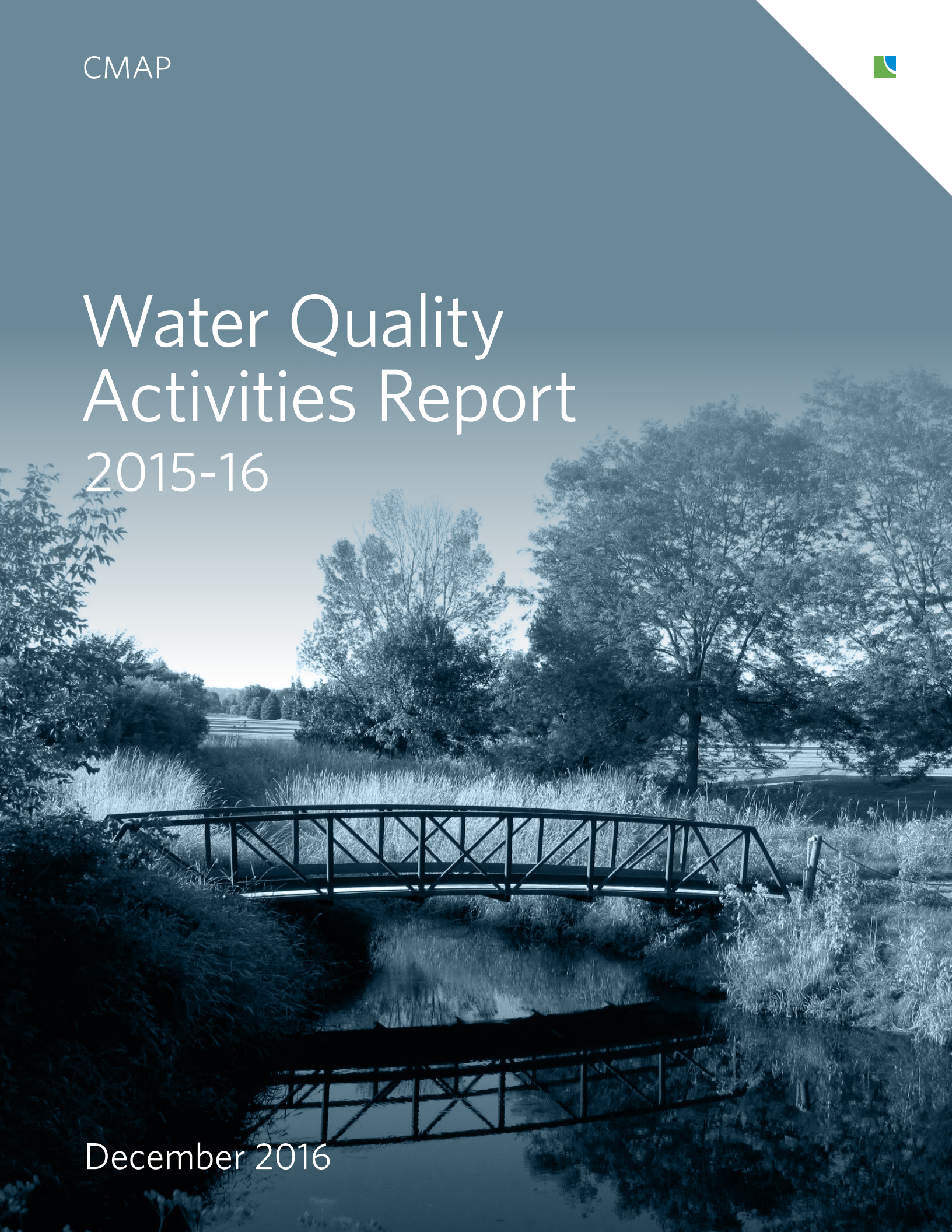


CMAP



Water Quality Activities Report 2015-16

December 2016



This report was prepared using Federal Water Pollution Control Act Section 604(b) funds from the Illinois Environmental Protection Agency. The findings and recommendations contained herein are not necessarily those of the funding agency.

The Chicago Metropolitan Agency for Planning (CMAP) is our region's official comprehensive planning organization. The agency and its partners are developing ON TO 2050, a new comprehensive regional plan to help the seven counties and 284 communities of northeastern Illinois implement strategies that address transportation, housing, economic development, open space, the environment, and other quality-of-life issues.

See www.cmap.illinois.gov for more information.

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Watershed-Based Planning

The Chicago Metropolitan Agency for Planning (CMAP) engaged in a number of watershed-based planning activities during 2015 and 2016. Summaries of these activities follow:

