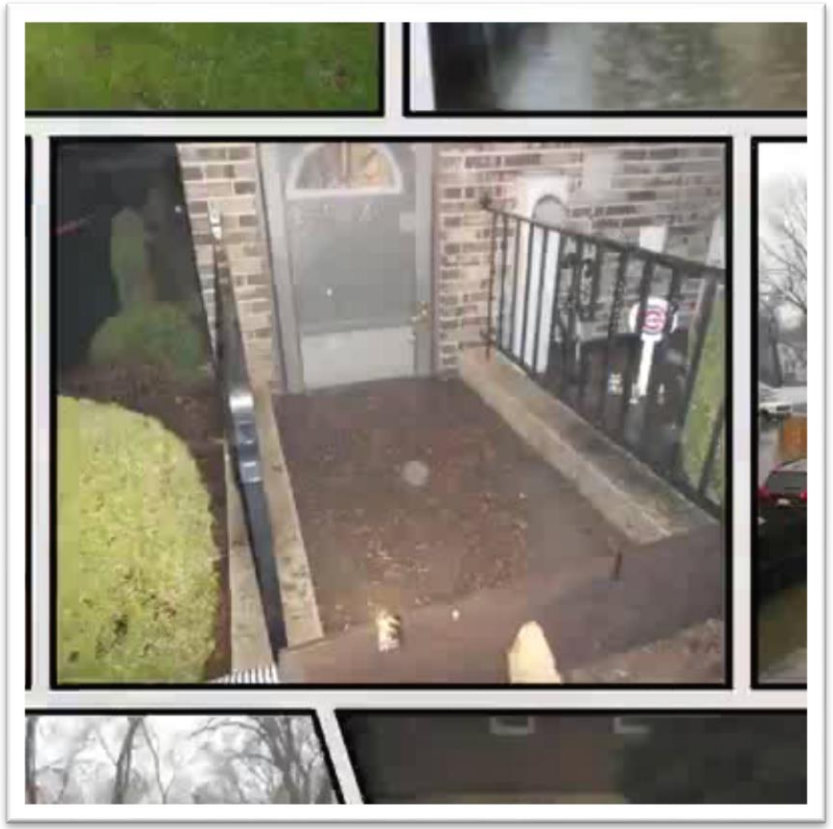
Village of Midlothian Stormwater Management Capital Plan (SMCP)

July 12, 2019

WHY MIDLOTHIAN (AND POSSIBLY EVERY MUNICIPALITY) SHOULD HAVE A STORMWATER MANAGEMENT CAPITAL PLAN TO ADDRESS FLOODING ISSUES AND PLAN FOR THE FUTURE

Floodlothian – The Early Years…

Flooding in Midlothian – The Start of Pursuing the Solution



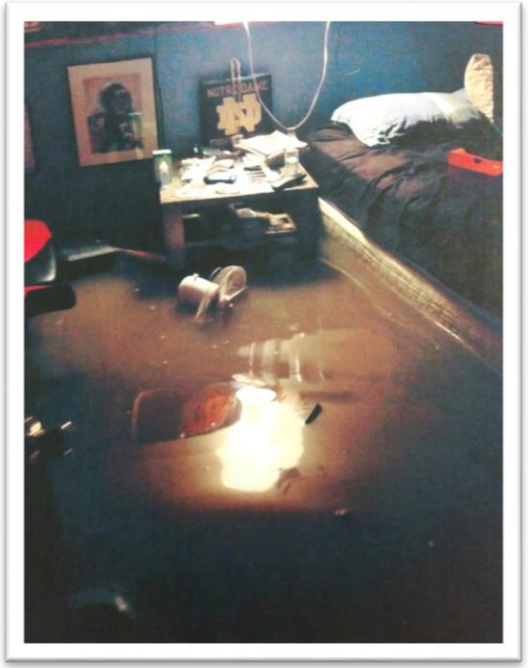
Residential Homes Inundated with Flood Waters

Vehicles under water and backyards completely flooded time and again

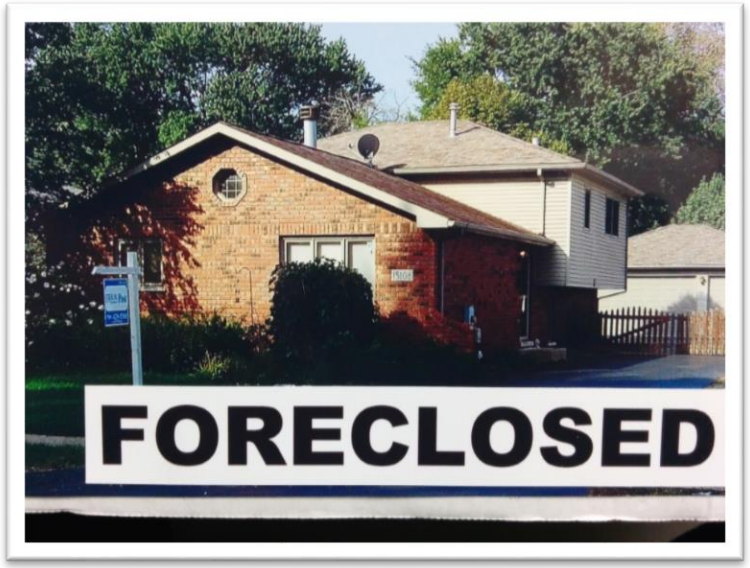
Businesses unable to operate as Kolmar Avenue flood waters rise

Flooding takes a toll…

This bedroom flooded twice in 13 months!



This home was foreclosed on!



Team Floodlothian

POSSIBLY THE MOST FAMOUS GARAGE IN AMERICA!

It all started in a flooded garage!

Original Floodlothian Members

First meeting with MWRD and CNT at Floodlothian Headquarters

Floodlothian getting in the game!

John Murray, MWRD, and Harriet Festing, who was with CNT at the time

Team Floodlothian attends Northwestern University's Design for America Flooding Project – August 11, 2013

Floodlothian getting in the game!

Students from Northwestern University arriving to study urban flooding, starting in the Floodlothian garage

Bernie Tafoya, WBBM News radio 780, Chicago, interviewing Helen Lekavich and Floodlothian

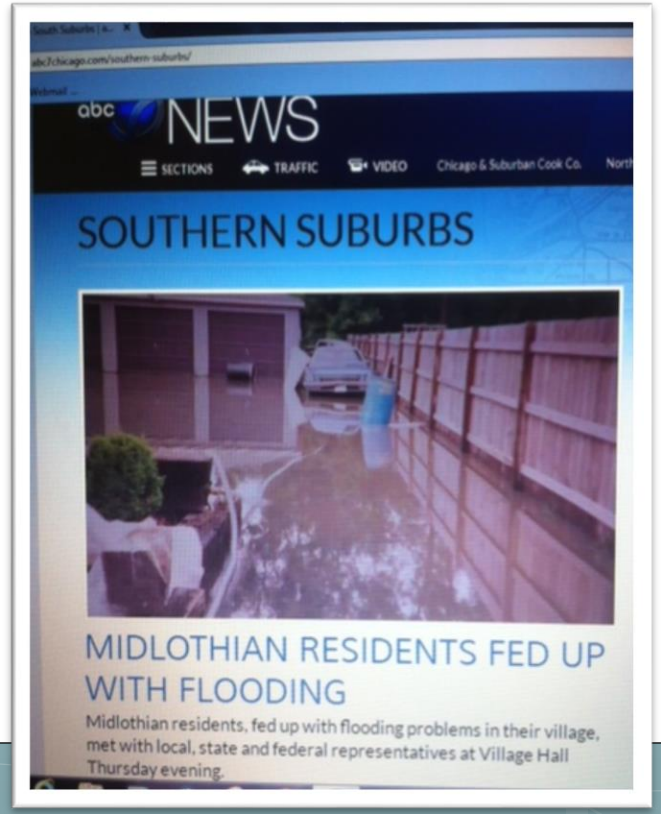
Floodlothian getting in the game!

Floodlothian with Karen Jordan from ABC, Channel 7, Chicago

Chris Coffey from NBC Channel 5, Chicago, interviewing Helen Lekavich

Floodlothian getting in the game!

