

Chapter IV. Plan Implementation and Evaluation

As noted in Chapter I, one of the requirements for county LWRM plans is to describe procedures that will be used to implement the nonpoint pollution performance standards and prohibitions under NR 151. Another plan requirement is to estimate costs associated with LWRM plan implementation. This chapter is intended to satisfy both of these requirements.

Urban Nonpoint Pollution Performance Standards

As noted in Chapter III, urban runoff pollution is the leading cause of many county lakes and streams not meeting water quality standards or water use objectives. Chapter III also noted that Chapter NR 151 Wisconsin Administrative Code contains a number of urban nonpoint pollution performance standards for new construction, which are being implemented through the County Storm Water Management and Erosion Control Ordinance. A general summary of the standards, as of 2012 is provided below:

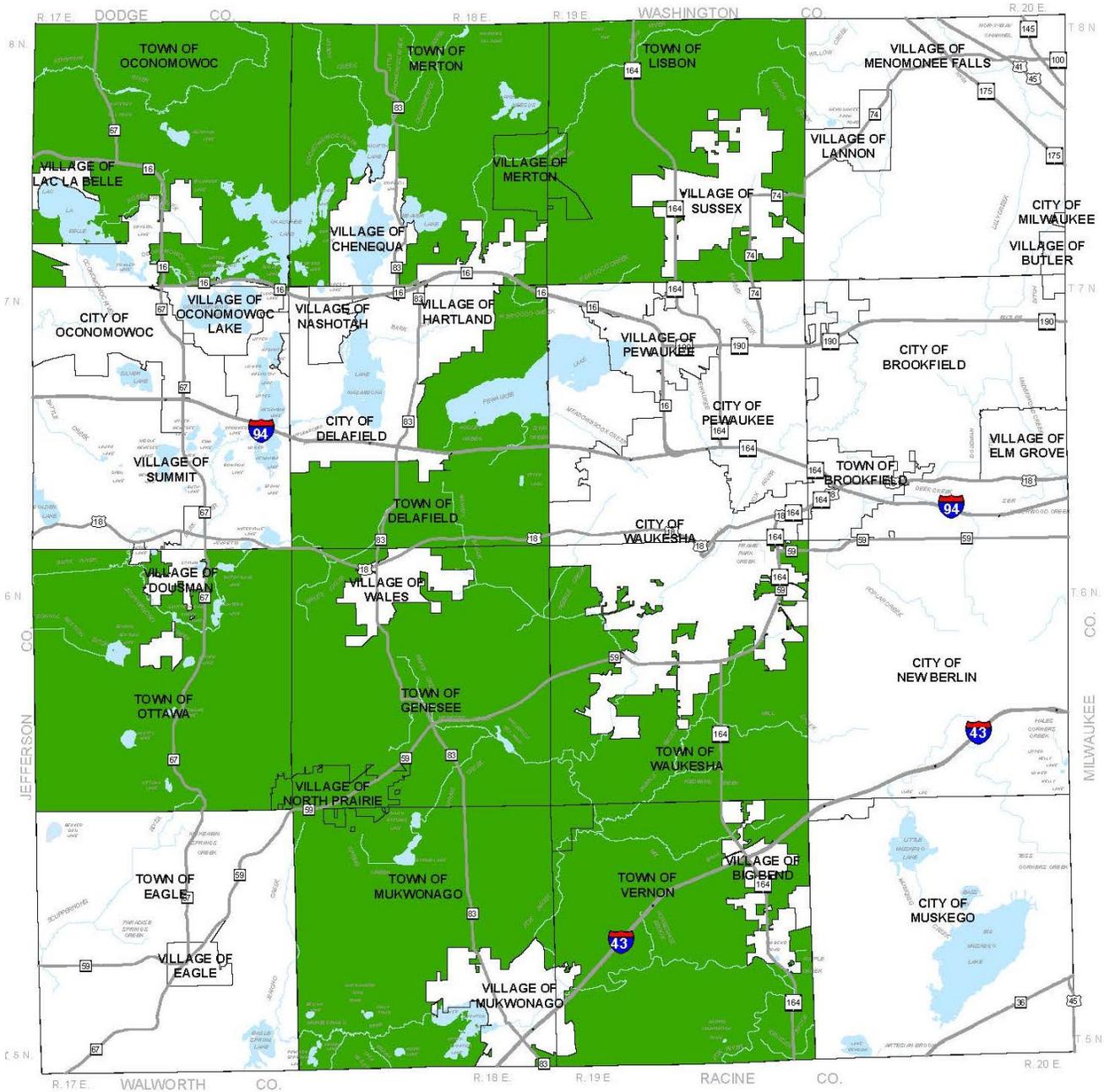
- Control 80% of sediment from construction sites.
- Control 80% of post-construction total suspended solids (TSS) from new developments and 40% from redevelopments.
- Maintain pre-development peak discharge rates for the 1-year and 2-year, 24 hour design storm for new developments.
- Infiltrate 90%, 75% or 60% of pre-development runoff volumes for new development with low, moderate or high imperviousness respectively.
- Maintain protective areas (10-75 feet) between new impervious surfaces and lakes, streams, and wetlands.
- Control petroleum runoff (visible sheen) from fueling and vehicle maintenance areas.

A list of urban best management practices to be utilized to meet state performance standards is contained in Appendix E.

Waukesha County Storm Water Management & Erosion Control Ordinance

As a condition of a Priority Watershed program grant, Waukesha County adopted a construction site erosion control ordinance in 1992. This ordinance was updated in 1998 to include post-construction storm water management requirements for new development, following standards agreed to by the Waukesha County Storm Water Advisory Committee. As a result of a redesign of the state's nonpoint program, urban nonpoint performance standards were subsequently promulgated in 2002 under Chapter NR 151 Wisconsin Administrative Code. New storm water discharge permit standards were also promulgated in 2004 under Chapter NR 216. The Waukesha County Storm Water Management and Erosion Control Ordinance was updated in 2005 to meet these new state standards. A copy of the county ordinance is available at www.waukeshacounty.gov/stormwater. Map IV-1 shows the jurisdiction of the county Storm Water Ordinance as of 2012. Enforcement of this ordinance remains the number one workload item for the LRD through the LWRM planning horizon. An overview of the Storm Water Permit program is presented in Figures IV-1. A simplified summary of the Storm Water Permit process is shown in flow chart form in Figure IV-2. It should be noted that Storm Water Permits are usually linked with other permit processes, and for larger projects, the review is often a cycle of submittals and responses, depending on the quality of plans submitted. Depending on the local economy, on average the LRD has issued 50-100 permits per year.

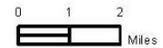
Map IV-1 Jurisdiction of the Waukesha County Storm Water Management & Erosion Control Ordinance: 2012



Legend

County Storm Water Permit Required

Source: Waukesha County



**Figure IV-1
Overview of Storm Water Permit Program**

WHEN: Proposed land development activity that will expose soil to erosion (grading or filling) or increase storm water runoff (add rooftops & pavement) and meets any of the following permit thresholds:

- | | |
|--|--|
| <ul style="list-style-type: none"> ➤ Disturbing 300 lineal feet of ground for new buried utility, pipe (unless plowed outside of ditch line) ➤ 3000 square feet land disturbing activity (bldgs./grading) ➤ All new "subdivisions" (as defined by local codes) ➤ All new local road construction ➤ All sites where at least ½ acre of impervious surface is added to the landscape (rooftops, pavement, etc.) ➤ Other sites that may cause off-site sediment or storm water runoff problems (as requested) | <div style="display: flex; align-items: center;"> <div style="font-size: 3em; margin-right: 5px;">}</div> <div style="border-left: 1px solid black; border-right: 1px solid black; padding: 0 5px;">Erosion Control Plan Required</div> </div> <div style="display: flex; align-items: center; margin-top: 10px;"> <div style="font-size: 3em; margin-right: 5px;">}</div> <div style="border-left: 1px solid black; border-right: 1px solid black; padding: 0 5px;">Storm Water Mgt. Plan <u>also</u> Required</div> </div> |
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WHY: To minimize water pollution, flooding, and other negative impacts of urbanization on downstream water resources (lakes, streams, wetlands & groundwater) and property owners. Aimed to control soil erosion and sedimentation during construction and manage the discharge of storm water after an urban development is complete. Pursuant to *Waukesha County Code Chapter 14, Article VIII – Storm water Management & Erosion Control*.

WHO: The Waukesha County Department of Parks and Land Use - Land Resources Division issues permits.

HOW: To obtain a permit, the applicant must prepare erosion control and/or storm water management plans, as noted above. The contents of these plans depend on the size and complexity of the site. For erosion control plans on sites one acre or less, a short checklist of plan requirements is on the application form. For all storm water management plans and erosion control plans for larger sites, published check lists and other technical guidelines are available. A submittal must include:

- Signed application, including list of project contacts
- Permit fee and financial assurance (see fee schedule)
- Site map (see checklist #!)
- Erosion control plan (preliminary or final – see checklist #2)
- Storm water management plan (preliminary or final – see checklist #3)
- Narrative/support materials on plan, soil test, BMP designs, construction sequence, etc.
- Other applicable items, such as a storm water BMP maintenance agreement

For new land divisions under county approval authority and certain zoning approvals, the LRD must issue a **Preliminary Review Letter** prior to approval of a Preliminary Plat. Obtaining conceptual/general review comments on these plans will facilitate other plan review processes. It also allows the applicant to proceed through those processes without committing the resources needed to complete final engineering designs and construction plans or line up contractors, which are all needed to obtain a permit. Prior to approval of a Final Plat, the LRD must issue a **Certification of Compliance** with the Storm Water Ordinance to verify that all deed restrictions, setbacks, BMP maintenance agreements and other recorded items are complete.

