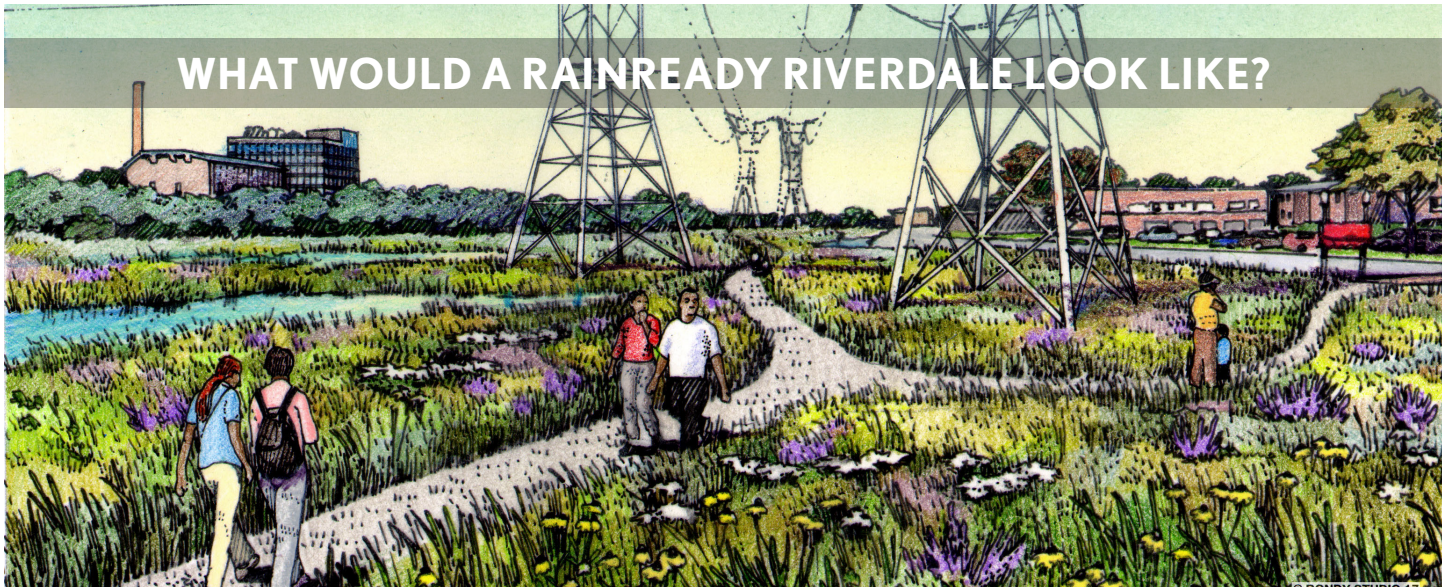


RainReady Calumet Corridor

Plan for Riverdale, IL



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 towards 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/calumetcorridor.

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.

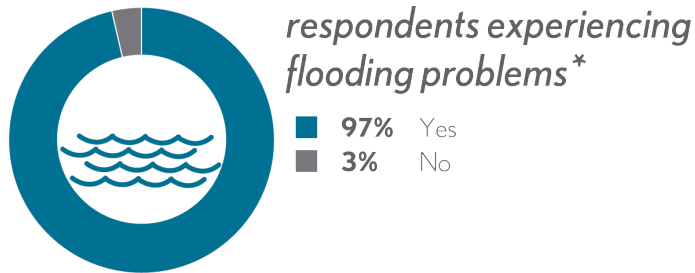
**KEEP READING FOR MORE INFORMATION ON THE
PATH AHEAD FOR RIVERDALE!**



Understanding the Problem

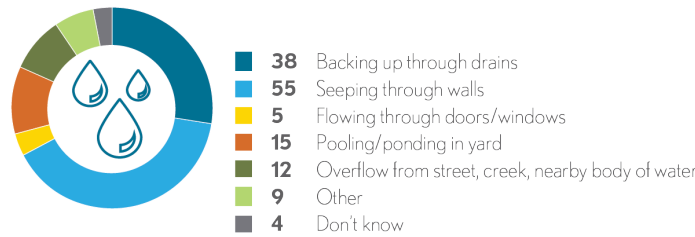
Like many of its neighbors, Riverdale has long been plagued by chronic flooding. In recent years, the scope and severity of the floods have become significantly worse. A combination of impervious surfaces, aging and limited infrastructure, and changes in regional climate have left Riverdale residents 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



87 survey respondents
\$4,109 average amount spent on stormwater-related repairs
\$1,533 average amount residents are willing to invest to reduce risk of future damage

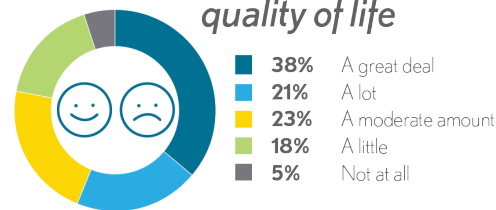
how water enters the properties



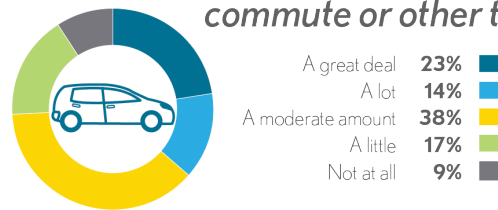
level of worry about flooding's impact property value



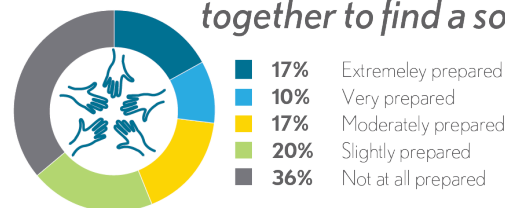
how much heavy rains impact quality of life



how much heavy rains impact commute or other travel



preparedness of community to work together to find a solution



efficacy of local government officials 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 recent 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 Plan recommends the following priority projects from a comprehensive list of recommendations:

