Village of Midlothian
Stormwater Management Capital Plan (SMCP)

March 11, 2020
IAFSM Conference
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 floodwater
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
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
Documenting damages

APPENDIX A

Midlothian Residents 4200 Block 147th Street, 147th Keesler and 147th Kildaire

DOCUMENTING OUR PURSUIT FOR FLOOD / DISASTER RELIEF:

- 5/22/2013-Present: Amending 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, “Footing At 147th and Keesler Ave.”

- 5/11/2013: Phoned State for 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 occurring the 4200 block of 147th Street, 147th Keesler and Kildaire.

- 6/9/2013: Phoned CNT (Carolyn Fischlich Technicolor) to report the ongoing Midlothian flooding problems. Transferred CNT a 15 minute video documenting the last 20 years of Midlothian flood damages. Video available upon request.

- 6/1/2013: Downloaded aerial history concerning the repeatedly damaged properties on the 4200 block of 147th St, 147th Keesler and 147th Kildaire on You Tube as MidlothianFloodCitizens to raise awareness of our 26 year plight, and hope for help.

- 6/23/2013: Opened a Facebook page: FloodCitizensMidlothian as a resource to look for help, that the Midlothian flood victims who have called the village for help and not had the history of their flood recorded, and as a data base to evidence and share our pursuit of disaster relief.

- 6/29/2013: CNT produced Urban Flooding Flooding Video which features Midlothian flood history. http://www.youtube.com/user/midlothiangoc


- 6/29/2013: Asked the Mayor to support our Village Trustees to our specific flooding problems at the Village Board Meeting. Trustee Jerry Gifford volunteered.

- 6/29/2013: Messenger Newspaper Page 12, “Letters To the Editor Midlothian Flooding”

- 7/9/2013: Emailed and phoned Ron Davis at ITMA to register and document the serious ongoing Midlothian flooding problems.

- 7/12/2013: Amended Cook County Hazard Mitigation Meeting in Tinley Park, IL, and exchanged results with the Tinley Tech Project Planners to document the destructive ongoing flooding problems in Midlothian.

- 8/5/2013: MWRD WMO (Water Management Ordinance) Meeting, Olidge Ridge Village Hall. Spoke to support the WMO on behalf of flooding residents in downtown Midlothian. Spoke with innovative Director Mr. St. Elmo, and President Manny concerning Midlothian flooding and set up a meeting with the MWRD to discuss the latest flooding and expository damage.

- 8/5/2013: MWRD WMO (Water Management Ordinance) Meeting, Olidge Ridge Village Hall. Spoke to support the WMO on behalf of flooding residents in downtown Midlothian. Spoke with innovative Director Mr. St. Elmo, and President Manny concerning Midlothian flooding and set up a meeting with the MWRD to discuss the latest flooding and expository damage.
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 for Planning (CMAP)
- Calumet Stormwater Collaborative & MPC
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, resiliency, 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, Floodplain 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 Assistance
- Chicago Metropolitan Agency for Planning Local Technical Assistance
- 147th Street Corridor Study - $100,000
- Update Development of a Village-wide stormwater management plan - $180,000
- The Department of Commerce and Economic Opportunity Enterprise Zone Certification
- 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
- Operationals: ComEd Green Region Program
- Village Greenway Project: $10,000
- RTA Access to Transit Grant - $980,000
- South Suburban Players and Managers Association Planning Technical Assistance Natalie Creek Trail Plan
- U.S. Army Corps of Engineers Silver Jackets Illinois Program
- RainReady Midlothian - $100,000
- Illinois Geological Survey Streamflow Gauge Installed on Natalie Creek - $60,000
- Update: National Fish & Wildlife Foundation Grant
- Permeable lot by Rain Ready Community Garden - $50,000
- Update: Metropolitan Water Reclamation District (MWRD) Midlothian Permeable 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) in the final stages of design, and construction is projected to start in the spring of 2019.

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 a strategy for 147th Street. The Village is seeking funding to construct those rain gardens on Village Way.
- Identify a strategy to alleviate flooding in the Jody Homes and Bely 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 SEEPPAGE

CREEK

- **Update**: Reduce flood risk on Natalie Creek with an $8.3 million MWRD 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), 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 Funds 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 Floodproofing program and green infrastructure projects across the Village.

The Midlothian Rain Fund could be sourced through an investment from the IEPA State Revolving Loan Fund through which the Village would apply for a loan to finance new stormwater management projects. The fund would also remain available 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 flood-prone areas like对比Homes and Byrd 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 example, if a homeowner's fee was $3.50 per month, the fees would then be collected for properties that contributed to 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, e.g., by installing rain gardens.

