

The provided responses are based on knowledge and understanding of the project at the time. As the Department continues processing the application, new information will be evaluated as it is received. The Department will continue working on the EIS and must process the application within statutory timeframes. Therefore, it is requested that if the public has any new information to submit to the DNR for consideration in the EIS, please do so by May 31, 2015.

Questions and Answers from the Information Meeting regarding DNR permitting Process – March 23, 2015

1. DNR There is a noticeable reduction in the fish population in the impoundment since the draw downs have occurred. During the drawdown, the near shore habitats are being compromised. The river freezes more quickly and encompasses most and sometime all surface areas thus reducing oxygen levels for the fish. The depth of the river is greatly reduced providing much less available “deep” water for winter survival. Additionally, there is a significant decline in the number of Bullfrogs since the draw downs have happened, and the clam population is becoming non-existent. Does the DNR know this is happening?

DNR response: Luke has been working closely with Elaine. Luke: I cannot necessarily comment directly on any abundant changes. We don't actually get into that stretch of river to sample as often as I would like. Access points as you guys probably know are kind of limited. I will say the concerns about overwintering habitat for the fish that are present in that stretch of the river are certainly chief among the things that I brought up and added to the Environmental Impact Statement (EIS) so yea those concerns are being considered along with all the other factors.

4/21/15: The Fox River and Wind Lake Canal above the Rochester Dam are home to a wide variety of gamefish and forage species, many of which have shown a documented affinity for specific overwintering habitat that is unlikely to be present during a winter drawdown to a maximum water depth of approximately 3'. Paragamian (1989) used radiotelemetry to determine seasonal walleye habitat use in the Cedar River in Iowa, finding that walleye overwintered in pools ranging in depth from 4.9' to 9.8' and that deep pools (>5.9') were sought most frequently by walleye in winter. Coble (1975) indicated a similar preference in smallmouth bass, finding smallmouth bass preferentially selected the deepest available habitat during winter. Channel catfish are known to seek out the deepest available scour holes for overwintering habitat (Newcomb 1989), even relocating to larger rivers if preferred habitat is not immediately available (Peters et al. 1992; Pellett et al. 1998). Multiple studies have documented the preference of northern pike for deep overwintering habitat (>6.7') in reservoirs and lakes (Diana et al. 1977; Cook and Bergersen 1988). Largemouth bass have also been significantly affected by winter drawdowns, typically moving greater distances and exhibiting larger home ranges during the drawdown (Rogers and Bergersen 1995). Largemouth bass, like all fish species, seek out specific overwintering habitat to minimize energy expenditure (Carlson 1992), habitat which may not be available during a drawdown. Muskellunge have also exhibited an affinity to congregate in the deepest available overwintering habitat during drawdown conditions (Gillis et al. 2010). Muskellunge in the Mississippi River have shown a significant preference for deeper pools, with overwintering depths up to and above 8.2' (Younk et al. 1996). Adult white sucker in the Credit River

system in Ontario occurred almost exclusively in pools deeper than 3.2' during the winter (Cunjak 1996). Given the fact that preferred winter habitat will not be available for these fish after the drawdown begins each October, a downstream fall migration of fish through the Rochester Dam can be expected each year. The Rochester Dam spillway is also unlikely to be passable during typical spring flows, meaning these fish species will not be able to migrate upstream past the dam to recolonize the river and canal. Without modification to the spillway, annual winter drawdowns could reasonably be expected to lead to a marked decrease in fish abundance between the Rochester, Waterford and Wind Lake Dams.