Boone-Dutch Creek Watershed-based Plan

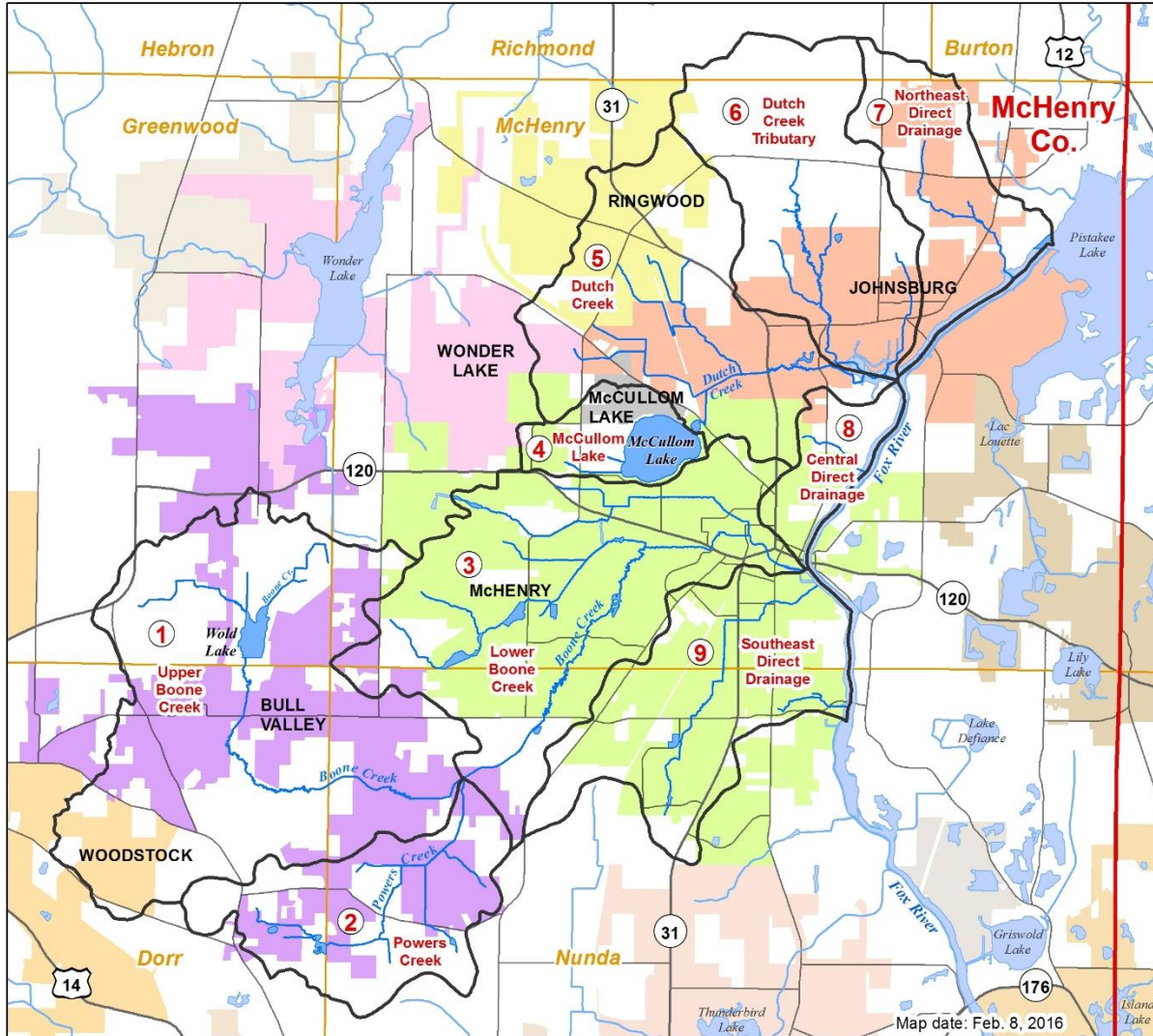
Supported by a Clean Water Act 604(b) planning grant through Illinois EPA, CMAP completed the Boone-Dutch Creek Watershed-based Plan in March 2016. The Boone-Dutch Creek Watershed planning area encompasses 45.3 square miles in eastern McHenry County and includes Boone and Dutch Creeks and their tributaries, McCullom Lake, numerous smaller lakes and ponds, and several other streams that drain directly to the Upper Fox River (Figure 1). Portions of seven municipalities and six townships fall within the planning area. The planning area was divided into nine subwatershed study units to help analyze and compare local conditions and improve consideration of best management practices where they would be most helpful.

For over a year and a half, more than 50 local residents, community leaders, businesses, local government agencies, and other organizations participated in meetings, identified local water resource goals, and contributed invaluable information on local water issues and potential best management practices throughout the Boone-Dutch Creek planning area. During this public engagement process, CMAP inventoried and analyzed the planning area's physical and natural features, land use and land cover, water resource conditions, pollutant sources, and land management practices. This work served as a basis for communicating the existing water quality and stream health conditions as well as identifying goals and recommendations for

protecting and improving water quality and habitat conditions in the planning area. A few analyses to highlight from the Boone-Dutch Creek Watershed-based Plan include an evaluation stream health as a function of impervious surface extent, a review of local plans and ordinances, and a valuation of ecosystem services.



Figure 1. Boone-Dutch Creek watershed planning area.



Legend

- Boone - Dutch Planning Area
- Counties
- Townships
- Waterbodies
- Streams
- Major Roads
- Bull Valley
- Johnsburg
- McCullom Lake
- McHenry
- Ringwood
- Wonder Lake
- Woodstock

0 1 2 Miles

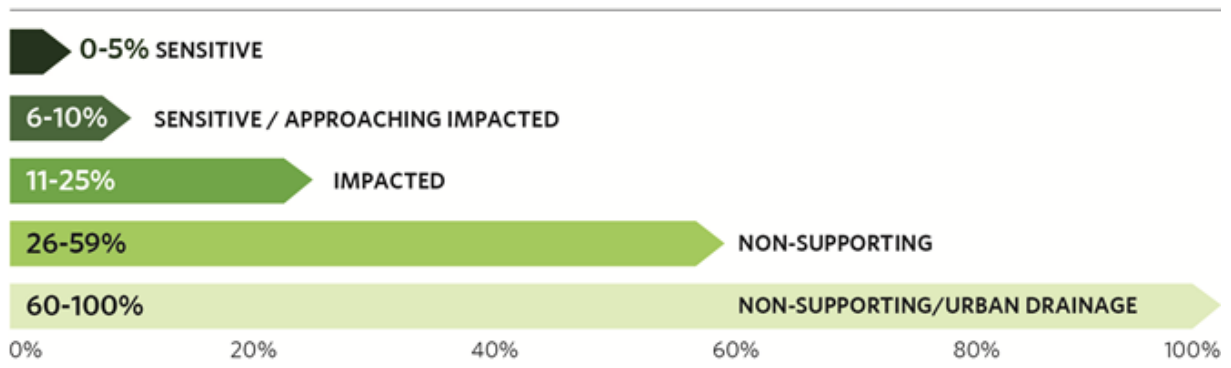


Data Sources: Watershed Planning Area - NRCS Watershed Boundary Dataset (2005) & CMAP (2014); County & Township Boundaries (CMAP 2014); Major Roads - IDOT (2014); Streams - National Hydrography Dataset Flowline (USGS 2007), McHenry Co. ADID (NIPC 1999) & CMAP (2015); Waterbodies - CMAP 2005 Land Use (2009); Municipal boundaries - McHenry Co. (2014) & Lake Co. (2015)



Impervious surface – that part of the landscape that is paved or covered with nonporous material (e.g., concrete, asphalt, roofs, etc.) – prevents infiltration of rain and snowmelt and thus generates runoff and nonpoint source pollution. Impervious surface changes local hydrology which often leads to down-cutting and widening of stream channels. The resultant erosion of the streambank and streambed further aggravates water quality and can negatively impact land resources, infrastructure, and instream and riparian habitat. Given the impacts of impervious surface on local hydrology, water quality, and aquatic life, it is best understood in the context of its impact on stream health. Research has shown that, for small subwatersheds of 2 to 20 mi², streams are able to retain their hydrologic function and support good to excellent aquatic diversity when there is less than ten percent impervious cover in the contributing subwatershed (Figure 2). However, as impervious cover increases above 10 percent, stream health declines and it becomes increasingly difficult to fully recover pre-development stream function and diversity through restoration and retrofitting activities.

