

Department of Natural Resources (DNR)

Region or Bureau Northeast
Type List Designation Type II

NOTE TO REVIEWERS: This document is a DNR environmental analysis that evaluates probable environmental effects and decides on the need for an EIS. The attached analysis includes a description of the proposal and the affected environment. The DNR has reviewed the attachments and, upon certification, accepts responsibility for their scope and content to fulfill requirements in s. NR 150.22, Wis. Adm. Code. Your comments should address completeness, accuracy or the EIS decision. For your comments to be considered, they must be received by the contact person before 4:30 p.m., November 2, 2009.

Contact Person: Carrie Webb
Title: Water Management Specialist
Address: 2984 Shawano Ave. Green Bay, WI 54313
Telephone Number 920-662-5453
E-mail Address Carriea.webb@wisconsin.gov

Applicant: City of Kaukauna

Address: 201 W. Second St. Kaukauna, WI 54130

Title of Proposal: Horseshoe Park Pond

Location: County: Outagamie City/Town/Village: Kaukauna

Township Range Section(s): Section 22, T21N, R18E

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## PROJECT SUMMARY

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### 1. Brief overview of the proposal including the DNR action

The City of Kaukauna is required by the State of Wisconsin to obtain an NR 216 Municipal Storm Water Discharge (MS4) Permit. The purpose of the permit is to control urban non-point source pollution by regulating discharges from municipal storm sewer systems. The City of Kaukauna has to develop a Storm Water Management Plan to achieve 40% Total Suspended Solids (TSS) reduction by March 10, 2013. Three alternatives which provide 40% TSS reductions were selected on a cost effective basis. Each alternative had identified one of the Horseshoe Park Pond options in the City of Kaukauna's Storm Water Management Plan, dated June 3, 2008. As part of the evaluation, the most cost effective pond was the Horseshoe Park Pond, not including maintenance costs which tend to cost more for online vs. offline ponds. The City of Kaukauna desires to construct the Horseshoe Park Pond in an unnamed tributary of Kankapot Creek.

The proposed project consists of constructing a wet detention pond (permanent pool = 1.24 acres) located within a navigable waterway. The proposed pond is considered a small dam. Approximately 0.34 acres of wetlands will be disturbed as part of this project, 0.22 acres contained within the bed / banks of the existing stream. The Horseshoe Park Pond will serve a 755.8 acre watershed. Approximately 2.6 acres of land will be disturbed as part of the construction of this pond. 0.26 acres of the 0.34 acres of proposed wetland disturbance are low quality wetlands.

Disturbed areas adjacent to the permanent pool will be planted with a wet to wet-mesic prairie (0.27 acres) and a mesic prairie (1.82 acres). The wet to wet-mesic prairie is a grass / wildflower seed mix consisting of 50 species, 60% of which are wetland types. The wet to wet-mesic prairie is to be planted two feet above the permanent pool down to the permanent pool. The mesic prairie is a grass / wildflower seed mix consisting of 47 species and is to be planted upland of the wet to wet-mesic prairie plantings. Additionally, there will be (4) Shagbark Hickories, (3) Bur Oaks, (8) White Oaks, and (3) White Pines. The 3 White Pines will be located outside of the prairie. The wetland plantings include shallow marsh and deep marsh native wetland species. The shallow marsh (0.60 acres) plantings include 8 species and will be planted in 0 to 12 inches of water depth. The shallow marsh will entail planting approximately 2,061 potted plants in 12 inches of topsoil within the safety shelf, surrounding the deep waters perimeter. The deep marsh (0.18 acres) plantings include 2 species and will be planted in 12 to 48 inches of water depth. The deep marsh will entail planting approximately 110 potted plants in 12 inches of topsoil on the side slopes of the forebays. The wetland plantings will cover nearly 64% of the permanent pool of water.

A vegetated rip-rap lined channel will divert the existing stream into the Horseshoe Park Pond down to the permanent pool of water. The purpose of reconstructing the upstream channel is to eliminate the existing drop located at the 72" CMP, and provide adequate protection for the flows being discharged from the 72" CMP. The Horseshoe Park Pond will create a permanent pool of 1.24 acres. The total storage that is created below the normal water surface elevation (649.5) is 2.86 ac-ft. During the 100-year rainfall event, an additional 9.92 ac-ft of storage is provided, providing 12.78 ac-ft of total storage. The peak flow rates leaving the pond for the 2, 10, and 100-year rainfall events are approximately 244, 337, and 408 cfs, respectively.

The concrete outlet structure will contain approximately 85 CY of concrete. The purpose of the outlet structure is to provide water quality treatment while dissipating energy prior to discharge into the rip-rapped downstream channel.

