciting at first, then closed in and left no opportunity for input
- Pictures would be very helpful.

**Table 7**

The group considered the proximity values of “low, medium and high” and based on first hand experience and cited research dismissed the values as arbitrary. The concern conditions that could be evident in each of the proximity scenarios could potentially be evident in all.

- The concerns generally themed around levels of disruption and emissions issues with regard to odour, emissions and other unwanted byproducts of treatment and recovery.
- Disruption concerns focused primarily on increasing truck traffic to transport biosolids or any other byproduct of processing away from the primary plant.
- Benefits were identified as the opportunity for reuse of water as well as heat and energy recovery with prospective benefits in the recovery of heavy metals and other chemical compounds.
- The participants also spoke about the potential for both negative and positive impacts on property values depending on the site and technology selected and the commitment to comprehensive community engagement to build a high level of awareness and support for a selected option.
- The very clear view expressed was that ultimately the issue of site selection is an issue of Trust - and that residents should be entrusted with the opportunity to review all of the sites under consideration to help rationalize a final selection based on a clearly articulated set of criteria. “We want to see the map.”



- Participants spoke about the potential for an integrated treatment system in alignment with new development, both residential and commercial, in the region. There was support for the proposition that the right choice of approach and technology should be considered as an incentive to the developer community.
- There was group unanimity on the question of desired level of treatment. Participants expressed strong support for treating water and solids beyond the levels set out in regulation. The system must address current and future needs of the community with an anticipation that taxation might reasonably increase to achieve a desired future state.
- The perspective was offered that the leadership needs to first gain clarity with regard to an expressed desired outcome with regard to water treatment and resource recovery which will point to a series of technology options. Once those options are narrowed the issue of site selection comes into consideration. Preferred outcomes determines technology solution which in turn determines site selection.
- Two very distinct perspectives were offered during the table discussion with regard to site and proximity.
- The first perspective maintained that sites located furthest away from residential communities be given primary consideration and if necessary move closer into higher density neighbourhoods but only after low proximity sites have been ruled out.
- The other perspective offered that higher density neighbourhoods should be allowed the opportunity to fully understand the benefits, concerns and safeguards and to gauge whether the facility, with optimized recovery, would be a net asset to the surrounding community.
- Most if not all the conversation focused on a distributed system scaled to individual communities with siting and aesthetics customized to suit the expressed values of the neighbourhood. In some instances, participants expressed support for a fully contained plant structure or the possibility of locating the plant beneath the ground of an existing amenity such as a park.
- We need to change the conversation from a discussion about an obligation to treat our waste to a conversation about how do we benefit from these key assets of water and recovered solids.
- The system design must allow for “sectioning” to address back-up or maintenance needs so that that the system maintains desired effectiveness during partial shutdown.
- At minimum the back-up system must perform to a higher standard than secondary treatment.
- The system design and technology choice should allow for “add-ons” in anticipation of population growth, changing community profiles, changes to regulations or technology advances creating higher benefits.
- The infrastructure must allow for separation of storm and sewer discharge to facilitate preferred and possibly less costly recovery options.

Overall, the group was appreciative of the process and indicated a strong desire to see a high level of public engagement,

interpreted to mean beyond the traditional approaches, through all subsequent siting discussions including any municipally led rezoning applications.

## Roundtable May 9, 2015 Resource Recovery

Table 2

Approach	Benefits	Concerns	Conditions for acceptance
Conventional (meets min standards)		<ul style="list-style-type: none"> <li>Treats sewage as waste</li> </ul>	
Leading Edge (beyond minimum, higher environmental standards)		<ul style="list-style-type: none"> <li>Treats sewage as a resource.</li> </ul>	

### Introductory comments

Conventional = sewage as waste, resources wasted

In some point we will need to go tertiary, why not go there now?

We need some form of resource recovery

Recognition that resource recovery does not come free - cost

Conditions for acceptance:

- Single plant or multiple is an overriding theme.
- Whatever we decide should be flexible and should include resource recovery (the whole concept should be flexible, adapt to local requirements, market demands)
- We should focus on a flexible vs rigid approach
- If resource recovery, what type?
- Need to ensure an understanding of the benefits of resource recovery
- Each community should decide what it wants based on local environment, culture, etc
- Technology should be affordable – resource recovery will cost money. How much economic benefit can the recovery bring? What are the benefits of resource recovery? There can be limits. Reality of resource recovery is that it can be very expensive. Building several plants can also be expensive. Question: Has a proper economic analysis been done on this?