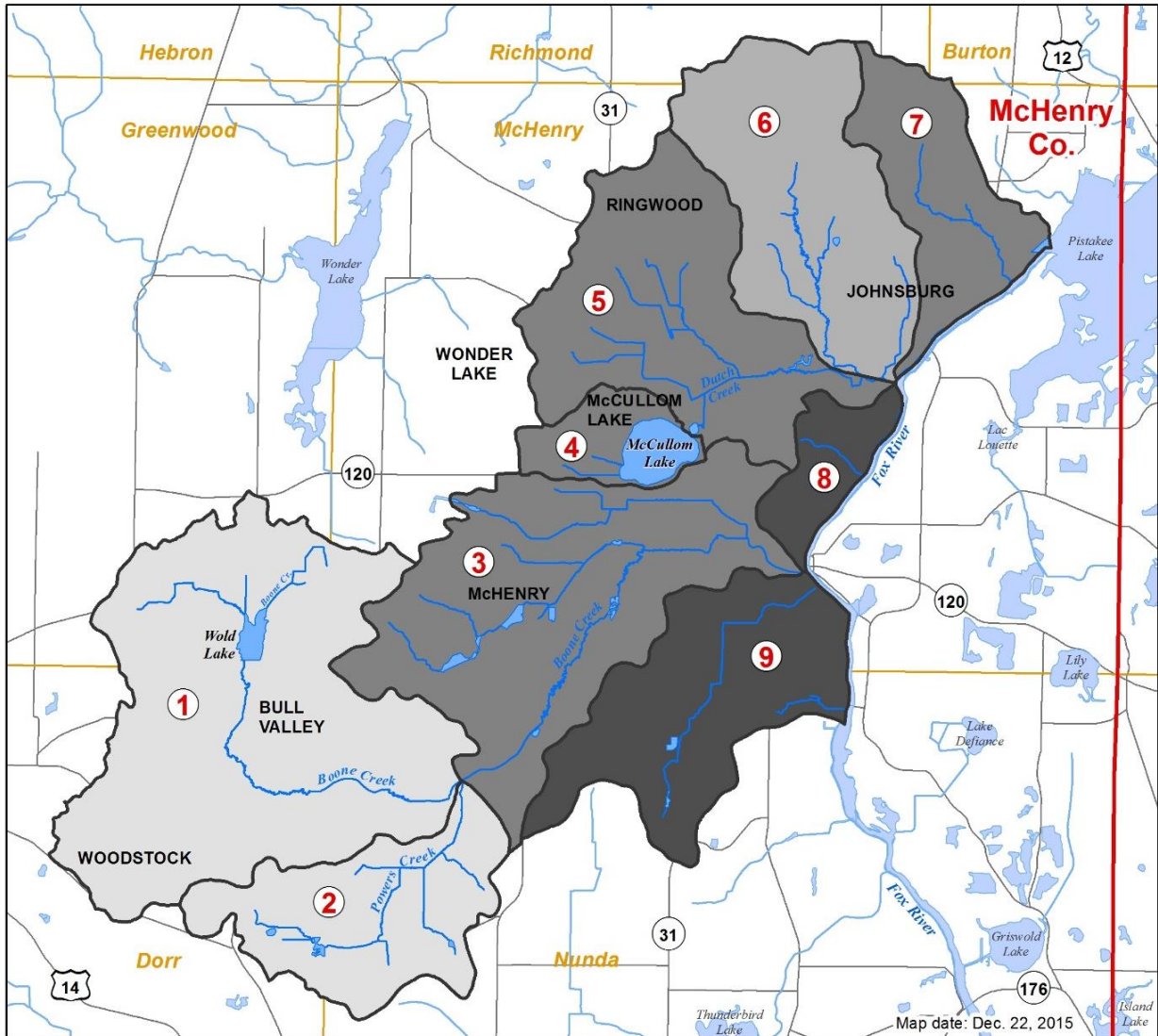
Figure 2. Stream health categories relative to extent (percentage) of impervious surface within a subwatershed.



In the Boone-Dutch Creek planning area, a stream health evaluation indicated that headwater areas with a smaller percentage of impervious surface, namely Upper Boone Creek (2.3 percent = “sensitive”), Powers Creek (3.5 percent = “sensitive”), and Dutch Creek Tributary (5.8 percent = “sensitive/approaching impacted”) (Figure 3), warrant special consideration as development proceeds in order to maintain good water quality and the currently small percentage of impervious surface. Plan recommendations emphasize that as development occurs, it is important that low-impact development, principles of conservation design, and site-level green infrastructure practices be implemented at the highest levels possible in these parts of the planning area to protect and maintain sensitive water quality and aquatic habitat conditions.



Figure 3. Stream health by subwatershed as a function of impervious surface extent in the Boone-Dutch Creek planning area.



Legend

- | | |
|-----------------------------|-------------------------------|
| Boone - Dutch Planning Area | Stream Health Category |
| Counties | sensitive |
| Townships | sensitive / approach impacted |
| Waterbodies | impacted |
| Streams | nonsupporting |
| Major Roads | |

0 1 2 Miles

Chicago Metropolitan Agency for Planning

Data Sources: Watershed Planning Area - NRCS Watershed Boundary Dataset (2005) & CMAP (2014); County & Township Boundaries (CMAP 2014); Major Roads - IDOT (2014); Streams - National Hydrography Dataset Flowline (USGS 2007), McHenry Co. ADID (NIPC 1999) & CMAP (2015); Waterbodies - CMAP 2005 Land Use (2009); National Land Cover Database (2011)

CMAP's review of comprehensive plans and ordinances focused on aspects that potentially influence water quality and watershed health. Each of the seven municipalities within the Boone-Dutch Creek planning area, as well as McHenry County, has adopted a comprehensive plan. The plans generally stress the importance of preventing sprawl by pursuing future land use patterns that direct growth into an orderly pattern that preserves community character and open space. For the most part, the comprehensive plans emphasize restricting development on identified areas of significant resources but have relatively few policies to limit the impact of development that does take place in the rest of the community. In other words, the plans seek to limit the overall impact of development on natural resources by setting aside land for conservation but pay less attention to mitigating the impacts of transportation and parking in developed and developing areas.

