



STORMSTORE

COOK COUNTY'S NEW STORMWATER
CREDIT TRADING MARKET

JULY 9 2020

10 AM CDT

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Metropolitan**Planning**Council

Credit Trading + StormStore™

Ryan Wilson

July 9, 2020

What is StormStore™?

- a **PARTNERSHIP** between
The Nature Conservancy (TNC) of Illinois and
Metropolitan Planning Council (MPC)
- a model **MARKETPLACE** for
Stormwater Credit Trading

Our Goals for StormStore

- **Lower the costs** of reducing urban flooding
- **Help communities** + landowners achieve the co-benefits of green infrastructure
- **Improve community resiliency** + opportunities for economic development
- **Provide greater flexibility** for developers + optimized placement of infrastructure

Problem Flooding in Cook County, IL

- **Intense.** Flooding events are more frequent and severe
- **Expensive.** Flooding cost the Chicago region an estimated in \$907 million in damages between 2003-2015*
- **Unknown.** Most flooding is occurring outside the floodplain (e.g. urban flooding)
- **Unjust.** In Cook County, low-income communities are the most vulnerable to regional flooding**



What is Credit Trading?

- **Policy.** Options for compliance
- **Market-based.** Decouples a portion of flood protection from development
- **Optimized.** Stormwater controls where it is most needed, and can provide greatest benefit
- **Participation.** To include:
 - Conservation organizations and land banks
 - Residents and governments
 - Philanthropic and private investors

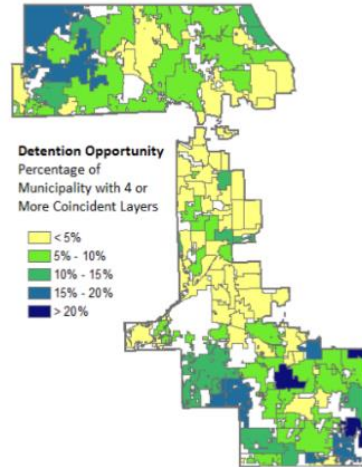
Trading allows more communities to experience the economic, social, and environmental benefits from building decentralized and nature-based solutions for stormwater management.



Opportunity Analysis of Supply + Demand

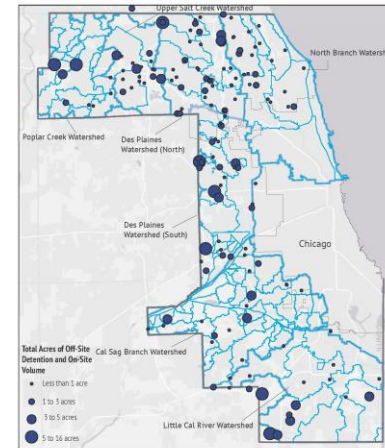
Supply Opportunity

- **Assessed** soil type, acreage, topography, land use and historical flooding
- Potential supply sites were found **in all the watersheds** in Cook County
- **Little Calumet and Des Plaines watersheds** reflected highest potential for supply



