

# DATA & TOOLS

Compiled by the Calumet Stormwater Collaborative

The Calumet Stormwater Collaborative repository data and tools section provides accessible stormwater resources that can be useful for data analysis, mapping, and to design and calculate the benefits of stormwater BMPs. Hyperlinked names take you to each resource.

Data and Imagery		
Name	Organization	Description
<a href="#"><u>Census data</u></a>	U.S. Census Bureau	Online catalog of census data.
<a href="#"><u>CMAP Data Hub</u></a>	Chicago Metropolitan Agency for Planning	Online catalog of data and information relevant to comprehensive planning in the seven-county metropolitan Chicago region. Datasets include urban tree canopy, land use, and green infrastructure vision, among others.
<a href="#"><u>CMAP Imagery Explorer: Historic Aerials (1970,1995)</u></a>	Chicago Metropolitan Agency for Planning	Interactive web app to browse and download scanned aerial photography of the Chicago region from 1970 and 1995.
<a href="#"><u>Collaborative Stormwater Viewer</u></a>	Calumet Stormwater Collaborative in partnership with CH2M Hill and South Suburban Mayors and Managers Association	Online mapping tool with several layers that are helpful for stormwater planning. It aggregates 25 different datasets at a single location and makes it readily available for anyone to access for free.
<a href="#"><u>Combined Sewer Overflow Waterway System map</u></a>	Metropolitan Water Reclamation District	Online map to view combined sewer overflow (CSO) events in the reaches of the Chicago Area Waterway System (CAWS).
<a href="#"><u>Cook County Data Hub</u></a>	Cook County	Online catalog of data relevant to Cook County.
<a href="#"><u>HistoricAerials.com</u></a>	NETR Online	Online catalog of historical aerial imagery and topographical maps. Imagery and maps can be purchased or viewed through an online viewer.
<a href="#"><u>Hydrologic Atlases</u></a>	U.S. Geological Survey in partnership with the Northeastern Illinois Planning Commission (NIPC)	Maps providing hydrologic data on flood depth and frequency within historic floodplain areas for northeastern Illinois. The maps were prepared in the 1960s and the data dates back to the 1940s and 1950s.
<a href="#"><u>Illinois Flood Map Database</u></a>	Illinois State Water Survey	Online catalog of preliminary and final digital Flood Insurance Rate Maps (dFIRMs), Discovery mapping products, and other relevant flood-related maps.
<a href="#"><u>Illinois Geospatial Data Clearinghouse</u></a>	Illinois State Geological Survey	Online catalog of data for the State of Illinois, including elevation, geology, hydrology, landcover, historical imagery, among other datasets.
<a href="#"><u>Mitigation Action Tracker</u></a>	Federal Emergency Management Agency	National web-based interactive mapping tool developed by FEMA to collect and track local hazard mitigation actions that have been proposed, fully funded, or completed. The Tracker is intended to help Risk MAP providers, mitigation planners, and stakeholders track flood mitigation actions to identify opportunities for implementation.
<a href="#"><u>Soil Survey of Cook County, Illinois</u></a>	U.S. Department of Agriculture National Resources Conservation Service	Soil survey of Cook County that includes detailed soil maps, soil series descriptions, information on the use and management of the soils, and soil properties. Results have been incorporated into the USDA NRCS Web Soil Survey application.
<a href="#"><u>SSMMA Open Data Portal</u></a>	South Suburban Mayors and Managers	Online catalog of public data relevant to SSMMA's region. Data can be previewed in a map and downloaded as a spreadsheet, shapefile, KML, or linked via Application Programming Interface (API).
<a href="#"><u>USGS Maps and GIS Data</u></a>	U.S. Geological Survey	Online catalog of public data on surface water, groundwater, water quality, and other themes.
<a href="#"><u>Web Soil Survey</u></a>	U.S. Department of Agriculture National Resources Conservation Service	Interactive soil mapping tool that allows users to explore the National Resources Conservation Service (NRCS) soil database, generate soil reports and maps, and download the spatial data associated with an area of interest.

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Name	Organization	Description
<a href="#"><u>Wetlands Mapper</u></a>	National Wetlands Inventory (NWI)	Interactive wetland mapping tool that allows the user to explore the National Wetlands Inventory database and download data.