Through ordinances and codes, communities implement the vision established in their comprehensive plans by establishing detailed, enforceable regulations. Zoning is the most common ordinance that municipalities and counties use to direct land use, transportation, and development practices, with many also using subdivision, stormwater, water use, and parking ordinances to regulate specific aspects of development. Because the municipalities share a common stormwater ordinance, they are similarly successful in addressing stormwater, soil erosion, and elements of floodplain, stream, and wetland protection. The categories where municipal ordinances generally did not address key topics included natural areas and open space, parking, transportation, pollution prevention, water efficiency, and conservation design and infill. These areas present an opportunity for revised codes to make strides in encouraging compact development patterns, reducing impervious surfaces, and preserving open space.

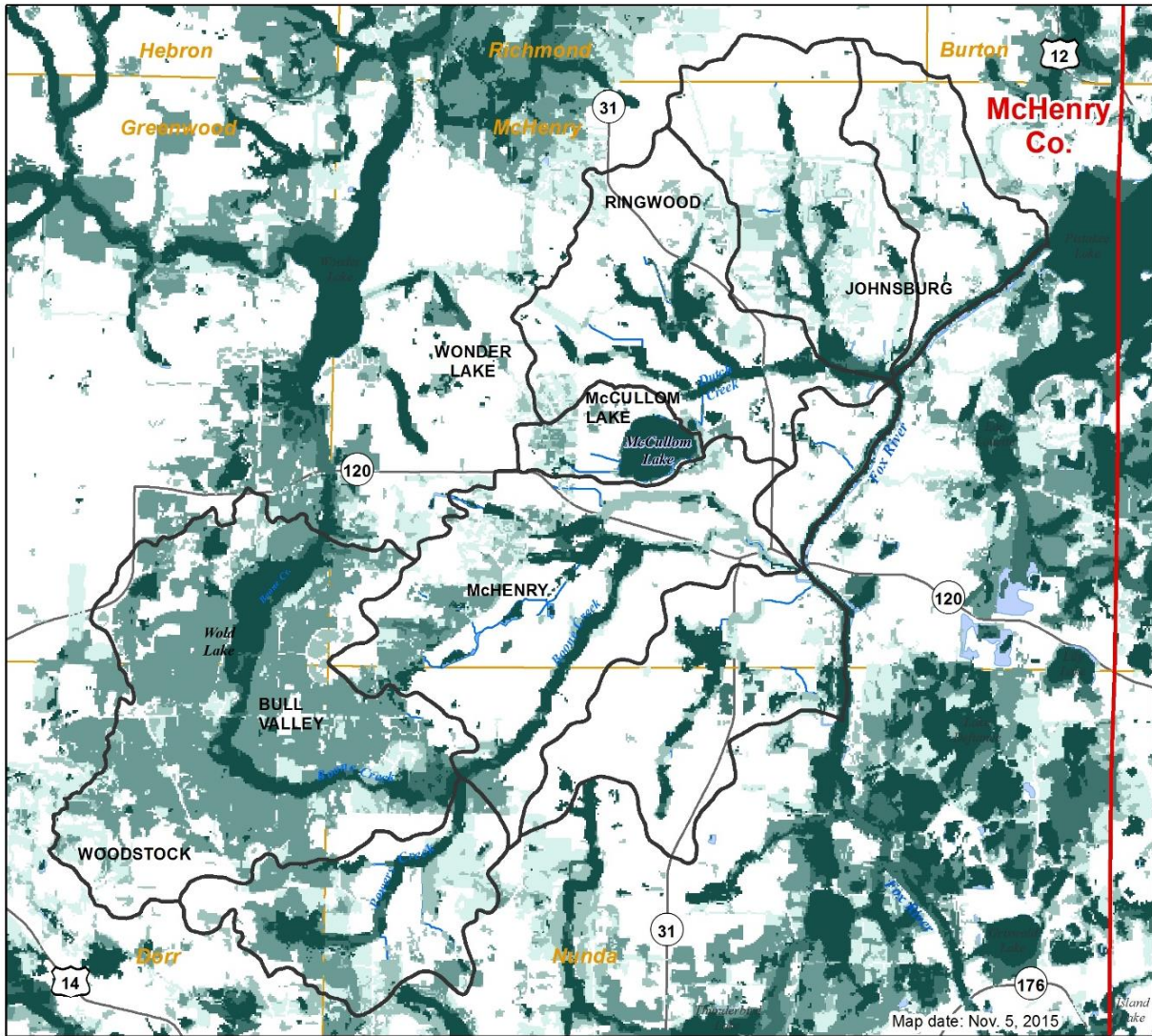
CMAP also analyzed the value of the Boone-Dutch Creek planning area's ecosystem services using the region's Green Infrastructure Vision (GIV).^{1,2} It is estimated that the Boone-Dutch Creek planning area within the GIV contributes an estimated \$91.5 million per year from flood control, groundwater recharge, water purification, and carbon storage services. While the estimated \$91.5 million in ecosystem services that the planning area provides per year is not all at risk of being lost due to development, it does represent a valuable, functional resource that could be diminished at public cost without proper protection. In response to these findings, the Watershed-based Plan indicates that expanding protected open space on both public and private lands within and around the planning area should be of high priority to provide additional links between fragmented habitats as well as increasing ecological and economic benefits. The Watershed-based Plan also recommends restoring farmed wetlands which currently comprise about 164 acres around the planning area.

¹ The Boone-Dutch Creek Watershed Plan is the first watershed-based plan in which CMAP used the GIV to analyze the value of the planning area's ecosystem services. Additional information on the GIV can be found at <http://www.cmap.illinois.gov/livability/sustainability/open-space/green-infrastructure-vision>

² CMAP's ecosystem valuation methodology and data can be found at <https://datahub.cmap.illinois.gov/dataset/green-infrastructure-vision-2-3-ecosystem-valuation>



Figure 4. Selected ecosystem services aggregate value of the Boone-Dutch Creek planning area.



