10.2-1 Net Creek Dam (MNR)

Planning Team Consensus
PAC Consensus
Steering Committee Consensus

Preliminary Preferred Operating Option

Operating Range:	295.30 – 297.05 m
Absolute Range:	294.92 – 297.05 m
Summer Band:	296.16 – 297.05 m May 1st to September 15th
Winter Drawdown:	Partial drawdown in fall, drawdown 30 cm beginning September 15th by removing one stop log per sluice **(new)** Full drawdown to be completed prior to freshet
Others:	Educate the Public – WMP consultation program (scoping, options, and Draft Plan stages), Public Waterway Safety, and Cottage Association meetings.

Benefits:

- There are no changes to the operating plan during the walleye spawning period. There were no options developed as walleye habitat is maintained with the current operating regime.
- A new drawdown strategy was selected to address lake trout spawning issues. The revised drawdown has potential benefits for lake trout spawning by encouraging the trout to spawn deeper with the initial drawdown prior to spawning, reducing the impact of the remainder of the drawdown, which is a priority to mitigate flooding.
- The current operating plan accommodates majority of users' navigational and recreational needs and no issues were identified. As a result, there were no options recommended by the PAC or Planning Team.
- The new partial drawdown in the fall may improve flood mitigation and thus public safety in years of early spring freshet. This option also maintains public awareness. In addition, a partial drawdown in the fall would lower water levels before the lake freezes and may reduce ice damage to docks.
- No options were developed specifically for power generation, however, the new drawdown strategy may benefit power generation. The water discharged during the partial drawdown in the fall will be passed through the generators at Matabitchuan GS, whereas previously it may have been passed through the spillway during freshet. This improves power generation downstream by making more efficient use of available water.
- The new drawdown strategy may reduce the impact of the drawdown on beaver. A partial fall drawdown may encourage beaver to build at a lower elevation, leaving them less susceptible to dewatering and their predators.

Conflicts:

- The new drawdown strategy may impact recreation and navigation in the late fall.

Outstanding Information Gaps:

- None

10.2-2 North Milne Lake Dam (MNR)

Planning Team Consensus
PAC Consensus
Steering Committee Consensus

Preliminary Preferred Operating Option

Operating Range: 310.30 – 310.60 m, operated as a weir
Others: Educate the Public – WMP consultation program (scoping, options, and Draft Plan stages), Public Waterway Safety, and Cottage Association Meetings.

Benefits:

- The present operations are maintained as the dam is operated as a weir. No issues were identified and no options were recommended by the PAC or Planning Team.
- The present operating regime emulates natural flow regime most of the time, as it is operated as a weir. When the lake level is at the top of the weir, all inflow is passed over the weir.
- The current operating plan maintains fish habitat and the weir provides habitat during pike and bass spawning periods. No issues were identified and no options were recommended by the PAC or Planning Team.
- The current operating plan accommodates majority of users' navigational and recreational needs and no issues were identified. As a result, there were no options recommended by the PAC or Planning Team.
- The current operating plan maintains public safety and public awareness. No issues were identified and no options were recommended by the PAC or Planning Team.
- The weir maintains wildlife habitat. No issues were identified and no options were recommended by the PAC or Planning Team.

Conflicts:

- None

Outstanding Information Gaps:

- None

10.2-3 Rabbit Lake Dam (OPGI)

Planning Team Consensus
PAC Consensus
Steering Committee Consensus

Preliminary Preferred Operating Option

Operating Range:	287.00 – 291.88 m **(new)**
Absolute Range:	286.00 – 292.34 m
Summer Band:	291.40 – 291.88 m from Victoria Day weekend to Thanksgiving weekend Achieve 291.40 m by May 1 on a reasonable effort basis **(new)** Target 291.40 m by Thanksgiving weekend during extremely dry summers on a reasonable effort basis **(new)** For these purposes, a dry summer is defined as a summer in which the total precipitation received at Earlton in July and August is less than 160 mm.
Winter Drawdown:	Drawdown to 287.00 m by March 20th and close off dam with onset of freshet **(new)**
Flood Allowance:	291.88 – 292.34 m
Others:	Educate the public – WMP consultation program (scoping, options, and Draft Plan stages), Public Waterway Safety, and Cottage Association Meetings. OPGI website **www.OPGI.com/envcomm/wateruse/riversystems.asp**, OPGI phone 1-705-268-9197.

Benefits:

- New constraints have been selected to improve conditions for walleye spawning by achieving the summer band elevations by the time the water temperature is appropriate for walleye spawning ($5^{O}C$). Relating this constraint to temperature rather than specific dates will account for yearly variability. This may also benefit pike habitat.
- The new fisheries' constraint to achieve the summer band earlier reflects a more natural regime, i.e. higher elevations earlier.
- The previous lake trout constraint to maintain the elevation above 290.63 m until Jan 15th was deemed by MNR to neither benefit nor conflict with trout spawning, as the only known trout spawning site is in 7 m of water that will still be well covered under water after the drawdown. Removal of this constraint would allow beginning the drawdown prior to freeze-up and should mitigate excessive shoreline erosion, result in less ice damage to docks and improve power generation without impacting lake trout spawning.
- The present summer band accommodates majority of users' navigational and recreational needs in the lake. No options were recommended by the PAC or Planning Team. Achieving the summer band earlier for fisheries will improve recreation and navigation. A new constraint was selected to target the bottom of the summer band by the Thanksgiving weekend during dry summers. This will balance upstream and downstream recreation and navigation, improving downstream conditions.
- The new operating regime maintains public safety and public awareness. No issues were identified and no options were recommended by the PAC or Planning Team.
- The drawdown strategy maintains flood mitigation. No options were recommended by the PAC or Planning Team specifically for flooding.
- The new timing for the summer band will improve wildlife habitat by maintaining more stable levels (summer band) earlier that will benefit nesting waterfowl.
- The new timing for the drawdown will improve power generation (100 households per year) resulting from the drawdown occurring during the coldest months of the year, which is one of the peak electrical demand periods.