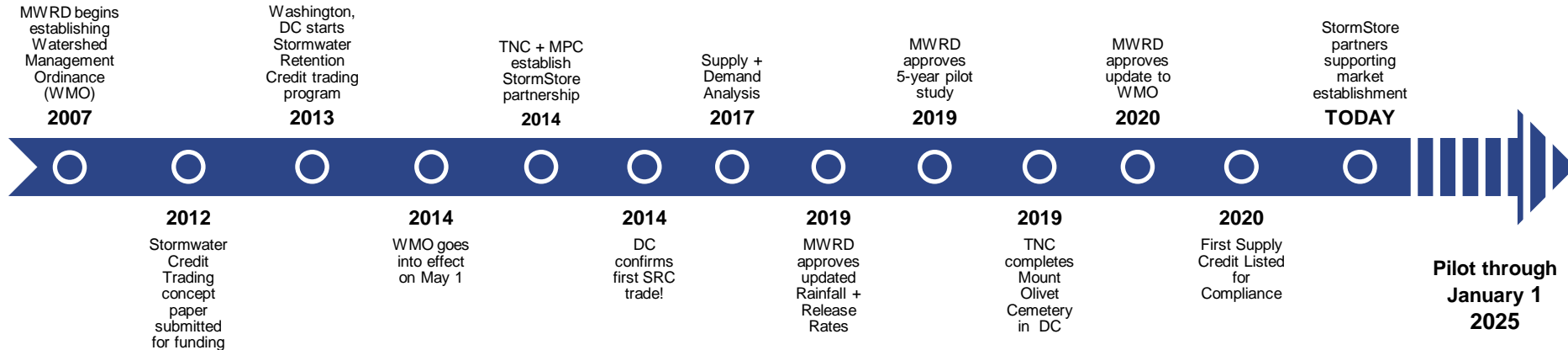
Demand Potential

- Assessed **10 years of permit data**
- Approx. **17% of projects under 10 acres could have used offsite** stormwater management
- Approx. **21% of projects could have realized a net economic benefit** of at least \$20,000
- The total economic benefit for all projects with a positive net benefit was estimated to be **\$47,407,095** or **~\$240,645 per project**



History of StormStore + Credit Trading

- Green infrastructure + Nature-based solutions
- MWRD + Watershed Management Ordinance
- Stormwater credit trading + StormStore™
- Washington D.C. + other markets



Who does StormStore help?

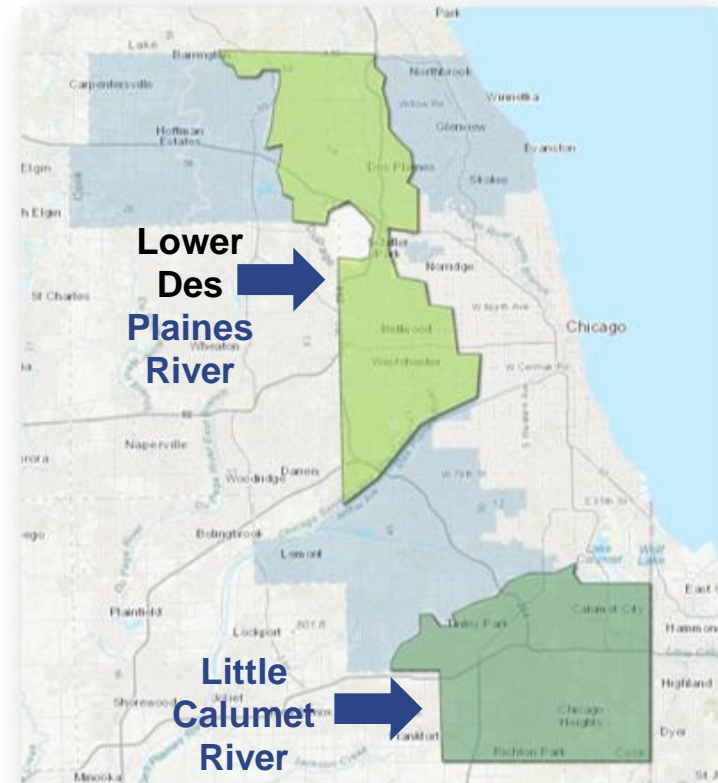
- A **private-developer** seeking an innovative way to meet stormwater compliance requirements
- A **municipality** with projects that address local flooding, or add new park-like amenities to the community
- An **affordable housing** developer
- A **consulting engineer**, planner, or architect working with developers in the pilot watersheds
- A **resident community member** who has a project identified in a local plan they want to see realized
- A **nonprofit landowner** or manager
- An **institution** (e.g. school, hospital) that has plans to improve or redevelop your property



Pilot Detention + Volume Control Trading

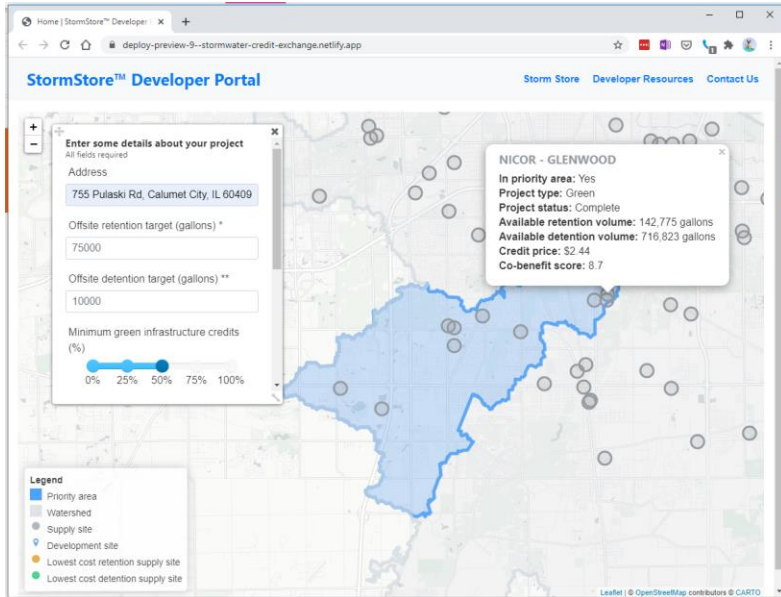
This **5-year Pilot Program** will allow...