NORTHEAST NEIGHBORHOOD

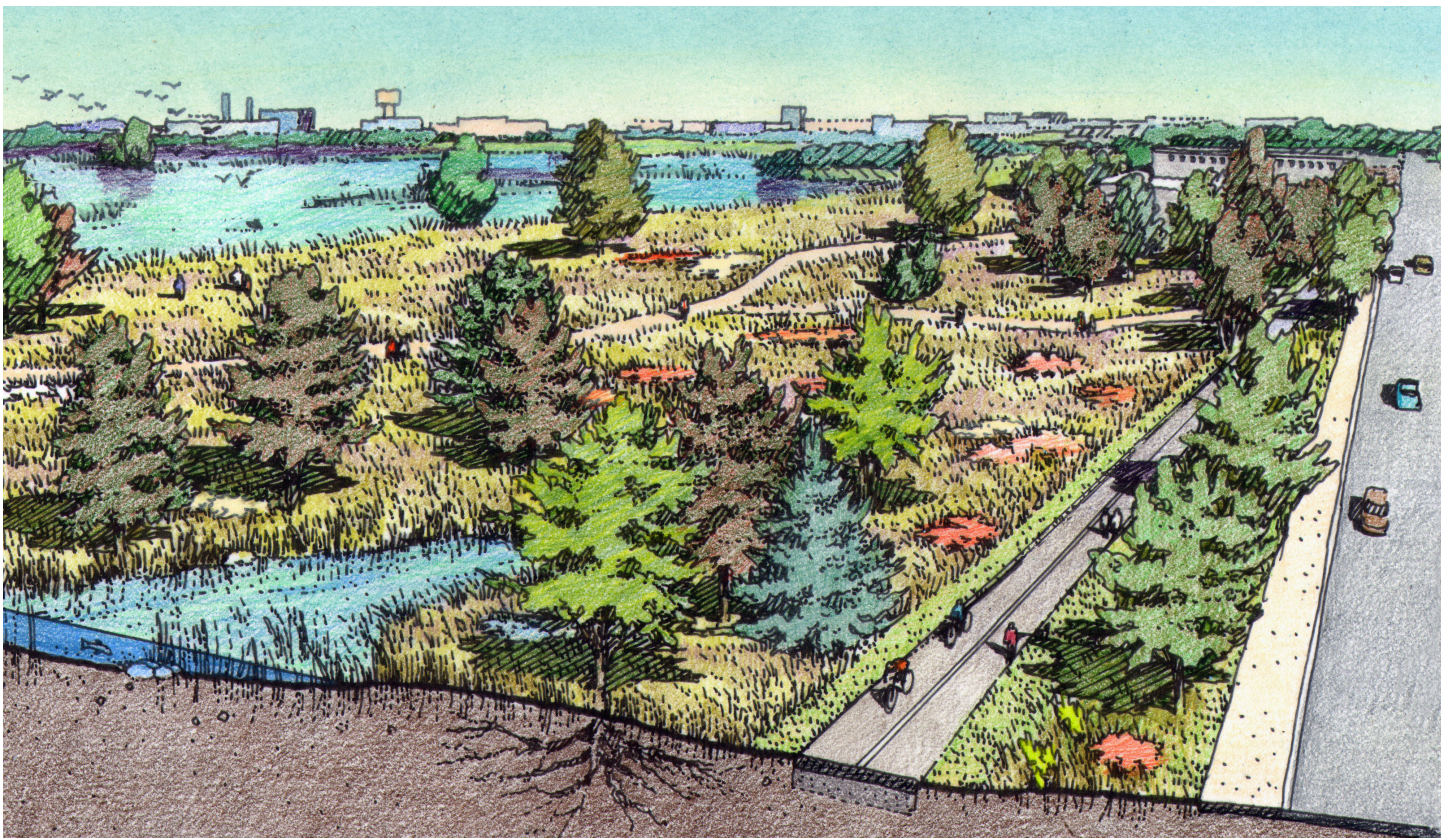
In 2017, plans will move forward to separate the sanitary sewer from the stormwater sewer in northeast Riverdale. The project area is defined by the Metra tracks, East 140th Street, the municipal border, and the Little Calumet River. This project will bring much needed flood relief to residents in the 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 Halsed 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.**

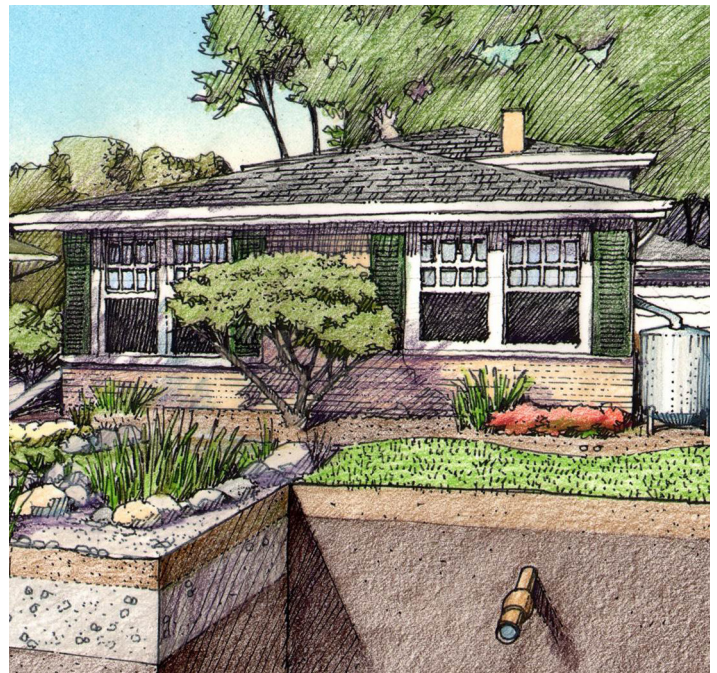
The strips between sidewalks and streets can be transformed into attractive green spaces that absorb stormwater runoff, reduce municipal maintenance costs, and beautify streets. Be sure to check your municipal code for which plants are permitted.

- **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

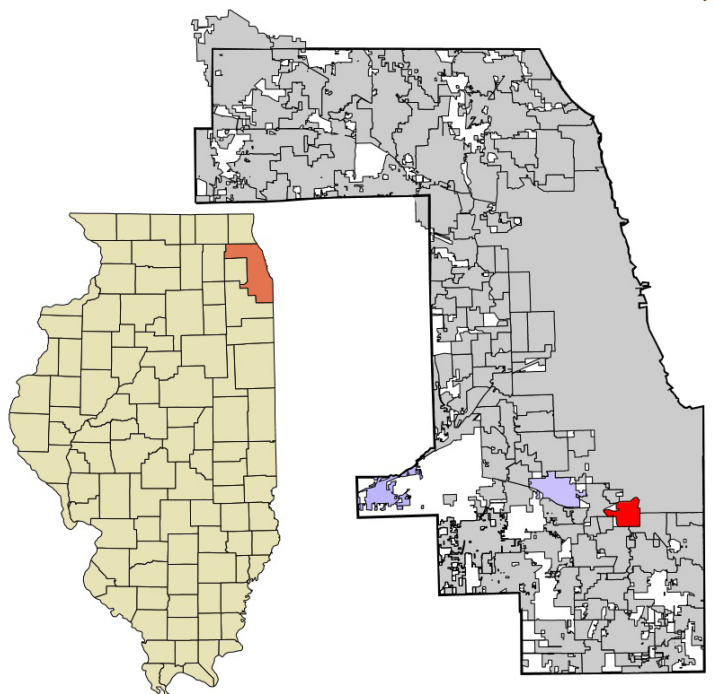
The Village of Riverdale is situated along the Little Calumet River about 16 miles south of Chicago's Downtown. Riverdale shares borders with Chicago to the northeast, Dolton to the east and south, Harvey to the southwest, Dixmoor and forest preserves to the west, and Calumet Park to the northwest. The village is close to both I-57 and I-94 and is only a 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.



