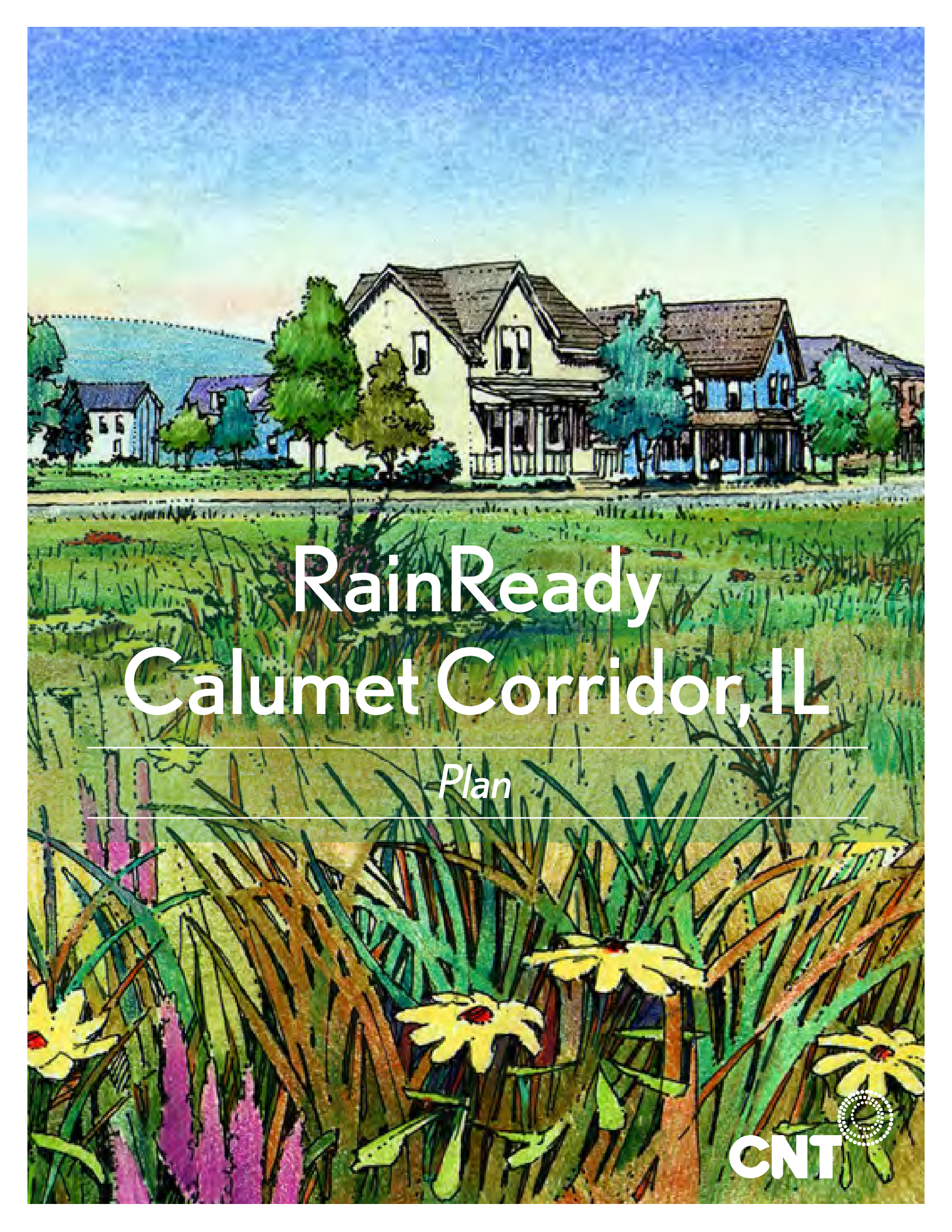


The background of the cover is a colorful illustration. The top half shows a row of houses with gabled roofs and porches, set against a blue sky with light clouds. The middle section is a lush green field. The bottom half features a close-up of tall grasses and yellow wildflowers. The title 'RainReady Calumet Corridor, IL' is written in large white letters across the middle, with 'Plan' in a smaller, italicized font below it.

RainReady Calumet Corridor, IL

Plan

CNT



RainReady Calumet Corridor, IL Plan



**US Army Corps
of Engineers®**

**PREPARED BY
THE CENTER FOR NEIGHBORHOOD TECHNOLOGY
AND THE U.S. ARMY CORPS OF ENGINEERS**

MARCH 2017



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EXECUTIVE SUMMARY

Purpose of the RainReady Plan

From more intense storms and chronic urban flooding to economic constraints and aging infrastructure, communities across the nation must find ways to thrive in the midst of shocks and stresses.

In April 2013, Cook County experienced a massive shock in the form of a severe rain and wind storm that resulted in severe damages to housing and infrastructure. One of the hardest hit parts of the county is an area referred to as the Calumet Corridor, which includes the communities Blue Island, Calumet City, Calumet Park, Dolton, Riverdale, and Robbins. The purpose of the RainReady Calumet Corridor Plan is to articulate a shared vision to put these six communities on a path towards greater resilience through improved stormwater management, sustainable economic development, and integrated planning.

The RainReady Calumet Corridor Plan represents the collective vision of over 2,100 residents, business owners, and municipal staff, elected representatives, regional leaders, and non-governmental organizations that all have a shared interest in strengthening the homes, neighborhoods, communities throughout the Calumet Corridor. Each of the six Calumet Corridor communities has a unique path ahead and this plan will support that journey by:

- Establishing a shared understanding of the scope, severity, and type of flooding risks across each community in the Calumet Corridor
- Identifying and prioritizing—through a collaborative planning process—RainReady solutions that provide multiple benefits to the community
- Providing municipal and community leaders with a clear roadmap for plan implementation
- Advancing existing planning and development priorities that align with the general principles of a RainReady community



“Urban Resilience is the capacity of individuals, communities, institutions, businesses, and systems within a city to survive, adapt, and grow no matter what kinds of chronic stresses and acute shocks they experience.”

- www.100resilientcities.org

Building on the success of the RainReady Community Planning model in the Village of Midlothian, the Center for Neighborhood Technology (CNT) partnered with the U.S. Army Corps of Engineers (USACE) to lead this planning process beginning in February of 2016.

Urban Flooding happens when water inundates property in a built environment, particularly in more densely populated areas, caused by rain overwhelming the capacity of local drainage systems, such as storm sewers (CNT, 2015). Urban flooding occurs when homes, yards, or streets are inundated with water from heavy rains or melting snow, damaging property, and making travel difficult and dangerous. It also results from sewer water backing up through pipes into basements, and from water seeping through foundation walls.

The Problem

The Calumet Corridor is facing a set of complex and interrelated challenges. The area is vulnerable to big storms, as in April 2013, as well as the pervasive, chronic impacts of urban flooding.

Urban flooding is the inundation of property in a built environment, particularly in more densely populated areas, caused by rain overwhelming the capacity of local drainage systems, such as storm sewers (CNT, 2015). Urban flooding occurs when homes, yards, or streets are inundated with water from heavy rains or melting snow, damaging property, and making travel difficult and dangerous. It also results from sewer water backing up through pipes into basements, and from water seeping through foundation walls.

Flooding in the Calumet Corridor can generally be attributed to four primary factors:

- The region's flat, low-lying, and naturally wet topography
- Historical patterns of land development that covered natural lands with impervious surfaces
- A changing climate, characterized by high-intensity storms
- Aging and undersized infrastructure throughout the region

In addition to the physical factors that contribute to urban flooding, there are also social, economic, and operational roadblocks that complicate the process of

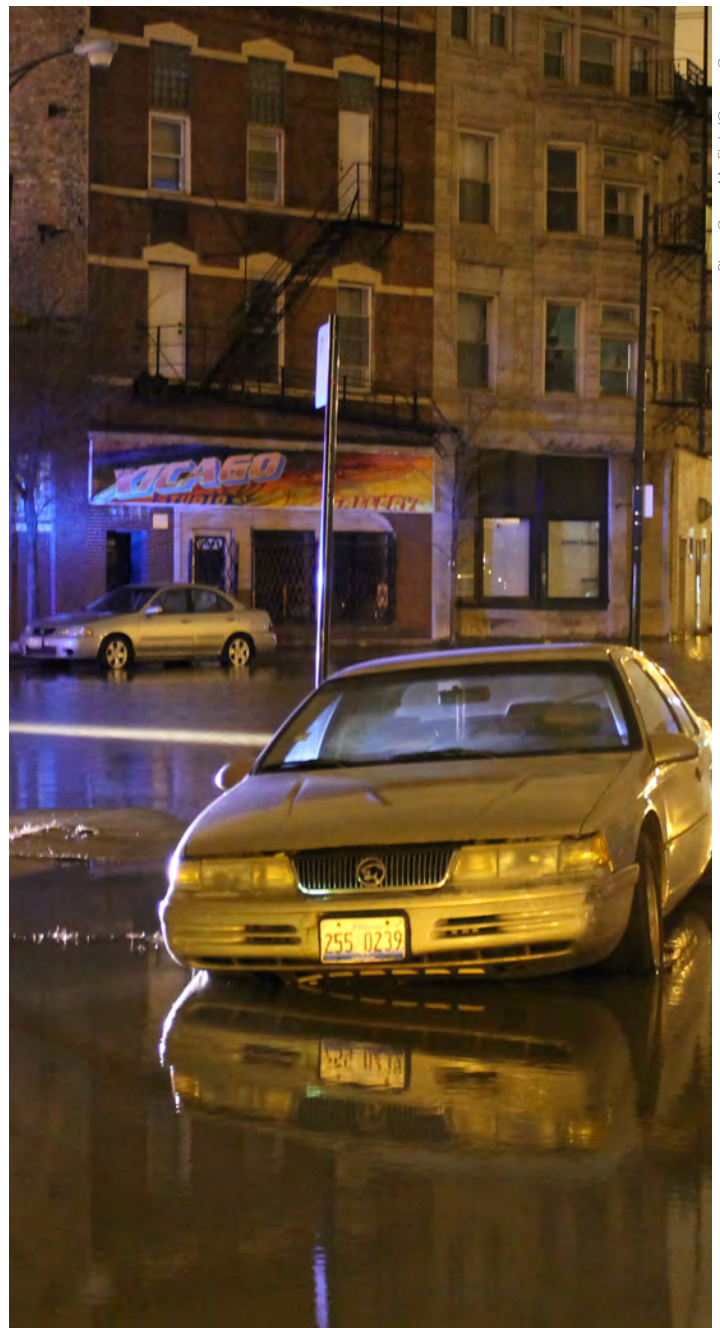
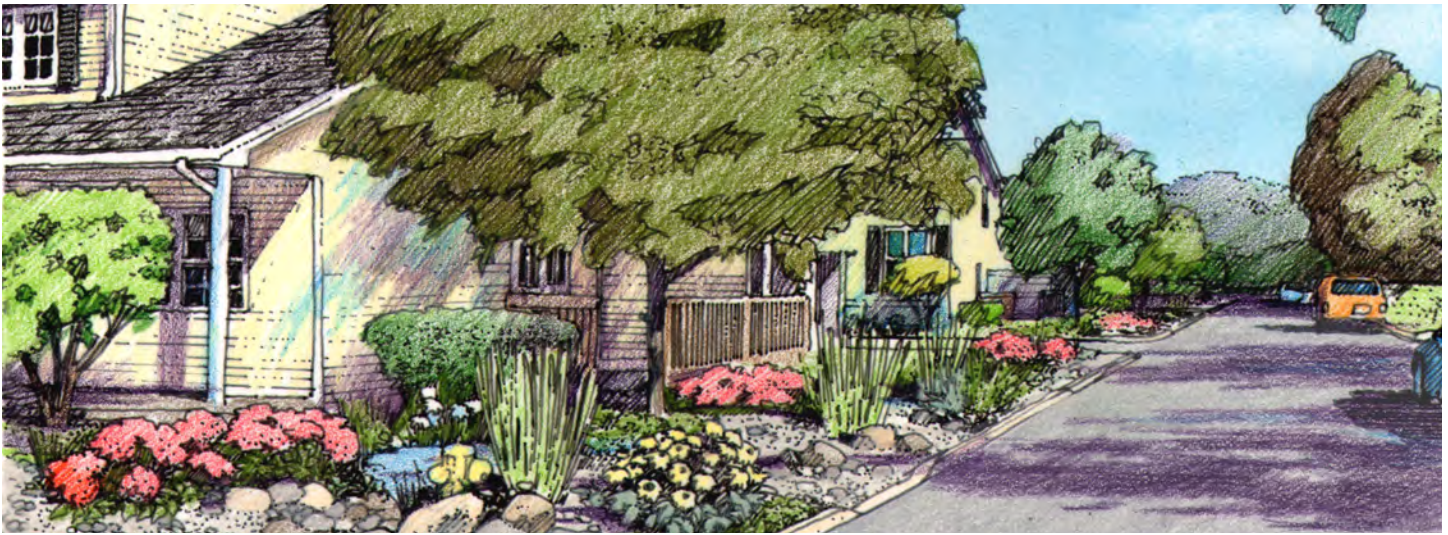


Photo: Connie Ma, Flickr/Creative Commons

planning and implementing effective solutions. These roadblocks include, among others: the high costs associated with understanding how water flows in an urban environment and designing effective flooding solutions; barriers to collaboration within and between communities; fiscal and capacity constraints; and local policies that may not be aligned with the goals of building more resilient communities.

This plan takes into account both the physical drivers of urban flooding, as well as the complex factors that either enable or impede a path towards greater community resilience.



The Path Ahead

A RainReady future for the Calumet Corridor is well within reach. Although this plan was prompted by the *problem* of urban flooding, the path ahead will build upon—and strengthen in turn—each community’s unique strengths, or *assets*. In fact, each of the six communities in the Calumet Corridor possesses the foundational community assets, strengths, and know-how necessary to mitigate flooding and achieve broader community goals.

By bringing flooding challenges and solution opportunities into the light, creating venues for collaboration, and outlining a clear roadmap for implementation, this plan—and the planning process through which it was developed—aims to support each community’s path towards a resilient revitalization.

We have organized our recommendations in this plan into a framework for action across scales and institutions. “The Three R’s” of resilience are:

- **Reorient communities.** Put communities on a path towards greater resilience by reorienting day-to-day operations and long-term planning.
- **Repair existing infrastructure.** Establish modernized infrastructure systems that allow communities to survive and thrive no matter what shocks and stresses they face.
- **Retrofit the landscape.** Create beautiful communities by converting underutilized impervious surfaces into natural landscapes, installing concentrated and integrated green-grey infrastructure, and restoring natural areas.

For each of the “Three R’s,” specific strategies and actions can be led by:

- Local residents and business owners
- Municipal staff
- Elected representatives
- Regional stakeholders

Similarly, these actions are designed to be implemented across scales:

- A Home or business
- A Neighborhood
- A Community
- A Region

As well as across geographies:

- Homes and neighborhoods
- Shopping areas and business districts
- Industrial centers and transportation corridors
- Open space and natural lands
- Community-wide

The vision for resilience articulated in this plan document was developed through a one-year collaborative planning process, which included extensive on-the-ground community engagement.

How to Use this Plan

This plan is organized into three chapters: 1) Introduction and Regional Context; 2) The RainReady Solutions, and 3) the RainReady Plans for each community.

Part 1: Defines the problem to be addressed, provides a broad vision for the future of the Calumet Corridor, and describes a path forward.

Part 2: Describes RainReady Solutions, which is organized according to the “Three R” Framework. This section provides a suite of general strategies and actions.

Part 3: Includes each of the six RainReady Plans for the six communities of the Calumet Corridor. Each of these RainReady plans includes a Citizen’s Guide, a brief snapshot of community context, a summary of findings from our flooding risk and resilience opportunity assessment, and—perhaps most importantly—an action plan outlining the specific actions to be taken.

The plan is intended to be read and used by several distinct audiences. Here are some places to focus your attention and ways use this plan:

• If you are a local resident or business owner:

- Read the Citizen’s Guide for a quick summary and to learn some easy steps to make your home or business more resilient to storms
- Read through the Action Plan for your community and see which actions you can take on your own property or within your neighborhood or business corridor
- Consider joining your community’s Steering Committee to take a more active role in helping to make your community more RainReady

• If you are a municipal staff person or elected representative:

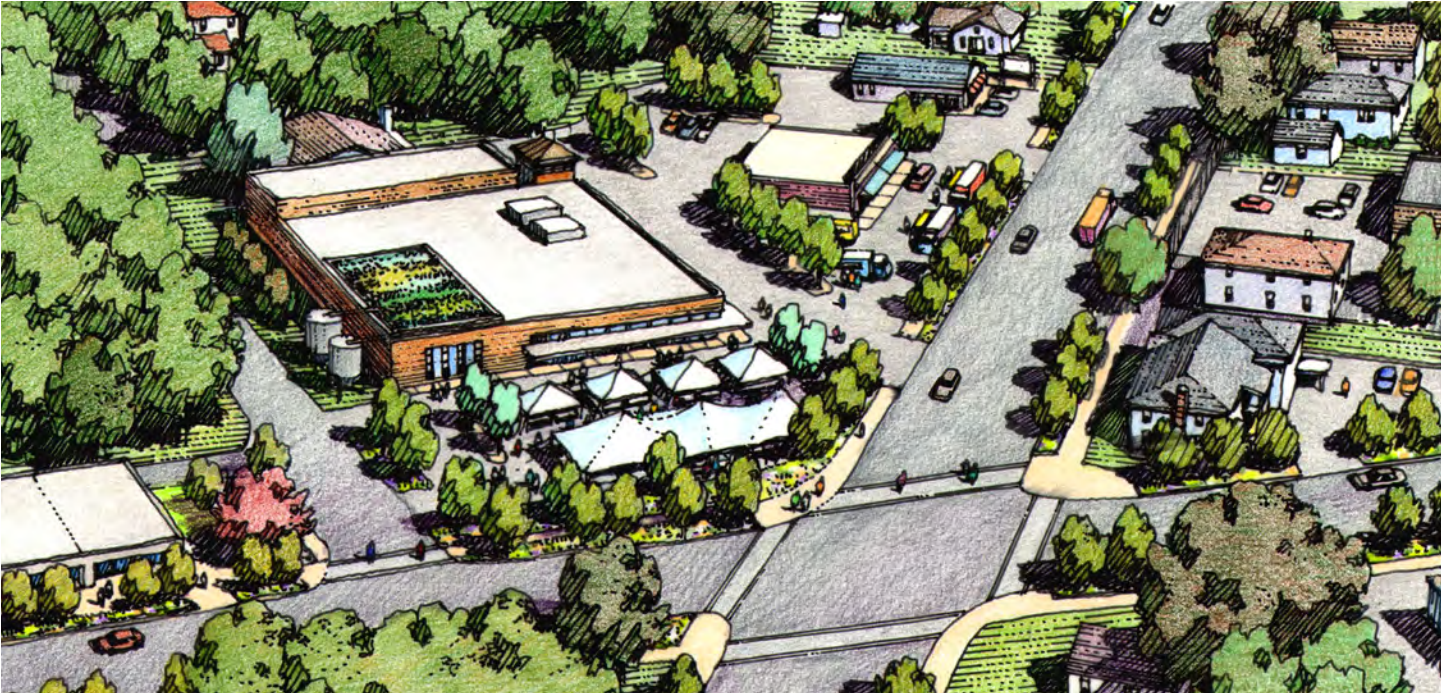
- Familiarize yourself with your community’s RainReady Plan
- Adopt the plan* and refer to it when making decisions for capital improvement projects (CIPs) and ongoing operations and maintenance (O&M) activities
- Refer to your community’s Action Plan when you are exploring grants and reviewing your capital budget

• If you are a regional stakeholder:

- Read the Regional Context to see how this plan builds upon and supports other ongoing regional planning and implementation efforts
- Review the Action Plans for the communities in which your organization or agency is active; identify opportunities to collaborate with local partners to refine and implement specific recommendations
- Continue to partner with other organizations; coordinate your efforts through regional collaboratives like the Calumet Stewardship Initiative (CSI), Millennium Reserve, Calumet Heritage Partnership (CHP), and through the various councils, committees, and work groups active in the area; identify recommendations in this plan that could be incorporated into the work plan of these regional collaboratives

**This plan outlines a path forward towards a more resilient Calumet Corridor, but implementation of specific recommendations will have to occur at the local level. Adopting this plan demonstrates your municipality’s commitment to considering these recommendations during capital planning and decision-making efforts and implementing the recommendations as necessary resources become available. The action plans outlines the actions and associated implementation steps, relative priority, estimated timeline, and potential project leads and resources needed. Further analysis is needed to estimate the costs of most recommendations.*

INTRODUCTION



The Vision

WHAT WOULD A RAINREADY CALUMET CORRIDOR LOOK LIKE?

It would be a region where residents and businesses receive relief from flooding in a way that also creates more beautiful neighborhoods, new jobs, more education and recreation opportunities for people of all ages and walks of life, more commercial activity, and healthier natural areas. In a RainReady Calumet Corridor, schoolyards capture rainwater and create more active spaces for children to learn and play; homeowners have access to expert guidance on home flooding solutions that work; and new businesses frequently pop up along revitalized commercial streets where native flowers bloom in spring. New green infrastructure installations are maintained by local graduates of green job training programs.

This vision is possible. The Calumet Corridor – and the broader Calumet region – benefits from a tremendous legacy of industrial leadership, abundant natural

resources, and an inspired network of individuals and groups committed to working together to build more livable communities.

This plan represents the collective vision of over 2,100 residents, business owners, municipal employees, elected representatives, regional leaders, and non-governmental organizations. It outlines a coordinated plan to build community *resilience*, which is the capacity of individuals and communities to survive, adapt, and thrive no matter what shocks and stresses they may encounter.

Building community resilience requires coordinated action across different scales. The solutions outlined in the RainReady Calumet Corridor Plan are organized by the scale of: homes and neighborhoods; business districts and shopping centers; industrial centers and transportation corridors; and open space and natural areas.

THE PROBLEM



The 2013 floods left Loretta Broughton with little hope for ever keeping her basement dry. That April night, she sat in her kitchen for hours watching smelly water creep from her first floor bathroom. The power was out, the sump pump had failed, and the rain showed no signs of slowing.

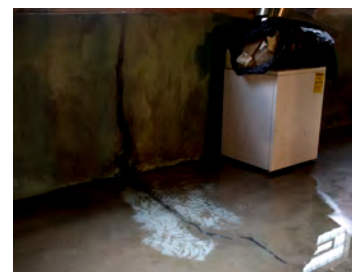
Ms. Broughton has spent thousands of dollars rodding pipes, sealing her foundation, and installing a drain tile around her building, but the flooding continues. Meanwhile, her insurance premiums rise. Around that time, Ms. Broughton gave up use of her basement, and began making plans to move, “I know that there’s nothing I can do about it. I don’t have the finances to do what needs to be done.”

“Every time it rains now, honestly, when they say rain, I’m like, Oh God please, Jesus please, don’t let the lights go out, because if the lights go out the power goes out and the sump pump will not work.”

Ms. Broughton loves her house, but the floods make it feel much less like home.

Ms. Broughton is not alone in her fight against flooding. Her experience is shared by millions of Illinois residents who, although they may live outside of a federally-designated “floodplain,” nonetheless could potentially experience flooding in their homes and communities. In fact, the average amount that Calumet Corridor residents spent on flood-related damages (amongst survey respondents who flooded at least once since 2006, n=396) is \$4,623. Flooding is a major problem in the Calumet Corridor and can affect homes, businesses, neighborhoods, and infrastructure systems in several ways:

- **Overland Flow** in which stormwater ponds or pools, in streets and yards and then enters buildings through windows, doors or other openings
- **Overbank/Riverine** in which rising floodwaters “overbank” from rivers and streams
- **Sewer Backups** in which combined stormwater and sewage backs up through floor drains, bathtubs, toilets, and sinks
- **Seepage** in which water enters structures through cracks in foundation walls and basement floors





Did You Know?

Many people think that flooding only occurs in places near rivers, lakes, or ocean coastlines. However, it can flood anywhere it rains. In fact, recent research has shown that 92% of flooding in Illinois occurs outside of the mapped *floodplain*. Flooding that happens outside of a floodplain in an urban area is called *urban flooding*. CNT defines urban flooding as “the inundation of property in a built environment, particularly in more densely populated areas, caused by rain overwhelming the capacity of drainage systems, such as storm sewers” (CNT, 2015). Urban flooding occurs when homes, yards, or streets are inundated with water from heavy rains or snow melt, damaging property, and making travel difficult and dangerous. It also results from sewer water backing up through pipes into basements, and from water seeping through foundation walls. CNT is involved in policy and advocacy efforts that seek to bring more awareness to the issue of urban flooding nation-wide.

In an effort to better understand where flooding occurs throughout the Calumet Corridor, the type of flooding, and the impact of flooding, the RainReady Community Team sent a survey to all 41,529 homes in the six community planning area. Through the RainReady Planning process we collected 550 resident surveys from across the Calumet Corridor. Here are some key findings from the RainReady Community Survey:

- **Basement backup** from the local sewer system and damaged private lateral lines, impacting several parts of town
- **75%** of survey respondents said they experience some type of flooding when it rains
- **95%** of survey respondents who experienced flooding live outside of a mapped floodplain
- **64%** of survey respondents experienced water seeping in through cracks in foundation walls, **50%** experienced sewer backups, and **31%** experienced both
- **54%** of survey respondents flooded **five or more times** since April 2006
- On average, respondents who have experienced flooding have spent **\$4,623** for flood repairs
- On average, survey respondents are willing to invest **\$2,164** to reduce future flooding risk
- **49%** think their local governments are not at all prepared to address flooding issues



Statistics like those on the previous page are important because they help planners understand the problem and potential solutions. Resident stories are another powerful way to create shared understanding of the problem, reveal that people are not alone, and to mobilize people to work towards a coordinated solution. Here are just a few excerpts taken from numerous conversations with residents:

- "It's been horrible," she said. "I'll be honest. When I bought the home, I was told I wasn't in a flood zone, so I didn't get the flood insurance. So I had to take a loss."—Calumet City Resident
- "When it rains real bad [sewage] comes up," she said. A local contractor told her it would cost \$10,000 to install a sump pump, "I wish I had known about all that before I bought here."—Calumet City Resident
- "I have to put wood pallets down to help the kids get off the bus when it's raining"—Dolton Resident
- "Every year the water gets closer and closer to flooding our church. We can't use our yard sometimes because the area is flooded, or the ground is too soft, or the mosquitos."—Dolton Resident
- "We have three sump-pumps that are constantly running, even when it's not raining. I want to use our church basement for our youth group and other gatherings, but we're worried it's going to flood"—Robbins Resident
- "We just finished our basement—pool table and all. And last week we had over two feet of [sewage] back up. It was a mess!"—Dolton Resident

- "The water gets so high it floods the street, my yard, and comes in through my basement window"—Blue Island Resident
- "I did a backflow check valve system, installed by a plumber. That supposedly would stop anything from coming back up into my house from the sewers," she says. "I did that last year or two years ago, but I still have had flooding."—Blue Island Resident
- The pump cost one Robbins' resident more than \$1,000 to purchase and install. "I paid industrial money," she says. She still avoids her basement at all costs, "because of the mold."—Robbins Resident
- "I used to have just a little water seeping in, but not like it does now. My basement was finished and I had carpet, but I had to tear it up."—Riverdale Resident
- "If it wasn't for the standing water, I probably could put a chair and table in my backyard and sit. But right now I have to sit in my driveway where the pavement is."—Robbins Resident
- "I love my home. I want to get this fixed."—Riverdale Resident
- "We tried so many things over the years. We put in an ejector pipe system; it still doesn't help 100% but it does make it better. I don't expect anything will ever be 100%."—Blue Island Resident
- "Sometimes the water gets two feet high in the streets and we have to move our cars or else they will get flooded"—Dolton Resident



Taken together, the various flooding data, stories, and maps that were collected, created, and analyzed through this process paint a clear picture: communities in the Calumet Corridor frequently experience flooding—even during small storms. Flooding—whether it’s a little bit of water that seeps into your basement after a small rain or three feet of sewage that backs up during a large storm—becomes especially problematic when it occurs in vulnerable communities that are still recovering from past storms and that have limited economic resources with which to prepare for and bounce back from future storms. Unfortunately, this is also the case for the Calumet Corridor region, as demonstrated by the following statistics gathered from Cook County’s application to the U.S. Department of Housing and Urban Development’s National Disaster Resilience Competition (NDRC) and other sources:

- The **April 2013 storm event** that occurred between April 16th and May 5th, 2013, resulted in a major disaster declaration (DR-4116)
- In Cook County, this Presidentially-declared disaster cost a total of **\$962,083,374** in damages
 - **\$627,885,060** = costs for private residents (this number is estimated by applying a Housing Impact Multiplier of 10 to FEMA Verified Losses in order to capture unidentified damages and account for those who did not apply or were denied assistance)

- **\$203,657,950** = costs for private insurance companies
- **\$130,540,364** = costs for public agencies/programs (i.e., FEMA, NFIP, CDBG-DR, and SBA)

- **12,720 insurance claims** were made in the zip codes areas covering the Calumet Corridor and **\$33,153,384** were paid out from public and private insurance providers (NOTE: these figures were gathered for the zip code areas that extend to some areas outside of the Calumet Corridor planning area) (CNT, 2012)
- The Calumet Corridor is considered by Cook County to be the **most impacted and distressed area** from DR-4116
- As of October 2015, there were still unmet recovery needs in housing and infrastructure
- Nearly **23%** of the population of the Calumet Corridor are living below the poverty line. Most of the residents in the Calumet Corridor live within areas of high social vulnerability

In sum, the Calumet Corridor faces: 1) chronic urban flooding issues, 2) a beleaguered recovery from the April 2013 presidentially-declared disaster, and 3) the threat of future rain storms—both small and large. This RainReady Calumet Corridor Plan thus aims to deliver an action plan for addressing this three-pronged flooding problem that is sensitive to other structural roadblocks and capacity potholes (See Page RainReady-16).

CAUSES AND IMPACTS OF URBAN FLOODING

Just as there are several distinct types of flooding affecting the Calumet Corridor, there are multiple factors contributing to rising floodwaters in the area. The precise cause(s) of flooding in any particular neighborhood or site will depend on site-specific conditions; however, flooding in the Calumet Corridor can generally be attributed to four primary factors:

- Flat, low-lying, and naturally-wet topography
- Increasing impervious surfaces
- Changing climate
- Aging and undersized infrastructure

NOTE: more community-specific discussions of flooding risk are provided in each of the community-specific plans.

FLAT, LOW-LYING TOPOGRAPHY

The Calumet Corridor is located in a generally flat, low-lying, and naturally wet part of Northeastern Illinois (of course, the glacial ridge that gave Blue Island its name is one notable exception).

We have the glaciers to thank for the topography of the Calumet Corridor. These impressive, earth-moving forces—the last of which melted away about 16,000 years ago—left behind an extraordinarily flat landscape (see Figure RR-2). Due to the flat landscape, rivers and streams in the Calumet Corridor flow with gentle currents. This makes for easy canoeing and kayaking, but presents challenges for flood control and stormwater management. Since municipal sewer systems rely heavily on gravity to move stormwater within suburban areas, this flatness often causes water to back up in streets and sewers.

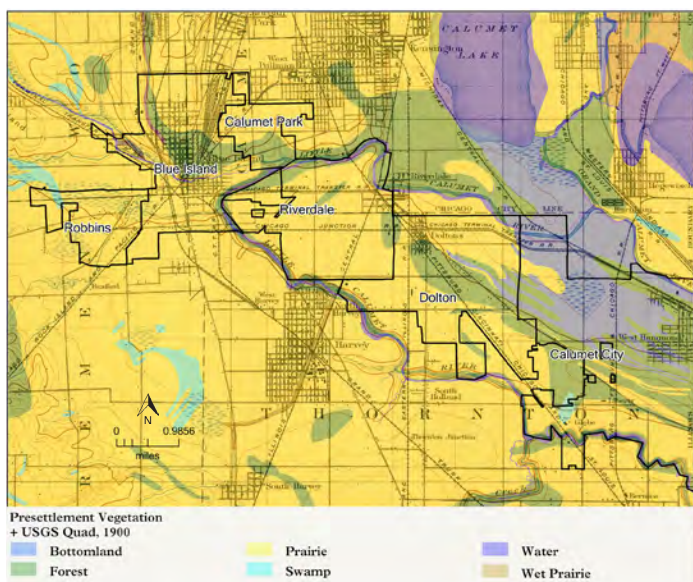


FIGURE RR-1:
Low, Flat, and Wet

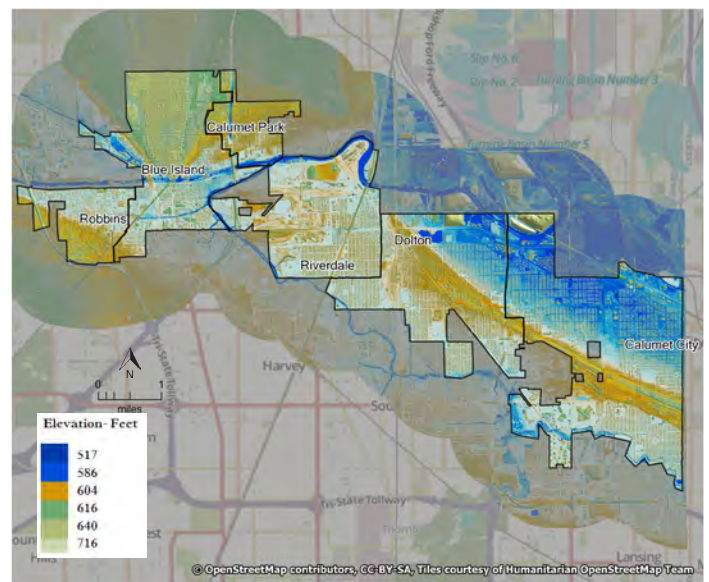


FIGURE RR-2:
Topography of the Calumet Corridor

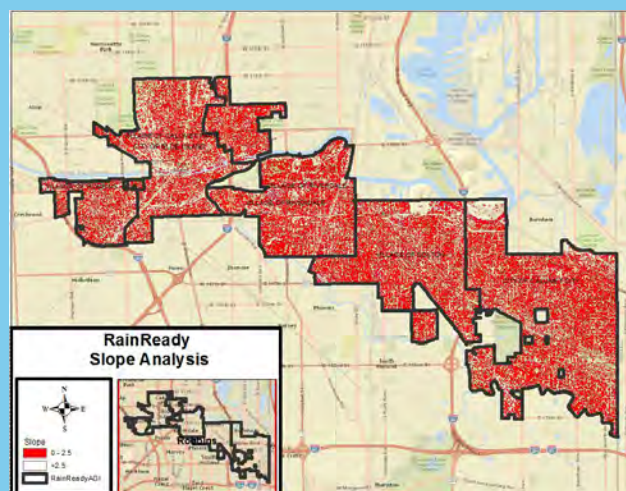
Another challenge inherent to the Calumet Corridor relates to the region's soils. Those same glaciers that flattened the landscape also left behind clay-rich soils, which are known for their poor drainage attributes. Sandy soils, in contrast, tend to drain faster, allowing water to pass through and flow deeper underground. When rain falls on clay-rich soils, however, it has trouble *infiltrating* – the process by which water enters the ground – and instead pools on the surface or runs off to flood other areas.

There are some notable exceptions within the Calumet Corridor, like Calumet City, which actually has sandy and well-drained soils. In general, however, the region's flat topography and predominantly clay-rich and poorly draining soils increase the Calumet Corridor's risk of urban flooding.

INCREASING IMPERVIOUS SURFACES

Historical and ongoing land development in the Calumet Corridor contributes to flooding and impacts downstream water quality. These days, rainwater that falls within the Calumet Corridor is likely to hit an *impervious surface*, such as a street, rooftop, or parking lot, rather than a *permeable surface*, like a forest, wetland, or prairie. The result is an increase in *stormwater runoff*, which is rain water that “runs” off of surfaces and must be managed by local sewers and drainage systems.

Prior to European settlement in the early 19th century, the Calumet region comprised of prairies, wetlands, forests, and open water (See Figure RR-1). These generally wet landscapes created diverse habitats that supported rare communities of plants and animals. This *biodiversity* (meaning the variation of different ecosystems, habitats, and species) made for abundant trading, hunting, and fishing opportunities for Indigenous people, as well as early explorers and settlers (i.e., before the 1830s). Today, however, this biodiversity and local ecosystems are highly threatened.



Did You Know?

Who remembers high school geometry? The average slope of the Calumet Corridor area is only 2.2%. This means that if you walk 100 feet horizontally you may only move up or down 2.2 feet in elevation. This is not a lot of elevation change, and this is the average slope across the entire six-community Calumet Corridor area; many areas are much flatter. Engineers generally consider areas that have a slope of +2.5% as having a sufficient slope to drain stormwater and prevent flooding. Since the majority of the Calumet Corridor is naturally flatter than what engineers recommend, infrastructure must be carefully designed to ensure proper drainage.



FIGURE RR-3:
Impermeable vs. Permeable Land Cover

A Brief History of the Calumet Region

- 1500 -1650s** Algonquian tribes inhabit the region
- 1570** Formation of the Iroquois League as Iroquois are pushed westward by European colonization
- 1650s** Algonquian tribes are forced westward as the Iroquois raids become more common place
- 1673** Europeans arrive in the Calumet region
- 1754-1763** The French and Indian War - French defeated, Great Britain gains control over the lands
- 1805** Little and Grand Calumet River become one river due to an overflow of the Grand Calumet banks
- 1818** Illinois becomes a state with a northern boundary set to include the mouths of the Calumet River and Chicago River
- 1830** Extinction of the bison in the Midwest
- 1848** The Illinois-Michigan Canal is completed
- 1848** The 1st railroad shipment of cargo arrives in Chicago
- 1869** The construction of the Calumet Harbor is approved by Congress
- 1871** The Great Chicago Fire
- 1880s** A heavy steel industry starts to dominate the region
- 1901-1908** Construction of the South Shore Line begins, making the dunes and lakeshore area more accessible
- 1913** Lincoln Highway - The first transcontinental highway passes through the Calumet area along the Old Sauk Trail
- 1920s** Ford Motor Company begins construction of its second biggest assembly plant in the U.S. along the Calumet River
- 1922** Calumet Sag-Channel is built as a response to pollution levels in Lake Michigan
- 1940s** Landfills begin to appear in the area
- 1940s-1950s** The Great Migration accelerates
- 1972** The Tunnel and Reservoir Plan (TARP) is adopted to mitigate combined sewer overflows; completion anticipated in 2029
- 1980s-1990s** Major steel plants begin to shut down
- 1985** People for Community Recovery block proposed expansion of Waste Management's CID landfill
- 1992** The fight against the Calumet Lake Airport is won
- 1998** National Park Service releases the Calumet Ecological Park Feasibility Study and recommends the creation of a National Heritage Area
- 2006** Phase I of TARP tunnel systems completed; the tunnel systems were put into service little by little as completed, starting in 1985
- 2012** Millenium Reserve Plan enacted



Did You Know?

The Calumet Corridor is home to eight natural areas of statewide significance. The Forest Preserve District of Cook County (FPDCC) has preserved over 800 acres of critical habitats that harbor unique communities of plants and animals. Alongside a few sites just across the Indiana border, these particular natural communities cannot be found anywhere else in the world! These sites are also home to a number of rare animal species, including prairie insects, reptiles, herons, and otters. A walk through these sites will also unveil marshlands, sand savannahs, sand prairies, sedge meadows, wet prairies, springs and seeps, mesic prairies, swamps, shrub prairies, and mesic woodlands—and the rich array of plant and animal life that these habitats support.

These natural areas not only preserve biodiversity—which is critical for maintaining the long-term health of our land and freshwater resources—but also act like sponges and soak up the rain that falls on them, thus reducing flooding risk in surrounding areas. They also can provide outdoor recreation, environmental education, and volunteer stewardship opportunities for nearby residents and visitors to the area. In light of the numerous benefits they provide, which are also called *ecosystem services*, the natural treasures found in the Calumet Corridor and broader Calumet region should be stewarded, protected, connected, and made more accessible to communities. Doing so would not only help alleviate flooding, but also make people healthier and communities more livable.



Did You Know?

In 1970, 85% of polluted U.S. waterways were the result of a single source of pollution, or *point source pollution* (e.g., an effluent pipe from a factory). The remaining 15% of polluted waterways were caused by runoff from agricultural land and urban areas, or *nonpoint source pollution*. Today, due to significant advances in environmental regulation and water treatment technologies, these values have flipped. 85% of polluted waterways are now the result of nonpoint source pollution and urban stormwater discharges. The Environmental Protection Agency's (EPA) first administrator, William Ruckelshaus, pointed to this fact in a 2010 *Wall Street Journal* opinion article where he called stormwater runoff "the water quality issue of the day" (WEF, 2015: 9).

During the 19th and 20th centuries, community and industrial development resulted in a dramatic alteration of the pre-settlement landscape (See Figure RR-4). Open areas were rapidly replaced by impervious surfaces to support human settlement, trade, and industry. Although impervious surfaces, like rooftops and roads, are byproducts of our human need for shelter, transportation, and commerce, they prevent the natural processes of *infiltration* (i.e., water soaking into the ground) and *evapotranspiration* (i.e., water evaporating back into the atmosphere through plants and trees). Consequently, rain—instead of being used as a valuable resource—becomes stormwater runoff, a waste product that contributes to local flooding and environmental issues.

Even small storms can generate a large amount of stormwater runoff. For example, a storm that drops one inch of rainfall on a one-acre impervious surface (e.g., a parking lot) would generate 27,154 gallons of stormwater runoff (Note: storms of this size or bigger occurred 13 times in Northeast Illinois in 2016). This is enough runoff to fill over eight backyard swimming pools (at 12 feet round and 48" deep). Put another way, one inch of rainfall on a 1,000 square foot roof will yield approximately 600 gallons of runoff. Although it may be hard to see, rain events (even small ones) produce a lot of stormwater runoff!

Just as problematic as the volume of stormwater runoff, however, are the pollutants this runoff collects as it flows across an urban landscape. Urban surfaces are littered with sediments, debris, oils, road salts, and toxic chemicals. When stormwater runoff transports these pollutants into rivers, streams, and other waterways—

which happens often in urban areas—they can degrade aquatic habitats, contaminate water supplies, and prevent safe swimming or water sports.

Today, 33.79% of the total land area of the Calumet Corridor is comprised of impervious surfaces, and this percentage is increasing. As more open land is developed and converted into impervious surfaces, the amount of permeable land decreases. The resulting increases in stormwater runoff cause a variety of problems, such as *combined sewer overflows* (CSOs), polluted waterways, "flashy"—or flood-prone streams, and urban flooding. The negative environmental impacts of land development are now detected when a *watershed* (i.e., the area of land that drains into a waterbody) has a total impervious cover as low as 5-10% (Scheueller et al. 2008). This means the streams that flow through Calumet Corridor (e.g., the Little Calumet River, Midlothian Creek, Cal-Sag Channel) are degraded or impaired due, in part, to the impacts of urban stormwater runoff. Put simply, when rainfall cannot find its way into the soil, local water bodies, or back into the atmosphere through the natural water cycle, it could pollute waterways, backup into basements, pool in streets, seep through walls, and overflow over the top of riverbanks. Local stormwater ordinances—like the Metropolitan Water Reclamation District's (MWRD) Watershed Management Ordinance (WMO)—require that new developments incorporate systems that control the volume and rate at which stormwater runs off from a site. Incorporating green infrastructure best management practices (BMPs) into new developments and redevelopments can greatly reduce the impacts of impervious surfaces.

CHANGING CLIMATE

Many residents in the Calumet Corridor have observed an increase in precipitation in recent years. In fact, interviews with residents and public works staff have anecdotally supported various climate change models that have projected more frequent high-intensity, short-duration storms. According to the 2014 National Climate Assessment (i.e., a report compiled by a team of over 300 experts) heavy downpours have been increasing nationally, especially over the last three to five decades (Melilo et al., 2014). In the Midwest and Northeast in particular, the heaviest rainfall events have become

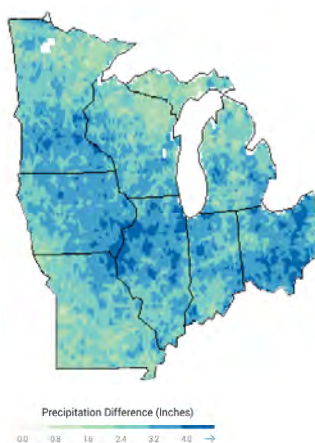
heavier and more frequent. The maps below depict climate projections for the Midwest. They show an anticipated increase in the number of days with heavy rain, and the amount of rain during big storms.

These big storms—paired with the increase in impervious surfaces in the Calumet Corridor—place a heavy burden on local sewer systems, which must manage huge and sudden volumes of water at once. As residents and municipal staff of the Calumet Corridor know all too well, current systems are often not up to the challenge.

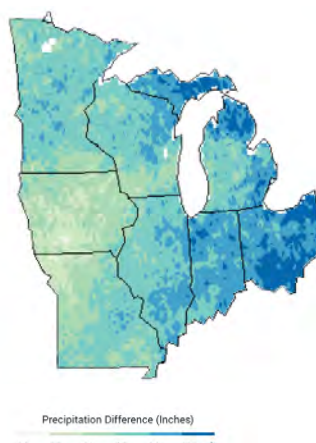
Did You Know?

Global climate change is expected to increase the total amount of water falling each year, as well as the frequency of short, intense storms like the April 2013 storm. These maps show projected changes in climate for the 21st century (2041-2070) relative to the late 20th century (1971-2000) across the Midwest.

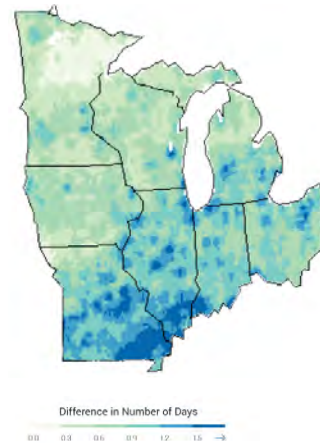
From left to right: the change in average total precipitation over the year. Across the Midwest, the total amount of water from rainfall and snowfall is projected to increase; increase in the number of days each year with very heavy rain or snow fall (top 2% of all rainfalls each year); increases in the amount of rain falling in the wettest 5-day period over a year. Both (far right and middle) indicate that big storms will increase in intensity and frequency across the Midwest. (Figure source: NOAA NCDC/CICS-NC).



**AVERAGE
PRECIPITATION**



**HEAVY
PRECIPITATION**



**WETTEST
5-DAY TOTAL**

AGING AND LIMITED INFRASTRUCTURE

The sewer systems that serve the Calumet Corridor communities vary significantly in terms of their age, size, type (e.g., combined sewers, separate storm and sanitary sewers) and condition (See Figure RR-7). This variation, the lack of up-to-date and accurate information on local sewers and drainage systems (e.g., accurate GPS locations of system components, details on condition of local sewers), and the cost of collecting this information is a challenge in itself. However, in light of the age of the Calumet Corridor communities, their historical development patterns, and their known flooding problems, it is safe to say that the storm sewers and drainage systems in the Calumet Corridor are generally aging and limited. Moreover, the majority of the sewer systems in the Calumet Corridor are “combined sewer systems,” which is a legacy design that has fallen out of favor in the civil engineering community. Each of these infrastructure-related factors contributes to stormwater management challenges in the Calumet Corridor, discussed briefly below.

First, as sewer systems age, pipes may collapse, crack, or clog, causing issues with local drainage. If not properly repaired or continually maintained, these degraded sewers—including both private lateral lines that connect individual buildings to the mainline sewer, as well as the public sewer itself—can cause stormwater and raw sewage to backup into homes, yards, and the public right-of-way (ROW).

Second, Calumet Corridor sewers were designed for a different time. When they were originally constructed, many local sewer systems were not designed to handle the increased stormwater flow from new development and impervious surfaces. Also, these older sewer systems were sized based on historical rainfall data that did not take into account the impacts of climate change, such as more frequent high-intensity storms. As a result, many of the local sewers throughout the Calumet Corridor are simply too small to handle the volume of water they now receive.



FIGURE RR-5:
Aging and Limited Infrastructure



FIGURE RR-6:
Degraded Sewers

Third, communities in the Calumet Corridor struggle with the legacy design of combined sewers. Combined sewer systems were a popular stormwater management approach in the mid-to-late 19th century. Combined sewer systems are called such because they “combine” stormwater and sewage from buildings in the same sewer, which transports the water from where it enters the system to where it is treated (e.g., Calumet Water Reclamation Plant) and ultimately discharged (as “effluent”) back into a local waterbody (e.g., Little Calumet River). In contrast, many municipalities are gradually transitioning to “separate system” systems, which maintain separate systems to transport stormwater and sewage.

During dry days and small rain events, the combined sewers generally function properly. However, during large storms events—which are becoming increasingly

frequent—the capacity of local sewers are often exceeded. This often results in water pooling in streets, yards, and public spaces, as well as sewer backup into basements.

The increased risk of urban flooding is not the only problem associated with aging combined sewer systems. Combined sewers typically include overflow points or “outfalls” into local rivers and lakes. These combined sewer outfalls allow (untreated) stormwater and sewage to “overflow” directly into local waterbodies when sewers reach their capacity during a large storm in order to prevent flooding in developed areas.

These *combined sewer overflows* (CSOs), can have a devastating effect on aquatic health and drinking water supply. A recent report published by U.S. Environmental Protection Agency (EPA), reported that 22 billion gallons of untreated wastewater discharged from CSOs flowed

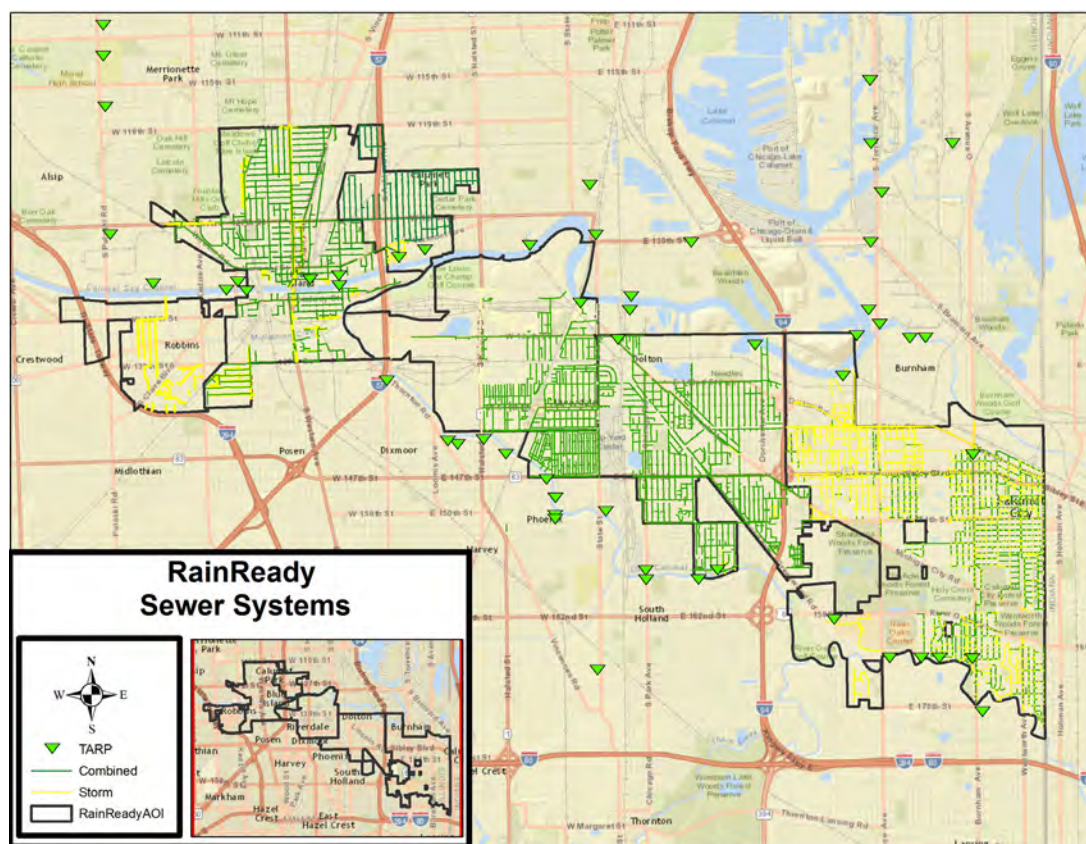


FIGURE RR-7:
Sewer Systems in the Calumet

into the Great Lakes Basin in 2014 (USEPA, 2016). This is extremely problematic, because the Great Lakes Basin holds 84% of North America’s surface freshwater and recent events, like Toledo’s 2014 water crisis, has revealed that human activity (e.g., agriculture and urban development) can render these great resources unusable.

For this reason, combined sewer overflows are considered one of the primary causes for water pollution today. Currently, 772 U.S. cities and water utilities face CSO issues, and many are spending billions of dollars under legally-binding consent decrees to reduce CSO frequency and volume, including the MWRD. For reference, the same EPA report stated that there were 41 CSO events from the MWRD’s Tunnel and Reservoir Plan (TARP) in 2014.

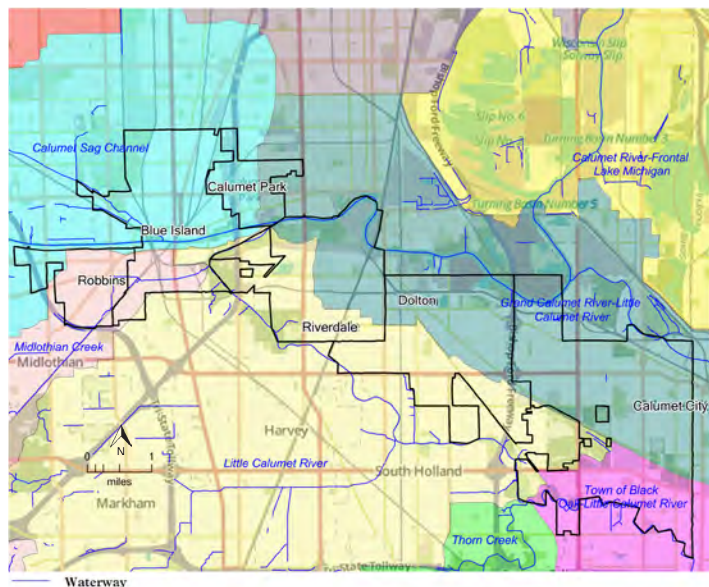


FIGURE RR-8:
Waterways and Watersheds



Photo: Jose M. Osorio, Chicago Tribune

Did You Know?

A popular approach to controlling combined sewer overflows (CSOs), basement backups, and other stormwater management issues is to build underground tunnels and reservoirs that temporarily store wastewater until it can be directed to a wastewater treatment facility. In essence, the tunnels provide a place to hold large volumes of stormwater and sewage while the treatment plants “catch up” with the storm. These tunnels can be miles long, up to 60 feet in diameter, and cost billions of dollars to construct. The Metropolitan Water Reclamation District of Great Chicago (MWRD)—the regional stormwater utility that serves the City of Chicago and 40 other suburban communities—has taken this approach to managing flooding and combined sewer overflows. Upon completion in 2029, the MWRD’s Tunnel and Reservoir Plan (TARP) will consist of 109.4 miles of tunnels and three reservoirs. The Tunnel will collectively provide 20.6 billion gallons of storage capacity for combined sewage and stormwater to the MWRD’s 352-square-mile service area, which includes the Calumet Corridor. Although TARP has already proven to be effective in reducing CSOs and improving water quality, the system’s full potential to mitigate local flood issues is still largely unrealized. This is not due to a flaw in the design of TARP, but rather, limitations of local municipal sewer systems that transport wastewater from homes and neighborhoods to TARP drop shafts and regional interceptor sewers. In other words, there may be bottlenecks in local sewer systems that obstruct or even prevent water from flowing from neighborhoods to TARP drop shafts, which may cause local flooding issues.



THE APRIL 2013 STORM

The devastating rain and wind that hit Northeast Illinois in April 2013 demonstrates what can happen when a large storm descends upon a region that is not prepared to handle it. All of these factors—climate change impacts, limited and aging stormwater and drainage sewer systems, a highly urbanized (i.e., impervious) landscape—conspired to produce a Presidentially-declared Disaster.

The storms that occurred between April 16th and May 5th, 2013 resulted in \$962,083,374 of damage in Cook County alone. One of the storms dropped five inches of rain overnight. This storm caused the widespread closure of expressways, flooded viaducts, downed trees, the forced evacuation of residences and nursing homes near rivers due to rising flood-stage levels, and power outages for about 24,000 ComEd customers.

In the Calumet Corridor and nearby communities, ten students had to be rescued by rafts after a school bus got stuck on a flooded street in Dolton, and a sinkhole on Chicago's South Side swallowed up to three cars and hospitalized one person. Flooding also caused severe delays on Metra and the cancellation of at least 400 flights at Chicago's O'Hare International Airport.

A reflection of the April 2013 storms reveals a number of mediating factors that contributed to the damage that resulted:

- **It was large.** The April 17th-18th storm that resulted in the deluge of five inches of rain within a 24-hour period is considered to be a 25-year, 24-hour storm event. A storm of this size has a 4% chance of occurring in any given year. Although this storm is not as big as the infamous 100-year storms that many communities are preparing for, which have a 1% chance of occurring in any given year, it is certainly large enough to cause significant flooding and damages.
- **The rain was constant.** The constant rainfall in the days leading up to the 25-year storm on April 17th caused soils to become saturated and local and regional sewer systems to reach their capacity. This led to a situation in which the rainfall between April 17th and 18th had nowhere to go, so it ended up flooding homes, businesses, and public right-of-ways all across Northeastern Illinois.
- **The region's flat, low-lying, and naturally-wet topography; impervious surfaces; and aging and undersized infrastructure.** See above.

The April 2013 storms caused a great degree of damage within the Calumet Corridor and across the broader Chicago Metropolitan Region. What's more, storms of this magnitude—and larger—are likely to hit the region



in the future (NCA, 2014). In light of this, it is imperative that communities take strategic steps now to prepare for, mitigate, and avoid the damage that could be caused by future storms. One only needs to look back at that damage caused by the April 2013 storms to understand the costs of inaction and not being sufficiently prepared.

THE AVERAGE STORM

The economic, social, and environmental impacts of the April 2013 storms were immense. However, communities in the Calumet Corridor frequently flood from much smaller storms as well. For example, some neighborhoods may experience widespread overland flooding during a 2-year 24-hour storm event. These storms rarely prompt major disaster declarations or even coverage in the local media; however, they have significant impacts in terms of a community's quality of life, business disruptions, and environmental quality.

Interviews with residents, survey responses, and meetings with municipal staff and engineers have revealed that even small storms can result in economic losses and a high degree of stress for Calumet Corridor residents and public works' staff alike. These small storms often go under the radar in public discussions, but can wreak

havoc on families and residents. For example, the family with two feet of raw sewage in their newly finished basement, or the newly employed resident who is late to work due to street closures.

Given the more hidden and more diffuse nature of urban flooding (e.g., basement backups, seepage, street flooding), it is sometimes difficult to mobilize the economic resources and political capital necessary to implement solutions to this chronic and widespread problem. However, CNT/RainReady has been committed to bringing the problem of urban flooding to light at all scales of government—from local governments to the federal government—as well as working with local communities to plan and implement effective solutions.

Urban flooding can manifest in a community and region either as an intense shock (e.g., the April 2013 storms) or chronic stresses (e.g., basement backups, street flooding). In light of this, the strategies and actions put forth in this plan aim to enhance community resilience so that individuals, businesses, infrastructure systems, and governments in the Calumet Corridor can survive and thrive no matter what rain-related shock and stress they encounter.

Government Capacity and Funding Potholes:

In addition to these structural roadblocks, local governments also face a variety of capacity and funding potholes that make it difficult to plan, design, and implement flooding solutions. These *capacity potholes*—although complex in nature—are less deeply rooted than *structural roadblocks* and can potentially be resolved through strategic short-term (one - two years) and medium-term (two - six years) actions.

The following capacity and funding potholes affect local governments in the Calumet Corridor:

- A general lack of the funding, time, personnel, equipment, and technical expertise that is necessary to implement and manage flood mitigation projects and programs
- Lack of time to consider creative financing and project implementation strategies

- It is often difficult to identify and secure funding and financing for priority projects
- Lack of political support to raise taxes and/or adopt fees necessary to invest in stormwater-related capital improvement projects and ongoing operations and maintenance (O&M) activities
- Federal funds are not always user-friendly, coordinated, or flexible, and are increasingly scarce and uncertain
- Support from foundations or non-governmental organizations—although critical—may provide short-term or one-time only assistance to jump start a project, but fails to build the local capacity necessary to maintain or manage a project in perpetuity
- Program- and theme-specific funding from external sources may not always align with the needs of a local community; for example, there may be ample funding available to catalyze an innovative project, program, or partnership that builds climate resilience, but funding for preliminary engineering, construction, community outreach and education, and ongoing support for operations and maintenance is hard to come by

Photo: D. Dohler, Flickr/Creative Commons



Communities must take strategic, concerted, timely, and appropriately-scaled actions to overcome these roadblocks and capacity potholes. Without intervention, infrastructure systems will continue to degrade and the (mutual) relationship between residents and municipal staff could become increasingly stressed, and urban flooding problems will increase in their frequency and magnitude.

It is apparent that some residents and municipal staff throughout the Calumet Corridor suffer from hopelessness and frustration at the growing urban flooding crisis. However, experience from previous CNT/ RainReady planning efforts has shown that it is possible to counteract hopelessness and reorient frustrations by channeling them through solution-oriented and collaborative planning processes that cultivate and leverage community action that drive effective flooding solutions. This RainReady Calumet Corridor Plan provides a roadmap to resilience that is achievable, inclusive, and urgent.

The RainReady Team recognizes the magnitude of the task ahead. Overcoming the physical factors that contribute to urban flooding in the midst of structural roadblocks and capacity potholes will take a significant investment of financial, social, and political capital. It will also require a willingness on the part of residents, staff, and elected representatives to reconcile past disagreements (e.g., instances when residents were excluded from important decisions; instances where projects that would have benefited an entire community were thwarted by one individual's or group's political ambitions) and to work together towards a shared vision. When these groups come together, however, the restoration of the Calumet Corridor to a healthy, vibrant, connected, and beautiful place will set an example for the whole region.



THE PATH FORWARD



...okay, enough about the problem. We know we have a flooding issue.

What can we do?

A RainReady future for the Calumet Corridor is well within reach. In fact, each of the six communities in the Calumet Corridor possess the foundational community assets, strengths, and know-how necessary to mitigate flooding AND achieve broader community goals.

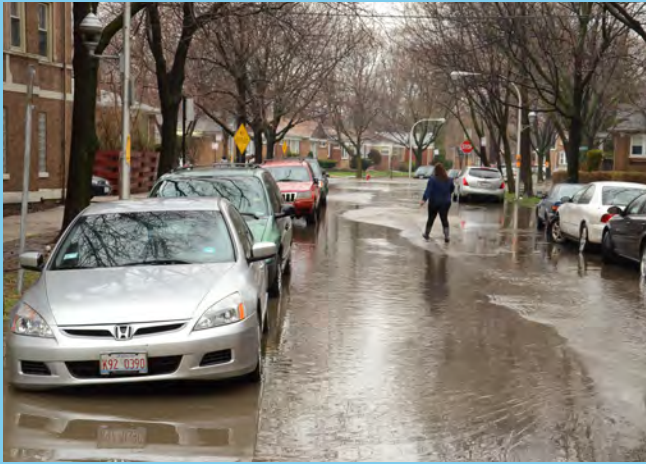
Through this planning process, the RainReady team discovered that residents, municipal staff, and elected representatives are more aligned in their shared desire to resolve local flooding issues than previously thought. We also learned that many local planners and community leaders have been implementing creative resilience-building projects for years, which other communities around the nation could learn from. Perhaps most encouraging, we learned that—in spite of chronic urban flooding issues (and other community concerns) and seemingly intractable roadblocks and potholes—residents in the Calumet Corridor continue to have an unwavering desire to improve the communities they call home. This individual resilience and drive will serve as the foundation on which all the other strategies and actions in this plan will build upon.

RAINREADY SOLUTIONS THAT DRIVE GREATER COMMUNITY RESILIENCE

Although focused on mitigating urban flooding, the RainReady solutions (i.e., goals, strategies, actions) presented in this plan are designed to address more than just flooding.

For example, streets and alleyways can be resurfaced in a way that not only reduces the wear-and-tear on cars and provides multiple transportation options (e.g., driving, walking, biking, transit), but also reduces street flooding. Front yards can be landscaped in way that not only beautifies the neighborhood and increases property values, but also reduces the risk of basement backups. Commercial corridors can be activated in a way that not only brings more shoppers (and tax revenue), but also reduces the stress on local sewers and creates a ‘sense of place’ that cultivates community pride. Industrial centers can be redeveloped in a way that not only creates new jobs, but also reduces flooding in the surrounding neighborhoods. The list goes on.

Put broadly, RainReady solutions build community resilience.



Defining Resilience

Resilience may mean different things to different people. For the purpose of this plan, we adopted the definition of resilience published by *100 Resilient Cities*, which defines *Urban Resilience* as “the capacity of individuals, communities, institutions, businesses, and systems within a city to survive and thrive no matter what kinds of chronic stresses and acute shocks they experience.”

Let’s break this definition down a bit. *Individuals* could include you (the reader of this plan), your neighbors, your work colleagues, your elected representatives, and other people who are somehow involved in your community. Community is a term that is thrown around quite a bit in urban planning (and in this plan). *Communities* are a group of people living in the same place or having a particular characteristic in common. Communities may be geographically based and include things like your block, your neighborhood, your municipality, and your region. Or a community may be socially defined and include things like your church community, your garden club, or your sports team. *Institutions* may include entities such as churches, schools, your local government, veteran’s organizations, and other local organizations and social networks. Businesses may include local and family-owned businesses, regional industries, as well as national chains. Lastly, systems are an interconnected set of elements that are coherently organized in a way to achieve some function or purpose. Systems are all around us and enable communities to survive and thrive. Systems include, among others: sewer systems, transportation systems, energy systems, and communication systems.

There are many individuals, communities, businesses, institutions, and systems that will be involved in implementing this RainReady Calumet Corridor Plan and building community resilience. Moreover, resilience is a very broad planning concept and encompasses a very wide array of dimensions and possible paths forward. The CNT/RainReady project team therefore developed a simple way to think about RainReady solutions and how they may drive greater community resilience, the *Three R’s Approach*.

The *Three R’s Approach* frames the goal of achieving greater community resilience—in the midst of urban flooding, structural roadblocks, and capacity potholes—in terms of these three broad goals:

- **(Re)orient communities.** Put communities on a path towards greater resilience by reorienting day-to-day operations and long-term planning.
- **Repair existing infrastructure.** Establish modernized infrastructure systems that allow communities to survive and thrive no matter what shocks and stresses they face.
- **Retrofit the landscape.** Create beautiful communities by converting impervious surfaces into natural landscapes, installing new green, grey, and green-grey infrastructure, and restoring natural areas.

Ultimately, this RainReady Calumet Corridor Plan is a road map to a more resilient future that can be used by community residents, municipal staff, elected officials, and regional partners. This plan can help mobilize the necessary financial, technical, political, and community resources necessary to achieve each community’s goals. *What* exactly a resilient future looks like was defined by the communities. The RainReady project team simply helped outline *how* to get there.

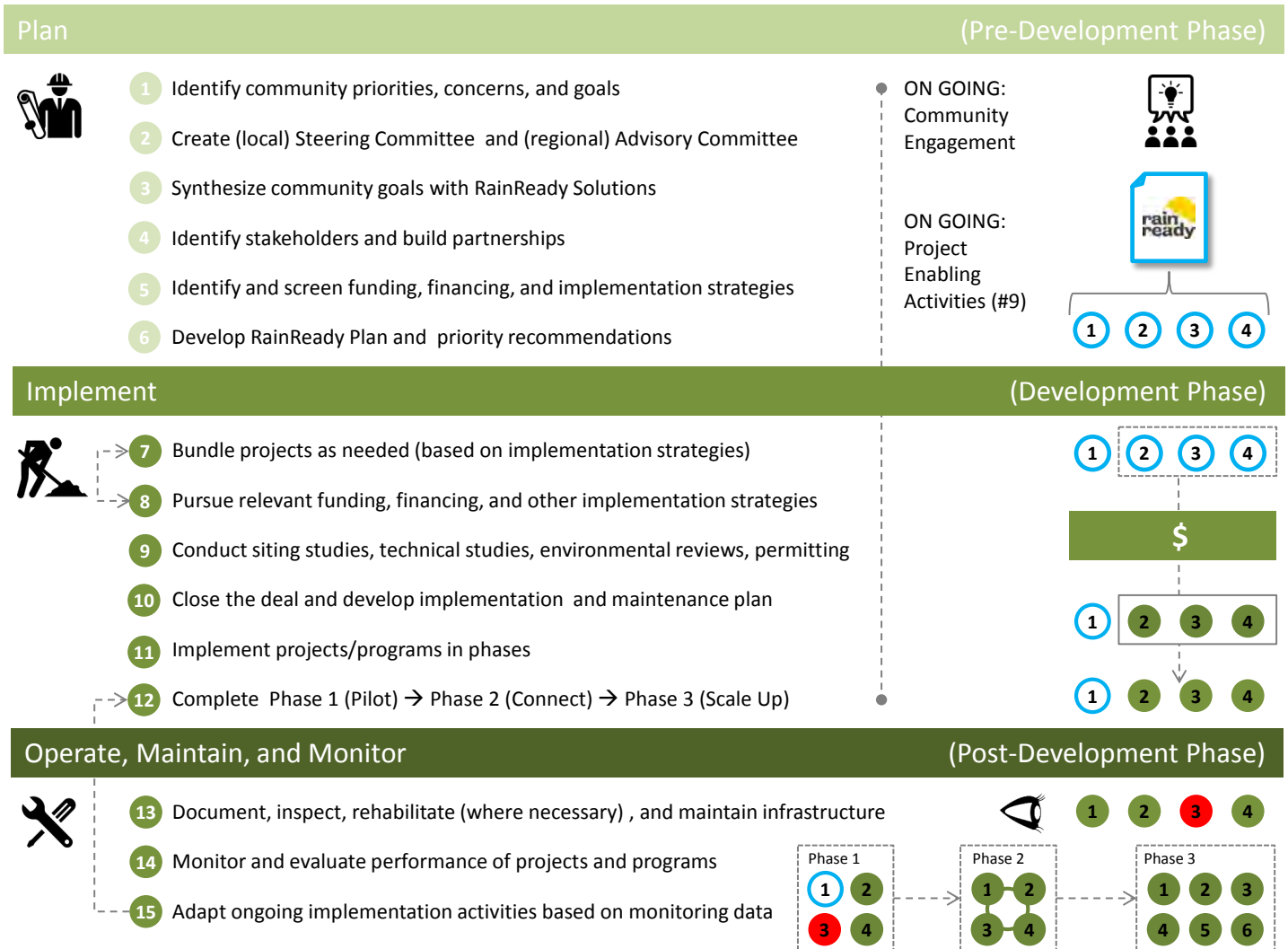


FIGURE RR-9:
The Path Towards Resilience

How to Approach Financing RainReady Communities

A CORRIDOR OF MODERATE INCOME COMMUNITIES HAS ASSETS

The path forward for resilience in the Calumet Corridor requires a new look at assets within each community.

Median single family home property values in the Calumet Corridor range from \$71,900 in Robbins to \$118,800 in Blue Island; median income ranges from \$23,614 per household per year in Robbins to \$47,050 in Calumet Park; mean income from \$37,568 in Robbins to \$55,753 in Dolton; and land area ranges from 734 acres in Calumet Park to 4,675 acres in Calumet City. Most dwellings are in either single family or two to four unit buildings with a relatively high homeownership rate.

These communities clearly vary in land coverage, in household income, and in the value of their property. In the aggregate, residential property alone has a market value of at least \$4.67 billion. Aggregated household income is on the order of \$1.92 billion.

How can these resources help secure funding for flood protection in the Calumet Corridor communities?

THE COST OF A TYPICAL RESIDENTIAL DEAL

Typical residential flood protection retrofits cost \$8,000 per dwelling unit. Given the typical incomes in the Calumet Corridor towns and villages, it is not likely that households have the savings and ability to pay cash to get the necessary green infrastructure and plumbing work done. If home equity financing is available, the cost to amortize \$8,000 presuming a 5 percent interest rate and a 15-year term is \$63.27 per month. This amount would cost the average Dolton homeowner 1.4 percent of their monthly income, but in Robbins that would be 2 percent or more. It is also more likely that a lender would be willing to extend such credit in Dolton or in Calumet Park than in Robbins or Blue Island, given the typical property values and incomes. If credit cards are an option, most households in these income ranges are likely to take five years to pay off the principal and interest; the monthly expense in these cases could range from \$190 at 15% interest to \$216 at 21%, respectively.

While the cost of damages per flood event in Cook County is around \$4,272 ([RainReady Nation](#), CNT 2015), the risk of repeat flooding is high, and without

FIGURE RR-10:
Summary of Housing and Land in the Calumet Corridor

	Land Area (square miles)	Land Area (acres)	Blocks	Total Number of Housing Units	% 1-4 Units	Median Property Value	Mean Household Income
Blue Island	4.157	2660.48	697	9816	72.9	\$118,800	\$48,435
Calumet City	7.305	4675.2	1088	16120	75.2	\$100,100	\$49,293
Calumet Park	1.148	734.72	260	3403	78.4	\$105,800	\$54,625
Dolton	4.685	2998.4	609	8945	91	\$95,200	\$55,753
Riverdale	3.75	2400	412	6184	74.1	\$86,300	\$47,550
Robbins	1.449	927.36	211	2242	87.6	\$71,900	\$37,568
Totals	22.494	14396.16	3277	46710			

intervention could amount to six to seven such events per decade. Denominated in aggregate damages, the payback for avoiding flood damages is deceptively attractive—but acquiring the resources to invest in the necessary protection could be an insurmountable barrier in such moderate income communities. In other words, homeowners may lack the upfront capital to invest in preventative solutions.

Our Calumet Corridor survey found average willingness to invest in flood protection at \$2,210. Excluding for those homeowners who are unwilling or unable to pay at all, the median rises to \$4,110. Beyond these figures, supplemental resources are needed.

There are several options for lowering the cost of flood protection and increasing access to credit.

MINI-BONDS

Municipal bonds are typically sold in denominations of \$5,000 or more. A neighborhood in Denver, CO needed to raise \$12 million for a combination of road, water main, and sewer improvements, and had just missed the deadline for the city's every-five-years general bond issue. Neighborhood leaders suggested the City lower the face value of the bonds needed to \$500 and sell them to the community itself. The city agreed to an experiment, offering an internet auction for one week only. The "opening bell" was rung on Monday morning at 8:30 am, and the entire issue sold out in 10 minutes. Mini-bonds were pioneered many years ago to make local improvements in conjunction with the Plan of Paris, and have been used in communities around the United States.

SPECIAL SERVICE AREAS

Various kinds of special service areas can be created by cities, towns and villages in Illinois. Such districts can be used for a wide range of purposes. Special service area (SSA) financing is a taxing mechanism used

by a municipality or a county to finance additional services, improvements, or facilities desired in a certain portion of its jurisdiction (35 ILCS 200/27-5 (1994)). A municipality may have an unlimited number of special service areas, which may overlap entirely or partially. There are no minimum or maximum physical size requirements, although a special service area cannot consist of the entire jurisdiction of a governmental entity.

The nine steps required to establish an SSA are: adopt an ordinance proposing the establishment of the special service area; adopt a resolution at a public hearing to determine if and when a public hearing will take place to create the SSA; provide notice of the public hearing; conduct a hearing by the governing board; observe a 60-day waiting period to allow for petitions to block implementation; adopt the final ordinance; implement special service area; file documents with the County Clerk and Recorder within 60 days; and, if necessary, alter the special service area.

Once a special service area has been created, the preceding procedures may be utilized to enlarge the area, change the tax or debt limitations, alter the type of tax authorized for debt retirement, or extend the life of the special service area if it was limited to a fixed number of years.

ON-BILL FINANCING

Twenty five states, including Illinois, authorize the operation of Property Assessed Clean Energy or PACE financing for energy efficiency improvements.

We suggest here a variant, whereby municipalities borrow funds on behalf of local property owners and receive repayment over a period similar to the term of the bond, say 30 years. At a 5 percent interest rate, \$8,000 on these terms would cost a property owner \$42.95 per month.

This could be collected on either the water bill or on the property tax bill.



DUE-ON-SALE FINANCING

Park Forest, IL and other area municipalities offer home improvement loans with payment deferred until time of resale. Community Development Block Grant funds can be used for this purpose, as can the other financing sources listed in this section. The advantage to the borrower is that the benefit of flood protection is received immediately, while the repayment would occur out of property sale proceeds at time of settlement.

50-50 FINANCING

A typical arrangement for financing sidewalk repair is to split the cost between property owners and a municipality. The value to the property owner is accelerated repair. This method can be combined with any of the financing programs listed here. For example, the property owner's share could be financed through on-bill repayment, lowering the cost to \$23 per household per month in the example provided.

GENERAL OBLIGATION FINANCING

General obligation bonds (GO bonds) are used for general corporate municipal purposes and backed by the municipality's full faith and credit.

Since full area flood risk reduction could require investments that cover both private property and the public realm, and any one block could easily have residential, commercial and public land uses included, a case could be made for issuing GO bonds for flood protection purposes.

"TREE INCREMENT" OR TAX INCREMENT FINANCING

Most towns have permeable parkways, parks, yards and tree canopy that over time have fallen into disrepair. Studies by economists (Wachter 2004) and public interest organizations suggest that over time restoration of green infrastructure features can add substantial value to taxable property. A model for carrying this out was developed for Portland OR (http://www.cnt.org/sites/default/files/publications/CNT_PDXTreeAssetMgmt.pdf) and should be considered for application in the Calumet Corridor communities.

FUTURE OPTIONS FOR FURTHER EXPLORATION

- Property casualty insurers already offer discounts for good driving behavior including less driving, and health insurers lower premiums for increasing physical activity. We suggest that the Calumet Corridor communities collectively approach the Illinois Insurance Commissioner and leading insurers to explore such incentives.
- The Metropolitan Water Reclamation District was designated as Cook County's stormwater management agency by the General Assembly, and is authorized to collect a millage to support flood protection investments. The corridor communities should explore a partnership with the MWRD that would help further lower the local burden of retrofit for stormwater management.
- Existing governmental units should be engaged in exploring these options, including options that are not limited to township government, school and community college districts, the Cook County Forest Preserve District, the Clean Water Revolving Loan Fund of the Illinois Environmental Protection Agency, local park districts, grants administered by the Illinois Dept. of Natural Resources, by the Illinois Department of Transportation, and the Chicago Metropolitan Agency on Planning (for example, the RainReady Midlothian Plan includes steps to partner with RTA and IDOT to provide green infrastructure resources around its Metra station).

For additional resources, consult Appendix C, Implementation Resources.

PARTNERS AND ACKNOWLEDGEMENTS

Creating this RainReady Calumet Corridor Plan was an ambitious undertaking. This plan would not have been possible without the participation, input, critique, and guidance from numerous community leaders and resource experts. Listed below are the various individuals, firms, agencies, and groups that contributed to the development of this plan.

This plan was funded by Cook County with Community Development Block Grant – Disaster Recovery funds (CDBG-DR). Cook County’s support for this plan demonstrates the County’s long-term commitment to building more resilient, economically competitive, and livable communities.

Over 2,100 community residents, municipal employees, elected officials, and regional experts were engaged throughout the fourteen month RainReady planning process.

To ensure that this plan is science-based and regionally-coordinated, the RainReady Community Team at the Center for Neighborhood Technology (CNT) partnered with the U.S. Army Corps of Engineers (USACE) and the South Suburban Mayors and Managers Association (SSMMA) to assist with planning, analysis, and implementation tasks. The RainReady Team also worked with Chicago Metropolitan Agency for Planning (CMAP) to learn from their Local Stormwater Planning Approach—a method CMAP developed to identify areas prone to urban flooding as well as potential locations for solutions—and to identify ways to coordinate stormwater planning efforts at a local and regional level.

Coordination and collaboration with other regional stakeholders—which is an essential ingredient to building community resilience at the regional level—was facilitated through the RainReady Technical Advisory Committee (TAC) and the Calumet Stormwater Collaborative (CSC).

In an effort to collect more targeted, community-specific information and feedback on plan recommendations and to jump start implementation efforts, the RainReady Team also organized a Steering Committee (SC) for each of the six Calumet Corridor municipalities (i.e., Blue Island, Calumet City, Calumet Park, Dolton, Riverdale, and Robbins).

These Steering Committees provided critical community-specific information regarding flooding risks and community priorities, as well as feedback on proposed plan recommendations for their specific municipality. These Committees are composed of community leaders—including people within and outside of local government—who will carry this plan forward.

A multidisciplinary Technical Advisory Committee (TAC) was also created to provide high-level input on plan recommendations and implementation strategies. The TAC included planning, policy, engineering, and community outreach resource experts.



Steering Committees



VILLAGE OF BLUE ISLAND

STEERING COMMITTEE MISSION STATEMENT:

The Blue Island Steering Committee will create residential and commercial maintenance plans which include green infrastructure best practices that are fair and attainable for all Blue Island Residents.

STEERING COMMITTEE MEMBERS:

- | | |
|--------------------------|---|
| • Bridgette Poole Milner | • Marsha Lee |
| • Jeremy Heyboer | • Mary Carvlin |
| • Judith Smith | • Rachel Heyboer |
| • Lili Juskevice | • Tom Hawley, 1 st Ward Alderman |



CITY OF CALUMET CITY

STEERING COMMITTEE MISSION STATEMENT:

The RainReady Calumet City Steering Committee will work with residents, staff and elected representatives, to make Calumet City resilient through the use of green and grey infrastructure improvements in alleys, vacant lots, and the City’s expansive parking lots.

STEERING COMMITTEE MEMBERS:

- | | |
|---|---|
| • Frank Alexander, Emergency Service & Disaster Agency (ESDA) | • Joaquin Vazquez |
| • Jim Meincke, Emergency Service & Disaster Agency (ESDA) | • John Beckman |
| | • Pete Saunders, Economic Development Coordinator |
| | • Shirley Watson |



VILLAGE OF CALUMET PARK

STEERING COMMITTEE MISSION STATEMENT:

Through the efforts of the RainReady Calumet Park Steering Committee, Calumet Park will no longer have homes, businesses, or public areas that flood. The tight knit community will be composed of well-maintained infrastructure, residents educated on flood resilience, and excellent response strategies in the case of an emergency.

STEERING COMMITTEE MEMBERS:

• Alma Earley	• Michelle Austin
• Gailyn Hall	• Ramona Austin
• Helen Reed	• Sandra Brown
• Joyce Shaw	• Shon Bailey, Foreman of Public Works
• Lisa Cowans	• Winnell Jones
• Mary Ryan, Village Administrator, Village of Calumet Park	



VILLAGE OF DOLTON

STEERING COMMITTEE MISSION STATEMENT:

The RainReady Dolton Steering Committee will implement the RainReady Dolton Plan, incorporating green infrastructure installation and sewer maintenance. The Committee will beautify the village, create activities for youth, establish new employment opportunities, educate residents, and advocate for implementation of the new sewer maintenance plan. All of the goals of the Committee will be created with flood mitigation in mind.

STEERING COMMITTEE MEMBERS:

• Barbara Evans	• Jerome Gray
• Barbara Lewis	• Kevin Griffin
• Bobby Evans	• Latonya Nalls
• Donna Gray	• Mary Evans
• Elizabeth Scott, Mayor's Chief of Staff, Village of Dolton	• Pearlie Lemons
	• Terry Lewis

VILLAGE OF ROBBINS

STEERING COMMITTEE MISSION STATEMENT:

The RainReady Robbins Steering Committee seeks to raise the quality of life through economic development, education, and neighborhood beautification. The committee will work to create access to daily amenities by establishing businesses that attract residents to spend their money in Robbins and to attract visitors to do the same. The committee will also create recreational and community garden amenities in vacant and underused areas. A sense of place will be established through communication, beautification improvements, and activity building for youth and seniors.

STEERING COMMITTEE MEMBERS:

- | | |
|--|---------------------------------|
| • Tasha Baker, Village Administrator, Village of Robbins | • David Bryant, Village Trustee |
| • Myrna Ratliff | • Ernest Maxey, Village Trustee |
| • Leota Murphy | • Sheila Jones |
| • David Dyson, Village Trustee | • Kathy Park |
| • Zachary Fulson | • Delean Fuller |
| • Christell A. Jones | • Carrie Smith |
| • Rosie Mitchell | • Leila Ward |
| • Joanna Rhodes | • Juanita Williams |
| • Helen Echols | • Barbara Pillow-Sidbeh |
| • Dave Moore | • Loretta Dowdy |
| • Shirley Howard | • Lula Fulson |
| • Melvin Bruton | • Jacob Carrothers |
| • James C. Collier, Sr. | • Jackie Henry |



VILLAGE OF RIVERDALE

STEERING COMMITTEE MISSION STATEMENT:

The Riverdale Steering Committee will use green infrastructure practices to dry and beautify the village, spurring economic, recreational, and community development.

STEERING COMMITTEE MEMBERS:

- | | |
|--|---|
| • Shana Battle | • Albert Williams |
| • Velinda Simpson | • Timothy Williams, Intergovernmental Affairs Manager, Village of Riverdale |
| • Jerome Russell, Village Trustee | • Loree Washington |
| • Cassandra Riley-Pinkney, Village Trustee | |
| • Marlene Brown | |



Technical Advisory Committee

- Ben Shorofsky, Delta Institute
- Benjamin Cox, Friends of the Forest Preserves
- Dana Ludwig, Robinson Engineering, Ltd
- Diane Banta, National Park Service
- Dominic Tocci, Cook County (Funder)
- Eric Neagu, The Antero Group
- Eric Otto, Cook County
- Hanna Kite, Active Transportation Alliance
- Heather Schady, Active Transportation Alliance
- Gunilla Goulding, Arcadis*
- Jacque Henrikson, Active Transportation Alliance
- Jeff Edstrom, Independent Consultant
- John Quail, Friends of the Chicago River
- John Legge, The Nature Conservancy
- Keith Powell, Clark-Dietz Engineers
- Lisa Cotner, Illinois Department of Natural Resources: Coastal Management Program
- Loree Washington, Faith in Place
- Lynne Westphal, USDA Forest Service
- Marion Kessy, Fluid Clarity
- Melissa Custic, The Morton Arboretum/ Chicago Region Trees Initiative
- Moira Zellner, University of Illinois at Chicago*
- Mollie Dowling, High Bridge Social Enterprise
- Molly Woloszyn, Illinois-Indiana Sea Grant, University of Illinois at Urbana-Champaign
- Ramont Bell, Faith in Place
- Reggie Greenwood, South Suburban Mayors and Managers Association

- Russell Rydin, South Suburban Land Bank and Development Authority
- Ted Haffner, Openlands
- Stacy Meyers, Openlands
- Thomas Burke, Christopher B. Burke Engineering, Ltd.*
- Thomas Nagle, Robinson Engineering, Ltd

Non-TAC Advisors

- Deanna Doohaluk, Hey and Associates
- Matt Bardhol, Geosyntec
- Mason Throneburg, CH2M
- Jennifer Dunn, Argonne National Laboratory
- Tom Price, Conservation Design Forum
- Jeff Wickenkamp, Hey and Associates

*Provided technical review of CNT/RainReady's Community Flooding Risk and Opportunities Tool

NOTE: These lists above do not reflect the full number of people engaged through the planning and outreach efforts (e.g., community meetings, educational workshops, tours, stakeholder interviews).

THE PLANNING PROCESS

Purpose of the RainReady Plan

Developing a plan is just one step on a community’s path towards resilience, but it is an important one.

A plan is an adopted vision for the future that is used to guide public and private actions in achieving that vision.

The purpose of this plan is to articulate a vision for more resilient Calumet Corridor communities (i.e., Blue Island, Calumet City, Calumet Park, Dolton, Riverdale, and Robbins) and to put these six communities on a path towards greater resilience through improved stormwater management, sustainable economic development, and integrated planning.

The RainReady/USACE (U.S. Army Corps of Engineers) project team (referred to as the “project team” hereafter)

and municipal partners began developing this plan in February 2016 with the following objectives in mind:

- Establish a shared understanding of the scope, severity, and type of flooding risks across each community in the Calumet Corridor
- Achieve consensus on priority solutions that provide multiple benefits to the community
- Provide municipal and community leaders with a clear roadmap for plan implementation, including partners, funding and financing strategies, necessary policy changes, and local champions
- Where possible, advance existing planning and development priorities that align with the general principles of a RainReady community

Guiding Principles

The following lists explicitly state the guiding principles that shaped how the RainReady Project Team framed problems, worked with communities, and designed solutions.

10 RainReady Guiding Principles:

1. Easily Implementable, Replicable, and Scalable Solutions

We work to ensure that our projects, programs, and partnerships can be widely and quickly adopted by towns and cities across America.

2. Market-Based Approaches

RainReady solutions meet the needs of individual property owners and renters by leveraging public, private, and public-private investments to ensure the biggest bang for the public's buck.

3. Community-Wide Efforts

We bring efficiency savings by serving the whole community and addressing the multifaceted mix of flooding problems that residents and business-owners face.

4. Evidence Based Plans

The projects, programs, policy-changes, and partnerships we recommend are prioritized based on a robust analysis of the risks and opportunities communities face.

5. Affordable and Fair Programs

RainReady solutions can benefit everyone, wealthy and poor.

6. Multi-Scale Solutions

Flooding problems occur at many scales, and thus action is needed at all scales – from individual homes, to neighborhoods, to municipalities, regions, states, and the nation.

7. No Negative Downstream Impacts

Our solutions are designed to avoid simply displacing flooding problems to neighboring homes and downstream communities.

8. Nature-Based (i.e., “Green Infrastructure”) Solutions

We advocate using green infrastructure solutions as often as possible since they have been shown to bring a wider array of community benefits than large-scale, engineered fixes.

9. Fiscal Fairness and Transparency

All properties generate stormwater runoff, so everyone should help pay for the services and systems necessary for managing it.

10. Preventative Measures

We promote the adoption of local ordinances, permits, incentives, educational programs, and infrastructure projects that anticipate various shocks and stresses and prepare for them.



The RainReady Team has adopted these principles, because they have been shown to be effective at putting communities on a path towards resilience. When put into action through policies, programs and projects, these guiding principles elevate high value projects, strengthen economic vitality and improve equity and quality of life for all community members.

Planning and Outreach Approach

The RainReady Calumet Corridor Plan is a community- and data-driven plan that is based on several guiding principles for building sustainable and equitable communities (See Figure RR-11). These principles and the associated RainReady Community planning process were developed through prior RainReady planning efforts in the Village of Midlothian and several Chicago neighborhoods. They have been shown to deliver innovative, effective, and game-changing solutions for communities struggling with urban flooding.

This plan was developed through a 15-month process that consisted of three phases: 1) Risk and Opportunity Assessment, 2) Solution Mapping, 3) Implementation Support, and 4) Monitor & Adaptation (See Figure RR-13). During each of these phases, project tasks were organized into three main workflows: 1) Data Collection, Analysis, and Visualization, 2) Community Outreach and Education, and 3) Planning Deliverables.

The planning process was *iterative* and *collaborative*. For example, data on known flooding risks was collected and printed on large format maps. These maps were then used in collaborative community meetings that were designed to gather additional input on flooding risk and preferred solutions from local residents, municipal staff, and elected representatives. This community input was fed back into our analytical and mapping tools, which were used to generate draft planning recommendations. These draft planning recommendations were then distributed to each community’s Steering Committees (SC) and the Technical Advisory Committee (TAC). Final recommendations were refined based on input from these two groups and any additional information that came to light through the planning process.

The goal at the outset was to develop a plan that synthesizes and reconciles quantitative data on each



FIGURE RR-11:
Plan Approach

Phase	Planning Tasks
1	• Problem Definition and Scoping • Data Collection and Cleaning • Risk Assessment • Opportunity Assessment • Stakeholder Analysis
2	• Community Outreach • GIS Mapping • Collaborative and Iterative Solution Design • Cost-Benefit Analysis • Project Prioritization and Program Design • Writing and Design of Plan Deliverables (plan, presentations, briefs, etc.)
3	• Funding, Financing, and Implementation Strategy Development • Grant Writing and Management • RainReady Home and Neighborhood Services (if appropriate) • Ongoing Community Organizing and Capacity Building Support • Stakeholder Mobilization and Alignment
4	• Monitoring of Green, Grey, and Green-Grey Infrastructure Systems • RainReady Alert (in development) • Regional Coordination Services • Program Evaluation

FIGURE RR-12:
Planning Services

community’s existing physical and hydrological conditions with community-driven input, such as what kinds of solutions are preferred and where. The purpose for balancing quantitative data with community input was to ensure that we did not recommend a project that, while physically and hydrologically feasible and cost-effective, is not grounded in what the community actually wants. Conversely, we also wanted to ensure that we did not recommend a project that is neither physically feasible nor cost effective. Either of these two scenarios would result in recommendations that are not implementable.

The Rain Ready Community Team worked with local communities to deliver a full range of community planning services (Figure RR-12).

The timeline and corresponding descriptions below describe the RainReady Calumet Corridor planning process, including the project’s key milestones and deliverables.

PHASE 1: RISK AND OPPORTUNITY ASSESSMENT

This RainReady planning process began with an assessment of urban flooding risks, community concerns, and solution opportunities (See the community-specific chapters for a summary of this information). Given the Calumet Region’s planning-rich context, this initial risk and opportunity assessment built upon previous ongoing regional and local planning efforts. The assessment also incorporated information gathered from stakeholder meetings, maps, and existing data indicating known flooding problem areas.

KEY PHASE 1 MILESTONES AND DELIVERABLES:

- The CNT/USACE project team organized and Project officially kicks off
- All six municipal kickoff meetings completed
- RainReady Community Survey and mailers finalized and distributed to 41,529 homes in the Calumet Corridor
- 100+ plans inventoried, 160+ Resilience Opportunities Assessed, and known flooding risks mapped; Information packaged into *Risk and Opportunity Assessment/ Geodatabase*
- All six *Community Resilience Snapshots* published and distributed to community partners

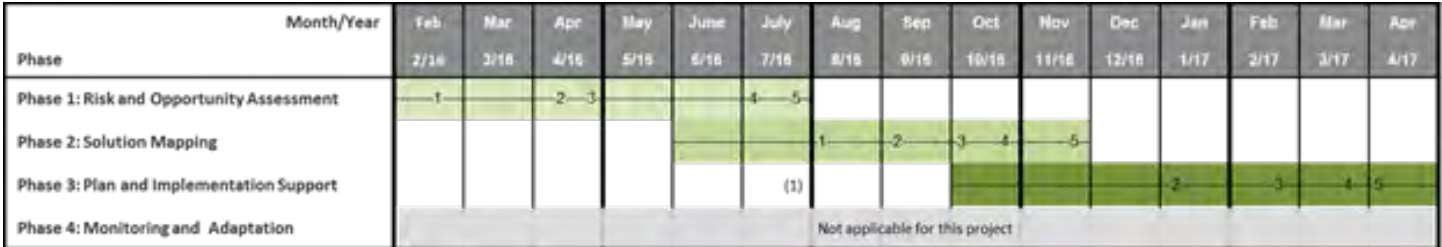


FIGURE RR-13:
RainReady Project Timeline

PHASE 2: SOLUTION MAPPING

Once the existing conditions on flooding risks and resilience opportunities were documented and packaged into the *Risk and Opportunity Assessment/Geodatabase* and the *Community Resilience Snapshots*, the project team used this information to create materials for collaborative *Community Meetings*, *Educational Workshops*, and *City/Village Board Presentations*. The RainReady project team also worked with CNT's Urban Analytics Team to iteratively develop and refine CNT's Resilience Planning Tool (Version 1.0) (Figure RR-14). This tool serves as an assessment and solution mapping resource that: 1) identifies flood-prone areas, 2) maps information related to hydrology, environmental conditions, transportation infrastructure, political jurisdictions, and economic development in the Calumet Corridor, and 3) enables the rapid and iterative testing of different green infrastructure solution alternatives.

KEY PHASE 2 MILESTONES AND DELIVERABLES:

- All six *Community Meetings* completed
- All seven *Educational Workshops* completed
- City/Village Board Meetings initiated to share preliminary findings and recommendations
- Two Steering Committee Workshops held, over 50 Steering Committee members are trained and recruited
- *CNT/RainReady Resilience Mapping Tool Version 1.0* complete

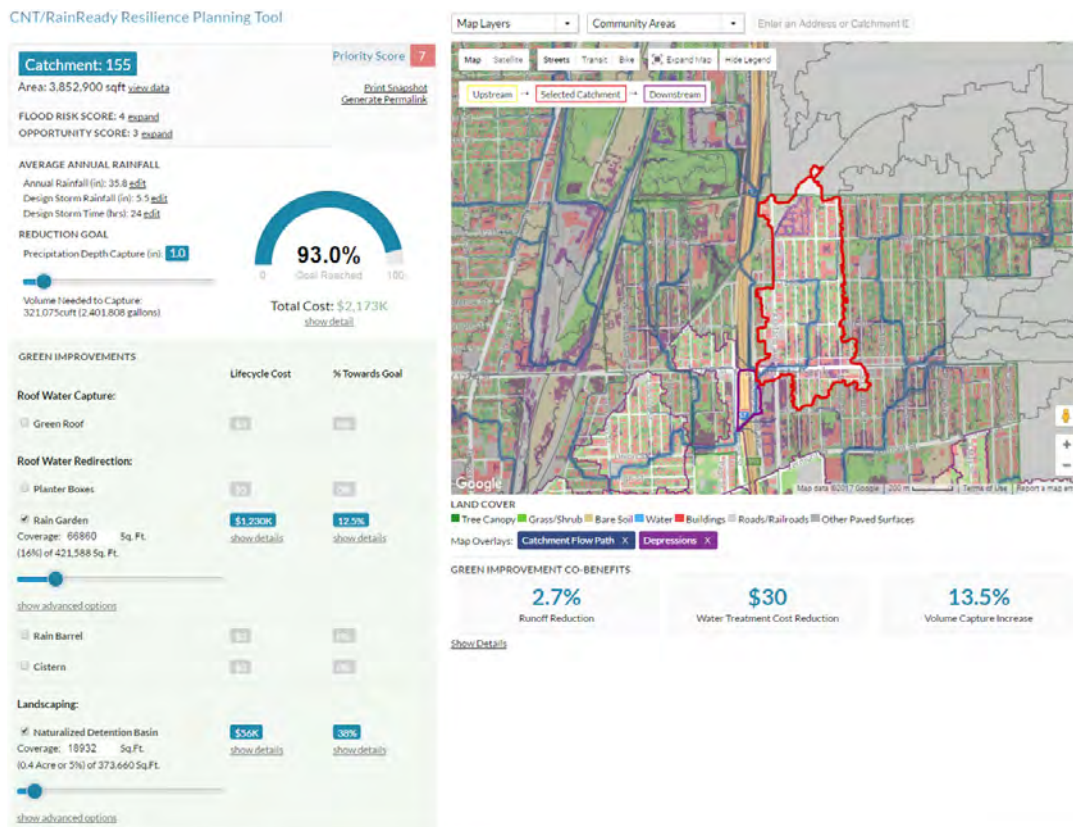


FIGURE RR-14:
CNT/RainReady Resilience Planning Tool™
in Action

PHASE 3: PLAN DEVELOPMENT AND IMPLEMENTATION SUPPORT

In Phase 3, community input, gathered through the various *Community Meetings* and other public engagement events, was fed into the *CNT/RainReady Resilience Mapping Tool*. The project team led *Educational Workshops* to help build local capacity and equip local residents to participate in and contribute to this planning process in meaningful ways. For example, we trained residents in the basics of green infrastructure through presentations and site visits so that they can identify what kind of green infrastructure solutions they would like to see in their communities. Community input gathered from the *Steering Committees*, expert input gathered from the *Technical Advisory Committee*, and outputs from the *CNT/RainReady Resilience Mapping Tool* (i.e., maps, quantitative analysis, data summaries) were used to develop preliminary plan recommendations (e.g., vision statements, mission statements, goals, strategies, and

actions). These preliminary recommendations were then redistributed back to the SCs, the TAC, and other partners and refined. The key deliverable from Phase 3 was the final plan, which was both community-driven and analytically rigorous.

KEY PHASE 3 MILESTONES AND DELIVERABLES:

- Approximately 15 preliminary priority projects identified
- *Draft RainReady Calumet Corridor* plan completed and distributed for internal review
- Draft plan distributed to Steering Committees, Technical Advisory Committee, and other partners
- *Final RainReady Calumet Corridor* completed, planned launch event
- Ongoing implementation support initiated



PHASE 4: MONITORING AND ADAPTATION

Monitoring the performance of projects and programs, evaluating that monitoring data, and adapting municipal management operations and capital improvement implementation efforts based on what you learned are critical steps for building resilient communities. We live in an increasingly uncertain and complex world and no planner can ever anticipate every possible scenario for the future. Plans—although they are often translated into static documents, maps, and graphs—must therefore be living documents that adapt to constantly changing conditions. Community leaders (e.g., residents, municipal staff, elected representatives) must adapt how they implement a plan, whether that occurs through community-driven projects, changes to policy and ongoing municipal operations, or long-term capital improvement projects.

Communities should take Phase 4: Monitoring and Adaption seriously in order to continually improve and move forward on their path towards greater resilience. Given the scope of this project and time constraints, the RainReady project team was unable to offer ongoing monitoring and adaptation support to the Calumet Corridor communities through this planning process. However, the recommendations proposed in this plan embed the processes of monitoring and adaptation.

PLANNING AND OUTREACH ACTIVITIES BY-THE-NUMBERS:

- **Over 2,100** community residents, municipal employees, elected officials, and regional resource experts engaged through the RainReady Planning Process
- **584** RainReady Surveys Completed (NOTE: analysis in this plan was based on 564 surveys)
- **55** Stakeholder Meetings attended by the RainReady project team
- **83** Community Outreach events hosted by the RainReady project team
- **Two mailers** sent to **41,529** homes in the Calumet Corridor
- **Four** Public Service Announcements
- **64** people attended a RainReady Workshop (i.e., Leaders Training and Educational Workshops)
- **237** community members attended a RainReady Community Meeting
- **602** doors knocked in local outreach
- **Five** Calumet Corridor residents hired to conduct outreach
- **26** resource experts engaged in the Technical Advisory Committee (TAC)
- **One** Technical Advisory Committee meetings held
- **Six** Community Steering Committees established with 78 community leaders
- **24** Community Steering Committees held to date
- **One** interactive website created





Ultimately, the main deliverable from this planning process is the document you are reading right now, the RainReady Calumet Corridor Plan. However, this plan is not the only result of everyone’s effort. In fact many projects were well underway even before this plan was finished.

From the start, this program was designed to be an *implementation-focused* planning process. That means, the RainReady project team balanced its intent to create a community-driven and analytically rigorous plan with its efforts to be pragmatic and advance priority projects as opportunities arose. Therefore, activities like participating in project/site planning meetings, advancing existing priorities through the RainReady meetings, submitting grant proposals, and advocating for the implementation of previously-identified priority projects that were aligned with the project team principles, were key components of the planning process.

The decision to take an *implementation-focused* approach to this planning process was informed by the planning context of the Calumet Corridor and broader Calumet and Southland Regions. Put simply, there are many plans that have been completed for the Calumet Corridor communities and region. So many, in fact, that “planning-fatigue” and the perceived lack of implementation efforts was a very real concern among our municipal partners and community residents.

We learned there was a need for: a more complete understanding of flooding challenges and potential solutions, the capacity to plan and implement projects in a coordinated fashion, and the ability to leverage the necessary funding, political, and community resources, and target those resources at the right projects and the right time. In light of these gaps, the project team embraced an *implementation-focused* approach to not only deliver a plan document, but also to help build the local capacity necessary to put the plan into action.

REGIONAL CONTEXT

The Calumet Region is an area shaped by water. Here are just a few examples that illustrate this point:

- The glaciers that receded 16,000 years ago shaped how water flows today by carving a very flat landscape and leaving behind poorly draining soils
- The Region's abundant freshwater resources supported Native American settlement and later, early European settlement, hunting, and trade
- As the country industrialized, the Region's access to "vacant" land and transportation routes (via land and water) supported the manufacturing and transportation of industrial goods, like steel
- As suburban communities developed, they constructed massive infrastructure systems to manage and create value from the Region's vast land and water resources

The growth of communities in the Calumet Region has always been tied to their ability to manage and create value from the region's land and water resources. By extension, creating resilient Calumet communities is dependent on learning how to live with water.

THE CALUMET REGION AND THE CALUMET CORRIDOR

Few places weave together nature, people, and industry as distinctively as the Calumet Region. Glaciers, Native Americans, pioneer settlers, railroaders, industrialists, highway builders, and suburbanization have all left their mark on the landscape. Understanding the Calumet Region's rich history is critical for charting a path forward towards a more resilient future.