Design Tools and Benefits Calculators		
Name	Organization	Description
<a href="#"><u>Green Values Stormwater Management Calculator</u></a>	Center for Neighborhood Technology	Easy-to-use calculator to quantify the difference between utilizing gray infrastructure and green infrastructure in terms of the life cycle costs, co-benefits, and peak discharge reduction. This calculator can help make the case for incorporating green infrastructure into site design.
<a href="#"><u>Integrated Valuation of Ecosystem Services and Tradeoffs (InVEST) v3.3.3</u></a>	The Natural Capital Project	Tool to map and value ecosystem services of natural systems.
<a href="#"><u>i-TREE Streets</u></a>	U.S. Forest Service	Free software to conduct and analyze a street tree inventory, including quantifying the environmental benefits of trees such as stormwater management.
<a href="#"><u>Landscape Green Infrastructure Design Model and Participatory Modeling Protocol</u></a>	University of Illinois at Chicago	The landscape green infrastructure design model (L-GrID) is a simulation model to design and assess different green infrastructure scenarios to address urban flooding. Participatory modeling protocol was developed to help communities collectively design, test, and resolve tradeoffs of different green infrastructure solutions. Contact Dr. Moira Zellner (mzellner@uic.edu) for more information.
<a href="#"><u>National Stormwater Calculator</u></a>	U.S. Environmental Protection Agency	Free software used to estimate runoff volumes for a specific site and assess the level to which green infrastructure practices can be utilized to meet a stormwater retention goal.
<a href="#"><u>WMO Model Templates</u></a>	Metropolitan Water Reclamation District	WMO-compliant templates for HEC-HMS, TR-20, and Win TR-20 models.

## DESIGN & IMPLEMENTATION

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**The Calumet Stormwater Collaborative repository design and implementation section provides accessible stormwater resources related to green infrastructure design, implementation, and construction. Hyperlinked names take you to each resource.**

Design Guidelines		
Name	Organization	Description
<a href="#"><u>Appendix C. Standard Details and Notes of WMO's Technical Guidance Manual (TGM)</u></a>	Metropolitan Water Reclamation District	Webpage of standard design details for green and grey infrastructure practices that are in compliance with the WMO.
<a href="#"><u>CDOT Sustainable Urban Infrastructure: Policies and Guidelines, Vol. 1</u></a>	Chicago Department of Transportation	This document establishes requirements, standards, and policies to help the City of Chicago design, build, and maintain sustainable infrastructure within the public right-of-way to address environmental issues, build resiliency, and improve quality of life.
<a href="#"><u>Green Infrastructure Design Guideline</u></a>	American Society of Landscape Architects	Website describing the benefits, contexts, and types of green infrastructure and is a robust resource for links to organizations, landscape performance research, and project examples.
<a href="#"><u>Green Infrastructure Designs: Scalable Solutions to Local Challenges</u></a>	Delta Institute, in partnership with the Calumet Stormwater Collaborative	Guidance on the selection, siting, and design of green infrastructure practices and detailed design templates for bioswales, stormwater planters, rain gardens, underground storage, and pervious pavement.
<a href="#"><u>Green River Pattern Book: An Illustrated Guide to Sustainable Urban Planning and Design Principles and Environmental Design / Energy Conservation Best Practices</u></a>	South Suburban Mayors and Managers Association, Chicago Southland Development Corporation, Hitchcock Design Group	The Pattern Book provides information on green infrastructure practices and other sustainable development techniques that can be applied to sites and conditions across the Calumet River Corridor in the communities of Blue Island, Burnham, Calumet City, Calumet Park, Dolton, Riverdale, and Robbins.
<a href="#"><u>Rain Gardens: A how-to manual for homeowners</u></a>	Wisconsin Department of Natural Resources and University of Wisconsin-Extension	A guide for homeowners and professional landscapers to design and build rain gardens on residential properties.
<a href="#"><u>Sustainable Sites Initiative (SITES)</u></a>	SITES is a combined effort of the American Society of Landscape Architects, The Lady Bird Johnson Wildflower Center at The University of Texas at Austin, and the United States Botanic Garden. It is now run by U.S. Green Building Council.	SITES is a program to guide and certify the sustainable design of sites, equivalent to LEED (system by the U.S. Green Building Council (USGBC)). The USGBC has adopted its rating system and offers SITES courses.
<a href="#"><u>Watershed Management Ordinance (WMO) Design Calculators</u></a>	Metropolitan Water Reclamation District	Spreadsheets to calculate stormwater runoff rates and volumes, detention storage, and hydraulic structure sizing to meet MWRD's Watershed Management Ordinance for site development or redevelopment.



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Implementation and Construction Strategies		
Name	Organization	Description
<u><i>City Green: Innovative Green Infrastructure Solutions for Downtowns and Infill Locations</i></u>	U.S. Environmental Protection Agency	A collection of case studies highlighting green infrastructure projects that overcame challenges commonly faced when working with infill sites.
<u><i>Stormwater Trees</i></u>	U.S. Environmental Protection Agency	Technical memorandum on planting and maintaining trees adjacent to roadways or sidewalks in urban areas suffering from urban heat island impacts, stormwater management issues, shade deficits, and other issues.
<u><i>Greening Vacant Lots: Planning and Implementation Strategies</i></u>	NatLab collaboration (Natural Resources Defense Council, The Nature Conservancy, and EKO Asset Management Partners)	A collection of case studies highlighting tools various cities have employed to turn vacant lots into more productive uses such as green infrastructure for stormwater management.
<u><i>Illinois Urban Manual</i></u>	Association of Illinois Soil and Water Conservation Districts (AISWCD)	Manual outlining best management practices (BMPs) for controlling nonpoint source pollution within existing and developing urban areas through soil erosion and sediment control, stormwater management, and special area protection.
<u><i>Landscape Performance Series</i></u>	Landscape Architecture Foundation	Website containing green infrastructure case studies, high level statistics that are useful for green infrastructure rationale, and online calculators for estimating and planning landscape performance.
<u><i>National Green Infrastructure Certification Program: Body of Knowledge</i></u>	DC Water & the Water Environment Federation	Compilation of reference materials on green infrastructure construction, inspection, and maintenance that were identified as part of the National Green Infrastructure Certification Program (NGICP).