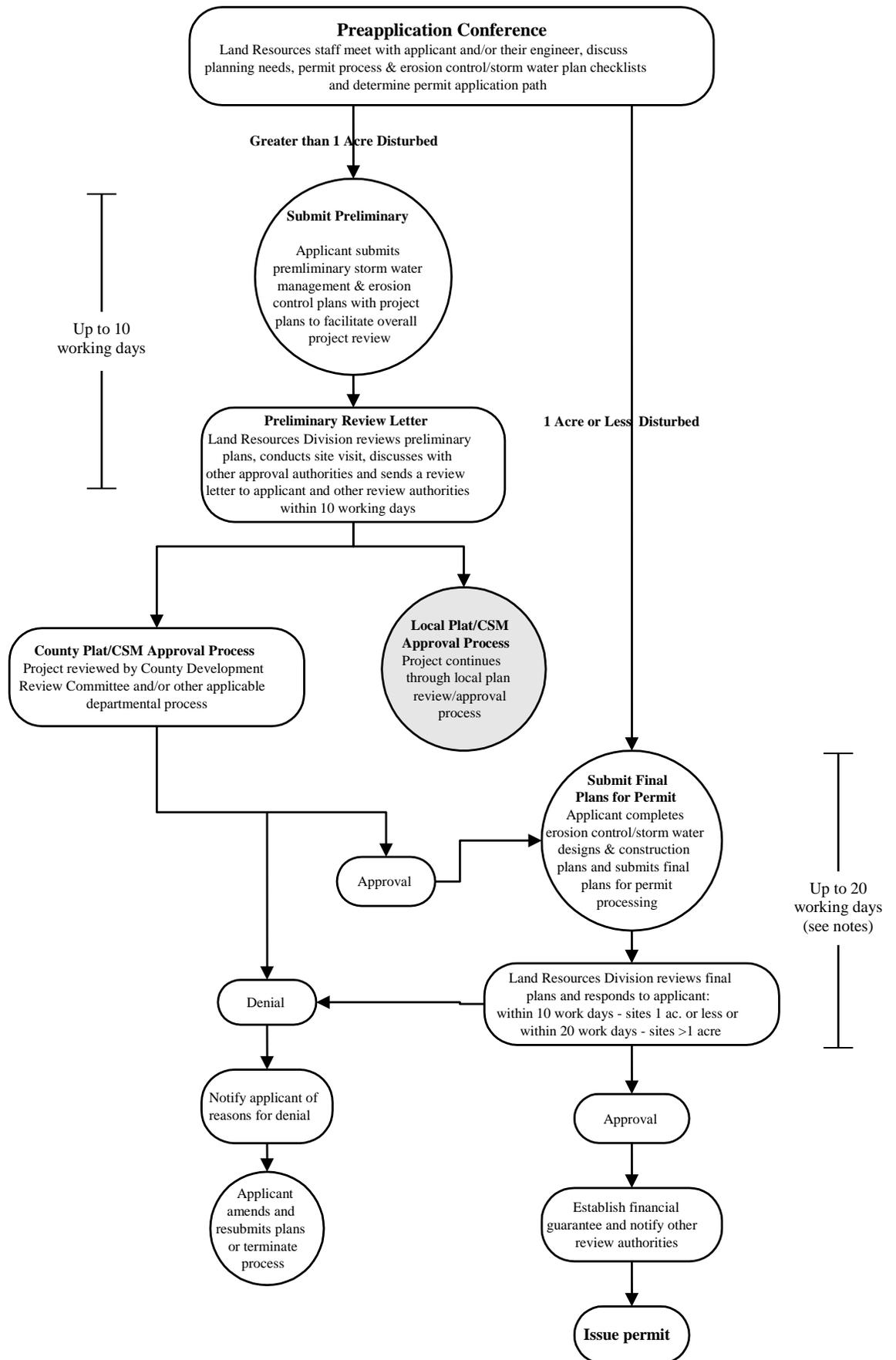
Variance or Appeal

- An appeal of a decision by Land Resources staff must be made in writing and submitted to the Board of Adjustment within 20 days of the date of decision. (Staff will assist you.)

TIME: Staff must approve or deny applications within:

- 10 working days of submittal/resubmittal for sites that disturb less than 1 acre; or
- 20 working days of submittal/resubmittal for sites that disturb 1 acre or greater.

**Figure IV-2
Storm Water Management Permit Process Flow Chart**



Municipal Separate Storm Sewer System (MS4) Storm Water Discharge Permits

Chapter NR 216 Wisconsin Administrative Code requires discharge permits for community storm sewer systems, which collect runoff from existing urban development in the community. The DNR issues general MS4 permits and requires communities to apply for coverage. In general, these permits apply to all communities with a contiguous population density of 1000 people per square mile. Phase 1 of these permit requirements was first applied in the early 2000's to five communities on the eastern edge of Waukesha County – Menomonee Falls, Brookfield, Elm Grove, Butler and New Berlin. These five communities were permitted along with other contiguous Milwaukee area communities draining to the Menomonee and Root River Watersheds. Eight more communities in the county were issued MS4 permit coverage under Phase 1 as the Upper Fox River Watershed Group (upstream from Waukesha). In 2006, Waukesha County and 17 other local communities obtained MS4 permit coverage under the Phase 2 of the program. Map IV-2 and Table IV-1 show which communities in Waukesha County were issued MS4 permits under both Phase 1 and 2.

MS4 Permit Requirements

The above noted general permits contain a long list of storm water program requirements that change somewhat between permit phases and permit renewal periods. Listed below is a general summary of the permit conditions as they apply to Waukesha County:

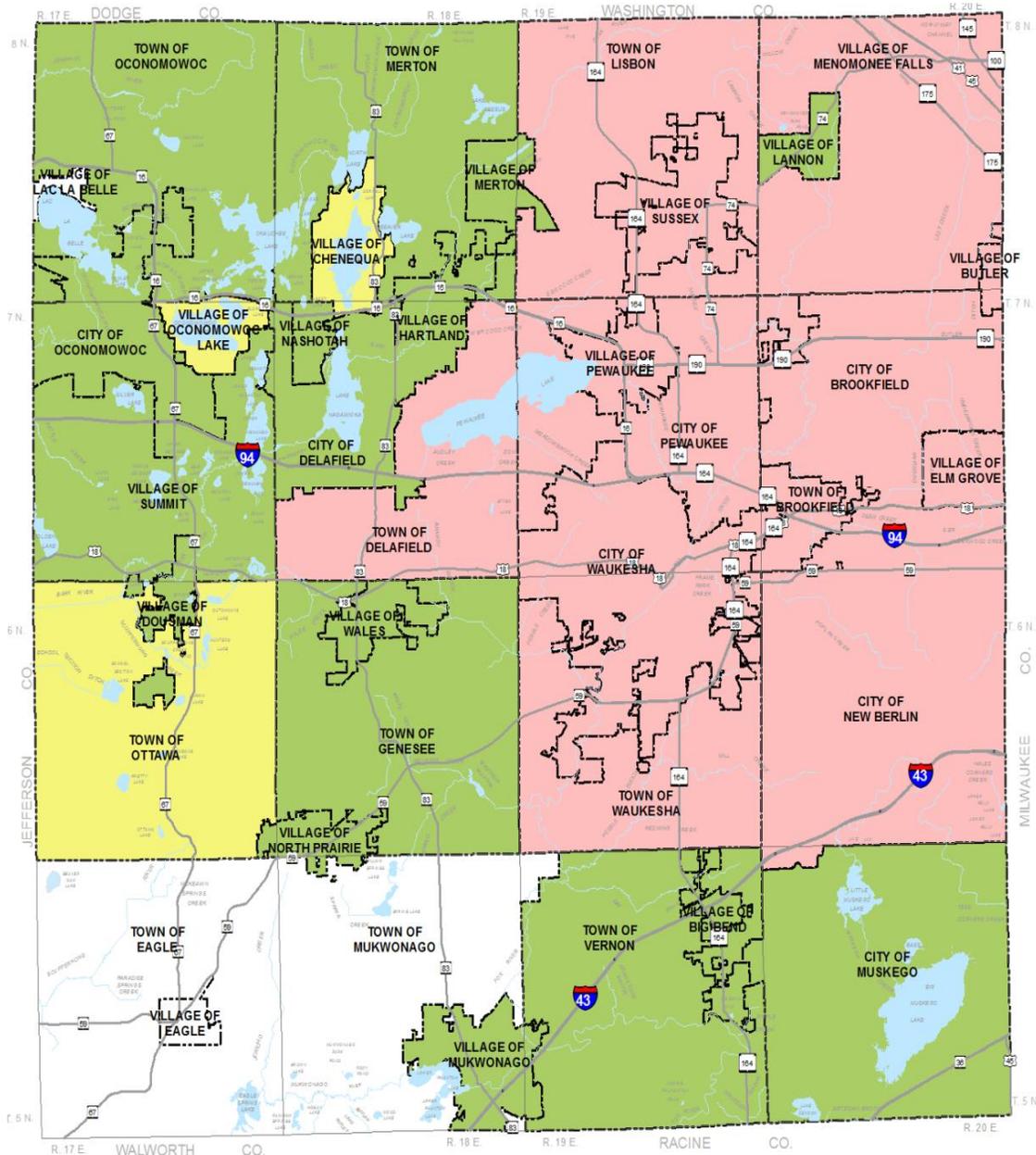
1. Update and enforce the county storm water and erosion control ordinance on new construction sites.
2. Prepare and implement a working agreement between the Waukesha County Public Works and the Parks and Land Use Departments to describe county ordinance enforcement procedures on county-owned lands.
3. Map all county-owned storm water management facilities and storm sewer outfalls.
4. Complete a storm water discharge pollutant-loading analysis (SLAMM model) to determine compliance with the urban area performance standards of 40% Total Suspended Solids (TSS) control by 2013. Implement new BMPs as needed to bring MS4 system into compliance.
5. Annually inspect all major county-owned storm sewer outfalls and implement an illicit discharge detection and elimination program.
6. Prepare and implement pollution prevention plans for all county-owned properties. This includes proper winter road salt / deicing management, nutrient management plans for fertilizer applications on larger county properties, and proper management of leaves and grass clippings
7. Implement internal staff training in pollution prevention for county public works and parks staff.
8. Annually inspect all county-owned storm water management practices and implement maintenance actions as needed.
9. Implement a public storm water education and outreach program. (Note: This is being done in cooperation with 25 partner communities.)
10. Annually report MS4 permit activity and progress on all these requirements and pay a \$500 permit fee.