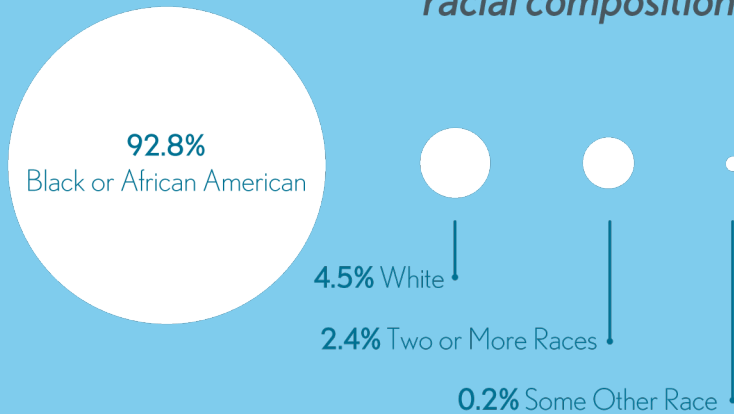
FIGURE RI-1:
Location of Riverdale within Cook County



Map by Resprinter123 via Wikipedia

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 (see *The Planning Process*). The result is a plan that works, both in terms of its community support and physical and economic feasibility.

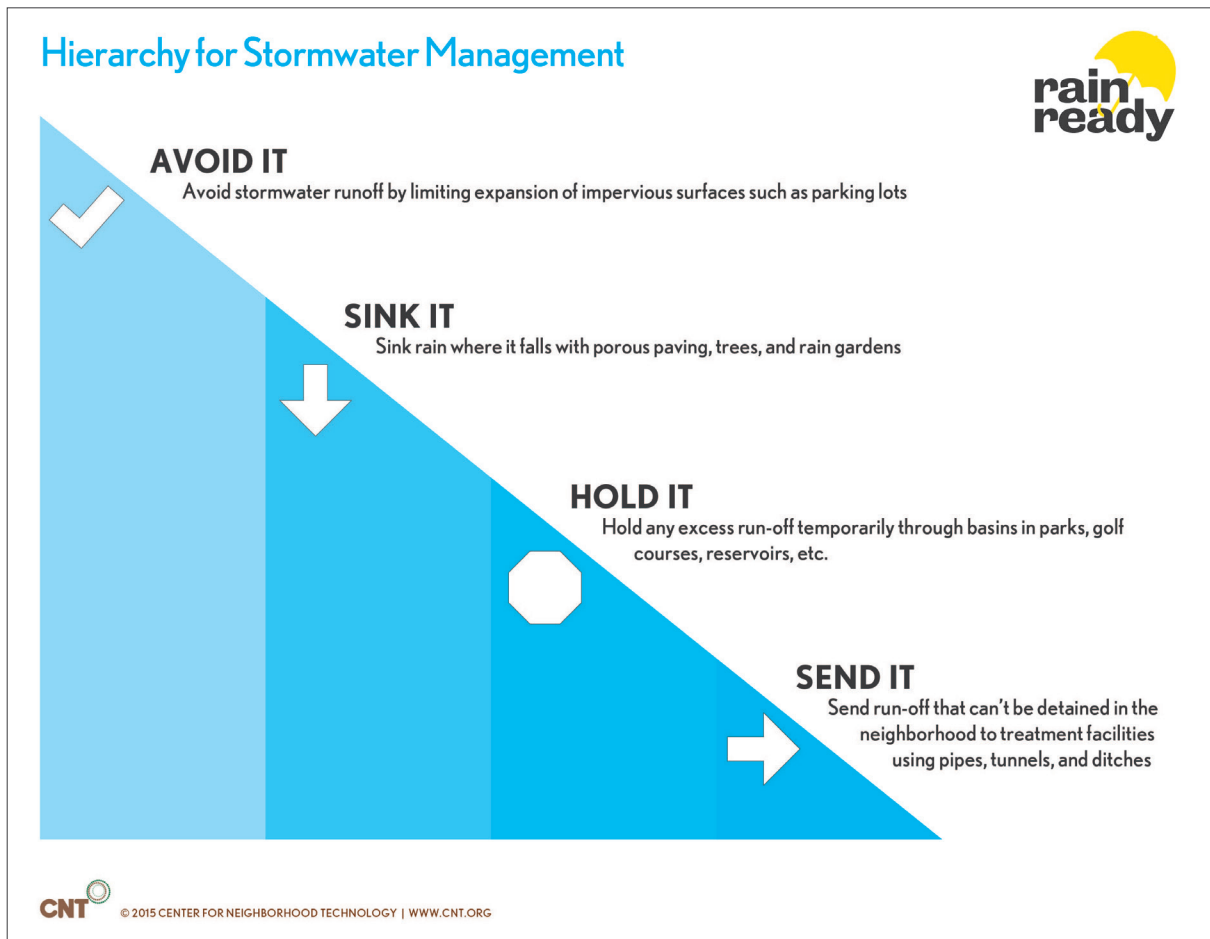


FIGURE RI-2:
Hierarchy for Stormwater Management

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 (see Reorient

recommendations).

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 FigureRI-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 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

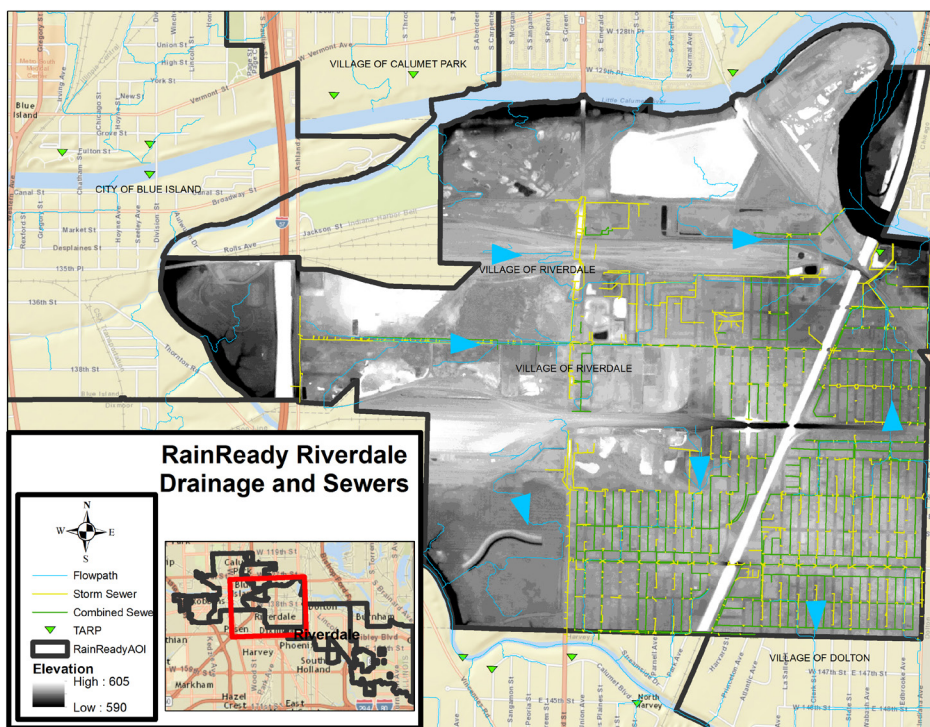


FIGURE RI-3:
Riverdale Drainage and Sewer Map



and drainage systems so as to bring it up to a state of good repair (see Repair Strategies).

MORE SEVERE STORMS

Climate change is bringing more frequent, high-intensity storms to the region (see The Problem). 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 (see Reorient Strategies).