# EDUCATION & ENGAGEMENT

Compiled by the Calumet Stormwater Collaborative

The Calumet Stormwater Collaborative repository education and engagement section provides accessible stormwater resources that can be useful to local government staff, homeowners, and the general public. Hyperlinked names take you to each resource.

Factsheets and Pamphlets		
Name	Organization	Description
<a href="#"><u>Rainready Factsheets</u></a>	Center for Neighborhood Technology	Factsheets that provide information on urban flooding, stormwater management, and other related topics.
<a href="#"><u>Stream Maintenance Brochure</u></a>	Metropolitan Water Reclamation District	A pamphlet for the general public that describes the importance of regular neighborhood stream maintenance to ensure natural function and prevent flooding.
<a href="#"><u>Understanding Your Sewer</u></a>	Metropolitan Water Reclamation District	This document explains how a combined sewer system works, and what causes sewer overflows and backups.
<a href="#"><u>World Meteorological Organization Information Pamphlets for Developers and Homeowners</u></a>	Metropolitan Water Reclamation District	These documents provide general information for developers and homeowners regarding the need for a World Meteorological Organization permit.
<a href="#"><u>World Meteorological Organization Short Summary</u></a>	Metropolitan Water Reclamation District	This brochure provides general information on flood prevention and stream maintenance.

Reports and Manuals		
Name	Organization	Description
<a href="#"><u>Banking on Green: How Green Infrastructure Can Save Municipalities Money and Provide Economic Benefits Community-Wide</u></a>	American Society of Landscape Architects, American Rivers, Water Environment Federation, and ECONorthwest	This easy-to-understand report is intended for local government and the general public. It focuses on the economic impacts caused by polluted urban runoff and explores how to implement green infrastructure in cost-effective ways.
<a href="#"><u>City Parks, Clean Water</u></a>	The Trust for Public Land	This document provides resources for municipalities to turn parks into green infrastructure resources.
<a href="#"><u>The Southern Lake Michigan Rain Garden Manual</u></a>	Purdue University, Lake Champlain Sea Grant, Great Lakes Restoration, Illinois-Indiana Sea Grant, University of Illinois, and Northwest Indiana Regional Planning Commission	This document is a step-by-step guide to rain gardens for homeowners, landscape architects, and city planners.

## FUNDING & FINANCING

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The Calumet Stormwater Collaborative repository funding and finance section provides key resources that can help public and non-profit organizations pay for stormwater management efforts. The information below provides a brief description of each opportunity, as well as hyperlinked names to more detailed information.

Brownfield Grants			
Grant Name	Grant-Making Organization	Eligible Recipients	Description
<a href="#"><u>Brownfields Area-Wide Planning (BF AWP) Grant Guidelines</u></a>	U.S. Environmental Protection Agency	Public and non-profit organizations	Funding for research and/or technical assistance to develop a site-specific plan for a brownfield assessment, cleanup, and subsequent reuse.
<a href="#"><u>Technical Assistance to Brownfields Communities (TAB)</u></a>	U.S. Environmental Protection Agency	Local governments	Provides technical assistance to communities on brownfields issues to increase understanding and involvement in cleanup and revitalization, and help move brownfield sites toward cleanup and reuse.

Financing Opportunities			
Resource	Organization	Target audience	Description
<a href="#"><u>Community Based Public-Private Partnerships</u></a>	U.S. Environmental Protection Agency	Local governments	Presents a model Community Based Public Private Partnership (CBP3) program, with a variety of emerging market-based tools, to help municipalities in the Chesapeake Bay region meet their stormwater management regulatory and community development program needs. While the focus is outside of the Chicago region, it provides a model for engaging and educating stakeholders on the use of P3s for stormwater management.
<a href="#"><u>Green Infrastructure Designs</u></a>	Delta Institute	Local governments	A toolkit which features a decision support tool and design templates to help communities to implement scalable green infrastructure projects.
<a href="#"><u>State Revolving Fund</u></a>	Illinois Environmental Protection Agency	Municipalities, public water service utilities, NGOs	A federal, low-interest loan program for capital improvement projects for water, wastewater, and stormwater infrastructure. Stormwater and green infrastructure projects are now eligible for funding via this source, and NGO's are also now eligible grantees.
<a href="#"><u>Steady Streams</u></a>	Metropolitan Planning Council	Local governments	A guide to help municipalities identify avenues to reliably and consistently generate adequate funds to manage stormwater.
<a href="#"><u>Tapping into Alternative Ways to Fund Innovative and Multi-Purpose Water Projects</u></a>	Stanford Woods Institute for the Environment	State and local governments	A paper that identifies funding mechanisms from the electricity sector that could be applied to the water sector. The research focuses on renewable generation and electricity demand-side management (DSM) practices in particular.
<a href="#"><u>Tree Asset Management in Portland, Oregon</u></a>	The Center for Neighborhood Technology	Local governments	A study that evaluates Portland, Oregon's approach to tree canopy cover and that offers a tree asset management (TAM) approach for the city. The recommendations are more broadly applicable to other cities.
<a href="#"><u>The Value of Green Infrastructure</u></a>	The Center for Neighborhood Technology	Local governments and communities	A guide that informs decision-makers and planners about the multiple benefits of green infrastructure and that helps communities determine how to assess the value of green infrastructure investments.
<a href="#"><u>Water Finance Clearinghouse</u></a>	U.S. Environmental Protection Agency	Local governments and communities	A navigable, web-based portal to help communities locate information and resources that will assist them in making informed decisions for their drinking water, wastewater, and stormwater infrastructure needs. There are two searchable data sets: 1) federal, state, and local funding sources for water infrastructure and 2) reports, tools, webinars, and other resources on financing mechanisms and approaches.



