

Figure 4

Flood Operations

When flood operations are declared, WSA may draw down Boundary Reservoir to its target level. However, WSA typically chooses whether to lower Rafferty Reservoir to compensate for the loss of flood storage in Boundary Reservoir. Figure 4 shows the target level for Boundary Reservoir according to the 1989 Agreement.

How flood operations are declared:

Flood conditions are declared by the International Souris River Board if one of two conditions is met within Annex A prior to the spring melt. Those conditions are met when the Canadian Water Security Agency and the US National Weather Service issue a:

- » 30-day, unregulated forecast volume at Sherwood, ND that equals or exceeds 175,200 acre-ft (216,100 dam³), or a
- » 30-day, local runoff volume forecast between the Canadian reservoirs and Sherwood, ND that equals or exceeds 30,000 acre-ft (37,000 dam³).

Boundary Reservoir

FACT SHEET

Souris River Basin

The Souris River rises near Weyburn, Saskatchewan, and flows in a southeasterly direction for approximately 349 km (217 miles) where it enters the United States near Sherwood in northwestern North Dakota. The river continues on a southeasterly course flowing through Minot, North Dakota. At Velva, the river forms a loop and turns northeast to Towner and then gradually assumes a northwesterly direction to flow back into Canada at Westhope, Manitoba. The Souris River continues its journey in Canada and empties into the Assiniboine River, which flows to the Red River of the North at Winnipeg. The Souris River has a total length of about 1173 km (729 miles), including about 576 km (358 miles) in North Dakota.

The total basin area is about 61,770 square kilometres (23,850 square miles). (Figure 1)

Click [here](#) to see a map with links to all the gages in the basin on the United States Geological Survey (USGS) website.

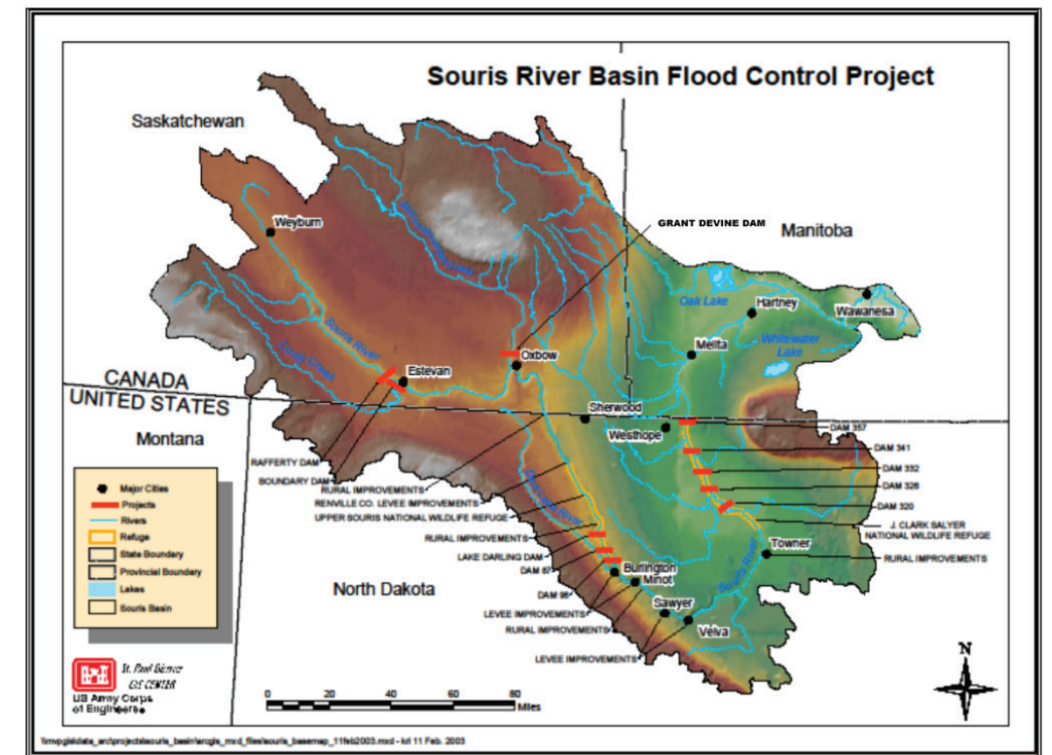


Figure 1

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International Souris River Study Board

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Figure 2

Souris River Basin Project

Four dams constitute the majority of the Souris River Basin Project: Rafferty, Grant Devine, Boundary and Lake Darling. The Rafferty – Grant Devine Project (including Boundary Reservoir) in the province of Saskatchewan works in coordination with Lake Darling Dam in North Dakota to provide flood control to rural areas in Saskatchewan, rural areas in North Dakota, and the City of Minot, ND (Figure 1). The flood project includes several smaller dams and bank improvements along the Souris River downstream of Minot, North Dakota.

