

NORTH MILL CREEK-DUTCH GAP CANAL WATERSHED BASED PLAN

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WATERSHED ISSUES, OPPORTUNITIES, VISION, GOALS & OBJECTIVES

2.1 WATERSHED ISSUES

One of the first tasks undertaken by the North Mill Creek-Dutch Gap Canal Planning Committee (watershed planning committee) was to identify watershed issues based on stakeholder input. Issues were identified by meeting participants at the February and March 2010 planning meetings and voted on to determine priorities.

The five highest priority individual issues by vote are:

1. Water Quality (negative water quality trend; quality and functionality of water body; impairments such as phosphorus, TSS, pesticides, chloride; non-point source pollution and nutrient load (phosphorus and fertilizers); water quality → septic) - 55 points
2. Protection of environmental corridor, wetlands, and sensitive natural areas – 27 points
3. Elevated water level in Dutch Gap (loss of farmable land due to flooding or poor drainage) – 25 points
4. Flooding (Lake George, Dutch Gap, Des Plaines, local, agricultural land) – 24 points
5. Siltation of waterways (Sedimentation; lake sedimentation also upstream impacts) – 22 points

The issues were then grouped in categories by topic areas to begin categorizing them into goal topics. The list below is the complete issues list by group. The list reflects the priority order by category from high to low. (The water quality and natural resources categories received equal votes by category, but water quality is listed first since it received the highest votes as an individual issue.)

The watershed issue topic areas receiving the most votes were

1. Water Quality
2. Natural Resources
3. Flooding
4. Stream/Lake Health
5. Land/Water Management

After the watershed issues were identified, stakeholders then provided input on what steps might be taken to address these watershed issues. The input provided by stakeholders on the potential steps to be taken is listed in the right hand column below next to the appropriate issue.

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Table 2-1: Watershed Issues

STAKEHOLDER IDENTIFIED WATERSHED ISSUES

Water Quality

- Water quality: (Negative water quality trend; quality and functionality of water body; impairments such as phosphorus, TSS, pesticides, chloride; non-point source pollution and nutrient load (phosphorus and fertilizers); water quality → septic)
- Future development (water quality)
- Water quality (recreational overuse)
- Inadequate stream buffers (Existing farm operations close to waterways - lack of buffers)
- Illegal dumping / runoff pollution
- Waste water treatment plant – effect on water quality (pharmacy/personal care contamination)

Natural Resources

- Protection of environmental corridor, wetlands, and sensitive natural areas
- Beavers (Beaver dam control Hastings & Mill Creek; Paasch Lake also has been dammed up at the culvert, Mud Lake, Lake George)
- Invasive plants (Losing diversity of plants in Redwing Slough (currently it is all cattails)
- Lack of natural area preservation (in Wisconsin) (open space preservation)
- Invasive species (IE carp)
- Wildlife Habitat – wetlands
- Loss of wildlife (Helicopter disruption of swans in the Redwing Slough area)

Flooding

- Elevated water level in Dutch Gap (loss of farmable land due to flooding or poor drainage)
- Flooding (Lake George, Dutch Gap, Des Plaines, local, agricultural land,)
- Effects of flooding from future developments – extended flooding conditions (runoff volume increase, potential future changes in zoning and floodplains – filling floodplains),
- Outside organizations influencing flood zones (concern with projects outside of the watershed being mitigated in North Mill Creek watershed)
- Prevent development and fill in current floodplains and wetlands
- Floodplain map accuracy

Stream/Lake Health

- Siltation of waterways (Sedimentation; lake sedimentation also upstream impacts)
- Effect of Rasmussen Dam removal
- Erosion control – on stream / lake and surrounding (also upstream impacts)
- Chemical treatment on lakes
- Channelization of the creek (re-meandering)

