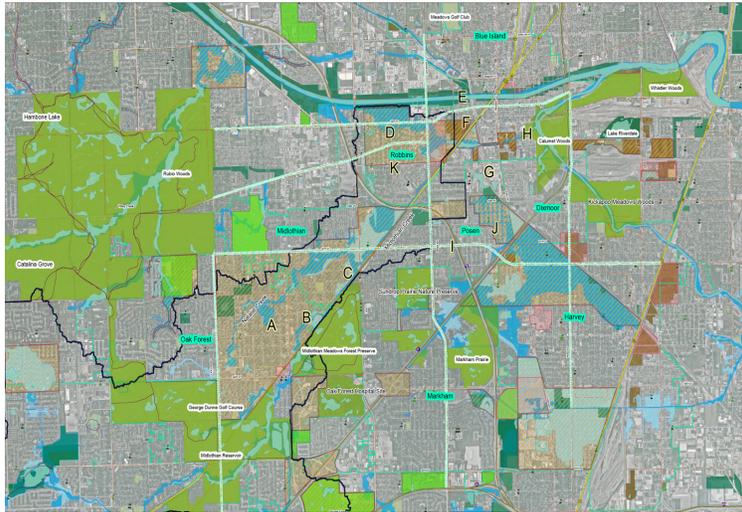


Midlothian Creek Green Infrastructure Plan June 2013



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- Leslie Phemister, Suburban Outreach Manager Active Transportation Alliance
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- Steven M. Byers, Illinois Nature Preserves Commission

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1. INTRODUCTION

1.1 Project Overview

The Midlothian Creek Green Infrastructure Plan provides a fresh exploration of green infrastructure utility and opportunities within a heavily urbanized corridor in the South Suburban area of Chicagoland. This project expands on Chicago Wilderness' Sustainable Watershed Action Team (SWAT) program by exploring the development of green infrastructure and sustainable community development, such as complete streets, in an urban core geography. The goals of the project are to provide mapping and project concepts that build on past Chicago Wilderness experience and initiatives (**See Appendix A-CW Journal: Best Practices in Conservation and Restoration**) explore the following:

1. **Natural Areas Protection:** The study area includes a variety of forest preserve, nature preserves, and parkland. Helping communities understand how their decisions impact these often high quality natural areas assists in protecting them. This project targets buffer areas and acquisition opportunities that may help protect these important resources.



2. **Restoration:** With its history of development and blight, restoration opportunities are critical to the Midlothian Creek geography. Identifying public and private opportunities for green infrastructure amenities, improved habitat, and stormwater treatment is a primary goal of this report.

3. **Resource Sensitive Development Practices:** Providing education regarding redevelopment and development practices that respect the environment and acknowledge impacts on downstream communities requires coordinated inter-governmental effort. As discussed below, this plan has helped to cultivate such coordination.



4. **Water Resource Protection:** The project team worked to highlight the value of water resources, in this case Midlothian Creek. Informing communities how utilizing green infrastructure to provide water quality pretreatment is an important element of the project.

5. **Quality of Life:** The project team and partner communities explored trail connectivity, enhanced green development, and vacant site reuse to improve quality of life within their cities and villages.
6. **Economic Development:** By improving quality of life and exploring alternative green flood mitigation strategies, this project provides strategies for redevelopment of vacant parcels. In addition, the project team and communities explored improved transportation routes that could provide multiple uses, including stormwater treatment, pedestrian and bicycle routes, as well as stronger aesthetic identities.



1.2 Study Area

Midlothian Creek (Creek) is a tributary to the Little Calumet River with significant opportunity for impactful opportunities for green infrastructure development and benefits. The Creek begins in Tinley Park and runs through the Villages of Midlothian, Robbins, and the City of Blue Island, as well as other communities. These communities were largely the focus of the report due to the



Creek's flooding impacts. Because it has been hydromodified, heavily channelized, and constrained it has created flooding issues in critical economic development areas. Further, there are ample vacant and underutilized parcels adjacent and near the Creek that could be used for green infrastructure opportunities that can provide attractive quality of life amenities, wildlife habitat, and floodplain mitigation if done appropriately. This study has developed strategies for providing such amenities.

1.3 Project Team

The Project Team was selected for their familiarity with both green infrastructure planning and the Midlothian Creek geography. Below is a brief description of each team member and their roles:

- Nancy Williamson - Illinois Department of Natural Resources (nancy.williamson@illinois.gov): Ms. Williamson is the Chicago Wilderness Green Infrastructure Vision Team Chair and coordinates the SWAT program for Chicago Wilderness. For this project, she provided critical oversight of the project and was the team leader.

- Eric Neagu, P.E., LEED AP - Weaver Boos Consultants (eneagu@weaverboos.com): Mr. Neagu was the lead consultant on the project team and provided technical expertise.
- Mark Bouman, Ph.D. - Field Museum (mbouman@fieldmuseum.org): Dr. Bouman provided community outreach, mapping oversight, and community facilitation support throughout the project.
- Dennis Latto, MUPP - South Suburban Mayors and Managers Association (dennis.latto@chicagosouthlandedc.org): Mr. Latto directs the South Suburban Atlas, a regional GIS tool. For this project Mr. Latto provided GIS support and developed the project mapping.

1.4 Report Structure

This document is structured for ease of reference, as follows:

1. The *Introduction* provides an overview and a summary of the project.
2. The *Green Infrastructure* section describes the concepts, techniques, and value that define green infrastructure. This section also discusses various regional initiatives completed by several organizations.
3. The *SWAT Midlothian Creek Process* section describes the process, data, and communities involved in the project.
4. The *Existing Conditions* section discusses the existing conditions of the Midlothian Creek corridor.
5. The *Green Infrastructure Maps* section summarizes the maps that were developed as part of this project. This section will include a discussion of the methodologies for project selection.
6. The *Green Infrastructure Opportunities* section details specific green infrastructure practices and summarizes the various green infrastructure opportunities throughout the corridor.
7. The *Implementation Funding and Ordinances* section offers potential funding sources to implement various green infrastructure initiatives.

8. The *Regulatory Parameters* section details any Federal, State, or other regulatory agency's compliance issues.
9. Lastly, a *Conclusion* section presents a brief summary of the plan, as well as the next steps, outcomes and outputs.

2. GREEN INFRASTRUCTURE

Webster’s New World Dictionary defines infrastructure as “The substructure or underlying foundation . . . on which the continuance and growth of a community or state depends.” Random House defines infrastructure as “The basic, underlying framework or features of a system, as the . . . communication and transport facilities of a country.” We are used to thinking of infrastructure in terms of built public works systems – roads, sewers, utilities, etc. – as our gray infrastructure. We are less inclined to think of our natural resource systems – woodlands, grasslands, wetlands, streams, parks, trails – as our green infrastructure. This is partly because the purpose and value of roads and sewers, for example, are so clearly defined and understood, while the purpose and value of wetlands along a stream, for example, are less understood, and therefore, less appreciated.