Three existing local trails are located adjacent to the proposed Horseshoe Park Pond. The existing trails along the north and east side of the pond will be primarily undisturbed. An existing trail that runs through the eastern portion of the pond will be re-routed around the southeast portion of the pond, tying into the east trail. The trail that will be re-routed is 317 lineal feet.

The proposed project will require a federal permit from the U.S. Army Corps of Engineers (USACE) under Section 404 of the Clean Water Act. At the state level, permits from the WDNR under Chapter 30 and 31, Wisconsin Statutes will be required. The WDNR will also require construction site NOI permit. The City of Kaukauna requires a Storm Water Management / Erosion Control Permit.

## **1. List the documents, plans, studies or memos on which this DNR review is based**

Wetland Delineation Report, McMahon Associates, December 2, 2008  
Operation and Maintenance Plan, McMahon Associates, June 26, 2009  
Application for a stormwater pond, small dam, wetland fill, riprap, intake & outfall structures, and grading prepared by McMahon Associates  
Environmental Assessment prepared by McMahon Associates  
Wisconsin State Statutes Ch. 30

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## DNR EVALUATION OF PROJECT SIGNIFICANCE

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### 3. Environmental Effects and Their Significance

- a. Discuss which of the primary and secondary environmental effects listed in the supporting documents are long-term or short-term.

#### Short Term Effects:

1. Operation of the construction equipment will result in noise pollution and exhaust emissions. The increased noise and exhaust may be irritating to nearby residents. Noise and disruption from the equipment is expected to further disturb wildlife activities in the vicinity of the operation for the duration of the project.
2. Potential for fish entrapment and potential kill when the water is diverted into the temporary channel.
3. The bare soils during construction may contribute sediment downstream into the wetlands and Kankapot Creek if proper erosion control measures are not used.
4. Construction activities may likely lead to short-term increases in employment and purchase of goods and services near the project location.
5. The clearing of the trees along the existing stream corridor will impact various wildlife species that utilize trees for habitat or food sources. *Dan Traas with Ranger Services, Inc. hired by the City stated that this is not a good quality woodlot because the species present are short lived pioneer species and exotic pests and plants may decimate the present tree species. But Traas said that all woodlots have value as green space and leaving a portion of the woodlot intact would enhance wildlife populations.*
6. Maintenance will be needed periodically to remove the accumulated sediments in the pond, which will increase the short term impacts from erosion and disturbance to wildlife and the aquatic plants.

#### Long Term Effects:

1. 0.34 acres of wetlands will be destroyed to create the pond, small dam, ripped downstream channel, and trail. The wetland will no longer be available to serve as habitat and food sources for wildlife and aquatic communities. *A report completed for the City by Natural Resources Consulting, Inc. (NRC) stated that 0.25 acres of wetland are located in the project area, and that the wetlands are confined to the banks of the tributary, but those statements are not factual according to the plans dated May 2009. NRC completed a functional assessment of the wetland and it scored low for vegetative and hydrologic integrity, water quality, wildlife and fish habitat, The wetland scored medium for stormwater attenuation, downstream water quality, and shoreline protection. These functions would be lost if the project is constructed, causing adverse impacts to the wetland.*
2. The removal of the tree canopy and the impounded water will be warmer, possibly removing the use of the waterway by cool water cyprinids (minnows, shiners, etc.) such as blacknose dace. *Debra Nowak, the naturalist at 1000 Islands Environmental Center doesn't feel that this location will have much of an effect on fish or other aquatic organisms because both Kankapot Creek and the Fox River have warm temperatures that are already limiting the organisms present in the waterways.*
3. The proposed pond could become a preferred habitat for non-native common carp instead of the native fishes described above. The impounded water in the pond would warm quickly in the spring attracting juvenile and adult carp from the adjacent Kankapot Creek and the Fox River into the pond.
4. The presence of fish (natives or non-natives) in the storm water treatment facility is likely to

result in re-suspension of sediment in the water column. The re-suspension of sediment negates the primary function of the storm water pond as a treatment facility. The purpose of the pond would be compromised and so will not provide the service it was designed to provide.