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Flood Mitigation Grants			
Grant Name	Grant-Making Organization	Eligible Recipients	Description
<u><a href="#">Flood Mitigation Assistance Program</a></u>	Federal Emergency Management Agency	States, Tribal, Territorial and local governments	Provides funding for projects and planning that reduces or eliminates risk of flood damage to structures insured under the NFIP, and can also cover management costs. Applicants must have an adopted hazard mitigation plan in order to be eligible for funding.
<u><a href="#">Hazard Mitigation Grant Program</a></u>	Federal Emergency Management Agency	States, Tribal, Territorial and local governments	Offers funding to protect life and property from future natural disasters. Criteria for eligibility include: properties have experienced several flood inundation events with damage to over 50% of the property, repetitive loss, and market loss exceeding 25%. Applicants must also have an adopted hazard mitigation plan to be eligible.
<u><a href="#">MWRD Flood-Prone Property Acquisition Program</a></u>	Metropolitan Water Reclamation District	Local communities	Provides assistance to local communities to acquire flood-damaged and flood-prone homes on a voluntary basis.
<u><a href="#">Pre-Disaster Mitigation Program</a></u>	Federal Emergency Management Agency	States, Tribal, Territorial and local governments	Awards planning and project grants to reduce future losses before disaster strikes. Applicants seeking funding for a project must have an adopted hazard mitigation plan in order to be eligible.
<u><a href="#">Section 205: Small Flood Risk Management Projects</a></u>	U.S. Army Corps of Engineers	Local governments, State Authorized Agencies, non-profit organizations	Funding to construct site-specific local flood protection projects or improvement of flood control works. The U. S. Army Corps of Engineers oversees planning, design, and construction of flood risk management projects in close coordination with the project sponsor.

Green and Grey Infrastructure Grants			
Grant Name	Grant-Making Organization	Eligible Recipients	Description
<u><a href="#">Chi-Cal Rivers Fund</a></u>	National Fish and Wildlife Foundation	Non-profit organizations, educational institutions, and state, tribal and local governments.	Funds on-the-ground projects that support green stormwater infrastructure, habitat enhancement, and public-use improvements within the waterways in the Chicago and Calumet regions.
<u><a href="#">Great Lakes Shoreline Cities Green Infrastructure Grants (GLRI funds)</a></u>	U.S. Environmental Protection Agency	Lake Michigan shoreline communities with population between 25,000 and 50,000	Funds green infrastructure projects on public property that will improve Great Lakes water quality.
<u><a href="#">IDNR Coastal Management Grants</a></u>	Illinois Department of Natural Resources	Communities, agencies, and NGO's with projects within the Illinois Coastal Management Zone.	Provides capital for communities within the coastal zone to fund various stormwater infrastructure projects that align with the mission of the program.
<u><a href="#">MWRD Green Infrastructure Program</a></u>	Metropolitan Water Reclamation District	Local communities, agencies	Provides assistance to local communities and agencies to address local drainage problems and improve water quality through green infrastructure projects.
<u><a href="#">MWRD Stormwater Management Phase II (Localized) Flood Control Program</a></u>	Metropolitan Water Reclamation District	Local communities, agencies	Provides assistance to local communities and agencies to address local drainage problems.
<u><a href="#">Section 14: Emergency Streambank and Shoreline Protection</a></u>	U.S. Army Corps of Engineers	Local governments, State Authorized Agencies, non-profit organizations	Funds construction for endangered highways, highway bridge approaches, and other essential, important public works, such as municipal water supply systems and sewage disposal plants, churches, hospitals, schools, and non-profit public services and known cultural sites that are endangered by flood-caused bank or shoreline erosion.