Benedict and McMahon elegantly define green infrastructure as “An interconnected network of green space that conserves natural ecosystem functions and values and provides associated benefits to human populations.” These functions and values include: groundwater infiltration, water quality, wildlife habitat, biodiversity, building soils, etc. All green space, however, is not equal. Some green spaces do a better job of infiltrating water into aquifers; some provide better water quality benefits; some green spaces are highly erodible; some green spaces are particularly adept at building soils. A good community resource that also illustrates the value the federal government places on green infrastructure is the USEPA’s *Managing Wet Weather with Green Infrastructure Municipal Handbook: Green Infrastructure Retrofit Policies* (**Appendix B**).

A green infrastructure plan provides communities with a roadmap for protecting, expanding, restoring and connecting ecosystem functions and values on the most important green spaces; and guiding future built spaces and gray infrastructure toward locations where ecosystem functions and values are less apparent.

Another good definition of green infrastructure is described in USEPA’s Water Quality Scorecard:

Large-scale green infrastructure may include habitat corridors and water resource protection. At the community and neighborhood scale, green infrastructure incorporates planning and design approaches such as compact, mixed-use development, parking reductions strategies, and urban forestry that reduces impervious surfaces and creates walkable, attractive communities.

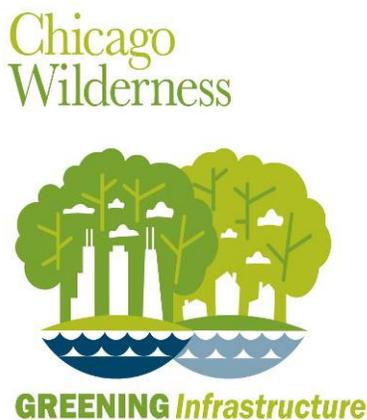
At the site scale, green infrastructure mimics natural systems by absorbing stormwater back into the ground (infiltration), and using trees and other natural vegetation to convert it to water vapor (evapotranspiration) . . . in a way that maintains or restores the site's natural hydrology.

While green infrastructure plans are expressed at different scales and executed using a variety of strategies, most plans include an identification of important “hubs” connected by important “corridors.” Hubs are usually defined as large, intact blocks of land that significantly contribute to critical ecological functions such as habitat for native plants and animals, water quality, flood protection, and other functions. Corridors are the linkages and vectors between the hubs that contribute to the long term sustainability and diversity of the hubs.

A description of several relevant regional organizations for this project and green infrastructure implementation, more broadly, is included below.

2.1 Chicago Wilderness Sustainable Watershed Action Team

The Sustainable Watershed Action Team (SWAT) was created in 2004 in response to an extensive municipal need assessment conducted by a Chicago Wilderness (CW) taskforce in conjunction with NIPC (Now CMAP). While land-use decisions are made at the local level,

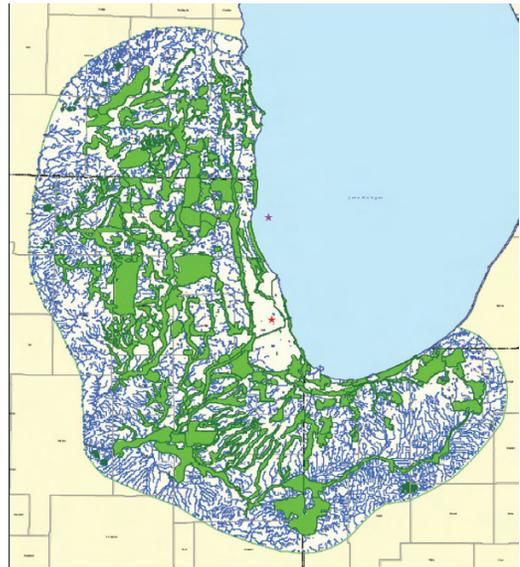


many municipalities and local units of government acknowledge their lack of technical capacity to strengthen their planning infrastructure (plans and ordinances) and to promote sustainable development and protection of natural resources. SWAT was developed to deliver customized, cost-effective direct technical assistance in developing local plans, adopting protective ordinances, and assisting with other sustainability projects. Current and past SWAT projects include work with Lake, Boone, Winnebago, DeKalb, McHenry, and Kane counties, Elgin, Aurora, Campton Hills and others, and with organizations such as Openlands, CMAP and Metropolitan Planning Council. Currently,

SWAT projects are funded through private foundation grants and support from corporations like Boeing.

2.2 A Green Infrastructure Vision

In 2004, members of Chicago Wilderness came together to begin the framework for a Green Infrastructure Vision (GIV). The GIV map produced from that effort identified 1.8 million acres for prospective protection, restoration, and thoughtful land development practices in the Chicago Wilderness region — spanning from southeast Wisconsin, through northeast Illinois into northwest Indiana and southwest Michigan. The Vision calls for us to carefully think about how we can live in and among natural areas in a sustainable way and to mutual benefit, by using tools such as conservation development, conservation easements, and thoughtful



land use planning. The 140 Resource Protection Areas mapped by the GIV served as opportunities to focus land acquisition, expand restoration on private land, and promote greenway connections, conservation easements, conservation design practices, agricultural preservation, protection of sensitive groundwater recharge areas, implementation of wastewater reclamation alternatives, and protection of stream and wetland buffers.

2.3 Chicago Metropolitan Agency for Planning

The Chicago Wilderness Green Infrastructure Vision was officially recognized in the Chicago Metropolitan Agency for Planning's (CMAP) GO TO 2040 (2010) as part of its recommendations to expand and improve parks and open space. CMAP and Chicago Wilderness joined together to develop the next generation data product and decision support system to allow users to make informed on-the-ground decisions to help them:

- Connect habitat areas and create new ones through restoration projects;
- Identify areas to target conservation investment funds;
- Target green infrastructure in local land-use plans and zoning ordinances;
- Positively influence gray infrastructure investment;
- Expand greenways and trail systems;
- Connect residential and commercial uses with green spaces;

- Positively influence economic development goals;
- Expand overall quality of life in the region;
- Support goals of the GO TO 2040 plan, the Illinois Wildlife Action Plan, and the Chicago Wilderness Biodiversity Recovery Plan.

2.4 Millennium Reserve

In 2011, the State of Illinois announced Governor Quinn’s new Millennium Reserve initiative. As shown on the map below, the focus area of this initiative is the Calumet region, straddling Illinois and Indiana, including the Calumet Core area, which includes all of the Midlothian Creek watershed studied as part of this project. As stated on the Millennium Reserve website:

Millennium Reserve: Calumet Core is a 220-square mile opportunity to transform a region in transition. Its goal is to catalyze innovative partnerships and action in the Calumet region that:

- I. Honor its cultural and industrial past;*
- II. Restore and enhance the natural ecosystems;*
- III. Support healthy and prosperous communities and residents; and*
- IV. Stimulate vigorous and sustainable economic growth.*

Millennium Reserve recognizes that conservation and sustainable land use in urban areas are inextricably linked to healthy communities and a robust economy.