Legend

- Boone - Dutch Planning Area
- Counties
- Townships
- Streams

Selected Ecosystem Services Aggregate Value

2014 Dollars/Acre/Year

- \$>0 - \$10
- \$10 - \$1,500
- \$1,500 - \$4,500
- \$4,500 - \$11,250
- \$11,250 - \$49,155

0 1 2 Miles

Chicago Metropolitan Agency for Planning

Data Sources: Watershed Planning Area - NRCS Watershed Boundary Dataset (2005) & CMAP (2014); County & Township Boundaries (CMAP 2014); Major Roads - IDOT (2014); Streams - USGS National Hydrography Dataset Flowline (2007), McHenry Co. ADID (NIPC 1999), & CMAP (2014); Waterbodies - CMAP Land Use (2005); Selected Ecosystem Services Aggregate Value - GIV 2.3 (TCF 2014)

Other analyses conducted for the watershed resource inventory included an inventory and assessment of detention basins, an evaluation of streambank erosion and riparian conditions, and an estimate of a nonpoint source pollutant loads. In terms of water quality protection recommendations, in addition to local planning and policy recommendations, numerous on-the-ground best management practices (BMPs) were identified. These included various urban stormwater infrastructure retrofits such as bioretention and vegetated swales, stream channel and riparian buffer restoration, farmed wetland restoration, various agricultural practices including denitrifying bioreactors and saturated buffers, and chloride reduction strategies. Total pollutant load reductions and costs for the BMPs also were estimated. Public education and outreach activities were also outlined to help support the plans goals and recommendations.

Collectively, these efforts culminated in an action plan that seeks to protect and restore water quality and watershed health. Local stakeholders contributed to development of both site-specific BMP recommendations as well as recommendations that are aimed at developing a more coordinated watershed planning, policy, and programming framework for the area.

The full plan and an executive summary are available on the Watershed Planning webpage on CMAP's website (<http://www.cmap.illinois.gov/livability/water/water-quality-management/watershed-planning>).

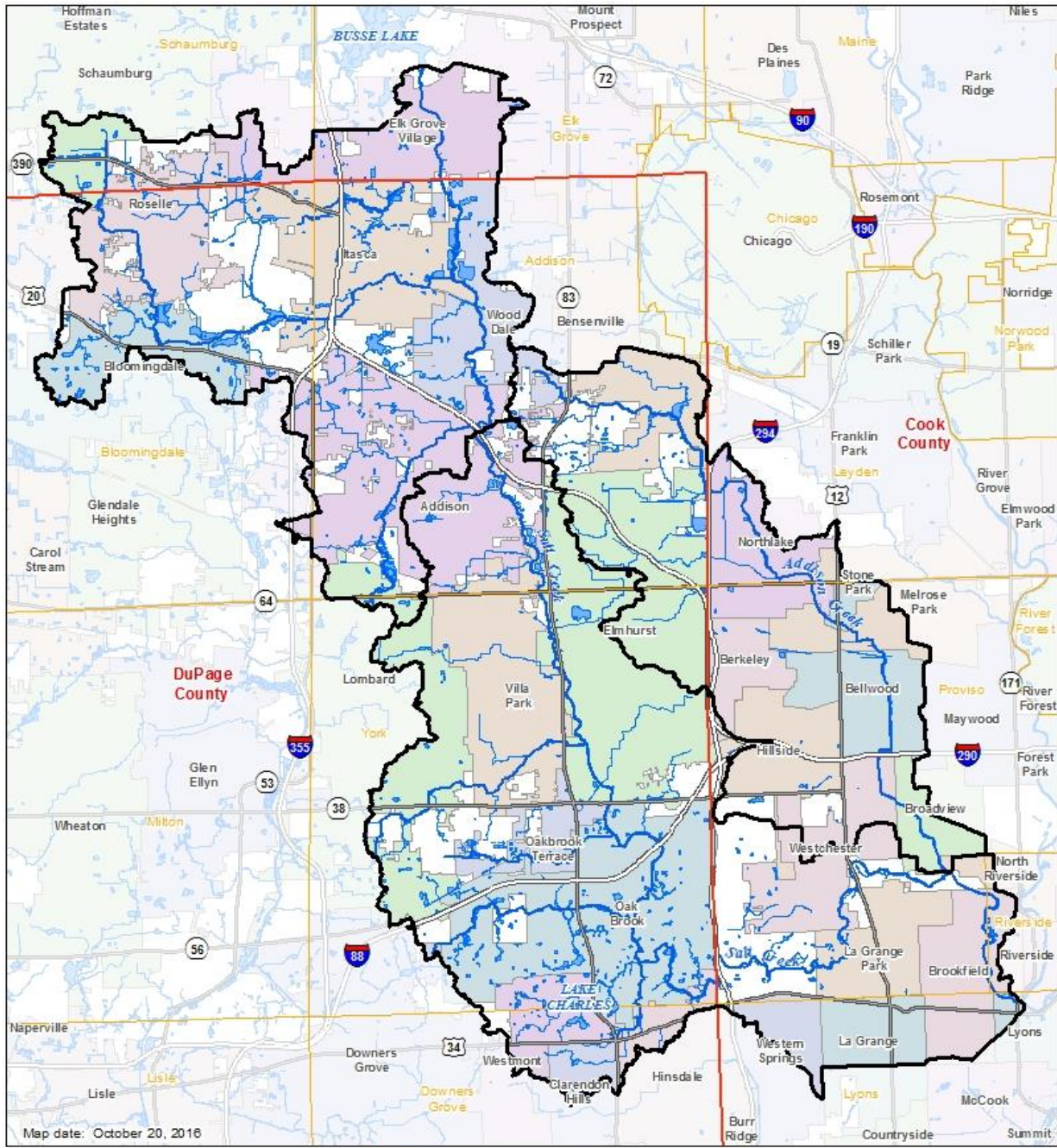
Lower Salt Creek Watershed Planning

The Lower Salt Creek Watershed Planning project began in 2016. Supported by a Clean Water Act Section 604(b) planning grant from the Illinois EPA, CMAP is working with project partners DuPage County Stormwater Management and DuPage River Salt Creek Workgroup to develop a watershed-based plan for the Lower Salt Creek Watershed – the area that drains to Salt Creek from below the outlet of Busse Lake southward to Salt Creek's confluence with the Des Plaines River in Lyons (Figure 5). Located primarily in eastern DuPage and western Cook Counties, the planning area includes the Spring Brook, Westwood, Sugar, Ginger, and Addison Creek subwatersheds. The 100.7 square mile planning area spans 34 municipalities and 11 townships. Municipal jurisdictions account for approximately 85 percent of the planning area. Elmhurst is the largest municipality followed by Addison and Oak Brook. The remaining 15 percent of the planning area is unincorporated with 10.4 acres located in DuPage County and 4.6 acres located in Cook County.