These funds would be used exclusively to finance stormwater management projects in the village while improving water quality and reducing the need for new storm sewers. **Update**: The Rain Funds program would eventually be used to develop a capital plan for stormwater management infrastructure projects, budget, and proposed timeline for implementation of a storm sewer 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.
Natalie Creek Flood Mitigation Project – currently underway
Thank you Metropolitan Water Reclamation District of Greater Chicago

From Kostner Avenue, facing west

From 147th Street, facing north
Flood Control Project on Natalie Creek

- Widening the channel at several locations
- Upsizing of restrictive culverts
- Creating a new water storage basin
- Mitigating overbank flooding for 237 homes, businesses and facilities in Midlothian and Oak Forest
- Project expected to be complete in 2020

Board of Commissioners

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President
Barbara J. McGowan
Vice President
Frank Avila
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Cameron Davis
Kimberly Du Buclet
Marcelino Garcia
Josina Morita
Debra Shore
Mariyana T. Spyropoulos

For more information, call 312-751-6633 or visit www.mwrdd.org

Brian A. Perkovich
Executive Director
Awarded CMAP Local Technical Assistance

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

BDJCS/atk

Via e-mail: kkreis@villageofmidlothian.org

Board Members
Gerald Bennett, Chair
Rita Athas
Frank Beal
Matthew Brolley
Franco Coladipietro
Janel Forde
Elliott Hartstein
Al Larson
Andrew Madigan
John Noak
Martin Oberman
Rick Reinbold
Carolyn Schofield
Peter Silvestri
Matthew Walsh

Non-voting Members
Seán McCarthy
Leanne Redden
Justine Sydello

Executive Director
Joseph C. Szabo
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:

- CMAP
- CNT
- Metropolitan Water Reclamation District of Greater Chicago
- SSMMA
- STRAND ASSOCIATES
- The Nature Conservancy
- ILLINOIS UNIVERSITY OF ILLINOIS AT URBANA-CHAMPAIGN
- Sea Grant ILLINOIS INDIANA
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
• 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

#1
#2
#3
#4
Identification of Problem Areas

Jolly Homes Neighborhood
Focus Areas Initial Evaluations

- Flat Topography
- Development in Floodplain
- Increased Impervious Surface
- Outdated Infrastructure
- Infrastructure Standards
Potential Opportunities: Infrastructure

- SMALL RAIN EVENTS
- LARGE RAIN EVENTS

ALL RAINFALL DEPTHS ARE FOR 3-HOUR DURATION

- 1-YEAR EVENT
- 2-YEAR EVENT
- 5-YEAR EVENT
- 10-YEAR EVENT
- 25-YEAR EVENT
- 50-YEAR EVENT
- 100-YEAR EVENT

HOMEOWNER-LEVEL INFRASTRUCTURE

NEIGHBORHOOD-LEVEL INFRASTRUCTURE

WATERSHED-LEVEL INFRASTRUCTURE
Potential Opportunities: Jolly Homes Neighborhood
Potential Opportunities

Planning and Programs
Prioritization of Potential Opportunities

- Drainage Area Capture
- Land Acquisition
- Infiltration Potential
- Relative Construction Cost
- Benefitting Properties / Areas
## Table 2: Infrastructure Opportunities

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<thead>
<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>Jolly Homes</td>
<td>Central Park Elementary School's New 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. • Potential partnership with School District and TNC. • Favorable soils for infiltration. • Education and partnership opportunity with TNC if designed as a wet detention basin. • Continued partnership with JUJC and IL-IN-SEA Grant.</td>
<td>• 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 site characteristics.</td>
<td>Village • MWRRD • Grants and partnerships</td>
<td>Will alleviate in-street flooding and flooding on private properties for properties along 151st Street and for Central Park Elementary School. May also alleviate flooding at outfall to Park Creek.</td>
<td>5.3</td>
<td>Storm sewer televising and cleaning • Topographic survey • Storm sewer modeling</td>
<td>+</td>
<td>+</td>
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<td>$1,288,650</td>
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<td>2</td>
<td>2B</td>
<td>6.02-1</td>
<td>Jolly Homes</td>
<td>151st Street Conveyance Upgrades</td>
<td>Conveyance Upgrades</td>
<td>Upgrade the existing manline along 151st Street and install new inlets and laterals. Includes new conveyance to detention basins.</td>
<td>• Alleviates flooding along 151st Street. • Can be completed in conjunction with other projects (i.e., 2A, 2C, and roadway projects).</td>
<td>• Village</td>
<td>Will alleviate in-street flooding and flooding on private properties for properties along 151st Street and for Central Park Elementary School.</td>
<td>2.4</td>
<td>Storm sewer televising and cleaning • Topographic survey • Storm sewer modeling</td>
<td>+</td>
<td>+</td>
<td>N/A</td>
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<td>$3,693,682</td>
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Opportunity 2A: Detention Basin
12.7 Ac.
-ft. of Storage

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

Opportunity 2C: Green Infrastructure

Recommendations and Next Steps
Jolly Homes Neighborhood
XP-SWMM 2D Output: 2-Year Event

Existing Conditions
XP-SWMM 2D Output: 2-Year Event

Proposed Conditions
XP-SWMM 2D Output: 100-Year Event

Existing Conditions
XP-SWMM 2D Output: 100-Year Event

Proposed Conditions
### Recommendations and Next Steps

#### Implementation Schedule

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<th>Task</th>
<th>Year 1</th>
<th>Year 2</th>
<th>Year 3</th>
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- **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

- Have a comprehensive and adopted plan
- Engage stakeholders early in the process
- Conduct limited stormwater modeling
- Consider maintenance costs
- Garner support for sustainable funding
Thank You

Kelsey Andersen, CFM (Strand Associates, Inc.®) – kelsey.andersen@strand.com
Kate Evasic (CMAP) – kevasic@cmap.Illinois.gov
Karen Kries (Village of Midlothian) – kkreis@villageofmidlothian.org