Northern pike begin spawning in early March in southern Wisconsin at water temperatures of about 34 to 40 degrees Fahrenheit. Northern pike seek flooded vegetation such as grasses, sedges, or rushes to broadcast their eggs. Water temperatures during egg development range between 45 and 60° F. The eggs adhere to the vegetation and hatch in about 2 weeks depending on water temperature. After hatching the sac-fry adhere to vegetation for about 2 weeks depending on water temperature. After the yolk sac is absorbed the fry are dependent on zooplankton for food. Walleye spawn over gravel/rubble substrate in water as shallow as 12 inches beginning in March or April when water temperatures are between 40 and 45 degrees. Walleyes will also utilize flooded wetland vegetation if available. The state threatened river redhorse spawns over gravel or rubble in water as shallow as 2 feet usually in May or when water temperatures are between 65 and 75°F. The shorthead redhorse spawns over sand, gravel, and rubble in water as shallow as 6 - 8 inches in April and May. Largemouth and smallmouth bass spawn in May and June and build nests in water as shallow as 12 inches. Allowing the winter drawdown to an open river system would likely result in reduced areas of shorelands and wetlands the Northern Pike utilize for spawning and would prevent sufficient water depths to allow spawning Northern Pike to use, and get to, these areas. RCDD is proposing to raise the water elevation starting February 15th in an effort to minimize impacts for spawning Northern Pike. Temporary drops below the lower minimum water elevation for high flows after precipitation events could also reduce spawning substrate for walleye, largemouth bass, smallmouth bass, and redhorse due to the fluctuations in water levels. The eggs and fry of fish and nests or babies of other amphibians and reptiles could be put at risk of death or being stranded also, by the fluctuations of water levels with a temporary allowance for water levels to drop below the minimum water level. Improper light levels, temperatures, drowning eggs, or entrapment of species all could result from the fluctuations in water levels with a changed operational order.

The amount of suitable spawning habitat directly impacts the success of natural reproduction during a given year. Successive years during which spawning habitat are lacking, and therefore reproductive success is low or absent, can lead to the collapse of a fish species' population. These changes could be detrimental to the existence of certain fish species, culminating in eradication of those species presently found in the waterway. If the affected species was a major predatory fish, disruption of a biological balance of the aquatic system could occur. This could result in an overabundance of undesirable Carp as well as a substantial increase in panfish, such as Bluegill, Perch, and Crappie. This scenario could result in stunted growth among panfish species.

Various negative effects can also be expected for any fish that remain above the Rochester Dam. Flow regime is among the most significant factors determining the abundance, growth and dispersal of riverine fisheries communities. Flow regulation that is unstable and/or does not mimic natural “run of the river” conditions has been associated with a variety of deleterious effects on fish populations. The natural dispersal of larval or juvenile fishes can be significantly altered, primarily by restricting or removing access to traditional rearing sites (Bonetto et al. 1989). Stable systems typically exhibit better fish abundance and growth rates than those with frequent water drawdowns (Gaboury and Patalas 1984; Bonetto et al. 1989). These fish will also face increased predation risk, as winter conditions, particularly during a drawdown, concentrate fish and make them much more vulnerable to land predators and birds (Alexander 1979; Bustard 1986; Power and Mitchell 1994). These issues would exacerbate the negative effects of limited and fragmented habitat discussed in the previous paragraph, putting additional pressure on remnant populations of popular gamefish and the forage fish that support them.

2. DNR The river bank behind our home is the lowest point in the impoundment between the dams. This area stays saturated somewhat like a sponge when the river is at its normal level. The drawdown causes the ground to dry out and when the water is raised quickly . . . this year the water returned in a day and half ... the returning water severely erodes the dried out silty bank causing areas to actually melt away and fall into the river. Other areas experience visible sinking when the water returns. This happens with each drawdown. Is the DNR aware of this problem?

DNR response: It sounds like we haven't had comments like that in the past and will be happy to take that one and respond.

4/21/15: The lower water depth would reduce stress to shoreline structures and could prevent damage from ice flows. Lower water levels in the winter drawdown would allow people to access and observe the stability of the shoreline protection and determine whether the structures need repair. Construction or repair of these structures would be easier while water levels are low.

However, the raising and lowering of the Fox River repeatedly over the course of the year by water elevation manipulation would likely result in increased bank instability within the areas backwatered by the dam. This would be due to the yearly revealing and inundation of up to three feet of river bank (lowest winter drawdown levels up to the normal and maximum water level elevations) thus curtailing the establishment of bank stabilizing vegetation. Temporarily lowering the minimum water elevation for high flows will possibly result in more frequent changes in water levels that could impact bank erosion.

