

GOLD BAR CITIZEN PLANNING COMMITTEE WORKSHOP #3 – WHAT WE HEARD REPORT

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WORKSHOP #3 DETAILS

EPCOR invited members of the public to take part in a workshop series associated with the ongoing operations at the Gold Bar Wastewater Treatment Plant (“GBWWTP” or “Gold Bar Plant”). The focus of the workshops was to discuss and gather feedback on how EPCOR can operate the Gold Bar Wastewater Treatment Plant in an environmentally and socially responsible manner that minimizes impacts on neighbours and area users, while still meeting the needs of the broader Edmonton population and Gold Bar’s ongoing operations.

The first two workshops were held on February 27 and March 19, 2019. The third workshop was held on May 14, 2019 from 5:30-9:30 p.m. at the Radisson located at 4520 76 Ave NW. A third-party contractor, Gay Robinson Consulting, facilitated Workshop #3.

Between workshop #2 and workshop #3, workshop participants were invited to attend a tour of the Gold Bar Plant. Nine participants attended tours of the plant from April 29 to May 1, 2019.

INVITATION

EPCOR sent an email invitation to participants from the first two workshops. These participants included members from surrounding residential communities, recreational park users, educational and research groups and representatives from the City of Edmonton (“City”). Appendix A includes a copy of the email invitation.

WORKSHOP #2 GOALS AND OBJECTIVES

Gay Robinson Consulting and EPCOR developed the following objectives, outcomes, and outputs for Workshop #3.

OBJECTIVES

- Provide information on proposed Design Principles for each of the Shared Outcomes.
- Provide information on Long Term Planning, Operations Centre Safety & Hygiene Plan, Odour Action Plan and Emissions Reduction Plan.
- Gather input on the proposed design principles to be used as criteria for long term planning and each of the projects.
- Gather input on appropriateness of information provided on long-term planning and each of the projects.
- Gather input on how well various options and plans related to long-term planning and each of the projects meet selected criteria.
- Gather input on proposed public engagement plans related to long-term planning and each of the projects.

OUTCOMES

Participants will:

- Have a clear understanding of the criteria EPCOR will use to guide future design and operating decisions at the Gold Bar Plant.
- Have an increased understanding of long term planning for the Gold Bar Plant, as well as proposed plans for Operations Centre safety & hygiene and odour & emissions reduction.
- Believe their input will be considered in decisions related to Gold Bar Plant operations.
- Have found their time spent at the session to be worthwhile.

EPCOR will:

- Have an increased level of understanding of stakeholder values and priorities.
- Have an increased level of understanding of how stakeholders wish to be engaged on specific projects.

OUTPUTS

- Suggested design principles to be used for long-term planning and each of the projects.
- Feedback on the appropriateness of information provided related to long term planning and each of the projects.
- Evaluation of options and plans against criteria for long-term planning and each project.
- Feedback on proposed public engagement plans related to long-term planning and each of the projects.

WORKSHOP ACTIVITIES AND PARTICIPANT FEEDBACK

Upon arrival, participants were asked to sit at one of two tables. Each table had a host from EPCOR responsible for leading discussion throughout the course of the evening. The following section provides a summary of the engagement exercises completed by participants and the feedback provided.

INTRODUCTIONS

Gay Robinson Consulting welcomed participants to the workshop and reviewed discussion guidelines (see Appendix B). EPCOR then presented the Design Principles created with the feedback provided during the second workshop.

PRESENTATION OF DESIGN PRINCIPLES

EPCOR presented a proposed list of Design Principles. See Appendix C for a copy of the presentation provided by EPCOR. EPCOR communicated that they would be sending an online survey to gather feedback and input regarding the Design Principles presented. EPCOR further communicated that the Design Principles would be applied and tested during the next four exercises planned for the workshop.

PRESENTATION ON LONG TERM PLANNING

EPCOR provided a presentation pertaining to long-term planning at GBWWTP. See Appendix C for a copy of the presentation provided by EPCOR.

EXERCISE #1 – LONG TERM PLANNING

Table Hosts led a discussion on long-term planning by using poster boards set up around the table (see Appendix D for a copy of the poster boards). Table Hosts took notes on flip chart paper and participants were asked to complete and submit handouts with the discussion questions included on the poster boards.

PARTICIPANT FEEDBACK – GROUP DISCUSSION

During group discussion, participants provided the following feedback regarding exercise one:

Table One

- Upstream impacts and EPCOR's minimum development thresholds are missing from the materials presented.
- What information/data was used to prepare materials?
- Safety is key.
- Core considerations in this exercise should be keeping all development within the existing fenceline, public safety, sharing options with the community and reducing odour and noise.
- Setback distances are a significant concern for participants.
- EPCOR needs to make sure the decision making process is completely transparent.

Table Two

- Participants agreed that the core considerations include safety, quality of life and relationship building.
- Remove 'existing' from accelerate odour reduction.
- Heavy traffic risks are a concern.
- Participants now have a nice cursory understanding of long-term planning.
- More details on SESS decision are required to formulate an opinion.
- Participants communicated that they need a better understanding of the impacts of water conservation.
- Why was ISL so wrong in their flow projections?
- Learn lesson – don't repeat mistake with SESS.
- Drainage can move infrastructure to divert away from GB in the long term.
- Open houses/info sessions; have post workshop with other stakeholders, smaller groups of informed stakeholders, most people in the community area engaged because of anti-development mentalities.

PARTICIPANT FEEDBACK – INDIVIDUAL HANDOUTS

See Appendix E for completed copies of the handouts submitted to EPCOR by workshop participants.

PRESENTATION ON SAFETY & HYGIENE

EPCOR provided a presentation pertaining to safety and hygiene at GBWWTP. See Appendix C for a copy of the presentation provided by EPCOR.

EXERCISE #2 – SAFETY & HYGIENE

Table Hosts led a discussion on long term planning by using poster boards set up around the table (see Appendix D for a copy of the poster boards). Table Hosts took notes on flip chart paper and participants were asked to complete and submit handouts with the same discussion questions.

PARTICIPANT FEEDBACK – GROUP DISCUSSION

During group discussion, participants provided the following feedback regarding exercise two:

Table One

- Participants understood that administration and safe work spaces are required.
- Participants are concerned with option 4 and access off of GB Road (introduces public safety concerns).
- EPCOR should re-engineer option 4 to use existing access.
- Public transit should be explored.
- Why does EPCOR feel entitled to have parking on site?
- Shuttle buses should be explored.
- EPCOR should explore incentives for car pooling.
- Participants felt that EPCOR only wants parking for convenience.
- Gold Bar Park Road already has pot holes, option #4 with access from this road won't last for one season (due to current state of this infrastructure).
- EPCOR should explore options of changing direction of traffic on site (depending on need).
- Eroding public park system is a huge concern.

Table Two

- What changed on east laydown area?
- Look at busing during capital projects.
- EPCOR could partner with refineries.
- Look at other public transportation options.
- Will there be more traffic in future?
- Low Impact Development (LID) principles should be implemented for a paved parking lot.

- Participants questioned how many levels are associated with proposed admin/maintenance building with option 4.
- Staying within fenceline is core objective.
- Sharing options and optimizing design is important – EPCOR should move these to design principles under their evaluation.
- What about resiliency? Does reducing laydown area impact this?
- What’s the building look like? What are the impacts to trees/vegetation? What’s going to happen to the existing footprint of maintenance building?
- With traffic flow will there be park access road impacts?
- Any differences for option on hygiene – this is a requirement of project.
- Option 4 is preferred – no rezoning of parkland and no trees impacted.
- Is there another level of stakeholder engagement for recommended option(s)? – For example, what the buildings look like?

PARTICIPANT FEEDBACK – INDIVIDUAL HANDOUTS

See Appendix E for completed copies of the handouts submitted to EPCOR by workshop participants.

PRESENTATION ON ODOUR ACTION PLAN

EPCOR provided a presentation pertaining to EPCOR’s odour action plan at GBWWTP. See Appendix C for a copy of the presentation provided by EPCOR.

PRESENTATION ON REDUCING FLARING AND GREENHOUSE GAS EMISSIONS (GHG)

EPCOR provided a presentation pertaining to reducing flaring and greenhouse gas (GHG) emissions at GBWWTP. See Appendix C for a copy of the presentation provided by EPCOR.

EXERCISES #3 AND #4

One Table Host led a discussion on the odour action plan and the other led a discussion on reducing flaring and greenhouse gas emissions (GHG). Poster boards were set up around the tables (see Appendix D for a copy of the poster boards). Participants had an allotted period of time to provide feedback at both tables. Table Hosts took notes on flip chart paper and participants were asked to complete and submit handouts with the same discussion questions.

PARTICIPANT FEEDBACK – GROUP DISCUSSION

During group discussion, participants provided the following feedback regarding exercise three:

Odour Action Plan Feedback – Discussion One

Criteria

- Add “remaining within existing fenceline” to the criteria used for evaluation?

- Does the monitoring station need to be outside the fenceline or outside a building to receive the benefits?
- Air monitoring needs to be located outside the fence.
- Could you put trees around the station?
 - It would make the monitoring station more visually appealing.
- No other additions to Core objectives proposed by EPCOR.
- If the odour monitoring station ends up on south side of GBWWTP, you should also monitor the north side due to weather/air changes.
- Design Principles
 - What is the target for odour control?
 - Alberta regulation changes? When/what levels?
- H₂S can be measured, but there are other odours (musty/earthy) smells. They should also be monitored/measured. I.e. sniff test.
- Are pathogens monitored (in air) and soil samples of the area? i.e. study of Mediterranean cities showed correlation of illness and proximity to plant.
- Use plain language with the public when presenting in the future. i.e. Sulfur vs. H₂S. This may help them identify the odour (Mercaptan vs. H₂S, refinery, sewers, etc.).
- Give 311 a script to report odours and FAQs.
- Have real time monitoring results available online and use to help identify odour sources (customer and 311).
 - Have URL easier to find (existing URL).
 - Explain reporting process (what happens after I report).

Desired Future State

- While not a health hazard, needs to address quality of life.
- Health concerns with levels observed. Health risk for extended exposure and recreation.
- Whose limit is lower than AHS?
- EPCOR should address passing health effects by vs. staying in the area and recreational breathing health effects vs. light breathing.
- More data and info about health/safety of low level H₂S exposure.

Monitoring Station Location

- Temporary station at the maintenance shed, is that feasible for long term? This area is already a parking lot and disturbed.
- Look at radius of complaints and determine from there.
- Alexander Theil Park could be used.
- Along trail or GB Park Road, so still south but north of the homes, not near trees/trail (dot on poster).

Odour Action Plan Feedback – Discussion Two

- Who owns the land at the existing monitoring stations?
 - EPCOR does not own this property.

- Who would own new monitoring station?
- Seems to be focused on H₂S, but that is not the most offensive odour at the site. Need to monitor the smell of fermenting waste and the broader odour profile.
- Only focusing on H₂S (health risk) but not the odour issues on the eastern part of the plant. Need to focus on both sources of odour.
- Also notice a masking/feebreeze type odour.
- Could the eastern clarifiers be covered?
- Also should measure mercaptan odours.

New Station Location

- Place where odours would have the most impact on residents and park users.
- Where it would also capture nitrogen oxide odours.
- What if the wind moves? Could you move it around?
- Looking at treed areas or where already disturbed.
 - Would prefer to have no vegetation disturbed.
- Can you get deviation from AB health for siting nearer to preferred location? i.e. near trees/road.
- Grass area south of GB should be treed to add a buffer and densification.
- Dot added to S.E. based on earth smell source.
- Noise impact of station? i.e. would the noise be comparable to a generator?
- Why not in the fenceline or at the fenceline?
 - If good there, would capture anything leaving the site
 - Already doing fenceline monitoring 1/day, this would be continuous monitoring at fence.
- Live readout for pedestrians walking by would be beneficial.

Reducing Flaring and Greenhouse Gas Emissions (GHG) – Discussion One

- Does EPCOR need the digester?
- Is this a revenue generator for EPCOR?
- This project provides opportunity for EPCOR to do something exciting and new.
- This is a great PR opportunity for EPCOR.
- Supportive of the project (with the design as is).
- Participants asked why we were spending time discussing a positive project like this.
- Participants wanted to know if this would result in increased traffic.
- This project would be great as an FYI to the surrounding community.
- Engagement not required as eroding public space is a significant concern and this project will remain within the existing fenceline by utilizing existing infrastructure.
- Gas pressure/public safety a consideration.
- What standards apply? Will there be an inspector?
- Why is EPCOR using something as large as a digester?
- Increasing hub of existing site? If so, this is a concern.
- Could this be located elsewhere?

- How deep is directional drilling?
- If bike path collapsed, who is responsible?
- Option 1 – not using processing space?
- Option 2- how many digesters impacted?
- Flaring would be a back-up plan if this project progresses.
- If this project proceeds, the flare will not run at same level today.
- Is there an intense construction period coming up?
 - 12 to 18 month construction period would likely be required.

Reducing Flaring and Greenhouse Gas Emissions (GHG) – Discussion Two

- Is stored gas a safety concern?
- Is co-generation an option?
- CO2 is lost as a result of flaring.
- This project would result in less GHG emissions.
- Will this project be noisy?
- This seems like a win-win project as the extents are contained on-site, there is no planned expansion and this results in decreased emissions.
- This project seems beneficial as there is no loss to parkland.
- Directional drilling outside of the fenceline would be big concern.
- Open house would be recommended. EPCOR can share impacts (drilling, etc.) and communications (timing, duration, etc.)
- Why has this taken so long?
- Is an agreement in place with ATCO?
- Maybe EPCOR could notify the community through a bill stuffer? Perhaps even communications in electronic bills or through a website link.
- Courtesy mail recommended, however, a notice drop is ineffective.
- EPCOR should notify via social media.
- Opportunity to participate in the engagement process is key.
- EPCOR could explore installing a sign with regular update (billboards).
- Trust and open communication is key.
- Temporary signage could be used to notify the public.

PARTICIPANT FEEDBACK – INDIVIDUAL HANDOUTS

See Appendix E for completed copies of the handouts submitted to EPCOR by workshop participants.

CLOSING REMARKS

EPCOR and Gay Robinson Consulting thanked participants for attending Workshop #3, discussed next steps and requested that all attendees completed a feedback form. Results from the feedback forms are included in Appendix F.

APPENDIX A

INVITATION

Good Afternoon,

I wanted to send a quick reminder that Workshop 3 will be held next Tuesday (May 14) from 5:30 – 9:30 pm at the Radisson (4520 76th Avenue NW, Edmonton, AB T6B 0A5). Dinner will be provided. Again, there will be **no workshop** on Monday (May 13).

Please take a couple of minutes to fill out your availability at the Survey Monkey link below.

<https://www.surveymonkey.com/r/workshop3>

Feel free to reach out with any questions.

Have a great weekend everyone!



Laine Watson, RPP, MCIP

Specialist, Community Engagement

Public & Government Affairs, Water Canada

9469 Rossdale Road NW, Edmonton AB T5K 0A5

Good Afternoon,

Thanks to everyone for confirming availability for next week. We've heard from a few participants that having two workshops in one week is difficult to manage, and there were a significant number of individuals who couldn't attend Monday, May 13.

Therefore, we have decided to **cancel the workshop on Monday, May 13**. We will **still host the workshop on Tuesday, May 14**. We will try our best to get all of the content covered in this one workshop session. As such, we plan on starting at 5:30 and finishing at 9:30 pm. Dinner will be served and the workshop will once again be held at the Radisson at 4520 76th Avenue NW.

I apologize for all the changes to the date and time of the workshop, but I hope members can appreciate that we are trying to select a date that works best for everyone while continuing to remain sensitive of the time commitment required. Please let me know if you anticipate issues with starting at 5:30.

Also, please let me know if you can't make the session next Tuesday, but would still like to provide feedback. Although we prefer that participants attend the workshop next Tuesday, we are open to planning a meeting the week after where those who can't attend on Tuesday can still provide feedback.

It would be greatly appreciated if you could take a couple of minutes to confirm your availability at the survey monkey link below:

<https://www.surveymonkey.com/r/workshop3>

Thank you, and feel free to reach out with any questions.



Laine Watson, RPP, MCIP

Specialist, Community Engagement

Public & Government Affairs, Water Canada

9469 Rossdale Road NW, Edmonton AB T5K 0A5

APPENDIX B

DISCUSSION GUIDELINES FOR WORKSHOP #3

- Respect each other
- Listen to learn and understand
- One speaker at a time; don't interrupt
- Everyone has equal chance to speak
- Focus on topic, not on individual person
- Build on each other's ideas
- Participate actively

APPENDIX C

PRESENTATION

Gold Bar Citizen Planning Committee



Workshop #3: May 14, 2019

1

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The Process to Date

We are here

<p><u>Workshop 1 (February):</u></p> <ul style="list-style-type: none"> • Understand community values, issues, priorities • How they want to engage • Information needs • Overview of Ops 	<p><u>Workshop 2: (March)</u></p> <ul style="list-style-type: none"> • Refine and rank Shared Outcomes as a guide for activity at plant • Refine Community Engagement Framework to guide engagement for plant 	<p><u>Plant Tours (April/May):</u></p> <ul style="list-style-type: none"> • End-to-end facility tour • IRP context provided at stations during the tour 	<p><u>Workshop 3 (May):</u></p> <ul style="list-style-type: none"> • Review Design Principles to be included in the IRP • Four applied exercises: discuss options for projects and planning, applying the design principles as criteria for refining and selecting the preferred option
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2

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Agenda for Today

Culmination of our work so far and application to specific project work we'd like to engage you on...

1. Introduce Design Principles
2. Background on IRP
3. Engage you in a discussion around 4 applied exercises
 - Apply our Design Principles to 4 projects/initiatives
 - Get your input on these projects
 - Get your perspective on how we engage the public on these projects in advance

3

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Objectives for Today

- Provide information on proposed Design Principles for the Shared Outcomes.
- Provide information on Long-Term Planning, Safety & Hygiene Plan, Odour Action Plan and Flaring & GHG Emissions Reduction Plan.
- Gather input on the proposed design principles, public engagement and other aspects of the various plans.

4

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Discussion Guidelines for Today

- Respect each other
- Listen to learn and understand
- One speaker at a time; don't interrupt
- Everyone has equal chance to speak
- Focus on topic, not on individual person
- Build on each other's ideas
- Participate actively

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Background: What is an IRP?

On average, \$50 million in capital projects are undertaken each year at Gold Bar WWTP for maintenance and rehabilitation. For the 2017 – 2021 period, City Council approved \$235 million in funding for capital projects at Gold Bar.

Integrated Resource Plan (IRP)

- Long term planning process (continuously updated)
- Considers traditional factors of forecasted demand and treatment capacity
- Considers external factors such as changing regulatory requirements, climate change, corporate goals, community values, and new technologies, etc.
- Addresses reliability and rehabilitation of existing assets
- Aligns current and future work to support achievement of 5 shared outcomes (quality of life; safety; relationship; environment; reliable, responsible, sustainable).

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Design Principles

The Design Principles define how EPCOR will achieve the goals described in the five Shared Outcome Statements and provide a framework to guide the evolution of the site. They will be incorporated into the IRP.

<i>Quality of Life</i>	<i>Safety</i>	<i>Relationship</i>	<i>Environment</i>	<i>Reliable, Responsible, Sustainable</i>
Accelerate odour reduction	Continuously improve safety	Communicate openly	Continuously improve environmental performance	Continuously maintain reliable operations
Remain within the existing fenceline	Ensure safe movement on-site	Align operating protocols	Reduce environmental impacts	Plan for a range of scenarios
Prevent increases to odour and noise	Improve worker hygiene and safety	Engage regularly	Increase resiliency	Prudently manage impacts to ratepayers
Restore disturbed vegetation	Protect public safety from site-related traffic	Share options and optimize designs	Engage employees and stakeholders	
Mitigate temporary impacts				

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EPCOR's Proposed Criteria

1. **Core objectives.**

- Criteria that must be met for long term planning success

2. **Design principles.**

- Additional criteria that are used to evaluate scenarios

3. **Execution principles.**

- Criteria that guide how a project is created and executed (but which don't affect the choice between options)

8

Four Applied Exercises

Planning for
Future Flows

Safety &
Hygiene Plan

Odour Action
Plan

Reducing
Flaring & GHG
Emissions Plan

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Exercise Overview

1. **Define the goal** we are working to achieve
2. **Select the design principles** that should be used as criteria for creating and evaluating solutions
3. Review the **variables** considered in long-term planning
4. **Share long term plan scenarios** for maintaining reliable operations
5. **Provide feedback** on how well the proposed plan meets the design principles

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In summary, your feedback on:

- Select Design Principles
- Future Scenarios
- Review Design Options
- Approach to Public Engagement

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GBRS Workshop 3

Materials for Applied Exercise #1
Long Term Planning Scenarios

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Define the Goal

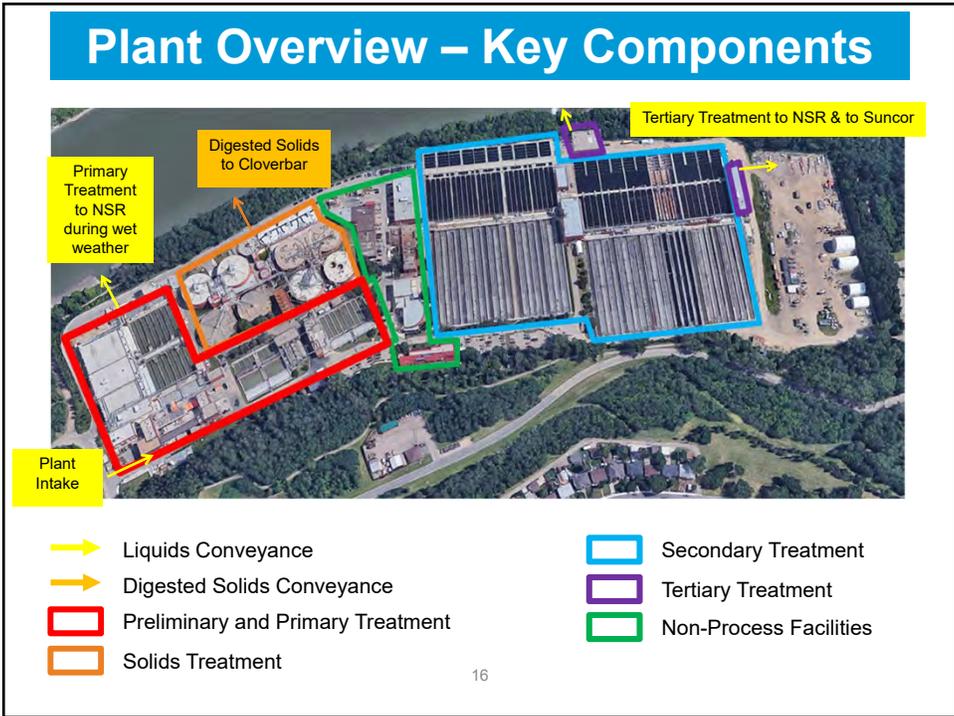
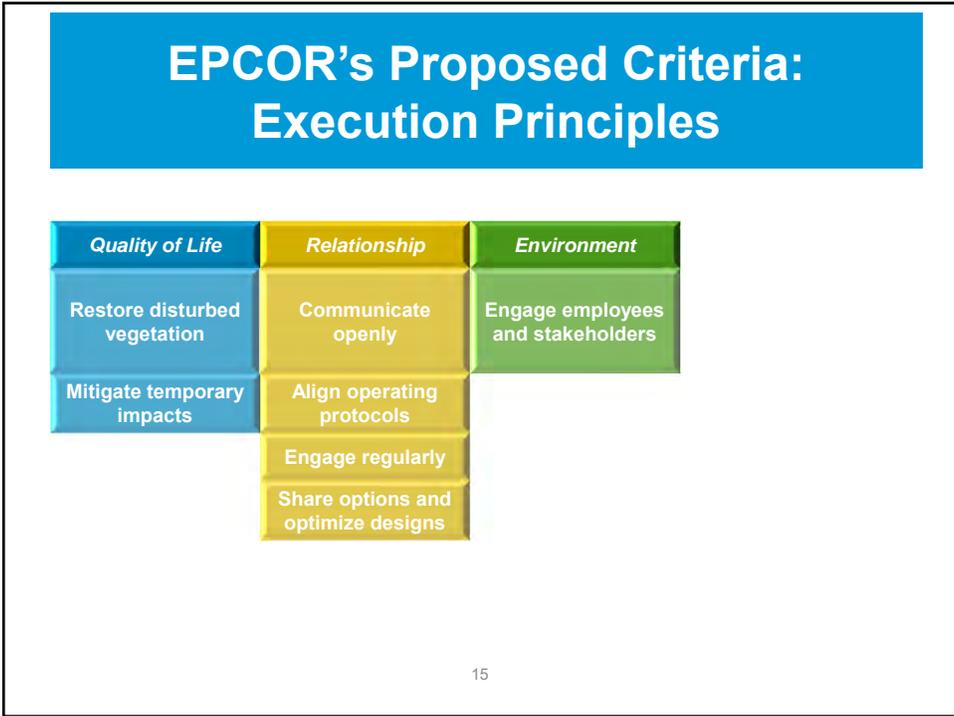
The Gold Bar WWTP is designed, maintained and operated in a prudent and responsible manner.

1. Gold Bar WWTP will **meet or exceed regulated performance requirements**, now and in the future.
2. Gold Bar WWTP will be **maintained in good working order**, and demonstrate **sustainable and reliable** operation.
3. Capital and operating **costs will be prudent**, giving consideration to the **impact on ratepayers**.
4. Gold Bar WWTP will be designed and operated in a way that **mitigates its impact on the community**.

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Is this the right report card to evaluate the plan?

		Long Term Plan
Core objectives (must meet)		
<i>Reliable, Responsible, Sustainable</i>	Continuously maintain reliable operations	
	Plan for a range of scenarios	
	Prudently manage impacts to ratepayers	
Design principles (evaluation criteria)		
<i>Quality of Life</i>	Accelerate odour reduction	
	Remain within the existing fence line	
	Prevent increases to odour and noise	
<i>Safety</i>	Continuously improve safety	
	Ensure safe movement on-site	
	Improve worker hygiene and safety	
	Protect public safety from site-related traffic	
<i>Environment</i>	Continuously improve environmental performance	
	Reduce environmental impacts	
	Increase resiliency	



Current State

- **For the 2017 – 2021 period, City Council approved \$235 million in funding for capital projects at the Gold Bar WWTP.**
 - About \$50 million in capital projects are undertaken each year for maintenance and rehabilitation.
 - This level of capital expenditure is expected to continue for the foreseeable future.
- **Most investment at Gold Bar is reliability driven – maintaining / replacing assets to ensure safe and reliable operation of the plant.**
 - As assets are rehabilitated or replaced as they approach end of life, there is often positive impact on the ability of the plant to treat wastewater. This reduces the need to expand the footprint of the plant.

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Key Variables for Planning

Drivers

- **Population Growth:** The rate of growth is the primary driver of volume changes
- **Water Conservation:** Declining per person water consumption

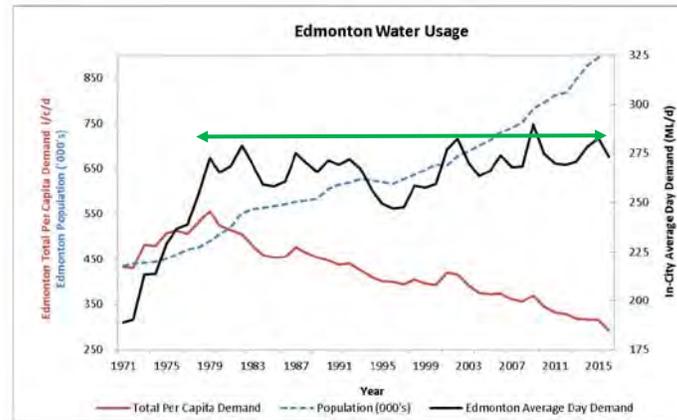
Impacts

- **Loadings (solids, organics, nutrients)** coming to the plant grow in proportion to population
- **Liquid flows** to the plant are not growing as fast as overall population growth due to the offsetting effects of water conservation
- As a result, the wastewater coming to the plant is expected to **increase in strength** (be more concentrated) over time

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Growth and Water Conservation

Total water usage in Edmonton has been essentially flat over the last 40 years as the impact of population growth has been offset by a systematic decline in per capita water consumption.