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

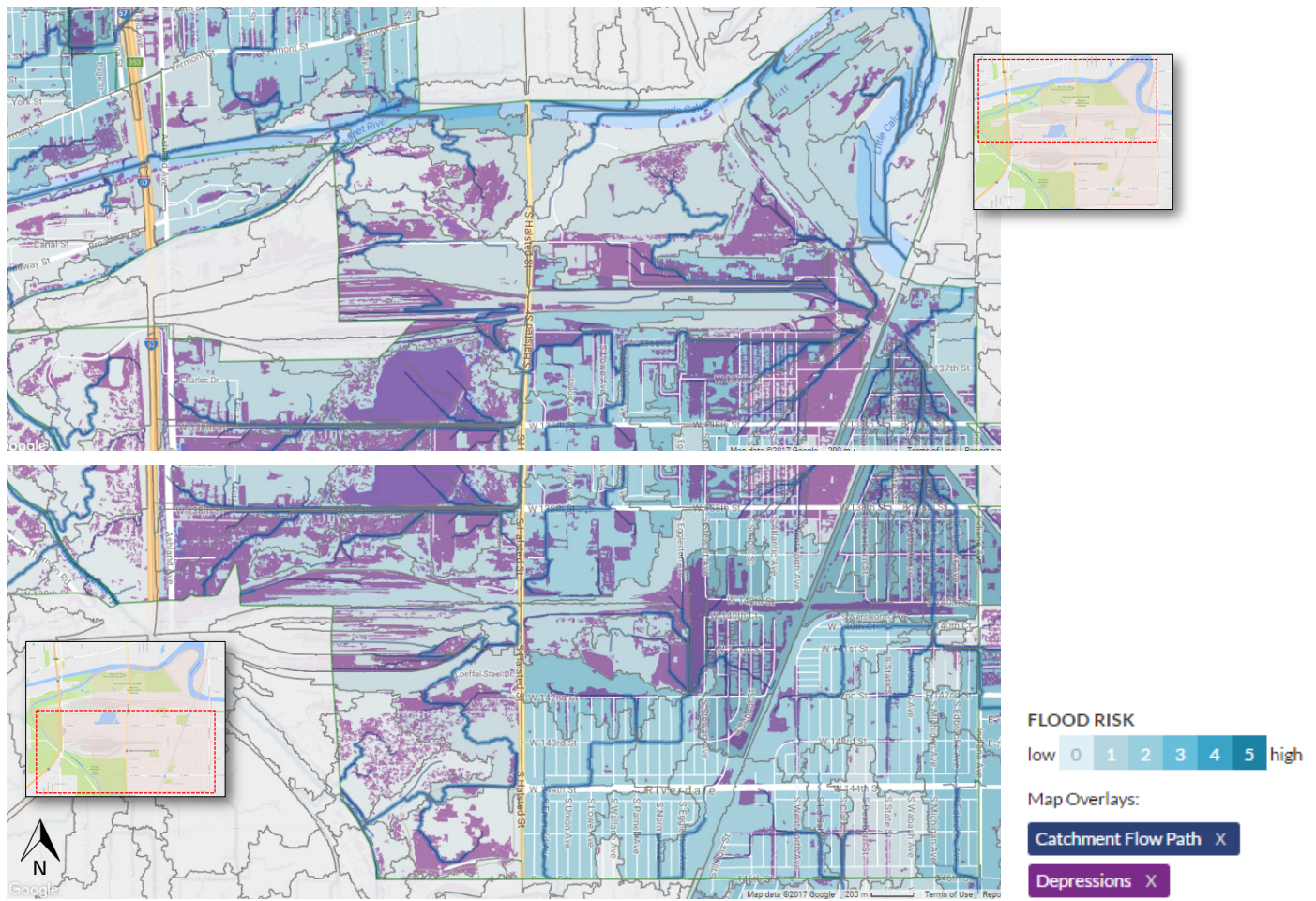


FIGURE RI-5:
Riverdale Urban Flooding Risk Assessment

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.



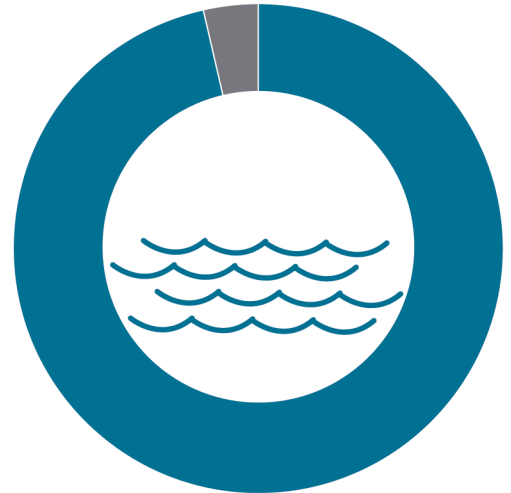
RainReady Riverdale COMMUNITY SURVEY

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 recent past, respectively.

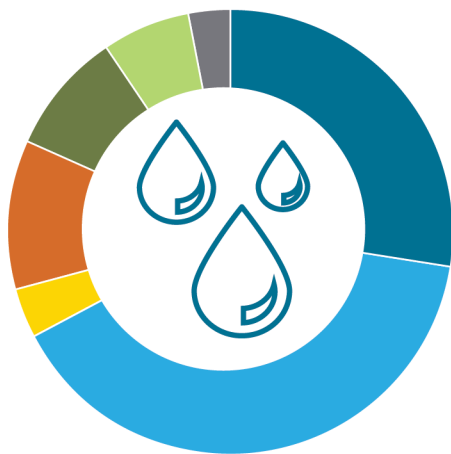
■ **97%** Yes
■ **3%** No

87 survey
respondents



\$4,109 average amount spent on stormwater-related repairs

\$1,533 average amount residents are willing to invest to reduce risk of future damage



how water enters the properties

■ **38** Backing up through drains
■ **55** Seeping through walls
■ **5** Flowing through doors/windows
■ **15** Pooling/ponding in yard
■ **12** Overflow from street, creek, nearby body of water
■ **9** Other
■ **4** Don't know

level of worry about flooding's impact on property value

Extremely worried **43%** ■
Very worried **22%** ■
Moderately worried **13%** ■
Slightly worried **14%** ■
Not at all worried **7%** ■

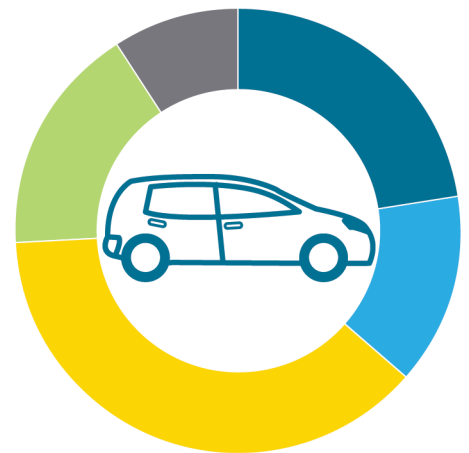




how much heavy rains impact quality of life

■ 38%	A great deal
■ 21%	A lot
■ 23%	A moderate amount
■ 18%	A little
■ 5%	Not at all

how much 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%	■



preparedness of 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

efficacy of local government officials 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

