CHIPPEWA FALLS URBAN AREA STORM WATER MANAGEMENT PLAN

As Prepared For:

The Village of Lake Hallie

The Town of Eagle Point

The Town of Lafayette

Chippewa County

This plan has been financed through nonpoint pollution control storm water planning grant, #USP-LC21-09000-04, and has been developed to meet requirements of WPDES Permit #WI-S050121-1.

This plan has been prepared with full opportunity for public participation and has been adopted by each municipality following requirements of the Wisconsin Open Meeting Law.

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EXECUTIVE SUMMARY

PURPOSE AND OBJECTIVES

Select municipalities in the Chippewa Falls Urban Area are now required to develop and implement a storm water management program to comply with Wis. Adm. Code, Chapter NR 216, and the Wisconsin Pollution Discharge Elimination System, (WPDES Permit #WI-S050121-1).

To meet this obligation, Chippewa County, the Village of Lake Hallie, the Town of Eagle Point and the Town of Lafayette have cooperated to develop a single storm water plan and a joint storm water management program. This joint program will be used to pursue a consistent approach toward managing storm water runoff and flooding in the Chippewa Falls Urban Area.

THE EXISTING CONDITION

A detailed storm water study was conducted to document the physical characteristics of the storm water system, and to estimate the amount of storm water runoff and nonpoint pollution that are now generated in the Chippewa Falls Urban Area.

This study has identified the watersheds that discharge the highest pollutant loads, the location of critical source areas within those watersheds, and the location of seasonally ponded areas that now store and infiltrate runoff.

Results of storm water modeling indicate that:

1. The current development pattern and existing management practices have been very effective in controlling storm runoff and pollutant loads to surface waters. This existing runoff control can be attributed to the flat and sandy characteristics of the landscape, and to the infiltration that occurs in ditch lines and storm water basins.

2. The developed portions of the storm water management area are now in full compliance with the developed urban area performance standards of NR151.13(2). These standards require a 20% pollution reduction by 2008, and a 40% pollution reduction by 2014.

HOW STORM WATER WILL BE MANAGED

Using the storm water study results, a formal planning process was conducted to determine how storm water will be managed as new development occurs.

The following management approach will be applied:

1. The physical characteristics of the landscape make it readily possible for the affected municipalities to stay within the pollution control limits, prescribed in Wis. Adm. Code, Chapter NR 216 and WPDES Permit #S050121-1. To accomplish this, developers will be required to control runoff from new construction as part of the routine site development process.

   It will not be necessary for the municipalities to construct any new municipal storm water facilities or alter any existing facilities to reduce nonpoint pollutant loads from the developed portions of the management area.

2. Storm water runoff and associated pollutant loads will be managed on a watershed basis recognizing the susceptibility and management objectives of the end-receiving waters. When possible, storm water runoff will be managed to maximize infiltration and groundwater recharge, which will in turn limit discharge to surface waters.

3. Management priority will be assigned to areas that directly affect municipal water supplies and to watersheds that contribute runoff to select lakes and streams that warrant special management attention.

4. As development occurs, efforts will be made to maintain surface drainage patterns and the area's capacity for flood storage and groundwater infiltration.

   This will be done by maintaining the existing drainage network and the storage capacity of surface depressions where ponding and groundwater infiltration now occur. To accomplish this, a storm water management overlay approach will be used to identify and manage sites that are critical to storm water routing, flood storage, and groundwater recharge.

5. The municipalities intend to limit the proliferation of municipality-owned storm water infrastructure and avoid the establishment of a regional storm water utility.

   To accomplish this, storm water runoff will be planned and managed on a site-by-site basis, as parcels are developed or redeveloped. Under this approach, the responsibility for meeting the prescribed runoff control standards will be assigned directly to the developer. These standards will be met through the use of site design and structural best management practices that rely on on-site detention and infiltration.

6. Unless otherwise negotiated by a municipality, the ownership of the structural storm water practices and the responsibility for maintaining them will be assigned to the developer. This

custodial responsibility may be retained by the developer or may be transferred to future property owners by way of a recorded title conveyance.

7. The County and municipalities will assure that storm water management practices are properly maintained. This will be accomplished by instituting a routine inspection program to monitor the condition of the privately owned facilities, and by retaining municipal access easements to allow for the public maintenance of these facilities, if necessary.

8. All requirements for construction site erosion control, post construction storm water management, and illicit discharge detection and monitoring will be administered and enforced by Chippewa County through use of a storm water management ordinance. This ordinance will be applied uniformly throughout the area subject to the WPDES permit.

HOW THE MUNICIPALITIES WILL WORK TOGETHER

The municipalities have agreed to institute a joint storm water program which will be managed under a joint WPDES storm water permit.

Under this approach, each municipality will be responsible for making storm water management decisions within its jurisdiction. This responsibility will be carried out within the broader context of its statutory responsibility for land use planning, zoning and subdivision control, construction permitting, and infrastructure management.

Core components of a joint storm water program have been defined, including the individual responsibilities of the County and each cooperating municipality. A Chapter 66.03 intermunicipal agreement will be used to implement the joint storm water management program. This agreement will be augmented by a storm water and construction site ordinance that will apply to the permitted area.

Efforts will be made to coordinate this storm water program with the program efforts of other municipalities in the Chippewa Falls/Eau Claire area that are also subject to state WPDES storm water permit requirements, including the City of Chippewa Falls, City of Altoona, and City of Eau Claire.

SUMMARY AND DISTRIBUTION OF COSTS

There will be additional costs to establish a storm water management program and to meet state WPDES permit requirements. Under the proposed management approach, the direct and indirect costs of meeting program requirements will be distributed between the public and private sectors.