STAKEHOLDER IDENTIFIED WATERSHED ISSUES

Land & Water Use, Management & Impacts

- Development impacts (future development)
- Need for sustainable agricultural uses
- Farm expansion (in particular dairy and horse) impact on resources and water quality
- Land use conversions (agriculture to residential, agricultural for preservation)
- Population increase effects on watershed
- Farmland (also upstream impacts)
- Not addressing negative trends
- Lake Shorelines – development
- Recreational uses

Stormwater Management & Drainage

- Maintain drainage systems - tiles and surface drainage to keep farmland (Tiles)
- Greater volume of runoff due to development
- Trees and brush control and debris jams along the creek (north of Millburn on North Mill and on the Des Plaines; to help alleviate flooding)
- Topography - low spots
- Detention ponds – shoreline

Education/Information/Input

- Lack of good information for homeowners and farmers
- Public education of new residents on watershed issues and best practices
- Need more information on funding opportunities
- Proper input from homeowners and farmers

Water Supply

- Groundwater / surface water depletion (water quality/quantity - well and irrigation; preserve recharge for ground water)

Property Rights & Responsibilities

- Farmland preservation
- Control of lake levels
- Property value (near waterbodies)
- Condemnation concerns
- Usability of private property

Inter-Jurisdictional/Multi-Stakeholder Cooperation

- Cooperation between states
- Lack of communication between existing landowners and certified villages when new subdivisions are constructed
- Enforcement of Department of Natural Resources in Wisconsin

STAKEHOLDER IDENTIFIED WATERSHED ISSUES

Climate Change

- Climate change consideration (such as increased rainfall)

STAKEHOLDER IDENTIFIED STEPS TO ADDRESS WATERSHED ISSUES

- Best management practice implementation
- Buffers (and have better incentives)
- (Identify/remediate) Toxic material sources
- Predictive model for land use on water quality
- Initiative to decrease fertilizer use (nutrient management)
- (Address) Waterfowl pollution
- Use beet juice as a salt alternative
- Production of meaningful data / TMDL
- Wetland restorations / addition and preservation
- Protection of high quality areas
- (Correct) Flooding due to drain tile failure
- Enforce floodplain regulations
- Channel capacity increase
- Floodplain buffers maintain and expand
- Compensatory flood storage
- Floodplain property purchase for open space
- Stream Health
- Restoration of Creek (Re-meander the creek, add pool riffles, recreate habitat)
- Bank stabilization with natives (streambank stabilization)
- Keep water out of the creek → infiltration
- Sustainable agricultural practices
- Maintenance program for water ways
- Smart developments (sustainable)
- Present developments
 - Upgrading
 - Green infrastructure
- Maintaining runoff quantity and quality (Flow control – runoff volume reduction)
- Pre-development hydrology (currently done by Town of Salem and Bristol)

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- Come up with an easier system of removing debris from the Wisconsin streams without having to go through the red tape
- New development regulations for open space and stormwater (promote conservation development)
- Promoting infiltration practices (creation for infiltration)
- Employ more vegetated drainage swales
- Retrofit detention and existing stormwater systems
- Regional stormwater utility
- Road salt reduction / deicing alternatives
- BMP education and incentives
- Phosphorus ban / not fertilizing lands (education and outreach)
- Educational programs (Environmental educational curriculum development K-12)
- More understanding / education on how stormwater is implemented in Lake County
- Purchase of rights/easements for buffers
- Resident role in watershed management
- Implement Des Plaines plans and try to resolve potential conflicts between the Des Plaines plan and Kenosha Comprehensive Plan (in terms of land use)
- Discharge locations from detention basins onto farm fields – the Villages should require the developers to talk with the surrounding landowners about the discharge points since they are making the farmland unusable.
- Interstate coordination / regulations
- Consistency with land use planning / regulation across state lines
- BMP' plans enforced
- Money established perpetual funding sources
- Tax incentives for rain gardens

2.2 Watershed Opportunities

Following the identification of watershed issues, stakeholders provided input on what they think the watershed opportunities are. They considered what they really like about the watershed and identified these characteristics as opportunities for preserving for the future. Stakeholders also identified opportunities for education and outreach. Planning participants again voted to prioritize the opportunities. The opportunities are listed in priority order below based on the stakeholder votes.