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Green and Grey Infrastructure Grants			
Grant Name	Grant-Making Organization	Eligible Recipients	Description
<a href="#"><u>Section 219: Environmental Infrastructure Program</u></a>	U.S. Army Corps of Engineers	Local governments, State Authorized Agencies, non-profit organizations	Provides technical, planning and/or design assistance to non-federal entities in Cook County, IL, as well as Benton, Jasper, Lake, Newton and Porter counties in Indiana, in water-related environmental infrastructure and resource protection and development projects.
<a href="#"><u>Sustain our Great Lakes</u></a>	National Fish and Wildlife Foundation	Non-profit organizations, educational institutions, and state, tribal and local governments.	Funds restoration and protection of wildlife and habitat in the Great Lakes basin. Priority is given to projects that restore aquatic connectivity and stream, riparian, wetland, and coastal habitat. Green Stormwater Infrastructure (GSI) was a new funding category in 2017.
<a href="#"><u>Urban Waters Small Grants Program</u></a>	U.S. Environmental Protection Agency	States, local governments, Indian Tribes, educational institutions, public or private NPOs, intertribal consortia, and interstate agencies.	Assists residents and organizations in underserved communities to address urban runoff and support economic revitalization. There is an interest in projects that also support the growth and development of local business as well as the establishment of new educational, employment, and recreational opportunities.

Planning Grants			
Grant Name	Grant-Making Organization	Eligible Recipients	Description
<a href="#"><u>Section 22 - Planning Assistance to States and Tribes</u></a>	U.S. Army Corps of Engineers	Local governments, State Authorized Agencies, non-profit organizations	Planning assistance for states, eligible Native American Indian tribes, and local governments to prepare plans and initiate actions to manage water and related land resources. Typical studies are only planning level of detail; they do not include detailed design for project construction.

Restoration and Open Space Grants			
Grant Name	Grant-Making Organization	Eligible Recipients	Description
<a href="#"><u>Chi-Cal Rivers Fund</u></a>	National Fish and Wildlife Foundation	Non-profit organizations, educational institutions, and state, tribal and local governments.	Funds on-the-ground projects that support green stormwater infrastructure, habitat enhancement, and public-use improvements within the waterways in the Chicago and Calumet regions.
<a href="#"><u>ComEd Green Region Program</u></a>	Openlands and ComEd	Public agencies in ComEd's service area of northern Illinois.	Grants of up to \$10,000 for open space projects that focus on planning, acquisition, and improvements to local parks, natural areas, and recreation resources. Priority is given to projects that demonstrate partnerships and significant impact on the surrounding community by increasing public access.
<a href="#"><u>Community Trees Program-Urban Forestry Annual Grant List</u></a>	Morton Arboretum	Multiple eligible recipients, but includes local governments	Several grant programs focused on community tree and forestry grants, corporate grants for community, state grants, and other opportunities.
<a href="#"><u>Section 206: Aquatic Ecosystem Restoration</u></a>	U.S. Army Corps of Engineers	Local governments, State Authorized Agencies, non-profit organizations	Supports aquatic ecosystem restoration and protection projects that improve the quality of the environment and are in the best interest of the public.
<a href="#"><u>Section 506: Great Lakes Fishery &amp; Ecosystem Restoration</u></a>	U.S. Army Corps of Engineers	Local governments, State Authorized Agencies, non-profit organizations	Assists in planning, design, and construction of projects to protect and/or restore the fishery, ecosystems, and beneficial uses of the Great Lakes.
<a href="#"><u>Sustain our Great Lakes</u></a>	National Fish and Wildlife Foundation	Non-profit organizations, educational institutions, and state, tribal and local governments.	Funds restoration and protection of wildlife and habitat in the Great Lakes basin. Priority is given to projects that restore aquatic connectivity and stream, riparian, wetland, and coastal habitat. Green Stormwater Infrastructure (GSI) was a new funding category in 2017.





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Water Quality Grants			
Grant Name	Grant-Making Organization	Eligible Recipients	Description
<u><a href="#">Community Partnership Program</a></u>	Great Lakes Clean Communities Network (GLCCN)	Recipients must be members of the GLCCN.	Small grant program that funds practice- or activity-based projects that directly improve water quality or support GLCCN's "Eco Score" indicators such as tree planting, erosion control, river cleanups, or green infrastructure.
<u><a href="#">Five Star &amp; Urban Waters Restoration Program</a></u>	National Fish and Wildlife Foundation	Non-profit organizations, educational institutions, and state, tribal and local governments.	Funds projects that address water quality issues in priority watersheds (e.g., stream bank erosion, stormwater runoff pollution, and degraded shorelines) through community partnerships, stewardship, outreach, education, training, and on-the-ground restoration of coastal wetland and riparian ecosystems. There is at least a 1:1 match ratio to be competitive.
<u><a href="#">Great Lakes Restoration Initiative</a></u>	U.S. Environmental Protection Agency	Eligible nonprofits, state gov. agencies, local govts, municipal governments, Indian tribes and edu. Institutions	Funds non-federal partners to implement projects that protect and restore the Great Lakes region. The program is guided by the GLRI Action Plan II, which supports green infrastructure and watershed management projects. Funded projects will build on work implemented under the initial GLRI Action Plan, as well as focus on: cleaning up Great Lakes Areas of Concern; preventing and controlling invasive species; reducing nutrient runoff that contributes to harmful/nuisance algal blooms; and restoring habitat to protect native species.
<u><a href="#">Section 319 Grants (IEPA's Nonpoint Source Pollution Control Financial Assistance Program)</a></u>	Illinois Environmental Protection Agency	Entities that have legal status to accept state funds (watershed groups, private orgs, non-profits, land conservancies or trusts, gov. agencies, edu. institutions).	Funds local government and other organizations to implement projects that utilize cost-effective best management practices (BMPs) for non-point pollution on a watershed scale. Projects may include structural BMPs such as detention basins and filter strips and non-structural BMPs such as construction erosion control ordinances and setback zones to protect community water supply wells. Communities that fall within the planning boundary of an EPA-compliant watershed are eligible to receive financial assistance to support on-the-ground implementation and installation of green infrastructure and other stormwater management projects. Applicants must be pre-qualified through the Grant Accountability and Transparency Act (GATA) Grantee Portal. See <a href="https://www.illinois.gov/sites/GATA/Grantee/Pages/default.aspx">https://www.illinois.gov/sites/GATA/Grantee/Pages/default.aspx</a>
<u><a href="#">Urban Waters Small Grants Program</a></u>	U.S. Environmental Protection Agency	States, local governments, Indian Tribes, educational institutions, public or private NPOs, intertribal consortia, and interstate agencies.	Assists residents and organizations in underserved communities to address urban runoff and support economic revitalization. There is an interest in projects that also support the growth and development of local business as well as the establishment of new educational, employment, and recreational opportunities.