The direct costs of planning and installing storm water best management practices will be incurred by those developing the land. It is anticipated that all storm water related permitting, engineering, and construction costs will be recognized as business expenses and will be passed on to the purchaser of the developed property through the real estate transaction.

The long-term indirect costs of maintaining privately owned storm water facilities will be incurred by the owners (or co-owners) of the parcels that are served by the facilities.

The public costs of implementing and administering this storm water management program will be incurred by the County and by the municipalities that are subject to WPDES Permit #WI-S050121-1. Each municipality will budget and account for its individual costs and program contributions. The public costs of program implementation will be partially offset by permit and service fees that will be charged to applicants, subject to requirements of the storm water ordinance.

To initiate this joint storm water program, the annual levy based program costs are projected for the County and each municipality as follows:

Estimated Annual Tax Levy
Budget Contribution

Municipality	Proportion of Program Costs*	Operating Expenses**	Capital Expenses	Total
Village of Lake Hallie	25%	$ 3,250	-0-	$ 3,250
Town of Lafayette	25%	$ 3,250	-0-	$ 3,250
Town of Eagle Point	20%	$ 2,600	-0-	$ 2,600
Chippewa County	30%	$ 4,000	-0-	$ 4,000
	100%	**$13,100**		**$13,100**

*The proportion of shared program costs for the village and towns are distributed on a per capita basis.

**Anticipated levy based operating expenses, estimated after revenue transfers and fee offsets.

INTRODUCTION

PROJECT BACKGROUND

On December 20, 2002, the Wisconsin Department of Natural Resources (DNR) formally notified municipalities in the Chippewa Falls Urban Area of their individual obligation to apply for a Wisconsin Pollution Discharge Elimination System (WPDES) storm water permit to comply with Wisconsin Administrative Rule NR216.

In response to that notification, the Towns of Eagle Point and Lafayette, the Village of Lake Hallie, and Chippewa County each filed an individual Notice of Intent to apply for the required permits.

In the spring of 2003, representatives of the affected municipalities met and agreed to develop a joint storm water management plan for the Chippewa Falls Urban Area.

To facilitate the planning process, the cooperating municipalities jointly developed and applied for an Urban Nonpoint Source Storm Water Planning Grant, administered through the DNR. The grant application was coordinated through the Chippewa County Land Conservation Department and was filed by Chippewa County on April 15, 2003.

In the fall of 2003, the County and participating municipalities were informed that the grant application was approved. A grant contract to conduct the storm water planning project was entered between the Chippewa County Land Conservation Committee and the DNR on December 1, 2003. The grant contract outlines the responsibilities of the cooperating municipalities and the end products to be developed through the planning process. The schedule of activities used to implement the project is provided in Appendix 1 as Figure 1.

The formal storm water planning process was initiated on January 20, 2004, with establishment of a Technical Advisory Committee (TAC), composed of affected stakeholders. This Technical Advisory Committee met periodically from 2004 through 2006, and provided structured input through the course of the planning process.

In the fall of 2004, the Village of Lake Hallie, acting on behalf of the cooperating municipalities, entered into a subcontract with Ayres Associates to conduct technical elements of the project, including the completion of storm water modeling.

Results of the joint storm water planning project are provided in the PLANNING METHODS AND RESULTS section of this plan. A conceptual outline of a joint storm water management program to meet permit requirements is provided under the sections titled: STORM WATER MANAGEMENT RECOMMENDATIONS and IMPLEMENTATION PLAN.

PURPOSE AND OBJECTIVES

The purpose of the storm water management plan is to:

1. Establish a common approach toward storm water management to encourage consistency among the municipalities in the Chippewa Falls Urban Area.

2. Define an administrative framework and the roles and responsibilities of cooperating municipalities for the purpose of implementing a joint storm water management program.

3. Establish an activity schedule and program budget which can be used by the municipalities to implement a joint storm water management program.

4. Meet requirements of Wisconsin Administrative Rule NR216 and associated requirements of the Wisconsin Pollution Discharge Elimination System; Joint Permit #WI-S050121-1.

PROJECT SETTING

LOCATION

The Chippewa Falls Urban Area constitutes the northern half of the Eau Claire/Chippewa Falls metropolitan area, and is located in Chippewa County in West Central Wisconsin. The storm water management area is situated immediately north and south of the City of Chippewa Falls, and includes a significant portion in the Village of Lake Hallie and minor portions in the Town of Eagle Point and Town of Lafayette. The location of the storm water management area and the project planning boundary are illustrated on Map 1.

The population of the Eau Claire/Chippewa Falls metropolitan area, including that of the incorporated cities and villages and the developing unincorporated areas, is estimated to be approximately 110,000.

The storm water area is located at the center of a major transportation hub, which has recently been formed at the junction of US I-94, US Hwy 53, and US Hwy 29. Given its urban location and proximity to the regional highway networks, significant development is anticipated.

The City of Eau Claire and the City of Chippewa Falls are now in the process of implementing storm water programs to comply with Phase I WPDES storm water permit requirements.

GLACIAL GEOLOGY, PHYSIOGRAPHY, AND SOILS

The storm water management area is situated on glacial deposits, consisting mainly of outwash, which overlay sandstone and granite bedrock. A large part of the project area is situated on the Wissota Terrace of the Chippewa River, a primary land form situated between Chippewa Falls and Eau Claire (Havholm, 1998, Syverson, 2007).

The outwash surface is flat with slopes ranging from 0-2%. The natural surface drainage system is poorly pronounced and composed of a network of shallow, low gradient intermittent channels. Discharge from this drainage network is largely epherial, conveying flow only during the spring snowmelt and other major runoff events.