The identification and prioritization of issues and opportunities at the outset of the planning process was the basis the planning team and stakeholders used for developing goals and objectives for the watershed plan and to guide the planning team's focus in completing the watershed assessment. The prioritization process did not limit watershed planning to only the five high priority issues/ opportunities, but rather allowed the watershed plan development team to focus their efforts and make sure that the highest priority issues are adequately addressed in the planning process and within this

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watershed plan report. The planning team also considered the results of the watershed assessment in developing the plan objectives.

Table 2-2: Prioritization of Watershed Issues

| PRIORITY (voting results) | OPPORTUNITY |
|-------------------------------------|---|
| 70 | Open land (large open/undeveloped areas; open space - forest preserves, trails, etc; high quality natural areas; nature, wildlife & habitat.) |
| 46 | Water resources: lakes, streams, wetlands (lakes and Redwing Slough), |
| 48 | Farmlands (good productive land; excellent quality agricultural land; farmland preservation) |
| 39 | Rural setting, but close to everything (quiet, rural flavor; current agricultural / rural feel; good balance of open space, farming, and built environments) |
| 39 | Good planning and management (work with municipalities - comprehensive plans and updates) |
| 36 | Open space purchase and preservation (land preservation; Wisconsin open space preservation (buyer's market....its time to buy)) |
| 20 | Water quality and fish (improve quality of water bodies) |
| 18 | Finding funding (grants for watershed improvement projects (money for Wisconsin and Illinois)) |
| 16 | Aquifers / water conservation |
| 16 | Strong education outreach for buy-in |
| 16 | Any future development presents opportunities (detention and stormwater options – wetland, groundwater recharge) |
| 12 | Incentives for change and implementation (increase level of tax incentives for floodplain and open space set aside) |
| 8 | Restoration (prairie and wetland) as mitigating factor for development |
| 8 | Education about pharmacy contamination treatment |
| 6 | Ordinances for residential development <ul style="list-style-type: none"> ○ Promote no phosphorus fertilizers ○ Enforcement of ordinances |
| 6 | Targeting pollutants and sediment |
| 6 | Love it, but getting too crowded (keep subdivisions out) |
| 5 | Strong environmental friendly zoning authority |
| 5 | Road salt reduction (smart de-icing practices) |
| 4 | Promotion of manure management for smaller farms not currently required to implement them |
| 3 | Promotion of conservation management for agriculture (i.e. lower phosphorus application rates) |
| 3 | Friendly people |

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| | |
|---|--|
| 2 | Lake views and scenery |
| 1 | Economic security (locally grown food) |
| 1 | Encourage landowners to be conservation minded |
| 0 | Development – future (make it positive - especially Route 173 / Tollway) |
| 0 | Route 45 and Edwards – future school site used as a demonstration site |
| 0 | Wisconsin DNR enforcement |

2.3 Stakeholders Have a Vision for the Watershed

The planning team took the watershed stakeholder planning committee through a visioning exercise that spanned several planning meetings to come up with their vision for the North Mill Creek/Dutch Gap Canal Watershed. The visioning process began with the following question:

What would you like the North Mill Creek/Dutch Gap Canal watershed landscape to look like - or be - in 20 years?

→ Begin with what you value related to the landscape, water resources & living conditions (consider what you like and would like to preserve - think about the future)

Stakeholders then considered writing a newspaper article about the watershed in 20 years and provided input on what the headline, story, quotes and photos in the article would contain.

The outcome of the visioning exercise resulted in the following watershed vision statement:

Our vision for the North Mill Creek and Dutch Gap Canal watershed is to have clean water, diverse ecosystems and fish and wildlife, which are supported by land use and development plans that promote the effective use, preservation and enhancement of working, recreational, and natural open space. We envision a community with rural or “small town” aesthetics and quality of life with residents that are well-informed of watershed issues.