State Representative Will Davis convened representatives from multiple agencies (MWRD, CNT, USACE, IDOT, Cook County, to name a few) to start the discussion on how to resolve the Natalie Creek flooding in September of 2014. This meeting was crucial to the $7.6 million Natalie Creek Flood Control Project now underway.



Floodlothian getting in the game!

The early days with Joe Kratzer and Cedric Robertson from MWRD

Rain Ready/Floodlothian at Center for Neighborhood Technology on Urban Flooding Awareness Act with U.S. Senator Dick Durbin

We are recognized both nationally & internationally

Hosting Australian Engineers as part of the American Public Works 2017 Congress International Affairs Committee

Dr. David Maidment (University of Texas at Austin), 2017 Chair of Committee on Urban Flooding in the United States, The National Academies of Sciences, at Floodlothian Headquarters

APPENDIX A

Midlothian Residents 4200 Block 147th Street, 147th Keeler and 147th Kildare

DOCUMENTING OUR PURSUIT FOR FLOOD / DISASTER RELIEF:

- 5/22/2013–Present: Attending Village of Midlothian Board Meetings twice a month to report and discuss flood damages, projects and concerns. *Notes and minutes available upon request.*
- 5/30/2013: Messenger Newspaper Page 1, "Flooding At 147th and Keeler Ave."
- 6/11/2013: Phoned Jennifer Burns Public Affairs MWRD to report the ongoing Midlothian flooding problems and mailed a package of photos to document the last 20 years of flood damages concerning the 4200 block of 147th Street, 147th and Keeler and Kildare.
- 6/2013: Phoned CNT (Center For Neighborhood Technology) to report the ongoing Midlothian flooding problems. Emailed CNT a 15 minute video documenting the last 20 years of Midlothian flood damages. *Video available upon request.*
- 6/19/2013: Downloaded flood history concerning the repeatedly damaged properties on the 4200 block of 147th St., 147th Keeler and 147th Kildare on You Tube as Midlothian/Floodlothian to raise awareness of our 20 year plight, and hope for help.
- 6/27/2013: Opened a Facebook page: Floodlothian Midlothian as a means to look for help, find the Midlothian flood victims who have called the village for help and not had the history of their flooding recorded, and as a data base to evidence and share our pursuit of disaster relief.
- 6/2013: CNT produced Urban Flooding *Vimeo* Video which features Midlothian flood footage. https://vimeo.com/76160229
- 6/2013: Midlothian flood victims join "The Gross Gathering" created by CNT to connect and educate flood victims.
- 6/2013: CNT website features Midlothian Flooding; "Fighting Urban Flooding: Documenting The Destruction" http://www.cnt.org/2013/08/20/fighting-urban-flooding-documenting-the-destruction/#UhQbASzPCJo.gmail
- 6/26/2013: Asked the Mayor to appoint a Village Trustee to our specific flooding problem at the Village Board Meeting. Trustee Jerry Gillis volunteered.
- 6/27/2013: Messenger Newspaper Page 12, "Letter To the Editor Midlothian Flooding"
- 7/9/2013: Emailed and phoned Ron Davis at IEMA to register and document the serious ongoing Midlothian flooding problems.
- 7/12/2013: Attended Cook County Hazard Mitigation Meeting in Tinley Park, Il, and exchanged emails with the Tetra Tech Project Planners to document the destructive ongoing flooding problems in Midlothian.
- 8/5/2013: MWRD WMO (Watershed Management Ordinance) Meeting, Chicago Ridge Village Hall. Spoke to support the WMO on behalf of flooding residents in downstream Midlothian. Spoke with Executive Director Mr. St Pierre and President Meany concerning Midlothian flooding and set up a meeting with the MWRD Engineer Mr. Murray to come to Midlothian to meet with the residents who suffer ongoing lake effect flooding and repetitive damage.

Floodlothian getting in the game!

Floodlothian and the pursuit for flood relief -- published over 70 times!!

We asked, they answered!

- Center for Neighborhood Technology (CNT)
- Metropolitan Water Reclamation District (MWRD)
- Illinois Environmental Protection Agency (IEPA)
- U.S. Army Corp of Engineers (USACE)
- Forest Preserves of Cook County (FPDCC)
- Illinois Department of Transportation (IDOT)
- Illinois Department of Natural Resources (IDNR)
- Chicago Metropolitan Agency (CMAP)
- Calumet Stormwater Collaborative & MPC

CNT Sustainable Communities Attainable Results

FOREST PRESERVES of Cook County

Illinois Department of Transportation

ILLINOIS DEPARTMENT OF NATURAL RESOURCES

CMAP

Calumet COLLABORATIVE

MetropolitanPlanningCouncil


RainReady Midlothian
Plan
CNT

Updated November 2017

A Citizen's Guide to a RainReady Midlothian

What would a RainReady Midlothian look like? It would be a community where residents and businesses benefit from flood relief in a way that also brings neighborhood beautification, retail activity, jobs, recreation, and habitat conservation.

In order to better understand Midlothian's flood risk, the Center for Neighborhood Technology, U.S. Army Corps of Engineers, Floodlothian Midlothian, and the Village of Midlothian joined together in January 2015. Throughout 2015, this group met monthly, hosted three community meetings, conducted a survey of 253 residents, and published the *RainReady Midlothian Interim Report*, an account of existing flood risk in the village. Together, we have established a shared vision for a RainReady Midlothian, summarized in this document, *A Citizen's Guide to a RainReady Midlothian*.

PURSUING THE SOLUTION

The RainReady team has achieved several key wins to date, including the following outside grants:

- ✓ ***Active Transportation Alliance Healthy Hot Spots Program***
  Complete Streets Policy - $39,000
- ✓ ***Center for Neighborhood Technology*** RainReady Midlothian Community Planning
- ✓ ***Chicago Metropolitan Agency for Planning Local Technical Assistance***
  147th Street Corridor Study - $80,000
  Update: Development of a Village-wide stormwater management plan - $TBD
- ✓ ***The Department of Commerce and Economic Opportunity***
  Enterprise Zone Certificate
- ✓ ***Illinois Department of Natural Resources Coastal Waters Program***
  Village Greenway Project- $20,000
- ✓ ***Illinois Green Infrastructure Grant from the IEPA Bureau of Water***
  Village Greenway Project (Permeable Parking Lot + Rain Garden) - $68,000
- ✓ ***Morton Arboretum Emerald Ash Borer Replacement*** - $18,000
- ✓ ***National Park Service Rivers , Trails , and Conservation Assistance Program***
- ✓ ***Openlands-ComEd Green Region Program***
  Village Greenway Project- $10,000
- ✓ ***RTA Access to Transit Grant*** - $980,000
- ✓ ***South Suburban Mayors and Managers Association Planning Technical Assistance*** Natalie Creek Trail Plan
- ✓ ***U.S. Army Corps of Engineers Silver Jackets Illinois Program***
  RainReady Midlothian - $50,000
  U.S. Geological Survey Streamflow Gauge Installed on Natalie Creek- $65,000
- ✓ **Update:** ***National Fish & Wildlife Foundation Grant***
  Permeable lot by Rain Ready Community Garden - $150,440
- ✓ **Update:** ***Metropolitan Water Reclamation District (MWRD)***
  Midlothian Permeable Parking Lot/Green Infrastructure Project, $TBD

TOTAL: $1,330,000 UPDATED TOTAL: $1,480,440

Update: An additional $8.3 million for flood mitigation on Natalie Creek has been proposed by the Metropolitan Water Reclamation District (MWRD) is in the final stages of design, and construction is projected to start in the spring of 2018.

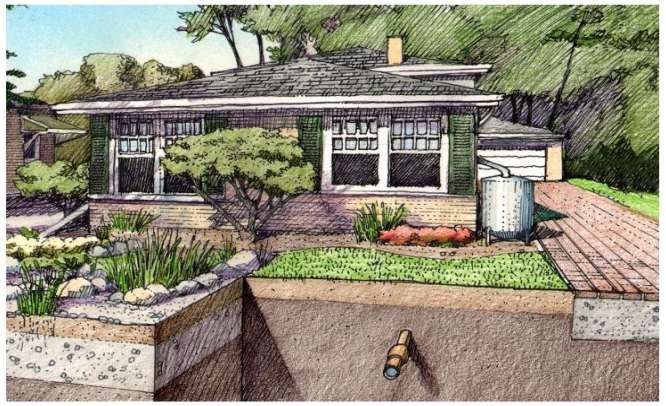
STRATEGIES FOR A RAINREADY MIDLOTHIAN:

The RainReady Midlothian Plan sets the Village on a path to greater resilience through improved stormwater management, economic opportunity, and community beautification.