5. Any disturbance and diversion of and changes to the stream corridor in addition to the placement of any structure preventing upstream migration will likely negatively impact spawning habitat and behavior of aquatic species. The proposal to use heavy riprap material in the stream bed, as well as the dam structure, could impede the movement of fish upstream. *Debra Nowak, the naturalist at 1000 Islands Environmental Center made a comment that it is highly unlikely that fish species are currently using the waterway at the pond site as there is no vegetation within the creek. NRC's report stated that "WDNR data from 1972 and 1999 indicate Kankapot Creek has no fishery".* Kankapot Creek supports a normal warm water fishery, including 6 species of fish that were sampled in July of 2006. The unnamed tributary, while impacted, does have fisheries value. It can provide spawning habitat for northern pike or white sucker, and several papers have documented the importance of these small streams. *NRC also concludes that spawning habitat does not occur and there is no significant fish use in Kankapot Creek based on their assessment of "fish barriers".* The fish barriers described are exposed bedrock, concrete lined channels, rocks, and/or debris that would unlikely be actual fish barriers, and would contain enough water for spawning migration in the spring
6. The project area has an abundant amount of topography that raptors use because of the stable temperatures during the night, but this pond would change that habitat, leading to raptors no longer using the area. *NRC's report states that no raptor nests were located within the project area, but the survey done by Eugene Jacobs of Raptor Services, LLC indicates that raptors likely use the project area for foraging.*
7. Potential for impacts to special concern species that prefer large canopy tree habitat such as cerulean warblers, least flycatcher, and the Acadian flycatcher. *The NRC report states that these species are not listed in the WDNR Natural Heritage Inventory in the project area. NRC believes that the forest structure, composition, fragmentation, and relatively high edge-to-area ratio of the impact area limit the habitat suitability for both the Acadian flycatcher and cerulean warbler, but might be suitable for the least flycatcher.* These species may use this contiguous forested area during migration, and the cumulative loss of these woodlots could impact those species.
8. While the site is not pristine from a wildlife standpoint, it is an important spot in the landscape scale of remaining habitat within the area of the Fox River. This site does contribute to the whole as a corridor for migrating birds as well as some resident birds. These wooded sites are important areas for stopping in migration to feed, rest, and have habitat available so as not to be predated. They offer an important aspect of holding wildlife when conditions may be harsh during the migration and then offer a sort of stopover housing with food sources. *Debra Nowak, the naturalist at 1000 Islands Environmental Center stated that the city contains many wooded stream corridors and is well known for the number of wooded ravines, and believes that the proposed pond will create better habitat for wildlife in the long term than the existing habitat. NRC believes that the amount of forest clearing proposed is small does not anticipate that it will impact the overall function of the forested corridor for migratory birds.* There could be cumulative impacts to these forested areas since there are several similar projects being proposed in the Fox Valley area.
9. The existing stream habitat will be converted to a pond habitat. Water quality is expected to decline within the pond compared to the existing stream.
10. The open water pond will cause thermal impacts which are expected to be increased temperatures in the summer and reduced temperatures in the winter. *It is NRC's opinion that the unnamed tributary has little effect on Kankapot Creek's water temperature, and believes the macroinvertebrate assemblage is not temperature sensitive.*
11. Nutrients within the pond will become concentrated and phosphorus will be routinely released into the water column under anoxic (no oxygen) conditions. This phosphorus will be available to algae and other aquatic plants if present. It is expected that dissolved oxygen levels will be less

stable and fluctuate depending on storm events, drought conditions, fluctuating temperature, and the presence or absence of vegetation.

12. Some aquatic insects derive their energy from the flow of organic matter, such as tree leaves, in a stream. Depending on the ecological character of the stream, the creation of a pond could restrict downstream delivery of organic matter necessary to sustain some species of aquatic organisms.
13. Ponds experience much greater water loss due to evaporation and infiltration. If the water loss in the pond exceeds the base flow of the stream, there will be no discharge from the pond. The lack of flow downstream of the pond would destroy the stream ecosystem.
14. By catching and treating the pollutants of concern before they reach Kankapot Creek and the Fox River, the pond will benefit the receiving waterway by reducing the amount of pollutants received. This is a long-term positive impact for Kankapot Creek and the Fox River. However, the proposed pond is essentially a “storage tank” for these same pollutants and will ultimately result in the creation of a permanent 303(d) waterway.
15. Disposal of excess material will alter the landscape at the disposal sites. Disposal must not occur in any wetland, floodplain, or below the ordinary high water mark of a waterway.

**b. Discuss which of the primary and secondary environmental effects listed in the supporting documents are effects on geographically scarce resources (e.g. historic or cultural resources, scenic and recreational resources, prime agricultural lands, threatened or endangered resources, or ecologically sensitive areas).**

The fragmentation and loss of large wooded habitat associated with stream corridors will be detrimental to many wildlife species – especially large raptors, cerulean warblers, least flycatcher, and the Acadian flycatcher. These stream corridors are the last remaining contiguous habitat found in a highly developed urban setting. Destroying this geographically scarce resource will have devastating impacts on certain wildlife species. *Debra Nowak, the naturalist at 1000 Islands Environmental Center stated “it is parcels like this that need the most protection from development, deforestation, and other negative impacts”, but believes that the Horseshoe pond site is a contributing factor to some of the water quality concerns in Kankapot Creek.*

The proposed location is very close in distance to Kankapot Creek, meaning that adventitious fish species such as northern pike, suckers and forage minnows likely use this stretch of stream. The stream has some base flow that is cooler in temperature than Kankapot Creek and the Fox River and may act as a thermal refuge for cool water cyprinids like blacknose dace. Also, fish species which occur in the Fox River like white sucker will use this stream in the spring for spawning. Connected waterways can be important in the life history strategy of certain fish species because of the spawning and nursery habitat provided and the connection to upstream spawning areas.