- Dockside Green not just a sewage treatment plant.
- Do we build 10 Dockside Greens? Who pays for it?
- Customize the plant for the community
- Need to treat to a level so not to be harmful to the environment
- Don't necessarily reuse treated water in peoples houses, make it into a wetland with walking trails (reduce pipes and facility technology) – use water locally in wetland
  - Use water in different ways: parks, etc
  - Diverse uses for water, not just one thing
- The environment is key, the technological process must not harm the environment, and must reflect the values of community
- The technology must remove substances of concern (microbeads, chemicals, bacteria) antibiotics are also introduced into waste water
- Whatever we do must take advantage of pipes and infrastructure, we have different catchment areas in our region, must work within this infrastructure situation. Ignoring it means a loss of money/opportunity
- Creating opportunity: Sechelt has water recovery for agriculture, what can we use water for locally: what are the community social and economic opportunities?
- Economic opportunities: plants can be a magnet for economic activity – use heat or energy – this can be an economic resource – how much money can this generate?
- Flexible and modular, ability to adapt. Size of the site factors into this.
- Modular and flexible to accommodate growth – set aside land adjacent to primary site for future growth
- One large plant is less flexible. In event of earthquake no flexibility. Multiple sites good if one facility has to go offline
- Looking at core area, system wide approach is required; this could include a series of smaller plants, or plants of various sizes. Facilities should have individual flexibility. A number of different facilities with different purposes, characteristics and abilities that represent a wider approach – not one size fits all. Need to be future proof (building for today with an eye on the future)
- Resource recovery has to respond to market demand. Can the resource be used? Can it be sold? (Value of water is going up?)
- Resource recovery needs to respond to emerging technologies as well – solar and energy storage for example – incorporate put a bank of solar arrays and batteries – technological flexibility
- Key: modular, flexible and scalable
- Modular and scalable in short term to look after long term

- How will we use the **biosolids**: must not produce ghg, or pollute, must not be used on land – can be used as an additive to concrete – flaring releases methane – on the other hand if you gasify you can reuse it as a gas to heat buildings and facilities
- Consider other waste management streams (eg. household garbage. This is called integrated resource recovery (biosolids, compost, garbage). Vancouver is going through this issue currently.
- To be affordable it has to be flexible into the future
- Big costs are debt and operating costs – full life cycle costs for the project required
- Factor in remediation costs in life cycle (bigger picture than just capital costs)

**Statement of preference:**

Flexible, diverse use of water, responsive to demand, modular, integrated

## Table 3

### Scenario 1 - Conventional

#### Benefits

easier to secure wide public acceptance - well known

greater comfort based on proven use - more acceptable by political decision makers - less short term risk.

public not focused on longer term - public like what they know

a great deal of apathy - all conventional systems are different - under 40's have no clear mindset/perspective on what is achievable.

\* all benefits as listed above are the concerns - no benefits - could lead to a poor decision.

conventional system may be easier to tie into existing systems - a system developed to operate to a higher standard of treatment could be less easily integrated.

perceived to be less expense -

uninformed perspective that there would be less risk involved -

on one level - doing anything is a benefit.

#### Concerns

concern that we will miss the opportunity - the more I know the less I know - that the solution will not respond to changing environmental conditions, social conditions - a web of conditions

Can't just approach in a narrow way - must be able to "do the right thing" for next generation living.

If we make the wrong "short term focused" decision - poor investment - the less we do the lower the value. Must account for longer term circumstance and contingencies.

That we have not created a high level of public awareness and support for an ideal solution.

The appropriate life cycle cost/benefit analysis be undertaken.

Under a conventional system, individuals haven't developed a high enough level of public responsibility.

There needs to be a stronger public education process

Flush Mr.Floatie - this is what happens to him under this situation - conventional vs leading edge

Relying on ignorance -

No drive to improve any part of the system - improvements in public awareness and use of resources such as water would be overlooked - need to change the dominant narrative.

Conventional system has a shorter lifespan -

Will not address future needs - community expansion - 20 years of growth and change will render the system obsolete

will not keep up with environmental standards.

cross cutting issue - overall lack of accountability  
need to build social license - public responsibility to care for the future.  
could be cheap to buy and expensive to run - must factor into operating cost

Conventional - seems to suggest "one plant" solution. Need to clarify.