It's a plan that requires residents, business owners, and municipal leaders to join together to pursue solutions at multiple scales:

HOME

- Reduce home flood risk through the Home Floodproofing and Lateral Repair Program.
- Provide immediate relief for flood victims through ongoing community education.



STREET + NEIGHBORHOOD

- Create a more resilient downtown by integrating transportation improvements, storm water best management practices, and economic investment in a new plan for 147th Street. **Update**: The Chicago Metropolitan Agency for Planning (CMAP) completed the 147th Street Corridor Study, focusing on storm water management, and Christopher B. Burke Engineering has provided designs and specifications for three rain garden installations on 147th Street. The Village is seeking funding to construct those rain gardens on Village parkways.
- Identify a strategy to alleviate flooding in the Jolly Homes and Belly Button Hill neighborhoods. The strategy will integrate green and grey infrastructure improvements, contingent on funding.

UNDERSTANDING THE PROBLEM

The Village of Midlothian has experienced flooding since it was first incorporated in 1927, but the scope and severity of impact has increased significantly in recent years. Unrestricted development, deferred maintenance of infrastructure, and changes in regional climate have converged in Midlothian, leaving residents vulnerable to flooding across the village.

THROUGH THE RAINREADY PROCESS, FOUR TYPES OF RESIDENTIAL FLOODING WERE IDENTIFIED IN THE VILLAGE

1. OVERBANKING FROM NATALIE CREEK
2. SANITARY SEWER BACKUP
3. STORM SEWER BACKUP
4. GROUNDWATER SEEPAGE

CREEK

- **Update:** Reduce flood risk on Natalie Creek with an $8.3 million MWRD projectprojected to start in the spring of 2018.
- Build a biking and walking trail along Natalie Creek in partnership with the Village, the South Suburban Mayors and Managers Association (SSMMA), Floodlothian Midlothian, and the National Park Service (NPS). **Update:** The Natalie Creek Trail Steering Committee meets monthly and is applying for grant funding Phase I engineering for the proposed trail.
- Minimize flooding across the village by installing green infrastructure on public streets and private property.

VILLAGE

- Secure a dedicated funding source for the Home Floodproofing Program and green infrastructure projects through the Illinois Environmental Protection Agency (IEPA) State Revolving Loan Fund.
- Build a transportation network that reduces runoff and serves all users by adopting a new Complete Streets ordinance.
- Reduce flood insurance costs to homeowners and free up the area near the Metra Station to developers by pursuing a modification to the Midlothian Creek floodplain.
- Hire dedicated staff to oversee implementation of the RainReady Midlothian Plan.
- Maximize opportunities for volunteer support and resident leadership through ongoing community engagement.

The measures outlined in this plan describe a coordinated path forward to increase community resilience to flooding in Midlothian.
In addition to these strategies, Midlothian must commit to a fundamental shift in the patterns of urban development that have caused flooding in the village. This includes protective ordinances for improved stormwater management on private property, transportation infrastructure retrofits, and green infrastructure installations across the village.

THE VILLAGE RAIN FUND

A Rain Fund is a strategy to generate funding to help communities fight flooding without raising property taxes or unfairly impacting residential property owners. It also ensures that dedicated funds are available to finance the Home Flood-proofing program and green infrastructure projects across the Village.

The Midlothian Rain Fund would launch with an initial investment from the IEPA State Revolving Loan Fund, through which the Village is eligible for a low-interest loan for storm water management. This fund would then be used to help homeowners pay for home improvements to reduce flood risk, install green infrastructure like trees and rain gardens across the village, and identify solutions to flooding in Jolly Homes and Belly Button Hill.

The loan would be repaid through a nominal monthly fee on all property owners, calculated based on the area of impervious surface on their properties. For most homeowners, the fee would be $3-$7 each month. The fee is higher for properties that contribute larger volumes of runoff to the sewer system, such as buildings with large parking lots. An incentive program would allow property owners to receive rebates if they capture their storm water runoff on site, e.g. by installing rain gardens.

These funds would be used exclusively to finance storm water management solutions in the village while bringing wider recreational and economic benefits to the community. **Update:** The new CMAP LTA grant will fund the development of a capital plan for storm water management/infrastructure projects, budget, and proposed time line for implementation of a storm water utility fund.

RainReady is an initiative of the Center for Neighborhood Technology (CNT), a Chicago-based non-profit. Our staff include engineers, landscape designers, lawyers, planners, outreach specialists and community organizers.

If you live in Midlothian and would like more information about RainReady, contact Village Trustee Karen Kreis: kkreis@villageofmidlothian.org.

If you do not live in Midlothian and would like to learn about getting a RainReady Plan in your community, see **WWW.RAINREADY.ORG** to learn more about our services.

The Natalie Creek Flood Mitigation Project is Currently Underway. Thank you Metropolitan Water Reclamation District of Greater Chicago

From Kostner Avenue, facing west

From 147th Street, facing north

Chicago Metropolitan Agency for Planning

233 South Wacker Drive
Suite 800
Chicago, IL 60606

312-454-0400
www.cmap.illinois.gov

October 12, 2017

Via e-mail: **kkreis@villageofmidlothian.org**

Karen Kreis
Trustee
Village of Midlothian
14801 Pulaski Road
Midlothian, Illinois 60445

Dear Trustee Kreis:

Thank you for your recent application to the Local Technical Assistance (LTA) program on behalf of the Village of Midlothian. I am pleased to inform you that your application for assistance to develop a Stormwater Management Plan has been successful.

Please note, however, that CMAP's ability to pursue this project is contingent upon securing funding from Cook County's CDBG-DR program; discussions with the County on this matter are well underway. In the event that this funding is not secured, CMAP would need to reconsider its ability to fund this project.

A member of our staff will be contacting you soon to discuss the next steps in launching this planning process. The agency will be publicizing the program recipients next week and you are welcome to share the press release and/or contact us if you would like to issue a press release jointly. Please contact Melissa Silverberg at 312-386-8641 or **msilverberg@cmap.illinois.gov** for more information. We look forward to meeting with you to begin setting a scope, strategy, and timeline for this collaboration.

Congratulations on submitting a successful project!