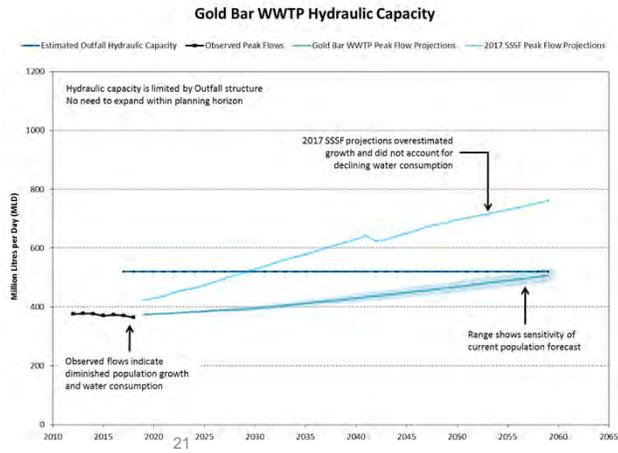
Other Variables and Uncertainties

- **Growth**
 - Higher or lower than expected growth from residential and industrial clients will shift the date at which secondary treatment technology needs to be changed (as early as 2027, or later).
- **Loading**
 - Disruptive trends in human consumption and waste generation will impact the planning process and timeline for future improvements.
 - For example, it is uncertain when the water conservation measures will normalize allowing flows to increase proportionately with growth again.
- **Regulatory Evolution**
 - Environmental regulations have become progressively rigorous with awareness and are expected to continue. This will significantly influence the timeline of required improvements.
- **Climate Change**
 - Changes in weather and rainfall pattern have significant impacts on wastewater treatment strategy, primarily because of the combined sewer system in Edmonton.
- **New Technologies**
 - Application of new technologies will allow us to improve performance while maintaining or reducing physical footprint, recover energy and resources from wastewater (Biogas, Biosolids, Nutrients, Treated water, etc.) and improve environmental sustainability.

Flow: Liquid Conveyance Capacity

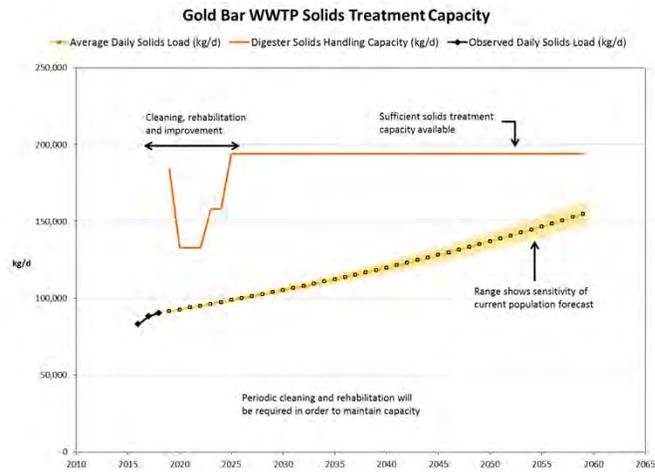
Actual liquid flows to Gold Bar (solid black line) have been flat due to water conservation measures. EPCOR expects growth in future Liquid Flows to be modest – far less than the 2017 ISL estimates used by the SSSF.

Conclusion:
Gold Bar WWTP has adequate hydraulic capacity to handle flows through 2060 and possibly longer within the plant's footprint



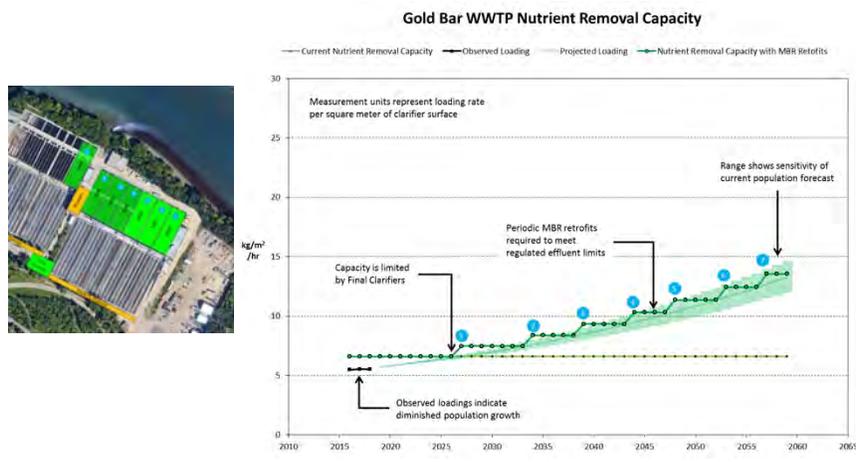
Flow: Solids Treatment Capacity

Conclusion:
Gold Bar WWTP has spare solids treatment capacity through 2060 and longer.



Flow: Nutrient Removal Capacity

Conclusion: Wastewater strength is expected to increase over time (solids loading). Nutrient removal capacity is easily increased over time by retrofitting existing secondary clarifier tanks with membrane technology. These retrofits will be required at a slower pace if SESS line is diverted to ACRWWTP.



Planning Conclusions

- **Principal Planning Conclusion:** Gold Bar WWTP is able to safely treat all flows that come to it through 2060 while remaining within its existing footprint and fenceline
 - i. Gold Bar WWTP has **ample hydraulic capacity** meaning that it is currently sized to handle liquid flows through 2060. Flow (liquids) growth is expected to be flat due to the impact of water conservation.
 - ii. Gold Bar WWTP also has **spare solids treatment capacity** (digesters) to treat solids growth through 2060. Solids coming to the plant for treatment are expected to grow in proportion to population growth.
 - iii. As municipal waste volume grows with population and flows are moderated due to water conservation, **wastewater strength** is expected to increase over time. Gold Bar WWTP will have to increase its nutrient removal capacity to keep pace. This is **easily accomplished by retrofitting** existing secondary clarifier tanks with membrane technology. The earliest this would be needed is 2027.



GBRS Workshop 3

Materials for Applied Exercise #2 Hygiene and Safety

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Define the Goal

1. **Ensure safe movement on-site.** Develop a plan for on-site vehicle and people movement that improves worker safety.
 - Relocate vehicle parking away from congested active treatment / process areas of the plant, and near support facilities
2. **Improve worker hygiene and safety.** Develop a plan for the location of non-process buildings and hygiene facilities that improves worker safety and limits health risks.
 - Develop acceptable locker / shower facilities
 - Relocate support facilities away from congested active treatment / process areas of the plant
 - Use opportunity to relocate support facilities within the fenceline as they require rehabilitation or improvement

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A report card to evaluate options...

		Option 1	Option 2	Option 3	Option 4
Core objectives (must meet)					
Safety	Continuously improve safety				
	Ensure safe movement on-site				
	Improve worker hygiene and safety				
Design principles (evaluation criteria)					
Quality of Life	Remain within the existing fenceline				
	Prevent increases to odour and noise				
	Restore disturbed vegetation				
	Mitigate temporary impacts				
Safety	Protect public safety from site-related traffic				
Environment	Reduce environmental impacts				
Reliable, Responsible, Sustainable	Continuously maintain reliable operations				
	Prudently manage impacts to ratepayers				

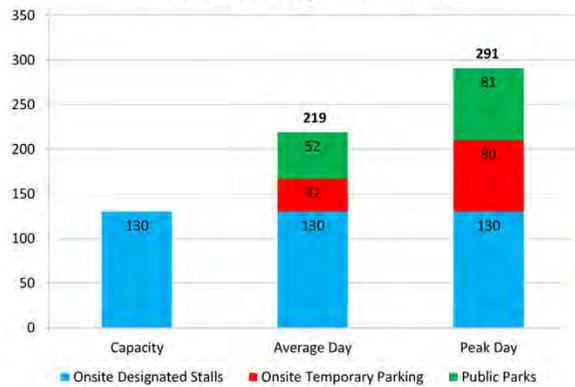
EPCOR's Proposed Criteria: Execution Principles



Current State: Safe Movement

- Up to 210 employees and visitors park on site (130 in designated stalls and 80 in temporary or non-designated stalls)
- About 50-80 contractors are using Gold Bar Park and Capilano Park lots
- This is **not expected to grow** for the foreseeable future

Gold Bar WWTP Parking Observations 2018



Current State: Safe Movement

- Most of the designated parking and temporary parking is near active treatment and process areas at the centre of the plant which creates significant safety risks including traffic congestion and increased pedestrian-vehicle interaction.



Desired Future State: Safe Movement

Desired future state: Provide 190 – 220 on-site parking stalls for employees and contractors

- Locate away from active treatment and process areas
- Locate near work place

In this future state, there would continue to be some overflow parking by contractors in the adjacent City parks. BS103

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Current State – Hygiene and Safety

- In 2015 EPCOR completed a study which assessed the risks to employees working with wastewater and its biological hazards
- A 2017 review recommended specific facility improvements
- Current facilities do not have proper separation of clean and dirty clothing (having showers between clean lockers and dirty lockers)
- Some locker and shower facilities require staff to walk through process areas and lockers themselves are in process hallways



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Future State – Hygiene and Safety

Recommendations for Staff Hygiene Facilities

(from study in 2017)

- Facilities should be available to keep street clothes and personal items separate from PPE and work clothes
- Shower and hand washing facilities need to be available for people to be able to clean up after contact with wastewater
- Locker rooms should have storage space for boots that is separate and at floor level or at bottom of lockers

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Options Overview

- **Four options** have been developed to meet the hygiene and safety goals
- Each of the options includes **on-site parking in a defined location**, and **changing and shower facilities in a place separate from process areas**

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Options Overview

The main variables between the options are:

- The **location** of parking and hygiene facilities
- The **sizing** and type of **structure**
- The **cost** to implement
- The implications of location and sizing decisions
 - On **land use** inside and outside the fenceline
 - On the **timespan** or **complexity** of implementation
 - On the **potential community impact** (proximity, visibility, traffic)
 - On the **ability to add technologies or processes** in the future
 - On **future maintenance and construction** (e.g. access to laydown areas)

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Option 1 - Original Proposal

- Parking: • Surface parking lot with 220 stalls
- Buildings: • Operations Centre: three story, Mtc/Ops lockers, HEI Office, Control Room
• Maintenance/Admin offices (Future)
- Other: • City Parks Yard relocated elsewhere
• Nordic Ski Club relocated
• Mountain bike trail stays as-is but would be relocated and rebuilt in the future
• Parking accessible to public after daytime work hours



Option 2 - Parks Yard Parkade

- Parking:**
- Build a 220 stall three-story parkade on top of the City Parks Yard, reducing the footprint used within Gold Bar Park
- Buildings:**
- Operations Centre: three story, Mtc/Ops lockers, HEI Office, Control Room
 - Maintenance/Admin offices (Future)
- Other:**
- City Parks Yard relocated elsewhere
 - Nordic Ski Club relocated
 - Mountain bike trail stays as-is but would be relocated and rebuilt in the future



Option 3 - Parkade North of Trail

- Parking:**
- Build an elongated 220 stall parkade north of the trail, reducing the footprint used within Gold Bar Park and moving the structures away from the road
- Buildings:**
- Maintenance/Admin/Ops Building
- Other:**
- City Parks Yard stays as-is
 - Nordic Ski Club stays as-is
 - Mountain bike trail relocated and rebuilt



Option 4 - Inside Fence at East End
EPCOR's Recommended Option

Parking:

- Build a 150 stall surface parking lot at east end, and use 45 surface stalls in the south-central area near the new Ops Centre. Reduce the laydown area.

Buildings:

- Operations Centre: one story, inside the fenceline
- Maintenance/Admin offices moved from the centre to the east end, inside the fence

Other:

- City Parks Yard and Nordic Ski Club unchanged. No development outside the existing fenceline. Main entrance moved to east end of site (arriving vehicles will now use Gold Bar Park Road; exiting vehicles are unchanged).



GBRS Workshop 3

Materials for Applied Exercise #3
Odour Control Action Plan

Define the Goal

1. **Achieve odour reduction.** Operating and capital improvements at Gold Bar will reduce odour from existing operations and meet current and future odour performance standards.
2. **Monitor, report and comply.** Add new regulatory monitoring to give stakeholders the information they need to judge that the air quality is safe and consistent with a good quality of life and enjoyment of parks and recreation.
3. **Prevent increases to odour.** Design the facility to be able to handle future volume changes without increases in odour.

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A report card to evaluate the plan...

		Reduce Odour	AEP Standards	Monitor and Report
Core objectives (must meet)				
<i>Quality of Life</i>	Accelerate odour reduction			
	Prevent increases to odour and noise			
<i>Environment</i>	Continuously improve environmental performance			
	Reduce environmental impacts			
<i>Reliable, Responsible, Sustainable</i>	Continuously maintain reliable operations			
Design principles (evaluation criteria)				
<i>Safety</i>	Continuously improve safety			
<i>Relationship</i>	Communicate openly			
	Align operating protocols			
<i>Reliable, Responsible, Sustainable</i>	Prudently manage impacts to ratepayers			

EPCOR's Proposed Criteria: Execution Principles

Quality of Life	Environment
Mitigate temporary impacts	Engage employees and stakeholders
Remain within the existing fence line	

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Current State: Odour

- Majority of the odour generation comes from the preliminary and primary treatment buildings (red area), with secondary sources from solids treatment buildings (orange area)

Key historical sources of odour:

- EPT Clarifiers
- Ineffective Scrubbers
- Headworks Buildings
- Primary Clarifiers
- Fugitive Sources (overhead doors, unsealed process and foul air ducting, etc.)

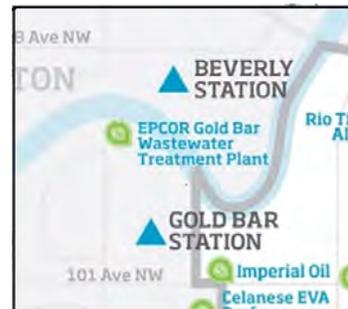
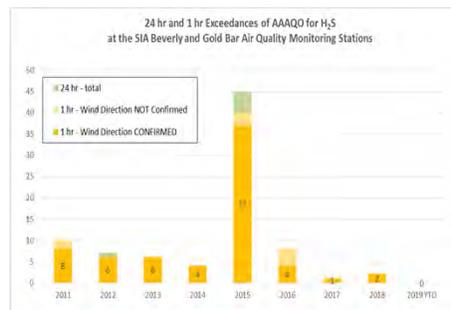


- Preliminary and Primary Treatment
- Solids Treatment
- Secondary Treatment
- Tertiary Treatment
- Non-Process Facilities

Current State: Odour

Alberta Ambient Air Quality Objective:

- An average of no more than 10 parts per billion over a one hour period, or 3 parts per billion over a 24-hour period
- Ambient air quality is monitored at the Beverly and Gold Bar stations
- Action Plan implemented following exceedances in 2015 – significant improvement since then



Update on Completed Odour Projects

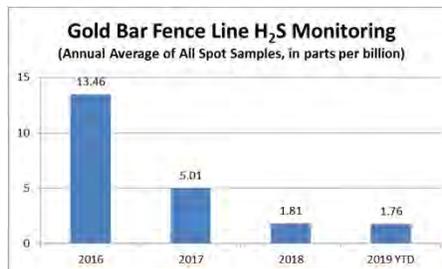
A \$10 million series of projects has been completed to date and has helped to significantly reduce odour emissions:

- Sealed Enhanced Primary Treatment clarifiers
- Upgraded ventilation and odour collection
- Scrubber upgrades



Current State: Odour

- **Spot Monitoring Samples** taken from 8 locations at the fenceline also show significant reductions in odour emissions.
- This has also shown marked improvement



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Desired Future State: Odour Reduction

Current State

Odour levels

- Odour exceedances have been reduced at the two monitoring stations
- Spot monitoring at the fenceline also shows reductions

Monitoring and Reporting

- Alberta Capital Air Shed publishes real time monitoring results from its stations in Beverly and near Gold Bar School
- EPCOR publishes fenceline spot monitoring results monthly
- There is no continuous air quality monitoring at the fenceline or in the adjacent part of Gold Bar Park

Desired Future State

Odour levels

- Odour levels consistently meet current and future standards, and are safe for human health and recreation

Monitoring and Reporting

- Additional continuous air quality monitoring is in place closer to the fenceline
- Results are available in real time in a format that is useful for stakeholders
- New regulatory monitoring and reporting give stakeholders the information they need to judge that the air quality is safe for human health and recreation

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Odour Action Plan Overview

- **Additional projects** are being implemented to further reduce odour and ensure compliance
- In conversation with Alberta Environment & Parks (AEP) about updating approval:
 - A new **air quality monitoring station** is under discussion and we would like your input on location and mitigating impacts
 - New **regulatory performance standards** are proposed related to the **performance of odour control equipment** and **ambient air quality**

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BS85
BS104

Additional Odour Projects

The following capital and operating initiatives will further reduce odour from existing operations, and meet current and future odour performance standards.

Action	Description	Cost	Status
Odour Monitoring System	Includes installation of weather and air quality monitoring stations	\$1.0 M	Design in progress
EPT Scrubber Upgrades	Redesign existing EPT Scrubber and install additional scrubber if necessary for revised capacity and better performance	\$8.4 M	Design in progress
Grit and Screen Buildings Ventilation Upgrades	Upgrade ventilation and implement odour control in headworks buildings	\$2.2 M	Design in progress
Seal Fermenter Roofs	Seal Fermenter Roofs in order to prevent fugitive odour emissions.	\$0.5 M	Design in progress
	Subtotal	\$12.1 M	

New Performance Standards

EPCOR is working with Alberta Environment & Parks to establish odour control requirements ^{BS105}able monitoring and effective reporting. _{BS106}

Proposed updates to the Gold Bar **Operating Approval** would:

- Add **odour scrubber operating performance** limits
- Add new **continuous monitoring and reporting** requirements for air entering and exiting the **odour scrubbers**
- Add standard requirements to **control fugitive emissions**
- Add **air monitoring and reporting at the fenceline**
- Require the **Alberta Ambient Air Quality Objectives be met** in close proximity to the south fenceline of the plant (new AQM station)

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BS107

New Air Quality Monitoring Station

A new continuous monitoring station between the Plant and the nearest receptors (houses along 109 A Avenue) will be developed



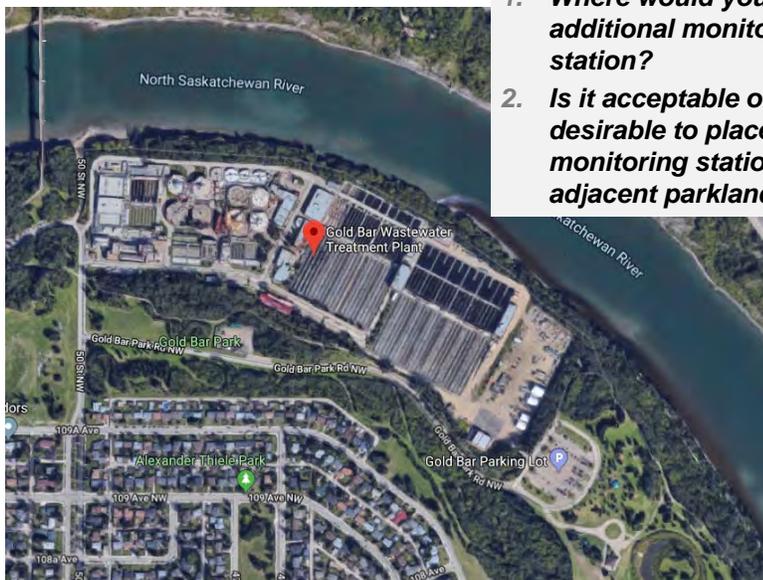
New Monitoring Station

Existing monitoring Station



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Location of New Monitoring Station



1. *Where would you site an additional monitoring station?*
2. *Is it acceptable or desirable to place a monitoring station within adjacent parkland?*



GBRS Workshop 3

Materials for Applied Exercise #4

Reducing Flaring and GHG Emissions:
Renewable Natural Gas

Define the Goal

Pollution is prevented. The impact of Gold Bar on air, land, water, climate and ecosystems is reduced.

1. ***Reduce environmental impacts.*** Prioritize investments and operating practice changes that reduce Gold Bar's environmental impact, with a focus on the reduction of greenhouse gas emissions, the protection of water quality and the protection of parkland.
2. ***Improve sustainability and enhance recovery of renewable resources.***
3. ***Continuously improve environmental performance.*** Assess current environmental performance, evolving standards and emerging risks, and propose initiatives that maintain regulatory compliance and improve environmental performance.

55

A report card to evaluate the plan...

Core objectives (must meet)		Reduce Flaring and GHGs
Environment	Reduce environmental impacts	
	Continuously improve environmental performance	
Design principles (evaluation criteria)		
Quality of Life	Remain within the existing fenceline	
	Prevent increases to odour and noise	
	Restore disturbed vegetation	
Safety	Continuously improve safety	
Reliable, Responsible, Sustainable	Continuously maintain reliable operations	
	Prudently manage impacts to ratepayers	

56

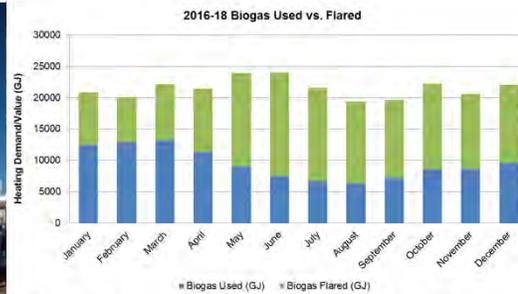
EPCOR's Proposed Criteria: Execution Principles



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Current State: Biogas and Flaring

- Biogas is a by-product of wastewater treatment (mostly solids digestion).
- Today, about 60% of the biogas generated in the solids digestion process at Gold Bar is used for heating. About 40% is flared.
- Flaring volumes are highest in the summer months, when there is less need to use gas on-site for heating (70% flared).



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Desired Future State: Biogas

Current State

40% of biogas is wasted via flaring –
About 150,000 GJ of energy in 2018

- Generated biogas is used for on-site heating (process and plant heating)
- 70-80% of the plant's heating demand is currently being met using Biogas
- Reduced heating demand and more flaring during summer season
- Contaminants in raw biogas cause maintenance issues with existing boilers

Desired Future State

Nearly all biogas is turned from waste into a useful product

- Conversion into renewable natural gas that can be used by others

The benefits include:

- Reduced flaring and lower air emissions
- Less waste, darker night sky, less odour
- Greenhouse gas reduction, as the use of renewable natural gas displaces consumption of regular natural gas

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Opportunity Overview: Biogas to Renewable Natural Gas

Rather than flaring, technology exists to capture the biogas, clean it, and deliver it into the ATCO natural gas distribution system as a source of **renewable natural gas**.

- Upgrading biogas to renewable natural gas would require some additional biogas cleaning and injection equipment on-site, and making an underground connection to the ATCO gas line that runs next to Gold Bar Park Road
- Delivering gas for off-site use would require an amendment to the Gold Bar operating permit
 - The original permit only allowed biogas for on-site uses (such as heating or renewable power generation)

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Design Considerations: Location

- The location of biogas equipment on-site impacts the siting of other process and non-process facilities
- Currently biogas is generated and stored in digester headspaces and transported to boilers and flares
- Additional biogas storage will be required to supply RNG facility without interruption



Option 2 (EPCOR Preference)

- Locate cleaning equipment near digesters where biogas is created (use space currently occupied by primary clarifiers 1 & 2)
- Repurpose Digester 5 for biogas storage

Option 1 (Previous Consideration – Not recommended)

- Locate in east laydown area
- Conflicts with moving parking and Admin to east end of site, separate from process facilities
- Requires significant gas piping

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BS53

Design Considerations: Injection

- All **equipment** would be located within the fenceline, and as much as possible **within existing buildings** or with **minimal visible impact**
- The **underground connection** to the ATCO gas system could have **temporary construction impacts** at the east end of Gold Bar Park, and may affect **trees** which would need to be **replaced**



Key Components

- Biogas Cleaning / Compression
- Biogas Storage
- Biogas Piping
- Biogas injection and underground gas pipeline

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A report card to evaluate the plan...(handout)

Core objectives (must meet)		Reduce Flaring and GHGs
Environment	Reduce environmental impacts	
	Continuously improve environmental performance	
Design principles (evaluation criteria)		
Quality of Life	Remain within the existing fence line	
	Prevent increases to odour and noise	
	Restore disturbed vegetation	
Safety	Continuously improve safety	
Reliable, Responsible, Sustainable	Continuously maintain reliable operations	
	Prudently manage impacts to ratepayers	

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- ## After Workshop 3...
- Publish a Community Update on workshop results to community
 - Initiate project specific stakeholder engagement with broader community: Hygiene & Safety and Reducing Flaring & GHG Emissions Plan
 - Re-establish our Community Liaison Committee (CLC) group
 - Expanded communication initiatives (newsletters, etc.)
 - Survey Monkey on Design Principles coming your way
- 64
- 

PROVIDING MORE **EPCOR**

APPENDIX D

POSTER BOARDS

LONG TERM PLANNING SCENARIOS

DEFINE THE GOAL

The Gold Bar WWTP is designed, maintained and operated in a prudent and responsible manner

1. Gold Bar will **meet or exceed regulated performance requirements**, now and in the future.
2. Gold Bar will be **maintained in good working order**, and demonstrate **sustainable and reliable operation**.
3. Capital and operating **Costs will be prudent**, giving consideration to the **impact on ratepayers**.
4. Gold Bar will be designed and operated in a way that **mitigates its impact on the community**.

EPCOR'S PROPOSED CRITERIA

Core objectives (must meet)

Reliable, Responsible, Sustainable	Continuously maintain reliable operations
	Plan for a range of scenarios
	Prudently manage impacts to ratepayers

Design principles (evaluation criteria)

Quality of Life	Accelerate odour reduction
	Remain within the existing fenceline
	Prevent increases to odour and noise
Safety	Continuously improve safety
	Ensure safe movement on-site
	Improve worker hygiene and safety
	Protect public safety from site-related traffic
Environment	Continuously improve environmental performance
	Reduce environmental impacts
	Increase resiliency

Execution principles

Quality of Life	Relationship	Environment
Restore disturbed vegetation	Communicate openly	Engage employees and stakeholders
Mitigate temporary impacts	Align operating protocols	
	Engage regularly	
	Share options and optimize designs	

PLANT OVERVIEW – KEY COMPONENTS



CURRENT STATE

- **For the 2017 – 2021 period, City Council approved \$235 million in funding for capital projects at the Gold Bar WWTP.**
 - About \$50 million in capital projects are undertaken each year for maintenance and rehabilitation.
 - This level of capital expenditure is expected to continue for the foreseeable future.
- **Most investment at Gold Bar is reliability driven – maintaining / replacing assets to ensure safe and reliable operation of the plant.**
 - As assets are rehabilitated or replaced as they approach end of life, there is often positive impact on the ability of the plant to treat wastewater. This reduces the need to expand the footprint of the plant.