The Midlothian Creek Green Infrastructure Plan was recognized in 2012 as one of the first Millennium Reserve projects. It is worth noting that the Millennium Reserve initiative was selected as an America’s Great Outdoors project, one of two in the State of Illinois.

2.5 Metropolitan Water Reclamation District of Greater Chicago

The Metropolitan Water Reclamation District of Greater Chicago (MWRD), which manages Midlothian Creek as it relates to stormwater, has been very active in promoting green infrastructure. A pending consent decree between MWRD and the USEPA will offer opportunities to support green infrastructure implementation laid out in this project. In addition, MWRD has offered input and support throughout this plan. Their engagement and understanding of the issues on this project has made for a more complete and effective green infrastructure plan.

2.6 South Suburban Mayors and Managers Association

The South Suburban Mayors and Managers Association (SSMMA) has long been an advocate and supporter of green infrastructure in the Chicago Southland. As described below, they view green infrastructure as a critical component to revitalizing the region. In addition, through various grant opportunities, there may be capacity to partner with SSMMA on project implementation resulting from this study.



*The Green TIME Zone of Chicago's Southland capitalizes on...emerging trends with a strategy through which older communities can translate the value of their established rail infrastructure and manufacturing capacity into desirable neighborhoods, good jobs, and environmental improvement. The strategy is built on three linked mechanisms for sustainable redevelopment: **transit-oriented development (TOD)** to establish livable communities, **cargo-oriented development (COD)** to capture the economic benefits of intermodal freight movements, and **green manufacturing** to build a healthy economy with a bright future. These mechanisms lead to the acronym TIME: communities and economies are rebuilt around TRANSIT, INTERMODAL facilities and MANUFACTURING, all founded on a commitment to preserve and improve the natural ENVIRONMENT.*

3. SWAT MIDLOTHIAN CREEK PROCESS

The SWAT process builds on the most up-to-date relevant data for mapping green infrastructure, which in the Midlothian Creek project included significant support from the South Suburban GIS Atlas. SWAT's unique local government technical assistance program works with specific tenets:

1. Government units are willing, engaged, and interested working with SWAT on a mutually identified project and actively assist in the project, increasing the likelihood of success.
2. Each project is customized to meet the needs of the "client," with SWAT utilizing existing material from previous efforts wherever possible.
3. Selection of SWAT-funded private consultants targets the specific skills needed to address the problem or issue of the "client." Consultants must demonstrate a history of ecological and economic success in implementing the targeted work.
4. Each project has a built-in funding mechanism to provide match for the primary funding source. The local unit of government provides, at a minimum, in-kind services, and the SWAT consultants work at a partially pro-bono rate that is one-half to one-third their normal billing rate, enabling SWAT to provide high-quality expert assistance at a fraction of the actual costs.

There are three primary project phases, all of which intersect and inform one another. The initial phase includes collecting relevant geographic and environmental project data and project resource experts. Subsequently, the project team worked with local municipalities to collect knowledge and project concepts relevant to their communities, and to educate them about the benefits of green infrastructure. Finally, the project team developed project mapping and checked the map with the communities and resource experts. Below is a more detailed description of the Data Collection process and Community Outreach elements of the project. **Section 5.0** discusses the mapping phase in more detail.

3.1 Data Collection

Data collection and analysis was the initial phase of this project. Various studies and plans provided a solid foundation for understanding the impacts and opportunities of the Creek. The project team collected readily available data relative to Midlothian Creek, including: the Little Calumet River Watershed Management Plan, the Blue Island Cargo-Oriented Development Plan,

the South Suburban Mayor and Managers Transit-Oriented Development Plan, South Suburban GIS Atlas data, and the Chicago Wilderness Green Infrastructure Vision.

Once collected, a base map was developed and resource experts were requested to review the map to ensure the most relevant information was included on the base map. The primary resource experts for this project included:

- Josh Ellis, Stormwater Program Director Metropolitan Planning Council
- Jonathan Grabowy, P.E. Metropolitan Water Reclamation District of Greater Chicago
- Reggie Greenwood, Economic Development Director South Suburban Mayors and Managers Association
- Neil Pellman, P.E., Will-South Cook County Soil and Water Conservation District
- Steve Buchtel, Executive Director Trails for Illinois
- Leslie Phemister, Suburban Outreach Manager Active Transportation Alliance
- Dan Spencer, Resource Ecologist Forest Preserve District of Cook County
- Steven M. Byers, Illinois Nature Preserves Commission

Once the data was collected and a final base map was developed, the project team moved onto the community outreach component of the project.

3.2 Community Outreach

The project team solicited input from multiple communities. Using an approach similar to the *Mill Creek Watershed Issues and Opportunities Identification* (**Appendix C**), communities were first instructed about green infrastructure and Midlothian Creek Green Infrastructure plan scope. Then they were asked to participate in the development of the map



and project concepts. This process included interactive mapping whereby community officials documented projects and issues on a large format map. The participants, meeting minutes,

project agendas are included in **Appendix D**. Communities were divided into primary communities, those directly impacted by Midlothian Creek, and secondary communities, those with tangential relationships to Midlothian Creek.

3.2.1 Primary Communities

Primary communities were selected due to the impact of Midlothian Creek floodplain on community and economic development concerns, as well as the potential for meaningful green infrastructure implementation to mitigate flooding and improve quality of life. The primary communities impacted by Midlothian Creek were as follows:

- **City of Blue Island:** The City of Blue Island is a regional leader in green infrastructure, having had 4 of the 11 initial Millennium Projects within its 4.5 square mile borders. Since its founding, the city has been an important commercial center in the south Cook County region, although its position in that respect has been eclipsed in recent years as other significant population centers developed around it and the region's commercial resources became spread over a wider area. With approximately 24,000 residents, Blue Island has worked diligently to incorporate sustainable practices into its planning practices. Midlothian Creek has its confluence with the Little Calumet River in Blue Island.
- **Village of Midlothian:** In its nearly 3 square miles, Midlothian has a relatively dense population of 14,000 people. The community includes substantial Forest Preserve District lands, as well as commercial areas. Midlothian is working to transform the community into a more livable place and sees green infrastructure amenities, including trails, pocket parks, and complete streets as an opportunity to improve quality of life.
- **Village of Robbins:** The Village of Robbins has 5,300 residents and roughly 1.5 square miles. Midlothian Creek flows through Robbins and floodplain concerns restrict development in key corridors. In addition, the Village borders the Cal-Sag Channel, which opens up significant redevelopment opportunities utilizing green infrastructure.