LOCATION

The Calumet Corridor is a sub-region within the broader "Calumet" and "Southland" Regions that are comprised of six communities: Blue Island, Calumet City, Calumet Park, Dolton, Riverdale, and Robbins. The Calumet Corridor has served as a major manufacturing and transportation hub for nearly two centuries due to its proximity to the City of Chicago and Northwest Indiana, its land and water resources, and its access to all modes of transportation. The Calumet Corridor's location continues to be one of its most important assets and provides a foundation for future development.



FIGURE RR-15:
The Calumet Corridor in Context

A Brief History of the Calumet Region

- 1500 -1650s** Algonquian tribes inhabit the region
- 1570** Formation of the Iroquois League as Iroquois are pushed westward by European colonization
- 1650s** Algonquian tribes are forced westward as the Iroquois raids become more common place
- 1673** Europeans arrive in the Calumet region
- 1754-1763** The French and Indian War - French defeated, Great Britain gains control over the lands
- 1805** Little and Grand Calumet River become one river due to an overflow of the Grand Calumet banks
- 1818** Illinois becomes a state with a northern boundary set to include the mouths of the Calumet River and Chicago River
- 1830** Extinction of the bison in the Midwest
- 1848** The Illinois-Michigan Canal is completed
- 1848** The 1st railroad shipment of cargo arrives in Chicago
- 1869** The construction of the Calumet Harbor is approved by Congress
- 1871** The Great Chicago Fire
- 1880s** A heavy steel industry starts to dominate the region
- 1901-1908** Construction of the South Shore Line begins, making the dunes and lakeshore area more accessible
- 1913** Lincoln Highway - The first transcontinental highway passes through the Calumet area along the Old Sauk Trail
- 1920s** Ford Motor Company begins construction of its second biggest assembly plant in the U.S. along the Calumet River
- 1922** Calumet Sag-Channel is built as a response to pollution levels in Lake Michigan
- 1940s** Landfills begin to appear in the area
- 1940s-1950s** The Great Migration accelerates
- 1972** The Tunnel and Reservoir Plan (TARP) is adopted to mitigate combined sewer overflows; completion anticipated in 2029
- 1980s-1990s** Major steel plants begin to shut down
- 1985** People for Community Recovery block proposed expansion of Waste Management's CID landfill
- 1992** The fight against the Calumet Lake Airport is won
- 1998** National Park Service releases the Calumet Ecological Park Feasibility Study and recommends the creation of a National Heritage Area
- 2006** Phase I of TARP tunnel systems completed; the tunnel systems were put into service little by little as completed, starting in 1985
- 2012** Millenium Reserve Plan enacted

A TAPESTRY OF PEOPLE, NEIGHBORHOODS, NATURE, AND INDUSTRY

The Calumet Region weaves together neighborhoods, open space and natural areas, shopping and business districts, industrial areas, and transportation corridors like a tapestry. If you take a deep look into the history of any particular place in the Calumet Corridor, you will uncover a complex story marked by cyclical waves of economic growth, conservation, collapse, and revitalization. These economic cycles have resulted in the layering and juxtaposition of old and new features and natural and built environments that are unique to the Calumet Region.

A BRIEF ECONOMIC AND SOCIAL HISTORY OF THE CALUMET CORRIDOR

Historically, the Calumet Region has been closely linked with heavy industry. The abundance of railroads and waterways that traverse the region supported the establishment of steel mills, oil refineries, bulk materials handlers, and other industries (often adjacent to or near waterways). These industries provided a wealth of jobs and community building opportunities for municipalities along the Calumet Corridor, especially in Blue Island, Dolton, and Riverdale.

Over the past 45 years, however, the region's economic base, number of skilled jobs and other opportunities have declined, due to changes in national and international markets and manufacturing technologies. Making matters worse, the Great Recession of 2008 resulted in many homeowners falling "underwater" on their mortgage payments (meaning the amount of a homeowner's mortgage is more than the value of their property), putting them at risk of foreclosure. When chronic flooding issues enter the picture (see The Problem) the financial burden becomes more than many homeowners can shoulder. This has created a situation in which some homeowners feel trapped in their homes or, in some cases, are driven to simply abandon their homes, seeking greener and dryer pastures.

Residents involved in this RainReady planning process have expressed concerns about higher crime rates, and diminishing accessibility to and quality of social services, public education, and public health services. Addressing

	Assets	Description and Examples
ECONOMIC	Transit-Oriented Development (TOD) and Cargo-Oriented Development (COD) opportunities	There are 10 Metra Stations (six in Blue Island, one in Calumet Park, one in Robbins, two in Riverdale. There are five large COD Zones that overlap with Calumet Corridor. Most of these existing TOD/COD existing sites have ample development potential.
	Proximity to Chicago	The Calumet Corridor is approximately 20 miles south of downtown Chicago.
	Access to jobs via transit	On average, 577,491 jobs are accessible within a 30 minute transit commute for households in the Calumet Corridor.
	Community access to transit	On average 35.2% of the people in the Calumet Corridor reside within a half mile of a transit stop.
	Developable land and properties located on commercial streets	All of the Calumet Corridor communities have land and properties available along commercial corridors.
	Funding, financing, and tax incentives programs	There are a variety of tax and funding incentives that are available to catalyze industrial, commercial, residential, and mixed use developments. For example, Tax Increment Financing Districts (TIFs), Special Business Districts, Growth Zones, Brownfield Redevelopment and Intermodal Promotion Act (BRIMPA), New Market Tax Credit Zones, and other incentives can be leveraged by investors and developers.
	Schools and universities with a mission to educate and equip a workforce with the skills needed for an ever-changing economy	There are several nearby colleges, universities, and trade schools within the Southland Region that prepare local residents for jobs in the region (e.g., South Suburban College, Moraine Valley College, Governors State University, Chicago Community Colleges).
	Deep respect for and desire to celebrate cultural and community heritage	Celebrating Robbins' historic African American identity (e.g., Tuskegee Airmen) is a key consideration for residents and Village staff for any planning and development effort.
SOCIAL	Historical neighborhoods that have housed families for generations	Many families have lived in their communities for multiple generations. Community members often cited the aesthetics of older neighborhoods (e.g., "tree-lined streets," and "beautiful and uniformed architecture") as a community strength.
	Engaged community residents and organizations	Community groups like Blue Island's Resident Action Group, Riverdale's Organization for Change (ROC), and numerous other block clubs, church groups, youth groups, and other community organizations are actively engaged in efforts to improve their community's homes, places of worship, and neighborhoods.
ENVIRONMENTAL	An abundance of ecologically-significant natural areas	There are approximately 820 acres of natural areas of statewide significance that are either within or immediately adjacent to the Calumet Corridor communities.
	Access to Lake Michigan, one of the world's largest sources of freshwater	The Great Lakes hold about 21% of the world's fresh water.

FIGURE RR-16:
Key Regional Assets

these community concerns are not within the scope of this plan. However, we feel it is important to acknowledge these broader challenges and, where possible, design flooding solutions that can help communities address them. For example, this plan outlines strategies for investing in infrastructure improvements that create local jobs, and building green school yards that create more youth opportunities for outdoor recreation and environmental education.

Although serious economic and social challenges exist, the Calumet Corridor boasts numerous economic, social, and environmental assets and proactive citizens (residents, municipal staff, and elected representatives) who are committed to improving their communities. Some of the key regional assets identified through this planning effort are listed in Figure RR-16. *Note: Community-specific assets are mapped and discussed in the community-specific chapters.*

In light of the regional assets (Figure RR-16), and many others that are not listed, the RainReady Community Team believes that Blue Island, Calumet City, Calumet Park, Dolton, Riverdale and Robbins are well positioned to take advantage of these tremendous regional strengths and realize a true revitalization of their neighborhoods, business districts, and communities.

SUMMARY OF KEY ACTORS, PLANS, AND POLICIES

The political landscape of the Calumet Corridor is as rich and varied as the region’s physical landscape. Dozens of local, regional, state, and federal organizations, agencies, and firms—each of which has its own jurisdiction and geographies—are actively engaged in shaping the region. Each of these governing bodies, and their staff, brings a unique set of resources (e.g., funds, technical assistance, and administrative know-how) and legal mandates (the responsibility to do something), which can be used to advance a project.

In such a *planning-rich* context, it is critical to begin any effort by learning *what* plans, policies, and ordinances are relevant for a given project and *where* communities can secure the necessary resources for implementation. Therefore, building the capacity of residents, municipal staff, and elected representatives to collectively navigate complicated decision-making processes, mobilize and engage the right stakeholders, and acquire the necessary funding and other resources is key to building stronger, more resilient communities.

To help readers and users of this plan understand and navigate the complex political and economic context of the Calumet Corridor, we created the following four tables:

- **Figure RR-17.** Political Jurisdictions with Cultural and Natural Geographies of the Calumet Region (geographic analysis)
- **Figure RR-18.** Key Actors by Sector (stakeholder analysis)
- **Figure RR-19.** Key Regional Plans (plan review)

FIGURE RR-17:
Political Jurisdictions with Cultural and Natural Geographies of the Calumet Region

Level	Political Jurisdictions	Cultural and Natural Geographies
Local	• Wards • Planning Areas • Municipalities	• Blocks • Neighborhoods • Drainage areas
Sub-Regional and County	• South Suburban Mayors and Managers Association's (SSMMA) 35-municipality service area • Cook County	• The Calumet Corridor • The Calumet Region • The Millennium Reserve Region • The "Southland" Region • Sewersheds and Watersheds
Regional	• Chicago Metropolitan Agency for Planning's (CMAP) seven-county planning area • Metropolitan Water Reclamation District's (MWRD) service area	• "Chicagoland" Region • Chicago Wilderness Region
State	• Congressional Districts	• Northeastern Illinois
National	• State of Illinois • U.S. Environmental Protection Agency (EPA) Region 5, U.S. Army Corps of Engineers' (USACE) Great Lakes and Ohio River Division • USACE Chicago Division	• The Midwest • Great Lakes and Mississippi Basins

Level	Political	Civic/Academic	Private
Local	• Aldermen • Trustees • Mayors	• Block clubs and neighborhood groups • Faith-based organizations • Community-based organizations	• Residents • Local businesses
Sub-Regional and County	• Staff at regional agencies • Staff at Council of Governments (COGs) • Staff at County government	• Regional civic organizations and philanthropies • Regional collaboratives, working groups, and networks • Regional land banks • Community colleges and universities (e.g., members of South Metropolitan Higher Education Consortium)	• Contractors • Developers
Regional	• Metropolitan Planning Organizations (MPO)	• Regional civic organizations and philanthropies • Regional collaboratives, working groups, and networks • Regional land banks • Community colleges and universities (e.g., members of South Metropolitan Higher Education Consortium)	• Railroad companies • Regionally-focused engineering firms • Utilities companies • Regional industries
State	• Staff at state agencies	• State Universities and Extension Programs	
National	• Staff at federal agencies	• National civic organizations and philanthropies • Regional collaboratives, working groups, and networks	• National business chains • National/International Architecture, Engineering and Construction (AEC) firms
This table lists the types of actors in a given sector and governance level. Specific actors (e.g., organizations, agencies, firms, etc.) are listed in the community-specific plans where appropriate.			

FIGURE RR-18:
Key Actors by Sector and Governance Level
(i.e., Stakeholder Analysis)

Through this planning process, RainReady reviewed over 100 plans, policies, and studies, including CMAP's GO TO 2040 Comprehensive Regional Plan (and forthcoming ON TO 2050 plan), the Millennium Reserve Plan, Local Technical Assistance (LTA) plans and the Metropolitan Water Reclamation District of Greater Chicago's (MWRD) Detailed Watershed Plans (DWP) and forthcoming Phase 2 Stormwater Master Plan. The purpose of such an extensive plan review was to avoid "reinventing the wheel" in terms of possible solutions, and to identify opportunities to build on and advance previously proposed ideas and community priorities.

Name	Lead(s)	Year Completed / Status	Focus
ON TO 2050	CMAP	Underway	Comprehensive Regional Plan
Cook County Bureau of Economic Development Sub-Regional Comprehensive Growth Plan	CMAP, Regional Transit Authority (RTA), Cook County	Underway	Economic Development
Chicago Region Trees Initiative Master Plan	The Morton Arboretum, Chicago Region Trees Initiative	Underway	Urban Forest
Calumet Stormwater Collaborative	Metropolitan Plannin Council (MPC) (with various members)	Ongoing	Watershed/Stormwater Management
Millennium Reserve	Various	Ongoing	Various
Floodplain and Stormwater Management Program	Forest Preserve District of Cook County (FPDCC)	Ongoing	Watershed/Stormwater Management
Healthy HotSpot	Cook County Department of Public Health, Active Transportation Alliance (ATA)	Ongoing	Public Health
Stormwater Master Plan for Little Calumet River/Cal-Sag Channel Drainage Area	MWRD	2016	Watershed/Stormwater Management
South Suburban Mayors and Managers Association (SSMMA) / South Council of Mayors: Existing Conditions Report	CMAP, SSMMA	2016	Complete Streets
Planning for Progress in Cook County	CMAP, Cook County	2016	Economic Development
2015 - 2019: Transportation Plan	Cook County Department of Transportation and Highways	2016	Transportation
2017 - 2022: Proposed Highway Improvement Program	Illinois Department of Transportation (IDOT)	2016	Transportation
Connecting Cook County: 2040 Long Range Transportation Plan	Cook County	2016	Transportation
Millennium Reserve Green Infrastructure Project	Chicago Wilderness, SSMMA	2015	Greenways / Green Infrastructure / Conservation
Cook County Multi-Jurisdictional Hazard Mitigation Plan	Cook County	2014	Hazard Mitigation Plan
Next Century Conservation Plan	FPDCC	2014	Greenways / Green Infrastructure / Conservation
Final Capital Improvement Plan 2012 -2016	FPDCC	2012	Capital Improvement Plan
Chicago Southland TOD Corridor Planning Study Phase II Implementation	SSMMA, RTA	2012	Transportation
GO TO 2040	CMAP	2010	Comprehensive Regional Plan
Detailed Watershed Plan for the Little Calumet River	MWRD	2009	Watershed/Stormwater Management
Green River Pattern Book	SSMMA, CNT	2009	Greenways / Green Infrastructure / Conservation
Calumet River Corridor Economic Development Vision and Strategy	CMAP, Business Districts, Inc. (BDI), Vandewalle & Associates, SSMMA	2007	Economic Development

FIGURE RR-19:
Key Regional Plans and
Ongoing Collaboration

This RainReady planning process also coordinated and aligned with these key regional planning and coordination efforts in the Calumet Corridor, where it was appropriate:

THE CALUMET STORMWATER COLLABORATIVE

The Calumet Stormwater Collaborative (CSC) is facilitated by the Metropolitan Planning Council (MPC) and comprised of the key stakeholders managing land, infrastructure, financing tools, or regulatory powers related to stormwater management in the Calumet Region. The CSC began as one of the first priority projects of the Millennium Reserve in light of the need for better communication and coordination around stormwater planning and implementation efforts. The CSC addresses three central problems:

- Stormwater overwhelms current infrastructure
- Green infrastructure’s role in stormwater management is still taking shape
- Coordinated action between government units and other stakeholders controlling land, infrastructure, financing tools and regulatory powers is necessary to solve systemic problems in systemic ways

The CSC has been invaluable in facilitating coordination with stakeholders and partners throughout this planning process. The RainReady educational workshops, hosted throughout the summer of 2016, were a shared product of the CSC.

The CSC, its member organizations, and its work products (e.g., Planning and Policy Resource Repository, educational materials, modeling and data tools, etc.) are all valuable resources for coordinating stormwater planning and implementation efforts in the Calumet Region.

THE CHICAGO METROPOLITAN AGENCY FOR PLANNING’S GO TO 2040 COMPREHENSIVE REGIONAL PLAN

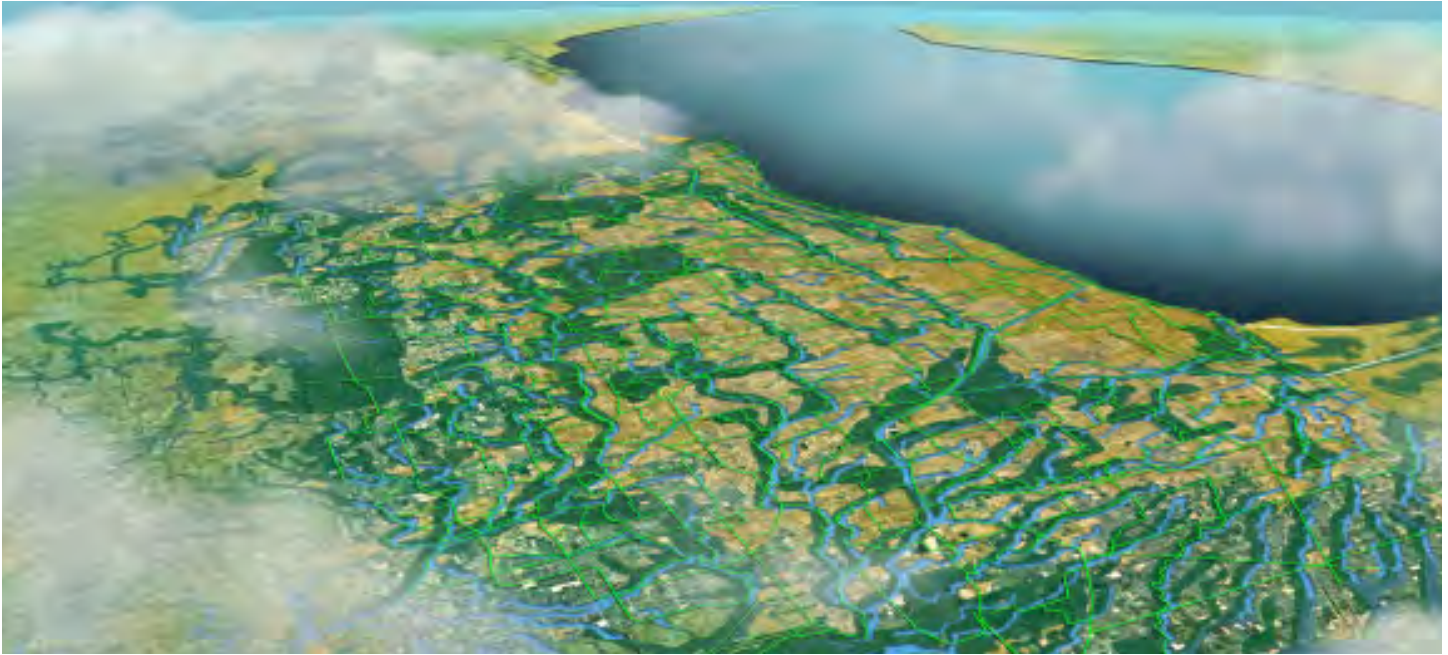
GO TO 2040 is Metropolitan Chicago’s comprehensive regional plan for sustainable prosperity in its seven counties and 284 communities. The Chicago Metropolitan Agency for Planning (CMAP) has begun developing a new comprehensive plan to succeed GO TO 2040. CNT is contributing to this effort on a variety of topics, including stormwater, resilience, green infrastructure, climate mitigation, working in vulnerable communities, and transit-oriented development (TOD).

COOK COUNTY’S APPLICATION TO THE U.S. DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT’S NATIONAL DISASTER RESILIENCE COMPETITION

In 2015, the State of Illinois, Cook County, DuPage County, and the City of Chicago, each applied to the U.S. Department of Housing and Urban Development’s (HUD) National Disaster Resilience Competition (NDRC), a large grant program for resilience initiatives. Though none of the applications were accepted, they provided a foundation for resilience priorities. In fact, many of Cook County’s 2015 project proposals were refined and advanced through RainReady Planning Process.

THE METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO’S PHASE II MASTER PLAN

The Metropolitan Water Reclamation District of Greater Chicago (MWRD) is an independent government and taxing body serving approximately 91 percent of Cook County. Its mission is to protect the health and safety of the public, protect the quality of the water supply source (Lake Michigan), improve the quality of water in watercourses in its service area, protect businesses and homes from flood damages, and manage water as a vital resource for its service area.



The MWRD has finalized a Stormwater Master Plan in the Little Calumet River/Calumet-Sag Channel Drainage Area, which incorporates portions of Blue Island, Calumet Park, Riverdale, and Robbins. The final Plan includes concept memos for known problem areas in four of the six communities in the Calumet Corridor. Where appropriate, the RainReady Calumet Corridor Plan builds on the recommendations put forth in these concept memos. The MWRD also worked closely with Cook County on the aforementioned NDRC application and is the lead agency on several projects within the Calumet Corridor. The RainReady team works closely with the MWRD to coordinate planning efforts and advance stormwater projects in the Calumet Corridor.

MILLENNIUM RESERVE GREEN INFRASTRUCTURE PROJECT

Between 2014 and 2015, Chicago Wilderness undertook a green infrastructure planning process for 36 communities within the Millennium Reserve - Calumet Core. The goal of this process was to increase awareness of natural assets and build a foundation for long-term natural resource protection and stewardship.

Through this process, Chicago Wilderness established:

- a map of the core green infrastructure networks throughout the Millennium Reserve
- a map of key “Opportunity Areas” suitable for localized green infrastructure strategies, which were identified through community workshops over a 12 month period
- increased capacity within local communities to understand the impacts of climate change and implement green infrastructure strategies

The plan established several foundational concepts around which the Cook County NDRC application and this RainReady Calumet Corridor Plan were built.

There is a long and rich history of planning and action in the Calumet Region and, despite reviewing more than 100 documents, this is not exhaustive.

RAINREADY: REGULATORY ENVIRONMENT SUMMARY

The six communities within the Calumet Corridor are subject to a variety of regulations impacting stormwater runoff and water quality. Federal, state, and county regulations apply universally to each of the six communities. Each municipality also has its own set of local codes and ordinances that impact the water within it.

The regulatory environment within which the residents, business owners, and developers of the Calumet Corridor operate will impact the path to RainReadiness. This section provides an overview of the regulations that apply to floodplain and stormwater management, water quality, land use planning, development, site planning, and building codes. Through this review, we can identify the existing regulatory tools that encourage better stormwater management as well as opportunities to improve or instate new regulations that encourage the use of green infrastructure and other water infrastructure best management practices (BMPs).

FEDERAL REGULATIONS

The federal regulations with the most “teeth” (or regulatory power) to manage flooding and stormwater in the Calumet Corridor include the Clean Water Act of 1972, as amended (33 U.S.C. §1251 et seq.), and the National Flood Insurance Act of 1968, as amended (42 U.S.C. 4001 et seq.).

A Note About Language and Definitions

The following section gets a bit technical and uses terms that have very specific definitions. Fear not! We have included a glossary of terms in Appendix B, which you can reference at any time. Terms and concepts that are italicized throughout this plan are defined in this appendix.

THE CLEAN WATER ACT

The Clean Water Act, officially the “Federal Water Pollution Control Act,” was the first federal statute established to protect the natural waters of the United States. It aims to “restore and maintain the chemical, physical, and biological integrity of the Nation’s waters” and remains the most important federal statute on water protection.

The Clean Water Act sets guidelines for the release of polluted water into natural waters, and establishes water quality standards for rivers, lakes, and wetlands. Within the Calumet Corridor, the Clean Water Act is responsible for the National Pollutant Discharge Elimination System (NPDES) Program, which dictates that a permit be secured wherever treated effluent and stormwater are released into waterways. The Clean Water Act also regulates the nature of fill material that can be placed in waterways and wetlands.

The United States Environmental Protection Agency (USEPA) administers the majority of the Clean Water Act Regulations. However, the State of Illinois has administered the NPDES program since 1977, and the USACE administers Section 404, which pertains to the placement of fill material into the navigable waters of the U.S. and associated wetlands.

THE NATIONAL FLOOD INSURANCE ACT

The National Flood Insurance Act authorizes the National Flood Insurance Program (NFIP), which is administered by the Federal Emergency Management Agency (FEMA). The NFIP aims to reduce the impact of riverine flooding on private and public structures. It does so by providing affordable insurance to property owners and by encouraging communities to adopt and enforce floodplain management regulations to reduce flooding on new construction.

Although voluntary, most communities participate in the NFIP because municipal participation in the program is required in order for property owners to insure their structure under the NFIP. This insurance is often required to secure a mortgage within the designated Special Flood Hazard Area (SFHA), defined by FEMA. To participate in the program, communities are required to adopt local floodplain management ordinances which ensure that new floodplain development is built to reduce flood risk and does not increase flood risk in other areas. Although the NFIP is administered by FEMA at the national level, individual communities are required to enforce their adopted floodplain ordinances.

FEMA established the voluntary Community Rating System (CRS) Program to encourage communities to go above and beyond the minimum requirements under the NFIP. CRS-participating communities implement actions to reduce flood damage through additional floodplain regulation, educational programs, and taking a comprehensive approach to floodplain management.



When communities opt in to CRS, flood insurance premium rates are discounted within the participating community, reflecting the reduction in risk associated with their actions. Within the Calumet Corridor, all six communities participate in the NFIP, but only Calumet City is currently participating in the CRS program.

Other federal regulations that impact the waterways of the Calumet Corridor are listed below.

-
- **National Environmental Policy Act (NEPA):** Requires federal agencies to assess the environmental effects of their proposed actions prior to implementation. Agencies also provide opportunities for public review and comment on those evaluations.
-
- **Safe Drinking Water Act (SDWA):** Protects the quality of drinking water in the U.S. This law focuses on all waters actually or potentially designed for drinking use, whether from above ground or underground sources, and is administered by the EPA.
-
- **Rivers and Harbors Act of 1899:** Protects navigation and regulates dredging and filling of the nation's waters by requiring a permit for any project that proposes erection of structures or other work in navigable waters. In the Calumet Corridor, the Calumet River, the Little Calumet River, and the Calumet-Sag Channel are listed as "navigable waterways" and are subject to this legislation, which is administered by the USACE.
-
- **Fish and Wildlife Coordination Act:** Protects fish and wildlife when federal actions result in the control or modification of a natural stream or body of water. The act requires a consultation with the U.S. Fish and Wildlife Service (USFWS) and Illinois Department of Natural Resources (IDNR) where any body of water is controlled or modified by any Federal agency.

STATE OF ILLINOIS REGULATIONS

Within the State of Illinois, the most important regulation for managing flooding and stormwater within the Calumet Corridor is the Rivers, Lakes, and Streams Act (RLSA). Under RLSA, the Illinois Department of Natural Resources (IDNR) Office of Water Resources (IDNR/OWR) regulates construction activities in floodplains. This includes regulating activities that may restrict a stream's capacity to carry flood flows and result in channel instability and increased flood damages to neighboring properties. In other words, construction activities must be reviewed for their potential to increase flooding.

IDNR requires permits for any construction within a public body of water and for construction within floodways. Permits are required for construction projects in floodways of 1) streams in urban areas with drainage areas of one square mile or more and 2) streams in rural areas with drainage areas of ten square miles or more. In Cook County, the MWRD reviews permits.

The State of Illinois Environmental Protection Agency (IEPA) administers the NPDES Program, which requires small municipalities with separate sewer systems to secure an ILR40 permit (Phase II MS4 Permit) to oversee the release of stormwater into local waterways. Sewer permits must comply with the current edition of the Illinois Recommended Standards for Sewage Works, Standard Specifications for Water and Sewer Main Construction, local standards and specifications, and Design Criteria for Pressure Sewer Systems, 35 Ill. Adm. Code 374.

Within the Calumet Corridor, Calumet City, Dolton, and Robbins have active NPDES permits. No permit is required for Blue Island, Calumet Park, or Riverdale. NPDES permits require stormwater management programs with the inclusion of six “Minimum Control Measures” under the following categories:

1. Public Education and Outreach on Stormwater Impacts
2. Public Involvement/Participation
3. Illicit Discharge Detection and Elimination
4. Construction Site Stormwater Runoff Control
5. Post-Construction Stormwater Management in New Development and Redevelopment
6. Pollution Prevention/Good Housekeeping for Municipal Operations



REGIONAL REGULATIONS

Within Cook County, the MWRD Watershed Management Ordinance (WMO) applies to all developments and qualified sewer construction within its service area. The WMO regulates the following:

- **Qualified sewer construction.** Defined based on the project's location, size, type, and ultimate sewer outlet location. Generally, any construction or modification of storm sewers in a combined sewer area and construction of storm sewers in a separate sewer area that discharge to a MWRD District facility are considered qualified sewer construction and require a *Watershed Management Permit*.
- **Drainage and detention and volume control.** The WMO includes several site development and stormwater management standards to restrict developments from increasing flood elevations, decreasing flood conveyance, or causing any increases in flood velocity within streams. The most significant requirements established to meet these goals include runoff volume control and storage requirements for developments. Figure RR-20 includes a summary of site stormwater management permit requirements.
- **Floodplain management, isolated wetland protection, and riparian environment protection.** Resource protection areas include floodplains, wetlands, wetland buffers, and riparian environments. The WMO requires that development in the floodplain cannot increase flood elevations or decrease conveyance capacity on other property.
- **Soil erosion and sediment control.** Erosion control includes measures to prevent soil from being removed from the earth's surface – planting vegetation, mulching, hydro-mulching, and installing geotextile fabrics. Sediment control measures – silt fences, fiber rolls, sediment traps, and wattles – prevent the transport of soil once it has been removed. The WMO requires that erosion and sediment control practices be included in the initial site plan of a development.

As part of the WMO, the MWRD also implements an *Infiltration and Inflow Control Program (ICAP2)* with which all municipalities in the MWRD's service area must comply. The program aims to limit the amount of infiltration and inflow (I&I) entering into sanitary sewer systems. Excessive I&I can overwhelm sanitary

FIGURE RR-20:
Summary of Site Stormwater Management Requirements

Development Type	Runoff Requirements	Volume Control Requirements	Storage Requirements
Single-Family Home	Exempt	Exempt	Exempt
Residential Subdivision	Parcels ≥ 1 acre	Parcels ≥ 1 acre	Parcels ≥ 5 acres
Multi-Family Residential	Parcels ≥ 0.5 acre	Parcels ≥ 0.5 acre	Parcels ≥ 3 acres ‡
Non-Residential	Parcels ≥ 0.5 acre	Parcels ≥ 0.5 acre	Parcels ≥ 3 acres ‡
Right-of-Way	New Impervious Area ≥ 1 acre	New Impervious Area ≥ 1 acre †	New Impervious Area ≥ 1 acre †
Open Space	Parcels ≥ 0.5 acre	Not Applicable	Not Applicable

* Site stormwater management requirements are not required for maintenance activities as defined in Appendix A.

† Where practicable.

‡ Starting the effective date of the ordinance, any new development on the parcel that equals, either individually or in the aggregates, more than one-half (0.5) acre.

Source, MWRD: note for reference https://www.mwrdr.org/iri/go/km/docs/documents/MWRD/Internet/protecting_the_environment/Stormwater_Management/htm/WMO/WMO_Summary.htm

systems with stormwater. Since sanitary systems are designed to hold only sewage, not stormwater, they are easily overwhelmed by big storms, leading to sanitary sewer overflows and basement backups. ICAP2 requires communities within MWRD's service area to identify and address I&I sources within public and private sewer systems. As of November 2015, Calumet City, Dolton, Riverdale, and Robbins all have completed and approved rehabilitations programs.

LOCAL CODES AND ORDINANCES

Local zoning, building codes, and ordinances can either promote or be a barrier to better stormwater management. For example, excessive requirements for on-site parking spaces promote unnecessary increases of impervious surfaces. Laws prohibiting flat roofs restrict green roof installations. Codes requiring that grass be trimmed to less than 10 inches high prevents the use of native grasses that could promote infiltration and improve local habitat.

Comprehensive plans, zoning codes, and building standards are just a few examples of regulations that intentionally or unintentionally regulate the way water is transported, collected and absorbed. Regulations that promote sprawling development or large amounts of impervious cover, for example, can impair stream water quality, worsen flooding, and reduce the recharge of aquifers. Local development codes should be reviewed to limit instances of these types of unintended consequences on local water management.

As is common in many communities, the municipalities in this area have adopted state, county, and international standards into their respective local ordinances. The International Building Code (IBC) developed by the International Code Council (ICC) sets out a series of codes relevant to all buildings except one- and two-family dwellings and is typically adopted in conjunction with the International Plumbing Code, International Mechanical Code, International Residential Code, International Property Maintenance Code, International Energy Conservation Code, etc. These codes are periodically updated, so it is important to note the year in which the adopted code was written. Blue Island is currently using the 2012 version, while Dolton is using 2009. Riverdale is operating under a similar, but different prescribed code from the Council of American Building Officials (CABO) One and Two Family Dwelling Code, 1995 edition, and Building Officials and Code Administrators (BOCA) National Building Code, 1996 edition.

Some notable additions to local ordinances in this area include Blue Island's guidance on "Plant Materials" which suggests, "inclusion of native plant material wherever possible" and promotes "adaptability of proposed plant material to the particular microclimate (sun, shade, dry or wet soils and the like) in which it is to be located" (Blue Island, Illinois Code of Ordinances § 163.05). Blue Island also specifies the inclusion of landscaping in parking lots and "streetscapes" (Blue Island, Illinois Code of Ordinances § 163.08 and 163.09).

RAINREADY SOLUTIONS: GOALS, STRATEGIES, AND ACTIONS



A RainReady Future is Possible!

Communities around the country (and right next door in Midlothian) are realizing that real impact is possible when residents, municipal staff, elected representatives, and regional stakeholders work together towards a shared vision.

Reducing flooding is a key priority for residents and local governments alike throughout the Calumet Corridor and is the focus of this plan. However, reducing flooding is not the only priority. Creating new jobs, educational and recreational opportunities for youth, and a sense-of-place and local ownership also ranked highly amongst those we heard from in this RainReady planning process.

Good news.

There are practical steps that communities can take that will reduce their flooding risk AND support other community priorities.

Creating resilient and thriving communities, however, will require working together across boundaries and borders that are generally not crossed. Just as rain water flows across public and private property, different land uses, and different spatial scales, so too must the strategies and actions that communities implement to reduce flooding.

Creating resilient communities will require that residents, municipal staff, elected representatives, and regional experts work collaboratively in defining problems and designing, determining, implementing, and maintaining solutions. Building community resilience also requires that communities develop infrastructure projects and programs (and financing strategies) that cut across public and private lines.

Such projects and programs (and the partnerships necessary to bring them to fruition) should deliver multiple functions and benefits, be planned in a coordinated manner, foster sustainable and long-term economic development (as opposed to short-term economic growth), and improve the quality of life for all.

RainReady solutions are resilient solutions. The solutions put forth in this plan aim to reduce flooding in a way simultaneously strengthens homes, beautifies neighborhoods, improves transportation, revitalizes commercial areas, and restores natural areas.

These solutions are organized into goals, strategies, and actions.

RAINREADY GOALS

The Three R's: Reorient, Repair, Retrofit

RainReady solutions encompass a wide range of policies, projects, programs, and partnerships that have a role to play in setting communities on a path towards resilience. The proposed solutions for each community take into account each community's strengths, concerns, priorities, and goals, as well as infrastructure projects and programs that are already on-the-books or active on-the-ground.

To help readers of this plan navigate the various proposed policies, projects, programs, and partnerships and understand who is responsible for a given action, we packaged these RainReady solutions into an easy-to-digest concept: **The Three R's**. Each 'R' represents a high-level goal that can guide communities along the paths towards resilience (see below).

Each goal has a corresponding set of **strategies**. Some of these strategies may look familiar, if you have been involved with other planning processes. This is

intentional, as building on prior planning efforts and supporting existing community priorities through stormwater projects was an objective of this planning process from the outset.

Each strategy has a corresponding set of **actions**. These actions were identified through interviews with experts, the RainReady Technical Advisory Committee, and an extensive review of best practices in building community resilience.

In each community plan, these goals, strategies, and actions are tailored so that they fit each community's unique vision for the future, strengths, concerns, and priorities.

This chapter will help readers understand the various goals, strategies, and actions that are proposed in the community action plans.

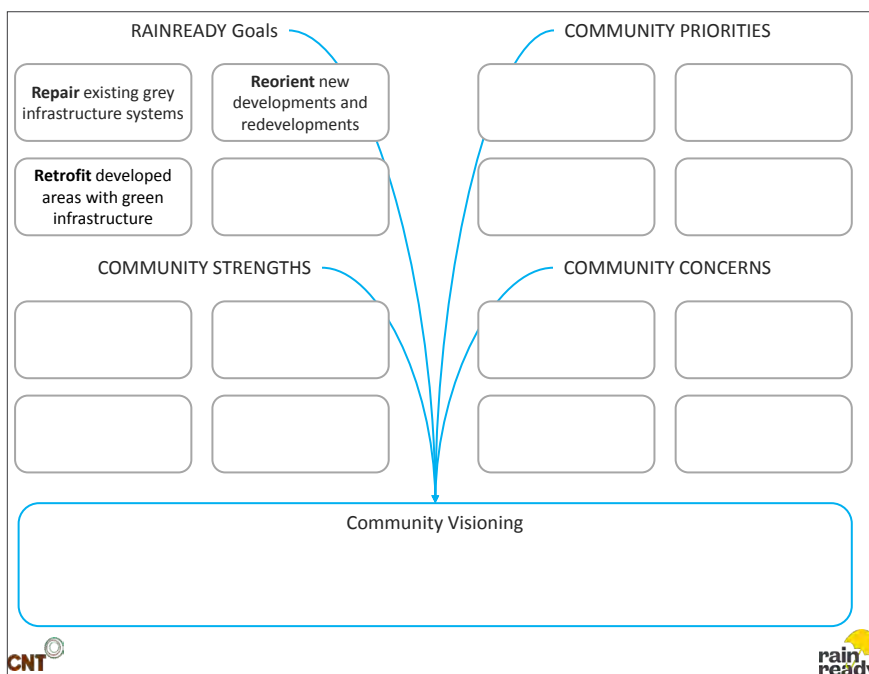
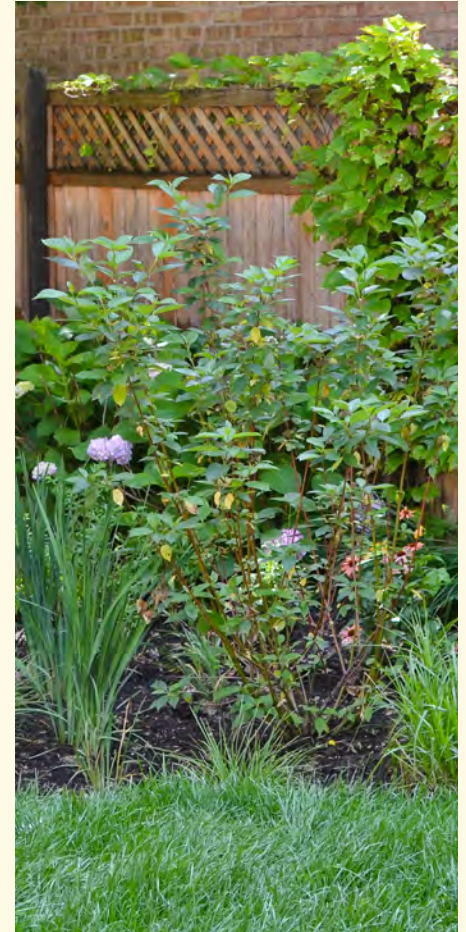
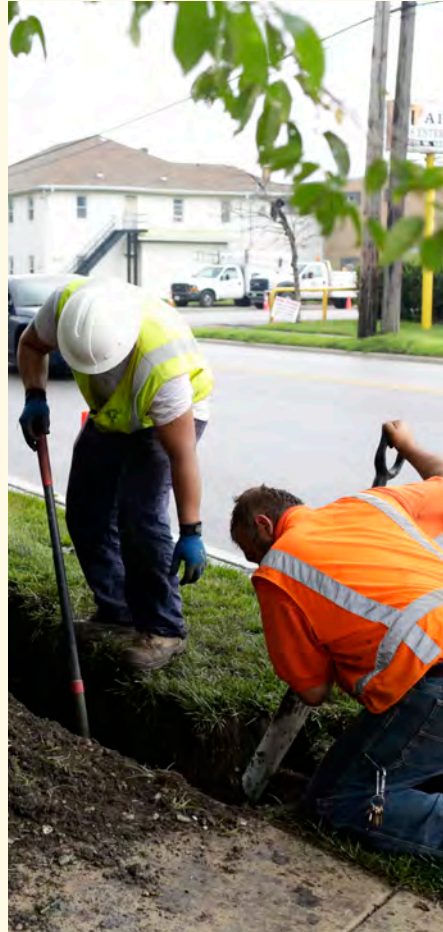


FIGURE RR20:
Synthesizing Community Input
and RainReady Goals



REORIENT STRATEGIES

- **Strategy 1.** Build capacity to make well-informed decisions and execute them
- **Strategy 2.** Plan and implement projects collaboratively
- **Strategy 3.** Promote smart, equitable, and resilient land development
- **Strategy 4.** Prepare your community for future shocks and stresses



REPAIR STRATEGIES

- **Strategy 1.** Document your municipal sewer and stormwater drainage system
- **Strategy 2.** Inspect and evaluate your municipal sewer and stormwater drainage system
- **Strategy 3.** Rehabilitate your municipal sewer and stormwater drainage system
- **Strategy 4.** Maintain your municipal sewer and stormwater drainage system



RETROFIT STRATEGIES

- **Strategy 1.** Retrofit your homes and neighborhoods
- **Strategy 2.** Retrofit your shopping areas, business districts, and downtown areas
- **Strategy 3.** Retrofit your industrial centers and railroad corridors
- **Strategy 4.** Retrofit (restore) your open space and natural areas

Visions, Goals, and Strategies, Oh My!

Several specific terms are used to describe the various components of this plan. The following definitions will help readers of this plan keep these terms and definitions straight:



TERM: VISION STATEMENTS

DEFINITION:

A vision statement articulates the collective understanding of the ideal future of a community. One vision statement was created for the Calumet Corridor area and each Steering Committee.

Visions statements were created by synthesizing the community input collected through the process and were iteratively refined with the community steering committees.

EXAMPLE FROM PLAN:

A RainReady Calumet City will be a community that works. It will be known a place where residents, city staff, and elected representatives work together and achieve real results. Through strategic and coordinated investments in green, grey, and green-grey infrastructure improvements, Calumet City's aging infrastructure, crumbling alleys, vacant lots, and expansive parking lots will be transformed from liabilities into community assets.



TERM: MISSION STATEMENTS

DEFINITION:

A mission statement summarizes the big-picture goals and values of an organization. One mission statement was developed for each of the six Calumet Corridor Steering Committees.

Mission statements were drafted by community steering committees, refined by the ReadyReady team, and then accepted by the community steering committees.

EXAMPLE FROM PLAN:

The RainReady Calumet City Steering Committee will work with residents, staff and elected representatives, to make Calumet City resilient by way of green and grey infrastructure improvements in alleys, vacant lots and expansive parking lots.



TERM: PRIORITY

DEFINITION:

A priority is an idea or recommendation (project, program, policy change) that a community especially wants to see accomplished or enacted.

Priorities were identified by:

- Educating residents on existing flooding risks and resilience opportunities and
- Having the steering committee define which recommendations are most important.

EXAMPLE FROM PLAN:

Ensure that all municipal planting projects in municipality use native plant species.

TERM: GOALS

DEFINITION:

Goals articulate ideal outcomes in a RainReady community. The Three RainReady goals (i.e., Reorient, Repair, and Retrofit) goals were applied to each community.

The RainReady goals were developed through an assessment of the primary planning problem to be addressed (chronic urban flooding) as well as broader factors (i.e., structural roadblocks, capacity potholes).

EXAMPLE FROM PLAN:

- **Reorient** Calumet City so that the community is on a path towards resilience
- **Repair** Calumet City's municipal sewer and stormwater drainage systems
- **Retrofit** the built landscapes throughout Calumet City with green, grey, and green-grey infrastructure improvements, and restore natural landscapes.

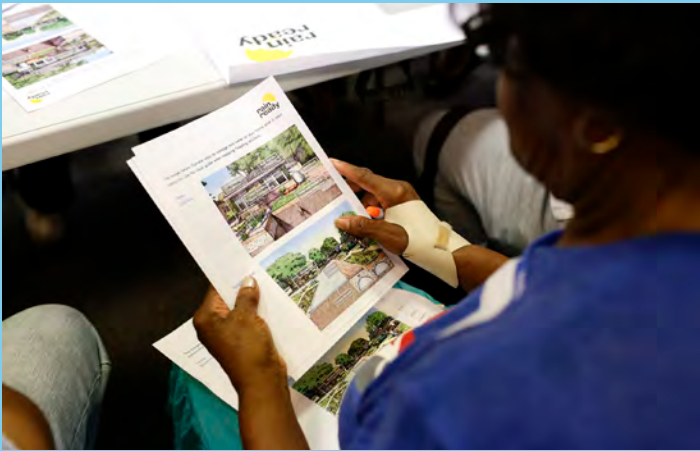


Photo: MARCXC, Flickr/Creative Commons

TERM: STRATEGIES

DEFINITION:

Strategies describe a way to achieve a RainReady goal.

A broad suite of potential strategies was developed through reviewing previous plans, inventorying best practices and case studies, and working collaboratively with community residents, staff, and elected representatives. Strategies were applied to communities based on each community's unique risks and resilience opportunities.

EXAMPLE FROM PLAN:

Strategy 1. Implement a residential resilience program .

TERM: ACTIONS

DEFINITION:

Recommended actions are specific projects, programs, policies, and partnerships that comprise a strategy.

Specific actions (e.g., what is proposed, where it goes, who leads, when does it happen, etc.) were developed by synthesizing outputs from analytical flood and solution mapping tools with input gathered through a collaborative and iterative community engagement process.

EXAMPLE FROM PLAN:

Adopt/Accept the RainReady Calumet City Action Plan; update the plan every 2-5 years; incorporate the plan's recommendations into forthcoming capital improvement planning efforts and decision-making efforts.

THE THREE R'S

The following goals are intended to help guide communities along the path towards greater resilience.

CNT/RainReady does not claim to have an exact blueprint for building a resilient community. In fact, this is something that each community needs to envision (and continually re-envision) for itself. CNT/RainReady, however, does have almost 40 years of experience in helping communities envision a more sustainable and equitable future and equipping people with the tools, insights, and know-how with which to realize that future.

Community leaders should acknowledge that the future is uncertain and develop the capacity of their communities (e.g., individuals, families, governments, infrastructure systems) to continually learn, improve, and adapt to change. The Three R's, therefore, are not a rigid step-by-step set of instructions, but rather a set of recommendations to guide how communities (re)orient towards a resilient future, repair and maintain existing infrastructure, and retrofit the natural and built landscapes.

RAINREADY GOALS:

- **Reorient communities.** Put communities on a path towards greater resilience by reorienting day-to-day-operations and long-term planning.
- **Repair existing infrastructure.** Establish modernized infrastructure systems that allow communities to survive and thrive no matter what shocks and stresses they face.
- **Retrofit the landscape.** Create beautiful communities by converting impervious surfaces into natural landscapes, installing new green, grey, and green-grey infrastructure, and restoring natural areas.

Reality Check



The path towards resilience is inherently uncertain (see The Path Forward). Communities will never know—with 100% certainty—what shocks and stresses lay ahead and what roadblocks and potholes may arise in the future. Consequently, there is no “one best way” to build your community’s resilience. Each community has a unique set of challenges and opportunities that they must navigate. This does not mean, however, that communities cannot take strategic and intentional steps to thrive today and prepare for tomorrow.

GOALS, STRATEGIES, AND ACTIONS

These goals, strategies, and actions will be implemented at multiple spatial scales



HOME

Strong communities are made up of strong and resilient homes. Reducing your individual flooding risk starts at home. Whether you are suffering from two feet of water in your basement or a constantly soggy lawn, there are simple, well-tested solutions available to homeowners and renters such as: regrading yards, televising and cleaning lateral lines, diverting water from gutters away from a house or into a rain gardens, and the careful placement or relocation of fences, garden, sheds, or anything that can block stormwater.



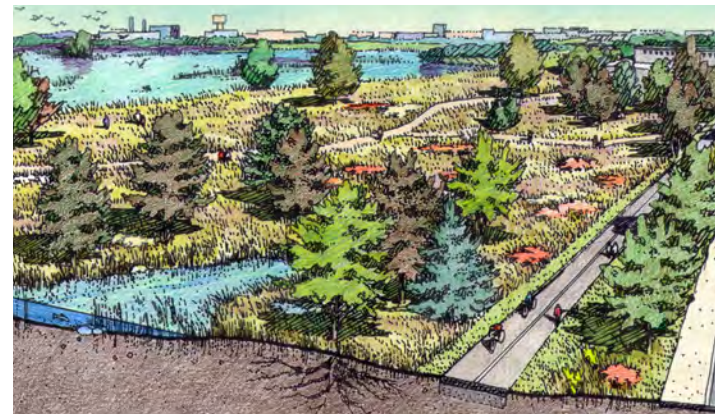
NEIGHBORHOOD

Stormwater may flow from one neighbor's property to another's, or pool in streets and alleys. Such local flooding issues can often be resolved through neighborhood-scale green infrastructure improvements, such as: bioswales along streets, green schoolyards and churches, green alleys, tree plantings, small-scale stormwater parks, and constructing storm sewers to collect runoff from roads and yards.



COMMUNITY

Some flooding and stormwater issues need to be addressed at the community-wide scale. For example, restoring a stream segment that flows through town, improving streetscapes, large sewer projects, revitalizing commercial corridors, and de-paving large impervious areas all require the marshalling of economic resources and political capital at the community level.



REGION

The communities of the Calumet Corridor are part of a broader region (see Regional Context). Waterways traverse the region and stormwater flows across municipal lines with no regard for political jurisdictions. Therefore, implementing large-scale projects like restoring a stream that crosses through multiple towns, constructing a regional trail, and developing a regional stormwater detention facilities, will require planning and implementation efforts at the regional level.

This plan also outlines actions that apply to different areas within your community. These different areas, or “land uses,” include the places where you live, work, play, and travel. To keep it simple, we organized the various land uses present throughout the Calumet Corridor into four primary categories:



YOUR HOMES AND NEIGHBORHOODS

The Calumet Corridor boasts many historic neighborhoods, each of which have their own unique character. Many of these neighborhoods, however, are in need of stabilization and restoration. This plan includes a variety of strategies and actions aimed at strengthening existing homes, beautifying the residential right-of-way (e.g., streets, parkways, sidewalks, alleys), and bringing new life to underutilized and vacant parcels.



YOUR INDUSTRIAL CENTERS AND TRANSPORTATION CORRIDORS

The large industrial areas, railroads, and highways that traverse the Calumet Corridor have supported previous eras of economic growth and will have a key role to play in the resilient revitalization of the broader Calumet Region. Although these legacy assets may present some challenges to residents of the Calumet Corridor (e.g., congestion due to automobiles and freight trains, air pollutions, brownfields), they can be redeveloped and revitalized in a way that reduces flooding in surrounding neighborhoods and promotes sustainable economic development.



YOUR SHOPPING AREAS AND BUSINESS DISTRICTS

Just as there are historic residential neighborhoods in need of repair, there are also historic (and newer) commercial corridors that—with just a bit of help—can once again be charming and pleasant places to shop and work (as opposed to traffic-ridden and stressful places that raise your blood pressure). This plan includes a variety of strategies and actions aimed at strengthening existing businesses, attracting new businesses, improving the commercial right-of-way (e.g., streets, parkways, sidewalks, alleys), and bringing new life to underutilized and vacant parcels.



YOUR OPEN SPACE AND NATURAL AREA

The natural land and water resources of the Calumet region (e.g., freshwater, rivers and streams, forest, prairies, wetlands) gave rise to the communities that occupy the landscape today. Sadly, only small remnants remain of these pre-settlement habitats and communities. Restoring these natural assets and re-connecting people to them—both physically and metaphorically—will be critical to creating a more resilient Calumet Corridor.

Goal 1: Reorient

REORIENT COMMUNITIES

PUT COMMUNITIES ON A PATH TOWARDS RESILIENCE BY REORIENTING DAY TO DAY OPERATIONS AND LONG-TERM PLANNING.

This goal will be achieved through strategic actions to improve local decision-making, ensure collaborative planning, promote equitable and resilient development, and prepare communities for future storms.

REORIENT STRATEGIES

- **Strategy 1. Build capacity to make well-informed decisions and execute them.** Adopt a long-term, adaptive, and integrated approach to managing day-to-day municipal operations, engaging in planning efforts, and making investment and development decisions.
- **Strategy 2. Plan and implement projects collaboratively.** Ensure that ongoing planning and decision-making processes are transparent, well-coordinated, and broadly participatory.
- **Strategy 3. Promote smart, equitable, and resilient land development.** Incentivize smart, equitable, and more resilient land development at all levels—from the home to the region.
- **Strategy 4. Prepare your community for future shocks and stresses.** Equip your residents, businesses, municipal staff, elected representatives, and regional partners with the knowledge and resources they need to prepare for, mitigate, respond to, and recover (stronger) from future storms—both large and small.



REORIENT ACTIONS

- **Strategy 1. Build capacity to make good decisions**
 - Build trust with your peers, your staff, and your constituents
 - Monitor and evaluate the performance of projects and programs
 - Improve the flow of information between departments and with your constituents
 - Cultivate a culture where it is okay to experiment, make mistakes, and learn
 - Continually seek to improve



• **Strategy 2. Plan and implement projects collaboratively**

- Engage a diversity of stakeholders early and often
- Listen, listen, and then listen some more
- Design outreach activities so that they match with the schedules, priorities, and expertise of the stakeholder group(s) you are seeking to engage
- Accomplish and celebrate the small victories (they add up)
- Don't take it personally
- Work together and recruit your neighbors
- See out creative ways to implement projects

• **Strategy 3. Promote smart, equitable, and resilient land development**

- Conduct a local ordinance audit
- Update building codes, zoning, and ordinances
- Public and Private Space Retrofit Programs
- Green Infrastructure and Flood Management Training

• **Strategy 4. Prepare your community**

- Know your risk: review the RainReady Plan: Calumet Corridor and Cook County's Hazard Mitigation Plan and implement their recommendations
- Agree on the path forward: work with RainReady and others to identify priorities for preparedness; and develop an emergency response plan
- Develop and implement an emergency alert system that alerts residents and visitors of an impending flood and other hazards or threats
- Educate the community on flood preparedness through school programs and other public forums (e.g., workshops, newsletters, websites, social media)
- Partner with American Red Cross, FEMA, and other organizations to provide disaster preparedness training
- Organize trainees into Community Emergency Response Teams (CERT)
- Educate homeowners, renters, and businesses about steps to reduce flood risk in homes and businesses and how to choose the right insurance so that they can quickly clean up, repair qualified damages, and strengthen the community following a storm
- Use tools like the Flood Vulnerability Assessment for Critical Facilities to assess the vulnerability of critical facilities and plan accordingly

Goal 2: Repair

REPAIR EXISTING INFRASTRUCTURE

ESTABLISH MODERNIZED INFRASTRUCTURE SYSTEMS THAT ALLOW COMMUNITIES TO SURVIVE AND THRIVE NO MATTER WHAT SHOCKS AND STRESSES THEY FACE.

Bringing aging and limited sewer systems up to a state of good repair will take strategic and ongoing efforts to document, inspect, maintain, and rehabilitate your existing sewer systems and residential lateral lines.

REPAIR STRATEGIES

- **Strategy 1. Document your municipal sewer and stormwater drainage system.** Gather information about the location, age, and extent of community infrastructure assets. Develop a system to record information about the various components of your overall system.
- **Strategy 2. Inspect and evaluate your municipal sewer and stormwater drainage system.** Regularly inspect your system so you know its condition and can identify problem areas.
- **Strategy 3. Rehabilitate your municipal sewer and stormwater drainage system.** When necessary, rehabilitate parts of the system to bring them up to a state of good repair.
- **Strategy 4. Maintain your municipal and sewer and stormwater drainage system.** Regularly clean and maintain your sewer system to keep small problems from turning into big ones.



REPAIR ACTIONS

- **Strategy 1. Document your municipal sewer system**
 - Update your sewer atlas information
 - Create a system (e.g., a Geographic Information System) for managing information on your municipal sewer system
 - Share your updated sewer atlas information through the Southland Suburban Mayor’s and Managers Association (SSMMA) to enable cross-jurisdictional stormwater planning
- **Strategy 2. Inspect your municipal sewer system**
 - Create a sewer inspection plan and schedule
 - Continually inspect your municipal sewer system on a cyclical basis (e.g., using both visual and closed circuit television inspection techniques)
 - Sewer televising and lining (inspection and maintenance task)
- **Strategy 3. Maintain your municipal sewer system**
 - Create a maintenance plan for green and grey infrastructure
 - Catch basin cleaning
 - Crack sealing
 - Sewer televising and lining (inspection and maintenance task)
 - Clean sewers and manholes
 - Street sweeping
- **Strategy 4. Rehabilitate your municipal sewer system**
 - Sewer point repairs
 - Roadway resurfacing (which improves gutters and other stormwater infrastructure)

Goal 3: Retrofit

RETROFIT THE LANDSCAPE

CREATE BEAUTIFUL, RAINREADY COMMUNITIES BY CONVERTING IMPERVIOUS SURFACES INTO NATURAL LANDSCAPES AND INSTALLING NEW GREEN AND GREY INFRASTRUCTURE.

Bringing aging and limited sewer systems up to a state of good repair will take strategic and ongoing efforts to document, inspect, maintain, and rehabilitate your existing sewer systems and residential lateral lines.

RETROFIT STRATEGIES

- **Strategy 1. Retrofit your homes and neighborhoods.** Retrofit homes and neighborhoods in a way that meets basic housing needs, supports public health, and creates more vibrant, connected, and livable places.
- **Strategy 2. Retrofit your shopping areas, business districts, and downtown areas.** Retrofit shopping areas, business districts, and downtown areas in a way that fosters economic prosperity, supports livelihoods and employment, and creates more walkable and attractive places.
- **Strategy 3. Retrofit your industrial centers and railroad corridors.** Retrofit industrial centers and railroad corridors in a way that creates new jobs, beautifies neighborhoods, and provides reliable transportation options.
- **Strategy 4. Retrofit (restore) your open space and natural areas.** Retrofit and restore your open space and natural areas in a way that preserves, protects, and enhances land and water resources, and connects these natural assets to your community.

RETROFIT ACTIONS

- **Strategy 1. Retrofit your homes and neighborhoods**
 - Implement a residential resilience program
 - Bring new life to vacant residential land
 - Create green schoolyards and churches
 - Create a network of residential green streets and complete streets
 - Create green alleys
- **Strategy 2. Retrofit your shopping areas, business districts, and downtown areas**
 - Enhance public facilities (e.g., schools and government buildings)
 - Bring new life to vacant and underutilized commercial land
 - Bring new life to underutilized parking lots
 - Create a network of commercial green streets and complete streets
- **Strategy 3. Retrofit your industrial centers and railroad corridors**
 - Improve the edges of large industrial sites and railroad corridors
 - Create a network of industrial green streets
 - Redevelop industrial sites in a way that reduces nearby flooding
- **Strategy 4. Retrofit (restore) your open land and natural areas**
 - Expand existing and create new open space and outdoor recreation amenities
 - Expand existing and create new urban agriculture sites
 - Integrate green infrastructure in municipal park systems

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RainReady Calumet Corridor

Plan for Robbins, IL



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A CITIZEN'S GUIDE TO A **RAINREADY ROBBINS**



A RainReady Robbins would be a community where all residents and businesses benefit from flood relief in a way that also brings neighborhood beautification, retail activity, jobs, recreation, and habitat conservation. In this community, public investment is transparent and fair.

In order to better understand Robbins' flooding risk, the Center for Neighborhood Technology (CNT), the U.S. Army Corps of Engineers, the RainReady Robbins Steering Committee, and the Village of Robbins joined together in February 2016. Throughout the year, this group met regularly, hosted community meetings, went door-to-door in the neighborhood, held seven educational workshops and five Steering Committee meetings, and reviewed hundreds of plans and studies. 72 Robbins residents filled out our flooding survey.

Together, we have established a shared vision and a path toward a more flood-resilient Robbins: The RainReady Robbins Plan. This Citizen's Guide to a RainReady Robbins covers the highlights of the plan, for more information visit www.rainready.org/calumet-corridor.

A Path Forward

Residents and municipal leaders in the Village of Robbins are motivated to address flooding in a way that spurs economic development and creates a more beautiful place to live and work. The regional stormwater utility, the Metropolitan Water Reclamation District (MWRD), is currently conducting a study on Midlothian Creek that seeks to create these opportunities in Robbins. The path forward for the community involves active partnerships to support the residents' vision for prosperity and investment in green infrastructure solutions.

Equipped with the RainReady Plan, the Village now has a roadmap for reducing flooding issues in a way that strengthens neighborhoods and businesses, and brings new life to vacant areas of town. With modern and well-maintained infrastructure, the Village will be prepared to weather future storms—both large and small.

**KEEP READING FOR MORE INFORMATION ON THE
PATH AHEAD FOR ROBBINS!**



**US Army Corps
of Engineers®**

Understanding the Problem

Like many of its neighbors, Robbins has long been plagued by chronic flooding. In recent years, the scope and severity of the floods have become significantly worse. A combination of aging and limited infrastructure and changes in regional climate have left many Robbins residents and infrastructure systems vulnerable to flooding. From 2007 to 2011, 316 flood-related insurance claims were filed in Robbins, with more than \$941,901 paid out in damages. In 2015, Robbins was identified by Cook County as the area “most impacted and distressed” by the April 2013 flooding disaster (DR-4116). Strategic policy changes and coordinated investment in green and grey infrastructure will mitigate chronic flooding issues in the Village.

RainReady Robbins Survey Results



Respondents experiencing flooding problems*

72 survey respondents

\$2,431 is the average amount spent on stormwater-related repairs

\$780 is the average amount residents are willing to invest to reduce risk of future damage

How does water enter properties?



- 18 Backing up through drains
- 17 Seeping through walls
- 6 Flowing through doors/windows
- 18 Pooling/ponding in yard
- 9 Overflow from street, creek, nearby body of water
- 3 Other
- 2 Don't know

What is the level of worry about flooding's impact on property value?



- Extremely worried 26%
- Very worried 21%
- Moderately worried 26%
- Slightly worried 11%
- Not at all worried 16%

How much do heavy rains impact quality of life?



- 31% A great deal
- 19% A lot
- 38% A moderate amount
- 13% A little
- 19% Not at all

How much do heavy rains impact commute or other travel?



- A great deal 16%
- A lot 16%
- A moderate amount 26%
- A little 16%
- Not at all 26%

What is the preparedness of the community to work together to find a solution?



- 24% Extremely prepared
- 6% Very prepared
- 12% Moderately prepared
- 6% Slightly prepared
- 53% Not at all prepared

How effective will local government officials be in addressing flooding issues?



- Extremely well 0%
- Very well 0%
- Moderately well 32%
- Slightly well 21%
- Not at all well 47%

Data Source: CNT Survey, 2016

*Respondents who answered “Yes, I experience problems” and “I do not experience problems anymore” were grouped into the “Yes” category because both sets of respondents experience ongoing flooding problems or have experienced problems in the past, respectively.

Planning the Solutions

The path ahead for Robbins requires coordinated action at multiple scales. Fortunately, community residents, municipal staff, and elected representatives are aligned in their desire for a more beautiful, flood-resilient community. The RainReady Plan recommends the following priority projects from a comprehensive list of recommendations:

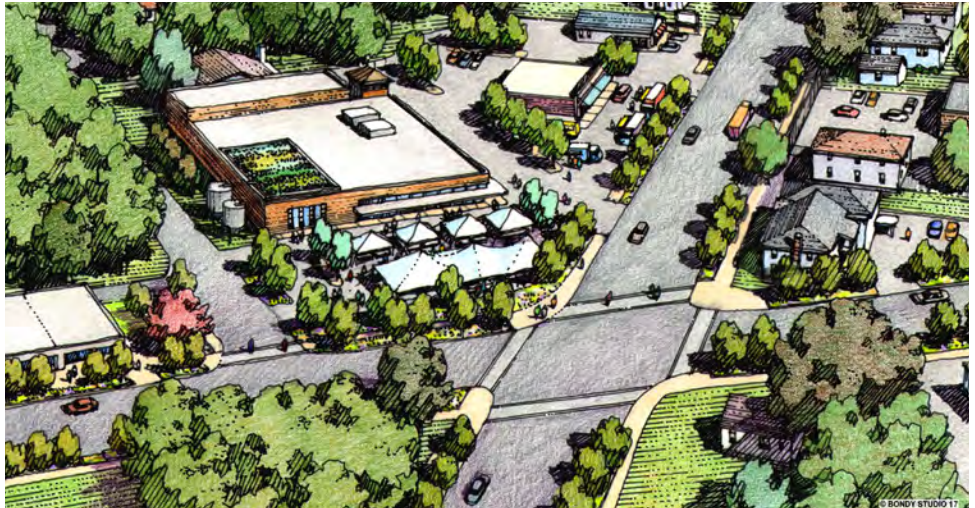
NEW OPEN SPACES – ROBBINS PARK

The Metropolitan Water Reclamation District is currently working with the Village of Robbins on a new plan to reduce flooding and create new recreational and economic opportunity in eastern Robbins, where Midlothian Creek takes a sharp turn. Tentatively named Robbins Park, the project is envisioned as a place for families to enjoy outdoor activities while keeping water out of the neighborhood.



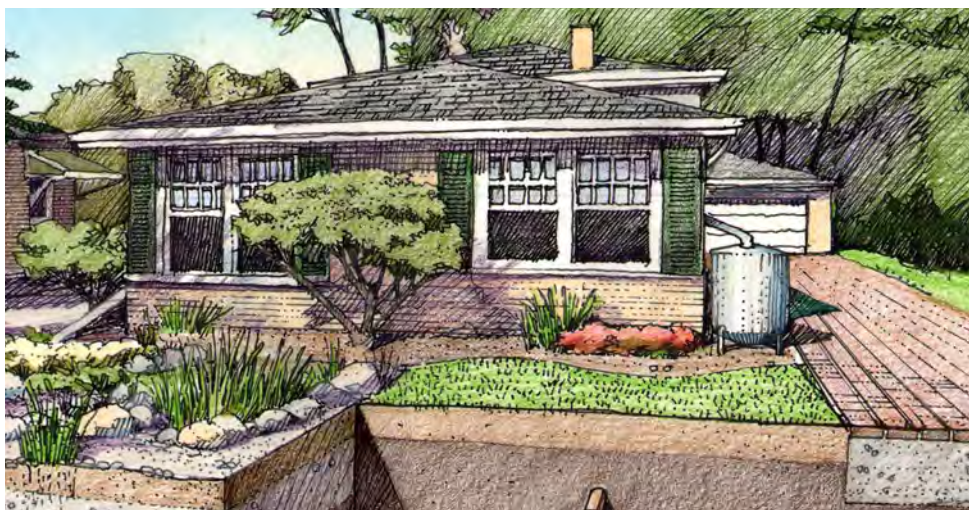
ROBBINS' "NEW TOWN CENTER"

Robbins can create a New Town Center area that will spur economic development, reduce flooding in the surrounding neighborhoods, and connect residents to the proposed Robbins Park. Beautiful streets could capture stormwater through bioswales, tree plantings and permeable pavement.



RESIDENTIAL PROGRAM

Establish a residential cost-sharing program to help homeowners recover from past storms and prepare for future storms. Under this program, residents would receive financial support for a complete home inspection and improvements targeted to reduce risk, like check valves, overhead sewers, and a rain garden.



Quick Steps

We know that residents experience flooding every summer, and the need for help is urgent. Here are 7 solutions that homeowners should consider to reduce their risk today:

- **ASSESS YOUR PROPERTY.**

The first step to solving your flood problem is to understand how water falls on your property and flows through your pipes. If you have significant problems, you may need the help of an engineer, plumber, electrician, or landscape designer.

- **MAKE YARD IMPROVEMENTS.**

In order to reduce flooding, capture stormwater runoff using rain gardens, swales, dry wells, permeable paving, rain barrels, or cisterns.

- **ELEVATE YOUR APPLIANCES.**

If water regularly enters your home, place appliances, furnaces, hot water heaters, and electrical panels above the typical flood level on wood or concrete blocks.

- **HAVE YOUR BUILDING SEWERS CHECKED.**

Faulty pipes connecting your home to the municipal sewer system can exacerbate foundation damage and flooding in your home. Ensure that grease, waste, or tree roots are not obstructing the pipe and preventing wastewater from leaving the house.

- **RECLAIM YOUR PARKWAY.**

The strips between sidewalks and streets can be transformed into attractive green spaces that absorb stormwater runoff, reduce municipal maintenance costs, and beautify streets. Be sure to check your municipal code for which plants are permitted.

- **GET INSURED.**

There are several options available to protect you against the risk of water damage, including home insurance policies, flood insurance riders, and the National Flood Insurance Program (NFIP), established by FEMA and administered by your local insurance companies.

- **ADVOCATE FOR THE RAINREADY PLAN.**

This plan outlines solutions to community wide flooding. Get involved in your local Steering Committee to make sure the plan is implemented!



GET INVOLVED!

Community leaders joined together in 2016 to form the RainReady Robbins Steering Committee. The Committee seeks to raise the quality of life in the Village through investment in economic development, education, and beautification. The Committee will work to support the establishment of new businesses that attract residents to spend their money in Robbins and invite visitors to do the same. The Committee will also create new opportunities for recreation and community gardens in vacant and underused areas. A sense of place will be established through improved communication, beautification projects, and new activities for youth and seniors.

The RainReady Robbins Steering Committee meets monthly!

For more information contact Rebecca Raines at rraines@cnt.org or 773.269.2217.

VILLAGE OF ROBBINS

COMMUNITY SNAPSHOT

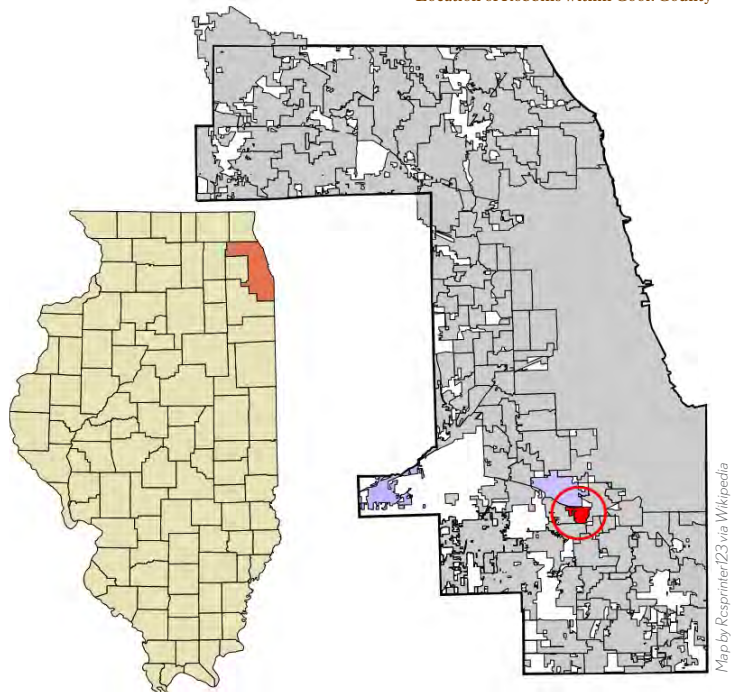
The Village of Robbins is one of the oldest incorporated, majority-black municipalities in the United States. The historic town is a small community made up of 1.5 square miles of land within Bremen Township in Cook County. Neighboring municipalities include Crestwood, Midlothian, Blue Island, Alsip, and Posen.

For a century, Robbins has attracted home buyers charmed by Robbins' close community and country streets. The village rose to prominence during the Great Migration as a gathering place for African Americans migrating from the south. Robbins was incorporated in 1917. Several decades later, Robbins became home to the first African American-owned and operated airport in the country. Today, the Robbins Flea Market draws hundreds of customers from the area each Tuesday and Thursday morning. Local churches, block clubs, and the community center help to maintain a strong sense of community pride.

When the Robbins brothers built the community's first subdivision in 1910, the village lacked paved streets, sewers, and other basic services. While infrastructure was built soon thereafter, the small town has been challenged to keep up with maintenance during difficult economic times, and lacks stormwater infrastructure in several parts of town. Flooding – a longstanding issue in Robbins – has recently become an urgent crisis. From 2007 to 2011, 316 flood-related insurance claims were filed in Robbins, with more than \$941,901 paid out in damages (CNT, 2014). For a village of just 5,441 residents and a median household income of \$21,800, the impacts are devastating. Addressing overbank flooding issues from Midlothian Creek and other chronic urban flooding problems will be critical for creating an economically vibrant, beautiful, and more livable Robbins for today and future generations.



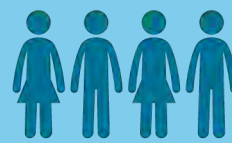
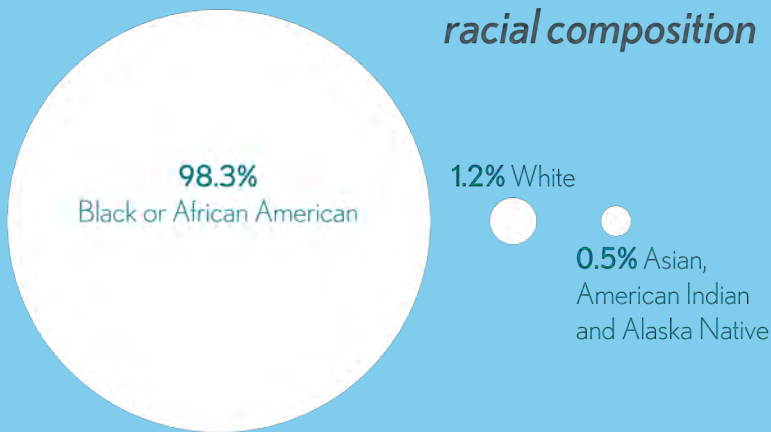
FIGURE RO-1:
Location of Robbins within Cook County



Robbins, IL

AT A GLANCE

racial composition



5,221
total population

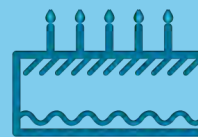


2,305
total number of
households



82% of residents hold
high school diploma

9% of residents hold
college diploma



44
median age

Cook County \$54,828

Cook County \$30,468



30%
people below
poverty level

Robbins **\$14,801**

Robbins **\$23,099**

median
per capita income

median
household income



21%
unemployment rate
(people age 16+)

Data Source: US Census

Flooding Risks and Resilience Opportunities

Residents and business owners in Robbins experience several types of flooding, including:

- **Basement backup** from the local sewer system and damaged private lateral lines, impacting several parts of town
- **Street flooding** from local drainage issues, causing pooling in the street at depths of 2-3 feet
- **Foundation seepage** in several areas of Robbins, causing rot and mold in basement walls
- **Riverine flooding** from Midlothian Creek, impacting neighborhoods in east Robbins

Areas with higher flooding risk are shown in Figure RO-8. Proposed flooding solutions are also shown on this map. These are solutions to retrofit the existing landscape with green, grey, and green-grey infrastructure projects that aim to avoid, slow, store and use, and drain stormwater from a site and community (see Figure RO-2).

These solutions were identified through a community-driven and analytically-rigorous process. Through this process, the project team identified flooding risks (among other community concerns) and opportunities to enhance community resilience.

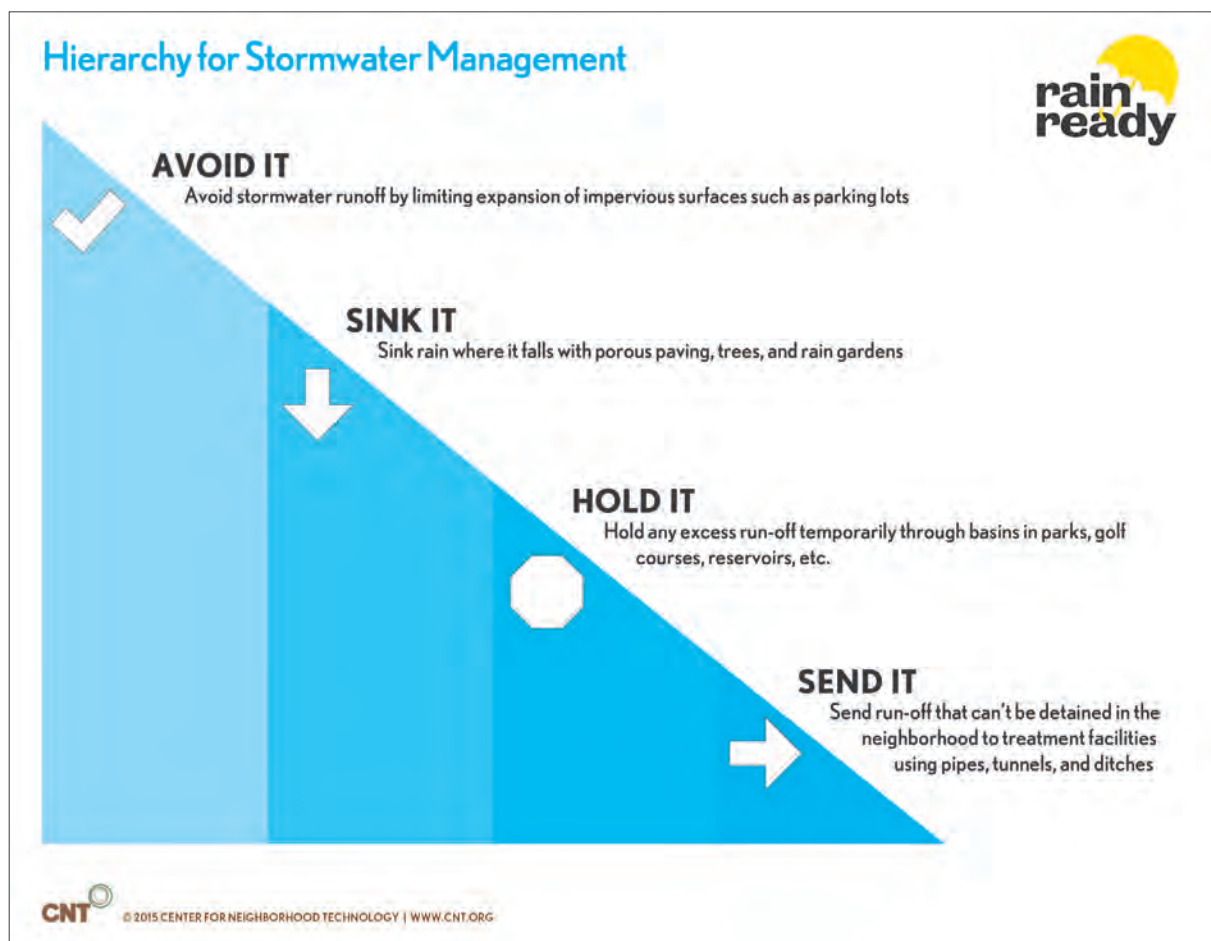


FIGURE RO-2:
Hierarchy for Stormwater
Management

Key findings from this flooding risk and resilience opportunity assessment are presented here. This risk and opportunity assessment provided the foundation for the strategies and recommendations presented in the RainReady Action Plan for Robbins.

Six main factors contribute to flooding in Robbins:

LOW-LYING, FLAT, AND NATURALLY WETLAND.

Prior to its development in the early 1900s, much of the landscape in Robbins was covered with wetlands. Although these areas were drained and filled in to build the town, water still naturally flows toward, and accumulates in, these areas. Robbins is also very flat and has a natural slope toward the northerly direction (see

Figure RO-3) of only 1% or less (NOTE: Areas with a slope of +2.5% are generally considered—as a rule of thumb—to have adequate drainage during storm events). This lack of topographic variation causes rainwater to stagnate and pool until it is absorbed (e.g., infiltrates into the ground), evaporated or transported via manmade drainage features like sewers and ditches. Community flooding concerns focused on basement seepage and street flooding, both of which are made worse by a flat surface landscape. Improving drainage and restoring wetland areas that allow rain to infiltrate into the ground and evapotranspire to the air will help to address these topographic challenges.

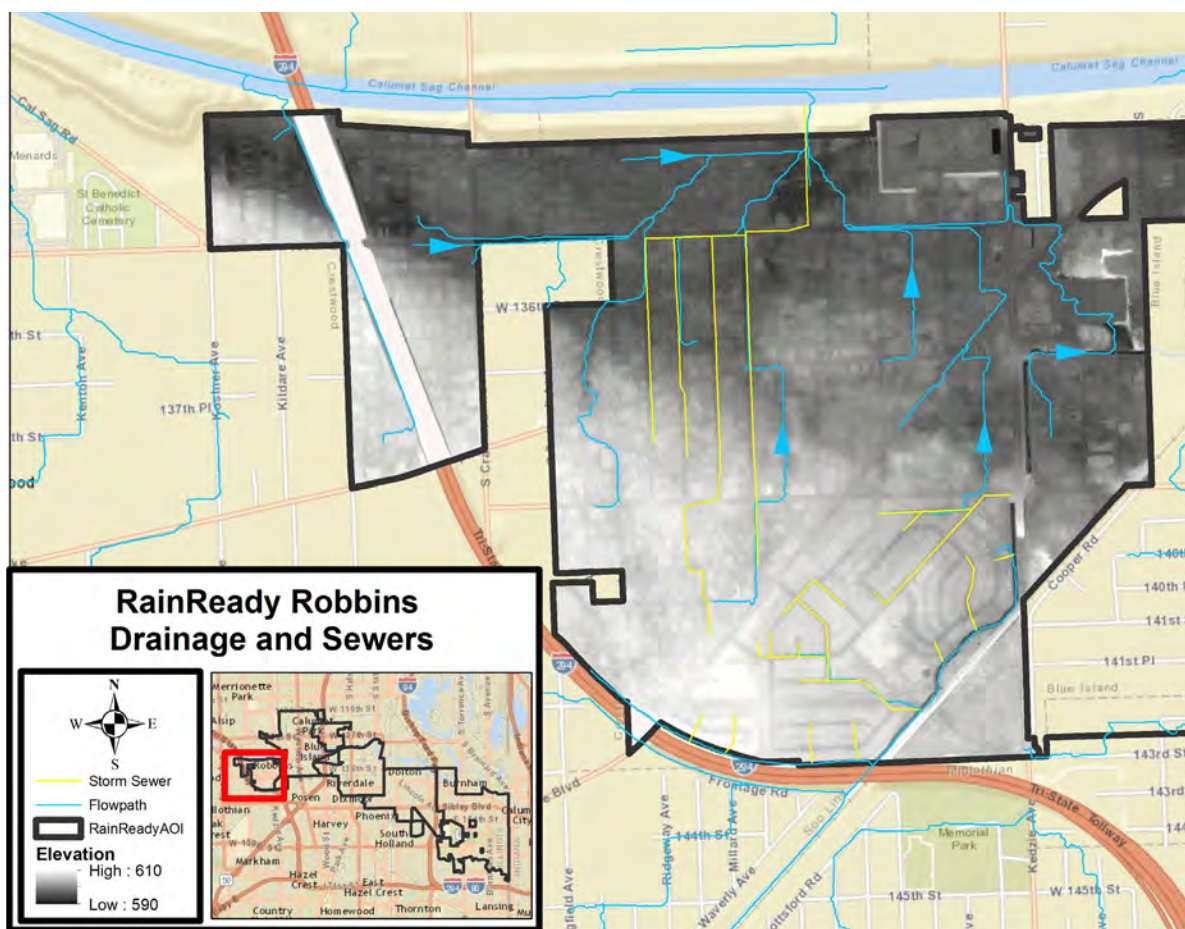


FIGURE RO-3:
Robbins Drainage and Sewers



MIDLOTHIAN CREEK

Midlothian Creek is a chronic source of flooding in Robbins, especially in the area near Kedzie Avenue and 137th Street where the creek makes a ninety-degree bend. Robbins currently has an opportunity to coordinate with the MWRD to implement a large-scale stormwater management project that could not only reduce flooding caused by Midlothian Creek, but also provide a number of other community benefits like new outdoor recreation amenities, more developable land, and new housing.

LACK OF DRAINAGE INFRASTRUCTURE

Robbins' stormwater management system is comprised mainly of open air ditches and a small network of storm water sewers that drain toward the Calumet-Sag ("Cal-Sag") Channel. Many local streets in Robbins (e.g., the neighborhood immediately south of the Cal-Sag Channel, and the neighborhood east of Kedzie Avenue,

south of 137th Street, north of 139th Street, and west of the Metra tracks) lack any stormwater infrastructure (e.g., curbs, drains and sewers), leaving these areas vulnerable to overland flooding. Creating cost-effective systems to manage water from streets (e.g., improved ditches, bioswales, and green streets) could help alleviate local flooding issues and make Robbins more walkable and attractive.

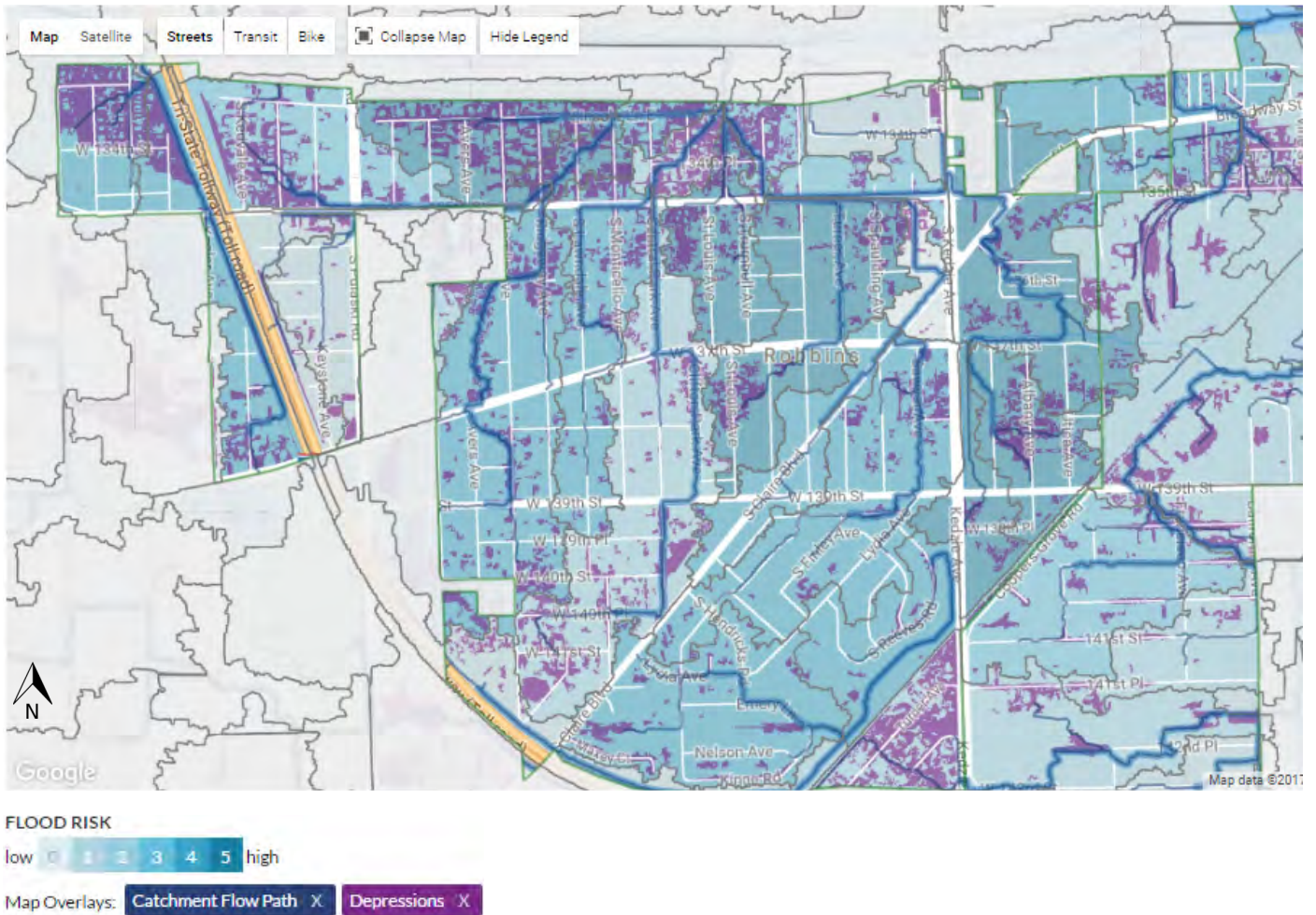
AGING SEWER INFRASTRUCTURE

As sewer systems age, pipes may collapse, crack, or clog, causing issues with local drainage. The condition of Robbins' storm sewers is unknown, but several of the ditch systems have fallen into disrepair and are unable to supply proper drainage to residents (see Figure RO-4).

FIGURE RO-4:
Typical Ditch Conditions in Robbins



Photo: Google Street View



These overland flow path and depression area maps show where stormwater is likely to flow and accumulate, or pool, in Robbins. These maps are based on high-resolution digital elevation models (DEMs) derived from Light Detection and Ranging (LiDAR) technology.

Although LiDAR provides very detailed information on land cover and topography, there are several factors that may result in discrepancies between these maps and how stormwater actually flows through a community (e.g., small landscape features like gutters, curbs, small hills that route water, which may not have been picked up in our flow path analysis). Also, each community has a sewer and drainage system that is designed to intercept and manage stormwater. Our team modeled the flow of stormwater over the landscape as if local sewer systems are at full capacity and could not handle any additional flows. In other words these maps only show the overland flow paths and accumulation of stormwater and do not factor in the underlying sewer network.

In spite of these limitations and assumptions, these maps represent a good approximation of how stormwater is likely to flow and accumulate in the Calumet Corridor. These maps were used alongside other information on flooding risk and solution opportunities to determine where green infrastructure retrofits could alleviate local flooding issues. This information informed the RainReady Action Plan for Robbins.

FIGURE RO-5:
Robbins Urban Flooding
Risk Assessment



MORE SEVERE STORMS

A changing climate will bring more frequent, high-intensity storms to the region. In light of this, Robbins should not only prepare for storms like the one that occurred in April 2013, but also much larger and more frequent storms, and more variable weather (e.g., intense storms followed by long droughts, more freeze/thaw cycles). Residents, municipal staff, and elected officials should be equipped with the knowledge and resources needed to prepare for, mitigate, and recover from future storms—both large and small.

INCREASING IMPERVIOUS SURFACES

As Robbins developed over time, natural lands were converted to buildings, parking lots, streets, and other “impervious surfaces.” The increase in impervious surfaces resulted in fewer open areas for rainwater to sink into the ground. Given the amount of vacant land in Robbins, the Village’s land cover is not as impervious as its neighbors. However, as Robbins takes steps to redevelop certain commercial and downtown areas (e.g., Claire Boulevard and the Metra Transit-Oriented Development, or TOD, area), efforts should be made to manage any additional stormwater runoff from any new impervious surfaces.

FIGURE RO-6:
Key Plans Reviewed for Robbins

Name	Lead(s)	Year Completed / Status	Focus
Stormwater Master Plan Project for the Little Calumet River/Cal-Sag Channel Drainage Area: Problem Area (Robbins #19/#39) Concept Memo	MWRD, Arcadis	2016	Watershed/ Stormwater Management
Pedestrian Access Improvement Plan	RTA	2012	Transportation
Analysis of Retail in the Village of Robbins and Alternatives for Revitalization	University of Illinois at Chicago (UIC)	2009	Economic Development
Robbins Economic Development Vision and Strategy	MPC	2009	Economic Development
Opportunities Analysis and Brownfields Site Identification and Prioritization	Vandewalle & Associates	2004	Economic Development
Robbins Transit Oriented Development (TOD) Study	RTA	2002	Transportation

The following section summarizes what we heard from Robbins residents, municipal staff, and elected representatives through the RainReady planning process as well as what we gathered from previous plans completed for the Village (see Figure RO-6). To make this information easier to digest, we organized it into community strengths, concerns, and land-based opportunities (i.e., planning priorities and capital projects) that apply to: 1) your homes and neighborhoods; 2) your business districts and shopping centers; 3) your industrial centers and railroad corridors; and 4) your open space and natural areas. We also created a community asset map to prompt ideas about how Robbin’s RainReady Action Plan can strengthen and build on existing community assets.

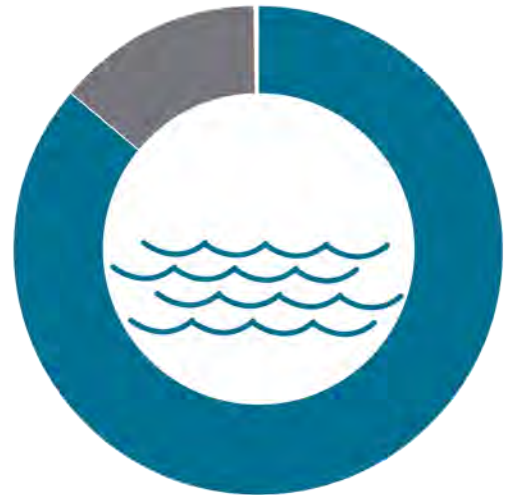
RainReady Robbins COMMUNITY SURVEY

Respondents experiencing flooding problems

Respondents who answered "Yes, I experience problems" and "I do not experience problems anymore" were grouped into the "Yes" category because both sets of respondents experience ongoing flooding problems or have experienced problems in the past, respectively.

■ **86%** Yes
■ **14%** No

72 survey
respondents



\$2,431 is the average amount spent on stormwater-related repairs

\$780 is the average amount residents are willing to invest to reduce risk of future damage



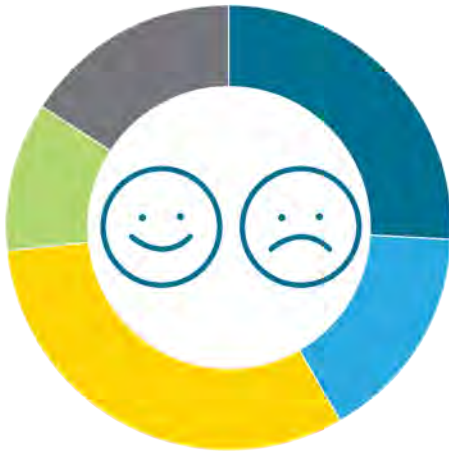
How does water enter properties?

■ **18** Backing up through drains
■ **17** Seeping through walls
■ **6** Flowing through doors/windows
■ **18** Pooling/ponding in yard
■ **9** Overflow from street, creek, nearby body of water
■ **3** Other
■ **2** Don't know

What is the level of worry about flooding's impact on property value?

Extremely worried **26%** ■
Very worried **21%** ■
Moderately worried **26%** ■
Slightly worried **11%** ■
Not at all worried **16%** ■



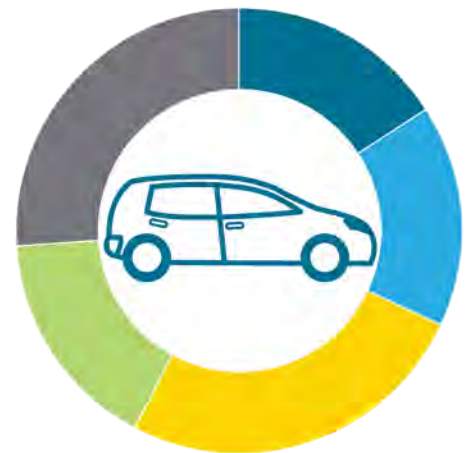


How much do heavy rains impact quality of life?

31%	A great deal
19%	A lot
38%	A moderate amount
13%	A little
19%	Not at all

How much do heavy rains impact commute or other travel?

A great deal	16%	■
A lot	16%	■
A moderate amount	26%	■
A little	16%	■
Not at all	26%	■



What is the preparedness of the community to work together to find a solution?

24%	Extremely prepared
6%	Very prepared
12%	Moderately prepared
6%	Slightly prepared
53%	Not at all prepared



How effective will local government officials be in addressing flooding issues?

Extremely well	0%	■
Very well	0%	■
Moderately well	32%	■
Slightly well	21%	■
Not at all well	47%	■



Data Source: CNT Survey, 2016

YOUR HOMES AND NEIGHBORHOODS



COMMUNITY STRENGTHS

- Low crime, residents feel like Robbins is a “safe haven”
- Sense of unity (e.g., block clubs, churches, engaged residents)
- Family-oriented community; some residents’ families have been in Robbins for 4-5 generations
- Robbins Community Center provides employment trainings and other helpful programs
- Rich and unique African American history and identity (e.g., Tuskegee Airmen, first female pilot)
- See Community Asset Map (Figure RO-7)

COMMUNITY CONCERNS

- Flooding!
- Vandalism of public and private property
- Few places for children to play and be active
- Abandoned homes
- Lack of community newspaper and clear and regular communication from the Village
- See Urban Flooding Risk Assessment (Figure RO-5)



Photo: Google Street View

LAND-BASED OPPORTUNITIES (PLANNING PRIORITIES AND CAPITAL PROJECTS)

Previous (and concurrent) plans have called for:

- Upgrading Robbins' sanitary sewer system, with the goal of improving capacity and reducing backups. This is a major investment, one that developers need to be aware of. It is possible that an interested developer would cover the costs of their share of the sewer upgrade, but they need that information upfront. It is imperative that Robbins staff be able to provide accurate timelines for work, expected cost, and phasing.
- Cleaning and improving streetscapes, building facades, and gateways into Robbins
- Creating green streets that mitigate urban flooding
- Creating denser housing in the mostly-vacant area that is immediately northwest of the Robbins Metra Station (NOTE: redevelopment of this area would require that the Midlothian Creek Flood Zone is significantly reduced. This will require a large-scale stormwater project)

Here are some ideas that were uncovered through the RainReady Robbins planning process:

- Adapting parks in flood-prone neighborhoods to manage water from streets
- Creating green parking lots and yards at churches
- Opportunity for new housing and business development (TOD) in area immediately north and west of the Metra station (area is bounded by Kedzie Avenue on the west, 135th Street on the north, and the border of Blue Island to the east and south)
- Improve pedestrian connections between the Metra station, existing residential and new retail and commercial development using green urban design techniques

YOUR BUSINESS DISTRICTS AND SHOPPING CENTERS



COMMUNITY STRENGTHS

-
- First National Bank of Robbins
-
- Robbins is centrally located in the Chicago region
-
- Reasonable taxes
-
- Public Library
-
- See Community Asset Map (Figure RO-7)

COMMUNITY CONCERNS

-
- Few places to educate youth and increase their competitiveness for schools and jobs
-
- High unemployment rate (the highest in the state)
-
- Residents expressed a desire for the following businesses and amenities: grocery store, pharmacy, physical therapy clinic, dry cleaner, car repair shop
-
- See Urban Flooding Risk Assessment (Figure RO-5)



LAND-BASED OPPORTUNITIES (PLANNING PRIORITIES AND CAPITAL PROJECTS)

Previous plans have called for:

- Building a historical museum and community center
- Increasing population density now to increase market potential for commercial and office development in the future
- Attracting a grocery store or other business that could draw in shoppers from the surrounding area
- Updating the zoning code, while coordinating the process with any and all efforts to increase residential density around the Metra station and commercial development along Kedzie Avenue and other key corridors; the zoning code needs built-in flexibility in the event that development deals for beneficial but non-conforming uses are proposed
- Creating safe and walkable streets to increase private investment in retail corridor

Here are some ideas that emerged through the RainReady planning process:

- Revitalizing the area around the intersection of South Claire Boulevard and West 137th Street as a new Town Center
- Develop the community's core: the Metra station, the intersection of Kedzie Avenue and 139th Street, and the municipal complex at Claire Boulevard and 137th Street
- Develop businesses around Robbins Metra Station
- Relocate the flea market
- Grocery store developments partnering with local community gardens/urban agriculture initiatives

YOUR INDUSTRIAL CENTERS AND TRANSPORTATION CORRIDORS

Photo: Adam Moss, Flickr/Creative Commons



COMMUNITY STRENGTHS

- Robbins Metra Station and access to Chicago
- Central location in the southland region
- See Robbins' Community Assets (Figure RO-7)



Photo: Google Street View

COMMUNITY CONCERNS

- Area around Robbins Metra Station is underutilized and hard to access (especially when it rains)
- Clean, beautify, and highlight all the gateways into town and overpasses (e.g., Kedzie Avenue just south of the Cal-Sag Channel, 135th Street and I-294, 137th Street and I-294, Claire Boulevard and I-294, the Metra station at 139th Street, the intersection of Francisco Avenue and Claire Boulevard)
- Concern about the fate of the industrial and vacant areas on the border between Robbins and Blue Island; some residents fear the MWRD's recent stormwater planning efforts are related to the past quarry project; the projects are not related, but the concern highlights the need to repair relationships and build trust
- See Urban Flooding Risk Assessment (Figure RO-5)



LAND-BASED OPPORTUNITIES (PLANNING PRIORITIES AND CAPITAL PROJECTS)

Previous plans have called for:

- Redeveloping vacant/industrial areas into a sports stadium that could draw in people from surrounding areas
- Pursuing an inter-governmental agreement with Blue Island to coordinate the development of the TOD area around the Robbins Metra Station
- Upgrading physical infrastructure to incentivize new development, and clarifying the development review process
- Employing land acquisition to give the community flexibility and substantial influence over future development; combining multiple small parcels to create larger sites, particularly along key corridors and at important intersections.