The purpose of this plan is to work with local stakeholders to develop recommendations that upon implementation will help restore and protect the water quality of Salt Creek, its tributaries, and the numerous lakes and ponds within this highly urbanized area. The plan must follow watershed-based planning guidelines established by the U.S. Environmental Protection Agency in order for implementation projects to be eligible for Clean Water Act Section 319(h) grant funding.



Figure 5. Lower Salt Creek watershed planning area.



- Lower Salt Creek Planning Area
- County
- Township
- Interstate Highway
- State & US Highways
- Waterbodies
- Streams and Rivers
- Municipalities

0 1 2 Miles

Chicago Metropolitan Agency for Planning

A draft watershed resource inventory was submitted to Illinois EPA in October 2016. The inventory includes an overview of the planning area’s population and demographics, physical and natural features, land use, water resource conditions, pollutant sources, and land management practices. The full plan is scheduled for completion in December 2017. CMAP is currently in the process of developing a project web page where project news and information including meeting dates, notes, presentations, and plan documents can be accessed. Please visit CMAP’s Watershed Planning webpage (<http://www.cmap.illinois.gov/livability/water/water-quality-management/watershed-planning>) for a link to the Lower Salt Creek project web page in early 2017.

Watershed Management Coordination

Throughout the year, staff provided technical assistance, guidance, and regional coordination to water quality related planning and management activities led by others in the region. As funding allows, and consistent with the water quality management planning work approved by Illinois EPA, staff directs efforts at those entities either undertaking watershed planning initiatives, implementation of Illinois EPA approved plans, or an activity related to evolving issues and the Clean Water Act (CWA). Such entities include those funded through the Clean Water Act or those focused on addressing CWA Section 303(d) listed (i.e., impaired) waters.

Table 1. Partners assisted and activities performed under CMAP's Watershed Management Coordination.

<i>Partners</i>
<ul style="list-style-type: none"> • Buffalo Creek Clean Water Partnership • City of Elgin Parks and Recreation Committee • Chicago Wilderness • DuPage County Stormwater Management • DuPage River Salt Creek Workgroup • Fox River Ecosystem Partnership • Fox River Study Group • Hickory Creek Watershed Planning Group • Illinois Nutrient Loss Reduction Strategy – Urban Stormwater Working Group • Jelkes Creek – Fox River Watershed Coalition • Kane-DuPage and McHenry-Lake SWCDs – Northeastern Illinois Envirothon • McHenry County Watershed Roundtable • Silver and Sleepy Hollow Creeks Watershed Coalition • Tower Lakes Drain Partnership • Tyler Creek Watershed Coalition
<i>Activities</i>
<ul style="list-style-type: none"> • Attended partner meetings and site visits and provided input as needed • Presented on and discussed BMP implementation and Section 319(h) grant opportunities • Assisted in the preparation of Nonpoint Source Pollution Control Section 319(h) grant applications



- Participated in partner-led conferences, roundtables, strategic planning, and educational events
- Presented overviews of CMAP's watershed planning activities to CMAP's Environment and Natural Resources Committee and Local Planning Coordination group
- Stayed abreast of partner activities via email correspondence and monthly meeting notes

Wastewater Quality Planning and Management

Facility Planning Area Amendment Review Process

CMAP has been evaluating its role in executing the facility planning area (FPA) process to determine how it might better fulfill the role of water quality management in northeastern Illinois. By December 2015, CMAP revised the FPA procedures manual and application process to better align the FPA process to the recommendations of the GO TO 2040 comprehensive regional plan. The revised manual modified the existing review procedures and also streamlined the review process to avoid duplication of efforts between CMAP, Illinois EPA, and other agencies. Specifically, the manual states that an FPA amendment request should be consistent with CMAP's regional forecasts, that wastewater and other "gray infrastructure" expansion not come at the expense of the regional green infrastructure network, and that water conservation efforts are implemented throughout the region. It also encourages intergovernmental cooperation between local governments planning for new development. Lastly, the manual considers whether an amendment request is consistent with other county and regional plans.

Upon the completion of the revised manual and application process, CMAP updated the webpage regarding the new FPA manual and presented "The Facilities Planning Area Process: A Tool to Help Shape Regional Growth" at the Illinois American Water Works Association's (ILAWWA) Watercon 2015 Conference in Springfield, Illinois. The revised [Facility Planning Area Process and Procedures Manual and Amendment Application](#) can be found on CMAP's Wastewater Planning project webpage.

No Facility Planning Area Amendment Review applications were received in 2015 or 2016; hence, no review activities were conducted. Nevertheless, CMAP continued to have discussions with Illinois EPA and internal staff about the water quality management plan review process.



Facility Planning Area Map Updates

Under a contract with Illinois EPA, CMAP prepares FPA base maps and point source tabular accounts for amendments to the Illinois Water Quality Management Plan. During the program year of 2016, CMAP completed revisions to the FPA maps that incorporated any FPA boundary amendments known or received through April 2014. The 2016 dataset includes boundary changes that were approved prior to April 2014 but were not incorporated in the April 2014 release. In addition to FPA boundaries, these new maps also include the location of municipal National Pollution Discharge Elimination System (NPDES) permit discharges as well as tabular descriptions of each municipal discharge. These new maps will provide more information to municipal units of government, planners, engineers, and the general public.

NPDES and SRF Reviews

Under contract with Illinois EPA to implement the Northeastern Illinois Water Quality Management Plan, CMAP reviewed National Pollutant Discharge Elimination System (NPDES) permit applications and State Revolving Loan Fund (SRF) applications during 2015 and 2016. For each application received, CMAP reviewed its content and notified partners and other interested parties of the proposed action. In total, 134 NPDES permit applications and 52 SRF applications were reviewed.