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2.4 Watershed Goals and Objectives

Seven goals were established for the North Mill Creek / Dutch Gap Canal watershed to address the issues and opportunities raised by the watershed planning committee. These goals led to the development of objectives and ultimately the action plan recommendations.

The goals and objectives:

- reflect watershed conditions
- Address stakeholder priority issues
- Consider expected future changes
- Meet funders' expectations (IL EPA)

Over the period of the planning year, “measurable” indicators were assigned to each goal to help measure future progress toward meeting each goal as the watershed action plan is implemented. The Action Plan contains recommended programmatic actions that address water quality, flooding, natural resources, green infrastructure, new development, education and coordination goals, and site specific actions that recommend best management practices for specific problem locations identified during inventories and assessments. The goals and objectives are examined in more detail when evaluating the watershed plan’s performance and progress by evaluating milestones related to measurable indicators for the goals and objectives.

GOALS

- Mini vision statements or targets for the watershed plan → the desired change or outcome you wish to achieve
- Are driven by stakeholder issues and problems identified by the watershed assessment.
- Ideally, will be clear, concise and measurable (you’ll know when you have achieved it)

OBJECTIVES

- Are specific, more precise steps needed to attain goals
- Position reached or purpose achieved by some activity by a specific time
- Objective outcomes should be measurable, attainable, relevant and time-based
- There may be multiple objectives for one goal



Figure 2-1: Watershed stakeholders get a close look at wastewater treatment plant, dairy and crop farm, and a high quality lake during the watershed bus tour in September 2010.

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Goal 1: Improve and protect water quality (physical, biological, and chemical health), eliminate impairments and non-point source pollution, and implement land development and management practices to prevent pollution.

Outcome: Water bodies are not impaired (fully support designated uses) and future pollution is prevented, have healthy lakes, streams, and wetlands

Table 2-3: Goal 1 Objectives

| ID | Objective | Other Goals Addressed |
|-----|--|-----------------------|
| 1.A | Reduce the quantity of road salt (sodium chloride) needed for safe and cost effective winter maintenance to reverse the current trend of rising chloride levels in lakes. Indicators: Salt tonnage/road mile Chloride trends in lakes. | |
| 1.B | Retrofit single purpose detention basins and other stormwater management structures to provide water quality benefits. Indicator: Number of detention basins retrofitted. | |
| 1.C | Reduce/eliminate the disposal of pharmaceuticals into toilets and drains by providing a feasible collection system. Indicators: Number of collection sites for pharmaceuticals Measured quantity of pharmaceuticals collected. | |
| 1.D | Reduce phosphorus loads that are the causes of water impairments by: <ul style="list-style-type: none"> ▪ Watershed municipalities and counties pass ordinances banning the use of fertilizers with phosphorus unless a soil test indicates it is needed. ▪ Remove phosphorus from wastewater discharges. ▪ Use of agricultural best management practices to reduce nutrient loads from farmland. ▪ Upgrading poorly functioning septic systems. Indicators: Number of municipalities and counties that have adopted a phosphorus ban. Installation of phosphorus removal technology at wastewater treatment plant as planned for 2011. Number of farmer participating in NRCS BMP programs Number of water bodies removed from the “impaired waters list” | 7 |
| 1.E | Maintain, expand and restore high quality riparian buffers where needed along and around streams, lakes and wetlands to protect/improve water quality and biological health of waters. Indicator: Total linear feet or area of buffer. | |