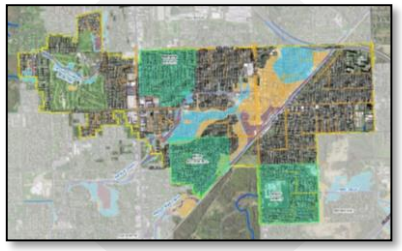
Sincerely,

Joseph C. Szabo
Executive Director

BD:JCS/stk

Stormwater Management Capital Plan Goals and Process

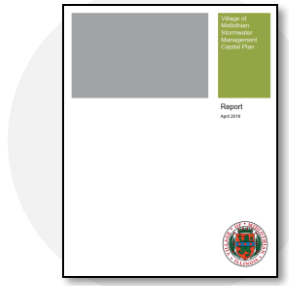
Rain Ready Plan



Technical Memorandum No. 1

Technical Memorandum No. 2

Draft SMCP



Final SMCP and Plan Adoption

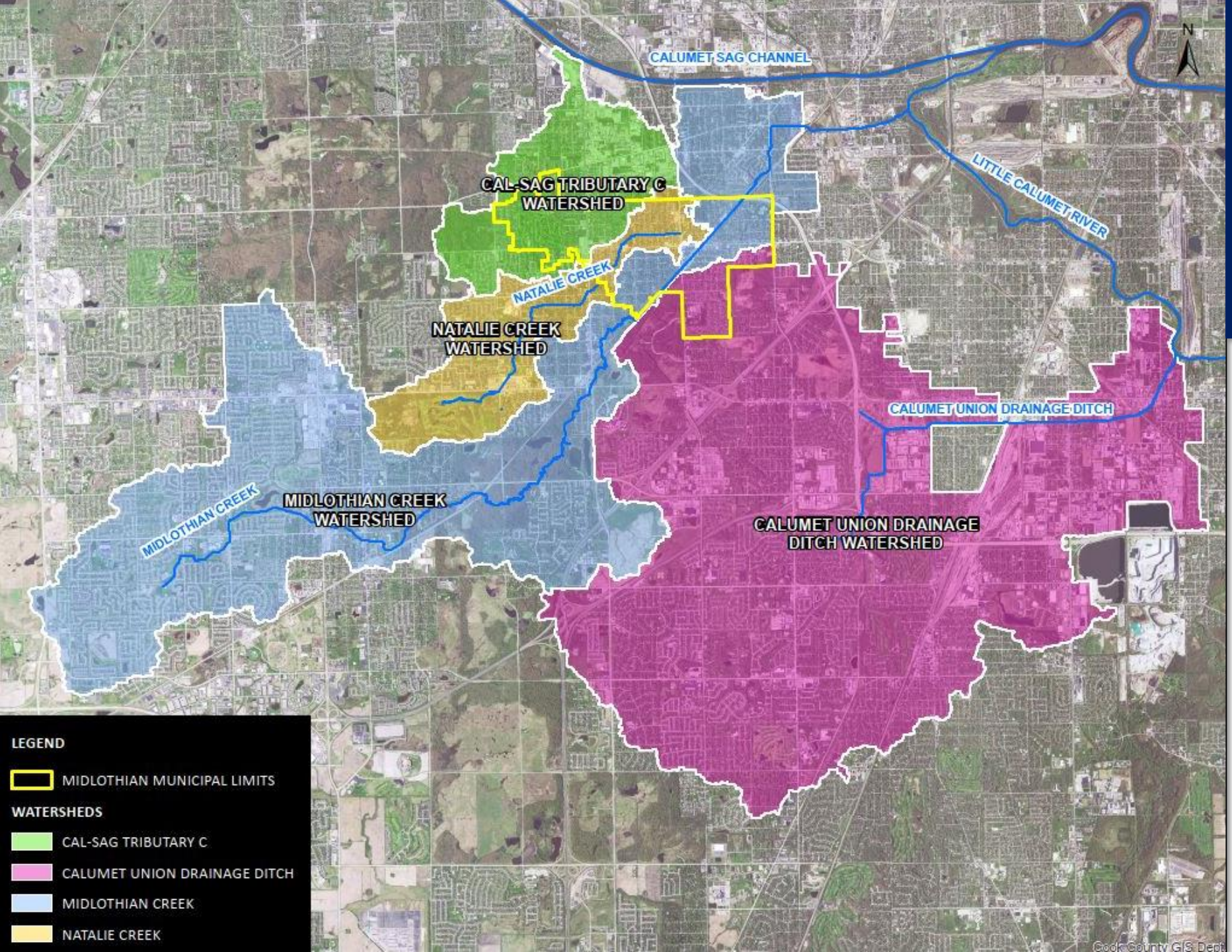
Steering Committee

Floodlothian
Midlothian

With Partners:

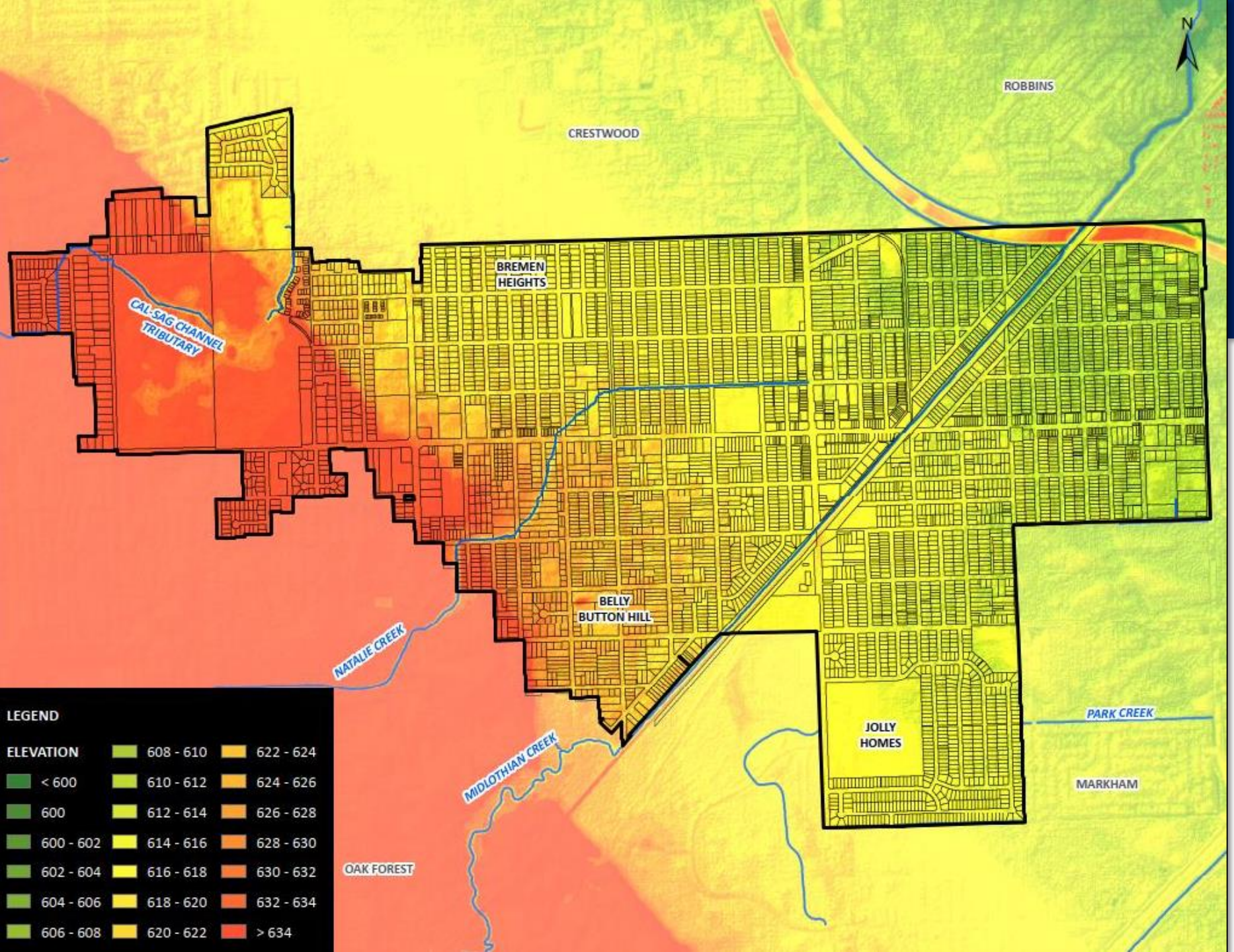
Data Gathering and Existing Conditions Evaluations

