The YMCA comments and questions to the Phase 2 Scope of Work fit into the following five categories in which DNR provides the following responses.

1. **Project Scope of Work and Project Goals**

YMCA: Clearly define the ultimate goals of the project.

DNR Response: The goal of the Whiteman Cove Restoration Architecture and Engineering Design project: *The data collected for this project will inform DNR of viable alternative(s) that will be evaluated for the analysis and design to reestablish the tidal estuary and fish passage*.

YMCA: the term "restoration" currently used in the document is unclear:
DNR: The term "restoration" refers to actions to be taken to meet the above stated goal.

YMCA: What fish species are being targeted?
DNR: The fish species include all species of salmon at all life stages.

YMCA: Requests that the scope identify suitable reference sites that are at the same scale as Whiteman Cove and have "similar wave conditions and geomorphology to the historic condition of Whiteman Cove."
DNR: This work is identified in subtask 8.2.

2. **Opportunities to Provide Input and Review**

YMCA expressed several times that we ensure opportunities for stakeholder coordination throughout the project.
DNR: There are numerous opportunities to review material and provide input throughout the development and implementation of the project as outlined in the October 3, 2019 memo from Walton to Cambre. DNR places great emphasis on assuring stakeholders opportunities for updates and input throughout the project and keeping stakeholders informed and engaged. DNR staff are also available to discuss the project with stakeholders individually at any time throughout the project.

YMCA: Asked that we clarify the timing for discussing preliminary concepts with regulatory agencies and how this timing fits with engagement of the stakeholders.
DNR: Agency engagement will occur prior to stakeholder engagement to ensure that we have the necessary guidance to discuss the preliminary concepts with the stakeholders with full confidence.

3. **Baseline Data**

The YMCA requested that DNR perform the following baseline data collection:

1. Fish survey early in the process.

2. Understand the historic condition of Whiteman Creek in relation to the pocket estuary and to describe the degraded condition of the creek.
3. Requests that the scope of work be revised to describe how the goal of preservation of Camp Colman's recreational and environmental education opportunities will be support and analyzed with respect to data collection or proposed analyses.
4. Explain how an open channel alternative would impact coastal geomorphology and sediment transport processes.
5. Will an open channel be sustainable given these larger scale and more dominant coastal processes?

DNR Response: Baseline data needs and recommendations were discussed in the August 19 meeting. After review of the discussion all the baseline data needs for the project were identified in the information sheet provided to stakeholders; Suggested Baseline Data Needs for developing Whiteman Cove Restoration Options Review Document, October 23, 2019. Data collection and analyses for this project are discussed under Task 6: Data Review and Collection and Subtask 8.1: Hydraulic Assessment and will reflect the goal of the project (described above) and an analysis of the potential fish passage, flooding risk and sediment transport impacts of the conceptual alternatives. The analysis includes impacts to the YMCA and private property adjacent to Whiteman Cove and in Case Inlet.

4. General Information

YMCA: The scope of work appears to be pre-disposed to the selection of an open channel or bridge concept.

DNR Response: The Phase 2 scope of work builds on the conclusions and recommendations of the 2015 (Revised) Draft Preliminary Design Report Whiteman Cove Estuary Restoration. As stated on page 25 of the report: *This preliminary evaluation serves as a building block for a more comprehensive restoration feasibility study. Additional studies needed for a more comprehensive analysis include the following:*

- *Assessing impacts to existing residential and camp improvements, including structures, docks, septic systems, and wells*
- *Considering a "worst case" scenario within the hydraulic model simulations including high water elevations and high wind-generated waves*

The outcome of Phase 2 work, the selection of restoration option(s), will provide an assessment of the impacts to the lagoon and the current outdoor recreation program at Camp Colman. DNR and the YMCA can then collaborate on the actions necessary to provide outdoor recreation opportunities for Camp Colman that simultaneously protects our native salmon and orca.

YMCA: There appear to be two matrices.
DNR: There will be one matrix, provided in draft and final form.

5. **Technical Questions**

Page 1 (bullets 6 and 7)

YMCA General Comments on the Scope of Work

- Creating a HEC-RAS 2D model as a part of this Scope of Work is inconsistent with conducting a comprehensive site survey during Phase 3. If a model is being performed, it should use the latest site survey information. Please revise the sequencing, or clarify how this redundancy and schedule works to ensure best use of science for selection of a preferred alternative.