Roads, construction, and other human impacts are known to allow invasive plants opportunities to establish in plant communities. Invasive species are a significant concern because the stream corridor acts as an avenue for transmission of aggressive species.

**c. Discuss the extent to which the primary and secondary environmental effects listed in the supporting documents are reversible.**

The only situation where the impacts could be reversible is if the dam structure was to be removed and the stream corridor re-established. Removal of the large canopy trees is reversible, but would take decades to grow back. The online pond could be reversed by removing the dam and restoring the stream channel, but site disturbance for construction will likely provide opportunities for aggressive, invasive species to colonize the area and may also provide an opportunity for invasives to become established in the immediate downstream marsh. Once most invasive species are introduced or

established in native habitat, eradication is often an impossible objective. Many species cannot be completely eliminated once established, only controlled or maintained to a minimum-population standard.

The function of the proposed storm water pond includes catching and treating the pollutants of concern (total phosphorus and total suspended solids) before they reach Kankapot Creek and the Fox River. The pond would essentially create a “storage tank” for these same pollutants and will ultimately result in a permanently impaired waterway. This impairment may be reversed by restoring the stream and wetland so long as the collected pond sediment is not allowed to be released during restoration efforts.

If the pond were left in place and stream flow diverted around the pond, release of this sediment would no longer be a concern other than during extreme flood events. However, a stream corridor would need to be restored to match the natural stream corridor that existed prior to the pond’s construction.

#### 4. Significance of Cumulative Effects

**Discuss the significance of reasonably anticipated cumulative effects on the environment (and energy usage, if applicable). Consider cumulative effects from repeated projects of the same type. Would the cumulative effects be more severe or substantially change the quality of the environment? Include other activities planned or proposed in the area that would compound effects on the environment.**

Cumulative impacts of the permitting of similar projects include long-term negative impacts to the public resource and species utilizing the stream system. These impacts would significantly lower the quality of the environment. If this project (and others like it) were to be permitted, the stream corridor and its associated resources will be significantly altered. Construction of online ponds includes impacts to or conversion of wetlands during the construction phase as a result of filling (to create pond berms and divert stream flow into and out of the pond) or from changes in hydrology. These changes are attempted to be mitigated by implementing wetland and prairie plantings. However, the landscape plantings are an artificial system intended to replace the services and functions of what is currently an existing and healthy waterway downstream with associated wetlands. If similar projects are permitted across the landscape, more functional and natural wetlands will be lost due to conversion to open water treatment ponds paired with artificially mitigated wetland plantings. The new wetland will be within the storm water pond and will be inundated with and a “storage tank” for pollutants (total suspended solids and total phosphorus). If storm water was treated before entering any public resource and associated wetlands, wetlands can still function but not be “storage tanks” for storm water pollution.

Similar site disturbances for pond construction will likely provide opportunities for aggressive, invasive species to colonize the area. Once most invasive species are introduced or established in native habitat, eradication is often an impossible objective. Many species cannot be completely eliminated once established, only controlled or maintained to a minimum-population standard. If invasives are not currently present in native habitat, significant proactive efforts should be made to preserve healthy native habitat without providing opportunities for the spread of invasives. The treatment of existing invasive-dominated communities require significant time and resources to develop and implement long-term maintenance plans in order to simply maintain invasive populations if eradication is not possible.

The function of the proposed storm water pond would include catching and treating the pollutants of concern (total phosphorus, and total suspended solids) before they reach the Fox River. The pond would essentially create a “storage tank” for these same pollutants and will ultimately result in a permanent 303(d) listed (impaired) waterway. If similar on-line ponds are permitted across the landscape, more waterways will be added to the 303(d) list of impaired waterways than what is being successfully treated and removed from the list. The proposal would create an additional impaired waterway (tributary to Kankapot Creek and the Fox River) for the purpose of treating storm water entering the waterways. If the proposed pond was

created and the water treated before entering Kankapot Creek, this site alone would not delist the creek and the Fox River. On the contrary, by creating a new impaired water without delisting another, the list of impaired waterways is simply growing longer.