<i>Application Type</i>	<i>2015</i>	<i>2016</i>
<i>NPDES Permit</i>	89	45
<i>State Revolving Loan Fund</i>	20	32
<i>Totals</i>	134	52

Lake Monitoring and Management

Volunteer Lake Monitoring Program

The Illinois Volunteer Lake Monitoring Program (VLMP) marked its 35th and 36th seasons in 2015 and 2016, respectively. Initiated by Illinois EPA in 1981, this popular program brings together citizens, state agency staff, and regional and local governmental staff to monitor and investigate the quality of Illinois lakes. In northeastern Illinois, CMAP served as program coordinator for the counties of Cook, DuPage, Kane, Kendall, McHenry, and Will, while the Lake County Health Department coordinated the program in Lake County. Staff provides volunteer training, technical assistance, educational materials, training material updates, data and equipment management, volunteer recognition recommendations, and assistance in annual report preparation. All monitoring equipment, data forms, instructional materials (including a comprehensive Training Manual), and other supplies are provided to the volunteers. Volunteers need only have a boat and anchor to participate.



Volunteer monitors measure water transparency (clarity) in a lake of their choosing using a simple device called a Secchi disk (an 8-inch diameter plate painted black and white in opposite quadrants, attached to a calibrated rope or tape measure). The disk is lowered into the water and the depth at which it is no longer visible is recorded. Volunteers also record water color, aquatic plant growth, and several other factors relating to lake, weather, and watershed conditions each time they monitor. Secchi monitoring typically is done twice a month during the May through October monitoring season.

Figure 6. Volunteer Kristin Davis assesses water color by using a color chart held above her Secchi disk at Crystal Lake/McHenry Co.



The Secchi measurements are used to document changes in water transparency during the monitoring season as well as from year to year (Secchi transparency is affected by the color of the water and the amount of suspended sediment and algae in the lake). The Secchi measurement also indicates the sunlit, or “euphotic,” zone of the lake, which is about twice as deep as you can see the Secchi disk in the water. This means that within this zone there is generally enough sunlight for aquatic plants and algae to live and grow.

In addition to Secchi disk monitoring, a subset of the volunteers (on a rotating basis) also have an opportunity to collect water chemistry samples on a monthly basis that are analyzed at an Illinois EPA laboratory. The water chemistry data provides important information on suspended material in the lake (e.g., sediment and algae) as well as levels of nutrients (e.g., phosphorus and nitrogen) that can promote nuisance aquatic plant and algae growth. Some volunteers also collect samples for chlorophyll analysis, and record dissolved oxygen and temperature data. The chlorophyll data is particularly useful in determining the amount of microscopic, “planktonic” algae in the lake. Dissolved oxygen and temperature data are useful for determining if the lake stratifies during the summer (i.e., separates into layers of warm, upper water and cool, bottom water) and if there is adequate oxygen in the water to support aquatic life.



Primary goals of the VLMP are to familiarize volunteers with lake processes and to help them learn about lake ecology and the cause-and-effect relationships that exist between their lake, its watershed, weather, and human activity. Through the VLMP's hands-on educational structure, the data and information gathered can more effectively assist in local lake and watershed management decision-making. Lake scientists, planners, and consultants also use the data for a wide variety of purposes. Furthermore, the Illinois EPA uses VLMP data in its biennial assessment of the state's waters as required by the federal Clean Water Act.

In the six counties coordinated by CMAP, 25 lakes were monitored at least once during the 2015 – 2016 seasons, involving more than 70 volunteers. The Secchi monitoring data can be viewed and downloaded from Illinois EPA's VLMP Web Application (<http://dataservices.epa.illinois.gov/waBowSurfaceWater/Default.aspx>).

Other CMAP staff activities included updates to the VLMP Training Manual and helping plan a lake festival at Crystal Lake in McHenry County and a lake education event at Lake Charlotte in Kane County. Each of these events included preparing a VLMP display board with site-specific VLMP data and lake and watershed protection information, as well as manning the display the day of the event.

For more information about or if you would like to join the VLMP, contact Northeastern Illinois VLMP Coordinator Holly Hudson at CMAP (hhudson@cmap.illinois.gov).

Figure 7. Volunteer Don Schultz collects a water sample at Golfview Lake/DuPage Co.



Figure 8. A homeowner visits the Lawn to Lake and VLMP displays at the educational event at Lake Charlotte/Kane Co.



Related Natural Resource Activities

ON TO 2050 Water Resources Strategies

CMAP began the development of ON TO 2050, the region's next comprehensive plan, scheduled for adoption in 2018. As part of this effort, staff began investigating how to best address water resource management in the plan in four primary areas: water quality (including wastewater), water supply, waterways and Lake Michigan, and stormwater and flooding. Staff has completed a preliminary scan of current and potential water resource activities and identified issues and challenges. Next steps include research and analysis, draft policy directions, and finalization of potential policies to include in ON TO 2050.

Water 2050 Implementation

In mid-March 2015, budget cuts by the State of Illinois prompted the Illinois Department of Natural Resources to suspend all activities related to a two-year grant received in March 2014, which at the time had been CMAP's only means of supporting Water 2050 and GO TO 2040 implementation actions related to water supply. The funding would have enabled staff to follow up on two key projects that were conducted in 2013 under CMAP's Local Technical Assistance (LTA) program and carry out other work to improve understanding of regional water use.

Although capacity was substantially severed, CMAP continued to seek out opportunities for advancing Water 2050 implementation through existing partnerships as well as budgeted projects and programs. Throughout 2015 – 2016, CMAP staff worked with the Northwest Water Planning Alliance (NWPA) as a key stakeholder in the region, participated in the Metropolitan Planning Council's (MPC) water advisory group, and investigated internally how water supply constraints can be incorporated into CMAP's evaluation of regionally significant transportation projects for the next comprehensive regional plan, ON TO 2050. Water supply issues were also addressed in several LTA projects that started in 2015 or 2016, such as the Village of Steger Planning Priorities Report, Lower Fox River Partnership Initiative Shared Services Study, and the Winthrop Harbor Comprehensive Plan.

Chicago Wilderness

The GO TO 2040 Plan recommends setting aside a significant sum of additional land for conservation purposes, and that conservation lands be arranged in a network of core areas connected by open space corridors. Following the 2014 work to update Chicago Wilderness' Green Infrastructure Vision (GIV), in 2015 CMAP completed the Ecosystem Services study of the GIV, resulting in GIV 2.3. This update estimated the monetary value of ecosystem services that areas identified within the GIV provide to the region. These ecosystem services include flood control, groundwater recharge, water purification, carbon sequestration, flora and fauna, and recreation. The products of this project can be viewed on [CMAP's Data Hub](#).