3.2.2 Secondary Communities

Secondary communities were selected due to their relationship to the primary communities, lack of support by other green infrastructure planning initiatives.¹ The secondary communities included in this project were as follows:

- **City of Country Club Hills:** A community of 16,200 people, Country Club Hills is nearly 5 square miles in size. The City includes some agricultural land, as well as residential and commercial. The uppermost community along Midlothian Creek, it was noted that development activities within Country Club Hills has a direct impact to downstream residents.
- **City of Markham:** The City of Markham is 5.3 square miles and has a population of 12,500 residents. The community is largely residential, with some post-development parcels that include brownfields and former commercial sites. Although Midlothian Creek does not touch Markham, there are other flooding concerns in the community that were explored through this project.
- **City of Oak Forest:** Oak Forest is a 28,000 person community that is roughly 6.00 square miles in size. Much of the landscape is Forest Preserve District of Cook County property. Commercial and residential land uses predominate. Midlothian Creek and Natalie Creek, a tributary to Midlothian Creek, meander through the community. Both have been noted to cause flooding concerns.
- **Village of Crestwood:** The Village of Crestwood is roughly 3 square miles of heavily urbanized development. Largely residential and commercial, this community of 11,200 people borders the Cal-Sag Channel and is a hub of retail activity.
- **Village of Posen:** The Village of Posen includes nearly 6,000 residents and is just over 1 square mile in size. Again, Midlothian Creek does not directly impact Posen, but current activities around transportation and periodic flooding justified the community's participation in this study.

¹ Subsequent to this project, Chicago Wilderness has begun a larger scale Green Infrastructure planning program following the SWAT model that includes the entire Millennium Reserve geography, including the communities listed as both primary and secondary, herein.

4. EXISTING CONDITIONS

The Midlothian Creek project area is a mix of residential, industrial, publicly-owned, forest preserves, high quality prairie, commercial, and school land uses. In short, it includes virtually any land use, concern, and opportunity one could think of. This comes with both challenges, including things like brownfields and blight; and, it comes with opportunities to transform those challenges, most of which are underutilized, into meaningful green infrastructure amenities. Below is a brief description of the area.

4.1 Study Area Details

Appendix E is the Midlothian Creek Existing Conditions Map, which formed the basis of later base mapping. Geographic elements that are most relevant are as follows:

- *Topography:* The term “Calumet Flat” describes the region’s general lack of hilly topography. The area is quite flat, which makes distributing stormwater a challenges and likely contributes to the multiple flooding issues and basement backups;
- *Municipal Boundaries:* Noteworthy is the dense interaction of municipalities. All of the communities within the study area are contiguous with one another, presenting an array of infrastructure and stormwater management challenges. As the saying goes, “Stormwater knows no boundaries.”
- *Demographics:* The study area includes a variety of communities, many of which struggle to maintain a full suite of in-house services for their residents. In sum, the area is largely African-American and Hispanic. Populations in these communities tend to be on the decline due to limited housing stock, lack of quality of life amenities, or other perceived and real challenges, like crime.
- *Stormwater Management:* All of the study area communities are with the MWRD geographic region, which means MWRD guidelines and permitting requirements apply for stormwater management. MWRD has worked diligently to begin resolving the substantial floodplain issues around Midlothian Creek (**See Appendix F-Midlothian Floodplain Data**). The challenge as it pertains to existing floodplain mapping is that much of the area indicated as flooding does not, at



least anecdotally, have flooding challenges. Addressing these challenges through regulatory approaches is described in **Section 8.0** of this report.

- *Soils*: One of the larger challenges to development of green infrastructure that mitigates flooding is the considerable amount of fill material that has been introduced into the region. This is often a result of dumping from larger developments to the north, as well as past development of the area. Although originally an agricultural area, most of the Midlothian Creek project area has gone through some type of development within the past 100 years.

4.2 Brownfields

Among the largest challenges to the region is the real or perceived number of brownfields, which are contaminated parcels that make development more difficult. Blue Island, Midlothian, and SSMMA are all working diligently to resolve brownfields through assessment and remediation of these parcels. While brownfields are often targeted for redevelopment as industrial or commercial uses, they also offer tremendous opportunities for green infrastructure amenities. Several of the projects discussed in **Section 6.0** of this report. Green infrastructure, including habitat restoration, parks, and other amenities are viable reuses of chronically underdeveloped sites. Many of the communities within this study are actively acquiring lands through no cash tax bids for redevelopment. The recent development of the Cook County Land Bank and the SSMMA Land Bank offer additional opportunities for redevelopment of brownfields. This project outlines several areas with known or suspected brownfields that could be utilized for redevelopment as green infrastructure.



5. GREEN INFRASTRUCTURE MAPS

The project team developed a series of maps that are intended to illustrate various considerations in the green infrastructure mapping process. Because all of the information cannot be easily discernable on one overall map, sub-maps were created to better highlight elements of the area. These maps are discussed in more detail below.

5.1 Map Review

5.1.1 Subwatershed

The Midlothian Creek Subwatershed Map (Figure 1) illustrates the entire watershed of Midlothian Creek, as well as those communities within the watershed. This map also includes floodplains, wetlands, and forest preserve lands, illustrating a complex web of land uses and watershed impacts and opportunities. The floodplain area is particularly noteworthy, because hydromodification (changing historic stormwater flow patterns) and development have created flooding in important economic development and residential corridors.

5.1.2 Presettlement

The Midlothian Creek Presettlement Subwatershed (Figure 2) points to the project area's past. The two most striking features of this map is the large prairie complex that once dominated the project area, and the meandering nature of Midlothian Creek. Heavy development has transformed prairie into homes and businesses, while former prairies have been turned into forest complexes. This convolution makes for challenging decisions when considering new green infrastructure opportunities.

5.1.3 Forest Preserves and Soils

The Midlothian Creek Forest Preserve Lands and Soil Types (Figure 3) highlights the current configurations of forest preserves, natural areas, and soil types. Comparing this map to the presettlement map shows the massive transformation of natural areas into other ecological zones. Also evident is the fragmentation of natural areas throughout the watershed.

5.1.4 Green Infrastructure Map

The Midlothian Creek Green Infrastructure Map (Figure 4) is the centerpiece of this project. It includes the priority projects for the area, as well as the green infrastructure network of connectivity opportunities. This map is discussed in much greater detail in **Section 6.0**.

5.1.5 Regional Transportation

The Midlothian Creek *Regional Transportation Map* (**Figure 5**) provides an important understanding of the interconnectedness of the transportation routes throughout the study area. A consistent theme during conversations with the communities was the challenge in dealing with so much inter-community and inter-agency transportation infrastructure. As seen on the map, communities in this region must contend with:

- Interurban Rail lines, such as the Metra Rail;
- Local Roads;
- Cook County Highways;
- Illinois Department of Transportation routes and highways;
- Interstate Highways; and,
- Disconnected trail systems;

Relative to green infrastructure implementation and stormwater management, this means significant coordination must be done to develop many of the project opportunities. For instance, a complete streets corridor could include coordination with IDOT, Cook County Highway, as well as adjacent communities. By highlighting several of these areas within this study, we hope to begin to shape future decisions by encouraging green infrastructure as an option when redesigning or rehabilitating existing transportation routes.