## **Scenario 2 - Leading Edge**

### **Benefits**

Longterm Solution

Adaptability to changing conditions and circumstance - building on the European system.

Europe has a record which can be referenced - Singapore strong example.

Modular build to deal with each phase of the treatment - expandable - distributed  
less tendency to "one size fits all"

Phased development will create optimized solution - allow for customize growth - Langford is growing - View Royal not so much.

Conservation of resources - greater personal responsibility

Maximize resource recovery - recharge aquifers

Concerns raised to this point would be addressed by leading edge technologies

Could trigger investment to create a "3xbottom line" approach

Crosscutting - public ownership desired

### **Concerns**

leading edge implies distributed which could deepen NIMBY

regional inequity contingent on siting. If one municipality assumes responsibility for siting - should they receive the disproportionate number of benefits? Is there a inter community cost benefit

Could we be tied down by "leading edge" technology - stuck with a system that costs more but cannot be adaptable. Different brand of stuck.

Initially more expensive - education for the politicians and public - clear indication of benefits needs to be canvassed.

Obsolescence

## **Conditions for Acceptance**

### **Conventional**

Conventional with the opportunity for water recovery....

If conventional means it will only respond to the regulatory requirement 2020 - Not acceptable.

Publicly built, owned and operated.

more work on the part of municipalities to reduce load

## **Leading Edge**

maximize resource recovery and elimination of heavy metals \*\*\*\*\*  
localized benefits  
Publicly owned and operated \*\*\*  
Funding agreements need to be secured  
need to have complete transparency  
adaptability - scaled to meet changing circumstance \*\*  
Crosscutting - community integration - trucking \*\*  
Built to respond to the highest level of global environmental standards  
Tertiary treatment - replenish water  
reclamation of bio-solids  
wood pellets  
energy production  
heat use

Costing can only be understood through thorough lifecycle analysis  
Phased in menu approach

Seashelt Scenario - leapfrogging - phased in over 20 years

Victoria must solve the Infrastructure and flow - cost issues as a baseline to fixing the bigger problem - equity issue.

Younger demographic need to be engaged in this discussion - where are the 40-somethings?

Table 3 - Further discussion

If we frame conventional as - meeting reg standard - not acceptable.

We discussed standards to include global standards - not just Canadian \*\*\*\*\*

Conventional could only be acceptable if recovery and resource gen was possible

Safe - withstand climate and other changes

Tertiary treatment \*\*\*

Governance

Awareness - need to find some way to engage younger citizens - more targeted and proactive

Inflow and infiltration issue - beyond NIMBY - equity, holistic - \*\*\*

Decision making process - need to fully understand lifecycle - 3x bottom line

modular - phased-in demonstrated ability to achieve performance outcomes - scalability



## Table 4

It was noted that the matrix supplied was misleading. The discussion should be simply: Do we want resource recovery?

### Concerns

- Micro plastics
- PCB's
- Antibiotic Resistant Organisms/ Superbugs
- No land application of solids
- Gasification – aerosolizing contaminants.
- GHG and climate change
- Previous plan had resource recovery as an add-on, not integrated into the design.
- Safety
- The proposed plan has a budget of \$782M with \$16M in operating costs – it won't address stormwater overflow

### Conditions for Acceptance

- What thresholds can we accept in terms of environmental pollution? The real reason we're doing it is for environmental concerns. But it makes it more palatable to say we'll recover resources. Why do we have to feel like we're selling the notion when what is important is the environment?
- Make conscious decisions for complete destruction of superbugs
- Make sure the systems we endorse are economically viable AND limit the emission of pollutants that damage people's health
- Approach needs to be tailored to the inputs – is it just wastewater? Kitchen scraps? Municipal waste?
- Transparency: Make the public aware of what pollutants are produced by the system
- You get to a point diminishing returns
- Cost benefit between piping \$380M vs gasification \$50M
- Process should ensure reduction of GHG's
- Pollution we make here, we keep and treat here – don't spread it on other people's land
- No discharge of pollutants into the marine or air
- Advanced treatment
- Willing to have the increase in taxes-want it to do the best we can
- Don't go for bottom line in cost and compromise the environment
- Don't sacrifice your future for short term plan
- Solution that is adaptable/scalable
- Overall revenues should exceed the operating costs
- Heat recovery for greenhouses to support food growing
- Food security
- Outputs: heat, electricity, water
- Wetlands in office towers?
- Take water out of system before it goes to the facility?
- Habitat restoration with reclaimed water is a resource
- Treatment of extremely hazardous materials
- One participant stated need for plasma incineration
- Another participant was concerned about the use of the term incineration – should be gasification
- Created a scale of highest pollution to lowest: Landfill – land distribution – anaerobic – incineration – gasification – varying perspectives on the order of these processes