A network of small watersheds is discernable based upon surface topography. Several subwatersheds are internally drained with no apparent surface outlets. The land surface is interspersed by shallow surface depressions which range in size from 0.10 - 2.5 acres. These surface depressions have been observed to be points of short-term ponding and groundwater infiltration. Several of these depressions contain wetlands which meet definitional criteria at lower surface elevations.

Soils in the project area are mapped as part of the Menahga-Friendship and the Billett-Roshold-Osterle Associations. These are characterized as deep, nearly level to sloping, excessively drained to somewhat poorly drained, sandy and loamy soils formed on outwash plains and stream terraces. Individual soil types have surface infiltration rates which range from 0.6 to 2.0 inches/hr. Subsurface infiltration rates range from 6 to 20 inches/hr. (Soil Survey of Chippewa County, Wisconsin, SCS, 1989)

PRECIPITATION

The average annual precipitation for the Chippewa Falls Urban Area is approximately 30.5 inches per year. Of this amount, approximately 25 inches falls during the growing season from April through September. The average monthly rainfall during the summer is approximately 3.5 inches per month, with maximum precipitation occurring in June.

Beginning in late November, most precipitation occurs as snow and accumulates until spring snowmelt. Highest runoff volumes occur in the spring when the snowmelts, the ground is either frozen or saturated, and heavy rains occur (Soil Survey of Chippewa County, Wisconsin, SCS, 1989).

The highest storm intensity occurs during the growing season from June to October (Surface Water Resources of Chippewa County, DNR 1976). The average 24 hour storm events used for storm water management and facility design in the project area range from the one year 2.3 inch design storm, to the 100 year 5.8 inch design storm.

Given the physical nature of the landscape and the distribution of storm events, it can be assumed that during the growing season, the average rainfall storm intensity seldom exceeds the infiltration capacity of the soil, and that storm water runoff in the project area is generated almost exclusively from imperious surfaces.

Flooding occurs seasonally in association with the spring snowmelt event and heavy spring rains, and is generally limited to drainageways, closed surface depressions, and the floodplain of the Chippewa River.

WATER RESOURCES AND SUB-BASINS

The storm water management area drains to five (5) separate water resource management units: Duncan Creek, Lake Wissota, Little Lake Wissota, the Chippewa River, and Lake Hallie. The condition and resource management objectives for each of these water resources has been defined (The Lower Chippewa River Basin Water Quality Management Plan, DNR 1989).

The groundwater system in the project area has been studied extensively. The elevation of the regional watertable ranges from 0 to 80 feet, below the land surface. The general direction and pattern of groundwater flow has been mapped at a scale of 1:100,000. This mapping suggests that groundwater divides coincide closely with major surface watershed boundaries, with localized flow occurring within watersheds toward major surface water outlets (Lippelt, 1988).

LAND USE

Land use patterns in the project area have been strongly affected by the adjacent urban centers and by the regional highway network.

A well-established commercial strip has been developed along US Hwy 53 and transects the Village of Lake Hallie between the City of Chippewa Falls and the City of Eau Claire. Recently, two (2) cloverleaf interchanges have been added as a part of the US Hwy 29/I-94 highway expansion, and US Hwy 53 bypass project.

Parcels with access to highway frontage are being planned for highway commercial or light industrial use.

High to medium density residential neighborhoods are situated throughout the project area, with more dense development patterns associated with residential subdivisions, located immediately adjacent the City of Eau Claire, the City of Chippewa Falls, and Lake Wissota.

Historically, all development located outside of the City of Chippewa Falls and the City of Eau Claire has occurred using private wells and septic systems, in the absence of municipal sewer/water services. In 1995, prior to incorporation, the Town of Hallie created several water supply districts and installed the infrastructure for a municipal water supply system. This system now serves a significant portion of the Village of Lake Hallie.

At present, no parts of the storm water management area are serviced by a sanitary sewer system. As now planned, all development and redevelopment within the project area will occur on private onsite treatment systems, meeting state administrative rule requirements (Chippewa Falls/Eau Claire Urban Area Sewer Water Service Plan for 2025, WCRPC, 2007).

Given its location within the Eau Claire/Chippewa Falls metropolitan area and the regional highway network, it is anticipated that there will be significant development and ongoing redevelopment in the storm water management project area.

This development has began to occur as larger-scale commercial retail at the junction of major interchanges. During this same period, there have been a number of new residential subdivisions which have been platted in the project area.

These development trends are expected to continue and possibly accelerate as economic development and growth occurs.

PLANNING METHODS AND RESULTS

PUBLIC INVOLVEMENT AND PARTICIPATION

A public outreach program was introduced at the onset of the planning process to notify the public of the requirements of the WPDES Storm Water Permit and of opportunities for public participation.

As part of the planning process, a Technical Advisory Committee (TAC) was created to assist in the development of the storm water program. The TAC was composed of elected representatives from the affected municipalities, state and local agencies, and industry stakeholders. An outline of the TAC Committee charge and representation is provided in Appendix 1, as Figure 2.

All TAC meetings were noticed and posted in compliance with the Wisconsin Open Meetings Law. The notices, agendas, and minutes from all public meetings and hearings, and the purpose of each meeting, as conducted as part of the storm water planning process, are on file.

Additional opportunities for public involvement will be provided through periodic reviews of the storm water management program. These revisions will be initiated by the Chippewa County Land Conservation Committee on a five (5) year basis to coincide with scheduled WPDES permit renewals.

PUBLIC EDUCATION AND OUTREACH

A public storm water education program has been developed to meet the prescribed requirements of the WPDES storm water permit. An outline of the public education and outreach program, including recommended educational messages, target audiences, and delivery mechanisms is provided in Appendix 2, as Table 1.