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 emerged 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 Transit-Oriented Development (TOD) areas that is 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, potential investors, and 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

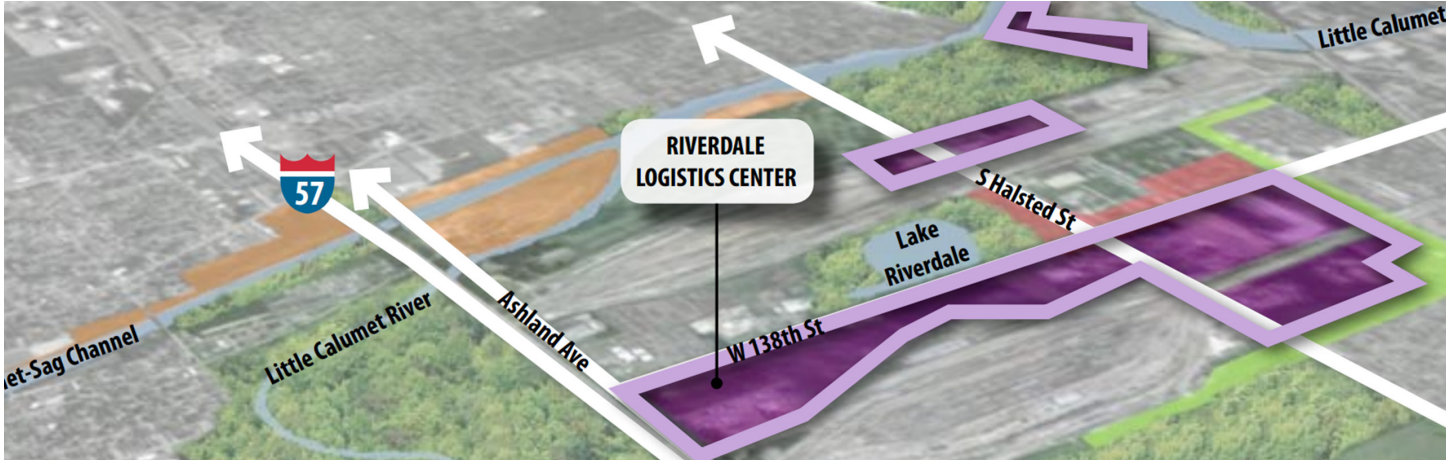
- Frequency of freight shipping and design of railroad crossings (i.e., at-grade crossings) cause severe traffic delays throughout the day along Indiana Avenue
- Some residents expressed concerns over the abundance of brownfields and potential environmental contaminants due to industrial operations

- 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 (i.e.,

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 South Suburban Mayors and Managers Association (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):

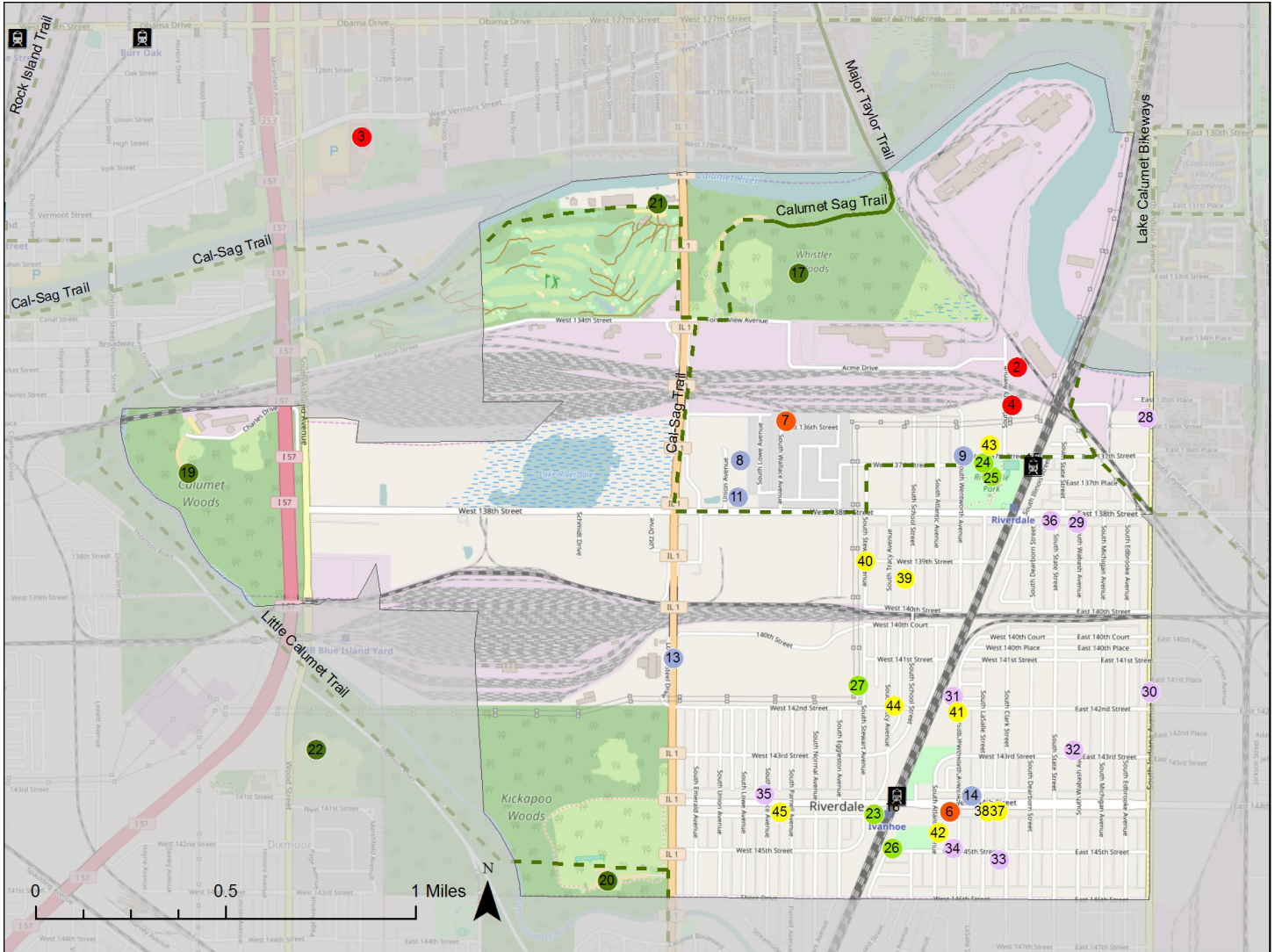
- Ensuring the continuance of service and access to active and passive use parks and trails as a key component of Riverdale's quality of life
- Providing additional open space in areas not currently served
- Increasing programming, upgrading equipment, and continuing maintenance levels
- Encouraging 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 emerged 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 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

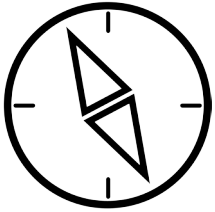
- 28 God's Promise Outreach Ministry
- 29 Shekinah Chapel
- 30 Christ Worship Center International
- 31 Riverdale Baptist Church
- 32 Ivanhoe Reformed Church
- 33 Ivanhoe United Methodist Church
- 34 Queen of Apostles Parish
- 35 New Name Missionary Baptist Church
- 36 Grace Bible Church

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.