## Table 5

- Don't think conventional vs leading edge isn't hugely useful because you have to know more about specific technology.
- Perhaps if you see conventional as viewing wastewater as waste and leading edge sees wastewater as a resource.
- No way to accept conventional technology because it doesn't recover enough. Also concerned that it doesn't take out toxins from the recovered resources. \*\*\*\*\*
- Want the highest level of resource recovery - best possible environmental benefits - -- MUST RECOVER WATER.\*\*\*
- Continuum – don't know where the line is. Cost vs. level of treatment. How much benefit does the extra treatment provide? Answer may change the level of cost willing to take on.
- Discussion: Smaller plant can deal with specialized tasks (one small plant that deals with hospital waste, another one that deals with industrial waste, another one that deals with landfill leachate) – shouldn't be necessary because of source control. Perhaps we need to have higher policing of source control.
- Seeing the plant as a community resource – should add back to the community. Must be integrated into the community they are in. Create Educational element, provide park space or wetlands, etc. – can become a tourist attraction.\*
- Location of the plant: okay in my community – if it is beautiful and adds benefit. \*
- Distributed system more resilient to climate change. – less likely to have all systems to be knocked out at once – more redundancy than one plant. Even if it costs more at first it will cost less over the long-term. Needs to plan for possible disaster.
- Need to look at building this for 50 to 100 years and consider disaster response. Containing the damage – not necessarily about continuing to treat. You can only engineer to a certain point. There is a cost benefit issue to emergency management.
- Is there the possibility that it would be more difficult to find those sites – can that be offset by the size of the plants. – footprint (size of site will determine the technology - no two plants will be the same – if you use the same technology at multiple sites training of personal is easier, however depending on the size and the site you might need different tech).
- Biosolids – need to treat the contaminants within the Find a technology that could be used as either smaller distributed plant. – proven technology for biosolid treatment – proven means somebody has been using this tech for at least a decade (with similar environmental conditions to the island). Biosolid treatment in my community a concern. Must not smell. Make sure that the air is clean – vital.\* But might be willing

to step back from that 10 years proven if there is redundant filtration system and mitigation for any other issues that might come up.\*

- Gasification – issues is that it is a relatively new technology and may not be considered proven – administrative hurdles. Still might be better for us. No emissions, biochar. Very environmentally friendly, can make money, less harmful than biosolids and composting. Heavy metals are a concern but they appear to stay in the char and don't leach out like digested biosolids.\*
- Happy to extend the timeline and risk losing the money to get something better and potentially cheaper. We should stop rushing headlong into this. We are in a good spot to reconsider our options - some disagreement – get it done. Start soon but make it scalable and modular. Think of the long game – 50 to 100 year solution.
- Legislated deadline – We have to consider this when we address the timeline.
- Have to have full resource recovery right from the start. – don't start with something less to meet a timeline. \*\*

#### **Overall discussion:**

- Not enough knowledge about the problems of solids treatment. Missing educational component. Treating water seems more understood.
- Whatever we choose must lead towards a healthy earth ecology – not just about the water but also the earth and the air.
- Concern about Vandalism – security should be on the site.
- Difficulties that we are facing we don't have a set amount of money. We are discussing values. What do we want out of our treatment facility? We have to decide what we want and then the engineers will tell us how they can build it and what it will cost. Once that happens perhaps we change our minds but we have to start from what we want.
- Different municipalities might have different needs. By having different plants for different municipalities we can tailor the solution to each municipality.
- How do we increase the amount of discussion in the community – not just all the same thing. Need to reframe the narrative to look at opportunity rather than NIMBY issues. What are the opportunities? Greenhouse? Increased property values? How do we change the perception? Media thrive on conflict. Need to get the information out through social media so that we are able to get to the younger generation. Get a video out there. Something that can go viral about poop.

- What should be driving the decision is what is best for the environment but not about the money. Might be true but there are many people who think that money is most important. We need to be able to include them in this discussion – frame to show how cost can be addressed with a higher level of treatment. Must focus on values doesn't necessarily mean that costs are not considered – modular systems doesn't have a gigantic scary cost up front.
- This is bigger than one municipality but rather as a region. This is an environmental issues. This must stop being a municipal discussion and become a regional discussion.
- Like the term Westside Solutions – different way to frame the conversation. Now we need to integrate Westside with Eastside.
- Want to say instead of NIMBY change to PIMBY – Please in my back yard.