The Land Resources Division serves as the MS4 permit contact for Waukesha County and is charged with leading all MS4 permit compliance activities among county departments.

Authorized Local Program (ALP)

To improve regulatory efficiencies, Waukesha County applied for Authorized Local Program status under Chapter NR 216, which was approved by DNR starting January 1, 2011. ALP status allows a Waukesha

Map IV-2 Municipal Separate Storm Sewer System (MS4) Discharge Permits Under Chapter NR 216 Waukesha County: 2012

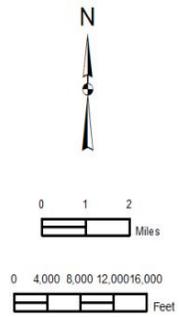


Legend

- Phase I Community (13)
- Phase II Community (18 including Waukesha County)
- Exempted Communities (3)
- MS4 Permit Not Required (4)

*Townships - Only portions meeting the Urbanized Area designation by the EPA

Source: Waukesha County & WDNR



County Storm Water Permit to also provide DNR permit coverage under NR 216 for a construction site that disturbs greater than one acre. This one-stop-shop for state and local storm water permit coverage is something the local development community supports because it simplifies and speeds up the permit process. To meet ALP requirements, the county must screen all NR 216 permit applications for the following:

- Potential wetland water quality impacts to ensure compliance with Chapter NR 103 Wis. Adm. Code or a county ordinance that is at least as restrictive;
- The presence of endangered or threatened resources protected under s. 29.604 Wis. Stats., and Chapter NR 27 Wis. Adm. Code;
- Impacts on historical properties that are listed properties or on the list of locally designated historic places under s. 44.45 Wis. Stats.

When potential impacts are found, the LRD contacts the designated regulatory authority and must withhold issuing a county Storm Water permit until the issue has been resolved. During the first year of ALP status, the LRD issued joint state/county permit coverage for 10 new construction projects. While this number is low due to the recession in 2011, the time saving merits of the program have been demonstrated, and the LRD plans to maintain ALP status. Some improvements are planned for posting Storm Water permit data on the county GIS-web site and possibly the pass-through of state and local administrative fees for the above noted screening processes.

Intergovernmental Agreements

From 2005-2009, Waukesha County executed intergovernmental agreements with 25 local units of government to carry out certain MS4 permit requirements. The driving factor in these agreements was the MS4 permit requirement for each community to implement a storm water information and education program. The LRD offered communities a DNR pre-approved information and education program and a designated staff person to coordinate program implementation efforts in exchange for an annual fee based on community population. For 2012, the community annual fees ranged from \$1,174 to \$4,700, but are subject to an annual fee increase based on actual program costs.

**Table IV-1
Communities in Waukesha County Issued Municipal Separate
Storm Sewer System (MS4) Permits Under Chapter NR 216 and that have
Executed an Intergovernmental Agreement with Waukesha County: 2012**

Phase 1 Communities			Phase 2 Communities		
Cities	Towns	Villages	Cities	Towns	Villages
Brookfield	Brookfield*	Butler	Delafield*	Genesee*	Big Bend*
New Berlin	Delafield*	Elm Grove	Muskego*	Merton*	Dousman*
Pewaukee*	Lisbon*	Menomonee Falls	Oconomowoc*	Oconomowoc*	Hartland*
Waukesha*	Waukesha*	Pewaukee*		Vernon*	Lannon*
		Sussex*			Merton*
					Nashotah*
					North Prairie*
			County		Mukwonago*
			Waukesha County		Summit*
					Wales*

* Communities that executed an intergovernmental agreement with Waukesha County

For seven towns where the county storm water ordinance applies (all except Brookfield), the intergovernmental agreements also contain provisions aimed to improve ordinance administration and enforcement, set erosion control policy for municipal road right-of-ways, and to improve tracking and maintenance of storm water best management practices. For two villages (Merton and North Prairie), the intergovernmental agreements also cover enforcement of the county storm water ordinance within the village, with one agreement (Merton) also covering 1-2 family home construction sites through the Wisconsin Uniform Dwelling Code (Chapter SPS 321). The LRD will continue to encourage intergovernmental cooperation on all MS4 permit requirements.

Storm Water Database

In 2005, using seed money from a DNR urban nonpoint grant, the LRD rolled out a robust database application that tracks storm water permits, project notes, financial assurances, and BMP installation and maintenance. The application runs on a web browser interface with the supporting database running on Microsoft SQL Server. The application is designed to automate and improve storm water permit record keeping and enforcement efforts, including a detailed tracking of contact notes for all active permits. The application is also designed to improve public access to storm water BMP design, installation and maintenance data. The system includes links to a county imaging system that stores copies of BMP maintenance agreements, photographs, and scans of BMP design and installation data or BMP inspection reports. Since 2006, most of these images are created when the storm water BMP maintenance agreement is recorded on the property through the Register of Deeds office – a county Storm Water permit requirement. For BMPs installed prior to 2006, the LRD is in the process of back-scanning available BMP data, which is scheduled to be completed in 2013.

There are also two types of GIS links in the storm water database application – a point for locating installed BMPs, and a polygon for locating active construction site storm water permit boundaries. As of February 2012, the county GIS system contains records for over 600 installed storm water BMPs, as shown in Map IV-3. The public can click on any BMP point on the GIS map and view or download all available data and images. Authorized users can also log into the system and upload additional images to the system such as photographs, as-built documents or BMP inspection reports. The LRD will continue encouraging more communities to get trained in the use in this part of the system.

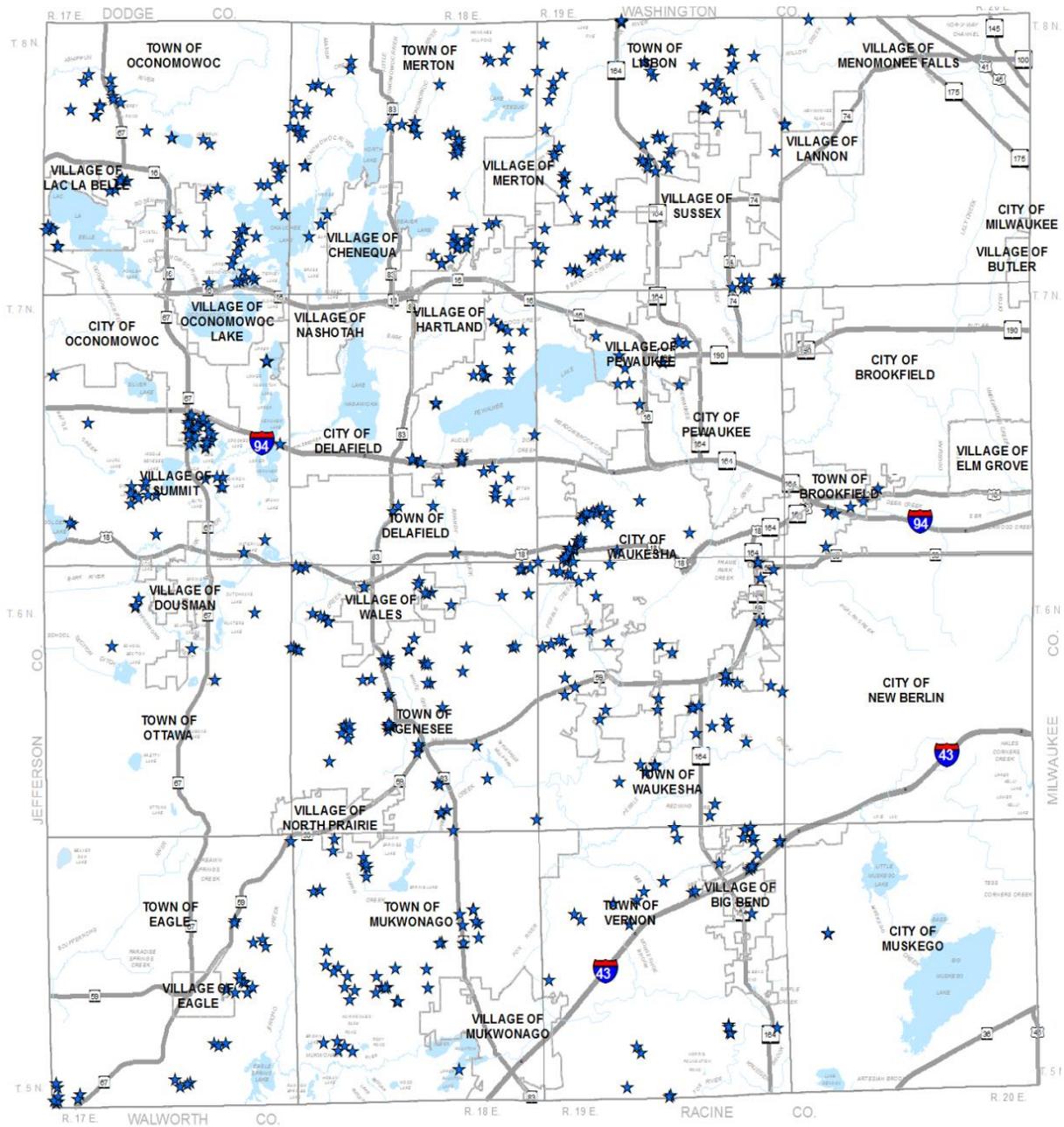
Storm water permit tracking on the GIS system is designed to coordinate regulatory efforts between the field and the office, and between the DNR and the LRD under the Authorized Local Program. When the LRD receives a permit application, the property boundary is digitized and linked to the permit number in the database. Authorized users can log in and view or enter permit information and find the current status of any permit. As of 2012, this part of the system is the least developed and is planned to be improved upon in the next year with the new GIS system that was recently installed.