3. DNR When the drawdown occurs we no longer can utilize the river for kayaking, canoeing and fishing due to lack of water and the shin-to-knee deep muck that you have to cross to reach the remaining water. This obviously not only prevents recreational usage of the waterway by homeowners and visitors alike, but also damages our property values when the river is a shadow of itself for months at a time. Does the DNR consider the damage to our property values caused by this drawdown?

DNR response: Yes the EIS will include a component that discusses property values, socio-economic impacts as a result of the change in the operational order of the dam. That is something that will be considered as part of the review and is also part of the public interest component – recreation; those are all things that are considered in the DNR review process.

Audience: Could I just – how do you determine that when you say you are going to evaluate that. What kind of data do you have to evaluate that?

DNR response: It is very difficult to answer a lot of those technical questions at this point as we haven't completed the EIS yet so we haven't fully outlined a lot of those details during our review.

4/21/2015: A winter drawdown would require people to visually bear the impacts of exposed mud flats. The proposal may have an impact on property taxes. The Department of Natural Resources does not have the expertise to evaluate economic impacts to properties and has not conducted any economic studies regarding economic impacts with the operation of the dam. Any factual economic information submitted by the Public will be considered in the EIS.

Is the loss of recreational use during the drawdown taken into consideration?

DNR response: Yes, it is something that is taken into consideration. It is a question that our wardens and some of our wildlife biologists are able to assist with as far as the hunting usage within a stretch of the river, fishing and things of that nature, we take into consideration.

4/21/2015: Recreational impacts will be included in the EIS.

#4 DNR – Why draw down river while work never gets done is a great concern. We are losing our banks from lowing and increases.

DNR response: As I mentioned in the presentation, anyone can request a change, a temporary drawdown in levels so even though the DNR hadn't technically issued a dredging permit, if the dam operator requests to draw down the dam and there is other reasons that they mentioned of why they do it, it also has to do with stability with their banks along their canals. Floating issues that they experience, the DNR can review that request and issue approval for a temporary drawdown.

4/21/2015: Per Section 31.02(1), Wis. Statutes, the Department, in the interest of public rights in navigable waters or to promote safety and protect life, health and property may regulate and control the level and flow of water in all navigable waters....

- **Any person may petition or request the Department to investigate and establish water level or flow requirements.**
- **An application form is submitted to the Department.**
- **A public hearing is not required for a temporary drawdown. However, a news release may be issued by the Department in most cases as a courtesy.**
- **Dam owners may occasionally wish to draw the level of their flowage below its ordered minimum elevation. Reasons:**

- **Emergency nature such as a potential dam failure. In such instances, a dam owner is required by law (s. 31.18(1), Wis. Stats.) to take action to protect life, health and property.**
- **Repair or maintenance work**
- **Dam inspection**
- **Temporary drawdowns may be desired by property owners for specific reasons such as for dredging projects or to reduce shoreline erosion due to unusual circumstances. Concurrence of the dam owner with the temporary drawdown plan may be required before the Department can issue the drawdown order.**
- **Seasonal Drawdowns: to minimize shore damage potential or for fish or game management practices. The dam owner should agree to the seasonal drawdown plan.**

5. DNR Why is it necessary to open the dam for a five month period?

DNR response: The answer to the question is that it does not necessarily have to be for five months. I think the reason why it has been designed to operate from October to February has been DNR comments as far as fisheries' habitat is fine and hertz and that is the reason we recommended that the draw down is from October to February as opposed to December to a different time period.

County response: I believe all the board members are involved in agriculture throughout the County except Mr. Foat.

4/21/2015: The RCDD's original request was for the winter drawdown to occur beginning December 1st and ending March 1st. However, the Department worked with the RCDD to establish the October 1st- February 15th dates to minimize adverse impacts to herpetiles and fish.

#7. DNR What is the purpose of proposing opening the Rochester dam from October 1 until March each year? I am a kayaker living on the river and kayaks well into December if there is ice.

DNR response: Maybe this one is probably better answered by AI but I can tell you that the drainage district application was made due to concerns with flooding they have along their waterway, their banks, and erosion issues. The main purpose why the drainage district is seeking this permit drawdown from the DNR for the past several 5-6-7 years.