## Roundtable May 13, 2015

### Cost and Level of Treatment

#### **Table 1**

Need something visual that people can grab to understand what a facility would look like in, for example, a park.

Q. Will there be a push for septic users to hook up to sewers?

A. Depends on municipality ... not in Colwood.

Q. How will a distributed system vs centralized affect cost?

A. Hard to say. Part of conversation.

#### **Table Introductions**

- Not assume that higher treatment implies higher cost.
- What's in sewage – microfiber towels, neutralize toxins, not just move them around.
- Saanich is moving fast. Westside seems thorough and thoughtful.
- Move forward ... we are past asking whether we need to do this.
- Path for greater sustainability for the region. Not about cost, about the right solution now and for the future.
- Want to understand all the costing.
- Cost vs. price. Cost to the environment. More value than money.
- Best investment for today and add to that investment to get where we want to go. If we can't afford the treatment we want today, we can work toward it.
- It's about getting it right. Fairly soon. Not a difficult thing to do. Has become politically difficult.
- 100 year plan so my kids don't have to come back to this table.
- Combine the responsibilities of the CRD – sewage, hospitals, kitchen scraps – seek opportunities.

#### **Report out**

- Who is leading the process - credibility is key.
- Transparency = TRUST
- Accountability to have a clear, concise conversation about costs/siting
- Status quo – distrust purposeful confusion – take full accounting before we can present realistic options
- Here is the measure against which we will ask citizens for support of options
- More granular than triple bottom line – series of metrics/values so people can say
- 'these are important to me' like; environment, scalable, future focused, based on previous discussions
- Trade-offs – need apples to apples comparison – things aren't being skewed
- There should be no losers .... Mitigate against detriments to choice of Site and technology
- Tested P3 – it depends on how you structure the deal – if revenue is generated, must be revenue sharing to support scalability of facility
- Community centric approach
- Thorough, independent and transparent analysis
- Investment, can make subsequent investments

## **Table 2**

### **Introductory comments from group:**

- Distributed facilities you can build as required
- Should be scalable, improvable
- Cost does not refer just to money
- We need to aim high
- Consider what was being proposed is just meeting regulations of today, maybe we should think about treating to a higher level so we don't have to do it again when regulations change
- Plan now for tertiary? Would cost more later to upgrade
- Theme: building for the future; a 100 year plan
- Mindset: not in favour of just using regulations, this is thinking small, not big. Think about the environmental issues not just regulations
- Most important: that we clean up the waste water to highest degree possible (Dockside Green). We can use this resource which encourages conservation and recycling
- Look what's happening in California with water: conservation.
- Cost perspective: water important; tertiary treatment can bring cost down, because don't need long outfall (cost of pipeline, etc)
- Wastewater vs resource is an established mindset in group. Looking at more than lowest cost.
- Introduce renewable aspects and bring costs down
- We're all concerned about environment, but there will be a cost associated with high level environmental protection.
  - Not necessarily – resource recovery, biosolids, the less that you have at the end of the cycle, the less costs.
- Different levels of treatment, closed system, leads to benign ash that can be used for a variety of things, it's a closed loop
- Scale of costs associated with level of treatment.
- Question: Can P3 be cheaper?
- There are health costs as well. Secondary doesn't take care of harmful substances. Need tertiary to deal with this.

### **Need lens of triple bottom line, equally weighted (not just financial costs)**

#### **Social costs/considerations (and values)**

- Asset (beneficial) to the community (plant) – can be a destination, a venue, a learning centre, small and local, creates a sense of pride, represents community values
- Minimal negative impact on health
- Consistent with community values, integrated into community
- The Songhees Wellness Centre good example of integration into community and community pride/aesthetics
- Nimbyism disappears when there is pride and ownership in facility.
- Minimize future pandemics through taking care of wastewater to high level
- Value: creating employment
- Resource recovery to create new resources - Food security/systems, greenhouse

#### **Environmental costs (values)**

- Health is a part of the environmental category, as well as social
- Scalable to adapt to leading edge innovation (meeting future regulations)
- Build for the future right from the start – modular, scalable and adaptable