The reservoirs are operated under the Operating Plan in Annex A of the 1989 Agreement between the governments of Canada and the United States of America.

The objectives of the Operating Plan are to:

- » provide 1% (100 year) flood protection at Minot, North Dakota, based on data available when the operating plan was developed;
- » provide flood protection to urban and rural areas downstream from Rafferty Dam, Grant Devine Dam, and Lake Darling Dam; and
- » ensure, to the extent possible, that the existing benefits from the supply of water in the Souris River Basin are not compromised.

Boundary Reservoir

Boundary Reservoir is created by Boundary Dam and is part of a series of reservoirs in the Souris River Basin.

Boundary Reservoir is located on Long Creek, 5.5 km (3.4 miles) upstream of Estevan, Saskatchewan (Figure 2). It has a surface area of 688 hectares (1,698 acres) at full supply level.

Boundary Reservoir is an important water supply reservoir. As a result, Boundary Reservoir has limited flood control storage.

The Saskatchewan Water Security Agency (WSA) compensates for the limited flood storage in Boundary Reservoir with additional drawdown of Rafferty Reservoir when required. Figure 3 shows the operating rules for Boundary Reservoir.

Boundary Reservoir is included in the Rafferty-Grant Devine Project as it is connected to Rafferty Reservoir via a 10 km long channel that allows water from Long Creek to be diverted to Rafferty Reservoir. Water can also be pumped from Rafferty Reservoir to Boundary Reservoir in low flow years. The Saskatchewan WSA owns, operates, and maintains the Rafferty-Grant Devine Project. However, Boundary Dam is owned, operated, and maintained by the **Saskatchewan Power Corporation** (SaskPower).

Non-Flood Operations

Boundary Reservoir is operated under Annex B of the 1989 Agreement by SaskPower during non-flood conditions as a water supply reservoir. The reservoir is maintained as closely to full supply level as possible (Figure 3).

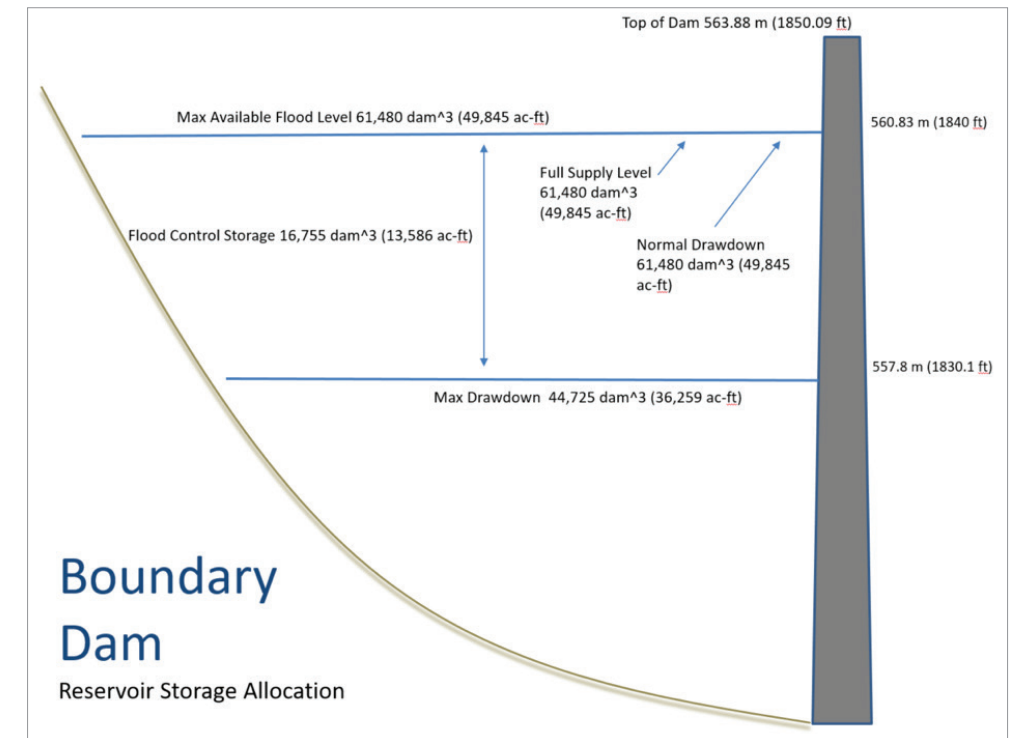


Figure 3

What is a drawdown?

Drawdown means lowering the elevation of the reservoir pool. This is done, for example, to increase capacity for flood storage, provide water supply downstream during a drought, for environmental reasons, support of law enforcement, and other purposes.