- The new operating regime maintains sustainable economic opportunities by providing a summer band for recreation and navigation that will benefit the tourist operators on the lake. No options were recommended by the PAC or Planning Team specifically for economics.

Conflicts:

- This regime limits maximum power generation as a result of the following potential losses:
    - maintenance of summer band (286.00 to 291.40 m) – 2,300 households per year
    - maintaining the operating range instead of the absolute range (291.88 to 292.34 m) – 162 households per year

Outstanding Information Gaps:

- None

Removal of the Jan. 15th fisheries constraint:

This option was based on the review of the existing operational constraint in light of current biological knowledge on Lake Trout life cycle/spawning habitat requirements. The removal of the constraint was not based on the opinion that there is not an impact to trout spawning by the current winter drawdown levels. In the option development process, the planning team considered the fact that there is a sustainable natural lake trout population in the lake with the current operating regime, which has a substantial winter drawdown of 5.88 m. The biological background research has determined that the emerging lake trout fry are not mobile and therefore remain on the spawning bed as egg deposited sites with egg sack (yolk) attached. Based on this information and a review of OPGI's records of historical operating levels, the conclusion made was that there must to be a sustainable amount of the lake trout population that spawn in deeper than what would be considered normal lake trout spawning levels. Based on the historical drawdown of approximately 4 m there would not be any natural trout found in the lake if they only spawned from 2-9ft, as is normal for unregulated lakes. However, one has to assume that the current operational drawdown levels are not favourable for Lake Trout and that there will be a level of mortality for the spawn found at depths shallower than the drawdown target level. Based on a review of the drawdown historical averages, we can also assume that there are years which lake levels were not drawn to the target level of 286.00 m and potentially those have been years which resulted in a greater spawn survival rate. As there have been no definitive studies conducted on the Rabbit Lake system by which to determine long term spawning depths and survival rates, the option was based on maintaining the historical drawdown regime on the lake. There is a valid concern that there would be a detrimental impact to the lake trout population if the removal of the January constraint would result in drawdown average levels being consistently lower over the course of time. However, if current operations are maintained and historical averages stay consistent, the existing baseline conditions in regards to current level of the natural lake trout population, will be maintained.

Flood Mitigation:

The Ottawa River watershed has flooding issues at several locations between Mattawa and Montreal. Due to the size and complexity of the watershed, it is difficult to predict if flooding will occur from year to year. All the Ottawa River basin storage reservoirs are thus lowered to their respective minimum levels prior to freshet each year to mitigate flooding.

The Rabbit Lake drawdown is completed by March 20th at which point the dam is closed off and the reservoir allowed to refill. The rate of filling depends on the snow pack density, the ambient temperatures and the amount of spring rains received. The drawdown target level of 287.00m is used as a guide. It is adjusted every year depending on the snow pack. If the area snow courses indicate above normal conditions, the drawdown is extended; vice-versa if it is below normal. This action mitigates flooding on the Ottawa River while ensuring the filling of Rabbit Lake by May 1st.

10.2-4 Matabitchuan G.S. (OPGI)

Planning Team Consensus
PAC Consensus
Steering Committee Consensus

Preliminary Preferred Operating Option

Operating Range:	273.20 – 275.33 m
Absolute Range:	273.20 – 275.33 m
Summer Band:	275.00 – 275.33 m Victoria Day weekend to Thanksgiving weekend
Winter Drawdown:	Drawdown Rabbit Lake by March 15th, Net Lake by March 21st, Fourbass Lake by April 9th
Fisheries Constraints:	274.60 – 275.33 m April 15th – June 15th for walleye spawning Spill log installed April 15th removed end June
Natural Flow regime:	**Low Flow:** spawning log installed April 15th, removed end June **Bankfull Flow:** None **Riparian Flow:** None
Others:	Educate the Public – WMP consultation program (scoping, options, and Draft Plan stages), Public Waterway Safety, and Cottage Association Meetings. OPGI website **www.OPGI.com/envcomm/wateruse/riversystems.asp**, OPGI phone 1-705-268-9197.

Benefits:

- The present operations maintain fish habitat. The spill log provides a minimum flow in the spillway during walleye and the red fin sucker spawning season. The facility generally operates to pass inflows thus providing habitat downstream of the facility. No options were recommended by the PAC or Planning Team.
- The present operations accommodate the majority of users' navigational and recreational needs. No options were recommended by the PAC or Planning Team.
- The present operations maintain public safety and public awareness. No options were recommended by the PAC or Planning Team.
- The present drawdown strategy maintains flood mitigation. No options were recommended by the PAC or Planning Team.
- The present drawdown reduces peak flows downstream of the facility during freshet to reduce shoreline erosion during this period. No options were recommended by the PAC or Planning Team.
- The current summer band maintains habitat for waterfowl and wildlife. No options were recommended by the PAC or Planning Team.
- The present operations maintain existing power generation. No options were recommended by the PAC or Planning Team.
- The present summer band maintains sustainable economic opportunities for the tourist operators on Fourbass Lake. No options were recommended by the PAC or Planning Team.

Conflicts:

- This regime limits maximum power generation as a result of the following potential losses:
    - maintenance of the summer band (273.20 to 275.00 m) – 148 households per year
    - water spilled during spawning log installation of 45 days – 24 households per year

Outstanding Information Gaps:

- There is an outstanding information gap to continue an erosion study at Matabitchuan GS