Opening Statement

Topic 4 – Water

Remarks of M. Hebert

1. Good morning/afternoon.

2. Alberta Transportation, through its assessment of the environmental effects of the SR1 Project, and through consultation with various Indigenous groups, local landowners, and regulators, is keenly aware of the concerns raised with regards to potential impacts to water and related disciplines as a result of the Project.

3. On behalf of Alberta Transportation, I have personally heard from and spoken with many Indigenous Groups and landowners who have voiced concerns about whether the Project may impact fish and aquatic habitat, water quality at local wells, or alter water quantity at naturally occurring springs and other sources.

4. As will be discussed by Dave Brescia in a moment, Alberta Transportation's analysis and detailed consideration of the issues associated with water quality and quantity, and fish and aquatic habitat has culminated in Alberta Transportation having confidence that the Project's impacts can be monitored for and, as needed, mitigated.

5. Since the next two topics focus on environmental impacts and mitigation, it is important to outline the approach taken by Transportation in the assessment of SR1. The environmental assessment process addresses both Project-related and cumulative environmental effects

and follows a standardized framework for each valued component. That process involves a number of steps:

i. Scoping of the assessment;

ii. Characterizing existing conditions, including the influence of past and current activities;

iii. Assessment of residual project effects, including the consideration of potential effects pathways and applicable mitigation measures;

iv. Assessment of cumulative effects;

v. Determination of significance; and

vi. Identification of monitoring programs.

6. In addition to the above, Transportation's environmental assessment process includes engagement with stakeholders and Indigenous groups to inform the development of mitigation and monitoring plans. This includes a commitment to a community liaison to ensure that impacts felt by the community can raised and dealt with by Transportation or Environment and Parks through the life of the project.

7. Specifically, Alberta Transportation has committed to water quality monitoring in the form of a *Draft Surface Water Monitoring Plan* and *Ground Water Monitoring Plan*. Alberta Transportation is currently in the process of obtaining further approvals from Fisheries and Oceans Canada for potential impacts to fish and aquatic habitat, which will include offsetting and monitoring activities. Further, Alberta Transportation has developed a *Draft Fish Rescue and Fish Health Monitoring and Mitigation Program*. It is expected that additional engagement with Indigenous groups, regulators, landowners, and other stakeholders will serve to further refine and clarify the scope and processes envisioned by

these monitoring plans. To this end we note that Alberta Transportation responded to the concerns identified most recently by various interveners in this proceeding. Our consideration and responses are found in the Reply Submission and appended technical memoranda.

8. I would now like to invite Mr. Brescia from Stantec to provide further comment.

Remarks of D. Brescia

9. Good morning/afternoon, Mr. Chairman. As you know, my name is Dave Brescia. I am an Environmental and Regulatory Advisor with Stantec, and I have been actively involved with this Project on behalf of Alberta Transportation since 2016.

10. As noted by Mr. Hebert, Alberta Transportation is keenly aware of the importance of understanding and addressing any impacts to water associated with the Project, as water concerns may have implications for fish, local Indigenous groups, local residents and downstream users such as the City of Calgary.

11. Consequently, at the direction of Alberta Transportation, Stantec undertook a comprehensive consideration of all aspects of Project-related water concerns. These considerations started with the preparation of the EIA, then carried forward throughout the regulatory process and engagement phases. It is work that continues.

12. As can be seen from a review of this material, multiple subject matter experts were engaged to investigate all aspects of Project interaction with water. Specifically, analysis was undertaken for the following disciplines:

i. hydrogeology – the movement, quantity and quality of water in the sub-surface

ii. hydrology – the movement of water at the surface, including quantity, geomorphology, and sediment transport

iii. surface water quality – consideration of the water's quality during diversion into the reservoir, storage and subsequent release, and

iv. fish and aquatic habitat – consideration of the implication of the Project on fish species in the Project area and further, including consideration of impacts to the habitat used by fish

13. These reviews, and related conclusions, are found in the respective sections of the environmental impact assessment and supplemental information requests. However, it is worth briefly touching on each at this time.

14. Hydrogeology implications of the project involved examining the potential changes to ground water quality and quantity that may be associated with the Project. Through use of an extensive borehole drilling and well testing program, data was obtained and a numerical model created to predict the implications of both dry and flood operations and other factors on groundwater levels, flow regime, and water quality. The model showed that any effects on ground water would be rare and reversable upon release of water from the reservoir and would not extend beyond the project development area at any magnitude that would be material.

15. Similarly, consideration of hydrological effects was undertaken primarily through examination of impacts to the hydrological regime, changes in suspended sediment transport and changes in channel geomorphology. Changes to the hydrological regime are non-existent when the project is not in operation and the flow rate and flow volume in the Elbow River will not be significantly impacted by the Project. As the Project is designed to mitigate flooding downstream, there will be reduced flow rate and volume downstream when the Project is in operation. Suspended sediment transport will be impacted during diversion, with sediment being moved into the reservoir and deposited. As a result of the reduced flow during flood operations, there will be some minor changes to the Elbow River channel between the outlet and Glenmore reservoir over the long term.

16. Surface Water Quality was assessed for changes to various parameters, including temperature, oxygen, and Total Suspended Sediment ("TSS"). Of these the primary consideration is TSS. Operation of the Project will occur at a time when TSS in the Elbow River is already high owing to a flood event. The Project would not change or alter this fact.

17. Turning to the issues of potential impacts on fish and fish habitat, Stantec on behalf of Alberta Transportation has completed extensive fish and fish habitat surveys within the Elbow River to support the aquatic ecology components of the EIA. Fieldwork was undertaken in 2016, with additional surveys in 2019 and 2020. These surveys provide a robust basis to both support the EIA and to inform monitoring and offsetting plans.