KEY VARIABLES FOR PLANNING

Drivers

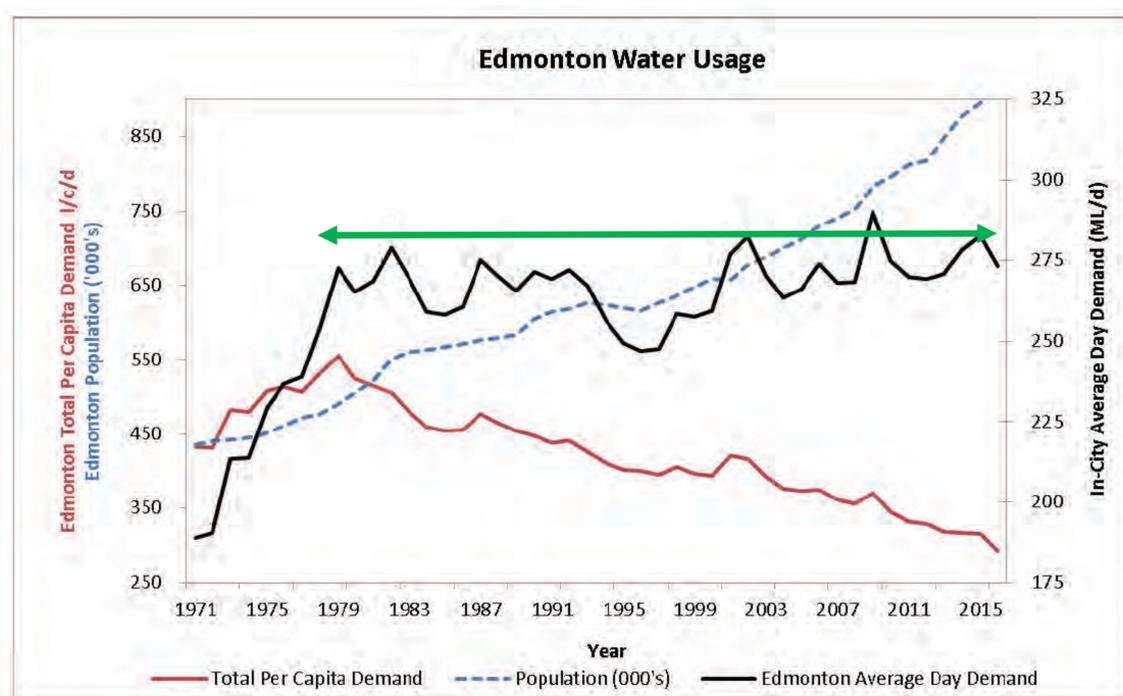
- **Population Growth:** The rate of growth is the primary driver of volume changes
- **Water Conservation:** Declining per person water consumption

Impacts

- **Loadings (solids, organics, nutrients)** coming to the plant grow in proportion to population
- **Liquid flows** to the plant are not growing as fast as overall population growth due to the offsetting effects of water conservation
- As a result, the wastewater coming to the plant is expected to **increase in strength** (be more concentrated) over time

GROWTH AND WATER CONSERVATION

Total water usage in Edmonton has been essentially flat over the last 40 years as the impact of population growth has been offset by a systematic decline in per capita water consumption.



OTHER VARIABLES AND UNCERTAINTIES

• Growth

- Higher or lower than expected growth from residential and industrial clients will shift the date at which secondary treatment technology needs to be changed (as early as 2027, or later).

• Loading

- Disruptive trends in human consumption and waste generation will impact the planning process and timeline for future improvements.
- For example, it is uncertain when the water conservation measures will normalize allowing flows to increase proportionately with growth again.

• Regulatory Evolution

- Environmental regulations have become progressively rigorous with awareness and are expected to continue. This will significantly influence the timeline of required improvements.

• Climate Change

- Changes in weather and rainfall pattern have significant impacts on wastewater treatment strategy, primarily because of the combined sewer system in Edmonton.

• New Technologies

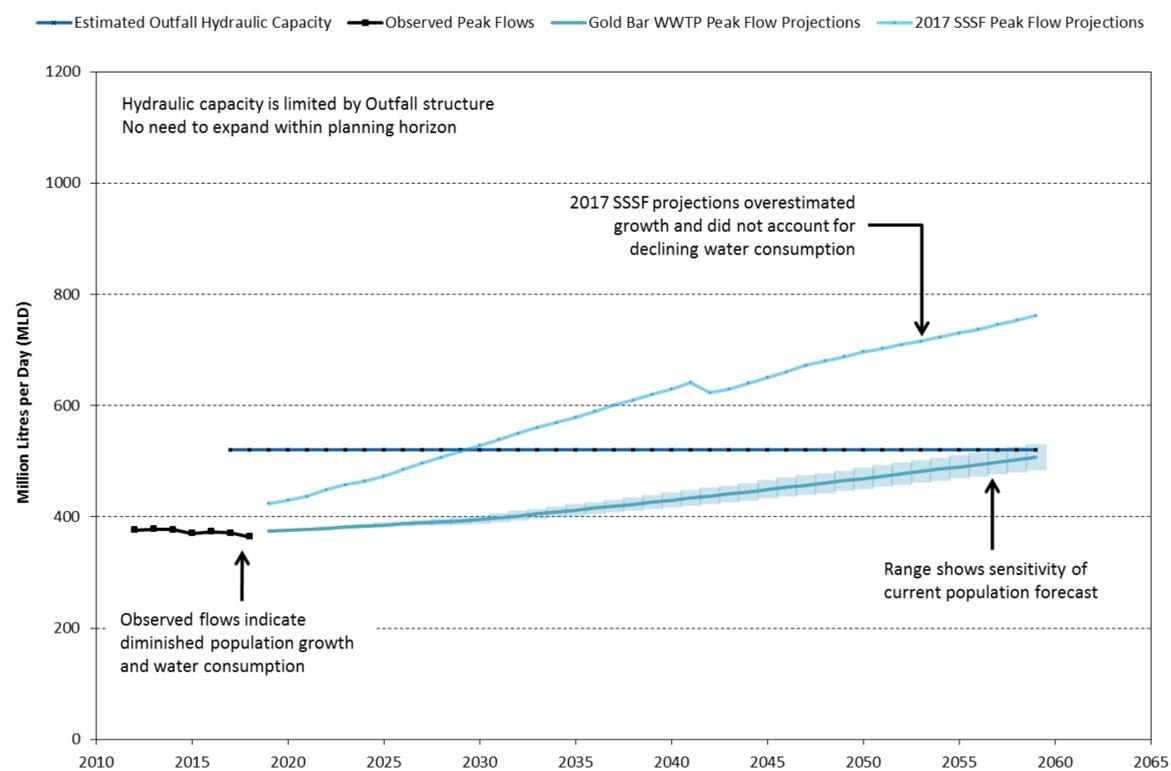
- Application of new technologies will allow us to improve performance while maintaining or reducing physical footprint, recover energy and resources from wastewater (Biogas, Biosolids, Nutrients, Treated water, etc.) and improve environmental sustainability.

FLOW : LIQUID CONVEYANCE CAPACITY

Actual liquid flows to Gold Bar (solid black line) have been flat due to water conservation measures. EPCOR expects growth in future Liquid Flows to be modest – far less than the 2017 ISL estimates used by the SSSF.

Conclusion: Gold Bar WWTP has adequate hydraulic capacity to handle flows through 2060 and possibly longer within the plant’s footprint.

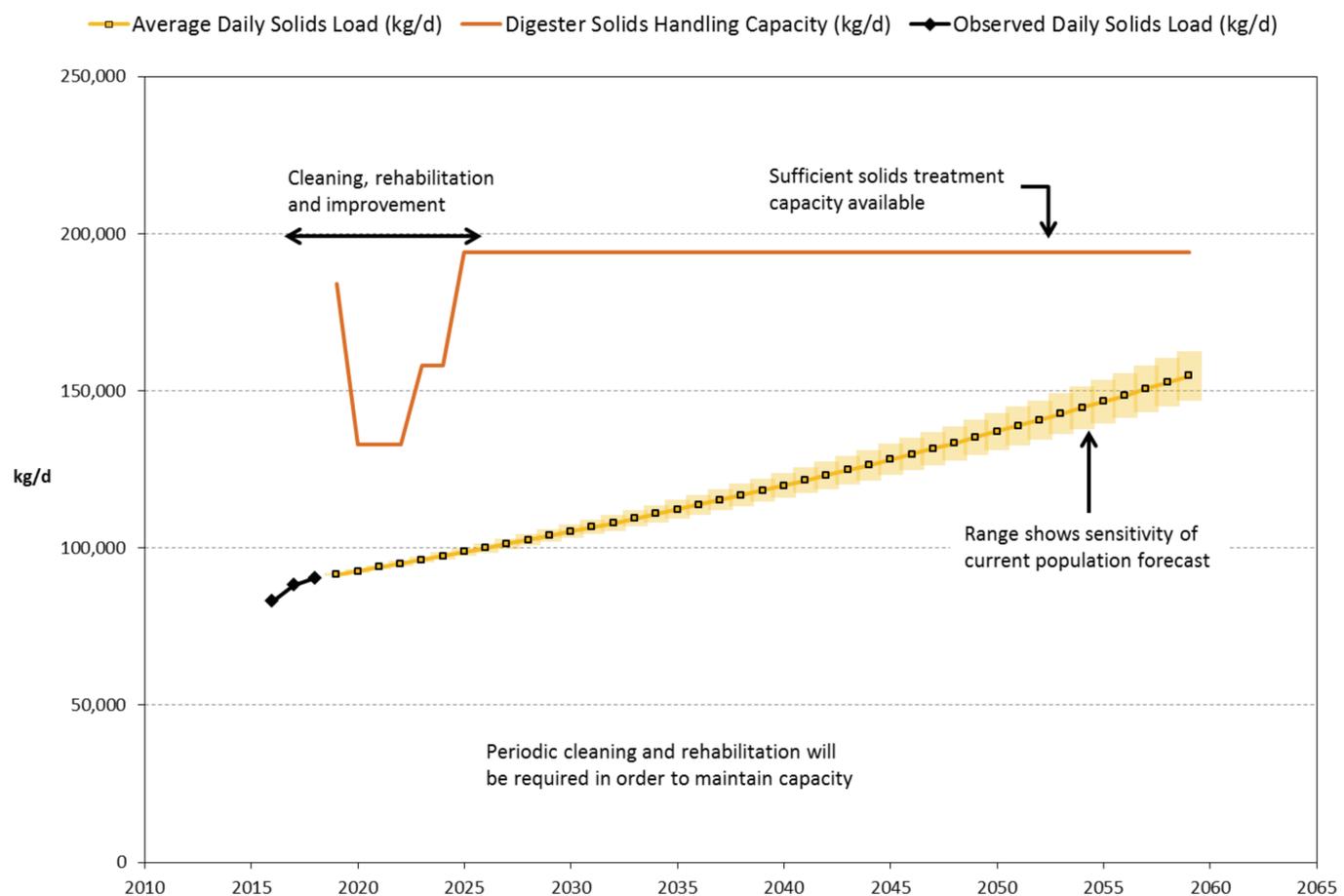
Gold Bar WWTP Hydraulic Capacity



FLOW: SOLIDS TREATMENT CAPACITY

Conclusion: Gold Bar WWTP has spare solids treatment capacity through 2060 and longer.

Gold Bar WWTP Solids Treatment Capacity

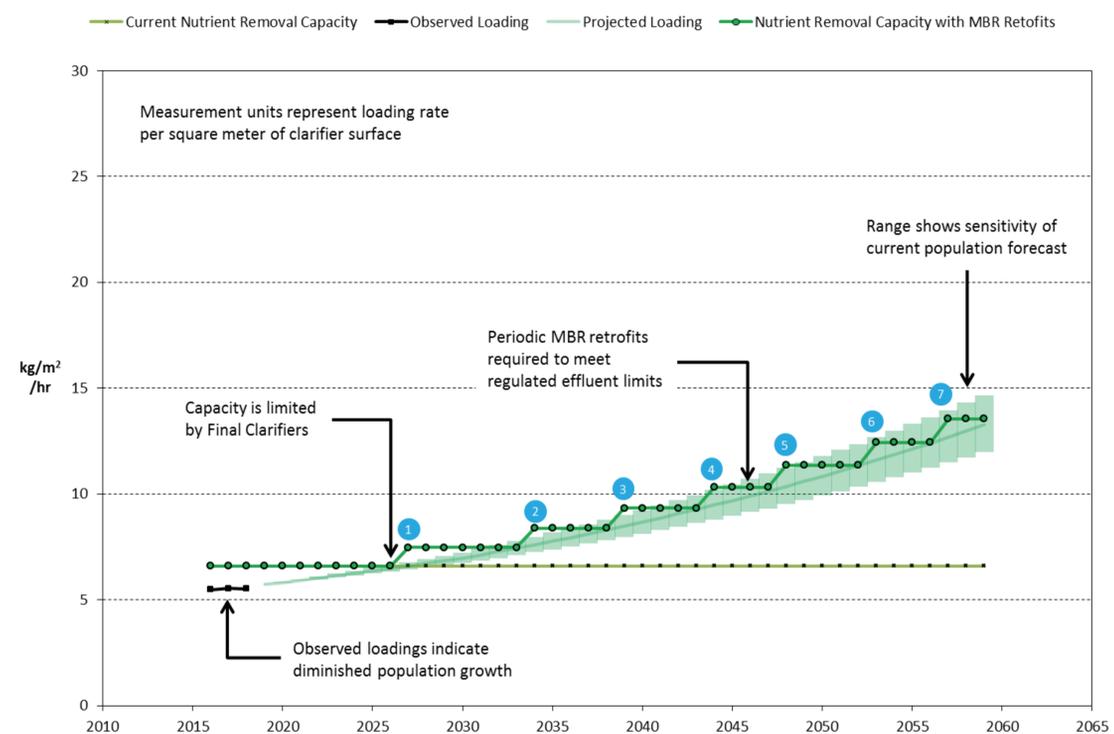


FLOW: NUTRIENT REMOVAL CAPACITY

Conclusion: Wastewater strength is expected to increase over time (solids loading). Nutrient removal capacity is easily increased over time by retrofitting existing secondary clarifier tanks with membrane technology. These retrofits will be required at a slower pace if SESS line is diverted to ACRWWTP.



Gold Bar WWTP Nutrient Removal Capacity



PLANNING CONCLUSIONS

- **Principal Planning Conclusion: Gold Bar is able to safely treat all flows that come to it through 2060 while remaining within its existing footprint and fenceline**
 - i. Gold Bar has **ample hydraulic capacity** meaning that it is currently sized to handle liquid flows through 2060. Flow (liquids) growth is expected to be flat due to the impact of water conservation.
 - ii. Gold Bar also has **spare solids treatment capacity** (digesters) to treat solids growth through 2060. Solids coming to the plant for treatment are expected to grow in proportion to population growth.
 - iii. As municipal waste volume grows with population and flows are moderated due to water conservation, **wastewater strength** is expected to increase over time. Gold Bar WWTP will have to increase its nutrient removal capacity to keep pace. This is **easily accomplished by retrofitting** existing secondary clarifier tanks with membrane technology. The earliest this would be needed is 2027.

YOUR FEEDBACK

Select the Design Principles

- Which criteria would you use to evaluate different long term plan scenarios for the Gold Bar WWTP?
- Would you add or subtract any of the criteria EPCOR proposes to use?

Future Scenarios

- Is this enough information to understand the major variables for long-term planning of process facilities at the Gold Bar WWTP?

Our long-term plan is to:

- rehabilitate existing infrastructure,
- keep all process facilities inside the fenceline; and
- use membrane technology to remove nutrients as they become more concentrated.
 - How well does this approach fit with the design principles you selected?

Public Engagement

- EPCOR plans public engagement to refine and finalize the Integrated Resource Plan for the Gold Bar WWTP.
 - What public engagement tactics do you recommend we use to involve neighbours and other stakeholders?
- What information do you recommend be shared with stakeholders?

SAFETY AND HYGIENE

DEFINE THE GOAL

- 1. Ensure safe movement on-site.** Develop a plan for on-site vehicle and people movement that improves worker safety.
 - Relocate vehicle parking away from congested active treatment / process areas of the plant, and near support facilities.
- 2. Improve worker hygiene and safety.** Develop a plan for the location of non-process buildings and hygiene facilities that improves worker safety and limits health risks.
 - Develop acceptable locker / shower facilities
 - Re-locate support facilities away from congested active treatment / process areas of the plant
 - Use opportunity to relocate support facilities within the fenceline as they require rehabilitation or improvement

EPCOR'S PROPOSED CRITERIA

Core objectives (must meet)

Safety	Continuously improve safety
	Ensure safe movement on-site
	Improve worker hygiene and safety

Design principles (evaluation criteria)

Quality of Life	Remain within the existing fenceline
	Prevent increases to odour and noise
	Restore disturbed vegetation
	Mitigate temporary impacts
Safety	Protect public safety from site-related traffic
Environment	Reduce environmental impacts
Reliable, Responsible, Sustainable	Continuously maintain reliable operations
	Prudently manage impacts to ratepayers

Execution principles

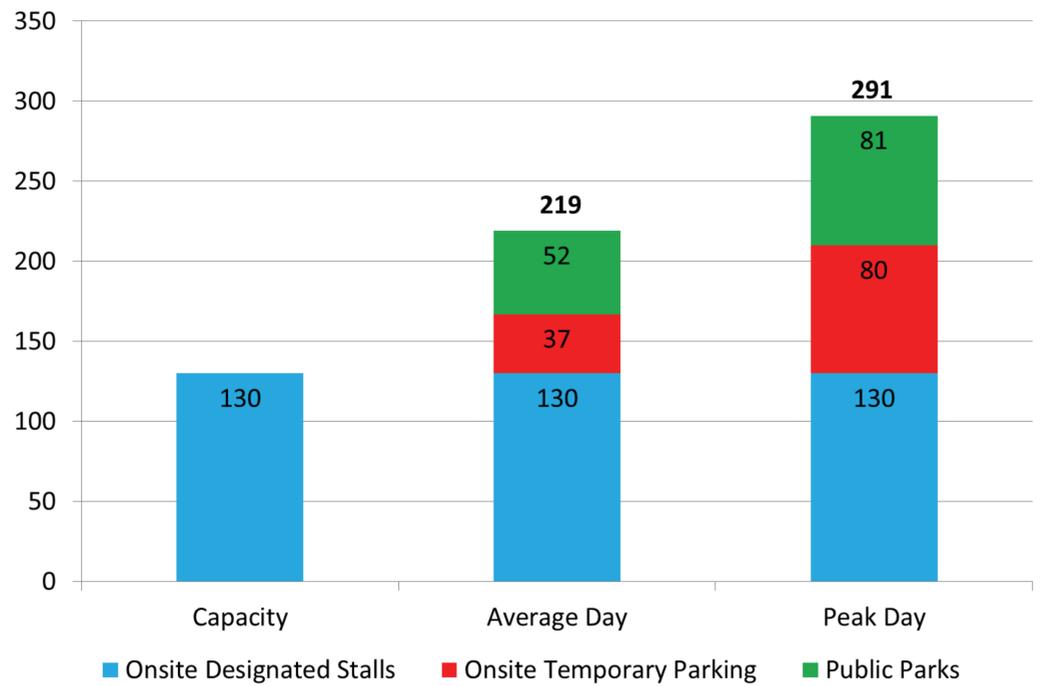
Relationship
Communicate openly
Align operating protocols
Engage regularly
Share options and optimize designs

CURRENT STATE: SAFE MOVEMENT

- Up to 210 employees and visitors park on site (130 in designated stalls and 80 in temporary or non-designated stalls)
- About 50-80 contractors are using Gold Bar Park and Capilano Park lots
- This is **not expected to grow** for the foreseeable future



Gold Bar WWTP Parking Observations 2018



- Most of the designated parking and temporary parking is near active treatment and process areas at the centre of the plant which creates significant safety risks including traffic congestion and increased pedestrian-vehicle interaction.



DESIRED FUTURE STATE: SAFE MOVEMENT

Desired future state: Provide 190 – 220 on-site parking stalls for employees and contractors

- Locate away from active treatment and process areas
- Locate near work place

In this future state, there would continue to be some overflow parking by contractors in the adjacent City parks.

CURRENT STATE – HYGIENE AND SAFETY

- In 2015 EPCOR completed a study which assessed the risks to employees working with wastewater and its biological hazards
- A 2017 review recommended specific facility improvements
- Current facilities do not have proper separation of clean and dirty clothing (having showers between clean lockers and dirty lockers)
- Some locker and shower facilities require staff to walk through process areas, and lockers themselves are in process hallways



FUTURE STATE - HYGIENE AND SAFETY

Recommendations for Staff Hygiene Facilities (from study in 2017)

- Facilities should be available to keep street clothes and personal items separate from PPE and work clothes
- Shower and hand washing facilities need to be available for people to be able to clean up after contact with wastewater
- Locker rooms should have storage space for boots that is separate and at floor level or at bottom of lockers

SAFE MOVEMENT/HYGIENE AND SAFETY – OPTIONS OVERVIEW

Options Overview

- **Four options** have been developed to meet the hygiene and safety goals
- Each of the options includes **on-site parking in a defined location**, and **changing and shower facilities in a place separate from process areas**.

The main variables between the options are:

- The **location** of parking and hygiene facilities
- The **sizing** and type of **structure**
- The **cost** to implement
- The implications of location and sizing decisions
 - On **land use** inside and outside the fenceline
 - On the **timespan** or **complexity** of implementation
 - On the **potential community impact** (proximity, visibility, traffic)
 - On the **ability to add technologies or processes** in the future
 - On **future maintenance and construction** (e.g. access to laydown areas)

Not currently recommended



OPTION 1: ORIGINAL PROPOSAL

- Parking:
 - Surface parking lot with 220 stalls
- Buildings:
 - Operations Centre: three story, Mtc/Ops lockers, HEI Office, Control Room
 - Maintenance/Admin offices (Future)
- Other:
 - City Parks Yard relocated elsewhere
 - Nordic Ski Club relocated
 - Mountain bike trail stays as-is but would be relocated and rebuilt in the future
 - Parking accessible to public after daytime work hours

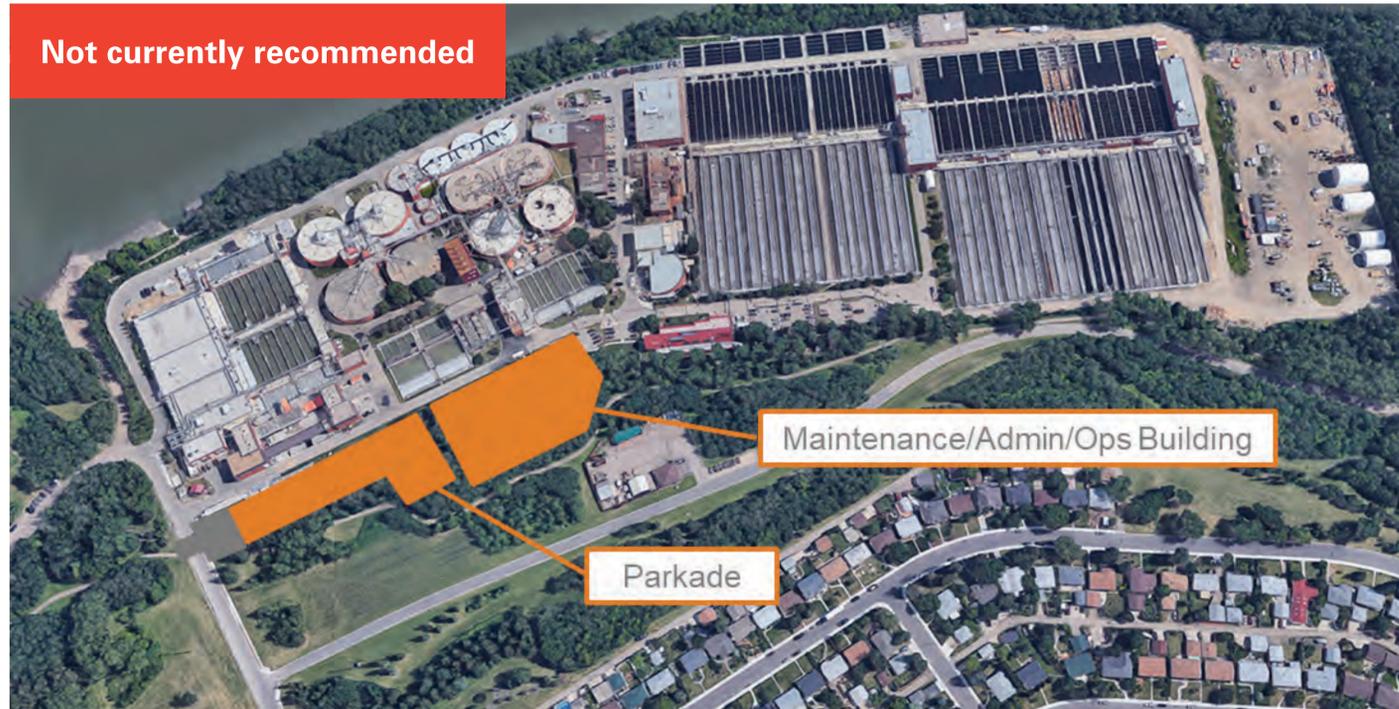
Not currently recommended



OPTION 2: PARKS YARD PARKADE

- Parking:
 - Build a 220 stall three-story parkade on top of the City Parks Yard, reducing the footprint used within Gold Bar Park
- Buildings:
 - Operations Centre: three story, Mtc/Ops lockers, HEI Office, Control Room
 - Maintenance/Admin offices (Future)
- Other:
 - City Parks Yard relocated elsewhere
 - Nordic Ski Club relocated
 - Mountain bike trail stays as-is but would be relocated and rebuilt in the future

Not currently recommended



OPTION 3: PARKADE NORTH OF TRAIL

- Parking:
- Build an elongated 220 stall parkade north of the trail, reducing the footprint used within Gold Bar Park and moving the structures away from the road
- Buildings:
- Maintenance/Admin/Ops Building
- Other:
- City Parks Yard stays as-is
 - Nordic Ski Club stays as-is
 - Mountain bike trail relocated and rebuilt



**OPTION 4: INSIDE FENCE AT EAST END
EPCOR'S RECOMMENDED OPTION**

- Parking:
- Build a 150 stall surface parking lot at east end, and use 45 stall surface lot stalls in the south-central area near the new Ops Centre. Reduce the laydown area
- Buildings:
- Operations Centre: one story, inside the fenceline
 - Maintenance/Admin offices moved from the centre to the east end, inside the fence
- Other:
- City Parks Yard and Nordic Ski Club unchanged. No development outside the existing fenceline. Main entrance moved to east end of site (arriving vehicles will now use Gold Bar Park Road; exiting vehicles are unchanged).

YOUR FEEDBACK

Select the Design Principles

- Which criteria would you use to evaluate the options?
- Would you add or subtract any of the criteria EPCOR proposes to use?

Current State and Desired Future State

- Is this enough information to understand the planning context?
- What other information would be useful to you or other stakeholders?

Options Discussion

- How would you rank the options against the criteria we are trying to meet?
- Does one or more of the options stand out as the best way to meet the goal?
- For EPCOR's recommended option, how well have the design principles been applied?
- What improvements could be made to better live up to the design principles?

Public Engagement

- Was this enough information to understand and evaluate the options? What else would be useful?
- What information do you recommend be shared with the community?
- EPCOR plans public engagement to refine and finalize the proposal.
 - What public engagement tactics do you recommend we use to involve neighbours and other stakeholders?

ODOUR CONTROL ACTION PLAN

DEFINE THE GOAL

- 1. Achieve odour reduction.** Operating and capital improvements at Gold Bar will reduce odour from existing operations, and meet current and future odour performance standards.
- 2. Monitor, report and comply.** Add new regulatory monitoring to give stakeholders the information they need to judge that the air quality is safe, and consistent with a good quality of life and enjoyment of parks and recreation.
- 3. Prevent increases to odour and noise.** Design the facility to be able to handle future volume changes without increases in odour.

