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

Siting Integration	Benefits	Concerns	Conditions for Acceptance
Low Proximity	• Single large plant might be acceptable • Can integrate municipal solid waste into a large plant • Greater setback to people • Communities can grow around it to use the resource recovery	• Loses resource recovery potential • Infrastructure • One plant needs to have redundancy – we could lose this facility in an earthquake situation and this will be a huge problem.	• 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. • Encourages economic development • Additional direct benefits for host community – • Smaller distributed sites include redundancy
Medium Proximity		•	•

High Proximity	• Can mitigate cost by utilizing resource recovery • Higher real estate value (if impressive architecture used) • Offset development costs and decrease operating costs with resource recovery • Potentially offset tax loss issues for a municipalities – with smaller sites rather than one larger • Municipal operating costs could be offset by resource recovery (water, heat, energy)	• Odor; • Aesthetics; • Noise; • Construction impacts – temporary /short term; • Traffic; • Above ground might run into odor and other issues depending on technology • Lower property values if taxes go up and other concerns aren't addressed • Safety – methane flare tank near people - could blow up, tsunami • Can't be big and on the water.	• Prefer a smaller distributed plant in order to be high proximity. – each municipality should have it's own • 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 • 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 • Must recovery resources (heat, water, solids, energy, etc.) to mitigate costs – should be done onsite if possible • High quality technology – must last and not break down – if it breaks down it must be easy to repair. • 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. • Must be smaller distributed? Each community should treat its own • Don't want to smell it • Don't notice it • Must include cost information. must be good value – not necessarily the lowest cost – includes resource recovery • Compare multiple sites verses single site

		• How do we make sure the conditions for acceptance will be adhered to by the organization? – accountability. • Must not be privatized. Run the risk of controlling the resource	• Look at land around where the trunk lines are to reduce cost. • Generate economic activity – encourage development • Positive for the community – not a waste an opportunity. • Must be small if it is on the water becomes a safety concern if it is a single site. – tsunami. • No community feels dumped on – must be fair. • Create a situation where the communities want this or at least willing to accept it without being imposed upon. • If it is a PPP the public must not lose control of the facility or the resources • Must be affordable

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

Siting	Benefits	Concerns	Conditions of Acceptance
Low	• Not as much disguising of the site • Less of an odour problem • Could cost less • Built above ground • More likely to get acceptance • Central plant • Handle solids and liquid on site •	• Over built • What do you do with the solids – could increase traffic • No back-up if there is a failure • Conveyance system could cost more • Potentially too far from DES or other resource recovery options • Could be in flood plain – climate proofed – or rising sea levels • Back-up redundancy	• Must have back redundancy for any catastrophic event(all) • Each community takes responsibility for their I & I (all) • Source control – reducing I & I • Lowest lifecycle cost (all) • Lowest community impact (all) • Lowest community impact including traffic and construction (all) • Last 50 years (all) • Rigorous triple bottom line (all)
Medium	• Possibility of reusing resources • Size dependent – but could be the tipping point distance • Could work if scaled properly and doesn't negatively impact neighbours	• Solids could be more of an issue • If too big – solids become a real concern – they might have to be treated offsite • Adding costs potentially if it is built to integrate	• Needs to be cost effective for resource recovery including gasification • Equity across the region for high and medium • Need to be a real benefit for community located in like education, environmental remediation, resource recovery – acceptable to community (medium and high)

	• Optimize resource recovery opportunities • Put more into integrating into communities • Could reduce conveyance costs	• Scale • Impact construction • Odour etc. has to be greater • Space greater concern • Disaster proof	
High	• Could be a smaller scale • Discreet • Integrate tighter and maximize resource recovery • Could be located where you have problem waste (e.g. hospital waste) depending on scale and location • Deal with your neighbourhood • Flexibility	• Restrict the type process – technology • Costs go up • Odour • Property values • Space restrictions	• A real balance between upfront costs and long term investment • Natural capital/social • Control for specificity – like resource for recovery specific to the problems in the area • Must fit the zoning • Scale small and technology high • Climate/disaster proof (all) • Must fit OCP • Could be sited anywhere – even close to a school – if it was the right technology • Strategy for expansion • Failure of equipment contingency planning (all)

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

Siting	Benefits	Concerns	Conditions
Low Proximity (5+ blocks from residence)	More support Less impacts, could be visible Less traffic and impact during construction	Underground and piping proximity Infrastructure	• Conditions for acceptance apply to all three siting proximities (see below)
Medium Proximity (3-5 blocks from residence)	Less costly for infrastructure	Neighbours more concerned Appearance Odours Traffic (during construction and maintenance)	
High Proximity (Inside 3 blocks)	• Build smaller plants • (in fact should be smaller plants) – Dockside Green small scale • Community ownership of decisions • Tertiary in smaller plants. Lower costs of final treatment and water • Discharge • No piping	• High construction impacts • Public concern • Not in my backyard	

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 solat 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 tonite, 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
• Opportunities to benefit from energy and resources • Housed in building that is modern, high tech, an economic benefit • Distance would lessen impact from smells, noise or low aesthetic appeal of the building • Closer to communities, increased density =	• Trucking through community • Odour (particularly during maintenance schedule) • Noise • Distance from trunk line may increase cost • Merge waste streams? • Need certain amount of land to maximize energy	• Do something to lever the economy, • Consider community plans • Recover resources • • No negative impacts • Different neighbourhoods require different approaches • Consider Penner's letter 2007 – keep cost low, secondary sewage or better, optimize resource recovery…

cheaper, more effective waste to energy capture •	and resources in that waste • Operational cost of pumping (counterpoint … is piping that big a deal?) • Ensure reuse makes financial sense • Carbon cost • What can you do with sludge…don't want to truck over malahat, can't apply to land • Perception of fairness – a number of smaller plants in a distributed system • Harder to integrate into established neighbourhoods rather than build it and they will come or at least have choice. • Lower lifecycle cost than what the CRD is proposing increases buy-in • Space requirements for multiple materials & future proofing may need a larger landbase	• • Existing neighbourhood or new build • Optimizing resource recovery • Minimum impact on environment • Cost benefit analysis of resource recovery • Future proofing – the value of water may increase over time – design for expansion • Do future thinking as well as current thinking – create a plant that has the capability even if you don't use it right away • Smart design • Life cycle costing - operational cost and capital cost • Use this as an opportunity to solve other problems as well, energy, employment, economic development • Lever the opportunity $ = many outcomes • Connect to community plans • Modular – build for today's population with space to expand as population grows • Potential for growth either in one plant or with a plan for an additional site. • Not kindergarten • Near to work may be ok • Density and character of neighbourhood matters • Depends on the type and definition/design of the plant

		• Wastewater treatment may be acceptable while the biosolids/sludge are less so • High tech building built on plant sludge piped away • Be open - Ocean based facility – serve cruise ship industry •

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 wether 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.