- Tie into existing infrastructure - less environmental impact

### **Financial**

- Ensure minimal end product from process
- Scalable for future needs and population growth
- Values: sustainable infrastructure, reused to generate benefits
- Tie into existing infrastructure, save money
- Resource recovery as a revenue generator
- Resource recovery to create new resources - Food security/systems
- Value: overall life cycle cost, create awareness of overall life cycle costs
- Create employment

### **Ownership and Cost Structure**

- Procurement types and financing affects costs, can also affect ownership
- Debt and liability additional concerns
- Category of costs:
  - Capital/Construction (make scalable)
  - Operating
  - Treatment
  - Conveyance system (minimize)
  - Site (use existing land)
  - Maintenance (consistent with existing systems in place)
- Ownership should be public (we are talking about resource and resource recovery, this is public) – a public trust?
- Possible to have a blended ownership model
- Run by a public trust to allow for unions
- Proper design will minimize all costs
- Using existing infrastructure will minimize costs
- Go to existing public land as a priority
- Treatment: must be innovative, others around the world visiting us to see this innovation
- Where will the money come from?
  - From all levels of government (including municipality)
- What about P3?
  - Should be public/public partnership
  - Host community should benefit financially?
- Will a facility really generate a great deal of interest from other countries or tourists? Will this lead to revenue?
- 

### **Wrap up and expression of table**

Delicate balance between treatment and cost. Got specific about what costs mean: triple bottom line, equally weighing all three costs, with the addition of community values.

### **Group discussion.**

Only P3, or only public? Why not 100% private? Need more discussion here. In private entity, who would control the water? Focus on values and principles.

### **Table 3**

- want to ensure that there is a visualization of the solution as part of the communications strategy moving forward
- treatment and cost matrix: benefits, concerns and conditions for acceptability
- how to pay for this?
- how to govern?
- costs are location-dependent

### **Introductions:**

- excited about level of knowledge around table and ideas
- concerned that we have a problem like halifax
- 50years is too long, technology is changing so fast, population changing
- can we discuss risks and mitigation of them
- would have liked to have been at all 3- didn't think she could attend all three
- did a survey of 6 neighbours— two on sewer don't care what goes on, two worried about costs, two on septic don't think they should have to pay anything
- worried about government grant and eastside/westside fighting for money- who gets what? divided by flow rate (lee explained flow rate)
- concern- so many municipality will decide how to charge individual citizens— will we have a regional system and then each municipality charges differently— sounds confusing
- needs to be a standard rate for each area— what am I really paying for this? What am I getting?
- I think the ocean approach is good enough however from Esquimalt so learning about all of this
- we are spending the \$- life cost of over \$2B, what about the young people and their costs, how will this affect the affordability of our community
- big costs and not able to dig ourselves out of it
- we need to do tertiary treatment, but different levels and different standards, and depends on what we do with the outflows
- gasification and toxins, etc, we need to handle this— need tertiary
- RFP responders— some said we should plan for short-term, go modular that will build and meet the needs as we go to increase levels by modular construction
- technology is such that it can fit in the room
- keep costs down
- big costs are digging pipes into the ground, work closely to the original pipe and existing infrastructure
- original plan is building a whole bunch of new pipes and want to avoid that
- wrote letters to the Minister and really upset about McLaughlan— didn't like that it was going into inner harbour
- want discussion of risks— original plan had one pipe— pipes break! So not a great way to handle risks

### **Start of Discussion:**

- Public-private partnership- has received bad press and good press
- mistake of Halifax— contract to design and build but not to operate so they took shortcuts, but that was because of the way the contract was written
- huge problems and needed to fix it
- around how the contract was written