18. Surveys covered approximately 70 kilometers of the river and used advanced methods of estimating habitat change, such as a bedload model and habitat suitability model. In

addition, redd surveys and a population survey were completed to characterize the fish community and to inform the effects assessment and future monitoring efforts. Alberta Transportation's data collection and analysis exceeds the efforts typically undertaken for EIAs. Alberta Transportation's field data will serve as a comprehensive tool for future monitoring.

19. With respect to Project design, the design of SR1 has several benefits for the aquatic environment relative to a typical onstream structure. The off-stream design limits interaction with the aquatic environment to the extent possible by having a small in-stream footprint. Additionally, the Project's fish passage design features mimic natural features of the Elbow River and are considered superior to a classic fishway. The off-stream design avoids the development of lacustrine or lake habitat, which could substantially change the Elbow River fish community over time. In years that the Project does not operate, there will be negligible effect on the Elbow River fish community.

20. Effects to the aquatic environment are limited to flood operation, primarily the risk of fish entrainment into the reservoir. Alberta Transportation undertook a robust assessment of aquatic ecology, including an informed evaluation of entrainment risk. While there is some uncertainty in predicting the nature of fish behaviour in a flood, and the risk of fish entrainment during diversion, Alberta Transportation has undertaken extensive efforts, using the best available science, to characterize the risk to fish during flood operation.

21. Even though residual effects to fish are predicted to be not significant, Alberta Transportation is committed to monitoring effects to fish during flood operation and will offset the potential loss of productivity as per the requirements of the federal Fisheries Act.

22. Alberta Transportation acknowledges that during flood operation, there is potential for the Project to interact with bull trout and its critical habitat. The upper reaches of the Elbow River are considered important habitat to bull trout, a species that require complex riverine habitat. The project location in the downstream extents of Elbow River provides the benefit of limiting interaction with bull trout to the extent possible. The field studies conducted for the Project demonstrate that bull trout are predominantly located in areas that are upstream of the Project. Alberta Transportation's population fieldwork in August included 186 bull trout captures in Elbow River, the majority of which were located near the confluence with MacLean Creek, Allen Bill Day Use Area, and Paddy's Flat. These findings align with the findings of other scientific studies on bull trout abundance and distribution in the Elbow River. Residual effects to bull trout and its critical habitat are predicted to be not significant, based on their distribution in the upper reaches of Elbow River, and the infrequency of Project operations.

23. Alberta Transportation is committed to offsetting residual effects to bull trout and its critical habitat that cannot be mitigated and is consulting with Fisheries and Oceans Canada to develop an offset plan that meets the conditions of both the *Species at Risk Act* and the *Fisheries Act*.

24. In summary, the team members responsible for hydrogeology, hydrology, surface water quality and fish have each considered the Projects associated impacts in great detail and are confident that impacts are well understood, temporary, or can be monitored.

25. Further, there have been a number of statements suggesting that Alberta Transportation is simply relying on future monitoring to mitigate the effects of SR1. In fact, where adverse

effects have been predicted in the EIA, Alberta Transportation has identified specific measures to mitigate those effects. Draft monitoring programs have been developed for several valued components to verify the effectiveness of planned mitigation measures, and to allow for continued improvement through adaptive management. Monitoring programs are an important tool to reduce uncertainty in outcomes. In addition, the development of these plans is also a requirement of both the Terms of Reference and the CEAA EIS Guidelines for the Project

26. In relation to the concerns raised by the Stoney Nakoda Nations on these issues, a review of the SR1 EIA was prepared by Stoney's consultants, PGL and its subconsultant, Boreal Water Resources Ltd., touching upon two specific topics - hydrology and aquatic ecology, and to provide comments regarding scientific/technical sufficiency of the assessment.

27. Stantec carefully reviewed the submissions prepared by Stoney Consultation and PGL and provided a detailed response which was included as part of Alberta Transportation's Reply Submission. Our responses to Stoney Consultation and PGL are included in Exhibit 324, at Appendices K and L, respectively.

28. As a general statement, PGL's review seems to have not considered material filed by Alberta Transportation in multiple rounds of federal and provincial information requests subsequent to the submission of the EIS in 2018. Further, Alberta Transportation has fully responded to the questions and concerns that Stoney Consultation and PGL have raised through the course of the environmental assessment process for SR1, and disagrees with PGL's conclusion that the potential residual adverse effects of the Project on hydrology and aquatic ecology have been underestimated.

29. I will now invite Mr. Hebert to make further comment.

Further remarks of M. Hebert

30. Thank you.

31. In closing, Alberta Transportation wishes to acknowledge the concerns raised in relation to this very important issue.

32. Alberta Transportation is committed to constructing and operating the Project in a manner that minimizes impacts to water, to conducting robust and effective monitoring, and when necessary using well-established and proven mitigation measures.

33. Specifically, Alberta Transportation has committed to an extensive and long term monitoring program of both surface water and ground water. This robust monitoring program will cover multiple disciplines. Details of these programs are contained in the drafts for each of:

    i. *Surface Water Monitoring Plan*;
    ii. *Ground Water Monitoring Plan*; and
    iii. *Fish Rescue and Fish Health Monitoring and Mitigation Program*.

34. Alberta Transportation's commitments to these measures is not limited to Project construction but rather is a commitment for the entirety of the Project's operational lifespan.

35. Alberta Transportation is confident that through the rigorous EIA process, including responding to SIRs at both the provincial and federal level, along with engagement and

consideration of matters raised by Indigenous Groups, local residents, stakeholders and their respective experts, we have a solid understanding of the implications of the Project on water. Furthermore, the monitoring regime will act as a verification of these conclusions and will guide the implementation of mitigation measures when and if needed.