EPCOR'S PROPOSED CRITERIA

Core objectives (must meet)

Quality of Life	Accelerate odour reduction
	Prevent increases to odour and noise
Environment	Continuously improve environmental performance
	Reduce environmental impacts
Reliable, Responsible, Sustainable	Continuously maintain reliable operations

Design principles (evaluation criteria)

Safety	Continuously improve safety
Relationship	Communicate openly
	Align operating protocols
Reliable, Responsible, Sustainable	Prudently manage impacts to ratepayers

Execution principles

Quality of Life	Environment
Mitigate temporary impacts	Engage employees and stakeholders
Remain within the existing fenceline	

CURRENT STATE: ODOUR

- Majority of the odour generation comes from the preliminary and primary treatment buildings (red area), with secondary sources from solids treatment buildings (orange area)

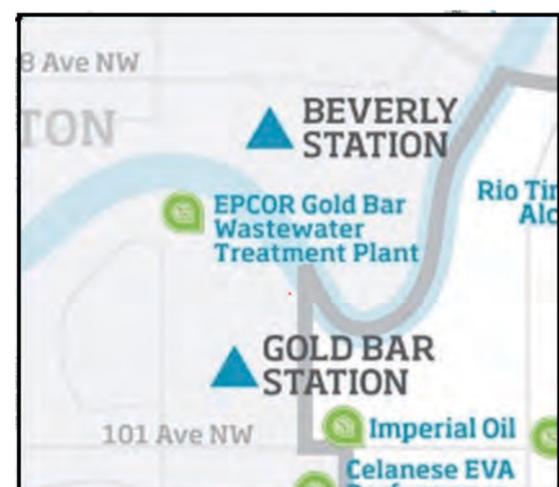
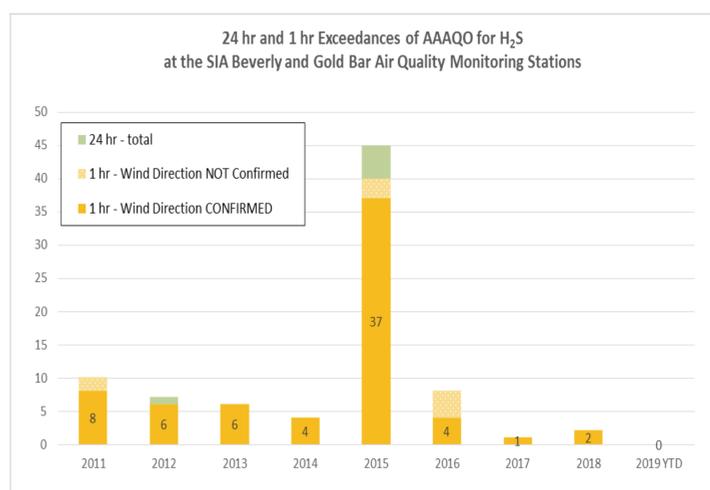


Key historical sources of odour:

- EPT Clarifiers
- Ineffective Scrubbers
- Headworks Buildings
- Primary Clarifiers
- Fugitive Sources (overhead doors, unsealed process and foul air ducting, etc.)

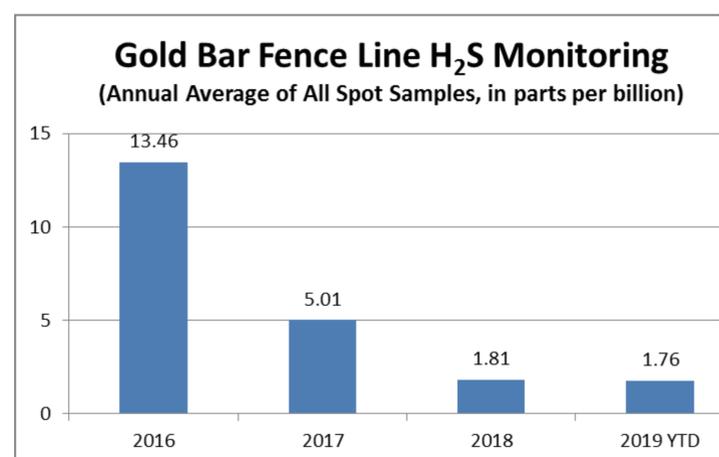
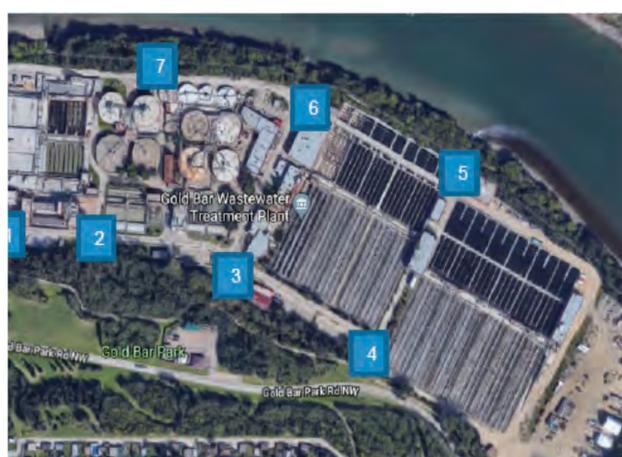
Alberta Ambient Air Quality Objective:

- An average of no more than 10 parts per billion over a one hour period, or 3 parts per billion over a 24-hour period
- Ambient air quality is monitored at the Beverly and Gold Bar stations.
- Action Plan implemented following exceedances in 2015 – significant improvement since then



Spot Monitoring

- **Spot Monitoring Samples** taken from 8 locations at the fenceline also show significant reductions in odour emissions.
- This has also shown marked improvement



UPDATE ON COMPLETED ODOUR PROJECTS

A \$10 million series of projects has been completed to date and has helped to significantly reduce odour emissions:

- Sealed Enhanced Primary Treatment clarifiers
- Upgraded ventilation and odour collection
- Scrubber upgrades



DESIRED FUTURE STATE: ODOUR REDUCTION

Current State

Odour levels

- Odour exceedances have been reduced at the two monitoring stations
- Spot monitoring at the fenceline also shows reductions

Monitoring and Reporting

- Alberta Capital Air Shed publishes real time monitoring results from its stations in Beverly and near Gold Bar School
- EPCOR publishes fenceline spot monitoring results monthly
- There is no continuous air quality monitoring at the fenceline or in the adjacent part of Gold Bar Park

Desired Future State

Odour levels

- Odour levels consistently meet current and future standards, and are safe for human health and recreation

Monitoring and Reporting

- Additional continuous air quality monitoring is in place closer to the fenceline
- Results are available in real time in a format that is useful for stakeholders
- New regulatory monitoring and reporting give stakeholders the information they need to judge that the air quality is safe for human health and recreation

ODOUR ACTION PLAN OVERVIEW

- **Additional projects** are being implemented to further reduce odour and ensure compliance
- In conversation with Alberta Environment and Parks (AEP) about updating approval:
 - A new **air quality monitoring station** is under discussion and we would like your input on location and mitigating impacts
 - **New regulatory performance standards** are proposed related to the **performance of odour control equipment** and **ambient air quality**

ADDITIONAL ODOUR PROJECTS

The following capital and operating initiatives will further reduce odour from existing operations, and meet current and future odour performance standards.

Action	Description	Cost	Status
Odour Monitoring System	Includes installation of weather and air quality monitoring stations	\$1.0 M	Design in progress
EPT Scrubber Upgrades	Redesign existing EPT Scrubber and install additional scrubber if necessary for revised capacity and better performance	\$8.4 M	Design in progress
Grit and Screen Buildings Ventilation Upgrades	Upgrade ventilation and implement odour control in headworks buildings	\$2.2 M	Design in progress
Seal Fermenter Roofs	Seal Fermenter Roofs in order to prevent fugitive odour emissions.	\$0.5 M	Design in progress
Subtotal		\$12.1 M	

NEW PERFORMANCE STANDARDS

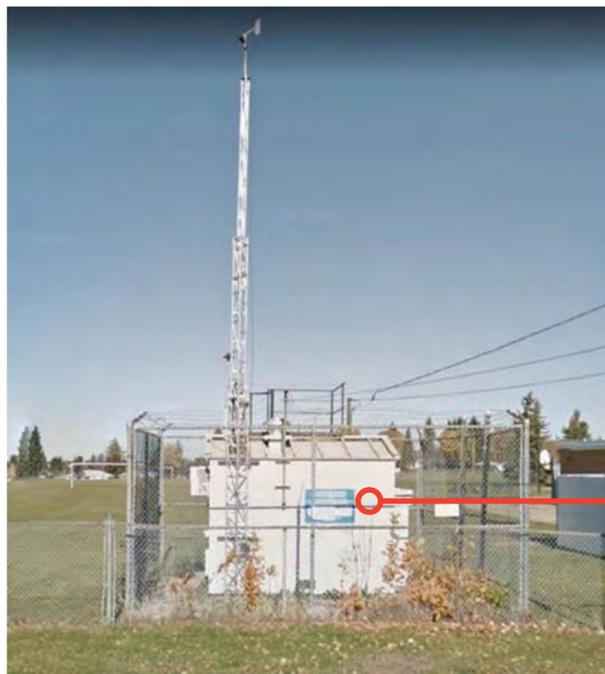
EPCOR is working with Alberta Environment & Parks to establish odour control requirements, reliable monitoring and effective reporting.

Proposed updates to the Gold Bar **Operating Approval** would:

- Add **odour scrubber operating performance** limits
- Add new **continuous monitoring and reporting** requirements for air entering and exiting the **odour scrubbers**
- Add standard requirements to **control fugitive emissions**
- Add **air monitoring and reporting at the fenceline**
- Require the **Alberta Ambient Air Quality Objectives be met** in close proximity to the south fenceline of the plant (new AQM station)

NEW AIR MONITORING STATION

A new continuous monitoring station between the Plant and the nearest receptors (houses along 109 A Avenue) will be developed



New Monitoring Station

Existing Monitoring Station



LOCATION OF NEW MONITORING STATION



1. Where would you site an additional monitoring station?
2. Is it acceptable or desirable to place a monitoring station within adjacent parkland?

YOUR FEEDBACK

Select the Design Principles

- Which criteria would you use to evaluate an odour reduction plan?
- Would you add or subtract any of the criteria EPCOR proposes to use?

Current State and Desired Future State

- Is this enough information to understand the context for an odour reduction plan?
- How well does the desired future state describe what you would like to see?

Odour Control Action Plan

- Where would you site an additional air monitoring station?
- Do you support adding new requirements related to odour control equipment, monitoring of air quality, and the management of air quality to the Gold Bar operating permit?
- What advice do you have about how monitoring data should be shared, and what is needed to make the data useful for the public and park users?

Public Engagement

Alberta Environment & Parks controls the process for operating approvals, including publishing public notices about amendments.

- How would you like EPCOR to share information and reporting if Alberta Environment & Parks amends the Gold Bar operating approval?

REDUCING FLARING AND GHG EMISSIONS: RENEWABLE NATURAL GAS

DEFINE THE GOAL

Pollution is prevented. The impact of Gold Bar on air, land, water, climate and ecosystems is reduced.

- 1. Reduce environmental impacts.** Prioritize investments and operating practice changes that reduce Gold Bar’s environmental impact, with a focus on the reduction of greenhouse gas emissions, the protection of water quality, and the protection of parkland.
- 2. Improve sustainability and enhance recovery of renewable resources**
- 3. Continuously improve environmental performance.** Assess current environmental performance, evolving standards and emerging risks, and propose initiatives that maintain regulatory compliance and improve environmental performance.

EPCOR’S PROPOSED CRITERIA

Core objectives (must meet)

Environment	Reduce environmental impacts
	Continuously improve environmental performance

Design principles (evaluation criteria)

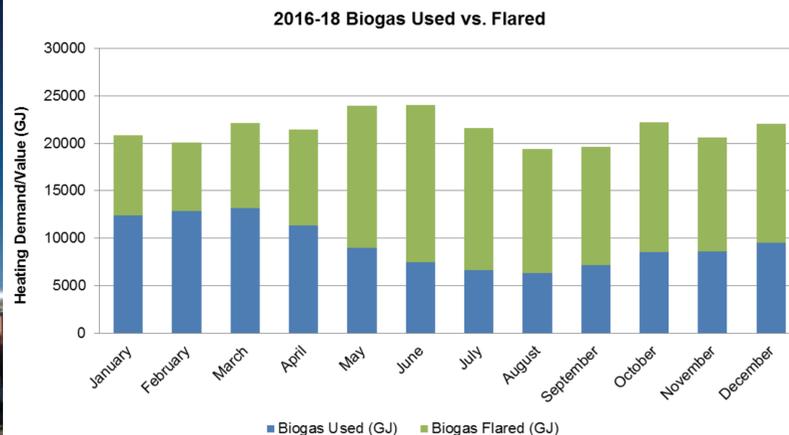
Quality of Life	Remain within the existing fenceline
	Prevent increases to odour and noise
	Restore disturbed vegetation
Safety	Continuously improve safety
Reliable, Responsible, Sustainable	Continuously maintain reliable operations
	Prudently manage impacts to ratepayers

Execution principles

Quality of Life	Safety	Relationship	Environment
Mitigate temporary impacts	Protect public safety from site-related traffic	Communicate openly	Engage employees and stakeholders
		Share options and optimize designs	
		Engage regularly	

CURRENT STATE: BIOGAS AND FLARING

- Biogas is a by-product of wastewater treatment (mostly solids digestion).
- Today, about 60% of the biogas generated in the solids digestion process at Gold Bar is used for heating. About 40% is flared.
- Flaring volumes are highest in the summer months, when there is less need to use gas on-site for heating (70% flared).



Current State

40% of biogas is wasted via flaring – About 150,000 GJ of energy in 2018

- Generated biogas is used for on-site heating (process and plant heating)
- 70-80% of the plant's heating demand is currently being met using Biogas
- Reduced heating demand and more flaring during summer season
- Contaminants in raw biogas cause maintenance issues with existing boilers

Desired Future State

Nearly all biogas is turned from waste into a useful product

- Conversion into renewable natural gas that can be used by others

The benefits include:

- Reduced flaring and lower air emissions
- Less waste, darker night sky, less odour
- Greenhouse gas reduction, as the use of renewable natural gas displaces consumption of regular natural gas

OPPORTUNITY OVERVIEW: BIOGAS TO RENEWABLE NATURAL GAS

Rather than flaring, technology exists to capture biogas, clean it, and deliver it into the ATCO natural gas distribution system as a source of **renewable natural gas**.

- Upgrading biogas to renewable natural gas would require some additional biogas cleaning and injection equipment on-site, and making an underground connection to the ATCO gas line that runs next to Gold Bar Park Road.
- Delivering gas for off-site use would require an amendment to the Gold Bar operating permit
 - The original permit only allowed biogas for on-site uses (such as heating or renewable power generation)



Option 1 (Previous Consideration – Not recommended)

- Locate in east laydown area
- Conflicts with moving parking and Admin to east end of site, separate from process facilities
- Requires significant gas piping

Option 2 (EPCOR Preference)

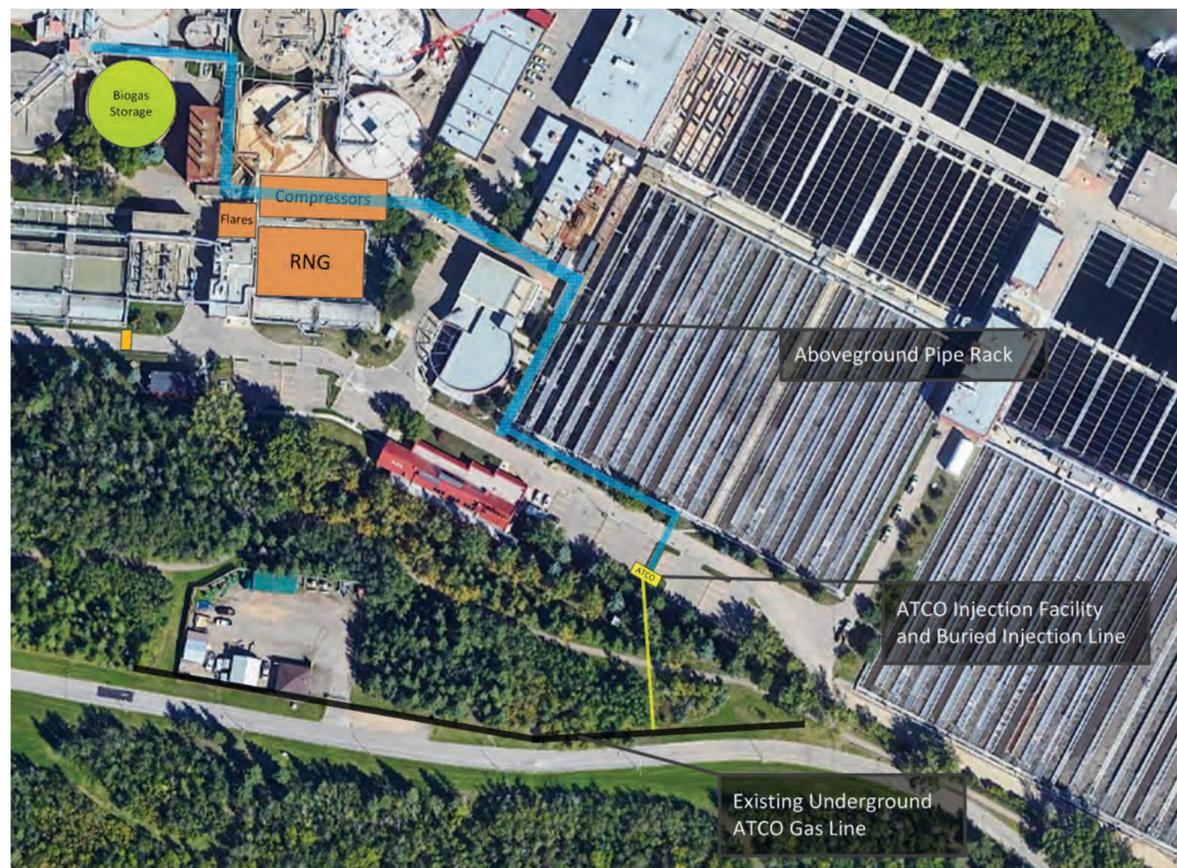
- Locate cleaning equipment near digesters where biogas is created (use space currently occupied by primary clarifiers 1 & 2)
- Repurpose Digester 5 for biogas storage

DESIGN CONSIDERATIONS: LOCATION

- The location of biogas equipment on-site impacts the siting of other process and non-process facilities
- Currently biogas is generated and stored in digester headspaces and transported to boilers and flares
- Additional biogas storage will be required to supply RNG facility without interruption

DESIGN CONSIDERATIONS: INJECTION

- All **equipment** would be located within the fenceline, and as much as possible **within existing buildings** or with **minimal visible impact**
- The **underground connection** to the ATCO gas system could have **temporary construction impacts** at the east end of Gold Bar Park, and may affect **trees** which would need to be **replaced**



Key Components

- Biogas Cleaning / Compression
- Biogas Storage
- Biogas Piping
- Biogas injection and underground gas pipeline

YOUR FEEDBACK

Select the Design Principles

- Which criteria would you use to evaluate a proposal to reduce flaring and greenhouse gas emissions?
- Would you add or subtract any of the criteria EPCOR proposes to use?

Current State and Desired Future State

- Is this enough information to understand the goals of reducing flaring and greenhouse gas emissions?
- How well does the desired future state describe what you would like to see?

Reducing Flaring and Recovering Biogas

- Do you support reducing flaring by allowing biogas to be upgraded and delivered to others for off-site uses?
- What Design Principles should EPCOR apply when adapting on-site infrastructure for the project?
- If connecting to the ATCO gas line causes temporary construction impacts, or impacts to trees, how should they be handled?

Public Engagement

EPCOR plans public engagement to refine and finalize the proposal.

- What public engagement tactics do you recommend we use to involve neighbours and other stakeholders?
- What information do you recommend be shared with stakeholders?

APPENDIX E

HANDOUTS

Shared Outcomes, Priority Actions and Design Principles



IRP Outcomes

EPCOR Water Services Inc. (EWSI) utilizes a continuous approach to long-range planning called Integrated Resource Planning (IRP). In addition to the traditional factors of forecasted demand and treatment capacity, external factors such as changing regulatory requirements, climate change, corporate goals, community values, and new technologies are also examined.

To guide the development of the IRP for Gold Bar Wastewater Treatment Plant (WWTP), EPCOR has developed five Shared Outcome Statements. These statements reflect stakeholder values as identified through engagement with a Community Planning Committee, EPCOR's values including its Health, Safety and Environment Policy, and the expectations or requirements of regulators and ratepayers. The achievement of the following five Shared Outcomes is the objective of the IRP:

Quality of Life

The Gold Bar WWTP is operated, maintained and updated in a way that reduces impacts to stakeholders and improves quality of life, including odour, noise and enjoyment of parks and recreation today and into the future.

Safety

Community, public and worker safety and health are protected.

Relationship

An honest, transparent, trusting and respectful long-term relationship is developed between EPCOR and Gold Bar WWTP stakeholders.

Environment

Pollution is prevented. The impact of the Gold Bar WWTP on air, land, water, climate and ecosystems is reduced.

Reliable, Responsible and Sustainable

The Gold Bar WWTP is designed, maintained and operated in a prudent and responsible manner.



Priority Actions Identified Through Public Engagement

Through engagement with a Community Planning Committee, and taking into account public input from engagement processes in 2017 and 2018, EPCOR has also identified a series of Priority Actions to be achieved in the near-term (either within the next year, or during the next five-year PBR period). The priority actions implemented through this IRP, or earlier, are:

Quality of Life

- Share quality of life measures online.
- Prioritize mitigating quality of life impacts (including temporary work beyond the fenceline that could result in tree removal and impacts to path and trail access; noise, visual, wildlife, traffic or odour) in the design, construction and operations of Gold Bar.
- Enhance the collection of customer odour reports and other impacts from the community. Follow up, investigate the issue and close the issue with the community member.
- Educate the community on odour types and conditions to help improve the odour reporting EPCOR receives.
- Continue to work with the City recreation team and heavy user recreational groups (e.g. Nordic Ski Club) to schedule operational activities like maintenance and construction to complement scheduled recreational events in the area where possible.

Safety

- Ensure treatment processes and work at the site meet or exceed applicable industry safety standards and regulations.
- Continue to educate the community on public safety at the site and for the surrounding area associated with projects or ongoing operations. This includes information about alarms, and aesthetic or health impacts from air emissions.
- Ensure staff and traffic (vehicles and equipment) can manoeuvre safely onsite and through the community.
- Improve public safety on Gold Bar Park Road.
- Limit health risks for employees in direct contact with wastewater who move between wastewater and non-processing wastewater areas at the plant.

Relationship

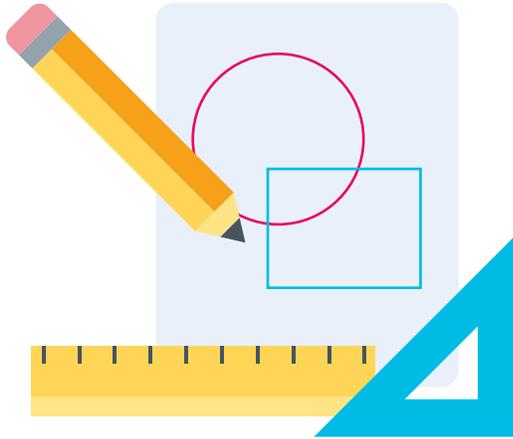
- EPCOR and Gold Bar WWTP stakeholders will develop an Engagement Framework that defines expectations for communication, consultation and ongoing operations.
- The design, construction and operations of Gold Bar will follow the communication and engagement process that has been collaboratively developed with the community.
- Communications are open, honest and timely (in all directions).
- Transparent decision making is supported by sharing criteria and options evaluation for significant projects.
- Define the function of the utility and the revenue model.

Environment

- Meet or exceed all applicable regulatory requirements and industry standards.
- Minimize the environmental impact of treatment processes on the air, land and water.
- Adopt new technologies to minimize Gold Bar's physical and environmental footprint.
- Improve sustainability and enhance recovery of renewable resources.
- In the longer term, make improvements per regulatory requirements to treat emerging contaminants of concern.
- Reduce direct and indirect greenhouse gas emissions from Gold Bar WWTP's operations.
- Explore public education opportunities related to the environment including the plant's role.

Reliable, Responsible and Sustainable

- Gold Bar WWTP will meet or exceed regulated performance requirements, now and in the future.
- Gold Bar WWTP will be maintained in good working order, and demonstrate sustainable and reliable operation (from economic, environmental and social perspectives).
- Capital and operating costs will be prudent, giving consideration to the impact on ratepayers.
- Gold Bar WWTP will be designed, maintained and operated in a way that mitigates its impact on the community, park and river valley.
- Open up Gold Bar WWTP to the public and share issues and considerations associated with maintenance and operations.



Design Principles

For the 2017 – 2021 period, City Council approved \$235 million in funding for capital projects at the Gold Bar WWTP. At present, about \$50 million in capital projects are undertaken each year for maintenance and rehabilitation. The IRP aligns current and future work to support the achievement of the five Shared Outcomes.

The IRP and its projects are implemented by many teams working over multiple decades. In planning for the future, and in implementing individual projects, EPCOR has identified twenty Design Principles that will guide the ongoing work of staff and contractors. These Design Principles define how EPCOR will achieve the goals and priority actions described in the five Shared Outcome Statements, and provide a framework to guide the evolution of the site. The objective of planners and project managers will be to deliver all process and non-process work at the site within these Design Principles, and to engage with stakeholders and regulators to explore options and trade-offs.

EPCOR seeks to implement high quality public engagement programs that result in critical infrastructure being permitted, built and operated in a way that is aligned with the interests and priorities of the community and meets the needs of the broader society. The Design Principles document EPCOR's commitments to stakeholders, clarify expectations for EPCOR's teams now and in the future, and provide stakeholders and EPCOR with criteria against which individual projects and design decisions can be tested.

Quality of Life

The Gold Bar WWTP is operated, maintained and updated in a way that reduces impacts to stakeholders and improves quality of life, including odour, noise and enjoyment of parks and recreation today and into the future.

Design Principles

In its long-term plans, individual projects, and ongoing operations at Gold Bar WWTP, EPCOR will:

1. **Accelerate odour reduction.** Identify and accelerate capital and operating initiatives that reduce odour from existing operations, and meet current and future odour performance standards.
2. **Remain within the existing fenceline.** Design Gold Bar WWTP to eliminate, offset, mitigate or reduce impacts to adjacent parkland (in that order of preference). The design of all process and non-process facilities at Gold Bar WWTP will be undertaken with the objective of keeping the facility within its existing fenceline.
3. **Prevent increases to odour and noise.** Design the facility to be able to handle future volume changes without increases in odour or noise.
4. **Restore disturbed vegetation.** Develop and implement a policy to re-naturalize or replace trees and vegetation that are disrupted by utility work.
5. **Mitigate temporary impacts.** Minimize or mitigate temporary impacts from construction and maintenance activities, including any temporary impacts that occur from work outside the fenceline.

Safety

Community, public and worker safety and health are protected.

Design Principles

In its long-term plans, individual projects, and ongoing operations at the Gold Bar WWTP, EPCOR will:

6. **Continuously improve safety.** Assess current safety performance, evolving standards and emerging risks, and propose initiatives that maintain regulatory compliance, improve safety, and provide information to the community.
7. **Ensure safe movement on-site.** Develop a plan for on-site vehicle, people movement, and parking, that improves worker and visitor safety.

8. Improve worker hygiene and safety. Develop a plan for the location of non-process buildings and hygiene facilities that improves worker safety and limits health risks.

The design of all process and non-process facilities at Gold Bar WWTP will be undertaken with the objective of keeping the facility within its existing fence line. EPCOR will minimize or mitigate temporary impacts from construction.

9. Protect public safety from site-related traffic. Consider the individual and cumulative transportation impacts from construction and maintenance activities, and develop plans to protect public safety on Gold Bar Park Road and 50th street.

Relationship

An honest, transparent, trusting and respectful long-term relationship is developed between EPCOR and Gold Bar WWTP stakeholders.

Design Principles

In its long-term plans, individual projects, and ongoing operations at the Gold Bar WWTP, EPCOR will:

10. Communicate openly. Make communication timely, open, complete and transparent about planning and development at Gold Bar WWTP.

11. Align operating protocols. Update internal operating procedures at Gold Bar WWTP to implement the communication protocols agreed to with the community.

12. Engage regularly. Periodically engage with stakeholders to review and refresh the communication protocols and products used to share operations and project information with stakeholders (including employees), and the channels that stakeholders use to provide information to Gold Bar WWTP.

13. Share options and optimize designs. Share design criteria and options for significant projects, and for projects that could impact quality of life for stakeholders, and use stakeholder input to improve and finalize project design and option selection.

Environment

Pollution is prevented. The impact of the Gold Bar WWTP on air, land, water, climate and ecosystems is reduced.