- depends on the scale of a project— big industrial plant may require P3 but for smaller plants, not as much \$ and government can borrow at cheaper cost
- must be owned by the people at the end
- PPP can be done poorly or done well
- avoiding a blunder, what are the potential with a PPP? better design, better integration, with a cheaper cost to build
- depends on the scale of the project— smaller distributed system is cheaper to build
- capital, debt and operating costs are important to discuss
- future regulations will change- yes? Yes, so to avoid future costs, build to tertiary
- modular
- secondary treatments are guided by regulatory stipulations
- tertiary treatment is on the horizon and how do we best provide for that?
- 50 year lifespan is beyond comprehension— need to look at 5-10 years
- technology is moving so fast— perhaps look out two years
- different scales and different sizes of plants based on different needs
- perhaps different municipalities band together in different ways
- but what if there is a size of plant that is technically and economically ideal, then different municipalities can link into it
- we are talking about modular approach:
- build something now and recognize that this will change over time and different technologies
- growing population— so what we need now can be added on as more people turn up
- we are blending it by keeping costs reasonable into the future, while increasing level of environmental practice
- another issue is resource recovery and where can we use the outflow, so many factors to think about
- Comox/Courtney— sells 50 lb bags of 'sky rocket'; Saanich peninsula send Pen Grow— problem is concentrated heavy metals so stopped that— environmental concerns
- with tertiary treatment you can remove metals? only with gasification
- gasification develops a resource you can sell and heat capture
- creates a propane-like gas... that doesn't sound all that bad
- there may be issues around public health
- digesters can blow up— that's a risk!
- conventional plant costs this much, or can build another cost that is higher but get resources back so net cost is lower, or can build something that provides economic benefit in other ways
- Colwood parking lot— waste water treatment under parking lot and then building on top
- creates property that generates revenue, sell water and heat to neighbouring homes and Colwood downtown
- when we look at costs, need to look at big picture— cost to build building and what benefits does it generate down the road... water is much more precious resource than we valued in past
- what does creation of building do on a larger economic picture
- would we be willing to pay more now in order to generate more benefit?
- heat
- greywater to flush toilets— CRD regulations will not allow it, very risk adverse
- ministry of environment has levels of tertiary treatment depending on end use— irrigation requires higher level of treatment because it will touch human hands

**Conditions of Acceptability- where do we sit on this right now?**

- hard to say if we don't know what we are dealing with
- esquimalt flow rate is high so worried that we are going to be paying a whole lot
- here are some principles:
- robust and high survivability— risks from earthquakes, sewage
- risks related to contract with builders
- climate change- sea level rise
- health risks are considered and mitigated
- allow for growth in population and technology
- governance model that produces a standard rate across the municipalities
- cost sharing that feels fair
- reducing costs by getting offsets from benefits
- the benefits will be getting increasingly valuable- ie- water recapture
- selling the resource
- becoming a economic generator
- so many opportunities out there that can be accrued based on it 'depends'
- need a resource analysis in catchment area— what can we immediately enhance today and what needs to be planned for tomorrow
- one big plant is too big for local firms to take on; smaller plants = local firms can take this on and local jobs can be created
- we don't want to do a distributed system that is all different— make sure that the plants are all the same with the same parts
- local building by-laws need to start requiring development follows the criteria and addresses these issues and ask developers to pick it up a notch and move towards Dockside Green
- regional development standards that are adopted across the municipalities; shift the negative perception of those amenities to a positive value
- what do we do with the 40% of houses on septic— does everyone's taxes go up? Septic— I pay differently— replace field and get pumped out, switch to sewage = replumbing my house so big initial cost; but many of those folks might be on failing septic systems who want to hook up to municipal system
- distributed system might be more resilient in case of emergency or crisis
- each plant should be fed by two substations in case of earthquake + back up emergency generators
- discussion about earthquake proofing— can make it resistant and make it to a level that will mitigate most risks, and pay to build and compare against cost to fix in case of earthquake
- other biological materials we are handling (kitchen waste, etc), if we bring it together do we create a certain economies of scale? Can save \$ by bringing together rather than shipping off shore- can we expand the definition of waste management to include all our waste management and make it more integrated into the whole waste management system
- it is too abstract— until we get a model in front of us, hard to discuss and make decisions on this— without that, we end up in a nebulous discussion
- private land increases the cost as compared to municipal land— how does this change the
- cost

## Summary

- we need to look at costs and benefits
- 50 years is too long- shorter time frame
- modular approach for future proofing

- distributed system needs to be similar components to keep maintenance and upkeep costs down
- decrease risk even if it increases up front cost
- pricing that is equal/standard across region
- publicly owned
- economic costs as well as jobs, economic generator/benefits
- social acceptance can influence things like land purchase
- building in uncertain conditions— hard to know the costs and benefits and economic opportunities so creating something that has the potential for flexible and adaptable to an uncertain future

#### **It depends on...**

- existing infrastructure
- where the land is
- land costs
- secondary or tertiary
- taxes or how we pay for it/ my tax increase
- ownership
- what is available in technology in order to get the benefits— modular and rolling trajectory towards better outcomes
- value of resources
- design— invisible to pretty/ugly
- community presence— can we see it? can we smell it?
- site— determines cost, contingency, community buy-in, etc
- community perception- political will and how the conversation is hosted
- money and financing— what is available now versus what might be available in the future amount of environmental harm
- amount of environmental benefit

#### **Questions and Concerns**

- Public private partnerships
- Functionality, cost and life cycle of project
- Costs
- Triple bottom line – planet, people, and financial costs
- How do we make the existing infrastructure work for us
- Taking responsibility for what we make
- Which option provides greater opportunity for private investment? Public funding?
- Can you structure a P3 to actually get risk and reward in the right place?
- Is issuing bonds an option?

