



# STAR VALUE CALCULATION WORKSHEET

(Adopted July 1991)  
(Revised March 2000)

## RRWMB "STar VALUE" CALCULATION WORKSHEET

PROJECT NAME: \_\_\_\_\_

DRAINAGE AREA: \_\_\_\_\_

**STORAGE VOLUMES:**

	<u>Acre-feet</u>	<u>Inches</u>	*Adjusted <u>Inches</u>	Adjusted <u>Acre-feet (S)</u>
Ungated (E Spillway)	_____	_____	_____ =>	_____
Gated	_____	_____	_____ =>	_____
Drawdown	_____	_____	_____ =>	_____
<b>TOTALS</b>	_____	_____	_____	_____
			^	
			^	
			^	
			^	

**DETENTION TIME:**

UNGATED detention time	=	<u>90% Ungated volume (AF)</u>	/ 2 =	_____ Days
		Average discharge (AF/Day)		
GATED detention time	=			
(detention time in operation plan)	+	<u>90% Gated volume (AF)</u>	/ 2 =	_____ Days
		Average discharge (AF/Day)		
<b>DRAWDOWN detention time</b>	=			_____ <u>23</u> Days

**TOTAL RELATIVE VALUE OF THE DETENTION TIME (T):**

Average time interval between project location and Red River peak	=	_____ Days
		(From Table 1)
Total relative value of the detention time, T: (From Figure 2)		
T (Ungated Storage)	=	_____ Days
T (Gated Storage)	=	_____ Days
T (Drawdown Storage)	=	_____ Days

**"STar VALUE" COMPUTATION: (S x T)**

Where S = Adjusted Storage (acre-feet) and T = Relative value of the detention time (days)

	S	x	T	=	Star Value
Ungated	_____		_____		_____
Gated	_____		_____		_____
Drawdown	_____		_____		_____
			Total Star Value	=	_____

\*The adjustment to storage should first be applied to the ungated storage.

**Table 1**  
**Average Time Interval between the Routed USGS Gaged  
Watershed Hydrograph and the Red River Hydrograph Peak**

<b>Description</b>	<b>Days before (-) Days after (+)</b>	<b>Peak</b>
Bois de Sioux nr White Rock		15
South Branch Buffalo River @ Sabin		-3
Buffalo River nr Hawley		-3
Buffalo River nr Dilworth		-3
Wild Rice @ Twin Valley		0
Wild Rice River @ Hendrum		0
Marsh River nr Shelly		-1
Sand Hill River @ Climax		0
Red Lake River @ Highlanding		5
Thief River @ TRF		5
Clearwater @ Plummer		6
Lost River @ Oklee		3
Clear Water @ Red Lake Falls		2
Red Lake River @ Crookston		0
Middle River @ Argyle		-6
Two Rivers @ Lake Bronson		-6