Design Principles

In its long-term plans, individual projects, and ongoing operations at the Gold Bar WWTP, EPCOR will:

14. Continuously improve environmental performance. Assess current environmental performance, evolving standards and emerging risks, and propose initiatives that maintain regulatory compliance and improve environmental performance.

15. Reduce environmental impacts. Prioritize investments and operating practice changes that reduce the Gold Bar WWTP's environmental impact, with a focus on contributing to the reduction of global greenhouse gas emissions, the protection of water quality, the protection of parkland and the recovery of resources.

16. Increase resiliency. Protect the community from the impacts of extreme weather and climate change by implementing measures to make the Gold Bar WWTP more resilient against overland and river flooding.

17. Engage employees and stakeholders. Involve and encourage the participation of employees and stakeholders in the improvement of our health, safety and environmental performance.

Reliable, Responsible and Sustainable

The Gold Bar WWTP is designed, maintained and operated in a prudent and responsible manner.

Design Principles

In its long-term plans, individual projects, and ongoing operations at Gold Bar WWTP, EPCOR will:

18. Continuously maintain reliable operations. Incorporate condition assessments of current facilities, and identify the work required to rehabilitate or maintain infrastructure.

19. Plan for a range of scenarios. Conduct scenario planning to identify the range of work that would be required to serve future populations under changing regulatory and climate conditions.

20. Prudently manage impacts to ratepayers. Develop options that result in reasonable costs for ratepayers, and which spread the rate impacts of investment over time.

Applied Exercise #1

Long Term Planning Scenarios



Shared Outcomes - Design Principles

Design Principles	Core Objectives	Design Principles	Execution Principles
Quality of Life			
Accelerate odour reduction	✓	✓	✓
Remain within the existing fence line	✓	✓	✓
Prevent increases to odour & noise	✓		
Restore disturbed vegetation			✓
Mitigate temporary impacts	✓	✓	✓
Safety			
Continuously improve safety	✓	✓	
Ensure safe movement on-site	✓	✓	
Improve worker hygiene and safety	✓	✓	
Protect public safety from site-related traffic	✓	✓	✓
Relationship			
Communicate openly	✓	✓	
Align operating protocols		✓	
Engage regularly		✓	✓
Share options and optimize designs			✓
Environment			
Continuously improve environmental performance	✓		✓
Reduce environmental impacts			✓
Increase resiliency			✓
Engage employees and stakeholders			✓
Reliable, Responsible, Sustainable			
Continuously maintain reliable operations	✓		
Plan for a range of scenarios	✓		
Prudently manage impacts to ratepayers	✓		

- **Core objectives** – Criteria that must be met for long term planning success
- **Design principles** – Additional criteria that are used to evaluate scenarios
- **Execution principles** – Criteria that guide how a project is created and executed (but which don't affect the choice between options)

Select the Design Principles

- What criteria would you use to evaluate different long term plan scenarios for the Gold Bar WWTP (put X's in the appropriate spaces above)?
- Would you add or subtract any of the criteria EPCOR proposes to use?

Applied Exercise #1

Long Term Planning Scenarios



Future Scenarios

- Is this enough information to understand the major variables for long-term planning of process facilities at the Gold Bar WWTP?

NO,

- Our long-term plan is to:
 - rehabilitate existing infrastructure,
 - keep all process facilities inside the fence line; and
 - use membrane technology to remove nutrients as they become more concentrated.

what does this mean?

- How well does this approach fit with the design principles you selected?

to minimal

Public Engagement

- EPCOR plans public engagement to refine and finalize the Integrated Resource Plan for the Gold Bar WWTP.
 - What public engagement tactics do you recommend we use to involve neighbours and other stakeholders?

information sessions, workshops,

- What information do you recommend be shared with stakeholders?

overview - information - what we heard

Applied Exercise #1

Long Term Planning Scenarios



Shared Outcomes - Design Principles

Design Principles	Core Objectives	Design Principles	Execution Principles
Quality of Life			
Accelerate odour reduction	X		
Remain within the existing fenceline	X		
Prevent increases to odour & noise	X		
Restore disturbed vegetation	X		
Mitigate temporary impacts	X		
Safety			
Continuously improve safety	X		
Ensure safe movement on-site	X		
Improve worker hygiene and safety	X		
Protect public safety from site-related traffic	X		
Relationship			
Communicate openly	X		
Align operating protocols	X		
Engage regularly	X		
Share options and optimize designs	X		
Environment			
Continuously improve environmental performance	X		
Reduce environmental impacts	X		
Increase resiliency	X		
Engage employees and stakeholders	X		
Reliable, Responsible, Sustainable			
Continuously maintain reliable operations	X		
Plan for a range of scenarios	X		
Prudently manage impacts to ratepayers	X		

- **Core objectives** – Criteria that must be met for long term planning success
- **Design principles** – Additional criteria that are used to evaluate scenarios
- **Execution principles** – Criteria that guide how a project is created and executed (but which don't affect the choice between options)

Select the Design Principles

- What criteria would you use to evaluate different long term plan scenarios for the Gold Bar WWTP (put X's in the appropriate spaces above)?
- Would you add or subtract any of the criteria EPCOR proposes to use?

Applied Exercise #1

Long Term Planning Scenarios



Future Scenarios

- Is this enough information to understand the major variables for long-term planning of process facilities at the Gold Bar WWTP?

NO. m. et of reventing SERS was not adequately draft with.
Also capacity beyond 2060 are difficult to forecast but
need to be thought about.

- Our long-term plan is to:
 - rehabilitate existing infrastructure,
 - keep all process facilities inside the fenceline; and
 - use membrane technology to remove nutrients as they become more concentrated.
- How well does this approach fit with the design principles you selected?

Good. - but there's more.

Public Engagement

- EPCOR plans public engagement to refine and finalize the Integrated Resource Plan for the Gold Bar WWTP.
 - What public engagement tactics do you recommend we use to involve neighbours and other stakeholders?

Multi-channel. In person workshops, open houses, internet
sc, +

- What information do you recommend be shared with stakeholders?

As much as possible.

Applied Exercise #1

Long Term Planning Scenarios



Shared Outcomes - Design Principles

Design Principles	Core Objectives	Design Principles	Execution Principles
Quality of Life			
Accelerate odour reduction		X	
Remain within the existing fenceline	X		
Prevent increases to odour & noise		X	
Restore disturbed vegetation		X	
Mitigate temporary impacts			X
Safety			
Continuously improve safety	X		
Ensure safe movement on-site	X		
Improve worker hygiene and safety	X		X
Protect public safety from site-related traffic	X		X
Relationship			
Communicate openly			X
Align operating protocols			X
Engage regularly		X	
Share options and optimize designs		X	X
Environment			
Continuously improve environmental performance	X		
Reduce environmental impacts	X		
Increase resiliency	X		
Engage employees and stakeholders	X		
Reliable, Responsible, Sustainable			
Continuously maintain reliable operations	X		
Plan for a range of scenarios	X		
Prudently manage impacts to ratepayers	X		

- **Core objectives** – Criteria that must be met for long term planning success
- **Design principles** – Additional criteria that are used to evaluate scenarios
- **Execution principles** – Criteria that guide how a project is created and executed (but which don't affect the choice between options)

Select the Design Principles

- What criteria would you use to evaluate different long term plan scenarios for the Gold Bar WWTP (put X's in the appropriate spaces above)?
- Would you add or subtract any of the criteria EPCOR proposes to use?

Add Traffic to the considerations

Applied Exercise #1

Long Term Planning Scenarios



Shared Outcomes - Design Principles

Design Principles	Core Objectives	Design Principles	Execution Principles
Quality of Life			
Accelerate odour reduction		x	
Remain within the existing fence line		x	
Prevent increases to odour & noise	x	x	
Restore disturbed vegetation			x
Mitigate temporary impacts			x
Safety			
Continuously improve safety		x	
Ensure safe movement on-site		x	
Improve worker hygiene and safety		x	
Protect public safety from site-related traffic			x
Relationship			
Communicate openly			x
Align operating protocols		x	
Engage regularly			x
Share options and optimize designs			x
Environment			
Continuously improve environmental performance		x	
Reduce environmental impacts		x	
Increase resiliency		x	
Engage employees and stakeholders			x
Reliable, Responsible, Sustainable			
Continuously maintain reliable operations	x		
Plan for a range of scenarios	x		
Prudently manage impacts to ratepayers	x		

- **Core objectives** – Criteria that must be met for long term planning success CRITICAL
- **Design principles** – Additional criteria that are used to evaluate scenarios
- **Execution principles** – Criteria that guide how a project is created and executed (but which don't affect the choice between options)

Select the Design Principles

- What criteria would you use to evaluate different long term plan scenarios for the Gold Bar WWTP (put **X**'s in the appropriate spaces above)?
- Would you add or subtract any of the criteria EPCOR proposes to use?

N/A

Applied Exercise #1

Long Term Planning Scenarios



Future Scenarios

- Is this enough information to understand the major variables for long-term planning of process facilities at the Gold Bar WWTP?
having a hard time understanding how nutrients are limited but solids are not.
- Our long-term plan is to:
 - rehabilitate existing infrastructure,
 - keep all process facilities inside the fence line; and
 - use membrane technology to remove nutrients as they become more concentrated.
- How well does this approach fit with the design principles you selected?
With new core objective of prevent increases in odours & noise.

Public Engagement

- EPCOR plans public engagement to refine and finalize the Integrated Resource Plan for the Gold Bar WWTP.
 - What public engagement tactics do you recommend we use to involve neighbours and other stakeholders?
Open houses, workshops for planning for input and informing, community liaison
- What information do you recommend be shared with stakeholders?
Criteria + plans.

Applied Exercise #1

Long Term Planning Scenarios



Shared Outcomes - Design Principles

Design Principles	Core Objectives	Design Principles	Execution Principles
Quality of Life			
Accelerate odour reduction	X		
Remain within the existing fenceline	X		
Prevent increases to odour & noise	X		
Restore disturbed vegetation		X	
Mitigate temporary impacts		X	
Safety			
Continuously improve safety			X
Ensure safe movement on-site			
Improve worker hygiene and safety			
Protect public safety from site-related traffic			
Relationship			
Communicate openly	X		
Align operating protocols	X		
Engage regularly	X		
Share options and optimize designs	X		
Environment			
Continuously improve environmental performance			
Reduce environmental impacts			
Increase resiliency			
Engage employees and stakeholders			
Reliable, Responsible, Sustainable			
Continuously maintain reliable operations	X		
Plan for a range of scenarios	X		
Prudently manage impacts to ratepayers	X		

- **Core objectives** – Criteria that must be met for long term planning success
- **Design principles** – Additional criteria that are used to evaluate scenarios
- **Execution principles** – Criteria that guide how a project is created and executed (but which don't affect the choice between options)

Select the Design Principles

- What criteria would you use to evaluate different long term plan scenarios for the Gold Bar WWTP (put **X**'s in the appropriate spaces above)?
- Would you add or subtract any of the criteria EPCOR proposes to use?

Applied Exercise #1

Long Term Planning Scenarios



Future Scenarios

- Is this enough information to understand the major variables for long-term planning of process facilities at the Gold Bar WWTP?

- Our long-term plan is to:
 - rehabilitate existing infrastructure,
 - keep all process facilities inside the fenceline; and
 - use membrane technology to remove nutrients as they become more concentrated.

- How well does this approach fit with the design principles you selected?

Public Engagement

- EPCOR plans public engagement to refine and finalize the Integrated Resource Plan for the Gold Bar WWTP.
 - What public engagement tactics do you recommend we use to involve neighbours and other stakeholders?

- What information do you recommend be shared with stakeholders?

Applied Exercise #1

Long Term Planning Scenarios



Shared Outcomes - Design Principles

Design Principles	Core Objectives	Design Principles	Execution Principles
Quality of Life			
Accelerate odour reduction	X		
Remain within the existing fenceline			X
Prevent increases to odour & noise	X		
Restore disturbed vegetation		X	
Mitigate temporary impacts		X	
Safety			
Continuously improve safety	X		
Ensure safe movement on-site	X		
Improve worker hygiene and safety	X		
Protect public safety from site-related traffic	/		X
Relationship			
Communicate openly			X
Align operating protocols		X	
Engage regularly		X	
Share options and optimize designs			X
Environment			
Continuously improve environmental performance	X		
Reduce environmental impacts	X		
Increase resiliency			X
Engage employees and stakeholders			X
Reliable, Responsible, Sustainable			
Continuously maintain reliable operations	X		
Plan for a range of scenarios	X		
Prudently manage impacts to ratepayers	X		

- **Core objectives** – Criteria that must be met for long term planning success
- **Design principles** – Additional criteria that are used to evaluate scenarios
- **Execution principles** – Criteria that guide how a project is created and executed (but which don't affect the choice between options)

Select the Design Principles

- What criteria would you use to evaluate different long term plan scenarios for the Gold Bar WWTP (put **X**'s in the appropriate spaces above)?
- Would you add or subtract any of the criteria EPCOR proposes to use?

Applied Exercise #1

Long Term Planning Scenarios



Future Scenarios

- Is this enough information to understand the major variables for long-term planning of process facilities at the Gold Bar WWTP?

- Our long-term plan is to:
 - rehabilitate existing infrastructure,
 - keep all process facilities inside the fenceline; and
 - use membrane technology to remove nutrients as they become more concentrated.

- How well does this approach fit with the design principles you selected?

Public Engagement

- EPCOR plans public engagement to refine and finalize the Integrated Resource Plan for the Gold Bar WWTP.
 - What public engagement tactics do you recommend we use to involve neighbours and other stakeholders?

- What information do you recommend be shared with stakeholders?

Applied Exercise #1

Long Term Planning Scenarios



Shared Outcomes - Design Principles

Design Principles	Core Objectives	Design Principles	Execution Principles
Quality of Life			
Accelerate odour reduction	y		
Remain within the existing fenceline		x	
Prevent increases to odour & noise		x	
Restore disturbed vegetation		x	
Mitigate temporary impacts		x	
Safety			
Continuously improve safety		x	
Ensure safe movement on-site			x
Improve worker hygiene and safety	x		
Protect public safety from site-related traffic	x		
Relationship			
Communicate openly	x		
Align operating protocols	x		
Engage regularly	x		
Share options and optimize designs	x		
Environment			
Continuously improve environmental performance	x		
Reduce environmental impacts	x		
Increase resiliency	x		
Engage employees and stakeholders	x		
Reliable, Responsible, Sustainable			
Continuously maintain reliable operations	x		
Plan for a range of scenarios	x		
Prudently manage impacts to ratepayers	x		

- **Core objectives** – Criteria that must be met for long term planning success
- **Design principles** – Additional criteria that are used to evaluate scenarios
- **Execution principles** – Criteria that guide how a project is created and executed (but which don't affect the choice between options)

Select the Design Principles

- What criteria would you use to evaluate different long term plan scenarios for the Gold Bar WWTP (put **X**'s in the appropriate spaces above)?
 - Would you add or subtract any of the criteria EPCOR proposes to use?
-

Applied Exercise #1

Long Term Planning Scenarios



Future Scenarios

- Is this enough information to understand the major variables for long-term planning of process facilities at the Gold Bar WWTP?

YES

- Our long-term plan is to:
 - rehabilitate existing infrastructure,
 - keep all process facilities inside the fenceline; and
 - use membrane technology to remove nutrients as they become more concentrated.

- How well does this approach fit with the design principles you selected?

Follows it well

Public Engagement

- EPCOR plans public engagement to refine and finalize the Integrated Resource Plan for the Gold Bar WWTP.
 - What public engagement tactics do you recommend we use to involve neighbours and other stakeholders?

Attend community AGM's

- What information do you recommend be shared with stakeholders?

plant expansion or lack of.

Applied Exercise #1

Long Term Planning Scenarios



Shared Outcomes - Design Principles

Design Principles	Core Objectives	Design Principles	Execution Principles
Quality of Life			
Accelerate odour reduction	X		
Remain within the existing fenceline	X		
Prevent increases to odour & noise	X		
Restore disturbed vegetation			X
Mitigate temporary impacts		X	
Safety			
Continuously improve safety		X	
Ensure safe movement on-site		X	
Improve worker hygiene and safety		X	
Protect public safety from site-related traffic		X	
Relationship			
Communicate openly		x	
Align operating protocols		x	
Engage regularly		X	
Share options and optimize designs	X		
Environment			
Continuously improve environmental performance	X		
Reduce environmental impacts	X		
Increase resiliency		X	
Engage employees and stakeholders		X	
Reliable, Responsible, Sustainable			
Continuously maintain reliable operations	X		
Plan for a range of scenarios	X		
Prudently manage impacts to ratepayers			X

- **Core objectives** – Criteria that must be met for long term planning success
- **Design principles** – Additional criteria that are used to evaluate scenarios
- **Execution principles** – Criteria that guide how a project is created and executed (but which don't affect the choice between options)

Select the Design Principles

- What criteria would you use to evaluate different long term plan scenarios for the Gold Bar WWTP (put **X**'s in the appropriate spaces above)?
- Would you add or subtract any of the criteria EPCOR proposes to use?

Applied Exercise #1

Long Term Planning Scenarios



Future Scenarios

- Is this enough information to understand the major variables for long-term planning of process facilities at the Gold Bar WWTP?

- Our long-term plan is to:
 - rehabilitate existing infrastructure,
 - keep all process facilities inside the fenceline; and
 - use membrane technology to remove nutrients as they become more concentrated.
- How well does this approach fit with the design principles you selected?

Public Engagement

- EPCOR plans public engagement to refine and finalize the Integrated Resource Plan for the Gold Bar WWTP.
 - What public engagement tactics do you recommend we use to involve neighbours and other stakeholders?

- What information do you recommend be shared with stakeholders?

Applied Exercise #1

Long Term Planning Scenarios



Shared Outcomes - Design Principles

Design Principles	Core Objectives	Design Principles	Execution Principles
Quality of Life			
Accelerate odour reduction		X	
Remain within the existing fenceline	X		
Prevent increases to odour & noise		X	
Restore disturbed vegetation		X	
Mitigate temporary impacts		X	
Safety			
Continuously improve safety		X	
Ensure safe movement on-site		X	
Improve worker hygiene and safety		X	X
Protect public safety from site-related traffic	X		
Relationship			
Communicate openly		X	
Align operating protocols		X	
Engage regularly		X	
Share options and optimize designs	X		
Environment			
Continuously improve environmental performance		X	
Reduce environmental impacts		X	
Increase resiliency		X	
Engage employees and stakeholders	X		
Reliable, Responsible, Sustainable			
Continuously maintain reliable operations		X	
Plan for a range of scenarios	X		
Prudently manage impacts to ratepayers		X	X

- **Core objectives** – Criteria that must be met for long term planning success
- **Design principles** – Additional criteria that are used to evaluate scenarios
- **Execution principles** – Criteria that guide how a project is created and executed (but which don't affect the choice between options)

Select the Design Principles

- What criteria would you use to evaluate different long term plan scenarios for the Gold Bar WWTP (put **X**'s in the appropriate spaces above)?
- Would you add or subtract any of the criteria EPCOR proposes to use?

Applied Exercise #1

Long Term Planning Scenarios



Future Scenarios

- Is this enough information to understand the major variables for long-term planning of process facilities at the Gold Bar WWTP?

- Our long-term plan is to:
 - rehabilitate existing infrastructure,
 - keep all process facilities inside the fenceline; and
 - use membrane technology to remove nutrients as they become more concentrated.

- How well does this approach fit with the design principles you selected?

Public Engagement

- EPCOR plans public engagement to refine and finalize the Integrated Resource Plan for the Gold Bar WWTP.
 - What public engagement tactics do you recommend we use to involve neighbours and other stakeholders?

- What information do you recommend be shared with stakeholders?

Applied Exercise #1

Long Term Planning Scenarios



Shared Outcomes - Design Principles

Design Principles	Core Objectives	Design Principles	Execution Principles
Quality of Life			
Accelerate odour reduction	X		X
Remain within the existing fence line	X		X
Prevent increases to odour & noise	X	X	X
Restore disturbed vegetation	X		X
Mitigate temporary impacts	X		X
Safety			
Continuously improve safety	X	X	X
Ensure safe movement on-site	X		X
Improve worker hygiene and safety	X		X
Protect public safety from site-related traffic	X		X
Relationship			
Communicate openly	X		X
Align operating protocols	X		X
Engage regularly	X		X
Share options and optimize designs	X		X
Environment			
Continuously improve environmental performance	X	X	X
Reduce environmental impacts	X	X	X
Increase resiliency	X	X	X
Engage employees and stakeholders	X	X	X
Reliable, Responsible, Sustainable			
Continuously maintain reliable operations	X	X	
Plan for a range of scenarios	X	X	
Prudently manage impacts to ratepayers	X	X	

- **Core objectives** – Criteria that must be met for long term planning success
- **Design principles** – Additional criteria that are used to evaluate scenarios
- **Execution principles** – Criteria that guide how a project is created and executed (but which don't affect the choice between options)

Select the Design Principles

- What criteria would you use to evaluate different long term plan scenarios for the Gold Bar WWTP (put X's in the appropriate spaces above)?

- Would you add or subtract any of the criteria EPCOR proposes to use?

I THINK THE CRITERIA IS FINE, JUST HAS TO BE MORE "SURGICALLY" APPLIED PER SPECIFIC PLAN

Applied Exercise #1

Long Term Planning Scenarios



Future Scenarios

- Is this enough information to understand the major variables for long-term planning of process facilities at the Gold Bar WWTP?

I THINK IT WOULD BE MORE RELEVANT IF SCENARIOS WERE MORE SPECIFIC. I DON'T BELIEVE A SINGLE PROCESS ~~WAS~~ IS A MODEL FOR ALL DIFFERENT SCENARIOS.

- Our long-term plan is to:
 - rehabilitate existing infrastructure,
 - keep all process facilities inside the fence line; and
 - use membrane technology to remove nutrients as they become more concentrated.

- How well does this approach fit with the design principles you selected?

I THINK I WOULD DO EACH ONE SEPARATELY AND HAVE DESIGN PRINCIPLES FOR EACH.

Public Engagement

- EPCOR plans public engagement to refine and finalize the Integrated Resource Plan for the Gold Bar WWTP.
 - What public engagement tactics do you recommend we use to involve neighbours and other stakeholders?

I NEED TO UNDERSTAND THE IRP BETTER BEFORE ANSWERING THIS.

- What information do you recommend be shared with stakeholders?

THINGS WE NEED TO KNOW ABOUT UPCOMING WORK THAT AFFECTS, INFORMATION ON THINGS YOU WISH US TO PROVIDE FEEDBACK ON, INFORMATION ON HOW

Name (Optional):

TO APPROPRIATELY ENGAGE WITH EPCOR WHEN WE FEEL IT IS APPROPRIATE FOR US TO PROVIDE INFO OR WHEN YOU FEEL IT WOULD BE BEST FOR US TO PROVIDE INFORMATION TO YOU WHEN YOU BELIEVE OUR INPUT WOULD BE BENEFICIAL.

Applied Exercise #1

Long Term Planning Scenarios



Shared Outcomes - Design Principles

Design Principles	Core Objectives	Design Principles	Execution Principles
Quality of Life			
Accelerate odour reduction		✓	
Remain within the existing fenceline		✓	
Prevent increases to odour & noise		✓	
Restore disturbed vegetation		✓	
Mitigate temporary impacts			✓
Safety			
Continuously improve safety	✓		
Ensure safe movement on-site	✓		
Improve worker hygiene and safety	✓		
Protect public safety from site-related traffic	✓		
Relationship			
Communicate openly	✓		
Align operating protocols	✓		
Engage regularly	✓		
Share options and optimize designs		✓	
Environment			
Continuously improve environmental performance		✓	
Reduce environmental impacts		✓	
Increase resiliency		✓	
Engage employees and stakeholders		✓	
Reliable, Responsible, Sustainable			
Continuously maintain reliable operations		✓	
Plan for a range of scenarios	✓		
Prudently manage impacts to ratepayers			✓

- **Core objectives** – Criteria that must be met for long term planning success
- **Design principles** – Additional criteria that are used to evaluate scenarios
- **Execution principles** – Criteria that guide how a project is created and executed (but which don't affect the choice between options)

Select the Design Principles

- What criteria would you use to evaluate different long term plan scenarios for the Gold Bar WWTP (put **X**'s in the appropriate spaces above)?
- Would you add or subtract any of the criteria EPCOR proposes to use?

no

Applied Exercise #1

Long Term Planning Scenarios



Future Scenarios

- Is this enough information to understand the major variables for long-term planning of process facilities at the Gold Bar WWTP?

yes, but I think that is likely only due to my own background.

- Our long-term plan is to:
 - rehabilitate existing infrastructure,
 - keep all process facilities inside the fence line; and
 - use membrane technology to remove nutrients as they become more concentrated.

- How well does this approach fit with the design principles you selected?

prove/test in Gold Bar context first + membrane technology likely to be more energy intensive than existing gravity settlement

Public Engagement

- EPCOR plans public engagement to refine and finalize the Integrated Resource Plan for the Gold Bar WWTP.
 - What public engagement tactics do you recommend we use to involve neighbours and other stakeholders?

- engage early in planning process, and obtain feedback throughout.

- What information do you recommend be shared with stakeholders?

None

Applied Exercise #1

Long Term Planning Scenarios



Shared Outcomes - Design Principles

Design Principles	Core Objectives	Design Principles	Execution Principles
Quality of Life			
Accelerate odour reduction	X		
Remain within the existing fenceline	X		
Prevent increases to odour & noise	X		
Restore disturbed vegetation	X		
Mitigate temporary impacts	X		
Safety			
Continuously improve safety	X		
Ensure safe movement on-site	X		
Improve worker hygiene and safety	X		
Protect public safety from site-related traffic	X		
Relationship			
Communicate openly	X		
Align operating protocols	X		
Engage regularly	X		
Share options and optimize designs	X		
Environment			
Continuously improve environmental performance	X		
Reduce environmental impacts	X		
Increase resiliency	X		
Engage employees and stakeholders	X		
Reliable, Responsible, Sustainable			
Continuously maintain reliable operations	X		
Plan for a range of scenarios	X		
Prudently manage impacts to ratepayers	X		

- **Core objectives** – Criteria that must be met for long term planning success
- **Design principles** – Additional criteria that are used to evaluate scenarios
- **Execution principles** – Criteria that guide how a project is created and executed (but which don't affect the choice between options)

Select the Design Principles

- What criteria would you use to evaluate different long term plan scenarios for the Gold Bar WWTP (put **X**'s in the appropriate spaces above)?
 - Would you add or subtract any of the criteria EPCOR proposes to use?
-

Applied Exercise #1

Long Term Planning Scenarios



Future Scenarios

- Is this enough information to understand the major variables for long-term planning of process facilities at the Gold Bar WWTP?

- Our long-term plan is to:
 - rehabilitate existing infrastructure,
 - keep all process facilities inside the fenceline; and
 - use membrane technology to remove nutrients as they become more concentrated.

- How well does this approach fit with the design principles you selected?

Public Engagement

- EPCOR plans public engagement to refine and finalize the Integrated Resource Plan for the Gold Bar WWTP.
 - What public engagement tactics do you recommend we use to involve neighbours and other stakeholders?

- What information do you recommend be shared with stakeholders?