## **Table 4**

### **Lowest cost:**

#### Benefits:

- People might find it easy to accept
- Meeting mandated
- Could be fewer barriers to completion
- Affordability
- Modular – low cost now to be upgraded

#### Concerns:

- Takes most space
- What if regulations change?
- What if we have to go through this process again if standards and expectations change?
- Won't fit into the neighbourhood
- Environmental concerns
- Public safety concerns
- Pathogens, micro plastics, etc.

### **Lowest cost over 50 years:**

#### Benefits:

- Modular construction
- Recovery of resources
- Can distribute costs over time – add to it as conditions change and may end up not having the resource recovery dollar potentials

#### Concerns:

- Making assumptions now that may not be correct

### **Best practices for the future:**

#### Benefits:

- Life sustaining
- Could be easier accepted as a benefit by community

#### Concerns:

- None identified

### **Conditions for acceptability (applicable to all)**

- You can start from the point of view of resource recovery
- Taking responsibility for what we make – what we create in our region is dealt with in our region
- Get the most we can out of our resources
- Affordable – the way in which you pay for it
- Issue of palatability – per door costs – need to talk about what the public will accept in general to pay for treatment at any level
- Value for money – what we pay for has to have value now and in the future
- DCCs charged to new development

- All costs and benefits need to be factored in over the life cycle of the facility(s)
- Factor in capital and operating costs – and factor the possible revenue
- Factor in ecological benefits/costs
- Make assumption of what we can do with resource recovery and then factor in capital and operating costs
- Look at a long term investment
- High quality treatment with low environmental impact
- Affordable
- Level of treatment provides economic value – not just directly – but things like tourism, food supply, etc. – ancillary benefits
- Ecological capital
- No pathogens, superbugs, micro plastics, heavy metals
- Community benefit that comes with the plant – public amenity – to the host community(s) – park, wet land
- Planning and costing – climate change is factored in
- Architectural design compatible with the visual look of neighbourhood
- Education on ecosystem – ie. Film showing public the plant is eco-friendly
- Choose a plant that large enough over time for growth
- Don't truck in sewage from outside communities
- Gain public support through full disclosure

## **Table 5**

### **General:**

Tertiary treatment is regarded as the minimum. Any decision on the number of sites and their location must be done in a collaborative manner, building on existing infrastructure and provide room for future growth.

Central to any proposal is transparency and accountability.

### **Overall themes of the discussion included that:**

- Technical information needs to be shared with the public
- Decisions on sites and technology need to be made in public
- CRD needs to take the lead in educating the public on treatment options
- This is a public problem, needing a public solution to what can be regarded as a public resource
- Ideal is to have a collaborative process involving all 8 municipalities so as to have the highest level of treatment possible.

### **Favour a distributive system that:**

- Is scalable, modular and capable of taking on future growth
- Makes resource recovery a priority
- Is tertiary and close to existing infrastructure
- Leaves a small “footprint”
- Employs different treatment modes at different sites as appropriate and cost effective
- Views treatment as an economic driver – e.g. zoning changes to increase density or attract light industry near a facility and use resource recovery to provide energy to those homes or businesses thereby reducing their costs.

- Uses Development Cost Charges to help fund future growth at the treatment facility
- Looks to best available technology including gasification

**Concerns:**

- Lack of clarity on what level of government is funding what and what are the conditions of that funding
- Need to have an open discussion/presentation on the actual costs of the land that would have to be acquired, the various technological options available and a life-cycle costing of the various options (operational and capital costs)
- Too little is in the public domain for most citizens to make a determination on what is best with regard to the trade off of current costs to future or defrayed costs.
- That newest technology is being discounted as untried and too expensive. Need to take a leadership role as a region to develop world class and world leading treatment.
- There is little apparent concern about fixing “I ‘n l” in the region as a condition for moving forward with new treatment options.