- Developers an alternative compliance in **Little Calumet** and **Lower Des Plaines** watershed planning areas
- A portion of required stormwater controls to be met offsite, most likely for redevelopment sites
- Developers still have to assure “no adverse impacts,” meaning they have to prove they don’t flood neighbors
- District staff 5 years to study the benefits and impacts of trading

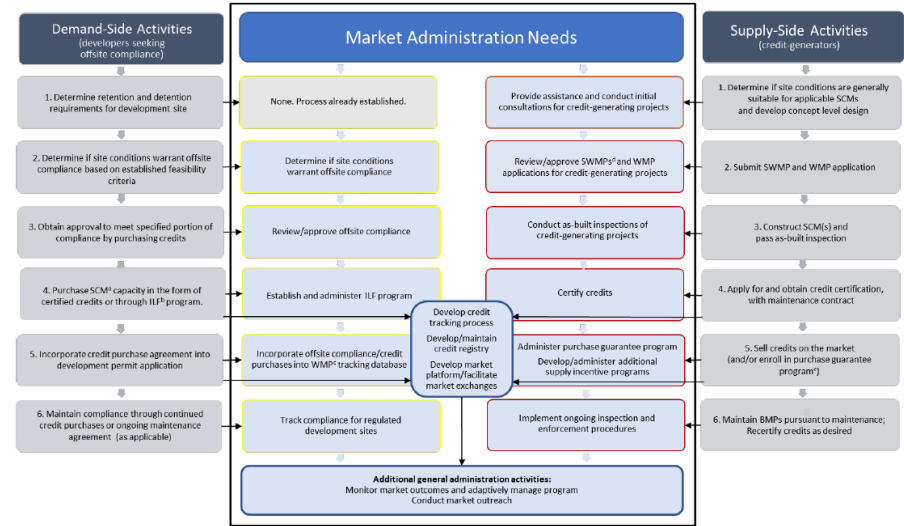


How the Market Works

Projects + Matchmaking



Market Administration



Next Steps for StormStore

- **IDENTIFY** project sites
- **ENGAGE** stakeholders
- **ENCOURAGE** investment
- **DEMONSTRATE** projects
- **DEVELOP** pricing and trading
- **CONTINUE** policy + advocacy
- **FACILITATE** market



We Want to Work with You!

Let us know today if you represent a municipality, landowner, developer or consultant, or community organization, or if you're simply interested in seeing a StormStore project in your community!

Ryan Wilson

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(312) 863-6018

Jen Jenkins

The Nature Conservancy, Illinois Chapter, Jennifer.Jenkins@TNC.org



Types of Projects that Can Participate in Pilot

Both VOLUME CONTROL and DETENTION stormwater projects are eligible

BUYERS of credits must have a "demand" project:

- Located fully within one of the eligible geographies
- Greater than 0.5 acres
- Able to meet the reduced onsite storage requirements onsite (detention and retention) outlined in the ordinance

SELLERS can generate credits from a "supply" project:

- Located fully within one of the eligible geographies
- Greater than 0.5 acres
- Able to provide new, additional capacity beyond the requirements of a permit for the "supply" site
- **NOT** a single-family home development
- Committed to long-term stewardship and maintenance

Both demand and supply projects will NEED TO OBTAIN A WMO PERMIT

Trading MUST OCCUR WITHIN SAME WATERSHED



Parking Lot Retrofitted with Bioretention
at FPCC Sand Ridge Nature Center
(South Holland, IL)



Community Rain Garden & Prairie Plant Project
(Village of Niles, IL)