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| ID | Objective | Other Goals Addressed |
|-----|---|-----------------------|
| 1.F | <p>Reduce pollution caused by dissolved and suspended solids and sediment accumulation in surface waters and wetlands by:</p> <ul style="list-style-type: none"> ▪ reducing erosion by stabilizing and buffering erodible soils, ▪ stabilizing eroding shorelines and streambanks, and ▪ preventing land development-related erosion using construction and post-construction best management practices. <p>Indicators: Area of erodible soils stabilized and buffered. Total linear feet of shoreline and streambanks stabilized. Ordinance/development standards revised as needed. Number of erosion/sediment control violations.</p> | 5, 7 |
| 1.G | <p>Keep the spreading and storage of manure out of streams, wetlands and floodplains.</p> <p>Indicator: Track reported violations</p> | 7 |
| 1.H | <p>Reform permitting requirements, provide incentives/cost share program, and promote pollution and stormwater runoff reduction programs (such as Conservation @Home) to result in retrofitting/implementing best management practices that reduce pollution and infiltrate stormwater.</p> <p>Indicators: Number of program participants. Money spent on incentives. Number of communities that revise permitting requirements.</p> | |
| 1.I | <p>Restore stream channels to geomorphology and instream habitat that supports good aquatic biological quality.</p> <p>Indicators: Length of stream channel restored. Improved biological quality</p> | 2 |

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Goal 2: Protect, enhance & restore natural resources (soil, water, plant communities, and fish and wildlife) through the expansion of green infrastructure reserves and environmental corridors, maintaining hydrology and buffers for high quality areas, and employing good natural resource management practices.

Outcome: Natural resources are protected, enhanced, or restored

Table 2-4: Goal 2 Objectives

| ID | Objective | Other Goals Addressed |
|-----|--|-----------------------|
| 2.A | <p>Permanently preserve more natural lands as conservation areas through purchase by forest preserve or by conservation easement including natural resource protection areas associated with equestrian uses.</p> <p>Indicators: Acres purchased Acres of conservation easements</p> | 3, 4 |
| 2.B | <p>Adopt development standards that protect natural resources on development sites and provide buffers for high quality areas.</p> <p>Indicators: Area of protected natural resources on development sites. Area of natural resource buffer provided on new development sites</p> | 4, 5 |
| 2.C | <p>Identify and protect environmental corridors through subdivisions, farmland, institutions, and office parks.</p> <p>Indicators: Larger hub or linear areas connected</p> | 4 |
| 2.D | <p>Identify high quality aquatic resources through assessment.</p> <p>Indicator: Number of assessed vs. not assessed water resources.</p> | 1 |
| 2.E | <p>Develop a specific action plan for each impaired lake and improve the resource by removing invasive species such as carp, cattails and purple loosestrife.</p> <p>Indicators: Number of action plans prepared. Evaluate aquatic resource trends based on lake assessment reports</p> | 1 |
| 2.F | <p>Restore forest preserve lands to natural communities and control invasive species.</p> <p>Indicators: Acres restored. Acres managed for invasive species control.</p> | |
| 2.G | <p>Develop environmental corridor and trail connections between new and existing forest preserves, across state lines, with community environmental corridor and trail systems, and equestrian trail connections.</p> <p>Indicators: Environmental corridor length added. Length of trail connections Number of interstate corridor/trail connections Number of connections made</p> | |
| 2.H | <p>Communities adopt policies and standards and management practices that keep invasive species out.</p> <p>Indicator: Number of communities that have ordinances and programs that control and manage invasive species.</p> | |

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Goal 3: Prevent flood damage from worsening in the watershed and reduce existing flood damage to structures, infrastructure and the increasing crop loss due to flooding.

Outcome: Reduction in flood damage to structures and infrastructure and reduction in farmland flooding