Applied Exercise #2 Safety & Hygiene



Shared Outcomes - Design Principles

Design Principles	Core Objectives	Design Principles	Execution Principles	Option 1	Option 2	Option 3	Option 4
Quality of Life							
Accelerate odour reduction							
Remain within the existing fenceline							X
Prevent increases to odour & noise							
Restore disturbed vegetation							X
Mitigate temporary impacts							X
Safety							
Continuously improve safety							X
Ensure safe movement on-site							X
Improve worker hygiene and safety							X
Protect public safety from site-related traffic							
Relationship							
Communicate openly							
Align operating protocols							
Engage regularly							
Share options and optimize designs							
Environment							
Continuously improve environmental performance							X
Reduce environmental impacts							X
Increase resiliency							X
Engage employees and stakeholders							
Reliable, Responsible, Sustainable							
Continuously maintain reliable operations							
Plan for a range of scenarios							
Prudently manage impacts to ratepayers							

- **Core objectives** – Criteria that must be met for long term planning success
- **Design principles** – Additional criteria that are used to evaluate scenarios
- **Execution principles** – Criteria that guide how a project is created and executed (but which don't affect the choice between options)

Applied Exercise #2 Safety & Hygiene



Select the Design Principles

- Which criteria would you use to evaluate the options (put **X**'s in the appropriate spaces above)?
 - Would you add or subtract any of the criteria EPCOR proposes to use?
-

Current State and Desired Future State

- Is this enough information to understand the planning context?
 - What other information would be useful to you or other stakeholders?
-
-

Options Discussion

- How would you rank the options against the criteria we are trying to meet?
 - Does one or more of the options stand out as the best way to meet the goal?
 - For EPCOR's recommended option, how well have the design principles been applied?
 - What improvements could be made to better live up to the design principles?
-
-
-

Public Engagement

- Was this enough information to understand and evaluate the options? What else would be useful?
 - What information do you recommend be shared with the community?
 - EPCOR plans public engagement to refine and finalize the proposal.
 - What public engagement tactics do you recommend we use to involve neighbours and other stakeholders?
-

Door to door conversations

Name (Optional): _____

Applied Exercise #2 Safety & Hygiene



Shared Outcomes - Design Principles

Design Principles	Core Objectives	Design Principles	Execution Principles	Option 1	Option 2	Option 3	Option 4
Quality of Life							
Accelerate odour reduction			X				
Remain within the existing fenceline	X						
Prevent increases to odour & noise		X					
Restore disturbed vegetation		X					
Mitigate temporary impacts			X				
Safety							
Continuously improve safety	X						
Ensure safe movement on-site	X						
Improve worker hygiene and safety	X						
Protect public safety from site-related traffic	X						
Relationship							
Communicate openly			X				
Align operating protocols			X				
Engage regularly			X				
Share options and optimize designs			X				
Environment							
Continuously improve environmental performance		X					
Reduce environmental impacts	X						
Increase resiliency			X				
Engage employees and stakeholders		X					
Reliable, Responsible, Sustainable							
Continuously maintain reliable operations			X				
Plan for a range of scenarios		X					
Prudently manage impacts to ratepayers							

- **Core objectives** – Criteria that must be met for long term planning success
- **Design principles** – Additional criteria that are used to evaluate scenarios
- **Execution principles** – Criteria that guide how a project is created and executed (but which don't affect the choice between options)

Applied Exercise #2 Safety & Hygiene



Select the Design Principles

- Which criteria would you use to evaluate the options (put **X**'s in the appropriate spaces above)?
- Would you add or subtract any of the criteria EPCOR proposes to use? - *see cross-out principles on other sheet*

Current State and Desired Future State

- Is this enough information to understand the planning context?
don't know
- What other information would be useful to you or other stakeholders?
don't know

Options Discussion

- How would you rank the options against the criteria we are trying to meet?
Best to worse: 4, 3, 2, 1
- Does one or more of the options stand out as the best way to meet the goal?
Option 4 is best ONLY if Goldbar Park road is not used for access
- For EPCOR's recommended option, how well have the design principles been applied?
not well - use of Goldbar Park road as main roadway to & from parking
- What improvements could be made to better live up to the design principles?
encourage car-pooling, use of transit

Public Engagement

- Was this enough information to understand and evaluate the options? What else would be useful?
Yes
- What information do you recommend be shared with the community?
- EPCOR plans public engagement to refine and finalize the proposal.
 - What public engagement tactics do you recommend we use to involve neighbours and other stakeholders?
another workshop to fine tune design

Name (Optional): _____

Applied Exercise #2 Safety & Hygiene

Shared Outcomes - Design Principles

Design Principles	Core Objectives	Design Principles	Execution Principles	Option 1	Option 2	Option 3	Option 4
Quality of Life							
Accelerate odour reduction	X						
Remain within the existing fenceline							
Prevent increases to odour & noise	X						
Restore disturbed vegetation							
Mitigate temporary impacts							
Safety							
Continuously improve safety	X						
Ensure safe movement on-site	Y						
Improve worker hygiene and safety	X						
Protect public safety from site-related traffic	X						
Relationship							
Communicate openly			X				
Align operating protocols			X				
Engage regularly			Y				
Share options and optimize designs			X				
Environment							
Continuously improve environmental performance							
Reduce environmental impacts							
Increase resiliency							
Engage employees and stakeholders							
Reliable, Responsible, Sustainable							
Continuously maintain reliable operations							
Plan for a range of scenarios							
Prudently manage impacts to ratepayers							

- **Core objectives** – Criteria that must be met for long term planning success
- **Design principles** – Additional criteria that are used to evaluate scenarios
- **Execution principles** – Criteria that guide how a project is created and executed (but which don't affect the choice between options)

Applied Exercise #2 Safety & Hygiene



Select the Design Principles

- Which criteria would you use to evaluate the options (put **X**'s in the appropriate spaces above)?
 - Would you add or subtract any of the criteria EPCOR proposes to use?
-

Current State and Desired Future State

- Is this enough information to understand the planning context?
 - What other information would be useful to you or other stakeholders?
-
-

Options Discussion

- How would you rank the options against the criteria we are trying to meet?
 - Does one or more of the options stand out as the best way to meet the goal?
 - For EPCOR's recommended option, how well have the design principles been applied?
 - What improvements could be made to better live up to the design principles?
-
-
-

Public Engagement

- Was this enough information to understand and evaluate the options? What else would be useful?
 - What information do you recommend be shared with the community?
 - EPCOR plans public engagement to refine and finalize the proposal.
 - What public engagement tactics do you recommend we use to involve neighbours and other stakeholders?
-
-

Name (Optional): _____

Applied Exercise #2 Safety & Hygiene



Shared Outcomes - Design Principles

EPCOR can solve Parking Issues w/o expanding Parking.

Design Principles	Core Objectives	Design Principles	Execution Principles	Option 1	Option 2	Option 3	Option 4
Quality of Life							
Accelerate odour reduction							
Remain within the existing fenceline	X						
Prevent increases to odour & noise							
Restore disturbed vegetation							
Mitigate temporary impacts							
Safety							
Continuously improve safety	X						
Ensure safe movement on-site	X						
Improve worker hygiene and safety	X						
Protect public safety from site-related traffic	X						
Relationship							
Communicate openly							
Align operating protocols							
Engage regularly							
Share options and optimize designs							
Environment							
Continuously improve environmental performance							
Reduce environmental impacts	X						
Increase resiliency							
Engage employees and stakeholders							
Reliable, Responsible, Sustainable							
Continuously maintain reliable operations							
Plan for a range of scenarios							
Prudently manage impacts to ratepayers							

*incentivize carpooling
 5 a day off/free coffee
 - charge for parking
 - use your corp. creativity to solve this problem.*

- **Core objectives** – Criteria that must be met for long term planning success
- **Design principles** – Additional criteria that are used to evaluate scenarios
- **Execution principles** – Criteria that guide how a project is created and executed (but which don't affect the choice between options)

Applied Exercise #2 Safety & Hygiene



Select the Design Principles

- Which criteria would you use to evaluate the options (put **X**'s in the appropriate spaces above)?
 - Would you add or subtract any of the criteria EPCOR proposes to use?
-

Current State and Desired Future State

- Is this enough information to understand the planning context?
 - What other information would be useful to you or other stakeholders?
-

Options Discussion

- How would you rank the options against the criteria we are trying to meet?
 - Does one or more of the options stand out as the best way to meet the goal?
 - For EPCOR's recommended option, how well have the design principles been applied?
 - What improvements could be made to better live up to the design principles?
-

Public Engagement

- Was this enough information to understand and evaluate the options? What else would be useful?
 - What information do you recommend be shared with the community?
 - EPCOR plans public engagement to refine and finalize the proposal.
 - What public engagement tactics do you recommend we use to involve neighbours and other stakeholders?
-

Name (Optional): _____

Applied Exercise #2 Safety & Hygiene



Shared Outcomes - Design Principles

Design Principles	Core Objectives	Design Principles	Execution Principles	Option 1	Option 2	Option 3	Option 4
Quality of Life							
Accelerate odour reduction		X		-N/A-	-N/A-	-N/A-	-N/A-
Remain within the existing fenceline	X			4TH	2ND	3RD	1ST
Prevent increases to odour & noise			X	-N/A-	-N/A-	-N/A-	-N/A-
Restore disturbed vegetation			X			4TH	1ST
Mitigate temporary impacts			X				
Safety							
Continuously improve safety	X			← SAME →			
Ensure safe movement on-site	X						
Improve worker hygiene and safety	X						
Protect public safety from site-related traffic	X						
Relationship							
Communicate openly			X				
Align operating protocols			X				
Engage regularly		X					
Share options and optimize designs		X					
Environment							
Continuously improve environmental performance	X						
Reduce environmental impacts	X	X					
Increase resiliency		X					
Engage employees and stakeholders		X					
Reliable, Responsible, Sustainable							
Continuously maintain reliable operations	X			← SAME →			
Plan for a range of scenarios	X						
Prudently manage impacts to ratepayers	X						

- **Core objectives** – Criteria that must be met for long term planning success
- **Design principles** – Additional criteria that are used to evaluate scenarios
- **Execution principles** – Criteria that guide how a project is created and executed (but which don't affect the choice between options)

Applied Exercise #2 Safety & Hygiene



Select the Design Principles

- Which criteria would you use to evaluate the options (put **X**'s in the appropriate spaces above)?
 - Would you add or subtract any of the criteria EPCOR proposes to use?
-

Current State and Desired Future State

- Is this enough information to understand the planning context?
 - What other information would be useful to you or other stakeholders?
-
-

Options Discussion

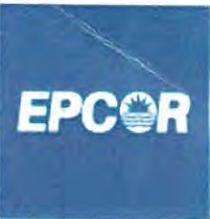
- How would you rank the options against the criteria we are trying to meet?
 - Does one or more of the options stand out as the best way to meet the goal?
 - For EPCOR's recommended option, how well have the design principles been applied?
 - What improvements could be made to better live up to the design principles?
-
-
-
-

Public Engagement

- Was this enough information to understand and evaluate the options? What else would be useful?
 - What information do you recommend be shared with the community?
 - EPCOR plans public engagement to refine and finalize the proposal.
 - What public engagement tactics do you recommend we use to involve neighbours and other stakeholders?
-
-

Name (Optional): _____

Applied Exercise #2 Safety & Hygiene



Shared Outcomes - Design Principles

Design Principles	Core Objectives	Design Principles	Execution Principles	Option 1	Option 2	Option 3	Option 4
Quality of Life							
Accelerate odour reduction		X		=	=	=	=
Remain within the existing fenceline	X			4	3	2	1
Prevent increases to odour & noise		X		=	=	=	=
Restore disturbed vegetation		X		=	=	=	4
Mitigate temporary impacts			X	=	=	=	=
Safety							
Continuously improve safety		X		=	=	=	4
Ensure safe movement on-site	X			=	=	=	4
Improve worker hygiene and safety	X			=	=	=	=
Protect public safety from site-related traffic		X					
Relationship							
Communicate openly	X			4	3	2	1
Align operating protocols			X				
Engage regularly	X			=	=	=	=
Share options and optimize designs	X			=	=	=	=
Environment							
Continuously improve environmental performance		X					
Reduce environmental impacts		X					
Increase resiliency		X					
Engage employees and stakeholders	X			=	=	=	=
Reliable, Responsible, Sustainable							
Continuously maintain reliable operations	X			=	=	=	=
Plan for a range of scenarios	X			=	=	=	=
Prudently manage impacts to ratepayers	X			=	=	=	=

- **Core objectives** – Criteria that must be met for long term planning success
- **Design principles** – Additional criteria that are used to evaluate scenarios
- **Execution principles** – Criteria that guide how a project is created and executed (but which don't affect the choice between options)

= means eqvs!

Applied Exercise #2 Safety & Hygiene



Select the Design Principles

- Which criteria would you use to evaluate the options (put **X**'s in the appropriate spaces above)?
 - Would you add or subtract any of the criteria EPCOR proposes to use?
-

Current State and Desired Future State

- Is this enough information to understand the planning context?

no

- What other information would be useful to you or other stakeholders?

* Height and Appearance of proposed buildings. Loss of trees (how many). What will be done with land freed up by abandonment/destruction of existing building. What is long term plan for site?

Options Discussion

- How would you rank the options against the criteria we are trying to meet?
-

- Does one or more of the options stand out as the best way to meet the goal?
-

- For EPCOR's recommended option, how well have the design principles been applied?

Can't be determined until more information is provided see above*

- What improvements could be made to better live up to the design principles?
-

Public Engagement

- Was this enough information to understand and evaluate the options? What else would be useful?

* see above.

- What information do you recommend be shared with the community?

* see above

- EPCOR plans public engagement to refine and finalize the proposal.

- What public engagement tactics do you recommend we use to involve neighbours and other stakeholders?

multi-channel. open house, scale models, internet i-to/portal.

Applied Exercise #2 Safety & Hygiene

Shared Outcomes - Design Principles

Design Principles	Core Objectives	Design Principles	Execution Principles	Option 1	Option 2	Option 3	Option 4
Quality of Life							
Accelerate odour reduction	✓						
Remain within the existing fenceline	✓						
Prevent increases to odour & noise	✓						
Restore disturbed vegetation		✓					
Mitigate temporary impacts			✓				
Safety							
Continuously improve safety							
Ensure safe movement on-site							
Improve worker hygiene and safety							
Protect public safety from site-related traffic	✓						
Relationship							
Communicate openly	✓						
Align operating protocols							
Engage regularly							
Share options and optimize designs	✓						
Environment							
Continuously improve environmental performance	✓						
Reduce environmental impacts	✓						
Increase resiliency							
Engage employees and stakeholders	✓						
Reliable, Responsible, Sustainable							
Continuously maintain reliable operations	✓						
Plan for a range of scenarios	✓						
Prudently manage impacts to ratepayers	✓						

- **Core objectives** – Criteria that must be met for long term planning success
- **Design principles** – Additional criteria that are used to evaluate scenarios
- **Execution principles** – Criteria that guide how a project is created and executed (but which don't affect the choice between options)

Applied Exercise #2 Safety & Hygiene



Select the Design Principles

- Which criteria would you use to evaluate the options (put **X**'s in the appropriate spaces above)?
 - Would you add or subtract any of the criteria EPCOR proposes to use?
-

Current State and Desired Future State

- Is this enough information to understand the planning context?
 - What other information would be useful to you or other stakeholders?
-

Options Discussion

- How would you rank the options against the criteria we are trying to meet?
 - Does one or more of the options stand out as the best way to meet the goal?
 - For EPCOR's recommended option, how well have the design principles been applied?
 - What improvements could be made to better live up to the design principles?
-

Public Engagement

- Was this enough information to understand and evaluate the options? What else would be useful?
 - What information do you recommend be shared with the community?
 - EPCOR plans public engagement to refine and finalize the proposal.
 - What public engagement tactics do you recommend we use to involve neighbours and other stakeholders?
-

Name (Optional): _____

Applied Exercise #2 Safety & Hygiene



Shared Outcomes - Design Principles

Design Principles	Core Objectives	Design Principles	Execution Principles	Option 1	Option 2	Option 3	Option 4
Quality of Life							
Accelerate odour reduction		✓		NA	NA	NA	NA
Remain within the existing fenceline	✓			4	3	4	1
Prevent increases to odour & noise		✓					
Restore disturbed vegetation		✓					
Mitigate temporary impacts		✓	✓				
Safety							
Continuously improve safety	✓						1
Ensure safe movement on-site	✓						1
Improve worker hygiene and safety	✓			1	1	1	1
Protect public safety from site-related traffic		✓	✓	2	2	2	1
Relationship							
Communicate openly							
Align operating protocols	W						
Engage regularly		✓	✓				
Share options and optimize designs		✓					
Environment							
Continuously improve environmental performance		✓					
Reduce environmental impacts		✓	✓				
Increase resiliency		✓	✓				
Engage employees and stakeholders	✓	✓	✓				
Reliable, Responsible, Sustainable							
Continuously maintain reliable operations		✓					
Plan for a range of scenarios		W					
Prudently manage impacts to ratepayers		✓					

- **Core objectives** – Criteria that must be met for long term planning success
- **Design principles** – Additional criteria that are used to evaluate scenarios
- **Execution principles** – Criteria that guide how a project is created and executed (but which don't affect the choice between options)

Applied Exercise #2 Safety & Hygiene



Select the Design Principles

- Which criteria would you use to evaluate the options (put **X**'s in the appropriate spaces above)?
 - Would you add or subtract any of the criteria EPCOR proposes to use?
-

Current State and Desired Future State

- Is this enough information to understand the planning context?
- What other information would be useful to you or other stakeholders?

yes.
clear information out

Options Discussion

- How would you rank the options against the criteria we are trying to meet?
 - Does one or more of the options stand out as the best way to meet the goal?
 - For EPCOR's recommended option, how well have the design principles been applied?
 - What improvements could be made to better live up to the design principles?
-

Public Engagement

- Was this enough information to understand and evaluate the options? What else would be useful?
 - What information do you recommend be shared with the community?
 - EPCOR plans public engagement to refine and finalize the proposal.
 - What public engagement tactics do you recommend we use to involve neighbours and other stakeholders?
-

Name (Optional): _____

Applied Exercise #2 Safety & Hygiene



Shared Outcomes - Design Principles

Design Principles	Core Objectives	Design Principles	Execution Principles	Option 1	Option 2	Option 3	Option 4
Quality of Life							
Accelerate odour reduction		✓	✓				
Remain within the existing fenceline		✓					1
Prevent increases to odour & noise			✓				
Restore disturbed vegetation			✓				
Mitigate temporary impacts			✓				
Safety							
Continuously improve safety	✓						
Ensure safe movement on-site	✓			1			
Improve worker hygiene and safety	✓						
Protect public safety from site-related traffic	✓						1
Relationship							
Communicate openly	✓						
Align operating protocols	✓						
Engage regularly	✓						
Share options and optimize designs	✓						
Environment							
Continuously improve environmental performance			✓				
Reduce environmental impacts			✓				
Increase resiliency			✓				
Engage employees and stakeholders			✓				
Reliable, Responsible, Sustainable							
Continuously maintain reliable operations			✓				
Plan for a range of scenarios			✓				
Prudently manage impacts to ratepayers			✓				

- **Core objectives** – Criteria that must be met for long term planning success
- **Design principles** – Additional criteria that are used to evaluate scenarios
- **Execution principles** – Criteria that guide how a project is created and executed (but which don't affect the choice between options)

blank = n/a

Applied Exercise #2 Safety & Hygiene



Select the Design Principles

- Which criteria would you use to evaluate the options (put **X**'s in the appropriate spaces above)?
- Would you add or subtract any of the criteria EPCOR proposes to use?

no

Current State and Desired Future State

- Is this enough information to understand the planning context?

yes

- What other information would be useful to you or other stakeholders?

none - pretty clear which option would appeal most to residents

Options Discussion

- How would you rank the options against the criteria we are trying to meet?
- Does one or more of the options stand out as the best way to meet the goal?
- For EPCOR's recommended option, how well have the design principles been applied?
- What improvements could be made to better live up to the design principles?

as per previous page.

Public Engagement

- Was this enough information to understand and evaluate the options? What else would be useful?

- What information do you recommend be shared with the community?

yes - process of getting to this stage.

- EPCOR plans public engagement to refine and finalize the proposal.

- What public engagement tactics do you recommend we use to involve neighbours and other stakeholders?

offer to explain process and results to all surrounding communities

Applied Exercise #2 Safety & Hygiene



Shared Outcomes - Design Principles

Design Principles	Core Objectives	Design Principles	Execution Principles	Option 1	Option 2	Option 3	Option 4
Quality of Life							
Accelerate odour reduction	X						
Remain within the existing fenceline		X					
Prevent increases to odour & noise	X						
Restore disturbed vegetation	X						
Mitigate temporary impacts	X						
Safety							
Continuously improve safety							
Ensure safe movement on-site							
Improve worker hygiene and safety							
Protect public safety from site-related traffic							
Relationship							
Communicate openly							
Align operating protocols							
Engage regularly							
Share options and optimize designs							
Environment							
Continuously improve environmental performance							
Reduce environmental impacts							
Increase resiliency							
Engage employees and stakeholders							
Reliable, Responsible, Sustainable							
Continuously maintain reliable operations							
Plan for a range of scenarios							
Prudently manage impacts to ratepayers							

- **Core objectives** – Criteria that must be met for long term planning success
- **Design principles** – Additional criteria that are used to evaluate scenarios
- **Execution principles** – Criteria that guide how a project is created and executed (but which don't affect the choice between options)

Applied Exercise #2 Safety & Hygiene



Select the Design Principles

- Which criteria would you use to evaluate the options (put **X**'s in the appropriate spaces above)?
 - Would you add or subtract any of the criteria EPCOR proposes to use?
-

Current State and Desired Future State

- Is this enough information to understand the planning context?
Yes
 - What other information would be useful to you or other stakeholders?
-

Options Discussion

- How would you rank the options against the criteria we are trying to meet?
OPTION 3
 - Does one or more of the options stand out as the best way to meet the goal?
OPTION 3
 - For EPCOR's recommended option, how well have the design principles been applied?
It addresses safety parking on site, and extra traffic on Gold Bar Rd.
 - What improvements could be made to better live up to the design principles?
-

Public Engagement

- Was this enough information to understand and evaluate the options? What else would be useful?
Yes
 - What information do you recommend be shared with the community?
 - EPCOR plans public engagement to refine and finalize the proposal.
 - What public engagement tactics do you recommend we use to involve neighbours and other stakeholders?
-

Name (Optional): _____

Very opposed to options 1, 2, & 3

→ We do not need to erode the public park systems to solve parking issues.



Applied Exercise #2 Safety & Hygiene

Parking & driving is a privilege. It is not a right. I am not willing to vote on something that ~~erodes~~ ^{clocks} our city's asset to make parking convenient

Shared Outcomes - Design Principles

Design Principles	Core Objectives	Design Principles	Execution Principles	Option 1	Option 2	Option 3	<u>Option 4</u>
Quality of Life							
Accelerate odour reduction							
Remain within the existing fenceline	X						X
Prevent increases to odour & noise							
Restore disturbed vegetation							
Mitigate temporary impacts							
Safety							
Continuously improve safety							
Ensure safe movement on-site							
Improve worker hygiene and safety							
Protect public safety from site-related traffic	X						
Relationship							
Communicate openly							
Align operating protocols							
Engage regularly							
Share options and optimize designs	X						
Environment							
Continuously improve environmental performance							
Reduce environmental impacts							
Increase resiliency							
Engage employees and stakeholders							
Reliable, Responsible, Sustainable							
Continuously maintain reliable operations							
Plan for a range of scenarios							
Prudently manage impacts to ratepayers							

- **Core objectives** – Criteria that must be met for long term planning success
- **Design principles** – Additional criteria that are used to evaluate scenarios
- **Execution principles** – Criteria that guide how a project is created and executed (but which don't affect the choice between options)

Applied Exercise #2 Safety & Hygiene



Select the Design Principles

- Which criteria would you use to evaluate the options (put **X**'s in the appropriate spaces above)?
 - Would you add or subtract any of the criteria EPCOR proposes to use?
-

Current State and Desired Future State

- Is this enough information to understand the planning context?
-

- What other information would be useful to you or other stakeholders?
-

Options Discussion

- How would you rank the options against the criteria we are trying to meet?
-

- Does one or more of the options stand out as the best way to meet the goal?
-

- For EPCOR's recommended option, how well have the design principles been applied?
-

- What improvements could be made to better live up to the design principles?
-

Public Engagement

- Was this enough information to understand and evaluate the options? What else would be useful?
-

- What information do you recommend be shared with the community?
-

- EPCOR plans public engagement to refine and finalize the proposal.

- What public engagement tactics do you recommend we use to involve neighbours and other stakeholders?
-

Name (Optional): _____

Applied Exercise #2 Safety & Hygiene



Shared Outcomes - Design Principles

Design Principles	Core Objectives	Design Principles	Execution Principles	Option 1	Option 2	Option 3	Option 4
Quality of Life							
Accelerate odour reduction							
Remain within the existing fenceline	✓						X
Prevent increases to odour & noise	X						X
Restore disturbed vegetation	X						X
Mitigate temporary impacts	X						X
Safety							
Continuously improve safety	X						X
Ensure safe movement on-site	X						X
Improve worker hygiene and safety	X						X
Protect public safety from site-related traffic	X						X
Relationship							
Communicate openly	✓						X
Align operating protocols							
Engage regularly	X						X
Share options and optimize designs							X
Environment							
Continuously improve environmental performance	X						X
Reduce environmental impacts	X						X
Increase resiliency							X
Engage employees and stakeholders							X
Reliable, Responsible, Sustainable							
Continuously maintain reliable operations	X						X
Plan for a range of scenarios							
Prudently manage impacts to ratepayers							

- **Core objectives** – Criteria that must be met for long term planning success
- **Design principles** – Additional criteria that are used to evaluate scenarios
- **Execution principles** – Criteria that guide how a project is created and executed (but which don't affect the choice between options)

Applied Exercise #2 Safety & Hygiene



Select the Design Principles

- Which criteria would you use to evaluate the options (put **X**'s in the appropriate spaces above)?
 - Would you add or subtract any of the criteria EPCOR proposes to use?
-

Current State and Desired Future State

- Is this enough information to understand the planning context?
 - What other information would be useful to you or other stakeholders?
-

Options Discussion

- How would you rank the options against the criteria we are trying to meet?

(1) 4 (2) 3 (3) 1 (4) 2

- Does one or more of the options stand out as the best way to meet the goal?

Option 4 with traffic routed to parking inside plant.

- For EPCOR's recommended option, how well have the design principles been applied?
-

- What improvements could be made to better live up to the design principles?
-

Public Engagement

- Was this enough information to understand and evaluate the options? What else would be useful?
-

- What information do you recommend be shared with the community?
-

- EPCOR plans public engagement to refine and finalize the proposal.

- What public engagement tactics do you recommend we use to involve neighbours and other stakeholders?
-

Name (Optional): _____

Applied Exercise #2 Safety & Hygiene

Shared Outcomes - Design Principles

Design Principles	Core Objectives	Design Principles	Execution Principles	Option 1	Option 2	Option 3	Option 4
Quality of Life							
Accelerate odour reduction		N/A					
Remain within the existing fenceline		x		4	2	2	1
Prevent increases to odour & noise		N/A					
Restore disturbed vegetation		x					
Mitigate temporary impacts		x					
Safety							
Continuously improve safety	x			equal			
Ensure safe movement on-site	x			1	2	2	4
Improve worker hygiene and safety	x			equal			
Protect public safety from site-related traffic	x	x		1	2	2	4
Relationship							
Communicate openly			x	equal			
Align operating protocols		x	x	equal			
Engage regularly			x	equal			
Share options and optimize designs		x					
Environment							
Continuously improve environmental performance		N/A					
Reduce environmental impacts		x					1
Increase resiliency		2, not reduce		2	2	2	4
Engage employees and stakeholders		x			2		1
Reliable, Responsible, Sustainable							
Continuously maintain reliable operations		x		equal			
Plan for a range of scenarios		x					4
Prudently manage impacts to ratepayers		x		2	3	3	1

- **Core objectives** – Criteria that must be met for long term planning success
- **Design principles** – Additional criteria that are used to evaluate scenarios
- **Execution principles** – Criteria that guide how a project is created and executed (but which don't affect the choice between options)

Stakeholders

~~4~~
1

Applied Exercise #2 Safety & Hygiene



Select the Design Principles

- Which criteria would you use to evaluate the options (put **X**'s in the appropriate spaces above)?
- Would you add or subtract any of the criteria EPCOR proposes to use?

Share & optimize designs to design principles

Current State and Desired Future State

- Is this enough information to understand the planning context?

not sure how we plan for a range of scenerios is covered.

- What other information would be useful to you or other stakeholders?

some seasonal info on peak parking

Options Discussion

- How would you rank the options against the criteria we are trying to meet?

- Does one or more of the options stand out as the best way to meet the goal?

- For EPCOR's recommended option, how well have the design principles been applied?

well really need to think about on site traffic.

- What improvements could be made to better live up to the design principles?