In addition, cumulative social impacts may include supporting the attitude of “end of pipe” treatment (or a reactive approach) low in the watershed rather than addressing and treating the source of storm water pollution before it reaches public waterways (a proactive approach). By compounding the effects of online storm water treatment ponds, more waterways would be permanently impaired at the cost of treating a single larger impaired receiving waterway, Kankapot Creek. Kankapot Creek can still be treated according to the TMDL report (focusing on pollutants of concern) but these treatment devices do not necessarily have to be installed within non-impaired waterways or at the base of the watershed immediately upstream of the impaired receiving waterway (Kankapot Creek). By permitting similar projects, the message that is being sent to the citizens of the state is that it is acceptable to allow a public resource that is held in the Public Trust to be used for private storm water treatment purposes. By permitting retrofitted best management practices (BMP’s) at the bottom-of-the-watershed rather than focusing on prevention and treatment upstream, the pollutants (suspended sediment, phosphorus, etc.) are allowed to remain in the resource for as long as possible until reaching the ultimate receiving water before undergoing treatment. In an effort to maintain or improve the quality of the resource, these treatment devices should be designed at upstream locations to treat storm water runoff before entering the public resource. The proposed online pond conflicts with state and federal goals of removing impaired waterways from the 303(d) list. Bottom-of-the-watershed storm water treatment is inconsistent with this goal since the storm water treatment pond will effectively collect and store the target pollutant, thus creating a permanently impair waterway for the sake of the receiving water.

The short-term cost-effective reasoning for bottom-of-the-watershed ponds is obvious – this is a location in the watershed where fewer BMPs can be used to remove or treat the largest quantity of pollutant. However, it is the Department’s opinion that the long-term costs and benefits from preventing and treating storm water before it enters waters of the state outweighs the immediate benefits of short-term solutions.

## 5. Significance of Risk

### a. Explain the significance of any unknowns that create substantial uncertainty in predicting effects on the quality of the environment. What additional studies or analysis would eliminate or reduce these unknowns?

It is uncertain if the few online storm water ponds that have previously been permitted are actually functioning to the degree at which they are designed to function – total suspended solids and toxicant removal. If online ponds do not provide the treatment of storm water that they are designed to provide, then the proposed environmental impacts would be for little to no public benefit. Understanding the functionality of existing online ponds in similar settings would provide useful insight as to whether the discussed environmental impacts are worth the treatment advantages online ponds may or may not provide.

Downstream impacts (thermal, dissolved oxygen, base flow, total suspended solids, etc.) should be studied to determine efficacy of existing treatment facilities. These studies should also be compared to off-line ponds to determine if other treatments can be used that do not have the adverse impacts on the public waterway as on-line ponds do.

It is unknown if the dam structure will prevent native fish species from migrating from Kankapot Creek to this stream segment and at the same time restrict the passage of all life stages of the common carp. Model simulations of fish passage can be performed using the software Fish Xing and would reduce this unknown.

The water quantity impacts for this project are unknown. Ponds experience much greater water loss due to evaporation and infiltration. If the water loss in the pond exceeds the base flow of the stream, there will be no discharge from the pond. The lack of flow downstream of the pond would destroy the stream ecosystem. The ecosystem destruction would continue downstream until the point where groundwater or other discharges enter the stream.

There is a risk for adverse impacts during construction. With the proper installation of erosion controls this risk is minimized. There are no known studies that would further aid in predicting the impacts of the project.

- b. Explain the environmental significance of reasonably anticipated operating problems such as malfunctions, spills, fires or other hazards (particularly those relating to health or safety). Consider reasonable detection and emergency response, and discuss the potential for these hazards.**

There will be a potential for fuel spills and other operating malfunctions. Machinery should be checked daily for leaks and removed from the site if any leaks are detected. If a spill occurs, the WDNR and local fire department will be notified immediately.

If fish or other nuisance wildlife begins to use the site and create a re-suspension of sediment and toxicants the treatment advantages of the pond cease to exist. The difficulty of controlling and/or removing the fish/wildlife once they are established is costly and ineffective.

There is a risk that the dam structure or berms could be breached. Short term impacts of a breach would include elevated levels of total suspended solids, turbidity, and the release of phosphorus that was to be removed as part of the "treatment" of the storm water and a likely short-term increase in erosion and stream flow and velocity. Long term impacts may include the deposition of this sediment and pollutants in the immediate downstream wetland.

## **6. Significance of Precedent**

**Would a decision on this proposal influence future decisions or foreclose options that may additionally affect the quality of the environment? Describe any conflicts the proposal has with plans or policy of local, state or federal agencies. Explain the significance of each.**

The Department's decision to approve or deny this proposal will not influence future decisions for this type of project application. Projects are reviewed on a case-by-case basis with each project having a unique set of circumstances that must be considered in the review process.