Table 2-5: Goal 3 Objectives

| ID | Objective | Other Goals Addressed |
|-----|--|-----------------------|
| 3.A | <p>Create flood storage by increasing water retention/infiltration areas in new and existing developed areas and at regional flood storage sites to reduce flooding and prevent downstream erosion.</p> <p>Indicators: Acres deed restricted for infiltration/retention Fewer flooding reports from flood problem areas Acre feet of new live storage</p> | 1 |
| 3.B | <p>Prevent increased loss of crops due to flooding by maintaining the conveyance capacity of stream channels using practices such as two-stage channels and maintaining a lower water level in the Dutch Gap Canal for positive tile drainage.</p> <p>Indicator: Reports of crop loss due to flooding.</p> | |
| 3.C | <p>Reduce road flooding by investigating and redesigning road structures that are causing flooding.</p> <p>Indicator: Reducing number of road and intersection closures</p> | |
| 3.D | <p>Lake County floodplain regulations match Kenosha regulations that prohibit building in the 100 year floodplain.</p> <p>Indicator: No permits are issued for constructing buildings in the 100-year floodplain.</p> | |
| 3.E | <p>Communities and counties enact ordinances and standards that require sump pump and downspout discharges be directed to lawn or rain gardens and infiltrated.</p> <p>Indicators: Number of communities with disconnection ordinances/standards.</p> | 1 |
| 3.F | <p>Establish institutional maintenance program, establish maintenance standards, and maintain conveyance in streams and drainage ways including the removal of debris blockages and maintenance/repair of erosion and hydraulic structures.</p> <p>Indicators: Stream maintenance entities/programs established Reports by maintenance entities of linear feet maintained/repared or amount of debris removed.</p> | |
| 3.G | <p>Research and identify overland flow routes and require more specific/stringent maintenance and easement requirements of stormwater features in new developments.</p> <p>Indicators: Mapped overland flow routes. New developments with adequate maintenances standards and drainage easement requirements.</p> | |

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| ID | Objective | Other Goals Addressed |
|-----|---|-----------------------|
| 3.H | Improve enforcement of floodplain regulations. Indicators: Number of enforcement actions. Frequency of compliance assessment. | |

Goal 4: Use a system of both site level stormwater green infrastructure practices and regional greenways and trails to protect and connect natural resource areas and to provide recreational opportunities.

Outcome: Site level and regional green infrastructure system is established

Table 2-6: Goal 4 Objectives

| ID | Objective | Other Goals Addressed |
|-----|---|-----------------------|
| 4.A | Distinguish between high, medium and low quality natural resources to guide green infrastructure planning efforts to preserve high quality areas while directing recreation toward lower quality resources. Indicator: Acres of high, medium and low quality resources. Number of municipalities, counties, other districts that include green infrastructure priorities on land use/plan maps. | 2 |
| 4.B | Expand the universe of allowable stormwater management best management practices to include non-structural options such as allowing stormwater credit for undisturbed natural areas, vegetated buffers and native landscaping in yards rather than turf. Indicator: Track allowance of nonstructural BMP changes in municipal and county development standards/codes. | 1, 2, 3 |
| 4.C | Implement green street retrofits (including in older resort areas and subdivisions around lakes) and install stormwater and natural resource best management practices for new road projects (including the new Millburn Bypass) to provide green infrastructure benefits. Indicators: Length of roadway retrofitted or designed with best management practices. Estimated volume of runoff reduced | 1, 2, 3 |
| 4.D | Implement green infrastructure best management practices including porous pavement in parking lots to increase infiltration and reduce runoff volumes as retrofits in existing developed areas and in new developments. Establish cost-sharing retrofit programs as an incentive. Indicator: Number of green infrastructure BMPs implemented. Estimate the volume of runoff reduced/ infiltrated. Track participation in incentive programs. | 1, 3 |
| 4.E | Identify and protect groundwater recharge areas as part of the green infrastructure network. Indicator: Groundwater recharge areas included and protected in green infrastructure network | |

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| ID | Objective | Other Goals Addressed |
|-----|---|-----------------------|
| 4.F | Communities, counties and natural resource agencies adopt and use the watershed Green Infrastructure Plan and other regional green infrastructure/greenway plans in local land use plans and policies. Indicator: Number of communities that have adopted/ incorporated plan in comprehensive plans. | |
| 4.G | Integrate green infrastructure approach into local stormwater and capital improvement/maintenance budgets. Indicators: Number of recommended green infrastructure projects included in community programs. | 1, 3 |
| 4.H | Develop and use standards for sustainable trail design and construction to link green infrastructure sites. Indicators: Length of sustainable trail built. | |

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Goal 5: Guide new development design and practices to protect or enhance existing water resources, natural resources and open space (working and natural lands).