Public Engagement

- Was this enough information to understand and evaluate the options? What else would be useful?

yes except peak parking info

- What information do you recommend be shared with the community?

Good to share evolution of design due to community involvement

- EPCOR plans public engagement to refine and finalize the proposal.

- What public engagement tactics do you recommend we use to involve neighbours and other stakeholders?

open house, website

Applied Exercise #3 Odour Control Action Plan

Shared Outcomes - Design Principles

Implement +/- out impacting trees or recreation
 Spaces like X-country skiing, mountain bike trails
 On the South east side to monitor more than this

Design Principles	Core Objectives	Design Principles	Execution Principles
Quality of Life			
Accelerate odour reduction			
Remain within the existing fenceline			
Prevent increases to odour & noise	X		
Restore disturbed vegetation			
Mitigate temporary impacts			
Safety			
Continuously improve safety			
Ensure safe movement on-site			
Improve worker hygiene and safety			
Protect public safety from site-related traffic			
Relationship			
Communicate openly			
Align operating protocols			
Engage regularly			
Share options and optimize designs	X		
Environment			
Continuously improve environmental performance			
Reduce environmental impacts	X		
Increase resiliency			
Engage employees and stakeholders	X		
Reliable, Responsible, Sustainable			
Continuously maintain reliable operations			
Plan for a range of scenarios			
Prudently manage impacts to ratepayers		X	

- **Core objectives** – Criteria that must be met for long term planning success
- **Design principles** – Additional criteria that are used to evaluate scenarios
- **Execution principles** – Criteria that guide how a project is created and executed (but which don't affect the choice between options)

Applied Exercise #3

Odour Control Action Plan



Select the Design Principles

- What criteria would you use to evaluate an odour reduction plan (put **X**'s in the appropriate spaces above)?
- Would you add or subtract any of the criteria EPCOR proposes to use?

Current State & Desired Future State

- Is this enough information to understand the context for an odour reduction plan?
- How well does the desired future state describe what you would like to see?

Odour Control Action Plan

- Where would you site an additional air monitoring station?
- Do you support adding new requirements related to odour control equipment, monitoring of air quality, and the management of air quality to the Gold Bar operating permit?
- What advice do you have about how monitoring data should be shared, and what is needed to make the data useful for the public and park users?

Public Engagement

- Alberta Environment & Parks controls the process for operating approvals, including publishing public notices about amendments.
 - How would you like EPCOR to share information and reporting if Alberta Environment & Parks amends the Gold Bar operating approval?

Name (Optional): _____

Applied Exercise #3 Odour Control Action Plan

Shared Outcomes - Design Principles

Design Principles	Core Objectives	Design Principles	Execution Principles
Quality of Life			
Accelerate odour reduction	X		X
Remain within the existing fenceline	X		
Prevent increases to odour & noise	X		X
Restore disturbed vegetation	X		
Mitigate temporary impacts	X		
Safety			
Continuously improve safety	X	X	X
Ensure safe movement on-site	X		
Improve worker hygiene and safety			
Protect public safety from site-related traffic			
Relationship			
Communicate openly	X		
Align operating protocols			
Engage regularly	X		
Share options and optimize designs	X		
Environment			
Continuously improve environmental performance	X		
Reduce environmental impacts	X		
Increase resiliency			
Engage employees and stakeholders	X		
Reliable, Responsible, Sustainable			
Continuously maintain reliable operations	X		
Plan for a range of scenarios			
Prudently manage impacts to ratepayers			

- **Core objectives** – Criteria that must be met for long term planning success
- **Design principles** – Additional criteria that are used to evaluate scenarios
- **Execution principles** – Criteria that guide how a project is created and executed (but which don't affect the choice between options)

Applied Exercise #3

Odour Control Action Plan



Select the Design Principles

- What criteria would you use to evaluate an odour reduction plan (put **X**'s in the appropriate spaces above)?
 - Would you add or subtract any of the criteria EPCOR proposes to use?
-

Current State & Desired Future State

- Is this enough information to understand the context for an odour reduction plan?
 - How well does the desired future state describe what you would like to see?
-
-

Odour Control Action Plan

- Where would you site an additional air monitoring station?
 - Do you support adding new requirements related to odour control equipment, monitoring of air quality, and the management of air quality to the Gold Bar operating permit?
 - What advice do you have about how monitoring data should be shared, and what is needed to make the data useful for the public and park users?
-
-
-

Public Engagement

- Alberta Environment & Parks controls the process for operating approvals, including publishing public notices about amendments.
 - How would you like EPCOR to share information and reporting if Alberta Environment & Parks amends the Gold Bar operating approval?
-
-
-

Name (Optional): _____

Applied Exercise #3 Odour Control Action Plan

Shared Outcomes - Design Principles

Design Principles	Core Objectives	Design Principles	Execution Principles
Quality of Life			
Accelerate odour reduction	X		
Remain within the existing fenceline	X		
Prevent increases to odour & noise	X		
Restore disturbed vegetation			
Mitigate temporary impacts			
Safety			
Continuously improve safety			
Ensure safe movement on-site			
Improve worker hygiene and safety			
Protect public safety from site-related traffic			
Relationship			
Communicate openly			
Align operating protocols			
Engage regularly			
Share options and optimize designs			
Environment			
Continuously improve environmental performance			
Reduce environmental impacts			
Increase resiliency			
Engage employees and stakeholders			
Reliable, Responsible, Sustainable			
Continuously maintain reliable operations			
Plan for a range of scenarios			
Prudently manage impacts to ratepayers			

- **Core objectives** – Criteria that must be met for long term planning success
- **Design principles** – Additional criteria that are used to evaluate scenarios
- **Execution principles** – Criteria that guide how a project is created and executed (but which don't affect the choice between options)

Applied Exercise #3

Odour Control Action Plan



Select the Design Principles

- What criteria would you use to evaluate an odour reduction plan (put **X**'s in the appropriate spaces above)?
- Would you add or subtract any of the criteria EPCOR proposes to use?

Current State & Desired Future State

- Is this enough information to understand the context for an odour reduction plan?
- How well does the desired future state describe what you would like to see?

Odour Control Action Plan

- Where would you site an additional air monitoring station?
- Do you support adding new requirements related to odour control equipment, monitoring of air quality, and the management of air quality to the Gold Bar operating permit?
- What advice do you have about how monitoring data should be shared, and what is needed to make the data useful for the public and park users?

Public Engagement

- Alberta Environment & Parks controls the process for operating approvals, including publishing public notices about amendments.
 - How would you like EPCOR to share information and reporting if Alberta Environment & Parks amends the Gold Bar operating approval?

Name (Optional): _____

Applied Exercise #3 Odour Control Action Plan

Shared Outcomes - Design Principles

Design Principles	Core Objectives	Design Principles	Execution Principles
Quality of Life			
Accelerate odour reduction	x		
Remain within the existing fenceline			
Prevent increases to odour & noise	x		
Restore disturbed vegetation	x		
Mitigate temporary impacts	x		
Safety			
Continuously improve safety			
Ensure safe movement on-site			
Improve worker hygiene and safety			
Protect public safety from site-related traffic			
Relationship			
Communicate openly		x	
Align operating protocols			
Engage regularly			
Share options and optimize designs			
Environment			
Continuously improve environmental performance		x	
Reduce environmental impacts		x	
Increase resiliency			
Engage employees and stakeholders			
Reliable, Responsible, Sustainable			
Continuously maintain reliable operations			
Plan for a range of scenarios			
Prudently manage impacts to ratepayers			

- **Core objectives** – Criteria that must be met for long term planning success
- **Design principles** – Additional criteria that are used to evaluate scenarios
- **Execution principles** – Criteria that guide how a project is created and executed (but which don't affect the choice between options)

Applied Exercise #3

Odour Control Action Plan



Select the Design Principles

- What criteria would you use to evaluate an odour reduction plan (put **X**'s in the appropriate spaces above)?
 - Would you add or subtract any of the criteria EPCOR proposes to use?
-

Current State & Desired Future State

- Is this enough information to understand the context for an odour reduction plan?
 - How well does the desired future state describe what you would like to see?
-
-

Odour Control Action Plan

- Where would you site an additional air monitoring station?
 - Do you support adding new requirements related to odour control equipment, monitoring of air quality, and the management of air quality to the Gold Bar operating permit?
 - What advice do you have about how monitoring data should be shared, and what is needed to make the data useful for the public and park users?
-
-
-

Public Engagement

- Alberta Environment & Parks controls the process for operating approvals, including publishing public notices about amendments.
 - How would you like EPCOR to share information and reporting if Alberta Environment & Parks amends the Gold Bar operating approval?
-
-
-

Name (Optional): _____

Applied Exercise #3 Odour Control Action Plan

Shared Outcomes - Design Principles

Design Principles	Core Objectives	Design Principles	Execution Principles
Quality of Life			
Accelerate odour reduction	X		
Remain within the existing fenceline			
Prevent increases to odour & noise	X		
Restore disturbed vegetation		X	
Mitigate temporary impacts			X
Safety			
Continuously improve safety			
Ensure safe movement on-site			
Improve worker hygiene and safety			
Protect public safety from site-related traffic			
Relationship			
Communicate openly	X		
Align operating protocols			
Engage regularly			
Share options and optimize designs		X	
Environment			
Continuously improve environmental performance	X		
Reduce environmental impacts	X		
Increase resiliency			
Engage employees and stakeholders		X	
Reliable, Responsible, Sustainable			
Continuously maintain reliable operations			X
Plan for a range of scenarios			X
Prudently manage impacts to ratepayers			X

- **Core objectives** – Criteria that must be met for long term planning success
- **Design principles** – Additional criteria that are used to evaluate scenarios
- **Execution principles** – Criteria that guide how a project is created and executed (but which don't affect the choice between options)

Applied Exercise #3

Odour Control Action Plan



Select the Design Principles

- What criteria would you use to evaluate an odour reduction plan (put **X**'s in the appropriate spaces above)?
 - Would you add or subtract any of the criteria EPCOR proposes to use?
-

Current State & Desired Future State

- Is this enough information to understand the context for an odour reduction plan?
 - How well does the desired future state describe what you would like to see?
-
-

Odour Control Action Plan

- Where would you site an additional air monitoring station?
 - Do you support adding new requirements related to odour control equipment, monitoring of air quality, and the management of air quality to the Gold Bar operating permit?
 - What advice do you have about how monitoring data should be shared, and what is needed to make the data useful for the public and park users?
-
-

Public Engagement

- Alberta Environment & Parks controls the process for operating approvals, including publishing public notices about amendments.
 - How would you like EPCOR to share information and reporting if Alberta Environment & Parks amends the Gold Bar operating approval?
-
-
-

Name (Optional): _____

I do not understand the need for an additional monitoring station. Doesn't the 3 fence-line monitors give enough information??

Applied Exercise #3 Odour Control Action Plan

Shared Outcomes - Design Principles

Design Principles	Core Objectives	Design Principles	Execution Principles
Quality of Life			
Accelerate odour reduction	✓		
Remain within the existing fenceline	N/A		
Prevent increases to odour & noise		X	
Restore disturbed vegetation			X
Mitigate temporary impacts			X
Safety			
Continuously improve safety		X	
Ensure safe movement on-site	N/A		
Improve worker hygiene and safety	N/A		
Protect public safety from site-related traffic	N/A		
Relationship			
Communicate openly			X
Align operating protocols		X	
Engage regularly			X
Share options and optimize designs		X	
Environment			
Continuously improve environmental performance	X		
Reduce environmental impacts		X	
Increase resiliency		X	
Engage employees and stakeholders			X
Reliable, Responsible, Sustainable			
Continuously maintain reliable operations		X	
Plan for a range of scenarios		N/A	
Prudently manage impacts to ratepayers		X	

- **Core objectives** – Criteria that must be met for long term planning success
- **Design principles** – Additional criteria that are used to evaluate scenarios
- **Execution principles** – Criteria that guide how a project is created and executed (but which don't affect the choice between options)

Applied Exercise #3

Odour Control Action Plan

Select the Design Principles

- What criteria would you use to evaluate an odour reduction plan (put **X**'s in the appropriate spaces above)?
- Would you add or subtract any of the criteria EPCOR proposes to use?

See above

Current State & Desired Future State

- Is this enough information to understand the context for an odour reduction plan?

need to explain more why H₂S (because trends w/ other "smells" and show data.

- How well does the desired future state describe what you would like to see?

well

Odour Control Action Plan

- Where would you site an additional air monitoring station?

in prevailing air direction (probably SE or SW)

- Do you support adding new requirements related to odour control equipment, monitoring of air quality, and the management of air quality to the Gold Bar operating permit?

yes Continuous monitoring is a good idea will help design odour control better

- What advice do you have about how monitoring data should be shared, and what is needed to make the data useful for the public and park users?

local readout @ station

Public Engagement

- Alberta Environment & Parks controls the process for operating approvals, including publishing public notices about amendments.
 - How would you like EPCOR to share information and reporting if Alberta Environment & Parks amends the Gold Bar operating approval?

pop up in Goldbar park

Applied Exercise #3 Odour Control Action Plan

Shared Outcomes - Design Principles

Design Principles	Core Objectives	Design Principles	Execution Principles
Quality of Life			
Accelerate odour reduction	✓		
Remain within the existing fence line			✓
Prevent increases to odour & noise	✓		
Restore disturbed vegetation			✓
Mitigate temporary impacts			✓
Safety			
Continuously improve safety			✓
Ensure safe movement on-site			✓
Improve worker hygiene and safety		✓	
Protect public safety from site-related traffic			✓
Relationship			
Communicate openly	✓		
Align operating protocols	✓		
Engage regularly	✓		
Share options and optimize designs	✓		
Environment			
Continuously improve environmental performance	✓		
Reduce environmental impacts		✓	
Increase resiliency		✓	
Engage employees and stakeholders		✓	
Reliable, Responsible, Sustainable			
Continuously maintain reliable operations	✓	✓	
Plan for a range of scenarios		✓	
Prudently manage impacts to ratepayers		✓	

- **Core objectives** – Criteria that must be met for long term planning success
- **Design principles** – Additional criteria that are used to evaluate scenarios
- **Execution principles** – Criteria that guide how a project is created and executed (but which don't affect the choice between options)

Applied Exercise #3

Odour Control Action Plan



Select the Design Principles

- What criteria would you use to evaluate an odour reduction plan (put **X**'s in the appropriate spaces above)?
- Would you add or subtract any of the criteria EPCOR proposes to use?

none

Current State & Desired Future State

- Is this enough information to understand the context for an odour reduction plan?

yes

- How well does the desired future state describe what you would like to see?

Odour Control Action Plan

- Where would you site an additional air monitoring station?
- Do you support adding new requirements related to odour control equipment, monitoring of air quality, and the management of air quality to the Gold Bar operating permit?
- What advice do you have about how monitoring data should be shared, and what is needed to make the data useful for the public and park users?

south of plant

yes

LED sign displaying real time H₂S concentrations on fence line

Public Engagement

- Alberta Environment & Parks controls the process for operating approvals, including publishing public notices about amendments.
 - How would you like EPCOR to share information and reporting if Alberta Environment & Parks amends the Gold Bar operating approval?

*— go over and above A/E/P/E/A requirements for approval.
amendment applications*

Applied Exercise #3 Odour Control Action Plan



Shared Outcomes - Design Principles

Design Principles	Core Objectives	Design Principles	Execution Principles
Quality of Life			
Accelerate odour reduction	✓		
Remain within the existing fence line	W/A	✓	
Prevent increases to odour & noise	✓		
Restore disturbed vegetation		✓	
Mitigate temporary impacts		✓	
Safety			
Continuously improve safety		✓	
Ensure safe movement on-site			
Improve worker hygiene and safety			
Protect public safety from site-related traffic			
Relationship			
Communicate openly			✓
Align operating protocols			✓
Engage regularly			
Share options and optimize designs			
Environment			
Continuously improve environmental performance	W/A	✓	
Reduce environmental impacts		✓	
Increase resiliency			
Engage employees and stakeholders		✓	✓
Reliable, Responsible, Sustainable			
Continuously maintain reliable operations		✓	
Plan for a range of scenarios			
Prudently manage impacts to ratepayers			

- **Core objectives** – Criteria that must be met for long term planning success
- **Design principles** – Additional criteria that are used to evaluate scenarios
- **Execution principles** – Criteria that guide how a project is created and executed (but which don't affect the choice between options)

Applied Exercise #3

Odour Control Action Plan



Select the Design Principles

- What criteria would you use to evaluate an odour reduction plan (put **X**'s in the appropriate spaces above)?
- Would you add or subtract any of the criteria EPCOR proposes to use?

Current State & Desired Future State

- Is this enough information to understand the context for an odour reduction plan?
- more plain language' to have to 'normal' individual
- How well does the desired future state describe what you would like to see?
good future state - to limit odor

Odour Control Action Plan

- Where would you site an additional air monitoring station?

- Do you support adding new requirements related to odour control equipment, monitoring of air quality, and the management of air quality to the Gold Bar operating permit?
if you can justify & explain to stakeholders why + ask how to make "viewable"
- What advice do you have about how monitoring data should be shared, and what is needed to make the data useful for the public and park users?
with EPCOR Bills as insert; web site, mail drop

Public Engagement

- Alberta Environment & Parks controls the process for operating approvals, including publishing public notices about amendments.
 - How would you like EPCOR to share information and reporting if Alberta Environment & Parks amends the Gold Bar operating approval?

as above-

Name (Optional): _____

Applied Exercise #3 Odour Control Action Plan

Shared Outcomes - Design Principles

Design Principles	Core Objectives	Design Principles	Execution Principles
Quality of Life			
Accelerate odour reduction	X	XXXX	
Remain within the existing fence line	X		
Prevent increases to odour & noise	X	XXXX	
Restore disturbed vegetation			XX
Mitigate temporary impacts			XX
Safety			
Continuously improve safety		XX	
Ensure safe movement on-site		XX	
Improve worker hygiene and safety			X
Protect public safety from site-related traffic		X	
Relationship			
Communicate openly	X		
Align operating protocols			X
Engage regularly	X		
Share options and optimize designs	X		
Environment			
Continuously improve environmental performance	XX		
Reduce environmental impacts	XX		
Increase resiliency		XX	
Engage employees and stakeholders		XX	
Reliable, Responsible, Sustainable			
Continuously maintain reliable operations	X		
Plan for a range of scenarios	XX		
Prudently manage impacts to ratepayers	X		

- **Core objectives** – Criteria that must be met for long term planning success
- **Design principles** – Additional criteria that are used to evaluate scenarios
- **Execution principles** – Criteria that guide how a project is created and executed (but which don't affect the choice between options)

Applied Exercise #3

Odour Control Action Plan



Select the Design Principles

- What criteria would you use to evaluate an odour reduction plan (put **X**'s in the appropriate spaces above)?
 - Would you add or subtract any of the criteria EPCOR proposes to use?
-

Current State & Desired Future State

- Is this enough information to understand the context for an odour reduction plan?
no - why is leakage not considered an option
- How well does the desired future state describe what you would like to see?
no - odours that do not lend themselves to easy measurement (eg "musty smell") not just H₂S.
- *- MUST DEAL WITH QUALITY OF LIFE!!!*
plan needs to include "subjective" human sniff test too.

Odour Control Action Plan

- Where would you site an additional air monitoring station?

- Do you support adding new requirements related to odour control equipment, monitoring of air quality, and the management of air quality to the Gold Bar operating permit?
monitoring of odors beyond H₂S is important.
- What advice do you have about how monitoring data should be shared, and what is needed to make the data useful for the public and park users?
on line.

Public Engagement

- Alberta Environment & Parks controls the process for operating approvals, including publishing public notices about amendments.
 - How would you like EPCOR to share information and reporting if Alberta Environment & Parks amends the Gold Bar operating approval?
multi-channel - mail drops to all residents in neighbourhood.
- internet, etc.
-
-

Applied Exercise #3 Odour Control Action Plan

Shared Outcomes - Design Principles

Design Principles	Core Objectives	Design Principles	Execution Principles
Quality of Life			
Accelerate odour reduction	X		
Remain within the existing fenceline	X		
Prevent increases to odour & noise	X		
Restore disturbed vegetation	X		
Mitigate temporary impacts	X		
Safety			
Continuously improve safety	X		
Ensure safe movement on-site	X		
Improve worker hygiene and safety	X		
Protect public safety from site-related traffic	X		
Relationship			
Communicate openly	X		
Align operating protocols	X		
Engage regularly	X		
Share options and optimize designs	X		
Environment			
Continuously improve environmental performance	X		
Reduce environmental impacts	X		
Increase resiliency	X		
Engage employees and stakeholders	X		
Reliable, Responsible, Sustainable			
Continuously maintain reliable operations	X		
Plan for a range of scenarios	X		
Prudently manage impacts to ratepayers	X		

- **Core objectives** – Criteria that must be met for long term planning success
- **Design principles** – Additional criteria that are used to evaluate scenarios
- **Execution principles** – Criteria that guide how a project is created and executed (but which don't affect the choice between options)

Applied Exercise #3

Odour Control Action Plan



Select the Design Principles

- What criteria would you use to evaluate an odour reduction plan (put **X**'s in the appropriate spaces above)?
- Would you add or subtract any of the criteria EPCOR proposes to use?

NO

Current State & Desired Future State

- Is this enough information to understand the context for an odour reduction plan?
- How well does the desired future state describe what you would like to see?

YES

Well

Odour Control Action Plan

- Where would you site an additional air monitoring station?
- Do you support adding new requirements related to odour control equipment, monitoring of air quality, and the management of air quality to the Gold Bar operating permit?
- What advice do you have about how monitoring data should be shared, and what is needed to make the data useful for the public and park users?

Along Gow Bar Rd to Park.

YES.

HAVE A SCREEN INDICATING # AT METER STATION.

Public Engagement

- Alberta Environment & Parks controls the process for operating approvals, including publishing public notices about amendments.
 - How would you like EPCOR to share information and reporting if Alberta Environment & Parks amends the Gold Bar operating approval?

ON EPCOR WEB SITE

Name (Optional): _____

Applied Exercise #3 Odour Control Action Plan

Shared Outcomes - Design Principles

Design Principles	Core Objectives	Design Principles	Execution Principles
Quality of Life			
Accelerate odour reduction	X		
Remain within the existing fenceline	X		
Prevent increases to odour & noise	X		
Restore disturbed vegetation	X		
Mitigate temporary impacts			
Safety			
Continuously improve safety		X	
Ensure safe movement on-site		X	
Improve worker hygiene and safety		X	
Protect public safety from site-related traffic			X
Relationship			
Communicate openly	X		
Align operating protocols			
Engage regularly	X		
Share options and optimize designs	X		
Environment			
Continuously improve environmental performance	X		
Reduce environmental impacts	X		
Increase resiliency	X		
Engage employees and stakeholders			X
Reliable, Responsible, Sustainable			
Continuously maintain reliable operations	X		
Plan for a range of scenarios	X		
Prudently manage impacts to ratepayers		X	

- **Core objectives** – Criteria that must be met for long term planning success
- **Design principles** – Additional criteria that are used to evaluate scenarios
- **Execution principles** – Criteria that guide how a project is created and executed (but which don't affect the choice between options)

Applied Exercise #3

Odour Control Action Plan



Select the Design Principles

- What criteria would you use to evaluate an odour reduction plan (put **X**'s in the appropriate spaces above)?
- Would you add or subtract any of the criteria EPCOR proposes to use?

Current State & Desired Future State

- Is this enough information to understand the context for an odour reduction plan?
Yes
- How well does the desired future state describe what you would like to see?
The plan seems to take care of one of the common complaints

Odour Control Action Plan

- Where would you site an additional air monitoring station?
Closer to the plant, southside of the river but within the valley
- Do you support adding new requirements related to odour control equipment, monitoring of air quality, and the management of air quality to the Gold Bar operating permit?
Yes
- What advice do you have about how monitoring data should be shared, and what is needed to make the data useful for the public and park users?
Put the monitoring station where most complaints are filed

Public Engagement

- Alberta Environment & Parks controls the process for operating approvals, including publishing public notices about amendments.
 - How would you like EPCOR to share information and reporting if Alberta Environment & Parks amends the Gold Bar operating approval?

Name (Optional): _____

Applied Exercise #3 Odour Control Action Plan

Shared Outcomes - Design Principles

Design Principles	Core Objectives	Design Principles	Execution Principles
Quality of Life			
Accelerate odour reduction	X		
Remain within the existing fenceline	X		
Prevent increases to odour & noise	X		
Restore disturbed vegetation			X
Mitigate temporary impacts			X
Safety			
Continuously improve safety	X		
Ensure safe movement on-site	X		
Improve worker hygiene and safety	X		
Protect public safety from site-related traffic	X		
Relationship			
Communicate openly			X
Align operating protocols			X
Engage regularly		X	
Share options and optimize designs		X	
Environment			
Continuously improve environmental performance	X		
Reduce environmental impacts	X		
Increase resiliency		X	
Engage employees and stakeholders		X	
Reliable, Responsible, Sustainable			
Continuously maintain reliable operations	X		
Plan for a range of scenarios		X	
Prudently manage impacts to ratepayers			X

- **Core objectives** – Criteria that must be met for long term planning success
- **Design principles** – Additional criteria that are used to evaluate scenarios
- **Execution principles** – Criteria that guide how a project is created and executed (but which don't affect the choice between options)

Applied Exercise #3

Odour Control Action Plan



Select the Design Principles

- What criteria would you use to evaluate an odour reduction plan (put **X**'s in the appropriate spaces above)?
- Would you add or subtract any of the criteria EPCOR proposes to use?
Set measurable ~~limit~~ target of odour limits.

Current State & Desired Future State

- Is this enough information to understand the context for an odour reduction plan?

- How well does the desired future state describe what you would like to see?

Odour Control Action Plan

- Where would you site an additional air monitoring station?
On the east boundary between GBWTP and Imperial refinery
- Do you support adding new requirements related to odour control equipment, monitoring of air quality, and the management of air quality to the Gold Bar operating permit?
Yes
- What advice do you have about how monitoring data should be shared, and what is needed to make the data useful for the public and park users?

Public Engagement

- Alberta Environment & Parks controls the process for operating approvals, including publishing public notices about amendments.
 - How would you like EPCOR to share information and reporting if Alberta Environment & Parks amends the Gold Bar operating approval?

Name (Optional): _____

Applied Exercise #4 Reducing Flaring & GHG Emissions



Shared Outcomes - Design Principles

Design Principles	Core Objectives	Design Principles	Execution Principles
Quality of Life			
Accelerate odour reduction	✗	✗	
Remain within the existing fence line		✗	
Prevent increases to odour & noise	✗		
Restore disturbed vegetation			✗
Mitigate temporary impacts			✗
Safety			
Continuously improve safety		✗	
Ensure safe movement on-site			✗
Improve worker hygiene and safety		N/A	
Protect public safety from site-related traffic			✗
Relationship			
Communicate openly			✗
Align operating protocols			✗
Engage regularly			✗
Share options and optimize designs		✗	
Environment			
Continuously improve environmental performance	✗		
Reduce environmental impacts	✗		
Increase resiliency		✗	
Engage employees and stakeholders		✗	
Reliable, Responsible, Sustainable			
Continuously maintain reliable operations		✗	
Plan for a range of scenarios		✗	
Prudently manage impacts to ratepayers		✗	

- **Core objectives** – Criteria that must be met for long term planning success
- **Design principles** – Additional criteria that are used to evaluate scenarios
- **Execution principles** – Criteria that guide how a project is created and executed (but which don't affect the choice between options)

Select the Design Principles

- Which criteria would you use to evaluate a proposal to reduce flaring and greenhouse gas emissions (put **X**'s in the appropriate spaces above)?

- Would you add or subtract any of the criteria EPCOR proposes to use?

Prevent increases to odour & noise → core

Applied Exercise #4 Reducing Flaring & GHG Emissions

Current State & Desired Future State

- Is this enough information to understand the goals of reducing flaring and greenhouse gas emissions?
upset case & flare
- How well does the desired future state describe what you would like to see?
it does a good job

Reducing Flaring and Recovering Biogas

- Do you support reducing flaring by allowing biogas to be upgraded and delivered to others for off-site uses?
yes
- If connecting to the ATCO gas line causes temporary construction impacts, or impacts to trees, how should they be handled?
detours, vegetation & path replacement

Public Engagement

- EPCOR plans public engagement to refine and finalize the proposal.
 - What public engagement tactics do you recommend we use to involve neighbours and other stakeholders?
public engagement for offsite impacts
- What information do you recommend be shared with stakeholders?