Watersheds



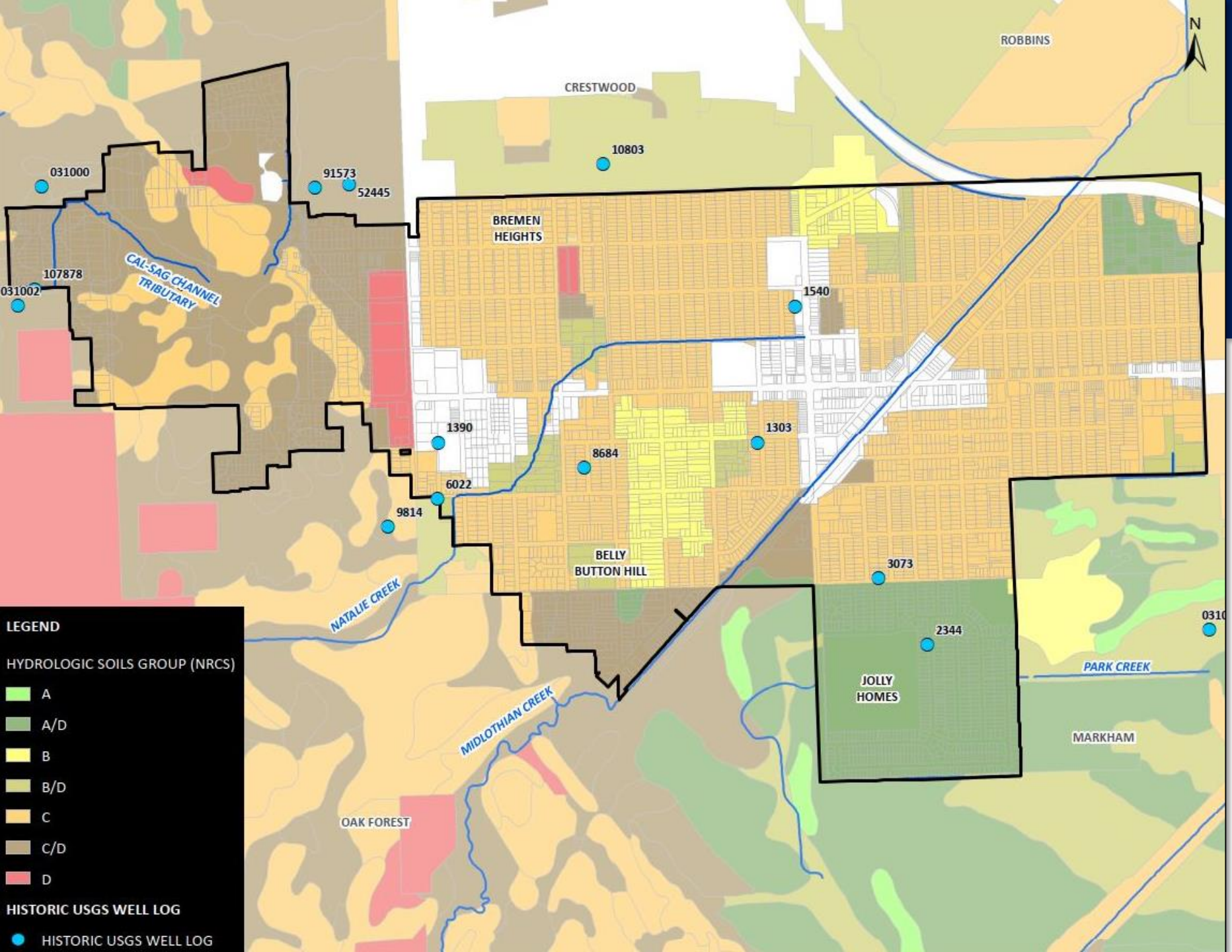
Data Gathering and Existing Conditions Evaluations

Topography



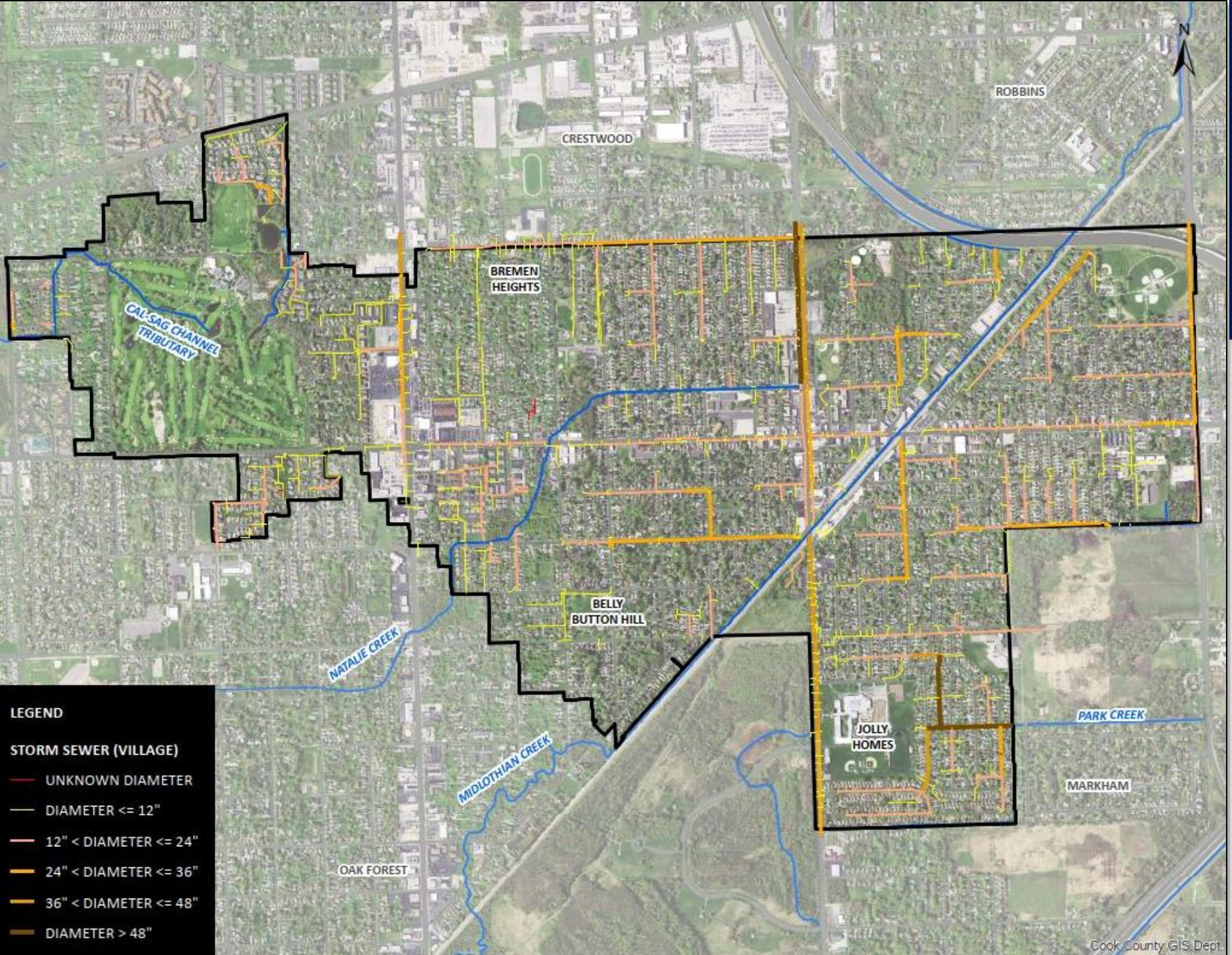
Data Gathering and Existing Conditions Evaluations

Soil Characteristics



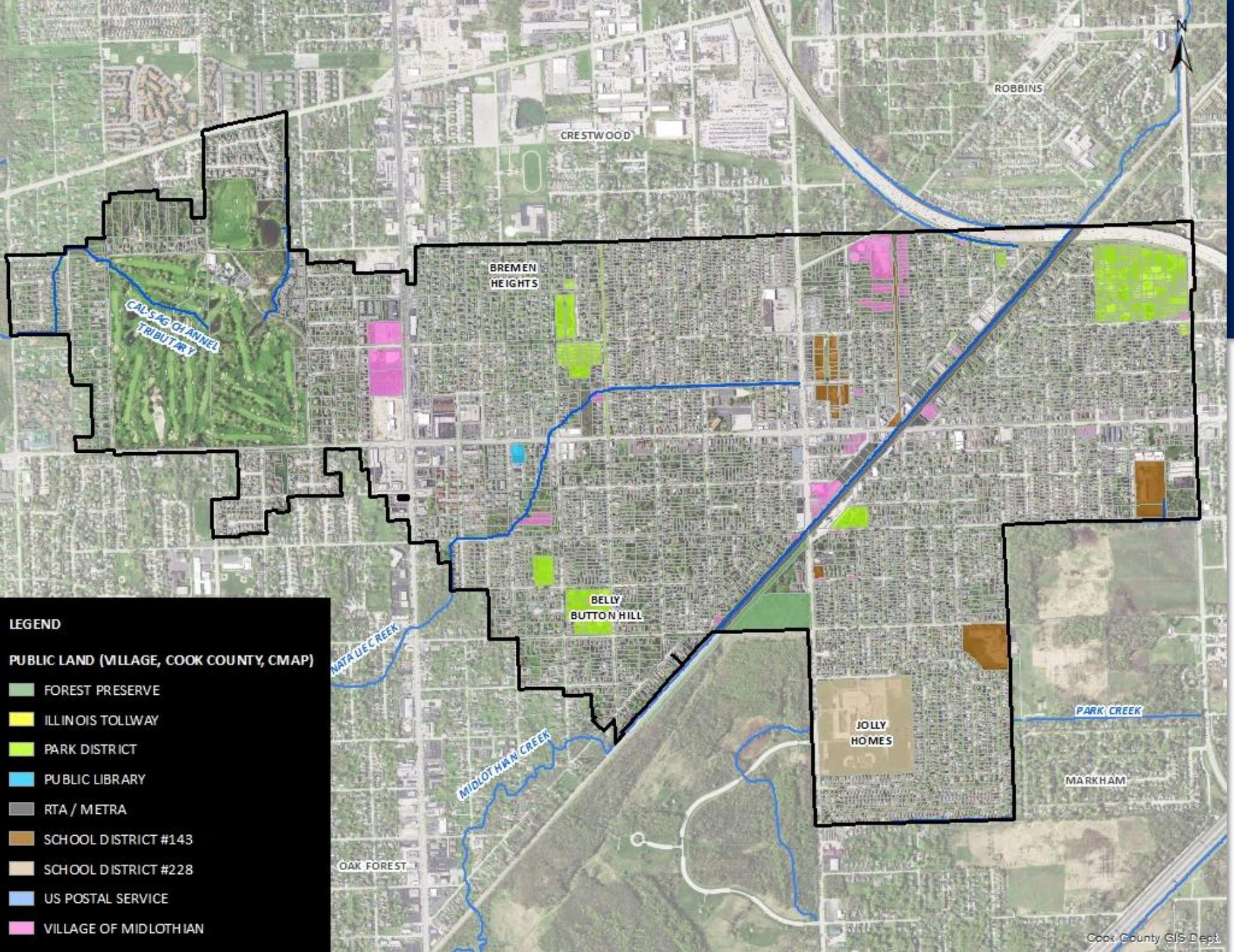
Data Gathering and Existing Conditions Evaluations

