FMM Feasibility VE Study - Comments

Proposal	Civil	PM	Structures	Geotech	H&H	Environmental
#1						
Realign ND diversion East of the Sheyenne River & protect Harwood, ND with ring levees.	The ND alignment is a locally preferred alignment and therefore they chose the locations to be taken out of the flood plain to include Harwood. By placing a ring levee around Harwood it would defeated the local sponsors goal of eliminating the small town from becoming isolated each flood season. In addition, the Federal Government would not be able to play a role in a ring levee proposal for the town of Harwood because the Benefit to Cost ratio is not above 1.0 and therefore the local sponsors would have to come up with other means on their own to accomplish this proposal in full.					
#2						
Realign MN diversion by shortening channel & re-orienting outlet works.	This proposal is to realign and shorten the MN diversion by shifting the alignment to the West of Kragness. The alignment is to include the town of Kragness to eliminate their flooding from the Buffalo River which is to the East of the town. If the channel were aligned to exclude the town of Kragness it would also make the city of Moorhead feel as though they are being squeezed for future development which was not acceptable for their city's acceptance of the MN diversion alternative.				Figures 2 & 3 regarding the outlet design and location of the MN alignment were agreed and completed during phase 3 of the feasibility study.	
#3						
Begin ND diversion channel further North.	Again, the ND alignment is a locally preferred alignment and therefore they chose the general location for the inlet. Their reasoning for the location of the inlet being further South than the MN alignment was to accommodate the city of Fargo's current future plans of development and to protect the city from the Wild Rice River flooding to the South.	To eliminate and relocate the 10 houses of Horace will not be acceptable to the Locally Preferred Plan sponsors.			With the new location proposed of the inlet structure it is very probable that a control structure of some sort will need to be placed at the intercept of the Wild Rice River and the Red River of the North due to the amount of water build up that will occur. This is a similar concept to the extension channel on the MN alignment that was needed for conveyance, no structure at the proposed ND inlet on the Wild Rice will potentially disrupt the design of the channel.	
#4						
Redesign Wild Rice Diversion for MN alignments.	Agreed…This is a possibility to consider during plans and specifications if the MN alignment is chosen.					
#5						
Replace bridged crossings with at grade crossings.			The level of design that has been done is only feasibility level and for the purpose of feasibility the cost needs to be as close as possible to construction cost and therefore actual bridges were only considered at this stage. This is an option to look into during plans and specifications as each crossing will need to be considered individually. The major issue with this idea is the impedance it will cause with the low flow channel. The purpose of the low flow channel was to continually pass enough flow through the channel so that it did not change the environmental habitat that will be meandering through for example the northern end of the ND alignment. This idea will require the concurrence of the natural resource agencies, the safety council for the required work to patrol the roads during every rain storm as well as the hydraulics department to ensure the overall channel purpose will not be affected. This is a possibility for cost savings and will be considered during plans and specifications.			