6. GREEN INFRASTRUCTURE OPPORTUNITIES

Various development opportunities, existing and proposed, lend themselves to green redevelopment and retrofitting within the Midlothian Creek corridor. Coordinated planning and implementation are critical because green infrastructure resources do not observe political boundaries. Working with the resource experts and communities, the project team has developed a list of higher priority green infrastructure opportunities and recommendations. Some examples of projects and general recommendations that will take coordinated planning actions are:

- Protection of sensitive stream or wetlands and river resources is best achieved if all of the communities in a watershed work together to develop consistent stormwater and conservation design ordinances. Working with ordinances and education programs, local governments can maximize the opportunity for water to be treated with green infrastructure practices, such as rain gardens, before it moves offsite.
- Connectivity will be optimized when new subdivisions, parks, businesses, and commercial developments incorporate local greenways, trail linkages, and bikeways where people live, work, recreate, and shop.

There is an array of techniques that can be used to protect and implement green infrastructure projects, as well as existing green infrastructure assets, like parks and forest preserves. These techniques may be applied not only to lands mapped in the green infrastructure network, but also to smaller areas that, though unmapped, have local importance and a community feels is deserving of protection. Recommendations are provided for each of the following techniques:

- Acquisition by public agencies;
- Conservation easements on private land;
- Targeted land use planning and zoning;
- Conservation development;
- Greenway connections;
- Trails;
- Landscape retrofitting of previously developed land; and,

- Ecological restoration of degraded landscape;

Given the number of foreclosed and underutilized parcels throughout the Midlothian Creek project area, utilizing land acquisition strategies, including the new land banks and the no cash tax bid process, offers a compelling opportunity to strategically develop green infrastructure. Open space and natural area acquisition is one of the principal methods recommended for protection of areas identified in the green infrastructure network map. It is a method that has been used with great success by communities and other open space agencies in protecting land and resources.

Below is a description of the best management practices considered for various green infrastructure projects within the Midlothian Creek area, followed by a detailed description of the implementation projects considered by resource experts and communities to be of the highest priority. The locations of the proposed priority projects can be seen on the attached **Midlothian Creek Green Infrastructure Map (Figure 4)**, where the context relative to the larger Midlothian Creek green infrastructure network can be best observed.

6.1 Green Infrastructure Best Management Practices

This section will discuss green concepts and Best Management Practices (BMPs) that apply throughout the Midlothian Creek study area. Several of these opportunities are targeted at specific sites, while others are more regional in nature. The following sections will briefly summarize proposed green infrastructure BMP and its benefits.

6.1.1 Bioswales

Traditional swales and ditches are constructed adjacent to roads or within rights-of-way to transport stormwater runoff as quickly as possible to their ultimate receiving waters or sewer system without any treatment. With proper design and installation, these swales can be converted into bioswales, also referred to as stormwater swales. Bioswales are vegetated with native plants to promote infiltration of stormwater runoff. This helps recharge groundwater, increases natural flow within creeks and streams, reduces runoff volume to sewer systems, and



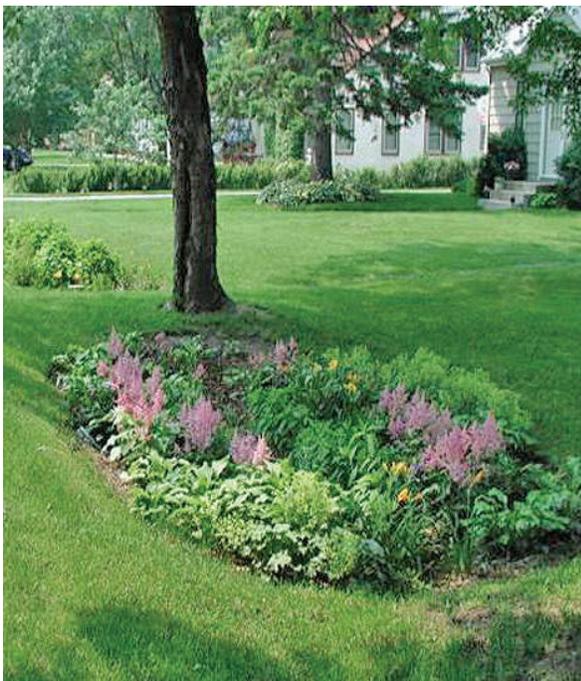
removes pollutants.

6.1.2 Stormwater “Bump-Outs”

Stormwater “bump-outs,” sometimes referred to as street retrofits, are installed as part of road capital improvement projects that involve curb and gutter systems. The curb and gutter system is modified to extend or ‘bump-out’ into the road without hindering traffic flow. This creates a green space behind the curb similar to bioswale that stormwater runoff enters through a series of curb and cuts. This water is then filtered before being discharged to storm sewer inlets. It also greatly enhances the aesthetics for both drivers and pedestrians.



6.1.3 Rain Garden



A rain garden is a shallow depression that has a unique soil material which allows for infiltration of stormwater runoff. The soil bed is made up of more granular and sandy soil so water can more easily infiltrate into the ground. Native plantings in the rain garden provide more water absorption and pollutant removal. An underdrain system, overflow outlet structure, and pretreatment filter strip of grass are all additional components that can be incorporated into a rain garden. Giving residents access to tools and programs to install these rain gardens helps get the community involved, can contribute to an increase in land value, and enhance water quality.

6.1.4 Rain Barrel

Rain barrels are low-cost, effective, and easily maintained stormwater retention BMP that can be applied to many residential parcels. Rain barrels capture stormwater runoff from rooftops through the downspout and retain this water. The water can then later be used by the resident to water their lawn or garden. This directly involves the community and educates people on the benefits of green infrastructure. In the fall of 2012, the City of Blue Island with the help of community organizers, volunteers, and local businesses installed over 100 rain barrels throughout a neighborhood that had a history of flooding issues. This project was a huge success and residents in other neighborhoods within the City have expressed strong interest in expanding this program to their area.



6.1.5 Permeable Pavement



Permeable Pavement allows stormwater runoff to be infiltrated through either open spaces in a series of interlocking paver system or by asphalt or concrete with the mixture properties to allow water to pass through it. The runoff would then enter a subbase that is used to retain and infiltrate the water into the soil. Permeable Pavement is capable of being designed to withstand heavy loading from industrial sites.

6.1.6 Stream Restoration

Streams and creeks within areas of poor water quality and low flows are subject to heavy erosion and sedimentation. Invasive species are frequently introduced to these areas and the natural



wildlife diminishes. Stream restoration reestablishes the natural environment of the stream and adjacent banks. Invasive species are removed and native plantings are installed to create the intended natural habitat for wildlife. Stream banks can be reshaped and or stabilized with vegetation to help achieve a self-sustaining, functional flow that would not require frequent maintenance.

6.1.7 Wetland Restoration

Wetland restoration enhances and expands existing wetlands within a specific area. Invasive species of plants would be removed and native plantings would be established. Excavation for expanding the wetlands would follow the natural topography of the land to minimize construction costs. The expanded areas would be planted with native vegetation. These expanded wetlands would be capable of volume control and may mitigate some of the flooding issues nearby and possibly further upstream.



