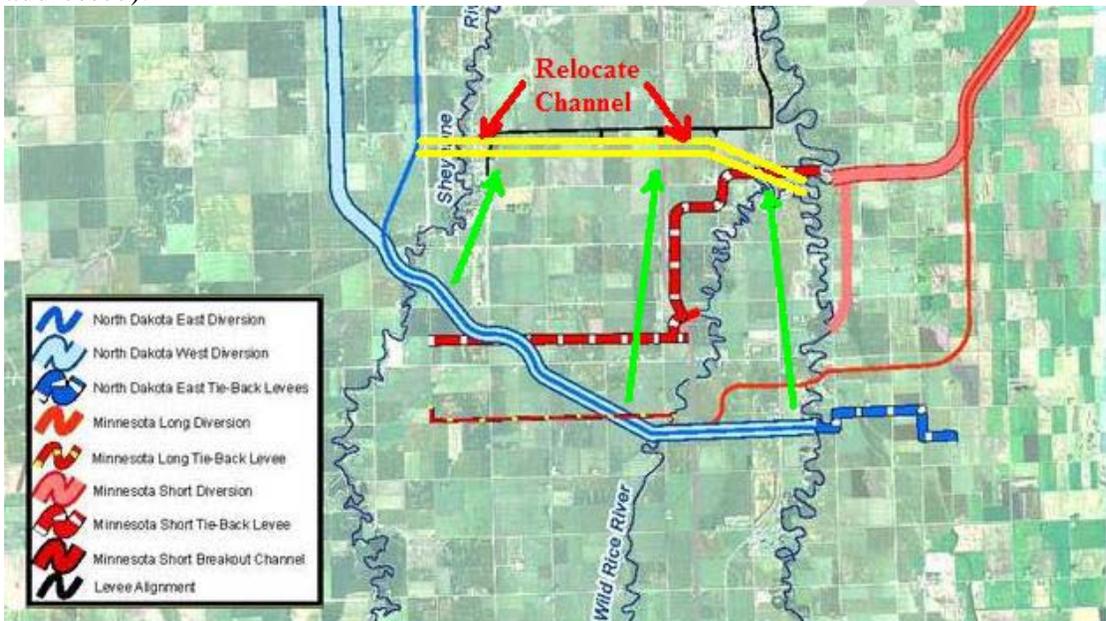


ORIGINAL DESIGN: The North Dakota East Diversion starts at the Red River upstream of the confluence with the Wild Rice River. It intersects the Wild Rice, Sheyenne, Maple, Lower Rush, and Rush Rivers over a total length of 191,948 feet.

PROPOSED DESIGN: Start the diversion just downstream of the confluence of the Red and Wild Rice Rivers. Proceed west to the existing Horace Diversion and join the original design path. This cuts 22,490 feet from the length of the channel, or 11.72% of the length. (Tie back levee issues not addressed).



ADVANTAGES: This eliminates the intersection structures with the Wild Rice River. Because it intersects the Sheyenne River downstream of the Horace Diversion inlet and captures the water from the West Fargo Diversion, it is possible that neither Sheyenne River crossing will require an inlet to the diversion. It shortens the diversion by about 4 miles. It eliminates the railroad bridge near Horace and the 48th Street and 46th Street (and possibly the 44th Street) road bridges. (It does require a second intersection structure with the Sheyenne River.) Because the channel is shorter, there would be less maintenance on the finished channel.

DISADVANTAGES: It significantly reduces the protected area. Because the Sheyenne River is "perched," it might not be possible to start the diversion below the confluence of the Red and the Wild Rice Rivers and flow downhill to the Sheyenne before reaching more heavily developed neighborhoods. Depending on how far the Maple River could back into the Sheyenne, an inlet might be needed at the downstream crossing or below it (after the confluence of the Sheyenne and Maple Rivers).

JUSTIFICATION: Reduced cost- \$140,000,000.

**Note that both the original estimate and this proposal do not include a necessary bridge where U.S. Highway 81 Bus. Crosses proposed channel at the south end of the diversion just west of the Red River. (This will be added to the Comment list as an omission)

COST ESTIMATE WORKSHEET

Speculation Item # 3 - Realign ND East channel further north				
DELETIONS				
ITEM	UNITS	QUANTITY	UNIT COST	TOTAL
				\$0
Delete Channel construction	ft	11,000	\$2,700.00	\$29,700,000
Delete local inlets	ea	4	\$1,100,000.00	\$4,400,000
Delete Wild Rice diversion structure		1	\$79,978,800.00	\$79,978,800
Delete Sheyenne Diversion structure		1	\$53,784,500.00	\$53,784,500
44th street bridge	ea	1	\$2,966,900.00	
46th street bridge	ea	1	\$2,975,800.00	\$2,975,800
48th street bridge	ea	1	\$2,975,900.00	\$2,975,900
Railroad bridge	ea	1	\$3,571,000.00	\$3,571,000
Less land acquisition (assume -10%)	acres	640	\$6,500.00	\$4,160,000
				\$0
				\$0
			Total Deletions	\$181,546,000
ADDITIONS				
ITEM	UNITS	QUANTITY	UNIT COST	TOTAL
				\$0
Sheyenne Diversion Structure	ea	1	\$55,000,000.00	\$55,000,000
Real estate (Horace) relocate houses?	acres	10	\$300,000.00	\$3,000,000
				\$0
			Total Additions	\$58,000,000
			Net Cost Decrease	\$123,546,000
Reduces E&D / CM**			Mark-ups 15.00%	\$18,531,900
			Total Cost Decrease	\$142,077,900