RESPONSE: Previous studies of Whiteman Cove, which included collection of bathymetry data for the site, concluded that the bathymetry of the lagoon is not significantly different than when it was closed off in the early 1960's. Existing information is adequate to develop a numerical model of the lagoon in order to evaluate larger scale water surface elevation and flow velocities in the lagoon based on existing and proposed (with project conditions). In addition, using numerical modeling during the feasibility study (FS) stage of a project is standard practice. During the FS stage, the model will be used to evaluate comparative performance of proposed alternatives and to identify potential impacts. The model will be revised, if needed, during 30% design to optimize the preferred alternative.

- What is the justification for not digging geological test pits? Doing so would provide a history of processes that have occurred at this site. Such pits must be created in a manner that will not affect the stability of the berm.

RESPONSE: There is historical information available that shows the configuration (i.e. location and geometry) of the berm and the approximate elevations of the berm, including T-sheets from the late 1800's and aerial photographs from the 1940's through late 1950's, just prior to closure of the lagoon.

Page 9 (bullets 3 and 4)

YMCA Comments on Task 7:

- The Scope of Work is unclear regarding what is meant by a "screening-level feasibility review of concepts." Is this a subjective analysis by the consultant, or an objective probability-based decision analysis? Please specify what this is and how it differs from the matrix-based approach also described.

RESPONSE: The "screening-level feasibility review of concept" is an objective decision analysis and will include a matrix-based approach. The purpose of the screening-level review is to identify the two concepts that will be moved forward into the full feasibility evaluation.

- As described, it is unclear if the matrix-based approach appears to diverge from evaluating preliminary concepts with collaboratively developed criteria to using "high level opportunities and constraints." How is the consultant going to combine these different factors in an objective and transparent evaluation process?

RESPONSE: Development of evaluation criteria will be completed in a collaborative manner. Opportunities to provide comment and input on the Preliminary Draft Evaluation Criterial will occur prior to developing the final evaluation criteria, as outlined in Subtask 7.1. This will either be at an in-person meeting or through website solicited input.

Page 11(bullets 2, 4 and 5)

YMCA Comments on Task 8:

- The YMCA questions whether a HEC-RAS 2D model is necessary to evaluate how alternatives will impact Whiteman Cove. This seems like a rather large modeling effort. The YMCA requests clarification regarding what scale the model will be built on to understand how rigorous it will be in predicting water surface elevations under the two conceptual alternatives.

RESPONSE: The HEC-RAS 2D model is needed to evaluate potential hydrodynamic conditions in the lagoon based on proposed options and how these conditions relate to fish passage and impacts to adjacent upland areas and shellfish beds offshore. The effort is not considered significant, as it is building on an already existing model developed in 2015.

The model domain will include inputs from the creek, the entire lagoon area and lagoon banks, berm, and shoreline areas inclusive of the shell-fish bed locations. The specific resolution of the model is yet to be determined, but is expected to be spatially variable with cell sizes small enough to resolve flow in proposed channels or hydraulic structures. 1-D model elements may need to be included in the 2-D model grid (which is possible in HEC-RAS), for simulation of flow through hydraulic structures (i.e. culverts, tide gates, weirs).

- Regarding the model, it appears that there will be three outputs form the 2D model: 1) depth-averaged velocities in the tidal connection, 2) water surface elevations, and 3) depth-averaged salinities. How will these outputs be used to evaluate the alternatives?

RESPONSE: The results of the model (i.e. outputs) will be used to evaluate the conceptual alternatives in terms of fish passage into the lagoon (i.e. velocities and water depths in channel or structure), potential for flooding of adjacent properties along the lagoon shoreline (i.e. water surface elevations), potential for low water elevations (draining) of the lagoon at certain tidal elevations, and sediment transport along the nearshore and estuary (based on predicted velocities and bed shear stress) that could impact adjacent commercial shellfish beds and an eelgrass restoration site.

- What will they be compared to?

RESPONSE: Results for proposed conditions will be compared to each other and to evaluation criteria developed as part of the project.

- Will field data be collected within the existing tide gates to be able to model those channels?

RESPONSE: Specific field data will not be collected as part of Phase 2 work within the existing tide gate structures. Since they are not currently operating as designed (to our knowledge), existing conditions modeling (if needed), including tide gate operation, will be based on operating procedures for those structures. Some field data is available for the water surface elevations in the lagoon from previous studies.

- How do these outputs allow for evaluation of potential flooding of upland areas, low water elevations that are connected to tidal fluctuation and sediment transport?

RESPONSE: The model output includes water surface elevations and will show dynamic flooding and draining of the lagoon as part of the model simulation (called "wetting and drying").

- How will a GIS-based analysis be used to evaluate impacts of high and low water levels?

RESPONSE: The outputs of the model will be brought into a GIS environment to develop user-friendly maps of model results and to compare results to other data sets, for example vegetation, property lines, location of structures, existing FEMA floodplain, etc.