CMAP also continued to participate in Chicago Wilderness' Water as Resource Working Group. Water as a Resource is one of six focus areas upon which Chicago Wilderness has been prioritizing their work. The Water as a Resource Working Group is charged with developing and implementing a work plan that strives to improve water quality, mitigate the impacts of stormwater, and recharge aquifers within the Chicago Wilderness region. CMAP attended all five advisory meetings that were held in 2015 and March 2016, the Confluence workshop in June 2016, and the Chicago Wilderness Congress in November 2016.

Stormwater Management and Flooding

CMAP initiated a robust effort in 2015 to develop and apply a cost-effective approach to better understand urban and riverine flooding risks in the region, communicate these challenges to communities and decision makers, and incorporate stormwater management recommendations in local plans and policies.

- ◆ CMAP has been participating in Illinois EPA's Nutrient Loss Reduction Strategy – Urban Stormwater Working Group. This group is exploring funding, identifying legislative initiatives, coordinating outreach and education, and orchestrating statewide efforts related to green infrastructure expansion and retrofitting, MS4 program training, and urban stream, lake, and stormwater monitoring. CMAP participated in the five meetings held during 2015 – 2016 and, in support of the stormwater education effort, contributed numerous resources to a matrix to help identify gaps for targeted audiences.
- ◆ In partnership with the American Planning Association (APA) and with support from the National Oceanic and Atmospheric Administration (NOAA), CMAP is working on strategies to incorporate climate change and resilience data into local planning efforts. This will primarily focus on increased precipitation's effects on communities but will also address heat and other climate change impacts.
- ◆ The Calumet Stormwater Collaborative (CSC), convened by the Metropolitan Planning Council, was formed to pursue the [Millennium Reserve](#) priority to improve stormwater management through investments in and coordination of green infrastructure solutions. CMAP has been an active member through 2015 and 2016. Since the start of the CSC's 2016-17 fiscal year, CMAP has been leading two initiatives: developing an online repository of stormwater resources and conducting a gap analysis of data and modeling tools. These initiatives aim to help member organizations and Calumet region communities improve water quality and reduce flooding. The online repository will be available in early 2017.



Local Technical Assistance

Throughout 2015 and 2016, CMAP staff participated in a number of discussions and provided comprehensive plan recommendations through its Local Technical Assistance (LTA) program (<http://www.cmap.illinois.gov/programs-and-resources/lta>). In 2015, CMAP completed one project and continued another with water quality implications: an update to the **Village of Glenview**'s codes and ordinances with a focus on its stormwater management and green infrastructure, and a green infrastructure plan for **Governors State University** to address stormwater management and flooding issues and develop natural area restoration and management strategies. Both are intended to improve water quality.

In 2016, CMAP staff began working on three Illinois EPA-supported LTA projects that include a water quality component: a corridor plan for the Fox River running through McHenry and Lake Counties and two stormwater management plans, one for the Village of Richton Park and the other for the City of Berwyn, both in Cook County. Additional 2016 LTA projects that have a water quality component but are not directly supported by Illinois EPA/WQMP funds include Midlothian, Franklin Park, South Holland, and North River Communities (i.e., Albany Park and surrounding neighborhoods on the northwest side of Chicago). An overview of the 2016-cycle projects follows:

The McHenry County Fox River Corridor Plan

This river corridor management plan will address a number of relevant topics, including water quality, river edge/riparian habitat, floodplain management, and landscape management for river health, among others. This project also has been selected as a pilot for a separate project in partnership with NOAA and the APA to examine how to best incorporate climate resilience and adaptation data into planning processes and deliverables. In this case, the effects of climate change on a natural system will be examined.



Richton Park Stormwater Management Plan

The goal of the project is to develop a green infrastructure concept plan that accommodates desired development by the Village while also protecting the integrity of the Hickory Creek riparian zone, floodway, floodplain, and environmental quality. Toward this effort, CMAP staff have been coordinating with Dr. Lindsay Birt, Watershed Coordinator of the Hickory Creek Watershed Planning Group (HCWPG), to provide progress updates and determine HCWPG's level of involvement. A future phase of work will develop more detailed strategies for managing stormwater for new development areas to protect hydrology, water quality, and stream integrity.

Berwyn Stormwater Management Plan

In 2016, CMAP staff collected data and conducted an ArcHydro analysis as a preliminary step to understand flooding issues and help with water quality analyses. Staff also used the Region 5 Load Estimation Spreadsheet Model as a preliminary step in understanding current land use-based pollutant loads emanating within the City. A next step in this process is to gain an understanding of the impact of currently installed BMPs on pollutant loading and the receiving waters. Future steps of the stormwater management plan development process will include an examination of the water quality improvements that could be expected from three areas where green infrastructure can be recommended to address a local urban flooding problem.

Midlothian 147th Street Corridor

This project will incorporate green infrastructure concepts into a plan for pedestrian enhancements along an Illinois Department of Transportation (IDOT) roadway corridor that experiences significant flooding problems. In addition to flood benefits, a consultant will model water quality benefits of each concept based on assumptions made for the proposed BMPs. This project will complement a major MWRD flood control capital investment along Natalie Creek and is being coordinated with the Active Transportation Alliance (ATA) and the Center for Neighborhood Technology (CNT), which has worked with the Village to address stormwater management challenges.

Franklin Park Comprehensive Plan

This comprehensive plan includes recommendations for a floodplain overlay district, a community-wide green infrastructure network, and other policies and strategies that will indirectly benefit water quality. CMAP coordinated with Ted Gray, Living Waters Consultants, to integrate Silver Creek Watershed Plan principals into the comprehensive plan.



South Holland Comprehensive Plan

South Holland was the first community in which CMAP’s new stormwater planning and analysis approach, funded via MacArthur and Cook County Community Development Block Grant – Disaster Recovery funds, was tested and refined. The plan’s recommendations emphasize the use of green infrastructure to address urban flooding and stormwater management challenges.

North River Communities

This project is in early stages but is examining stormwater challenges with a focus on water quality in the North Branch Chicago River and flooding of both riverine and urban areas.





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FY17-0035