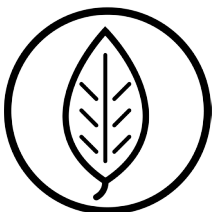
REORIENT

- 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)

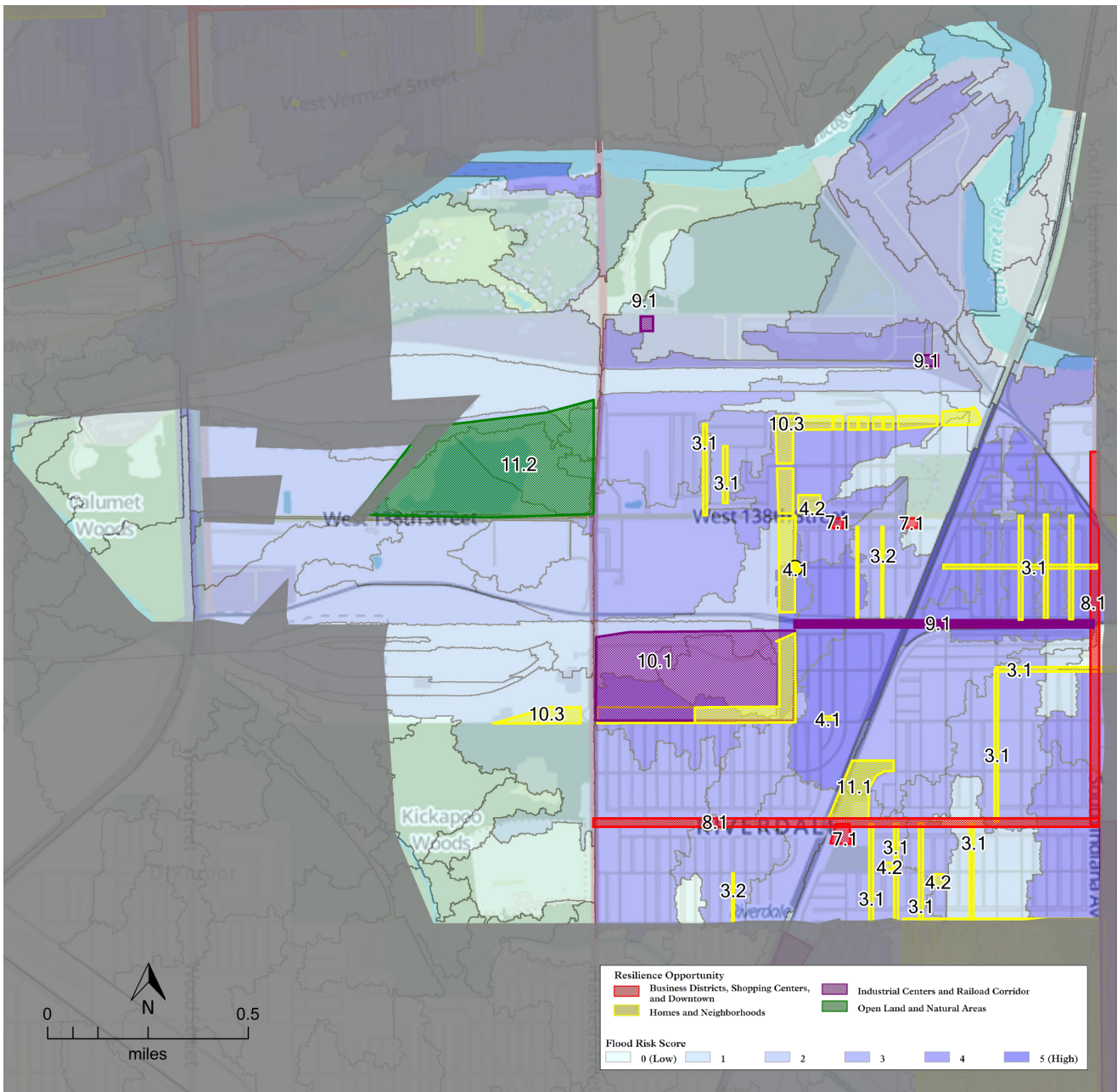
- Create new jobs
- Develop and implement a green and grey infrastructure maintenance plan



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 towards 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 towards 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.



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



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 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

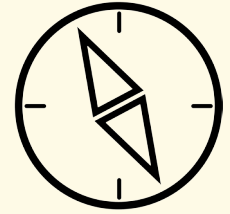
RETROFIT (RESTORE) STRATEGIES FOR YOUR INDUSTRIAL CENTERS AND RAILROAD CORRIDORS

- **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 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: Low Medium High

PHASING: Short Medium Long Ongoing

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: Low Medium High

PHASING: Short Medium Long Ongoing

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).

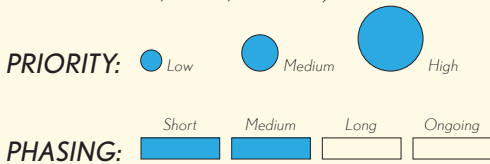
Where: Community-wide

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)



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.

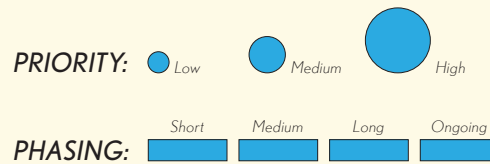
Where: Community-wide

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



RECOMMENDATION 2.2

Incorporate updates on stormwater projects and other resilience-related topics into the Village's various communication channels

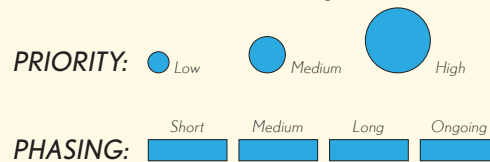
Where: Community-wide

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)



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.

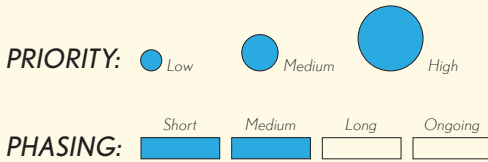
Where: Community-wide and throughout the Calumet region

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)



**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.

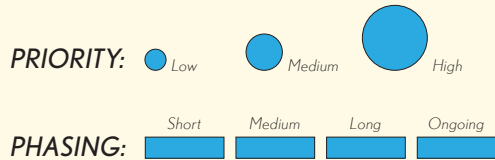
Where: Community-wide

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)



**STRATEGY 4:
PREPARE YOUR COMMUNITY FOR FUTURE
SHOCKS AND STRESSES**

RECOMMENDATION 4.1

Educate the public on flooding risks.