Here are some ideas that were uncovered through the RainReady planning process:

- New sea walls along the Cal-Sag Channel could support more industrial activity at the Robbins Community Power Facility
- Reimagine the Robbins Metra Station/TOD area through the MWRD's current master planning process

YOUR OPEN SPACE AND NATURAL AREAS



COMMUNITY STRENGTHS

-
- Robbins Park District - parks scattered throughout town
 - See Robbins' Community Assets (Figure RO-7)
-



COMMUNITY CONCERNS

-
- Lingering concern about the quarry coming to town making the Village unlivable
 - Fear of annexation, Robbins will be "absorbed" into neighboring towns
 - No walking trails (and no sidewalks throughout much of town)
 - See Urban Flooding Risk Assessment (Figure RO-5)
-



LAND-BASED OPPORTUNITIES (PLANNING PRIORITIES AND CAPITAL PROJECTS)

Previous plans have called for:

- The Village of Robbins approved a Board Resolution showing support for the MWRD's efforts to complete a Master Plan and Phase II designs for a stormwater management project that will provide broader economic, environmental and social benefits
- Creating bike path connections along the Rock Island District line; there may be future opportunities to connect bike paths throughout the Village, especially at locations east of the Metra tracks in the Blue Island portion of the Robbins Metra TOD area

Here are some ideas that emerged through the RainReady planning process:

- Reestablish the former exercise trail that used to exist on the ComEd power lines; incorporate green infrastructure into this trail
- Restore and preserve Midlothian Creek's floodplain in a way that provides recreational and educational opportunities, manages stormwater, and improves the local ecology of the

area (e.g., play fields, gardens, trails, ecological restoration); restore Midlothian Creek near Kedzie Avenue; several previous planning efforts (e.g., Millennium Reserve Green Infrastructure mapping, the MWRD's Detail Watershed Plan, the National Disaster Resilience Competition) have proposed the ecological restoration of Midlothian Creek; proposals to restore the creek throughout the Village area are included in the RainReady Plan and MWRD Master Plan

- Park improvements in the "bottoms" neighborhood (a low-lying and flood-prone part of town) create better connections for walkers and bikers along Midlothian Creek
- There is an opportunity to connect Robbins to the Calumet-Sag ("Cal-Sag") Trail along the MWRD land along the southern edge of the Cal-Sag Channel from South Pulaski Road to the Robbins Community Power Facility; the Calumet-Sag Trail Coalition—a group of public and private partners working to implement the construction of the Cal-Sag Trail—is exploring opportunities to connect the Cal-Sag Trail to communities that are on the "other side" of the proposed Cal-Sag Trail alignment

COMMUNITY ASSETS

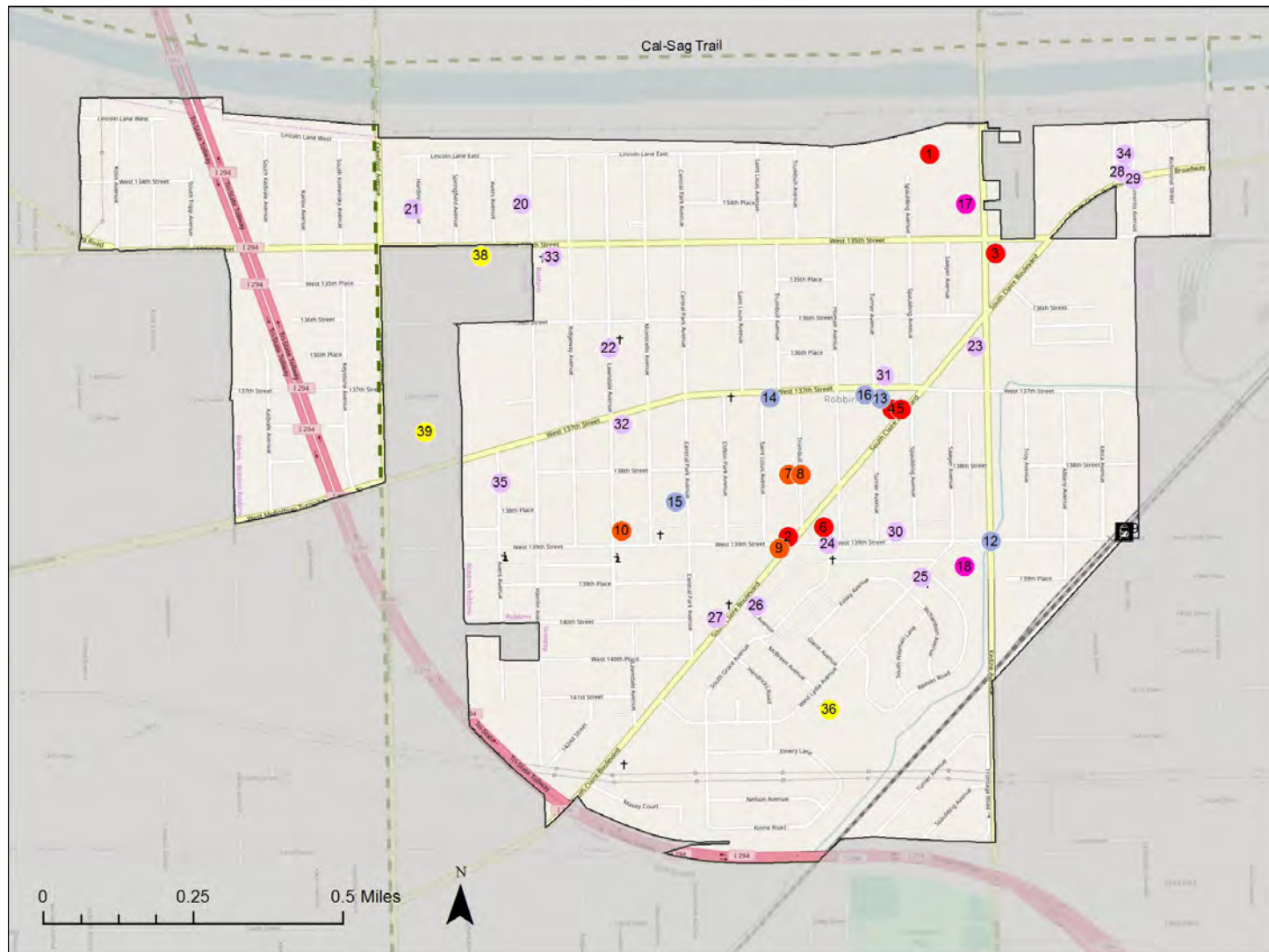


FIGURE RO-7:
Robbins' Community Assets

BUSINESSES

- 1 Robbins Community Power
- 2 Robins Food Mart
- 3 Fuller's Citgo
- 4 Mello's Barber Shop
- 5 Union Faith Plaza Laundromat
- 6 Family Dollar

COMMUNITY ORGANIZATIONS

- 7 Robbins Community Center
- 8 Bremen Youth Services
- 9 Village of Robbins Open Air Market
- 10 Robbins History Museum

GOVERNMENT AGENCIES

- 11 Robbins Fire Department
- 12 Robbins Park District
- 13 Robbins Police Department
- 14 Robbins Post Office
- 15 Robbins William Leonard Public Library
- 16 Robbins Village Hall

HEALTH ORGANIZATIONS

- 17 Robbins Health Center
- 18 Lydia Health Care Center

METRA STATIONS

- 19 Robbins Metra Station

RELIGIOUS INSTITUTIONS

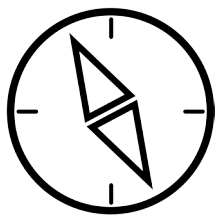
- 20 Pilgrim Valley Methodist Baptist Church
- 21 St. John Community Church
- 22 Great Hope Missionary Baptist Church
- 23 Mt. Olive Missionary Church
- 24 Bethel AME Church
- 25 Union Baptist Church
- 26 Good Shepherd Lutheran Church
- 27 Robbins Seventh Day Adventist Church
- 28 House of Prayer Community Workers
- 29 Greater Christian Baptist Church
- 30 St. Luke Missionary Baptist Church
- 31 Robbins Church of God in Christ
- 32 Church of Christ
- 33 Robbins Pentecostal Temple
- 34 Christ Temple Church
- 35 Mt. Calvary Methodist Baptist Church

SCHOOLS AND COLLEGES

- 36 Bernice Childs School
- 37 Kellar School
- 38 Delia M Turner Elementary School
- 39 218 Alternative Ed

COMMUNITY PRIORITIES

Listed below are the community priorities we heard from Robbins residents, municipal staff, and elected representatives through the RainReady Planning Process. These community priorities were synthesized with the flooding risk and resilience opportunities assessment to develop Robbin's Action Plan.



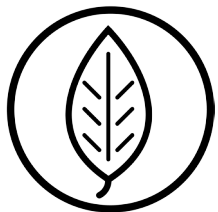
REORIENT

- Educate residents about the importance of spending money locally in Robbins
- Improve communications between residents, municipal staff, elected representatives, and stakeholders from outside of Robbins (e.g., MWRD, Cook County, organizations, philanthropies, etc.)
- Establish a community newspaper
- Create more job training programs
- Establish a resident-led Welcoming Committee



REPAIR (AND MAINTAIN)

- Clean up Robbins (e.g., remove trash and debris from streets, remove invasive trees and shrubs)
- Repair the sidewalks, curbs, and drains throughout the town



RETROFIT

- Attract organizations that provide basics services (e.g., senior center, youth center, social services agency)
- Attract new businesses to the Village's historic downtown area
- Attract a regional business or recreational amenity that will encourage residents to shop in Robbins (e.g., grocery store, sporting arena)
- Develop the area around the Robbins Metra Station
- Create a community garden on an empty lot
- Turn Claire Boulevard into a commercial complete street
- Restore Midlothian Creek by creating natural flood storage
- Create new trails on the ComEd right-of-way and along Midlothian Creek
- Widen Midlothian Creek and create a new recreation site
- Move the Robbins Flea market to 135th Street and Homan Avenue

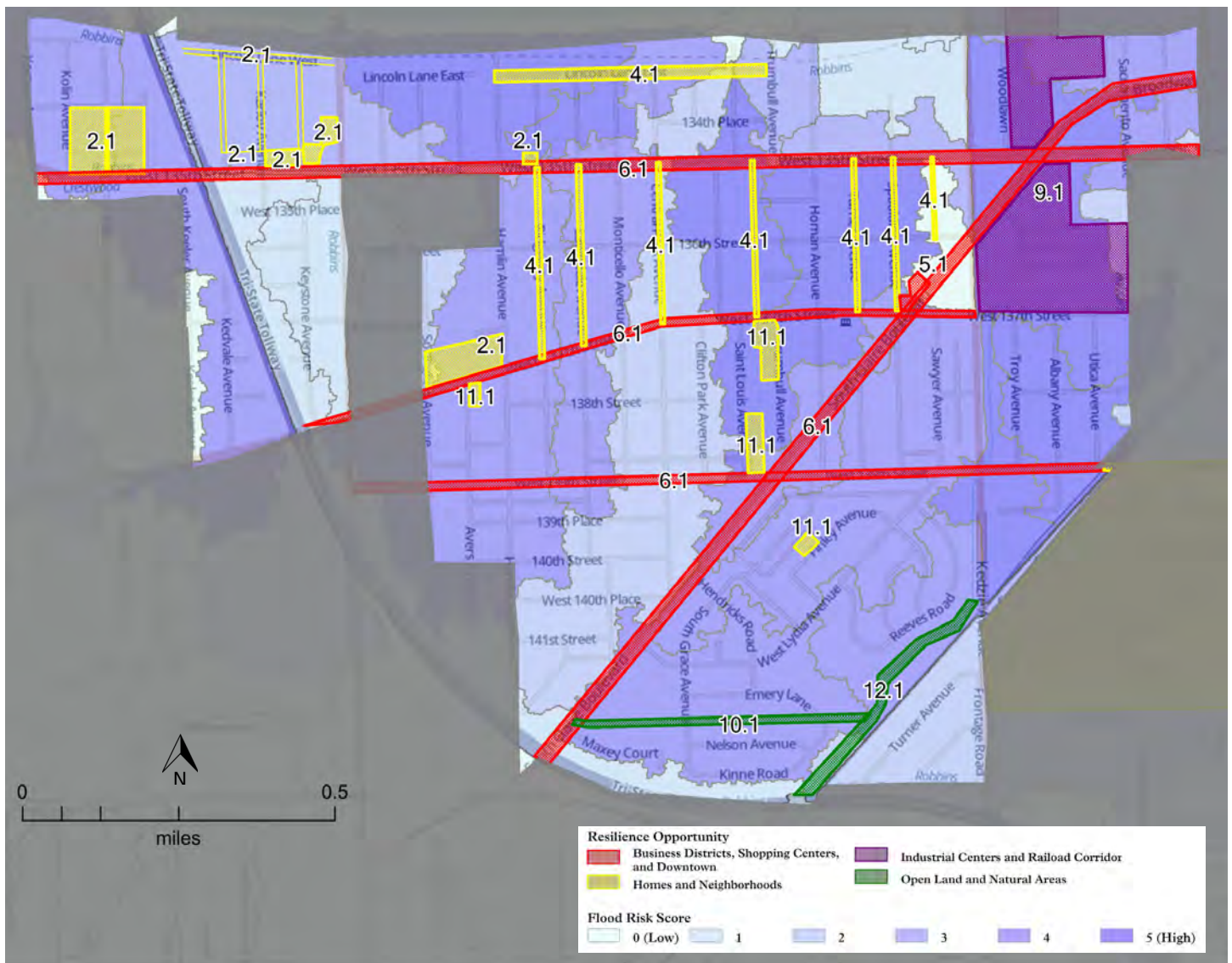


FIGURE RO-8:
Flood Risk and Resilience Opportunity in Robbins

The map above overlays flooding risk with proposed “Retrofit” recommendations. The colors correspond to the part of town where the recommendation is to be applied and the numbers correspond with the Retrofit recommendations in the Action Plan. Some recommendations in the Action Plan apply community-wide and are not shown on the map.

This map identifies locations where various green infrastructure projects could be integrated into Robbins’s community fabric (e.g., green streets along residential streets, commercial complete streets along commercial corridors, green schools, etc.). These locations were identified through a thorough assessment of flooding

risk (e.g., known problem areas, survey results, overland flowpaths, depression areas, and impervious coverage) and resilience opportunities (e.g., planning priorities, community assets, capital improvement projects) in Robbins.

Robbins should reference this map and the Action Plan to identify opportunities where green infrastructure retrofit projects could be integrated into forthcoming roadway improvements, planned developments, and other capital improvement efforts. This would ensure that future projects deliver multiple benefits, such as improved transportation and flood mitigation.

RAINREADY **ACTION PLAN**



Vision Statement

A RainReady Robbins will be economically vibrant, beautiful, and sustainable. New businesses and a revitalized village center will provide residents places to work, play, shop, and learn. These new amenities will be accessible to people from all walks of life, and will draw in visitors from surrounding areas. Vacant land will be transformed into beautiful places that provide activities for youth and seniors, manage stormwater, and create a unique sense of place.

RainReady Goals



Reorient Robbins so that the community is on a path toward resilience



Repair Robbins' municipal sewer and stormwater drainage systems



Retrofit the built landscapes throughout Robbins with green, grey, and green-grey infrastructure improvements, and restore natural landscapes

NOTE: This plan outlines a path forward toward a more resilient Calumet Corridor, but implementation of specific recommendations will have to occur at the local level. Adopting this plan demonstrates a local community's commitment to considering these recommendations during capital planning and decision-making efforts and implementing these recommendations as necessary resources become available. In many cases, the Village of Robbins is already actively engaged in a given project or program recommendation. In other cases, additional resources (e.g., external grant funds, dedicated revenue, partnerships, etc.) will be necessary to advance a project or program. The following action plan outlines the actions and associated implementation steps, implementation priority, estimated timeline, and identified potential project leads and resources needed. Further analysis is needed to estimate the costs of most recommendations. The specific details may change as communities take action to advance a recommendation and as new information and opportunities emerge.



REORIENT

COMMUNITY-WIDE STRATEGIES FOR ROBBINS

- **Strategy 1.** Build capacity to make well-informed decisions and execute them
- **Strategy 2.** Plan and implement projects collaboratively
- **Strategy 3.** Promote equitable and resilient development at all levels
- **Strategy 4.** Prepare your community for future shocks and stresses



REPAIR

COMMUNITY-WIDE STRATEGIES FOR ROBBINS

- **Strategy 1.** Document your municipal sewer and stormwater drainage system
- **Strategy 2.** Inspect your municipal sewer and stormwater drainage system
- **Strategy 3.** Rehabilitate your municipal sewer and stormwater drainage system
- **Strategy 4.** Maintain your municipal sewer and stormwater drainage system



RETROFIT

RETROFIT STRATEGIES FOR YOUR HOMES AND NEIGHBORHOODS

- **Strategy 1.** Implement a residential assistance program
- **Strategy 2.** Bring new life to vacant residential land
- **Strategy 3.** Create a network of residential green streets and complete streets
- **Strategy 4.** Create green schools and churches

RETROFIT STRATEGIES FOR YOUR SHOPPING AREAS AND BUSINESS DISTRICTS

- **Strategy 5.** Bring new life to Robbins' historical commercial corridors
- **Strategy 6.** Create a network of commercial complete streets
- **Strategy 7.** Bring new life to the area around the Robbins Metra Station
- **Strategy 8.** Bring new life to underutilized parking lots

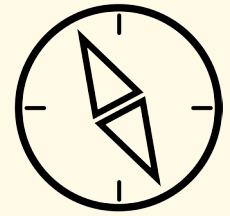
RETROFIT STRATEGIES FOR YOUR INDUSTRIAL CENTERS AND RAILROAD CORRIDORS

- **Strategy 9.** Bring new life to underutilized industrial areas through "Robbins Park"

RETROFIT (RESTORE) STRATEGIES FOR YOUR OPEN SPACES AND NATURAL AREAS

- **Strategy 10.** Develop the new open space and outdoor recreation amenities
- **Strategy 11.** Integrate green infrastructure into Robbins' park system
- **Strategy 12.** Manage flooding issues stemming from Midlothian Creek through stream restoration and natural stormwater detention

GOAL 1: REORIENT



COMMUNITY-WIDE RECOMMENDATIONS

STRATEGY 1:

BUILD CAPACITY TO MAKE WELL-INFORMED DECISIONS AND EXECUTE THEM

RECOMMENDATION 1.1

Adopt the RainReady Robbins Plan. Update the Plan every 2-5 years. Incorporate this plan's recommendations into forthcoming capital improvement planning and implementation efforts.

Where: Community-wide

How: Participate in the RainReady community planning process (completed); convene a steering committee consisting of residents, municipal staff, and elected representatives (completed); propose and adopt at a City Board Meeting in early 2017

How much: \$104,000 (this cost has already been paid for by Cook County)

Who leads: CNT/RainReady (for initial plan); the Village of Robbins (for adoption and plan updates)

Resources needed: Technical assistance and/or funding for planning updates

PRIORITY: 

PHASING: 

RECOMMENDATION 1.2

Engage in regional and local planning and coordination efforts (e.g., the Calumet Stormwater Collaborative, Millennium

Reserve, CMAP's Comprehensive Regional Plans, SSMMA's various committees)

Where: Community-wide

How: Read and continually reference stormwater-related resources; align local strategies with regional initiatives to increase access to funding and technical assistance

How much: Varies

Who leads: The Village of Robbins and regional organizations/coalitions like CMAP, SSMMA, CSC, CHP

Resources needed: Internal: the Village assigns this task to a staff person; External: the SSMMA or another regional organization could hire a stormwater/resilience-focused staff person to serve this role for all communities in their service area (proposed)

PRIORITY: 

PHASING: 

RECOMMENDATION 1.3

Incorporate best practices data management and stormwater planning for local governments (e.g., continual process improvement, performance management, program evaluation, monitoring, ongoing collection and dissemination of useful data, open data, civic apps competitions).

Where: Community-wide

How: Create a system to collect, manage, and analyze data on water-related complaints and adopted solutions (e.g., type and source of flooding, damage costs, improvements made to property); partner with research institutions to install sensors that

will monitor the performance of green infrastructure installations

How much: There will be initial costs to set up these systems, but these improvements could pay for themselves over time through increased operational efficiencies and improved outcomes

Who leads: Village of Robbins, regional 311 Call Center/Service (proposed—this does not exist yet), SSMMA

Resources needed: Internal: General Fund; External: IDNR Coastal Management Program Grants, partnerships with research institutions (e.g., colleges/universities, Argonne National Labs, CNT, UI Labs)

PRIORITY:  Medium

PHASING:  Ongoing

STRATEGY 2: PLAN AND IMPLEMENT PROJECTS COLLABORATIVELY

RECOMMENDATION 2.1

Sustain the RainReady Robbins Steering Committee (SC) and engage this group in the ongoing planning and implementation efforts.

Where: Community-wide

How: Continue to work with the RainReady team in 2017 to get the SC off the ground

How much: Approximately 2-3 hours per month

Who leads: CNT/RainReady, Village of Robbins (e.g., community leaders, municipal staff, elected representatives)

Resources needed: CNT/RainReady (to start); ongoing collaboration is volunteer

PRIORITY:  High

PHASING:  Ongoing

RECOMMENDATION 2.2

Incorporate updates on stormwater projects and other resilience-related topics into the Village's various communication channels (e.g., official city websites and social media).

Where: Community-wide

How: Include a section on "Stormwater Projects" or "Resilience Updates" in Village communications (e.g., social media, newsletters, mailers)

How much: Varies

Who leads: The Village of Robbins, local media outlets

Resources needed: The Village of Robbins

PRIORITY:  High

PHASING:  Ongoing

RECOMMENDATION 2.3

Coordinate with neighboring municipalities on stormwater-related (and others) planning and development projects.

Where: Community-wide

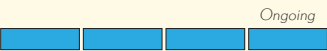
How: Coordinating planning and development efforts across jurisdictional borders—and leveraging each other’s resources—could minimize costs and maximize benefits of projects for all parties involved; where appropriate, Intergovernmental Agreements (IGAs) could be pursued with municipalities and other government agencies (e.g., MWRD, Cook County)

How much: The benefits of improved coordination far outweigh the costs (e.g., approximately 5-15 hours per month of staff time devoted to collaborative efforts)

Who leads: Village of Robbins, neighboring municipalities, MWRD, CSC, SSMMA, CMAP, United Way Neighborhood Network: Blue Island/Robbins

Resources needed: Internal: the Village of Robbins, or share costs (e.g., time) of participation with neighboring communities); External: the SSMMA or other regional organization could hire a stormwater/resilience-focused staff person to serve this function for all communities in their service area (proposed)

PRIORITY: 

PHASING: 

STRATEGY 3:
PROMOTE EQUITABLE AND RESILIENT DEVELOPMENT AT ALL LEVELS—FROM THE HOME TO THE REGION

RECOMMENDATION 3.1
Adopt (and comply with) current stormwater management requirements. Where feasible, improve local ordinances and building codes to promote resilient and equitable development.

Where: Community-wide

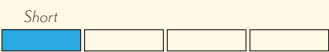
How: Conduct an audit of your local ordinances to evaluate areas for improvement; identify opportunities to improve local codes and ordinances in a way that enables and incentivizes resilient community development; adopt an incremental and adaptive approach to implementing green infrastructure and other resilience-building projects and programs (e.g., the Green Infrastructure Portfolio Standard)

How much: N/A

Who leads: The Village of Robbins

Resources needed: Grant funding targeted for local capacity building and technical assistance (e.g., CMAP’s Local Technical Assistance program, U.S. Economic Development Administration funding opportunities)

PRIORITY: 

PHASING: 

STRATEGY 4:
PREPARE YOUR COMMUNITY FOR FUTURE SHOCKS AND STRESSES

RECOMMENDATION 4.1
Educate the public on flooding risks. Ensure that there is a group of residents trained in disaster response and recovery.

Where: Community-wide

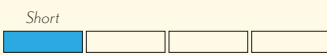
How: Implement a public education program; partner with American Red Cross, FEMA, and other organizations that can provide disaster preparedness training; develop a Calumet Park Community Emergency Response Team (CERT)

How much: N/A

Who leads: The Village of Calumet Park, local community organizations

Resources needed: Many of these trainings are free and participation is voluntary

PRIORITY: 

PHASING: 

RECOMMENDATION 4.2

Implement an Emergency Alert System that lets homeowners, businesses, and visitors know when a flood will likely occur.

Where: Community-wide

How: Create a text-based alert system like Calumet Park's CodeRed

How much: N/A

Who leads: The Village of Robbins

Resources needed: Internal: General Fund; External: Grants targeted for emergency alert systems and capacity-building (e.g. IDNR Coastal Management Program Grants U.S. Economic Development Administration funding opportunities)

PRIORITY: 

PHASING: 

RECOMMENDATION 4.3

Ensure that at least one Village staff person (or a consultant who does work on behalf of the Village) has one or more the following certifications: Certified Floodplain Manager (CFM), National Green Infrastructure Certification Program (NGICP), LEED-ND.

Where: Community-wide

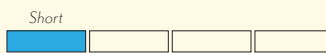
How: Incentivize the appropriate staff person (e.g., reimburse the costs) to earn and maintain certifications or require that Village contractors and consultants involved with land development have these certifications

How much: Varies depending on certification(s)

Who leads: The Village Engineer

Resources needed: Staff time and funding for certification costs

PRIORITY: 

PHASING: 



STRATEGY 2: INSPECT YOUR MUNICIPAL SEWER AND STORMWATER DRAINAGE SYSTEM

RECOMMENDATION 2.1

Implement a comprehensive inspection program (e.g., visual inspection, closed circuit television inspection) to regularly assess the condition of Robbins' municipal sewer system (e.g., manholes, catch basins, sewers).

Where: Community-wide (inspect known flooding problem areas first)

How: Establish a feasible and continuous inspection program (e.g., televise 10% of the sewers for 10 years, then repeat); inspect the Village's sewer infrastructure to observe deteriorating pipes, heavy debris, roots, and voids in the system

How much: TBD

Who leads: The Village Engineer

Resources needed: Internal: the General Fund, Water Fund, TIF Funds (where appropriate); External: CDBG, DCEO, IEPA State Revolving Loan Fund, USACE Section 219

PRIORITY: ☐ ☐ ☒ *High*

PHASING: Ongoing

PHASING: Short

STRATEGY 3:

REHABILITATE YOUR MUNICIPAL SEWER SYSTEM AND STORMWATER DRAINAGE SYSTEM

RECOMMENDATION 3.1

Repair the existing ditch and reduce runoff using green infrastructure (e.g., bioswales, native plants).

Where: The area northwest of Pulaski and 135th Street

How: Attain planning-level designs for this project, apply for grant funds (or use Robbins' General Funds) to complete preliminary engineering designs and construction in forthcoming fiscal year

How much: TBD

Who leads: The Village of Robbins, the Village Engineer, USACE

Resources needed: Internal: the General Fund, Water Fund, TIF Funds (where appropriate); External: CDBG, DCEO, IEPA State Revolving Loan Fund, USACE Section 219

PRIORITY: 

PHASING: 

RECOMMENDATION 3.2

Repair major sewer defects, such as collapsed sewers, identified through the inspection program.

Where: Targeted repairs in known problem areas

How: Complete +/- five repairs per year

How much: N/A

Who leads: The Village Engineer

Resources needed: Internal: the General Fund, Water Fund, TIF Funds (where appropriate); External: CDBG, DCEO, IEPA State Revolving Loan Fund, USACE Section 219

PRIORITY: 

PHASING: 

STRATEGY 4:

MAINTAIN YOUR MUNICIPAL SEWER SYSTEM AND STORMWATER DRAINAGE SYSTEM

RECOMMENDATION 4.1

Develop and follow a comprehensive maintenance plan describing how all green, grey, and green-grey infrastructure systems will be maintained (e.g., Green/Grey Infrastructure Maintenance Plan).

Where: Community-wide

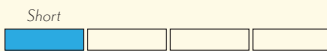
How: Apply for planning and technical assistance grants to develop this maintenance plan

How much: TBD

Who leads: The Village Engineer

Resources needed: External: CMAP's LTA program, HUD CDBG, IDNR Coastal Management Program Grants

PRIORITY: 

PHASING: 

RECOMMENDATION 4.2

Develop and implement the comprehensive Green/Grey Infrastructure Maintenance plan program in tandem with inspection program (see Recommendation 4.1). The entire sewer system should be cleaned on a ten-year cycle to ensure optimal function.

Where: Community-wide (inspect known flooding problem areas first)

How: Televisive and clean 10% of Robbins’ sewers every year

How much: TBD

Who leads: The Village Engineer

Resources needed: Internal: the General Fund, Water Fund, TIF Funds (where appropriate); External: CDBG, DCEO, IEPA State Revolving Loan Fund, USACE Section 219

PRIORITY: 

PHASING: 

RECOMMENDATION 4.3

Line deteriorated sanitary sewer mains observed through the inspection program (see Recommendation 2.1).

Where: Community-wide (prioritize lining efforts in known flooding problem areas)

How: Line sewers in known problem areas; aim to line 3% of the sewers per year

How much: N/A

Who leads: The Village Engineer, Public Works department

Resources needed: Internal: the General Fund, Water Fund, TIF Funds (where appropriate); External: CDBG, DCEO, IEPA State Revolving Loan Fund, USACE Section 219

PRIORITY: 

PHASING: 

GOAL 3: RETROFIT



RECOMMENDATIONS FOR YOUR HOMES AND NEIGHBORHOODS



STRATEGY 1: IMPLEMENT A RESIDENTIAL ASSISTANCE PROGRAM

RECOMMENDATION 1.1

Establish a residential cost-sharing program in Robbins to help residents recover from past storms and prepare for future storms. Under this program, residents would receive financial support for a complete home inspection and improvements targeted to reduce risk, like check valves, overhead sewers, and a rain garden.

Where: Community-wide

How: Partner with the delegate agencies /organizations tasked with implementing such programs in your region; renew and expand (if feasible) the Village's residential cost-share program; program outreach and recruitment efforts should be targeted to the most flood-prone areas in Calumet Park, but open to the entire Village

How much: Varies – communities often provide a 50/50 cost-share

Who leads: Cook County, RainReady, Cook County, CEDA

Resources needed: Internal: General Fund for the municipal cost-share program; External: Cook County's Residential Resilience Program (CDBG-DR), MWRD, DOE Weatherization and Intergovernmental Program Office grants, CEDA program and services

PRIORITY:  High

PHASING:  Short



STRATEGY 2: BRING NEW LIFE TO VACANT RESIDENTIAL LAND

RECOMMENDATION 2.1

Bring new life to vacant residential land in Robbins with native plants, tree planting, urban agriculture, and other strategies to beautify and activate neighborhoods.

Where: Northwest corner of Ridgeview Avenue and 135th Street; block northwest of 137th Street and Hamlin Avenue; blocks northwest and northeast of 135th Street and South Kildare Avenue

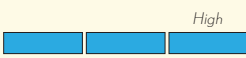
How: Create programs that incentivize residents and community groups to improve nearby vacant properties (via temporary use rights or permanent land ownership); such programs could be: Adopt-A-Lot, Side Yard/Large Lot programs, land

banking, temporary transfer of use rights to a community group, community greening, and award programs

How much: The City of Chicago’s “Large Lot Program” enables adjacent property owners, block clubs, and non-profit groups in select neighborhoods to purchase City-owned land for \$1 per parcel

Who leads: The Village of Robbins, current homeowners, local community organizations, the RainReady Steering Committee, South Suburban Land Band Authority

Resources needed: The Village of Robbins would effectively absorb the costs in terms of lost future property tax revenue on these particular parcels; however, the benefits of neighborhood stabilization, reduced crime, reduced flooding, and other economic spillover effects (e.g., increased property values due to greening vacant lots) would likely offset these costs

PRIORITY: 

PHASING: 

STRATEGY 3: CREATE A NETWORK OF RESIDENTIAL GREEN STREETS AND COMPLETE STREETS

RECOMMENDATION 3.1

Create a network of residential green streets that incorporate green infrastructure improvements (e.g., roadside swales, rain gardens, permeable pavement, tree plantings) along flood-prone residential streets. Ensure that any community greening projects on public or private land fit the community’s preferences for neighborhood aesthetics (e.g., size, color, and “look and feel” of installations), while also providing flood-reduction and other benefits.

Where: The 142-acre central residential neighborhood in

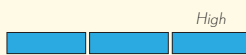
Robbins just west of Kedzie Avenue between West 125th and West 139th Streets

How: Use this RainReady Plan identify potential locations where green streets can be piloted; where appropriate, incorporate green infrastructure BMPs into planned roadway improvements; monitor the performance of the green streets; adjust the future implementation of such green infrastructure projects based on monitoring data and community feedback

How much: TBD

Who leads: The Village of Robbins, organizations specializing in the installation and maintenance of neighborhood green infrastructure

Resources needed: Internal: the General Fund; External: CDBG, DCEO, IEPA State Revolving Loan Fund, USACE Section 219

PRIORITY: 

PHASING: 

STRATEGY 4: CREATE GREEN SCHOOLS AND CHURCHES

RECOMMENDATION 4.1

Create green schoolyards that: manage stormwater with green infrastructure (e.g., rain gardens, permeable pavement, urban agriculture, rain barrels, cisterns); produce healthy foods; create spaces for more active play, physical education, and outdoor learning.

Where: Keller Middle School, Horace Mann School

How: Establish partnerships that explore construction and maintenance of multi-use schoolyards that incorporate elements of the Space to Grow program in Chicago (e.g., MWRD,

City of Chicago Department of Planning and Development,
Openlands, Healthy Schools Campaign)

How much: N/A

Who leads: In the Space to Grow model, the Village of Robbins and local school districts and would work in partnership with governmental agencies and NGOs to initiate and manage this program

Resources needed: Internal: School district funds, General Fund; External: MWRD capital improvement funds, Cook County CDBG-DR funds; Internal/External: Robbins could participate a public-public private partnership in which funds from multiple sources are leveraged and costs are shared

PRIORITY:  Medium

PHASING:  Long

RECOMMENDATION 4.2

Create green churches that manage stormwater with green roofs, depaving impervious surfaces (where feasible), rain gardens, parking lot bioswales, permeable pavement, and cisterns to capture water from roofs. In other communities church grounds and facility managers are incorporating these green improvements into the churches mission (e.g., prayer trails, outdoor space for congregation gatherings).

Where: Robbins Church of God in Christ, Faith Learning Center Church

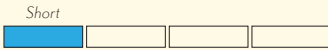
How: Educate church leaders, congregations, parishioners, etc., on the benefits of green infrastructure; streamline the permitting process for churches seeking to make green infrastructure improvements to their property; connect churches to the organizations/agencies that can provide financial and technical assistance

How much: N/A

Who leads: Individual churches and their congregations/parishioners

Resources needed: Internal: church capital funds and endowments; External: IDNR Coastal Management Grants, Chi-Cal Rivers Fund grants, Trinity Christian College student assistance, AmeriCorps State grants, private foundation grants (e.g., the Kresge Foundation, Grand Victoria Foundation)

PRIORITY:  High

PHASING:  Short

RECOMMENDATIONS FOR YOUR SHOPPING AREAS AND BUSINESS DISTRICTS



STRATEGY 5: BRING NEW LIFE TO ROBBINS' HISTORICAL COMMERCIAL CORRIDORS

RECOMMENDATION 5.1

Attracting new businesses and community organizations—that would provide much needed goods and services to Robbins' residents—is a key community priority. Through coordinated

investments in green (e.g., roadside bioswales, permeable pavement, tree plantings) and grey infrastructure (sidewalk and road improvements), and the strategic redevelopment of specific properties, Robbins can create a New Town Center area that could spur economic development, reduce flooding in the surrounding residential neighborhoods, and connect residents to the (proposed) Robbins Park area.

Where: New Town Center (the area south of West 135th Street, east of South Spaulding Avenue, north of West 137th Street, and west of Kedzie Avenue/South Claire Boulevard)

How: Redevelop/repurpose the building located at 13629 South Spaulding Avenue and its parking lot for community uses (e.g., community center, new location for the Robbins Flea Market, food trucks, green gathering space); create commercial complete streets on West 137th Street and South Claire Boulevard (see Recommendation 6.1); connect this New Town Center area to the (proposed) Robbins Park (see Recommendation 9.1) and TOD area (see Recommendation 7.1)

How much: TBD

Who leads: Village of Robbins Office of the Mayor, Chamber of Commerce, MWRD, SSMMA

Resources needed: Infrastructure improvements are paid through various internal and external funding sources and financing strategies; other place-making amenities (e.g., memorials, small green infrastructure installations, tree plantings, public art, and benches, etc.) can be added on to infrastructure improvements and sometimes paid for with private funds through public-private partnerships

PRIORITY: 

PHASING: 



STRATEGY 6:
**CREATE A NETWORK OF
COMMERCIAL COMPLETE STREETS**

RECOMMENDATION 6.1

Create commercial complete streets along flood-prone roads that incorporate green infrastructure best management practices (GI BMPs) like roadside bioswales, permeable pavement, planter boxes, tree planting, bike lanes, and other strategies to beautify streets and make them safe for walkers, bikers, and drivers.

Where: South Claire Boulevard from I-294 to Blue Island Border; 139th Street from I-294 to Robbins Metra Station; 137th Street from I-294 to Kedzie Avenue; 135th Street from west to east border

How: Pass a local Complete Streets policy (see policy recently passed by Blue Island for a local model); use Robbin’s Urban Flooding Risk and Opportunity Assessment (Figure RO-5) to identify (at a planning level) where GI BMPs can be integrated into the network of complete street; include complete street projects in capital improvement planning efforts; apply for grants as funding opportunities arise

How much: TBD

Who leads: The Village of Robbins, IDOT, ATA

Resources needed: Internal: the MFT, General Fund, TIF Funds

(where appropriate); External: CDBG, special grants from DCEO, IDOT, STP

PRIORITY:  ^{High}

PHASING:  ^{Medium}

STRATEGY 7: BRING NEW LIFE TO THE AREA AROUND ROBBINS' METRA STATION

RECOMMENDATION 7.1

Robbins' Metra Station is a key community asset. However, the station and the surrounding area (i.e., Transit-Oriented Development area) are located in a flood-prone area, which limits investment and redevelopment opportunities in this part of town. Fortunately, the (forthcoming) plan for Robbins Park—if implemented—will resolve many of the community's chronic flooding challenges and could open up new land development opportunities. In conjunction with Robbins' efforts to create Robbins Park, the Village should also modernize the station area and revitalize the TOD area in a way that reduces urban flooding and improves pedestrian connectivity between the station and residential, commercial, and recreational areas to the north and west.

Where: The TOD area around Robbins Metra Station (a "TOD area" generally refers to the land area that falls within a .25 or .5 mile radius originating from a transit station)

How: Review prior plans for Robbins' TOD area; include TOD improvements in the forthcoming plan for Robbins Park (see Recommendation 9.1); leverage investments in the Robbins Park area and stormwater project (and a reduced floodway) to catalyze investments in the TOD area; connect the revitalized TOD area to Robbins' New Town Center (see Recommendation 5.1)

How much: TBD

Who leads: The Village of Robbins, MWRD, RTA, ATA, CMAP, developers, various other partners

Resources needed: Funding and technical assistance for developing and implementing an economic development framework for Robbins (in progress)

PRIORITY:  ^{High}

PHASING:  ^{Long}



STRATEGY 8: BRING NEW LIFE TO UNDERUTILIZED PARKING LOTS

RECOMMENDATION 8.1

Robbins has several underutilized parking lots. These large impervious parking lots are one of the largest generators of polluted stormwater runoff. Conversely, they also present an opportunity for smart infill redevelopment, revitalizing commercial corridors (see Recommendation 6.1), open space creation, and ecological restoration.

Where: Community-wide; activating the vacant parking located lot at the northwest corner of the intersection of West 137th Street and South Claire Boulevard is a priority for creating a New Town Center (see Recommendation 5.1)

How: Robbins should bring new life to its underutilized parking lots by: 1) retrofitting parking lots with green infrastructure BMPs (e.g., permeable pavement, rain gardens, bioswales), 2) implementing infill redevelopment where appropriate

(see Recommendation 6.1), 3) de-paving parking lots and converting them into open space (see Recommendation 8.1), and 4) removing minimum parking requirements and making other policy changes that insure that new developments do not construct excessive parking

How much: TBD

Who leads: Village of Robbins, local businesses, parking lot owners

Resources needed: Internal: the General Fund

PRIORITY: 

PHASING: 

RECOMMENDATIONS FOR YOUR INDUSTRIAL CENTERS AND RAILROAD CORRIDORS

Image: MWRDC, 2016



STRATEGY 9: BRING NEW LIFE TO UNDERUTILIZED INDUSTRIAL AREAS THROUGH “ROBBINS PARK”

RECOMMENDATION 9.1

The Metropolitan Water Reclamation District of Greater Chicago (MWRD) is currently working the Village and other partners to create a master plan for “Robbins Park” area. This plan aims to re-envision the area in way that reduces flooding while also creating economic development opportunities (e.g., new jobs, new housing, transit-oriented development) and outdoor amenities (e.g., sport fields, fishing, rowing, walking trails). The Village should continue to work the MWRD to create a community-driven plan for revitalizing industrial and vacant lands.

Where: The Robbins Park (i.e., the area east of Kedzie Avenue, south of 135th Street, west of Sacramento Watt Avenue, and north of 137th Street); the MWRD

How: Engage Robbins’ RainReady Steering Committee in reviewing alternative design proposals for Robbins Park; identify opportunities to connect proposals for Robbins Park to other recommendations in this plan (e.g., residential green streets, commercial complete streets, TOD, trails along Midlothian Creek); secure MWRD funding (and other funding sources) to implement this project; leverage this project to catalyze other investments (e.g., revitalizing the TOD area around the Robbins Metra Station, creating a trail connection from Keller Middle School to Horace Mann School, new housing development, and others)

How much: The MWRD has indicated that they would be willing to invest approximately \$5 million into this project

Who leads: The Village of Robbins, the MWRD (and their partners); the RainReady Robbins Steering Committee

Resources needed: Funding and technical assistance for developing and implementing an economic development framework for Robbins (in progress).

PRIORITY: 

PHASING: 

RECOMMENDATIONS FOR YOUR OPEN LAND AND NATURAL AREAS

STRATEGY 10:

DEVELOP THE NEW OPEN SPACE AND OUTDOOR RECREATION AMENITIES

RECOMMENDATION 10.1

Create a multi-use recreational trail from St. Peter Claver Church to Horace Mann School. The construction of this trail could: mitigate urban flooding issues in the surrounding neighborhoods; support the restoration of Midlothian Creek (see Recommendation 12.1); connect to a revitalized “Robbins Park” and TOD area (see Recommendation 9.1); and create much needed outdoor recreation and educational opportunities for people of all ages, and especially Robbins’ youth.

Where: Start at St. Peter Claver Church → follow ComEd ROW eastward toward Midlothian Creek → follow Midlothian Creek north toward the Robbins Parks → exact trail alignment will be contingent on the Robbins Park plan

How: Engage ComEd in discussion regarding the use of their utility right-of-ways for community purposes (the Metropolitan Planning Council has been in discussions with Com-Ed on this topic); integrate portions of this project into the forthcoming plan for Robbins Park; apply for funding and technical assistance to plan and implement the portions of this trail project that fall outside of the Robbins Park planning area

How much: N/A

Who leads: The Village of Robbins, the MWRD (for components of the trail plan related to the Robbins Park area); MPC (for coordinating efforts to activate Com-Ed ROWs); the RainReady Robbins Steering Committee (for development of the trail plan); NPS and CMAP (for technical assistance)

Resources needed: Internal: the General Fund; External: MWRD capital funds (for stormwater-related project components in the Robbins Park area) planning area, NPS – Rivers, Trails, and Conservation Assistance (RTCA) program (for technical assistance), US DOT Recreational Trails Program; CMAP’s Transportation Alternatives Program (TAP)

PRIORITY: Medium

PHASING: Long



STRATEGY 11:

INTEGRATE GREEN INFRASTRUCTURE INTO ROBBINS’ PARK SYSTEM

RECOMMENDATION 11.1

Improve Robbins’ neighborhood parks in a way that restores and connects natural ecosystems, manages stormwater, and expands outdoor recreation and environmental education opportunities. Incorporate green infrastructure features like naturalized detention ponds, rain gardens, permeable pavement, and bioswales, as well as new play structures and educational signage.

Where: Multiple: Commissioner’s Park (137th Street and Avers Avenue), Celebration Park (13730 South Trumbull Avenue), Park on Finley Ave. (14046 South Finley Avenue), park at 139th Street and South Louis Avenue

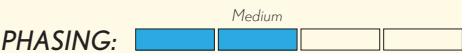
How: Include project(s) in the Robbins Park District’s ongoing

capital improvement planning and implementation efforts; implement a policy that encourages the conversion of underutilized lawns into native plant gardens; apply for grants as opportunities arise; increase programming at parks

How much: TBD

Who leads: Robbins' Park District

Resources needed: Grant funding for park improvements and implementing neighborhood-scale green infrastructure projects (e.g., Chi-Cal Rivers Fund)



STRATEGY 12:
MANAGE FLOODING ISSUES STEMMING FROM MIDLOTHIAN CREEK THROUGH STREAM RESTORATION AND NATURAL STORMWATER DETENTION

RECOMMENDATION 12.1

Midlothian Creek is one of the main drivers of flooding in Robbins. Fortunately, it is possible to improve Midlothian in a way that reduces riverine flooding issues, creates outdoor recreation amenities, and improves the quality of life for residents of Robbins. These improvements could include restoring the Midlothian Creek and its “riparian zone,” and creating new natural stormwater features in the proposed Robbins’ Park area.

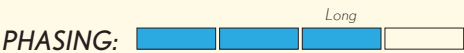
Where: Midlothian Creek and its “riparian” zone (i.e., a 100-foot buffer from the edges of the stream), the Robbins Park area

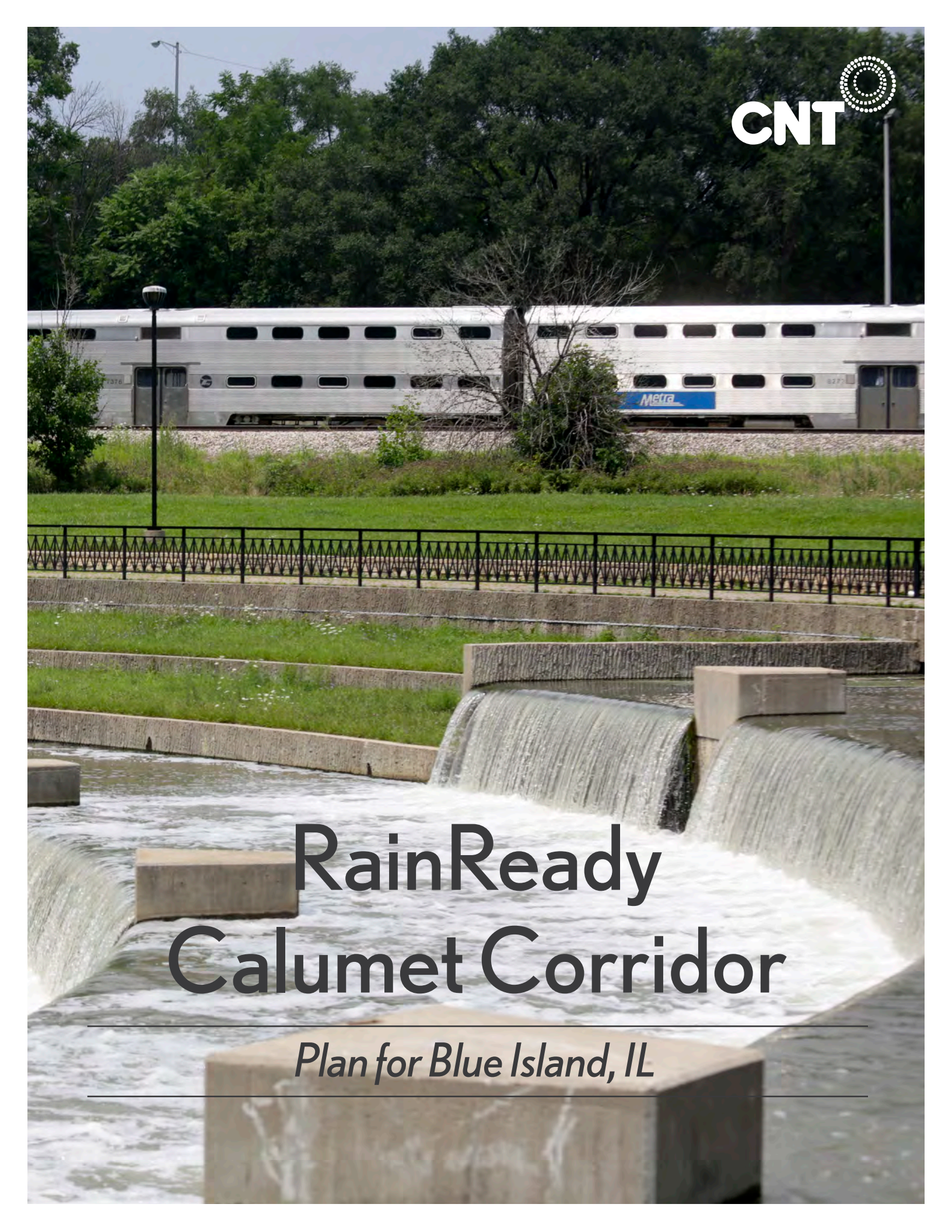
How: Integrate portions of this project into the forthcoming plan for Robbins Park; explore partnership and funding opportunities to implement this project

How much: TBD

Who leads: The Village of Robbins, the MWRD, regional environmental organizations

Resources needed: Funding and technical assistance for developing and implementing a stream restoration and outdoor recreation plan





RainReady Calumet Corridor

Plan for Blue Island, IL

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A CITIZEN'S GUIDE TO A **RAINREADY BLUE ISLAND**



A RainReady Blue Island would be a community that continues to find innovative and effective ways to strengthen its homes and businesses and create new opportunities for sustainable economic development. It would be a community where residents, businesses, and local officials work together to implement and maintain community projects that create jobs, reduce flooding, beautify and connect neighborhoods in a way that is fair and transparent.

In order to better understand Blue Island's flooding risk, the Center for Neighborhood Technology (CNT), the U.S. Army Corps of Engineers, the RainReady Blue Island Steering Committee, and the City of Blue Island joined together in February 2016. Throughout the year, this group met regularly, hosted community meetings, went door-to-door in the neighborhoods, held seven educational workshops and multiple Steering Committee meetings, and reviewed hundreds of plans and studies. 72 Blue Island residents filled out our flooding survey.

Together, we have established a shared vision and a path toward a flood-resilient Blue Island: The RainReady Blue Island Plan. This Citizen's Guide to a RainReady Blue Island covers the highlights of the plan, for more information visit www.rainready.org/calumet-corridor.

A Path Forward

Blue Island is a regional leader in adopting innovative approaches to stormwater management and economic development. The Mayor likes to think BIGG (Blue Island Going Green), and his administration has certainly walked the talk in this regard. The City was an early adopter of "green infrastructure" and began installing rain gardens and distributing rain barrels in 2013 to reduce flooding in its northeast neighborhood. The City now has a foundation of green infrastructure projects from which to learn, improve, and expand projects that reduce flooding and spur economic development.

Equipped with this RainReady Plan, the City now has a roadmap for reducing local flooding issues in a way that strengthens neighborhoods and business districts, bringing new life and vibrancy to vacant areas of town. In many instances, the City is already proactively engaged in many of the recommendations of this plan. This plan includes new project recommendations as well as creative ways to coordinate and accelerate various public and private projects that deliver flood relief and other community benefits.

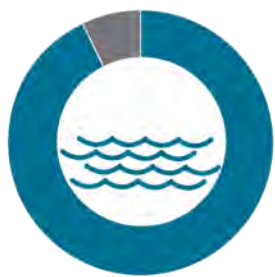
**KEEP READING FOR MORE INFORMATION ON THE
PATH AHEAD FOR BLUE ISLAND!**



**US Army Corps
of Engineers®**

Understanding the Problem

Like many of its neighbors, Blue Island has long been plagued by chronic flooding. In recent years, the scope and severity of the floods have become significantly worse. A combination of increased impervious surfaces, aging and limited infrastructure, and changes in regional climate have left Blue Island residents vulnerable across the city. From 2007 to 2011, 469 flood-related insurance claims were filed in the 60406 zip code, with more than \$1.2 million paid out in damages. In 2015, the broader Calumet Corridor in which Blue Island is located was identified by Cook County as the area that was “most impacted and distressed” by the April 2013 storms (DR-4116). Strategic policy changes and coordinated investment in green and grey infrastructure capital projects and ongoing maintenance will be part of the mix of solutions necessary to mitigate chronic flooding issues and large storms.



*Respondents experiencing flooding problems**

71 survey respondents

\$2,242 is the average amount spent on stormwater-related repairs

\$9,314 is the average amount residents are willing to invest to reduce risk of future damage

How does water enter properties?



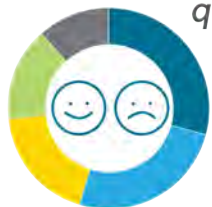
- 24 Backing up through drains
- 28 Seeping through walls
- 10 Flowing through doors/windows
- 17 Pooling/ponding in yard
- 11 Overflow from street, creek, nearby body of water
- 2 Other
- 2 Don't know

What is the level of worry about flooding's impact on property value?



- Extremely worried 30%
- Very worried 11%
- Moderately worried 22%
- Slightly worried 19%
- Not at all worried 19%

How much do heavy rains impact quality of life?



- 33% A great deal
- 29% A lot
- 21% A moderate amount
- 17% A little
- 13% Not at all

How much do heavy rains impact commute or other travel?



- A great deal 11%
- A lot 15%
- A moderate amount 19%
- A little 41%
- Not at all 15%

What is the preparedness of the community to work together to find a solution?



- 11% Extremely prepared
- 18% Very prepared
- 11% Moderately prepared
- 25% Slightly prepared
- 36% Not at all prepared

*Respondents who answered "Yes, I experience problems" and "I do not experience problems anymore" were grouped into the "Yes" category because both sets of respondents experience ongoing flooding problems or have experienced problems in the past, respectively.

Data Source: CNT Survey, 2016

Planning the Solutions

Blue Island's path toward flood resilience will require coordinated action at multiple levels—from the individual home to the broader region. Fortunately, community residents, municipal staff, and elected representatives are aligned in their desire for a more beautiful, flood-resilient community. This RainReady Plan recommends the following priority projects, which were taken from a comprehensive list of recommendations:

RESIDENTIAL PROGRAM

Renew and expand Blue Island's residential cost-sharing program to help homeowners recover from past storms and prepare for future storms. Under this program, residents would receive financial support for a complete home inspection and improvements targeted to reduce risk, like check valves, overhead sewers, and a rain garden.

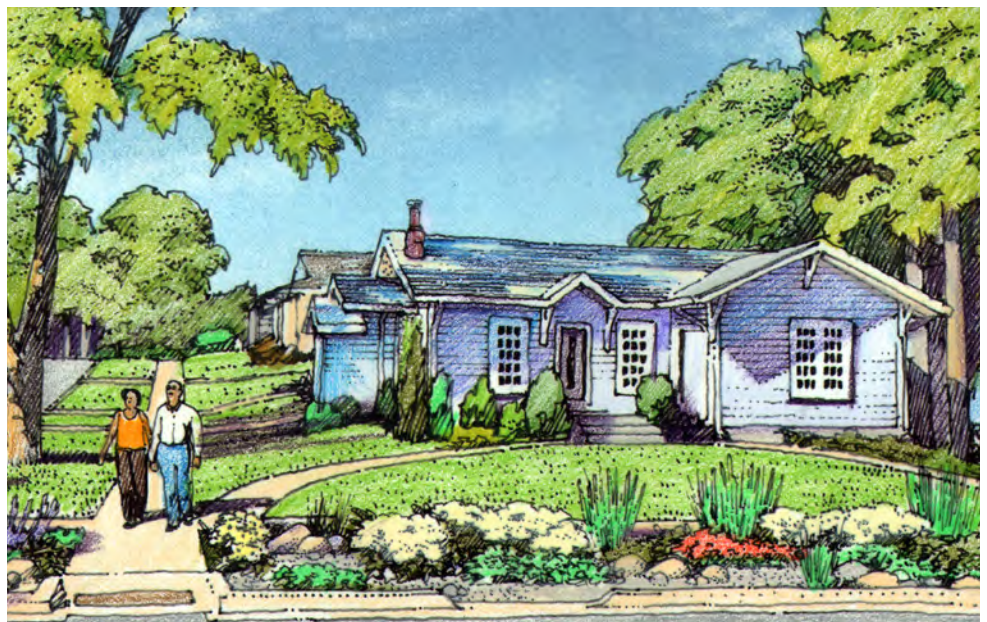
WESTERN AVENUE BEAUTIFICATION

Western Avenue is slated for improvements thanks to local leadership setting up the Business Development District. The City should continue its practice of incorporating green infrastructure (planter boxes, tree plantings, and bioswales) into planned improvements such as streetscapes and the public right-of-way. These types of improvements will beautify the corridor while reducing stormwater runoff into the local sewers.



NORTHEAST NEIGHBORHOOD

The northeast neighborhood of Blue Island, "the bowl," has been known to flood for many years. The City of Blue Island has succeeded in securing numerous grants and partnerships that are dedicated to reducing flooding and beautifying the neighborhood. With support from MWRD, a coordinated investment in green and grey infrastructure is expected to occur in 2017. The City should continue to coordinate with the MWRD and other partners to implement and maintain concentrated and integrated green and grey infrastructure projects.



Quick Steps

We know that residents experience flooding every summer, and the need for help is urgent. Here are 7 solutions that homeowners should consider to reduce their risk today:

- **ASSESS YOUR PROPERTY.**

The first step to solving your flood problem is to understand how water falls on your property and flows through your pipes. If you have significant problems, you may need the help of an engineer, plumber, electrician, or landscape designer.

- **MAKE YARD IMPROVEMENTS.**

In order to reduce flooding, capture stormwater runoff using rain gardens, swales, dry wells, permeable paving, rain barrels, or cisterns.

- **ELEVATE YOUR APPLIANCES.**

If water regularly enters your home, place appliances, furnaces, hot water heaters, and electrical panels above the typical flood level on wood or concrete blocks.

- **HAVE YOUR BUILDING SEWERS CHECKED.**

Faulty pipes connecting your home to the municipal sewer system can exacerbate foundation damage and flooding in your home. Ensure that grease, waste, or tree roots are not obstructing the pipe and preventing wastewater from leaving the house.

- **RECLAIM YOUR PARKWAY.**

The strips between sidewalks and streets can be transformed into attractive green spaces that absorb stormwater runoff, reduce municipal maintenance costs, and beautify streets. Be sure to check your municipal code for which plants are permitted.

- **GET INSURED.**

There are several options available to protect you against the risk of water damage, including home insurance policies, flood insurance riders, and the National Flood Insurance Program (NFIP), established by FEMA and administered by your local insurance companies.

- **ADVOCATE FOR THE RAINREADY PLAN.**

This plan outlines solutions to community wide flooding. Get involved in your local Steering Committee to make sure the plan is implemented!



GET INVOLVED!

Blue Island has a RainReady Blue Island Steering Committee that meets monthly!

For more information contact Rebecca Raines at rraines@cnt.org or 773.269.2217.

CITY OF BLUE ISLAND

COMMUNITY SNAPSHOT

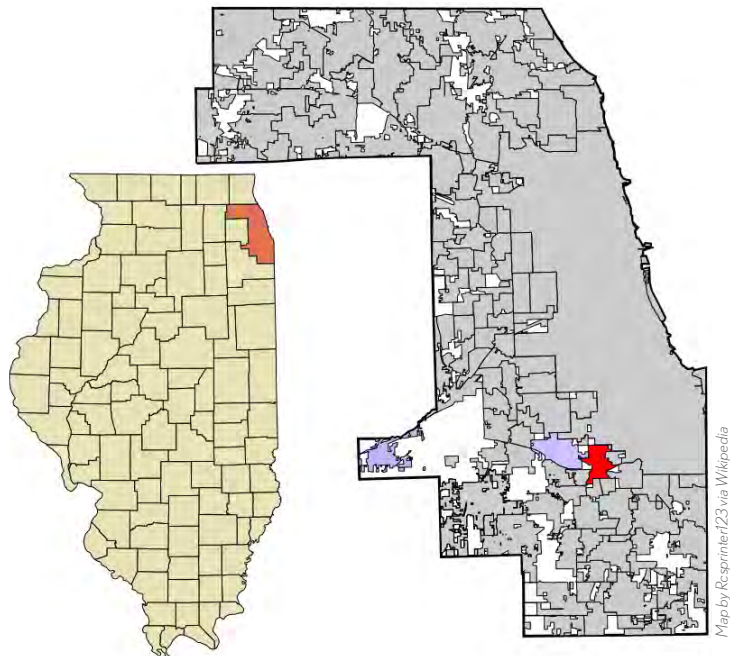
Located 16 miles south of downtown Chicago and situated along the Cal-Sag Channel, Blue Island, Illinois holds a unique place in south suburban Cook County. Blue Island's easy access to waterways made it highly suitable for industrial and commercial growth. Over time, Blue Island's regional and local assets transformed the community from a settlement in Chicago's outskirts to a regional hub for industry and commerce. It is a vibrant and entrepreneurial community with considerable growth potential.

Like many of its neighbors, Blue Island has long been plagued by chronic floods. From 2007 to 2011, 469 flood-related insurance claims were filed in the 60406 zip code, with more than \$1.2 million paid out in damages (CNT, 2014). In 2013, Blue Island became a leader in addressing local flooding issues when local leaders brought attention and resources to bear on its flood-prone northeast neighborhood.

More investment is needed to bring additional flood-resilience to residents in the northeast neighborhood and other parts of town. Fortunately, Blue Island is well positioned to continue to learn from, expand, and improve their earlier efforts. Building on Blue Island's prior and ongoing efforts, this plan provides a roadmap for reducing local flooding issues in a way that strengthens neighborhoods and business districts, and brings new life vibrancy to vacant areas of town.

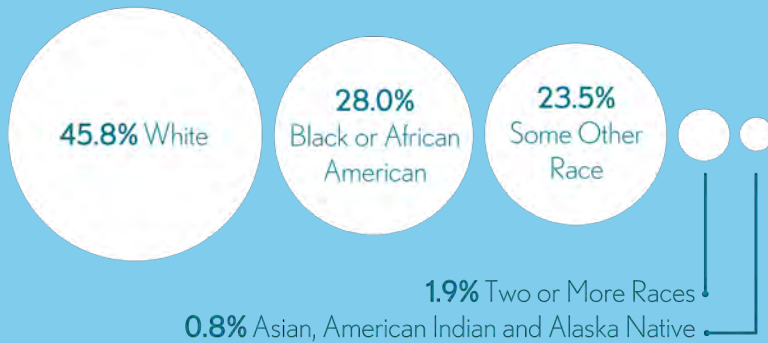


FIGURE BI-1:
Location of Blue Island within Cook County



Blue Island, IL AT A GLANCE

racial composition



23,453
total population

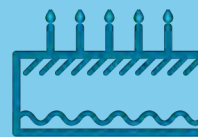


9,591
total number of households



78% of residents hold high school diploma

15% of residents hold college diploma



34
median age

Cook County \$54,828

Blue Island \$39,023

Cook County \$30,468

Blue Island \$18,867

median
per capita income

median
household income



22%
people below poverty level



16%
unemployment rate
(people age 16+)

Data Source: US Census

Flooding Risks and Resilience Opportunities

Residents and business owners in Blue Island experience several types of flooding:

- **Basement backup** from the local sewer system and damaged private lateral lines, impacting several parts of town
- **Street and yard flooding** which occurs when local drainage systems are overwhelmed with stormwater and sewage
- **Foundation seepage** in several areas of Blue Island, causing rot and mold in basement walls

Areas with higher flooding risk are shown in Figure BI-4 (the darker the blue the higher the risk of flooding). Proposed flooding solutions are also shown on this map. These “green-grey” solutions were identified through a community-driven and analytically-rigorous process. The result is a plan that works, both in terms of its community support and physical and economic feasibility.

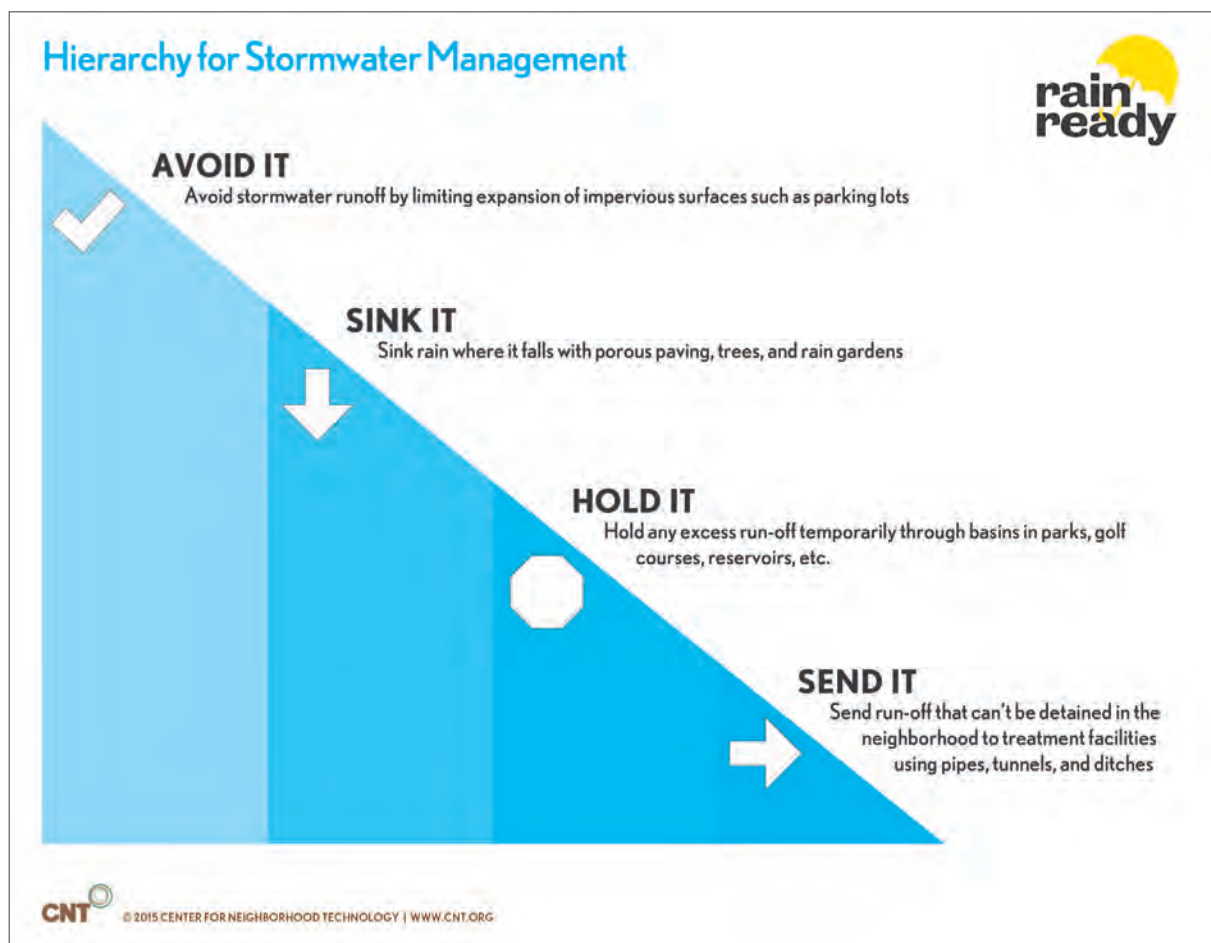


FIGURE BI-2:
Hierarchy for Stormwater
Management

Key findings from this Flooding Risk and Resilience Opportunity assessment are presented here. This risk and opportunity assessment provided the foundation for the strategies and recommendations presented in the RainReady Action Plan for Blue Island.

Four main factors contribute to flooding in Blue Island:

INCREASING IMPERVIOUS SURFACES

As Blue Island developed over time, natural lands were converted to buildings, parking lots, streets, and other impervious surfaces. The increase in impervious surfaces resulted in fewer open areas for rainwater to sink into the ground. As Blue Island takes steps to redevelop certain commercial and downtown areas (e.g., Western Ave, Old Western Ave, its TOD areas), efforts should be made to manage any additional stormwater runoff from any new impervious surfaces as well as reduce runoff from existing impervious surfaces.

AGING AND LIMITED INFRASTRUCTURE

Blue Island has a varied array of storm sewer and combined sewer systems. There is a small network of sewer lines in the northwest that drains into the golf courses bordering 123rd Street. Another small network is in the southwest near 139th Street and Kedzie Avenue, draining into Midlothian Creek. The largest network is a system that travels down Western Avenue starting with a 15" diameter ultimately growing to 60". The 1.7 mile line bisects Blue Island from the northern border at 119th Street in the north to an outfall into the Cal-Sag Channel in the south. There are five TARP drop shafts along the Cal-Sag Channel servicing the combined sewer system. However, placement of drainage outlets and sewer conditions may be preventing stormwater from being efficiently routed to the robust outfalls. Additionally, as municipal sewer systems age, pipes may collapse causing local drainage issues. Blue Island should continue its exemplary practices of documenting, inspecting, maintaining, and rehabilitating its municipal sewer system so as to bring it up to a state of good repair and keep it in good condition.

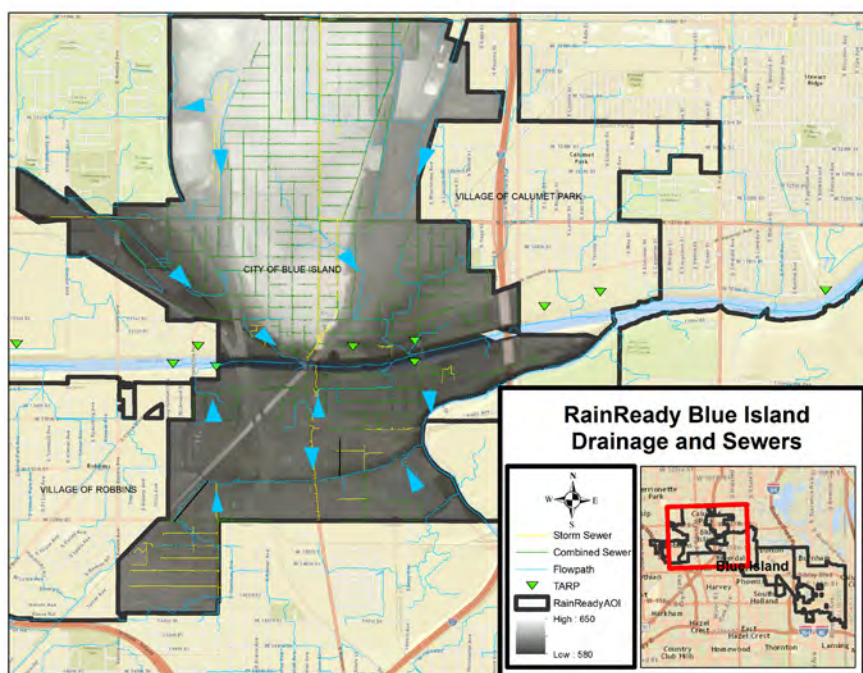


FIGURE BI-3:
Blue Island Drainage
and Sewers

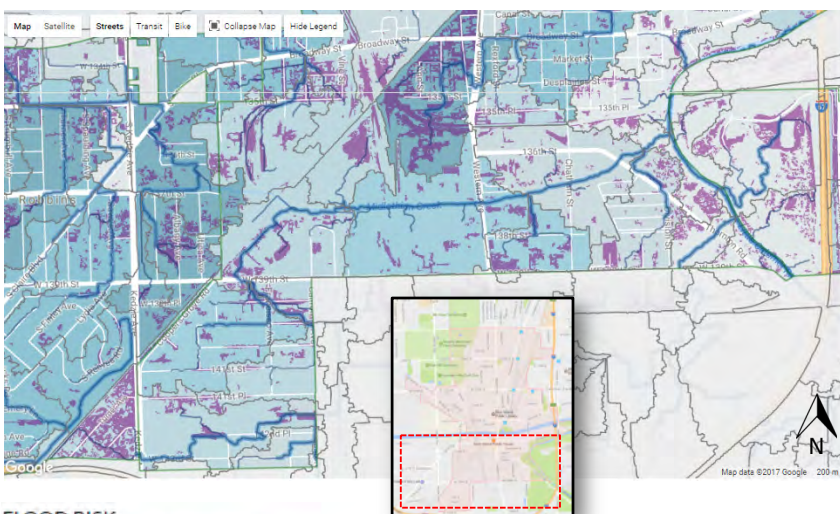
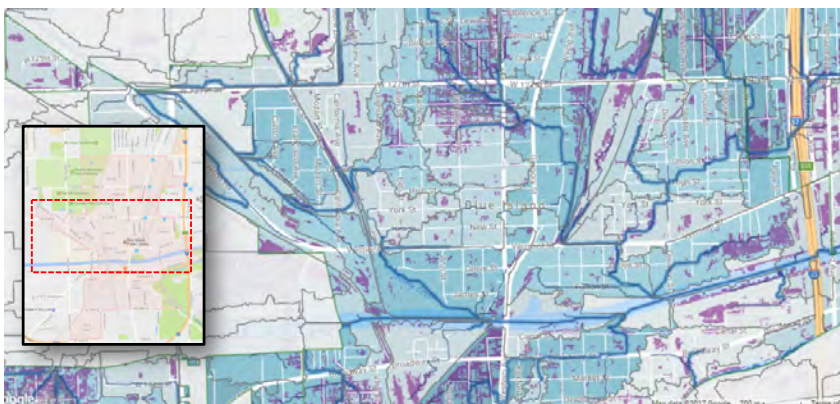
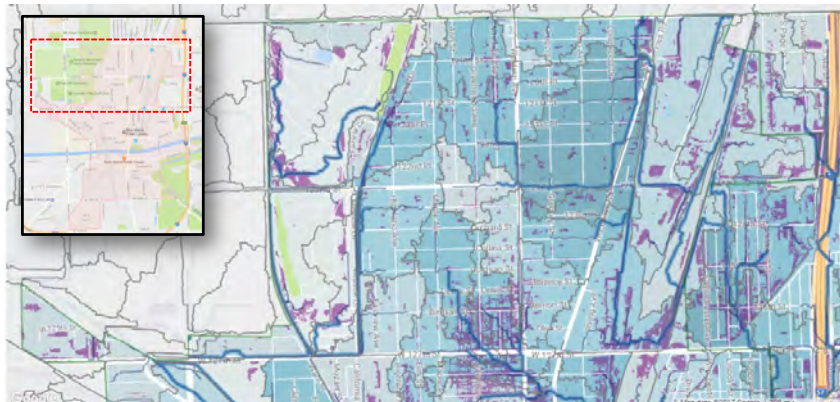


MORE SEVERE STORMS

Climate change is bringing more frequent high-intensity storms to the region. In light of this, Blue Island should not only prepare for past storms like the one that occurred in April 2013, but also prepare for larger, more frequent storms, with more variable weather (e.g., intense storms followed by long droughts, more freeze/thaw cycles). Residents, municipal staff, and elected officials should be equipped with the knowledge and resources needed to prepare for, mitigate, and recover from future storms—both large and small.

TOPOGRAPHY

Blue Island is generally flat except for the glacial “island” that gives Blue Island its name. The approximately 1.5 mile by 0.5 mile glacial feature sticks out in the relatively flat Calumet Corridor. The western slope is only 1.5%, but on the eastern ridge, the general slope is greater than 6%. Stormwater runoff flows quickly down the eastern ridge and pools in the low-lying areas of northeast Blue Island (“the bowl”). The rest of Northern Blue Island is quite flat, with a slope of less than 1% draining toward the Cal-Sag Channel. The drainage area south of the channel is split in half by rail lines between 135th Place and 136th Street. To the north it drains toward the Cal-Sag Channel. The area south of the rail lines drains toward Midlothian Creek. Again, the natural slope is less than 1% -- very flat. Both Blue Island’s general flatness and the ridge in the northeast neighborhood contribute to flooding issues.



FLOOD RISK

low 1 2 3 4 5 high

Map Overlays: ☒ Catchment Flow Path ☒ Depressions

FIGURE BI-4:
Blue Island Urban Flood Risk Assessment

These overland flow path and depression area maps show where stormwater is likely to flow and accumulate, or pool, in Blue Island. These maps are based on high-resolution digital elevation models (DEMs) derived from Light Detection and Ranging (LiDAR) technology.

Although LiDAR provides very detailed information on land cover and topography, there are several factors that may result in discrepancies between these maps and how stormwater actually flows through a community (e.g., small landscape features like gutters, curbs, small hills that route water, which may not have been picked up in our flow path analysis). Also, each community has a sewer and drainage system that is designed to intercept and manage stormwater. Our team modeled the flow of stormwater over the landscape as if local sewer systems are at full capacity and could not handle any additional flows. In other words these maps only show the overland flow paths and accumulation of stormwater and do not factor in the underlying sewer network.

In spite of these limitations and assumptions, these maps represent a good approximation of how stormwater is likely to flow and accumulate in the Calumet Corridor. These maps were used alongside other information on flooding risk and solution opportunities to determine where green infrastructure retrofits could alleviate local flooding issues. This information informed the community's action plan.

FIGURE BI-5:
Key Plans Reviewed for Blue Island

Name	Lead(s)	Year Completed / Status	Focus
Stormwater Master Plan Project for the Little Calumet River/Cal-Sag Channel Drainage Area: Problem Area #52 (California Gardens), Concept Memo (NOTE: two other concept memos were also created for Blue Island, but these were not complete by the time that RainReady reviewed prior plans)	MWRD, Arcadis	2016	Watershed/Stormwater Management
Blue Island Capital Improvement Priorities Report	CMAP	2016	Capital Improvement Plan
Blue Island Developer Discussion Panel	RTA, ULI, City of Blue Island	2013	Economic Development
A Comprehensive Plan for Blue Island	CMAP	2012	Comprehensive Plan
Blue Island, Blue Water (Program)	City of Blue Island	2012	Green Infrastructure
Blue Island TOD Zoning Code Update	RTA, City of Blue Island	2011	Transportation
Blue Island Plan for Economic Development	City of Blue Island, CNT	2005	Economic Development

Source: *Prevalence and Cost of Urban Flooding*, Center for Neighborhood Technology 2013

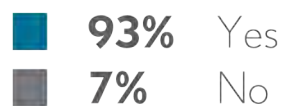
The following section summarizes what we heard from Blue Island residents, municipal staff, and elected representatives through the RainReady planning process as well as what we gathered from previous plans completed for the City (see Figure BI-5). To make this information easier to digest, we organized it into community strengths, concerns, and land-based opportunities (i.e., planning priorities and capital projects) that apply to: 1) your homes and neighborhoods; 2) your business districts and shopping centers; 3) your industrial centers and railroad corridors; and 4) your open space and natural areas. We also created a community asset map to prompt ideas about how Blue Island's RainReady Action Plan can strengthen and build on existing community assets.



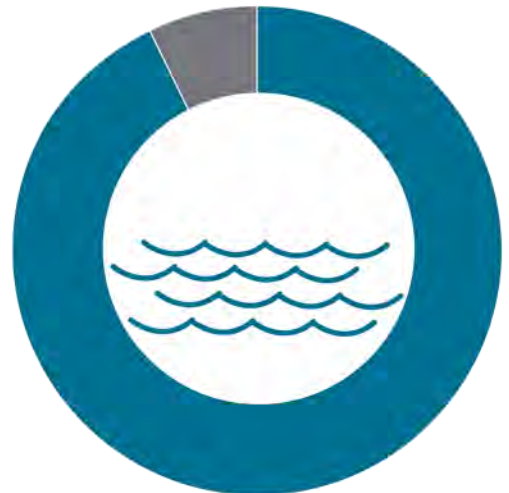
RainReady Blue Island COMMUNITY SURVEY

Respondents experiencing flooding problems

Respondents who answered "Yes, I experience problems" and "I do not experience problems anymore" were grouped into the "Yes" category because both sets of respondents experience ongoing flooding problems or have experienced problems in the past, respectively.



71 survey
respondents

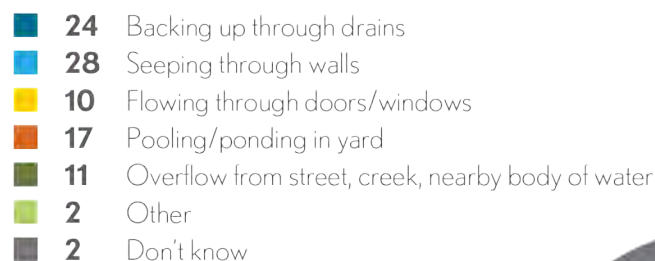


\$2,242 is the average amount spent on stormwater-related repairs

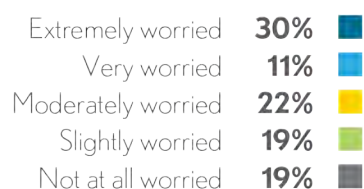
\$9,314 is the average amount residents are willing to invest to reduce risk of future damage

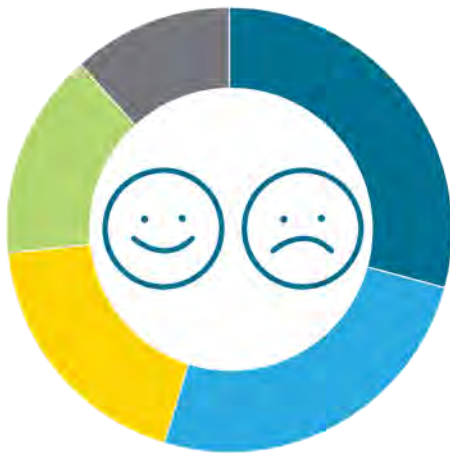


How does water enters properties?



What is the level of worry about flooding's impact on property value?

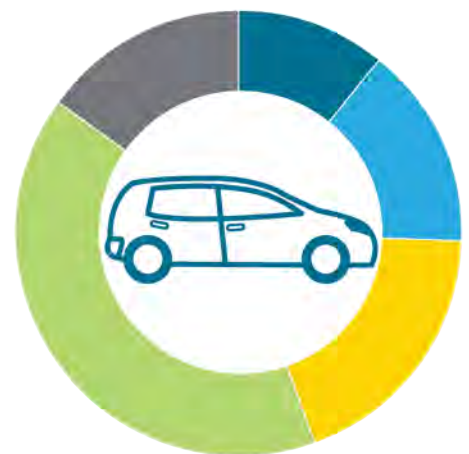




How much do heavy rains impact quality of life?

33%	A great deal
29%	A lot
21%	A moderate amount
17%	A little
13%	Not at all

How much do heavy rains impact commute or other travel?



A great deal	11%
A lot	15%
A moderate amount	19%
A little	41%
Not at all	15%



What is the preparedness of the community to work together to find a solution?

11%	Extremely prepared
18%	Very prepared
11%	Moderately prepared
25%	Slightly prepared
36%	Not at all prepared

YOUR HOMES AND NEIGHBORHOODS

Photo: David Wilson, Flickr/Creative Commons



COMMUNITY STRENGTHS

- The Blue Island Public Library
- The Blue Island Park District (parks, programs)
- Weekly emails from the Alderman
- The Historical District attracts customers and patrons from the broader Chicagoland region
- Blue Island's sense of community is highly valued by residents and municipal staff alike
- Excellent transportation access to Chicago by all modes of transportation
- Blue Island has a rich and celebrated history that the City and community organizations promote through public art, displays, and signage
- Western Avenue is a key commercial corridor
- Low crime rates
- Blue Island is a racially and socio-economically diverse community
- Blue Island is considered a leader—not only in the Southland

region, but throughout the Chicagoland region in promoting sustainable economic development

- Residents support local businesses and the City's efforts to bring vitality to the community through urban agriculture, public art installations, and community events
- Blue Island's tree-lined streets give the community a unique sense-of-place; Blue Island has been recognized as a Tree City USA community for more than six years
- See Community Asset Map (Figure BI-6)

COMMUNITY CONCERNS

- Flooding!
- Undersized and degraded sewers
- Need for regular street repair and cleaning
- The two-way communication between the City and residents can be improved



- Some streets and curbs are in poor condition (e.g., grass can be seen growing through curbs in some parts of town)
- Abandoned properties, vacant lots, and absentee landlords contribute to blight in certain parts of town
- Blue Island has approximately 23 miles of alleys that are generally in poor condition
- Some of the rain gardens in the Northeast neighborhood are “too wild looking” (e.g., plantings grow to the curb, they are not well maintained, they attract pests)
- See Urban Flooding Risk Assessment (Figure BI-4)

LAND-BASED OPPORTUNITIES (PLANNING PRIORITIES AND CAPITAL PROJECTS)

Here are some ideas that were uncovered through the RainReady planning process:

- Various urban flooding mitigation projects have been recently completed or are planned or underway in the



Northeast neighborhood (see Blue Island Capital Improvement Priorities Report for a list, accessible on CMAP’s website)

- Repair bridges over the Cal-Sag Channel to improve pedestrian access to neighborhoods and parks
- Create educational signs about local history and natural ecosystem
- Incentivize and enable residents and business to make improvements to their property. When necessary, enforce local codes and ordinances in a way that is fair and transparent; Blue Island could coordinate roadway resurfacing and improvement projects with sewer and water main improvements; CMAP recommended considering the following factors when identifying which roads or road segments to improve each year: road condition, cost of repair, TIF and/or external funding availability, related improvement projects (e.g., sewer and water main improvements, green and grey stormwater infrastructure investments) ward, average daily traffic, city economic development priorities

YOUR BUSINESS DISTRICTS AND SHOPPING CENTERS



COMMUNITY STRENGTHS

- The Olde Western Historic District
- Blue Island's Business Development District (BDD) has been generating funds that it can leverage to reinvest in the district
- New businesses are opening up in Blue Island
- See Community Asset Map (Figure BI-6)

COMMUNITY CONCERNS

- Flooding!
- Western Avenue is in need of streetscape and façade improvements
- Building facades along Western Avenue vary in style and size, some residents expressed preference for a more uniform architectural style
- Lack of wayfinding signage (e.g., between Metra stations and points of interest)
- Difficult to access the Metra stations from nearby neighborhoods and Western Avenue
- See Urban Flooding Risk Assessment (Figure BI-4)



Photo: MPC, Flickr/Creative Commons

LAND-BASED OPPORTUNITIES (PLANNING PRIORITIES AND CAPITAL PROJECTS)

Here are some ideas that were uncovered through the RainReady planning process:

- Reconfigure Western Avenue and Gregory Street as two-way commercial “Complete Street”
- Proposed parking improvements: Olde Western Parking Expansion, parking lots along Western Avenue, and Metra Parking; improvements may include: additional landscaping, green infrastructure (e.g., permeable pavement and bioswales), lighting, and newer parking payment technology
- Bicycle and pedestrian improvements (See Blue Island’s Active Transportation Plan) and sidewalk and curb repair projects (See Blue Island’s Capital Improvement Plan) should

be coordinated with the Blue Island’s Urban Flooding Risk Assessment

- Improve connections and pedestrian access between Blue Island Metra stations with sidewalk improvements, public art (under bridges), and signs to help people find their way
- Continue to invest in historic preservation efforts in the Olde Western Avenue Historic District and other parts of town
- Continue to leverage Blue Island’s historic character to draw in tourism and new businesses

YOUR INDUSTRIAL CENTERS AND TRANSPORTATION CORRIDORS

Photo: David Wilson, Flickr/Creative Commons



Photo: vicki, Flickr/Creative Commons

COMMUNITY STRENGTHS

- Blue Island has seven Metra stations that provide unparalleled transit access (amongst other Southland municipalities) to Chicago and the south suburbs
- Close proximity to Chicago (via all modes of transportation)
- Available land near transit stations and railroad that the City can use to support Transit-Oriented Development (TOD) and Cargo-Oriented Development (COD)
- The City's continued efforts to improve pedestrian access, shopping, and housing near the Vermont Street station (TOD)
- Two major corridors that lead into the City of Chicago: 127th Street and Western Avenue
- The Cal-Sag Channel can support more water-based travel (e.g., shipping of industrial materials, outdoor recreation, commuting)
- See Community Asset Map (Figure BI-6)

COMMUNITY CONCERNS

- Vacant and underutilized industrial land
- Environmental pollutants and brownfields present barriers to the redevelopment of some industrial areas
- See Urban Flooding Risk Assessment (Figure BI-4)



Photo: MJC, Flickr/Creative Commons

LAND-BASED OPPORTUNITIES (PLANNING PRIORITIES AND CAPITAL PROJECTS)

- The City, the SSMMA, Antero Group, and OAI, Inc./ High Bridge, L3C is implementing a green infrastructure infiltration basin in Blue Island's Northeast Industrial Site (Phase I Design completed in November, 2015)
- The MWRD completed concept memos for the California Gardens neighborhood (Problem Area #52) in Southeast Blue Island, Old Western Row area (Problem Area #4), and the residential neighborhood along Division near Union and High Streets (Problem Area #47/48)
- Blue Island's Capital Improvement Priorities Report (May 2016) outlined recommendations for: sewer improvements,

catchment basin and manhole improvements, water main improvements, roadway resurfacing, parking improvements, sidewalk and curb repair, alley improvements, and more; the RainReady Blue Island Action Plan can be used in conjunction with this report to prioritize projects and programs

YOUR OPEN SPACE AND NATURAL AREAS

Photo MPC, Flickr/Creative Commons



COMMUNITY STRENGTHS

- Multiple municipal parks, natural areas, and waterway access points
- Blue Island has been a Tree City USA for more than six years and has formally endorsed the Metropolitan Mayor's Caucus' Greenest Region Compact
- Access to regional greenways (e.g., the Cal-Sag Trail) and blueways (the Calumet Water Trails)
- See Community Asset Map (Figure BI-6)

COMMUNITY CONCERNS

- Residents have concerns that rain gardens are bringing snakes, bees, and other "pests" to their neighborhood and yards
- Poor water quality and trash in the Cal-Sag Channel
- Poor water quality in Stony Creek and Midlothian Creek
- See Urban Flooding Risk Assessment (Figure BI-4)



LAND-BASED OPPORTUNITIES (PLANNING PRIORITIES AND CAPITAL PROJECTS)

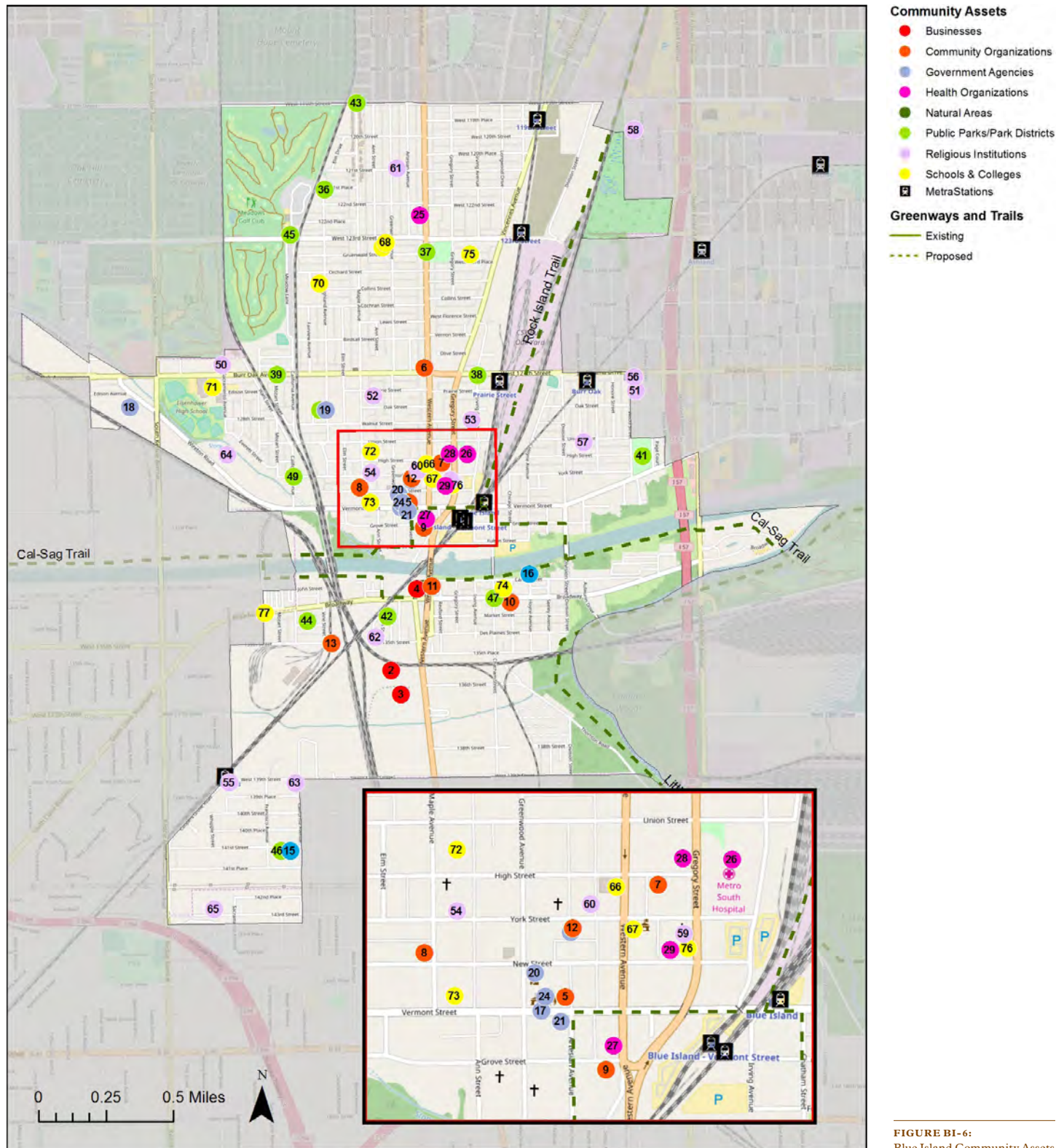
Here are some ideas that were uncovered through the RainReady planning process:

- Ecological restoration at Stan's Park, on the vacant land between the Cal-Sag Channel and Stony Creek, as well as the strip of vacant land between Old Western Avenue and Western Avenue
- There is a strong interest in creating community gardens on vacant land
- Expand open space along waterways including the Cal-Sag

Channel, Midlothian Creek, Stony Creek, and Little Calumet River in order to improve water quality and create additional opportunities for recreation and bicycling

- The City recently passed a resolution approving the Phase III construction of the Cal-Sag Trail Project (Blue Island East Segment) and committed the necessary matching funds in October 2016
- There are opportunities for pursuing waterfront development that aligns with the "Our Great Rivers" vision

COMMUNITY ASSETS



BUSINESSES

- 1 Insomniac Studios
- 2 Metro Recycling
- 3 Namaste Laboratories
- 4 Jebens Hardware Store

COMMUNITY ORGANIZATIONS

- 5 Blue Island Area Chamber of Commerce
- 6 Blue Island Farmers Market
- 7 Progress Center for Independent Living
- 8 Blue Island Historical Society
- 9 Metropolitan Family Services
- 10 Blue Cap
- 11 Guildhaus
- 12 Blue Island Urban Forestry Board
- 13 Rotary Club

GARDENS AND FARMS

- 14 Memorial Park Community Garden
- 15 California Gardens Community Garden
- 16 Blue Island Organic Sustainable (Bios) Farm

GOVERNMENT AGENCIES

- 17 Blue Island Fire Department
- 18 Illinois Department of Human Services
- 19 Blue Island Park District
- 20 Blue Island Police Department
- 21 Blue Island Post Office
- 22 Blue Island Public Library
- 23 Blue Island Public Works
- 24 Blue Island Mayor's Office

HEALTH ORGANIZATIONS

- 25 Fresenius Kidney Care
- 26 MetroSouth Medical Center
- 27 PTSIR Physical Therapy
- 28 Pronger Smith MedicalCare
- 29 Heart Care Center of Illinois

METRA STATIONS

- 30 Blue Island Metra Station
- 31 119th St Metra Station
- 32 123rd St Metra Station
- 33 Blue Island-Vermont Street Metra Station
- 34 Burr Oak Metra Station
- 35 Prairie St Metra Station

PUBLIC PARKS/ PARK DISTRICTS

- 36 Kiddie Korral
- 37 Hart Park
- 38 Stan's Park
- 39 Schultz Park
- 40 Memorial Park
- 41 Centennial Park
- 42 Disabato Park
- 43 Bark Park
- 44 Perillo Park
- 45 Meadows Golf Club of Blue Island
- 46 Tommy A. Brown Sports Association
- 47 Portland Park
- 48 Tot Lot
- 49 Lombardo Park

RELIGIOUS INSTITUTIONS

- 50 Calvary Chapel
- 51 St. Isadore Social Center
- 52 Grace United Methodist Church
- 53 Iglesia Del Nazareno (Church of the Nazarene)
- 54 Salem Lutheran Church
- 55 California Gardens Christian
- 56 St. Isidore Church
- 57 St. Donatus Parish
- 58 Evangelical Community Church
- 59 St. Benedict
- 60 Christ Memorial United Church
- 61 Harvest Faith Church International
- 62 Christian Life Center
- 63 Life changing Ministry Pentecostal
- 64 Chapel Gating's
- 65 First Emmanuel Missionary Baptist Church

SCHOOLS AND COLLEGES

- 66 Moraine Valley Community College
- 67 Medical Academy of Businesses
- 68 Greenbriar School
- 69 Veterans Memorial Middle School
- 70 Greenwood Elementary School
- 71 Dwight D. Eisenhower High School
- 72 Everett F Kerr Middle School
- 73 Whittier School
- 74 Lincoln Elementary School
- 75 Paul Revere Primary School
- 76 St. Benedict School
- 77 Horace Mann School

COMMUNITY PRIORITIES

Listed below are the community priorities we heard from Blue Island residents, municipal staff, and elected representatives through the RainReady Planning Process (e.g., RainReady Community Meetings and Blue Island Steering Committee Meetings). These community priorities were synthesized with the flooding risk and resilience opportunities assessment to develop the RainReady Blue Island Action Plan.

REORIENT

- Develop and implement a community education program focused on flooding risk and mitigation strategies for public and private property as well as residential properties
- Increase resident engagement in flood-related and other planning efforts
- Increase communications and awareness by creating a two-way flow of information between the City and residents
- Ensure that future developments and redevelopments are context appropriate; for example, consider adopting and enforcing two types of commercial zones: Downtown Commercial and Neighborhood Commercial
- Create more mixed-use developments, especially along Western Avenue
- Ensure that youth, seniors, and vulnerable residents receive the help they need during heat waves and storms
- Ensure that code enforcement and the provision of municipal services is equitable and transparent
- Provide assistance for flood mitigation and resilience improvements to residences

REPAIR (AND MAINTAIN)

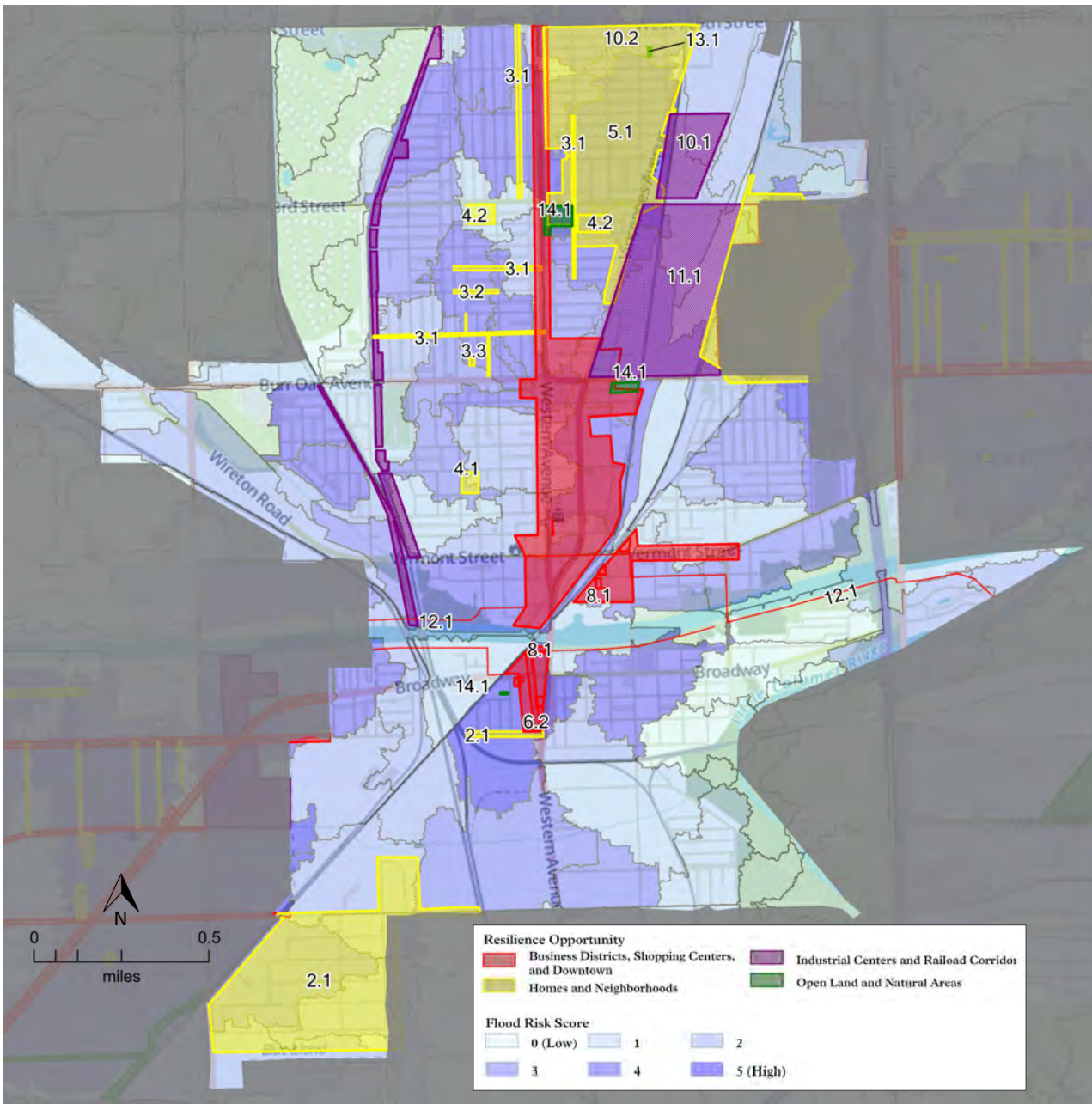
- Create a green/grey infrastructure maintenance plan that is transparent and followed citywide
- Ensure that all new green infrastructure installations are well-maintained
- Maintenance should be updated to include regular sewer cleaning and public way maintenance, specifically targeted at rain gardens
- Encourage greater adoption of native plants on private property (and reduce the chances of an incorrect citation) by amending (or clarifying) local weed ordinances and/or training code enforcers in native plant identification
- Repair and replace aging stormwater and wastewater infrastructure systems, use green infrastructure to the greatest extent possible
- Coordinate road repairs with stormwater projects

- Encourage homeowners and business owners to maintain their private property

RETROFIT

- Incorporate native plants, trees, rain gardens, and other green infrastructure solutions into the City's alleys, public right-of-ways, and private lands to beautify neighborhoods and mitigate flooding
- Engage residents in the design of green infrastructure installations; understand resident preferences for plant species, level of maintenance, appearance, etc.
- Attract organizations that provide basics services (youth center, social services agency, etc.)
- Replace certain lots along Western Avenue with new multi-family housing development
- Enhance the Historic District on Olde Western Avenue and protect architecturally significant properties
- Bring new life to the old "Chevy Lot" (e.g., reuse and repurpose vacant buildings, host music events, food trucks, movies in the parks, benches and places to mingle); Take advantage of its proximity to the Metra station, attract tourism) and other vacant lots
- Beautify the gateways into Blue Island
- Leverage Blue Island's numerous railroad connections and remediate vacant industrial lands to create opportunities for new jobs and to attract new business and industries
- Bring new life to vacant lots (e.g., rain gardens, grow food for the homeless, construct a pergola or place to gather, "green and beautify them")
- Finish Blue Island's portion of the Cal-Sag Trail and develop trail-supporting amenities (e.g., rest stations, new businesses) to connect Blue Island to neighboring communities
- Create new parks, open space, and outdoor recreation amenities (e.g., outdoor event spaces, on-road/off-road trails, boat launches, boat houses, and liveries for kayaking, rowing and other water sports) throughout the City, along the Cal-Sag Trail, and along the City's waterways
- Improve water quality of the Cal-Sag Channel

FIGURE BI-7:
Flood Risk
and Resilience
Opportunity in
Blue Island



The map above overlays flooding risk with proposed “Retrofit” recommendations. The colors correspond to the part of town where the recommendation is to be applied and the numbers correspond with the Retrofit recommendations in the Action Plan. Some recommendations in the Action Plan apply community-wide and are not shown on the map.

This map identifies locations where various green infrastructure projects could be integrated into Blue Island’s community fabric (e.g., green streets along residential streets, commercial complete streets along commercial corridors, green schools, etc.). These locations were identified through a thorough assessment

of flooding risk (e.g., known problem areas, survey results, overland flowpaths, depression areas, and impervious coverage) and resilience opportunities (e.g., planning priorities, community assets, capital improvement projects) in Blue Island.

Blue Island should reference this map and the Action Plan to identify opportunities where green infrastructure retrofit projects could be integrated into forthcoming roadway improvements, planned developments, and other capital improvement efforts. This would ensure that future projects deliver multiple benefits, such as improved transportation and flood mitigation.

RAINREADY **ACTION PLAN**



Vision Statement

A RainReady Blue Island will be a national leader in promoting sustainable and equitable development in suburban communities. The City will continue to find creative means to strengthen its neighborhoods and business districts and to revitalize underutilized parts of town. Instead of a liability, rain water will be treated as a vital resource that supports the City's growing community of farmers and gardeners, its waterfront amenities, and new water-sensitive business. The installation and maintenance of new green, grey, and green-grey infrastructure systems will relieve physical stresses and build social equity for all people and all neighborhoods in Blue Island. The City's numerous restaurants and bars, tree-lined streets, historic districts, and land and water trails will make Blue Island a great place to live or visit for a weekend excursion.

RainReady Goals



Reorient Blue Island so that the community is on a path toward resilience



Repair Blue Island's municipal sewer and stormwater drainage systems



Retrofit the built landscapes throughout Blue Island with green, grey, and green-grey infrastructure improvements, and restore natural landscapes

NOTE: This plan outlines a path forward toward a more resilient Calumet Corridor, but implementation of specific recommendations will have to occur at the local level. Adopting this plan demonstrates a local community's commitment to considering these recommendations during capital planning and decision-making efforts and implementing these recommendations as necessary resources become available. In many cases, the City of Blue Island is already actively engaged in a given project or program recommendation. In other cases, additional resources (e.g., external grant funds, dedicated revenue, partnerships, etc.) will be necessary to advance a project or program. The following action plan outlines the actions and associated implementation steps, implementation priority, estimated timeline, and identified potential project leads and resources needed. Further analysis is needed to estimate the costs of most recommendations. The specific details may change as communities take action to advance a recommendation and as new information and opportunities emerge.



REORIENT

COMMUNITY-WIDE STRATEGIES FOR BLUE ISLAND

- **Strategy 1.** Build capacity to make well-informed decisions and execute them
- **Strategy 2.** Plan and implement projects collaboratively
- **Strategy 3.** Promote equitable and resilient development at all levels
- **Strategy 4.** Prepare your community for future shocks and stresses



REPAIR

COMMUNITY-WIDE STRATEGIES FOR BLUE ISLAND

- **Strategy 1.** Map and document your municipal sewer and stormwater drainage system
- **Strategy 2.** Inspect and evaluate your municipal sewer and stormwater drainage system
- **Strategy 3.** Rehabilitate your municipal sewer and stormwater drainage system
- **Strategy 4.** Maintain your municipal sewer and stormwater drainage system



RETROFIT

RETROFIT STRATEGIES FOR YOUR HOMES AND NEIGHBORHOODS

- **Strategy 1.** Implement a residential resilience program
- **Strategy 2.** Bring new life to vacant residential land
- **Strategy 3.** Create a network of residential green streets, green alleys, and complete streets

- **Strategy 4.** Create more green schools and churches and expand existing structures

- **Strategy 5.** Reduce widespread flooding in the northeast neighborhood through coordinated green and grey infrastructure investments

RETROFIT STRATEGIES FOR YOUR SHOPPING CENTERS AND BUSINESS DISTRICTS

- **Strategy 6.** Bring new life to Blue Island's Business Development District
- **Strategy 7.** Improve the areas around Blue Island's six Metra stations
- **Strategy 8.** Bring new life to underutilized parking lots
- **Strategy 9.** Expand Blue Island's network of commercial complete streets

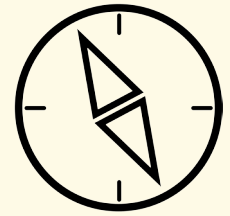
RETROFIT STRATEGIES FOR YOUR INDUSTRIAL CENTERS AND RAILROAD CORRIDORS

- **Strategy 10.** Redevelop and improve industrial sites in a way that reduces flooding in surrounding areas
- **Strategy 11.** Improve the edges of large industrial sites and railroad corridors

RETROFIT (RESTORE) STRATEGIES FOR YOUR OPEN LAND AND NATURAL AREAS

- **Strategy 12.** Develop the Cal-Sag Trail and other open space and outdoor recreation amenities
- **Strategy 13.** Expand urban agriculture in Blue Island
- **Strategy 14.** Integrate green infrastructure into Blue Island's park system

GOAL 1: REORIENT



COMMUNITY-WIDE RECOMMENDATIONS

STRATEGY 1:

BUILD CAPACITY TO MAKE WELL-INFORMED DECISIONS AND EXECUTE THEM

RECOMMENDATION 1.1

Adopt/accept the RainReady Blue Island Plan; update the plan every 2-5 years; incorporate the plan's recommendations into forthcoming capital improvement planning efforts and decision-making efforts.