# POLICIES & REGULATIONS

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The Calumet Stormwater Collaborative repository policies and regulations section provides accessible resources related to stormwater regulations, policy, and ordinances. Hyperlinked names take you to each resource.

Regulatory Requirements		
Name	Organization	Description
<a href="#"><u>Illinois Drainage Law</u></a>	University of Illinois	Describes the legal principles related to drainage for the entire state of Illinois, including guidelines for erosion and sediment control, requirements to obtain a permit to construct in streams or floodways, and federal wetlands provisions.
<a href="#"><u>Joint Permit Application</u></a>	Illinois Department of Natural Resources, Illinois Environmental Protection Agency, U.S. Army Corps of Engineers	Joint permit application instructions and forms for construction projects in Illinois waterways, floodplains and wetlands.
<a href="#"><u>Watershed Management Ordinance</u></a>	Metropolitan Water Reclamation District	The Watershed Management Ordinance (WMO) regulates qualified sewer construction, drainage and detention, volume control, floodplain management, wetland and riparian protection, and erosion and sediment control and applies to all development within Cook County and qualified sewer construction within MWRD's boundaries or service agreement areas.
<a href="#"><u>WMO Technical Guidance Manual</u></a>	Metropolitan Water Reclamation District	This manual provides information about MWRD's Watershed Management Permit process, including the types of permits, information required to complete the application, and examples of successful applications.

Policy Documents		
Name	Organization	Description
<a href="#"><u>Better Site Design</u></a>	Center for Watershed Protection	This document provides tools, exercises, and models for adapting local development rules and regulations to protect natural resources.
<a href="#"><u>Green Infrastructure Opportunities that Arise During Municipal Operations</u></a>	U.S. Environmental Protection Agency	This document outlines approaches that local governments can use to incorporate green infrastructure into capital improvements.
<a href="#"><u>Green Infrastructure Portfolio Standard</u></a>	American Rivers, Center for Neighborhood Technology, Great Lakes and St. Lawrence Cities Initiative	An approach that local governments can employ to reduce runoff volumes and pollutant loads in urban or developed areas.
<a href="#"><u>Local Water Policy Innovation: A Road Map for Community Based Stormwater Solutions</u></a>	American Rivers	Outlines how a municipality can improve stormwater management.
<a href="#"><u>Managing Wet Weather with Green Infrastructure Municipal Handbook Series</u></a>	U.S. Environmental Protection Agency	A step-by-step guide to expanding green infrastructure in communities.
<a href="#"><u>On the Road to Reuse: Residential Demolition Bid Specification Development Tool Report &amp; Factsheet</u></a>	U.S. Environmental Protection Agency	Highlights environmental issues associated with residential demolitions and outlines practices to incorporate into the demolition contracting process to achieve better environmental outcomes.



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Model Ordinances and Checklists		
Name	Organization	Description
<u><a href="#">Flood Resilience Checklist</a></u>	U.S. Environmental Protection Agency	Checklist of strategies to improve flood resilience, encourage land conservation, discourage development on river corridors, and protect people from vulnerable flood areas.
<u><a href="#">Model Water Use Conservation Ordinance</a></u>	Chicago Metropolitan Agency for Planning	Model ordinance created for counties and municipalities in the Chicago region looking to develop or revise a water use conservation ordinance.
<u><a href="#">National Flood Insurance Program Community Rating System</a></u>	Federal Emergency Management Agency	The Community Rating System is a voluntary incentive program that recognizes and encourages floodplain management activities that exceed the minimum NFIP requirements.
<u><a href="#">Plan Integration for Resilience Scorecard</a></u>	Texas A&M University	Scorecard to evaluate plans based on their ability to increase or decrease hazard vulnerabilities for the planning area.
<u><a href="#">Statewide Model Stormwater Ordinance</a></u>	Illinois Department of Natural Resources	Model ordinance for stormwater management developed for the State of Illinois. This document is a guideline only as the MWRD WMO has regulatory authority.
<u><a href="#">Tree Preservation Ordinance and Management Plan Templates</a></u>	Chicago Region Trees Initiative	Website with templates that counties, local governments, or other government entities can use to develop a forest management plan and tree preservation ordinance for developed areas.
<u><a href="#">Water Quality Scorecard</a></u>	U.S. Environmental Protection Agency	Scorecard to review local codes and ordinances to ensure that they work together to support a green infrastructure approach to stormwater management and development.