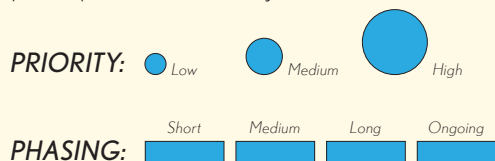
Where: Community-wide

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



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:  Low Medium High

PHASING:  Short Medium Long Ongoing

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

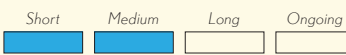
How: Incentivize the appropriate staff person (e.g., reimburse the costs) to earn and maintain certifications or require that Village contractors and consultants involved with land development have these certifications

How much: Varies depending on certification(s)

Who leads: The Village Engineer

Resources needed:

PRIORITY: TBD LOCALLY

PHASING:  Short Medium Long Ongoing

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: Low Medium High

PHASING: Short Medium Long Ongoing

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: Low Medium High

PHASING: Short Medium Long Ongoing

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.

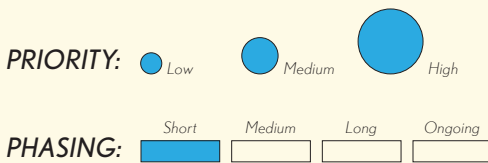
Where: The Northeast Neighborhood

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



RECOMMENDATION 3.2

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

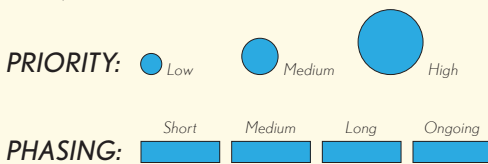
Where: Targeted repairs in known problem areas

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



RECOMMENDATION 3.3

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

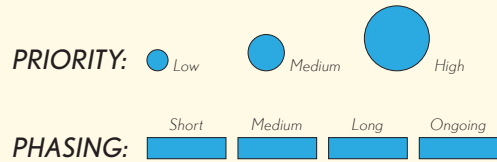
Where: Community-wide (inspect known problem areas first)

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



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

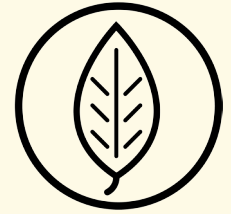
Who leads: The Village Engineer and Public Works Department

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

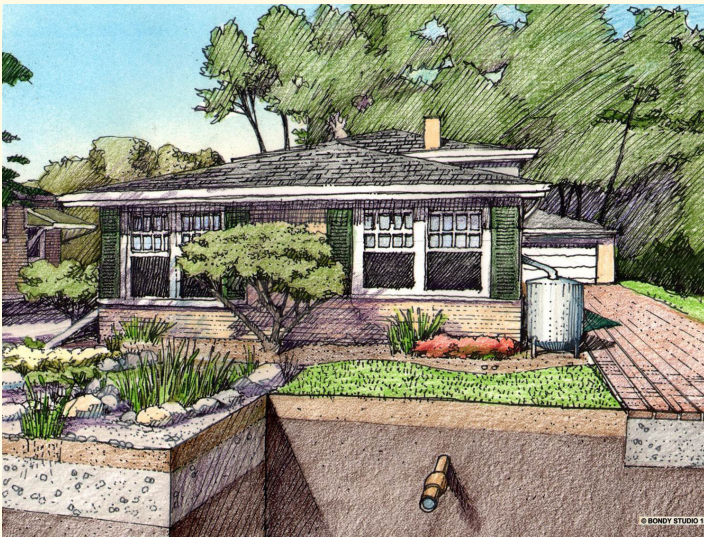
PRIORITY:

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.

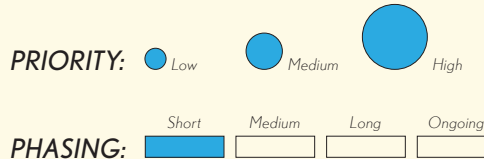
Where: Community-wide

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



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.

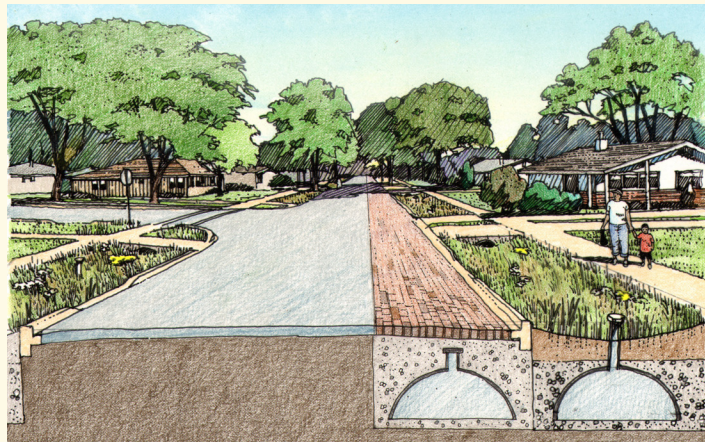
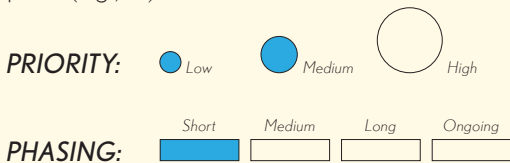
Where: Community-wide

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)



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 →

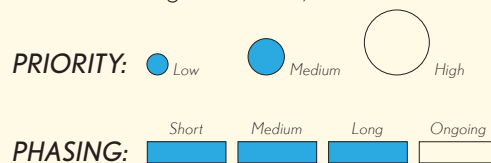
136th Street from 138th Street to Eggleston Avenue; Parnell Avenue → 136th Street from Pacetter Parkway to Eggleston Avenue (dead end at railroad tracks); State Street from 144th Street to 141st Street; 141st Street from State Street to Manor Court (Note: this East end of street is in Dolton, cross-jurisdictional 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, so 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

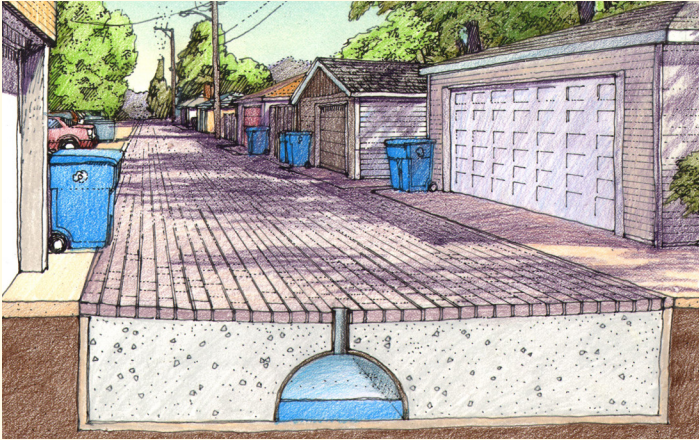
How: Use this RainReady Plan identify potential locations where green streets can be piloted; where appropriate, incorporate green infrastructure BMPs into planned roadway improvements; monitor the performance of select green infrastructure installations; adjust the future implementation of green infrastructure 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





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.