Where: Community-wide

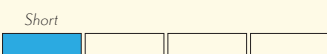
How: Participate in the RainReady community planning process (completed); convene a steering committee consisting of residents, municipal staff, and elected representatives (completed); propose and adopt the plan at a City Board Meeting in early 2017

How much: \$104,000 (this cost has already been paid for by Cook County)

Who leads: CNT/RainReady (for initial plan); City of Blue Island (for adoption and plan updates)

Resources needed: Internal and/or external funding and technical assistance for plan updates

PRIORITY: 

PHASING: 

RECOMMENDATION 1.2

Engage in regional and local planning and coordination efforts (e.g., the Calumet Stormwater Collaborative, Millennium Reserve, CMAP's Comprehensive Regional Plans, SSMMA's various committees).

Where: Community-wide

How: Read and continually reference stormwater-related resources; align local strategies with regional initiatives to increase access to funding and technical assistance

How much: Varies

Who leads: The City of Blue Island and regional organizations/coalitions like CMAP, SSMMA, CSC, CHP

Resources needed: Internal: the City assigns this task to a staff person; External: the SSMMA could hire a stormwater/resilience-focused staff person to serve this role for all communities in their service area (proposed)

PRIORITY: 

PHASING: 

RECOMMENDATION 1.3

Continue to utilize Blue Island's GIS database to document flooding issues; incorporate best practices in data management and stormwater planning for local governments (e.g., continual process improvement, performance management, program evaluation, monitoring, ongoing collection and dissemination of useful data, open data and civic hacking).

Where: Community-wide

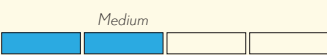
How: Use Blue Island’s GIS system to collect, manage, and analyze data on water-related complaints and adopted solutions (e.g., type and source of flooding, damage costs, improvements made to property); partner with research institutions to install sensors that will monitor the performance of green infrastructure installations

How much: There will be initial costs to set up these systems, but these improvements could pay for themselves over time through increased operational efficiencies and improved outcomes

Who leads: City of Blue Island, regional 311 Call Center/Service (proposed-this does not exist yet), SSMMA

Resources needed: Internal: General Fund; External: IDNR Coastal Management Program Grants, partnerships with research institutions (e.g., colleges/universities, Argonne National Labs, CNT, UI Labs)

PRIORITY: 

PHASING: 

STRATEGY 2: PLAN AND IMPLEMENT PROJECTS COLLABORATIVELY

RECOMMENDATION 2.1

Sustain the RainReady Blue Island Steering Committee (SC) and engage these groups in the ongoing planning and implementation efforts.

Where: Community-wide

How: Continue to work with the RainReady team in early 2017 to get the Steering Committee off the ground; clearly define the mission and roles of the Blue Island’s Steering Committee;

consider consolidating these groups into one entity

How much: SC: Approximately 3-5 hours per month; Steering Committee: varies

Who leads: CNT/RainReady, City of Blue Island (e.g., community leaders, municipal staff, elected representatives)

Resources needed: CNT/RainReady (to start); ongoing volunteer collaboration

PRIORITY: 

PHASING: 

RECOMMENDATION 2.2

Incorporate updates on stormwater projects and other resilience-related topics into the City’s various communication channels (e.g., The Forum, official city websites and social media).

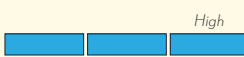
Where: Community-wide

How: Include a section on “Stormwater Projects” or “Resilience Updates” in official City communications

How much: Approximately 5-15 hours per month of staff time

Who leads: The City of Blue Island, local media outlets

Resources needed: The City of Blue Island (staff time)

PRIORITY: 

PHASING: 

RECOMMENDATION 2.3

Coordinate with neighboring municipalities on stormwater-related planning and development projects, and the sharing of equipment and services; such cross-jurisdictional coordination has been shown to reduce costs and maximize benefits of projects, increase operational efficiencies, and improve/expand service delivery.

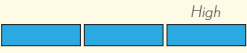
Where: Community-wide and throughout the Calumet region

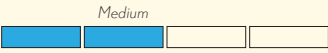
How: Where appropriate, pursue Intergovernmental Agreements (IGAs) with municipalities and other government agencies (e.g., MWRD, Cook County)

How much: The benefits of improved coordination far outweigh the costs (e.g., approximately 5-15 hours per month of staff time devoted to collaborative efforts)

Who leads: The City of Blue Island, neighboring municipalities, MWRD, CSC, SSMMA, CMAP, United Way Neighborhood Network: Blue Island/Robbins

Resources needed: Internal: the City of Blue Island, or share costs (i.e., time) of participation with neighboring communities; External: the SSMMA or another regional organization could hire a stormwater/resilience-focused staff person to serve this function for all communities in their service area

PRIORITY: 

PHASING: 

STRATEGY 3:
PROMOTE EQUITABLE AND RESILIENT DEVELOPMENT AT ALL LEVELS

RECOMMENDATION 3.1

Adopt (and comply with) current stormwater management requirements. Where feasible, improve local ordinances and building codes to promote resilient and equitable development.

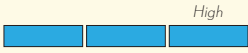
Where: Community-wide

How: Conduct an audit of your local ordinances to evaluate areas for improvement; pass common-sense policy changes/updates; adopt an incremental and adaptive approach to implementing green infrastructure and other resilience-building projects (e.g., the *Green Infrastructure Portfolio Standard*)

How much: N/A

Who leads: The City of Blue Island

Resources needed: The City of Blue Island (staff time)

PRIORITY: 

PHASING: 

STRATEGY 4:
PREPARE YOUR COMMUNITY FOR FUTURE SHOCKS AND STRESSES

RECOMMENDATION 4.1

Educate the public on flooding risks. Ensure that there is a group of residents trained in disaster response and recovery.

Where: Community-wide

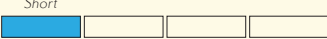
How: Implement a public education program; partner with American Red Cross, FEMA, and other organizations that can provide disaster preparedness training; develop a Blue Island Community Emergency Response Team (CERT)

How much: N/A

Who leads: The City of Blue Island; RainReady Steering Committee

Resources needed: Many of these trainings are free and participation is voluntary

PRIORITY:  ^{High}

PHASING:  ^{Short}

RECOMMENDATION 4.2

Implement an Emergency Alert System (e.g., RainReady Alert) that lets homeowners, businesses, and visitors know when a flood will likely occur.

Where: Community-wide

How: Establish a text-based system that alerts residents of flooding and other hazards

How much: N/A

Who leads: The City of Blue Island

Resources needed: Internal: General Fund; External: Grants targeted for emergency alert systems and capacity-building (e.g. IDNR Coastal Management Program Grants U.S. Economic Development Administration funding opportunities)

PRIORITY:  ^{High}

PHASING:  ^{Ongoing}

RECOMMENDATION 4.3

Ensure that at least one City staff person has one or more of the following certifications: Certified Floodplain Manager (CFM), National Green Infrastructure Certification Program (NGICP), LEED-ND.

Where: Community-wide

How: Incentivize the appropriate staff person (e.g., reimburse the costs) to earn and maintain certifications or require that City contractors and consultants involved with land development have these certifications

How much: Varies depending on certification(s)

Who leads: The City Engineer

Resources needed: Internal: The General Fund

PRIORITY:  ^{Medium}

PHASING:  ^{Short}

GOAL 2: REPAIR



COMMUNITY-WIDE RECOMMENDATIONS

STRATEGY 1:

MAP AND DOCUMENT YOUR MUNICIPAL SEWER AND STORMWATER DRAINAGE SYSTEM

RECOMMENDATION 1.1

Ensure that Blue Island has up-to-date sewer atlas information and a system for documenting information on the conditions of the overall system, specific elements (e.g., catch basins, curbs), and flooding problem areas.

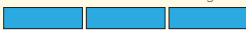
Where: Community-wide

How: Continue to update this information and share it through SSMMA's GIS consortium (and other regional data-sharing portals) to facilitate more streamlined inter-jurisdictional stormwater planning efforts

How much: N/A

Who leads: The City Engineer

Resources needed: Internal: the General Fund, Water Fund; External: IDNR Coastal Management Program Grants

PRIORITY: 

PHASING: 

STRATEGY 2:

INSPECT AND EVALUATE YOUR MUNICIPAL SEWER AND STORMWATER DRAINAGE SYSTEM

RECOMMENDATION 2.1

Develop and implement a comprehensive inspection and cleaning program (e.g., visual inspection, closed circuit television inspection) to regularly assess the condition Blue Island's municipal sewer system (e.g., manholes, catch basins, sewers). CMAP's *Capital Improvement Priorities Report* (2016) called for inspecting and cleaning the entire system on a ten-year cycle to ensure optimal function.

Where: Community-wide (inspect known problem areas first)

How: Establish a feasible, continuous, and cyclical inspection schedule (e.g., televise 10% of the sewers for 10 years, then repeat); use Blue Island's Urban Flooding Risk Assessment (Figure BI-4) to identify and prioritize known flooding problem areas); inspect the City's sewer main infrastructure to observe deteriorating pipes, heavy debris, roots, and voids in the system

How much: 1-Year Costs: \$120,000; 5-Year Costs (\$600,000) (Source: CMAP, 2016)

Who leads: The City Engineer

Resources needed: Internal: the General Fund, Water Fund, TIF Funds (where appropriate), External: CDBG, DCEO, IEPA State Revolving Loan Fund, USACE Section 219

PRIORITY: 

PHASING: 

STRATEGY 3:
**REHABILITATE YOUR MUNICIPAL SEWER
AND STORMWATER DRAINAGE SYSTEM**

RECOMMENDATION 3.1

Improve the drainage and conveyance of the stormwater drainage system in residential areas south of the Cal-Sag Channel.

Where: The Olde Western District (south of the Cal-Sag Channel, east of the railroad tracks, west of Western Avenue, and north of 135th Street) and the residential neighborhood south of the Cal-Sag Channel, east of Western Avenue and north of Des Plaines Street

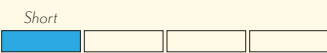
How: Attain planning-level designs for this project; apply for external grant funds and/or incorporate this project into Blue Island's capital improvement plan; complete preliminary engineering designs and other necessary studies, and implement construction

How much: TBD

Who leads: The City Engineer, USACE

Resources needed: Internal: the General Fund, Water Fund, TIF Funds (where appropriate), External: CDBG, DCEO, IEPA State Revolving Loan Fund, USACE Section 219

PRIORITY: 

PHASING: 

RECOMMENDATION 3.2

Repair major sewer defects, such as collapsed sewers, that were identified through the inspection program (see Recommendation 2.1).

Where: Targeted repairs in known problem areas

How: Complete +/- 5 sewer point repairs per year

How much: 1-Year Cost = \$75,000; 5-Year Cost = \$375,000 (Source: CMAP, 2016)

Who leads: The City Engineer, Public Works

Resources needed: Internal: the General Fund, Water Fund, TIF Funds; External: CDBG, DCEO, IEPA State Revolving Loan Fund, USACE Section 219

PRIORITY: 

PHASING: 

RECOMMENDATION 3.3

Line deteriorated sanitary sewer mains observed by the inspection program (see Recommendation 2.1). Sewer lining serves many purposes such as maintaining the structural integrity of the sewer, sealing cracks, covering voids of missing pipe, eliminating infiltration, discouraging tree root penetration through cracks and voids, and maintaining proper flow (Source: CMAP, 2016).

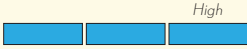
Where: Community-wide (inspect known problem areas first)

How: Line sewers in known problem areas; aim to line 3% of the sewers per year

How much: 1-Year Cost = \$450,000; 5-Year Cost = \$2,250,000 (Source: CMAP, 2016)

Who leads: The City Engineer and Public Works

Resources needed: Internal: the General Fund, Water Fund, TIF Funds (where appropriate), External: CDBG, DCEO, IEPA State Revolving Loan Fund, USACE Section 219

PRIORITY: 

PHASING: 

STRATEGY 4: MAINTAIN YOUR MUNICIPAL SEWER AND STORMWATER DRAINAGE SYSTEM

RECOMMENDATION 4.1

Develop and implement a comprehensive maintenance plan that describes how all green, grey, and green-grey infrastructure systems will be maintained.

Where: Community-wide

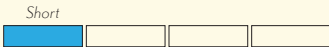
How: Apply for planning and technical assistance grants to develop this maintenance plan

How much: Approximately \$20,000 to \$25,000

Who leads: The City Engineer, Public Works

Resources needed: Internal: the General Fund, Water Fund, TIF Funds; External: CMAP's LTA program, HUD CDBG, IDNR Coastal Management Program Grants

PRIORITY: 

PHASING: 

RECOMMENDATION 4.2

Implement the comprehensive Green/Grey Infrastructure Maintenance Plan program in tandem with inspection program (See Recommendation 2.1). The entire sewer system should be cleaned on a ten-year cycle to ensure optimal function.

Where: Community-wide (inspect known flooding problem areas first)

How: Televisive and clean 10% of Blue Island's sewers every year. Prioritize the most flood-prone areas

How much: 1-Year Cost = \$120,000; 5-Year Cost = \$600,000 (Source: CMAP, 2016)

Who leads: The City Engineer, Public Works

Resources needed: Internal: the General Fund, Water Fund, TIF Funds (where appropriate); External: CDBG, DCEO, IEPA State Revolving Loan Fund, USACE Section 219

PRIORITY: 

PHASING: 

GOAL 3: RETROFIT



RECOMMENDATIONS FOR YOUR HOMES AND NEIGHBORHOODS

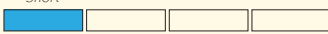


How much: Varies – communities often provide a 50/50 cost-share; Up to \$25,000 in assistance is available to eligible applicants through Cook County’s Residential Resilience Program

Who leads: Cook County, RainReady, CEDA

Resources needed: Internal: General Fund for the municipal cost-share program; External: Cook County’s Residential Resilience Program (CDBG-DR), MWRD, DOE Weatherization and Intergovernmental Program Office grants, CEDA program and services

PRIORITY:  High

PHASING:  Short

STRATEGY 1: IMPLEMENT A RESIDENTIAL RESILIENCE PROGRAM

RECOMMENDATION 1.1

Establish a residential cost-sharing program in Blue Island to help residents recover from past storms and prepare for future storms. Under this program, residents would receive financial support for a complete home inspection and improvements targeted to reduce risk, like check valves, overhead sewers, and a rain garden.

Where: Community-wide

How: Partner with the delegate agencies/organizations (e.g., RainReady) tasked with implementing such programs in your region; design and manage a similar, but scaled-down program that can be extended to residents (e.g., those not eligible for Cook County’s program)

STRATEGY 2: BRING NEW LIFE TO VACANT RESIDENTIAL LAND

RECOMMENDATION 2.1

Bring new life to vacant residential land with native plants, tree planting, urban agriculture, and strategies to beautify neighborhoods.

Where: Site (41.663384, -87.683508), Catchment #304 (vacant land south of Cal-Sag Channel), 2121 119th Place

How: Create programs that incentivize residents and community groups to improve nearby vacant properties (via temporary use rights or permanent land ownership); such programs could be: Adopt-A-Lot, Side Yard/Large Lot programs, land banking, temporary transfer of use rights to a community group, community greening, and award programs

How much: Example: the City of Chicago’s “Large Lot Program”

enables adjacent property owners, block clubs, and non-profit groups in select neighborhoods to purchase City-owned land for \$1 per parcel

Who leads: Current homeowners, community organizations (e.g., Blue Island Urban Forestry Board, Steering Committee, master gardeners), SSLBA

Resources needed: The City would effectively absorb the costs in terms of lost future property tax revenue on these particular parcels; however, the benefits of neighborhood stabilization, reduced flooding, reduced crime, and economic spillover effects (e.g., increased property values due to greening vacant lots) would likely offset these costs; residents and community groups could attain property at a very affordable price (e.g., \$1)

PRIORITY:

High

PHASING:

Short



STRATEGY 3:
**CREATE A NETWORK OF RESIDENTIAL GREEN STREETS,
GREEN ALLEYS, AND COMPLETE STREETS**

RECOMMENDATION 3.1

Create a network of residential green streets that incorporate green infrastructure improvements (e.g., roadside swales, rain gardens, permeable pavement, tree plantings) along flood-prone residential streets.

Where: Figure BI-7 identifies streets that would be suitable for green streets based on overland flow, topography, and potential flood reduction benefits; the City should consider these locations as they make Capital Improvement planning and implementation decisions

How: Use this RainReady Plan to identify potential locations where green streets can be piloted; where appropriate, incorporate green infrastructure BMPs into planned roadway improvements; monitor the performance of select green infrastructure installations; adjust the future implementation of green infrastructure projects based on monitoring data and community feedback

How much: TBD

Who leads: The City of Blue Island, Public Works

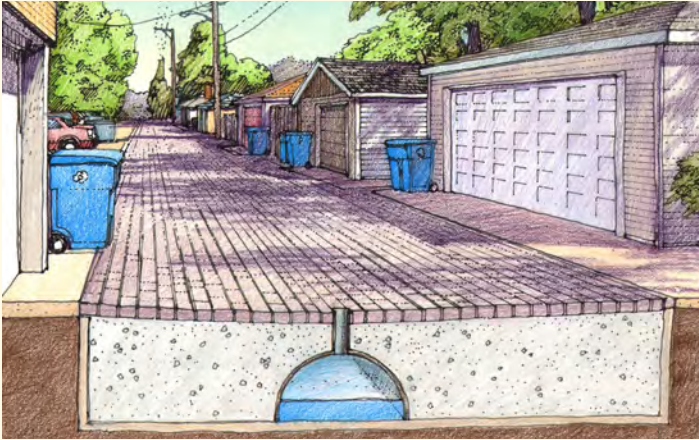
Resources needed: Internal: the General Fund, the Water Fund, TIF funds (where appropriate); External: CDBG, DCEO, IEPA State Revolving Loan Fund, USACE Section 219; STP funds

PRIORITY:

High

PHASING:

Long



RECOMMENDATION 3.2

Install green alleys that reduce wear-and-tear on cars (via re-grading and filling potholes) and manage stormwater runoff with permeable pavement and end-of-alley stormwater bulbouts.

Where: Figure BI-7 identifies alleyways that would be suitable for green alleys based on overland flow, topography, and potential flood reduction benefits; the City should consider these locations as they make Capital Improvement planning and implementation decisions

How: Continue to work with the MWRD to implement the Phase II green alleyway project(s) in the northeast neighborhood; monitor these projects to see what works; expand green alleyways into to other flood-prone alleys

How much: TBD

Who leads: The City of Blue Island, MWRD, Public Works

Resources needed: Internal: the General Fund; External: CDBG, DCEO, IEPA State Revolving Loan Fund, MWRD, USACE Section 219

PRIORITY: High

PHASING: Medium



RECOMMENDATION 3.3

Create a network of residential complete streets that incorporate green infrastructure improvements (see Recommendation 3.1), bikeway improvements, traffic-calming road features, and place-making amenities (e.g., benches, people spots).

Where: Community-wide (reference: Blue Island Capital Improvement Priorities Report)

How: Use this RainReady Plan to prioritize related sidewalk and curb repair, roadway resurfacing, and streetscaping improvements recommended in Blue Island Capital Improvement Priorities Report; given the additional traffic engineering involved, creating complete streets is more intensive than green streets

How much: TBD

Who leads: The City of Blue Island

Resources needed: Internal: the General Fund, the Water Fund, TIF funds (where appropriate); External: CDBG, DCEO, IEPA State Revolving Loan Fund, USACE Section 219; STP funds

PRIORITY: High

PHASING: Medium

STRATEGY 4:

CREATE MORE GREEN SCHOOLS AND CHURCHES AND EXPANDEXISTING STRUCTURES

RECOMMENDATION 4.1

Create green schoolyards that: manage stormwater with green infrastructure (e.g., rain gardens, permeable pavement, urban agriculture, rain barrels, cisterns); Produce healthy foods; Create spaces for more active play, physical education, and outdoor learning.

Where: Multiple: Everett F Kerr MS (2521 Grove Street); Veterans Memorial MS (12320 Greenwood Avenue); The Paul Revere Schools (2300 123rd Place) (build on the GI that's already installed)

How: Explore the feasibility constructing and maintaining multi-use schoolyards that incorporates elements of the Space to Grow program in Chicago (e.g., MWRD, City of Chicago Department of Planning and Development, Openlands, Healthy Schools Campaign); if feasible, pursue a public-private partnership model to initiate and manage this program

How much: TBD

Who leads: The City of Blue Island, the MWRD, Cook County, local school districts and schools (e.g., administrators, faculty, students, families)

Resources needed: Internal: School district funds, General Fund; External: MWRD capital improvement funds, Cook County CDBG-DR funds; Internal/External: Blue Island should develop a public-public private partnership in which funds from multiple sources are leveraged and costs are shared

PRIORITY:  ^{Medium}

PHASING:  ^{Medium}

RECOMMENDATION 4.2

Create green churches that manage stormwater with green roofs, depaving impervious surfaces (where feasible), rain gardens, parking lot bioswales, permeable pavement, and cisterns to capture water from roofs. In other communities, church grounds and facility managers are incorporating these green improvements into the church's mission (e.g., prayer trails, outdoor space for congregation gatherings).

Where: TBD

How: Educate church leaders, congregations, parishioners, etc. on the benefits of green infrastructure; streamline the permitting process for churches seeking to make green infrastructure improvements to their property; connect churches to the organizations/agencies that can provide financial and technical assistance

How much: TBD

Who leads: Individual churches and their congregations/ parishioners

Resources needed: Internal: church capital funds and endowments; External: IDNR Coastal Management Grants, Chi-Cal Rivers Fund grants, Trinity Christian College student assistance, AmeriCorps State grants, private foundation grants (e.g., the Kresge Foundation, Grand Victoria Foundation)

PRIORITY:  ^{High}

PHASING:  ^{Short}

STRATEGY 5:

REDUCE WIDESPREAD FLOODING IN THE NORTHEAST NEIGHBORHOOD THROUGH COORDINATED GREEN AND GREY INFRASTRUCTURE INVESTMENTS

RECOMMENDATION 5.1

The City of Blue Island has succeeded in securing numerous grants and partnerships (e.g., Great Lakes Restoration Initiative, Chi-Cal Rivers Green Infrastructure Grants, MWRD Phase II projects) that are dedicated to mitigating urban flooding in the Northeast neighborhood. The City should build on these early successes and continue to work with the MWRD and other partners to install, maintain, and monitor concentrated and integrated green-grey infrastructure.

Where: Northeast neighborhood (area south of 119th Street, east of Western Avenue, north of 127th Street, and west of City border with Calumet Park)

How: Continue to collaborate with regional partners (e.g., MWRD, SSMMA, MPC, CNT, OAI, Inc./High Bridge, L3C) to implement well-designed green-grey infrastructure projects; monitor the performance of installations; maintain GI installations (see Repair Recommendation 4.1); educate residents on the benefits of green infrastructure and native plants; coordinate the installation of green infrastructure with forthcoming sidewalk/roadway improvements; expand the use green infrastructure where it is likely to be effective

How much: N/A

Who leads: The City of Blue Island, MWRD, SSMMA, many other local and regional NGOs

Resources needed: Internal: the General Fund, the Water Fund, TIF funds (where appropriate); External: CDBG, DCEO, IEPA State Revolving Loan Fund, USACE Section 219; STP funds; Chi-Cal Rivers Funds, Great Lakes Restoration Initiative

PRIORITY: High

PHASING: Medium

RECOMMENDATIONS FOR YOUR SHOPPING AREAS, BUSINESS DISTRICTS, AND DOWNTOWNS



STRATEGY 6:

BRING NEW LIFE TO BLUE ISLAND'S BUSINESS DEVELOPMENT DISTRICT

RECOMMENDATION 6.1

Continue to invest in and bring new life to the Western Avenue Business Development District (BDD). Incorporate green infrastructure (e.g., planter boxes, tree planting, cisterns, roadside bioswales, parking lot bioswales, permeable pavement) in order to reduce runoff into the local sewers and mitigate urban flooding; incorporate bike lanes, traffic calming, and place making features to create a vibrant and walkable downtown.

Where: Western Avenue BDD

How: Use the City’s existing Business Development Grant Program to provide the match for State/Federal grants; coordinate transportation and stormwater projects to develop concentrated and integrated green and grey infrastructure improvements; consider residents’ preferences for mixed use development, façade enhancements, architectural style, and wayfinding signage when reviewing developer proposals

How much: N/A

Who leads: City of Blue Island, IDOT, MWRD, SSMMA

Resources needed: Internal: the General Fund, the Water Fund, TIF funds (where appropriate); External: CDBG, DCEO, IEPA State Revolving Loan Fund, USACE Section 219; STP funds; Chi-Cal Rivers Funds, Great Lakes Restoration Initiative

PRIORITY: High

PHASING: Medium



RECOMMENDATION 6.2

Continue to invest in the Olde Western Avenue Historic District in a way that beautifies the area, increases retail activity and reduces flooding. Where feasible, incorporate green infrastructure BMPs like planter boxes, tree planting, cisterns, green roof, roadside bioswales, parking lot bioswales, and

permeable pavement, which can help create a more pedestrian-friendly environment.

Where: Olde Western Avenue Historic District

How: Use the City’s existing Business Development Grant Program to provide the match for State/Federal grants; coordinate transportation and stormwater projects to develop concentrated and integrated green and grey infrastructure improvements; explore local businesses willingness to make improvements on their property

How much: TBD

Who leads: City of Blue Island, Blue Island Chamber of Commerce and Industry, Blue Island Arts Alliance

Resources needed: Internal: the General Fund, the Water Fund, TIF funds (where appropriate); External: CDBG, DCEO, IEPA State Revolving Loan Fund, USACE Section 219; STP funds; Chi-Cal Rivers Funds, Great Lakes Restoration Initiative

PRIORITY: High

PHASING: Medium

STRATEGY 7: IMPROVE THE AREAS AROUND BLUE ISLAND’S SIX METRA STATIONS

RECOMMENDATION 7.1

Incorporate green infrastructure BMPs (e.g., permeable parking lots, bioswales, tree planting, planter boxes), wayfinding signage, sidewalk improvements, and place making amenities.

Where: The TOD Zones around each of Blue Island’s Metra

stations (a “TOD Zone” generally refers to the land area that falls within a .25 or .5 mile radius originating from a transit station)

How: Residents engaged in the RainReady planning process frequently shared a desire to see Blue Island’s Metra stations beautified and the connections between the stations and surrounding neighborhoods improved through wayfinding signage, sidewalk improvements, and public art displays; given that Blue Island’s TOD Zones overlap with flood-prone neighborhoods in some areas, any efforts to improve these TOD Zones and neighborhood connections should incorporate GI BMPs (where appropriate)

How much: TBD

Who leads: City of Blue Island, MWRD, Metra, RTA, Blue Island Chamber of Commerce and Industry, Blue Island Arts Alliance

Resources needed: Internal: the General Fund, the Water Fund, TIF funds (where appropriate); External: CDBG, DCEO, IEPA State Revolving Loan Fund, USACE Section 219, STP funds; Chi-Cal Rivers Funds, Great Lakes Restoration Initiative

PRIORITY: Medium

PHASING: Medium



STRATEGY 8: BRING NEW LIFE TO UNDERUTILIZED PARKING LOTS

RECOMMENDATION 8.1

Access to safe, sufficient, and convenient parking improves commuter safety and increases revenues for the City (due to increased utilization of City-owned lots). However, too much (underutilized) parking can cause an area to appear empty and blighted, generate polluted stormwater runoff, and reduce the overall walkability of an area. Therefore, the City’s efforts to expand, replace, and maintain its parking lots should recognize the impacts that large impervious areas have on water quality and urban flooding, and incorporate green infrastructure BMPs wherever possible.

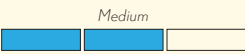
Where: Multiple: Olde Western Parking Expansion, Metra Parking Lots, parking lots along Western Avenue (CMAP, 2016)

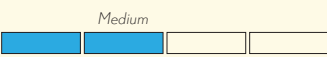
How: Blue Island could bring new life to its existing parking lots, and ensure that any future parking development does not diminish neighborhood vibrancy by: 1) retrofitting existing parking lots with green infrastructure BMPs (e.g., permeable pavement, rain gardens, bioswales), 2) implementing infill redevelopment and/or de-paving parking lots where appropriate, and 3) removing minimum parking requirements and making other policy changes that insure that new developments do not construct excessive parking

How much: TBD

Who leads: The City of Blue Island, parking lot owners (e.g., Metra, local businesses, parking lot owners)

Resources needed: Funding for improvements to public and private parking lots

PRIORITY: 

PHASING: 

STRATEGY 9: EXPAND BLUE ISLAND'S NETWORK OF COMMERCIAL COMPLETE STREETS

RECOMMENDATION 9.1

Create commercial complete streets that facilitate all modes of transportation. Revitalize commercial corridors. Reduce urban flooding with green infrastructure BMPs (e.g., bioswales, permeable pavement, planter boxes, tree planting).

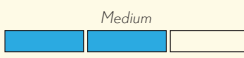
Where: See the City's Active Transportation Plan and Capital Improvement Priorities Report

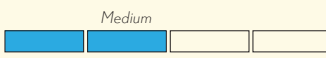
How: Continue to implement the complete streets and transportation (e.g., sidewalk and curb repair, bicycle improvements, streetscaping) recommendations from the City's Active Transportation Plan and Capital Improvement Priorities report, respectively; use Blue Island's Urban Flooding Risk and Opportunity Assessment (Figure BI-4); to identify (at a planning level) where GI BMPs can be integrated into the City's growing network of complete streets

How much: N/A

Who leads: The City of Blue Island, IDOT, ATA, CMAP

Resources needed: Internal: the MFT, General Fund, TIF Funds (where appropriate), External: CDBG, special grants from DCEO, IDOT, STP

PRIORITY: 

PHASING: 

RECOMMENDATIONS FOR YOUR INDUSTRIAL CENTERS AND RAILROAD CORRIDORS

STRATEGY 10: REDEVELOP AND IMPROVE INDUSTRIAL SITES IN A WAY THAT REDUCES FLOODING IN SURROUNDING AREAS

RECOMMENDATION 10.1

Implement, maintain, and monitor the green infrastructure improvements (i.e., infiltration basin, removal of invasive plant species) at the northeast industrial site to mitigate flooding in the surrounding catchment area.

Where: Northeast Industrial Site (northeast of 123rd Street and Metra tracks)

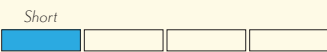
How: Document the process through which the City was able to improve this challenging and complex site; demonstrate the flood reduction benefits of this project; leverage this information to secure additional funding to implement similar industrial redevelopment and improvement projects elsewhere in Blue Island; tie this project back to "Blue Island-Calumet Park 'Complete Communities' concept proposed in Cook County's the NDRC proposal

How much: N/A

Who leads: The City of Blue Island, SSMMA, Antero Group, OAI Inc./High Bridge, L3C

Resources needed: Project has been completed, additional resources are needed to monitor the performance of the installation

PRIORITY: 

PHASING: 

RECOMMENDATION 10.2

Implement a mixed-use development in Northeast Blue Island; Incorporate roadside bioswales, naturalized detention ponds, grey infrastructure improvements (sewer and road improvements), and strategies to beautify the landscape and activate the space for broader community use.

Where: 119th Street to the north, Vincennes Rd/Metra Tracks to the west, 123rd street to the south, Railroad tracks to the east

How: Build on the “Blue Island-Calumet Park ‘Complete Communities’ concept proposed in Cook County’s National Disaster Resilience Competition application; continue to prepare and assemble the land; complete the necessary studies and designs, and convene the partners necessary to implement this project: use Growth Zone incentives to implement stormwater improvements at industrial centers and railroad corridors

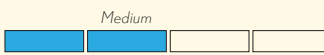
How much: N/A

Who leads: City of Blue Island, SSMMA, Master developer (TBD)

Resources needed: Funding and technical assistance for developing and implementing a mixed use development in

Northeast Blue Island

PRIORITY: 

PHASING: 

STRATEGY 11:

IMPROVE THE EDGES OF LARGE INDUSTRIAL SITES AND RAILROAD CORRIDORS

RECOMMENDATION 11.1

Improve the edges of large industrial sites and railroad corridors by repairing ditches (e.g., increase storage/conveyance capacity, remove invasive species like phragmites), installing bioswales along railroad tracks, and constructing mixed-use recreational trails where it is appropriate and feasible

Where: Railroad tracks (the railroad that is just east of The Meadows Golf Club) from 119th Street to Vermont Street; railroad tracks that run parallel to Wahl Street from 127th Street to Cal Sag; west/south/east edges of railroad site between 123rd Street to the north, 127th Street to the south, Metra tracks to the west, Calumet Park to the east; northeast corner of 139th Street and railroad tracks (there is flow path along the western edge)

How: Identity industrial sites and railroad corridors that may contribute to flooding in surrounding neighborhoods; establish a public-private partnership (P3) with railroad companies and industrial site owners; use Growth Zone funds and/or other incentives to implement stormwater improvements at industrial centers and railroad corridors; where feasible, create off-road trails in tandem with edge improvements

How much: TBD

Who leads: The City of Blue Island, railroad companies, SSMMA, regional environmental organizations

Resources needed: Costs can be shared between public (e.g., City of Blue Island) and private partners (e.g., railroad companies and industrial site owners)

PRIORITY: High

PHASING: Long

RECOMMENDATIONS FOR YOUR OPEN LAND AND NATURAL AREAS



STRATEGY 12: DEVELOP THE CAL-SAG TRAIL AND OTHER OPEN SPACE AND OUTDOOR RECREATION AMENITIES

RECOMMENDATION 12.1

Incorporate green infrastructure features (e.g., roadside bioswales, permeable pavement, tree planting) and beautiful places to walk, rest, and gather (e.g., rest areas and gathering places, signage to help walkers find their way, historical and educational signage) into Blue Island's segments of the Cal-Sag Trail.

Where: Cal-Sag Trail alignment in Blue Island (stormwater projects would have the most flood reduction impact if installed on the trail segments along Vermont Street)

How: Continue to capitalize on Blue Island access to regional

greenways and blueways to support commercial activity and tourism in the City

How much: TBD

Who leads: City of Blue Island, Cal-Sag Trail Coalition

Resources needed: Dedicated funding and/or grants for implementing trail projects and neighborhood-scale green infrastructure projects

PRIORITY: High

PHASING: Short

STRATEGY 13: EXPAND URBAN AGRICULTURE IN BLUE ISLAND

RECOMMENDATION 13.1

Just as Blue Island is a leader in adopting green infrastructure practices, the City is also a leader in leveraging the urban farming movement to improve the community's quality of life. Urban agriculture (e.g., community gardens and urban farms) increase access to fresh, local, and healthy foods, create jobs, support a local ethic of land stewardship, and can reduce stormwater runoff. The City should therefore support efforts to expand urban agriculture sites in the City and incorporate green infrastructure BMPs (bioswales, vegetated filter strips) at these sites.

Where: Community-wide (the vacant lot at 2121 119th Place is possibly a suitable location based on community input)

How: Promote the expansion of urban agriculture citywide through policies and incentive programs that support local farmers and community organizations; use the following criteria

to select specific sites: 1) whether or not there is community interest in developing and sustaining a garden/farm, 2) proximity/access to a supply of potable water (e.g., water line connections, ability to capture rain water), 3) presence of vacant and/or city-owned land, and 4) site's relation to a depression area and/or overland flow path (i.e., prioritize gardens where they will reduce downstream flooding)

How much: TBD

Who leads: The City of Blue Island, BIOS, local community organizations (e.g., Blue Island Urban Forestry Board, Master Gardeners, Blue Island Steering Committee)

Resources needed: Dedicated funding and/or grants to expand incentive programs for urban farmers



STRATEGY 14:
**INTEGRATE GREEN INFRASTRUCTURE
INTO BLUE ISLAND'S PARK SYSTEM**

RECOMMENDATION 14.1

The Blue Island Park District should continue to improve the City's parks in a way that restores and connects people to the outdoors, restores natural ecosystems, manages stormwater, and expands outdoor recreation opportunities. Green infrastructure features like naturalized detention ponds, rain gardens, permeable pavement, bioswales, and native plants could be incorporated into parks.

Where: Hart Park (permeable pavement, rain gardens); park at southeast corner of Irving Avenue and 127th Street (a bioswale on southern edge of park could benefit homes to south); Chris

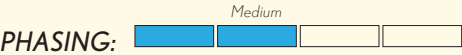
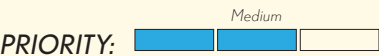
Disabato Play Lot; Tot Lot (re-install the native plant rain garden)

How: Incorporate a green infrastructure/native plant policy in the Blue Island Park District's policies for planning and operations and maintenance (adopt a policy that encourages the conversion of underutilized lawns into native plant gardens); include green infrastructure improvement project(s) in ongoing capital improvement planning and implementation efforts; apply for grants as opportunities arise; partner with community organizations to help maintain native plant gardens

How much: TBD

Who leads: The Blue Island Park District

Resources needed: The City of Blue Island and/or the Blue Island Park District can pay for the initial capital costs (with internal funds and/or external grant funds) and the costs of maintenance can be minimized by partnering with local community organizations to assist with the maintenance of specific green infrastructure installations



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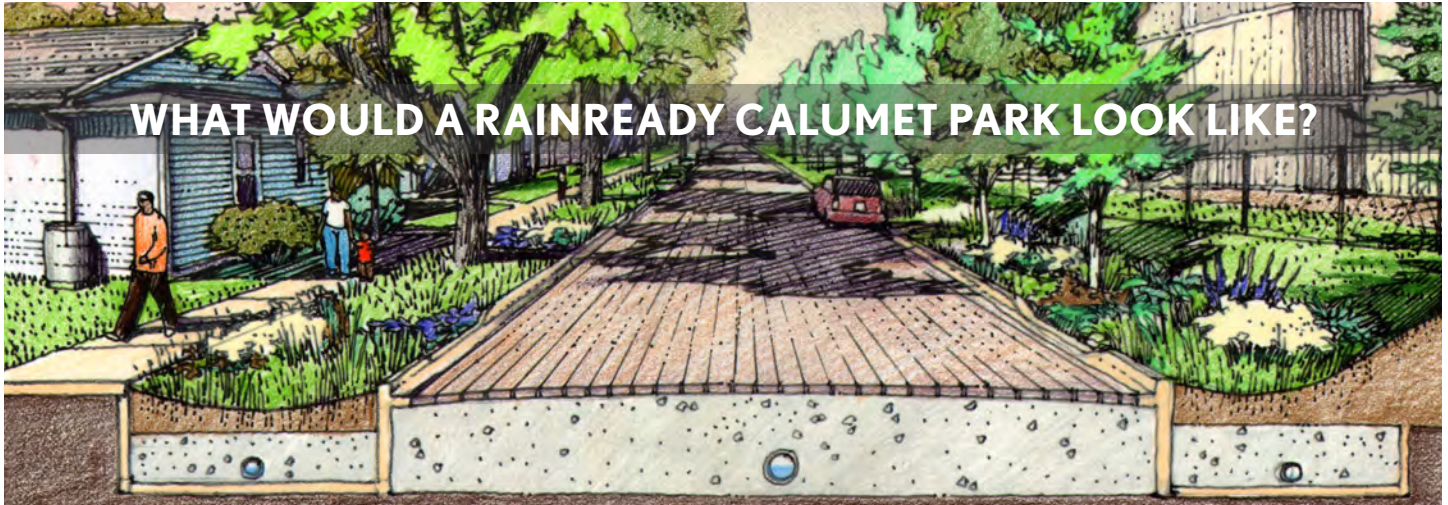
RainReady Calumet Corridor

Plan for Calumet Park, IL



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A CITIZEN'S GUIDE TO A RAINREADY CALUMET PARK



A RainReady Calumet Park would be a community where residents and businesses benefit from flood relief in a way that also brings neighborhood beautification, commercial activity, new jobs, recreation, and habitat conservation. Together, community residents, business owners, municipal staff, and elected representatives will coordinate their efforts to create a vibrant and resilient community. In order to better understand Calumet Park's flooding risk, the Center for Neighborhood Technology (CNT), the U.S. Army Corps of Engineers, the RainReady Calumet Park Steering Committee, and the Village of Calumet Park joined together in February 2016. Throughout the year, this group met regularly, hosted community meetings, went door-to-door in the neighborhood, held seven educational workshops and five Steering Committee meetings, and reviewed a number of plans and studies. 144 residents filled out our flooding survey.

Together, we have established a shared vision and path toward a RainReady Calumet Park: The RainReady Calumet Park Plan. This Citizen's Guide to a RainReady Calumet Park covers the highlights of the plan, for more information visit www.rainready.org/calumet-corridor.

A Path Forward

In 2016, the Village took great steps forward with its sewer maintenance program, providing relief to many parts of town by televising, cleaning, and lining their public sewer. The Village also has a residential cost-share program on the books, which could be renewed and expanded to assist residents with funding for flood mitigation home improvements. The path forward for the community includes targeted investment in sewer improvements in West Calumet Park and the targeted installation of green infrastructure best management practices (BMPs) that reduce flooding and add to the character of Calumet Park.

Equipped with this RainReady Plan, the Village now has a roadmap for reducing local flooding issues in a way that strengthens neighborhoods and business districts, and bringing new life and vibrancy to all parts of town.

**KEEP READING FOR MORE INFORMATION ON THE
PATH AHEAD FOR CALUMET PARK!**



**US Army Corps
of Engineers®**

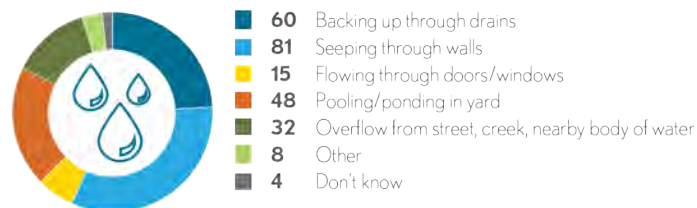
Understanding the Problem

Like many of its neighbors, Calumet Park has long been plagued by chronic flooding. In recent years, the severity of flooding in the community has become significantly worse. A combination of aging and limited infrastructure and changes in regional climate have left Calumet Park's residents and infrastructure systems vulnerable to flooding. From 2007 to 2011, 3,362 flood-related insurance claims were filed in the 60827 zip code, with more than \$8,073,673 paid out in damages. In 2015, the broader Calumet Corridor in which Calumet Park is located was identified by Cook County as the area that was "most impacted and distressed" by the April 2013 flooding disaster (DR-4116). Strategic policy changes and coordinated investment in green and grey infrastructure capital projects and ongoing maintenance will be part of the mix of solutions necessary to mitigate chronic flooding issues and large storms.

RainReady Calumet Park Survey Results



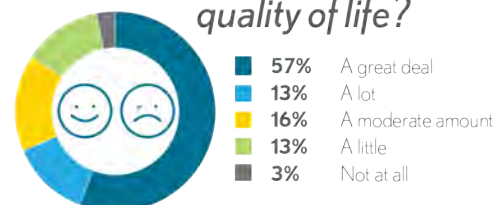
How does water enter properties?



What is the level of worry about flooding's impact on property value?



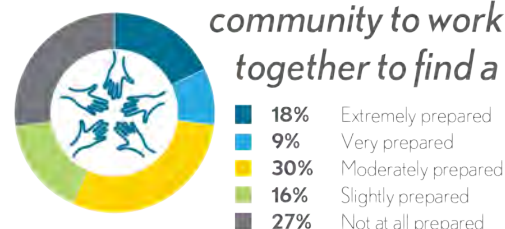
How much do heavy rains impact quality of life?



How much do heavy rains impact commute or other travel?



What is the preparedness of the community to work together to find a solution?



How effective will local government officials be in addressing flooding issues?



Data Source: CNT Survey, 2016

*Respondents who answered "Yes, I experience problems" and "I do not experience problems anymore" were grouped into the "Yes" category because both sets of respondents experience ongoing flooding problems or have experienced problems in the past, respectively.

Planning the Solutions

The path ahead for Calumet Park requires coordinated action at multiple scales. Fortunately, community residents, municipal staff, and elected representatives are aligned in their desire for a more beautiful, flood-resilient community. The RainReady Plan recommends the following priority projects, which are taken from a more comprehensive list of recommendations.

RESIDENTIAL PROGRAM

Renew Calumet Park's residential cost-sharing program to help homeowners recover from past storms and prepare for future storms. Under this program, residents would receive financial support for a complete home inspection and improvements targeted to reduce risk, like check valves, overhead sewers, and a rain garden.



NEIGHBORHOOD GREENING

Create a network of beautiful residential streets and vibrant neighborhoods built to capture stormwater, increase property values, and make streets safer for walking, biking, and outdoor play. This program would help community members soak up rain by installing green infrastructure in their yards, parkways, parks, schools, and vacant properties in the neighborhood. Installations should be designed with community input and maintenance plans.



WEST CALUMET PARK NEIGHBORHOOD

The west Calumet Park neighborhood experiences severe and chronic flooding every year. The Metropolitan Water Reclamation District (MWRD) has developed a preliminary plan to reduce flooding using green and grey infrastructure. RainReady and the Village are working together to secure funding for the next step: developing detailed engineering designs.



Quick Steps

We know that residents experience flooding every summer, and the need for help is urgent. Here are 7 solutions that homeowners should consider to reduce their risk today:

- **ASSESS YOUR PROPERTY.**

The first step to solving your flood problem is to understand how water falls on your property and flows through your pipes. If you have significant problems, you may need the help of an engineer, plumber, electrician, or landscape designer.

- **MAKE YARD IMPROVEMENTS.**

In order to reduce flooding, capture stormwater runoff using rain gardens, swales, dry wells, permeable paving, rain barrels, or cisterns.

- **ELEVATE YOUR APPLIANCES.**

If water regularly enters your home, place appliances, furnaces, hot water heaters, and electrical panels above the typical flood level on wood or concrete blocks.

- **HAVE YOUR BUILDING SEWERS CHECKED.**

Faulty pipes connecting your home to the municipal sewer system can exacerbate foundation damage and flooding in your home. Ensure that grease, waste, or tree roots are not obstructing the pipe and preventing wastewater from leaving the house.

- **RECLAIM YOUR PARKWAY.**

The strips between sidewalks and streets can be transformed into attractive green spaces that absorb stormwater runoff, reduce municipal maintenance costs, and beautify streets. Be sure to check your municipal code for which plants are permitted.

- **GET INSURED.**

There are several options available to protect you against the risk of water damage, including home insurance policies, flood insurance riders, and the National Flood Insurance Program (NFIP), established by FEMA and administered by your local insurance companies.

- **ADVOCATE FOR THE RAINREADY PLAN.**

This plan outlines solutions to community wide flooding. Get involved in your local Steering Committee to make sure the plan is implemented!



GET INVOLVED!

Community leaders joined together in 2016 to form the RainReady Calumet Park Steering Committee.

The Committee will work in partnership with the municipality to implement the RainReady Calumet

Park Plan, focused on sewer maintenance and investment in green infrastructure installation. They are motivated to beautify the Village, create activities for youth, establish new employment opportunities, educate residents, and advocate for implementation of the new sewer maintenance plan. Join their efforts!

The RainReady Calumet Park Steering Committee meets monthly! For more information contact Rebecca Raines at rraines@cnt.org or 773.269.2217.

VILLAGE OF CALUMET PARK

COMMUNITY SNAPSHOT

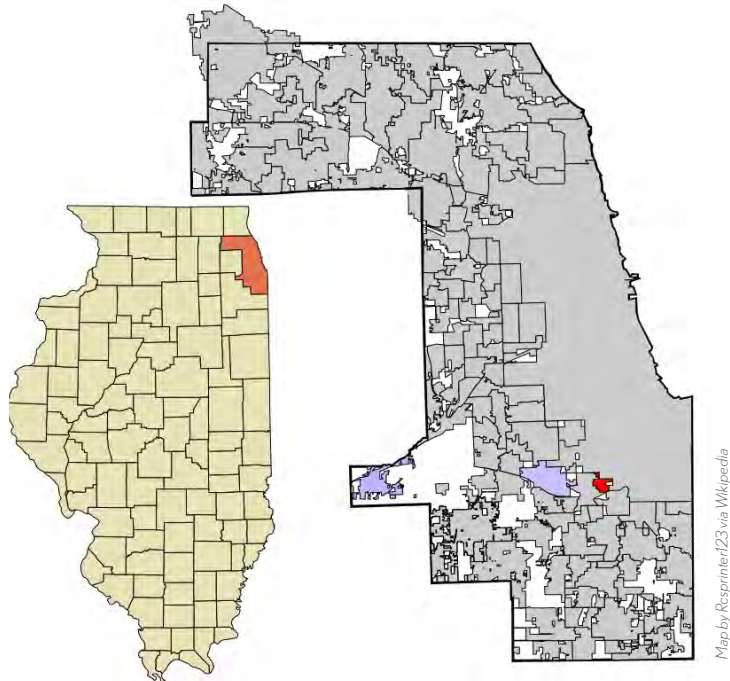
The Village of Calumet Park is a suburb of Chicago located immediately south of the city. It is bordered by Chicago to the north and the east, the City of Blue Island to the west, and the Little Calumet River to the south. The Village of Calumet Park has a total land area of 1.15 square miles and was incorporated as the Village of DeYoung in 1912.

Calumet Park has been a close-knit community since it first formed as a predominately Polish town in 1912. Soon after World War II, Interstate 57 gave Calumet Park direct access to downtown Chicago, leading to a boom in the construction of small brick homes and a large growth in population. The Village now boasts a new 911 Center, a popular Senior Center, and a strong network of community schools, excellent transportation access, and other strengths. The popular Community Festival brings residents and business owners together to celebrate Calumet Park each summer.

Today, Calumet Park experiences severe and repeated flooding. From 2007 to 2011, 3,362 flood-related insurance claims were filed in the 60827 zip code, with more than \$8,073,673 paid out in damages (CNT, 2014). The Village is being proactive in addressing these flooding concerns. Municipal leaders and staff have instituted an exemplary sewer inspection and maintenance program, which has been shown to effectively alleviate local flooding issues in problem areas. The Village has also worked closely with the RainReady team and community leaders in the development of this plan.

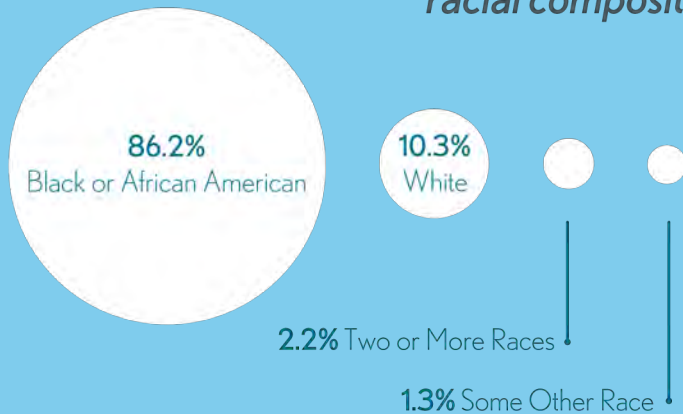


FIGURE CP-1:
Location of Calumet Park within Cook County



Calumet Park, IL AT A GLANCE

racial composition



8,189
total population

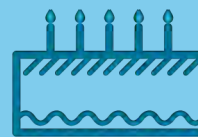


3,407
total number of
households



89% of residents hold
high school diploma

15% of residents hold
college diploma



39
median age

Cook County \$54,828

Calumet Park \$47,212

Cook County \$30,468

Calumet Park \$22,498

median
per capita income

median
household income



18%
people below
poverty level



24%
unemployment rate
(people age 16+)

Data Source: US Census

Flooding Risks and Resilience Opportunities

Residents and business owners in Calumet Park experience several types of flooding:

- **Basement backup** from the local sewer system and damaged private lateral lines, impacting several parts of town
- **Street flooding**, which occurs when local drainage systems are overwhelmed with stormwater and sewage causing water to pool in the street
- **Foundation seepage** in several areas of Calumet Park, causing rot and mold in basement walls

This risk and opportunity assessment provided the foundation for the strategies and recommendations presented in the RainReady Action Plan for Calumet Park. Proposed flooding solutions are also shown in Figure CP-8. These “green-grey” solutions were identified through a community-driven and analytically-rigorous process. The result is a plan that works, both in terms of its community support and physical and economic feasibility.

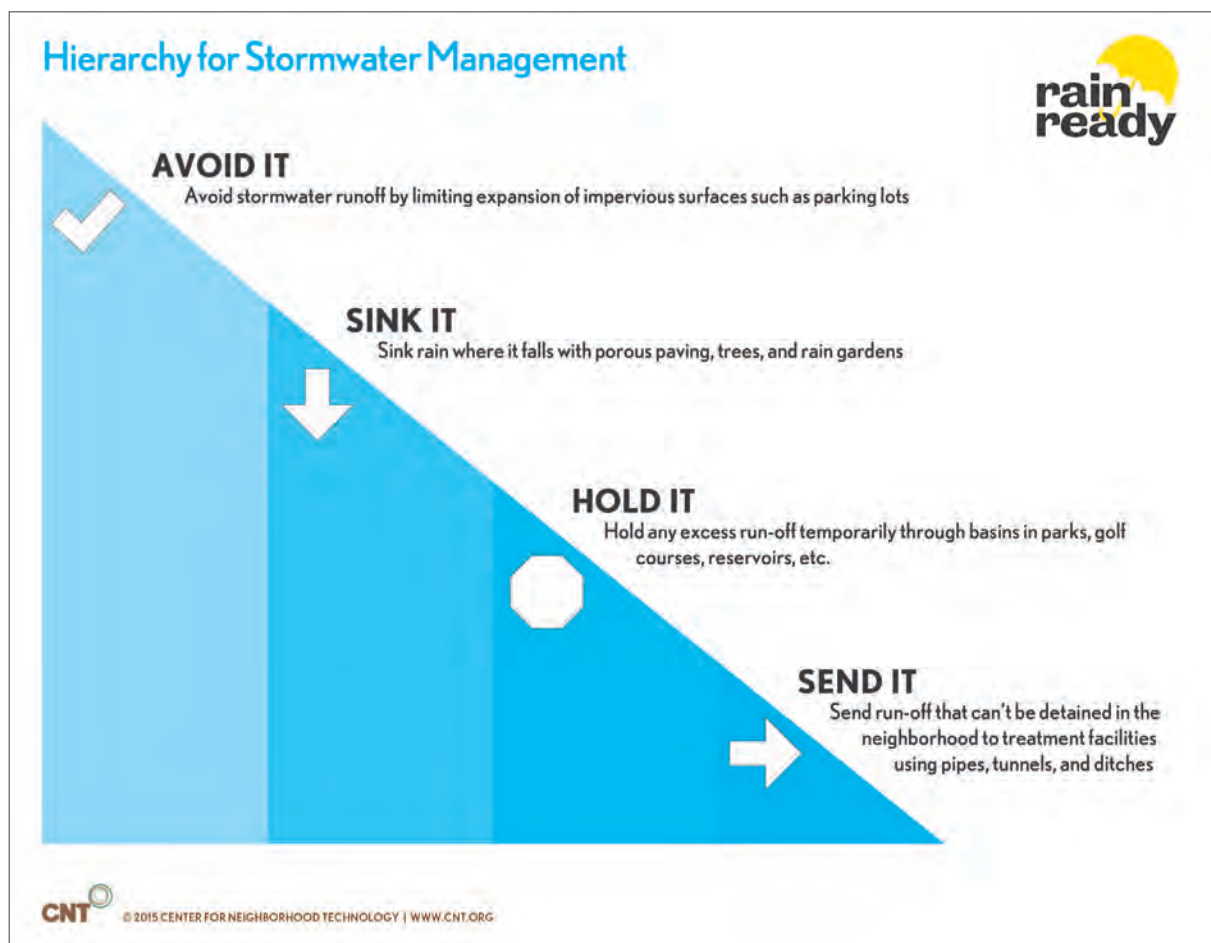


FIGURE CP-2:
Hierarchy of Stormwater
Management

Four main factors contribute to flooding in Calumet Park:

INCREASING IMPERVIOUS SURFACES

As Calumet Park developed over time, natural lands were converted to buildings, parking lots, streets, and other “impervious surfaces.” The increase in impervious surfaces resulted in fewer open areas for rainwater to sink into the ground. As Calumet Park takes steps to redevelop certain commercial and downtown areas (e.g., the Ashland TOD, 127th Street), efforts should be made to manage any additional stormwater runoff from any new developments as well as reduce runoff from existing impervious surfaces.

AGING AND LIMITED SEWER INFRASTRUCTURE

There is a small network of storm sewers in the shopping center southeast of Ashland and Vermont Avenues. The rest of the municipality is serviced by combined sewer

systems that flow from north neighborhoods toward 127th Street, then south toward TARP interceptors at Throop and Laflin Streets. Combined sewer flows west of I-57 flow east down 121st Street and 127th Street to connect to the large capacity Ashland Avenue sewer line onto the TARP interceptor. As sewer systems age, pipes may collapse, causing local drainage issues. Residents report widespread basement back up and flooded manholes during storms, suggesting that there may be maintenance issues within the municipal sewer lines. Calumet Park should continue to document, inspect, rehabilitate (where necessary), and maintain their municipal sewer and stormwater drainage system so as to bring it up to a state of good repair.

MORE SEVERE STORMS

Climate change is bringing more frequent high-intensity storms to the region. In light of this, Calumet Park should not only prepare for storms like the one that occurred in April 2013, but also much larger and more

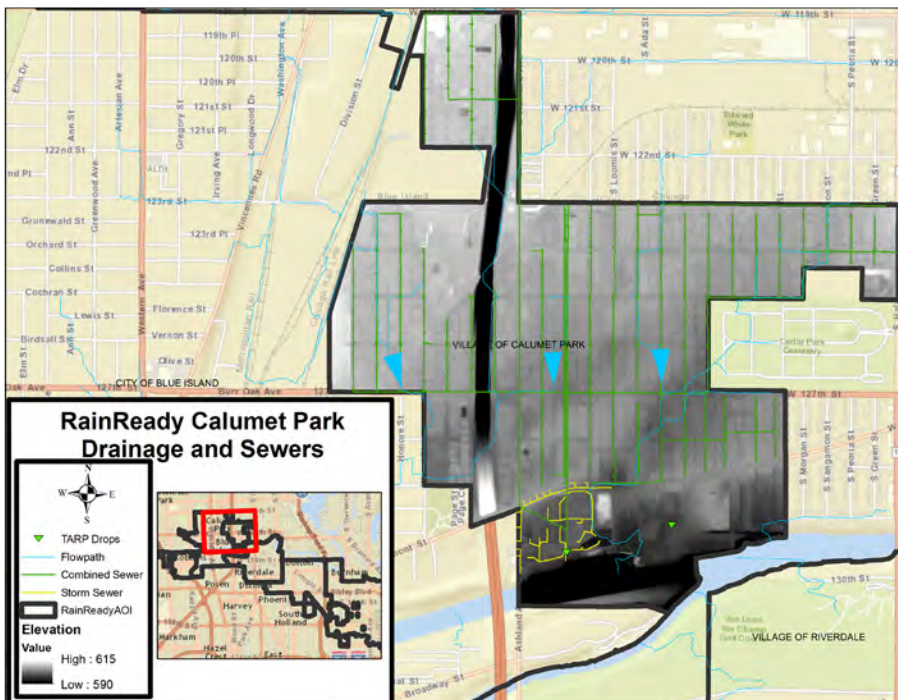


FIGURE CP-3:
Calumet Park Drainage
and Sewers



frequent storms, and more variable weather (e.g., intense storms followed by long droughts, more freeze/thaw cycles). Calumet Park should also equip their residents, municipal staff, and elected officials with the knowledge and resources needed to prepare for, mitigate, and recover from future storms—both large and small.

FLAT TOPOGRAPHY

Since stormwater is largely directed via gravity, Calumet Park’s flat streets create challenges for moving the water out of neighborhoods. Calumet Park has an overall slope <1% flowing from the northwest part of the village toward the Cal Sag Channel. The area to the west of I-57 (i.e., West Calumet Park) naturally drains toward Blue Island, however the sewer system routes runoff eastward. The relative flatness creates drainage problems throughout the village, causing ponding in streets and seepage into basement foundations.



FIGURE CP-4:
A typical residential street in Calumet Park

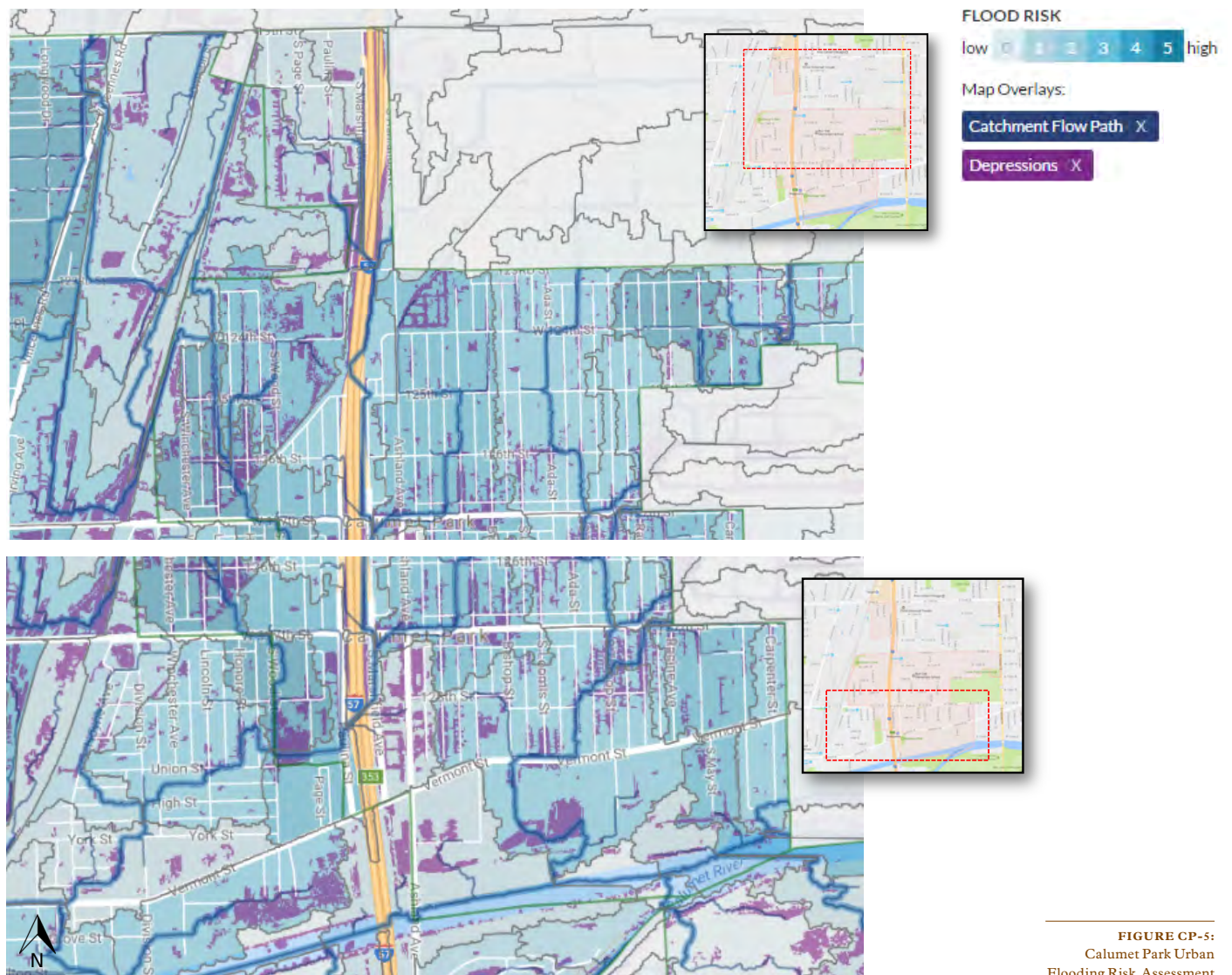


FIGURE CP-5:
Calumet Park Urban
Flooding Risk Assessment

These overland flow path and depression area maps show where stormwater is likely to flow and accumulate, or pool, in Calumet Park. These maps are based on high-resolution digital elevation models (DEMs) derived from Light Detection and Ranging (LiDAR) technology.

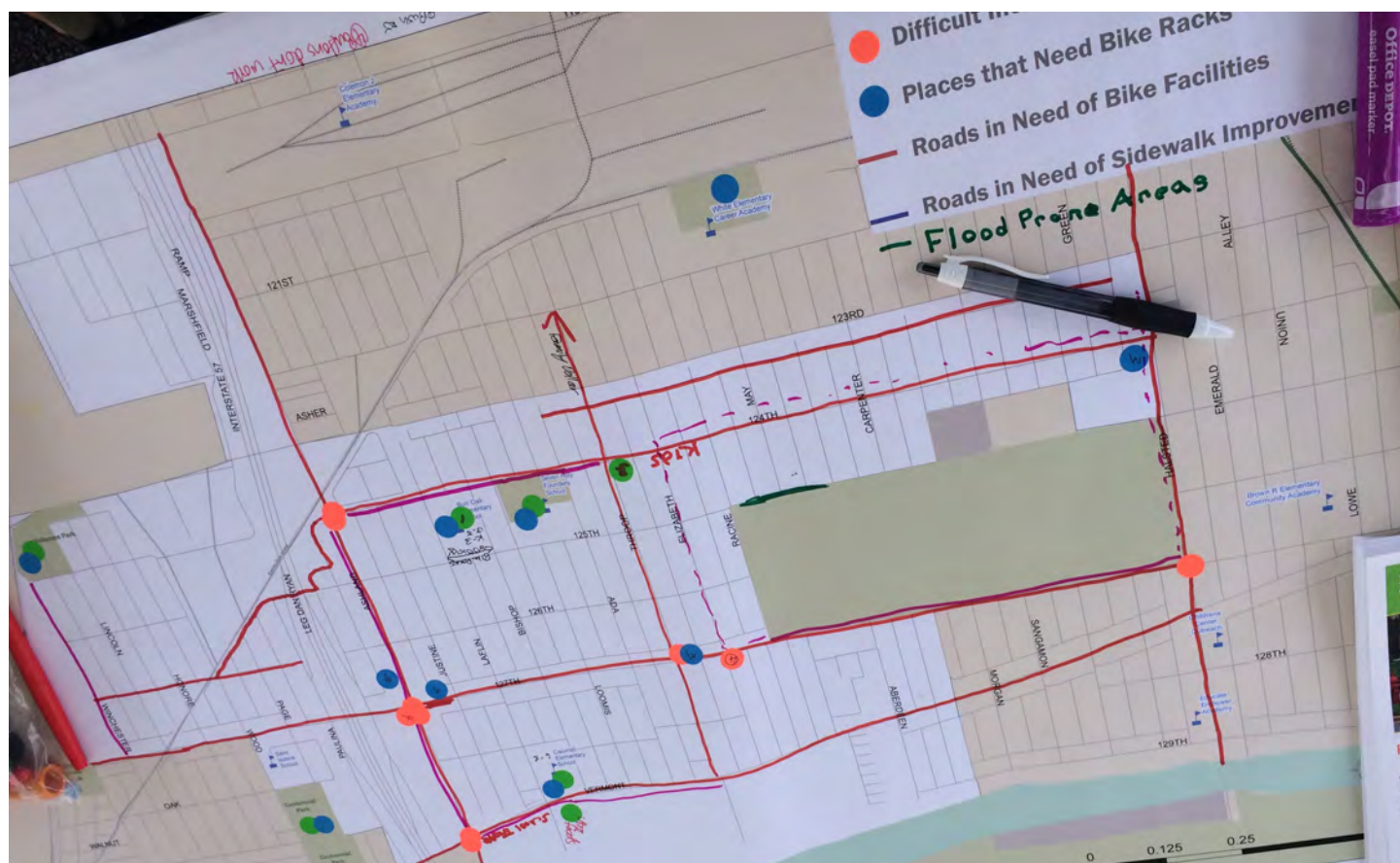
Although LiDAR provides very detailed information on land cover and topography, there are several factors that may result in discrepancies between these maps and how stormwater actually flows through a community (e.g., small landscape features like gutters, curbs, small hills that route water, which may not have been picked up in our flow path analysis). Also, each community has a sewer and drainage system that is designed to intercept and manage stormwater. Our team modelled the flow of stormwater over the landscape as if local sewer systems are at full capacity and could not handle any additional flows. In other words these maps only show the overland flow paths and accumulation of stormwater and do not factor in the underlying sewer network.

In spite of these limitations and assumptions, these maps represent a good approximation of how stormwater is likely to flow and accumulate in the Calumet Corridor. These maps were used alongside other information on flooding risk and solution opportunities to determine where green infrastructure retrofits could alleviate local flooding issues. This information informed each community's action plan.

FIGURE CP-6:
Key Plans Reviewed for Calumet Park

Name	Lead(s)	Year Completed / Status	Focus
A Planning Priorities Report for Calumet Park	CMAP	2016	Various
TOD Developer Discussion Panel	Village of Calumet Park, RTA	2016	Transportation
Stormwater Master Plan Project for the Little Calumet River/Cal-Sag Channel Drainage Area: Problem Area (West Calumet Park #7) Concept Memo	MWRD, Arcadis	2016	Watershed/Stormwater Management
Calumet Park Active Transportation Plan	ATA	In Progress	Transportation

The following section summarizes what we heard from Calumet Park’s residents, municipal staff, and elected representatives through the RainReady planning process as well as what we gathered from previous plans completed for the Village (see Figure CP-6). To make this information easier to digest, we organized it into community strengths, concerns, and land-based opportunities (i.e., planning priorities and capital projects) that apply to: 1) your homes and neighborhoods; 2) your business districts and shopping centers; 3) your industrial centers and railroad corridors; and 4) your open space and natural areas. We also created a community asset map to prompt ideas about how Calumet Park’s RainReady Action Plan can strengthen and build on existing community assets.



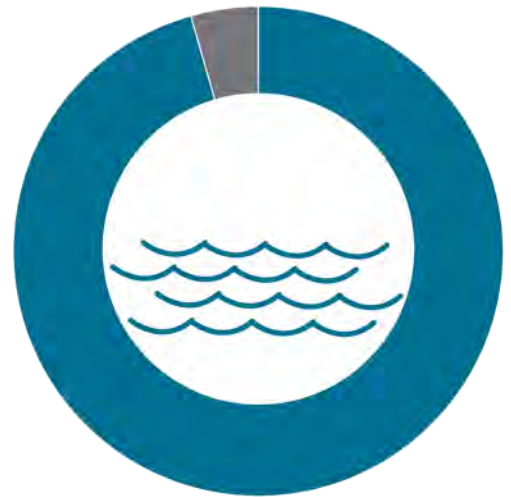
RainReady Calume Park COMMUNITY SURVEY

Respondents experiencing flooding problems

Respondents who answered "Yes, I experience problems" and "I do not experience problems anymore" were grouped into the "Yes" category because both sets of respondents experience ongoing flooding problems or have experienced problems in the past, respectively.

■ **96%** Yes
■ **4%** No

144 survey
respondents



\$6,435 is the average amount spent on stormwater-related repairs

\$1,197 is the average amount residents are willing to invest to reduce risk of future damage



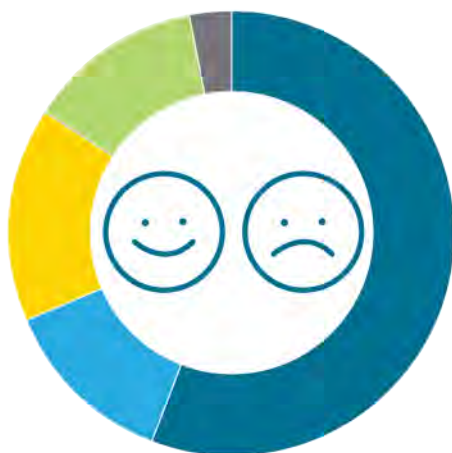
How does water enter properties?

■ **60** Backing up through drains
■ **81** Seeping through walls
■ **15** Flowing through doors/windows
■ **48** Pooling/ponding in yard
■ **32** Overflow from street, creek, nearby body of water
■ **8** Other
■ **4** Don't know

What is the level of worry about flooding's impact on property value?

Extremely worried **62%** ■
Very worried **15%** ■
Moderately worried **12%** ■
Slightly worried **5%** ■
Not at all worried **6%** ■

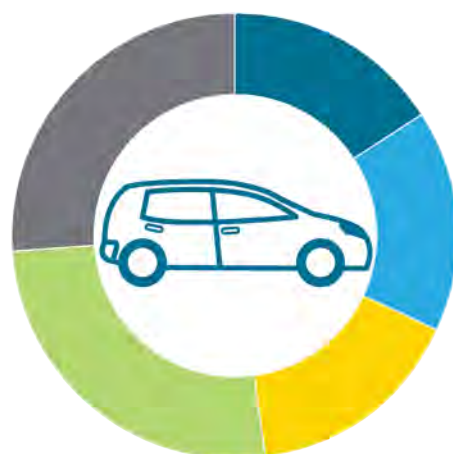




How much do heavy rains impact quality of life?

57%	A great deal
13%	A lot
16%	A moderate amount
13%	A little
3%	Not at all

How much do heavy rains impact commute or other travel?



A great deal	29%
A lot	11%
A moderate amount	24%
A little	21%
Not at all	15%



What is the preparedness of the community to work together to find a solution?

18%	Extremely prepared
9%	Very prepared
30%	Moderately prepared
16%	Slightly prepared
27%	Not at all prepared

How effective will local government officials be in addressing flooding issues?



Extremely well	2%
Very well	9%
Moderately well	30%
Slightly well	25%
Not at all well	35%

Data Source: CNT Survey, 2016

YOUR HOMES AND NEIGHBORHOODS



COMMUNITY STRENGTHS

- Recreational center for youth and seniors
- Community residents are united in their awareness of the Village's flooding problems and the need to find a solution
- Close to Chicago, easy access to downtown
- Strong sense of public safety
- CodeRED, a new rapid emergency notification system in Calumet Park, and Cook County iWatch, a mobile application for crime tips, are two new resources for residents to help report crimes and help reduce crime rates
- Residents report timely police response and attribute it in part to CodeRED and iWatch
- The Village's Home Beautification Program
- See Community Asset Map (Figure CP-7)

COMMUNITY CONCERNS

- Chronic flooding in residential areas throughout the Village
- Housing in some areas is in poor condition
- Lack of safe bicycle and pedestrian infrastructure
- Local churches and schools have been playing an active role in programming youth activities, but are in need of additional space for recreational activities
- Limited social services and resources exist in Calumet Park and residents often rely on Blue Island for health-related services
- Slow response time to non-emergency calls (e.g., fallen trees)
- Old trees on public and private land are a risk of falling, especially Ash trees (due to emerald ash borer)
- Increasing water rates
- Residents report a lack of workforce training opportunities and youth activities as contributors to gang activity, primarily for young men



- Water hydrant replacement is needed throughout the Village, especially between Aberdeen and Morgan Streets in Northwest Calumet Park
- See Urban Flooding Risk Assessment (Figure CP-5)

LAND-BASED OPPORTUNITIES (PLANNING PRIORITIES AND CAPITAL PROJECTS)

Here are some ideas that were uncovered through the RainReady planning process:

- The Village has demonstrated its support for Complete Streets and has adopted the Complete Streets Ordinance for the Village of Calumet Park in October of 2016
- The recent adoption of a local Complete Streets ordinance could also support the expansion of green infrastructure flood reducing strategies
- A home beautification program that was kicked off in June 2016 could be continued into 2017 and expanded to incorporate green infrastructure practices that reduce flooding

- Opportunity to create a local bicycle network that could connect neighborhoods to the planned Cal-Sag Trail and Major Taylor Trail
- Green infrastructure and improved bikeway and pedestrian infrastructure can be used together to create a friendly, safe, and walkable environment for residents and visitors
- The grid layout and uniform shape and size of Calumet Park's residential streets would enable the incremental installation (i.e., scaling up) of green infrastructure (e.g., rain gardens, bioswales, tree plantings) along parkways
- Investments in green infrastructure that reduce flooding would encourage longtime residents to stay in the community, attract interested homeowners, retain property values

YOUR BUSINESS DISTRICTS AND SHOPPING CENTERS



COMMUNITY STRENGTHS

- Calumet Park has been successful in recruiting new retail and commercial development
- Market-based study completed for development on 127th Street
- See Community Asset Map (Figure CP-7)

COMMUNITY CONCERNS

- In recent years, there have been several vacancies in the Raceway Park Shopping Center
- Concerns for pedestrian safety at the Raceway Park who need to travel to/from Pace Bus stops, especially near Vermont Street and Ashland Avenue where there are no crosswalks or sidewalks
- Concern about how the Ashland Transit-Oriented Development (TOD) might exacerbate flooding in surrounding areas
- See Urban Flooding Risk Assessment (Figure CP-5)



LAND-BASED OPPORTUNITIES (PLANNING PRIORITIES AND CAPITAL PROJECTS)

Here are some ideas that were uncovered through the RainReady planning process:

- A TOD project is underway at the Ashland Metra station
- There is a growing interest in mixed-use waterfront development throughout the Chicagoland region; with approximately 0.72 miles of waterfront property, Calumet Park could potentially benefit from this new development trend
- The grid layout and uniform shape and size of Calumet Park's residential streets would enable the incremental installation (i.e., scaling up) of green infrastructure (e.g., rain gardens, bioswales, tree plantings); such green infrastructure (GI) improvements could create a unique character for the Village
- Residents request that the Village beautify the north side of 127th Street so that it matches the south side, this is aligned with the complete streets concept
- Connect with IDOT to pursue sidewalk and streetscape improvements adjacent to Raceway Park Shopping Center and on 127th Street

YOUR INDUSTRIAL CENTERS AND TRANSPORTATION CORRIDORS

Photo: Google Maps



COMMUNITY STRENGTHS

- Easy access to I-57 supports shipping and logistics businesses
- The Calumet-Sag Channel supports waterway-based industry
- Participation in the Calumet Green Manufacturing Partnership supports the Village's industrial jobs base
- Close access to a dense network of commuter transit and freight railroads
- See Community Asset Map (Figure CP-7)

COMMUNITY CONCERNS

- Industry along the Cal-Sag Channel is a barrier to using the waterfront for recreational and mixed-use development
- See Urban Flooding Risk Assessment (Figure CP-5)



LAND-BASED OPPORTUNITIES (PLANNING PRIORITIES AND CAPITAL PROJECTS)

Here are some ideas that were uncovered through the RainReady planning process:

- Several prior plans recommend that Calumet Park and Blue Island coordinate on matters related to the development and redevelopment along their shared border and commercial corridors (e.g., Marshfield Plaza and the Ashland Triangle, Blue Island's Northeast Site and the 119th Street Corridor, West Calumet Park and the vacant land north of Veterans Park, 127th Street Corridor). Coordinating planning and development efforts across jurisdictional borders—and leveraging each other's resources—could minimize costs, maximize benefits of projects, and leverage funding for flood mitigation projects for both municipalities

YOUR OPEN SPACE AND NATURAL AREAS



COMMUNITY STRENGTHS

- Centennial Park and Veterans' Park
- Green infrastructure pilot project at Veterans Park
- There is a general interest in increasing tourism in the Southland region
- See Community Asset Map (Figure CP-7)

COMMUNITY CONCERNS

- Limited access to parks
- Flooding in areas adjacent to Veterans Park
- See Urban Flooding Risk Assessment (Figure CP-5)



LAND-BASED OPPORTUNITIES (PLANNING PRIORITIES AND CAPITAL PROJECTS)

Here are some ideas that were uncovered through the RainReady planning process:

- In the future, the Village could potentially connect the forthcoming Cal-Sag Trail to a new waterfront trail or Riverwalk along the Cal-Sag Channel
- The Village could leverage the improving water quality of the Cal-Sag Channel and the expanding Calumet Water Trail system (e.g., boat launches, boat houses, liveries) to support an outdoor recreation industry
- The thin wedge of vacant land located between Ashland Avenue and I-57, (12279 South Ashland Avenue) presents an

opportunity for a beautification project by expanding open space and green infrastructure

- Expanding green infrastructure best management practices (e.g., rain garden, bioswales) in and around Veterans Park could reduce the risk of flooding in the West Calumet Park neighborhood
- Opportunity to work collaboratively to preserve and restore the vacant land north of Veterans Park as a shared natural area, outdoor recreation amenity, and stormwater management facility that benefits both Blue Island and Calumet Park residents and attracts visitors to the area

COMMUNITY ASSETS

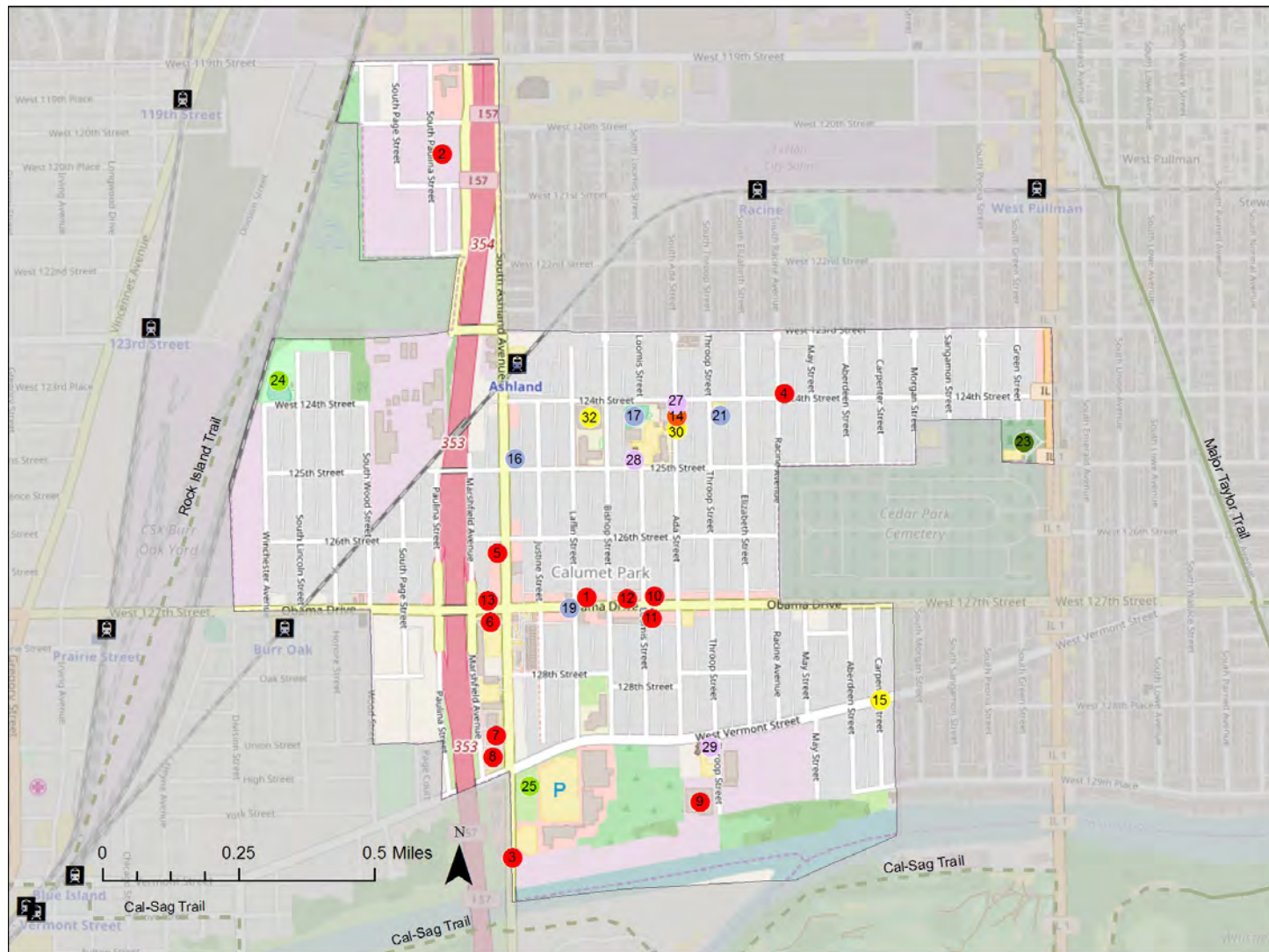


FIGURE CP-7:
Calumet Park Community Assets

BUSINESSES

- 1 Apollo Detective Agency
- 2 Bonaparte Corporation
- 3 Aldi
- 4 Sugars Bar LLC
- 5 Family Dollar
- 6 McDonald's
- 7 Edible Arrangements
- 8 Walgreens
- 9 SG Supply Company
- 10 Ace Hardware
- 11 R&S Foods
- 12 Dillingers Restaurant
- 13 Shell Food Mart

COMMUNITY ORGANIZATIONS

- 14 Catholic Charities
- 15 New Life Outreach Ministry

GOVERNMENT AGENCIES

- 16 Calumet Park Fire Department
- 17 Calumet Park Parks District
- 18 Calumet Park Police Department
- 19 Calumet Park Public Library
- 20 Calumet Park Public Works
- 21 Calumet Park Village Hall

METRA STATIONS

- 22 Ashland Metra Station

NATURAL AREAS

- 23 Cedar Park Cemetery

PUBLIC PARKS/PARK DISTRICTS

- 24 Veterans Park
- 25 Raceway Park

RELIGIOUS INSTITUTIONS

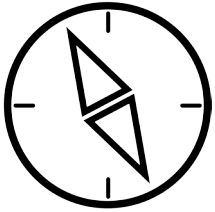
- 26 Pioneer Baptist Church
- 27 Seven Holy Founders
- 28 Community Covenant Church
- 29 Mt Calvary Lutheran Church

SCHOOLS & COLLEGES

- 30 Beacon Therapeutic
- 31 Calumet Elementary and Middle School
- 32 Burr Oak Academy

COMMUNITY PRIORITIES

Listed below are the community priorities we heard from Calumet Park residents, municipal staff, and elected representatives through the RainReady Planning Process. These community priorities were synthesized with the flooding risk and resilience opportunities assessment to develop Calumet Park's Action Plan.



REORIENT

- Increase collaboration, communication, and engagement between residents and local government
- Bring back block clubs and other social groups that foster cohesive communities, familiarity with neighbors, and safe streets
- Educate residents on water conservation, native plants, resilience, and emergency response



REPAIR (AND MAINTAIN)

- Create a maintenance plan and program for green and grey infrastructure installations
- Encourage maintenance of private property
- Continue to repair roads, sidewalks, and curbs



RETROFIT

- Create more jobs for youth
- Expand educational and recreational opportunities for youth
- Create a community garden that includes native plants and recreational amenities at the vacant land southeast of the intersection of Vermont Street and Ashland Avenue, east of the Ultra Shopping Center
- Where feasible, install bioswales along residential parkways and stormwater bulbouts intersections

RAINREADY **ACTION PLAN**



Vision Statement

In a RainReady Calumet Park, the economic impact of small storms will be virtually eliminated and the impact of big storms will be greatly reduced. Community residents, business owners, municipal staff, and elected representatives will work together and coordinate their efforts to create a vibrant and resilient community. Public Investment decisions will be transparent, homeowners will be well-educated and aware of flooding risks, and there will be sufficient resources for emergency response (when needed). Burr Oak Elementary will be a model green school throughout the Southland region. Calumet Park will continue to be a tight-knit community and thrive, no matter what shocks and stresses may come its way.

RainReady Goals



Reorient Calumet Park so that the community is on a path toward resilience



Repair Calumet Park's municipal sewer and stormwater drainage systems



Retrofit the built landscapes throughout Calumet Park with green, grey, and green-grey infrastructure improvements, and restore natural landscapes

NOTE: This plan outlines a path forward toward a more resilient Calumet Corridor, but implementation of specific recommendations will have to occur at the local level. Adopting this plan demonstrates a local community's commitment to considering these recommendations during capital planning and decision-making efforts and implementing these recommendations as necessary resources become available. In many cases, the Village of Calumet Park is already actively engaged in a given project or program recommendation. In other cases, additional resources (e.g., external grant funds, dedicated revenue, partnerships, etc.) will be necessary to advance a project or program. The following action plan outlines the actions and associated implementation steps, implementation priority, estimated timeline, and identified potential project leads and resources needed. Further analysis is needed to estimate the costs of most recommendations. The specific details may change as communities take action to advance a recommendation and as new information and opportunities emerge.



REORIENT

COMMUNITY-WIDE STRATEGIES FOR CALUMET PARK

- **Strategy 1.** Build capacity to make well-informed decisions and execute them
- **Strategy 2.** Plan and implement projects collaboratively
- **Strategy 3.** Promote equitable and resilient development at all levels
- **Strategy 4.** Prepare your community for future shocks and stresses



REPAIR

COMMUNITY-WIDE STRATEGIES FOR CALUMET PARK

- **Strategy 1.** Map and document your municipal sewer and stormwater drainage system
- **Strategy 2.** Inspect and evaluate your municipal sewer and stormwater drainage system
- **Strategy 3.** Rehabilitate your municipal sewer and stormwater drainage system
- **Strategy 4.** Maintain your municipal sewer and stormwater drainage system



RETROFIT

RETROFIT STRATEGIES FOR YOUR HOMES AND NEIGHBORHOODS

- **Strategy 1.** Implement a residential resilience program
- **Strategy 2.** Bring new life to vacant residential land
- **Strategy 3.** Create a network of residential green streets, green alleys, and complete streets
- **Strategy 4.** Expand on existing and create more green schools and churches
- **Strategy 5.** Reduce widespread flooding in the West Calumet Park neighborhood through coordinated green and grey infrastructure investments

RETROFIT STRATEGIES FOR YOUR SHOPPING AREAS AND BUSINESS DISTRICTS

- **Strategy 6.** Bring new life to underutilized parking lots
- **Strategy 7.** Expand Calumet Park's network of commercial complete streets

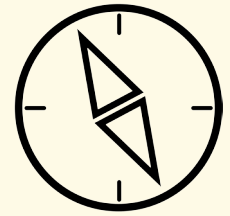
RETROFIT STRATEGIES FOR YOUR INDUSTRIAL CENTERS AND RAILROAD CORRIDORS

- **Strategy 8.** Improve the edges of large industrial sites and railroad corridors

RETROFIT (RESTORE) STRATEGIES FOR YOUR OPEN LAND AND NATURAL AREAS

- **Strategy 9.** Create a waterfront park along the Calumet-Sag Channel/Little Calumet River
- **Strategy 10.** Integrate green infrastructure into Calumet Park's park system

GOAL 1: REORIENT



COMMUNITY-WIDE RECOMMENDATIONS

STRATEGY 1:

BUILD CAPACITY TO MAKE WELL-INFORMED DECISIONS AND EXECUTE THEM

RECOMMENDATION 1.1

Adopt the RainReady Calumet Park Plan; Update the plan every 2-5 years. Incorporate the plan's recommendations into forthcoming capital improvement planning efforts and decision-making efforts.

Where: Community-wide

How: Participate in the RainReady community planning process; convene a steering committee consisting of residents, municipal staff, and elected representatives; propose and adopt at a Village Board Meeting in 2017

How much: \$104,000 (this cost has already been paid for through CDBG-DR funds)

Who leads: CNT/RainReady (for initial plan); Village of Calumet Park (for adoption and plan updates)

Resources needed: Technical Assistance for planning updates

PRIORITY: 

PHASING: 

RECOMMENDATION 1.2

Engage in regional and local planning and coordination efforts (e.g., the Calumet Stormwater Collaborative, Millennium Reserve, CMAP's Comprehensive Regional Plans, SSMMA's various committees).

Where: Community-wide

How: Read and continually reference stormwater-related resources; align local strategies with regional initiatives to increase access to funding and technical assistance

How much: Varies

Who leads: The Village of Calumet Park and regional organizations/coalitions like CMAP, SSMMA, CSC, CHP

Resources needed: Internal: staff personnel and time; External: SSMMA could hire a stormwater/resilience-focused staff person to serve this role for all communities in their service area (proposed)

PRIORITY: 

PHASING: 

RECOMMENDATION 1.3

Continue to utilize Calumet Park's GIS database to document flooding issues. Incorporate best practices in data management and stormwater planning for local governments (e.g., continual process improvement, performance management, program evaluation, monitoring, ongoing collection and dissemination of useful data, open data and civic hacking).

Where: Community-wide

How: Use Calumet Park's GIS system to collect, manage, and analyze data on water-related complaints and adopted solutions (e.g., type and source of flooding, damage costs, improvements made to property); partner with research institutions to install sensors that will monitor the performance of green infrastructure installations

How much: There will be initial costs to set up these systems, but these improvements could pay for themselves over time through increased operational efficiencies and improved outcomes

Who leads: Village of Calumet Park, regional 311 Call Center/Service (proposed)

Resources needed: Internal: GIS System, staff time; External: SSMMMA (data sharing), the Village can expand their monitoring capacity through partnerships with research institutions (e.g., colleges/universities, Argonne National Labs, CNT, UI Labs)

PRIORITY: 

PHASING: 

STRATEGY 2: PLAN AND IMPLEMENT PROJECTS COLLABORATIVELY

RECOMMENDATION 2.1

Sustain the RainReady Calumet Park Steering Committee (SC) and engage this group in the ongoing planning and implementation efforts.

Where: Community-wide

How: Continue to work with the RainReady team in early 2017 implement plan recommendations

How much: Approximately 2-3 hours per month

Who leads: Village of Calumet Park (e.g., community leaders, municipal staff, elected representatives), CNT/RainReady

Resources needed: CNT/RainReady (to start); ongoing collaboration is volunteer led

PRIORITY: 

PHASING: 

RECOMMENDATION 2.2

Incorporate updates on stormwater projects and other resilience-related topics into the Village's various communication channels (e.g., official city websites and social media).

Where: Community-wide

How: When appropriate, include stormwater and resilience-related updates in the "Public Works" section of official Village communications

How much: Varies

Who leads: The Village of Calumet Park, local media outlets

Resources needed: The Village of Calumet Park (staff time)

PRIORITY: 

PHASING: 

RECOMMENDATION 2.3

Continue to coordinate (via the Illinois Public Works Association) with neighboring municipalities on stormwater-related planning and development projects, and the sharing of maintenance and emergency response equipment and services. Cross-jurisdictional coordination has been shown to reduce public costs, increase operational efficiencies, and improve/expand the delivery of municipal services.

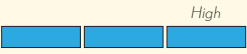
Where: Community-wide and throughout the Calumet region

How: Where appropriate, pursue Intergovernmental Agreements (IGAs) with municipalities and other government agencies (e.g., MWRD, Cook County)

How much: The benefits of cross-jurisdictional coordination (e.g., reduced costs, improved response times) have been shown to outweigh the costs; therefore the investment of staff time in coordination efforts (e.g., approximately 5-10 hours/month) is a good investment

Who leads: Village of Calumet Park, neighboring municipalities, MWRD, CSC, SSMMA, CMAP

Resources needed: Internal: The Village of Calumet Park (staff time); External: the SSMMA could potentially hire a stormwater/resilience-focused staff person to serve this function for all communities in their service area (proposed)

PRIORITY: 

PHASING: 

STRATEGY 3:
PROMOTE EQUITABLE AND RESILIENT DEVELOPMENT
AT ALL LEVELS—FROM THE HOME TO THE REGION

RECOMMENDATION 3.1

Adopt (and comply with) current stormwater management requirements. Where feasible, improve local ordinances and building codes to promote resilient and equitable development.

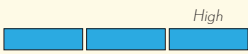
Where: Community-wide

How: Conduct an audit of your local ordinances to evaluate areas for improvement; pass common-sense policy changes/updates; adopt an incremental and adaptive approach to implementing green infrastructure and other resilience-building projects (e.g., the *Green Infrastructure Portfolio Standard*)

How much: N/A

Who leads: The Village of Calumet Park

Resources needed: Internal: The Village of Calumet Park (staff time)

PRIORITY: 

PHASING: 

STRATEGY 4:
PREPARE YOUR COMMUNITY FOR
FUTURE SHOCKS AND STRESSES

RECOMMENDATION 4.1

Educate the public on flooding risks.

Where: Community-wide

How: Continue to train and educate residents through Calumet Park's Emergency Service & Disaster Agency (ESDA); partner with American Red Cross, FEMA, and other organizations that can provide disaster preparedness training

How much: N/A

Who leads: Calumet Park's Emergency Service & Disaster Agency (other disaster preparedness organizations can provide support)

Resources needed: Many of these trainings are free and participation is voluntary

PRIORITY: 

PHASING: 

RECOMMENDATION 4.2

Continue to utilize an emergency alert system that alerts homeowners, businesses, and visitors when a flood will likely occur.

Where: Community-wide

How: Continue to alert residents of flooding and other hazards through the Village's Code Red text-based alert system

How much: N/A

Who leads: Village of Calumet Park

Resources needed: This system is already set up. An external grant could enable the expansion of this service

PRIORITY: 

PHASING: 

RECOMMENDATION 4.3

Ensure that at least one Village staff person (or a consultant who does work on behalf of the Village) has one or more of the following certifications: Certified Floodplain Manager (CFM), National Green Infrastructure Certification Program (NGICP), LEED-ND.

Where: Community-wide

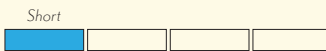
How: Incentivize the appropriate staff person (e.g., reimburse the costs) to earn and maintain certifications; require that Village contractors and consultants involved with land development in Calumet Park have these certifications

How much: Varies depending on certification(s)

Who leads: The Village Engineer

Resources needed: N/A

PRIORITY: 

PHASING: 

GOAL 2: REPAIR



COMMUNITY-WIDE RECOMMENDATIONS

STRATEGY 1:

MAP AND DOCUMENT YOUR MUNICIPAL SEWER AND STORMWATER DRAINAGE SYSTEM

RECOMMENDATION 1.1

Ensure that Calumet Park has up-to-date sewer atlas information and a system for documenting information on the conditions of the overall system, specific elements (e.g., catch basins, curbs), and flooding problem areas.

Where: Community-wide

How: Continue to update this information and share it through SSMMA's GIS consortium (and other regional data-sharing portals) to facilitate more streamlined inter-jurisdictional stormwater planning efforts

How much: N/A

Who leads: The Village of Calumet Park's Village Engineer, SSMMA

Resources needed: Internal: the General Fund, Water Fund; External: The SSMMA's GPS mapping/training service; IDNR Coastal Management Program Grants (for expansion)

PRIORITY: 

PHASING: 

STRATEGY 2:

INSPECT AND EVALUATE YOUR MUNICIPAL SEWER AND STORMWATER DRAINAGE SYSTEM

RECOMMENDATION 2.1

Develop and implement a comprehensive inspection program (e.g., visual inspection, closed circuit television inspection) to regularly assess the condition of Calumet Park's municipal sewer system (e.g., manholes, catch basins, sewers).

Where: Community-wide (inspect known problem areas first)

How: Establish a feasible, continuous, and cyclical inspection schedule (e.g., televise 10% of the sewers for 10 years, then repeat); use Calumet Park's Urban Flooding Risk Assessment (Figure CP-5) to identify and prioritize known flooding problem areas)

How much: N/A

Who leads: The Village Engineer

Resources needed: Internal: the General Fund, Water Fund, TIF Funds (where appropriate), External: CDBG, DCEO, IEPA State Revolving Loan Fund, USACE Section 219

PRIORITY: 

PHASING: 

STRATEGY 3:

REHABILITATE YOUR MUNICIPAL SEWER AND STORMWATER DRAINAGE SYSTEM

RECOMMENDATION 3.1

Improve the drainage and conveyance of stormwater drainage system in the West Calumet Park neighborhoods.

Where: The West Calumet Park Neighborhood (the area south of Veterans Park, east of the railroad tracks/municipal border, north of 127th Street, and west of I-57)

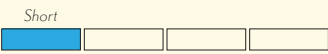
How: Attain planning-level designs for this project (see the MWRD Concept Memo for this area); apply for external grant funds and/or incorporate this project into Calumet Park’s capital improvement program; complete preliminary engineering designs and other necessary studies (engage community residents in this process); implement project

How much: TBD

Who leads: The Village Engineer, MWRD, Cook County

Resources needed: External: MWRD (for high-level plan); Cook County (for PE costs); MWRD, Cook County, and Calumet Park (for construction costs); other sources: CMAP’s LTA program, HUD CDBG, IDNR Coastal Management Program Grants

PRIORITY: 

PHASING: 

RECOMMENDATION 3.2

Repair major sewer defects, such as collapsed sewers, identified through the inspection program (see Recommendation 2.1).

Where: Targeted repairs in known problem areas

How: Complete +/- 5 repairs per year

How much: TBD

Who leads: The Village Engineer and Public Works Department

Resources needed: Internal: the General Fund, Water Fund, TIF Funds; External: CDBG, DCEO, IEPA State Revolving Loan Fund, USACE Section 219

PRIORITY: 

PHASING: 

RECOMMENDATION 3.3

Line deteriorated sanitary sewer mains observed by the inspection program (see Recommendation 2.1).

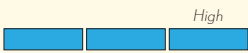
Where: Community-wide (inspect known problem areas first)

How: Line sewers in known problem areas; aim to line 3% of the sewers per year

How much: TBD

Who leads: The Village Engineer and Public Works Department

Resources needed: Internal: the General Fund, Water Fund, TIF Funds (where appropriate), External: CDBG, DCEO, IEPA State Revolving Loan Fund, USACE Section 219

PRIORITY: 

PHASING: 

STRATEGY 4:
MAINTAIN YOUR MUNICIPAL SEWER
AND STORMWATER DRAINAGE SYSTEM

RECOMMENDATION 4.1

Develop and follow a comprehensive maintenance plan describing how all green, grey, and green-grey infrastructure systems will be maintained.

Where: Community-wide

How: Apply for planning and technical assistance grants to develop this maintenance plan

How much: Approximately \$15,000 to \$20,000

Who leads: The Village Engineer

Resources needed: Internal: the General Fund, Water Fund, TIF Funds; External: CMAP's LTA program, HUD CDBG, IDNR Coastal Management Program Grants

PRIORITY:

High

PHASING:

Short

RECOMMENDATION 4.2

Implement the comprehensive Green/Grey Infrastructure Maintenance plan program in tandem with the inspection program (see Recommendation 2.1). The entire sewer system should be cleaned on a ten-year cycle to ensure optimal function.

Where: Community-wide (inspect known flooding problem areas first)

How: Televisive and clean 10% of Calumet Park's sewers every year; prioritize the most flood-prone areas

How much: N/A

Who leads: The Village Engineer and Public Works Department

Resources needed: Internal the General Fund, Water Fund, TIF Funds (where appropriate), External: CDBG, DCEO, IEPA State Revolving Loan Fund, USACE Section 219

PRIORITY:

High

PHASING:

Ongoing

GOAL 3: RETROFIT



RECOMMENDATIONS FOR YOUR HOMES AND NEIGHBORHOODS



STRATEGY 1: IMPLEMENT A RESIDENTIAL RESILIENCE PROGRAM

RECOMMENDATION 1.1

Establish a residential cost-sharing program to help homeowners recover from past storms and prepare for future storms. Under this program, residents would receive financial support for a complete home inspection and improvements targeted to reduce risk, like check valves, overhead sewers, and a rain garden.

Where: Community-wide

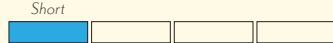
How: Partner with the delegate agencies/organizations tasked with implementing such programs in your region; renew and expand (if feasible) the Village's residential cost-share program; program outreach and recruitment efforts should be targeted to the most flood-prone areas in Calumet Park, but open to the entire Village

How much: Varies – communities often provide a 50/50 cost-share

Who leads: The Village of Calumet Park

Resources needed: Internal: General Fund; External: Cook County's Residential Resilience Program (CDBG-DR)

PRIORITY:  High

PHASING:  Short

STRATEGY 2: BRING NEW LIFE TO VACANT RESIDENTIAL LAND

RECOMMENDATION 2.1

Where appropriate, bring new life to vacant residential land with native plants, tree planting, urban agriculture, and strategies to beautify neighborhoods. Ensure that community greening projects on public or private land fit with the community's preferences for neighborhood aesthetics (e.g., size, color, and "look and feel" of installation), while also providing flood-reduction and other benefits.