To pursue greater efficiency in educational outreach, an intermunicipal working agreement has been developed between Chippewa County and other WPDES permitted municipalities in the Eau Claire/Chippewa Falls Urban Area. This agreement is provided in Appendix 2, as Figure 1.

Efforts will be made to work through this agreement to establish the necessary institutional arrangements to implement a single coordinated storm water education and outreach program to service all permitted municipalities.

STORM SEWER SYSTEM MAP

A storm sewer systems map has been created to meet the prescribed requirements of the WPDES permit. This map and its associated databases will be routinely maintained and used to support ongoing storm water management program efforts.

To create the storm sewer map, a free-standing geographic information system (GIS) was developed using ArcView 3.2 software and digital maps maintained by Chippewa County.

This core GIS was then refined by using field data that was collected to complete the illicit discharge and storm water modeling elements of this plan. The resulting storm water GIS and its associated data are

provided on a compact disc (CD) as Appendix 3.

This GIS was used to generate Map 2. Map 2 illustrates the location of the storm water planning boundary, current land cover, surface water features, and contributing watersheds.

STORM WATER QUALITY MANAGEMENT MODELING

A field review was conducted to verify the accuracy of current land use data and to document existing hydrology. As part of this review, the location of surface drainageways and areas of seasonal ponding were documented during the spring snowmelt events of 2005 and 2006. As part of this same inventory process, the location, size, and condition of existing structural storm water best management practices (BMPs) were also documented.

A pollutant loading analysis was then conducted by Ayres Associates using the SLAMM runoff model and model policy guidance, provided by the Department of Natural Resources (6/6/05). To do this, two (2) model runs were conducted.

An initial "No Controls" model run was conducted to estimate the mass load of Total Suspended Solids (TSS), which could be anticipated assuming curb and gutter (pipe) drainage with no storm water controls or best management practices (BMPs).

For comparison, a second "With Controls" model run was conducted to estimate the load of Total Suspended Solids (TSS), which could be anticipated based upon the physical characteristics of the existing storm sewer system and upon the extent of existing storm water controls.

An overview of each of these modeling scenarios follows. Full documentation of model assumptions, inputs, and results has been submitted and is available as part of the planning record.

Model Run #1 - "No Controls"

This model run estimates "worst case scenario" pollutant loads for existing land use conditions, assuming direct hydrologic connections and no BMPs to provide storm water treatment. The results provide a baseline condition and are used under the WPDES permit process to determine the extent of pollution control, which will be needed in the urbanized portion of the project area to comply with the pollution reduction requirements for "developed urban areas", as established in NR 151.13(2).

In conducting the "No Controls" model run, the following assumptions were made:

1. The model run establishes the total pollutant load for existing land uses without recognition of any existing BMPs.

2. The DNR modeling guidance (6/6/05) was followed to determine what lands were included and excluded from the modeled area.

3. The pollutant source area data for the model's prescribed land use categories were those recognized as being representative of urban areas in Wisconsin. The Wisconsin Standard Land Use input files were used.

4. The drainage type was assumed to be “curb and gutter” in “fair” condition.

Model Run #2 - “With Controls”

This model run estimates the current extent of nonpoint pollution runoff and is based upon documented land uses, the physical characteristics of the storm water drainage system, and the type and location of storm water best management practices (BMPs) that are in the project area.

In conducting the “With Controls” model run, the following assumptions were made:

1. The model run establishes the total pollutant load for existing land uses with recognition of existing BMPs.

2. The DNR model guidance (6/6/05) was followed to determine what lands were included and excluded from the modeled area.

3. Field-collected source area data for each land use were used.

4. The drainage type was determined by field inventory and was verified as meeting the definitions for disconnectedness, as defined in SLAMM training guidance.

Results of the Field Inventory and Watershed Runs

Results of the modeling effort under the “No Controls” and the “With Controls” conditions are provided in Table 1. Model results are reported by watershed and show the volume of runoff with and without controls, the runoff pollutant loads reported as Total Suspended Solids (TSS) and particulate phosphorus, and the percent of runoff and pollutant load reduction that can be attributed to existing conditions.

The relative volume and distribution of the current nonpoint pollution load, as modeled for each watershed under the existing “With Controls” conditions, is shown on Map 3.

The documented locations of areas of seasonable ponding and storm water best management practices, as determined through the field inventory process, are shown on Map 4.

MODEL ANALYSIS

To determine the extent of current compliance with the developed urban area performance standards of NR151.13(2), the pollutant loads associated with the baseline "No Controls" conditions were compared to those documented under the "With Controls" conditions. This comparison provides the percent of current pollutant load reduction, which can be attributed to current hydrologic conditions and existing best management practices (BMPs).

For permit purposes, this modeled load reduction may be applied toward the pollution reduction requirements for developed portions of the project area, as established in Wisconsin Administrative Rule NR216.

Results of the modeling effort support the following conclusions:

1. Given the physical features of the landscape, distributed land use pattern, and the disconnected nature of the storm water drainage system, the developed portions of the project area now generate relatively minor volumes of storm water and nonpoint source pollution, as compared to the adjoining incorporated areas with curb and gutter and storm sewer infrastructure.

2. The amount of storm water runoff and nonpoint pollution generated in the project area varies by location. The modeling effort has identified the location of critical source areas where pollution control can be most effective, and the location of watersheds which contribute the highest pollutant loads to surface waters.

3. The existing surface drainage network and structural storm water management practices have been very effective in reducing the pollutant load of Total Suspended Solids and Total Phosphorus delivered to surface waters.

    A. Modeling results indicate that within the project area as a whole, approximately 92% of the runoff and 97% of the Total Suspended Solids load is being controlled by the physical nature of the existing MS4 drainage network and existing storm water management facilities.