Existing Conveyance



Data Gathering and Existing Conditions Evaluations

Public Open Space



Previous Reports and Studies

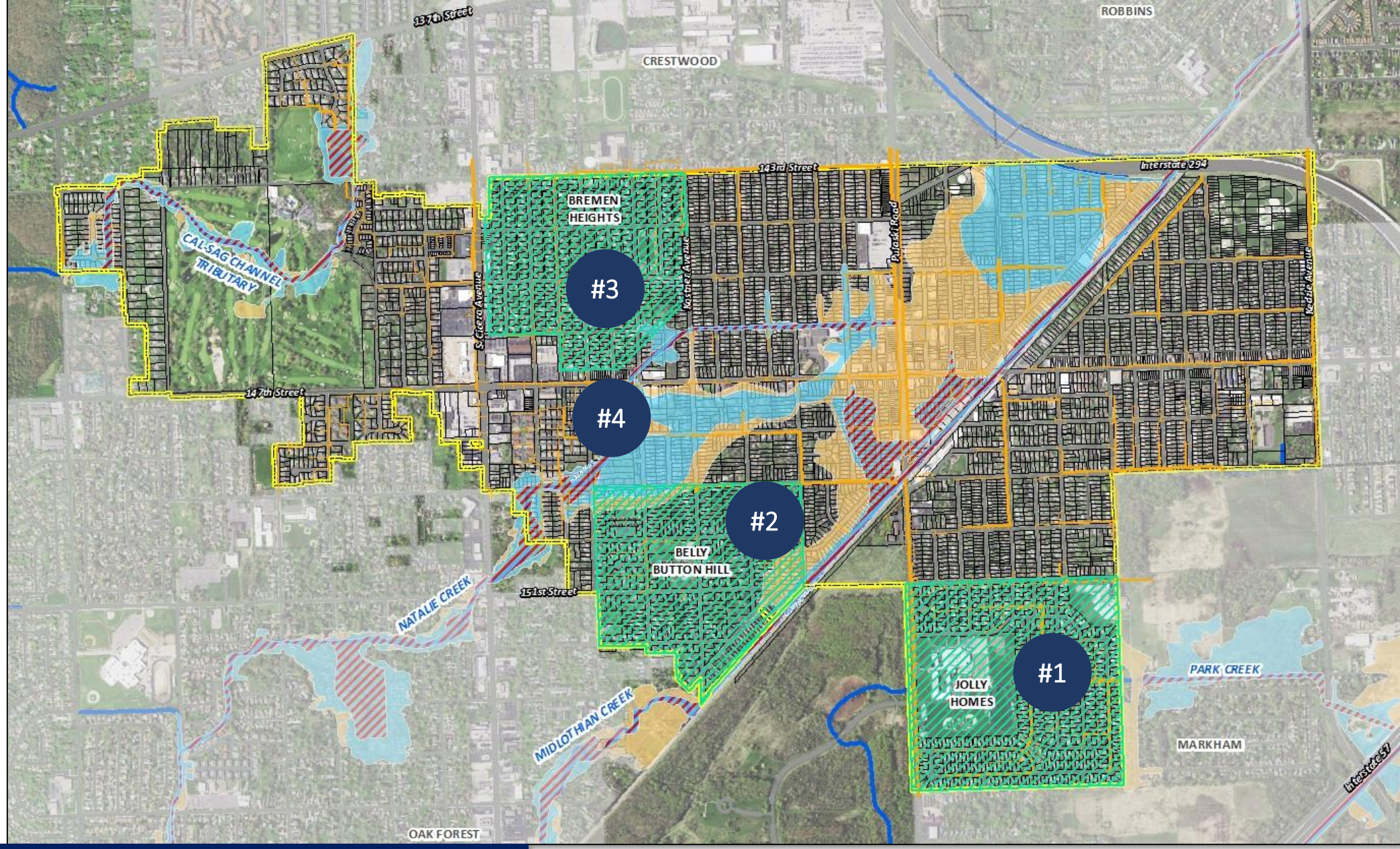
- CNT RainReady Midlothian Plan and Interim Report
- Jolly Homes Drainage Study
- Midlothian Creek Green Infrastructure Plan
- Midlothian 147th Street Corridor Plan
- Calumet Regional Study: Native Soils and Green Infrastructure
- Little Calumet River Watershed-Based Plan
- Natalie Creek Flood Mitigation Preliminary Design Report
- Midlothian Active Transportation Plan