Types of Projects that Can Benefit from StormStore

EXAMPLE DEMAND

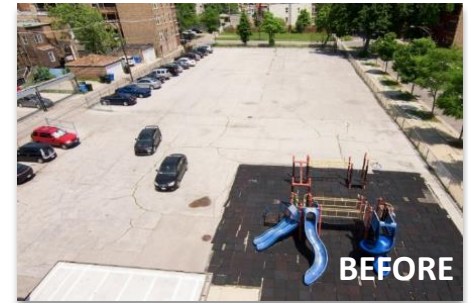


Demand sites will still need to provide detention for the 10-year, 24-hour storm event onsite and/or at least 50% of the required volume control onsite (as required by WMO)

EXAMPLE SUPPLY



TNC Retrofit of Parking Lot at Sacred Heart Church (Detroit, MI)



Space to Grow Playground Retrofits (Chicago, IL)

Supply sites will need to provide voluntary retention or detention capacity beyond the storage required by WMO

Building a Nature Based StormStore™ Supply



RAIN GARDENS/BIOSWALES



CONSTRUCTED WETLANDS



DETENTION BASINS



GREEN ROOFS



GREEN STREETS



PERMEABLE PAVEMENT



NATIVE PLANTING

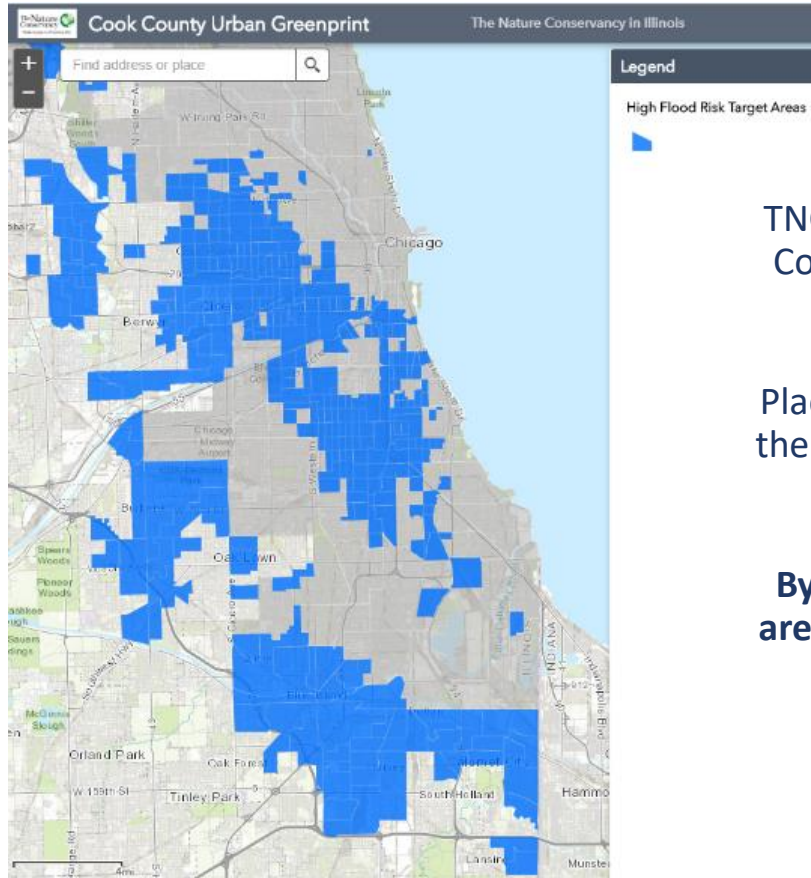


TREES



PAVEMENT REMOVAL

Where Nature Based Solutions Are Most Beneficial



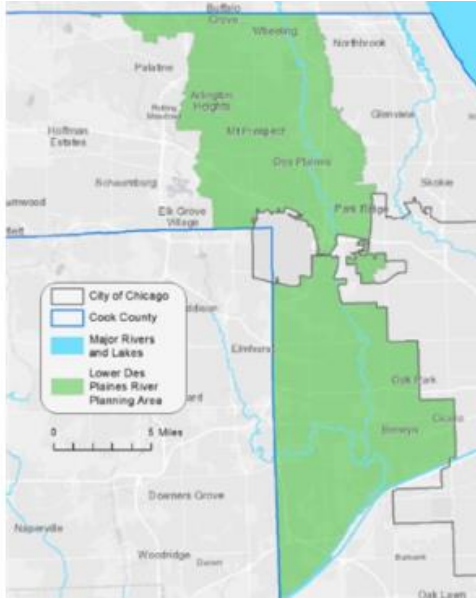
TNC developed **Greenprint** to identify areas in Cook County that are most vulnerable to climate change

Placement of nature based solutions could minimize the impact of flooding and other environmental risks

By installing StoreStore™ supply projects in these areas the co-benefits of green infrastructure can be optimized!