    B. The watersheds which generate the highest pollutant loads are those that have a higher proportion of their area dedicated to industrial and commercial uses. These watersheds are largely situated along the STH 124/US Hwy 53 commercial corridor and are internally drained with no direct channel connection to surface waters.

    C. The load of Total Suspended Solids to surface waters of high management concern, including Duncan Creek, Little Lake Wissota, and Lake Hallie, range from 5,000 - 12,000 lbs./yr. The loads of dissolved phosphorus delivered to these surface waters range from 11-25 lbs.

4. The developed portions of the storm water management area are now in full compliance with the developed urban area performance standards of NR151.13(2), which require a 20% pollution reduction by 2008, and a 40% pollution reduction by 2014.

   This is due in large part to storm water infiltration which occurs in storm water retention basins situated in sandy soils.

5. The storm water planning inventory and modeling effort have identified the location of internally drained areas, and areas where ponding routinely occurred during spring, snowmelt conditions.

   These areas now serve to store and infiltrate runoff. It is reasonable to assume that these areas provide important points of groundwater recharge and serve to reduce flood perks.

ILLICIT DISCHARGE AND ELIMINATION

An illicit discharge program has been developed to detect and remove illicit discharges to the road ditch network (MS4). This program will be jointly implemented by the permitted municipalities.

Under the joint approach, the responsibility for monitoring and detecting illicit discharges will be assigned to the municipality that is currently responsible for routine street and highway maintenance. The responsibility for eliminating and, if necessary, regulating the sources of illicit discharges when detected, will be assigned to the Chippewa County Zoning Department. The responsibility for monitoring storm water discharges at storm water outfalls will be assigned to the Chippewa County Land Conservation Department.

The specific responsibilities of each municipality and agency under the illicit discharge detection and elimination program will be incorporated into a Chapter 66.03 intermunicipal working agreement, which has been developed to implement the joint storm water program.

The core elements of the illicit discharge program, including procedures for illicit discharge detection, monitoring, and enforcement will be incorporated into a construction site and post construction storm water ordinance which will apply to the storm water management area.

Identification of Major and Minor Outfalls

To initiate the illicit discharge program, the location of all road ditch surface water connections were mapped to identify the points of potential storm water discharge. A field review of these mapped connections was then conducted to document the size, physical construction, and condition of each outfall. A list of "major outfalls" subject to WPDES monitoring requirements was then generated using definitional criteria, listed in Wisconsin Administrative Code NR216.

Results of the outfall inventory show that there are twelve (12) major outfalls which discharge to five (5) unique water resource units, as defined by the Department of Natural Resources. In addition to these major outfalls, four (4) minor outfalls were identified as being important in ongoing water resource management efforts. These minor outfalls receive direct discharge from existing storm water ponds, or have the immediate potential to become major outfalls based upon anticipated development.

The location of all major and minor outfalls in the project area, and the extent of the contributing ditch network (MS4) is shown on Map 5.

Inventory of Illicit Discharges and Initial Field Screening of Major Outfalls

Using the list of major storm water outfalls, an initial dry season field screening was conducted during a dry weather period from May 24-26, 2006.

As part of the screening process, information was collected to describe the characteristics of each major outfall using photographs and a standardized data collection form. When present, the volume and properties of the dry weather discharge were documented using a narrative description.

As part of this process, the ditch lines and storm sewers, which convey runoff to each of the major storm water outfalls, were then mapped. Each of the contributing reaches of the road ditch networks were inspected to detect any observable sources of illicit discharge. Specific efforts were made to document any points where a ditch line connects to a piped storm water conveyance by way of a drop inlet or storm water drain.

Results of Illicit Discharge and Outfall Screening

The location and physical characteristics of each major and minor outfall, and the results of the illicit discharge detection inventory and dry weather outfall screening process, are summarized in Table 2.

Results of the initial inventory and screening process showed no illicit connections or sources of illicit discharge to any of the ditch lines which convey runoff to waters of the state.

Results of the dry weather screening process documented a base flow discharge at only one (1) of the sixteen (16) outfalls (#CF 10-4). That discharge was determined to be attributed to an air coolant discharge currently regulated through an active WPDES permit.

Ongoing Detection and Outfall Monitoring

A free-standing database has been created for each major outfall to support ongoing illicit discharge monitoring and outfall screening.

Each municipality will conduct a routine inspection of road ditch lines under its jurisdiction to detect illicit discharges. Inspections of the road drainage network will be scheduled to coincide with the routine evaluations of municipal road surfaces, completed under the Wisconsin Pavement Assessment Program (PACER). Results of these illicit discharge detection inspections will be recorded on an attachment to standardized PACER forms. These records will be filed annually with Chippewa County to facilitate WPDES reporting.

The Chippewa County Land Conservation Department will conduct an annual dry weather evaluation of each major outfall. These dry weather inspections will be scheduled to coincide with the annual inspections of the road ditch networks conducted by the municipalities.

The need for water sampling will be evaluated based upon the frequency of observed discharges at each outfall. Water quality sampling will be limited to that necessary to meet WPDES permit requirements or to document the storm water pollutant load in support of a specific water resource management initiative.

CONSTRUCTION SITE POLLUTION CONTROL AND POST CONSTRUCTION STORM WATER MANAGEMENT

Chippewa County, acting on behalf of the affected municipalities, will develop, implement, and enforce a program to reduce the discharge of sediment from construction sites and to control the quality of storm water discharges from areas being developed and redeveloped.

This storm water management program will be implemented through a combined construction site pollution control and storm water management ordinance. This ordinance will be based upon state model ordinances to meet the prescribed requirements and standards of NR216, NR151, and the WPDES permit.

This ordinance will be created to augment and be consistent with similar ordinances, previously adopted by Eau Claire County, the City of Chippewa Falls, and the Town of Lafayette.