Agricultural Nonpoint Pollution Performance Standards

As noted in Chapter III, agricultural runoff pollution is a leading cause of water pollution in most of the watersheds in the state. Chapter III also noted that Chapter NR 151 Wisconsin Administrative Code contains a number of agricultural nonpoint pollution performance standards for cropland erosion and nutrient applications, barnyard runoff, and livestock waste management. A general summary of the statewide agricultural nonpoint pollution standards, as of 2012 is provided below:

Map IV-3

Storm Water Best Management Practices in the Waukesha County Database: 2012



Legend

- ★ Storm Water BMPs
Included in the Waukesha
County Database and GIS
System as of 2/2012



Source: Waukesha County

- Soil erosion rates on all cropland must be maintained at or below “T”. *[Note: “T” is the tolerable erosion rate for each soil type to maintain its productivity indefinitely. T-values generally range from 3-5 tons per acre per year and are documented in the NRCS Technical Guide.]*
- Application of manure or other nutrients to croplands must be done in accordance with a nutrient management plan, designed to meet state standards for limiting the entry of nutrients into groundwater or surface water resources.
- Clean water runoff must be diverted away from contacting feedlots, manure storage facilities, and barnyards in water quality management areas (areas within 300 feet of a stream, 1000 feet from a lake, or areas susceptible to groundwater contamination).
- All new or substantially altered manure storage facilities must meet current engineering design standards to prevent surface or groundwater pollution.
- All cropland tillage must be setback 5-20 feet from the ordinary high water mark of any lake or stream.

The following manure management prohibitions also apply statewide:

- No direct runoff from animal feedlots to “waters of the state”.
- No overflowing manure storage facilities.
- No unconfined manure piles in shoreland areas (areas within 300 of a stream, 1000 feet from lakes).
- No unlimited livestock access to “waters of the state” where the livestock prevent sustaining an adequate vegetative cover.

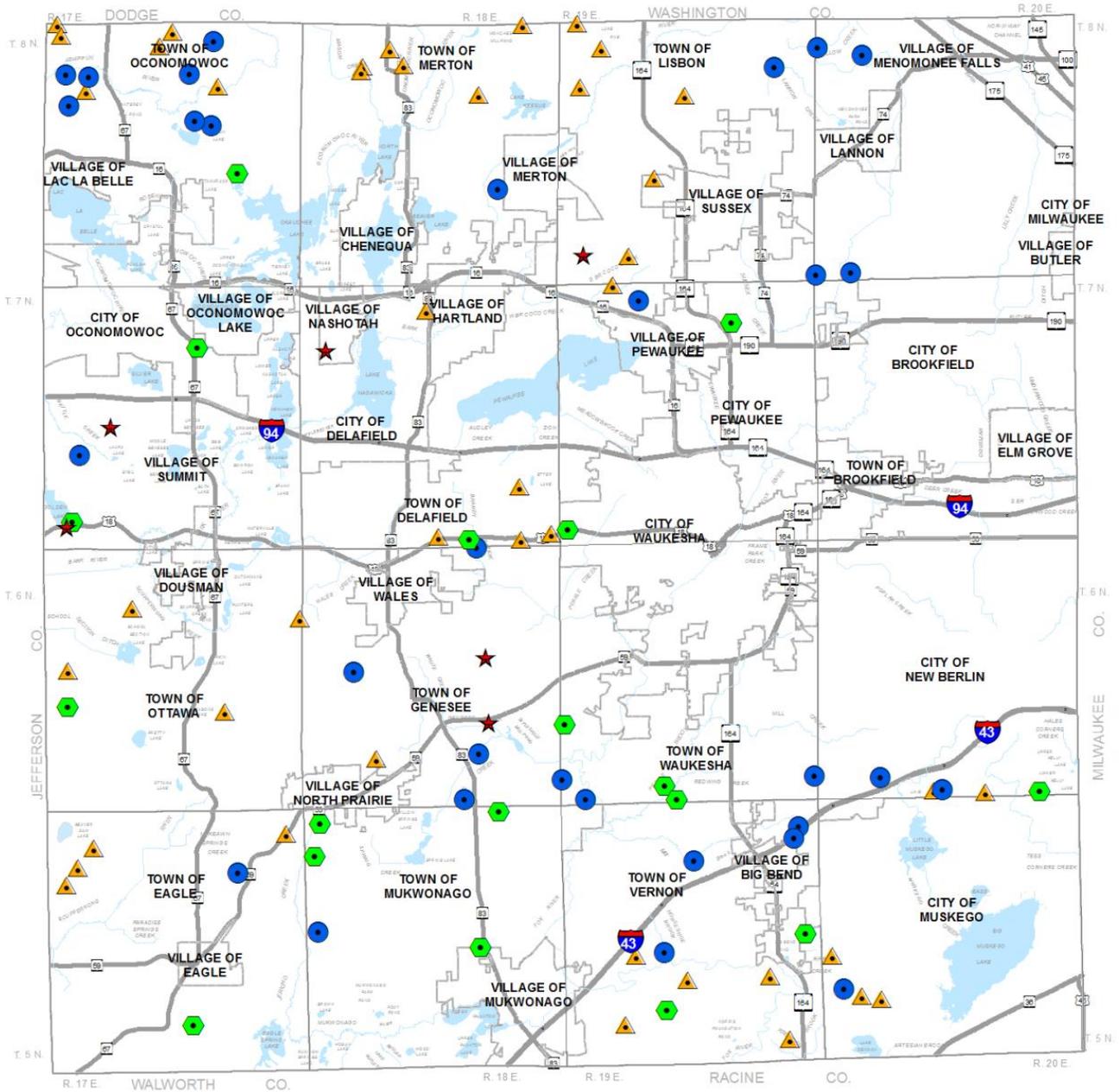
Agricultural Nonpoint Implementation Procedures

State administrative rules prescribe specific cost-sharing requirements that must be met before a landowner can be required to comply with the above noted agricultural nonpoint pollution performance standards. The minimum cost-share rate is generally 70%, except in cases of economic hardship, whereby 90% cost-sharing is required. The cost-sharing requirement does not apply to landowners who receive the state Farmland Preservation income tax credit.

A 2010 generalized agricultural land use inventory conducted by the LRD shows there were 85,526 acres in agricultural uses. Of this, 2007 USDA reports estimate cropland to be about 70,000 acres. Since the 1990’s, conservation plans have been developed for a large percentage of county farmland due to the owner or operator participating in USDA programs, the state Farmland Preservation tax credit, or previous Priority Watershed projects. A transect survey conducted by LRD staff in 2001 showed that approximately 90% of county cropland was at or below “tolerable” (T) soil erosion rates, the state and federal standard that would maintain soil productivity indefinitely. While compliance with “T” value is mandatory under state law, the NRCS will not participate in enforcement efforts. In fact, conservation plans prepared for USDA programs cannot be used by LRD staff to determine landowner compliance with state standards without the written permission from the landowner.

The LRD has also inventoried livestock operations in the county and found very few significant threats to local water resources. Map IV-4 shows the general location of 98 livestock facilities with more than 40 animal units. Only 17 of these 98 are located within a water quality management zone (300 feet of a river or 1000 feet of a lakeshore). The LRD estimates that about half of the 17 may need some runoff control practices, such as clean water diversion to meet state nonpoint standards. Large pasture areas used on several farms make this unnecessary. Based on LRD landowner contacts to date, the majority of local farms do not currently comply with state requirements for a nutrient management plan. The state

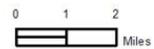
Map IV-4 Livestock Operations with Greater Than 40 Animal Units: Waukesha County 2011



Livestock Type

- Beef (18)
- ▲ Dairy (43)
- Horses (31)
- ★ Other (6)

Source: Waukesha County



Nutrient Management technical standard (NRCS 590) includes Phosphorous Index limits for individual farm fields, but the local level of compliance is unknown.

As noted in Chapter II, development pressures are a daily fact of life for agricultural producers in Waukesha County. While there is still a considerable amount of agricultural production in the county, the LRD considers many of the remaining farms to be a temporary land use based on adopted community land use plans. Therefore, if problem fields or livestock facilities are located in an area planned for future development, it would seem questionable policy to invest a significant amount of limited public resources to address short-term agricultural runoff issues. Because of this, the total LRD resources allocated to this goal are much less than most other county land conservation departments in the state and agricultural nonpoint compliance activities are focused on the “priority farms” described in step 2 below. Having said this, all farms in the county must meet the NR 151 performance standards and are therefore subject to enforcement action for noncompliance.