Where: Community-wide

How: Create programs that incentivize residents and community groups to improve nearby vacant properties (via temporary use rights or permanent land ownership); such programs could be: Adopt-A-Lot, Side Yard/Large Lot programs, land banking, temporary transfer of use rights to a community group, community greening, and award programs

How much: Example: the City of Chicago's "Large Lot Program" enables adjacent property owners, block clubs, and non-profit groups in select neighborhoods to purchase City-owned land for \$1 per parcel

Who leads: Current homeowners, community organizations, Steering Committee, master gardeners, SSLBA

Resources needed: The Village would effectively absorb the costs in terms of lost future property tax revenue on these particular parcels; however, the benefits of neighborhood stabilization, reduced flooding, reduced crime, and economic spillover effects (e.g., increased property values due to greening vacant lots) would likely offset these costs; residents and community groups could attain property at a very affordable price (e.g., \$1)

PRIORITY: Medium

PHASING: Short



STRATEGY 3: CREATE A NETWORK OF RESIDENTIAL GREEN STREETS, GREEN ALLEYS, AND COMPLETE STREETS

RECOMMENDATION 3.1

Create a network of residential green streets that incorporate green infrastructure improvements (e.g., roadside swales, rain gardens, permeable pavement, tree plantings) along flood-prone residential streets. Ensure that any community greening projects on public or private land fit the community's preferences for neighborhood aesthetics (e.g., size, color, and "look and feel"

of installations), while also providing flood-reduction and other benefits.

Where: Multiple: South Justine Street from 124th to 127th Street; South Throop Street from 123rd to 127th Street; Racine Avenue from 123rd to Cedar Park Cemetery; South Sangamon Street from 123rd to Cedar Park Cemetery; South Peoria Street from 123rd to Cedar Park Cemetery; South Laflin Street from 125th Street to 127th Street; Ada Street from 124th to 127th Street; stormwater bulbouts at: South Loomis and Vermont Street; 128th Street and South Throop; 126th Street and South Loomis; 126th and South Laflin

How: Use this RainReady Plan to identify potential locations where green streets can be piloted; where appropriate, incorporate green infrastructure BMPs into planned roadway improvements; monitor the performance of select green infrastructure installations; adjust the future implementation of green infrastructure projects based on monitoring data and community feedback

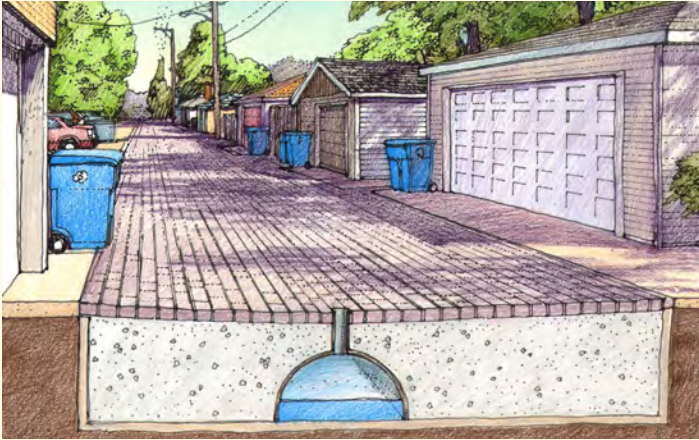
How much: TBD

Who leads: The Village of Calumet Park; organizations specializing in the installation and maintenance of neighborhood green infrastructure

Resources needed: Internal: the General Fund, the Water Fund, TIF funds (where appropriate); External: CDBG, DCEO, IEPA State Revolving Loan Fund, USACE Section 219; STP funds

PRIORITY: Medium

PHASING: Medium



RECOMMENDATION 3.2

Install green alleys that reduce wear-and-tear on cars (via re-grading and filling potholes) and manage stormwater runoff with permeable pavement and end-of-alley stormwater bulbouts.

Where: TBD

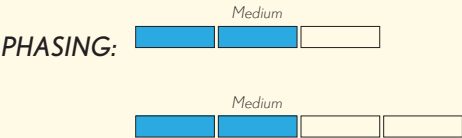
How: Identify flood-prone alleys; Implement pilot project(s); monitor these projects to see what works; expand green alleys to other flood-prone alleys

How much: TBD

Who leads: The Village of Calumet Park

Resources needed: Internal: the General Fund, External: CDBG, DCEO, IEPA State Revolving Loan Fund, MWRD, USACE Section 219

PRIORITY:



RECOMMENDATION 3.3

Create a network of residential complete streets that incorporate green infrastructure improvements (see Recommendation 3.1), bikeway improvements, traffic-calming road features, and place-making amenities (e.g., benches, "people spots").

Where: Community-wide; 124th Street from Ashland Avenue South Halsted Street Burnham Greenway to the eastern municipal border; Pulaski Road from Burnham Greenway to the eastern municipal border; reference: Calumet Parks' Active Transportation Plan

How: Use this RainReady Plan to prioritize related sidewalk and curb repair, roadway resurfacing, and streetscaping improvements recommended in Calumet Park's Active Transportation Plan

How much: TBD - given the additional traffic engineering involved, implementing complete streets is more costly than implementing green streets, however, complete streets provide additional transportation benefits

Who leads: The Village of Calumet Park, Active Transportation Alliance (for initial plan)

Resources needed: Internal: the General Fund, the Water Fund, TIF funds (where appropriate); External: CDBG, DCEO, IEPA State Revolving Loan Fund, USACE Section 219, STP funds





STRATEGY 4:
EXPAND ON EXISTING AND CREATE MORE GREEN SCHOOLS AND CHURCHES

RECOMMENDATION 4.1
 Create green schoolyards that: 1) manage stormwater with green infrastructure (e.g., rain gardens, permeable pavement, urban agriculture, rain barrels, and cisterns); 2) produce healthy foods; and 3) create spaces for more active play, physical education, and outdoor learning.

Where: Burr Oak Elementary

How: Reach out to the local school district and the administration to determine interest in such a program; If there is interest, establish a partnership in the spirit of Space to Grow in Chicago in which the capital and maintenance costs are shared between public and private partners

How much: TBD

Who leads: The Village of Calumet Park, local school districts, schools (e.g., administrations, faculty, students, families), the MWRD, Cook County, local environmental organizations

Resources needed: Internal: School district funds, General Fund; External: MWRD capital improvement funds, Cook County

CDBG-DR funds; Calumet Park should develop a public-public private partnership in which funds from multiple sources are leveraged and costs are shared

PRIORITY: Medium

PHASING: Long

RECOMMENDATION 4.2
 Create green churches that manage stormwater with green roofs, the de-paving of impervious surfaces (where feasible), rain gardens, parking lot bioswales, permeable pavement, and cisterns to capture water from roofs. In other communities church grounds and facility managers are incorporating these green improvements into the church’s mission (e.g., prayer trails, outdoor space for congregation gatherings).

Where: TBD

How: Educate church leaders, congregations, parishioners, etc. on the benefits of green infrastructure; streamline the permitting process for churches seeking to make green infrastructure improvements to their property; connect churches to the organizations that can provide financial and technical assistance

How much: TBD

Who leads: Individual churches and their congregations/parishioners

Resources needed: Internal: church capital funds and endowments; External: IDNR Coastal Management Grants, Chi-Cal Rivers Fund grants, other private foundation grants

PRIORITY: TBD LOCALLY

PHASING: Long



STRATEGY 5:
REDUCE WIDESPREAD FLOODING IN THE WEST CALUMET PARK NEIGHBORHOOD THROUGH COORDINATED GREEN AND GREY INFRASTRUCTURE INVESTMENTS

RECOMMENDATION 5.1

The Metropolitan Water Reclamation District of Greater Chicago (MWRD) has created a concept plan to reduce flooding in the West Calumet Park neighborhood. The Village of Calumet Park should collaborate with the MWRD, Cook County, and other partners, to refine this plan and implement a solution that is effective and accepted by local residents.

Where: West Calumet Park

How: Review the alternatives put forth in the MWRD’s concept plan and other relevant plans for the area; work with Calumet Park’s RainReady Steering Committee to select a suitable alternative and review the final designs; acquire funding for detailed designs and construction; communicate with West Calumet Park residents throughout the process

How much: TBD

Who leads: The Village of Calumet Park, MWRD (for concept plan-completed)

Resources needed: Internal: the General Fund, the Water Fund, TIF funds (where appropriate); External: CDBG, DCEO, IEPA State Revolving Loan Fund, USACE Section 219; STP funds; Chi-Cal Rivers Funds, Great Lakes Restoration Initiative

PRIORITY: High

PHASING: Short

RECOMMENDATIONS FOR YOUR SHOPPING AREAS AND BUSINESS DISTRICTS

STRATEGY 6:
BRING NEW LIFE TO UNDERUTILIZED PARKING LOTS

RECOMMENDATION 6.1

Access to safe, sufficient, and convenient parking improves commuter safety and may increase revenues for the Village (in the case of Village-owned lots). However, too much underutilized parking can cause an area to appear blighted, generate polluted stormwater runoff, and reduce the overall walkability of an area. Therefore, any efforts to expand, replace, and maintain parking lots (public and/or privately-owned) should recognize the impacts that large impervious areas have on water quality and urban flooding, and incorporate green infrastructure best management practices (GI BMPs) wherever possible.

Where: Linear cluster of parking lots on Ashland Avenue from 124th Street to Vermont Street

How: Calumet Park can bring new life to its underutilized parking lots by: 1) retrofitting parking lots with green infrastructure BMPs (e.g., permeable pavement, rain gardens, bioswales), 2) implementing infill redevelopment where appropriate, 3) de-paving parking lots and converting them into open space,

to the overland flooding issues in the West Calumet Park neighborhood. The MWRD plan for the area calls for—among other things—improving the ditch along the western edge of South Winchester Avenue and installing additional green infrastructure BMPs at Veterans Park to alleviate overland flooding issues in the neighborhood. The Village should continue to work with the MWRD, Cook County, and other potential funding partners to advance plans to improve the West Calumet Park neighborhood (see Recommendation 5.1). Improvements to the edge of this industrial site should mitigate overland flooding issues (via improved infiltration and conveyance of stormwater) and beautify the neighborhood.

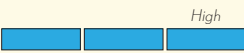
Where: South Winchester Avenue and Veterans Park

How: Review the alternatives put forth in the MWRD’s concept plan and other relevant plans for the area; acquire funding for detailed designs and other project-enabling activities; communicate with West Calumet Park residents throughout the process; use Growth Zone funds and other incentives to implement stormwater improvements at industrial centers and railroad corridors

How much: TBD

Who leads: Village of Calumet Park, MWRD, Cook County, SSMMA

Resources needed: The Village, the MWRD, and Cook County should explore a “public-public partnership” in which the capital costs are shared; the ongoing maintenance of any new green infrastructure could either be incorporated into the Village’s work plan or contracted out to an organization/firm that specialized in the maintenance of green infrastructure

PRIORITY: 

PHASING: 

RECOMMENDATIONS FOR YOUR OPEN LAND AND NATURAL AREAS

STRATEGY 9: CREATE A WATERFRONT PARK ALONG THE CALUMET-SAG CHANNEL/LITTLE CALUMET RIVER

RECOMMENDATION 9.1

Most of Calumet Park’s waterfront land along the Calumet-Sag Channel and Little Calumet River is occupied by industrial uses. However, there are a few waterfront parcels in southeast Calumet Park (south of the intersection of South Aberdeen Street and West 129th Street) that could potentially be developed into a public waterfront park and Riverwalk. Calumet Park should consider developing a small waterfront park that: 1) creates a new green space and outdoor recreation amenity for residents; 2) reduces flooding in the nearby residential neighborhood (e.g., improving the drainage of stormwater into the Little Calumet River via a chain of engineered wetlands); and 3) improves the water quality and ecological health of the Little Calumet River (e.g., restoring the streambank near the confluence of the Cal-Sag Channel and Little Calumet River).

Where: The waterfront land along the Calumet-Sag Channel and Little Calumet River (from South Throop Street to South Carpenter Street)

How: Identify who owns the land along the Calumet-Sag Channel and Little Calumet River (from South Throop Street to South Carpenter Street); if privately-owned, enter into discussions with the land owner regarding the potential purchase and/or use of their land; if Village-owned, initiate a process for redeveloping publically-owned land; review any plans that address the Calumet Waterway System (e.g., Our Great Rivers, The Northeastern Illinois Regional Greenways and Trails Plan); engage residents in the planning, design, and implementation of this project; Apply for grant funds; construct the project; explore

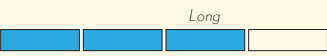
future opportunities to expand open space and waterfront amenities westward and to connect to the forthcoming Cal-Sag Trail

How much: TBD

Who leads: Village of Calumet Park, MPC (for technical assistance and alignment with the Our Great Rivers plan), the Calumet Park RainReady Steering Committee

Resources needed: There are often grants available for river-related improvements (e.g., at the time of publishing this plan, the Chicago Community Trust is inviting grant proposals for community-led projects that help our great rivers reach their potential); the Village should continue to keep an eye out for such grants and seek partners through the Calumet Stormwater Collaborative who can help plan and implement competitive grant proposals

PRIORITY: TBD LOCALLY

PHASING: 

RECOMMENDATION 9.2

In addition to the proposed waterfront park (see Recommendation 9.1), there are several other opportunities to create small neighborhood parks, or “stormwater parks” that could expand outdoor recreation opportunities for Calumet Park residents and reduce urban flooding.

Where: Multiple: the vacant lot at the southwest corner of West 124th Street and South Sangamon Street; the triangle-shaped area at the northwest corner of 123rd Street and Ashland Avenue, east of I-57

How: Identify vacant land that intersects with an overland

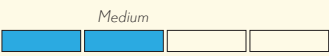
stormwater flowpath and/or is located in a flood-prone area; transform these parcels into stormwater parks that incorporate green infrastructure BMPs (e.g., rain gardens, bioswales, tree plantings; native plants); connect these stormwater parks into Calumet Park’s expanding network of complete streets

How much: TBD

Who leads: Village of Calumet Park, Director of Parks and Recreation; the Calumet Park RainReady Steering Committee

Resources needed: Funding to acquire land and invest in new parks

PRIORITY: 

PHASING: 

STRATEGY 10:
INTEGRATE GREEN INFRASTRUCTURE INTO CALUMET PARK’S PARK SYSTEM

RECOMMENDATION 10.1

Improve the Village’s parks in a way that restores and connects natural ecosystems, manages stormwater, and expands outdoor recreation opportunities. Incorporate green infrastructure features like naturalized detention ponds, rain gardens, bioswales, tree plantings, and native plants, as well as new play structures.

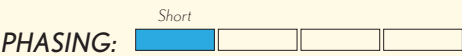
Where: Veterans Park; proposed stormwater parks (see Recommendation 9.2)

How: Include project(s) in Calumet Park’s ongoing capital improvement planning and implementation efforts; implement a policy that encourages the conversion of underutilized lawns into native plant gardens; apply for grants as opportunities arise

How much: TBD

Who leads: Village of Calumet Park, Director of Parks and Recreation; the Calumet Park RainReady Steering Committee

Resources needed: Funding to acquire land and invest in new parks



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RainReady Calumet Corridor

Plan for Riverdale, IL



CNT



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A CITIZEN'S GUIDE TO A **RAINREADY RIVERDALE**



A RainReady Riverdale would be a community where all residents and businesses benefit from flood relief in a way that also brings neighborhood beautification, retail activity, jobs, recreation, and habitat conservation. In this community, public investment is transparent and fair.

In order to better understand Riverdale's flooding risk, the Center for Neighborhood Technology (CNT), the U.S. Army Corps of Engineers, the RainReady Riverdale Steering Committee, and the Village of Riverdale joined together in February 2016. Throughout the year, this group met regularly, hosted community meetings, went door-to-door in the community, held seven public workshops, held five Steering Committee meetings, and reviewed over a hundred plans and studies. 87 Riverdale residents filled out our flooding survey.

Together, we have established a shared vision and path toward a flood-resilient Riverdale: The RainReady Riverdale Plan. This Citizen's Guide to a RainReady Riverdale covers the highlights of the plan, for more information visit www.rainready.org/calumet-corridor.

A Path Forward

In 2016, Riverdale secured a \$7.4 million grant from Cook County to address flooding in the northeast neighborhood. The project will pay for sewer separation, and is expected to greatly reduce flooding in the northeast neighborhood.

The Village is also working with public and private partners to redevelop key industrial and commercial sites in a way that brings in new jobs and economic activity while simultaneously reducing flooding in surrounding areas.

Equipped with the RainReady Plan, the Village now has a roadmap to reduce flooding in a way that strengthens neighborhoods and businesses, and brings new life to vacant areas of town. With modern and well-maintained infrastructure, the Village will be prepared to weather the storms of the future—both large and small.

**KEEP READING FOR MORE INFORMATION ON THE
PATH AHEAD FOR RIVERDALE!**



**US Army Corps
of Engineers®**

Understanding the Problem

Like many of its neighbors, Riverdale has long been plagued by chronic flooding. In recent years, the scope and severity of the floods have become significantly worse. A combination of impervious surfaces, aging and limited infrastructure, and changes in regional climate have left Riverdale residents vulnerable across the village. From 2007 to 2011, 3,362 flood-related insurance claims were filed in the 60827 zip code, with more than \$8,073,673 paid out in damages. Residents suffer a mix of basement backup, street and yard flooding, and foundation seepage. In 2015, the broader Calumet Corridor in which Riverdale was identified by Cook County as the area “most impacted and distressed” by the April 2013 flooding disaster (DR-4116). Strategic policy changes and coordinated investment in green and grey infrastructure will mitigate chronic flooding issues in Riverdale.

RainReady Riverdale Survey Results



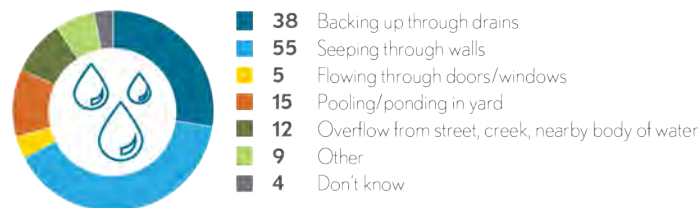
Respondents experiencing flooding problems*

87 survey respondents

\$4,109 is the average amount spent on stormwater-related repairs

\$1,533 is the average amount residents are willing to invest to reduce risk of future damage

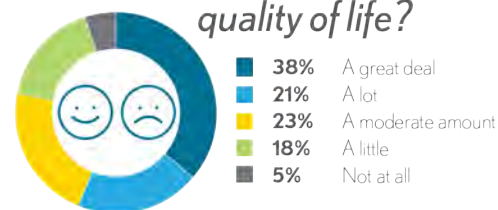
How does water enter properties?



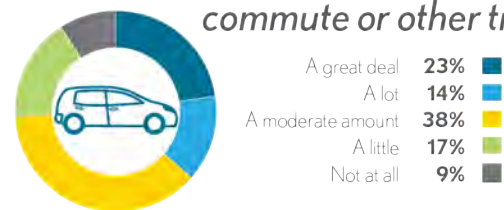
What is the level of worry about flooding's impact on property value?



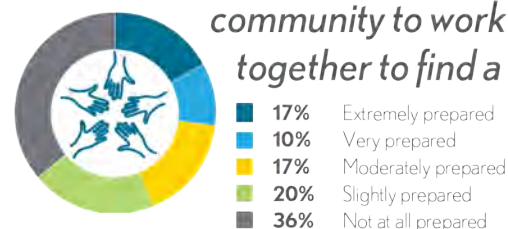
How much do heavy rains impact quality of life?



How much do heavy rains impact commute or other travel?



What is the preparedness of the community to work together to find a solution?



How effective will local government officials be in addressing flooding issues?



Data Source: CNT Survey, 2016

*Respondents who answered “Yes, I experience problems” and “I do not experience problems anymore” were grouped into the “Yes” category because both sets of respondents experience ongoing flooding problems or have experienced problems in the past, respectively.

Planning the Solutions

The path ahead for Riverdale requires coordinated action at multiple scales. Fortunately, community residents, municipal staff, and elected representatives are aligned in their desire for a more beautiful, flood-resilient community. The RainReady Calumet Corridor Plan recommends the following priority projects from a comprehensive list of recommendations:

NORTHEAST NEIGHBORHOOD

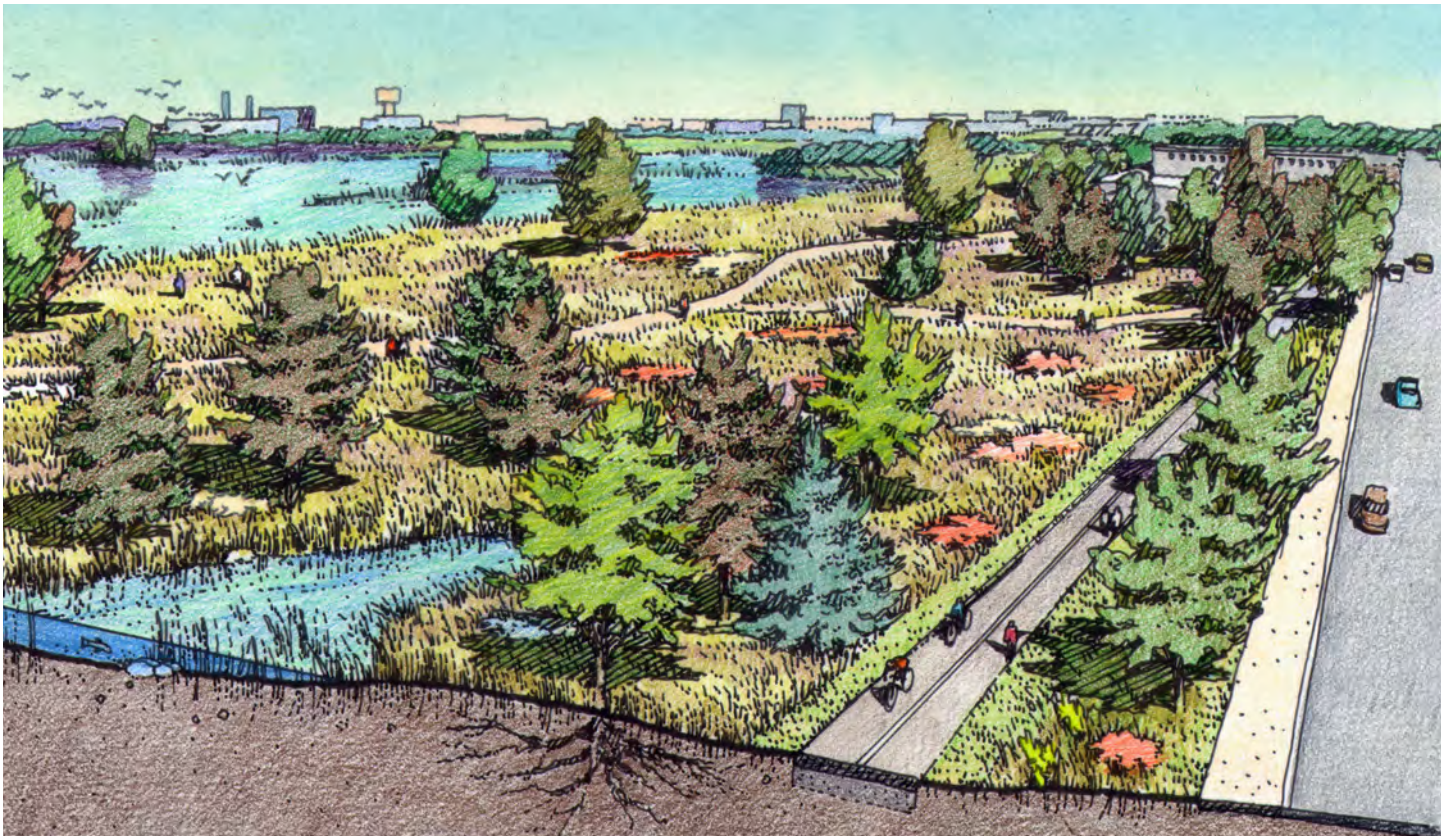
In 2017, plans will move forward to separate the sanitary sewer from the stormwater sewer in northeast Riverdale. The project area is defined by the Metra tracks, East 140th Street, the municipal border, and the Little Calumet River. This project will bring much needed flood relief to residents in the northeast neighborhood of Riverdale who have been struggling with basement backups and other local flooding challenges for years.

THE CAL-SAG TRAIL

The Village of Riverdale recently green-lighted the expansion of the Cal-Sag Trail into town. The extension of the Cal-Sag Trail into Riverdale will spur a whole host of new opportunities for economic development, recreation, and even flood mitigation. Residents and local leaders should work together to make sure the forthcoming project includes green infrastructure like bioswales, vegetated swales, and tree plantings, in places where these improvements will alleviate local flooding issues.

OPEN UP RIVERDALE MARSH

Plans are in the works to improve Riverdale Marsh, a 75 acre site just northwest of 138th Street and Halsted Avenue. The current plan aims to create new opportunities for residents and visitors to get outside for a picnic, a walk, birding, and biking. It could even connect to the forthcoming Cal-Sag Trail and other commercial corridors, opening up a vast network of outdoor play and shopping.



Quick Steps

We know that residents experience flooding every summer, and the need for help is urgent. Here are 7 solutions that homeowners should consider to reduce their risk today:

- **ASSESS YOUR PROPERTY.**

The first step to solving your flood problem is to understand how water falls on your property and flows through your pipes. If you have significant problems, you may need the help of an engineer, plumber, electrician, or landscape designer.

- **MAKE YARD IMPROVEMENTS.**

In order to reduce flooding, capture stormwater runoff using rain gardens, swales, dry wells, permeable paving, rain barrels, or cisterns.

- **ELEVATE YOUR APPLIANCES.**

If water regularly enters your home, place appliances, furnaces, hot water heaters, and electrical panels above the typical flood level on wood or concrete blocks.

- **HAVE YOUR BUILDING SEWERS CHECKED.**

Faulty pipes connecting your home to the municipal sewer system can exacerbate foundation damage and flooding in your home. Ensure that grease, waste, or tree roots are not obstructing the pipe and preventing wastewater from leaving the house.

- **RECLAIM YOUR PARKWAY.**

The strips between sidewalks and streets can be transformed into attractive green spaces that absorb stormwater runoff, reduce municipal maintenance costs, and beautify streets. Be sure to check your municipal code for which plants are permitted.

- **GET INSURED.**

There are several options available to protect you against the risk of water damage, including home insurance policies, flood insurance riders, and the National Flood Insurance Program (NFIP), established by FEMA and administered by your local insurance companies.

- **ADVOCATE FOR THE RAINREADY PLAN.**

This plan outlines solutions to community wide flooding. Get involved in your local Steering Committee to make sure the plan is implemented!



GET INVOLVED!

Community leaders joined together in 2016 to form the RainReady Riverdale Steering Committee. The Committee will work to implement the RainReady Riverdale Plan by building an ongoing beautification and economic development effort. They are committed to investment in infrastructure improvements, improved transportation assets, complete streets, and community gardens across the Village. The Committee wants to preserve Riverdale's natural areas and bring new life to vacant areas. They are motivated to raise employment rates, increase the availability of healthy foods, and create more retail with TOD areas and infill. The Committee will also work to open lines of communication throughout the community.

RainReady Riverdale Steering Committee meets monthly!

For more information contact Rebecca Raines
at rraines@cnt.org or 773.269.2217.

VILLAGE OF RIVERDALE

COMMUNITY SNAPSHOT

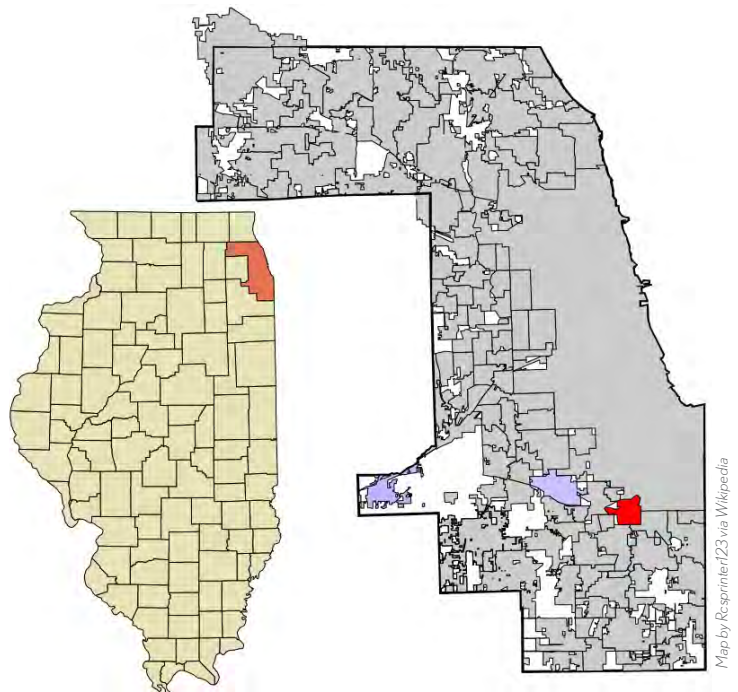
The Village of Riverdale is situated along the Little Calumet River about 16 miles south of Chicago's downtown. Riverdale shares borders with Chicago to the northeast, Dolton to the east and south, Harvey to the southwest, Dixmoor and forest preserves to the west, and Calumet Park to the northwest. The village is close to both I-57 and I-94 and is only 30-minutes from Chicago's loop by car, rail, and bus. The total land area of the village is 3.7 square miles.

In its earliest days, Riverdale was known as a final stopover on the Underground Railroad. After the turn of the century, the village began its rise to prominence as a manufacturing hub, providing jobs to residents throughout the region. The village population boomed in the 1960s, increasing from 1,500 to 12,000 in just 20 years. Today, the village's industrial legacy lives on through extensive railroad and industrial assets. Riverdale also has a strong history of tree stewardship having been a Tree City, U.S.A. for more than a decade. An active tree commission park district and volunteer stewards keep Riverdale's neighborhoods and natural areas green.

Like many of its neighboring communities, the Village of Riverdale experiences severe and repeated flooding. From 2007 to 2011, 3,362 flood-related insurance claims were filed, with more than \$8,073,673 paid out in damages (CNT, 2014). Flooding in Riverdale exacerbates existing challenges, such as maintaining older homes, economic divestment, and aging public infrastructure. On the other hand, efforts to mitigate Riverdale's flooding challenges can also support the community's broader economic development goals.



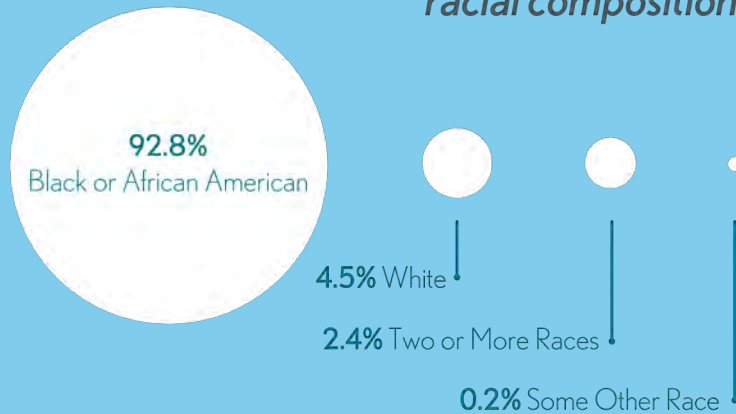
FIGURE RI-1:
Location of Riverdale within Cook County



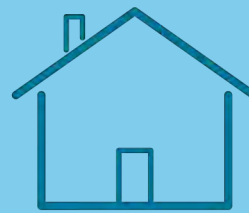
Riverdale, IL

AT A GLANCE

racial composition



13,278
total population

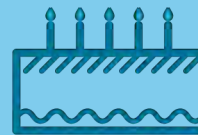


6,135
total number of households



88% of residents hold high school diploma

14% of residents hold college diploma



33
median age

Cook County \$54,828

Riverdale \$39,623

Cook County \$30,468

Riverdale \$18,140



per capita income



median household income



25%
people below poverty level



18%
unemployment rate (people age 16+)

Data Source: US Census

Flooding Risks and Resilience Opportunities

Residents and business owners in Riverdale experience several types of flooding:

- **Basement backup** from the local sewer system and damaged private lateral lines, impacting several parts of town
- **Street flooding**, which occurs when local drainage systems are overwhelmed with stormwater and sewage causing water to pool in the street
- **Foundation seepage** in several areas of Riverdale, causing rot and mold in basement walls

Areas with higher flooding risk are shown in Figure RI-8. Proposed flooding solutions are also shown on this map. These “green-grey” solutions were identified through a community-driven and analytically-rigorous process. The result is a plan that works, both in terms of its community support and physical and economic feasibility.

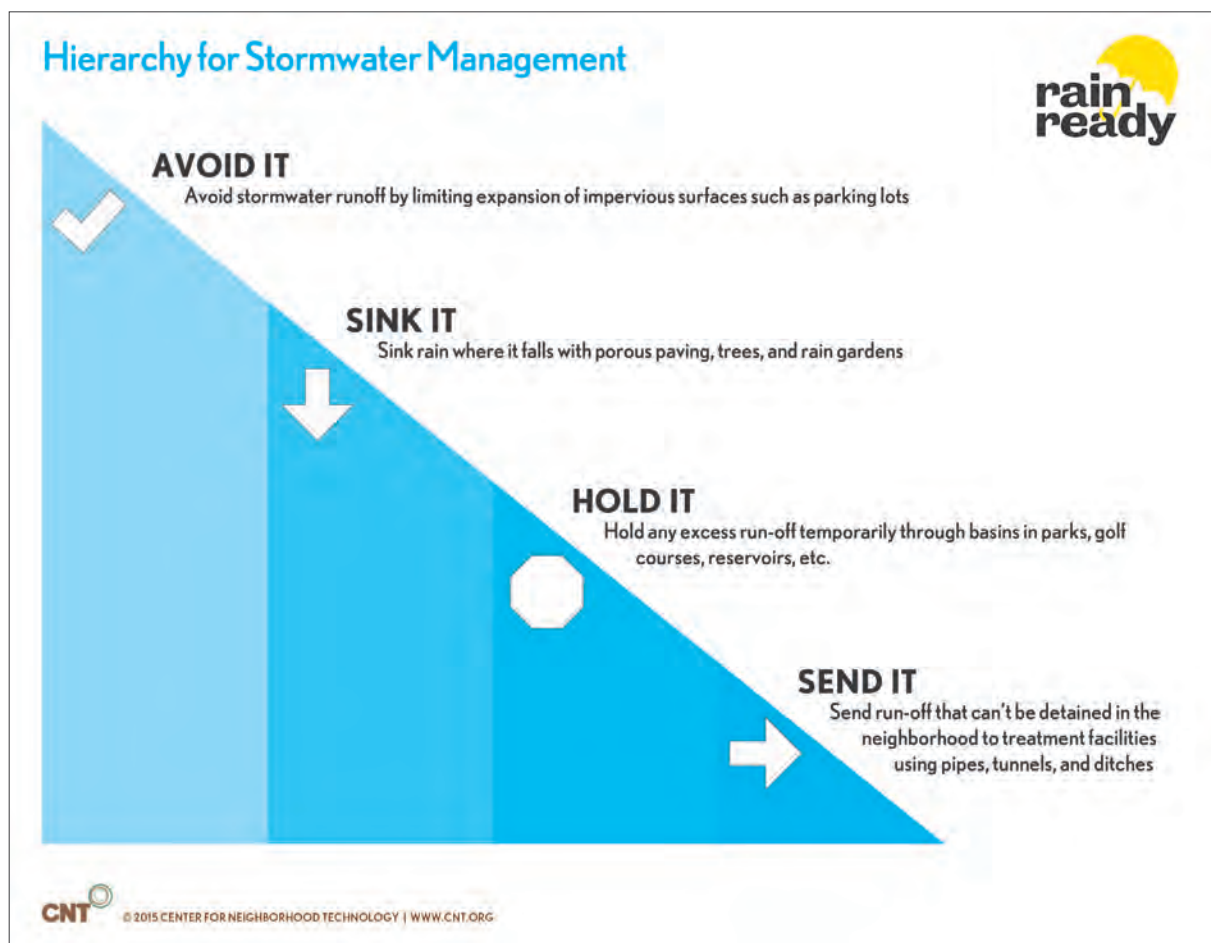


FIGURE RI-2:
Hierarchy for Stormwater
Management

Key findings from this Flooding Risk and Resilience Opportunity assessment are presented here. This risk and opportunity assessment provided the foundation for the strategies and recommendations presented in the RainReady Action Plan for Riverdale.

Four main factors contribute to flooding in Riverdale:

INCREASING IMPERVIOUS SURFACES

As Riverdale developed over time, natural lands were converted to buildings, parking lots, streets, and other “impervious surfaces.” The increase in impervious surfaces resulted in fewer open areas for rainwater to sink into the ground. As Riverdale takes steps to redevelop certain commercial and industrial areas (e.g., the Riverdale Prairie Industrial site, TOD areas, etc.), efforts should be made to manage any additional stormwater runoff from any new developments as well as reduce runoff from existing impervious surfaces.

AGING AND LIMITED SEWER INFRASTRUCTURE

Riverdale appears to have a well distributed storm sewer network. However, the general flatness of the network combined with sparse drainage points can cause water to pond in streets and public spaces (see Figure RI-3). Many alleyways are in disrepair and lack adequate storm drains, often causing nearby homes to flood. MWRD’s massive reservoir system, TARP, appears to connect with the Riverdale system northwest of the railroad tracks near Forestview and Perry Avenues. The rest of village sewers drain toward Indiana Ave or 146th St. As sewer systems age, pipes may collapse causing local drainage issues. Residents report widespread basement back up and flooded manholes during storms, suggesting that there may be maintenance issues within the municipal sewer lines. Riverdale should document, inspect, rehabilitate (where necessary), and maintain their municipal sewer and drainage systems so as to bring it up to a state of good repair.

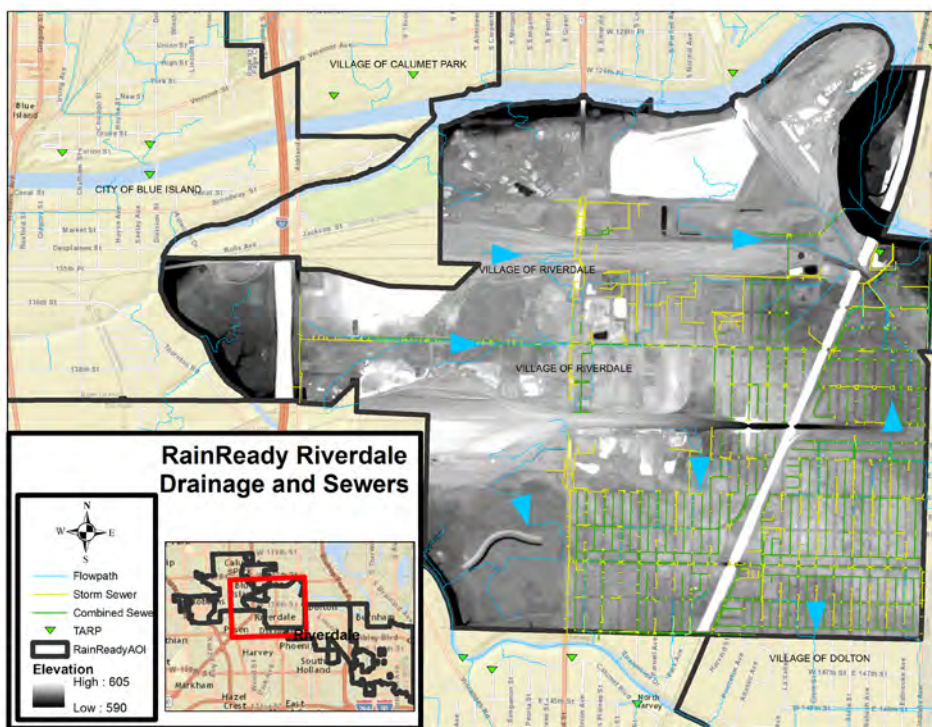


FIGURE RI-3:
Riverdale Drainage and
Sewer Map



MORE SEVERE STORMS

Climate change is bringing more frequent, high-intensity storms to the region. In light of this, Riverdale should not only prepare for storms like the one that occurred in April 2013, but also much larger and more frequent storms, and more variable weather (e.g., intense storms followed by long droughts, more freeze/thaw cycles). Riverdale should also equip their residents, municipal staff, and elected officials with the knowledge and resources needed to prepare for, mitigate, and recover from future storms—both large and small.

FLAT TOPOGRAPHY

Since stormwater is largely directed via gravity, Riverdale’s flat topography creates challenges for moving the water out of neighborhoods. Riverdale’s natural topography is extremely flat, with an overall slope on the order of 1/10 of 1% (~0.15%). Most of the elevation changes are actually manmade features like railroad embankments and bridges. Rain that falls in Riverdale drains to the Little Calumet River to the north, west and south, depending on the ridges created by the railroad embankments. For example, the IHB railroad located just south of 140th Street divides the village into two main catchments: the area north drains to the lower Little Calumet River (i.e., the River along Riverdale’s northern border) and the area to the south drains to the lower Little Calumet River (i.e., the River along Riverdale’s southern

border). However, east of the Metra rail line, there is a low section at Michigan Avenue that allows stormwater to flow north/south across the 140th Street/railroad division.

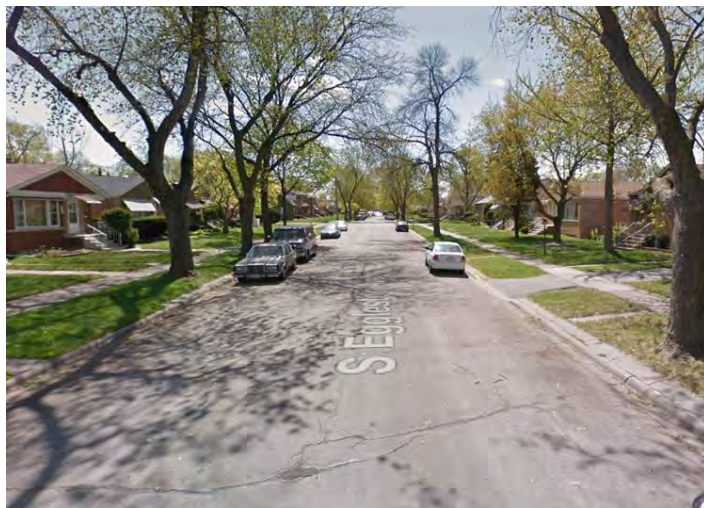


FIGURE RI-4:
Typical residential street in Riverdale, Illinois

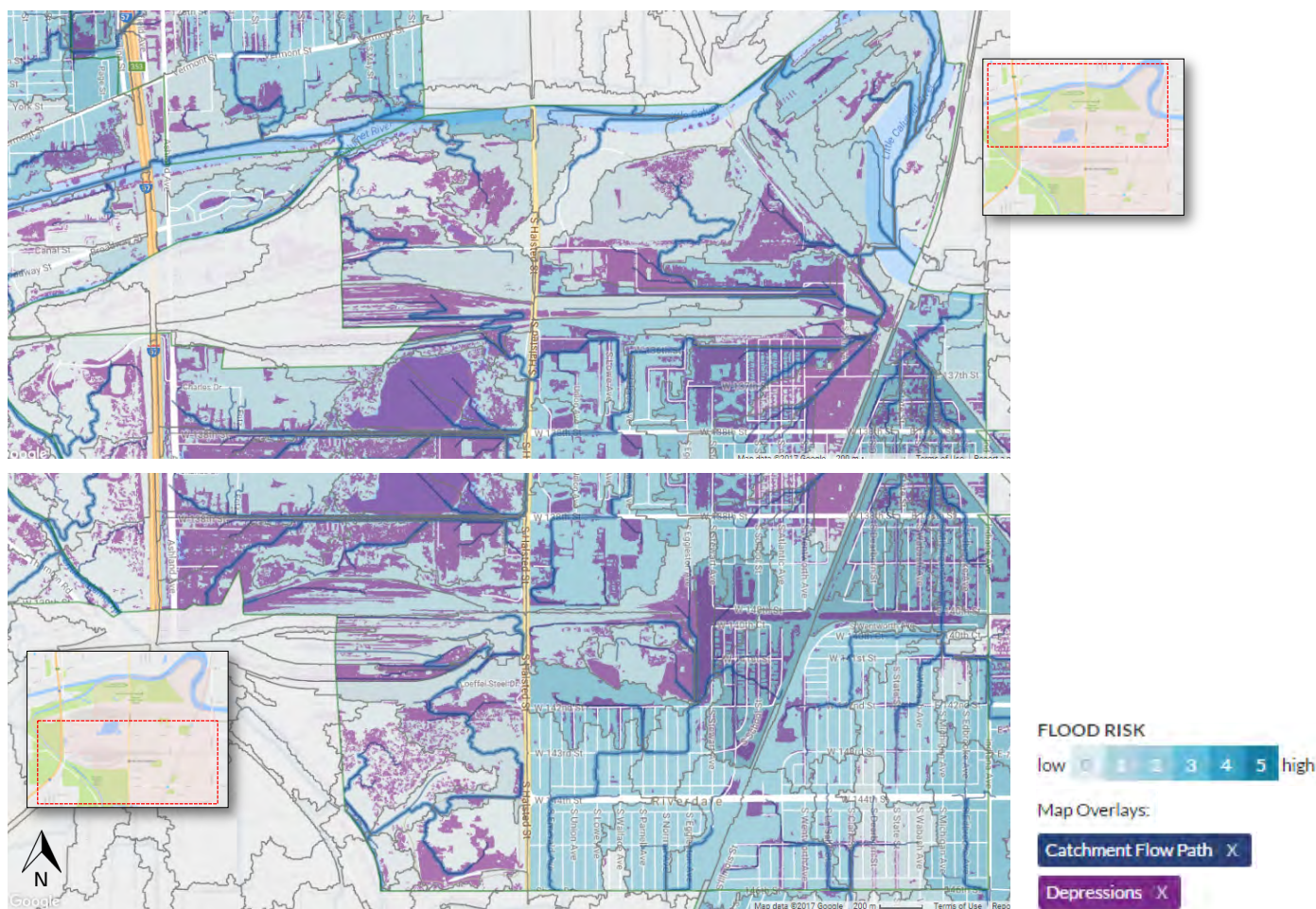


FIGURE RI-5:
Riverdale Urban Flooding Risk Assessment

These overland flow path and depression area maps show where stormwater is likely to flow and accumulate, or pool, in Riverdale. These maps are based on high-resolution digital elevation models (DEMs) derived from Light Detection and Ranging (LiDAR) technology.

Although LiDAR provides very detailed information on land cover and topography, there are several factors that may result in discrepancies between these maps and how stormwater actually flows through a community (e.g., small landscape features like gutters, curbs, small hills that route water, which may not have been picked up in our flow path analysis). Also, each community has a sewer and drainage system that is designed to intercept and manage stormwater. Our team modelled the flow of stormwater over the landscape as if local sewer systems are at full capacity and could not handle any additional flows. In other words these maps only show the overland flow paths and accumulation of stormwater and do not factor in the underlying sewer network.

In spite of these limitations and assumptions, these maps represent a good approximation of how stormwater is likely to flow and accumulate in the Calumet Corridor. These maps were used alongside other information on flooding risk and solution opportunities to determine where green infrastructure retrofits could alleviate local flooding issues. This information informed each community's action plan.

FIGURE RI-6:
Previous Plans of Riverdale

Name	Lead(s)	Year Completed / Status	Focus
Stormwater Master Plan Project for the Little Calumet River/Cal-Sag Channel Drainage Area: Problem Area Concept Memo (Northeast Riverdale #16)	MWRD, Arcadis	2016	Watershed/ Stormwater Management
Riverdale Wetland Delineation Report	MWRD, Kabbes Engineering, Inc.	2016	Watershed/Stormwater Management
Riverdale Comprehensive Plan	Village of Riverdale, RATIO, Hancock, DCI	2014	Comprehensive
Riverdale Active Transportation Plan	Active Transportation Alliance	2011	Transportation
Lake Riverdale Calumet Waterfront Sustainable Development Plan	Hitchcock Design Group	2010	Various: Economic Development, Green Infrastructure, Transportation
Various site proposals, master plans, and studies	--	--	--

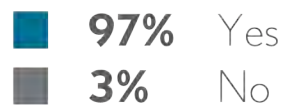
The following section summarizes what we heard from Riverdale residents, municipal staff, and elected representatives through the RainReady planning process as well as what we gathered from previous plans completed for the Village (see Figure RI-6). To make this information easier to digest, we organized it into community strengths, concerns, and land-based opportunities (i.e., planning priorities and capital projects) that apply to: 1) your homes and neighborhoods; 2) your business districts and shopping centers; 3) your industrial centers and railroad corridors; and 4) your open space and natural areas. We also created a community asset map to prompt ideas about how Riverdale's RainReady Action Plan can strengthen and build on existing community assets.



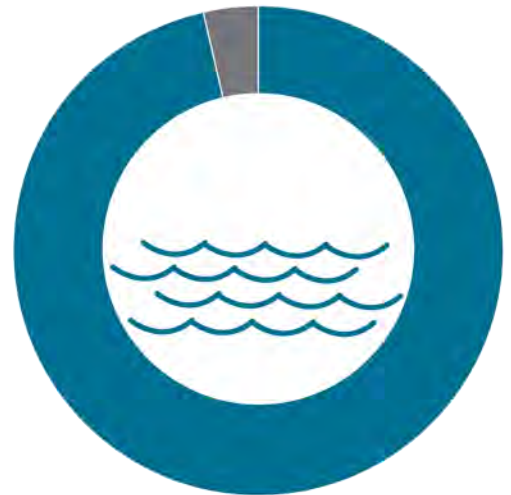
RainReady Riverdale COMMUNITY SURVEY

Respondents experiencing flooding problems

Respondents who answered "Yes, I experience problems" and "I do not experience problems anymore" were grouped into the "Yes" category because both sets of respondents experience ongoing flooding problems or have experienced problems in the past, respectively.



87 survey
respondents

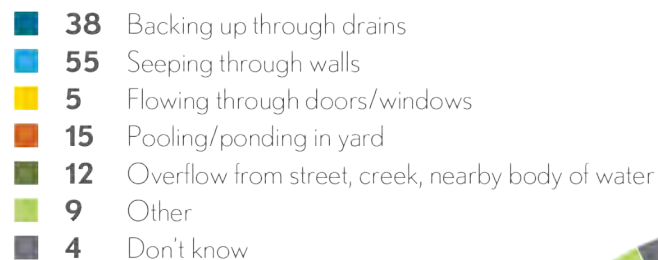


\$4,109 is the average amount spent on stormwater-related repairs

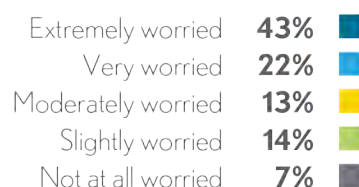
\$1,533 is the average amount residents are willing to invest to reduce risk of future damage

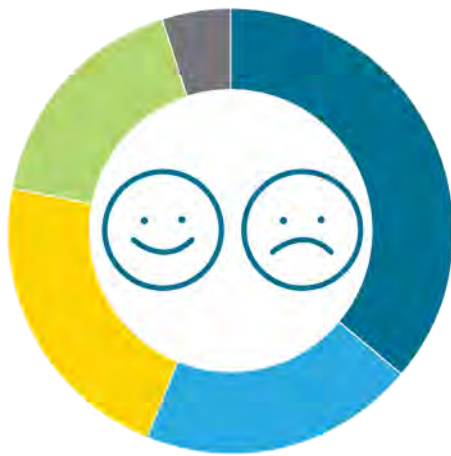


How does water enter properties?



What is the level of worry about flooding's impact on property value?



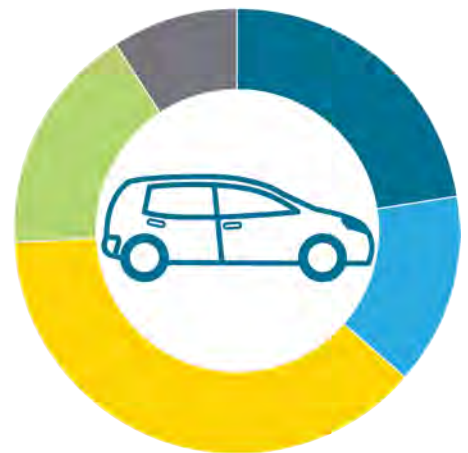


How much do heavy rains impact quality of life?

38%	A great deal
21%	A lot
23%	A moderate amount
18%	A little
5%	Not at all

How much do heavy rains impact commute or other travel?

A great deal	23%
A lot	14%
A moderate amount	38%
A little	17%
Not at all	9%



What is the preparedness of the community to work together to find a solution?

17%	Extremely prepared
10%	Very prepared
17%	Moderately prepared
20%	Slightly prepared
36%	Not at all prepared



How effective will local government officials be in addressing flooding issues?

Extremely well	5%
Very well	8%
Moderately well	11%
Slightly well	18%
Not at all well	58%



Data Source: CNT Survey, 2016

YOUR HOMES AND NEIGHBORHOODS



COMMUNITY STRENGTHS

- Access to regional greenways (e.g., the Major Taylor Trail and the forthcoming Cal-Sag Trail)
- Residential areas are close to two Metra stations
- Good access to neighborhood parks (managed by the Riverdale Park District)
- Local community groups that encourage an ethic of land stewardship (e.g., volunteer stewards in the Forest Preserves, the Riverdale Tree Commission, Riverdale Tree Buddies youth program)
- Easy to access Chicago by all means of transportation (car, train, bus)
- Gridded street layout and uniform shape will simplify the installation of Green Infrastructure Best Management Practices (GI BMPs)
- See Community Asset Map (Figure RI-7)

COMMUNITY CONCERNS

- Flooding!
- Low property values
- Lack of opportunities for youth
- Older homes in need of repair
- Population has decreased by 5,000 (about 10%) in last 20 years to around 13,536
- Difficult to get around without a car
- Concern that the constant flow of trains through residential areas are contributing to cracks in the foundations of homes, especially homes in close proximity to the tracks
- See Riverdale Urban Flooding Risk Assessment (Figure RI-5)



LAND-BASED OPPORTUNITIES (PLANNING PRIORITIES AND CAPITAL PROJECTS)

Previous (and concurrent) plans have called for:

- Creating a diversity of housing types (e.g., single-family detached/attached, multifamily)
- Offering multi-generational housing (e.g., post-school, family, senior, retirement)
- Matching the available housing with potential residents' and home-buyers' preferences (e.g., housing type, affordability, proximity to transit and neighborhood amenities)
- Encouraging multi-family rental units, where underrepresented in the community, and are taxed as commercial property with focus around Metra Stations
- Focusing on the development of affordable and subsidized multifamily housing within or approximate to the blighted neighborhoods
- Add landscaping and greenery to soften the appearance of vacant and blighted properties
- Working with CMAP Local Technical Assistance Program (LTA) to conduct a detailed residential, commercial, and

Transit-Oriented Development (TOD) tax study in Riverdale

- Balancing the need for traffic flow with the desire to create a pedestrian-friendly environment and access to adjacent development
- Encouraging medium to high density mixed-use buildings near the Ivanhoe Metra station

Here are some ideas that were uncovered through the RainReady planning process:

- Cook County proposed a Riverdale 'Complete Communities' (i.e., revitalization of residential, industrial, commercial areas and properties and improvements to open space and public right-of-way for flood mitigation, economic redevelopment, and community enhancement) project for Riverdale through the National Disaster Resilience Competition (NDRC)
- Cook County recently contributed Community-Development Block Grant-Disaster Recovery (CDBG-DR) funds to the Sewer Separation/Flood Relief Project in the Northeast neighborhood
- It may be possible to "upzone" certain residential areas (e.g., TOD areas, residential areas near/along key commercial corridors), to allow for the conversion of single-family detached housing into single-family attached housing and multifamily housing

YOUR BUSINESS DISTRICTS AND SHOPPING CENTERS



COMMUNITY STRENGTHS

- Riverdale has land and properties within its commercial corridors (144th Street, 138th Street, Indiana Avenue) and TOD areas that are available for redevelopment
- Riverdale is 30-minutes from Chicago's Downtown from car, train, and bus
- A desire amongst residents to use their purchasing power to support local businesses
- The Ivanhoe Metra station maintains strong ridership rates to Downtown Chicago
- Historic commercial buildings that could be restored and adapted for a new use
- See Community Asset Map (Figure RI-7)

COMMUNITY CONCERNS

- High vacancy rates along commercial corridors
- Inadequate foot traffic in commercial corridors to sustain local businesses
- The nearby Kensington and Homewood stations attract Riverdale's would-be "park and ride" patrons from the Ivanhoe Metra Station
- Riverdale's Metra Stations are perceived as unsafe
- High taxes
- See Riverdale Urban Flooding Risk Assessment (Figure RI-5)



LAND-BASED OPPORTUNITIES (PLANNING PRIORITIES AND CAPITAL PROJECTS)

Previous plans have called for (goals and strategies):

- Redeveloping vacant and/or under-utilized property for new commercial, or multi-family uses (balance the tax base in the community and provide tax relief for residents)
- Working with the Riverdale Chamber of Commerce and SSMMA to support and retain existing businesses
- Encouraging mixed-use development within Riverdale’s TOD areas
- Attracting new businesses and major employers by promoting attractive land/building packages and favorable taxes and strengthening and supporting existing retail to foster vibrant active environments
- Allowing/providing assistance for appropriate additions to existing housing stock to make them more appealing
- Attracting new tax base through new residents
- Using intermediary entity (e.g., South Suburban Land Bank Association) to purchase and turn-around foreclosed properties to the market
- Initiating more aggressive code enforcement including an unwholesome environment ordinance
- Encouraging mixed-use development with proximity to Metra stations to provide opportunities for restaurants, small

- retail, and cafes to strengthen commercial services offered within the community
- Identifying target investment zones with priority land uses and economic tools
- Designating a point person within Village government that coordinates economic development, funding, redevelopment, code enforcement, building codes, and community development activities so that residents and potential investors may help support redevelopment
- Forming partnerships with Metra to coordinate infrastructure and transportation improvements, including upgrades to the Ivanhoe and Riverdale Metra station
- Improving 144th Street Corridor, the intersection of 138th Street and Halsted Avenue
- Creating strong pedestrian connections to Metra stations and other amenities
- Developing a Halsted/138th Commercial Center

The TOD area around the Riverdale Metra station (especially along 138th Street and 137th Street) offers potential for a new housing and business development.

YOUR INDUSTRIAL CENTERS AND TRANSPORTATION CORRIDORS

Photos: Google Street View



COMMUNITY STRENGTHS

- Close proximity to Chicago
- Access to Metropolitan Chicago via a variety of transportation modes (e.g., Metra, local roads, nearby highways)
- Global and regional trends in manufacturing, freight, and supply chains, may bring renewed interest in Riverdale's available industrial lands and logistics resources
- Riverdale has two railroads: Indiana Harbor Belt Railroad and CSX Transportation
- See Community Asset Map (Figure RI-7)

COMMUNITY CONCERNS

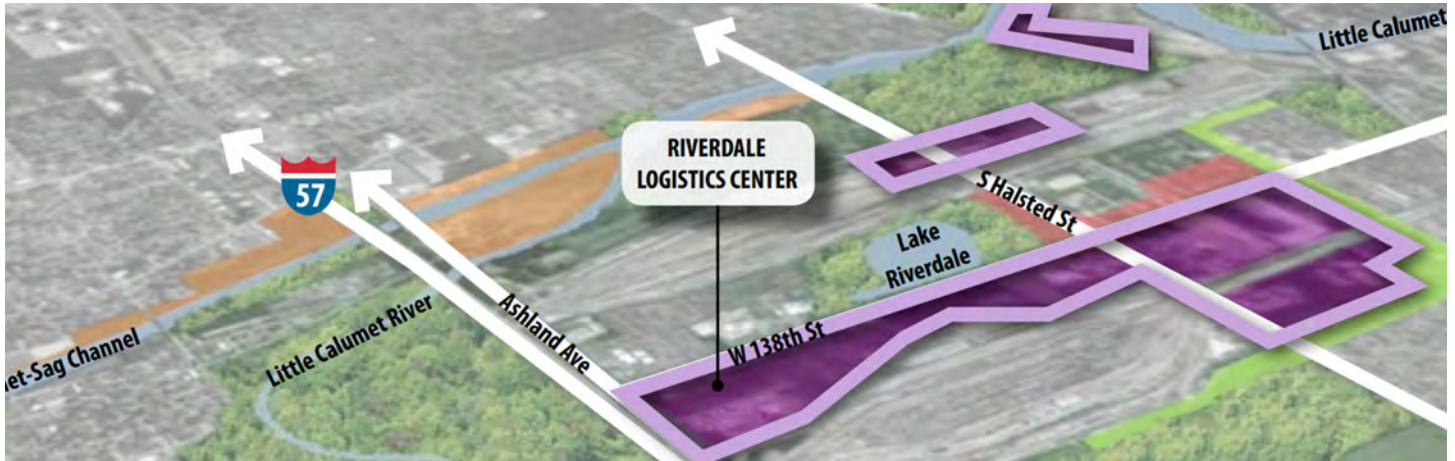
- Frequency of freight shipping and design of railroad crossings (i.e., at-grade crossings) cause severe traffic delays throughout the day along Indiana Avenue
- Some residents expressed concerns over the abundance of brownfields and potential environmental contaminants due to industrial operations

- Concerns that the constant freight traffic is causing cracks in the foundations of homes, especially homes in close proximity to the railroad tracks
- See Riverdale Urban Flooding Risk Assessment (Figure RI-5)

LAND-BASED OPPORTUNITIES (PLANNING PRIORITIES AND CAPITAL PROJECTS)

Previous plans have called for (goals and strategies):

- Identifying and remediating brownfields
- Modernizing existing facilities
- Increasing the non-residential tax base through the transition of underutilized industrial property into better performing residential, retail and employment related uses
- Working with the Riverdale Chamber of Commerce and SSMMA to support and retain existing industrial businesses such as ArcelorMittal and IHB Railroad and commercial businesses such as CVS



- Leveraging Riverdale's competitive advantages (e.g., regional location, rail assets) to drive commercial/industrial growth with a focus on rail and cargo accessory industries, or Cargo-Oriented Development (COD)
- Identifying public private partnership (P3) opportunities.
- Providing assistance with parcel assemblage in key redevelopment areas so as to create large-enough sites for existing and new industrial business
- Creating a COD rail-served industrial park on a currently vacant 45-acre site adjacent to the IHB Railroad (the site is southeast of the intersection of South Halsted Avenue and South Wallace Avenue and bounded by the ComEd right of way (ROW) to the east and south). The IHB Railroad would provide rail access to the site and would be an active participant in finding end users for the site. The project would add to the feasibility of a proposed storage-in-transit facility that would operate in conjunction with the industrial park. Estimated development investment for the industrial park is \$40 million. The related project of a storage-in-transit yard would be another \$25 million.

- Creating a regional stormwater management system that includes: an "eco-boulevard" (AKA industrial complete street) on 138th Street, regional detention ponds in underutilized industrial areas, a bioswale and multi-use trail along the ComEd ROW, a greywater reuse system
- Creating a Riverdale Logistics Center

The Village recently demolished the abandoned granary silo (2014) and is in the process of assembling land and completing the necessary studies to make the site shovel-ready.

The Village has partnered with the SSMMA to implement Phase I, Phase II, and brownfield remediation projects at various sites in the past, this partnership should be maintained.

YOUR OPEN SPACE AND NATURAL AREAS



COMMUNITY STRENGTHS

- Close access to numerous neighborhood parks and forest preserves
- Riverdale was recognized as a Tree City USA community for eleven years
- A new boat launch was recently constructed at Kickapoo Woods
- Volunteer stewards are actively engaged in ecological restoration work at Kickapoo Meadows and Whistler Woods
- See Community Asset Map (Figure RI-7)

COMMUNITY CONCERNS

- Previous plans and residents alike have called for improved walkability throughout the Village and better connectivity between parks, schools and forest preserve property
- There is a need for better signage and access to the Forest Preserves in Riverdale
- See Riverdale Urban Flooding Risk Assessment (Figure RI-5)



LAND-BASED OPPORTUNITIES (PLANNING PRIORITIES AND CAPITAL PROJECTS)

Previous plans have called for (goals and strategies):

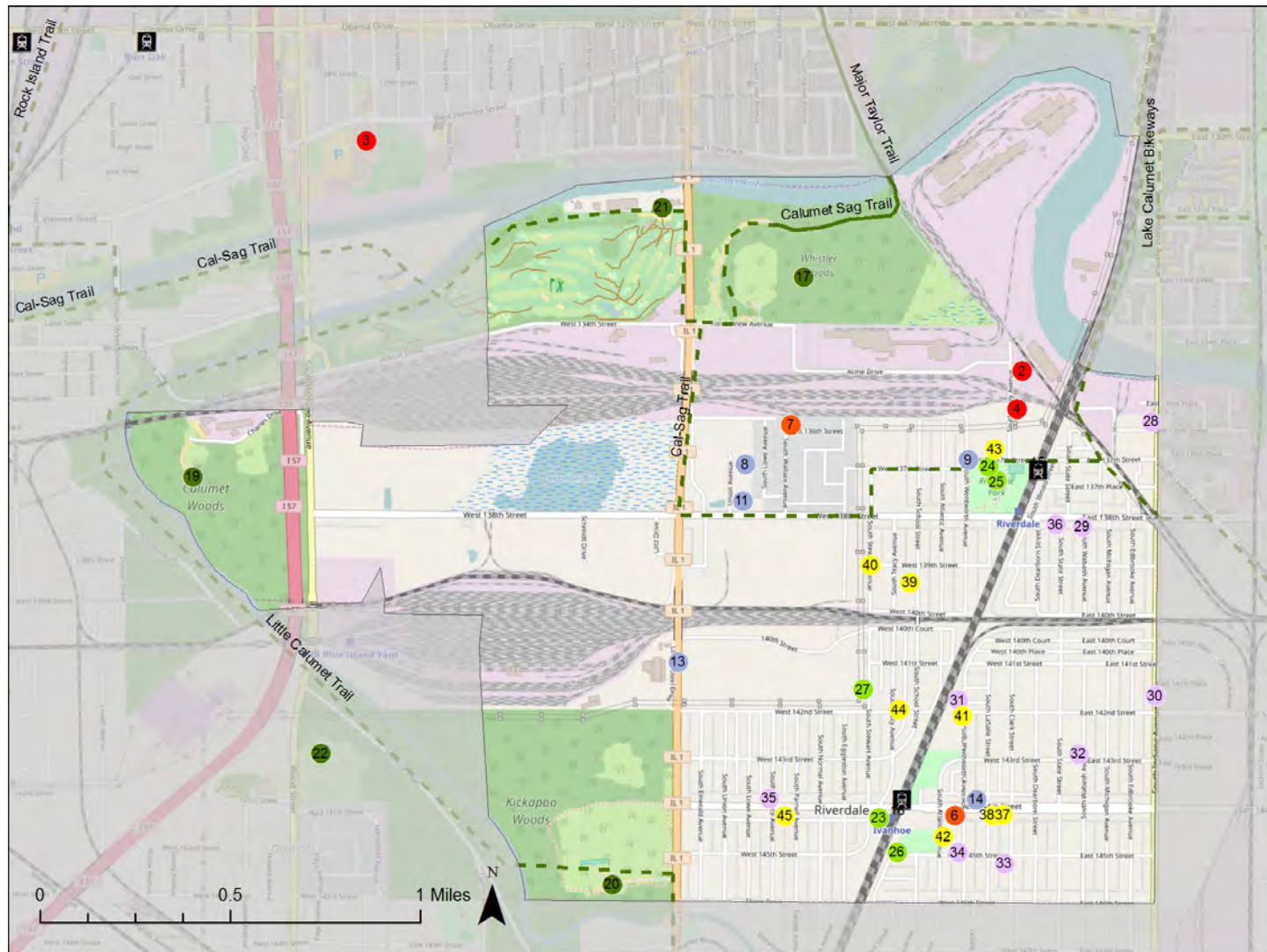
- Ensuring the continuance of service and access to active and passive use parks and trails as a key component of Riverdale's quality of life
- Providing additional open space in areas not currently served
- Increasing programming, upgrading equipment, and continuing maintenance levels
- Encouraging enhanced connectivity by utilizing open space corridors
- Enhancing uses and amenities within parks by forming partnerships within the community
- Increasing the number of volunteer stewards in the local Forest Preserves (e.g., Kickapoo Meadows)
- Creating a Riverdale Urban Farm Cooperative; this public/private cooperative would work with ComEd to develop a long term lease arrangement that allows the use of the right-of-way under the power lines to be used as an urban farm

- Stabilizing the shoreline and enhancing natural areas along the Little Calumet River
- Creating naturalized regional detention basin and constructed wetlands

Here are some ideas that were uncovered through the RainReady planning process:

- The Village of Riverdale, SSMMA, MWRD, Friends of the Chicago River, CNT/RainReady, Fresh Coast Capital and other partners are currently in the process of developing a plan for the Lake Riverdale site that builds on previous plans for the area and responds to site conditions and limitations
- The Our Great River's plan outlined several (vision-level) recommendations for Riverdale including: completing Riverdale's portion of the Cal-Sag Trail; constructing new trails (e.g., a trail under the ComEd power lines and new trails that follow the banks for the Little Calumet River through the Forest Preserves; the preservation and restoration of the Lake Riverdale as a natural area; the creation of a trail under the ComEd power lines
- Parks in flood-prone residential areas can be used to capture rainwater

COMMUNITY ASSETS



- Businesses
- Community Organizations
- Government Agencies
- Health Organizations
- Natural Areas
- Public Parks/Park Districts
- Religious Institutions
- Schools & Colleges
- Metra Stations

Greenways and Trails

- Existing
- - - Proposed

FIGURE RI-7:
Riverdale Community Assets

BUSINESSES

- 1 RoseBud Farm Stand
- 2 ArcelorMittal
- 3 Ultra Foods
- 4 ACME Continental Credit Union

COMMUNITY ORGANIZATIONS

- 5 People for Community Recovery
- 6 Riverdale Chamber of Commerce
- 7 Communities Creating Change

GOVERNMENT AGENCIES

- 8 Riverdale Fire Department
- 9 Riverdale Park District
- 10 Riverdale Police Department
- 11 Riverdale Post Office
- 12 Riverdale Public Library
- 13 Riverdale Public Works
- 14 Riverdale Village Hall

METRA STATIONS

- 15 Riverdale Metra Station
- 16 Ivanhoe Metra Station

NATURAL AREAS

- 17 Whistler Woods (FPDCC)
- 19 Calumet Woods (FPDCC)
- 20 Kickapoo Woods (FPDCC)
- 21 Joe Louis Golf Course (FPDCC)
- 22 Dixmoor Playfield (FPDCC)

PUBLIC PARKS/PARK DISTRICTS

- 23 Ivanhoe Park
- 24 Mohawk Park
- 25 Riverdale Park
- 26 Franson Park
- 27 Prairie Park

RELIGIOUS INSTITUTIONS

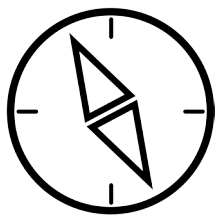
- 28 God's Promise Outreach Ministry
- 29 Shekinah Chapel
- 30 Christ Worship Center International
- 31 Riverdale Baptist Church
- 32 Ivanhoe Reformed Church
- 33 Ivanhoe United Methodist Church
- 34 Queen of Apostles Parish
- 35 New Name Missionary Baptist Church
- 36 Grace Bible Church

SCHOOLS & COLLEGES

- 37 Great Expectation Learning
- 38 Dolton School District 148
- 39 Washington School
- 40 General George Patton Elementary School
- 41 Park Elementary School
- 42 Queen of the Apostles School
- 43 District 133
- 44 Riverdale School
- 45 Dolton Early Childhood Center

COMMUNITY PRIORITIES

Listed below are the community priorities (organized into the ‘Three R’ categories) we heard from Riverdale residents, municipal staff, and elected representatives through the RainReady Planning Process. These community priorities were synthesized with the flooding risk and resilience opportunities assessment to develop Riverdale’s Action Plan.



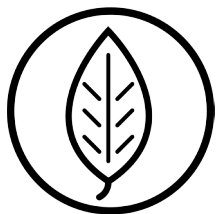
REORIENT

- Open better lines of communication throughout the community (e.g., between residents, and between residents and local government)
- Spur economic development and community beautification through infrastructure improvements, increased transportation, complete streets and community gardens
- Continue to cultivate a tight knit community by breaking down barriers between groups
- Attract organizations that provide basic services (e.g., senior center, youth center, social services agency)
- Create a residential improvement cost-share program to assist homeowners with flood mitigation and other improvements
- Create and execute an education program on private and public flood mediation steps for neighbors
- Complete a drainage to understand how water flows throughout the community and between land uses (e.g., industrial land, railroads, residential areas)



REPAIR (AND MAINTAIN)

- Create new jobs
- Develop and implement a green and grey infrastructure maintenance plan



RETROFIT

- Redevelop industrial sites, roads and vacant areas (e.g., the former H&H Granary Site, industrial complete street on Indiana Avenue, improve the edges of industrial sites, and install green infrastructure along the 138th Street Industrial Area)
- Revitalize commercial corridors with complete streets, new landscaping, and gathering places (e.g., 144th Street and 138th Street present great commercial complete street opportunities, and ample opportunity for commercial redevelopment at the intersection of Halsted and 138th Street)
- Attract new retail business to commercial corridors and TOD areas
- Improve access to healthy foods
- Beautify neighborhoods (install rain gardens on residential properties, home gardens—like those in Pullman, Beverly, gardens in front yards, medians, and parkways)
- Complete Riverdale’s portion of the Cal sag trail and improve local connections (via sidewalk and street improvements, wayfinding signage, etc.) to regional trails (e.g., Cal-Sag Trail, Major Taylor Trail, Calumet Water Trails)

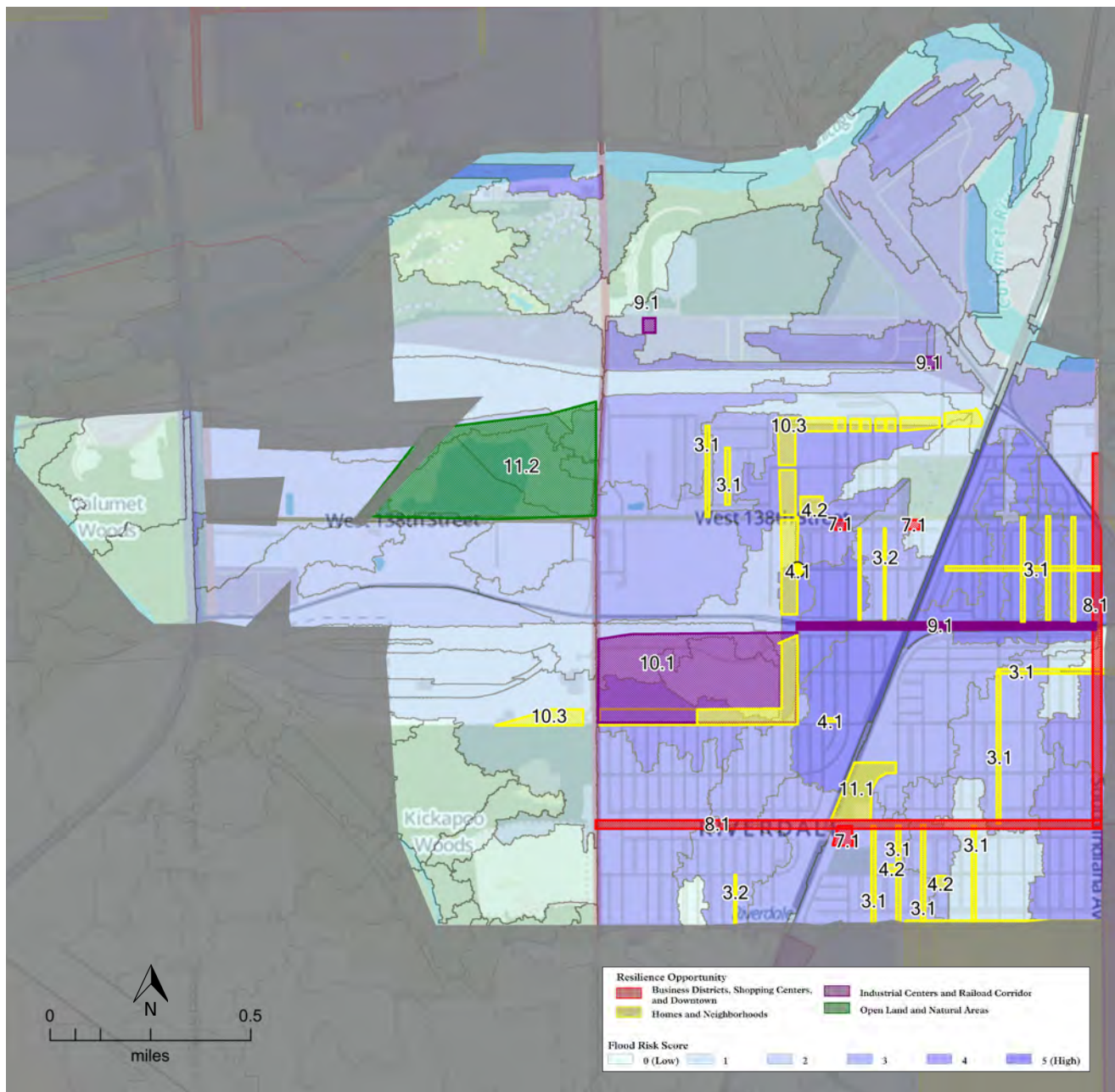


FIGURE RI-8:
Flood Risk and Resilience Opportunity in Riverdale

The map above overlays flooding risk with proposed “Retrofit” recommendations. The colors correspond to the part of town where the recommendation is to be applied and the numbers correspond with the Retrofit recommendations in the Action Plan. Some recommendations in the Action Plan apply community-wide and are not shown on the map.

This map identifies locations where various green infrastructure projects could be integrated into Riverdale’s community fabric (e.g., green streets along residential streets, commercial complete streets along commercial corridors, green schools, etc.). These locations were identified through a thorough

assessment of flooding risk (e.g., known problem areas, survey results, overland flowpaths, depression areas, and impervious coverage) and resilience opportunities (e.g., planning priorities, community assets, capital improvement projects) in Riverdale.

Riverdale should reference this map and the Action Plan to identify opportunities where green infrastructure retrofit projects could be integrated into forthcoming roadway improvements, planned developments, and other capital improvement efforts. This would ensure that future projects deliver multiple benefits, such as improved transportation and flood mitigation.

RAINREADY ACTION PLAN

Vision Statement

In a RainReady Riverdale, the Village's neighborhoods, commercial corridors, industrial areas, and natural lands will be connected and strengthen each other. Neighborhood flooding will be reduced through targeted investments in green and grey infrastructure and individual property retrofits, people will be connected to vibrant commercial corridors, inviting transit stops, and restored natural areas through safe and walkable complete streets and new trails, and revitalized industrial areas will not only create local jobs and ease the tax burden on residents, but will also reduce flooding in nearby neighborhoods. Leaders in RainReady Riverdale will continually improve the community by strengthening and leveraging the Village's unique mosaic of neighborhoods, industrial areas, transit, and natural lands, and building the capacity of its residents, municipal staff, and elected representatives to work together. A RainReady Riverdale will survive and thrive no matter what shocks and stresses may arise.



RainReady Goals



Reorient Riverdale so that the community is on a path toward resilience



Repair Riverdale's municipal sewer and stormwater drainage systems



Retrofit the built landscapes throughout Riverdale with green, grey, and green-grey infrastructure improvements, and restore natural landscapes

NOTE: This plan outlines a path forward toward a more resilient Calumet Corridor, but implementation of specific recommendations will have to occur at the local level. Adopting this plan demonstrates a local community's commitment to considering these recommendations during capital planning and decision-making efforts and implementing these recommendations as necessary resources become available. In many cases, the Village of Riverdale is already actively engaged in a given project or program recommendation. In other cases, additional resources (e.g., external grant funds, dedicated revenue, partnerships, etc.) will be necessary to advance a project or program. The following action plan outlines the actions and associated implementation steps, implementation priority, estimated timeline, and identified potential project leads and resources needed. Further analysis is needed to estimate the costs of most recommendations. The specific details may change as communities take action to advance a recommendation and as new information and opportunities emerge.



REORIENT

COMMUNITY-WIDE STRATEGIES FOR RIVERDALE

- **Strategy 1.** Build capacity to make well-informed decisions and execute them
- **Strategy 2.** Plan and implement projects collaboratively
- **Strategy 3.** Promote equitable and resilient development at all levels
- **Strategy 4.** Prepare your community for future shocks and stresses



REPAIR

COMMUNITY-WIDE STRATEGIES FOR RIVERDALE

- **Strategy 1.** Map and document your municipal sewer and stormwater drainage system
- **Strategy 2.** Inspect and evaluate your municipal sewer and stormwater drainage system
- **Strategy 3.** Rehabilitate your municipal sewer and stormwater drainage system
- **Strategy 4.** Maintain your municipal sewer and stormwater drainage system



RETROFIT

RETROFIT STRATEGIES FOR YOUR HOMES AND NEIGHBORHOODS

- **Strategy 1.** Implement a residential resilience program
- **Strategy 2.** Bring new life to vacant residential land
- **Strategy 3.** Create a network of residential green streets, green alleys, and complete streets
- **Strategy 4.** Create green schools and churches
- **Strategy 5.** Reduce widespread flooding in the Northeast Riverdale neighborhood through concentrated and integrated green (e.g., stormwater) and grey (e.g., transportation) infrastructure investments

RETROFIT STRATEGIES FOR YOUR SHOPPING AREAS AND BUSINESS DISTRICTS

- **Strategy 6.** Bring new life to Riverdale's commercial corridors and TOD areas
- **Strategy 7.** Bring new life to underutilized parking lots
- **Strategy 8.** Create a network of commercial complete streets

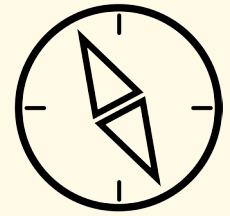
RETROFIT (RESTORE) STRATEGIES FOR YOUR INDUSTRIAL CENTERS AND RAILROAD CORRIDORS

- **Strategy 9.** Improve the edges of large industrial sites and railroad corridors
- **Strategy 10.** Redevelop industrial sites in a way that reduces nearby flooding

RETROFIT (RESTORE) STRATEGIES FOR YOUR OPEN SPACES AND NATURAL AREAS

- **Strategy 11.** Develop the Cal-Sag Trail and other outdoor recreational amenities
- **Strategy 12.** Integrate green infrastructure in Riverdale's park system

GOAL 1: REORIENT



COMMUNITY-WIDE RECOMMENDATIONS

STRATEGY 1:

BUILD CAPACITY TO MAKE WELL-INFORMED DECISIONS AND EXECUTE THEM

RECOMMENDATION 1.1

Adopt/Accept the RainReady Riverdale Action Plan; Update the plan every 2-5 years; Incorporate the plan's recommendations into forthcoming capital improvement planning efforts and decision-making efforts.

Where: Community-wide

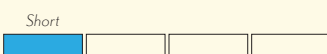
How: Participate in the RainReady community planning process (completed); convene a steering committee consisting of residents, municipal staff, and elected representatives (completed); propose and adopt at a Village Board Meeting in early 2017

How much: \$104,000 (this cost has already been paid for by Cook County)

Who leads: CNT/RainReady (for initial plan); Village of Riverdale (for adoption and plan updates)

Resources needed: Internal and/or external funding and technical assistance for plan updates

PRIORITY: 

PHASING: 

RECOMMENDATION 1.2

Engage in regional and local planning and coordination efforts

(e.g., the Calumet Stormwater Collaborative, Millennium Reserve, CMAP's Comprehensive Regional Plans, SSMMA's various committees).

Where: Community-wide

How: Read and continually reference stormwater-related resources; align local strategies with regional initiatives to increase access to funding and technical assistance

How much: Varies

Who leads: The Village of Riverdale and regional organizations/coalitions like CMAP, SSMMA, CSC, CHP

Resources needed: Internal: the Village assigns this task to a staff person; External: the SSMMA could hire a stormwater/resilience-focused staff person to serve this role for all communities in their service area (proposed)

PRIORITY: 

PHASING: 

RECOMMENDATION 1.3

Incorporate best practices data management and stormwater planning for local governments (e.g., continual process improvement, performance management, program evaluation, monitoring, ongoing collection and dissemination of useful data, open data and civic hacking).

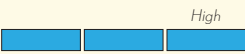
Where: Community-wide

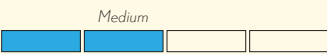
How: Create a system to collect, manage, and analyze data on water-related complaints and adopted solutions (e.g., type and source of flooding, damage costs, improvements made to property); partner with research institutions to install sensors that will monitor the performance of green infrastructure installations

How much: There will be initial costs to set up these systems, but these improvements could pay for themselves over time through increased operational efficiencies and improved outcomes

Who leads: Village of Riverdale, regional 311 Call Center/Service (proposed-this does not exist yet), SSMMA

Resources needed: Internal: General Fund; External: IDNR Coastal Management Program Grants, partnerships with research institutions (e.g., colleges/universities, Argonne National Labs, CNT, UI Labs)

PRIORITY: 

PHASING: 

STRATEGY 2:

PLAN AND IMPLEMENT PROJECTS COLLABORATIVELY

RECOMMENDATION 2.1

Sustain the RainReady Riverdale Steering Committee (SC) and engage these groups in the ongoing planning and implementation efforts.

Where: Community-wide

How: Continue to work with the RainReady team in early 2017 to get these groups off the ground

How much: Approximately 2-3 hours per month

Who leads: Village of Riverdale (e.g., community leaders, municipal staff, elected representatives), CNT/RainReady

Resources needed: CNT/RainReady (to start); ongoing collaboration is volunteer led

PRIORITY: 

PHASING: 

RECOMMENDATION 2.2

Incorporate updates on stormwater projects and other resilience-related topics into the Village's various communication channels.

Where: Community-wide

How: When appropriate, include stormwater and resilience-related updates in the "Public Works" section of official City communications

How much: Varies

Who leads: The Village of Riverdale, local media outlets

Resources needed: The Village of Riverdale (staff time)

PRIORITY: 

PHASING: 

RECOMMENDATION 2.3

Continue to coordinate (via the Illinois Public Works Association) with neighboring municipalities on stormwater-related planning and development projects, and the sharing of maintenance and emergency response equipment and services. Cross-jurisdictional coordination has been shown to reduce public costs, increase operational efficiencies, and improve/expand the delivery of municipal services.

Where: Community-wide and throughout the Calumet region

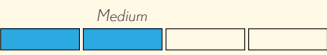
How: Where appropriate, pursue Intergovernmental Agreements (IGAs) with municipalities and other government agencies (e.g., MWRD, Cook County)

How much: The benefits of cross-jurisdictional coordination (e.g., reduced costs, improved response times) have been shown to outweigh the costs; therefore the investment of staff time in coordination efforts (e.g., approximately 5-10 hours/month) is a good investment

Who leads: Village of Riverdale, neighboring municipalities, MWRD, CSC, SSMMA, CMAP

Resources needed: Internal: the Village of Riverdale, or share costs (i.e., time) of participation with neighboring communities); External: the SSMMA could hire a stormwater/resilience-focused staff person to serve this function for all communities in their service area (proposed)

PRIORITY: 

PHASING: 

STRATEGY 3:
PROMOTE EQUITABLE AND RESILIENT DEVELOPMENT AT ALL LEVELS—FROM THE HOME TO THE REGION

RECOMMENDATION 3.1

Adopt (and comply with) current stormwater management requirements. Where feasible, improve local ordinances and building codes to promote resilient and equitable development.

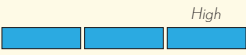
Where: Community-wide

How: Conduct an audit of your local ordinances to evaluate areas for improvement; pass common-sense policy changes/ updates; adopt an incremental and adaptive approach to implementing green infrastructure and other resilience-building projects (e.g., the Green Infrastructure Portfolio Standard)

How much: N/A

Who leads: The Village of Riverdale

Resources needed: The Village of Riverdale (staff time)

PRIORITY: 

PHASING: 

STRATEGY 4:
PREPARE YOUR COMMUNITY FOR FUTURE SHOCKS AND STRESSES

RECOMMENDATION 4.1

Educate the public on flooding risks.

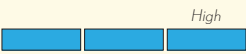
Where: Community-wide

How: Implement a public education program; partner with American Red Cross, FEMA, and other organizations that can provide disaster preparedness training; develop a Community Emergency Response Team (CERT)

How much: N/A

Who leads: The Village of Riverdale, disaster preparedness organizations/agencies (e.g., American Red Cross, FEMA)

Resources needed: Many of these trainings are free and participation is voluntary

PRIORITY: 

PHASING: 

RECOMMENDATION 4.2

Implement an Emergency Alert System that lets homeowners, businesses, and visitors know when a flood will likely occur.

Where: Community-wide

How: Establish a text-based system the alerts residents of flooding and other hazards

How much: N/A

Who leads: Village of Riverdale

Resources needed: Internal: General Fund; External: Grants targeted for emergency alert systems and capacity-building (e.g., IDNR Coastal Management Program Grants U.S. Economic Development Administration funding opportunities)

PRIORITY: 

PHASING: 

RECOMMENDATION 4.3

Ensure that at least one Village staff person (or a consultant who does work on behalf of the Village) has one or more the following certifications: Certified Floodplain Manager (CFM), National Green Infrastructure Certification Program (NGICP), LEED-ND.

Where: Community-wide

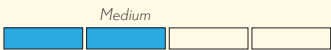
How: Incentivize the appropriate staff person (e.g., reimburse the costs) to earn and maintain certifications or require that Village contractors and consultants involved with land development have these certifications

How much: Varies depending on certification(s)

Who leads: The Village Engineer

Resources needed: Internal: General Fund

PRIORITY: TBD LOCALLY

PHASING: 

GOAL 2: REPAIR



COMMUNITY-WIDE RECOMMENDATIONS

STRATEGY 1:

MAP AND DOCUMENT YOUR MUNICIPAL SEWER AND STORMWATER DRAINAGE SYSTEM

RECOMMENDATION 1.1

Ensure that Riverdale has up-to-date sewer atlas information and a system for documenting information on the conditions of the overall system, specific elements (e.g., catch basins, curbs), and flooding problem areas.

Where: Community-wide

How: Continue to update this information and share it through SSMMA's GIS consortium (and other regional data-sharing portals) to facilitate more streamlined inter-jurisdictional stormwater planning efforts

How much: N/A

Who leads: The Village Engineer, SSMMA

Resources needed: Internal: the General Fund, Water Fund

PRIORITY: 

PHASING: 

STRATEGY 2:

INSPECT AND EVALUATE YOUR MUNICIPAL SEWER AND STORMWATER DRAINAGE SYSTEM

RECOMMENDATION 2.1

Develop and implement a comprehensive inspection program

(e.g., visual inspection, closed circuit television inspection) to regularly assess the condition of Riverdale's municipal sewer system (e.g., manholes, catch basins, sewers).

Where: Community-wide (inspect known problem areas first)

How: Establish a feasible, continuous, and cyclical inspection schedule (e.g., televise 10% of the sewers for 10 years, then repeat); use Riverdale's Urban Flooding Risk Assessment to identify and prioritize known flooding problem areas)

How much: N/A

Who leads: The Village Engineer

Resources needed: Internal: the General Fund, Water Fund, TIF Funds (where appropriate), External: CDBG, DCEO, IEPA State Revolving Loan Fund, USACE Section 219

PRIORITY: 

PHASING: 

STRATEGY 3:

REHABILITATE YOUR MUNICIPAL SEWER AND STORMWATER DRAINAGE SYSTEM

RECOMMENDATION 3.1

Improve the drainage and conveyance of stormwater drainage system in the Northeast Neighborhood through the Sewer Relief Project.

Where: The Northeast Neighborhood

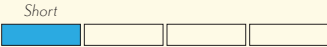
How: Complete preliminary engineering designs and other project enabling activities; apply for external grants funds to fill any gaps between the project's costs and Cook County's CDBG-DR grant; construct the project (integrate green infrastructure wherever feasible)

How much: TBD

Who leads: The Village Engineer, Cook County, MWRD

Resources needed: External: MWRD (for high-level plan); Cook County/CDBG-DR (for PE costs); MWRD, Cook County, and Riverdale (for construction costs); other sources: CMAP's LTA program, HUD CDBG, IDNR Coastal Management Program Grants

PRIORITY: 

PHASING: 

RECOMMENDATION 3.2

Repair major sewer defects, such as collapsed sewers, identified through the inspection program (see Recommendation 2.1).

Where: Targeted repairs in known problem areas

How: Complete +/- 5 repairs per year

How much: TBD

Who leads: The Village Engineer and Public Works Department

Resources needed: Internal: the General Fund, Water Fund, TIF Funds; External: CDBG, DCEO, IEPA State Revolving Loan Fund, USACE Section 219

PRIORITY: 

PHASING: 

RECOMMENDATION 3.3

Line deteriorated sanitary sewer mains observed by the inspection program (see Recommendation 2.1).

Where: Community-wide (inspect known problem areas first)

How: Line sewers in known problem areas; aim to line 3% of the sewers per year

How much: TBD

Who leads: The Village Engineer and Public Works Department

Resources needed: Internal: the General Fund, Water Fund, TIF Funds (where appropriate), External: CDBG, DCEO, IEPA State Revolving Loan Fund, USACE Section 219

PRIORITY: 

PHASING: 

STRATEGY 4: MAINTAIN YOUR MUNICIPAL SEWER AND STORMWATER DRAINAGE SYSTEM

RECOMMENDATION 4.1

Develop and follow a comprehensive maintenance plan describing how all green, grey, and green-grey infrastructure systems will be maintained.

Where: Community-wide

How: Apply for planning and technical assistance grants to develop this maintenance plan

How much: Approximately \$20,000 to \$50,000

Who leads: The Village of Riverdale's Village Engineer, CNT/ RainReady

Resources needed: Internal: the General Fund, Water Fund, TIF Funds; External: CMAP's LTA program, HUD CDBG, IDNR Coastal Management Program Grants

PRIORITY: TBD LOCALLY

PHASING: 

RECOMMENDATION 4.2

Implement the comprehensive Green/Grey Infrastructure Maintenance plan program in tandem with inspection program (see Recommendation 2.1). The entire sewer system should be cleaned on a ten-year cycle to ensure optimal function.

Where: Community-wide (inspect known flooding problem areas first)

How: Televising and clean 10% of Riverdale's sewers every year; prioritize the most flood-prone areas

How much: N/A

Who leads: The Village Engineer and Public Works Department

Resources needed: Internal: the General Fund, Water Fund, TIF Funds (where appropriate), External: CDBG, DCEO, IEPA State Revolving Loan Fund, USACE Section 219

PRIORITY: TBD LOCALLY

PHASING: 

GOAL 3: RETROFIT



RECOMMENDATIONS FOR YOUR HOMES AND NEIGHBORHOODS



STRATEGY 1: IMPLEMENT A RESIDENTIAL RESILIENCE PROGRAM

RECOMMENDATION 1.1

Establish a residential cost-sharing program to help homeowners recover from past storms and prepare for future storms. Under this program, residents would receive financial support for a complete home inspection and improvements targeted to reduce risk like check valves, overhead sewers, and a rain garden.

Where: Community-wide

How: Partner with the delegate agencies/organizations tasked with implementing such programs in your region; program outreach and recruitment efforts could be targeted to the most flood-prone areas in Riverdale, but open to the entire Village

How much: Up to \$25,000 in assistance is available to eligible applicants through Cook County's Residential Resilience Program

Who leads: The Village of Riverdale, NHS, organizations that provide housing assistance

Resources needed: Cook County's Residential Resilience Program (CDBG-DR), municipal cost-share program

PRIORITY: High

PHASING: Short

STRATEGY 2: BRING NEW LIFE TO VACANT RESIDENTIAL LAND

RECOMMENDATION 2.1

Where appropriate, bring new life to vacant residential land with native plants, tree planting, urban agriculture, and strategies to beautify neighborhoods. Ensure that community greening projects on public or private land fit with the community's preferences for neighborhood aesthetics (e.g., size, color, and "look and feel" of installation), while also providing flood-reduction and other benefits.

Where: Community-wide

How: Create programs that incentivize residents and community groups to improve nearby vacant properties (via temporary use rights or permanent land ownership); such programs could be: Adopt-A-Lot, Side Yard/Large Lot programs, land banking, temporary transfer of use rights to a community group, community greening, and award programs

How much: Example: the City of Chicago's "Large Lot Program" enables adjacent property owners, block clubs, and non-profit groups in select neighborhoods to purchase City-owned land for \$1 per parcel

Who leads: Current homeowners, community organizations, Steering Committee, master gardeners, SSLBA

Resources needed: The Village would effectively absorb the costs in terms of lost future property tax revenue on these particular parcels; however, the benefits of neighborhood stabilization, reduced flooding, reduced crime, and economic spillover effects (e.g., increased property values due to greening vacant lots) would likely offset these costs; residents and community groups could attain property at a very affordable price (e.g., \$1)

PRIORITY: Medium

PHASING: Short



STRATEGY 3: CREATE A NETWORK OF RESIDENTIAL GREEN STREETS, GREEN ALLEYS, AND COMPLETE STREETS

RECOMMENDATION 3.1

Create a network of residential green streets that incorporate green infrastructure improvements (e.g., roadside swales, rain gardens, permeable pavement, tree plantings) along flood-prone residential streets. Ensure that any community greening projects on public or private land fit the community's preferences for neighborhood aesthetics (e.g., size, color, and "look and feel" of installations), while also providing flood-reduction and other benefits.

Where: Multiple: Northern/Central Cluster: Wallace Avenue →

136th Street from 138th Street to Eggleston Avenue; Parnell Avenue → 136th Street from Pacetter Parkway to Eggleston Avenue (dead end at railroad tracks); State Street from 144th Street to 141st Street; 141st Street from State Street to Manor Court (Note: this east end of street is in Dolton, cross-jurisdictional project); West 139th Street from South Illinois Street to South Indiana Avenue, South Wabash Avenue, South Michigan Avenue, and South Edbrooke Avenue from East 138th Street to East 140th Street (all part of Northeast Riverdale area, see MWRD Phase II/Cook County Sewer Relief project); Southern Cluster: Atlantic Avenue/Wentworth Avenue/LaSalle Street/Clark Street/Dearborn Street from 144th to 146th Street

How: Use this RainReady Plan identify potential locations where green streets can be piloted; where appropriate, incorporate green infrastructure BMPs into planned roadway improvements; monitor the performance of select green infrastructure installations; adjust the future implementation of green infrastructure projects based on monitoring data and community feedback

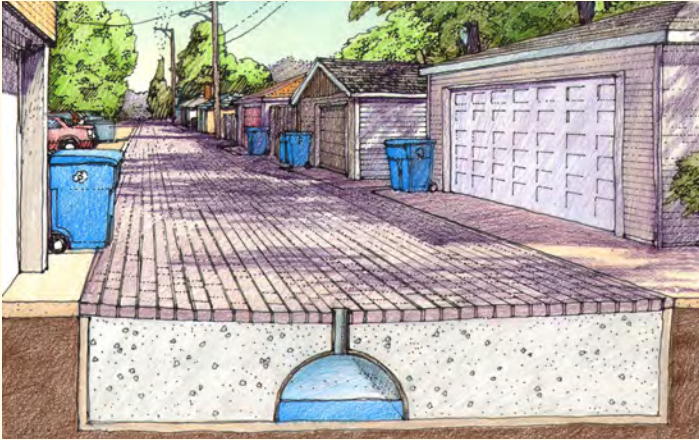
How much: TBD

Who leads: The Village of Riverdale; organizations specializing in the installation and maintenance of neighborhood-scale green infrastructure

Resources needed: Internal: the General Fund, the Water Fund, TIF funds (where appropriate); External: CDBG, DCEO, IEPA State Revolving Loan Fund, USACE Section 219; STP funds

PRIORITY: Medium

PHASING: Long



RECOMMENDATION 3.2

Install green alleys that reduce wear-and-tear on cars (via re-grading and filling potholes) and manage stormwater runoff with permeable pavement and end-of-alley stormwater bulbouts.

Where: Multiple: alleys between South School Road and South Atlantic Avenue, and South Atlantic Avenue and Wentworth Avenue, from West 138th Street to West 140th Street; South Parnell Avenue and South Normal from West 145th Street to Shore Drive

How: Identify flood-prone alleys (complete/ongoing); implement pilot project(s); monitor these projects to see what works; expand green alleys to other flood-prone alleys

How much: TBD

Who leads: The Village of Riverdale

Resources needed: Internal: the General Fund, External: CDBG, DCEO, IEPA State Revolving Loan Fund, MWRD, USACE Section 219

PRIORITY:

PHASING:



RECOMMENDATION 3.3

Create a network of residential complete streets that incorporate green infrastructure improvements (see Recommendation 3.1), bikeway improvements, traffic-calming road features, and place-making amenities (e.g., benches, people spots).

Where: Multiple: west of Metra Tracks residential complete street: start at Eggleston Avenue and southern municipal border → South Stewart Avenue → South Tracy Avenue → School Street → end at ComEd Utility ROW; east of Metra Tracks residential complete street: start at Dolton Industrial Site (Harvard Street and Riverside Drive) → Riverside Drive → West 148th Place → Wentworth Avenue → West 148th Street → Clark Street → West 140th Court → end at Indiana Avenue

How: Where appropriate, incorporate green infrastructure BMPs into planned complete street roadway improvements; monitor the performance of select green infrastructure installations; adjust the future implementation of green infrastructure projects based on monitoring data and community feedback

NOTE: Given the additional traffic engineering involved, creating complete streets is more intensive than green streets

How much: N/A

Who leads: The Village of Riverdale

Resources needed: Internal: the General Fund, the Water Fund, TIF funds (where appropriate); External: CDBG, DCEO, IEPA State Revolving Loan Fund, USACE Section 219; STP funds

PRIORITY: 

PHASING: 

STRATEGY 4: CREATE GREEN SCHOOLS AND CHURCHES

RECOMMENDATION 4.1

Create green schoolyards that: manage stormwater with green infrastructure (e.g., rain gardens, permeable pavement, urban agriculture, rain barrels, cisterns); produce healthy foods; and create spaces for more active play, physical education, and outdoor learning.

Where: Multiple: General George Patton Elementary School (13700 South Stewart Avenue); Washington School (13900 South School Street) (hill on school property; water flows North to South); Park Elementary School (14210 South Wentworth Avenue); Riverdale School (325 West 142nd Street)

How: Explore the feasibility constructing and maintaining multi-use schoolyards that incorporate elements of the Space to Grow program in Chicago (e.g., MWRD, City of Chicago Department of Planning and Development, Openlands, Healthy Schools Campaign); if feasible, pursue a public-private partnership model to initiate and manage this program

How much: TBD

Who leads: The Village of Riverdale, Cook County, MWRD, local school districts and schools (e.g., administrators, faculty), a regional environmental organization

Resources needed: Internal: School district funds, General Fund;

External: MWRD capital improvement funds, Cook County CDBG-DR funds; Internal/External: Riverdale should develop a public-public private partnership in which funds from multiple sources are leveraged and costs are shared

PRIORITY: TBD LOCALLY

PHASING: 

RECOMMENDATION 4.2

Create green churches that manage stormwater with green roofs, de-paving impervious surfaces (where feasible), rain gardens, parking lot bioswales, permeable pavement, and cisterns to capture water from roofs. In other communities church grounds and facility managers are incorporating these green improvements into the church's mission (e.g., prayer trails, outdoor space for congregation gatherings).

Where: Rhema Word Kingdom Ministries (13755 South Stewart Avenue); Queen of Apostles Parish (207 West 145th Street); Ivanhoe United Methodist Church (14500 South Clark Street)

How: Educate church leaders, congregations, parishioners, etc. on the benefits of green infrastructure; streamline the permitting process for churches seeking to make green infrastructure improvements to their property; connect churches to the organizations/agencies that can provide financial and technical assistance

How much: TBD

Who leads: Individual churches and their congregations/parishioners

Resources needed: Internal: church capital funds and endowments; External: IDNR Coastal Management Grants, Chi-Cal Rivers Fund grants, Trinity Christian College student assistance, AmeriCorps State grants, private foundation grants (e.g., the Kresge Foundation, Grand Victoria Foundation)

PRIORITY: TBD LOCALLY

PHASING: 

STRATEGY 5:
REDUCE WIDESPREAD FLOODING IN THE NORTHEAST RIVERDALE NEIGHBORHOOD THROUGH CONCENTRATED AND INTEGRATED GREEN (E.G., STORMWATER) AND GREY (E.G., TRANSPORTATION) INFRASTRUCTURE INVESTMENTS

RECOMMENDATION 5.1

The Village of Riverdale—with the assistance of Cook County—recently (summer 2016) secured \$7,393,575 of Community Development Block Grant Disaster Relief (CDBG-DR) funding for the Northeast Sewer Separation/Flood Relief Project. The Village of Riverdale should coordinate with the MWRD, Cook County, and other partners, to implement this project in a way that demonstrates how green and grey infrastructure investments can be coordinated.