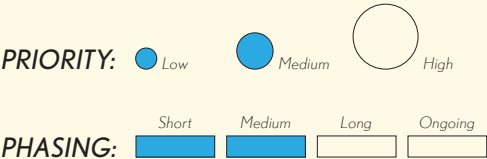
Where: Multiple: Alleys between South School Road and South Atlantic Avenue and South Atlantic Avenue and Wentowrth Avenue from West 138th Street to West 140th Street; South Parnell Avenue and South Normal from West 145th Street to Shore Drive

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



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 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

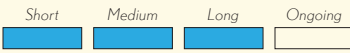
NOTE: Given the additional traffic engineering involved, creating complete streets is more intensive than green streets

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:  Low Medium High

PHASING:  Short Medium Long Ongoing

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, and 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:  Short Medium Long Ongoing

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)

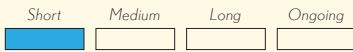
How: Continue to collaborate with Cook County to implement the Sewer Relief Project in Northeast Riverdale; consider alternatives that incorporate green infrastructure BMPs (review the various alternatives put forth in the MWRD’s stormwater concept plan for the Northeast area); consider how this project 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 .5 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 (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

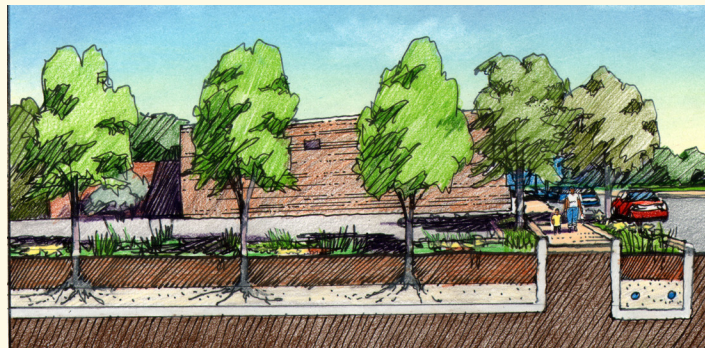
How much: N/A

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: ● Low ● Medium ● High

PHASING: Short Medium Long Ongoing



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:

PRIORITY: ● Low ○ Medium ○ High

PHASING: Short Medium Long Ongoing



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

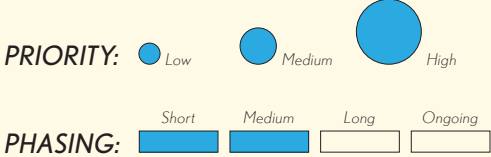
How: Continue to implement the pedestrian, bicycle, and transit improvements proposed in the Village’s 2011 Active Transportation plan; use Riverdale’s Urban Flooding Risk and Opportunity Assessment (Figure RI-8) to identify (at a planning level) where GI BMPs can be integrated into the Village’s

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

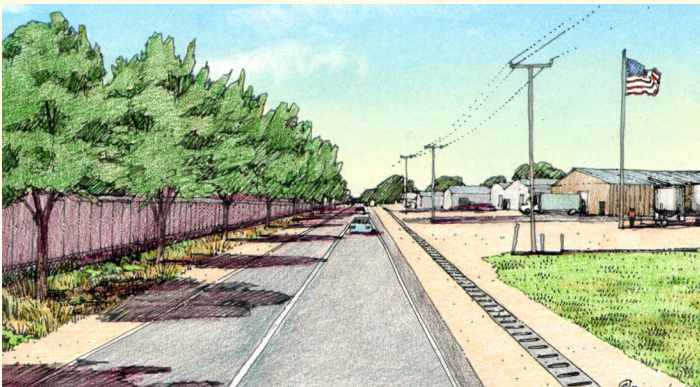
How much: TBD

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



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

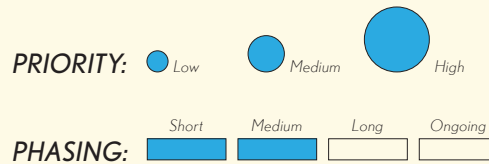
How: Identify locations where edge treatments can alleviate local flooding; establish a partnership with railroad companies and industrial site owners to make improvements to their land; use Growth Zone incentives to implement stormwater

improvements at industrial centers and railroad corridors

How much: TBD

Who leads: Village of Riverdale, railroad companies, SSMMA

Resources needed: TBD



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.

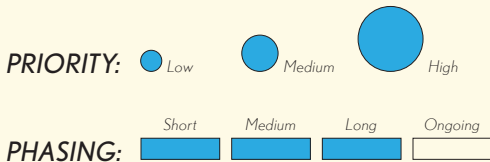
Where: The Riverdale Prairie Industrial Park and adjacent ComEd right-of-way

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



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, and 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.

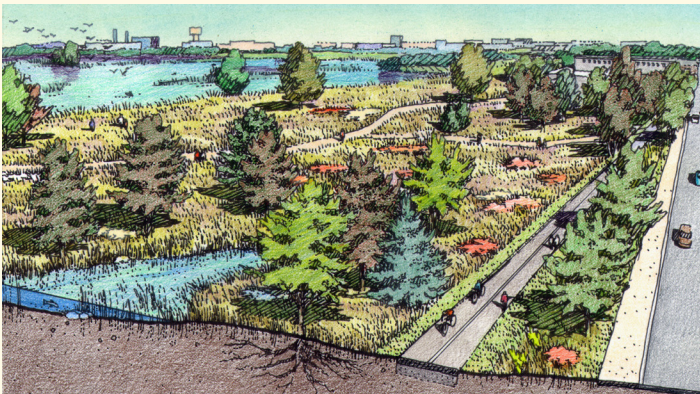
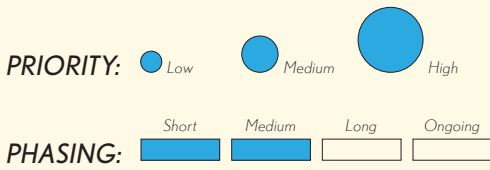
Where: Cal-Sag Trail alignment in Riverdale (stormwater projects would have the most flood reduction impact if installed along the entire alignment between the intersection of South Halsted Avenue and West 138th Street to the intersection of East 138th Street and South Indiana Avenue)

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



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.

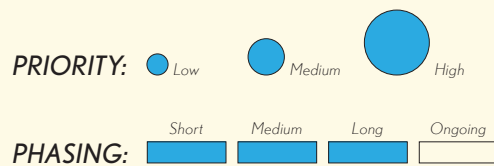
Where: The Lake Riverdale site

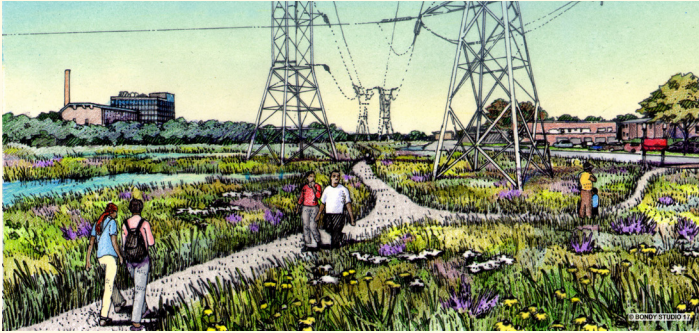
How: Continue to meet with the planning team that has been convened by SSMMA to oversee the redevelopment of this site; identify an end user(s) for the site (e.g., Riverdale Park District, The Nature Conservancy, the Forest Preserves of Cook County); develop a community-driven plan for the site that 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





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 11.1), 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: ● Low ● Medium ○ High

PHASING: Short Medium Long Ongoing

STRATEGY 12: INTEGRATE GREEN INFRASTRUCTURE INTO 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: Short Medium Long Ongoing