Outcome: New development occurs without impairing water resources, natural resources, and open space

Table 2-7: Goal 5 Objectives

| ID | Objective | Other Goals Addressed |
|-----|--|-----------------------|
| 5.A | Develop use standards/guidelines for applying the green infrastructure approach to site planning and design and stormwater management including building networks that strategically connect to off-site green infrastructure. Indicators: Number of new developments that have applied green infrastructure standards Number of properties that have applied standards to retrofit existing development | 1, 2, 3, 4 |
| 5.B | Review and revise existing development codes to allow or require the green infrastructure approach to site planning and design and stormwater management by right. Indicators: Number of watershed communities that have reviewed their development codes. Number of code changes. | 1, 2, 3, 4 |
| 5.C | Cluster development while still meeting overall minimum zoning and reduce footprint of homes and buildings (reduce allowable minimum size of homes in zoning category). Indicator: Number of new clustered developments. Ordinance revisions. Average size/land covered by new homes. | 1, 2, 3, 4 |
| 5.D | Reduce the stormwater maintenance burden on deed restricted homeowner association common areas by designing stormwater practices/systems that are easy/low maintenance. Indicator: Track maintenance fees for mowed vs naturalized facilities | 1, 2, 3 |
| 5.E | Reduce/eliminate centralized detention ponds and replace with decentralized wetlands, rain gardens of meaningful or effective size relative to impervious area, and drainage swale stormwater system that includes lots that do not back up to one another but allow open space views. Indicator: Number or area of rain gardens Percent of land dedicated to stormwater features. | 1, 2, 3, 4 |

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Goal 6: Provide watershed stakeholders with knowledge, skills and motivation needed to implement the watershed plan. Watershed stakeholders include (but are not limited to) residents, property owners, property owner associations, government agencies and jurisdictions, and developers.

Outcome: Stakeholders have adequate information and knowledge of resources to implement the watershed plan

Table 2-8: Goal 6 Objectives

| ID | Objective | Other Goals Addressed |
|-----|---|-----------------------|
| 6.A | All watershed residents will know “what a watershed is” and what watershed they live in. Indicator: Watershed sign density | 1, 2, 3, 4, 5, 7 |
| 6.B | Educate Home Owner Associations and others on proper maintenance of detention basins and other stormwater/drainage features they are responsible for Indicator: Number of workshops Number of participants | 1, 2, 3, 4 |
| 6.C | Minimize phosphorous use thru education <ul style="list-style-type: none"> ▪ about yard landscaping and maintenance ▪ agricultural BMPs Indicator: Number of workshops, yard walks Number of attendees Number of farmers with nutrient management plans | 1, 7 |
| 6.D | Collaborate with educational institutions such as CLC to provide training on property management best management practices for targeted stakeholders: <ul style="list-style-type: none"> ▪ Homeowners, ▪ Municipal, county and township officials, ▪ Lake owners, ▪ Stream riparian owners, ▪ Farmers Indicator: Number of training events Number of participants | 1, 2, 4, 7 |
| 6.E | Provide training on practices related to good lake management including aquatic plant management, fisheries and water quality Indicator: Number of lake associations reached | 1, 2 |
| 6.F | Educate developers, plan commissions, and Village Boards on the green infrastructure approach to site planning and design and stormwater management. Target = new development Indicator: Number of developers/site design consultants reached Number of plan commissioners reached Number of Village trustees reached Number of municipal and county ordinances updated to be green infrastructure friendly | 5 |