Drainage District response: It sounded like the question was more concerned about could we wait until December. The Drainage District could wait until December; however, the DNR has already brought up the point that if you wait until December, you have the environmental concerns for the frogs. And they weigh those decisions and decide the right direction.

4/21/2015: The RCDD's original request was for the winter drawdown to occur beginning December 1st and ending March 1st. However, the Department worked with the RCDD to establish the October 1st- February 15th dates to minimize adverse impacts to herpetiles and fish.

The purpose for the drawdown starting on October 1st is to avoid impacts to amphibians (i.e., leopard frog, bullfrog, etc.) and reptiles (i.e., painted turtle, snapping turtle, etc.). These animals will burrow into the river/stream mud in the fall to overwinter. The water depth provides insulation from freezing temperatures that can harm or kill the animals. If the water depth changes and is lowered while the animal is burrowed into the mud, the insulation is lost and the freezing temperatures will affect them. Some residents may remember several years ago, before the draw downs, we had a dry fall and water levels dropped later that fall. The result was very low water levels and exposed shoreline. That following spring the DNR received reports from residents seeing dead frogs and turtles along the river. This is a case where the animals had burrowed in the mud and were not able to move when levels changed. As a result the freezing temperatures reached them in their burrows and many died. While temperatures are likely still above freezing in early October, it is hard to predict when the freezing temperatures will occur. The frogs and turtles start preparing for overwintering in early October, so a fixed time period was chosen to work with.

#8 DNR/County How does this draw down affect the water above the Waterford dam? In this winter melt, I ended up with no water near my shoreline. This has never happened before this year. In all the 39 years I've lived there, only in scheduled draw downs. Why don't I have my normal amount of water this year in front of my property?

DNR response: We have not received any comments on that prior to tonight. Nathan, our water engineer, have you received any comments regarding that? Nathan: I haven't heard about this is about the Waterford dam? The Rochester Dam should not affect the water level on the Waterford Dam boundary. Racine County owns the dams. Basically that the Rochester Dam does not control the water levels in the Waterford impoundment. It would have to be due to the operation of the Waterford dam. County response: The operation of all Racine County dams I have to reiterate is under DNR orders so all the water levels have to be kept at a certain level based on the gauges that we monitor daily. If there is a rain event or flooding type events, those gauges are monitored hourly I would say. And there was a dam operator that handles that and we also have Racine County staff that is trained to monitor that so we always have people in place monitoring these levels. It is not arbitrarily moved up and down. It is operated within a couple of tenths, a couple hundredths, I should say, of the operational order which is literally a couple of inches of the DNR's order. I can tell you that a couple years ago the water levels were low because we were in a drought. Now I can't answer what happened last year but when we were in drought a few years back, the water table was very low. And so as the seasons change, the water table – people's private drinking water wells were starting to be affected by the water levels back in 2012. Many of you probably recall that. Then we had excessive amounts of precipitation which raised the water table extremely high and it changed the problem to a different problem. So it really depends on a lot of things because a lot of that is not only weather dependent but also what is happening upstream. We monitor not only the levels in Racine County. We also monitor the gauges north of Racine County and if the gauges north of Racine County are not following their orders, which all go back to the early 1900's by the way, if they are not following their orders, we give them a call and say we recognize that you are not following your orders because the United States geological survey has gauges that can be monitored on line. You can see them on the web pages. Many of you have seen

those water markings. And so we can keep an eye and see what is happening upstream and we know what water is coming.

4/21/2015: The operation of the Rochester Dam does not have any effect on water levels above the Waterford Dam. The Rochester Dam does not control water levels in the Waterford impoundment.

The Waterford Dam is operated separately by Racine County.

13 DNR Erosion concern has been mentioned regarding the drainage district banks. Waterford has worked with the DNR evaluating the Fox River and this problem. Why is the DNR not evaluating the stream bank erosion/health concerns of the river versus main made canals that consistently change the habitat of the Fox River?