6.1.8 Complete Streets

Complete streets corridors accommodate multi-modal use and provide for some stormwater treatment, wildlife, and plant habitat. The concept behind a complete street is to utilize the existing right-of-way to install green infrastructure BMPs and promote non-vehicular traffic. Typical complete streets have medians in the center lanes that act as bioswales, painted lanes designated only for bikes or buses, and landscaping along the sidewalks between the street and pedestrians. If space permits it, stormwater “bump-outs” can be incorporated. Complete streets corridor encourages biking, walking, or public transit while reducing vehicular traffic, essential for decreasing carbon emissions and increasing air quality. A complete street corridor can be done in simple phases such as delineating bike lanes or installing planters along the sidewalk.



6.2 Mapped Opportunity Areas

The leading factor in identifying green infrastructure BMPs is understanding how the existing conditions of an area can be utilized and enhanced. This section details which green infrastructure BMPs can be applied to specific opportunity areas as identified on **Figure 4**. While certain themes and opportunities are evident, each project is unique and offers its own set of projects that require design and thought as implementation consideration arise.

6.2.1 A - Natalie Creek Greenspace Flood Reduction

The floodplain area shown on **Figure 4** illustrates significant flooding in this largely residential area. To reduce flooding in this area, we recommend the following:

- Bioswales and stormwater “bump-outs” should be installed. This can be implemented during rehabilitation of the roadways;
- Rain gardens and rain barrels are effective tools for business and households to capture stormwater on site and redistribute into the ground or back into gardens. These can also be made to be attractive amenities;
- Stormwater tree plantings that increase the canopy and retain additional stormwater, also increase home values and reduce cooling bills in summer;
- Connectivity to area destinations via on-street trails is also suggested.

Implementation of these elements should be phased in over a period of several years. Education and outreach to residents and businesses should be done in advance of implementation to ensure maintenance requirements and benefits are fully understood.

6.2.2 B - Midlothian Meadows Green Neighborhood Improvements

According to Midlothian municipal officials, this area regularly experiences flooding. The floodplain area shown on **Figure 4** illustrates significant flooding in this largely residential area. To reduce flooding in this area, we recommend the following:

- Bioswales and stormwater “bump-outs” should be installed. This can be implemented during rehabilitation of the roadways;
- Rain gardens and rain barrels are effective tools for business and households to capture stormwater on site and redistribute into the ground or back into gardens. These can also be made to be attractive amenities;

- Stormwater tree plantings that increase the canopy and retain additional stormwater, also increase home values and reduce cooling bills in summer;
- Connectivity to area destinations via on-street trails is also suggested.

Implementation of these elements should be phased in over a period of several years. Education and outreach to residents and businesses should be done in advance of implementation to ensure maintenance requirements and benefits are fully understood. Communicating with other municipalities that have successfully implemented green infrastructure BMPs, such as Blue Island, is recommended.

6.2.3 C - Midlothian Transit-Oriented Development

The Transit-oriented development (TOD) area in Midlothian is a highly desirable location for businesses and potential residential uses. However, it is almost entirely located within a floodplain that prohibits development. Further, Midlothian officials have commented that this area does not experience flooding. MWRD analysis reinforces this statement. Still, there are opportunities for valuable green infrastructure implementation, including:

- Amend the FEMA floodplain to more accurately reflect flooding in the area. This should open up significant development opportunities in the corridor;
- Improve pedestrian and bicycle routes to and from the TOD area;
- Enhance and restore Midlothian Creek to create a more attractive and natural waterway;
- Site-based implementation should target:
 - Permeable pavement to reduce stormwater runoff;
 - Rain gardens and rain barrels; and
 - Stormwater tree plantings.

This project area could be used as an educational opportunity. If developers are open to considering green infrastructure, the Village could benefit in multiple ways.

6.2.4 D - Robbins Greenspace Project

The Village of Robbins has very little open space for public access. This project proposes to open up Midlothian Creek and Cal-Sag Channel waterfront for residents and visitors, while also providing stormwater storage in a floodplain area. Elements include:

- Leasing MWRD lands adjacent to the Cal-Sag Channel;
- Develop open space corridor, with public recreational opportunities;
- Connect area through bicycle and pedestrian trails to other regional trail systems;
- Site-based green infrastructure:
 - Permeable pavement to reduce stormwater runoff;
 - Rain gardens and rain barrels;
 - Stormwater tree plantings.

These BMPs and beautification techniques would increase the quality of life for the residents of Robbins as well as the adjacent communities. Moreover, green infrastructure practices can help reduce flooding within the residential and commercial areas. This may attract developers to the area and ultimately contributing to the economy.

6.2.5 E - Blue Island Waterfront Green Infrastructure

This project proposes to open up the Blue Island waterfront for residents and visitors along the Cal-Sag Channel and Little Calumet River. This project will also provide stormwater storage in a floodplain area. Elements include:

- Leasing MWRD lands adjacent to the Cal-Sag Channel;
- Develop open space corridor, with public recreational opportunities;
- Connect area through bicycle and pedestrian trails to other regional trail systems particularly the Cal-Sag Trail;
- Bioswales and stormwater “bump-outs” should be installed as part of street retrofit and roadway capital improvement projects.

Development of identified open spaces will build off the various existing connectivity resources of Blue Island and the region. These BMPs will also contribute to replenishing the creeks and streams in the area.

6.2.6 F - South Cargo-Oriented Development Green Infrastructure

Blue Island has designated an area on the south end of the community for Cargo-oriented development (COD). This project has been analyzed under a separate contract to identify green infrastructure opportunities that will help mitigate flooding and improve the aesthetics of the area. Suggested site-based green infrastructure in this area is as follows (See **Appendix G** for details):

- 100' stream restoration riparian buffer throughout Midlothian Creek corridor;
- Wetland restoration and connectivity throughout corridor;
- Bioswales and stormwater “bump-outs” should be installed as part of street retrofit and roadway capital improvement projects;

The Blue Island COD District possesses opportunities for green infrastructure implementation that can contribute to the vitality of Blue Island’s community. The suggested BMPs range from small to large scale and include concepts for future developments the City envisions. Large scale BMPs can mitigate major areas of flooding issues within the COD and further upstream. Large scale BMPs also may attract additional developments within the City as part of a broader goal.

6.2.7 G - Urban Wetland Restoration

This project is proposed in an area of Robbins with frequent flooding. The concept behind this project is to expand on the existing low-lying areas, many of which are delineated wetlands, and restore these areas to provide additional stormwater runoff infiltration and volume control. Elements include:

- Wetland restoration and expansion;
- Develop open space corridor, with public recreational opportunities as part of the wetland expansions;
- Connect the area through bicycle and pedestrian trails to other regional trail systems;
- Provide much needed park space to the community, as well as wildlife habitat.