Many counties are implementing the above noted agricultural nonpoint standards through a county ordinance or a working agreement with the DNR. A working agreement would document the procedures that will be followed by the LRD and DNR for a public complaint or an LRD referral of an agricultural nonpoint problem, as noted in step 6 of the procedures listed below. Since the 2006 LWRM plan was adopted, the LRD has requested a working agreement with DNR, but local storm water workload issues have prevented it from getting done. The LRD will continue to pursue such a working agreement in the future. Regardless, the implementation steps detailed below would likely evolve as program experience and fiscal demands may dictate. In the following sections, the term “landowner” is used generically to describe the person responsible for compliance with the above noted standards.

Step 1. Conduct information and education activities.

The LRD will distribute information and educational material prepared by the DNR, DATCP and LRD to relevant landowners through one-on-one contacts, the LRD web page or other methods that may become available. The educational materials will be designed to achieve the following objectives:

- Educate landowners about Wisconsin’s agricultural performance standards and prohibitions, applicable conservation practices, and cost share grant opportunities;
- Promote voluntary implementation of conservation practices necessary to meet the performance standards and prohibitions;
- Inform landowners of compliance procedures and agency roles to be used statewide and locally;
- Make landowners aware of expectations for compliance and consequences for noncompliance.

Step 2. Select and evaluate parcels for compliance with standards and prohibitions (Priority Farms Strategy).

The LRD will use the county GIS system and old Farmland Preservation Program participant lists to identify priority farms for compliance determinations. Farmland Preservation Program participants are the highest priority since they must comply with the nonpoint standards to be eligible for the state income tax credit. Map IV-5 shows where farms are eligible to claim the FPP credit under the 2011 revisions to the Waukesha County Farmland Preservation Plan. A GIS database is used to record the results of farm compliance checks, track progress on implementing performance standards, identify priority farms, and generate reports. More specifically, the GIS system is used to identify livestock operations within the Water Quality Management Areas (300 feet from a stream or 1000 feet from a lake). The latest available color digital

orthophotos and land ownership data are used as a base map for initial screening, combined with 2-foot contour maps and water resource layers. Digital land units from the USDA-Farm Service Agency may be used to delineate field boundaries. This information is supplemented with an LRD generated digital map of existing farm operations and water resource classification data. Information from the Soil Survey may also be used to identify potential groundwater problems. Other high priority landowners for compliance checks will include citizen complaints and targeted watersheds through other partnerships – but only if the lands are not slated for development in the adopted community comprehensive plan.

Once the list of landowners is created, LRD staff conducts a records inventory search for files related to conservation planning within the department. This is an initial review to determine potential compliance with the performance standards based on past or present program participation. If no records are found, or if the records are found to be out of date with existing farming operations, an on-site farm visit will be scheduled. It should be noted that as of 2009, NRCS conservation planning records cannot be used by the LRD to determine landowner compliance without the written permission of the landowner.

Step 3. Document and report compliance status.

Following completion of records review and on-site evaluations, a **NR 151 Status Report** will be prepared and issued to owners of the parcel evaluated. This report will convey at a minimum:

- Current status of compliance of individual parcels with each of the performance standards and prohibitions.
- Corrective measure options and rough cost estimates to comply with each of the performance standards and prohibitions for which a parcel is not in compliance.
- Eligibility for cost sharing.
- Grant funding sources and technical assistance available from federal, state, and local government, and third party service providers.
- An explanation of conditions that apply if public cost share funds are used.
- A timeline for completing corrective measures, if necessary.
- Process and procedures for contesting evaluation results to the county.
- A copy of performance standards, prohibitions and technical design standards.

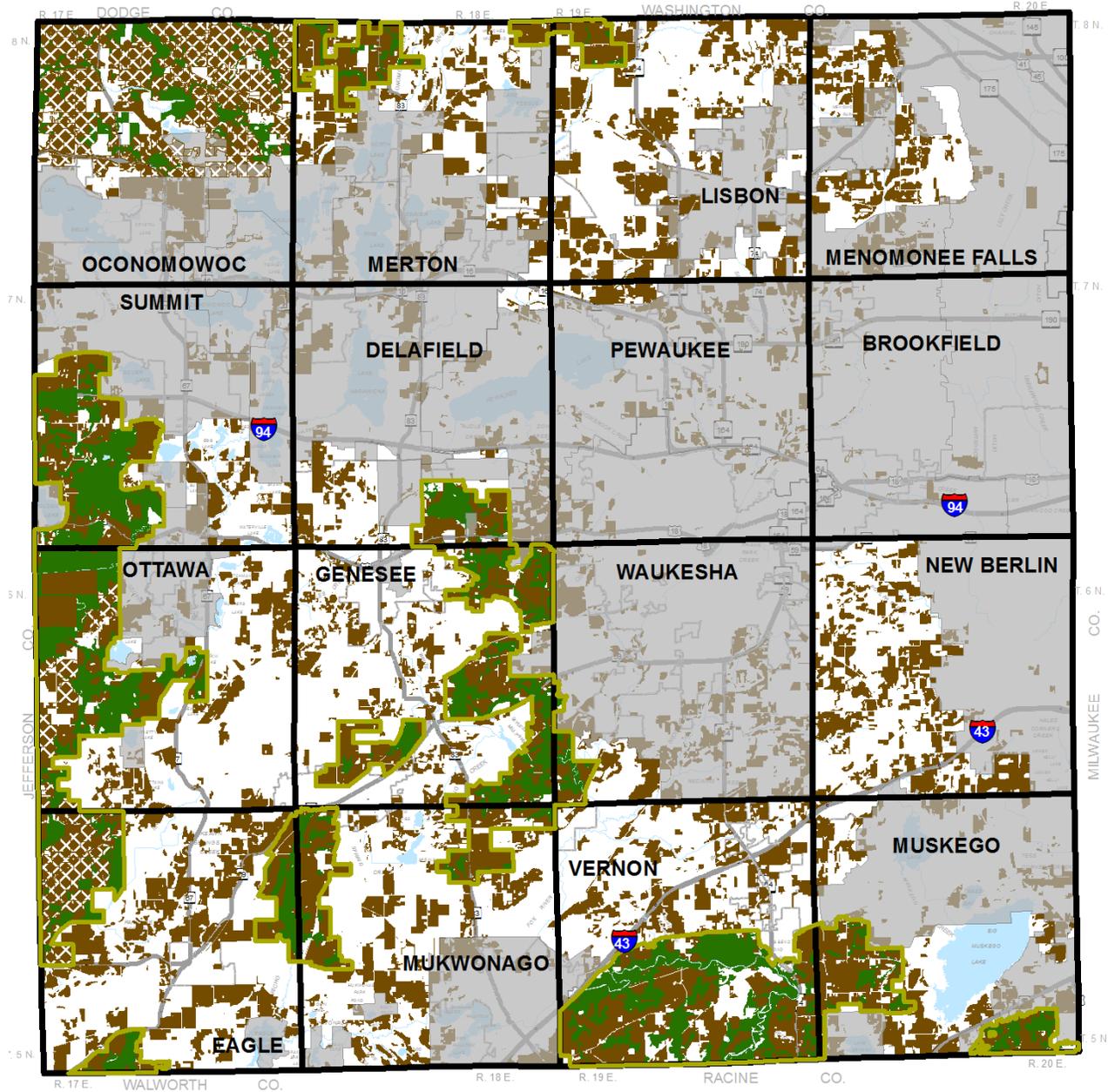
All evaluations and compliance information will be kept as public record in accordance with the procedures documented by the Waukesha County Department of Parks and Land Use.

If a landowner agrees with the initial compliance determination and no corrective actions are required, a **Letter of NR 151 Compliance** will be issued (See Step 5) and the site mapped and GIS database populated. If a landowner disagrees with the initial compliance determination, the landowner may meet and discuss concerns with the LRD regarding the compliance determination process and results. If, after discussing the NR 151 Status Report with the LRD, the landowner still disagrees with conclusions of the LRD, the landowner may choose to follow the appeals process to be detailed in the anticipated working agreement between the LRD and the DNR.

Step 4. Offer or arrange for technical assistance. Offer available cost sharing as needed to install or implement best management practices (BMPs).

If a site is determined to be out of compliance with the state standards, technical assistance and cost sharing will be offered to the landowner to upgrade the site(s) and bring them into compliance. A list of conservation practices likely to be utilized to meet state performance standards and potential sources of

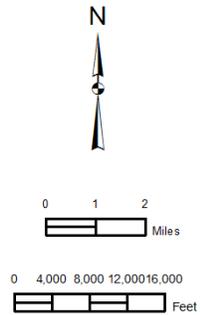
Map IV-5 Farmland Preservation Plan for Waukesha County: 2011



Legend

-  Unrefined Future AEA Map Units (>1000 acres)
-  Farmland Preservation Area (Towns of Oconomowoc, Ottawa & Eagle)
-  Planned Sewer Service Area
-  Environmental Corridor within Targeted FP/AEA Map Units
-  Farmland

Source: Waukesha County



cost-share funding is found in Appendix E. If no cost sharing is available, a landowner is not required to comply until such time that cost sharing becomes available. However, if cost sharing is offered, and a landowner still refuses to make the corrective actions needed to bring the site into compliance, future cost sharing is not required.

Step 5. Administer funding and technical assistance. Re-evaluate parcel.

Once a landowner agrees to implement the corrective actions to bring the site into compliance with the state standards, and if cost sharing is involved, the cost share agreement and schedule for implementation will be executed. If technical assistance is required it will be arranged for through appropriate agencies/staff with the proper engineering job approval or conservation planning certifications.