DNR response: We have been getting comments from Craig Helker, who is our stream biologist, so I believe he has been helping address those through the EIS. There will be more of a response in the EIS.

4/21/2015: Streambank erosion and resource impacts to the Fox River are being evaluated under the application and addressed in the EIS.

20 DNR/County Why is the river level a foot higher since 2009?

4/21/2015: Currently Rochester dam is operated according to an operational order issued under permit number 3-SE-81-802. The permit requires a normal water level of 4.7 ft. on gauge* at CTH D, with the maximum being 5.2 ft. on gauge*, and a minimum of 4.2 ft. on gauge*. Additionally it requires that a minimum flow of 46 cubic feet per second be maintained through the dam at all times and that removal of a fishway board occurs between November 15th and May 15th of each year.

Additional Comments:

Reptiles and Amphibians: All mud flats are laid bare thru fall, winter and spring, river and canal banks are exposed, eliminating winter over areas for turtles, especially snappers – bank dwellers. Frogs seem to have been effected, we had bull frogs every year for years, and I have not heard any since the draw downs began. The leopard frogs also, don't see them anymore.

Mollusks: The first year of the drawn down the raccoons devastated the clam population. There were fresh open shells by the hundreds. They are protected in Wisconsin, and some species federally protected. When exposed, can they migrate back to water before dying?

Fur Bearers: All banks are exposed where muskrats den especially up the canal. Beaver houses are useless, unless they extend them to deep enough water (in most cases many feet). How does it affect mink which we have had a fair population of?

Note: County stated that Chapter 88 of the Statutes is called drainage of the lands. That is the Bible for the drainage districts. We have five of them in Racine County. If you don't have drainage districts you have storm water utilities. That is the difference.

4/21/2015: The purpose for the drawdown starting on October 1st is to avoid impacts to amphibians (i.e., leopard frog, bullfrog, etc.) and reptiles (i.e., painted turtle, snapping turtle, etc.). These animals will burrow into the river/stream mud in the fall to overwinter. The water depth provides insulation from freezing temperatures that can harm or kill the animals. If the water depth changes and is lowered while the animal is burrowed into the mud, the insulation is lost and the freezing temperatures will affect them. Some residents may remember several years ago, before the draw downs, we had a dry fall and water levels dropped later that fall. The result was very low water levels and exposed shoreline. That following spring the DNR received reports from residents seeing dead frogs and turtles along the river. This is a case where the animals had burrowed in the mud and were not able to move when levels changed. As a result the freezing temperatures reached them in their burrows and many died. While temperatures are likely still above freezing in early October, it is hard to predict when the freezing temperatures will occur. The frogs and turtles start preparing for overwintering in early October, so a fixed time period was chosen to work with.

The fluctuations in the river are the cause for the decline for the muskrats, frogs, and likely the mink. Muskrats along the river made their dens in the river banks. With the fall drop in water levels those dens became exposed, forcing the muskrats to move or be taken by predators.

The dropping of the water levels in October helps to avoid impacting overwintering frogs, but lower water levels may still affect frogs living in the river. The low water levels may not allow for good overwintering conditions, forcing frogs to move or possibly die, causing a reduction in numbers in the area.

The decline in mink sightings could also be due to the fluctuations in the water levels. Mink live along waterways and make their dens near the water surface, sometimes taking over burrows other animals have created. The drop in water levels exposes the dens and makes them less suitable for the mink. There could also be a decline in prey (i.e., muskrats, fish, etc.) in the area forcing the mink to move in search of better food sources.

Migrating waterfowl still use this area, but likely at a lesser amount when the water levels are lower. There are other waterbodies in the area that they can use, so it is not a large impact.

Dropping water levels will expose mussels on the water margin upstream of the dam to increased predation, and has the potential to increase mortality should the mussels be left out of the water by rapidly dropping water levels.

DNR #21

- Many of Waterford/Rochester's residents chose to live in this community because of the outdoor activities the Fox River offers.
- The Fox River is an awesome natural resource and provides canoeing, kayaking, hunting, trapping, fishing or just watching nature – and it is open to the public.