The wetland restoration and expansions will help mitigate flooding issues within Robbins. Residents will also benefit from the aesthetic improvements and trail system connectivity. This may attract developers to the area and ultimately contributing to the economy.

6.2.8 H - Calumet Woods Open Space

There is opportunity in the Village of Riverdale to expand on the existing trails system of Calumet Woods Forest Preserve to connect to the open space wetland area of Lake Riverdale. The corridor would establish a pedestrian and bike-friendly corridor with highly visible green infrastructure BMPs:

- Stream restoration along parts of the Little Calumet River;
- Wetland restoration in and around Lake Riverdale;
- Connect the area through bicycle and pedestrian trails to other regional trail systems.
- Bioswales and stormwater “bump-outs” should be installed as part of street retrofit and roadway capital improvement projects along the corridor;

Development of identified open spaces will build off the various existing connectivity resources of Riverdale and the region. These BMPs will also contribute to replenishing the creeks and streams in the area.

6.2.9 I - Posen Green Neighborhood Retrofit

This area in the Village of Posen has an aging infrastructure. Its storm sewer system experiences heavy inflow during substantial rainfall. This project will help prevent possible future flooding by implementing the below green infrastructure BMPs:

- Bioswales and stormwater “bump-outs” should be installed. This can be implemented during rehabilitation of the roadways;
- Rain gardens and rain barrels are effective tools for business and households to capture stormwater on site and redistribute into the ground or back into gardens. These can also be made to be attractive amenities;
- Stormwater tree plantings that increase the canopy and retain additional stormwater, also increase home values and reduce cooling bills in summer;
- Connectivity to area destinations via on-street trails is also suggested.

Implementation of these elements should be phased in over a period of several years. Education and outreach to residents and businesses should be done in advance of implementation to ensure maintenance requirements and benefits are fully understood. Communicating with other municipalities that have successfully implemented green infrastructure BMPs such as Blue Island is recommended.

6.2.10 J - 147th Complete Streets Project

There are planned future improvements to 147th Street as well as other streets located throughout the region. Early planning and coordination with the Illinois Department of Transportation (IDOT), Cook County Highway Department (CCHD), and local municipalities are required to implement a complete street corridor for these projects. Key elements are:

- Early communication with IDOT, CCHD, and local municipalities to incorporate a complete streets design including bioswales, bike lanes, and sidewalks;
- Stormwater “bump-outs” are to be considered through appropriately wide corridors;
- Connectivity to area destinations and regional bike and pedestrian trails;
- Encourage community participation during the planning process.

A complete streets corridor would greatly benefit residents and increase water quality. It would encourage more non-vehicular travel and have a positive impact on air quality. It is important to engage in conversations early with IDOT and local municipalities about these street improvement projects.

6.2.11 K - Tuskegee Park

The Village of Robbins is the proud home of the first African-American owned and operated airport in the United States. During World War II, this airport served as the model for the Tuskegee Airman Program for training African-American military aviators. Robbins plans to purchase this airstrip and implement the below BMPs:

- Restore natives plantings and install rain gardens in the area;
- Streetscape corridor connecting from the train station to the museum using BMPs when able such as bioswales, stormwater tree plantings, and stormwater “bump-outs;”
- Connect area through bicycle and pedestrian trails to other regional trail systems.

The Tuskegee Park will instill a great deal of pride within the residents of Robbins. These BMPs and beautification techniques would increase their quality of life and the quality of life of the adjacent communities.

6.2.12 L - Wayfinding Signage for Natural Areas

As green infrastructure begins to be implemented as described in the previous sections, the public should be provided with adequate information on how to access these new amenities. Signage will be erected in key areas to lead people to trail systems and existing and proposed forest preserve properties. Educational signage will also be displayed throughout areas of green infrastructure BMPs.

7. IMPLEMENTATION ORDINANCES AND FUNDING

As discussed above, implementing green infrastructure techniques will improve water quality and the quality of life for residents. In order for the successful implementation of green infrastructure BMPs, communities must embrace sustainability practices and incorporate it into core community values. Seeking out grant monies or other funding sources is an ideal way to finance capital improvements that utilize green infrastructure. Adopting green infrastructure minimum requirements or evaluation process into community ordinances is another example to establish green infrastructure BMPs. Communities could also offer incentives for developers to integrate green infrastructure into their developments. Whatever the case, it is critical that community leaders communicate with each other to ensure the overall vision for the region stays aligned.

7.1 Ordinances

Community decisions around infrastructure are often based on the ordinances and codes adhered to. It is often the case the communities have not revisited ordinance, building codes, and other guiding documents for many decades. Because of the many demands of municipal elected officials and staff, reviewing decade's old documents proves to be a time-consuming and challenging endeavor. Moreover, the process for updating these guidelines can be daunting. As a result, many organizations have developed mechanisms and recommendations for ordinances that offer alternatives to those most common internal regulatory challenges.

The Chicago Wilderness Green Infrastructure Resources/Funding (**Appendix H**) provides a lengthy list of both ordinance alternatives and funding mechanisms for green infrastructure implementation guidance and installation. This document coupled with the *Center for Neighborhood Technology Codes and Ordinances Worksheet* (**Appendix I**) offers communities an approachable and time-saving strategy to updating ordinances to accommodate alternative and green infrastructure decisions. We further recommend a full ordinance review to identify areas where green infrastructure can be included more readily, or at least not restricted.

7.2 Funding

Project funding for green infrastructure implementation is becoming more and more available through various grant programs. In addition, many communities are realizing the life-cycle cost benefits to green infrastructure versus traditional infrastructure can be considerable. From design to implementation, green infrastructure has been proven time and again to be a less expensive, more durable approach to stormwater management. Two resources produced by the USEPA, the

Municipal Handbook: Funding Options (**Appendix J**), and the Municipal Handbook: Incentive Mechanisms (**Appendix K**).

There are three primary project funding mechanisms. Communities can incorporate green infrastructure into annual budgets. This is the easiest way to implement projects and offers the most project control for a community. Some communities have implemented stormwater fees, similar to sanitary and water utility rates, to pay for stormwater infrastructure. This is often more palatable to residents if green infrastructure is targeted, as green infrastructure often improves other quality of life factors, including home values. In addition, this approach illustrates the community's commitment to progressive and innovative approaches to municipal decision-making. Also, grant programs often provide communities with financial resources to implement green infrastructure. This has become standard in many federal and state grant programs, as it is increasingly recognized that more traditional infrastructure is significantly more costly and often damaging to the environment and area water quality. Finally, for private development various incentive packages, including tax benefits, can be utilized to promote the use of green infrastructure.

8. REGULATORY PARAMETERS

Given the broad scope of this report, several regulatory agencies may be involved depending on the type of improvements and green infrastructure BMPs being implemented. This section will focus on the agencies that are most closely related to improvements along Midlothian Creek, the U.S. Army Corps of Engineers (ACOE), IEPA, the Metropolitan Water Reclamation District of Greater Chicago (MWRD), and the Illinois Department of Transportation (IDOT). These agencies are being considered for one of the following reasons:

- Regulatory permitting requirements;
- Reduced flooding or other improvements that align with the mission of the agency; or,
- Land ownership impacts, e.g. state transportation routes.