After the corrective measures are applied, the site will be re-evaluated to determine if the parcel is now in compliance with the relevant performance standards or prohibitions. If the site is in compliance, the **NR 151 Status Report** will be updated to include a **Letter of NR 151 Compliance**. This would serve as official notification that the site has been determined to now be in compliance with applicable performance standards and prohibitions. Under NR 151, once a site is determined to be in compliance, it is required that the site remains in compliance for perpetuity without additional cost sharing being required.

Step 6. Issue required notices and enforcement activities.

Following compliance status notification, if appropriate action is not taken by the landowner/operator in a reasonable amount of time as detailed in the **NR 151 Status Report**, enforcement action may commence. Generally, a **NR 151 Violation Letter** would be sent via certified mail to notify the landowner of the violation and explain possible enforcement action that may follow. It is anticipated that the LRD would refer the case to the DNR for further enforcement, depending on the outcome of the working agreement described earlier.

Step 7. Monitor compliance with state standards and prohibitions

Monitoring progress on implementing the performance standards and prohibitions will be done using the Waukesha County GIS Ag Compliance Tracking database. This may be done as random spot checks or through operation and maintenance checks on sites previously cost shared. Results will be reported as needed to meet state grant requirements.

Agricultural Buffer Standard

When the administrative rules concerning the redesign of the state nonpoint pollution control program were being debated in 2000 and 2001, there was disagreement about what role vegetative buffers should have in the agricultural nonpoint performance standards. In order for the rest of the administrative rules to move forward, the DNR agreed to remove the buffer language from the draft rules and revisit the issue at a later date. As of 2012, no such standard has been adopted or proposed.

If and when a buffer standard is incorporated into NR 151, the LRD plans to incorporate it into local program efforts and revise annual work plans as necessary. At present, voluntary programs such as the Conservation Reserve Enhancement Program (CREP) have minimum buffer widths based on program goals and technical standards. However, participation in this program in Waukesha County has been very low and the CREP contract expired in 2008. DATCP has recently expressed an interest in executing

a new CREP contract with Waukesha County, but it would already expire in 2013, making implementation impractical.

Estimated Program Costs

Since this plan does not have the authority to establish fiscal policy for the county, the estimated costs provided below are solely intended to satisfy state LWRM planning requirements and do not in any way show anticipated LRD budgets. Due to the current fiscal constraints imposed by state and local policy makers, it is assumed that no additional staff resources will be made available to implement this plan beyond what is currently allocated to land and water conservation programs in the county (approximately 5.8 FTE in 2012). The 5-year cost estimates contained in Tables IV-2 and IV-3 are based on historical inflationary costs to maintain existing program efforts and staffing levels. Even though this plan is written with a 10-year planning horizon, cost projections are limited to 5 years because fiscal projections beyond that period have proven to have limited value. For example, the 2006 LWRM Plan estimated minimum state cost-share funding needed to support LRD staff in accordance with statutory cost-sharing rates. However, by 2012, the state was already approximately \$100,000 short of their statutory obligation in this funding category.

The landowner cost-sharing estimates in Table IV-2 and IV-3 are partially based on a statutory requirement of 70% cost-sharing and are dependent on landowner needs to comply with the state performance standards and other voluntary efforts such as wetland restorations, as described earlier in this chapter and Chapter III. Since 90% of cropland is estimated to already comply with the erosion control requirements, and there are few significant livestock operators in the county, these costs are estimated to be nominal compared to most other Wisconsin counties. However, if a standard is established for stream buffers, and nutrient management standards are enforced, these costs would be much higher than shown. Further details on this issue are provided in the last section of this chapter describing impediments to plan implementation.

Table IV-3 is provided to demonstrate the future state grant needs to continue supporting existing program efforts, based on current state statutory obligations. Under section 92.14 Wisconsin Statutes, the Department of Agriculture, Trade and Consumer Protection is directed to provide each county \$100,000 per year for landowner cost sharing grants, plus base staff funding for an average of three conservationists at a rate of 100% for the first position, 70% for the second position and 50% for the third position. Average salary increases and inflationary costs represent the increases shown each year. Cost-sharing is assumed to be available from federal and state sources at equal levels in Table IV-3.

The cost estimates outlined in this chapter represent the best estimates of the LRD at the time of plan preparation and are all subject to change. No attempt is made to identify the source of funding beyond the assumptions noted above. All of the estimated costs are subject to the annual budget processes at the county, state and federal levels. The LRD will make every attempt to take advantage of the wide array of grants and partnerships that may be available through public or private sources to implement this plan.

Table IV – 2
Estimated Total Costs for Plan Implementation: 2012-2016

Cost Category	2012	2013	2014	2015	2016
LRD Staff (S&B)	\$468,500	\$491,900	\$516,500	\$542,300	\$569,400
Operating Expenses	\$110,000	\$112,200	\$114,400	\$116,700	\$119,000
Landowner BMP Cost-Sharing	\$150,000	\$150,000	\$150,000	\$150,000	\$150,000
Total Costs	\$728,500	\$754,100	\$780,900	\$809,000	\$838,400

Table IV – 3
Estimated Minimum State Costs to Support Plan Implementation 2012-2016
Under Funding Formulas Contained in Section 92.14 Wisconsin Statutes

State Cost-share Category	2012	2013	2014	2015	2016
LRD Staff (statutory obligation/s. 92.14)	\$210,000	\$220,500	\$231,500	\$243,100	\$255,300
Landowner BMPs - 70% Cost-Sharing	\$100,000	\$100,000	\$100,000	\$100,000	\$100,000
Total State Costs	\$310,000	\$320,500	\$331,500	\$343,100	\$355,300

Monitoring and Evaluation

Monitoring and evaluating program efforts are important to ensure program effectiveness and accountability in the expenditure of public funds. Waukesha County currently uses a variety of methods to monitor and evaluate progress on program efforts, including land inventories, GIS/database maintenance, surveys, advisory committees, annual reviews and progress reports, and water quality monitoring.

Measuring progress for nonpoint pollution control programs has been identified as a serious challenge in several state legislative audits since the late 1980's. Past program efforts have focused on tracking best management practices installed to control nonpoint pollution and associated expenditures involved. Modeling has also been used to estimate pollution reduction accomplished by the installation of practices. Actually measuring changes in water quality is the best way to track progress, but it is very expensive. Also, due to the high number of variables involved in monitoring water quality, it is often difficult to interpret the data. Below is more detail on some of the methods Waukesha County uses to monitor and evaluate the success of implementing plan activities.

Advisory Committees

The county maintains several advisory committees that are periodically asked to review program efforts and plan future activities. One example is the LWRM Plan Advisory Committee, which was used to develop and update this plan. Another example is the Storm Water Advisory Committee, which is codified in the Storm Water Ordinance as the official group responsible for advising the LRD on ordinance updates and the development of technical guidelines related to ordinance administration. As noted in Chapter III, the Storm Water Education Advisory Committee meets twice each year to review progress on educational efforts and plan future events. A subcommittee of this group also helps plan the annual storm water workshop. The Mineral Extraction Advisory Committee is consulted when updates are made to the Nonmetallic Mine Reclamation ordinance or to resolve related conflicts that may arise during the regulation of local mines. A common theme to all these advisory committees is giving the affected industries and other interested parties an opportunity to evaluate county program efforts and offer suggestions for improvement or ideas for future program efforts.

Citizen Surveys

One way to measure progress in information and education efforts is through random citizen surveys. The LRD has sponsored two such surveys in the past, one in 1994 and another in 2003. Both surveys tried to measure the level of understanding of nonpoint pollution and the impacts of urban runoff in particular. The LRD has compared and documented the results of these two surveys. In general, we found that public knowledge of nonpoint pollution has increased, but there is still much misunderstanding about storm sewers and where they discharge (29% correct answer). It is encouraging that more people believe that individuals are a key to solving nonpoint pollution problems now (30%) than in 1994 (23%). Unfortunately, these types of surveys are expensive and if not carefully designed, the data collected can be difficult to compare or establish a long-term trend. It is unclear if this type of survey will be repeated within the timeframe of this plan update.

Another form of survey that is done more regularly is a brief questionnaire of participants in a particular workshop conducted by the LRD. This is done at the completion of the workshop to get immediate feedback and suggestions for improvement. This will continue to be a standard part of LRD information and education program efforts.

Water Quality Monitoring

Monitoring water quality can be a powerful tool for tracking long-term trends and “ground-truthing” assumed impacts of land use changes and pollution control practices installed. However, as noted above, it is very expensive and difficult to do. Citizen surveys show that over the past 10 years an equal number of people think water quality is getting better versus getting worse or staying the same. In general, there is such a shortage of water quality monitoring information available to the LRD that it is impossible to say who is right. One solution to this problem is to encourage volunteer citizen monitoring.

Citizen Stream Monitors

Since 2002, the LRD has been very active in encouraging citizen volunteer water quality monitoring of the streams in Waukesha County. The LRD, in cooperation with groups such as the Rock River Coalition, Pewaukee River Partnership, and Water Action Volunteers (WAV) have held annual training sessions to teach interested citizens how to monitor streams for temperature, turbidity, dissolved oxygen, stream

flow and how to conduct biotic index and habitat assessments. The data collected is entered into an Internet accessible database that will be useful for monitoring future trends in stream condition.

There are currently 20 teams of volunteer monitors around the county. The stream sites being monitored on a regular basis are listed in Table IV-4 and shown on Map IV-6. As staff time allows, the LRD will continue to help train volunteer teams and facilitate data collection.