Jolly Homes Neighborhood

Belly Button Hill / Kostner Park

Bremen Heights Neighborhood

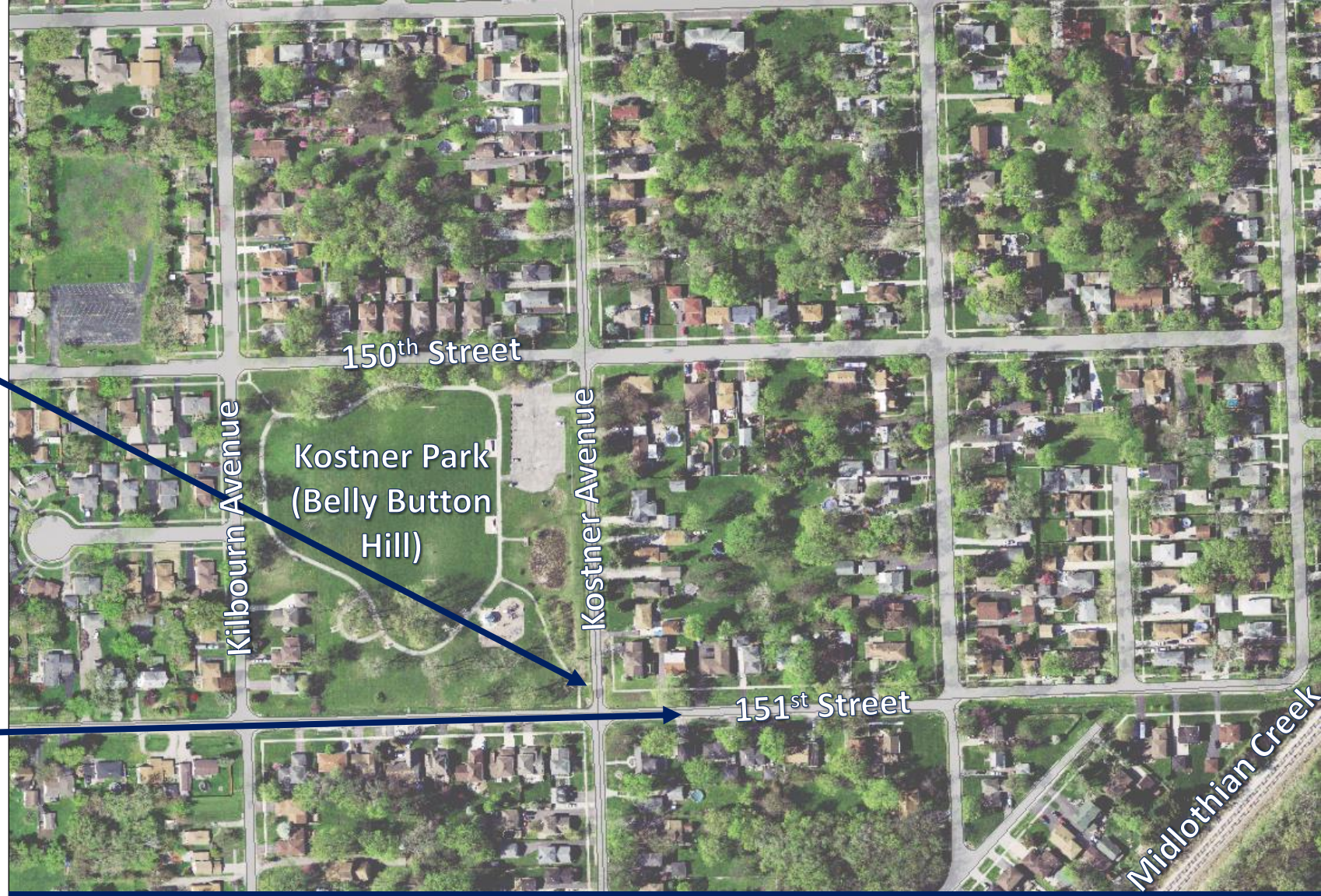
Natalie Creek Corridor



Identification of Problem Areas

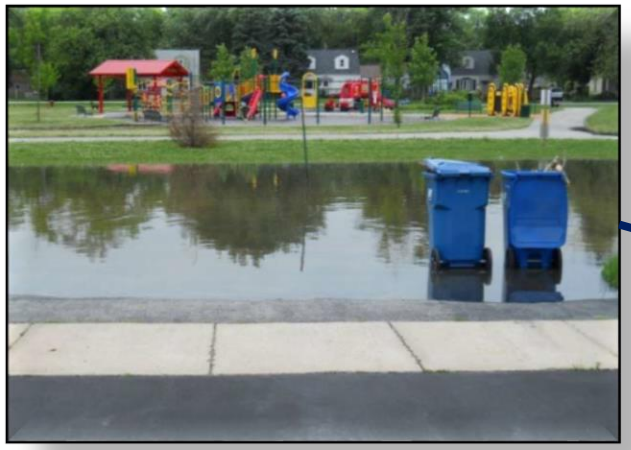
Identification of Problem Areas

Jolly Homes Neighborhood



Identification of Problem Areas

Belly Button Hill Park



Identification of Problem Areas

Bremen Heights Neighborhood

Focus Areas Initial Evaluations

Flat Topography

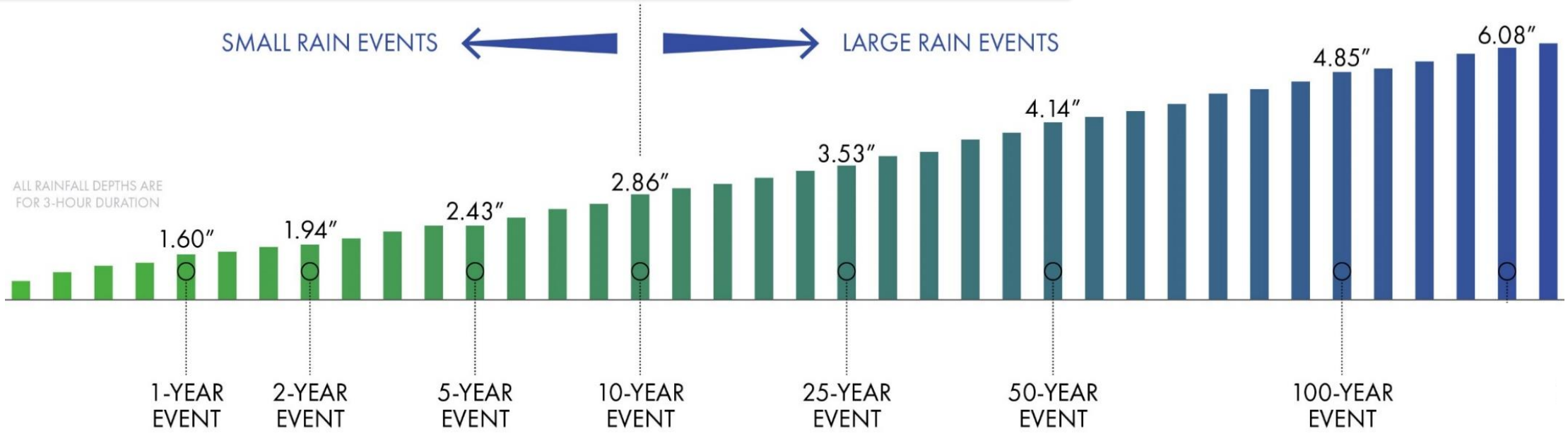
Development in Floodplain

Increased Impervious Surface

Outdated Infrastructure

Infrastructure Standards

Potential Opportunities: Infrastructure



HOMEOWNER-LEVEL
INFRASTRUCTURE

NEIGHBORHOOD-LEVEL
INFRASTRUCTURE

WATERSHED-LEVEL
INFRASTRUCTURE

Potential Opportunities: Jolly Homes Neighborhood

Green Infrastructure

Conveyance

Storage

Green Infrastructure

Storage

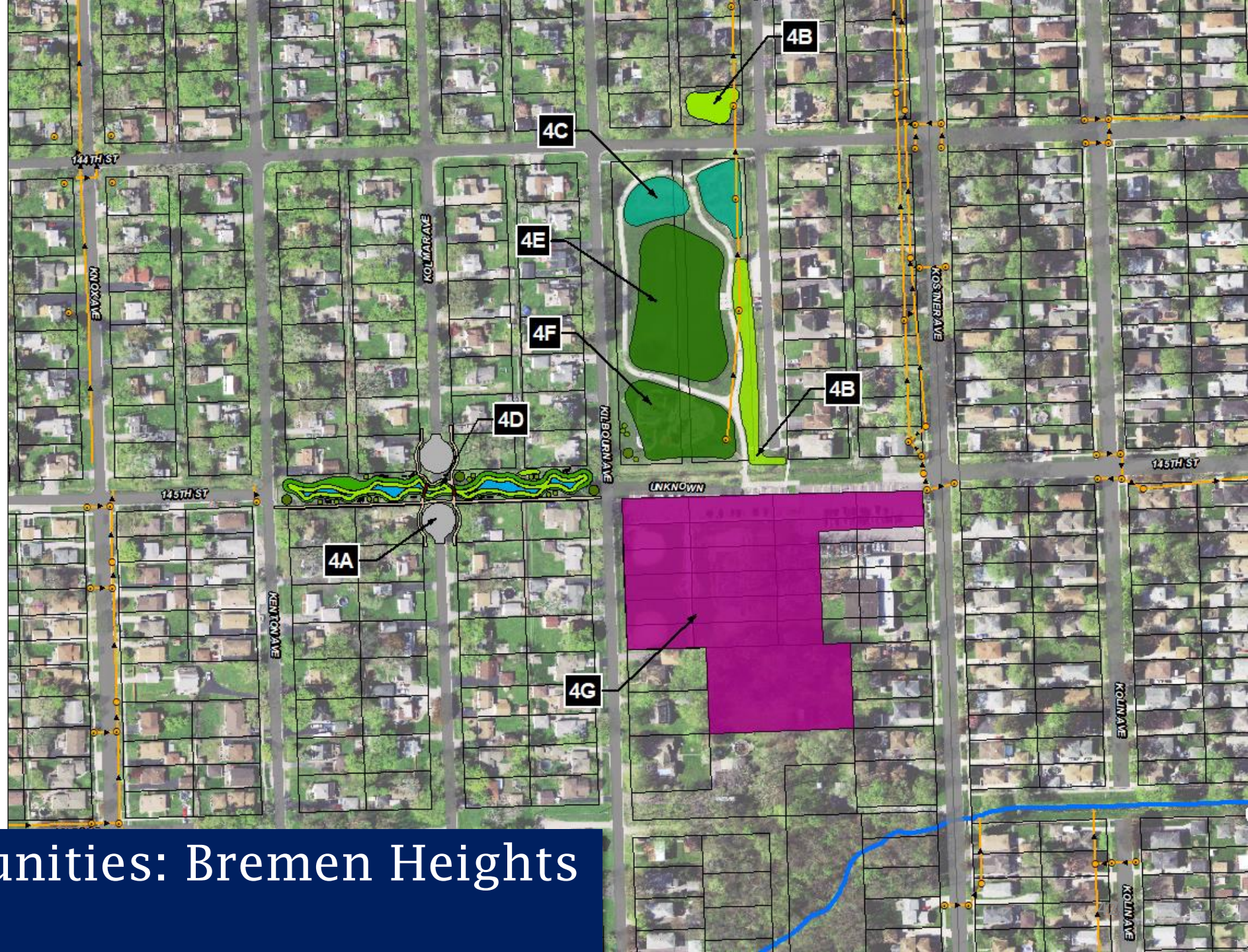
Storage

Potential Opportunities: Belly Button Hill Park

Green Infrastructure

Storage

Storage



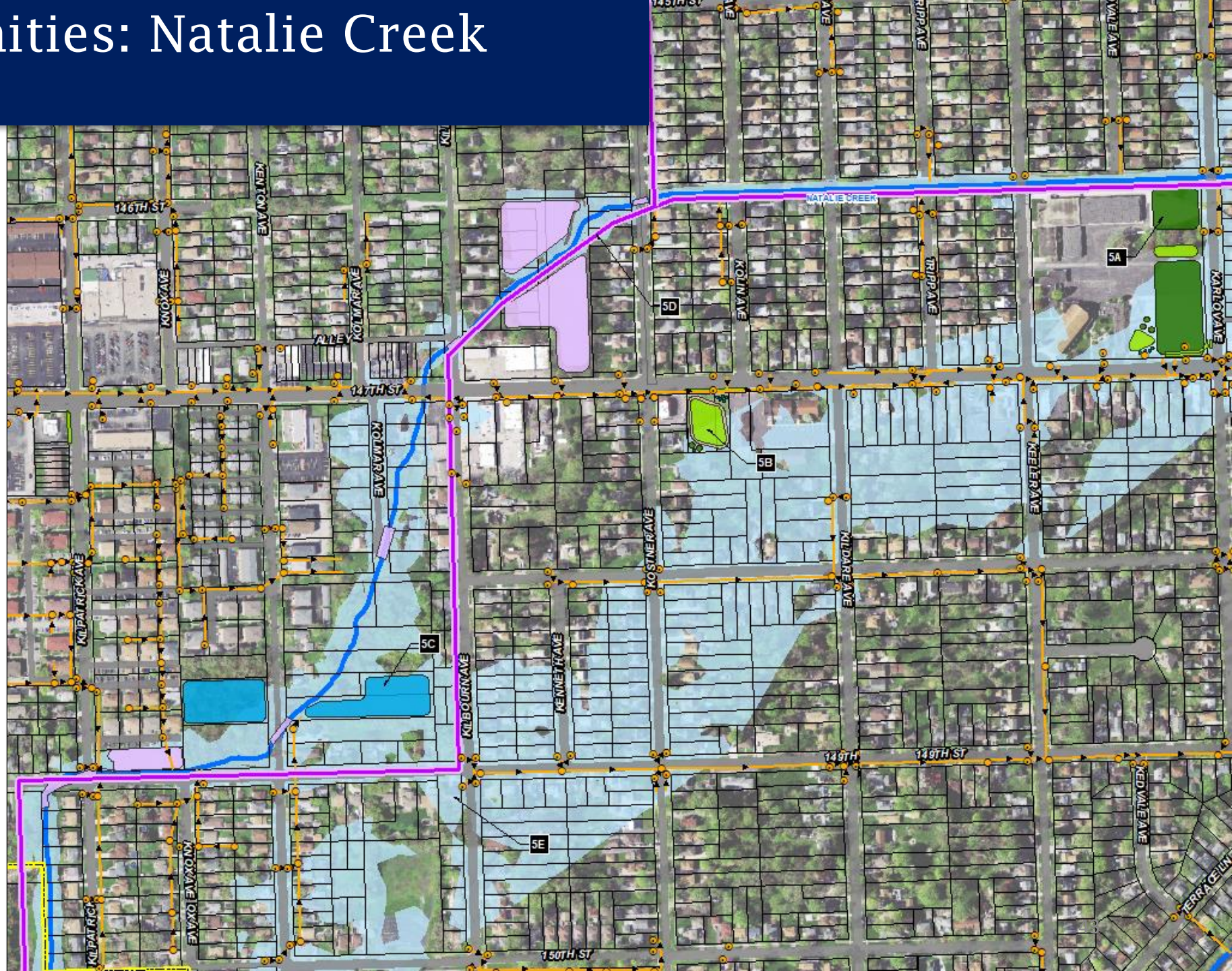
Potential Opportunities: Bremen Heights Neighborhood

Potential Opportunities: Natalie Creek Corridor

Storage

Green Infrastructure

Green Infrastructure



Potential Opportunities: Planning and Programs

Prioritization of Potential Opportunities

Drainage Area Capture

Land Acquisition

Infiltration Potential

Relative Construction Cost

Benefitting Properties / Areas

Prioritization of Potential Opportunities

Opportunity Matrix

Table 2: Infrastructure Opportunities

Priority Number	ID	Figure	Priority Area	Name	Stormwater Management Type	Description	Pros	Cons	Potential Funding Sources	Benefitting Properties / Areas	Opportunity Footprint (acres)	Related Planning Programs	Drainage Area Capture	Property Ownership / Land Acquisition	Infiltration Potential	Relative Construction Cost	
1	2A	6.02-1	Jolly Homes	Central Park Elementary School New Detention Basin (East)	Existing Detention Basin Retrofit and New Detention Basin	Retrofit existing dry detention basin east of Central Park Elementary School and extend new footprint to open space just north of Park Creek. Includes opportunities for additional conveyance to basin.	