- The Village recognizes the Fox River as an awesome natural resource and has put forth considerable effort to create more public access for residents and visitors alike including Whitford Park shoreline restoration, planned renovations for the Club 10 Park to increase public access, installing canoe/kayak launches both above and below the Waterford and Rochester dams.
- It is not reasonable to draw this waterway down for almost 6 months of the year. There is no one on any waterway in the State of Wisconsin that would agree that this is reasonable. This year the waterway was drawn down on October 1 and water levels did not return to normal until the 2nd week in March.
- Residents are paying waterfront taxes with no water, and we will have boat launches for an unusable and unfishable waterway.
- I am on this waterway 3 to 4 times per week. The Fox is a thriving ecosystem. Birds of prey, turtles, frogs, deer musky, LM Bass, SM bass, Walleye, pike, perch, crappie, drum, catfish, blue gill, warmouth, teal, wood ducks, mallards, the list goes on. For an ecosystem to thrive to this extent, everything has to be in perfect order. Nature's hand is at work here.
- Drawing down this waterway is singular in purpose and puts more stress on the ecosystem, it threatens to destroy it. If a below average winter were to coincide with a drawdown, the results could be disastrous. There is precedence for this.
- The winter of 2014/15 was fairly moderate with the only sustained period of frigid temperatures occurring in February. During this time snowmobiles and ATVs were running the river from Burlington to north of Big Bend. In a natural "run of the river state" the fish have the ability to seek our deeper waters both above the Waterford dam and below the Rochester dam. In the areas impacted by the drawdown (between the dams) the deepest spot during the drawdown is 3' with many places less than 1'. During sustained periods of frigid temperatures, the fish have nowhere to go – they are trapped. There only options are to freeze, or go over the dam in Rochester – either way they are not coming back.
- Even if we don't experience a deep freeze, it is not healthy for fish to swim in less than 1' of water for months on end.
- Migrating waterfowl use the canal as a favorite stop as it is always the last to freeze. During the drawdown, the vegetation that ducks feed on dies due to low water levels. This year, migrating waterfowl did not stop in the canal. They completely bypassed it.
- The dam in Rochester impacts more than just the drainage canal, it impacts everything below the dam in in Waterford. What gives the Drainage District this kind of power? The drainage district is a public entity and the public's wishes should be considered.
- The drawdown is bad for Waterford/Rochester residents, visitors, and fishery.

My reason for attending this meeting and reaching out to the DNR is that your team is always on the search to give the public more hunting and fishing opportunities. From fish stocking to MFL's the

Wisconsin DNR is doing a great job and providing world class hunting/fishing opportunities. We have an opportunity right here, right now and the proposed drawdown threatens to destroy it.

This year the Drainage District lowered water levels to facilitate dredging and no dredging occurred. What an absolute waste of an awesome natural resource. If the Drainage District needs to complete maintenance it should be well-planned, infrequent, and under the close supervision of the DNR.

4/21/2015: This information has been noted for the DNR records.

#5 DNR & RCDD My family and I continue to be concerned with the drawdown process that has been occurring on an annual basis. We would like to better understand the reasoning for the drawdowns and the proposal to continue them on an annual basis if they are not being used for the stated purpose of dredging canals. Even if dredging does occur go forward at the time of the drawdowns I would like to understand the reason for the annual requirement.

Our concerns include impacts on the rivers ecosystem, the resident and migratory animals that use it and the impact on our own recreational and viewing activities. Prior to the annual drawdowns we enjoyed a much more robust experience with the river in all of the categories listed above. I look forward to understanding how the interests of any other parties in the drawdown effort would eclipse those of myself, my family, other concerned riparian owners, the animals, and the overall ecosystem.

Question sent from Village of Waterford to DNR received on 4/10/2015: Why is a level of 4.7 considered in the normal range of operation when the river is over its bank?

4/21/2015: A public hearing was held on June 3, 1981 to discuss the modification to the operating levels for the Rochester Dam. The appropriate normal water level at the County Trunk Hwy D corresponds to a gauge reading of 4.7. The 1981 Rochester Dam order is being sent to the Village of Waterford with this response.