# STORMWATER PLANNING

*Compiled by the Calumet Stormwater Collaborative*

**The Calumet Stormwater Collaborative repository planning section provides descriptions of plans and reports relevant to the Calumet region. Hyperlinked names take you to the document.**

Municipal, County and Watershed-Based Plans, Reports, and Guides		
Plan or Report	Organization	Description
<a href="#"><u>Cal-Sag Channel Detailed Watershed Plan</u></a>	Metropolitan Water Reclamation District	This detailed watershed plan provides useful information for stormwater and flood mitigation planning to address regional flooding problems along waterways within the Cal-Sag Channel watershed. The plan outlines specific stormwater improvements for each problem area, analyzes the extent of flooding, and provides potential stormwater alternatives along with benefit-cost information for each proposed stormwater improvement.
<a href="#"><u>Chicago River Watershed Discovery Report</u></a>	Federal Emergency Management Agency	This report for the Chicago River Watershed documents areas at risk for flooding and solutions to reduce the associated risk. Information was gathered through a community outreach process, which consisted of public meetings and interviews with stakeholders. Floodplain studies and mitigation projects are recommended for key areas and priority mitigation projects are outlined in more detail. Associated data and maps are also available for download via website.
<a href="#"><u>Chicago Wilderness Green Infrastructure Plan for the Millennium Reserve</u></a>	Chicago Wilderness and Illinois Department of Natural Resources	This plan is the culmination of engagement with South Cook County communities of the Calumet region in a green infrastructure mapping and planning process that documented natural assets, water connectivity, and local stormwater issues. Identified opportunity areas are included, which allow communities and area partners to use this plan as a reference for mapping future green infrastructure implementation projects and as a reference when applying for grant funding opportunities.
<a href="#"><u>Cook County Stormwater Management Plan</u></a>	Metropolitan Water Reclamation District	This plan provides a framework for Cook County's stormwater program. It identifies stormwater management goals and outlines Metropolitan Water Reclamation District's approach to watershed planning.
<a href="#"><u>Guidance for Developing Watershed Action Plans in Illinois</u></a>	Chicago Metropolitan Agency for Planning and Illinois Environmental Protection Agency	This resource helps guide the creation and development of an effective watershed-planning initiative in order to produce a locally driven watershed action plan.
<a href="#"><u>Little Calumet River Detailed Watershed Plan and Phase B Report</u></a>	Metropolitan Water Reclamation District	This detailed watershed plan provides useful information for stormwater and flood mitigation planning to address regional flooding problems along waterways within the Little Calumet River watershed. The plan outlines specific stormwater improvements for each problem area, analyzes the extent of flooding, and provides potential stormwater alternatives along with benefit-cost information for each proposed stormwater improvement.
<a href="#"><u>Preliminary Assessment of the Potential for Inducing Stormwater Infiltration in Cook County, Illinois</u></a>	U.S. Geological Survey	This study uses hydrogeologic and land cover data to identify areas with the most potential for stormwater infiltration to reduce combined sewer overflows and increase groundwater recharge. Done in cooperation with MWRD, the assessment provides general locations where infiltrating BMPXs could be sited, though field confirmation of conditions would still be required.
<a href="#"><u>The Prevalence and Cost of Urban Flooding</u></a>	Center for Neighborhood Technology	This report documents research on the prevalence and cost of flooding to property owners in Cook County from 2007 to 2011.



# STORMWATER PLANNING

*Compiled by the Calumet Stormwater Collaborative*

## Municipal, County and Watershed-Based Plans, Reports, and Guides

Plan or Report	Organization	Description
<u><a href="#">RainReady Calumet Corridor Plan</a></u>	Center for Neighborhood Technology	This plan outlines recommendations and strategies to strengthen homes, neighborhoods, and communities throughout the Calumet Corridor, including the communities of Blue Island, Calumet City, Calumet Park, Dolton, Riverdale, and Robbins.
<u><a href="#">Thorn Creek Watershed-Based Plan - Plan Addendum</a></u>	Chicago Metropolitan Agency for Planning, Geosyntec, and Illinois Environmental Protection Agency	This plan provides an update to the 2005 Thorn Creek Watershed Based Plan. It contains a summary of best management practices (BMPs) recommended for implementation within the Thorn Creek Watershed to address water quality issues identified in that area. Site-specific BMPs identified in the plan could qualify for Section 319 grant funding.