The precedent that would be set by permitting this and similar online storm water ponds at the lowest point possible in the watershed, essentially, is that it is acceptable to allow a resource that is held in the Public Trust Doctrine to be used for private storm water treatment purposes. The municipality is attempting to treat the storm water runoff after it has already entered a public waterway, as a reactive means to achieve TMDL success and to potentially remove a waterway (the Fox River) from the impaired list while ultimately creating another impaired waterway. By permitting retrofitted best management practices (BMP's) at the end-of-the-pipe (bottom-of-the-watershed) rather than focusing on prevention and treatment upstream, the pollutants (suspended sediment, phosphorus, etc.) are allowed to remain in the resource for as long as possible until reaching the ultimate receiving water before undergoing treatment. In an effort to maintain or improve the quality of the resource, these treatment devices should be designed at upstream locations to treat storm water runoff before entering the public resource.

The proposed online pond conflicts with state and federal goals of removing impaired waterways from the 303(d) list. Bottom-of-the-watershed storm water treatment is inconsistent with this goal since the storm water treatment pond will effectively collect and store the target pollutant, thus creating a permanently impaired waterway for the sake of the receiving water.

The short-term cost-effective reasoning for bottom-of-the-watershed ponds is obvious – this is a location in the watershed where fewer BMPs can be used to remove or treat the largest quantity of pollutant. However, it is the Department’s opinion that the long-term costs and benefits from preventing and treating storm water before it enters waters of the state outweighs the immediate benefits of short-term solutions. Ultimately, treatment ponds low in the watershed are not working to change behaviors or attitudes that create polluted storm water at its source.

## **7. Significance of Controversy over Environmental Effects**

**Discuss the effects on the quality of the environment, including socio-economic effects, that are (or are likely to be) highly controversial, and summarize the controversy.**

Communities are now required to treat storm water runoff and remove pollutants of concern (described in the waterway’s unique TMDL, or total maximum daily loading, report) from tributaries leading to receiving 303(d), or impaired, waters of the state. There is also a stringent timeline associated with meeting these storm water permit conditions. Communities must design and implement BMP’s to treat storm water runoff for targeted pollutants. In order to achieve the highest amount of pollutant removal that fits into a tight budget, bottom-of-the-watershed online storm water treatment ponds (like the proposed pond) are the most cost-effective options that communities are pursuing. However, the quality of the public resource is suffering by allowing the pollutant(s) of concern to enter and remain in public waterways for the longest amount of time possible before treatment occurs immediately prior to the receiving water.

Communities may have overlooked the “maximum extent practicable” (MEP) option for meeting their storm water permit conditions, pursuant to NR 151.13(2)(b)(2), Wis. Adm. Code. The negative impacts of the proposed pond should be weighed against MEP to determine if bottom-of-the-watershed retrofitted practices are truly cost-effective options with minimized environmental impacts.

The communities have to reduce TSS by 40% by 2013 or to the MEP. So for a community who may argue that they can't meet 40% and instead, have met MEP, they should have to show an alternatives analysis to get us to agree that they've met MEP. MEP is not a solution to avoid meeting the reduction requirement. It should be noted that the communities are supposed to meet 40% TSS reductions for their MS4 systems as a system. In other words, they may over achieve the 40% within one watershed of their MS4 and underachieve 40% in other watersheds of their MS4. They can prorate the areas so all the discharges from all of their pipes, when added together, reduce the TSS from their entire system by 40% when compared to no controls.

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## **ALTERNATIVES**

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**8. Briefly describe the impacts of no action and of alternatives that would decrease or eliminate adverse environmental effects. (Refer to any appropriate alternatives from the applicant or anyone else.)**

a. Localized Alternatives: There are three localized alternatives for the proposed project:

Horseshoe Park Pond Option 1:

The Horseshoe Park Pond Option 1 was the alternative selected, and the alternative that contains the least wetland disturbance of the sites where a wetland delineation was conducted. There is approximately 14,940 square feet, or 0.34 acres of wetland disturbance associated with the construction of this pond. A portion of the wetlands that are being disturbed as part of this project are considered low quality.

The Horseshoe Park Pond – Option 1 has an estimate upon design of the proposed pond of \$500,000, not including maintenance costs. The Horseshoe Park Pond Option 1 has a TSS removal of 51.6% and a Total Phosphorus removal of 37.3%.

#### Horseshoe Park Pond Option 2:

The Horseshoe Park Pond Option 2 contains 16,132 square feet, or 0.37 acres of wetland disturbance associated with the construction of this pond option.

The Horseshoe Park Pond – Option 2 had an original estimate of approximately \$460,000 with a TSS removal of 52.7% and a Total Phosphorus removal of 37.9%.

#### Horseshoe Park Pond Option 3:

The Horseshoe Park Pond Option 3 contains 29,158 square feet, or 0.67 acres of wetland disturbance associated with the construction of this pond option. The wetlands that would be disturbed as part of this option contain the wetlands identified within both option 1 and option 2.

The Horseshoe Park Pond – Option 2 had an original estimate of approximately \$855,000 with a TSS removal of 66.9% and a Total Phosphorus removal of 47.5%.