Where: Northeast Riverdale (the neighborhood east of the Metra tracks, north of East 140th Street, west of the municipal border, and south of the Little Calumet River)

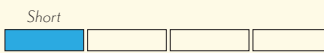
How: Continue to collaborate with Cook County to implement the Sewer Relief Project in Northeast Riverdale; consider alternatives that incorporate green infrastructure BMPs (review the various alternatives put forth in the MWRD’s stormwater concept plan for the Northeast area); consider how this project could be integrated into broader planning priorities (e.g., the Cal-Sag Trail and TOD area improvements)

How much: N/A

Who leads: The Village of Riverdale, Cook County, MWRD (for concept plan)

Resources needed: N/A

PRIORITY: 

PHASING: 

**RECOMMENDATIONS FOR
YOUR SHOPPING AREAS AND
BUSINESS DISTRICTS**

STRATEGY 6:
BRING NEW LIFE TO RIVERDALE’S COMMERCIAL CORRIDORS AND TOD AREAS

RECOMMENDATION 6.1

Riverdale has two Metra stations (Ivanhoe and Riverdale). These Metra stations—and their surrounding Transit-Oriented Development (TOD) areas—can be improved in a way that revitalizes commercial corridors along 138th Street and 144th Street, better connects residents to transit, and alleviates local flooding issues. The Village should modernize these stations (in partnership with Metra) and revitalize their TOD areas through coordinated investments in green and grey infrastructure (e.g., incorporate green infrastructure BMPs like permeable parking lots, bioswales, tree planting, planter boxes, with wayfinding signage, sidewalk improvements, and place-making amenities).

Where: The Transit-Oriented Development (TOD) Zone around each of Riverdale’s Metra stations (a “TOD Zone” generally refers to the land area that falls within a .25 or .50 mile radius originating from a transit station)

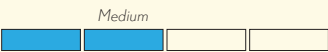
How: Engage Metra in discussions regarding making station and parking lot improvements; connect Metra stations to Riverdale’s expanding network of commercial complete streets (see Recommendation 8.1) and new trail along the ComEd Right-of-Way; install wayfinding signage that points Metra travelers to points-of-interest in Riverdale

How much: N/A

Who leads: Village of Riverdale, MWRD, Metra, RTA

Resources needed: Internal: the General Fund, the Water Fund, TIF funds (where appropriate); External: CDBG, DCEO, IEPA State Revolving Loan Fund, USACE Section 219; STP funds; Chi-Cal Rivers Funds, Great Lakes Restoration Initiative

PRIORITY: 

PHASING: 



STRATEGY 7:
BRING NEW LIFE TO UNDERUTILIZED PARKING LOTS

RECOMMENDATION 7.1

Access to safe, sufficient, and convenient parking improves commuter safety and may increase revenues for the Village (due to increased utilization of Village-owned lots). However, too much underutilized parking can cause an area to appear empty and blighted, generate polluted stormwater runoff, and reduce the overall walkability of an area. Therefore, any efforts to expand, replace, and maintain parking lots (public and/or privately-owned) should recognize the impacts that large impervious areas have on water quality and urban flooding, and incorporate green infrastructure best management practices (GI BMPs) wherever possible.

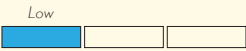
Where: Multiple: linear cluster of parking lots on West 144th Street, Metra parking lots

How: Riverdale can bring new life to its underutilized parking lots by: 1) retrofitting parking lots with green infrastructure BMPs (e.g., permeable pavement, rain gardens, bioswales), 2) implementing infill redevelopment where appropriate, 3) de-paving parking lots and converting them into open space, and 4) removing minimum parking requirements and making other policy changes that ensure that new developments do not create excessive parking

How much: TBD

Who leads: Village of Riverdale, local businesses, parking lot owners (e.g., parking lot owners, Metra)

Resources needed: Funding for improvements to public and private parking lots

PRIORITY: 

PHASING: 



STRATEGY 8: CREATE A NETWORK OF COMMERCIAL COMPLETE STREETS

RECOMMENDATION 8.1

Revitalizing and attracting new businesses to Riverdale's commercial corridors is a key priority for local planners. Commercial complete streets have been shown to create a more pedestrian-friendly environment, increase foot traffic, and attract businesses that want to be located in walkable, transit-served communities. Riverdale should create a network of commercial complete streets that strengthen its commercial corridors (see Recommendation 6.1), improve public health by promoting walking and active transportation, and reduce urban flooding through GI BMPs (e.g., permeable pavement, street planter boxes, bioswales, tree plantings).

Where: Multiple: 138th Street from Halsted Avenue to municipal border, 144th Street from Halsted Avenue to Indiana Avenue; Indiana Avenue from 146th Street to Little Calumet River

How: Continue to implement the pedestrian, bicycle, and transit improvements proposed in the Village's 2011 Active Transportation plan; use Riverdale's Urban Flooding Risk and Opportunity Assessment (Figure RI-8) to identify (at a planning level) where GI BMPs can be integrated into the Village's

growing network of complete streets; include projects that combine transportation and green infrastructure projects in ongoing capital planning and implementation efforts; coordinate with Dolton to implement a commercial complete street on Indiana Avenue; over time, seek to create an interconnected network of commercial complete streets, residential green/complete streets, and trails

How much: TBD

Who leads: The Village of Riverdale, IDOT, ATA, CMAP

Resources needed: Internal: the MFT, General Fund, TIF Funds (where appropriate), External: CDBG, special grants from DCEO, IDOT, STP

PRIORITY: *High*

PHASING: 

RECOMMENDATIONS FOR YOUR INDUSTRIAL CENTERS AND RAILROAD CORRIDORS



STRATEGY 9: IMPROVE THE EDGES OF LARGE INDUSTRIAL SITES AND RAILROAD CORRIDORS

RECOMMENDATION 9.1

Riverdale is so flat that railroad embankments and other manmade features like berms and ditches dictate how stormwater flows (or doesn't flow) throughout the municipality. It is possible to alleviate some local flooding issues by improving the edges of large industrial sites and railroad corridors. Riverdale should improve the edges of large industrial sites and railroad corridors by improving ditches (e.g., increase storage/conveyance capacity, remove invasive plants like Phragmites that backfill ditches), installing bioswales along railroad tracks.

Where: Multiple: north and south sides of the IHB RR tracks from Steward Avenue to Indiana Avenue; the Metra tracks ROW; the ditches along Forest View Avenue and B.W.H Marsden Drive

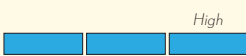
How: Identify locations where edge treatments can alleviate local flooding; establish a partnership with railroad companies and industrial site owners to make improvements to their land; use Growth Zone incentives to implement stormwater

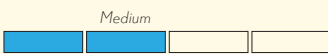
improvements at industrial centers and railroad corridors

How much: TBD

Who leads: Village of Riverdale, railroad companies, SSMMMA

Resources needed: TBD

PRIORITY:  High

PHASING:  Medium

STRATEGY 10: REDEVELOP INDUSTRIAL SITES IN A WAY THAT REDUCES NEARBY FLOODING

RECOMMENDATION 10.1

Riverdale is well-positioned to be a leader (amongst its Southland neighbors) in implementing innovative industrial redevelopment strategies that build community resilience. The Riverdale Prairie Industrial Park is an excellent site to pilot such a resilient redevelopment program and then scale it up to other areas. The Riverdale Prairie Industrial Park is a 45-acre (mostly vacant) industrial site that is adjacent to the IHB Railroad. The site could support Cargo-Oriented Development (COD) facilities (e.g., storage-in-transit facility, rail access) that—if constructed—could expand the business activity along IHB Railroad and Hales Yard. Given that the site is hydrologically connected (in terms of overland flow paths, overland drainage areas, and sewersheds) to a residential neighborhood, any efforts to redevelop the Riverdale Prairie Industrial Park should not only manage its own stormwater on site, but reduce urban flooding in the surrounding flood-prone neighborhoods. Such a project, would truly be resilient and could set a precedent/model for similar project throughout the Southland region and the Chicago Metropolitan Area.

Where: The Riverdale Prairie Industrial Park and adjacent ComEd right-of-way

How: Continue to meet with the planning team that SSMMA convened to oversee the redevelopment of this site; complete all necessary studies and pre-development work tasks necessary to make this site shovel-ready; develop a partnership with ComEd and explore opportunities to manage stormwater from the Riverdale Prairie Industrial Site and ComEd ROW through a naturalized detention basin (or other green, grey, or green-grey infrastructure systems) that may cross both parties' property lines; layer multiple funding and financing strategies (e.g., private investment, publicly-subsidized land assembly, P3s, leveraged Growth Zone incentives and TIF funds, etc.) to construct a project that complies with the MWRD's Watershed Management Ordinance and other regulations; develop a Public-Private Partnership to manage the long-term maintenance any new green infrastructure (or contract out to an organization/company that specializes in this)

How much: TBD

Who leads: The Village of Riverdale, the planning team (SSMMA, potential master developers and end users, IHB Railroad, ComEd)

Resources needed: TBD

PRIORITY: 

PHASING: 

RECOMMENDATIONS FOR YOUR OPEN LAND AND NATURAL AREAS

STRATEGY 11: DEVELOP THE CAL-SAG TRAIL OTHER OUTDOOR RECREATION AMENITIES

RECOMMENDATION 11.1

The completion of the Cal-Sag Trail will create new economic development, outdoor recreation, and public health opportunities for communities along its alignment (i.e., trail path). If green infrastructure BMPs are incorporated into the Cal-Sag Trail, the trail could also serve to alleviate local flooding issues. Therefore, the Village of Riverdale should incorporate green infrastructure BMPs (e.g., roadside bioswales, permeable pavement, vegetated swales, tree plantings), place-making amenities (e.g., create beautiful places to walk, rest, and gather), and wayfinding signage into the design of Riverdale's portion of the forthcoming Cal-Sag Trail.

Where: Cal-Sag Trail alignment in Riverdale (stormwater projects would have the most flood reduction impact if installed along the entire alignment between the intersection of South Halsted Avenue and West 138th Street to the intersection of East 138th Street and South Indiana Avenue)

How: Engage residents in the trail planning and design process; ensure that GI BMPs are included in the final trail designs; seek to create connections to points-of-interest (e.g., a restored/repurposed Lake Riverdale) and commercial corridors via Riverdale's expanding network of commercial and residential complete streets (see Recommendations 8.1 and 3.3); leverage the new trail to support Riverdale's economic development (e.g., use Riverdale's "trail town" status to drive increased retail activity) and housing goals (e.g., market Riverdale to families and young professionals seeking a transit-served town with great access to parks open space)

How much: TBD

Who leads: Village of Riverdale, the Cal-Sag Trail Coalition

Resources needed: Funding for green infrastructure improvements to the Cal-Sag Trail

PRIORITY:  High

PHASING:  Medium



RECOMMENDATION 11.2

Riverdale Marsh has been the subject of several planning efforts in recent years. However, efforts to redevelop this 75-acre site (located at northwest intersection of Halsted Street and 138th Street) have been delayed due to uncertainties regarding the site's environmental conditions, current ownership and potential end users, and differing opinions regarding the highest and best use for the site (e.g., industrial, commercial, open space). In light of the recent publication of several studies (e.g., Phase I and Phase II engineering studies, a wetland delineation completed by the MWRD), MWRD's mandate to relieve the agency of its ownership of the site, and renewed interest in repurposing Riverdale Marsh for a more productive community use, a clear path forward is beginning to emerge. Riverdale should explore options to create a Riverdale Marsh Natural Area that would provide residents and visitors with new outdoor recreation opportunities (e.g., fishing, walking, birding, biking). Additionally, a restored Riverdale Marsh could potentially alleviate flooding in

the surrounding areas and support wetland banking, which could enable sustainable cargo-oriented development immediately to the south.

Where: The Lake Riverdale site

How: Continue to meet with the planning team that has been convened by SSMMA to oversee the redevelopment of this site; identify an end user(s) for the site (e.g., Riverdale Park District, The Nature Conservancy, the Forest Preserves of Cook County); develop a community-driven plan for the site that builds on previous plans, responds to the site's unique conditions, and is coordinated with proposed/forthcoming capital projects (e.g., the Cal-Sag Trail, an industrial and commercial complete street along 138th Street); explore innovative financing options (e.g., Fresh Coast Capital, wetland banking); respond to the MWRD's forthcoming (2017) RFPs for the site; leverage the planning team to implement the project; develop a long-term maintenance plan; introduce this site and maintenance plan into the portfolio/work plan of an organization with the capacity to maintain the site in perpetuity

How much: N/A

Who leads: The Village of Riverdale, the planning team (SSMMA, CNT/RainReady, MWRD, TNC, Friends of the Chicago River, OAI/Highbridge, Fresh Coast Capital)

Resources needed: TBD

PRIORITY:  High

PHASING:  Long



RECOMMENDATION 11.3

Similar to the Riverdale Marsh project (see Recommendation 11.2), the idea to repurpose and activate the land under the ComEd power lines for a community use (e.g., trail, urban farm) has been “on the books” for years. Given the forthcoming Cal-Sag Trail project (see Recommendation 11.1), the Riverdale Prairie Industrial Park project (see Recommendation 10.1), the proposed residential and commercial complete streets projects, and various other projects that could benefit from a multi-use trail under the ComEd power lines—not to mention the residents that would benefit from green infrastructure BMPs that could alleviate local flooding—the time is ripe for Riverdale to construct this trail.

Where: The ComEd ROW starting at the Little Calumet River (south of the Soo Line Rail yard) and ending at Mohawk Park

How: Develop a partnership with ComEd and explore opportunities to utilize their ROW for community use (NOTE: the Metropolitan Planning Council has been in discussion with ComEd regarding the use of their ROWs throughout the region); apply for technical assistance grants to plan and design this trail; ensure that the ComEd ROW trail includes green infrastructure BMPs and creates connections to neighborhood parks, schools, and Riverdale’s network of commercial and residential complete streets

How much: TBD

Who leads: The Village of Riverdale, ComEd, organizations/agencies that could provide local technical assistance (CMAP, NPS, Openland)

Resources needed: TBD

PRIORITY: Medium

PHASING: Medium

STRATEGY 12: INTEGRATE GREEN INFRASTRUCTURE IN RIVERDALE’S PARK SYSTEM

RECOMMENDATION 12.1

Improve Riverdale’s parks in a way that restores and connects natural ecosystems, manages stormwater, and expands outdoor recreation opportunities. Incorporate green infrastructure features like naturalized detention ponds, rain gardens, permeable pavement, and bioswales, as well as new play structures.

Where: Ivanhoe Park, Riverdale Park

How: Engage residents in the planning process; ensure that final designs incorporate GI BMPs; where appropriate, re-direct water from streets into bioswales on park land (this would reduce street flooding and define/beautify the edges of parks); include project(s) in the Park District’s ongoing capital improvement planning and implementation efforts; implement a policy that encourages the conversion of underutilized lawns into native plant gardens; apply for grants as opportunities arise

How much: TBD

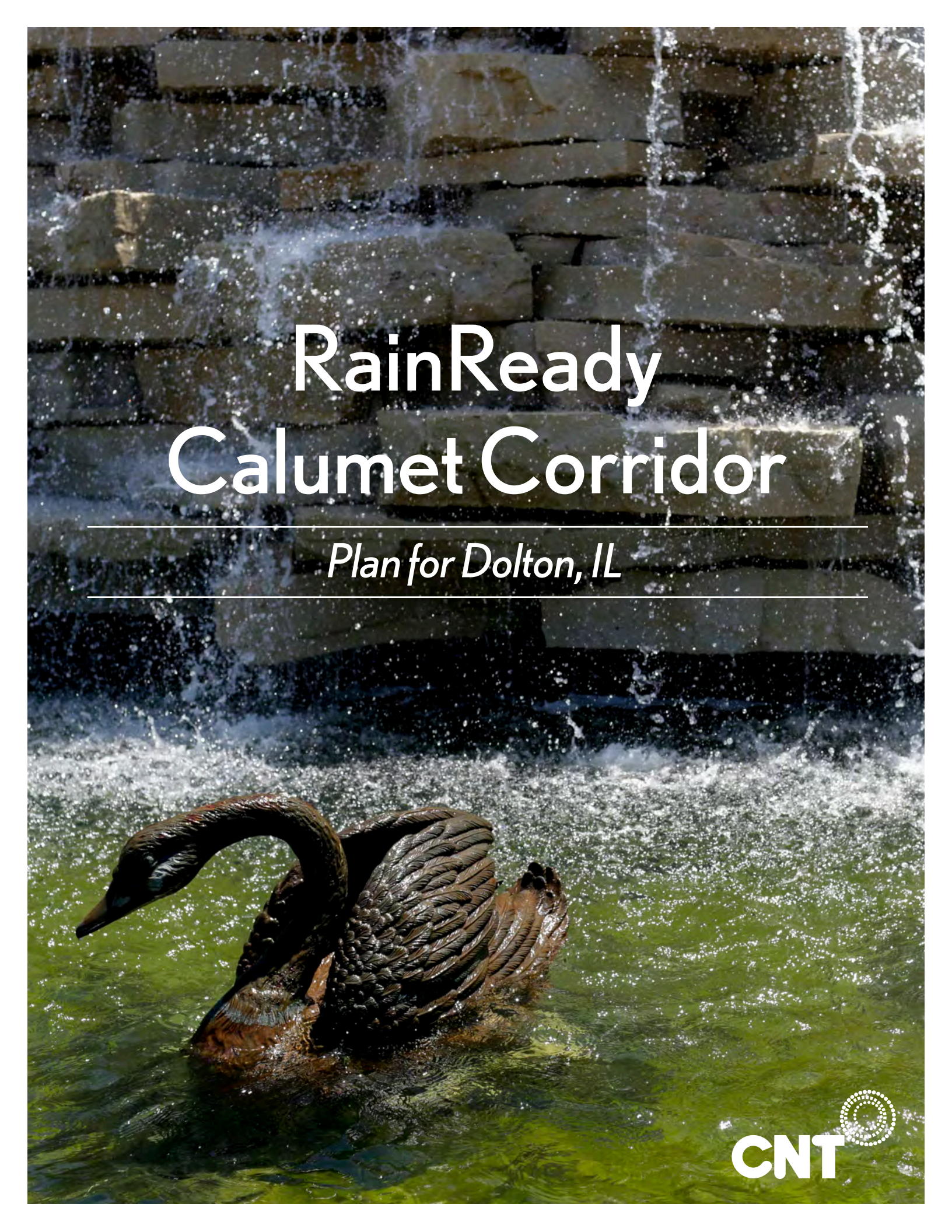
Who leads: The Riverdale Park District

Resources needed: Funding to improve new and existing parks

PRIORITY: TBD LOCALLY

PHASING: Medium

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A bronze swan sculpture is positioned in the lower-left foreground, partially submerged in greenish water. In the background, a multi-tiered stone waterfall cascades down, creating white spray and foam. The scene is set outdoors with natural lighting.

RainReady Calumet Corridor

Plan for Dolton, IL

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A CITIZEN'S GUIDE TO A **RAINREADY DOLTON**



A RainReady Dolton would be a community where all residents and businesses benefit from flood relief in a way that also brings neighborhood beautification, retail activity, new jobs, recreation, and habitat conservation. In this community, public investment is transparent and fair.

In order to better understand Dolton's flooding risk, the Center for Neighborhood Technology (CNT), the U.S. Army Corps of Engineers, the RainReady Dolton Steering Committee, and the Village of Dolton joined together in February 2016. Throughout the year, this group met regularly, hosted community meetings, went door-to-door in the neighborhood, held seven public education workshops, reviewed over 100 plans and studies, and held five Steering Committee meetings. 72 residents filled out our flooding survey.

Together, we have established a shared vision and path toward a more flood-resilient Dolton: The RainReady Dolton Plan. This Citizen's Guide to a RainReady Dolton covers the highlights of the plan, for more information visit www.rainready.org/calumet-corridor.

A Path Forward

Dolton residents and municipal leaders are committed to addressing the flooding challenge in the Village. The path forward for the community includes targeted and coordinated investment in sewer maintenance and new green infrastructure projects that protect public and private property.

Equipped with the RainReady Plan, the Village now has a roadmap for reducing flooding issues in a way that also strengthens neighborhoods, increases economic activity, and brings new life to vacant areas. With modern and well-maintained infrastructure, the Village will be prepared to weather future storms—both large and small.

**KEEP READING FOR MORE INFORMATION ON THE
PATH AHEAD FOR DOLTON!**



**US Army Corps
of Engineers®**

Understanding the Problem

Like many of its neighbors, Dolton has been plagued by chronic floods for years. In recent years, the scope and severity of the floods have become significantly worse. A combination of increased impervious surfaces, aging and limited infrastructure, and changes in regional climate have left many Dolton residents, businesses, and infrastructure systems vulnerable to flooding. From 2007 to 2011, 4,047 flood-related insurance claims were filed, with more than \$10,500,000 dollars paid out in damages. Residents today suffer a mix of chronic basement backup, street and yard flooding, overbanking from the Little Calumet River, and foundation seepage. In 2015, the broader Calumet Corridor in which Dolton is located was identified by Cook County as the area that was “most impacted and distressed” by the April 2013 flooding disaster (DR-4116). Strategic policy changes and coordinated investment in green and grey infrastructure capital projects and ongoing maintenance will be part of the mix of solutions necessary to mitigate chronic flooding issues and large storms.

Additional investment will be needed to further protect residents across the Village of Dolton.

RainReady Riverdale Survey Results



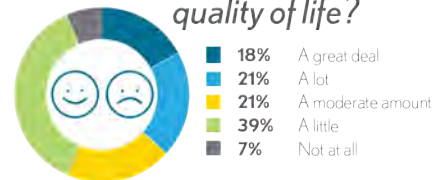
How does water enter properties?



What is the level of worry about flooding's impact on property value?



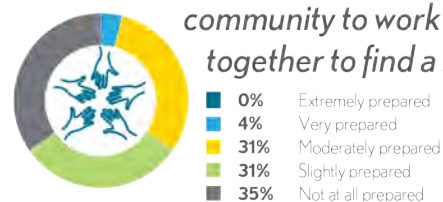
How much do heavy rains impact quality of life?



How much do heavy rains impact commute or other travel?



What is the preparedness of the community to work together to find a solution?



How effective will local government officials be in addressing flooding issues?



Data Source: CNT Survey, 2016

*Respondents who answered “Yes, I experience problems” and “I do not experience problems anymore” were grouped into the “Yes” category because both sets of respondents experience ongoing flooding problems or have experienced problems in the past, respectively.

Finding the Solutions

The path ahead for Dolton requires coordinated action at multiple levels. Fortunately, community residents, municipal staff, and elected representatives are aligned in their desire for a more beautiful, flood-resilient community. The RainReady Plan recommends the following priority projects from a comprehensive list of recommendations:

RESIDENTIAL PROGRAM

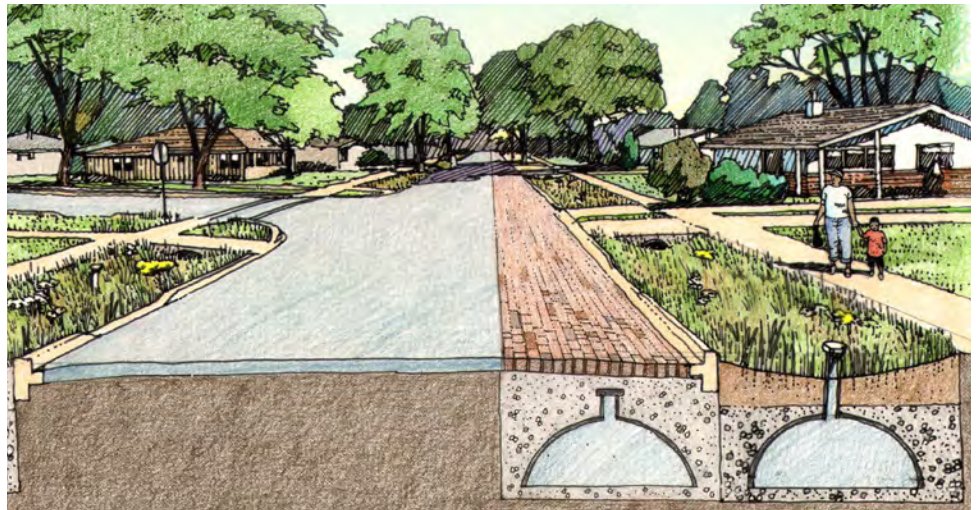
Establish a residential cost-sharing program to help homeowners recover from past storms and prepare for future storms. Under this program, residents would receive financial support for a complete home inspection and improvements targeted to reduce risk, such as check valves, overhead sewers, and rain gardens.

NORTHEAST NEIGHBORHOOD

The neighborhood of northeast Dolton has experienced flooding for many years. Reduce flood risk through a neighborhood greening program. Create a network of beautiful residential streets built to capture stormwater, increase property values, and make streets safer for walking, biking, and playing. Sidewalk improvements, bioswales, and tree plantings would be designed and maintained by local residents, reflecting their vision for a healthy Dolton. Improvements can be installed on a street by street basis, as neighborhood streets are slated to be repaved.

GREEN SCHOOLS

Invest in healthy schoolyards that soak up stormwater while creating safe and educational places to play. Playgrounds can be redesigned with large underground storage tanks to hold stormwater and reduce neighborhood flooding. The design has been tested, and kid-approved!



Quick Steps

We know that residents experience flooding every summer, and the need for help is urgent. Here are 7 solutions that homeowners should consider to reduce their risk today:

- **ASSESS YOUR PROPERTY.**

The first step to solving your flood problem is to understand how water falls on your property and flows through your pipes. If you have significant problems, you may need the help of an engineer, plumber, electrician, or landscape designer.

- **MAKE YARD IMPROVEMENTS.**

In order to prevent flooding and minimize the impact of water in your home and neighborhood, try to capture stormwater runoff using rain gardens, swales, dry wells, permeable paving, rain barrels, or cisterns.

- **ELEVATE YOUR APPLIANCES.**

If water regularly enters your home, place appliances, furnaces, hot water heaters, and electrical panels above the typical flood level on wood or concrete blocks.

- **HAVE YOUR BUILDING SEWERS CHECKED.**

Faulty pipes connecting your home to the municipal sewer system can exacerbate foundation damage and flooding in your home. Ensure that grease, waste, or tree roots are not obstructing the pipe and preventing wastewater from leaving the house.

- **RECLAIM YOUR PARKWAY.**

The strips between sidewalks and streets can be transformed into attractive green spaces that absorb stormwater runoff, reduce municipal maintenance costs, and beautify streets. Be sure to check your municipal code for which plants are permitted.

- **GET INSURED.**

There are several options available to protect you against the risk of water damage, including home insurance policies, flood insurance riders, and the National Flood Insurance Program (NFIP) established by FEMA and administered by your local insurance companies.

- **ADVOCATE FOR THE RAINREADY PLAN.**

This plan outlines solutions to community wide flooding. Get involved in your local Steering Committee to make sure the plan is implemented!



GET INVOLVED!

Community leaders joined together in 2016 to form the RainReady Dolton Steering Committee. The Committee will work in partnership with the municipality to implement the RainReady Dolton Plan, focused on sewer maintenance and investment in green infrastructure installation. They are motivated to beautify the Village, create activities for youth, establish new employment opportunities, educate residents, and advocate for implementation of the new sewer maintenance plan.

The RainReady Dolton Steering Committee meets monthly!

For more information contact Rebecca Raines at rraines@cnt.org or 773.269.2217.

VILLAGE OF DOLTON

COMMUNITY SNAPSHOT

Situated 18 miles south of downtown Chicago, the Village of Dolton sits beside the Little Calumet River and within the greater Calumet Corridor. Dolton is bordered by Chicago to the north, Riverdale and Harvey to the west, South Holland to the south, and Calumet City to the east, with I-94 running along its eastern border. Dolton has a total land area of 4.68 square miles.

The Village of Dolton is one of the major industrial centers of Cook County's south suburban, or "Southland" region.

Dolton has been called 'The Gateway to the South Suburbs'. From George Dolton's first ferry trip across the Little Calumet River in 1835, to early lumbering and agricultural operations, to the expansion of the village's industrial and railroad assets throughout the 19th century, Dolton's growth has been directly tied to its land, water, infrastructural, and community resources. Today, the Village boasts long-standing residential neighborhoods, a strong network of schools, parks, and churches, and exceptional railroad, industrial, and commercial assets. These assets provide the foundation for building a stronger, more livable, and more resilient Dolton.

Like many south suburban communities, the Village of Dolton is faced with repetitive, chronic, and sometimes severe effects of flooding. Between 2007 and 2011, 4,047 insurance claims were made and over \$10,500,000 dollars were paid out in flood-related damages (CNT, 2012). The effects of flooding in Dolton exacerbate existing community challenges, such as maintaining homes, economic divestment, and aging public infrastructure (see Figure DO-4).

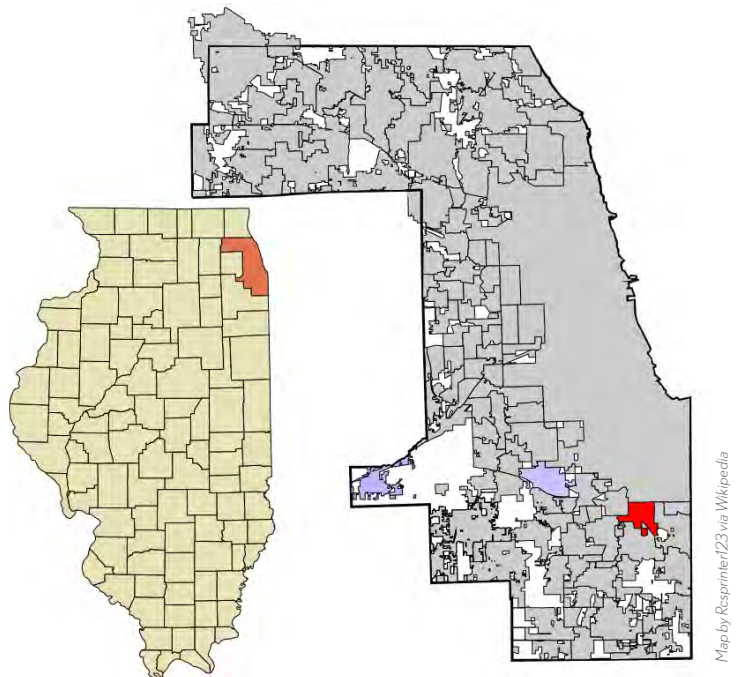
COMMUNITY VISION STATEMENT

The Dolton Steering Committee will reduce flood risk in Dolton while creating a more beautiful, connected, and economically vibrant community.

STEERING COMMITTEE MISSION STATEMENT

The RainReady Dolton Steering Committee will implement the RainReady Dolton Plan, incorporating green infrastructure installation and sewer maintenance. The Committee will beautify the village, create activities for youth, establish new employment opportunities, educate residents, and advocate for implementation of the new sewer maintenance plan. All of the goals of the Committee will be created with flood mitigation in mind.

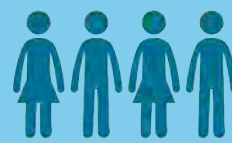
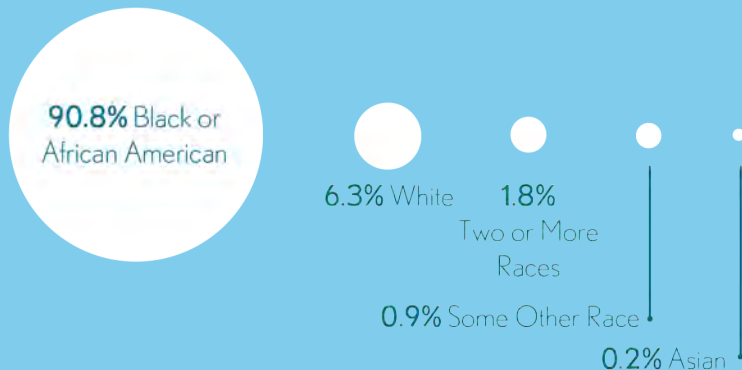
FIGURE DO-1:
Location of Dolton within Cook County



Dolton, IL

AT A GLANCE

racial composition



23,262
total population

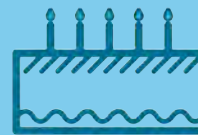


8,992
total number of households



87% of residents hold high school diploma

18% of residents hold college diploma



33
median age

Cook County **\$54,828**

Dolton **\$46,184**

Cook County **\$30,468**

Dolton **\$20,124**

median
per capita income

median
household income



25%
people below poverty level



8%
unemployment rate
(people age 16+)

Data Sources: US Census and Bureau of Labor Statistics

Flooding Risks and Resilience Opportunities

Residents and business owners in Dolton experience several types of flooding:

- **Basement backup** from the local sewer system and damaged private lateral lines, impacting several parts of town
- **Street flooding**, which occurs when local drainage systems are overwhelmed with stormwater and sewage causing water to pool
- **Foundation seepage** in several areas of Dolton causes rot and mold in basement walls
- **Riverine flooding** from the Little Calumet River, impacting neighborhoods in Southwest Dolton

Key findings from this Flooding Risk and Resilience Opportunity assessment are presented here. This risk and opportunity assessment provided the foundation for the strategies and recommendations presented in the RainReady Action Plan for Dolton.

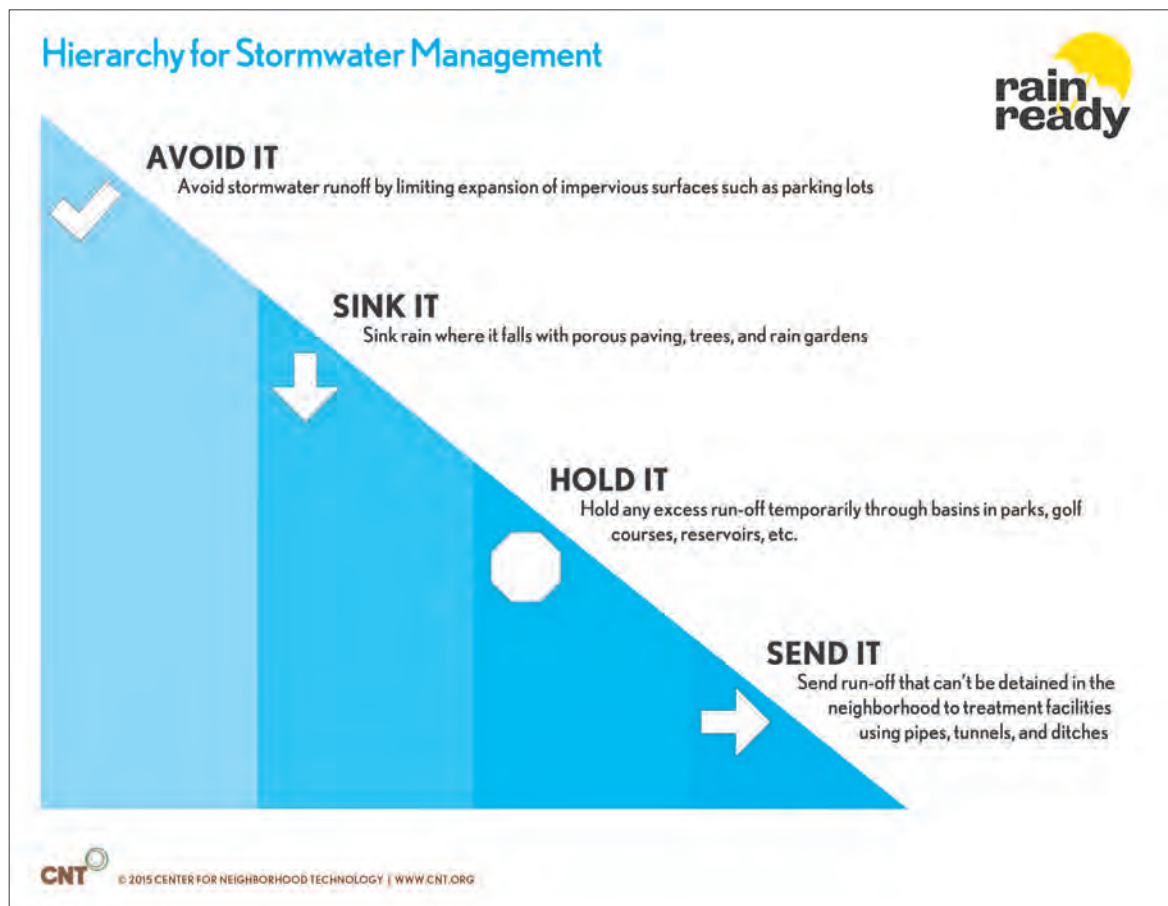


FIGURE DO-2:
Hierarchy for Stormwater
Management

Four main factors contribute to flooding in Dolton:

INCREASING IMPERVIOUS SURFACES

As Dolton developed over time, natural lands were converted to buildings, parking lots, streets, and other “impervious surfaces.” The increase in impervious surfaces resulted in fewer open areas for rainwater to sink into the ground. As Dolton takes steps to redevelop certain commercial and industrial areas (e.g., the Downtown Dolton area, Northern Industrial Corridor, Sibley Boulevard Corridor), efforts should be made to manage any additional stormwater runoff from new developments as well as reduce runoff from existing impervious surfaces.

AGING AND LIMITED SEWER INFRASTRUCTURE

When rain falls on impervious surfaces it becomes stormwater runoff. Dolton’s stormwater is managed mainly by a combined sewer network that is robust in some areas and very limited in others. For example, the Village is connected to the Metropolitan Water Reclamation District’s (MWRD) Tunnel and Reservoir Plan (TARP) in several places, which has been shown to reduce the prevalence of local flooding issues and frequency of combined sewer overflows. An initial survey of the location, number, and size of Dolton’s TARP interceptors and sewer outfalls into the Little Calumet River suggests that the sizing of these large, “grey” storm sewer system components seem appropriate for managing the estimated amount of stormwater they are likely to receive during a storm. However, in spite of recent connection to TARP and other large grey infrastructure projects, local flooding issues persist. Since the sewer line is well-served by TARP and the pipe sizes seem

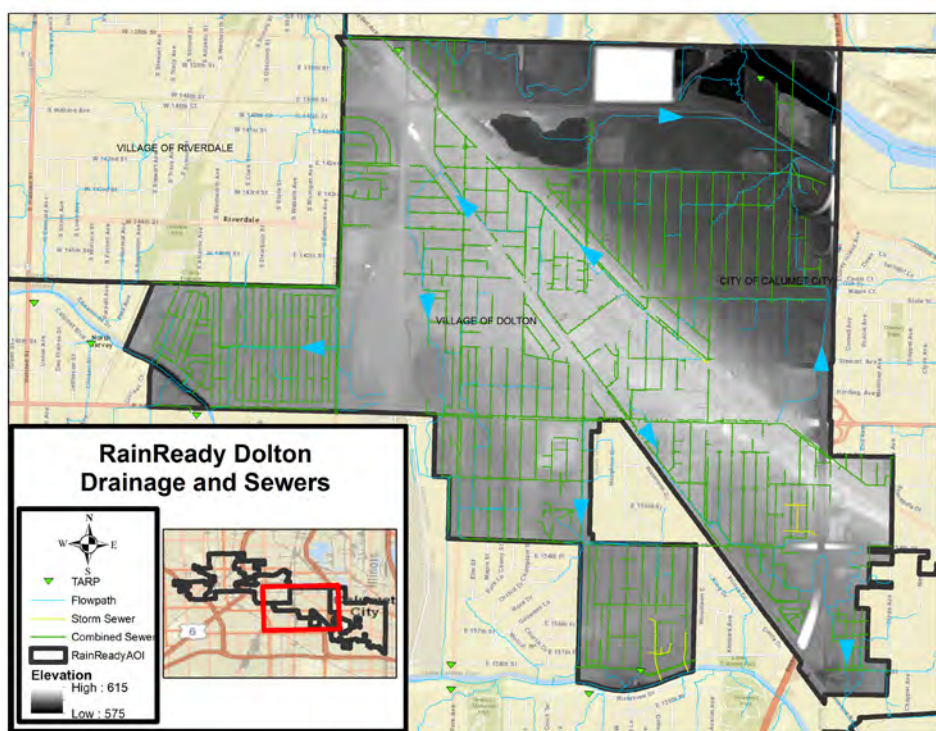


FIGURE DO-3:
Name of figure



reasonable given demand, we expect flooding is largely due to the condition of the sewer system (potentially old, clogged, damaged), as well as the local drainage connecting to the sewer. As sewer systems age, pipes may collapse, causing local drainage issues. In other words it does not matter how big the ‘gizmo’ (e.g., TARP interceptor, sewer outfall, pumping station) is at the end of the pipe; if the pipe (i.e., the local sewer and drainage network) is too small, degraded, or not draining properly, water will continue to flood streets, properties, and basements. The solution then lies in rehabilitating and maintaining the local sewer and drainage system, and installing green infrastructure systems that keep water out of the system entirely.

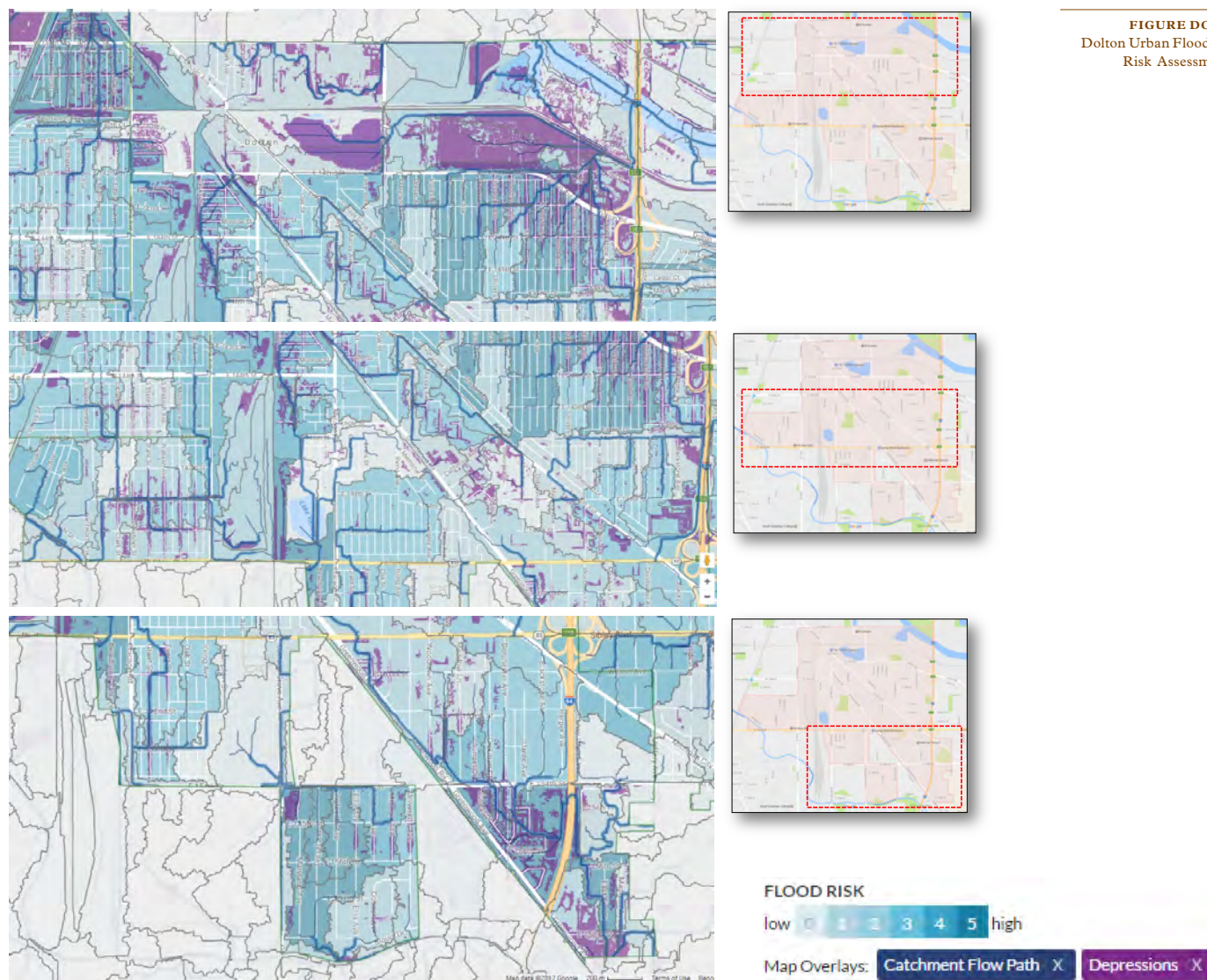
MORE SEVERE STORMS

Climate change is bringing more frequent, high-intensity storms to the region. In light of this, Dolton should not only prepare for storms like the one that occurred in April 2013, but also much larger and more frequent storms, and more variable weather (e.g., intense storms followed by long droughts, more freeze/thaw cycles). Residents, municipal staff, and elected officials should be equipped with the knowledge and resources needed to prepare for, mitigate, and recover from future storms—both large and small.

FLAT TOPOGRAPHY

Since stormwater is largely directed via gravity, Dolton’s flat topography creates challenges for moving water out of neighborhoods. The most prominent ridge in Dolton runs along Lincoln Avenue. The ridge slopes southwest toward the Little Calumet at a gentle incline of less than 1%. North of the ridge, the slope is roughly 1%, still fairly flat. Since Dolton cannot rely on gravity to move its stormwater, infrastructure must be well maintained to reduce risk the of flooding.

FIGURE DO-4:
Dolton Urban Flooding
Risk Assessment



These overland flow path and depression area maps show where stormwater is likely to flow and accumulate, or pool, in Dolton. These maps are based on high-resolution digital elevation models (DEMs) derived from Light Detection and Ranging (LiDAR) technology.

Although LiDAR provides very detailed information on land cover and topography, there are several factors that may result in discrepancies between these maps and how stormwater actually flows through a community (e.g., small landscape features like gutters, curbs, and small hills that route water, which may not have been picked up in our flow path analysis). Also, each community has a sewer and drainage system that is designed to intercept and manage stormwater. Our team modelled the flow of stormwater over the landscape as if local sewer systems are at full capacity and could not handle any additional flows. In other words these maps only show the overland flow paths and accumulation of stormwater and do not factor in the underlying sewer network.

In spite of these limitations and assumptions, these maps represent a good approximation of how stormwater is likely to flow and accumulate in the Calumet Corridor. These maps were used alongside other information on flooding risk and resilience opportunities to determine where green infrastructure retrofits could alleviate local flooding issues. This information informed Dolton's action plan.

FIGURE DO-4:
Key Plans Reviewed for Dolton

Name	Lead(s)	Year Completed / Status	Focus
Village of Dolton Comprehensive Plan	Village of Dolton, CMAP	2013	Comprehensive Plan
Various site proposals, master plans and studies	--	--	--

Source: Prevalence and Cost of Urban Flooding, Center for Neighborhood Technology 2013

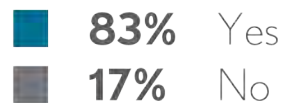
The following section summarizes what we heard from Dolton residents, municipal staff, and elected representatives through the RainReady planning process as well as information we gathered from previous plans completed for the village (see Figure DO-4). To make this information easier to digest, we organized it into community strengths, concerns, and land-based opportunities (i.e., planning priorities and capital projects) that apply to: 1) your homes and neighborhoods; 2) your business districts and shopping centers; 3) your industrial centers and railroad corridors; and 4) your open space and natural areas. We also created a community asset map to prompt ideas about how Dolton’s RainReady Action Plan can strengthen and build on existing community assets.



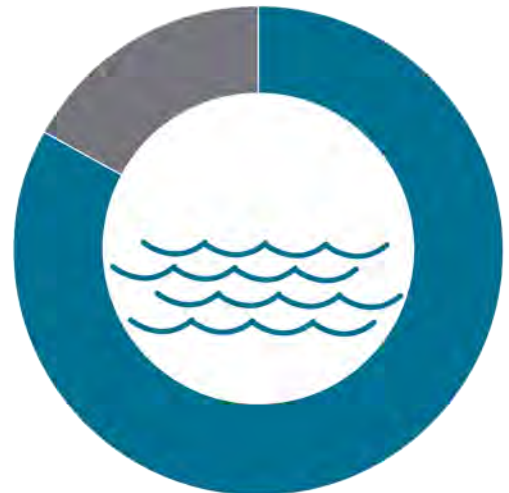
RainReady Dolton COMMUNITY SURVEY

Respondents experiencing flooding problems

Respondents who answered "Yes, I experience problems" and "I do not experience problems anymore" were grouped into the "Yes" category because both sets of respondents experience ongoing flooding problems or have experienced problems in the past, respectively.



72 survey
respondents

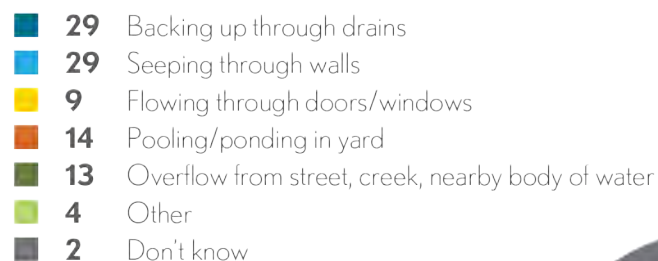


\$4,704 is the average amount spent on stormwater-related repairs

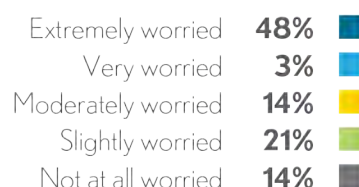
\$567 is the average amount residents are willing to invest to reduce risk of future damage

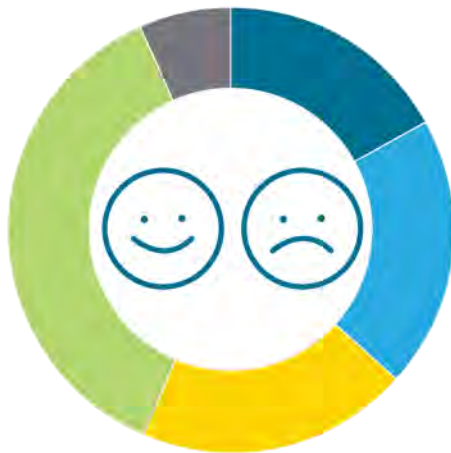


How does water enter properties?



What is the level of worry about flooding's impact on property value?



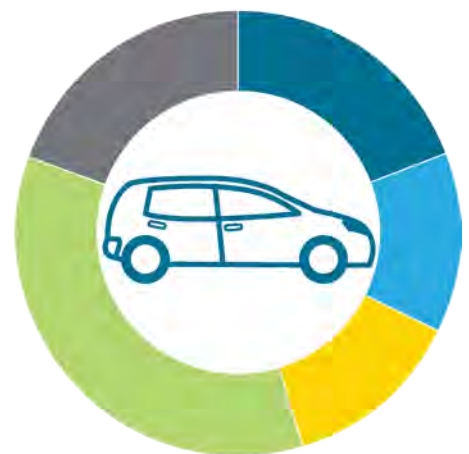


How much do heavy rains impact quality of life?

18%	A great deal
21%	A lot
21%	A moderate amount
39%	A little
7%	Not at all

How much do heavy rains impact commute or other travel?

A great deal	19%
A lot	13%
A moderate amount	13%
A little	35%
Not at all	19%



What is the preparedness of the community to work together to find a solution?

0%	Extremely prepared
4%	Very prepared
31%	Moderately prepared
31%	Slightly prepared
35%	Not at all prepared



How effective will local government officials be in addressing flooding issues?

Extremely well	3%
Very well	10%
Moderately well	17%
Slightly well	27%
Not at all well	43%



Data Source: CNT Survey, 2016

YOUR HOMES AND NEIGHBORHOODS



COMMUNITY STRENGTHS

- Motion to authorize expenditure of \$8,000 for Phase 1 of Dolton Urban Agriculture Initiative
- Local community organizations (e.g., Fathers and Blessings, Charters Youth Commission) have been active in creating youth programs (e.g., employment, gardening)
- Dolton's 50/20 youth employment initiative
- Regular 'Coffee with the Mayor' event
- The Dolton Flea Market
- Tree-lined residential streets
- Dolton's TreeKeepers Initiative
- Positive and proactive public administration
- Dolton Village Hall's social media and community outreach efforts
- Owner-occupied housing is over 67.5%
- See Community Asset Map (Figure DO-6)

COMMUNITY CONCERNS

- Flooding!
- High rates of foreclosures
- Neighborhood safety
- Underperforming schools
- Property taxes are too high
- Lack of diverse housing options
- Poorly maintained properties
- A general lack of connectivity (both via car and walking) between different areas of Dolton
- See Urban Flooding Risk Assessment (Figure DO-4)

LAND-BASED OPPORTUNITIES (PLANNING PRIORITIES AND CAPITAL PROJECTS)

Previous plans have called for (goals and strategies):

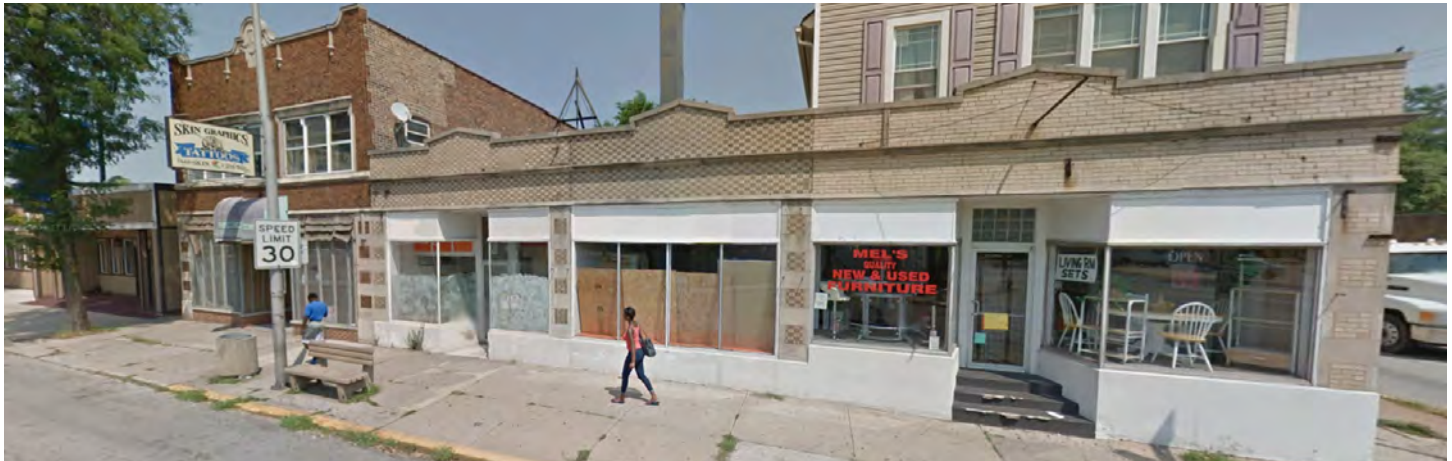
- Maintaining and enhance Dolton's housing stock
- Conducting biannual Town Hall meetings
- Coordinating with local and regional governments to promote efficient use of tax payer dollars
- Maintaining and enhancing the Village's website
- Converting vacant lots into attractive "park like" spaces

Here are some ideas that were uncovered through the RainReady planning process:

- Build LEED-certified senior housing near business districts
- Create rain garden programs in targeted neighborhoods
- Build community gardens and gathering spaces at select vacant lots
- Create educational prairies and gardens at schools
- Build a natural-looking retention pond on the vacant land in far southeast Dolton that incorporates benches, walking paths, and fishing piers

YOUR BUSINESS DISTRICTS AND SHOPPING CENTERS

Photo: Google Maps



COMMUNITY STRENGTHS

- Dolton can capitalize on regional efforts to expand the south suburban employment base; increasing the size of Dolton's employment base can help increase the overall size of its retail market; Dolton's population will likely remain relatively constant
- Access and proximity to I-94
- The Sibley Boulevard Corridor and growth in sales tax due to new retail development along the Boulevard
- Dolton's commercial corridors attract patrons from outside Dolton; the corridors have opportunity for more growth
- Close proximity to a high number of employment centers within a 10-minute drive
- See Community Asset Map (Figure DO-6)

COMMUNITY CONCERNS

- A generally lack of walkability
- The streets that run through Dolton's downtown lack sufficient traffic and visibility to interest most retailers. Only 147th Street and Sibley Boulevard has sufficient traffic and visibility
- Commercial corridors have been developed in a disjointed manner in recent years; this has created the need for better planning relative to ingress and egress to the sites; traffic planning and traffic calming; signage; design guidelines including landscaping; and, underdeveloped sites which are not being viewed in a strategic manner
- Commercial corridors are not pedestrian-friendly, streetscapes and facades are in need of a facelift
- Significant back-ups and congestion occur on the westbound I-94 off-ramp due to backups at the Lincoln/Sibley intersection
- Downtown has suffered over many years as primary retailing has moved from downtown areas to high traffic retail corridors and regional retail corridors.
- See Urban Flooding Risk Assessment (Figure DO-4)



LAND-BASED OPPORTUNITIES (PLANNING PRIORITIES AND CAPITAL PROJECTS)

Previous plans have called for (goals and strategies):

- Improving these streets: 1) Ellis Avenue, 2) Dorchester Avenue, 3) Woodlawn Avenue, 4) Wabash Avenue, 5) Michigan Avenue, and 6) Edbrooke Avenue
- Conducting outreach to Dolton's property owners and area brokers to increase private sector engagement and investment in development and redevelopment projects
- Improving the Sibley Boulevard Corridor: The existing commercial/retail viability of the Sibley corridor will be retained as an economic engine for the Village of Dolton; over time, streetscape and complete streets initiatives will be implemented to improve the attractiveness of the corridor while making it more welcoming to customers; in addition, the Village will be aggressive in capitalizing on the success of the corridor to capture significant new business; also, the Village will establish some design guidelines which will help guide the development of new sites and the overall corridor.
- Discouraging large parking lots in favor of smaller, connected parking lots that employ landscape screening, transitions, and buffers; ensure pedestrian safety by creating "safe zones" for pedestrians through the use of fences, ballards, sidewalks or other means.

- Revitalizing Downtown Dolton as the center of the community; capitalizing on its history, the current community anchors (e.g., municipal building and the library), new restaurants, retail and service businesses, and pedestrian-oriented open space, and streetscape improvements to create a "sense of place"
- Pursuing mixed use housing developments
- Creating a consistent design scheme for the downtown area

Here are some ideas that were uncovered through the RainReady planning process:

- Beautify Sibley Boulevard and reduce flooding with trees, planters, bioswales and signage
- Improve visual appearance (e.g., facades, streetscapes) of Dolton's downtown and commercial corridors
- Install green infrastructure at key intersections: Sibley Boulevard and Greenwood Avenue, Sibley Boulevard and Lincoln Avenue, and Sibley Boulevard and Indiana Avenue
- Potential to expand the existing TIF (Menards) to the west to spur additional economic development

YOUR INDUSTRIAL CENTERS AND TRANSPORTATION CORRIDORS

Photos: Google Maps



COMMUNITY STRENGTHS

- The Village of Dolton has a long history of supporting industry and there is a labor force within the population which would embrace job opportunities within these industries
- Recycling Center at Greenwood Avenue and Irving Avenue up and running
- Excellent Cargo-Oriented Development (COD) opportunities (existing multi-modal facilities, several railroads, and land available for industrial redevelopment)
- See Community Asset Map (Figure DO-6)

COMMUNITY CONCERNS

- While there are excellent sites for development in the industrial corridor, the Village will need to either gain control of the sites or develop working partnerships with the site owner in order to develop the sites to their highest potential
- Site development will require significant staff resources over an extended period of time as sites will likely require significant infrastructure investments and preparation
- While Dolton is extremely well positioned—particularly with the Union Pacific intermodal facility—site development within the region will be competitive and Dolton will need to be aggressive in order to get its share of development opportunities.
- See Urban Flooding Risk Assessment (Figure DO-4)



LAND-BASED OPPORTUNITIES (PLANNING PRIORITIES AND CAPITAL PROJECTS)

Previous plans have called for (goals and strategies):

- Engaging in the regional “Chicago Southland’s Green TIME Zone” initiative being conducted by the Chicago Southland Economic Development Corporation
- Redeveloping Dolton’s primary industrial sites for intermodal distribution or green technology manufacturing uses
- Pursuing intermodal and green manufacturing opportunities in the Northern Industrial Corridor

YOUR OPEN SPACE AND NATURAL AREAS



COMMUNITY STRENGTHS

- New playground equipment has been installed in many parks
- Dolton Park is centrally located, well-utilized, and contains a variety of amenities
- See Community Asset Map (Figure DO-6)

COMMUNITY CONCERNS

- Lack of parks
- Lack of connectivity between different areas of Dolton
- See Urban Flooding Risk Assessment (Figure DO-4)



LAND-BASED OPPORTUNITIES (PLANNING PRIORITIES AND CAPITAL PROJECTS)

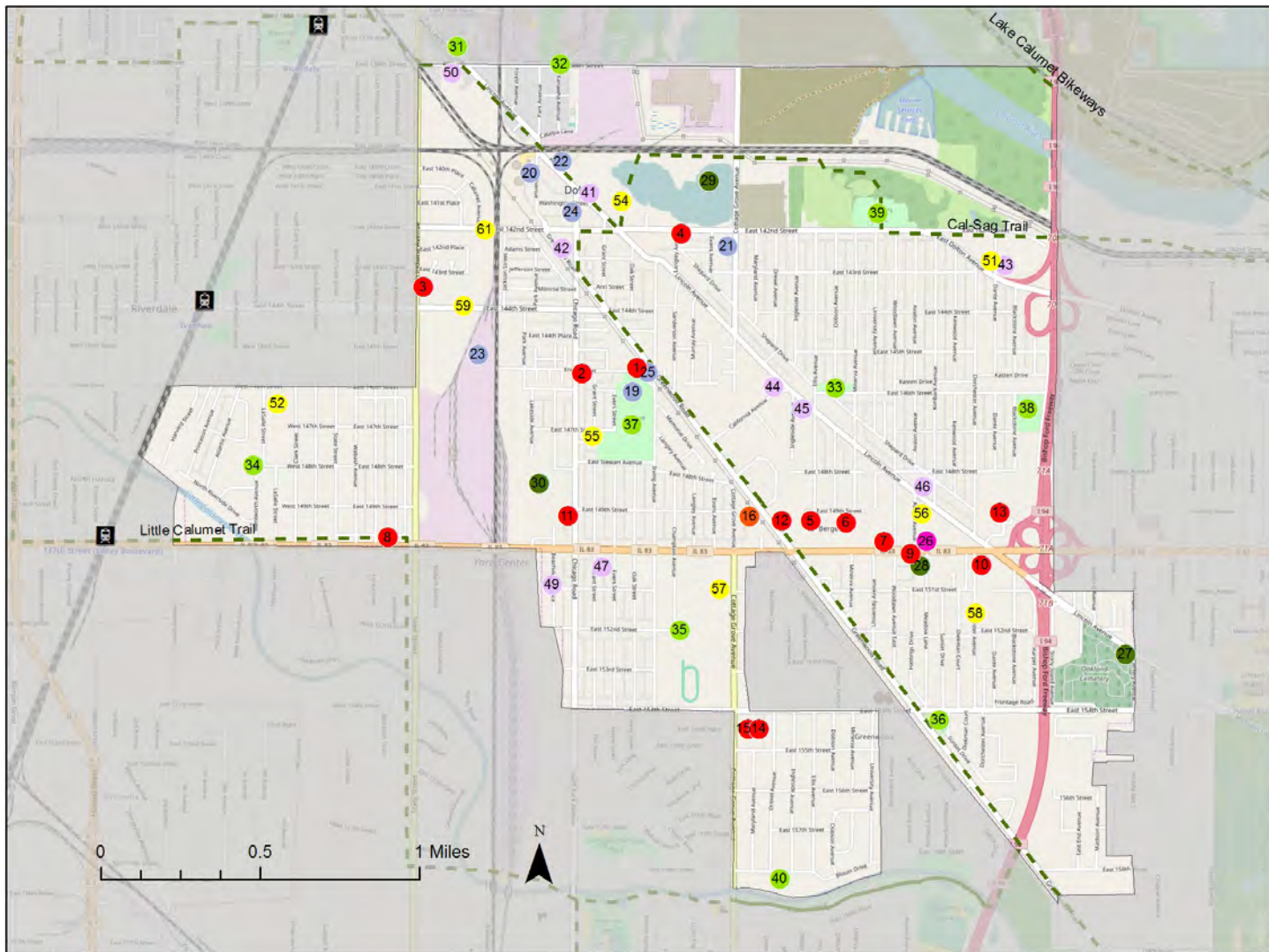
Previous plans have called for (goals and strategies):

- Partnering with Thornton Township High School District 205 to implement programs
- Implementing the sustainability guidelines noted in the Sustainability Chapter of the Green River Pattern Book
- Working with the Army Corps and others to manage flooding along the Little Calumet River
- Working with current property owners to explore opportunities to open up one of the lakes for public use
- Championing the completion of the Cal-Sag Trail
- Working with the Park District to enhance neighborhood parks and ensure all residents have access to a park within ¼ mile of home
- Coordinating with local and regional governments to promote efficient use of tax payer dollars

Here are some ideas that were uncovered through the RainReady planning process:

- Transform vacant lots into parks with educational signage about local ecology and climate change
- Build community gardens close to senior housing
- Improve local access to parks and green space (e.g., ensure that all homes have a park within ¼ mile)
- Create a new wetland and natural area in the flood-prone area bounded by East 154th Street on the north, I-94 on the west, 156th Street on the south, and the Calumet City border on the east

COMMUNITY ASSETS



- Businesses
- Community Organizations
- Government Agencies
- Health Organizations
- Natural Areas
- Public Parks/Park Districts
- Religious Institutions
- Schools & Colleges
- MetraStations

Greenways and Trails

- Existing
- - - Proposed

FIGURE DO-6:
Dolton Community Assets

BUSINESSES

- 1 Bonanza
- 2 Dolton Ace Hardware
- 3 Fairway Finer Foods
- 4 Clark Gas
- 5 Food 4 Less
- 6 Dollar General
- 7 Walgreens
- 8 Papa's Philly and Fish II
- 9 Blast Fitness
- 10 Dolton Bowl
- 11 Lilah's Sports Bar
- 12 Family Dollar
- 13 Menards Plaza
- 14 Italian Fiesta Pizzeria
- 15 Almar Plaza

COMMUNITY ORGANIZATIONS

- 16 Melanie Fitness Center
- 17 Fathers and Blessings

GOVERNMENT AGENCIES

- 18 Dolton Fire Department
- 19 Dolton Park District
- 20 Dolton Police Station
- 21 Dolton Post Office
- 22 Dolton Public Library
- 23 Dolton Public Works
- 24 Dolton Village Hall
- 25 Dolton Recycling Center

HEALTH ORGANIZATIONS

- 26 Bud's Ambulance Services

NATURAL AREAS

- 27 Oakland Cemetery
- 28 Berger Cemetery
- 29 Lake Cottage Grove (Private)
- 30 Lake Victory (Private)

PUBLIC PARKS/PARK DISTRICTS

- 31 Dolton-Riverdale Park
- 32 Sunshine Park
- 33 Kandy Kane Park
- 34 Town and Country Park
- 35 Willowgreen Park
- 36 Triangle Park
- 37 Dolton Park
- 38 Blackstone Park
- 39 John W. Needles Park
- 40 Riverview Park

RELIGIOUS INSTITUTIONS

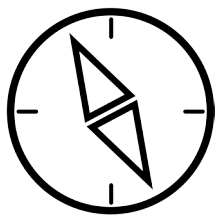
- 41 City of the Lord Church
- 42 New Zion Covenant
- 43 New Life Celebration Church of God
- 44 Abundant Living Christian Center
- 45 Abounding in Christ Love Ministries
- 46 Lorimer Baptist Church
- 47 Faith United Methodist Church
- 48 New Birth of Love Methodist Baptist Church
- 49 New Birth of Love MB Church
- 50 Resurrection House Baptist Church

SCHOOLS & COLLEGES

- 51 Trinity International University
- 52 Roosevelt Elementary School
- 53 Roosevelt Junior High School
- 54 Lincoln Junior High School
- 55 Franklin Elementary School
- 56 Berger-Vandenberg Elementary School
- 57 Thornridge High School
- 58 Diekman School
- 59 Dolton's Academy for Learning
- 60 Pace Elementary School
- 61 Harriet Tubman School

COMMUNITY PRIORITIES

Listed below are the community priorities we heard from Dolton residents, municipal staff, and elected representatives through the RainReady Planning Process. These community priorities were synthesized with the flooding risk and resilience opportunities assessment to develop Dolton's Action Plan.



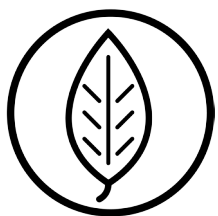
REORIENT

- Open better lines of communication throughout the community (e.g., between residents, and between residents and local government)
- Attract organizations that provide basics services (e.g., senior center, youth center, social services agency)
- Raise awareness of climate change
- Establish more employment and educational opportunities for youth
- Encourage economic development that: 1) helps existing businesses and attracts new businesses, 2) helps residents maintain their homes, 3) creates opportunities for residents (and visitors) to spend money in Dolton
- Create a neighborhood beautification program (e.g., "Mayor Rogers Beautification Award") that encourages residents to install native plants
- Create a cost-share program to assistance homeowners with flood mitigation and other home improvements that make Dolton more resilient
- Educate residents on flooding risks and how to decrease the impact of flooding
- Create more youth programs



REPAIR (AND MAINTAIN)

- Pave streets
- Create jobs through infrastructure repair projects
- Create a maintenance program
- Education program for residents to decrease the impact of flooding in homes



RETROFIT

- Create more parks (use "Community Bulldozing Day" to build a new park)
- Complete the wetland and open space project in southeast Dolton
- Create a vegetable garden - like the one that use to be by the Dorchester senior building
- Create a more beautiful, connected, and economically vibrant community based on the incorporation of green infrastructure in public and private spaces

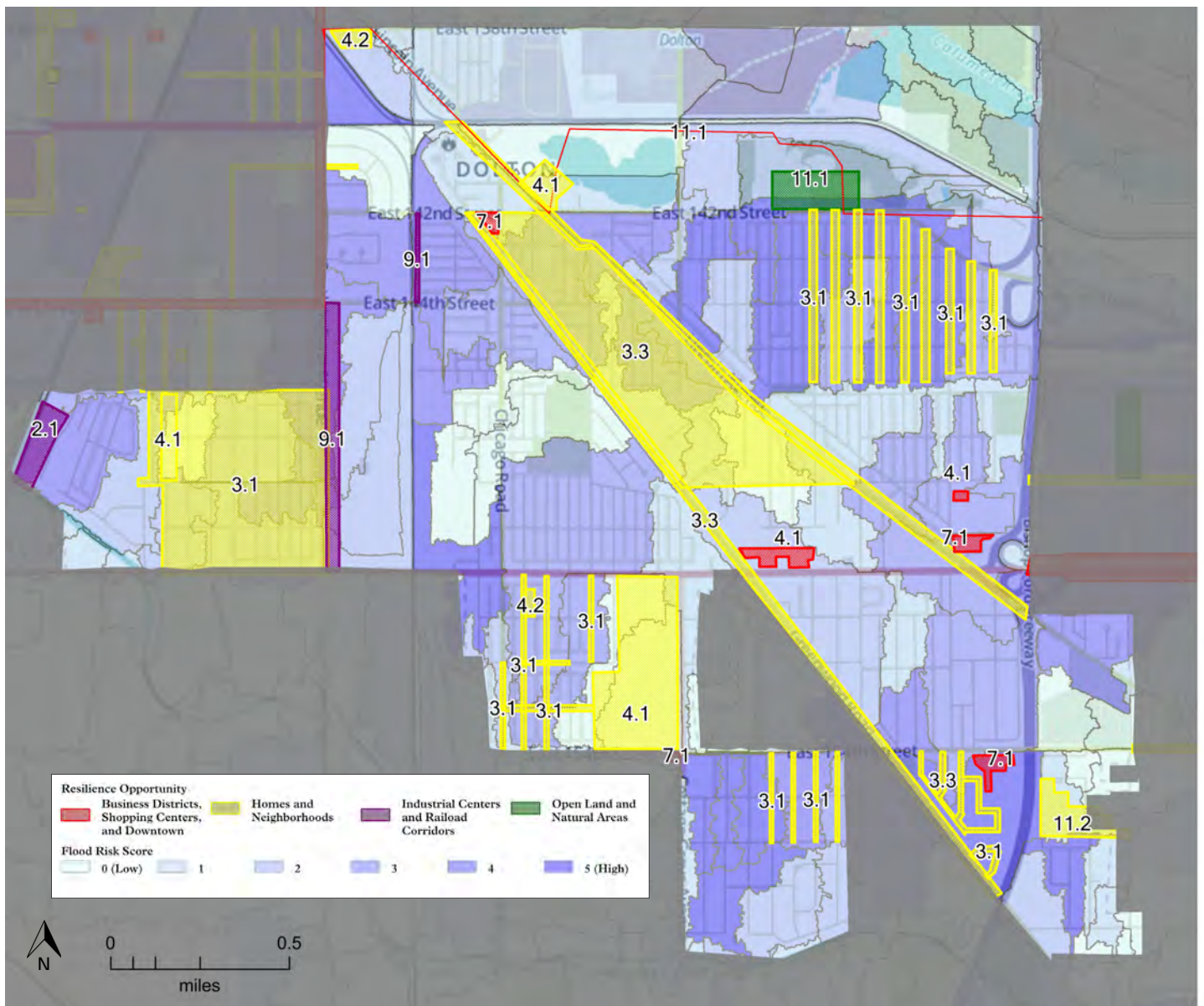


FIGURE DO-7:
Flood Risk and Resilience Opportunity in Dolton

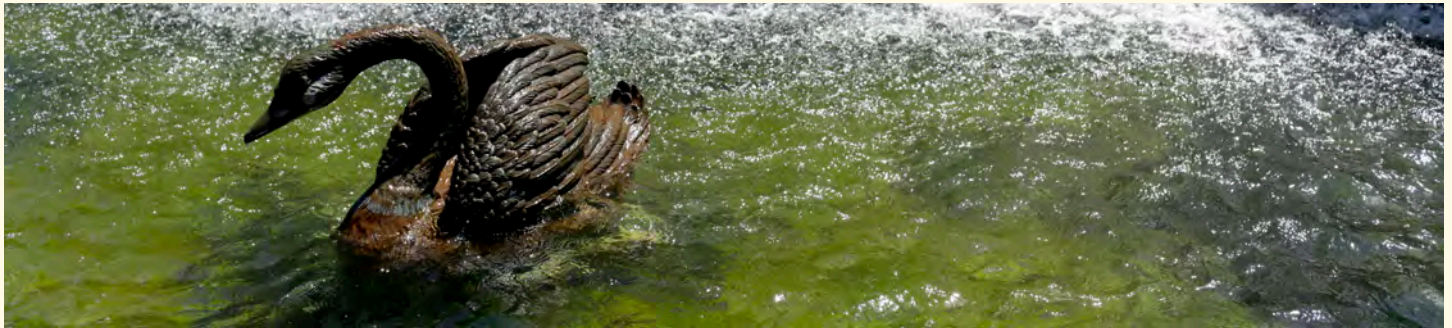
The map above overlays flooding risk with proposed “Retrofit” recommendations. The colors correspond to the part of town where the recommendation is to be applied and the numbers correspond with the Retrofit recommendations in the Action Plan. Some recommendations in the Action Plan apply community-wide and are not shown on the map.

This map identifies locations where various green infrastructure projects could be integrated into Dolton’s community fabric (e.g., green streets along residential streets, commercial complete streets along commercial corridors, green schools, etc.). These locations were identified through a thorough assessment of flooding

risk (e.g., known problem areas, survey results, overland flowpaths, depression areas, and impervious coverage) and resilience opportunities (e.g., planning priorities, community assets, capital improvement projects) in Dolton.

Dolton should reference this map and the Action Plan to identify opportunities where green infrastructure retrofit projects could be integrated into forthcoming roadway improvements, planned developments, and other capital improvement efforts. This would ensure that future projects deliver multiple benefits, such as improved transportation and flood mitigation.

RAINREADY **ACTION PLAN**



Vision Statement

A RainReady Dolton will be a beautiful, connected, and vibrant community. The Village's chronic flooding problems will be greatly reduced through coordinated investments in green, grey, and green-grey infrastructure projects. These public infrastructure projects will attract private investment and—through coordinated public-private-partnerships—will create new local jobs, expand educational and recreational opportunities for youth, improve local transportation options, connect residents to community assets, restore natural areas, and reduce urban flooding. This sustainable economic development will generate new tax revenues and open up innovative revenue streams, which will support ongoing maintenance programs and community improvement initiatives. In spite of a changing climate and uncertain economic and political conditions, a RainReady Dolton will survive and thrive no matter what shocks and stresses may arise.

RainReady Goals



Reorient Dolton so that the community is on a path toward resilience



Repair Dolton's municipal sewer and stormwater drainage systems



Retrofit the built landscapes throughout Dolton with green, grey, and green-grey infrastructure improvements, and restore natural landscapes

NOTE: This plan outlines a path forward toward a more resilient Calumet Corridor, but implementation of specific recommendations will have to occur at the local level. Adopting this plan demonstrates a local community's commitment to considering these recommendations during capital planning and decision-making efforts and implementing these recommendations as necessary resources become available. In many cases, the Village of Dolton is already actively engaged in a given project or program recommendation. In other cases, additional resources (e.g., external grant funds, dedicated revenue, partnerships, etc.) will be necessary to advance a project or program. The following action plan outlines the actions and associated implementation steps, implementation priority, estimated timeline, and identified potential project leads and resources needed. Further analysis is needed to estimate the costs of most recommendations. The specific details may change as communities take action to advance a recommendation and as new information and opportunities emerge.



REORIENT

COMMUNITY-WIDE STRATEGIES FOR DOLTON

- **Strategy 1.** Build capacity to make well-informed decisions and execute them
- **Strategy 2.** Plan and implement projects collaboratively
- **Strategy 3.** Promote equitable and resilient development at all levels
- **Strategy 4.** Prepare your community for future shocks and stresses



REPAIR

COMMUNITY-WIDE STRATEGIES FOR DOLTON

- **Strategy 1.** Map and document your municipal sewer and stormwater drainage system
- **Strategy 2.** Inspect and evaluate your municipal sewer and stormwater drainage system
- **Strategy 3.** Rehabilitate your municipal sewer and stormwater drainage system
- **Strategy 4.** Maintain your municipal sewer and stormwater drainage system



RETROFIT

RETROFIT STRATEGIES FOR YOUR HOMES AND NEIGHBORHOODS

- **Strategy 1.** Implement a residential resilience program
- **Strategy 2.** Bring new life to vacant residential land
- **Strategy 3.** Create a network of residential green streets, green alleys, and complete streets
- **Strategy 4.** Create green schools and churches

RETROFIT STRATEGIES FOR YOUR SHOPPING AREAS AND BUSINESS DISTRICTS

- **Strategy 5.** Bring new life to “Downtown Dolton”
- **Strategy 6.** Bring new life to underutilized parking lots
- **Strategy 7.** Create a network of commercial complete streets

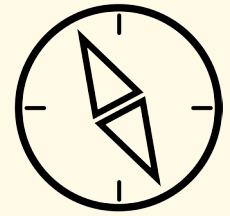
RETROFIT STRATEGIES FOR YOUR INDUSTRIAL CENTERS AND RAILROAD CORRIDORS

- **Strategy 8.** Improve the edges of industrial sites and railroad corridors
- **Strategy 9.** Redevelop industrial sites in a way that reduces nearby flooding

RETROFIT (RESTORE) STRATEGIES FOR YOUR OPEN LAND AND NATURAL AREAS

- **Strategy 10.** Develop the Cal-Sag Trail and other outdoor amenities
- **Strategy 11.** Integrate green infrastructure in Dolton’s park system

GOAL 1: REORIENT



COMMUNITY-WIDE RECOMMENDATIONS

STRATEGY 1:

BUILD CAPACITY TO MAKE WELL-INFORMED DECISIONS AND EXECUTE THEM

RECOMMENDATION 1.1

Adopt/Accept the RainReady Dolton Action Plan. Update the plan every 2-5 years. Incorporate the plan's recommendations into forthcoming capital improvement planning efforts and decision-making efforts.

Where: Community-wide

How: Participate in the RainReady community planning process; convene a steering committee consisting of residents, municipal staff, and elected representatives (completed); propose and adopt at a Village Board Meeting in early 2017

How much: \$104,000 (this cost has already been paid for by Cook County)

Who leads: CNT/RainReady (for initial plan); Village of Dolton (for adoption and plan updates)

Resources needed: Cook County Department of Planning and Development

PRIORITY: 

PHASING: 

RECOMMENDATION 1.2

Engage in regional and local planning and coordination efforts (e.g., the Calumet Stormwater Collaborative, Millennium

Reserve, CMAP's Comprehensive Regional Plans, SSMMA's various committees).

Where: Community-wide

How: Read and continually reference stormwater-related resources; align local strategies with regional initiatives to increase access to funding and technical assistance

How much: Approximately 3-6 hours per month

Who leads: The Village of Dolton and regional organizations/coalitions like CMAP, SSMMA, CSC, CHP

Resources needed: Internal: the City assigns this task to a staff person; External: the SSMMA could hire a stormwater/resilience-focused staff person to serve this role for all communities in their service area (proposed)

PRIORITY: 

PHASING: 

RECOMMENDATION 1.3

Incorporate best practices data management and stormwater planning for local governments (e.g., continual process improvement, performance management, program evaluation, monitoring, ongoing collection and dissemination of useful data, open data and civic hacking).

Where: Community-wide

How: Create a system to collect, manage, and analyze data on water-related complaints and adopted solutions (e.g., type and source of flooding, damage costs, improvements made to property); partner with research institutions to install sensors that will monitor the performance of green infrastructure installations

How much: There will be initial costs to set up these systems, but these improvements could pay for themselves over time through increased operational efficiencies and improved outcomes

Who leads: Village of Dolton, regional 311 Call Center/Service (proposed-this does not exist yet), SSMMA

Resources needed: Internal: General Fund; External: IDNR Coastal Management Program Grants, partnerships with research institutions (e.g., colleges/universities, Argonne National Labs, CNT, UI Labs)

PRIORITY: 

PHASING: 

STRATEGY 2:

PLAN AND IMPLEMENT PROJECTS COLLABORATIVELY

RECOMMENDATION 2.1

Sustain the RainReady Dolton Steering Committee (SC) and engage this group in the ongoing planning and implementation efforts.

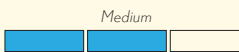
Where: Community-wide

How: Continue to work with the RainReady team in 2017 to get the SC off the ground

How much: Approximately 2-3 hours per month

Who leads: Village of Dolton (e.g., community leaders, municipal staff, elected representatives), CNT/RainReady

Resources needed: CNT/RainReady (to start); ongoing collaboration is volunteer led

PRIORITY: 

PHASING: 

RECOMMENDATION 2.2

Incorporate updates on stormwater projects and other resilience-related topics into the village's various communication channels (e.g., the Sentinel, Dolton's local cable station, newsletters).

Where: Community-wide

How: When appropriate, include stormwater and resilience-related updates in the "Public Works" section of official village communications

How much: Varies

Who leads: The Village of Dolton, local media outlets

Resources needed: The Village of Dolton (staff time)

PRIORITY: 

PHASING: 

RECOMMENDATION 2.3

Coordinate with neighboring municipalities on stormwater-related planning and development projects, and the sharing of equipment and services. Cross-jurisdictional coordination has been shown to reduce public costs and maximize benefits of projects, increase operational efficiencies, and improve/expand service delivery.

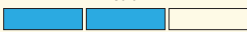
Where: Community-wide and throughout the Calumet region

How: Where appropriate, pursue Intergovernmental Agreements (IGAs) with municipalities and other government agencies (e.g., MWRD, Cook County)

How much: The benefits of improved coordination far outweigh the costs (e.g., approximately 5-10 hours per month of staff time devoted to collaborative efforts)

Who leads: Village of Dolton, neighboring municipalities, MWRD, CSC, SSMMA, CMAP

Resources needed: Internal: The Village of Dolton, or share costs (i.e., time) of participation with neighboring communities); External: the SSMMA could hire a stormwater/resilience-focused staff person to serve this function for all communities in their service area (proposed)

PRIORITY: 

PHASING: 

STRATEGY 3: PROMOTE EQUITABLE AND RESILIENT DEVELOPMENT AT ALL LEVELS—FROM THE HOME TO THE REGION

RECOMMENDATION 3.1

Adopt (and comply with) current stormwater management requirements; Where feasible, improve local ordinances and building codes to promote resilient and equitable development.

Where: Community-wide

How: Conduct an audit of your local ordinances to evaluate areas for improvement; pass common-sense policy changes/updates; adopt an incremental and adaptive approach to implementing green infrastructure and other resilience-building projects (e.g., the *Green Infrastructure Portfolio Standard*)

How much: N/A

Who leads: The Village of Dolton

Resources needed: The Village of Dolton

PRIORITY: 

PHASING: 

STRATEGY 4: PREPARE YOUR COMMUNITY FOR FUTURE SHOCKS AND STRESSES

RECOMMENDATION 4.1

Educate the public on flooding risks and other hazards.

Where: Community-wide

How: Implement a public education program; partner with American Red Cross, FEMA, and other organizations that can provide disaster preparedness training; develop a Community Emergency Response Team (CERT)

How much: NA

Who leads: RainReady Steering Committee, the Village of Dolton, disaster preparedness organizations/agencies (e.g., American Red Cross, FEMA)

Resources needed: Many of these trainings are free and participation is voluntary

PRIORITY: 

PHASING: 

RECOMMENDATION 4.2

Implement an emergency alert system that lets homeowners, businesses, and visitors know when a flood will likely occur.

Where: Community-wide

How: Create and utilize a text-based system to alert residents of flooding and other hazards

How much: N/A

Who leads: Village of Dolton

Resources needed: An external grant could enable the expansion of this service

PRIORITY:  Medium

PHASING:  Medium

RECOMMENDATION 4.3

Ensure that at least one City staff person has one or more the following certifications: Certified Floodplain Manager (CFM), National Green Infrastructure Certification Program (NGICP), LEED-ND.

Where: Community-wide

How: Incentivize the appropriate staff person (e.g., reimburse the costs) to earn and maintain certifications or require that village contractors and consultants involved with land development have these certifications

How much: Varies depending on certification(s)

Who leads: The Village Engineer

Resources needed: Internal: The General Fund

PRIORITY:  Medium

PHASING:  Medium

GOAL 2: REPAIR



COMMUNITY-WIDE RECOMMENDATIONS

STRATEGY 1:

MAP AND DOCUMENT YOUR MUNICIPAL SEWER AND STORMWATER DRAINAGE SYSTEM

RECOMMENDATION 1.1

Ensure that Dolton has up-to-date sewer atlas information and a system for documenting information on the conditions of the overall system, specific elements (e.g., catch basins, curbs), and flooding problem areas.

Where: Community-wide

How: Continue to update this information and share it through SSMMA's GIS consortium (and other regional data-sharing portals) to facilitate more streamlined inter-jurisdictional stormwater planning efforts

How much: TBD

Who leads: The Village Engineer, SSMMA

Resources needed: Internal: the General Fund, Water Fund; External: IDNR Coastal Management Program Grants

PRIORITY: 

PHASING: 

STRATEGY 2:

INSPECT AND EVALUATE YOUR MUNICIPAL SEWER AND STORMWATER DRAINAGE SYSTEM

RECOMMENDATION 2.1

Develop and implement a comprehensive inspection program (e.g., visual inspection, closed circuit television inspection) to regularly assess the condition of Dolton's municipal sewer system (e.g., manholes, catch basins, sewers).

Where: Community-wide (inspect known problem areas first)

How: Establish a feasible, continuous, and cyclical inspection schedule (e.g., televise 10% of the sewers for 10 years, then repeat); use Dolton's Urban Flooding Risk Assessment (see Figure DO-4) to identify and prioritize known flooding problem areas

How much: TBD

Who leads: The Village of Dolton's Village

Resources needed: Internal: the General Fund, Water Fund, TIF Funds (where appropriate), External: CDBG, DCEO, IEPA State Revolving Loan Fund, USACE Section 219

PRIORITY: 

PHASING: 

STRATEGY 3:

REHABILITATE YOUR MUNICIPAL SEWER AND STORMWATER DRAINAGE SYSTEM

RECOMMENDATION 3.1

Repair major sewer defects, such as collapsed sewers, identified through the inspection program (see Recommendation 2.1).

Where: Targeted repairs in known problem areas

How: Complete +/- 5 repairs per year; use Dolton's Urban Flooding Risk Assessment (see Figure DO-4) to identify and prioritize known flooding problem areas

How much: TBD

Who leads: The Village Engineer and Public Works Department

Resources needed: Internal: the General Fund, Water Fund, TIF Funds; External: CDBG, DCEO, IEPA State Revolving Loan Fund, USACE Section 219

PRIORITY: 

PHASING: 

RECOMMENDATION 3.2

Line deteriorated sanitary sewer mains observed by the inspection program (see Recommendation 2.1).

Where: Community-wide (inspect known problem areas first)

How: Line sewers in known problem areas. Aim to line 3% of the sewers per year; use Dolton's Urban Flooding Risk Assessment (see Figure DO-4) to identify and prioritize known flooding problem areas)

How much: TBD

Who leads: The Village Engineer and Public Works Department

Resources needed: Internal: the General Fund, Water Fund, TIF Funds (where appropriate), External: Sources: CDBG, DCEO, IEPA State Revolving Loan Fund, USACE Section 219

PRIORITY: 

PHASING: 

STRATEGY 4: MAINTAIN YOUR MUNICIPAL SEWER AND STORMWATER DRAINAGE SYSTEM

RECOMMENDATION 4.1

Develop and follow a comprehensive maintenance plan describing how all green, grey, and green-grey infrastructure systems will be maintained.

Where: Community-wide

How: Apply for planning and technical assistance grants to develop this maintenance plan

How much: \$~15,000 to \$20,000

Who leads: The Village Engineer

Resources needed: Internal: the General Fund, Water Fund, TIF Funds; External: CMAP's LTA program, HUD CDBG, IDNR Coastal Management Program Grants

PRIORITY: 

PHASING: 

RECOMMENDATION 4.2

Implement the comprehensive Green/Grey Infrastructure Maintenance plan program in tandem with inspection program (see Recommendation 2.1). The entire sewer system should be cleaned on a ten-year cycle to ensure optimal function.

Where: Community-wide (inspect known flooding problem areas first)

How: Televis and clean 10% of Dolton's sewers every year; use Dolton's Urban Flooding Risk Assessment (see Figure DO-4) to identify and prioritize known flooding problem areas)

How much: TBD

Who leads: The Village Engineer and Public Works Department

Resources needed: Internal: the General Fund, Water Fund, TIF Funds (where appropriate), External: CDBG, DCEO, IEPA State Revolving Loan Fund, USACE Section 219

PRIORITY: 

PHASING: 

GOAL 3: RETROFIT



RECOMMENDATIONS FOR YOUR HOMES AND NEIGHBORHOODS



STRATEGY 1: IMPLEMENT A RESIDENTIAL RESILIENCE PROGRAM

RECOMMENDATION 1.1

Establish a residential cost-sharing program to help homeowners recover from past storms and prepare for future storms. Under this program, residents would receive financial support for a complete home inspection and improvements targeted to reduce risk, like check valves, overhead sewers, and a rain garden.

Where: Community-wide

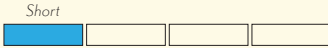
How: Partner with the delegate agencies / organizations tasked with implementing such programs in your region; renew and expand (if feasible) the Village's residential cost-share program; program outreach and recruitment efforts should be targeted to the most flood-prone areas in Calumet Park, but open to the entire Village

How much: Varies – communities often provide a 50/50 cost-share

Who leads: The Village of Dolton, Cook County, RainReady, Dolton's Steering Committee (for recruiting participants)

Resources needed: Internal: General Fund; External: Cook County's Residential Resilience Program (CDBG-DR)

PRIORITY: 

PHASING: 



STRATEGY 2: BRING NEW LIFE TO VACANT RESIDENTIAL LAND

RECOMMENDATION 2.1

Most of Dolton's residential neighborhoods are intact communities of single-family homes with few vacant lots. However, there are a few vacant lots throughout town that could use a facelift. In order to reduce the negative impacts of vacant lots (e.g., reduced property values, perception/reality of increased crime) Dolton should bring new life to vacant residential lots with native plants, tree planting, urban agriculture, and other strategies to keep these lots green and well-maintained. Ensure that community greening projects on public or private land fit with the community's preferences for neighborhood aesthetics (e.g., size, color, and "look and feel")

of installation), while also providing flood-reduction and other benefits.

Where: Community-wide, the vacant site near 14636-14798 Harvard Street

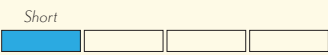
How: Create programs that incentivize residents and community groups to improve nearby vacant properties (via temporary use rights or permanent land ownership); such programs could be: Adopt-A-Lot, Side Yard/Large Lot programs, land banking, temporary transfer of use rights to a community group, community greening, and award programs; the National Disaster Resilience Competition proposed a “Resilient Housing Development” at the vacant Cargo-Oriented Development site at 14636 Harvard Street

How much: The City of Chicago’s “Large Lot Program” enables adjacent property owners, block clubs, and non-profit groups in select neighborhoods to purchase City-owned land for \$1 per parcel

Who leads: Current homeowners, community organizations, Steering Committee, master gardeners, SSLBA

Resources needed: The Village would effectively absorb the costs in terms of lost future property tax revenue on these particular parcels; however, the benefits of neighborhood stabilization, reduced flooding, reduced crime, and economic spillover effects (e.g., increased property values due to greening vacant lots) would likely offset these costs; residents and community groups could attain property at a very affordable price (e.g., \$1)

PRIORITY: 

PHASING: 

RECOMMENDATION 2.2

Connect Dolton’s newly improved vacant lots (see Recommendation 2.1), schools and churches, and parks (see Recommendation 11.1) to the village’s expanding network of residential green streets (see Recommendation 3.1), green alleys (see Recommendation 3.2), and complete streets (see Recommendation 3.3).

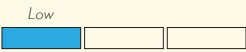
Where: Community Wide (focus pilot project efforts on blocks with: 1) frequently- flooded alleys, 2) village-owned vacant properties, a 3) neighbors and/or community groups with an interest in managing/owning a parcel(s)

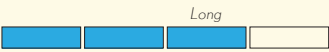
How: Redirect stormwater runoff from streets and alleys (through regrading and curb cuts) into vacant lots and parkways in front of vacant lots that have been improved with green stormwater infrastructure BMPs (e.g., rain gardens, naturalized detention basins, tree plantings)

How much: TBD

Who leads: Village Engineer

Resources needed: Internal: the General Fund, TIF Funds (where appropriate), External: CDBG, DCEO, IEPA State Revolving Loan Fund, USACE Section 219

PRIORITY: 

PHASING: 



Residential green streets emerged as a viable solution to Dolton's urban flooding issues through the National Disaster Resilience Competition (NDRC). Green streets make sense in Dolton for several reasons: 1) Dolton's wide right-of-ways (60 feet or more) make green streets feasible, 2) Dolton's flat streets make it difficult to redirect stormwater, and 3) the community has shown support for this solution. In light of these factors, Dolton should create a network of residential green streets that incorporate green infrastructure BMPs (e.g., roadside swales, rain gardens, permeable pavement, tree plantings) along flood-prone residential streets.

How: Use this RainReady Plan identify potential locations where green streets can be piloted; where appropriate, incorporate green infrastructure BMPs into planned roadway improvements; monitor the performance of select green infrastructure installations; adjust the future implementation of green infrastructure projects based on monitoring data and community feedback

Who leads: The Village of Dolton, Cook County, IDOT

Resources needed: Internal: the General Fund, the Water Fund, TIF funds (where appropriate); External: CDBG, DCEO, IEPA State Revolving Loan Fund, USACE Section 219; STP funds

PHASING: Short



There were few resident comments about poor alley conditions or flooding in alleyways in Dolton. This may be due to the fact that alleys in Dolton are well-maintained and do not flood, or that the problem has not yet been reported and documented. Assuming the latter, we propose that Dolton install green alleys that reduce wear-and-tear on cars (via re-grading and filling potholes) and manage stormwater runoff with permeable

pavement and end-of-alley stormwater bulbouts. These water-sensitive improvements can be incorporated in Dolton's ongoing alleyway improvement program (if applicable).

Where: TBD

How: Identify flood-prone alleys; if there are flood-prone alleys, implement a pilot green alleyway project; monitor these projects to see what works; expand green alleys to other flood-prone alleys over time

How much: TBD

Who leads: The Village of Dolton

Resources needed: Internal: the General Fund, External: CDBG, DCEO, IEPA State Revolving Loan Fund, MWRD, USACE Section 219

PRIORITY: Low

PHASING: Long



RECOMMENDATION 3.3

Creating more connected neighborhoods is a key planning priority. Complete streets have been shown to be an effective strategy for improving neighborhood connectivity, creating safer streets, and managing stormwater. Therefore, Dolton should

create a network of residential complete streets that incorporate green infrastructure improvements (see Recommendation 3.1), bikeway improvements, traffic-calming road features, and place-making amenities (e.g., benches, "people spots").

Where: Community-wide

How: Identify flood-prone streets; where appropriate, coordinate the installation of green infrastructure BMPs with planned sidewalk and curb repairs, roadway resurfacing, and other streetscape projects; identify green streets that connect many community amenities, like parks, schools, for conversion into complete streets; monitor the performance of GI installations

How much: TBD – given the additional traffic engineering involved, implementing complete streets is more costly than implementing green streets, however, complete streets provide additional transportation benefits

Who leads: The Village of Dolton, Active Transportation Alliance (for initial plan)

Resources needed: Internal: the General Fund, the Water Fund, TIF funds (where appropriate); External: CDBG, DCEO, IEPA State Revolving Loan Fund, USACE Section 219; STP funds

PRIORITY: Medium

PHASING: Long

STRATEGY 4: CREATE GREEN SCHOOLS AND CHURCHES

RECOMMENDATION 4.1

Create green schoolyards that: manage stormwater with green infrastructure (e.g., rain gardens, permeable pavement, urban agriculture, rain barrels, cisterns); produce healthy foods; and

create spaces for more active play, physical education, and outdoor learning.

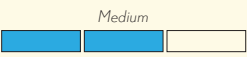
Where: Multiple: Thornridge High School (bioswales along Irving Avenue), Lincoln Junior High (rain garden, permeable pavement), Roosevelt Junior High (redirect runoff from school/ parking lot to green space to the south)

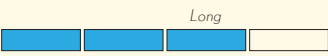
How: Reach out to local school district and the administration to determine interest in such a program; if there is interest, establish a partnership in the spirit of Space to Grow in Chicago in which the capital and maintenance costs are shared between public and private partners

How much: TBD

Who leads: The MWRD, Cook County, Village of Dolton, Schools (e.g., school districts, administrations, faculty, students, families)

Resources needed: Internal: School district funds, General Fund; External: MWRD capital improvement funds, Cook County CDBG-DR funds; Internal/External: Dolton should develop a public-public private partnership in which funds from multiple sources are leveraged and costs are shared

PRIORITY: 

PHASING: 

RECOMMENDATION 4.2

Create green churches that manage stormwater with green roofs, de-paving of impervious surfaces (where feasible), rain gardens, parking lot bioswales, permeable pavement, and cisterns to capture water from roofs. In other communities church grounds and facility managers are incorporating these green improvements into the church’s mission (e.g., prayer trails, outdoor space for congregation gatherings).

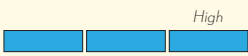
Where: Resurrection House Baptist Church

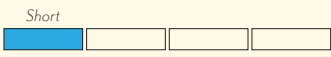
How: Educate church leaders, congregations, parishioners, etc. on the benefits of green infrastructure; streamline the permitting process for churches seeking to make green infrastructure improvements to their property; connect churches to the organizations/agencies that can provide financial and technical assistance

How much: TBD

Who leads: Individual churches and their congregations/ parishioners

Resources needed: Internal: church capital funds and endowments; External: IDNR Coastal Management Grants, Chi-Cal Rivers Fund grants, Trinity International University, AmeriCorps State grants, private foundation grants (e.g., the Kresge Foundation, Grand Victoria Foundation)

PRIORITY: 

PHASING: 

RECOMMENDATIONS FOR YOUR SHOPPING AREAS AND BUSINESS DISTRICTS



STRATEGY 5: BRING NEW LIFE TO “DOWNTOWN DOLTON”

RECOMMENDATION 5.1

Dolton’s downtown area is in need of a face lift. This became apparent early on in the planning process when reviewing Dolton’s Comprehensive Plan, conducting initial field work, and gathering community input. Dolton’s Comprehensive Plan presents many good strategies for revitalizing the downtown area, which Dolton municipal staff and elected officials should review. When taking steps to revitalize Downtown Dolton (e.g., improving streetscapes, attracting new retail businesses), the Village should incorporate green infrastructure BMPs that reduce urban flooding, create more inviting pedestrian environments, calm traffic (which has been shown to increase retail activity), and create a sense of place. Once revitalized—through coordinated investments in green infrastructure and grey infrastructure—“Downtown Dolton” can become an anchor that connects a variety other green infrastructure improvements (e.g., the Cal-Sag Trail, complete streets, a greenwood corridor trail, and others).

Where: Downton Dolton (this area can be defined by the area

that falls within a .25 mile radius from the intersection of Chicago Road and East 142nd Street

How: Review Dolton’s Comprehensive plan, especially the sections pertaining to Dolton’s downtown area; work with CMAP’s Local Technical Assistance program to create and implement a plan for Downtown Dolton; coordinate the installation of green infrastructure BMPs with planned sidewalk and curb repairs, roadway resurfacing, and other streetscape projects; connect the newly-revitalized Downtown Dolton to regional trails (e.g., Cal-Sag Trail, the proposed Greenwood Trail); make Downtown Dolton a destination for residents and visitors by attracting trail-supporting businesses, locating community events in the area (e.g., Flea Market, outdoor movie theaters, farmers market, etc.); brand and market “Downtown Dolton”

How much: TBD

Who leads: Village of Dolton, CMAP

Resources needed: Internal: the General Fund, the Water Fund, TIF funds (where appropriate); External: CDBG, DCEO, IEPA State Revolving Loan Fund, USACE Section 219; STP funds; Chi-Cal Rivers Funds, Great Lakes Restoration Initiative

PRIORITY: Medium

PHASING: Long



How much: TBD

Who leads: Village of Dolton, local businesses, parking lot owners

Resources needed: Village of Dolton, parking lot owners

PRIORITY: Medium

PHASING: Long

STRATEGY 6: BRING NEW LIFE TO UNDERUTILIZED PARKING LOTS

RECOMMENDATION 6.1

Dolton has many underutilized parking lots in its downtown area and elsewhere through the community. Access to safe, sufficient, and convenient parking improves commuter safety and may increase revenues for the Village (due to increased utilization of Village-owned lots). However, too much (underutilized) parking can cause an area to appear empty and blighted, generate polluted stormwater runoff, and reduce the overall walkability of an area. Therefore, any efforts to expand, replace, and maintain parking lots (public and/or privately-owned) should recognize the impacts that large impervious areas have on water quality and urban flooding, and incorporate green infrastructure best management practices (GI BMPs) wherever possible.

Where: Multiple: Downtown Dolton, Linear cluster of parking lots along East Sibley Boulevard; the Menards Parking lot

How: Dolton can bring new life to its underutilized parking lots by: 1) retrofitting parking lots with green infrastructure BMPs (e.g., permeable pavement, rain gardens, bioswales, naturalized detention basins), 2) implementing infill redevelopment where appropriate, 3) de-paving parking lots and converting them into open space, and 4) removing minimum parking requirements and making other policy changes that ensure that new developments do not create excessive parking



STRATEGY 7: CREATE A NETWORK OF COMMERCIAL COMPLETE STREETS

RECOMMENDATION 7.1

Revitalizing and attracting new businesses to Dolton's commercial corridors is a key priority for local planners. Commercial complete streets have been shown to create a more pedestrian-friendly environment, increase foot traffic, and attract businesses that want to be located in walkable, transit-served communities. Dolton should create a network of commercial complete streets that strengthen its commercial corridors, improve public health by promoting walking and active transportation, and reduce urban flooding through GI BMPs (e.g., permeable pavement, street planter boxes, bioswales, tree plantings).