## Climate and Hazard Mitigation Plans

Plan or Report	Organization	Description
<u><a href="#">Chicago Climate Action Plan</a></u>	City of Chicago	This plan outlines Chicago's plan to reduce emissions and prepare for climate change, including adaptation strategies to manage stormwater, implement green urban design, and engage the public. The plan includes a municipal climate adaptation guide that is a useful planning tool for other communities.
<u><a href="#">Cook County Multi-Jurisdictional Hazard Mitigation Plan</a></u>	Cook County Department of Homeland Security and Emergency Management	Hazard mitigation plans are important documents to consider in all planning activities, particularly plans that aim to address stormwater and flooding. This plan identifies and recommends ways to reduce risks posed by hazards, including long-term and short-term policies, programs, projects, and other activities within all incorporated and unincorporated areas of Cook County, and is intended to be used by all local jurisdictions in Cook County.
<u><a href="#">National Climate Assessment</a></u>	U.S. Global Change Research Program	This document is intended for decision makers at all levels (national to local) as well as the general public. The National Climate Assessment summarizes the impacts of climate change on the United States presently and in the future. Over 300 experts contributed to the assessment.



# TRAINING & MAINTENANCE

Compiled by the Calumet Stormwater Collaborative

The Calumet Stormwater Collaborative repository training and maintenance section provides accessible stormwater resources related to maintenance and training programs. Hyperlinked names take you to each resource.

Maintenance		
Name	Organization	Description
<a href="#"><u><i>A Survey of Green Infrastructure maintenance Programs in the United States</i></u></a>	Yale: School of Forestry and Environmental Studies	Presents information gained from a survey of green infrastructure maintenance programs across the United States.
<a href="#"><u><i>Catching Rain: Key Maintenance Tips for Rain Gardens</i></u></a>	Washington State University Extension - Department of Ecology	Succinct resource on how to maintain a rain garden.
<a href="#"><u><i>Elements of a Green Infrastructure Maintenance Business Plan</i></u></a>	U.S. Environmental Protection Agency	A strategic business plan for successful green infrastructure maintenance programs, including ideas on potential collaborations and partnerships.
<a href="#"><u><i>Field Guide: Maintaining Rain Gardens, Swales and Stormwater Planters</i></u></a>	Oregon State University Stormwater Solutions	Detailed information on how to maintain rain gardens, swales, and stormwater planters to ensure long term maintenance of stormwater facilities.
<a href="#"><u><i>Inspection and maintenance: Maintaining your rain garden.</i></u></a>	Rutgers - New Jersey Agricultural Experiment Station	Outlines weekly and annual tasks for maintaining a rain garden including common problems and solutions.
<a href="#"><u><i>National Green Infrastructure Certification Program: Body of Knowledge</i></u></a>	DC Water & the Water Environment Federation	Compilation of reference materials on green infrastructure construction, inspection, and maintenance. The list encompasses resources that were identified, reviewed, and selected as reference materials for the technical basis of the National Green Infrastructure Certification Program (NGICP).
<a href="#"><u><i>Operation and Maintenance of Green Infrastructure Receiving Runoff from Roads and Parking Lots</i></u></a>	U.S. Environmental Protection Agency	Technical memorandum on green infrastructure practices in streets and parking lots that addresses common operation and maintenance questions and provides recommendations for evaluating the need and providing maintenance.
<a href="#"><u><i>Professional Rain Garden Maintenance</i></u></a>	University of Rhode Island Stormwater Solutions	Lists considerations for maintaining a rain garden and provides a checklist of monthly and annual activities.
<a href="#"><u><i>Routine Maintenance for Rain Gardens</i></u></a>	Blue Water Baltimore	Provides a 3 year-schedule of routine maintenance activities for rain gardens, including guidelines for plant care, trash removal, composting, and snow removal.
<a href="#"><u><i>Stormwater Treatment: Assessment and Maintenance</i></u></a>	University of Minnesota / Minnesota Pollution Control Agency	Guidance manual on BMP assessment and maintenance that serves as a supplement to the Minnesota Stormwater Manual.



## TRAINING & MAINTENANCE

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Training		
Name	Organization	Description
<u><a href="#">Green Jobs Training Catalog</a></u>	U.S. Environmental Protection Agency	Catalog of national training programs for green infrastructure installation and maintenance, including two in the Chicago area.
<u><a href="#">Landscape Performance Series: Case Studies</a></u>	Landscape Architecture Foundation	Collection of case studies, some of which describe the project's Economic, Operations & Maintenance, or Job Creation benefits.
<u><a href="#">National Green Infrastructure Certification Program</a></u>	D.C. Water & Water Environment federation	National program that certifies workers in the Green Infrastructure Industry, which could be used as a template for a green infrastructure training program in the Chicago region.
<u><a href="#">The Need for National Green Infrastructure Training and Certification</a></u>	D.C. Water & Sewer Authority	Provides a study of existing certificate programs, green infrastructure implementation drivers, and recommendations to engage stakeholders