### b. Stormwater Quality Analysis / City Wide Alternatives:

#### Alternative #1 (Baseline):

Four wet detention basins are proposed to be constructed in addition to existing Best Management Practices (BMP's) (i.e grass swales, existing wet detention ponds, and the City's street sweeping program). The four wet ponds are as follows:

#### 1. North Industrial Park Dry Pond Conversion:

Located within the City of Kaukauna's North Industrial Park is an existing dry pond. The proposed option is to convert the existing dry pond into a wet detention basin.

#### 2. Industrial Park 3 Wet Pond Modification:

Located within the City of Kaukauna's Industrial Park #3 is an existing wet detention pond. The existing wet detention pond is primarily two and a half feet in depth. According to WDNR's 1001 code, a minimum of 50% of the water surface shall have a depth greater than 5 feet. The modifications to the proposed pond would aim at satisfying the requirement identified within WDNR's 1001 code.

#### 3. Grignon Park Pond – Option #2:

The Grignon Park Pond – Option #2 is the third most cost effective option:

- No. 1 - Horseshoe Park
- No. 2 – Seventeenth Street Pond (within the same watershed as Horseshoe Park)
- No. 3 – Grignon Park Pond.

There are several options for the Grignon Park Pond. The selected option maximizes the permanent pool while minimizing the reduction of the existing soccer fields located within Grignon Park.

4. Horseshoe Park Pond – Option #1:

The Horseshoe Park Pond – Option #1 is the second most cost effective ponds within Horseshoe Park, but contains the least wetland disturbance. There is approximately 0.34 acres of wetland disturbance associated with the construction of this pond.

The capital cost to construct the four wet detention ponds identified above = \$1.65 million

Alternative #2:

Seven wet detention basins are proposed to be constructed in addition to existing BMP's. In addition to the three wet detention basins mentioned above (North Industrial Park Dry Pond Conversion, Industrial Park 3 Wet Pond Modifications, and the Grignon Park Pond – Option #2) four additional ponds will need to be constructed. The four wet ponds are needed to replace the Horseshoe Park Pond – Option #1 and are as follows:

1. Seventeenth Street Pond:

The Seventeenth Street Pond is the second most cost effective option overall (second to the Horseshoe Park Pond options). Although an exact wetland disturbance is unknown, it appears there would be a significant amount of additional wetland disturbance as compared to the Horseshoe Park Pond – Option #1. Additionally, the construction of this pond would require land acquisition from six property owners. Land acquisition from multiple property owners increases the difficulty and likelihood of the project.

2. Seventh Street Pond:

The Seventh Street Pond is located to the north of the Horseshoe Park Pond. The Seventh Street area is adjacent to Kankapot Creek, and the proposed pond would be located in an existing depression. It is unknown if wetlands are located within this area.

3. Fourteenth Street Pond:

The Fourteenth Street Pond is located southeast of the Horseshoe Park Pond. The Fourteenth Street Pond is located adjacent to Kankapot Creek within an existing wooded area. It is unknown if wetlands are located within this area.

4. MCC Quarry Pond:

The MCC Quarry Pond is located adjacent to the MCC Quarry. MCC currently pumps water from their quarry into a small settling basin, prior to ultimate discharge into the Fox River. The proposed option would expand the existing settling basin for compliance with 1001 code. The City would also need to obtain a maintenance agreement or the purchase of property from MCC.

The capital cost to construct the seven wet detention ponds described above and within Alternative #1 is equal to \$2.1 million. As a result of not constructing the Horseshoe Park Pond – Option #1, the City would need to pay an additional estimated amount of \$450,000. However, Alternative #2 could have more wetland disturbance than Alternative #1, and could disturb higher quality wetlands.

### Alternative #3:

Eleven wet detention basins are proposed to be constructed in addition to existing BMP's. The three wet detention basins mentioned within Alternative #1 (North Industrial Park Dry Pond Conversion, Industrial Park 3 Wet Pond Modifications, and the Grignon Park Pond – Option #2) and three of the ponds mentioned within Alternative #2 (Seventh Street, Fourteenth Street, and the MCC Quarry Pond) will be constructed in addition to the five following ponds. The five wet ponds are needed to replace the Seventeenth Street Pond:

1. Draper Street Pond:

The Draper Street Pond is located on the City's north side with a ravine surrounded by approximately 20 residential homes. A public information meeting was held for the construction of the Draper Street Pond. Minimal support was shown as part of the meeting. As a result, the City decided not to move forth with the construction of this pond.

2. Company Woods Pond Expansion:

The Company Woods Pond is an expansion of an existing wet detention pond. The existing wet detention pond does not satisfy 1001 code as the pond is only 2-feet in depth. The Expansion would extend the pond laterally, and deepen the existing pond.