Applied Exercise #4 Reducing Flaring & GHG Emissions



Shared Outcomes - Design Principles

Design Principles	Core Objectives	Design Principles	Execution Principles
Quality of Life			
Accelerate odour reduction	X		
Remain within the existing fenceline		X	
Prevent increases to odour & noise	X		
Restore disturbed vegetation		X	
Mitigate temporary impacts			X
Safety			
Continuously improve safety	X		
Ensure safe movement on-site	X		
Improve worker hygiene and safety	X		
Protect public safety from site-related traffic	X		
Relationship			
Communicate openly		X	
Align operating protocols		X	
Engage regularly		X	
Share options and optimize designs		X	
Environment			
Continuously improve environmental performance	X		
Reduce environmental impacts	X		
Increase resiliency	X		
Engage employees and stakeholders			X
Reliable, Responsible, Sustainable			
Continuously maintain reliable operations	X		
Plan for a range of scenarios	X		
Prudently manage impacts to ratepayers	X		

- **Core objectives** – Criteria that must be met for long term planning success
- **Design principles** – Additional criteria that are used to evaluate scenarios
- **Execution principles** – Criteria that guide how a project is created and executed (but which don't affect the choice between options)

Select the Design Principles

- Which criteria would you use to evaluate a proposal to reduce flaring and greenhouse gas emissions (put **X**'s in the appropriate spaces above)?
 - Would you add or subtract any of the criteria EPCOR proposes to use?
-

Applied Exercise #4

Reducing Flaring & GHG Emissions



Current State & Desired Future State

- Is this enough information to understand the goals of reducing flaring and greenhouse gas emissions?
_____ *yes.* _____
- How well does the desired future state describe what you would like to see?
_____ *very good.* _____

Reducing Flaring and Recovering Biogas

- Do you support reducing flaring by allowing biogas to be upgraded and delivered to others for off-site uses?
_____ *yes.* _____
- If connecting to the ATCO gas line causes temporary construction impacts, or impacts to trees, how should they be handled?

Public Engagement

- EPCOR plans public engagement to refine and finalize the proposal.
 - What public engagement tactics do you recommend we use to involve neighbours and other stakeholders?
_____ *website explanations* _____
- What information do you recommend be shared with stakeholders?

Applied Exercise #4 Reducing Flaring & GHG Emissions



Shared Outcomes - Design Principles

Design Principles	Core Objectives	Design Principles	Execution Principles
Quality of Life			
Accelerate odour reduction	x		
Remain within the existing fenceline	x		
Prevent increases to odour & noise	x		
Restore disturbed vegetation			
Mitigate temporary impacts			
Safety			
Continuously improve safety			
Ensure safe movement on-site			
Improve worker hygiene and safety			
Protect public safety from site-related traffic	x		
Relationship			
Communicate openly			
Align operating protocols			
Engage regularly			
Share options and optimize designs	x		
Environment			
Continuously improve environmental performance	x		
Reduce environmental impacts	x		
Increase resiliency	x		
Engage employees and stakeholders	x		
Reliable, Responsible, Sustainable			
Continuously maintain reliable operations			
Plan for a range of scenarios			
Prudently manage impacts to ratepayers			

- **Core objectives** – Criteria that must be met for long term planning success
- **Design principles** – Additional criteria that are used to evaluate scenarios
- **Execution principles** – Criteria that guide how a project is created and executed (but which don't affect the choice between options)

Select the Design Principles

- Which criteria would you use to evaluate a proposal to reduce flaring and greenhouse gas emissions (put **X**'s in the appropriate spaces above)?
 - Would you add or subtract any of the criteria EPCOR proposes to use?
-

Applied Exercise #4

Reducing Flaring & GHG Emissions



Current State & Desired Future State

- Is this enough information to understand the goals of reducing flaring and greenhouse gas emissions?

- How well does the desired future state describe what you would like to see?

Reducing Flaring and Recovering Biogas

- Do you support reducing flaring by allowing biogas to be upgraded and delivered to others for off-site uses?

- If connecting to the ATCO gas line causes temporary construction impacts, or impacts to trees, how should they be handled?

Public Engagement

- EPCOR plans public engagement to refine and finalize the proposal.
 - What public engagement tactics do you recommend we use to involve neighbours and other stakeholders?

- What information do you recommend be shared with stakeholders?

Name (Optional): _____

Applied Exercise #4 Reducing Flaring & GHG Emissions



Shared Outcomes - Design Principles

Design Principles	Core Objectives	Design Principles	Execution Principles
Quality of Life			
Accelerate odour reduction			
Remain within the existing fenceline		X	
Prevent increases to odour & noise			
Restore disturbed vegetation	X		
Mitigate temporary impacts	X		
Safety			
Continuously improve safety	X		
Ensure safe movement on-site			
Improve worker hygiene and safety			
Protect public safety from site-related traffic	X		
Relationship			
Communicate openly			
Align operating protocols			
Engage regularly			
Share options and optimize designs			
Environment			
Continuously improve environmental performance	X		
Reduce environmental impacts			
Increase resiliency			
Engage employees and stakeholders			
Reliable, Responsible, Sustainable			
Continuously maintain reliable operations			
Plan for a range of scenarios			
Prudently manage impacts to ratepayers			

- **Core objectives** – Criteria that must be met for long term planning success
- **Design principles** – Additional criteria that are used to evaluate scenarios
- **Execution principles** – Criteria that guide how a project is created and executed (but which don't affect the choice between options)

Select the Design Principles

- Which criteria would you use to evaluate a proposal to reduce flaring and greenhouse gas emissions (put **X**'s in the appropriate spaces above)?
- Would you add or subtract any of the criteria EPCOR proposes to use?

Applied Exercise #4

Reducing Flaring & GHG Emissions



Current State & Desired Future State

- Is this enough information to understand the goals of reducing flaring and greenhouse gas emissions?

- How well does the desired future state describe what you would like to see?

Reducing Flaring and Recovering Biogas

- Do you support reducing flaring by allowing biogas to be upgraded and delivered to others for off-site uses?

- If connecting to the ATCO gas line causes temporary construction impacts, or impacts to trees, how should they be handled?

Public Engagement

- EPCOR plans public engagement to refine and finalize the proposal.
 - What public engagement tactics do you recommend we use to involve neighbours and other stakeholders?

- What information do you recommend be shared with stakeholders?

Name (Optional): _____

Applied Exercise #4 Reducing Flaring & GHG Emissions

Shared Outcomes - Design Principles

Design Principles	Core Objectives	Design Principles	Execution Principles
Quality of Life			
Accelerate odour reduction			
Remain within the existing fenceline		X	
Prevent increases to odour & noise		X	
Restore disturbed vegetation		X	
Mitigate temporary impacts			X
Safety			
Continuously improve safety			
Ensure safe movement on-site			X
Improve worker hygiene and safety			
Protect public safety from site-related traffic			X
Relationship			
Communicate openly		X	
Align operating protocols			
Engage regularly		X	
Share options and optimize designs	X		
Environment			
Continuously improve environmental performance	X		
Reduce environmental impacts	X		
Increase resiliency			
Engage employees and stakeholders			
Reliable, Responsible, Sustainable			
Continuously maintain reliable operations			X
Plan for a range of scenarios		X	
Prudently manage impacts to ratepayers		X	

- **Core objectives** – Criteria that must be met for long term planning success
- **Design principles** – Additional criteria that are used to evaluate scenarios
- **Execution principles** – Criteria that guide how a project is created and executed (but which don't affect the choice between options)

Select the Design Principles

- Which criteria would you use to evaluate a proposal to reduce flaring and greenhouse gas emissions (put **X**'s in the appropriate spaces above)?
- Would you add or subtract any of the criteria EPCOR proposes to use?

Applied Exercise #4

Reducing Flaring & GHG Emissions



Current State & Desired Future State

- Is this enough information to understand the goals of reducing flaring and greenhouse gas emissions?

yes

- How well does the desired future state describe what you would like to see?

Reducing Flaring and Recovering Biogas

- Do you support reducing flaring by allowing biogas to be upgraded and delivered to others for off-site uses?

yes

- If connecting to the ATCO gas line causes temporary construction impacts, or impacts to trees, how should they be handled?

replace trees, restore natural landscape

Public Engagement

- EPCOR plans public engagement to refine and finalize the proposal.
 - What public engagement tactics do you recommend we use to involve neighbours and other stakeholders?

mail out gov details

- What information do you recommend be shared with stakeholders?

construction timeline

Name (Optional): _____

Applied Exercise #4 Reducing Flaring & GHG Emissions

Shared Outcomes - Design Principles

Design Principles	Core Objectives	Design Principles	Execution Principles
Quality of Life			
Accelerate odour reduction			
Remain within the existing fenceline			
Prevent increases to odour & noise			
Restore disturbed vegetation			
Mitigate temporary impacts			
Safety			
Continuously improve safety			
Ensure safe movement on-site			
Improve worker hygiene and safety			
Protect public safety from site-related traffic			
Relationship			
Communicate openly			
Align operating protocols			
Engage regularly			
Share options and optimize designs			
Environment			
Continuously improve environmental performance			
Reduce environmental impacts	X		
Increase resiliency			
Engage employees and stakeholders			
Reliable, Responsible, Sustainable			
Continuously maintain reliable operations			
Plan for a range of scenarios			
Prudently manage impacts to ratepayers			

- **Core objectives** – Criteria that must be met for long term planning success
- **Design principles** – Additional criteria that are used to evaluate scenarios
- **Execution principles** – Criteria that guide how a project is created and executed (but which don't affect the choice between options)

Select the Design Principles

- Which criteria would you use to evaluate a proposal to reduce flaring and greenhouse gas emissions (put **X**'s in the appropriate spaces above)?
- Would you add or subtract any of the criteria EPCOR proposes to use?

Applied Exercise #4

Reducing Flaring & GHG Emissions



Current State & Desired Future State

- Is this enough information to understand the goals of reducing flaring and greenhouse gas emissions?

YES

- How well does the desired future state describe what you would like to see?

Reducing Flaring and Recovering Biogas

- Do you support reducing flaring by allowing biogas to be upgraded and delivered to others for off-site uses?

YES.

- If connecting to the ATCO gas line causes temporary construction impacts, or impacts to trees, how should they be handled?

To return site to original state.

Public Engagement

- EPCOR plans public engagement to refine and finalize the proposal.
 - What public engagement tactics do you recommend we use to involve neighbours and other stakeholders?

Epcor website

- What information do you recommend be shared with stakeholders?

Name (Optional): _____

Applied Exercise #4 Reducing Flaring & GHG Emissions



Shared Outcomes - Design Principles

Design Principles	Core Objectives	Design Principles	Execution Principles
Quality of Life			
Accelerate odour reduction	✓		
Remain within the existing fenceline	✓		
Prevent increases to odour & noise	✓		
Restore disturbed vegetation			
Mitigate temporary impacts			
Safety			
Continuously improve safety			
Ensure safe movement on-site			
Improve worker hygiene and safety			
Protect public safety from site-related traffic			
Relationship			
Communicate openly			
Align operating protocols			
Engage regularly			
Share options and optimize designs			
Environment			
Continuously improve environmental performance			
Reduce environmental impacts	✓		
Increase resiliency			
Engage employees and stakeholders			
Reliable, Responsible, Sustainable			
Continuously maintain reliable operations			
Plan for a range of scenarios			
Prudently manage impacts to ratepayers			

- **Core objectives** – Criteria that must be met for long term planning success
- **Design principles** – Additional criteria that are used to evaluate scenarios
- **Execution principles** – Criteria that guide how a project is created and executed (but which don't affect the choice between options)

Select the Design Principles

- Which criteria would you use to evaluate a proposal to reduce flaring and greenhouse gas emissions (put **X**'s in the appropriate spaces above)?
 - Would you add or subtract any of the criteria EPCOR proposes to use?
-

Applied Exercise #4

Reducing Flaring & GHG Emissions



Current State & Desired Future State

- Is this enough information to understand the goals of reducing flaring and greenhouse gas emissions?
Yes
- How well does the desired future state describe what you would like to see?
Very inline with reducing the environmental footprint

Reducing Flaring and Recovering Biogas

- Do you support reducing flaring by allowing biogas to be upgraded and delivered to others for off-site uses?
Yes
- If connecting to the ATCO gas line causes temporary construction impacts, or impacts to trees, how should they be handled?

Public Engagement

- EPCOR plans public engagement to refine and finalize the proposal.
 - What public engagement tactics do you recommend we use to involve neighbours and other stakeholders?

- What information do you recommend be shared with stakeholders?

Name (Optional): _____

Applied Exercise #4 Reducing Flaring & GHG Emissions

Shared Outcomes - Design Principles

Design Principles	Core Objectives	Design Principles	Execution Principles
Quality of Life			
Accelerate odour reduction	X		
Remain within the existing fenceline	X		
Prevent increases to odour & noise	X		
Restore disturbed vegetation		X	
Mitigate temporary impacts			X
Safety			
Continuously improve safety	X		
Ensure safe movement on-site		X	
Improve worker hygiene and safety		X	
Protect public safety from site-related traffic		X	
Relationship			
Communicate openly	X		
Align operating protocols			X
Engage regularly	X		
Share options and optimize designs	X		
Environment			
Continuously improve environmental performance	X		
Reduce environmental impacts	X		
Increase resiliency		X	
Engage employees and stakeholders	X		
Reliable, Responsible, Sustainable			
Continuously maintain reliable operations	X		
Plan for a range of scenarios	X		
Prudently manage impacts to ratepayers	X		

- **Core objectives** – Criteria that must be met for long term planning success
- **Design principles** – Additional criteria that are used to evaluate scenarios
- **Execution principles** – Criteria that guide how a project is created and executed (but which don't affect the choice between options)

Select the Design Principles

- Which criteria would you use to evaluate a proposal to reduce flaring and greenhouse gas emissions (put **X's** in the appropriate spaces above)?
 - Would you add or subtract any of the criteria EPCOR proposes to use?
-

Applied Exercise #4

Reducing Flaring & GHG Emissions



Current State & Desired Future State

- Is this enough information to understand the goals of reducing flaring and greenhouse gas emissions?
yes
- How well does the desired future state describe what you would like to see?
good. Safe storage needs to be addressed more clearly.

Reducing Flaring and Recovering Biogas

- Do you support reducing flaring by allowing biogas to be upgraded and delivered to others for off-site uses?
yes
- If connecting to the ATCO gas line causes temporary construction impacts, or impacts to trees, how should they be handled?
notify public.

Public Engagement

- EPCOR plans public engagement to refine and finalize the proposal.
 - What public engagement tactics do you recommend we use to involve neighbours and other stakeholders?
light compared to other projects but don't neglect it.
- What information do you recommend be shared with stakeholders?

Applied Exercise #4 Reducing Flaring & GHG Emissions



Shared Outcomes - Design Principles

Design Principles	Core Objectives	Design Principles	Execution Principles
Quality of Life			
Accelerate odour reduction			
Remain within the existing fenceline	X		
Prevent increases to odour & noise	X		
Restore disturbed vegetation			
Mitigate temporary impacts	X		
Safety			
Continuously improve safety	X		
Ensure safe movement on-site			
Improve worker hygiene and safety			
Protect public safety from site-related traffic			
Relationship			
Communicate openly			
Align operating protocols			
Engage regularly			
Share options and optimize designs			
Environment			
Continuously improve environmental performance			
Reduce environmental impacts	X		
Increase resiliency			
Engage employees and stakeholders			
Reliable, Responsible, Sustainable			
Continuously maintain reliable operations			
Plan for a range of scenarios			
Prudently manage impacts to ratepayers	X		

- **Core objectives** – Criteria that must be met for long term planning success
- **Design principles** – Additional criteria that are used to evaluate scenarios
- **Execution principles** – Criteria that guide how a project is created and executed (but which don't affect the choice between options)

Select the Design Principles

- Which criteria would you use to evaluate a proposal to reduce flaring and greenhouse gas emissions (put **X**'s in the appropriate spaces above)?
- Would you add or subtract any of the criteria EPCOR proposes to use?

Applied Exercise #4

Reducing Flaring & GHG Emissions



Current State & Desired Future State

- Is this enough information to understand the goals of reducing flaring and greenhouse gas emissions?

- How well does the desired future state describe what you would like to see?

Reducing Flaring and Recovering Biogas

- Do you support reducing flaring by allowing biogas to be upgraded and delivered to others for off-site uses?
YES

- If connecting to the ATCO gas line causes temporary construction impacts, or impacts to trees, how should they be handled?
COMMUNICATE TO STAKE-HOLDERS + RESIDENTS

Public Engagement

- EPCOR plans public engagement to refine and finalize the proposal.
 - What public engagement tactics do you recommend we use to involve neighbours and other stakeholders?

- What information do you recommend be shared with stakeholders?

Name (Optional): _____

Applied Exercise #4 Reducing Flaring & GHG Emissions

Shared Outcomes - Design Principles

Design Principles	Core Objectives	Design Principles	Execution Principles
Quality of Life			
Accelerate odour reduction			
Remain within the existing fenceline			
Prevent increases to odour & noise	X		
Restore disturbed vegetation			
Mitigate temporary impacts			
Safety			
Continuously improve safety			
Ensure safe movement on-site			
Improve worker hygiene and safety			
Protect public safety from site-related traffic			
Relationship			
Communicate openly			
Align operating protocols			
Engage regularly			
Share options and optimize designs			
Environment			
Continuously improve environmental performance	X		
Reduce environmental impacts	X		
Increase resiliency	X		
Engage employees and stakeholders		X	
Reliable, Responsible, Sustainable			
Continuously maintain reliable operations	X		
Plan for a range of scenarios	X		
Prudently manage impacts to ratepayers	X		

- **Core objectives** – Criteria that must be met for long term planning success
- **Design principles** – Additional criteria that are used to evaluate scenarios
- **Execution principles** – Criteria that guide how a project is created and executed (but which don't affect the choice between options)

Select the Design Principles

- Which criteria would you use to evaluate a proposal to reduce flaring and greenhouse gas emissions (put X's in the appropriate spaces above)?

- Would you add or subtract any of the criteria EPCOR proposes to use?

Storage is risky - will require extensive risk assessment and firewater study.

Applied Exercise #4 Reducing Flaring & GHG Emissions



Current State & Desired Future State

- Is this enough information to understand the goals of reducing flaring and greenhouse gas emissions?
Yes.
- How well does the desired future state describe what you would like to see?

Reducing Flaring and Recovering Biogas

- Do you support reducing flaring by allowing biogas to be upgraded and delivered to others for off-site uses?
Yes
- If connecting to the ATCO gas line causes temporary construction impacts, or impacts to trees, how should they be handled?

Public Engagement

- EPCOR plans public engagement to refine and finalize the proposal.
 - What public engagement tactics do you recommend we use to involve neighbours and other stakeholders?

- What information do you recommend be shared with stakeholders?
Transparency of directional drilling

Name (Optional): _____

Applied Exercise #4 Reducing Flaring & GHG Emissions



Shared Outcomes - Design Principles

Design Principles	Core Objectives	Design Principles	Execution Principles
Quality of Life			
Accelerate odour reduction	✓		
Remain within the existing fenceline			
Prevent increases to odour & noise			
Restore disturbed vegetation			
Mitigate temporary impacts	✓		
Safety			
Continuously improve safety	✓		
Ensure safe movement on-site			
Improve worker hygiene and safety			
Protect public safety from site-related traffic		✓	
Relationship			
Communicate openly		✓	
Align operating protocols	✓		
Engage regularly			✓
Share options and optimize designs		✓	
Environment			
Continuously improve environmental performance		✓	
Reduce environmental impacts	✓		
Increase resiliency	✓		
Engage employees and stakeholders		✓	
Reliable, Responsible, Sustainable			
Continuously maintain reliable operations	✓		
Plan for a range of scenarios		✓	
Prudently manage impacts to ratepayers	✓		

- **Core objectives** – Criteria that must be met for long term planning success
- **Design principles** – Additional criteria that are used to evaluate scenarios
- **Execution principles** – Criteria that guide how a project is created and executed (but which don't affect the choice between options)

Select the Design Principles

- Which criteria would you use to evaluate a proposal to reduce flaring and greenhouse gas emissions (put **X**'s in the appropriate spaces above)?
- Would you add or subtract any of the criteria EPCOR proposes to use?

Applied Exercise #4 Reducing Flaring & GHG Emissions



Current State & Desired Future State

- Is this enough information to understand the goals of reducing flaring and greenhouse gas emissions?

- How well does the desired future state describe what you would like to see?

Reducing Flaring and Recovering Biogas

- Do you support reducing flaring by allowing biogas to be upgraded and delivered to others for off-site uses?
if it is a "win win"
- If connecting to the ATCO gas line causes temporary construction impacts, or impacts to trees, how should they be handled?
inform public - neighbours, park users etc.

Public Engagement

- EPCOR plans public engagement to refine and finalize the proposal.
 - What public engagement tactics do you recommend we use to involve neighbours and other stakeholders?
use bills, signs, mail drops etc
- What information do you recommend be shared with stakeholders?

Name (Optional): _____

Applied Exercise #4 Reducing Flaring & GHG Emissions



Shared Outcomes - Design Principles

Design Principles	Core Objectives	Design Principles	Execution Principles
Quality of Life			
Accelerate odour reduction		✓	
Remain within the existing fenceline		✓	
Prevent increases to odour & noise			
Restore disturbed vegetation			
Mitigate temporary impacts			
Safety			
Continuously improve safety			
Ensure safe movement on-site			
Improve worker hygiene and safety			
Protect public safety from site-related traffic			
Relationship			
Communicate openly	✓		
Align operating protocols	✓		
Engage regularly	✓		
Share options and optimize designs	✓		
Environment			
Continuously improve environmental performance	✓		
Reduce environmental impacts	✓		
Increase resiliency	✓		
Engage employees and stakeholders	✓		
Reliable, Responsible, Sustainable			
Continuously maintain reliable operations		✓	
Plan for a range of scenarios		✓	
Prudently manage impacts to ratepayers		✓	

- **Core objectives** – Criteria that must be met for long term planning success
- **Design principles** – Additional criteria that are used to evaluate scenarios
- **Execution principles** – Criteria that guide how a project is created and executed (but which don't affect the choice between options)

Select the Design Principles

- Which criteria would you use to evaluate a proposal to reduce flaring and greenhouse gas emissions (put **X**'s in the appropriate spaces above)?
- Would you add or subtract any of the criteria EPCOR proposes to use?

no

Applied Exercise #4

Reducing Flaring & GHG Emissions



Current State & Desired Future State

- Is this enough information to understand the goals of reducing flaring and greenhouse gas emissions?

yes
- How well does the desired future state describe what you would like to see?

Reducing Flaring and Recovering Biogas

- Do you support reducing flaring by allowing biogas to be upgraded and delivered to others for off-site uses?

- If connecting to the ATCO gas line causes temporary construction impacts, or impacts to trees, how should they be handled?

temporary impact mitigation

Public Engagement

- EPCOR plans public engagement to refine and finalize the proposal.
 - What public engagement tactics do you recommend we use to involve neighbours and other stakeholders?

social media campaign
- What information do you recommend be shared with stakeholders?

summary *kin-see*

- future membrane filtration/bioreactor operation will increase power requirements (nothing is as cheap as gravity flow as per the existing today clarifiers), so hopefully agreement for generating and selling PNO₂ will be limited so that CHP options can be reviewed again in the future

Applied Exercise #4 Reducing Flaring & GHG Emissions



Shared Outcomes - Design Principles

Design Principles	Core Objectives	Design Principles	Execution Principles
Quality of Life			
Accelerate odour reduction			
Remain within the existing fenceline	X		
Prevent increases to odour & noise			
Restore disturbed vegetation			
Mitigate temporary impacts			
Safety			
Continuously improve safety			
Ensure safe movement on-site			
Improve worker hygiene and safety			
Protect public safety from site-related traffic			
Relationship			
Communicate openly			
Align operating protocols			
Engage regularly			
Share options and optimize designs			
Environment			
Continuously improve environmental performance			
Reduce environmental impacts			
Increase resiliency			
Engage employees and stakeholders			
Reliable, Responsible, Sustainable			
Continuously maintain reliable operations			
Plan for a range of scenarios			
Prudently manage impacts to ratepayers			

- **Core objectives** – Criteria that must be met for long term planning success
- **Design principles** – Additional criteria that are used to evaluate scenarios
- **Execution principles** – Criteria that guide how a project is created and executed (but which don't affect the choice between options)

Select the Design Principles

- Which criteria would you use to evaluate a proposal to reduce flaring and greenhouse gas emissions (put **X**'s in the appropriate spaces above)?
 - Would you add or subtract any of the criteria EPCOR proposes to use?
-

Applied Exercise #4

Reducing Flaring & GHG Emissions



Current State & Desired Future State

- Is this enough information to understand the goals of reducing flaring and greenhouse gas emissions?

- How well does the desired future state describe what you would like to see?

As presented today, with the information provided, this seems like a positive project to all stakeholders.

Reducing Flaring and Recovering Biogas

- Do you support reducing flaring by allowing biogas to be upgraded and delivered to others for off-site uses?

Yes

- If connecting to the ATCO gas line causes temporary construction impacts, or impacts to trees, how should they be handled?

Public Engagement

- EPCOR plans public engagement to refine and finalize the proposal.
 - What public engagement tactics do you recommend we use to involve neighbours and other stakeholders?

- What information do you recommend be shared with stakeholders?

Name (Optional): _____

APPENDIX F

FEEDBACK FORMS



Gold Bar Community Planning Committee Workshop #3

Feedback Forms

Number of Feedback forms completed: 10

Please indicate the extent to which you agree with each of the following statements.

		1 Strongly Disagree	2 Disagree	3 Agree	4 Strongly Agree	5 Not Sure
1.	The objectives of the meeting were clear	1		7	2	
2.	The information presented was easy for me to understand		2	3	3	2
3.	I had enough information to provide meaningful input		3	4	3	
4.	Participation and interaction were encouraged			2	8	
5.	I had an opportunity to express ideas and opinions in a safe environment		1	2	7	
6.	I now have a better understanding criteria EPCOR will use to guide future design and operating decisions at the Gold Bar Plant			8	1	1
7.	I have a good understanding of the long term planning process for the Gold Bar Plant			5	4	2
8.	I have a good understanding of the Safety & Hygiene Plan for the Gold Bar Plant			5	5	
9.	I have a good understanding of the Odour Action Plan			3	6	1
10.	I have a good understanding of the Gold Bar Plant's plans to reduce flaring & GHG emissions			3	7	
11.	I think EPCOR will consider community input in decisions related to Gold Bar Plant's operations			2	6	2
12.	Participating in this meeting was a good use of my time			6	4	
		Poor	Average	Good	Excellent	Not Sure
13.	How do you rate the meeting overall?		4	2	4	

10. Do you have any suggestions for improvement to this workshop?

- Try not to let participants know your recommendations than as our opinion.
- Provide workshop material ahead of the meeting so participants can do homework and understand the concepts presented.
- Anti-development people taking over table discussions.
- The charts with our input could've been provided before hand so that we could spend less time in the workshop figuring it out.
- Understanding the design principles is one thing, seeing how the priority actions identified through public engagement are reflective of principles is another thing. Huge gap.
- This was a challenge for both the community and EPCOR.
- I understand what the intent was to frame our opinions, it was hard to place these thoughts into obvious "EPCOR Corporate boxes". Too much corporate speak and not enough common language.
- Good exercise.
- Was tight timeline but you did well at compressing to effectively use our time.

11. Please share any other comments that you have about the workshop:

- Was great having subject experts at the table. Would have been nice to have the principals and meanings ahead of time – easier to answer questions.
- EPCOR is a good community partner. However, upstream decisions are convoluted and is dodged throughout this process. Never confronted the elephant in the room.
- I was one of the few that was willing to attend 2x 3-hour sessions over 2 days – this was too compressed for me.