8.1 U.S. ACOE Eng Form 4345

The U.S. ACOE requires a permit when working within wetlands, particularly with construction projects. The extension of 137th Street would require an ACOE permit since it lies within a delineated wetland. The ACOE would likely require compensatory storage to mitigate the loss of wetlands. This requirement would align with the City's green infrastructure BMP objective of further expanding the wetlands around the proposed road.

Additionally, the new road would require a culvert to be placed within Midlothian Creek to allow for water to continue flowing. Detailed hydraulic and hydrology calculations of the culvert would be required and potentially analysis of the impacts further upstream. The ACOE publishes software to be used in these types of applications: HY-8 models the hydraulics and hydrology of a channel with the proposed culvert; HEC-HMS models the hydraulics and hydrology of the entire watershed upstream.

8.2 IEPA General NPDES Permit No. ILR10

The IEPA General National Pollutant Discharge Elimination System (NPDES) Permit for Storm Water Discharges from Construction Site Activities, or General NPDES Permit No. ILR10, is required for construction projects that impact more than one (1) acre. Its purpose is to minimize pollutants from stormwater runoff that result from construction sites. The extension of 137th Street would require this permit. A detailed Storm Water Pollution Prevision Plan (SWPPP) is required to fulfill this permit.

Key areas of focus for a SWPPP are Sediment Control, Storm Water Management, and Erosion Prevention. Careful construction phasing is necessary to be as efficient as possible and reduce costs. Using the areas that will be expanded wetlands for temporary sediment basins, is an example of how to plan properly. Also, erosion control materials around the banks of Midlothian Creek would be needed to prevent sediment or pollutants from entering the creek. Silt fencing and temporary ditch checks would help satisfy the requirements.

8.3 Metropolitan Water Reclamation District of Great Chicago

The MWRD is the regulatory body within Cook County responsible for water quality, including storm and sanitary discharge. The MWRD has established regulatory requirements and green infrastructure goals to reduce flooding and improve water quality. The suggestions outlined within this report help to meet those goals. In addition, MWRD must issue permits to allow for development and redevelopment on various properties.

8.4 Illinois Department of Transportation

The primary engagement points for IDOT are the ownership of proposed complete streets routes and the introduction of BMPs along existing rights-of-way. IDOT will need to be consulted for improvements on various corridors throughout this plan.

9. CONCLUSION

The *Midlothian Creek Green Infrastructure Plan* provides a series of project concepts and an important green infrastructure planning resource for those communities and organizations involved. This document offers a resource for virtually any element of the built environment. While this plan provides an important initial step in cultivating green infrastructure and sustainability strategies within the Midlothian Creek watershed and adjacent areas, the most vital component will be continuing to work with communities and offering resources and support as municipal officials and regional organizations transition to more progressive and ecologically sensitive strategies. As this transition takes place, we are confident the *Midlothian Creek Green Infrastructure Plan* will provide an invaluable resource.

9.1 Next Steps

As communities seek to implement the projects and opportunities established through this planning process, there are important steps that will help them through the decision-making and design process. We have included a brief outline of considerations that will strengthen community commitment to green infrastructure. We propose considering the following as new infrastructure projects are proposed and designed:

- *Establish Project Benefits:* The BMP Matrix (See **Appendix L**) included in the appendix has been provided to illustrate a decision making process. By using a similar matrix for any infrastructure project, municipalities can assess the benefits of green infrastructure versus traditional infrastructure to determine the project approach.
- *Policy Updates:* There are public policy recommendations, including ordinance updates, mandatory open space goals, and development requirements that may be standardized through policy-making within communities and the region. Included within the appendix, (See **Appendix M**) are a series of suggested considerations that have been used elsewhere by Chicago Wilderness. When applied, these policies can form the foundation of an improved quality of life for residents and businesses.
- *Grant Funding:* This document illustrates to potential funding sources that serious technical thought and strategies have been established for the communities involved. When applying for funding, this document can and should be referenced as a technical resource.

- *Communication:* Because of the contiguous geography and dense development of the project area, it is important to continue inter-community lines of dialogue regarding infrastructure decisions. The process outlined above has initiated interesting and on-going conversation between the three primary communities, including several grant applications, including a US Fish and Wildlife Service grant application for tree installation.
- *Education:* Perhaps most importantly, this document offers a green infrastructure educational tool for current and future elected officials, staff, and residents. By referring to this document, communities can better understand how they are interconnected and how their development decisions impact the broader green infrastructure network, including natural areas, roads, parks, and other amenities.

9.2 On-going Project Activities

There are multiple exciting and on-going project outcomes resulting from the SWAT Green Infrastructure process. These include the following activities:

- *Midlothian Creek Green Infrastructure Plan Website* (<https://sites.google.com/a/ssmma.info/millennium-reserve-calumet-initiative/midlothian-creek-green-infrastructure-plan>): The South Suburban GIS Atlas and South Suburban Mayors and Managers Association, as part of this project, developed a website to highlight and track the implementation progress of the Midlothian Creek Green Infrastructure Plan.
- *On-Going Community Engagement:* An exciting result of this project has been the on-going community engagement in green infrastructure planning and other inter-governmental projects. Blue Island, Midlothian, and Robbins have begun to meet monthly to discuss infrastructure projects, aesthetics, and other issues that impact these communities. These types of conversations had not happened prior to this project.

Community Projects: A number of community projects, including some green infrastructure implementation, have already resulted from, or been influenced by, the *Midlothian Creek Green Infrastructure Plan*. Mentioned above, the *Blue Island South COD Green Infrastructure Plan* (Appendix G) includes a more detailed exploration of green infrastructure opportunities throughout the Blue Island Cargo-oriented Development area and adjacent areas. A similar analysis was completed on the City's north side. This study, *The Blue Island NE Mixed-Use Site Green Infrastructure Plan* (See **Appendix N**) provides a green infrastructure stormwater

management strategy for future development of light industrial and retail development in an important 80 acre redevelopment area.

- *IGIG Applications:* The City of Blue Island and the Village of Midlothian each submitted Illinois Green Infrastructure Grant (IGIG) applications with the technical support of the project team.
- *Inter-Governmental Agreements:* With the support of SSMMA, the primary communities have begun to explore inter-governmental agreements to explore mutually beneficial decisions with respect to stormwater management and transportation planning. The idea is to cultivate strategies and share resources when addressing decision-making that involved external agencies. For example, working together to approach IDOT on a complete streets project may provide a stronger sense of where the region, as opposed to an individual community, is headed relative to sustainability approaches.

These are just some examples of opportunities that have resulted, in part, because of this project. The project partners, communities, and stakeholders are all committed to continuing this process. Subsequent steps for *The Midlothian Creek Green Infrastructure Plan* include formal presentation to the primary and secondary communities for further consideration.