3. 1000 Islands Pond:

The 1000 Islands pond is proposed to be constructed in the 1000 Islands Reserve on the Cities South Side, north of CTH 'Z' to the east of the three softball / baseball fields.

4. Riverview Pond:

The Riverview Pond is proposed within property owned by Kaukauna Utilities. Kaukauna Utilities is planning on expanding its hydro plant. As part of the expansion, there is some additional space that may become available. The Riverview Pond would intercept stormwater that currently discharges under the existing canal that provides water to the hydro plant.

5. Starwood Acres Pond:

The Starwood Acres Pond is located on the Cities South Side, within an agricultural field. The proposed pond would serve existing and new development within its watershed.

The capital cost to construct the eleven wet detention ponds identified above, and within Alternative #1 and #2 is \$3.35 million. As a result of not constructing the Horseshoe Park Pond – Option #2, the City would need to pay an additional estimated amount = \$1.7 million.

c. No action alternative

For minimal or no-impact options, the design should be re-evaluated to be an off-line storm water treatment pond. No-impact alternatives should be designed for a pond to collect higher water levels

(storm event levels) while allowing the base flow to remain in the natural stream corridor. Storm event water levels could “spill over” into a pond adjacent to the stream corridor and discharge back into the stream after treatment in the storm water pond. An off-line alternative would essentially avoid wetland impacts and stream diversion but still provide treatment of certain storm events water levels. In an effort to maintain or improve the quality of the resource, these treatment devices should be designed at upstream locations to treat storm water runoff before entering the public resource. The proposed online pond conflicts with state and federal goals of removing impaired waterways from the 303(d) list. Bottom-of-the-watershed storm water treatment is inconsistent with this goal since the storm water treatment pond will effectively collect and store the target pollutant, thus creating a permanently impaired waterway for the sake of the receiving water.

The no-impact alternative pond design alone may not provide enough treatment for the City to comply with permit conditions by 2013, but a combination of various types and locations of BMPs may need to be evaluated to comply with the MS4 permit condition or to comply to the maximum extent practicable.

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## SUMMARY OF ISSUE IDENTIFICATION ACTIVITIES

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9. List agencies, citizen groups and individuals contacted regarding the project (include DNR personnel and title) and summarize public contacts, completed or proposed.

<u>Date</u>	<u>Contact</u>	<u>Comment Summary</u>
8/25/09	David Rowe - DNR Fisheries Biologist	Opposed to project
8/26/09	Dick Nikolai - DNR Wildlife Biologist	Opposed to project
Ongoing	Miles Winkler - DNR Dam Engineer	Preliminary review of dam structure
Future	Adjacent property owners	Provide notice of project
Future	General public	Provide notice of project
Ongoing	Jim Doperalski Jr. - DNR EA Specialist	Comments on EA
11/2/09	Jon Gumtow, Natural Resources Consulting, Inc.	Habitat Evaluation Survey done for City of Kaukauna
10/15/09	Dan Traas, Ranger Services, Inc.	Woodlot Assessment done for City of Kaukauna
10/12/09	Debra Nowak, 1000 Islands Environmental Center	Position letter
October 2009	Eugene Jacobs, Raptor Services, LLC	Raptor Evaluation done for Natural Resources Consulting, Inc.

10.  On-site inspection or past experience with site by evaluator.

**DECISION (This decision is not final until certified by the appropriate authority)**

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In accordance with s. 1.11, Stats., and Ch. NR 150, Adm. Code, the Department is authorized and required to determine whether it has complied with s.1.11, Stats., and Ch. NR 150, Wis. Adm. Code.

Complete either A or B below:

A. EIS Process Not Required



The attached analysis of the expected impacts of this proposal is of sufficient scope and detail to conclude that this is not a major action which would significantly affect the quality of the human environment. In my opinion, therefore, an environmental impact statement is not required prior to final action by the Department.

B. Major Action Requiring the Full EIS Process



The proposal is of such magnitude and complexity with such considerable and important impacts on the quality of the human environment that it constitutes a major action significantly affecting the quality of the human environment.

Signature of Evaluator	Date Signed

Number of responses to news release or other notice:

Certified to be in compliance with WEPA	
Environmental Analysis and Liaison Program Staff	Date Signed

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**NOTICE OF APPEAL RIGHTS**

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If you believe you have a right to challenge this decision made by the Department, you should know that Wisconsin statutes, administrative codes and case law establish time periods and requirements for reviewing Department decisions.

To seek judicial review of the Department's decision, ss. 227.52 and 227.53, Stats., establish criteria for filing a petition for judicial review. Such a petition shall be filed with the appropriate circuit court and shall be served on the Department. The petition shall name the Department of Natural Resources as the respondent.