Under the proposed management approach, the responsibilities for ordinance administration and enforcement will be delegated to the Chippewa County Zoning Department. Technical support, including responsibility for storm water plan review and infrastructure-based construction inspection, will be delegated to the Chippewa County Land Conservation Department. To avoid redundancy, the County will coordinate its efforts, plan review, and inspection with the City of Chippewa Falls and appropriate state regulatory agencies when joint jurisdictions apply.

Responsibility for administration of the erosion control provisions of the Uniform Dwelling Code (UDC), during the subsequent development phases, will be administered by the Chippewa County Zoning Department and will be conducted as part of the routine sanitary and construction permitting process.

An outline of agency responsibilities at each phase of the development process is provided in Table 3.

The jurisdictional coverage of this storm water ordinance will extend to the corporate boundaries of each municipality, unless a more confined boundary is requested by the municipality. To encourage consistency, adjoining towns in the urbanizing area (Wheaton and Anson), that participate in County Comprehensive Zoning, will be provided the opportunity to have the ordinance applied to their jurisdiction.

To meet WPDES permit requirements, this ordinance will be drafted before August 1, 2007, to be considered for adoption before October 1, 2007, with an effective date of implementation of January 1, 2008. A copy of a draft ordinance is provided in Appendix 4.

POLLUTION PREVENTION

Each affected municipality, subject to terms of the WPDES permit, will develop and implement a pollution prevention program.

The program will be developed following a standardized format and will include procedures for the following:

1. Routine inspection and maintenance of municipal-owned or operated structural storm water management facilities to maintain their pollutant removal operating efficiency.

2. Routine street sweeping and catch basin cleaning.

3. Proper disposal of street sweeping and catch basin cleaning waste.

4. Application of road salt, sand, and other deicers at the minimum rate necessary to maintain public safety.

5. Proper management of leaves and grass clippings.

6. Storm water pollution prevention planning for municipal garages, storage areas, and other municipal sources of storm water pollution.

To meet WPDES permit requirements, the municipal pollution prevention program will be drafted before September 30, 2007, and implemented before January 1, 2008.

STORM WATER MANAGEMENT RECOMMENDATIONS

COMMON MANAGEMENT GUIDELINES

It is the intent of the cooperating municipalities to pursue a consistent approach toward managing storm water runoff in the Chippewa Falls Urban Area. This will be done by implementing a common joint storm water management program. This program will be used to address a broad range of water management issues, including those related to storm water routing, municipal flood control, groundwater recharge, and nonpoint pollution control.

In pursing this program effort, it is recognized that the municipalities have already achieved compliance with the pollution reduction standards for the developed urban area, as established in s. NR151.13(2), Wisconsin Administrative Rule. Given this compliance, the water quality component of this joint storm water program will be implemented to maintain this status and to assure that new development in developing areas meet the water quality based performance standards of s. NR151.12 or 151.24.

To encourage a comprehensive approach toward storm water management, the following guidelines will be applied:

1. **Municipality Responsibilities:** Each municipality will be responsible for managing storm water runoff generated within its jurisdiction. This responsibility will be carried out using its municipal authority for land use planning, zoning, land division and development review, and infrastructure management.

2. **Watershed Priorities:** Storm water runoff and associated pollutant loads will be managed on a watershed basis recognizing the susceptibility and management objectives of the end-receiving waters.

   When possible, storm water runoff will be managed to maximize infiltration and improve groundwater recharge.

   In pursuing this concept, management priority will be assigned to watersheds that contribute runoff to surface waters designated by the State as outstanding, exceptional, or impaired, and to watersheds that provide direct groundwater recharge to public water supplies.

   General management areas of priority interest are shown on Map 6. They include the following:

   A. Watersheds that are located within a designed municipal wellhead protection area, or

   B. Watersheds that contain internally drained areas with documented sites of ponding and groundwater infiltration, or

   C. Watersheds that discharge runoff to surface waters that have been classified by the State of Wisconsin as impaired (303d) waters (Little Lake Wissota), or as outstanding and

exceptional waters (Lake Hallie); or

D. Watersheds that discharge runoff to undisturbed wetlands with high functional value or biotic diversity.

3. **Maintenance of Natural Drainage Patterns:** Irrespective of watershed location, storm water runoff in undeveloped and developing areas will be managed to maintain the existing pattern of surface drainage, and the area's existing capacity for depressional storage and groundwater infiltration.

This will be done by maintaining the integrity of the natural drainage network and by maintaining the storage and infiltration capacity of natural depressions where surface ponding and groundwater infiltration now occur.

To accomplish this, a storm water management overlay approach will be used to identify and manage sites that are critical to storm water routing, depressional flood storage, and groundwater recharge.

Critical drainage features and site specific management areas are shown on Map 6. They include the following:

a. Areas of concentrated flow which convey surface runoff to the road ditch network or directly to water resources. This includes areas of surface drainage shown on the Soil Survey of Chippewa County, USGS 7.5 minute quads, and areas which have been observed to convey seasonal runoff during the spring snowmelt events.

b. The ponded areas of closed surface depressions that serve as sites of ponding and provide groundwater infiltration and recharge during the spring snowmelt and rain event.

c. The contributing watershed area of small, internally drained watersheds without outlets, that contribute localized runoff to sites where ponding routinely occurs.

It is proposed that these sites be prioritized by each municipality and be considered as candidate sites for targeted land acquisition programs to protect their natural functions.

It is further proposed that a zoning-based conditional use process be applied to these sites so that design conditions might be considered to maintain or replace the natural storage and infiltration capacity of each affected site, as development occurs.