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| ID | Objective | Other Goals Addressed |
|-----|---|-----------------------|
| 6.G | <p>Educate property owners and associations on the need for green infrastructure and on the proper maintenance of green infrastructure practices. Target = existing development</p> <p>Indicator: Number of rain gardens installed Number of rain barrels sold Number of local nurseries with native plants</p> | 4 |
| 6.H | <p>Outreach, encouragement, education for agricultural producers (farmers, equestrian, nurseries) that provides links to existing agencies that offer technical assistance, training and funding resources to encourage producer participation in NRCS, Extension and state agriculture programs that support BMPs and sustainable agriculture.</p> <p>Indicator: Enrollment in agriculture programs</p> | 7 |
| 6.I | <p>General public education on flood mitigation and prevention</p> <p>Indicators: Number of flyers/mailings to high flood risk property owners Number of interactions with public about flooding problems Number of hits on website</p> | 3 |
| 6.J | <p>Provide training for riparian landowners on best practices for stream restoration and maintenance that will restore the conveyance of Dutch Gap Canal to its intended capacity.</p> <p>Indicators: Number of participants in training Agreement on best channel design and capacity</p> | 2, 3, 7 |
| 6.K | <p>Conduct workshops on best practices to minimize the use of road salt for public and private snow removal providers.</p> <p>Indicators: Number of attendees by sector Reduction in quantity of road salt applied Number of municipalities and large parking lot owners that use alternative de-icing products</p> | 1, 2 |
| 6.J | <p>Educate the general public on the importance of watershed health (water quality, flood prevention, soil conservation and agricultural production, green infrastructure, water-based recreation) are to the economy of the communities in the watershed.</p> <p>Indicator: Number of newspaper or web articles on this topic Every community highlights this topic with an article in their community newsletter or on their website</p> | 1, 2, 3, 4, 5, 7 |

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Goal 7: Encourage watershed stakeholder participation in farmland preservation programs and implementation of sustainable agricultural practices that meet the watershed goals.

Outcome: The plan encourages farmland preservation and sustainable agriculture practices that meet the watershed goals

Table 2-9: Goal 7 Objectives

| ID | Objective | Other Goals Addressed |
|-----|--|-----------------------|
| 7.A | Research and develop a farmland preservation program for both the Illinois and Wisconsin portions of the watershed (may be two different programs), and partner with existing farmland protection groups to share knowledge and provide support. Indicators: County/municipal adopted farmland preservation program(s) | |
| 7.B | Keep prime farmland in agricultural production. Indicator: Track prime farm acres in production or conversely prime farmland rezoned and converted to other uses | |
| 7.C | Conserve soils by using erosion control measures on farms and utilizing best farming practices to reduce erosion. Indicators: Acres of cover crops or crop residue left on fall fields. | 1, 2 |
| 7.D | Watershed farms and equestrian facilities establish and follow manure/nutrient management programs. Appropriate agencies/communities enforce existing regulations related to animal waste disposal. Indicator: Number of farming and equestrian operations with plans. Number of inspections/violations that are resolved | 1 |
| 7.E | Promote and support sustainable organic farming and “pollinator friendly” practices, crops and habitat (for bees and other plant pollinators). Indicators: Track number of organic farms Track number of organic farming training events or technical support services provided Estimate and track pollinator friendly habitat on farms | 1, 2 |
| 7.F | Install/use farming best management practices such as pesticide application (product and methods); and maintaining farmland buffers along waterways and through overland flow paths (grassed waterways and other appropriate practices) and erodible soil areas to protect/improve water quality. Indicator: Length or area of farmland waterway and erodible soil buffers. | 1, 2, 3, 4 |

NORTH MILL CREEK-DUTCH GAP CANAL WATERSHED BASED PLAN

| ID | Objective | Other Goals Addressed |
|-----|--|-----------------------|
| 7.G | Maintain drain tiles to reduce sediment transport to waterways. Investigate opportunities and establish demonstration site for end of tile water quality best management practice. After careful study, disable/remove non-functioning drain tiles that are no longer useful. Indicator: Sediment accumulation in channels adjacent to and downstream of row crop farms. Demonstration site established and monitored Length of drain tile removed. | 1 |
| 7.H | Create more community gardens. Indicator: Number of communities that have community gardens Number of participants in community gardens | |
| 7.I | Create and implement resource management plans for all farms, equestrian facilities and nurseries in the watershed. Indicators: Number or percent of farms, equestrian facilities and nurseries with resource plans. | 1, 2 |

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