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Subject: SR1: Questions
Date: June 5, 2019 3:03:23 PM

Additional community questions:

Process:

1. Through which Alberta Government approval process is this project proceeding (i.e. Water Act Approvals)?
2. Under what authority has land been acquired and under what budget, given SR1 is not an approved provincial project. Please explain or correct our understanding.

Precedents

1. Please provide a statement on whether SR1 is a precedent-setting project for flood mitigation? i.e. Has anything like this been done in Canada? Other places? We cannot find anything similar. If there are precedents, provide examples (locations, date of construction, size) and comment on their similarities / differences. Do not include diversions, as the main purpose of this project is temporary storage of flood waters in the reservoir.
2. If this project is new to Canada, please comment on the level of confidence that the project will work as planned.
3. Comment on the usefulness of the SR1 project to address drought and fire.

Water

1. How much will the flow rate of the Elbow River change when SR1 waters are released under various flood scenarios & retention times?
2. Please clarify if retention times are the estimated times for complete draining of the reservoir (i.e. 60 days until reservoir is empty) or the start of complete draining (draining will begin in 60 days). If the former, please estimate the number of days water will be held without draining in the reservoir, or is this depended on flood size? If so, explain.
3. Explain the risks to air quality as the reservoir is drained assuming that, each day, some of the silt will be exposed. Board 18 from the 2018 open houses: "In the event of a design flood the modelling predicts the potential to exceed air quality objectives for up to 4 days following drainage of SR1." If the reservoir is draining over a long period of time, please explain how air quality risks are limited to 4 days?
4. Explain whether the water in the SR1 footprint is effectively "stagnant" with no fresh water flow from the Elbow River (a closed system).
5. Predict whether any fresh water is expected to enter the reservoir from another source.
6. Explain how the Alberta Government will monitor for seepage or loss of water from the SR1 reservoir and what the mitigation strategies are.
7. Quantify the expected evaporation of water from the SR1 reservoir under various flood scenarios and retention lengths. Express this as a % of water retained. Compare this to the expected evaporation of the elbow river as a baseline.

8. What is the expected contents of the waters being released out of the reservoir and how will the properties of the SR1 water differ from the Elbow River water that bypasses the SR1 footprint?
9. What will be the water temperature in the SR1 reservoir (weekly expected forecasts at various reservoir depths & durations of retention). Compare that to the typical temperature of the Elbow River. This should further be broken down into various flood scenarios.
10. Will there be any impact on the water temperature of the Elbow River downstream of SR1, including the Glenmore reservoir? [Note: This question appears to be asked by the NRCB]
11. What is the risk of contamination of the SR1 waters from septic fields and sewer back up from Redwood Meadows and Bragg Creek and properties upstream of SR1? Please note that we expect the upstream berms to provide inadequate protection from groundwater flooding due to the width of the alluvial aquifer. Groundwater flooding will inevitably result in flooded septic systems. If you can prove otherwise, please do. What are the measures of contamination from septic systems?
12. We request that all area wells surrounding the SR1 footprint in all directions to be tested before any construction begins. Results must be released publicly for comparison. Testing should take place again, regularly - during and following construction and each time the reservoir is used. Testing should include a complete water quality report and along with water pressure. Propose mitigation measures if any negative impacts are recorded. Explain whether any compensation is considered for well owners who are negatively impacted. Please confirm what testing of area wells is proposed.

Wildlife

1. What is the expected number of fish and other aquatic animals, by species, in the reservoir at various flood scenarios. Identify each species and its sensitivity to water temperature & water quality changes. Please do not limit this to fish. Identify expected species mortality. [Note: This question appears to be asked by the NRCB re: fish, but will there be other species - beavers, otters, mollusks, etc]
2. What, if any, risks to ungulates, carnivores, birds and other animals may exist from drinking from the SR1 reservoir? How will this risk be mitigated?
3. Will there be other risks to animals from movement in the reservoir or diversion channel (i.e. from stranding in silt or difficulties crossing the diversion channel)?

Silt & Integrity of SR1

1. Give the expected silt deposit buildup in the reservoir and related structures at various flood scenarios. How will the build-up evolve over time (multiple uses of SR1)?
2. What is the risk that silt accumulation impedes the future function of ANY of the structures associated with the reservoir, diversion channel, gates, outlets, spillways, etc? People in Redwood Meadows comment that the silt deposits from the 2013 flood have taken on concrete-like properties. Is this hardening of silt contemplated in the future functioning of the reservoir and its components?
3. If the silt is expected to be removed, please explain under what circumstances, the mechanism, its expected cost and the impacts on the community (dust, trucks, noise, frequency). Explain where the silt will be moved to, if in Rocky View County.

Construction

1. We know that when pipeline work was ongoing in the SR1 footprint previously, a local well went dry. Predict the risk to local well operations from construction. How will this risk be mitigated?
2. Provide estimated costs for dust suppression (watering, etc.) during construction and provide sources of water.

Health

1. Is there expected to be increased mosquito activity on the SR1 footprint, relative to its current uses, once the reservoir has been used in any way? If so, by how much? Include assumptions and various scenarios of flood. Provide information on how far mosquitoes can travel within the local area and predict any impacts within the local area. Advise if there is any expected increase in West Nile or Zika risk for people and animals, both wild and domestic. If increased mosquito activity is expected, please predict or comment on mosquito activity at our community soccer park and schools, which are approximately 3 km directly east of the reservoir. What testing and mitigation measures are proposed to manage this risk?
2. Identify the testing for water quality before SR1 for all water cooperatives or plants upstream of Glenmore Reservoir and describe plans for testing on an ongoing basis.
3. Identify what water quality remediation plans will exist and what compensation or other remuneration would exist for compromised water quality (sedimentation, cyanobacteria, etc.) - for landowners, water plant owners and water cooperatives.

Cost/Benefit

1. Identify whether costs of subdivision for any lands acquired by the Alberta Government are included in the cost/benefit analysis, if they are included in the proposed \$60 million resale. If not, please estimate the costs of subdivision for all impacted lands.
2. Please provide the expected land use of the resold/excess land.
3. Please provide the updated land acquisition values, including both cash and non-cash compensation and confirm that ALL compensation for land has been included in the cost model. Please describe non-cash compensation, if provided to any landowners, including land in lieu and tax credits or tax adjustments and any other item that may be considered compensation. If you are unable to provide the financial figures, please list ALL types of compensation to landowners by category.
4. Identify whether any costs related to SR1 may have been included in other projects (i.e. road changes), and if so, identify them and include them in the SR1 cost model. Provide a breakdown of roadway changes by road (i.e. RR40 upgrades, Highway 22 Elevation, Highway 22 Bridge Crossings, Springbank Road and Hwy 22 Intersection Elevation, Diversion Channel Crossings on secondary roads).
5. Explain whether any upgrades are planned for Twp Rd 250 and Hwy 22, which is a high-accident area.
6. Provide costs for moving / upgrading each individual pipeline impacted by the reservoir. Include compensation to pipeline operators for business disruption, if applicable, as a separate line item.
7. Provide the cost of the development permit (Rocky View County) and other permits (if any).
8. Provide an updated projection of annual operating costs of SR1. The most recent is from the 2017 IBI report (\$5M per year). Please provide a breakdown of the annual operating costs, including dust suppression (water, tackifiers, vegetation), safety management, emergency response, silt removal/management, staff, facilities &

structural maintenance, berm and reservoir maintenance (planting, etc.) wildlife management and tracking, monitoring of fish passages, spawning areas and fish health, water quality testing, air quality monitoring, reporting, etc.

Thanks,

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Karin Hunter
President



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