

## James-EIC-Fish-passage hearing summary

1. The Project area includes 14 culvert outlets that have open channels upstream that may provide habitat for migratory freshwater fish. Of these outlets:
  - a. five were confirmed to have migratory fish in their catchments;
  - b. six were deemed to possibly have migratory fish in their catchments; and
  - c. three were considered to be unlikely to have migratory fish in their catchments.
2. At least 11 of these culvert outlets will require extensions to match the face of the new sea walls.
3. I have adopted a conservative approach by assuming fish are present in all affected catchments and this is reflected in the proposed consent conditions that ensure fish passage is improved or at least maintained at the current level for all 14 culverts.
4. 11 of the culvert outlets are at or below current beach level. Three of these beach level culverts currently extend beyond the extent of the proposed seawall and may not require any pipe extensions. The other eight will require installation of extensions to the existing pipes to the face of the new concrete seawall or rock revetment. These extensions should not result in any alteration to fish passage provided erosional and depositional processes around those outlets remain the same.
5. Three culvert outlets are elevated above current beach levels and will also require extension of pipes to the face of the new seawall or rock revetment. However, given their elevation, the extension design will need to ensure they do not become perched fish barriers.
6. The Project proposes beach nourishment for sections of beach at Point Howard, Lowry Bay, and York Bay (as described in the evidence of Mr Reinen-Hamill). There is the potential the addition and subsequent movement of sand and gravel material at these locations could block culvert outlets and have adverse effects on fish passage.
7. A suite of consent conditions have been recommended to ensure the current level of fish passage is maintained or improved, including:
  - a. Ensuring culvert extensions associated with the Project are designed in consultation with a qualified freshwater ecologist.
  - b. Avoiding the addition of beach nourishment gravels within 10m of culvert outlets.
  - c. Pre and post-construction monitoring to ensure the new extended outlets are operating as intended and have not developed any features that may impede fish passage. Remedial actions will be required if some aspect of outlet design has resulted in impeded fish passage.
8. Overall, with the implementation of the proposed conditions, the Project will have negligible to less than minor adverse effects on the passage of migratory freshwater fish.