Where: Further analysis is necessary to identify suitable

commercial complete streets; the following streets were selected based on flood-reduction potential: Main Street/East 142nd Street; Sibley Boulevard

How: Adopt a complete streets policy that demonstrates Dolton's commitment to considering all forms of transportation (e.g., walking, biking, transit, driving, etc.) when making improvements within the existing and future road right-of-ways; put this complete streets policy into action through forthcoming capital improvement projects; use Dolton's Urban Flooding Risk and Opportunity Assessment (see Figure DO-7) to identify (at a planning level) where GI BMPs can be integrated into the Village's growing network of complete streets; implement projects that combine transportation and green infrastructure projects in ongoing capital planning and implementation efforts; coordinate with neighboring municipalities to implement a commercial complete that cross borders; over time, seek to create an interconnected network of commercial complete streets, residential green/complete streets, and multi-use trails

How much: TBD

Who leads: The Village of Dolton, IDOT, ATA, CMAP

Resources needed: Internal: the MFT, General Fund, TIF Funds (where appropriate); External: CDBG, special grants from DCEO, IDOT, STP

PRIORITY: 

PHASING: 

RECOMMENDATIONS FOR YOUR INDUSTRIAL CENTERS AND RAILROAD CORRIDORS



STRATEGY 8: IMPROVE THE EDGES OF LARGE INDUSTRIAL SITES AND RAILROAD CORRIDORS

RECOMMENDATION 8.1

Dolton's industrial areas and railroads have been critical to the community's economic growth and will continue to have a key role in supporting Dolton's path toward resilience and economic revitalization. Most industrial sites are initially constructed with robust storm sewers and drainage systems (e.g., dedicated storm sewers, ditches, retention/detention basins) that are designed to manage the stormwater that falls on their property. However, these systems can fall into disrepair (e.g., sewers can collapse, ditches can fill in with invasive species) if not properly maintained. Unfortunately, this is the case for many industrial sites across the Calumet Corridor. Fortunately, it is possible to alleviate some local flooding issues by improving the edges of large industrial sites and railroad corridors. Dolton should improve the edges of large industrial sites and railroad corridors by improving ditches (e.g., increase storage/conveyance capacity, remove invasive plants like Phragmites that backfill ditches), installing bioswales

along railroad tracks.

Where: Multiple: the eastern and northern edges of the Union Pacific intermodal facility (especially the service road at East 148th Street); the northern edge of the industrial area at Greenwood Road and California Avenue

How: Identify locations where edge treatments can alleviate local flooding; establish a partnership with railroad companies and industrial site owners to make improvements to their land; use Growth Zone incentives to implement stormwater improvements at industrial centers and railroad corridors; where feasible, create off-road trails in tandem with edge improvements

How much: TBD

Who leads: Village of Dolton, railroad companies, SSMMA

Resources needed: There are several incentive programs that are intended to support the improvement, clean up, and redevelopment of industrial sites in the Calumet Corridor (e.g., Growth Zone, and TIFs); these incentive programs could be used enable public and private investments that simultaneously improve industrial sites and alleviate flooding in surrounding neighborhoods

PRIORITY: 

PHASING: 

STRATEGY 9: REDEVELOP INDUSTRIAL SITES IN A WAY THAT REDUCES NEARBY FLOODING

RECOMMENDATION 9.1

Like many older riverfront communities that came to prominence during the industrial era of the 20th century, most of Dolton's

riverfront land is dedicated to industrial uses. This was necessary when the Calumet Area Waterways primarily functioned to transport industrial goods and wastewater, but this is no longer the case. Recent water quality improvements (largely due to the MWRD's efforts), the forthcoming Cal-Sag Trail, and resident preferences for community amenities has prompted many south suburban to reconsider dedicating valuable waterfront property to industrial uses. The Village of Dolton should consider a broader array of potential land uses (beyond industrial) when redeveloping its Northern Industrial Corridor. Any new development or redevelop efforts—whether industrial or otherwise—should not only manage any new stormwater, but reduce flooding in the surrounding areas. These could be accomplished by incorporating regional stormwater detention facilities that provide broader community benefits.

Where: Northern Industrial Corridor

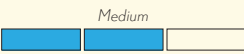
How: Here are some initial concepts for reimagining Dolton's Northern Industrial Corridor: 1) convert the Marina and Development Site #4 into an outdoor recreation area; 2) create an innovation district or green manufacturing district in Development Site #1 and connect this site to Downtown Dolton via a commercial complete street along 142nd Street; 3) permanently preserve and protect Development Site #2 (i.e., John W. Needles Park) as shared open space, connect this site (via a pedestrian bridge over the IHB Railroad to the Marina; target Dolton's industrial (re)development efforts to Development Sites #1 and #3

How much: N/A

Who leads: The Village of Dolton, the planning team (SSMMA, potential master developers and end users, IHB Railroad)

Resources needed: There are several incentive programs that are intended to support the improvement, clean up, and redevelopment of industrial sites in the Calumet Corridor (e.g., Growth Zone, and TIFs); these incentive programs could be used enable public and private investments that simultaneously

improve industrial sites and alleviate flooding in surrounding neighborhoods

PRIORITY: 

PHASING: 

RECOMMENDATIONS FOR YOUR OPEN LAND AND NATURAL AREAS



STRATEGY 10: DEVELOP THE CAL-SAG TRAIL AND OTHER OUTDOOR RECREATION AMENITIES

RECOMMENDATION 10.1

The completion of the Cal-Sag Trail will create new economic develop, outdoor recreation, and public health opportunities for communities along its alignment (i.e., trail path). If green infrastructure BMPs are incorporated into the Cal-Sag Trail, the trail could also serve to alleviate local flooding issues. Therefore, the Village of Dolton should incorporate green infrastructure BMPs (e.g., roadside bioswales, permeable pavement, vegetated swales, and tree plantings), place-making amenities (e.g., create beautiful places to walk, rest, and gather), and wayfinding signage into the design of Dolton's portion of the forthcoming Cal-Sag Trail.

Where: Cal-Sag Trail alignment in Dolton (stormwater projects would have the most flood reduction impact if installed along the alignment between the intersection of East 138th Street and South Indiana Avenue to the intersection of Lincoln Avenue and Chicago Road)

How: Engage residents in the trail planning and design process; Ensure that GI BMPs are included in the final trail designs; seek to create connections to points-of-interest (e.g., Downtown Dolton, Lake Cottage Grove, Needles Park) via Dolton's expanding network of commercial and residential complete streets; leverage the new trail to support Dolton's economic development (e.g., use Dolton's "trail town" status to drive increased retail activity and housing goals, and market Dolton to families and young professionals seeking an affordable community with great access to parks open space)

How much: N/A

Who leads: Village of Dolton, the Cal-Sag Trail Coalition

Resources needed:

PRIORITY: 

PHASING: 

RECOMMENDATION 10.2

The residential neighborhood on the far southeast part of town has been dealing with chronic overland flooding issues for decades. Flooding in this area is likely caused by a number of factors such as: a local sewer network that is undersized and degraded, runoff from surrounding areas to the north and northwest (which may be exacerbated by runoff from I-57, and a vacant land area that does not effectively absorb (i.e., infiltrate or evapotranspire water). One potential solution to flooding in this area is to create a new naturalized detention basin in the vacant land area that manages runoff from areas to the

north and northwest in concert with other sewer infrastructure and drainage improvements. Besides solving a local flooding issue this new wetland can also create new recreational (e.g., walking/hiking, fishing, birding) and environmental education opportunities for nearby residents.

Where: The vacant land area generally bounded by East 154th Place to the north (south of the residences), I-94 to the west, 156th Street to the south, and Clyde Avenue to the east

How: Complete a drainage study of the site; convene a planning team consisting of the Village of Dolton, the RainReady Dolton Steering Committee, the City of Calumet City (as this site crosses into their jurisdiction) and Countryside Health Care; create a site plan that resolves the local flooding issues, creates connections to the Little Calumet River and Forest Preserve lands to the South; apply for technical assistance if needed; apply for grants to assist in implementing this project

How much: TBD

Who leads: The Village of Dolton, the planning team organizations/agencies that could provide local technical assistance (CMAP, NPS, Openlands)

Resources needed: TBD

PRIORITY:

High

PHASING:

Medium



STRATEGY 11:
INTEGRATE GREEN INFRASTRUCTURE
INTO DOLTON'S PARK SYSTEM

RECOMMENDATION 11.1

Improve Dolton's parks in a way that restores and connects natural ecosystems, manages stormwater, and expands outdoor recreation opportunities. Incorporate green infrastructure features like naturalized detention ponds, rain gardens, permeable pavement, and bioswales, as well as new play structures.

Where: Needles Park, Dolton Park

How: Engage residents in the planning process; ensure that final designs incorporate GI BMPs; where appropriate, re-direct water from streets into bioswales on park land (this would reduce street flooding and define/beautify the edges of parks; Include project(s) in the Park District's ongoing capital improvement planning and implementation efforts; implement a policy that encourages the conversion of underutilized lawns into native plant gardens; apply for grants as opportunities arise

How much: N/A

Who leads: The Dolton Park District

Resources needed: Funding to improve new and existing parks

PRIORITY: TBD LOCALLY

PHASING:

Medium

1924

ADMINISTRATION BUILDING

RainReady Calumet Corridor

Plan for Calumet City, IL

CNT



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A CITIZEN'S GUIDE TO A RAINREADY CALUMET CITY



A RainReady Calumet City would be a community where all residents and businesses benefit from flood relief in a way that also brings neighborhood beautification, retail activity, new jobs, recreation, and habitat conservation. In this community, public investment is transparent and fair.

In order to better understand Calumet City's flood risk, the Center for Neighborhood Technology (CNT), the U.S. Army Corps of Engineers, the RainReady Calumet City Steering Committee, and Calumet City joined together in February 2016. Throughout the year, this group met regularly, hosted community meetings, went door-to-door in the neighborhoods, held seven educational workshops, held five Steering Committee meetings, and reviewed over 100 plans and studies. 104 Calumet City residents filled out our flooding survey.

Together, we have established a shared vision and path toward a flood-resilient Calumet City: The RainReady Calumet City Plan. This Citizen's Guide to a RainReady Calumet City covers the highlights of the plan, for more information visit www.rainready.org/calumet-corridor.

A Path Forward

Calumet City has been proactive in developing a robust sewer maintenance plan and setting up a cost-share program to assist homeowners who experience flooding. The path forward for the community includes building on the community's strengths as well as coordinating investments in sewer maintenance and new green and grey capital infrastructure projects that protect public and private property.

Equipped with the RainReady Plan, the City now has a roadmap to reduce flooding in a way that strengthens neighborhoods and businesses, and brings new life to vacant areas of town. With modern and well-maintained infrastructure, the City will be prepared to weather future storms—both large and small.

**KEEP READING FOR MORE INFORMATION ON THE
PATH AHEAD FOR CALUMET CITY!**



**US Army Corps
of Engineers®**

Understanding the Problem

Like many of its neighbors, Calumet City has long been plagued by chronic flooding. In recent years, the scope and severity of the floods have become significantly worse. A combination of aging and limited infrastructure and changes in regional climate have left many Calumet City residents and infrastructure systems vulnerable to flooding. From 2007 to 2011, 4,620 flood-related insurance claims were filed, with more than \$12,603,844 dollars paid out in damages (CNT, 2014). Residents suffer a mix of basement backup, street and yard flooding, overbanking from the Little Calumet River, and foundation seepage. In 2015, the broader Calumet Corridor in which Calumet City is located was identified by Cook County as the area that was “most impacted and distressed” by the April 2013 storms (DR-4116). Strategic policy changes and coordinated investment in green and grey infrastructure capital projects and ongoing maintenance will be part of the mix of solutions necessary to mitigate chronic flooding issues and large storms.

RainReady Calumet City Survey Results



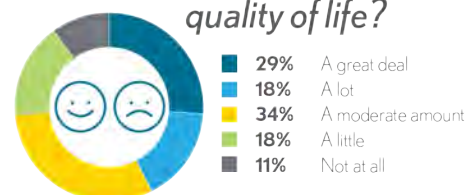
How does water enter properties?



What is the level of worry about flooding's impact on property value?



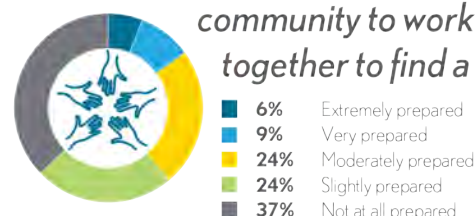
How much do heavy rains impact quality of life?



How much do heavy rains impact commute or other travel?



What is the preparedness of the community to work together to find a solution?



How effective will local government officials be in addressing flooding issues?



Data Source: CNT Survey, 2016

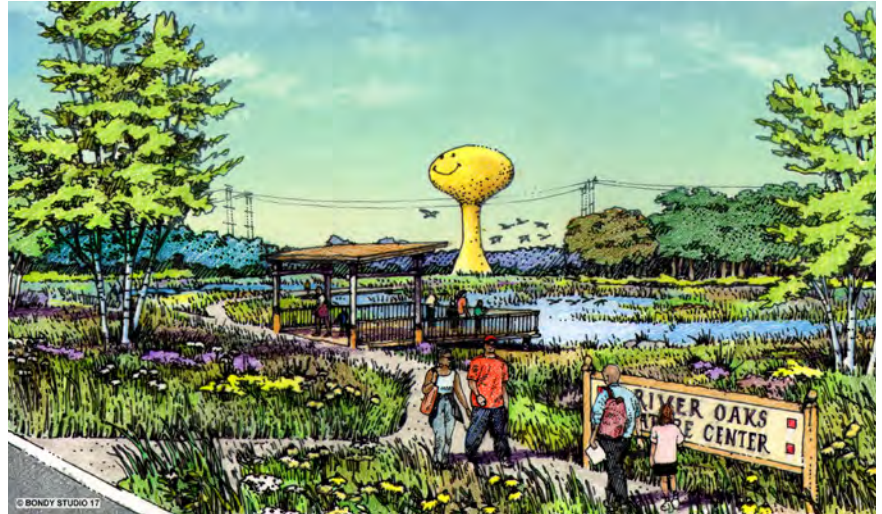
*Respondents who answered “Yes, I experience problems” and “I do not experience problems anymore” were grouped into the “Yes” category because both sets of respondents experience ongoing flooding problems or have experienced problems in the past, respectively.

Planning the Solutions

The path ahead for Calumet City requires coordinated action at multiple scales. Fortunately, community residents, municipal staff, and elected representatives are aligned in their desire for a more beautiful, flood-resilient community. The RainReady Plan recommends the following priority projects from a comprehensive list of recommendations:

RETROFITTING PARKING LOTS

Calumet City has many large parking lots. When a big storm hits the city, rainwater runs off these parking lots in sheets, often overwhelming the local sewer and sending pollutants into local waterways. While access to safe and convenient parking is necessary to support Calumet City's commercial corridors, many of these lots sit vacant most of the time. Fortunately, it is possible to retrofit parking lots in a way that creates a safer and more inviting pedestrian environment, increases economic activity, and mitigates local flooding issues.



NEIGHBORHOOD GREENING

Create a network of beautiful residential streets built to capture stormwater, increase property values, and make streets safer for walking, biking, and playing. This program would help community members soak up rain by installing green infrastructure in their yard, parkways, parks, and vacant properties in the neighborhood. RainReady recommends concentrating efforts in the neighborhoods south of Pulaski Road between Burnham Avenue and State Line Road where there is a large concentration of vacant parcels.



INVEST IN THE NEW TOWN CENTER

Calumet City is already working to bring fresh energy to its Town Center. RainReady recommends that these improvements incorporate strategies to reduce flooding while creating beautiful public spaces. This could include community gardens, improvements to Memorial Park, bike lanes adjacent to bioswales, and rain gardens at existing and proposed government buildings.



Quick Steps

We know that residents experience flooding every summer, and the need for help is urgent. Here are 7 solutions that homeowners should consider to reduce their risk today:

- **ASSESS YOUR PROPERTY.**

The first step to solving your flood problem is to understand how water falls on your property and flows through your pipes. If you have significant problems, you may need the help of an engineer, plumber, electrician, or landscape designer.

- **MAKE YARD IMPROVEMENTS.**

In order to reduce flooding, capture stormwater runoff using rain gardens, swales, dry wells, permeable paving, rain barrels, or cisterns.

- **ELEVATE YOUR APPLIANCES.**

If water regularly enters your home, place appliances, furnaces, hot water heaters, and electrical panels above the typical flood level on wood or concrete blocks.

- **HAVE YOUR BUILDING SEWERS CHECKED.**

Faulty pipes connecting your home to the municipal sewer system can exacerbate foundation damage and flooding in your home. Ensure that grease, waste, or tree roots are not obstructing the pipe and preventing wastewater from leaving the house.

- **RECLAIM YOUR PARKWAY.**

The strips between sidewalks and streets can be transformed into attractive green spaces that absorb stormwater runoff, reduce municipal maintenance costs, and beautify streets. Be sure to check your municipal code for which plants are permitted.

- **GET INSURED.**

There are several options available to protect you against the risk of water damage, including home insurance policies, flood insurance riders, and the National Flood Insurance Program (NFIP), established by FEMA and administered by your local insurance companies.

- **ADVOCATE FOR THE RAINREADY PLAN.**

This plan outlines solutions to community wide flooding. Get involved in your local Steering Committee to make sure the plan is implemented!



GET INVOLVED!

Community leaders joined together in 2016 to form the RainReady Calumet City Steering Committee. The Committee is particularly focused on retrofitting vacant lots, alleys, and vast concrete districts with green infrastructure. They also seek to expand social and youth activities. Join in!

The RainReady Calumet City Steering Committee meets monthly! For more information contact Rebecca Raines at rraines@cnt.org or 773.269.2217.

CALUMET CITY

COMMUNITY SNAPSHOT

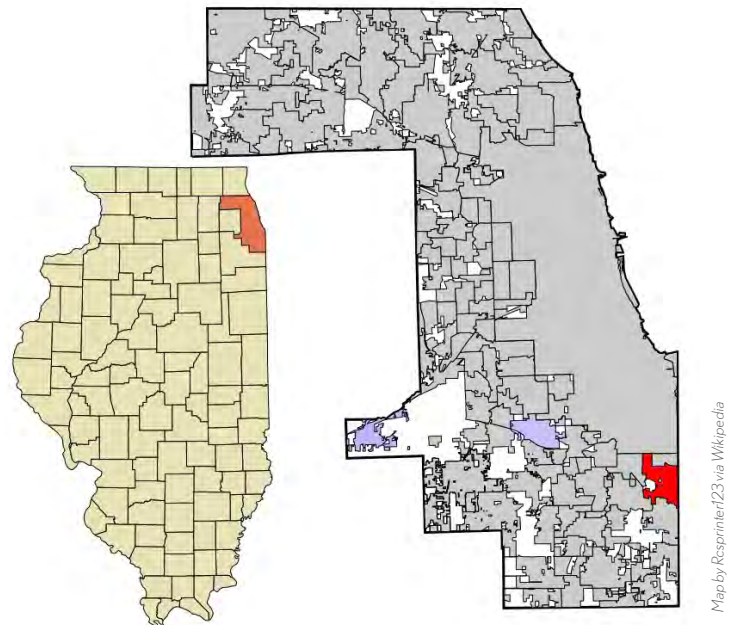
Calumet City is adjacent to Chicago and shares its eastern border with the Indiana state line. The City consists of 7.31 square miles of land, with the Calumet River flowing through the City's northern edge. Calumet City is bordered by Burnham and Chicago to the north, Hammond, Indiana to the east, Lansing to the south, and Dolton and South Holland to the west. The City lies along Interstate 94 (Bishop Ford Freeway) and is in close proximity to Interstate 80 (Kingery Expressway). These two major expressways provide access to the entire region, and in the case of Interstate 80, the entire nation.

In the 123 years since incorporation, Calumet City has been a hub to meatpackers, beer brewers, printmakers, and famed bootlegger Al Capone. These days, River Oaks Center draws shoppers from across the south suburbs, the improved Public Library and Police Department set a standard for public excellence, and Calumet City public schools empower young people to be leaders in the community. The City still conducts business from its original, brick-laid City Hall building.

As in many other neighboring communities, however, residents and businesses of Calumet City experience severe and chronic flooding. From 2007 to 2011, 4,620 flood-related insurance claims were filed, with more than \$12,603,844 dollars paid out in damages (CNT, 2014). Flooding in Calumet City exacerbates existing challenges, such as maintaining older homes, economic divestment, and aging public infrastructure. On the other hand, efforts to mitigate Calumet City's flooding challenges can also support the community's broader economic and community development goals.

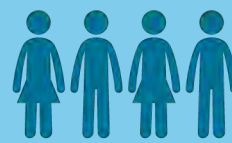
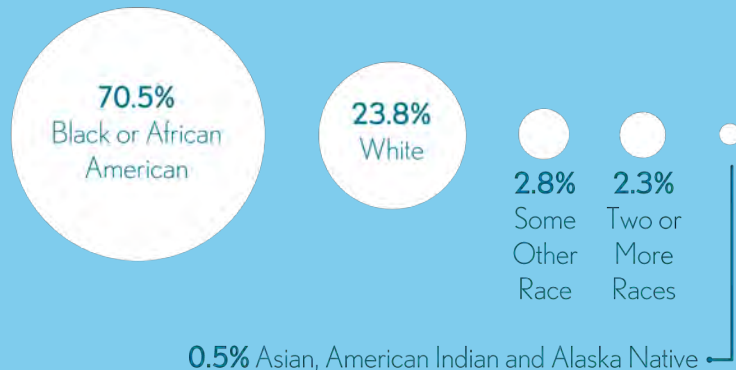


FIGURE CC-1:
Location of Calumet City within Cook County



Calumet City, IL AT A GLANCE

racial composition



37,197
total population

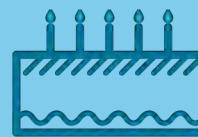


16,233
total number of households



86% of residents hold high school diploma

16% of residents hold college diploma



35
median age

Cook County \$54,828

Calumet City **\$39,530**

Cook County \$30,468

Calumet City **\$20,066**

median
per capita income

median
household income



22%
people below poverty level



19%
unemployment rate
(people age 16+)

Data Source: US Census

Flooding Risks and Resilience Opportunities

Residents and business owners in Calumet City experience several types of flooding:

- **Basement backup** from the local sewer system and damaged private lateral lines, impacting several parts of town
- **Street and yard flooding** which occurs when local drainage systems are overwhelmed with stormwater and sewage causing water to pool
- **Foundation seepage** in several areas of Calumet City, causing rot and mold in basement walls
- **Riverine flooding** from the Little Calumet River, which has devastated parts of the City that are along its banks in the past

Areas with higher flooding risk are shown in Figure CC-7. Proposed flooding solutions are also shown on this map. These “green-grey” solutions were identified through a community-driven and analytically-rigorous process. The result is a plan that works, both in terms of its community support and physical and economic feasibility.

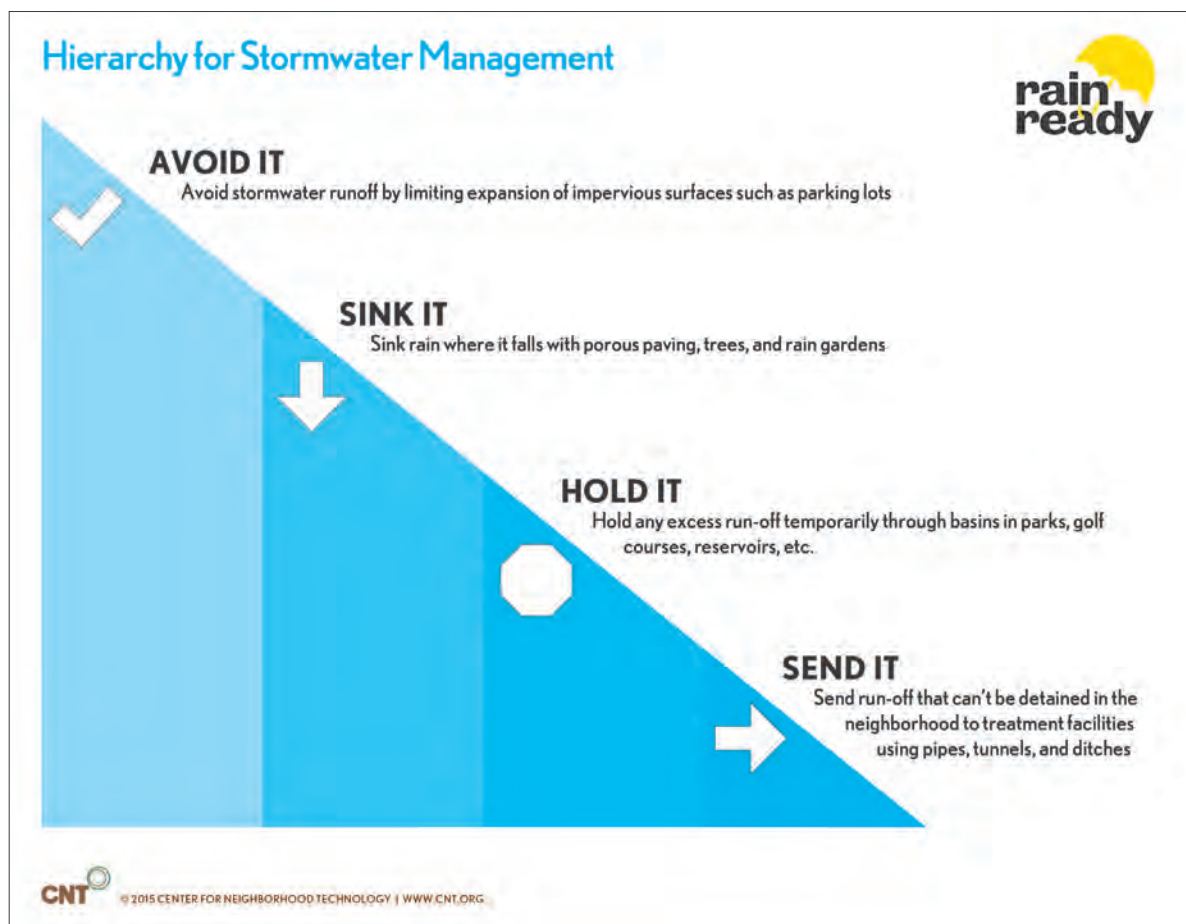


FIGURE CC-2:
Hierarchy for Stormwater
Management

Key findings from this Flooding Risk and Resilience Opportunity assessment are presented here. This risk and opportunity assessment provided the foundation for the strategies and recommendations presented in the RainReady Action Plan for Calumet City.

Four main factors contribute to flooding in Calumet City:

INCREASING IMPERVIOUS SURFACES

As Calumet City developed over time, natural lands were converted to buildings, parking lots, streets, and other “impervious surfaces.” The increase in impervious surfaces resulted in fewer open areas for stormwater to sink into the ground. As Calumet City takes steps to redevelop certain commercial and industrial areas (e.g., the New Town Center Area, commercial corridors along Sibley Boulevard, Torrence Avenue, Burnham Avenue, River Oaks Drive, and River Oaks Mall), efforts should

be made to manage additional stormwater runoff from new developments as well as reduce runoff from existing impervious surfaces.

AGING AND LIMITED SEWER INFRASTRUCTURE

MWRD’s TARP interceptors run along the western and eastern sections of Calumet City to alleviate backups in the combined sewer network. The southern portion of the network connects near Burnham Avenue and 163rd Street. In the north, the network connects near Burnham Avenue and State Street. Calumet City has one of the most robust storm sewer networks in the region. However, the relative flatness of the landscape is exacerbated by some unique drainage issues. In many areas, the curbs are very low, which causes stormwater to pond on residential lawns, which may contribute to basement seepage. These lawns are ideal locations to install green infrastructure for stormwater management. The age of the sewer may also play a role; as sewer systems age, pipes may collapse

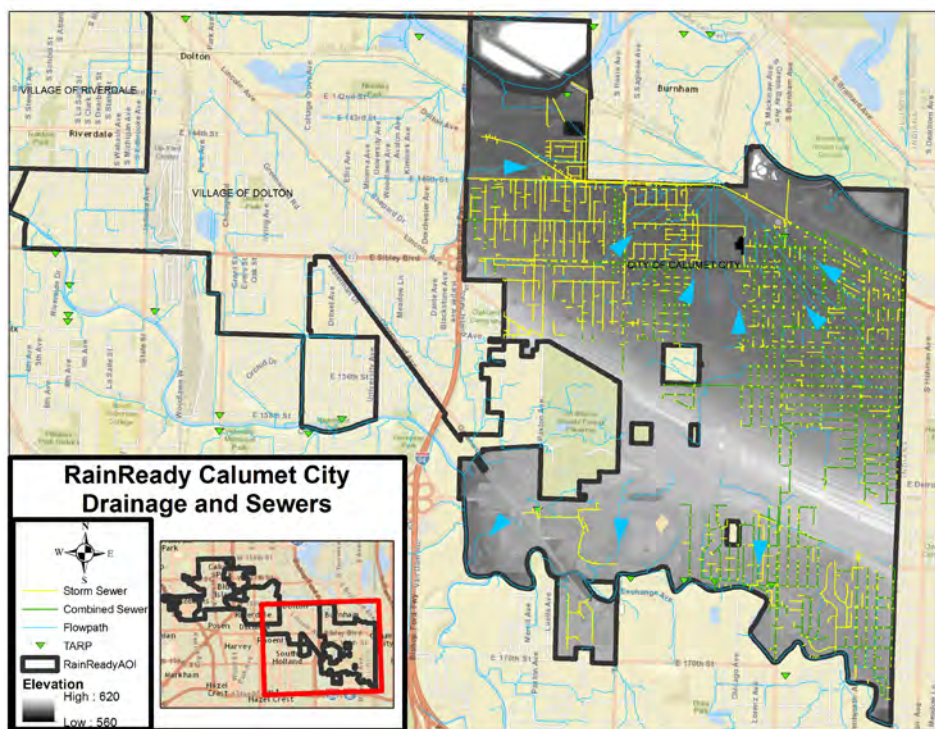


FIGURE CC-3:
Calumet City Drainage
and Sewers



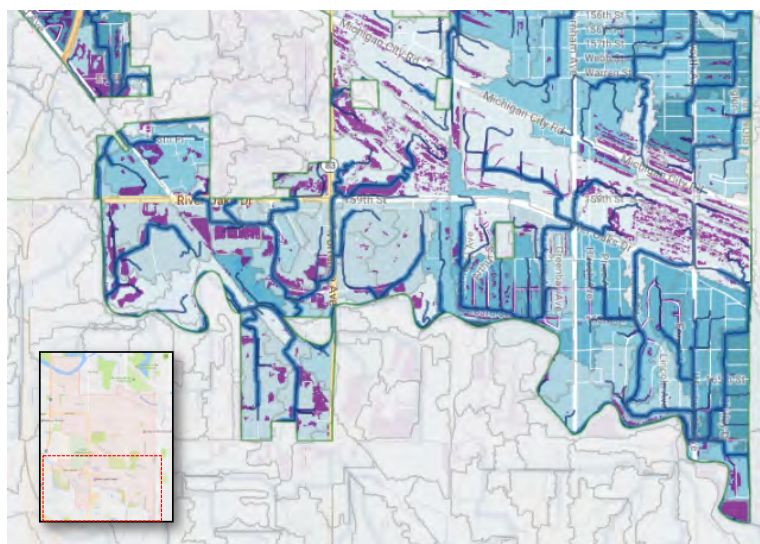
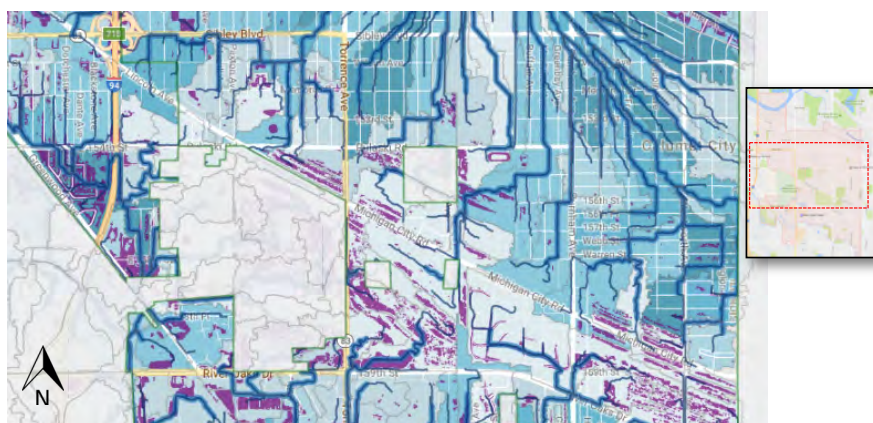
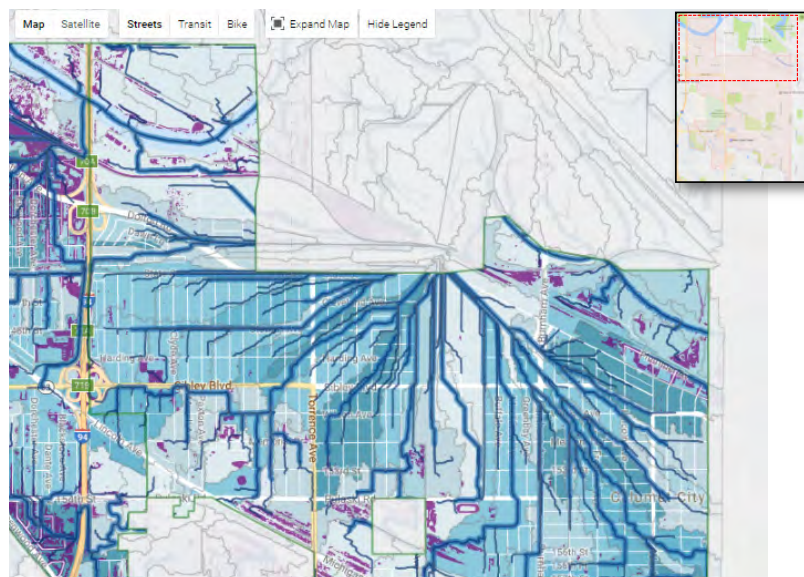
causing local drainage issues. Calumet City should continue to document, inspect, maintain, and repair their municipal sewer system so as to bring it up to a state of good repair.

MORE SEVERE STORMS

Climate change is bringing more frequent, high-intensity storms to the region. In light of this, Calumet City should not only prepare for storms like the one that occurred in April 2013, but also much larger and more frequent storms, and more variable weather (e.g., intense storms followed by long droughts, more freeze/thaw cycles). This will mean inspecting and potentially improving its levee system. Residents, municipal staff, and elected officials should be equipped with the knowledge and resources needed to prepare for, mitigate, and recover from future storms—both large and small.

FLAT TOPOGRAPHY

Since stormwater is largely directed via gravity, Calumet City's generally flat topography creates challenges for moving the water out of neighborhoods. A subtle glacial ridge travels southeast along Michigan City Road, splitting the community into two separate drainage networks. In the north, stormwater makes its way to Burnham, just north of where State Street bends to parallel rail lines. Stormwater continues at a slow downward slope to an outfall into the Grand Calumet River. In the south, stormwater mostly drains directly into the Little Calumet River.



FLOOD RISK

low 1 2 3 4 5 high

Map Overlays: ☒ Catchment Flow Path ☒ Depressions

These overland flow path and depression area maps show where stormwater is likely to flow and accumulate, or pool, in Calumet City. These maps are based on high-resolution digital elevation models (DEMs) derived from Light Detection and Ranging (LiDAR) technology.

Although LiDAR provides very detailed information on land cover and topography, there are several factors that may result in discrepancies between these maps and how stormwater actually flows through a community (e.g., small landscape features like gutters, curbs, small hills that route water, which may not have been picked up in our flow path analysis). Also, each community has a sewer and drainage system that is designed to intercept and manage stormwater. Our team modeled the flow of stormwater over the landscape as if local sewer systems are at full capacity and could not handle any additional flows. In other words these maps only show the overland flow paths and accumulation of stormwater and do not factor in the underlying sewer network.

In spite of these limitations and assumptions, these maps represent a good approximation of how stormwater is likely to flow and accumulate in the Calumet Corridor. These maps were used alongside other information on flooding risk and solution opportunities to determine where green infrastructure retrofits could alleviate local flooding issues. This information informed each community's action plan.

FIGURE CC-4:
Calumet City Urban Flooding Risk Assessment

FIGURE CC-5:
Key Plans Reviewed for Calumet City

Name	Lead(s)	Year Completed / Status	Focus
Calumet City Comprehensive Plan	CMAP	2014	Comprehensive Plan
Calumet City Natural Hazards Mitigation Plan	Calumet City Floodplain Management Planning Committee	2011	Natural Hazards
Healthy HotSpot Complete Streets Technical Assistance Program	ATA	Policy written, waiting adoption	Transportation

The following section summarizes what we heard from Calumet City residents, municipal staff, and elected representatives through the RainReady planning process as well as what we gathered from previous plans completed for the City (see Figure CC-5). To make this information easier to digest, we organized it into community strengths, concerns, and land-based opportunities (i.e., planning priorities and capital projects) that apply to: 1) your homes and neighborhoods; 2) your business districts and shopping centers; 3) your industrial centers and railroad corridors; and 4) your open space and natural areas. We also created a community asset map to prompt ideas about how Calumet City's RainReady Action Plan can strengthen and build on existing community assets.



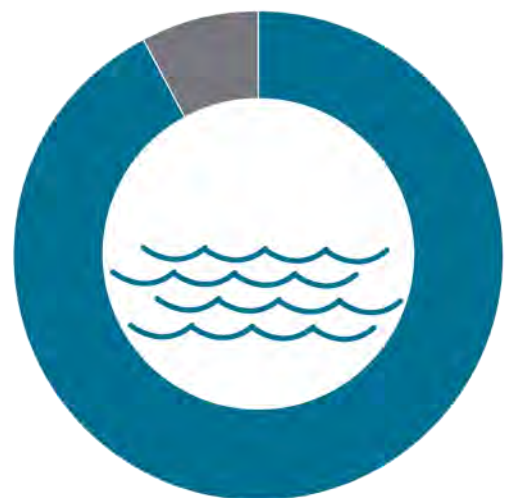
RainReady Calumet City COMMUNITY SURVEY

Respondents experiencing flooding problems

Respondents who answered "Yes, I experience problems" and "I do not experience problems anymore" were grouped into the "Yes" category because both sets of respondents experience ongoing flooding problems or have experienced problems in the past, respectively.

■ **92%** Yes
■ **8%** No

104 survey
respondents



\$4,291 is the average amount spent on stormwater-related repairs

\$1,526 is the average amount residents are willing to invest to reduce risk of future damage



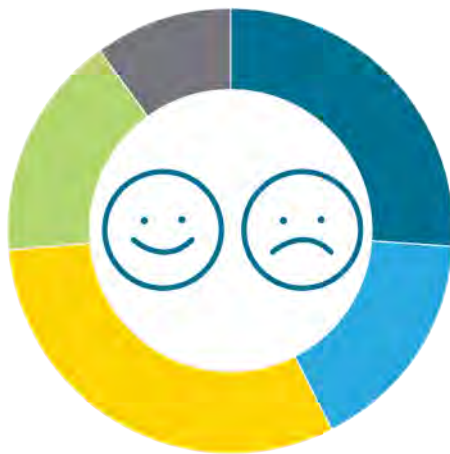
How does water enter properties?

■ **34** Backing up through drains
■ **51** Seeping through walls
■ **16** Flowing through doors/windows
■ **26** Pooling/ponding in yard
■ **16** Overflow from street, creek, nearby body of water
■ **7** Other
■ **3** Don't know

What is the level of worry about flooding's impact on property value?

Extremely worried **37%** ■
Very worried **15%** ■
Moderately worried **20%** ■
Slightly worried **19%** ■
Not at all worried **9%** ■

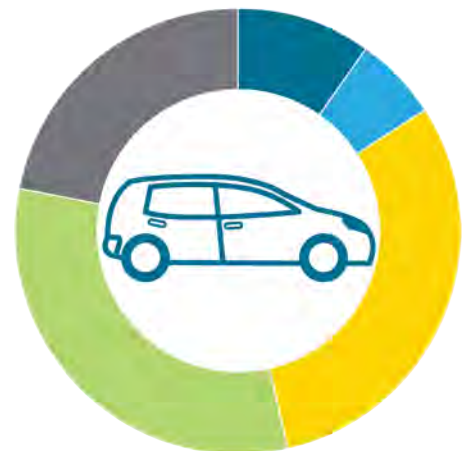




How much do heavy rains impact quality of life?

29%	A great deal
18%	A lot
34%	A moderate amount
18%	A little
11%	Not at all

How much do heavy rains impact commute or other travel?



A great deal	10%
A lot	6%
A moderate amount	31%
A little	32%
Not at all	22%



What is the preparedness of the community to work together to find a solution?

6%	Extremely prepared
9%	Very prepared
24%	Moderately prepared
24%	Slightly prepared
37%	Not at all prepared

How effective will local government officials be in addressing flooding issues?



Extremely well	8%
Very well	4%
Moderately well	24%
Slightly well	19%
Not at all well	45%

Data Source: CNT Survey, 2016

YOUR HOMES AND NEIGHBORHOODS



COMMUNITY STRENGTHS

-
- Calumet City Public Library
-
- The local newsletter
-
- Some residents are very involved with maintaining their yards and even the public right-of-way
-
- Resident population is relatively young and diverse
-
- See Community Asset Map (Figure CC-6)

COMMUNITY CONCERNS

-
- Flooding!
-
- The two-way communication between the City and residents can be improved
-
- Poor alley conditions (gravel has been gradually applied to alleys, but without proper grading)
-
- Calumet City would like to increase homeownership
-
- See Urban Flooding Risk Assessment (Figure CC-4)

LAND-BASED OPPORTUNITIES (PLANNING PRIORITIES AND CAPITAL PROJECTS)

Previous plans have called for:

-
- Improving and maintaining Calumet City's sewer and drainage infrastructure (e.g., removing settlement from the Yates detention basin, separating the existing combined storm/sewer system, lining and televising sewers, maintaining and improving the levee, enhancing the Superior Avenue and State Line Detention Basins)
-
- Pursuing a public-private partnership to redevelop the open area corridor near Pulaski at State Street for a residential use
-
- Implementing innovative redevelopment projects (possibly in partnership with the SSMMA and SSLBA) at City-owned vacant lots where housing has been torn down.
-
- Revitalizing the area roughly located east of Freeland Avenue, south of Sibley Avenue, west of State Line Road, and north of 155th Place as Calumet City's new Town Center. Calumet City lacks a strong identity and is usually only associated with the River Oaks Mall. While the mall is a great asset, the City would like to have a walkable and safe environment where its citizens can gather and others from out of town will want to visit. The mall is an auto-centric



environment where businesses may come and go. The concept for the Town Center is to create a long lasting and sustainable identity for the City. The vacant parcels and proximity to nearby amenities such as Memorial Park, makes this area a great location to create a City identity. With a limited demand for retail, due to the economy and low traffic counts, this area will not be considered a traditional downtown. While discussing the area with local residents, some of the main reasons this area is not visited often is due to the high crime and lack of activity. With downtown Hammond nearby, many residents cross the border for goods and services, in particularly the Strack and Van Til Grocery Store.

- Initiate a capital improvement program to fund a new police station and locating that a new station near the existing City Hall where a strong police presence could reduce the crime in the area.
- Continuing to upgrade the Calumet City Public Library's facilities as the City grows and new technologies become available
- Turning some the vacant lots scattered throughout the community into community gardens that to grow local food and provide a gathering spot for the neighborhood. The City should work with local restaurants to allow them to grow fresh food in the garden to use for their business. This will help strengthen ties between the City and local businesses while also providing the public with fresh food. It is also advisable

for the City to work with organizations which have a good reputation for establishing community gardens.

- Creating a community garden in Calumet City's Town Center area
- Implementing a variety of measures (signs, educational brochures, one-on-one talks with City staff during inspections) to advise property owners of their drainage maintenance responsibilities
- Install green infrastructure BMPs in the "Frogtown" neighborhood to mitigate flooding

Here are some ideas that emerged through the RainReady planning process:

- Development of the Pulaski Road Corridor from Torrence to State to link key sites (high school, police, library, city hall) with attractive streetscape, open space amenities and facade improvements to create a "sense of place"
- Develop the multiple lots controlled by the City where housing has been torn down through private-public partnerships, specifically in the neighborhood southwest of City Hall
- Encourage improvement to residential properties and buildings by updated local ordinances and building codes, a façade improvement program, and a residential cost-share program

YOUR BUSINESS DISTRICTS AND SHOPPING CENTERS



COMMUNITY STRENGTHS

- River Oaks Mall
- Torrence Avenue as the retail base of Calumet City-aside from River Oaks Mall- with anchors such as CVS and Walgreens plus high traffic counts
- Calumet City is a relatively attractive market for office space development
- Excellent regional location
- Business-friendly environment
- Affordable housing

COMMUNITY CONCERNS

- There is a desire to improve Calumet City's regional identity
- Underutilized commercial/retail corridors
- River Oaks Mall is a car-centric environment, that is not inviting for pedestrians
- There are many large parking lots throughout Calumet City that sit vacant most of the time
- Flooding in streets and parking lots
- High crime rates

- Competition with nearby downtown areas leading to retail leakage

LAND-BASED OPPORTUNITIES (PLANNING PRIORITIES AND CAPITAL PROJECTS)

Previous plans have called for:

- Adopting flexible and adaptive zoning policies to address changing market conditions
- Pursuing mixed use development opportunities along major corridors, near River Oaks Center, and in the Town Center area
- Linking key sites (high school, police, library, city hall) along the Pulaski Road Corridor from Torrence to State with an attractive streetscape, open space amenities and facade improvements that create a "sense of place"
- Pursuing infill redevelopment projects (that include streetscape improvements and a facade improvement program) along the Torrence Avenue and Sibley Avenue commercial corridors
- Developing additional "outlots" around the River Oaks Mall (similar to what has been done at Chicago Ridge Mall), including unused parking areas around the mall on all sides. Properties with frontage along Torrence or River Oaks Drive are best suited for retail/restaurant or office uses, while properties along Ring Road are suggested for mixed use including offices and high density housing. The City has explored the potential for a casino in this area. Such entertainment uses would also be appropriate. While it is recognized that many of these lots along Torrence Avenue and 159th Street will be needed for parking, some additional outlot development will add to the vibrancy of the area. One or more of these outlots could also be used for stormwater management if needed.
- Enhancing the streetscape appearance along Torrence Avenue, including a new gateway treatment from the Little

Calumet River Bridge to Ring Road, a potential landscaped median, and enhanced landscape treatments on private property throughout the corridor. Coordination with Lansing to the south is recommended along Torrence Avenue to create a consistent streetscape concept for the corridor.

-
- Creating better accommodations for bicyclists, including bike lanes along Ring Road and multi-use paths leading into this major shopping/dining area along River Oaks Drive/159th Street and north along Torrence Avenue through the Forest Preserve property.
-
- Developing a unique and identifiable community gateway between the Bishop Ford Freeway and Madison Street. Focusing Sibley Boulevard streetscape enhancements on improving the appearance of this corridor as an entryway into the City and on making the area friendlier to pedestrians.
-
- Enhancing pedestrian and bicycle movement through the Pulaski Road corridor and visually connecting the area through common light standards and banners
-
- Adopting and implementing a complete streets ordinance. Some key locations where complete streets concepts should be initially implemented are along all of Wentworth Avenue, Michigan City Road, Torrence Avenue, River Oaks Drive, and along Pulaski Road in between Michigan City Road and Burnham Avenue. When funding for maintenance for these main corridors becomes available, the City should look into incorporating complete street concepts. The Chicago Department of Transportation has recently passed a Complete Streets guideline to help with development within the City and should be used as a reference when considering complete street development (www.chicagocompletestreets.org)
-
- Implementing variety of measures (signs, educational brochures, one-on-one talks with City staff during inspections) to advise property owners of their drainage maintenance responsibilities and ways to mitigate their flooding risk

Here are some ideas that were uncovered through the RainReady planning process:

-
- The River Oaks Drive Roadway Improvements were just approved by the Illinois Department of Transportation (IDOT) and is scheduled for Letting in March of 2017. The

project will include traffic signal modification for a pedestrian crossing at River Oaks Drive East Mall Entrance as well as drainage improvements along the north side of River Oaks Drive from Torrence Avenue to River Road to alleviate standing water on the roadway.

-
- Local leaders anticipate adopting a local Complete Streets Policy in 2017
-
- Pursue mixed use development opportunities along major corridors, near River Oaks, and in the New Town Center
-
- Redevelop/Repurpose Calumet City's small commercial buildings for small offices, light manufacturing, or other adaptive reuse
-
- Implement a large-scale green infrastructure improvement project along the southern outer parking area at the River Oaks Mall (e.g., de-pave it and create a restored wetland that improves water quality, manages overbank flooding, and reduces runoff into the Little Calumet River). Connect this new "River Oaks Nature Preserve" to new mixed used developments along the northern and western edges of the River Oaks Malls' "outlots"
-
- Integrate green infrastructure BMPs and façade improvements into mixed-use development projects in the Wentworth Woods Corridor, River Oaks Corridor, Torrence Avenue Corridor, Sibley Boulevard Corridor, and Pulaski Road Corridor in order to revitalize these shopping districts, create a more walkable and inviting pedestrian environment, and expand housing options for families and young professionals.
-
- The City-owned vacant land along Sibley Boulevard between Torrence Avenue and Burnham Avenue is well-suited for mixed use residential development (a proposed development with a developer was unsuccessful some years ago but it would be good to revisit this opportunity through developer outreach). The development should incorporate green infrastructure improvements that not only manage the runoff from any new impervious areas, but also reduces flooding in downstream neighborhoods (to the north) and creates a greenway connection to the nearby Burnham Greenway (to the east).

YOUR INDUSTRIAL CENTERS AND TRANSPORTATION CORRIDORS

Photo: Google Maps

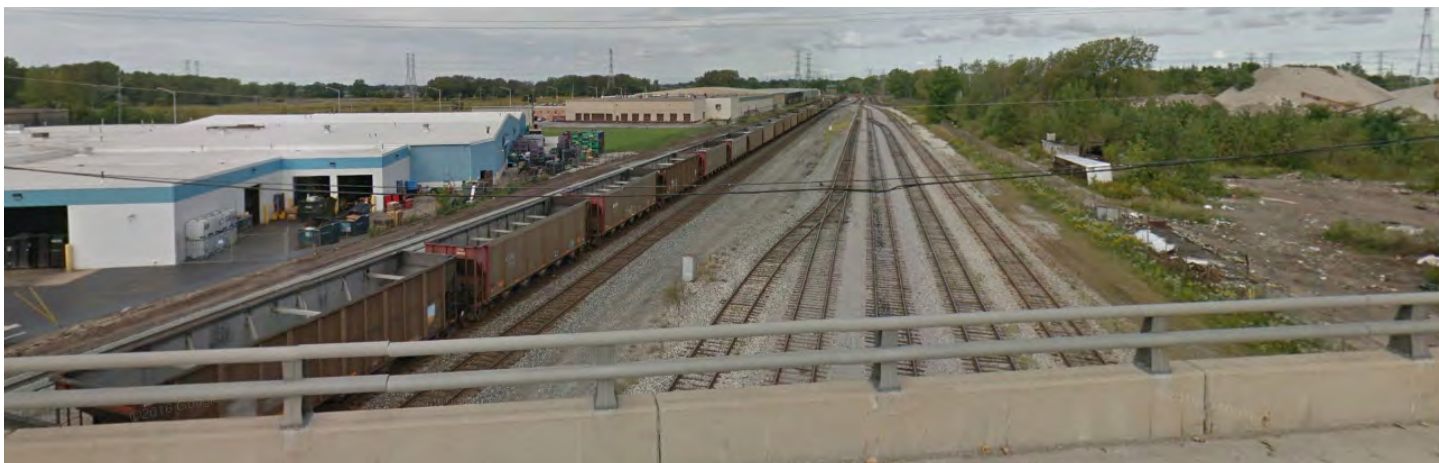


COMMUNITY STRENGTHS

- Easy access via the interstate highway network including the Bishop Ford Expressway
- Recognized hub for industry and commerce
- Positive economic influence for the South Suburbs
- See Community Asset Map (Figure CC-6)

COMMUNITY CONCERNS

- Significant environmental challenges are well documented at several sites (e.g., the Marble Street Superfund Site)
- Runoff from large industrial sites may contribute pollutant loadings into the Little Calumet River and Grand Calumet River
- See Urban Flooding Risk Assessment (Figure CC-4)



LAND-BASED OPPORTUNITIES (PLANNING PRIORITIES AND CAPITAL PROJECTS)

Previous plans have called for:

- Applying for grant funding through the Illinois Environmental Protection Agency (IEPA) to remediate the Marble Street site and establishing a public private partnership to redevelopment and market the area to industrial end users. (NOTE: RainReady's recommendation for the Marble Street site differs from this recommendation)
- Continuing Calumet City's program of sewer and drainage improvements
- Implementing a variety of measures (signs, educational brochures, one-on-one talks with City staff during inspections) to advise property owners of their drainage maintenance responsibilities and ways to mitigate their flooding risk

Here are some ideas that were uncovered through the RainReady planning process:

- The Burnham Greenway Bike Path will be updated to show warning signage and flashers and updated pavement markings. Sidewalk improvements will also be incorporated on the south side of River Oaks Drive from just east of Torrence Avenue to Arthur Avenue.
- The heavy (M2) and light (M1) industrial districts located east of the Burnham Greenway from Michigan City Road to State Street could improve their property edges with green infrastructure (e.g., bioswales, stormwater wetlands, and vegetated filter strip buffers), which would reduce onsite flooding issues and runoff from industrial sites to downstream areas (e.g., Prairie and Marsh Nature Preserve, Burnham Greenway)
- The City should not pursue industrial redevelopment of the Marble Street site

YOUR OPEN SPACE AND NATURAL AREAS



COMMUNITY STRENGTHS

- Ample neighborhood open spaces (e.g., community parks, neighborhood parks, mini-parks), greenways and blueways (e.g., Burnham Greenway, Little Calumet River), and close proximity to forest preserve property and other natural areas (e.g., Sand Ridge Prairie and Nature Center, Superior Street Prairie)
- Calumet Memorial Park Districts' programs and activities for youth and adults that take place at their parks and facilities
- See Community Asset Map (Figure CC-6)

COMMUNITY CONCERNS

- Parks and natural areas are not well connected to neighborhoods
- Too many unnecessary parking lots
- Cooperative relationship between Holy Cross Cemetery and the Cook County Forest Preserve
- See Urban Flooding Risk Assessment (Figure CC-4)

LAND-BASED OPPORTUNITIES (PLANNING PRIORITIES AND CAPITAL PROJECTS)

Previous plans have called for:

- Developing the Cal-Sag Trail, shared use paths, new on-street bike lanes:
 1. The Cal-Sag Trail
 2. The Michigan City Road Path: this path is important because it provides two way traffic across the City from east to west and vice-versa while also connecting to existing paths in Hammond, Indiana; the Burnham Greenway; and future paths in Dolton. For the most part, there is ample room on either side of the road for a 10' wide shared use path.
 3. The River Oaks Drive / 159th Street Path: This path is planned to be layed out along the north side of the street. It will connect the multi-family homes in the west to the River Oaks Mall, the proposed campsite in the Shabbona Woods, the Green Lake Family Aquatic Center, and the Burnham Greenway.
 4. Torrence Avenue & Other Forest Preserve Paths: A shared use path along Torrence Avenue is necessary for the already abundant pedestrian use. Fully paved shared use paths will allow bicyclists and pedestrians alike to travel along the routes in a much safer manner. Since the forest preserve is a major recreational location, the development of paths around it will ensure that residents have better access to this amenity. Calumet City does not own some of these properties or right-of-ways and it is advised that the City work with the Cook County Forest Preserve to ensure that these routes get developed.

5. Ring Road Bike Lane: The existing width of Ring Road is sufficient to accommodate a bike lane on both sides. It will allow residents access to all the retail opportunities around the River Oaks Mall.
 6. Burnham Avenue Bike Lane: To create a bike lane on each side of Burnham Avenue the road would need to be widened. It is possible that a shared use path may be able to run along the west side of the road because there is enough room for a 10' wide path.
 7. Wentworth Avenue Bike Lane: Starting at 165th Street and traveling all the way to Garfield Avenue, the existing width of Wentworth Avenue is sufficient to accommodate a bike lane on both sides. However, north of Elizabeth Street there is only room for cars to park on one side of the street to accommodate the new bike lanes. This is a key path as it will eventually lead into the new Town Center. Memorial Drive in between Wentworth Avenue and Freeland Avenue should be widened to accommodate a bike lane and on street parking. This section of the road will be part of the new town center and will give students from the elementary school and users of memorial park a dedicated safe lane to connect to the other trails within the system without limited parking for the school and park
-
- Rerouting rooftop stormwater drainage to locations other than storm sewers and harvesting that water for other uses in order to handle stormwater onsite.
-
- Installing native plant bioswales and raingardens adjacent to and within parking lots, near buildings, within residential yards and parkways to help mitigate flooding issues.
-
- Installing permeable pavement materials (e.g., permeable concrete, permeable precast pavers, reinforced gravel and grass paving, and permeable asphalt) to allow stormwater to infiltrate through the pavement into the soil below. Some key locations to install permeable pavers include residential driveways, small parking lots, and new sidewalks and crosswalks. The City could provide incentives within its zoning ordinance for those who build permeable driveways and parking lots. These incentives may range from a density bonus to tax incentives.
-
- Encouraging the use of native grasses, forbs, shrubs, and trees in any landscaping project. Native species can withstand a wide range of temperature extremes, use less water, require less maintenance, and use less fertilizer. The City should amend their current zoning ordinance to include regulations regarding planting native landscaping for certain districts (most likely commercial and industrial districts). Another option would be to draft a set of Design Guidelines which would set out a standard for design of all elements within the community including landscaping.
-
- Continue to coordinate with the MWRD on the implementation of stormwater projects identified in the Little Calumet River Detailed Watershed Plan (DWP) and other ongoing MWRD-led channel maintenance and capital improving planning and implementation efforts. Improved coordination with the MWRD (and other stakeholders) will help advance projects that protect the City from overbank flooding.
-
- Creating a new park at the corner of 154th Place and Forsythe Avenue. With the surrounding denser residential uses and close proximity to the hospital, this site is ideal for a community garden.
-
- Here are some ideas that emerged through the RainReady planning process:
-
- Portions of Calumet City's oversupply of parking lots could be de-paved and transformed into new open spaces and natural areas (e.g., the outer ring parking along the southern edge of River Oaks Center). These new open spaces could be connected to other parts of town through existing greenways (e.g., the Burnham Greenway).
-
- The Burnham Greenway could be enhanced with place-making amenities (e.g., public art installations, community gathering spaces) and green infrastructure improvements (e.g., bioswales, tree planning, urban agriculture). These improvements could be applied along the entire greenway or concentrated in the stretch between Pulaski Road and Sibley Boulevard.
-
- Complete the Burnham Greenway Gap and leverage (via "Trail Town" amenities and development) Calumet City's unique connection to multiple regional "greenway" (e.g., The Burnham Greenway, The Cal-Sag Trail, The Greenwood Corridor) and "blueways" (e.g., Calumet Water Trails).
-
- Green infrastructure BMPs (e.g., bioswales, rain gardens, tree plantings) could be installed in parks that are located within or upstream of flood-prone neighborhoods (e.g., Downey Park, Wentworth Woods Forest Preserve, Memorial Park)
-
- Stream (or "riparian") restoration efforts along the Little Calumet River and Grand Calumet River could improve its aquatic health, create new outdoor recreation opportunities, beautify neighborhoods, and improve the streams' capacity to manage large storms.
-
- Enhancement of Veteran's Park to include rain gardens and an improved wildlife habitat while making a stronger connection to the Little Calumet. This would include educational elements to highlight the benefits of green infrastructure to this popular park destination.
-
- Opportunities to connect neighborhoods and residents to the Forest Preserves through improved wayfinding signage, improved gateways, and better street connections with surrounding neighborhoods (e.g., sidewalk improvements).

The map displays the city of Calumet, Illinois, with 60 numbered sampling sites marked by colored dots. The sites are distributed across the city, with a higher concentration in the central and southern areas. Key features include the Calumet River, Lake Calumet, and the Calumet Trail. Major roads such as I-83, I-55, and US-6 are shown. An inset map in the top right corner provides a broader context, showing the location of Calumet City within Cook County, Illinois. A scale bar at the bottom left indicates distances up to 1 mile, and a north arrow is located at the bottom center.

BUSINESSES

- 1 Calumet Collision and Auto Repair
- 2 Castaways Bowl
- 3 Home Depot
- 4 Jamaica Jerk Choice
- 5 Pete's Fresh Market
- 6 River Oaks Mall

COMMUNITY ORGANIZATIONS

- 7 Calumet City Chamber of Commerce
- 8 Calumet City Cultural Center
- 9 American Legion
- 10 VFW Post 81411

GOVERNMENT AGENCIES

- 11 Calumet City Fire Department
- 12 Calumet City Memorial Park District
- 13 Calumet City Police Station
- 14 Calumet City Post Office #1
- 15 Calumet City Post Office #2
- 16 Calumet City Public Library
- 17 Calumet City Public Works & Water Tower
- 18 Water Tank
- 19 Calumet City City Hall & Fire Department
- 20 Water Tank
- 21 Calumet Fire Station #2
- 22 Pumping Station
- 23 Water Tower

HEALTH ORGANIZATIONS

- 24 Ingalls Medical Facility and Urgent Care
- 25 Christian Community Health Center

NATURAL AREAS

- 26 Holy Cross Catholic Cemetery
- 27 Green Lake (FPDCC)
- 28 Green Lake Woods (FPDCC)
- 29 Sand Ridge Nature Center (FPDCC)
- 31 Shabbona Woods (FPDCC)
- 32 Burnham Prairie Nature Reserve (FPDCC)
- 33 Clayhole Woods (FPDCC)
- 34 Wentworth Woods (FPDCC)
- 35 River Oaks Golf Course (FPDCC)
- 36 Calumet City Playfield (FPDCC)

PUBLIC PARKS/PARK DISTRICTS

- 37 Green Lake Family Aquatic Center
- 38 Burnham Woods Golf Course
- 39 Veterans Park
- 40 Sandridge Fitness Community Center
- 41 Memorial Park
- 42 Cleveland Park
- 43 Commissioners Park
- 44 Burnham Park
- 45 Finneran Park
- 46 Watertank Park
- 47 Riverfront Park
- 48 Pulaski Park
- 49 Hoxie Toto Lot
- 50 Egan Park
- 51 Downey Park
- 52 Burnham Greenway

RELIGIOUS INSTITUTIONS

- 53 Calumet City Bible Church
- 54 New Apostolic Church
- 55 Healing Center Cogic
- 56 Higher Ground Community Church
- 57 Our Lady of Knock
- 58 Celia Gregg Memorial AME Church
- 59 St. Victor Church
- 60 God's Word Christian Center
- 61 First Pentecostal Community
- 62 St. Andrew the Apostle Church - Catholic Parish
- 63 First Baptist Church - Calumet

SCHOOLS AND COLLEGES

- 64 American Professional Bartenders School
- 65 Networks Barber College
- 66 Schrum Memorial School
- 67 Hoover Elementary School
- 68 Caroline Sibley Elementary School
- 69 Thornton Fractional Center
- 70 Dirksen Middle School
- 71 S.O.F.A. Academy
- 72 Carol Moseley Braun School
- 73 Dolton East School District 149
- 74 Lincoln Elementary School
- 75 Wentworth Intermediate School
- 76 Wentworth Junior High School
- 77 Woodrow Wilson Elementary School
- 78 Thornton Fractional North High School

COMMUNITY PRIORITIES

Listed below are the community priorities we heard from Calumet City residents, city staff, and elected representatives through the RainReady Planning Process. These community priorities were synthesized with the flooding risk and resilience opportunities assessment to develop Calumet City's Action Plan.

REORIENT

- Ensure that all municipal planting projects in municipality use native plant species
- Educate residents about the relationship between plants, roots, soil, and hydrology and the benefits of nature plants (e.g., the role that amphibians playing in reducing mosquitos)
- Implement policies that permit the repurposing of vacant commercial and retail buildings as social centers and shared community spaces
- Create more youth after-school activities and expand recreational (fitness and social) programs and employment initiatives for youth
- Implement crime abatement and prevention programs
- Create a capacity to brainstorm and agree on effective strategies for reducing flooding
- Create a list of available funds and key decision-makers to contact
- Work collaboratively with various municipalities and agencies in Northwest Indiana to identify and implement strategies to reduce overland flooding and flooding from the Little Calumet River
- Increase community capacity: planning, community organizing/ mobilization, canvassing, implementing on-the-ground projects.

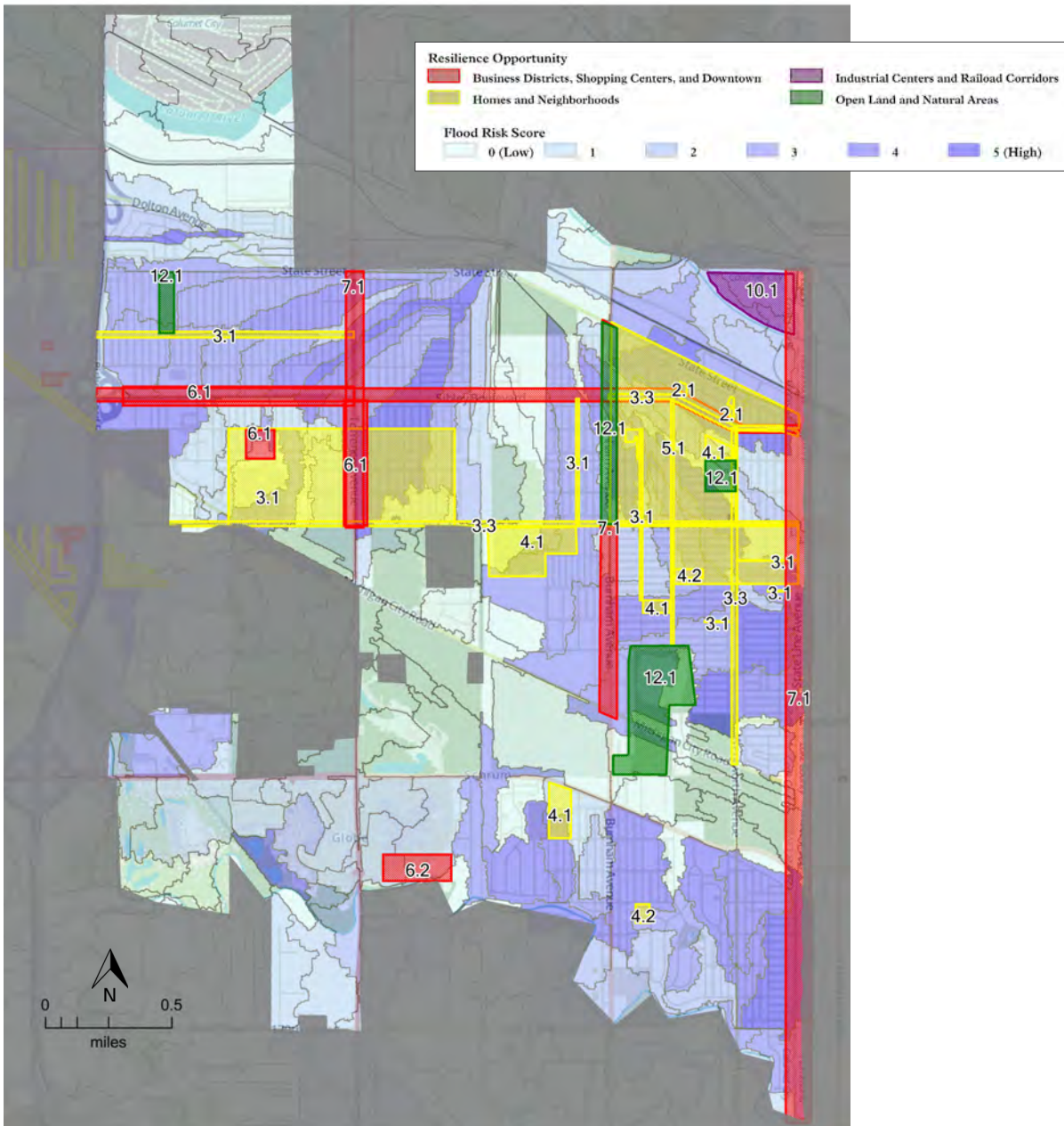
REPAIR (AND MAINTAIN)

- Clean (e.g., remove litter and weeds) and retrofit alleys (e.g., level and regrade gravel, redirect runoff so it flows into end-of-alley bioswales instead of into garages)
- Fix broken sidewalks and build new sidewalks where there are none to improve walkability and connections between different parts of Calumet City
- Record data on flood-prone areas

RETROFIT

- Install more rain gardens and tree plantings to beautify neighborhoods and reduce flooding
- De-pave a large portion of River Oaks Center parking lots and create a new natural area and space for outdoor activities (e.g., walking, hiking, birding, launching boats in the Little Calumet River)
- Improve parkways with bioswales and rain gardens that manage street flooding
- Temporarily or permanently clean up (e.g., remove litter) and green vacant lots with low-mow prairie treatments, wildflower treatments, and tree treatment that beautify neighborhoods, improve property values, and reduce flooding
- Improve local ecosystems: find locations to create wildlife habitat and retain flood waters.
- Activate the New Town Center area and create a new police department
- Strategically retrofit vacant lots, alleys, and vast concrete districts with green infrastructure to offset some of the impacts from stormwater, as well as to enhance property values and community aesthetics.
- Increase connectivity to area destinations via on-street bikeways and off-street trails
- Depave expansive parking lots and restore native ecosystems
- Preserve and restore the natural areas along the Little Calumet River and Calumet River
- Create a cistern system on vacant lots in residential areas

FIGURE CC-7:
Flood Risk
and Resilience
Opportunity in
Calumet City



The map above overlays flooding risk with proposed “Retrofit” recommendations. The colors correspond to the part of town where the recommendation is to be applied and the numbers correspond with the Retrofit recommendations in the Action Plan. Some recommendations in the Action Plan apply community-wide and are not shown on the map.

This map identifies locations where various green infrastructure projects could be integrated into Calumet City’s community fabric (e.g., green streets along residential streets, commercial complete streets along commercial corridors, green schools, etc.). These locations were identified through a thorough

assessment of flooding risk (e.g., known problem areas, survey results, overland flowpaths, depression areas, and impervious coverage) and resilience opportunities (e.g., planning priorities, community assets, capital improvement projects) in Calumet City.

Calumet City should reference this map and the Action Plan to identify opportunities where green infrastructure retrofit projects could be integrated into forthcoming roadway improvements, planned developments, and other capital improvement efforts. This would ensure that future projects deliver multiple benefits, such as improved transportation and flood mitigation.

RAINREADY ACTION PLAN

Steering Committee Mission Statement

A RainReady Calumet City will be a community that works. It will be known a place where residents, city staff, and elected representatives work together and achieve real results. Through strategic and coordinated investments in green, grey, and green-grey infrastructure improvements, Calumet City's aging infrastructure, crumbling alleys, vacant lots, and expansive parking lots will be transformed from liabilities into community assets. Rainwater that used to flood streets and homes will instead flow into beautiful parkway rain gardens. Underutilized parking lots will be transformed into new places to shop, play, and unwind—perhaps even live! Vacant lots will be turned into beautiful and safe places for youth to play and learn about the natural world in their own backyard. Creative public-private projects, partnerships, and policy changes will drive a virtuous cycle of community investment, environmental restoration, and sustainable development. Calumet City will continue improve and move forward along the path toward greater community resilience. A RainReady Calumet City will survive and thrive no matter what shocks and stresses may arise.



RainReady Goals



Reorient Calumet City so that the community is on a path toward resilience



Repair Calumet City's municipal sewer and stormwater drainage systems



Retrofit the built landscapes throughout Calumet City with green, grey, and green-grey infrastructure improvements, and restore natural landscapes

NOTE: This plan outlines a path forward toward a more resilient Calumet Corridor, but implementation of specific recommendations will have to occur at the local level. Adopting this plan demonstrates a local community's commitment to considering these recommendations during capital planning and decision-making efforts and implementing these recommendations as necessary resources become available. In many cases, the City of Calumet City is already actively engaged in a given project or program recommendation. In other cases, additional resources (e.g., external grant funds, dedicated revenue, partnerships, etc.) will be necessary to advance a project or program. The following action plan outlines the actions and associated implementation steps, implementation priority, estimated timeline, and identified potential project leads and resources needed. Further analysis is needed to estimate the costs of most recommendations. The specific details may change as communities take action to advance a recommendation and as new information and opportunities emerge.



REORIENT

COMMUNITY-WIDE STRATEGIES FOR CALUMET CITY

- **Strategy 1.** Build capacity to make well-informed decisions and execute them
- **Strategy 2.** Plan and implement projects collaboratively
- **Strategy 3.** Promote equitable and resilient development at all levels
- **Strategy 4.** Prepare your community for future shocks and stresses



REPAIR

COMMUNITY-WIDE STRATEGIES FOR CALUMET CITY

- **Strategy 1.** Map and document your municipal sewer and stormwater drainage system
- **Strategy 2.** Inspect and evaluate your municipal sewer and stormwater drainage system
- **Strategy 3.** Rehabilitate your municipal sewer and stormwater drainage system
- **Strategy 4.** Maintain your municipal sewer and stormwater drainage system



RETROFIT

RETROFIT STRATEGIES FOR YOUR HOMES AND NEIGHBORHOODS

- **Strategy 1.** Implement a residential resilience program
- **Strategy 2.** Bring new life to vacant residential land
- **Strategy 3.** Create a network of residential green streets, green alleys, and complete streets
- **Strategy 4.** Create green schools and churches

RETROFIT STRATEGIES FOR YOUR SHOPPING AREAS AND BUSINESS DISTRICTS

- **Strategy 5.** Bring new life to Calumet City's New Town Center and commercial corridors
- **Strategy 6.** Bring new life to underutilized parking lots
- **Strategy 7.** Create a network of commercial complete streets

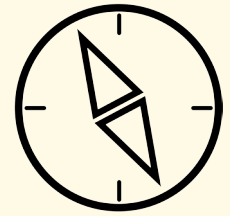
RETROFIT STRATEGIES FOR YOUR INDUSTRIAL CENTERS AND RAILROAD CORRIDORS

- **Strategy 8.** Remediate and repurpose the Marble Street site for a shared open space
- **Strategy 9.** Improve the edges of large industrial sites and railroad corridors

RETROFIT (RESTORE) STRATEGIES FOR YOUR OPEN LAND AND NATURAL AREAS

- **Strategy 10.** Develop the Cal-Sag Trail and other outdoor recreation amenities
- **Strategy 11.** Integrate green infrastructure into Calumet City's park system

GOAL 1: REORIENT



COMMUNITY-WIDE RECOMMENDATIONS

STRATEGY 1:

BUILD CAPACITY TO MAKE WELL-INFORMED DECISIONS AND EXECUTE THEM

RECOMMENDATION 1.1

Adopt/Accept the RainReady Calumet City Action Plan; Update the plan every 2-5 years. Incorporate the plan's recommendations into forthcoming capital improvement planning and decision-making efforts.

Where: Community-wide

How: Participate in the RainReady community planning process (completed); convene a steering committee consisting of residents, municipal staff, and elected representatives (completed); propose and adopt at a Village Board Meeting in early 2017

How much: \$104,000 (this cost has already been paid for by Cook County)

Who leads: CNT/RainReady (for initial plan); City of Calumet City (for adoption and plan updates)

Resources needed: Technical Assistance for planning updates

PRIORITY: 

PHASING: 

RECOMMENDATION 1.2

Engage in regional and local planning and coordination efforts (e.g., the Calumet Stormwater Collaborative, Millennium

Reserve, CMAP's Comprehensive Regional Plans, SSMMA's various committees).

Where: Community-wide

How: Read and continually reference stormwater-related resources; align local strategies with regional initiatives to increase access to funding and technical assistance

How much: Varies

Who leads: The City of Calumet City and regional organizations/ coalitions like CMAP, SSMMA, CSC, CHP

Resources needed: Internal: the City assigns this task to a staff person; External: the SSMMA could hire a stormwater/ resilience-focused staff person to serve this role for all communities in their service area (proposed)

PRIORITY: 

PHASING: 

RECOMMENDATION 1.3

Incorporate best practices data management and stormwater planning for local governments (e.g., continual process improvement, performance management, program evaluation, monitoring, ongoing collection and dissemination of useful data, open data and civic hacking).

Where: Community-wide

How: Use a GIS system to collect, manage, and analyze data on water-related complaints and adopted solutions (e.g., type and source of flooding, damage costs, improvements made to property); partner with research institutions to install sensors that will monitor the performance of green infrastructure installations

How much: There will be initial costs to set up these systems, but these improvements could pay for themselves over time through increased operational efficiencies and improved outcomes

Who leads: City of Calumet City, regional 311 Call Center/Service (proposed-this does not exist yet), SSMMA

Resources needed: Internal: GIS System, staff time; External: SSMMA (data sharing), the Village can expand their monitoring capacity through partnerships with research institutions (e.g., colleges/universities, Argonne National Labs, CNT, UI Labs)

PRIORITY: 

PHASING: 

STRATEGY 2: PLAN AND IMPLEMENT PROJECTS COLLABORATIVELY

RECOMMENDATION 2.1

Sustain the RainReady Calumet Park Steering Committee (SC) and engage this group in the ongoing planning and implementation efforts.

Where: Community-wide

How: Continue to work with the RainReady team in 2017 to get the SC off the ground

How much: Approximately 2-3 hours per month

Who leads: City of Calumet City (e.g., community leaders, municipal staff, elected representatives), CNT/RainReady

Resources needed: CNT/RainReady (to start); ongoing collaboration is volunteer led

PRIORITY: 

PHASING: 

RECOMMENDATION 2.2

Incorporate updates on stormwater projects and other resilience-related topics into the Village's various communication channels.

Where: Community-wide

How: Include a section on "Stormwater Projects" or "Resilience Updates" in official Village communications

How much: Approximately 5-15 hours per month of staff time

Who leads: The City of Calumet City, local media outlets

Resources needed: The City of Calumet City (staff time)

PRIORITY: 

PHASING: 

RECOMMENDATION 2.3

Coordinate with neighboring municipalities on stormwater-related planning and development projects, and the sharing of equipment and services via the Illinois Public Works Association. Cross-jurisdictional coordination has been shown to reduce public costs and maximize benefits of projects, increase operational efficiencies, and improve/expand service delivery.

Where: Community-wide and throughout the Calumet region

How: Where appropriate, pursue Intergovernmental Agreements (IGAs) with municipalities and other government agencies (e.g., MWRD, Cook County); the MWRD has an

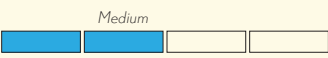
interest in supporting municipal and regional efforts to share equipment/services related to stormwater management

How much: The benefits of cross-jurisdictional coordination (e.g., reduced costs, improved response times) have been shown to outweigh the costs; therefore the investment of staff time in coordination efforts (e.g., approximately 5-10 hours/month) is a good investment

Who leads: City of Calumet City, neighboring municipalities, MWRD, CSC, SSMMA, CMAP

Resources needed: Internal: the City of Blue Island, or share costs (i.e., time) of participation with neighboring communities); External: the SSMMA could hire a stormwater/resilience-focused staff person to serve this function for all communities in their service area (proposed)

PRIORITY: 

PHASING: 

STRATEGY 3:
PROMOTE EQUITABLE AND RESILIENT DEVELOPMENT AT ALL LEVELS—FROM THE HOME TO THE REGION

RECOMMENDATION 3.1

Continue to comply with current stormwater management requirements. Where feasible, improve local ordinances and building codes to promote resilient and equitable development.

Where: Community-wide

How: Conduct an audit of your local ordinances to evaluate areas for improvement; pass common-sense policy changes/updates; adopt an incremental and adaptive approach to implementing green infrastructure and other resilience-building projects (e.g., the *Green Infrastructure Portfolio Standard*)

How much: N/A

Who leads: The City of Calumet City

Resources needed: The City of Calumet City (staff time)

PRIORITY: 

PHASING: 

STRATEGY 4:
PREPARE YOUR COMMUNITY FOR FUTURE SHOCKS AND STRESSES

RECOMMENDATION 4.1

Educate the public on flooding risks.

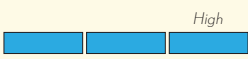
Where: Community-wide

How: Continue to train and prepare residents through Calumet City’s Emergency Service & Disaster Agency (ESDA); partner with American Red Cross, FEMA, and other organizations that can provide disaster preparedness training

How much: N/A

Who leads: The City of Calumet City, ESDA, disaster preparedness organizations/agencies (e.g., American Red Cross, FEMA)

Resources needed: Many of these trainings are free and participation is voluntary

PRIORITY: 

PHASING: 

RECOMMENDATION 4.2

Continue to utilize an emergency alert system that alerts homeowners, businesses, and visitors know when a flood will likely occur.

Where: Community-wide

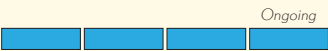
How: Develop real-time flood inundation maps based on data collected from the two nearby stream gages operated by the USGS Illinois Water Science Center (ILWSC); distribute information on the extent of various flood events to local emergency managers and residents so they can take appropriate actions to minimize damage

How much: TBD

Who leads: The City of Calumet City, ESDA, USACE, USGS

Resources needed: Grant funding targeted to creating an emergency alert system

PRIORITY: 

PHASING: 

RECOMMENDATION 4.3

Ensure that at least one City staff person (or a consultant who does work on behalf of the City) has one or more the following certifications: Certified Floodplain Manager (CFM), National Green Infrastructure Certification Program (NGICP), LEED-ND.

Where: Community-wide

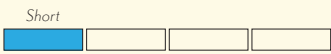
How: Incentivize the appropriate staff person (e.g., reimburse the costs) to earn and maintain certifications or require that Village contractors and consultants involved with land development have these certifications

How much: Varies depending on certification(s)

Who leads: The City Engineer

Resources needed: Internal: The General Fund

PRIORITY: 

PHASING: 

GOAL 2: REPAIR



COMMUNITY-WIDE RECOMMENDATIONS

STRATEGY 1:

MAP AND DOCUMENT YOUR MUNICIPAL SEWER AND STORMWATER DRAINAGE SYSTEM

RECOMMENDATION 1.1

Ensure that Calumet City has up-to-date sewer atlas information and a system for documenting information on the conditions of the overall system, specific elements (e.g., catch basins, curbs), and flooding problem areas.

Where: Community-wide

How: Continue to update this information and share it through SSMMA's GIS consortium (and other regional data-sharing portals) to facilitate more streamlined inter-jurisdictional stormwater planning efforts

How much: TBD

Who leads: The City Engineer, Public Works, SSMMA

Resources needed: Internal: the General Fund, Water Fund

PRIORITY: 

PHASING: 

STRATEGY 2:

INSPECT AND EVALUATE YOUR MUNICIPAL SEWER AND STORMWATER DRAINAGE SYSTEM

RECOMMENDATION 2.1

Develop and implement a comprehensive inspection program

(e.g., visual inspection, closed circuit television inspection) to regularly assess the condition of Calumet City's municipal sewer system (e.g., manholes, catch basins, sewers)

Where: Community-wide (inspect known problem areas first)

How: Establish a feasible, continuous, and cyclical inspection schedule (e.g., televise 10% of the sewers for 10 years, then repeat); Use Calumet City's Urban Flooding Risk Assessment (see Figure CC-4) to identify and prioritize known flooding problem areas

How much: TBD

Who leads: The City Engineer, Public Works

Resources needed: Internal: the General Fund, Water Fund, TIF Funds (where appropriate), External: CDBG, DCEO, IEPA State Revolving Loan Fund, USACE Section 219

PRIORITY: 

PHASING: 

STRATEGY 3:

REHABILITATE YOUR MUNICIPAL SEWER AND STORMWATER DRAINAGE SYSTEM

RECOMMENDATION 3.1

Repair major sewer defects, such as collapsed sewers, identified through the inspection program (see Recommendation 2.1).

Where: Targeted repairs in known problem areas

How: Complete +/- 5 repairs per year; Use Calumet City's Urban Flooding Risk Assessment (see Figure CC-4) to identify and prioritize known flooding problem areas

How much: TBD

Who leads: The City Engineer, Public Works

Resources needed: Internal: the General Fund, Water Fund, TIF Funds; External: CDBG, DCEO, IEPA State Revolving Loan Fund, USACE Section 219

PRIORITY: 

PHASING: 

RECOMMENDATION 3.2

Line deteriorated sanitary sewer mains observed by the inspection program (see Recommendation 2.1)

Where: Community-wide (inspect known problem areas first)

How: Line sewers in known problem areas; aim to line 3% of the sewers per year; use Calumet City's Urban Flooding Risk Assessment (see Figure CC-4) to identify and prioritize known flooding problem areas)

How much: TBD

Who leads: The City Engineer, Public Works

Resources needed: Internal: the General Fund, Water Fund, TIF Funds (where appropriate), External: CDBG, DCEO, IEPA State Revolving Loan Fund, USACE Section 219

PRIORITY: 

PHASING: 

STRATEGY 4:

MAINTAIN YOUR MUNICIPAL SEWER AND STORMWATER DRAINAGE SYSTEM

RECOMMENDATION 4.1

Develop and follow a comprehensive maintenance plan describing how all green, grey, and green-grey infrastructure systems will be maintained

Where: Community-wide

How: Apply for planning and technical assistance grants to develop this maintenance plan

How much: \$~15,000 to \$20,000

Who leads: The City Engineer, Public Works

Resources needed: Internal: the General Fund, Water Fund, TIF Funds; External: CMAP's LTA program, HUD CDBG, IDNR Coastal Management Program Grants

PRIORITY: 

PHASING: 

RECOMMENDATION 4.2

Implement the comprehensive Green/Grey Infrastructure Maintenance plan program in tandem with inspection program (see Recommendation 2.1). The entire sewer system should be cleaned on a ten-year cycle to ensure optimal function

Where: Community-wide (inspect known flooding problem areas first)

How: Televiser and clean 10% of Calumet City's sewers every year; use Calumet City's Urban Flooding Risk Assessment (see Figure CC-4) to identify and prioritize known flooding problem areas

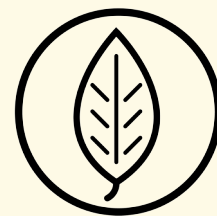
How much: TBD

Who leads: The City Engineer, Public Works

Resources needed: Internal: the General Fund, Water Fund, TIF Funds (where appropriate), External: CDBG, DCEO, IEPA State Revolving Loan Fund, USACE Section 219

PRIORITY: 

PHASING: 



RECOMMENDATION 1.1

Where: Community-wide

How much: Varies

Resources needed: Internal: General Fund, municipal cost-share program; External: Cook County's Residential Resilience Program (CDBG-DR), DOE Weatherization and Intergovernmental Program Office grants, other home assistance grants offered through regional agencies

PHASING: Short



RECOMMENDATION 2.1

Where: Community-wide, concentrate efforts in the neighborhoods south of Pulaski Road between Burnham Avenue and State Line Road where there is a large concentration of vacant parcels; multiple: Southwest corner of 154th Street and Forsythe Avenue; 12 block area (south of 154th Street, east of Lincoln Avenue, north of 156th Street, and west of State Line)

How: Create programs that incentivize residents and community groups to improve nearby vacant properties (via temporary

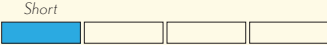
use rights or permanent land ownership); such programs could be: Adopt-A-Lot, Side Yard/Large Lot programs, land banking, temporary transfer of use rights to a community group, community greening, and award programs

How much: The City of Chicago’s “Large Lot Program” enables adjacent property owners, block clubs, and non-profit groups in select neighborhoods to purchase city-owned land for \$1 per parcel

Who leads: City of Calumet City, SSLBA, current homeowners, community organizations

Resources needed: The City of Calumet City would effectively absorb the costs in terms of lost future property tax revenue on these particular parcels. However, the benefits of neighborhood stabilization, reduced crime, and spillover effects (e.g., increased property values due to greening vacant lots) would likely offset these costs. Residents and community groups could attain property at a very affordable price (e.g., \$1)

PRIORITY: 

PHASING: 

RECOMMENDATION 2.2

Connect Calumet City’s newly activated vacant lots (see Recommendation 2.1) to the City’s expanding network of green alleys (see Recommendation 3.2).

Where: Community-wide (focus pilot project efforts on blocks with: 1) frequently- flooded alleys, 2) city-owned vacant properties, a 3) neighbors and/or community groups with an interest in managing/owning a parcel(s))

How: Redirect stormwater runoff from alleys (through regrading) into vacant lots that have been improved with green stormwater infrastructure (e.g., rain gardens, naturalized detention basins,

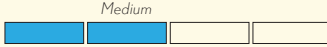
and tree planting

How much: TBD

Who leads: The City Engineer

Resources needed: Internal the General Fund, Water Fund, TIF Funds (where appropriate), External:CDBG, DCEO, IEPA State Revolving Loan Fund, USACE Section 219

PRIORITY: 

PHASING: 



STRATEGY 3: CREATE A NETWORK OF RESIDENTIAL GREEN STREETS, GREEN ALLEYS, AND COMPLETE STREETS

RECOMMENDATION 3.1

Create a network of residential green streets that incorporate green infrastructure improvements (e.g., roadside swales, rain gardens, permeable pavement, tree plantings) along flood-prone residential streets. Ensure that any community greening projects on public or private land fit the community’s preferences for neighborhood aesthetics (e.g., size, color, and “look and feel” of installations), while also providing flood-reduction and other benefits.

Where: Multiple: Green Streets: all streets within the “Frogtown

Area” – i.e., the area between Wilson Avenue, Paxton Avenue, Pulaski Road, and Exchange Avenue; Mackinaw Avenue from Sibley Boulevard to Pulaski Road; Price Avenue from Wilson Avenue to 156th Place; Freeland Avenue from Sibley Boulevard to Warren Street; Lincoln Avenue from Sibley to Webber Street; Stewart Avenue from I-94 to Torrence Avenue; Burnham Greenway to the eastern municipal border; Pulaski Road from Burnham Greenway to the eastern municipal border

How: Use this RainReady Plan identify potential locations where green streets can be piloted; where appropriate, incorporate green infrastructure BMPs into planned roadway improvements; monitor the performance of select green infrastructure installations; adjust the future implementation of green infrastructure projects based on monitoring data and community feedback

How much: N/A

Who leads: The City of Calumet City; organizations specializing in the installation and maintenance of neighborhood green infrastructure

Resources needed: Internal: the General Fund, the Water Fund, TIF funds (where appropriate); External: CDBG, DCEO, IEPA State Revolving Loan Fund, USACE Section 219; STP funds

PRIORITY:

High

PHASING:

Medium



RECOMMENDATION 3.2

Install green alleys that reduce wear-and-tear on cars (via re-grading and filling potholes) and manage stormwater runoff with permeable pavement, end-of-alley stormwater bulbouts, and redirecting runoff into vacant lots (see Recommendation 2.2).

Where: Multiple: alleys between 156th Street and 156th Place from Forsythe to State Line; 155th Place and 156th Street from Wentworth to State Line; 157th Street and Webb Street from Lincoln Avenue to Wentworth

How: Over the years, layers of gravel (used for alley paving) have accumulated in certain alleys; this accumulated gravel has raised the crown of the alleys and causes runoff to flow into residents’ garages or pool in potholes; there are two potential solutions to this problem 1) regrade the alleys so that stormwater runoff flows toward end-of-alley stormwater bulbouts or vacant lots that are intended to hold water, or 2) install permeable alleys with a gravel gallery

How much: TBD

Who leads: The City of Calumet City, Public Works

Resources needed: Internal: the General Fund, External: CDBG, DCEO, IEPA State Revolving Loan Fund, USACE Section 219

PRIORITY:

Medium

PHASING:

Medium



RECOMMENDATION 3.3

Creating more connected neighborhoods is a key local planning priority. Calumet City has already demonstrated support for Complete Streets and the City Board is expected to adopt an official Complete Streets policy early in 2017. Complete streets have been shown to be an effective strategy for improving neighborhood connectivity, creating safer streets, and managing stormwater. Therefore, Calumet City should continue its exemplary Complete Streets leadership and create a network of residential complete streets that integrate green infrastructure improvements (see Recommendation 3.1), bike and pedestrian improvements, traffic-calming road features, and other place-making amenities (e.g., benches, people spots) into forthcoming transportation improvement projects.

Where: Refer to the City's Active Transportation Plan; use this plan to identify (at a planning level) where green infrastructure BMPs can be incorporated into planned transportation improvements

How: Where appropriate, incorporate green infrastructure BMPs into planned complete street roadway improvements; monitor the performance of select green infrastructure installations; adjust the future implementation of green infrastructure projects based on monitoring data and community feedback

NOTE: Given the additional traffic engineering involved,

creating complete streets is more intensive than green streets

How much: TBD

Who leads: The City of Calumet City, Active Transportation Alliance (for initial plan)

Resources needed: Internal: the General Fund, the Water Fund, TIF funds (where appropriate); External: CDBG, DCEO, IEPA State Revolving Loan Fund, USACE Section 219; STP funds

PRIORITY: *High*

PHASING: Medium

STRATEGY 4: CREATE GREEN SCHOOLS AND CHURCHES

RECOMMENDATION 4.1

Create green schoolyards that: 1) manage stormwater with green infrastructure (e.g., rain gardens, permeable pavement, urban agriculture, rain barrels, and cisterns); 2) produce healthy foods; and 3) create spaces for more active play, physical education, and outdoor learning

Where: Multiple: Lincoln Elementary School (410 157th Street), Thornton Fractional North High School (755 Pulaski Road), Woodrow Wilson Elementary School (560 Wentworth Avenue), Hoover Elementary School and Schrum Memorial School (1255 Superior Avenue)

How: Reach out to local school district and the administration to determine interest in such a program; if there is interest, establish a partnership in the spirit of Space to Grow in Chicago in which the capital and maintenance costs are shared between public and private partners

How much: TBD

Who leads: The City of Calumet City, local school districts, schools (e.g., administrations, faculty, students, families), the MWRD, Cook County, local environmental organizations

Resources needed: Internal: School district funds, General Fund; External: MWRD capital improvement funds, Cook County CDBG-DR funds; Calumet City could develop a public-private partnership in which funds from multiple sources are leveraged and costs are shared

PRIORITY: TBD LOCALLY

PHASING: 

RECOMMENDATION 4.2

Create green churches that manage stormwater with green roofs, depaving impervious surfaces (where feasible), rain gardens, parking lot bioswales, permeable pavement, and cisterns to capture water from roofs. In other communities church grounds and facility managers are incorporating these green improvements into the church's mission (e.g., prayer trails, outdoor space for congregation gatherings)

Where: Multiple: Our Lady of Knock (501163rd Street); St. Andrew the Apostle Church - Catholic Parish (768 Lincoln Avenue)

How: Educate church leaders, congregations, parishioners, etc. on the benefits of green infrastructure; streamline the permitting process for churches seeking to make green infrastructure improvements to their property; connect churches to the organizations/agencies that can provide financial and technical assistance

How much: TBD

Who leads: Individual churches and their congregations/parishioners

Resources needed: Internal: church capital funds and endowments; External: IDNR Coastal Management Grants, Chi-Cal Rivers Fund grants, other private foundation grants

PRIORITY: TBD LOCALLY

PHASING: 

RECOMMENDATIONS FOR YOUR SHOPPING AREAS AND BUSINESS DISTRICTS

STRATEGY 5: BRING NEW LIFE TO CALUMET CITY'S NEW TOWN CENTER AND COMMERCIAL CORRIDORS

RECOMMENDATION 5.1

Continue to invest in and bring new life to the Calumet City's Town Center. Open a new police station near City Hall to deter crime in the area. Improve the nearby vacant residential properties (see Recommendation 2.1), improve Memorial Park (see Recommendation 11.1) and create a community garden, connect the district to other parts of town through commercial and residential complete streets and trails, and mitigate local flooding issues by incorporating green infrastructure BMPs (e.g., planter boxes, tree plantings, cisterns, roadside bioswales, parking lot bioswales, native plant rain gardens, and permeable pavement) into these projects wherever it is possible.

Where: Calumet City's Town Center district

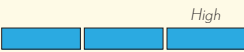
How: Convene a planning team to oversee any plan development and project implementation activities (or incorporate this task into the work plan of an existing government unit); explore public-private strategies for funding and implementing capital improvement projects; coordinate transportation and stormwater infrastructure investments when

planning and implementing projects, for example, incorporate green infrastructure BMPs and bikeway improvements when you are re-surfacing/improving a road

How much: TBD

Who leads: City of Calumet City, the Planning Team Calumet Memorial Park District, Chamber of Commerce

Resources needed: Infrastructure improvements are paid through various funding internal and external sources; other place-making amenities (e.g., wayfinding signage, street decorations, benches, etc.) can be stacked on infrastructure improvements and paid for with private funds (via donations) or public-private partnerships

PRIORITY: 

PHASING: 

RECOMMENDATION 5.2

Connect (via off-road trails, bikeways, and new sidewalks) a newly-revitalized Town Center to the Marble Street site which has been cleaned up and preserved as an open space and outdoor recreation amenity. Nearby communities (e.g., Palos Heights, Orland Park, Michigan City) are reaping the economic, social, and environmental benefits of new trails and connected green spaces and Calumet City can too.

Where: New Town Center district with greenway connections to the Marble Street site

How: This long-term strategy builds on multiple shorter term strategies (e.g., activating the New Town Center district, transforming the Marble Street superfund site into an open space amenity, creating a network of complete streets); with connections to multiple regional greenways and blueways, Calumet City is well-positioned to leverage these natural assets

to promote eco-tourism and new retail, and attract young families and professionals interested in a community with such amenities

How much: TBD

Who leads: City of Calumet City, EPA, SMMA, NPS, ATA

Resources needed: Internal: the General Fund, TIF funds, External: CDBG, DCEO, IEPA State Revolving Loan Fund, USACE Section 219, IDNR Coastal Management Grants

PRIORITY: TBD LOCALLY

PHASING: 



RECOMMENDATION 5.3

Increase retail activity, improve the pedestrian environment, and create a “sense of place” within Calumet City’s commercial corridors by: 1) pursuing creative, mixed-use redevelopment projects; 2) implementing a façade improvement program, form-based codes, or other design guidelines that ensure that new developments fit the community’s desired character; and requiring the use green infrastructure BMPs (e.g., permeable pavement, de-paving, bioswales, naturalized detention basins with place-making amenities, tree planting, etc.) to manage stormwater from the sites.

Where: Sibley Boulevard Corridor*, Torrence Avenue

Corridor*, Pulaski Road Corridor, River Oaks Corridor, Wentworth Woods Corridor*

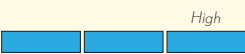
**Corridors where GI improvements would have the most flood reduction benefits for downstream neighborhoods*

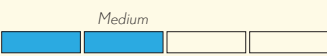
How: The City of Calumet City has several tools with which to encourage and incentivize smart and resilient infill redevelopment (e.g., removing minimum parking requirements, changing zoning, converting parking lots into open space and new mixed-use developments, investing in pedestrian-oriented infrastructure)

How much: N/A

Who leads: The City of Calumet City, local businesses, Chamber of Commerce

Resources needed: Internal: the General Fund, TIF funds, External: CDBG, DCEO, IEPA State Revolving Loan Fund, USACE Section 219

PRIORITY: 

PHASING: 



STRATEGY 6: BRING NEW LIFE TO UNDERUTILIZED PARKING LOTS

RECOMMENDATION 6.1

Calumet City has many underutilized parking lots. These large impervious parking lots are one of the largest generators of polluted stormwater runoff. Conversely, they also present an opportunity for smart infill redevelopment, revitalizing commercial corridors (see Recommendation 7.1), open space creation, and ecological restoration.

Where: Multiple: linear cluster of parking lots along Sibley Boulevard from I-94 to Torrence Avenue (there is very large depression at Pete's Fresh Market); Bernadine Manor (1700 Memorial Drive); linear cluster along Torrence Avenue from Sibley Boulevard to Pulaski Road

How: Calumet City should bring new life to its underutilized parking lots by: 1) retrofitting parking lots with green infrastructure BMPs (e.g., permeable pavement, rain gardens, bioswales), 2) implementing infill redevelopment where appropriate (see Recommendation 7.1), 3) de-paving parking lots and converting them into open space (see Recommendation 8.2), and 4) removing minimum parking requirements and making other policy changes that insure that new developments do not construct excessive parking

How much: N/A

Who leads: City of Calumet City, local businesses, parking lot owners

Resources needed: City of Calumet City, parking lot owners

PRIORITY: TBD LOCALLY

PHASING:  Ongoing



RECOMMENDATION 6.2

River Oaks Mall (or “River Oaks Center”) is key economic driver and defining feature in Calumet City. Improving this regional asset will be a key component of Calumet City’s resilient revitalization. Given the mall’s proximity to the Little Calumet River, a renewed interest in riverfront development and amenities, and the potential for flood reduction, green amenities should be considered when planning and designing improvements to the River Oaks Center and surrounding areas. These green amenities could include such things as new river walk, new green spaces that manage stormwater, trail connections to the Burnham Greenway, and other green infrastructure BMPs that could be incorporated into redevelopment efforts.

Where: River Oaks Mall

How: Convene a planning team that will oversee any plan

development and project implementation activities (or incorporate this task into the work plan of an existing government unit); explore public-private strategies for funding and implementing capital improvement projects of this scale; secure necessary technical assistance and funding resources; engage residents in planning and implementation efforts; construct this project; market this nationally-significant, and highly innovative community amenity to attract new businesses and visitors alike

How much: TBD

Who leads: City of Calumet City, local businesses, parking lot owners

Resources needed: TBD

PRIORITY: TBD LOCALLY

PHASING:  Long



STRATEGY 7: CREATE A NETWORK OF COMMERCIAL COMPLETE STREETS

RECOMMENDATION 7.1

In 2016, the Village of Calumet Park adopted a complete streets ordinance (Ordinance 16-1145). Local leaders anticipate that the City Board will adopt an official Complete Streets Policy in early 2017. The City should continue to strengthen its

position as a regional leader in complete streets by creating a network of commercial complete streets that: facilitate the safe transportation for all modes of transportation (e.g., walking, biking, transit, driving); revitalize commercial corridors with traffic-calming and place-making features; and reduce urban flooding with green infrastructure BMPs (e.g., bioswales, permeable pavement, planter boxes, tree planting).

Where: See the Village's Active Transportation plan; use this plan to identify (at a planning level) where green infrastructure BMPs can be incorporated into planned transportation improvements

How: Where appropriate, incorporate green infrastructure BMPs into planned complete street roadway improvements; monitor the performance of select green infrastructure installations; adjust the future implementation of green infrastructure projects based on monitoring data and community feedback

How much: TBD

Who leads: The City of Calumet, IDOT, ATA, CMAP

Resources needed: Internal: the MFT, General Fund, TIF Funds (where appropriate), External: CDBG, special grants from DCEO, IDOT, STP

PRIORITY: TBD LOCALLY

PHASING:

Medium

RECOMMENDATIONS FOR YOUR INDUSTRIAL CENTERS AND RAILROAD CORRIDORS



STRATEGY 8: REMEDiate AND REPURPOSE THE MARBLE STREET SITE FOR A SHARED OPEN SPACE

RECOMMENDATION 8.1

Calumet City's Comprehensive Plan calls for remediating and marketing the Marble Street site—a 35-acre Superfund Site in the northeast corner of the City—to potential industrial end users. This recommendation was informed by the 2009 Marble Street Development Plan. Given the site's secluded location and proximity to industrial areas in Hammond, pursuing an industrial land use is a valid land use decision. However, preserving this site for industrial uses would preclude the City from pursuing other development options, which may produce more long-term value for the City. Considering: 1) the types of amenities (e.g., parks, trails, local destinations) that young professionals and families are looking for; 2) Calumet City's excellent access to regional greenways and blueways; and 3) the availability of funding opportunities for land and water restoration work, we recommend that Calumet City remediate and repurpose the Marble Street site for a shared open space, which could be connected to the City's Town Center and regional greenways and blueways.

Where: The Marble Street Property

How: Explore whether or not members of the Cal-Sag Trail Coalition would be willing to provide technical greenways and trails planning assistance; convene a planning team to oversee the development and implementation of an open space plan for the site; apply for technical assistance and grant funds to complete this plan; engage residents in the planning process; complete all necessary project enabling tasks; explore public-private partnerships and strategies for funding and implementing the plan; seek to connect this "Marble Street Recreation Area" to local amenities in Calumet City (e.g., Town Center) as well as regional blueways and greenways

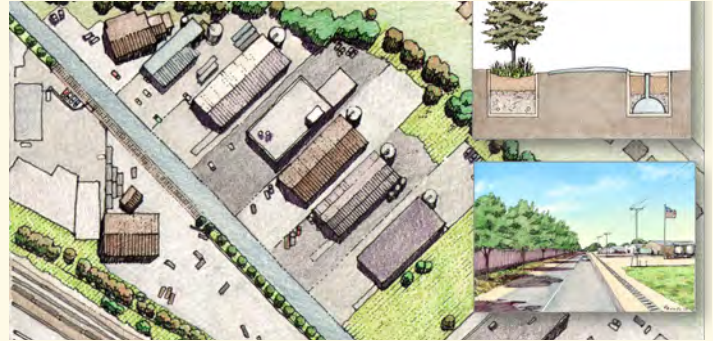
How much: TBD

Who leads: The City of Calumet City, the Cal-Sag Trail Coalition; the planning team; technical assistance providers

Resources needed: Internal: General Fund, TIFs; External: US EPA (Great Lakes Restoration Initiative Funds), Growth Zone

PRIORITY: TBD LOCALLY

PHASING: 



STRATEGY 9: **IMPROVE THE EDGES OF LARGE INDUSTRIAL SITES AND RAILROAD CORRIDORS**

RECOMMENDATION 9.1

Improve the edges of large industrial sites and railroad corridors by improving ditches (e.g., increase storage/conveyance capacity, remove invasive plants like phragmites), installing bioswales along railroad tracks, and constructing mixed-use trails where it is appropriate and feasible.

