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

Middletown Residents 4208 Black 147th Street, 147th Keeler and 147th Kildare

DOCUMENTING OUR PURSUIT FOR FLOOD / DISASTER RELIEF:

- 5/7/2013 – Middletown Daily News: Public Affair: MFRD to report on the ongoing Middletown flooding problems and_AG a package of photos to document the last 10 years of flooding damages covering the 4200 block of 147th Street, 147th Keeler and Kildare.
- 6/13/2013 – filmed CNT (Center for Neighborhood Technology) to report on ongoing Middletown flooding problems. Filmed CNT a 15 minute video documenting the last 10 years of Middletown flood damages. Video available upon request.
- 6/13/2013: Downloaded flood history summarizing the recently damaged properties on the 4200 block of 147th St., 147th Keeler and 147th Kildare on YoutTube at MiddletownFlood Ottawa to raise awareness of our 30 year plight and hope for help.
- 6/29/2013 – Opened a Facebook page: Middletown Middletown Town to seek help, and to start the Middletown Flood Victims who have called the Village for help and asked the Village of their flooding recorded, as a data base in evidence and share our present disaster relief.
http://vimeo.com/26350553
- 6/13/2013: Middletown flood victims join “The Grass Gathering” created by CNT to connect and educate flood victims.
- 6/30/2013 – Asked the Mayor to appoint a Village Trustee to a specific flooding problem at the Village Board Meeting, Thanks Terry Gillis who responded.
- 6/7/2014 – Messenger Newspaper Page 12, “Letter to the Editor Middletown Flooding”
- 9/2/2013 – Finalized and presented Ron Dough at IFSA to register and document the various ongoing Middletown flooding problems.
- 9/7/2013 – Addressed Creek County Board Mitigation Meeting in Tiley Park, IL and exchanged emails with the Board. Plans to document the extensive ongoing flooding problems in Middletown.
- 9/7/2014 – MFRD Ward 02 (Westwood Management Ordinance) Meeting, Chicago Ridge Village Hall. Spoke to support the CPD on behalf of flooding residents in downtown Middletown. Spoke with Executive Director Ms. St. Pierre and President. Money concerning Middletown Flooding and set up a meeting with the MFRD Engineer Bill. Money to come to Middletown to meet with the residents who suffer ongoing flooding, flooding and repetitive damages.
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
RainReady Midlothian

Plan

CNT
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, FloodReady 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
- The Department of Commerce and Economic Development Enterprise Zone Certificate
- Illinois Department of Natural Resources Coastal Waters Program Village Greenway Project - $200,000
- Illinois Green Infrastructure Grant from the EPA Bureau of Water Village Greenway Project (Pondable Parking Lot + Rain Garden) - $68,000
- Morton Arboretum Emerald Ash Borer Replacement - $35,000
- National Park Service Rivers, Trails, and Conservation Assistance Program OPENFUNDs-ComEd Green Region Program Village Greenway Project - $25,000
- RTA Access to Transit Grant - $990,000
- South Suburban Mayors and Managers Planning Technical Assistance Natalie Creek Trail Plan
- U.S. Army Corps of Engineers Silver Jackets Illinois Program RainReady Midlothian - $500,000
- U.S. Geological Survey Streamflow Gauge Installed on Natalie Creek - $65,000
- Update: National Fish & Wildlife Foundation Grant Pondable lot by Rain Ready Community Garden - $150,440
- Update: Metropolitan Water Reclamation District (MWRD) Midlothian Pondable Parking Lot/Green Infrastructure Project - $180

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) as a result of 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, stormwater best management practices, and economic development in new alley for 147th Street. Update: The Chicago Metropolitan Agency for Planning (CMAP) completed the 147th Street Corridor Study, focusing on stormwater management, and Christopher B. Burka Engineering has provided designs and specifications for three rain garden installations on 147th Street. The Village seeks funding to construct these rain gardens on Village parkways.

• Identify a strategy to alleviate flooding in the Jolly Homes and Bell 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. **OVERTANKING 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 MWDD project projected 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), Floodproof Midlothian, and the National Park Service (NPS).
- **Update:** The Natalie Creek Trail Steering Committee meets monthly and is applying for grant funding for detailed 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 funds 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 Flooding Assistance program and green infrastructure projects across the village.

The Midlothian Rain Fund would launch with a seed investment from the EPA’s State Revolving Loan Fund, through which the village eligible for a low-interest loan for stormwater management. The 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 Jolly Button Hill.

The loan would be repaid through a nominal monthly fee on property owners, calculated based on the area of impervious surface on their properties. For most homeowners, the fee would be $3-$5 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 stormwater runoff onsite, e.g. by installing rain gardens.