**Table IV-4
Volunteer Stream Monitor Locations**

Stream Name	Location	Watershed	Years Monitored
1. Golf Course Creek	Lac La Belle Dr.	Oconomowoc River	3
2. Battle Creek	Golden Lake Rd.	Oconomowoc River	11
3. Oconomowoc River	Beach Rd.	Oconomowoc River	3
4. Oconomowoc River	West Shore Dr.	Oconomowoc River	3
5. Mason Creek	Petersen Rd.	Oconomowoc River	2
6. Little Oconomowoc River	Petersen Rd	Oconomowoc River	6
7. Bark River	Genesee Lake Rd.	Bark River	10
8. Bark River	Hillside Rd.	Bark River	2
9. Scuppernong Creek	Ice Age Trail	Bark River	10
10. Jericho Creek	Hwy LO	Mukwonago River	6
11. Genesee Creek	Carroll College property	Middle Fox River	6
12. Spring Brook	Holiday Rd.	Middle Fox River	2
13. Pebble Creek	Kame Terrace	Upper Fox River	11
14. Pebble Creek	Hwy TT	Upper Fox River	11
15. Brandy Brook	Hwy DT	Upper Fox River	11
16. Pewaukee River	Lindsay Rd.	Upper Fox River	8
17. Pewaukee River	Village Park near Capitol Dr.	Upper Fox River	8
18. Pewaukee Lake Outfall	Behind Main St.	Upper Fox River	8
19. Pewaukee River	Hwy M near Hammel Bldg.	Upper Fox River	8

Stream Name	Location	Watershed	Years Monitored
20. Pewaukee River	Hwy J & I-94	Upper Fox River	8
21. Pewaukee River	Hwy F	Upper Fox River	8
22. Coco Creek	Capitol Dr.	Upper Fox River	8
23. Coco Creek	Yench Rd.	Upper Fox River	8
24. Meadowbrook Creek	Hwy SS	Upper Fox River	8
25. Zion Creek	Oakton Rd.	Upper Fox River	8

Source: Waukesha Co. LRD

Wisconsin's Self-Help Lake Monitoring Program

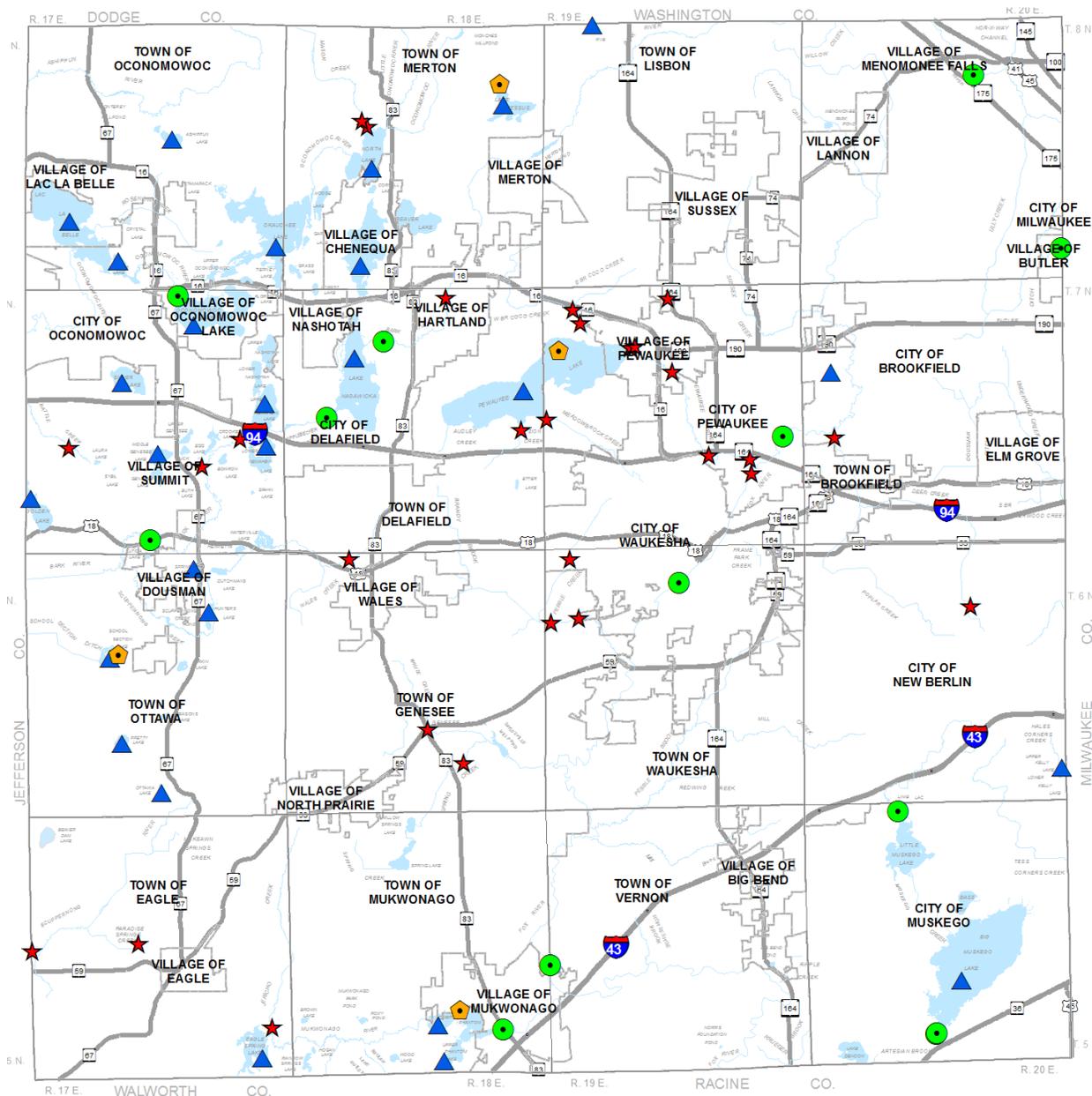
Wisconsin's Self-Help Lake Monitoring Program began in 1986 as one component of the Department of Natural Resources Lake Management program. The Program is designed as a data collection program on some of Wisconsin's 15,000 lakes and serves as a citizen education program about lakes in general. Each volunteer learns about his or her own lake by collecting the data and through a detailed report he or she receives at the end of the sampling season.

The Program was designed with six specific objectives in mind:

1. To teach citizen volunteers some concepts of basic limnology, how lakes "work" and to increase their understanding of the water quality of their lake in particular.
2. To teach citizens about basic lake sampling techniques, specifically how to use a Secchi disc carefully, regularly, and according to set procedures.
3. To document changes in lake clarity over time by tallying the data on a centralized computer system.
4. To differentiate between normal and seasonal variations in water clarity and long-term trends over time. In this way we can judge whether water clarity and, presumable water quality, is getting better, getting worse, or staying the same.
5. To compare the water clarity data for all of the lakes in the program on both a regional and statewide basis.
6. To collect data accurately over time in order to make sound lake management decisions.

Volunteer monitors may measure water clarity using a Secchi disk or may elect to do chemical analysis as well as water clarity readings. The 27 lakes in Waukesha County with Self-Help Lake Monitoring as of 2012 are shown in Map IV-6.

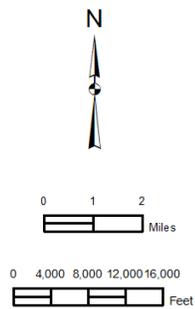
Map IV-6 Water Monitoring Sites in Waukesha County: 2012



Legend

- ★ Citizen Water Monitoring Sites (28)
- USGS Gaging Stations (13)
- ▲ DNR Self Help Monitoring Sites (27)
- ⬠ DNR Lake Baseline Monitoring (4)

Source: Waukesha County, WDNR & USGS



Agency Water Quality Monitoring

The Department of Natural Resources conducts baseline monitoring of streams in Waukesha County, which rotates annually in accordance with regional program planning. DNR also conducts fish surveys, examines macroinvertebrates, and conducts habitat assessments at a number of locations around the county. Public access to much of this data is available through the DNR's web site.

The United States Geological Survey (USGS) also collects water resources data on lakes and streams in Waukesha County and at numerous locations around Wisconsin. The type of data collected varies depending on program and project scope but includes historic and current stream flow on selected water bodies, water quality, and lake stage data. They regularly partner with other agencies and local interest groups to collect information on the condition of surface and groundwater resources.

Map IV-6 shows locations of USGS stream gage stations and lakes that have recently been monitored as part of an ongoing lake stage and water quality monitoring program. Water quality at each lake is monitored in February, April, June, July and August. Dissolved oxygen concentration, temperature, pH level, and specific conductance are determined in each lake. The objective of this long term monitoring program is to determine lake stage and water quality at these and other selected lakes in order to be able to detect chemical or biological changes that may take place over time.

More information on the variety of data collected by the USGS and the ability to view real-time stream gage data can be found at the USGS website: <http://wi.water.usgs.gov/>.

DNR Lake Baseline Monitoring

Department of Natural Resources staff also conducts baseline monitoring of four lakes in Waukesha County each year. These lakes are monitored for total phosphorus, chlorophyll A, secchi depth, temperature profiles, dissolved oxygen profiles, pH profiles and conductivity profiles. Once a year in late summer these lakes are also monitored for color, alkalinity, nitrate, nitrite, total Kjeldahl-N, calcium and magnesium. The lakes with baseline monitoring include: Lake Keesus, Pewaukee Lake, Lower Phantom Lake and School Section Lake. These lakes are shown on Map IV-6.

