Proposed Final Study Plans Comment-Response Table

Author **Agency/Interested Party**	**Proposed Final Study Plans Section (Page)** ***"Text"***	**Comment**
Section 1: Introduction		
Michael Knapp ADOT&PF	Section 1.2.11 Ongoing Study Efforts by Others (page 16) *"Sediment transport monitoring at the highway and railroad bridges being conducted by Eklutna, Inc."*	Only a short-duration requirement by USACE permit
Section 3.1: Instream Flow Study		
Michael Knapp ADOT&PF	Section 3.1.4.3 Study Site Selection (page 35) *"Approximately 230,000 cubic yards of sediment accumulated behind the Lower Eklutna Dam after it ceased operations in 1956 and before it was removed in 2018. Most of that sediment was left in the river after the removal of the dam. However, existing flows in the Eklutna River (resulting from precipitation and accretion from small tributaries) have already transported a large portion of that accumulated sediment downstream. The majority of the remaining sediment is silt and clay, with some sand and gravel."*	A large portion has already been transported? How was this determined?
Michael Knapp ADOT&PF	Section 3.1.4.3 Study Site Selection (page 36) *"Because the reach of the Eklutna River within and immediately downstream of the lower dam site is so heavily sedimented (Figure 3-2), it is likely that channel morphology changes would continue to occur within this reach even with a high to low study flow release schedule (see Section 3.1.4.5) making model calibration difficult."*	How much deposition (depth) has occurred in the Figure 3-1 reach? What does "heavily sedimented" mean?
Michael Knapp ADOT&PF	Section 3.1.4.4 Model Review and Selection (page 39) *"Hydraulic Analysis – in which depth and velocities and their spatial distribution are determined for a given flow condition. The development of stage/discharge rating curves can be used to calculate a relationship between depth and flow. Further hydraulic analyses can be performed to develop a relationship between velocity and flow. In addition to depth and velocity, shear stress is another hydraulic variable that can be computed and will be useful to the Geomorphology/ Sediment Transport Study (Section 3.2)."*	Rating curve will not be stable in areas where deposition are occurring.
Appendix B: Comment Response Tables		
Michael Knapp ADOT&PF	Draft Study Plans Comment-Response Table, Comment #75 (page 10) *"Sediment transport varies between rivers because different rivers react differently to similar inputs and the mathematical computations do not fully model physical processes. The northern hemisphere has other rivers that often flow supersaturated with glacial fines. How does this enhance or detract from their ability to move sand, gravel and cobbles? Please find models that have been proven to work on rivers with similar sediment loads."*	Specific weight of water will change if it is silt-laden. This will impart a higher tractive force along the bed. HEC-RAS is based upon a fixed boundary assumption. While it can provide some gross estimates of sediment transport rates, it cannot address alluvial fan dynamics or channel evolution processes.
Michael Knapp ADOT&PF	Revised Draft Study Plans Comment-Response Table, Response to TU Comment (page 2) *"The proposed range of IFS test flows (25 cfs to 150 cfs) should afford a HEC-RAS extrapolation range well above 375 cfs and should be able to reliably calculate water surface elevations (and flow depths) at flows up to 1,000 cfs."*	Extrapolated modeling results for ~6.7x the flow?!
Michael Knapp ADOT&PF	Revised Draft Study Plans Comment-Response Table, Response to NMFS Comment (page 3) *"The proposed range of IFS test flows (25 cfs to 150 cfs) should afford a HEC-RAS extrapolation range well above 375 cfs and should be able to reliably calculate water surface elevations (and flow depths) at flows up to 1,000 cfs."*	...but not over an alluvial fan. Might work in a constrained box canyon, but it will not solve the uncertainties near the bridges.