These funds would be used exclusively to finance stormwater management solutions in the village, while bringing water recreational and economic benefits to the community. Update: Illinois CCAMRA TIA grant will fund the development of a capital plan for stormwater management infrastructure projects, budget, and proposed timeline for implementation of a stormwater 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](http://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
October 12, 2017

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/CS/atk
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

With Partners:

- CNT
- Metropolitan Water Reclamation District of Greater Chicago
- South Suburban Mayors & Managers Association
- Strand Associates
- The Nature Conservancy
- Illinois
- Sea Grant
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
• 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
Identification of Problem Areas

Jolly Homes Neighborhood

Belly Button Hill / Kostner Park

Bremen Heights Neighborhood

Natalie Creek Corridor
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

ALL RAINFALL DEPTHS ARE FOR 3-HOUR DURATION

1-YEAR EVENT
1.60”

2-YEAR EVENT
1.94”

5-YEAR EVENT
2.43”

10-YEAR EVENT
2.86”

25-YEAR EVENT
3.53”

50-YEAR EVENT
4.14”

100-YEAR EVENT
4.85”

HOMEOWNER-LEVEL INFRASTRUCTURE

NEIGHBORHOOD-LEVEL INFRASTRUCTURE

WATERSHED-LEVEL INFRASTRUCTURE
Potential Opportunities: Jolly Homes Neighborhood

Green Infrastructure

Conveyance

Storage
Potential Opportunities: Belly Button Hill Park
Potential Opportunities: Bremen Heights Neighborhood

Green Infrastructure

Storage

Storage
Potential Opportunities: Natalie Creek Corridor

Storage

Green Infrastructure

Green Infrastructure
Potential Opportunities: Planning and Programs

- Rain Fund
- Storm Sewer Televising
- Updates to Village MS4 Program
- Storm Sewer Cleaning and Rehab.
- Topo. Survey and Field Data Collection
- Storm Management System Modeling
- Private Property Flood-proofing
Prioritization of Potential Opportunities

- Drainage Area Capture
- Land Acquisition
- Infiltration Potential
- Relative Construction Cost
- Benefitting Properties / Areas
## Prioritization of Potential Opportunities

### Opportunity Matrix

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<tr>
<th>Priority Number</th>
<th>ID</th>
<th>Figure</th>
<th>Priority Area</th>
<th>Name</th>
<th>Stormwater Management Type</th>
<th>Description</th>
<th>Pros</th>
<th>Cons</th>
<th>Potential Funding Sources</th>
<th>Benefitting Properties / Areas</th>
<th>Opportunity Footprint (acres)</th>
<th>Related Planning Programs</th>
<th>Drainage Area Capture</th>
<th>Property Ownership / Land Acquisition</th>
<th>Infiltration Potential</th>
<th>Relative Construction Cost</th>
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<tr>
<td>1</td>
<td>2A</td>
<td>6.02-1</td>
<td></td>
<td>Jolly Homes Central Park Elementary School New Detention Basin</td>
<td>Existing Detention Basin</td>
<td>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.</td>
<td>Provides storage to alleviate flooding along 151st Street.</td>
<td>Requires coordination and approval from School District.</td>
<td>Village +</td>
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<td>5.5</td>
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<td>+</td>
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<td>$1,288,650</td>
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<tr>
<td>2</td>
<td>2B</td>
<td>6.02-1</td>
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<td>Jolly Homes 151st Street Conveyance Upgrades</td>
<td>Conveyance</td>
<td>Upgrade the existing mainline along 151st Street and install new inlets and laterals. Includes new conveyance to detention basin.</td>
<td>Alleviates flooding along 151st Street.</td>
<td>Temporarily disturbs 151st Street and Central Park Elementary School.</td>
<td>Village +</td>
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<td>2.4</td>
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<td>+</td>
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Opportunity 2A: Detention Basin
12.7 Ac.
- ft. of Storage

Opportunity 2B: Conveyance Upgrades
New 48-Inch Storm Sewer

Opportunity 2B: Conveyance Upgrades
New Lateral Storm Sewers

Opportunity 2C: Green Infrastructure

Recommendations and Next Steps

Jolly Homes Neighborhood
Opportunity 3A: Detention Basin

**BELLY BUTTON HILL/KOSTNER PARK**

Opportunity 3A: Detention Basin
4.0 Ac.-ft. of Storage

Opportunity 3A: Detention Basin
15.8 Ac.-ft. of Storage

Recommendations and Next Steps

Belly Button Hill Park
## Recommendations and Next Steps

### Implementation Schedule

<table>
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<tr>
<th>Task</th>
<th>Year 1</th>
<th>Year 2</th>
<th>Year 3</th>
<th>Year 4</th>
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<td><strong>Engineering</strong></td>
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**Legend:**
- **Yellow**: Jolly Homes Opportunities (2A, 2B, and 2C)
- **Green**: Belly Button Hill Opportunities (3A, 3B, 3C, 3D, and 3E)
- **Blue**: 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?