4. **Development and Management of Storm Water Infrastructure:** In pursuing these concepts, it is the intent of the municipalities to limit the creation and proliferation of a municipality-owned storm water infrastructure and to defer the establishment of an area-wide storm water utility.

Instead, storm water runoff will be planned and managed on a site-by-site basis, as sites in the storm water management area are developed or redeveloped. Under this approach, the responsibility for meeting prescribed storm water standards will be assigned directly to the developer. These standards will be met through site design and use of best management practices, which rely on surface infiltration and on-site detention.

Unless otherwise negotiated by a municipality, the custodial responsibility for maintaining storm water management practices will be retained by the developer, or will be assigned to future property owners by way of a recorded title conveyance.

The municipalities will assure that storm water management practices are properly maintained. This will be accomplished by retaining maintenance easements and by instituting a publicly administered storm water facility inspection program to monitor the condition of the privately owned facilities. Requirements for operational maintenance will be enforced by Chippewa County and each municipality through the maintenance provisions of a joint storm water management ordinance.

MANAGEMENT RECOMMENDATIONS FOR MAJOR OUTFALLS

Each municipality is responsible for managing storm water runoff, and for pursuing broader water management objectives within its jurisdiction.

The following site specific storm water management recommendations are provided for consideration as land use planning and infrastructure management decisions are made. These recommendations are summarized by municipalities for each major outfall.

TOWN OF EAGLE POINT

DC-GL2-3 - Road channel outfall to Duncan Creek via CTH S - south road ditch.

•Document the current routing of storm water runoff that is conveyed through the highway ditch network located at the STH 124 - CTH S roundabout.

•Evaluate the feasibility of altering the existing STH 124, CTH S, and town road ditch network to expand the seasonal storage capacity within the existing public right-of-ways. Potential locations include the NE and NW corners of the STH 124 - CTH S roundabout, and the internal junction of STH 124 and Greenfield Street.

•Evaluate the feasibility of preserving sites to install regional stormwater infiltration practices on parcels located adjacent the STH 124 - CTH S roundabout.

Parcel Location	Tax Parcels
T29N, R8W, Sec. 29, NW 1/4	
T29N, R8W, Sec. 30, NE 1/4	22908-3014-00020000; 22908-2923-04250000

•Evaluate the feasibility of preserving sites, mapped as critical storm water management areas, where seasonable ponding and infiltration now occurs.

Parcel Location	Tax Parcels
T29N, R8W, Sec. 20, SW 1/4	#22908-2033-00000000; 22908-2034-00020000

DC-GL2-1 - Pipe outfall to Duncan Creek, 80th Street storm water main.

•Evaluate the capacity of the 80th Street 36" storm water main to transfer runoff from the existing residential road network, and the additional runoff which will be routed from new development, planned north of CTH S.

•Inform residents of the existence of the drop inlets and the closed pipe storm water system on 80th Street and implement a targeted homeowner educational effort.

•Evaluate the condition and extent of surface road connections to the 80th Street drainage network. If necessary, implement custodial management practices to limit nonpoint pollutants, including street sweeping and salt management.

CH2-3 - CTH I open channel outfall to Lake Wissota.
CH2-5 - Pipe outfall to Lake Wissota Embayment, Village Green storm water overflow conveyances.
CF10-2 - Pipe outfall to Chippewa River via CTH I, St. Joe's Hospital, Wissota Terrace Ravine.

•Seek clarification regarding the town's jurisdictional authority and responsibility to monitor runoff which is generated within the City of Chippewa Falls and conveyed to outlets located in the Town of Eagle Point.

•Evaluate the size, current capacity, and outlet evaluations of the road culverts which convey storm runoff from the County Farm Development, located in T29N, R8W, Section 33. Verify that the existing outlets are stable and adequately sized to convey runoff from the new development which is planned.

TOWN OF LAFAYETTE

LW3-5 - Pipe outfall to Little Lake Wissota, 54th Avenue
LW3-6 - Pipe outfall to Little Lake Wissota, 54th Avenue
LW3-7 - Pipe outfall to Little Lake Wissota, 54th Avenue

•Evaluate the size, capacity, and outlet evaluations of culverts which convey storm water north across 54th Avenue to open channel outfalls to Little Lake Wissota.

•As part of Little Lake Wissota 303d TMDL planning process, evaluate the feasibility of adopting a zero discharge storm water standard to eliminate the potential for pollutant loads generated from new development located in and outside of the storm water planning area.

VILLAGE OF LAKE HALLIE

HA2-1 - Natural depression and groundwater infiltration pond; T28N, R9W, Section 24.

•Monitor the frequency and duration of seasonal runoff conveyed to this site. Document the water chemistry of seasonal runoff.

•Evaluate the feasibility of site alterations to maintain infiltration and storage functions through construction of a forebay to facilitate site maintenance.

•Evaluate the feasibility of constructing a series of infiltration ponds to intercept, store, and infiltrate groundwater upgradient of the main groundwater infiltration pond.

Parcel Location	Tax Parcel
T28N, R8W, Sec. 19	22808-1931-00020000; 22908-1931-02000000; 22808-1932-00020000; 22808-1932-02000000; 22808-1913-00020000; 22808-1913-03750000; 22808-1912-72048004; 22808-1912-72040006

•Evaluate the engineering design, maintenance history, and infiltration capacity of all storm water facilities located in the Village of Lake Hallie Wellhead Protection Zone. As appropriate, implement structural improvements and accelerated management practices to reduce runoff pollutants conveyed to groundwater from these storm water retention facilities.

•Evaluate the feasibility of preserving sites, mapped as critical storm water management areas, where seasonal ponding and infiltration now occurs.