• Provides storage to alleviate flooding along 151st Street • Potential partnership with School District 143 and TNC • Favorable soils for infiltration • Education and partnership opportunity with TNC if designed as a wet detention basin • Continued partnership with UIUC and IL-IN Sea Grant	• Requires coordination and approval from School District • May require pumping • Requires maintenance • Temporarily disturbs 151st Street and Central Park Elementary School • Infiltration options are dependent on soil characteristics	• Village • MWRD • Grants and partnerships	Will alleviate in-street flooding and flooding on private properities for properties along 151st Street and for Central Park Elementary School. May also alleviate flooding at outfall to Park Creek.	5.3	• Storm sewer televising and cleaning • Topographic survey • Storm sewer modeling	+		+	-	$1,288,650
2	2B	6.02-1	Jolly Homes	151st Street Conveyance Upgrades	Conveyance Upgrades	Upgrade the existing mainline along 151st Street and install new inlets and laterals. Includes new conveyance to detention basins.	• Alleviates flooding along 151st Street • Can be completed in conjunction with other projects (i.e.2A, 2C, and roadway projects)	• Temporarily disturbs 151st Street and Central Park Elementary School • Potential impacts to mature trees	• Village	Will alleviate in-street flooding and flooding on private properities for properties along 151st Street and for Central Park Elementary School.	2.4	• Storm sewer televising and cleaning • Topographic survey • Storm sewer modeling	+	+	N/A	-	$3,693,682

Recommendations and Next Steps

Jolly Homes Neighborhood

Recommendations and Next Steps

Belly Button Hill Park

Recommendations and Next Steps

Implementation Schedule

Task	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Engineering						
Submit for Funding						
Construction						

Jolly Homes Opportunities (2A, 2B, and 2C)

Belly Button Hill Opportunities (3A, 3B, 3C, 3D, and 3E)

Next in Matrix: Bremen Heights Opportunities (4A, 4B, and 4C)

Lessons Learned

- Engage stakeholders early in the process
- Consider maintenance costs for green infrastructure
- Garner support for stormwater utility

What partnership opportunities exist for implementation?

Other questions?