GIS/Database Tracking Systems

The LRD has developed a web-based database for tracking storm water permits and the long-term maintenance of storm water practices. This system will continue to be used to monitor compliance with the urban nonpoint performance standards and to generate annual reports of activity such as plans reviewed, permits issued, inspections conducted and enforcement action. In addition, a GIS link to this database allows mapping of the sites where permits have been issued or storm water BMPs have been installed. BMP inspection reports can be uploaded to track maintenance.

For the agricultural performance standards, a similar GIS database has been developed to track compliance status by land parcel. This system will be updated in the near future to be web-based and to track the installation of agricultural BMPs. As noted earlier, the LRD has conducted a Transect Survey to determine general cropland erosion rates throughout the county. While this methodology is good for an overview of compliance, the LRD has not repeated the survey since 2001 due to its limited use. Extensive land development in the county has also resulted in the loss of many of the cropland sampling points, making a statistical valid survey difficult to repeat.

Annual Reports/Performance Evaluations

As a condition of state grants or regulations, the LRD must submit annual reports on the progress of local program efforts. Examples include annual reports to demonstrate MS4 permit compliance (DNR), to maintain Authorized Local Program status (DNR) or to meet grant requirements for the Soil and Water Resource Management grant (DATCP). All of these provide an opportunity to evaluate the previous year's program efforts. As noted in Chapter III, the LRD also uses the planned activities in this document as a starting point to develop more detailed annual staff goals, which are then used for performance evaluations at the end of the year.

Taken together, the various monitoring, evaluation and reporting methods described above will be used to continuously evaluate the implementation of this plan and make future program changes, as needed to keep program efforts true to the goals described in Chapter III.

Impediments to Plan Implementation

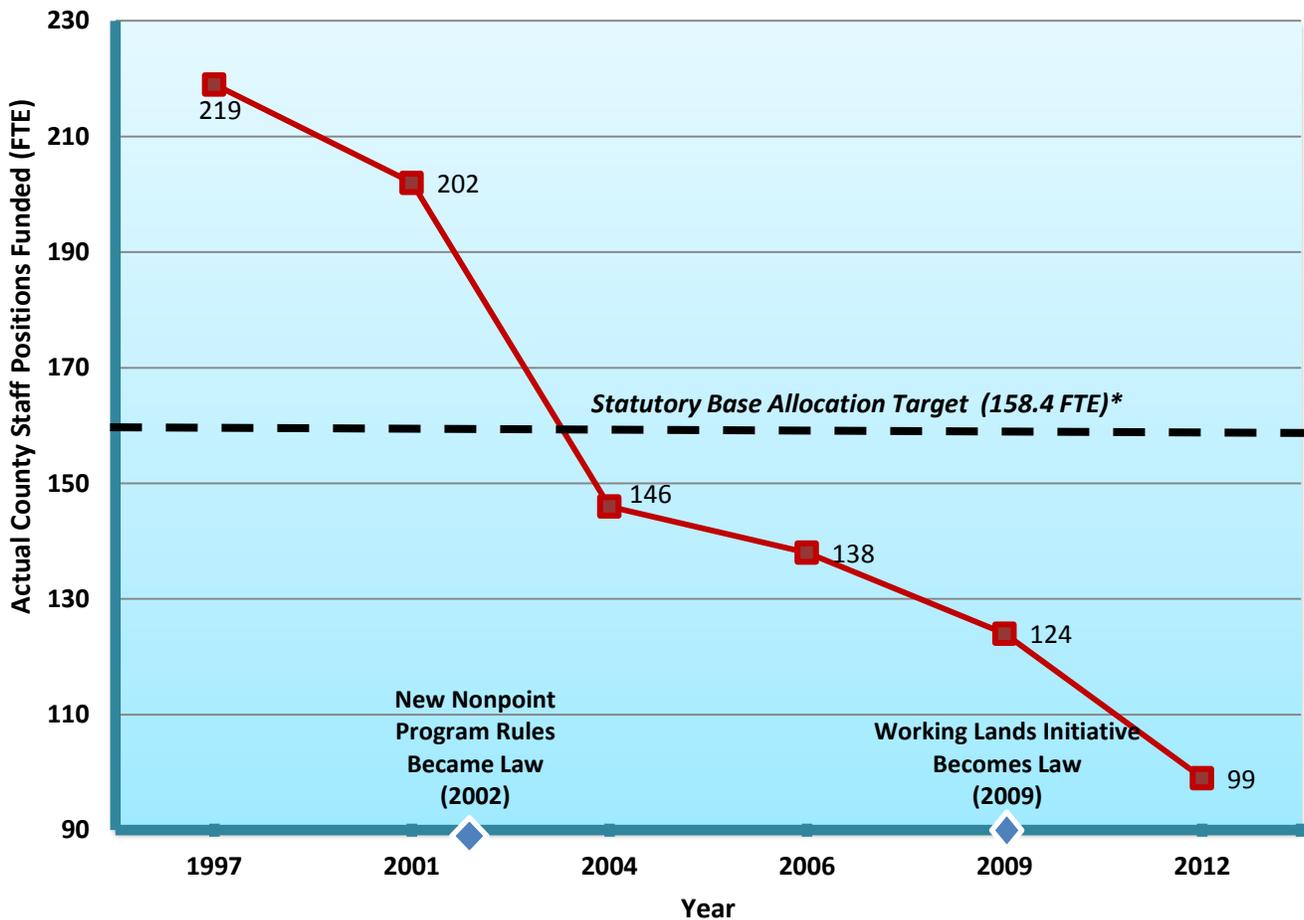
State Funding Cuts for County Program Delivery

As noted throughout this plan, counties are the primary local delivery system for state land and water conservation programs. In 1999, as part of a redesign of the state nonpoint pollution abatement programs, the Wisconsin Legislature committed to a base level of county funding to implement the new program. Section 92.14(6) Wisconsin Statutes directs DATCP to provide program grants to counties to support an average of three conservation staff per county at a cost-shared rate of 100/70/50%. When the new program rules were adopted a few years later, DATCP conservatively estimated that an *additional \$2-4 million per year* was needed to support county conservation program delivery services over the next 10 years. Since then, however, funding has trended in the opposite direction. As of 2012, the state was over \$4 million short of meeting even the base level of staff funding. Figure IV-3 shows the number of county conservation staff supported by state funding since the nonpoint program redesign began in 1997, compared to the noted statutory obligation. Figure IV-3 shows 2012 state funding supports 120 less conservation staff than it did in 1997 - which is 59 positions short of the statutory target of three per county. If the trend were to continue through the 10-year planning horizon of this document, the future sustainability of program efforts would be questionable, along with progress toward meeting state clean water goals.

State Agricultural Cost-sharing Mandates

Another significant plan impediment for implementing the agricultural nonpoint performance standards is the state mandated cost-sharing rates for agricultural conservation practices. For example, nutrient management plans are mandated for all cropland in the state, with a minimum cost-sharing rate of \$28 per acre. Even for the relatively small cropland acreage in Waukesha County (approximately 70,000 acres in 2007), this would require almost \$2 million in cost-share funds to implement. DATCP estimates that Statewide, \$280 million would be required to fund nutrient management plans on the 10 million acres of harvested cropland in the state. However, total statewide cost-share funding available for nutrient management in 2012 was approximately \$1.2 million. Clearly, this \$28/acre cost-sharing mandate is not a realistic strategy to get nutrient management plans implemented on all cropland within any reasonable program planning horizon. It is also arguable that this particular conservation practice pays for itself in saved fertilizer costs, and therefore should not be subject to any cost-sharing mandate at all.

**Figure IV-3
County Conservation Staff Positions Supported by State Funding: 1997-2012**



* Full time equivalent (FTE) target number is based on s.92.14(6)(b) Wis. Stats, which reads: "...the department shall attempt to provide funding under this section for an average of 3 staff persons per county ..." [at a 11/70/50 % cost-share rate]. For three staff, this adds up to 2.2 FTE per county X 72 counties = 158.4 FTE. Conservation staff numbers are derived from DATCP reports and historical county surveys. The 2012 number reflects a \$1.1 million lapse plus \$1million cut approved in the 2011-2013 state budget (\$0.5 million/yr.), and average county FTE salary & benefit cost reported by DATCP.

Source: Wisconsin Land and Water Conservation Association and DATCP

Summary

Unfortunately, the two impediments noted above are closely related, and taken together, present some critical issues regarding future program efforts. For example, the funding source for nutrient management – SEG funds generated from landfill tip fees - is also used to support county conservation program delivery services. During state budget shortfalls, this funding competition presents a no-win decision for policy makers as to which is more important - cost-sharing for landowners, or the local delivery system needed to design and install conservation practices, administer cost-sharing grants and ensure compliance with the state standards? Meanwhile, any shortage of cost-sharing funds means landowners cannot be required to comply with the agricultural nonpoint performance standards. One exception to this rule is landowners who claim the state Farmland Preservation income tax credit. Under current state law, cost-sharing for these landowners is not required to ensure compliance with

the performance standards. Yet, the limited cost-sharing that is currently available through DATCP is being targeted to these landowners.

Increasingly, counties are being held more accountable for the implementation of their Land and Water Resource Management Plans, including the nonpoint performance standards. Yet, as noted above, the incentives for agricultural landowners to comply are very limited and the mechanism to ensure compliance is hampered by state cost-share mandates and program funding shortfalls. Counties have a vested interest in protecting the local land and water resource base and will continue to adapt to the program rules and funding realities they face. However, to sustain a viable local program delivery system and meet clean water goals, some fundamental review of state program administrative rules and funding sources would seem to be in order.