Where: The industrial areas along the Burnham Greenway and in the Northeast corner of the City (along State Street)

How: Establish a partnership with industrial site owners; explore their willingness to make improvements to their land; use Growth Zone incentives to implement stormwater improvements at industrial centers and railroad corridor; connect industrial edge improvements to regional greenways when possible

How much: TBD

Who leads: City of Calumet City, owners of local industrial businesses, railroad companies

Resources needed: TBD

PRIORITY: 

PHASING: 

RECOMMENDATIONS FOR YOUR OPEN LAND AND NATURAL AREAS



STRATEGY 10: DEVELOP THE CAL-SAG TRAIL AND OTHER OUTDOOR RECREATION AMENITIES

RECOMMENDATION 10.1

If Calumet City's various multi-use trail projects are implemented, Calumet City will have access to hundreds of miles of land and water trails. Calumet City's location within the Calumet Region and access to several regional greenways and blueways is a competitive advantage that—if leveraged—could drive increased retail activity and other quality-of-life improvements. Therefore, Calumet City should develop the Cal-Sag Trail other regional greenway and blueway projects. The final design of these projects should aim to: 1) connect people to places (e.g., parks, schools, restaurants, venues); mitigate flooding through green infrastructure BMPs (e.g., roadside bioswales, permeable pavement, tree planting); and create beautiful places to walk, rest, and gather through place-making amenities (e.g., rest areas and gathering places, signage to help walkers find their way, historical and educational signage) into benches, public art, gathering spaces).

Where: The proposed Cal-Sag Trail and Burnham Greenway Gap Trails

How: Engage residents in the trail planning and design process; ensure that GI BMPs are included in the final trail designs; seek to create connections to points-of-interest (e.g., Downtown Dolton, Lake Cottage Grove, Needles Park) via Calumet City's expanding network of commercial and residential complete streets; leverage the new trail to support Dolton's economic development (e.g., use Dolton's "trail town" status to drive increased retail activity and housing goals (e.g., market Dolton to families and young professionals seeking an affordable community with great access to parks open space)

How much:

Who leads: City of Calumet City, the Cal-Sag Trail Coalition

Resources needed: Funding to complete Calumet City's segment of the Trail

PRIORITY: 

PHASING: 

STRATEGY 11: INTEGRATE GREEN INFRASTRUCTURE INTO CALUMET CITY'S PARK SYSTEM

RECOMMENDATION 11.1

Calumet City is fortunate to have a strong network of parks scattered throughout town. Many of these parks are located in flood-prone neighborhoods, and the installation of green infrastructure BMPs at these parks could help alleviate local flooding issues (by keeping water out of the local sewers). The Calumet Memorial Park District should consider ways to incorporate green infrastructure practices into the ongoing maintenance and capital improvement efforts.

Where: Multiple: Calumet Park (421 Warren Street); Memorial Park (612 Wentworth Avenue), Burnham Greenway (between State Street and Pulaski Road), Downey Park (300 Jeffery Avenue)

How: Include green infrastructure project(s) in the Calumet City's Park District's ongoing capital improvement planning and implementation efforts; implement a policy that encourages the conversion of underutilized lawns into native plant gardens; apply for grants as opportunities arise

How much: TBD

Who leads: The Calumet City Memorial Park District

Resources needed: Funding to improve existing and new park spaces

PRIORITY:  Medium

PHASING:  Ongoing

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APPENDIX A

ACRONYM GUIDE

ACTIVE TRANS - Active Transportation Alliance

BMP - Best Management Practices

CAV - Community Assistance Visit

CDBG - Community Development Block Grant

CDOT - Chicago Department of Transportation

CHP - Calumet Heritage Partnership

CERT - Community Emergency Response Team

CIP - Capital Improvement Program

CMAP - Chicago Metropolitan Agency for Planning

CN - Canadian National

CNT - Center for Neighborhood Technology

COD - Cargo Oriented Development

CRF - City Resilience Framework

CRS - Community Rating System

CSC - Calumet Stormwater Collaborative

CSEDC - Chicago Southland Economic Development Corporation

CSO - Combined Sewer Overflows

CTA - Chicago Transit Authority

CW - Chicago Wilderness

SRF - (Clean Water) State Revolving Fund

DCEO - Illinois Department of Commerce and

Economic Opportunity

DOE - U.S. Department of Energy

DPD - Department of Planning and Development

EDA - U.S. Economic Development Administration

FEMA - Federal Emergency Management Agency

FHWA - Federal Highway Administration

FTA - Federal Transit Administration

GI - Green Infrastructure

GLRI - Great Lakes Restoration Initiative

GSI - Green Stormwater Infrastructure

CFR - Code of Federal Regulations

FEMA - Federal Emergency Management Agency

FPDCC - Forest Preserve District of Cook County

H+T - Housing + Transportation

HUD - U.S. Department of Housing and Urban Development

ICMP - Illinois Coastal Management Program

IDES - Illinois Department of Employment Security

IDHS - Illinois Department of Human Services

IDNR - Illinois Department of Natural Resources

IDOT - Illinois Department of Transportation

IDPH - Illinois Department of Public Health

IEPA - Illinois Environmental Protection Agency

IHB - Indiana Harbor Belt

IHDA - Illinois Housing Development Authority

IFA - Illinois Finance Authority

LCI - Livable Communities Initiative

LID - Low Impact Development

LEED - Leadership in Energy and Environmental Design

MFT - Motor Fuel Tax

MPC - Metropolitan Planning Council

MPO - Metropolitan Planning Organization

MR - Millennium Reserve

MS4 - Municipal Separate Storm Sewer System

MWRD - Metropolitan Water Reclamation District of Greater Chicago

NOAA - National Oceanic and Atmospheric Administration

NAAF - Natural Areas Acquisition Fund

NAHB - National Association of Home Builders

NDRC - National Disaster Resilience Competition

NHS - Neighborhood Housing Services

NIPC - Northeastern Illinois Planning Commission (now CMAP)

NPS - National Parks Service

NRPA - National Recreation and Park Association

NRCS - Natural Resources Conservation Service (formerly SCS)

OLT - Open Land Trust

O&M - Operations and Maintenance

OSLAD - Open Space Lands Acquisition and Development

OWR - Office of Water Resources (IDNR)

P3s - Public-Private Partnerships, Public-Public Partnerships

PE - Preliminary Engineering

PWSLP - Public Water Supply Loan Program

R&D - Research and Development

ROW - Right-of-Way

RR - RainReady

RTA - Regional Transportation Authority

RTAMS - Regional Transportation Asset Management System

RTAP - Regional Technical Assistance Program

RTCA - Rivers, Trails, and Conservation Assistance

RTP - Regional Transportation Plan

SBIR - Small Business Innovation Research

SCS - Soil Conservation Service (now NRCS)

SRP - Site Remediation Program

SRTS - Safe Routes to School

SSLBA - South Suburban Land Bank Authority

SSMMA - South Suburban Mayors and Managers
Association

STP - Surface Transportation Program

SWCD - Soil and Water Conservation District

TIF - Tax Increment Financing

TIP - Transportation Improvement Program

TLC - Transportation for Livable Communities

TOD - Transit Oriented Development

UP - Union Pacific

USACE - U.S. Army Corps of Engineers

USDA - U.S. Department of Agriculture

USDOT - U.S. Department of Transportation

USEPA - U.S. Environmental Protection Agency

USGBC - U.S. Green Building Council

WPC - Watershed Planning Council

APPENDIX B

GLOSSARY OF TERMS

This plan includes a number of broad concepts and specific terms. Some regulations and federal agencies use very specific definitions for regulatory purposes. In those cases, we have used the regulatory definition and indicated the source of that definition, as follows:

1. 17 Illinois Administrative Code, Chapter I, Section 3700 (December 31, 2014)
2. 17 Illinois Administrative Code, Chapter I, Section 3708
3. Model Floodplain Ordinance for Communities Within Northeastern Illinois
4. FEMA
5. USEPA
6. NRCS
7. Title 33 Code of Federal Regulations 328 Definitions (b)

Adverse Impacts: Any deleterious impact on water resources or wetlands affecting their beneficial uses including recreation, aesthetics, aquatic habitat, quality, and quantity.

Adaptation: Adjustment in response to actual and expected climate change, and/or effect to reduce harm or take advantage of opportunities.

Applicant³: Any person, firm, corporation, or agency that submits an application for a stormwater permit. The applicant is the current owner of the property or a representative for the owner.

Aquifer: Geologic formation(s) that is water-bearing. A geological formation or structure that stores and/or transmits water, such as to wells and springs. Use of the term is usually restricted to those water-bearing formations capable of yielding water in sufficient quantity to constitute a usable supply for people's uses.

Asset: A useful and desirable building, resource, or quality.

Backwater Valve: A valve placed in the home sewer line ("lateral line") to help prevent water from backing up from the municipal sewer system into basements. It prevents sewage from backing up into your basement by installing a one-way flap in your private building sewer. Think of it as a one-way swinging door – water can flow out, but if your system backs up it cannot flow back in.

Base Flood³: The flood having a 1% chance of being equaled or exceeded in any given year. The base is also known as the 100-year frequency flood event.

Base Flood Elevation (BFE)³: The elevation of the crest of the base flood in relation to mean sea level.

Basement³: That portion of the building having its floor subgrade (below ground level) on all sides.

Basement Backup: See “sewer backup.”

Bedrock: Solid rock that underlies the soil and fragmented rock.

Best Management Practice (BMP): A measure used to control the adverse stormwater-related effects of development. BMPs include structural devices (e.g., swales, filter strips, infiltration trenches, and site runoff storage basins designed to remove pollutants, reduce runoff rates and volumes, and protect aquatic habitats) and nonstructural approaches (e.g., public education efforts to prevent the dumping of household chemicals into storm drains).

Biodiversity: The variability among living organisms from all sources, including terrestrial, marine, and other aquatic ecosystems and the ecological complexes of which they are part; this includes diversity within species, between species, and of ecosystems.

Brownfield: A former industrial or commercial site where future use is affected by real or perceived environmental contamination.

Building³: A walled and roofed structure principally above ground, including manufactured homes, prefabricated buildings, and gas or liquid storage tanks. The term also includes recreational vehicles and travel trailers installed on a site for more than 180 days per year.

Buffer: An area of predominantly deeply rooted native vegetated land adjacent to channels, wetlands, lakes, or ponds for the purpose of stabilizing banks and reducing contaminants, including sediments, in stormwater that flows to such areas.

Bulletin 70: Frequency Distributions and Hydro-climatic Characteristics of Heavy Rainstorms in Illinois, by Floyd Huff and James Angel of the Illinois State Water Survey (1989).

Bulletin 71: Rainfall Frequency Atlas of the Midwest by Floyd Huff and James Angel of the Illinois State Water Survey (1992).

Bypass Flows: Stormwater runoff from upstream properties tributary to a property’s drainage system, but not under its control.

Calumet Region: The Calumet Region is the name given to the geographic areas drained by the Grand Calumet River and the Little Calumet River of northeastern Illinois and northwestern Indiana. Since much of this region is on the south shore of Lake Michigan, it is sometimes referred to as the “South Shore.” Although the Calumet Region has no fixed boundaries, most Chicagoans understand it to be the part of the metropolitan area surrounding Lake Calumet and the Calumet river system. By the 1880s, the heavy industry beginning to dominate the region also helped to define it. A 1957 Chicago report that described the region as lying south of 79th Street, stretching from Joliet, Illinois to Gary, Indiana (Source: Encyclopedia of Chicago).

Calumet Corridor: The Calumet Corridor is a sub-region within the Calumet Region comprising six municipalities including Robbins, Blue Island, Calumet Park, Riverdale, Dolton, and Calumet City. Previous plans have also referred to this area as the Calumet River Corridor and have included the Village of Burnham. The six community Calumet Corridor served as the planning area for this plan.

Capacity: (1) The maximum amount that something can contain. (2) The ability or power to do, experience, or understand something.

Catch Basin: A grease trap located on the residential property, usually in the backyard.

Catchment: A catchment is an area of land that drains

to a particular point. All runoff within a given catchment will flow down to the same outlet.

Channel³: Any river, stream, creek, brook, branch, natural or artificial depression, ponded area, flowage, slough, ditch, conduit, culvert, gully, ravine, wash, or natural or manmade drainage way that has a definite bed and bank or shoreline, in or into which surface or groundwater flows, either perennially or intermittently.

Channel Modification: Alteration of a channel by changing the physical dimensions or materials of its bed or banks.

Climate Change: Refers to any significant change in the measures of climate lasting for an extended period of time. In other words, climate change includes major changes in temperature, precipitation, or wind patterns, among others, that occur over several decades or longer.

Combined Sewer Systems: Sewers that are designed to collect rainwater runoff, domestic sewage, and industrial wastewater in the same pipe. Mostly, combined sewer systems transport their wastewater to a sewage treatment plant, where it is treated and discharged to a water body.

Combined Sewer Overflows (CSOs): The excess capacity of flow in a combined sewer system, typically occurring during periods of heavy precipitation. Overflow discharges directly to a nearby stream, river, or other water body.

Compensatory Storage: An artificially excavated, hydraulically equivalent volume of storage within the floodplain used to balance the loss of natural flood storage and flow conveyance capacity when artificial fill or structures are placed within the floodplain. The uncompensated loss of natural floodplain storage and conveyance capacity can increase off-site floodwater elevations and flows.

Conflict Resolution: A process to resolve disputes.

Crest: The top of a mountain or hill.

Decision Makers: The people, organizations and agencies responsible for setting the priorities for flood management

Depressional Storage: The volume contained below a closed contour, the upper elevation of which is determined by the invert of a surface gravity outlet.

Design Storm: A rainfall event of specified size and return frequency (e.g., a storm that occurs only once every 2 years) that is used to calculate the runoff volume and peak discharge rate.

Detention Basin: A facility constructed or modified to provide for the temporary storage of stormwater runoff and the controlled release by gravity, through infiltration, or by pump of this runoff at a prescribed rate during and after a flood or storm.

Development: Any man-made change to real estate, including construction, reconstruction, repair, or placement of a building or any addition to a building, installing a manufactured home on a site, preparing a site for a manufactured home, or installing a travel trailer on a site for more than 180 days; drilling, mining, installing utilities, construction of roads, bridges, or similar projects; demolition of a structure or redevelopment of a site; clearing of land as an adjunct of construction; construction or erection of levees, walls, fences, dams, or culverts, or channel modification; filling, dredging, grading, excavating, paving, or other non-agricultural alterations of the ground surface; storage of materials; deposit of solid or liquid waste; any other man-made activity that might change the direction, height, or velocity of flood or surface water, including extensive vegetation removal; and substantial improvement of an

existing building. Development does not include routine maintenance of existing buildings and facilities such as re-roofing or re-surfacing of roads when there is no increase in elevation, or gardening, plowing, and similar agricultural practices that do not involve filling, grading, or construction of levees.

Development Site: The specific area of land where regulated activities in the municipality are planned, conducted, or maintained.

Downspout: Pipe to carry rainwater from a roof to a drain or to ground level.

Drainage Area: The land area above a given point where precipitation will contribute to runoff flow.

Drainage Basin: Land area where precipitation runs off into streams, rivers, lakes, and reservoirs. It is a land feature that can be identified by tracing a line along the highest elevations between two areas on a map, often a ridge. Large drainage basins, like the area that drains into the Mississippi River, contain thousands of smaller drainage basins. Also called a “watershed.”

Drainage Plan: See Stormwater Management Plan.

Dry Basin: A detention basin designed to drain completely after temporary storage of stormwater flows and to normally be dry over the majority of its bottom area.

Discharge: Discharge is another term for streamflow; it is the measured volume of water that moves past a point in a stream in a given amount of time. Discharge is usually expressed in cubic feet per second.

Downspout: A vertical pipe that carries rain and snow melt from gutters on the edges of the roof to either the foundation drain and sewer system (if the downspout remains connected) or to the surface of the property (if

the downspout has been disconnected).

Easement: Grant or reservation by a land owner for the use of such land by others for a specific purpose or purposes, and which must be included in the conveyance of land affected by such easement.

Ecosystem: Any natural unit or entity including living and non-living parts that interact to produce a stable system through cyclic exchange of materials

Effluent: Discharge or emission of a liquid or gas.

Erosion: The process in which a material is worn away by a stream of liquid (water) or air, often due to the presence of abrasive particles in the stream.

Flood: A general and temporary condition where water partially or completely overflows land that is normally dry. This overflow typically comes from inland or tidal waves or from an unusual and rapid accumulation of water runoff from any source. For purposes of identifying urban flooding areas, flooding also includes basement backups and foundation seepage related to stormwater events, but unrelated to river overflows.

Flood Fringe: The portion of the floodplain outside of the regulatory floodway.

Flood Insurance Rate Map (FIRM): A map prepared by FEMA that depicts the Special Flood Hazard Area (SFHA) within a community. This map includes insurance rate zones and floodplains and may or may not depict floodways.

Flood Map: Maps showing the geographic extent of possible flooding. Maps are informed by hydrologic and hydraulic modelling, and can be produced to show the possible flooding that would arise from rainfall of a given intensity.

Floodplain: Relatively flat and normally dry land typically adjacent to a body of water with ground surface elevations at or below the base flood elevation (BFE: the 100-year frequency flood elevation) that is covered by water during a flood.

Flood-proofing: Any combination of structural and non-structural additions, changes, or adjustments to structures which reduce or eliminate flood damage to real estate or improved real property, water and sanitary facilities, and structures and their contents.

Flood Protection Elevation (FPE): The elevation of the base flood or 100-year frequency floods plus 1 foot of freeboard at any given location in the Special Flood Hazard Area (SFHA).

Flood Risk: A combination of the likelihood of a flood occurring and the consequence of the flood when it does occur.

Flow Path: A route designated by people to direct the flow of rain and snow melt runoff over the land in a controlled manner.

Floodway: See Regulatory Floodway.

Foundation drain: An underground pipe that runs along the bottom of a home's foundation and helps keep the basement free of excess moisture from groundwater.

Freeboard: An increment of height added to the BFE, groundwater table, or 100-year design water surface elevation to provide a factor of safety for uncertainties in calculations, unknown local conditions, wave action, non-stationary climate, and unpredictable effects such as those caused by ice or debris jams.

Glaciation: The process, condition, or result of being covered by glaciers or ice sheets. The physical landscape and surface geology of the Chicago area are the legacy of

the most recent of several continental glaciations.

Green Infrastructure: Any stormwater management technique or practice that reduces runoff volume through preserving, restoring, utilizing, or enhancing the processes of infiltration, evapotranspiration, and reuse. Approaches may include green roofs, naturalized detention facilities, trees and tree boxes, rain gardens, vegetated swales, vegetated buffers, wetlands, infiltration planters, porous and permeable pavements, porous piping systems, dry wells, vegetated median strips, reforestation/revegetation, rain barrels, cisterns, and protection and enhancement of riparian buffers and floodplains.

Grey Infrastructure: Man-made constructions often composed of concrete and metals, to carry people or services from one place to another. Examples are sewers, roads, bridges, pipes, etc. While grey infrastructure is highly durable, its construction and maintenance costs are high. Due to safety regulations, all work must be completed by skilled, licensed engineers and/or laborers.

Grey Water: Wastewater from clothes washing machines, showers, bathtubs, hand washing, lavatories and sinks.

Groundwater: Water that is located beneath the ground or pavement surface.

Gutter: Hang from the perimeter of the roof, funneling rain and snow melt off the roof and into downspouts.

Habitat: The physical environment in which a certain organism prefers to live.

Hydrograph: A hydrograph is a graph that shows changes in discharge or river stage over time. The time scale may be in minutes, hours, days, months, years, or decades.

Hydrology: The scientific study of the water of the earth,

its occurrence, circulation and distribution, its chemical and physical properties, and its interaction with the environment, including its relationship to living things.

Hydric Soil: A soil that is saturated, flooded, or ponded long enough during the growing season to develop anaerobic conditions in the upper part.

Hydrologic and Hydraulic Calculations: Engineering analysis which determines expected flood flows and flood elevations based on land characteristics and rainfall events.

Hydrologically Disturbed: An area where the land surface has been cleared, grubbed, compacted, or otherwise modified to alter stormwater runoff, volumes, rates, flow direction, or inundation duration.

Illinois Urban Manual: A publication of best management practices commonly used in an urban setting produced by the Association of Illinois Soil and Water Conservation Districts, published October 2013. <http://www.aiswcd.org/illinois-urban-manual/>

Impermeable: See Impervious.

Impervious: Not allowing water to pass through.

Impervious Area: Land cover such as, but not limited to, non-porous asphalt or asphalt sealants, non-porous concrete, roofing materials except planted rooftops designed to reduce runoff, and gravel surfaces used as roadways or parking lots that prevent infiltration.

Impervious Surfaces: Structures such as roads, sidewalks, driveways and parking lots that are made of compacted material like concrete, asphalt, brick, stone, etc. These surfaces do not allow water to pass through them vs. soil that “absorbs” water and allows it to pass through.

Infiltration: The passage or movement of water in the soil. Flow of water from the land surface into the subsurface.

Integrated Water Management (IWM): A water management approach which considers all components of the water cycle as a whole to maximize social, environmental and economic outcomes. It achieves this through the coordinated management of drainage, flooding, waterways, water supply, and sewerage services.

Inundation: The submergence of land by water. See Flood.

Land Cover: The physical material at the surface of the earth. Land covers include grass, asphalt, trees, bare ground, water, etc.

Lateral Line: All homes and businesses connected to sanitary sewer systems have a lateral line. It’s the pipe that transports water used inside your home out to your city’s sanitary sewer system in the street.

Mitigation: Measures necessary to minimize the negative effects that stormwater drainage and development activities might have on the public health, safety, and welfare. Examples of mitigation include compensatory storage, soil erosion and sedimentation control, and channel restoration.

Nature-based Solutions (Green Infrastructure): an approach to water management that protects, restores, or mimics the natural water cycle. Green infrastructure is effective, economical, and enhances community safety and quality of life. It means planting trees and restoring wetlands, rather than building a costly new water treatment plant. See Green Infrastructure.

Natural: When used in reference to channels, those formed by the existing surface topography of the earth prior to man-made changes. A natural stream tends

to follow a meandering path; its floodplain is not constrained by levees; the area near the bank has not been cleared, mowed, or cultivated; the stream flows over soil and geologic materials typical of the area with no substantial alteration of the course or cross-section of the stream caused by filling or excavating. A modified channel may regain some natural characteristics over time as the channel meanders and vegetation is re-established. Similarly, a modified channel may be restored to more natural conditions by man through regrading and revegetation.

Non-structural Solutions: Any non-physical measure used to reduce the consequences of flooding. This includes community education programs, training, insurance, planning and development controls, warning and emergency planning, and emergency response.

Open Channel: A conveyance system with a definable bed and banks carrying the discharge from field tiles, surface drainage, and/or storm sewer system. It does not include grassed swales within farm fields under agricultural production, which are ephemeral.

One Hundred-Year (100-yr) Event: A rainfall, runoff, or flood event having a 1% chance of occurring in any given year.

Ordinary High Water Mark: The point on the bank or shore up to which the presence and action of surface water is so continuous so as to leave a distinctive mark such as by erosion, destruction, or prevention of terrestrial vegetation, predominance of aquatic vegetation, or other easily recognized characteristics.

Outfall: The place where a sewer, drain, or stream discharges; the outlet or structure through which reclaimed water or treated effluent is finally discharged to a receiving water body.

Overland Flooding: Flooding that occurs when water flows over the surface of public and private property. It can enter homes and buildings through windows and doors.

Overland Flow Path: A design feature of the major stormwater system which carries flows in excess of the minor stormwater system design capacity in an open channel or swale, or as sheet flow or weir flow over a feature designed to withstand the particular erosive forces involved.

Peak Flow: The maximum flowrate of water at a given point in a channel or conduit.

Permeability: The ability of a material to allow the passage of a liquid, such as water, through rocks. Permeable materials, such as gravel and sand, allow water to move quickly through them, whereas impermeable materials, such as clay, don't allow water to flow freely.

Permeable: See Pervious.

Pervious: Allowing water to pass through.

Post-development: Refers to conditions that reasonably may be expected or anticipated to exist after completion of the land-disturbing activity on a specific site or tract of land.

Precipitation: Rain, snow, hail, sleet, dew, and frost.

Prevention: The actions taken to reduce or eliminate the impacts of an emergency before it happens.

Recovery: Taking steps to help affected people and communities achieve a proper and effective level of functioning.

Redevelopment: Any human-induced activity or change to an existing developed property (including, but not

limited to, demolition, grading, paving, excavation, dredging, fill, or mining; alteration, subdivision, or change in land use or practice; building; or storage of equipment or materials) undertaken by private or public entities that affects the volume, flow rate, drainage pattern, or composition of the site stormwater runoff on the previously developed land. The term does not include maintenance.

Regulatory Floodplain: Lands subject to inundation by the base flood. Floodplains are identified on enumerated panels and index of Flood Insurance Rate Maps (FIRMS) prepared by FEMA. Regulatory floodplains include urban flooding areas not otherwise subject to inundation by the base flood.

Regulatory Floodway: The channel of a river or other watercourse and the adjacent land areas that must be reserved in order to discharge the base flood without cumulatively increasing the water surface elevation more than a designated height. Communities must regulate development in these floodways to ensure that there are no increases in upstream flood elevations. For streams and other watercourses where FEMA has provided Base Flood Elevations (BFEs) but no floodway has been designated, the community must review floodplain development on a case-by-case basis to either ensure that increases in water surface elevations do not occur, or identify the need to adopt a floodway if adequate information is available.

Response: Activities undertaken to combat emergencies and provide rescue and immediate relief services.

Retention/Detention Facility: A retention facility stores stormwater runoff without a gravity release. A detention facility provides for storage of stormwater runoff and controlled release of this runoff during and after a storm.

Regional Catchment: A catchment, often including

several local catchments (or subcatchments), larger than 60 hectares (ha) or greater in size. In some rural areas, due to historical agreements, councils manage flood and drainage infrastructure for areas up to 200ha in size.

Runoff: The water or drainage derived from melting snow or rain falling on the land surface, flowing over the surface of the ground, or collected in channels or conduits.

Recurrence Interval: The average number of years between floods of a certain size is the recurrence interval or return period. The actual number of years between floods of any given size varies a lot because of the naturally changing climate.

Reservoir: A pond, lake, or basin, either natural or artificial, for the storage, regulation, and control of water.

Resilience: The capacity of individuals, communities, institutions, businesses, and systems within a community to survive, adapt, and grow under stress and shocks.

Risk Assessment: The process used to determine the level of risk at a particular location by quantifying both likelihood and impact of floods. Flood managers use this process to determine management priorities.

Riverine Flooding: Occurs when runoff from storms exceeds the capacity of a river or creek and overflows onto surrounding land.

Runoff: Water from melting snow or rain falling on the land, flowing over the ground, or collected in channels or conduits.

Sedimentation: (1) The combined processes of soil erosion, entrainment, transport, deposition, and consolidation. (2) Deposition of sediments.

Seepage: The slow movement of water through small

cracks, pores, interstices, etc., of a material into or out of a body of surface or subsurface water.

Sewer: A system of underground pipes that collect and deliver wastewater to treatment facilities or streams.

Sewer Backup: Also known as “basement backup.” This occurs when sewer systems receive more stormwater and sewage backups than they can handle. Water is pushed backwards through home sewer laterals and causes sewage to backup into homes through basement floor drains, toilets, and sinks.

Sewer Grate; Sewer Inlet: Also known as “catch basin,” “inlet,” or “storm sewer inlet.” Opening in the surface of the street that allows stormwater runoff to enter the underground municipal sewer system.

Slope: The ratio of the change in elevation over distance.

Special Flood Hazard Area (SFHA): Areas on the FIRMs, as well as urban flooding areas, where floodplain management regulations must be enforced.

Stormwater: Runoff from the surface of the land resulting from precipitation or snow or ice melts.

Stormwater Drainage System: All means, natural or man-made, used to convey stormwater to, through, or from a drainage area to the point of final outlet from a property. The stormwater drainage system includes, but is not limited to, any of the following: conduits and appurtenance features, canals, channels, ditches, streams, culverts, streets, storm sewers, detention basins, swales, and pumping stations.

Stormwater Flooding: Occurs when runoff from storms exceeds the capacity of our drains and pipes and overflows onto surrounding properties. Overland flooding can happen very quickly. Floods that rise very rapidly are often known as ‘flash floods.’ Stormwater

flooding is sometimes referred to as ‘overland flooding.’

Stormwater Management: A system of vegetative, structural, non-structural, and educational measures that control the volume, rate, and pollutants of stormwater.

Stormwater Management Permit (SWM Permit): An approval shall be issued by the enforcement officer prior to the approval of a building permit. Issuance of a stormwater management permit signifies conformance with provisions of this ordinance.

Stormwater Management Plan (SWM Plan): Set of drawings or other documents submitted as a prerequisite to obtaining a stormwater management approval, which contains all information and specifications of drainage systems and environmental features proposed after the development of a property.

Stormwater Pollution Prevention Plan (SWPPP): A site-specific, written document that identifies potential sources of stormwater pollution at the construction site, describes practices to reduce pollutants in stormwater discharges from the construction site (reduction of pollutants is often achieved by controlling the volume of stormwater runoff), and identifies procedures the operator will implement to comply with the terms and conditions of a construction general permit.

Stormwater Runoff; Runoff: This is rainfall that collects on streets, sidewalks, roofs, and parking lots and runs off impermeable surfaces. It is cleaner than sanitary sewage, but can be contaminated with animal waste, salt and other pollution.

Storm Sewer: A closed conduit for conveying collected stormwater.

Surface Water: Water that is on the Earth’s surface, such as in a stream, river, lake, or reservoir.

Swale: A grassy, shallow ditch-like depression used to direct stormwater flows.

Televising: This is a method for visually inspecting a sewer line. It helps assess sewer line conditions and can reveal blockages, or other damage.

Tributary: A smaller river or stream that flows into a larger river or stream. Usually, a number of smaller tributaries merge to form a river

Urban Flooding: Occurs when homes, yards or streets are inundated with water from heavy rains or snow melt, damaging property, and making travel difficult and dangerous. It also results from sewer water backing up through pipes into basements, and from water seeping through foundation walls.

Urban Infill/Consolidation: The development of higher-density residential and commercial properties in existing urbanized areas of the city.

Volume Control Storage: The volume of storage required to detain a specified amount of runoff from the new impervious area of development on the site.

Vulnerability: The degree to which a system is susceptible to, or unable to cope with, adverse effects of climate change, including climate variability and extremes. Vulnerability is a function of the character, magnitude, and rate of climate variation to which a system is exposed; its sensitivity; and its adaptive capacity.

Wet Basin: (1) A detention basin designed to maintain a permanent pool of water after the temporary storage of stormwater runoff. (2) The top of the water surface in the saturated part of an aquifer.

Water Table: The upper limit of a free water surface in a saturated soil or underlying material.

Watershed: All land drained by, or contributing water to the same stream, lake, stormwater facility, or draining to a point.

Wetland: Areas where water covers the soil, or is present either at or near the surface of the soil all year or for varying periods of time during the year, including during the growing season. Wetlands can be natural or man-made constructions. If man-made, they are often referred to as constructed wetlands.

APPENDIX C

IMPLEMENTATION RESOURCES

Funding and Financing: Federal Resources

Source:	Community Development Financial Institutions (CDFI) Fund
Program:	New Markets Tax Credit Program (NMTC)
Mechanism:	Tax Credit
Description:	The NMTC Program incentivizes community development and economic growth through the use of tax credits that attract private investment to distressed communities.
Eligible Applicants:	Businesses
Eligible Activities:	Activities to Support Livelihoods and Employment, Capital Projects
Link:	https://www.cdfifund.gov/programs-training/Programs/new-markets-tax-credit/Pages/default.aspx

Source:	Corporation for National and Community Service (CNCS)
Program:	AmeriCorps State and National Grants
Mechanism:	Grants
Description:	The mission of CNCS is to improve lives, strengthen communities, and foster civic participation through service and volunteering. Through AmeriCorps, Senior Corps, the Social Innovation Fund, and the Volunteer Generation Fund, CNCS has helped to engage millions of citizens in meeting community and national challenges through service and volunteer action.
Eligible Applicants:	Educational Institutions, Nonprofits Organizations, Local Governments, States, Tribal Governments
Eligible Activities:	Activities to support livelihoods and employment, Capital Projects; Activities to Ensures Social Stability, Security and Justice; Activities to Empower a Broad Range of Stakeholders
Link:	https://www.nationalservice.gov/build-your-capacity/grants/funding-opportunities/2017/ameri-corps-state-and-national-grants-fy-2017

Source:	Federal Emergency Management Agency (FEMA)
Program:	Emergency Management Performance Grant (EMPG) Program
Mechanism:	Grants
Description:	The purpose of the EMPG Program is to provide federal grants to states to assist state, local, territorial, and tribal governments in preparing for all hazards, as authorized by the Robert T. Stafford Disaster Relief and Emergency Assistance Act (the Stafford Act), as amended (42 U.S.C. §§ 5121 et seq.) and Section 662 of the Post Katrina Emergency Management Reform Act of 2006, as amended (6 U.S.C. § 762). Title VI of the Stafford Act authorizes FEMA to make grants for the purpose of providing a system of emergency preparedness for the protection of life and property in the United States from hazards and to vest responsibility for emergency preparedness jointly in the federal government and the states and their political subdivisions. The federal government, through the EMPG Program, provides necessary direction, coordination, guidance, and assistance, as authorized in this title, to support a comprehensive "all hazards" emergency preparedness system.
Eligible Applicants:	States, Local Governments
Eligible Activities:	Activities to Fosters Long-Term and Integrated Planning
Link:	https://www.fema.gov/emergency-management-performance-grant-program

Source:	Federal Emergency Management Agency (FEMA)
Program:	FEMA's Community Emergency Response Team (CERT)
Mechanism:	Training
Description:	CERT educates individuals about disaster preparedness for hazards that may impact their area and trains them in basic disaster response skills, such as fire safety, light search and rescue, team organization, and disaster medical operations.
Eligible Applicants:	Nonprofit Organizations, Local Governments, Businesses, Educational Institutions, Tribal Governments
Eligible Activities:	Activities to Foster Long-Term and Integrated Planning
Link:	https://www.fema.gov/community-emergency-response-teams

Source:	Federal Emergency Management Agency (FEMA)
Program:	Flood Mitigation Assistance (FMA) from Hazard Mitigation Assistance (HMA)
Mechanism:	Grants
Description:	State is applicant; local government is subrecipient of funds. Federal funds may be used to pay up to 75% of eligible activity costs; FEMA may contribute up to 100% of the federal cost share for severe repetitive loss properties. Eligible activities include property acquisition and structure demolition / relocation, mitigation reconstruction, dry floodproofing, retrofitting of existing buildings, and pre-disaster code enforcement. Funding priority is on severe repetitive loss properties.
Eligible Applicants:	States, Local Governments, Nonprofit Organizations, Tribal Governments
Eligible Activities:	Activities to Meet Basic Needs
Link:	https://www.fema.gov/flood-mitigation-assistance-grant-program

Source:	Federal Emergency Management Agency (FEMA)
Program:	Hazard Mitigation Grant Program (HMGP) from Hazard Mitigation Assistance (HMA)
Mechanism:	Grants
Description:	The HMGP provides grants to states and local governments to implement long-term hazard mitigation measures after a major disaster declaration. Authorized under Section 404 of the Stafford Act and administered by FEMA, HMGP was created to reduce the loss of life and property due to natural disasters. The program enables mitigation measures to be implemented during the immediate recovery from a disaster.
Eligible Applicants:	States, Local Governments, Nonprofit Organizations, Tribal Governments
Eligible Activities:	Activities to Foster Long-Term and Integrated Planning
Link:	http://www.fema.gov/hazard-mitigation-grant-program

Source:	Federal Emergency Management Agency (FEMA)
Program:	Pre-Disaster Mitigation Grants (PDM) from Hazard Mitigation Assistance (HMA)
Mechanism:	Grants
Description:	The PDM Program, authorized by Section 203 of the Robert T. Stafford Disaster Relief and Emergency Assistance Act, is designed to assist states, territories, federally-recognized tribes, and local communities in implementing a sustained pre-disaster natural hazard mitigation program. The goal is to reduce overall risk to the population and structures from future hazard events, while also reducing reliance on federal funding in future disasters. This program awards planning and project grants and provides opportunities for raising public awareness about reducing future losses before disaster strikes. PDM grants are funded annually by congressional appropriations and are awarded on a nationally competitive basis.
Eligible Applicants:	States, Local Governments, Nonprofit Organizations, Tribal Governments
Eligible Activities:	Activities to Foster Long-Term and Integrated Planning
Link:	http://www.fema.gov/pre-disaster-mitigation-grant-program

Source:	National Fish and Wildlife Foundation (NFWF)
Program:	Five Star & Urban Waters Restoration Program
Mechanism:	Grants
Description:	The program focuses on the stewardship and restoration of coastal, wetland and riparian ecosystems across the country. Its goal is to meet the conservation needs of important species and habitats, providing measurable and meaningful conservation and educational outcomes. The program requires the establishment and/or enhancement of diverse partnerships and an education/outreach component that will help shape and sustain behavior to achieve conservation goals. Funding priorities for this program include: - On-the-ground wetland, riparian, in-stream, and/or coastal habitat restoration - Meaningful education and training activities, either through community outreach, participation, and/or integration with K-12 environmental curriculum - Measurable ecological, educational, and community benefits - Partnerships: Five Star projects should engage a diverse group of community partners to achieve ecological and educational outcomes.
Eligible Applicants:	States, Local Governments, Educational Institutions, Nonprofit Organizations, Tribal Governments
Eligible Activities:	Activities to Enhance and Provide Protective Natural & Man-Made Assets
Link:	http://www.nfwf.org/fivestar/Pages/home.aspx

Source:	National Oceanic and Atmospheric Administration (NOAA)
Program:	NOAA Great Lakes Habitat Restoration Regional Partnership Grants
Mechanism:	Grants, Technical Assistance
Description:	NOAA delivers funding and technical expertise to restore Great Lakes coastal habitats. These habitats support valuable fisheries and other resources; improve water quality; provide recreational opportunities for the public's use and enjoyment; and buffer our coastal communities from the impacts of changing lake levels.
Eligible Applicants:	Nonprofit Organizations, Educational Institutions, Businesses, States, Local Governments, Tribal Governments
Eligible Activities:	Activities to Enhance and Provide Protective Services to Natural & Man-Made Assets
Link:	http://www.grants.gov/view-opportunity.html?oppld=280339

Source:	National Oceanic and Atmospheric Administration (NOAA)
Program:	Office for Coastal Management
Mechanism:	Grants
Description:	Supports coral reefs and estuaries outside Illinois
Eligible Applicants:	States, Educational Institutions
Eligible Activities:	Activities to Enhance and Provide Protective Services to Natural & Man-Made Assets; Activities to Foster Economic Prosperity
Link:	https://coast.noaa.gov/funding/index.html

Source:	National Oceanic and Atmospheric Administration (NOAA)
Program:	Regional Coastal Resilience Grant Program
Mechanism:	Grants
Description:	Supports projects that address needs related to hazard mitigation, climate adaption, disaster redevelopment, land use, etc. Activities to build resilience may include developing and implementing plans, policies, regulations, guidelines and incentives.
Eligible Applicants:	Nonprofit Organizations, Educational Institutions, Businesses, Local Governments, States, Tribal Governments
Eligible Activities:	Activities to Enhance and Provide Protective Services to Natural & Man-Made Assets; Activities to Foster Long-Term and Integrated Planning
Link:	https://coast.noaa.gov/resilience-grant/

Source:	National Oceanic and Atmospheric Administration (NOAA)
Program:	Sea Grant Community Climate Adaptation Initiative (CCAI)
Mechanism:	Grants
Description:	NOAA Sea Grant's CCAI is committed to improving the nation's ability to understand, plan for, and respond to climate variability and change along our shorelines. The primary objectives are to provide the communities with sufficient information to consider alternatives, enable them to make well-informed decisions, and ultimately, to develop and implement customized solutions.
Eligible Applicants:	Learning Institutions, Others (i.e., Collaborations)
Eligible Activities:	Activities to Foster Long-Term and Integrated Planning
Link:	http://seagrant.noaa.gov/WhatWeDo/Climate/CCCAIMap.aspx

Source:	National Resources Conservation Services (NRCS)
Program:	Emergency Watershed Protection Program (EWP)
Mechanism:	Grants
Description:	Relieving imminent hazards to life and property caused by floods, fires, windstorms and other natural occurrences, EWP is designed for installation of recovery measures. Activities include providing financial and technical assistance to: remove debris from stream channels, road culverts, and bridges, reshape and protect eroded banks, correct damaged drainage facilities, establish cover on critically eroding lands, repair levees and structures, and repair conservation practices.
Eligible Applicants:	States, Local Governments, Tribal Governments
Eligible Activities:	Activities to Foster Long-Term and Integrated Planning
Link:	https://www.nrcs.usda.gov/wps/portal/nrcs/main/national/programs/landscape/ewpp/

Source:	National Resources Conservation Services (NRCS)
Program:	Watershed and Flood Prevention Operations Program (WFPO)
Mechanism:	Grants
Description:	The WFPO Program provides technical and financial assistance to states, local governments and Tribes (project sponsors) to plan and implement authorized watershed project plans for the purpose of: watershed protection, flood mitigation, water quality improvements, soil erosion reduction, rural, municipal, and industrial water supply, irrigation, water management, sediment control, fish and wildlife enhancement, and hydropower
Eligible Applicants:	States, Local Governments, Tribal Governments
Eligible Activities:	Activities to Enhance and Provide Protective Services to Natural & Man-Made Assets
Link:	https://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/programs/landscape/wfpo/?cid=nrcs143_008271

Source:	US Army Corps of Engineers (USACE)
Program:	Section 14: Emergency Streambank and Shoreline Protection
Mechanism:	Grants
Description:	The purpose of the Section 14 authority is to provide emergency streambank and shoreline protection for public facilities, such as roads, bridges, hospitals, schools, and water/sewage treatment plants that are in imminent danger of failing. Projects authorized under Section 14 are cost-shared at 100% federal up to \$100,000, then 50% federal and 50% non-federal for the feasibility phase, and 65% federal and 35% non-federal for the design and construction phase.
Eligible Applicants:	States
Eligible Activities:	Activities to Meet Basic Needs
Link:	http://www.mvr.usace.army.mil/Business-With-Us/Outreach-Customer-Service/Flood-Risk-Management/Section-14/

Source:	US Army Corps of Engineers (USACE)
Program:	Section 205: Small Flood Risk Management Projects
Mechanism:	Grants
Description:	The Small Flood Risk Management Project program provides local flood risk management by the construction or improvement of flood control works or non-structural measures. The types of studies and/or projects are tailored to be site specific. Typical flood risk management projects may include levees, floodwalls, impoundments, pumping stations, and channel modifications as well as non-structural measures. Non-structural measures reduce flood damages by changing the use of floodplains or by accommodating existing uses to the flood hazard. Examples include flood proofing, relocation of structures, and flood warning and preparedness systems. The Corps of Engineers oversees planning, design, and construction of flood risk management projects in close coordination with the project sponsor.
Eligible Applicants:	Non-Federal Sponsors
Eligible Activities:	Activities to Meet Basic Needs
Link:	http://www.mvr.usace.army.mil/Business-With-Us/Outreach-Customer-Service/Flood-Risk-Management/Section-205/

Source:	US Army Corps of Engineers (USACE)
Program:	Section 206: Aquatic Ecosystem Restoration
Mechanism:	Grants
Description:	The Corps of Engineers can carry out aquatic ecosystem restoration and protection projects. Such projects generally include manipulation of the hydrology in and along bodies of water, including wetlands and riparian areas. A project is adopted for construction only after a detailed investigation determines that the project will improve the quality of the environment and is in the best interest of the public.
Eligible Applicants:	Non-Federal Sponsors
Eligible Activities:	Activities to Enhance and Provide Protective Natural & Man-Made Assets
Link:	http://www.mvr.usace.army.mil/Business-With-Us/Outreach-Customer-Service/Ecosystem-Restoration/Section-206/

Source:	US Army Corps of Engineers (USACE)
Program:	Section 219: Environmental Infrastructure Program
Mechanism:	Technical Assistance
Description:	The Environmental Infrastructure Program, also known as Section 219 of the 1992 Water Resources Development Act (WRDA), as amended, authorizes the Corps to assist non-federal interests in carrying out water-related environmental infrastructure and resource protection and development projects. Such assistance may be in the form of technical, planning, and/or design assistance for water supply and storage, treatment and distribution system, and wastewater treatment systems including treatment plants.
Eligible Applicants:	Non-Federal Sponsors
Eligible Activities:	Activities to Meet Basic Needs
Link:	http://www.usace.army.mil/Missions/Civil-Works/Project-Partnership-Agreements/model_ra/section_219/

Source:	US Army Corps of Engineers (USACE)
Program:	Section 506: Great Lakes Fishery & Ecosystem Restoration (GLFER)
Mechanism:	Grants
Description:	The U.S. Army Corps of Engineers can assist in planning, design and construction of projects to protect and/or restore the fishery, ecosystems and beneficial uses of the Great Lakes. Federal cost limit is \$10,000,000 per project.
Eligible Applicants:	Non-Federal Sponsors
Eligible Activities:	Activities to Enhance and Provide Protective Natural & Man-Made Assets

Source:	US Department of Agriculture (USDA)
Program:	Farm to School Grant
Mechanism:	Grants
Description:	The purpose of the USDA Farm to School Grant Program is to assist eligible entities in implementing farm to school programs that improve access to local foods in eligible schools. On an annual basis, USDA awards up to \$5 million in competitive grants for training, supporting operations, planning, purchasing equipment, developing school gardens, developing partnerships, and implementing farm to school programs.
Eligible Applicants:	Educational Institutions, States, Local Governments, Tribal Governments, Nonprofit Organizations, Agricultural Producers
Eligible Activities:	Activities to Promote Cohesive and Engaged Communities
Link:	http://www.fns.usda.gov/farmentoschool/farm-school-grant-program

Source:	US Department of Agriculture (USDA)
Program:	US Forest Service - Urban and Community Forestry Program
Mechanism:	Grants
Description:	The Urban and Community Forestry Program responds to the needs of urban areas by maintaining, restoring, and improving urban forest ecosystems on more than 70 million acres. Through these efforts, the program encourages and promotes the creation of healthier, more livable urban environments across the nation. The Urban and Community Forestry Program provides technical, financial, research, and educational services to local government, non profit organizations, community groups, educational institutions, and tribal governments. The program is delivered through its legislative partners, the state forestry agencies in 59 states and US territories. Three national themes provide a framework for this work: - Conserve working forest landscapes, - Protect forests from harm, and - Enhance benefits associated with trees and forests.
Eligible Applicants:	Local Governments, Nonprofit Organizations, Educational Institutions
Eligible Activities:	Activities to Enhance and Provide Protective Natural & Man-Made Assets
Link:	https://www.fs.fed.us/managing-land/urban-forests/ucf

Source:	US Department of Agriculture (USDA)
Program:	Water & Environmental Grant and Loan
Mechanism:	Loan
Description:	Through Rural Utilities Service Water and Environmental Programs (WEP), rural communities obtain the technical assistance and financing necessary to develop drinking water and waste disposal systems. Safe drinking water and sanitary waste disposal systems are vital not only to public health, but also to the economic vitality of rural America. WEP provides funding for the construction of water and waste facilities in rural communities and is proud to be the only Federal program exclusively focused on rural water and waste infrastructure needs of rural communities with populations of 10,000 or less. WEP also provides funding to organizations that provide technical assistance and training to rural communities in relation to their water and waste activities.
Eligible Applicants:	Local Governments
Eligible Activities:	Activities to Meet Basic Needs
Link:	https://www.rd.usda.gov/programs-services/all-programs/water-environmental-programs

Source:	US Department of Energy (DOE)
Program:	Outreach Technical Assistance - Office of Energy Efficiency and Renewable Energy (EERE)
Mechanism:	Grants, Technical Assistance
Description:	EERE works with business, industry, universities, national laboratories, and others to increase the use of renewable energy and energy efficiency technologies. One way EERE encourages the growth of these technologies is by offering financial assistance opportunities for their research and development. EERE evaluates projects that may include brownfields as proposed sites for renewable energy technologies.
Eligible Applicants:	Businesses, Educational Institutions
Eligible Activities:	Activities to Foster Long-Term and Integrated Planning; Activities to Enhance and Provide Protective Natural & Man-Made Assets
Link:	https://energy.gov/eere/funding/eere-funding-opportunities

Source:	US Department of Energy (DOE)
Program:	Weatherization and Intergovernmental Programs Office
Mechanism:	Grants, Technical Assistance
Description:	The Weatherization and Intergovernmental Program provides grants, technical assistance, and information tools to states, local governments, community action agencies, utilities, tribal governments, and U.S. territories for their energy programs. The funding can be used to encourage installation of green infrastructure—such as green roofs—as part of the weatherization process.
Eligible Applicants:	States, Local Governments, Nonprofit Organizations, Tribal Governments
Eligible Activities:	Activities to Enhance and Provide Protective Natural & Man-Made Assets
Link:	http://energy.gov/eere/wipo/weatherization-and-intergovernmental-programs-office

Source:	US Department of Health and Human Services (DHHS)
Program:	National Institute of Environmental Health Sciences - Environmental Careers Worker Training Program
Mechanism:	Grants
Description:	The following organizations and institutions are eligible: public/state controlled institutions of higher education; private institutions of higher education; Hispanic-serving institutions; historically black colleges and universities; tribally controlled colleges and universities; Alaska Native and Native Hawaiian-serving institutions; Asian American/Native American/Pacific Islander-serving institutions and nonprofits with 501(c)(3) IRS Status (other than institutions of higher education)
Eligible Applicants:	Educational Institutions, Nonprofits Organizations
Eligible Activities:	Activities to Support Livelihoods and Employment, Capital Projects
Link:	https://www.niehs.nih.gov/careers/hazmat/about_wetp/ecwtp/index.cfm

Source:	US Department of Health and Human Services (DHHS)
Program:	Office of Community Services - Community Economic Development Program (CED)
Mechanism:	Grants
Description:	The CED Program provides funds to create employment and business development opportunities for low-income residents.
Eligible Applicants:	Nonprofit Organizations
Eligible Activities:	Activities to Support Livelihoods and Employment, Capital Projects
Link:	https://www.acf.hhs.gov/ocs/programs/ced

Source:	US Department of Housing and Urban Development (HUD)
Program:	Brownfields Economic Development Initiative (BEDI)
Mechanism:	Grants
Description:	Used for land writedowns, site remediation costs, funding reserves, over-collateralizing or direct enhancement of the security of the Section 108 loan, or provisions of financing to for-profit businesses at a below-market interest rate. HUD is not currently requesting funding for the BEDI Program.
Eligible Applicants:	Local Governments
Eligible Activities:	Activities to Foster Economic Development
Link:	https://www.hudexchange.info/programs/bedi/

Source:	US Department of Housing and Urban Development (HUD)
Program:	Capacity Building for Sustainable Communities (in partnership with the EPA)
Mechanism:	Grants
Description:	The Capacity Building for Sustainable Communities Program will identify intermediary organizations that can provide capacity building support for communities engaged in planning efforts that support community involvement and integrate housing, land use, land cleanup and preparation for reuse, economic and workforce development, transportation, and infrastructure investments. Each grantee will be expected to deliver capacity building support to communities across the United States.
Eligible Applicants:	Nonprofit Organizations, Local Governments, States, Tribal Governments, Businesses
Eligible Activities:	Activities to Promote Leadership and Effective Management
Link:	https://portal.hud.gov/hudportal/HUD?src=/program_offices/economic_development/capacity-building

Source:	US Department of Housing and Urban Development (HUD)
Program:	Choice Neighborhoods Initiative Implementation Grant
Mechanism:	Grants
Description:	Choice Neighborhoods Implementation Grants support the implementation of comprehensive neighborhood revitalization plans that are expected to achieve the following three core goals: 1. Housing: Replace distressed public and assisted housing with high-quality mixed-income housing that is well-managed and responsive to the needs of the surrounding neighborhood. 2. People: Improve educational outcomes and intergenerational mobility for youth. 3. Neighborhood: Create the conditions necessary for public and private reinvestment in distressed neighborhoods to offer the kinds of amenities and assets, including safety, good schools, and commercial activity, that are important to families' choices about their community. To achieve these core goals, communities must develop and implement a comprehensive neighborhood revitalization strategy, or "Transformation Plan." The transformation plan can be developed through the Choice Neighborhoods Initiative Planning Grant.
Eligible Applicants:	Local Governments, Businesses
Eligible Activities:	Activities to Foster Long-Term and Integrated Planning
Link:	https://portal.hud.gov/hudportal/HUD?src=/program_offices/public_indian_housing/programs/ph/cn/grants

Source:	US Department of Housing and Urban Development (HUD)
Program:	Choice Neighborhoods Initiative Planning Grant
Mechanism:	Grants
Description:	Choice Neighborhoods Planning Grants support the development of comprehensive neighborhood revitalization plans which focus on directing resources to address three core goals: Housing, People, and Neighborhoods. To achieve these core goals, communities must develop and implement a comprehensive neighborhood revitalization strategy, or Transformation Plan. The Transformation Plan will become the guiding document for the revitalization of the public and/or assisted housing units while simultaneously directing the transformation of the surrounding neighborhood and positive outcomes for families.
Eligible Applicants:	Local Governments, Businesses, Nonprofit Organizations, Tribal Governments
Eligible Activities:	Activities to Foster Long-Term and Integrated Planning
Link:	https://portal.hud.gov/hudportal/HUD?src=/program_offices/public_indian_housing/programs/ph/cn/planninggrants

Source:	US Department of Housing and Urban Development (HUD)
Program:	Community Development Block Grant (CDBG): Disaster Recovery Program
Mechanism:	Grants
Description:	HUD provides flexible grants to help cities, counties, parishes, and states recover from presidentially declared disasters, especially in low- and moderate-income areas.
Eligible Applicants:	States, Local Governments, Tribal Governments
Eligible Activities:	Activities to Meet Basic Needs
Link:	https://portal.hud.gov/hudportal/HUD?src=/hudprograms/disaster-recovery

Source:	US Department of Housing and Urban Development (HUD)
Program:	Community Investment Cash Advances Programs (CICA)
Mechanism:	Grants
Description:	The CICA programs of the twelve FHLBs offer funding, including low-cost, long-term funds for member financial institutions to use to provide financing for projects that are targeted to certain economic development activities. These activities include commercial, industrial, manufacturing, social service, infrastructure projects, and public facility projects.
Eligible Applicants:	FHL Bank Members (must have Community Lending Plan)
Eligible Activities:	Activities to Foster Economic Prosperity
Link:	https://portal.hud.gov/hudportal/documents/huddoc?id=19564_FederalHomeLoan.pdf

Source:	US Department of Housing and Urban Development (HUD)
Program:	Lead Hazard Reduction Demonstration (LHRD) Grant
Mechanism:	Grants
Description:	Identify and control lead-based paint hazards in privately owned rental or owner-occupied housing.
Eligible Applicants:	States, Local Governments, Tribal Governments, Nonprofit Organizations
Eligible Activities:	Activities to Ensure Public Health Services
Link:	https://portal.hud.gov/hudportal/HUD?src=/program_offices/administration/grants/fundsavail/nofa16/lhrd

Source:	US Department of Housing and Urban Development (HUD)
Program:	Lead-Based Paint Hazard Control Grant
Mechanism:	Grants
Description:	Identify and control lead-based paint hazards in privately owned rental or owner-occupied housing.
Eligible Applicants:	States, Local Governments, Tribal Governments, Nonprofit Organizations
Eligible Activities:	Activities to Ensure Public Health Services
Link:	https://portal.hud.gov/hudportal/HUD?src=/program_offices/administration/grants/fundsavail/nofa16/lbphc

Source:	US Department of Housing and Urban Development (HUD)
Program:	Section 108 Loan Guarantee Program
Mechanism:	Grants
Description:	Section 108 of the Housing and Community Development Act of 1974 provides for a loan guarantee component of the Community Development Block Grant (CDBG) Program. The Section 108 Loan Guarantee Program (Section 108) provides communities with a source of financing for economic development, housing rehabilitation, public facilities, and other physical development projects, including improvements to increase their resilience against natural disasters. The funds can be used by a designated public entity to undertake eligible projects, or, alternatively, can be loaned to a third party developer to undertake the projects. This flexibility makes it one of the most potent and important public investment tools that HUD offers to local governments.
Eligible Applicants:	States, Local Governments, Tribal Governments
Eligible Activities:	Activities to Foster Economic Prosperity
Link:	https://www.hudexchange.info/programs/section-108/section-108-program-eligibility-requirements/#overview

Source:	US Department of Housing and Urban Development (HUD)
Program:	Section 108 Program / BUILT In Cook
Mechanism:	Grants
Description:	Loan program to finance TOD; COD; mixed use/service sector; and business development.
Eligible Applicants:	Businesses, Individuals
Eligible Activities:	Activities to Foster Economic Prosperity

Source:	US Department of Housing and Urban Development (HUD)
Program:	Sustainable Communities Challenge Planning
Mechanism:	Technical Assistance
Description:	The Department of Housing and Urban Development's \$28 million Community Challenge Planning Grant Program fosters reform and reduces barriers to achieving affordable, economically vital, and sustainable communities. Such efforts may include amending or replacing local master plans, zoning codes, and building codes, either on a jurisdiction-wide basis or in a specific neighborhood, district, corridor, or sector to promote mixed-use development, affordable housing, the reuse of older buildings and structures for new purposes, and similar activities with the goal of promoting sustainability at the local or neighborhood level. This Program also supports the development of affordable housing through the development and adoption of inclusionary zoning ordinances and other activities to support planning implementation.
Eligible Applicants:	Local Governments, States, Tribal Governments
Eligible Activities:	Activities to Foster Long-Term and Integrated Planning; Activities to Provide Reliable Communication and Mobility
Link:	https://portal.hud.gov/hudportal/documents/huddoc?id=sidebysideNOFA.pdf

Source:	US Department of Housing and Urban Development (HUD)
Program:	Sustainable Communities Regional Planning Grants
Mechanism:	Technical Assistance
Description:	Support metropolitan and multijurisdictional planning efforts that integrate housing, land use, economic and workforce development, transportation, and infrastructure investments in a manner that empowers jurisdictions to consider the interdependent challenges.
Eligible Applicants:	Nonprofit Organizations, Cities
Eligible Activities:	Activities to Foster Long-Term and Integrated Planning; Activities to Provide Reliable Communication and Mobility
Link:	https://portal.hud.gov/hudportal/documents/huddoc?id=sidebysideNOFA.pdf

Source:	US Department of the Interior (DOI)
Program:	National Park Service (NPS) - Federal Lands to Parks Program (FLP)
Mechanism:	Land Transfer
Description:	The NPS's FLP Program helps communities create new parks and recreation areas by transferring surplus federal land to state and local governments. This program helps ensure public access to park lands and promotes good stewardship of natural, cultural, and recreational resources.
Eligible Applicants:	States, Local Governments, Tribal Governments
Eligible Activities:	Activities to Enhance and Provide Protective Natural & Man-Made Assets
Link:	https://www.nps.gov/ncrc/programs/flp/index.htm

Source:	US Department of the Interior (DOI)
Program:	National Park Service (NPS) - Groundwork USA Letters of Interest
Mechanism:	Grants, Technical Assistance
Description:	Funding is currently available to select up to two new communities for the Groundwork Program. They will be eligible for up to \$200,000 in funding and technical assistance from the National Park Service, US Environmental Protection Agency, and groundwork USA to plan, establish, and build the capacity of Groundwork Trust organizations in their communities.
Eligible Applicants:	Local Governments
Eligible Activities:	Activities to Empower a Broad Range of Stakeholders; Activities to Foster Long-Term and Integrated Planning
Link:	http://groundworkusa.org/wp-content/uploads/2016/11/GW-USA-New-Community-RFP-announcement-11.1.16.pdf

Source:	US Department of the Interior (DOI)
Program:	National Park Service (NPS) - River, Trails, and Conservation Assistance Program (RTCA)
Mechanism:	Grants
Description:	The NPS's RTCA program provides assistance to communities so they can conserve rivers, preserve open space, and develop trails and greenways.
Eligible Applicants:	Nonprofit Organizations, Tribal Governments, Local Governments, States, Federal Agencies
Eligible Activities:	Activities to Enhance and Provide Protective Natural & Man-Made Assets
Link:	https://www.nps.gov/orgs/rtca/index.htm

Source:	US Department of Transportation (DOT)
Program:	Recreational Trails Program (RTP)
Mechanism:	Grants
Description:	The RTP provides funds to states to develop and maintain recreational trails and trail-related facilities for both non-motorized and motorized recreational trail uses.
Eligible Applicants:	States
Eligible Activities:	Activities to Enhance and Provide Protective Natural & Man-Made Assets
Link:	http://www.fhwa.dot.gov/environment/recreational_trails/

Source:	US Department of Transportation (DOT) - Federal Highway Administration (FHWA)
Program:	Surface Transportation Program (STP)
Mechanism:	Grants
Description:	The STP provides flexible funding that may be used by states and localities for projects to preserve and improve the conditions and performance on any federal-aid highway, bridge and tunnel projects on any public road, pedestrian and bicycle infrastructure, and transit capital projects, including intercity bus terminals.
Eligible Applicants:	States, Local Governments
Eligible Activities:	Activities to Provide Reliable Communication and Mobility; Activities to Enhance and Provide Protective Natural & Man-Made Assets
Link:	http://www.cmap.illinois.gov/about/involvement/committees/advisory-committees/council-of-mayors/surface-transportation-program

Source:	US Department of Transportation (DOT)
Program:	Transportation Enhancement Activities (TE)
Mechanism:	Grants
Description:	TE activities benefit the traveling public and help communities to increase transportation choices and access, enhance the built and natural environment, and provide a sense of place.
Eligible Applicants:	States, FHWA divisions
Eligible Activities:	Activities to Provide Reliable Communication and Mobility; Activities to Enhance and Provide Protective Natural & Man-Made Assets
Link:	http://www.fhwa.dot.gov/environment/transportation_enhancements/teas.cfm

Source:	US Department of Transportation (DOT)
Program:	Transportation Investment Generating Economic Recovery Grants (TIGER)
Mechanism:	Grants
Description:	The highly competitive TIGER grant program supports innovative projects, including multi-modal and multi-jurisdictional projects, which are difficult to fund through traditional federal programs. The TIGER Discretionary Grant program provides a unique opportunity for the DOT to invest in road, rail, transit and port projects that promise to achieve national objectives. Since 2009, Congress has dedicated nearly \$4.6 billion for seven rounds of TIGER to fund projects that have a significant impact on the nation, a region, or a metropolitan area.
Eligible Applicants:	States, Local Governments, Tribal Governments
Eligible Activities:	Activities to Provide Reliable Communication and Mobility
Link:	https://www.transportation.gov/tiger

Source:	US Economic Development Administration (USEDA)
Program:	Disaster Recovery Funding
Mechanism:	Grants
Description:	No longer available. See EDA link for current funding opportunities.
Eligible Applicants:	NA
Eligible Activities:	NA
Link:	https://www.eda.gov/funding-opportunities/

Source:	US Economic Development Administration (USEDA)
Program:	Economic Adjustment Assistance Program (EAA)
Mechanism:	Grants, Partnerships
Description:	The USEDAs EAA program flexibly supports the design and/or implementation of strategies (e.g., strategy development, infrastructure construction, RLF capitalization/recapitalization) to assist communities or regions that experienced or are under threat of serious damage to their underlying economic base. Grants generally require a 50% local cost share.
Eligible Applicants:	Tribal Governments, States, Local Governments, Nonprofit Organizations, Educational Institutions
Eligible Activities:	Activities to Support Livelihoods and Employment, Capital Projects
Link:	https://www.eda.gov/funding-opportunities/

Source:	US Economic Development Administration (USEDA)
Program:	Local Technical Assistance
Mechanism:	Grants
Description:	The Local Technical Assistance program is designed to provide focused assistance to public and nonprofit leaders to help in economic development decision-making (e.g., impact analyses, feasibility studies). Grants generally require a 50% local cost share.
Eligible Applicants:	Tribal Governments, States, Local Governments, Nonprofit Organizations, Educational Institutions
Eligible Activities:	Activities to Support Livelihoods and Employment, Capital Projects
Link:	https://www.eda.gov/funding-opportunities/

Source:	US Economic Development Administration (USEDA)
Program:	Planning Program
Mechanism:	Grants
Description:	Planning program grants help regional organizations (Economic Development Districts, tribal governments, and other eligible areas) develop, implement, revise, or replace comprehensive economic development strategies (CEDs). CEDs are strategy-driven plans for regional economic development. They are the result of "regionally owned" planning processes designed to guide the economic prosperity and resiliency of an area or region. EDA-approved CEDs are prerequisites for requesting an EDA-funded public works or EAA programs. EDA also provides limited planning-grant assistance for short-term planning activities. Grants generally require a 50% local cost share.
Eligible Applicants:	Tribal Governments, States, Local Governments, Nonprofit Organizations, Educational Institutions
Eligible Activities:	Activities to Support Livelihoods and Employment, Capital Projects
Link:	https://www.eda.gov/funding-opportunities/

Source:	US Economic Development Administration (USEDA)
Program:	Public Works Program (PW)
Mechanism:	Grants
Description:	EDA's PW funding enables communities to construct or rehabilitate public infrastructure and facilities that are essential to job creation and economic development. Grants can be provided to support business incubators, industrial parks, and utility infrastructure needed for a private development, among other uses. Grants generally require a 50% local cost share
Eligible Applicants:	Tribal Governments, States, Local Governments, Nonprofit Organizations, Educational Institutions
Eligible Activities:	Activities to Support Livelihoods and Employment, Capital Projects
Link:	https://www.eda.gov/funding-opportunities/

Source:	US Economic Development Administration (USEDA)
Program:	Revolving Loan Fund Grant
Mechanism:	Loan, Grants
Description:	The Economic Development Administration's Revolving Loan Fund Program supplies small businesses and entrepreneurs with the gap financing needed to start or expand their business.
Eligible Applicants:	Local Governments, States, Nonprofit Organizations, Tribal Governments, Educational Institutions
Eligible Activities:	Activities to Foster Economic Prosperity; Activities to Support Livelihoods and Employment, Capital Projects
Link:	https://eda.gov/rlf/

Source:	US Economic Development Administration (USEDA)
Program:	Strong Cities Strong Communities Visioning Challenge (SC2)
Mechanism:	Technical Assistance, Grants
Description:	The SC2 initiative seeks to strengthen neighborhoods, towns, cities, and regions around the country by enhancing the capacity of local governments to develop and execute their economic vision and strategies, providing necessary technical assistance and access to federal agency expertise, and creating new public and private sector partnerships.
Eligible Applicants:	Cities
Eligible Activities:	Activities to Foster Economic Prosperity; Activities to Foster Long-Term and Integrated Planning;

Source:	US Environmental Protection Agency (EPA)
Program:	Environmental Justice Small Grants Request for Proposals (EJSG)
Mechanism:	Grants
Description:	EPA's EJSG program provides financial assistance to community-based organizations, and local and tribal governments working on projects to address environmental and public health concerns. EPA will award grants that support activities designed to empower and educate affected communities and to identify ways to address environmental and public health concerns at the local level. Approximately 40 one-year projects will be awarded at up to \$30,000 each.
Eligible Applicants:	NA
Eligible Activities:	NA
Link:	https://www.epa.gov/environmentaljustice/environmental-justice-small-grants-program

Source:	US Environmental Protection Agency (EPA)
Program:	Environmental Education Grants
Mechanism:	Grants
Description:	Under the Environmental Education Grants Program, EPA seeks grant proposals from eligible applicants to support environmental education projects that promote environmental awareness and stewardship and help provide people with the skills to take responsible actions to protect the environment. This grant program provides financial support for projects that design, demonstrate, and/or disseminate environmental education practices, methods, or techniques. Since 1992, EPA has distributed between \$2 and \$3.5 million in grant funding per year, supporting more than 3,600 grants.
Eligible Applicants:	Local Governments, Educational Institutions, Nonprofit Organizations
Eligible Activities:	Activities to Empower a Broad Range of Stakeholders
Link:	https://www.epa.gov/education/environmental-education-ee-grants#apply

Source:	US Environmental Protection Agency (EPA)
Program:	Environmental Workforce Development and Job Training Grants Program
Mechanism:	Grants
Description:	Environmental Workforce Development and Job Training grants provide eligible entities, including nonprofit organizations funding to recruit, train, and place local, unemployed and severely under-employed, and predominantly low-income and minority residents of affected communities the skills needed to secure full-time, sustainable employment in hazardous and solid waste remediation, water quality, chemical safety, and the environmental field at large.
Eligible Applicants:	Nonprofit Organizations
Eligible Activities:	Activities to Support Livelihoods and Employment, Capital Projects
Link:	https://www.epa.gov/brownfields/types-brownfields-grant-funding#tab-6

Source:	US Environmental Protection Agency (EPA)
Program:	Office of Brownfields and Land Revitalization - Area-Wide Planning Grants (BF AWP)
Mechanism:	Grants
Description:	BF AWP is a grant program which provides funding to conduct activities that will enable the recipient to develop an area-wide plan (including plan implementation strategies) for assessing, cleaning up and reusing catalyst/high priority brownfield sites. Funding is directed to a specific project area, such as a neighborhood, downtown district, local commercial corridor, old industrial corridor, community waterfront or city block, affected by a single large or multiple brownfield sites.
Eligible Applicants:	States, Local Governments, Tribal Governments, Nonprofit Organizations
Eligible Activities:	Activities to Foster Long-Term and Integrated Planning
Link:	https://www.epa.gov/brownfields/types-brownfields-grant-funding#tab-5

Source:	US Environmental Protection Agency (EPA)
Program:	Office of Brownfields and Land Revitalization - Cleanup Grants
Mechanism:	Grants
Description:	Cleanup grants provide funding for a grant recipient to carry out cleanup activities at brownfields sites. An eligible entity may apply for up to \$200,000 per site. Due to budget limitations, no entity can apply for funding cleanup activities at more than three sites. These funds may be used to address sites contaminated by petroleum and hazardous substances, pollutants, or contaminants (including hazardous substances co-mingled with petroleum). Cleanup grants require a 20 percent cost share, which may be in the form of a contribution of money, labor, material, or services, and must be for eligible and allowable costs (the match must equal 20 percent of the amount of funding provided by EPA and cannot include administrative costs). A cleanup grant applicant may request a waiver of the 20 percent cost share requirement based on hardship. An applicant must own the site for which it is requesting funding at time of application. The performance period for these grants is three years.
Eligible Applicants:	States, Local Governments, Tribal Governments, Nonprofit Organizations
Eligible Activities:	Activities to Enhance and Provide Protective Natural & Man-Made Assets
Link:	https://www.epa.gov/brownfields/types-brownfields-grant-funding#tab-5

Source:	US Environmental Protection Agency (EPA)
Program:	Office of Water - Campus RainWorks Challenge
Mechanism:	Prizes
Description:	Student teams are asked to design innovative green infrastructure for their campus. In past years, teams have incorporated climate resiliency and consider community engagement in their green infrastructure designs for stormwater management. EPA is calling for college and university students to form teams with a faculty advisor and compete in either the master plan or demonstration project categories.
Eligible Applicants:	College and University Students
Eligible Activities:	Activities to Enhance and Provide Protective Services to Natural & Man-Made Assets
Link:	http://smartgrowth.org/campus-rainworks-challenge-2/?utm_source=SGN+2016-1121&utm_campaign=sgn-news-2016-1121&utm_medium=email

Source:	US Environmental Protection Agency (EPA)
Program:	Office of Water - Drinking Water State Revolving Fund (DWSRF)
Mechanism:	Grants
Description:	The DWSRF was established by the 1996 Safe Drinking Water Act (SDWA) Amendments to provide loans to publicly and privately owned public water systems. The loans can be used for infrastructure improvements needed to protect public health and ensure compliance with the SDWA. The DWSRF is a state-run program that works like a bank, providing low- or no-interest loans to communities, public utilities, and private companies for drinking water projects that meet the program's criteria.
Eligible Applicants:	Local Governments, Businesses
Eligible Activities:	Activities to Meet Basic Needs; Activities to Ensure Public Health Services; Activities to Foster Economic Prosperity
Link:	https://www.epa.gov/drinkingwatersrf

Source:	US Environmental Protection Agency (EPA)
Program:	Office of Water - Urban Waters Small Grants Program
Mechanism:	Grants
Description:	As part of the urban waters movement, the program helps communities, especially underserved communities, connect to their waterways and engage in restoration to improve water quality and revitalize their neighborhoods.
Eligible Applicants:	States, Local Governments, Tribal Governments, Educational Institutions, Nonprofit Organizations
Eligible Activities:	Activities to Empower a Broad Range of Stakeholders; Activities to Foster Long-Term and Integrated Planning
Link:	https://www.epa.gov/urbanwaters/urban-waters-small-grants

Source:	US Environmental Protection Agency (EPA)
Program:	Technical Assistance to Brownfields Communities (TAB)
Mechanism:	Technical Assistance
Description:	The TAB program funds technical assistance to communities and other stakeholders on brownfields issues with the goal of increasing the community's understanding and involvement in brownfields cleanup and revitalization, and helping to move brownfields sites forward toward cleanup and reuse.
Eligible Applicants:	Nonprofit Organizations, Educational Institutions, Local Governments, Businesses, Tribal Governments
Eligible Activities:	Activities to Enhance and Provides Protective Natural & Man-Made Assets
Link:	https://www.epa.gov/brownfields/brownfields-technical-assistance-and-research

Source:	US Environmental Protection Agency (EPA)
Program:	Wetland Program Development Grants (WPDG)
Mechanism:	Grants
Description:	WPDGs provide eligible applicants an opportunity to conduct projects that promote the coordination and acceleration of research, investigations, experiments, training, demonstrations, surveys and studies relating to the causes, effects, extent, prevention, reduction and elimination of water pollution.
Eligible Applicants:	States, Local Governments, Tribal Governments
Eligible Activities:	Activities to Enhance and Provide Protective Natural & Man-Made Assets
Link:	https://www.epa.gov/wetlands/wetland-program-development-grants

Source:	US Environmental Protection Agency (EPA), US Endowment, Natural Resources Conservation Service
Program:	Healthy Watersheds Consortium Grant
Mechanism:	Grants
Description:	The Healthy Watersheds Consortium Grant Program goal is to accelerate strategic protection of healthy, freshwater ecosystems and their watersheds. Eligible applicants include not-for-profit 501(c)(3) organizations, for-profit companies, tribes, intertribal consortia, interstates, state, and local government agencies including water utilities and wastewater facilities, and colleges and universities.
Eligible Applicants:	Nonprofit Organizations, States, Tribal Governments, Local Governments, Educational Institutions, Businesses, Collaborations
Eligible Activities:	Activities to Enhance and Provide Protective Natural & Man-Made Assets
Link:	http://www.usendowment.org/healthywatersheds.html

Source:	US Fish and Wildlife Service (FWS)
Program:	Coastal Program
Mechanism:	Technical Assistance, Grants
Description:	The Coastal Program is one of the U.S. Fish and Wildlife Service's most successful and effective cooperative conservation programs. The mission of the Coastal Program is to protect and recover Federal Trust Species (threatened and endangered species, migratory birds, marine mammals, and inter-jurisdictional fish) by supporting voluntary restoration, enhancement and protection of high-priority coastal habitats. The national Coastal Program provides financial and technical assistance to on-the-ground habitat restoration and protection projects through locally-based field coordinators in 24 coastal areas around the nation.
Eligible Applicants:	Local Governments, Tribal Governments, Educational Institutions, Nonprofit Organizations, Businesses, States
Eligible Activities:	Activities to Foster Long-Term and Integrated Planning
Link:	https://www.fws.gov/coastal/

Source:	US Fish and Wildlife Service (FWS)
Program:	North American Wetlands Conservation Act Grants Program (NAWCA)
Mechanism:	Matching Funds
Description:	Increase bird populations and wetland habitat, while supporting local economies and American traditions such as hunting, fishing, birdwatching, family farming, and cattle ranching. Wetlands protected by NAWCA provide valuable benefits such as flood control, reducing coastal erosion, improving water and air quality, and recharging ground water.
Eligible Applicants:	PPP
Eligible Activities:	Activities to Enhance and Provide Protective Services to Natural & Man-Made Assets
Link:	https://www.fws.gov/birds/grants/north-american-wetland-conservation-act.php

Source:	US Forest Service (USFS)
Program:	Community Forest Program
Mechanism:	Grants
Description:	Establish community forests that provide continuing and accessible community benefits.
Eligible Applicants:	Local Government, Nonprofit Organizations
Eligible Activities:	Activities to Enhance and Provide Protective Natural & Man-Made Assets
Link:	http://www.fs.fed.us/cooperativeforestry/programs/loa/cfp.shtml

Source:	US Department of Agriculture (USDA)
Program:	Conservation Innovation Grants Program (CIGS)
Mechanism:	Grants
Description:	Supports projects using innovative approaches to support environmental enhancement and protection activities related to agricultural production through the National Resources Conservation Service. CIGs have supported promising new technologies to improve fertilizer, water and on-farm energy use, to improve water quality, or to make agriculture more resilient to weather extremes.
Eligible Applicants:	Nonprofit Organizations, Businesses, Local Governments, Tribal Governments, Individuals
Eligible Activities:	Activities to Foster Economic Prosperity
Link:	https://www.nrcs.usda.gov/wps/portal/nrcs/main/national/programs/financial/cig/

Source:	US Department of the Interior (DOI)
Program:	National Park Service - Land and Water Conservation Fund (LWCF)
Mechanism:	Grants
Description:	The state side of the LWCF provides matching grants to states and local governments for the acquisition and development of public outdoor recreation areas and facilities.
Eligible Applicants:	States, Local Governments
Eligible Activities:	Activities to Enhance and Provide Protective Services to Natural & Man-Made Assets
Link:	https://www.nps.gov/subjects/lwcf/stateside.htm

Funding and Financing: State Resources

Source:	Community Development Block Grant (CDBG)
Program:	Community Development Assistance Program (CDAP)
Mechanism:	Grants
Description:	The Community Development Assistance Program (CDAP), known nationally as the Community Development Block Grant (CDBG) program, provides federal funding for a variety of community-based projects. Communities with populations of 50,000 or less can apply for CDAP-Economic Development grant funding to assist private business in retaining or creating full-time, permanent jobs. Grant funds may also be used for improvements to public infrastructure that directly supports a company in the local community.
Eligible Applicants:	Local Governments (of a population of 50,000 or less)
Eligible Activities:	Activities to Foster Economic Prosperity
Link:	http://www.iira.org/rdrg/community-development-assistance-program-cdap/

Source:	US Department of Housing and Urban Development (HUD)
Program:	Illinois Energy Now
Mechanism:	Grants
Description:	Illinois Energy Now is an energy efficiency program administered by the State of Illinois that provides millions of dollars in rebates to public facilities that make large-scale equipment improvements to their electric and natural gas systems. More than \$70 million is available annually to help fund these projects. Includes energy efficiency rebates, grants, technical assistance, building assessments, and design consultation.
Eligible Applicants:	States, Local Governments, Tribal Governments, Educational Institutions
Eligible Activities:	Activities to Meet Basic Needs
Link:	https://www.illinois.gov/dceo/whyillinois/TargetIndustries/Energy/Pages/EnergyEfficiency.aspx

Source:	Illinois Department of Natural Resources (IDNR)
Program:	Bike Path Program
Mechanism:	Grants
Description:	The Illinois Bicycle Path Grant Program was created in 1990 to financially assist eligible units of government to acquire, construct, and rehabilitate public, non-motorized bicycle paths and directly related support facilities.
Eligible Applicants:	Local Governments
Eligible Activities:	Activities to Provide Reliable Communication and Mobility
Link:	https://www.dnr.illinois.gov/AEG/Pages/BikePathProgram.aspx

Source:	Illinois Department of Natural Resources (IDNR)
Program:	Federal Recreational Trails Program (RTP)
Mechanism:	Grants
Description:	This program provides funding assistance for acquisition, development, rehabilitation and maintenance of both motorized and non-motorized recreation trails. By law, 30% of each state's RTP funding must be earmarked for motorized trail projects, 30% for non-motorized trail projects, and the remaining 40% for multi-use motorized and non-motorized trails or a combination of either. The RTP program can fund up to 80% of approved projects and requires a minimum 20% non-federal funding match. Applications for grant assistance must be received by IDNR no later than March 1 of each calendar year. Awards are generally announced within 180 days following the application deadline date. Multiple applications may be submitted by the same project sponsor.
Eligible Applicants:	States, Local Governments, Tribal Governments, Nonprofit Organizations
Eligible Activities:	Activities to Enhance and Protect Natural & Man-Made Assets
Link:	https://www.dnr.illinois.gov/AEG/Pages/FederalRecreationalTrailsProgram.aspx

Source:	Illinois Department of Natural Resources (IDNR)
Program:	Illinois Coastal Management Program (ICMP)
Mechanism:	Grants
Description:	ICMP grants provide assistance to coastal communities to plan for balanced growth and sustainability and for watershed management to address coastal non-point pollution. Priority will be given to projects which encourage communities to adopt comprehensive plans to protect coastal resources. The ICMP will also support projects addressing hazard mitigation, natural resource protection or restoration, economic vitality, or projects which enhance public access to coastal areas. Funding may also be available to provide assistance for research, data collection, education or public awareness.
Eligible Applicants:	States, Local Governments, Nonprofit Organizations, Businesses, Educational Institutions
Eligible Activities:	Activities to Promote Cohesive and Engaged Communities; Activities to Meet Basic Needs; Activities to Support Livelihoods and Employment, Capital Projects
Link:	https://www.dnr.illinois.gov/cmp/Pages/grants.aspx

Source:	Illinois Department of Natural Resources (IDNR)
Program:	Open Space Lands Acquisition and Development (OSLAD)
Mechanism:	Grants
Description:	The OSLAD Program is a state-financed grant program that provides funding assistance to local government agencies for acquisition and/or development of land for public parks and open space.
Eligible Applicants:	Local Governments
Eligible Activities:	Activities to Enhance and Protect Natural & Man-Made Assets; Activities to Promote Cohesive and Engaged Communities; Activities to Enhance and Protect Natural & Man-Made Assets
Link:	https://www.dnr.illinois.gov/AEG/Pages/OpenSpaceLandsAcquisitionDevelopment-Grant.aspx

Source:	Illinois Environmental Protection Agency (IEPA)
Program:	Brownfields Redevelopment Loan Program (BRLP)
Mechanism:	Loan
Description:	The BRLP is a low interest loan program to support efforts by local governments and private parties to clean up brownfields sites. These cleanups take place under the Illinois Environmental Protection Agency's (IEPA) voluntary Site Remediation Program (SRP). The BRLP program is a revolving loan fund because it uses loan repayments (principal, plus interest) to make new loans for the same authorized purposes. Similar revolving loan funds administered by the Illinois EPA have successfully supported investments in wastewater treatment, drinking water, and general economic development. The Illinois EPA's Office of Brownfields Assistance (OBA) administers the BRLP program.
Eligible Applicants:	Local Governments, Businesses, Nonprofit Organizations
Eligible Activities:	Activities to Enhance and Protect Natural & Man-Made Assets
Link:	http://www.epa.state.il.us/land/brownfields/loan/brownfield-loan-app.pdf

Source:	Illinois Environmental Protection Agency (IEPA)
Program:	Clean Water State Revolving Fund (CWSRF)
Mechanism:	Grants
Description:	The CWSRF program is a federal-state partnership that provides communities a permanent, independent source of low-cost financing for a wide range of water quality infrastructure projects, including: - Wastewater treatment, - Stormwater management, - Non-point source pollution control, and - Watershed and estuary management.
Eligible Applicants:	Local Governments, Businesses, Nonprofit Organizations
Eligible Activities:	Activities to Meet Basic Needs; Activities to Enhance and Protect Natural & Man-Made Assets
Link:	https://www.epa.gov/cwsrf

Source:	Illinois Environmental Protection Agency (IEPA)
Program:	Illinois Green Infrastructure Grant (IGIG) Program for Stormwater Management
Mechanism:	Grants
Description:	Programs: 1. Combined Sewer Overflow (CSO) Rehabilitation Category; 2. Stormwater Retention and Infiltration Category; 3. Green Infrastructure Small Projects Category.
Eligible Applicants:	States, Local Governments, Nonprofit Organizations
Eligible Activities:	Activities to Meet Basic Needs; Activities to Foster Economic Prosperity; Activities to Enhance and Protect Natural & Man-Made Assets
Link:	http://www.epa.illinois.gov/topics/grants-loans/water-financial-assistance/igig/index

Source:	Illinois Environmental Protection Agency (IEPA)
Program:	Municipal Brownfield Redevelopment Grant
Mechanism:	Grants
Description:	Can be used for environmental site assessments and actual cleanup activities. Requires a 70/30 match from municipality.
Eligible Applicants:	Local Governments
Eligible Activities:	Activities to Enhance and Protect Natural & Man-Made Assets
Link:	http://www.epa.state.il.us/land/brownfields/grants/brownfields-grant-program-application-package.pdf

Source:	Illinois Environmental Protection Agency (IEPA)
Program:	Section 319h - Nonpoint Source Pollution Control Financial Assistance Program
Mechanism:	Grants
Description:	Funds can be used for the development, update, and implementation of watershed management plans including the development of information/education programs and for the installation of best management practices. Non-point source pollution control project types include: Implementation of an approved Watershed-Based Plan; Development of a Watershed-Based Plan; Development of a Total Maximum Daily Load (TMDL) Implementation Plan; Best Management Practice (BMP) Implementation; Information and Outreach; Technical Assistance; and Monitoring.
Eligible Applicants:	Local Governments, Nonprofit Organizations
Eligible Activities:	Activities to Enhance and Protect Natural & Man-Made Assets; Activities to Foster Long-Term and Integrated Planning
Link:	http://www.epa.illinois.gov/topics/water-quality/watershed-management/nonpoint-sources/grants/index

Source:	Illinois Housing Development Authority (IHDA)
Program:	Low Income Housing Tax Credits
Mechanism:	Grants
Description:	Creates a tax incentive for private buyers to buy into an equity share of a project. Needs other conventional financing and often gap financing to go with it.
Eligible Applicants:	Businesses
Eligible Activities:	Activities to Foster Economic Prosperity
Link:	https://www.huduser.gov/portal/datasets/lihtc.html

Source:	Private Activity Bonds
Program:	Private Activity Bonds
Mechanism:	Grants
Description:	State receives an allocation annually and each jurisdiction is able to secure their allocation on an annual basis. The allocation allows a jurisdiction to issue bonds to fund private development, but often comes with a non-competitive allocation of low income housing tax credits.
Eligible Applicants:	Local Governments
Eligible Activities:	TBA
Link:	NA

Funding and Financing: Regional Resources

Source:	Great Lakes Clean Communities Network (GLCCN)
Program:	Community Partnership Program (CPP)
Mechanism:	Partnership
Description:	Offers a small grant program that funds practice- or activity-based projects that directly improve water quality or support GLCCN's EcoScore indicators, such as tree planting, erosion control, river cleanups or green infrastructure.
Eligible Applicants:	Local Governments, Nonprofit Organizations
Eligible Activities:	Activities to Enhance and Protect Services to Natural & Man-Made Assets
Link:	http://glccn.org/mini-grant-program/

Source:	Multiple Agencies
Program:	Great Lakes Restoration Initiative (GLRI)
Mechanism:	Grants
Description:	The GLRI was launched in 2010 to accelerate efforts to protect and restore the largest system of fresh surface water in the world – the Great Lakes. During FY15 -19, federal agencies will continue to use GLRI resources to strategically target the biggest threats to the Great Lakes ecosystem and to accelerate progress toward long term goals for this important ecosystem. GLRI Action Plan II summarizes the actions that federal agencies plan to implement during FY15-19. These actions will build on restoration and protection work carried out under the first GLRI Action Plan, with a major focus on: - Cleaning up Great Lakes Areas of Concern - Preventing and controlling invasive species - Reducing nutrient runoff that contributes to harmful/nuisance algal blooms - Restoring habitat to protect native species
Eligible Applicants:	States, Local Governments, Educational Institutions, Nonprofit Organizations, Tribal Governments
Eligible Activities:	Activities to Enhance and Protect Services to Natural & Man-Made Assets
Link:	https://www.glri.us/

Source:	National Fish and Wildlife Foundation (NFWF)
Program:	Chi-Cal Rivers Fund
Mechanism:	PPP, Grants
Description:	Supports projects that: reduce stormwater runoff with green infrastructure; enhance fish and wildlife habitat; and improve public-use opportunities.
Eligible Applicants:	Federal, States, Tribal Governments, Local Governments, Educational Institutions, Nonprofit Organizations
Eligible Activities:	Activities to Enhance and Protect Natural & Man-Made Assets
Link:	http://www.nfwf.org/chi-cal/Pages/home.aspx

Source:	National Fish and Wildlife Foundation (NFWF)
Program:	Sustain Our Great Lakes
Mechanism:	Grants
Description:	Sustain, restore and protect fish, wildlife and habitat in the Great Lakes basin. Funding priority is given to projects that restore aquatic connectivity, stream and riparian habitat, wetland habitat, and coastal habitat.
Eligible Applicants:	States, Local Governments, Tribal Governments, Educational Institutions, Nonprofit Organizations
Eligible Activities:	Activities to Enhance and Protect Natural & Man-Made Assets
Link:	https://www.sustainourgreatlakes.org/about/

Source:	US Department of Agriculture (USDA)
Program:	North Central Region Sustainable Agriculture Research and Education (SARE)
Mechanism:	Grants
Description:	Provides grants for researchers, producers, farmers, students and educators involved in projects that explore and promote environmentally sound, profitable, and socially responsible food and/or fiber systems.
Eligible Applicants:	Collaborations (Between Scientists, Farmers, Institutions, and Educators)
Eligible Activities:	Activities to Support Livelihoods and Employment, Capital Projects
Link:	http://www.northcentralsare.org/Grants/Write-a-Successful-Grant/Grant-Program-Presentations

Funding and Financing: Local Resources

Source:	The Chicago Community Trust (CCT)
Program:	Our Great Rivers
Mechanism:	Grants
Description:	CCT calls for community-led proposals across four of its funding arenas: sustainable development, economic development, public health, and arts and culture. River-adjacent neighborhoods are invited to apply through representative organizations for funding to administer rivers-related planning, programs and projects. All proposals must align with one or more of the Our Great Rivers Vision's three themes: Inviting Rivers, Productive Rivers, Living Rivers
Eligible Applicants:	Local Governments, Nonprofit Organizations
Eligible Activities:	Activities to Enhance and Protect Natural & Man-Made Assets; Activities to Ensure Public Health Services; Activities to Foster Economic Prosperity
Link:	http://cct.org/wp-content/uploads/2017/02/OurGreatRiversRFP_Jan17.pdf

Source:	Chicago Metropolitan Agency for Planning (CMAP)
Program:	Local Technical Assistance (LTA) Projects
Mechanism:	Technical Assistance
Description:	The RTA and CMAP annually issue a joint Call for Projects for the RTA's Community Planning program and CMAP's Local Technical Assistance (LTA) Program.
Eligible Applicants:	Local Governments, Nonprofit Organizations, Educational Institutions
Eligible Activities:	Activities to Foster Long-Term and Integrated Planning; Activities to Meet Basic Needs
Link:	http://www.cmap.illinois.gov/programs-and-resources/lta

Source:	Chicago Metropolitan Agency for Planning (CMAP)
Program:	Transportation Alternatives Program (TAP)
Mechanism:	Grants
Description:	The TAP provides funding for programs and projects defined as transportation alternatives including on- and off-road pedestrian and bicycle facilities; infrastructure projects for improving non-driver access to public transportation and enhanced mobility; community improvement activities and environmental mitigation; recreational trail program projects; Safe Routes to School projects; and projects for planning, designing, or constructing boulevards and other roadways largely in the right-of-way of former Interstate System routes or other divided highways.
Eligible Applicants:	Local Governments, Nonprofit Organizations
Eligible Activities:	Activities to Provide Reliable Communication and Mobility; Activities to Enhance and Protect Natural & Man-Made Assets
Link:	https://www.fhwa.dot.gov/map21/guidance/guidetap.cfm

Source:	Cook County Department of Transportation and Highways
Program:	Connecting Cook County
Mechanism:	Grants
Description:	Connecting Cook County, the County's first long range transportation plan in 75 years, takes stock of our transportation assets, deficiencies and future needs, and measures them against the community and economic opportunities that transportation can facilitate. The Plan outlines a new direction and a more expansive role for the County in funding and collaborating on projects across jurisdictional boundaries and in achieving greater integration of the system across all transportation modes.
Eligible Applicants:	Local Governments
Eligible Activities:	Activities to Provide Reliable Communication and Mobility; Activities to Enhance and Protect Natural & Man-Made Assets
Link:	https://www.cookcountyil.gov/service/connecting-cook-county-long-range-transportation-plan

Source:	Metropolitan Water Reclamation District (MWRD)
Program:	MWRD Phase II Buyout Program
Mechanism:	Grants
Description:	Voluntary buyout program for homeowners in floodplains.
Eligible Applicants:	Homeowners
Eligible Activities:	Activities to Meet Basic Needs
Link:	NA

Source:	Metropolitan Water Reclamation District (MWRD)
Program:	MWRD Phase II Stormwater Management Program
Mechanism:	Grants
Description:	The mission of the Stormwater Management Program is to protect the safety of Cook County's residents and minimize flooding damage by coordinating, planning, implementing, financing, and operating regional stormwater management projects, and to develop and enforce reasonable rules with respect to watershed development. The framework of the MWRD's countywide stormwater management program is presented in the Cook County Stormwater Management Plan (CCSMP).
Eligible Applicants:	Local Governments
Eligible Activities:	Activities to Meet Basic Needs
Link:	http://www.mwrdd.org/pv_obj_cache/pv_obj_id_365F2D23632544B26B8002C1D829F27450016C00/filename/CCSMP.pdf

Source:	Open Lands
Program:	ComEd Green Region Program
Mechanism:	Grants
Description:	The grants of up to \$10,000 each support existing open space projects that focus on conservation, preservation, and improvements to local parks and recreation resources. Grant recipients can use Green Region grants in combination with other funding sources to cover a portion of the expenses associated with developing and/or supporting their open space programs.
Eligible Applicants:	Local Governments, Nonprofit Organizations
Eligible Activities:	Activities to Enhance and Protect Natural & Man-Made Assets; Activities to Promote Cohesive and Engaged Communities
Link:	https://openlands.org/planning/greenregion/

Source:	South Suburban Land Bank and Development Authority (SSLBDA)
Program:	Land Banks
Mechanism:	Partnerships
Description:	The SSLBDA was formed in 2012 with an intergovernmental agreement passed by the Village of Park Forest, City of Oak Forest and City of Blue Island. Land banks exist as a regional economic development tool for municipalities with limited manpower and financial resources to legally hold, manage and develop tax or bank foreclosed properties and put them back into productive use. Eventually, all southland municipalities will be invited to become members. The land bank was made possible by a HUD Sustainable Communities Grant awarded to the South Suburban Mayors and Managers Association (SSMMA) in 2011. SSMMA helped establish and provide technical assistance for the SSLBDA.
Eligible Applicants:	Local Governments, Nonprofit Organizations, Businesses
Eligible Activities:	Activities to Foster Economic Prosperity
Link:	http://www.sslbda.org/

Funding and Financing: Philanthropic Resources

Source:	CSX Transportation
Program:	Beyond Our Rails
Mechanism:	Grants
Description:	Primary areas of interest are safety, environment, wellness, and community (youth leadership education, dropout prevention). May be a fit within community sub-category of "supporting programs identified by community leaders as vital for that community's success." Does not fund multi-year commitments.
Eligible Applicants:	Nonprofit Organizations
Eligible Activities:	Activities to Promote Cohesive and Engaged Communities; Activities to Ensure Public Health Services
Link:	http://www.beyondourrails.org/index.cfm/community/giving-gateway/

Source:	Freshwater Future
Program:	Freshwater Future Grants
Mechanism:	Grants
Description:	Freshwater Future's grant programs provide financial support to activities that actively promote aquatic habitat protection through grassroots advocacy efforts by community groups working locally to protect and restore shorelines, inland lakes, rivers, and wetlands in the Great Lakes Basin.
Eligible Applicants:	Nonprofit Organizations
Eligible Activities:	Activities to Promotes Cohesive and Engaged Communities; Activities to Ensure Social Stability, Security and Justice; Activities to Promote Leadership and Effective Management; Activities to Enhance and Protect Natural & Man-Made Assets; Activities to Empower a Broad Range of Stakeholders
Link:	https://freshwaterfuture.org/grants/

Source:	Grand Victoria Foundation
Program:	Core Program Grant
Mechanism:	Grants
Description:	The Core Program's Land and Water Conservation program focuses on promoting public policies, instituting high quality stewardship and conservation practices, and aligning resources and actions to maximize land and water health and resilience.
Eligible Applicants:	Nonprofit Organizations
Eligible Activities:	Activities to Promote Cohesive and Engaged Communities; Activities to Enhance and Protect Natural & Man-Made Assets
Link:	http://www.grandvictoriafdn.org/grant-programs/guidelines/core-grants

Source:	Grand Victoria Foundation
Program:	Vital Lands
Mechanism:	Grants
Description:	Vital Lands Illinois supports acquisition and preservation of irreplaceable natural lands.
Eligible Applicants:	Nonprofit Organizations, Local Governments
Eligible Activities:	Activities to Enhance and Protect Natural & Man-Made Assets
Link:	http://www.grandvictoriafdn.org/grant-programs/guidelines/vital-lands-illinois

Source:	Nicor Gas
Program:	Nicor Gas Charitable Giving
Mechanism:	Grants
Description:	Focuses on basic human needs, community enrichment (sustainability and livability of neighborhoods), diversity, education, and environmental stewardship.
Eligible Applicants:	Nonprofit Organizations
Eligible Activities:	Activities to Support Livelihoods and Employment, Capital Projects; Activities to Promote Cohesive and Engaged Communities; Activities to Enhance and Protect Natural & Man-Made Assets; Activities to Ensure Social Stability, Security, and Justice
Link:	https://www.nicorgas.com/community/NG-grant-request

Source:	Pay It Forward Foundation
Program:	Mini Grant Project
Mechanism:	Grants
Description:	Provides \$500 mini-grants to school, church, and community based youth groups for supplies, materials, equipment, or transportation.
Eligible Applicants:	Educators and Student, Community Youth Groups (With an Adult Sponsor), Individual Youths
Eligible Activities:	Activities to Promote Cohesive and Engaged Communities
Link:	http://www.payitforwardfoundation.org/

Source:	The Chicago Community Trust
Program:	Varying Grants and Funds
Mechanism:	Grants, Partnerships, Fellowships
Description:	The organization funds facilitating small business in neighborhoods and general economic development efforts. They have partnered with other counties in the past.
Eligible Applicants:	Nonprofit Organizations
Eligible Activities:	Activities to Empower a Broad Range of Stakeholders; Activities to Foster Long-Term and Integrated Planning; Activities to Meet Basic Needs
Link:	http://www.cct.org/what-we-offer/grants/

Source:	The Field Foundation of Illinois
Program:	Varying Grants and Funds
Mechanism:	Grants
Description:	The Field Foundation will fund projects that prevent and reduce pollution of the natural environment and protect, preserve, and restore the natural environment. They prioritize projects in geographic areas with highly concentrated environmental hazards.
Eligible Applicants:	Local Governments, Nonprofit Organizations, Educational Institutions
Eligible Activities:	Activities to Promote Cohesive and Engaged Communities; Activities to Support Livelihoods and Employment; Capital Projects; Activities to Enhance and Protect Natural & Man-Made Assets
Link:	http://104.236.89.59/how-to-apply/program-grants/how-to-apply-programgrants/

Source:	Trinity Christian College
Program:	Trinity Christian College
Mechanism:	Assistance
Description:	Provides numerous student volunteer-based community assistance programs. The College may provide assistance with fund procurement, and community and business programs.
Eligible Applicants:	Student Communities
Eligible Activities:	Activities to Promote Cohesive and Engaged Communities
Link:	trnty.edu

Source:	Wells Fargo
Program:	Corporate Giving Program
Mechanism:	Grants
Description:	Organizations serving Illinois are encouraged to contact their local Wells Fargo to submit a grant proposal.
Eligible Applicants:	Nonprofit Organizations
Eligible Activities:	Activities to Promote Cohesive and Engaged Communities; Activities to support livelihoods and employment; Capital Projects
Link:	https://www.wellsfargo.com/about/corporate-responsibility/community-giving/

Source:	Captain Planet Foundation
Program:	Captain Planet Foundation Grants
Mechanism:	Grants
Description:	Captain Planet Foundation will accept small grant requests for amounts between \$500 – \$2,500. Preferential consideration is given to applicants who have secured at least 50% matching or in-kind funding for their projects. Projects with matching funds or in-kind support are given priority because external funding is a good indicator of the potential for long-term sustainability of the activities. Captain Planet Foundation may choose to fund a portion of the project budget that best fits within the foundation guidelines or contact an applicant for further discussion. Grants from the Captain Planet Foundation are intended to: provide hands-on environmental stewardship opportunities for youth; serve as a catalyst to getting environment-based education in schools; inspire youth and communities to participate in community service through environmental stewardship activities.
Eligible Applicants:	Nonprofit Organizations, Educational Institutions with annual budgets of less than \$3 million
Eligible Activities:	Activities to Support Livelihoods and Employment; Capital Projects; Activities to Promotes Cohesive and Engaged Communities; Activities to Enhance and Protect Natural & Man-Made Assets
Link:	http://captainplanetfoundation.org/apply-for-grants/

Source:	The Pollination Project
Program:	Pay It Forward Loans
Mechanism:	Loan
Description:	The Pollination Project is a grant-making foundation focusing on seed grants to individual social change makers around the world. While their grant funding is meant for purely charitable efforts, they also offer loans to startup social change enterprises that are designed to make a profit while simultaneously helping people and the planet.
Eligible Applicants:	Businesses
Eligible Activities:	Activities to Empower a Broad Range of Stakeholders
Link:	https://thepollinationproject.org/pay-it-forward-loans/

Source:	Illinois American Water
Program:	American Water Environment Program
Mechanism:	Grants
Description:	The program is designed to support diverse types of activities such as watershed cleanups, reforestation efforts, biodiversity projects, streamside buffer restoration projects, wellhead protection initiatives, and hazardous waste collection efforts.
Eligible Applicants:	Local Governments, Nonprofit Organizations
Eligible Activities:	Activities to Enhance and Protect Natural & Man-Made Assets
Link:	https://amwater.com/ilaw/about-us/environmental-grant-program

Source:	The Field Foundation of Illinois
Program:	The Emergency & Technical Assistance Fund
Mechanism:	Grants, Technical Assistance
Description:	There are three areas where funding can be considered: 1. Emergency needs that would lead to a cessation of service or threaten the health and safety of the clientele and/or staff of the organization (An emergency is defined as a one-time occurrence that is beyond an organization's control and unrelated to any ongoing resource development or related issue); 2. Small discrete projects that proceed over a short time frame, are generally one time in nature of need, and can be effectively addressed through a grant in the range of \$2,000 - \$5,000; and, 3. Technical assistance, (e.g., board development, program planning, evaluation, strategic planning, resource development, fiscal management, and in-service training) intended to enhance or expand internal operating capacity, efficiency and effectiveness.
Eligible Applicants:	Local Governments, Nonprofit Organizations
Eligible Activities:	Activities to Meet Basic Needs; Activities to Promote Leadership and Effective Management
Link:	http://104.236.89.59/how-to-apply/emergency-and-technical-assistance/

Source:	Union Pacific Foundation
Program:	Community-Based Grant Program
Mechanism:	Grants
Description:	Strong interest in promoting program effectiveness among nonprofits. Majority of grants go to help nonprofit organizations build capacity by helping new or existing programs reach more people or reach them more effectively. Particularly interested in community and civic organizations and health and human services. Will not be the sole funder of an initiative.
Eligible Applicants:	Nonprofit Organizations
Eligible Activities:	Activities to Promote Cohesive and Engaged Communities; Activities to Ensure Public Health Services
Link:	https://www.up.com/aboutup/community/foundation/grants/index.htm

APPENDIX D

ADDITIONAL RESOURCES

The Calumet Stormwater Collaborative's Planning and Policy work group is developing an online repository of resources related to planning and implementing stormwater projects.

You can learn more about the Calumet Stormwater Collaborative and the forthcoming resource repository here:

<https://www.metroplanning.org/work/project/23/subpage/1>

ABOUT CNT

RainReadySM is an initiative of the Center for Neighborhood Technology (CNT). As an award-winning innovations laboratory for urban sustainability, CNT is dedicated to taking on big challenges, starting in small places. CNT helps make neighborhoods, cities, and regions work better, for everyone. This work is generously supported with grants from The Boeing Company, Grand Victoria Foundation, the Joyce Foundation, the Charles Stewart Mott Foundation, the Prince Charitable Trusts, and the Surdna Foundation.