Parcel Location	Tax Parcel
T28N, R8W, Sec. 17, NW 1/4 of SE 1/4	#22808-1742-00000000
T28N, R8W, Sec. 17, SW 1/4 of SE 1/4	#22808-1743-00020000
T28N, R8W, Sec. 18, SW 1/4 of SE 1/4	#22808-1843-66760081; #22808-1843-66760082
T28N, R8W, Sec. 18, SE 1/4 of SE 1/4	#22808-1844-00020000

LH2-1 - 30th Avenue road culvert conveyance to Lake Hallie.

•Visually monitor storm water conveyance during spring snowmelt and major runoff events to determine the potential for storm water discharge to Lake Hallie.

•As development occurs in Lake Hallie watershed (LH2), conduct an analysis, and evaluate the feasibility of installing municipal storm water infiltration facilities upgradient of 30th Avenue, to intercept and infiltrate runoff before reaching Lake Hallie.

Parcel Location	Tax Parcel
T28N, R9W, Sec. 23	#22809-2343-71707003

BC9-1 - Storm water pond pipe outlet - STH 29 north ditch line to Chippewa River.

•Monitor storm water facility condition and function.

IMPLEMENTATION PLAN

PROGRAM STRUCTURE AND RESPONSIBILITIES

The cooperating municipalities will operate under a joint WPDES storm water permit to implement a joint storm water management program. This program will be used to pursue a consistent approach toward managing storm water runoff and flooding in the Chippewa Falls Urban Area.

The responsibilities of the municipalities and supporting agencies under this storm water management program are summarized in Table 4.

ACTIVITY SCHEDULE

Core elements of the storm water management plan will be systematically implemented following the activity schedule established in the WPDES permit. The status of each program element and the proposed dates of implementation are provided in Table 5.

MUNICIPAL COORDINATION

To assure structured communication, the following measures will be used to coordinate program efforts:

1. A Chapter 66.03 intermunicipal agreement will be developed to formally define the responsibilities of the County and those of the cooperating municipalities for the purpose of implementing the storm water management program and fulfilling obligations under the joint WPDES permit.

2. An annual meeting will be held between the County, the participating municipalities, and DNR. The meeting will be sponsored by the County and will be used to review WPDES permit requirements, and the status of storm water management activities. Additional meetings of the group will be sponsored upon request on an as-needed basis.

3. An annual joint report of permit-related activities will be prepared by the County, as required under the WPDES permit. This report will be distributed to the municipalities.

4. The County and cooperating municipalities will communicate with other municipalities in the Chippewa Falls/Eau Claire area that are also subject to State WPDES storm water permit requirements, including the City of Chippewa Falls, the City of Eau Claire, the City of Altoona, and the towns of Union and Washington in Eau Claire County.

   To accomplish this, the municipalities will coordinate the group's information and outreach efforts with those of other WPDES permit holders, using existing Chapter 66.03 intermunicipal agreements that have been created for that purpose.

PROGRAM BUDGET

There are new public costs associated with meeting the WPDES permit requirements. To limit these costs, the participating municipalities have agreed to implement a joint coordinated storm water program.

To finance and distribute the costs of this program, each municipality will budget and account for all facets of the joint storm water program by establishing a segregated storm water program budget. To assure consistency, the municipalities will be encouraged to use a standardized set of expenditures and related revenue accounts.

An annual program budget has been projected for the 2008 calendar year using the program implementation schedule outlined in Table 5. This budget is provided as Figure 1.

DISTRIBUTION OF PROGRAM COSTS

The new public costs associated with implementing this joint storm water program can be characterized as either capital expenses or operational expenses.

Capital expenses will include those associated with planning and installing publicly owned storm water infrastructure, including the costs of land acquisition, engineering, and site improvements. These capital expenses will be incurred solely by the municipality that intends to acquire the land or develop storm water facilities to control storm water within its boundaries.

Operational expenses will include the costs of activities, which are conducted to implement the joint storm water program and comply with WPDES Permit number #WI-S050121-1. This includes the costs of implementing a public education program, site specific storm water plan review and facility construction inspection, illicit discharge detection, outfall monitoring, storm water facility monitoring, ordinance administration and enforcement, and WPDES permit administration.

In assuming these new operational costs, Chippewa County and the participants will seek to limit property tax impacts by establishing service fees that will be charged directly to permit applicants subject to requirements of the storm water ordinance. Service fees will be charged by the County to offset the full public costs of storm water ordinance administration, plan review, and the County's storm water construction inspection.

The remaining operational expenses will be distributed between the parties based upon the program duties and responsibilities defined in Table 4.

The costs of WPDES permit administration, maintaining the storm water system map, and implementing the public education and community outreach components of the storm water program will be distributed equally between the County and the cooperating municipalities (50% County, and 50% Village of Lake Hallie, Town of Eagle Point, Town of Lafayette). The village and towns' share of these program costs will be distributed proportionately on a per capita basis.

The public costs of implementing an illicit discharge detection program and a joint storm water facility inspection program will be assumed fully by the Village of Lake Hallie, the Town of Eagle Point, and the Town of Lafayette. Annual payments will be made to the County by each municipality for annual inspections of storm water facilities and storm water outfalls, based upon the location of inspections and

the number of inspections conducted. The County will bill each municipality on an annual basis. Using these assumptions, the proposed distribution of annual program costs for 2008 can be estimated as follows:

Estimated Annual Tax Levy
Budget Contribution

Municipality	Proportion of Program Costs	Operating Expenses	Capital Expenses	Total
Village of Lake Hallie	25%	$ 3,250	-0-	$ 3,250
Town of Lafayette	25%	$ 3,250	-0-	$ 3,250
Town of Eagle Point	20%	$ 2,600	-0-	$ 2,000
Chippewa County	30%	$ 4,000	-0-	$ 4,000
	100%	**$13,100**		**$13,100**

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