<https://bit.ly/ChicagoGreenprint>

Lower Des Plaines River Watershed Planning Area



Desplaines
Rosemont
Norridge
Elmwood Park
River Grove
Franklin Park
Melrose Park
Maywood
Bellwood
Broadview
Oak Park
Cicero
Berwyn
Lyons
Summit
Stickney

**These are communities where
StormStore could bring the greatest
economic and environmental benefits**

Greenprint Priority Areas for Project Development

Little Calumet River Watershed Planning Area



Robbins
Blue Island
Riverdale
Dixmoor
Posen
Midlothian
Markham
Hazel Crest
South Holland
Dolton
Calumet City
Burnham
Lansing

A Call to Action: Help Us Identify Opportunities



RE-IMAGINE
SCHOOL YARDS & PARKS



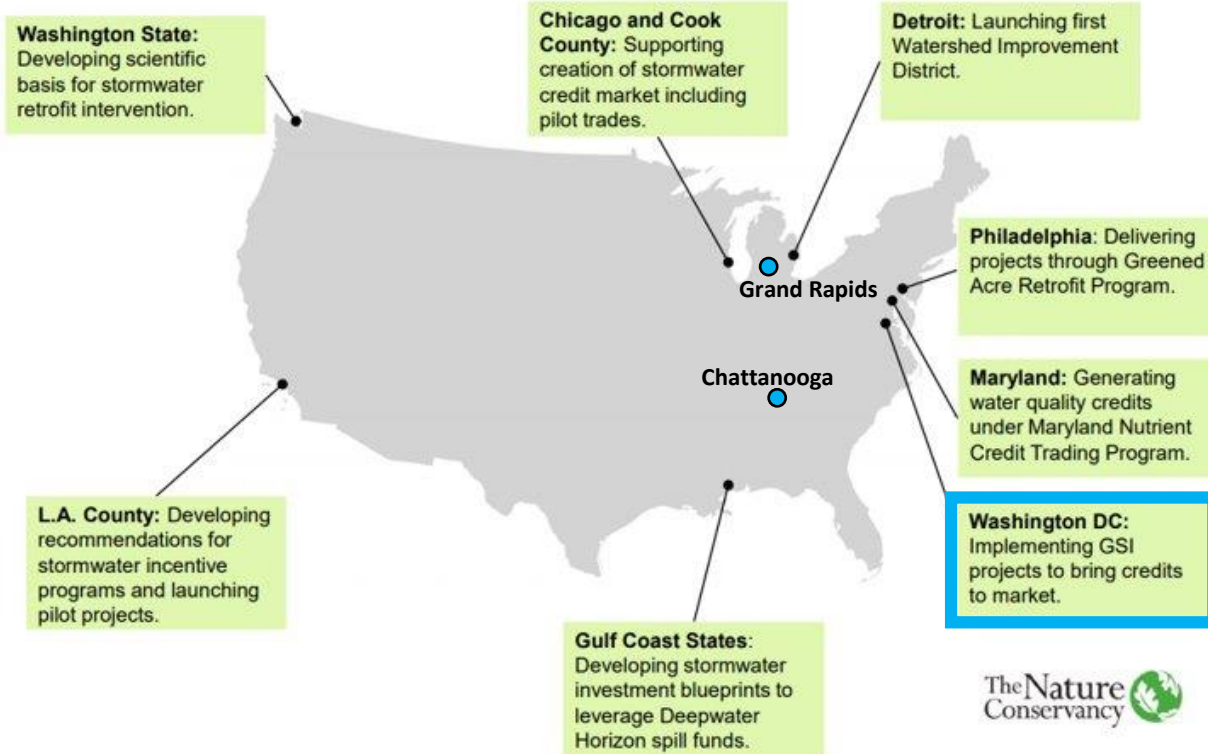
REUSE
VACANT LOTS



RE-DEVELOP
PARKING
LOTS




Stormwater Markets Across the U.S.



Kahlil Kettering

The Nature Conservancy, MD/D.C. Chapter





Washington, D.C.: Stormwater Retention Credits (SRCs)

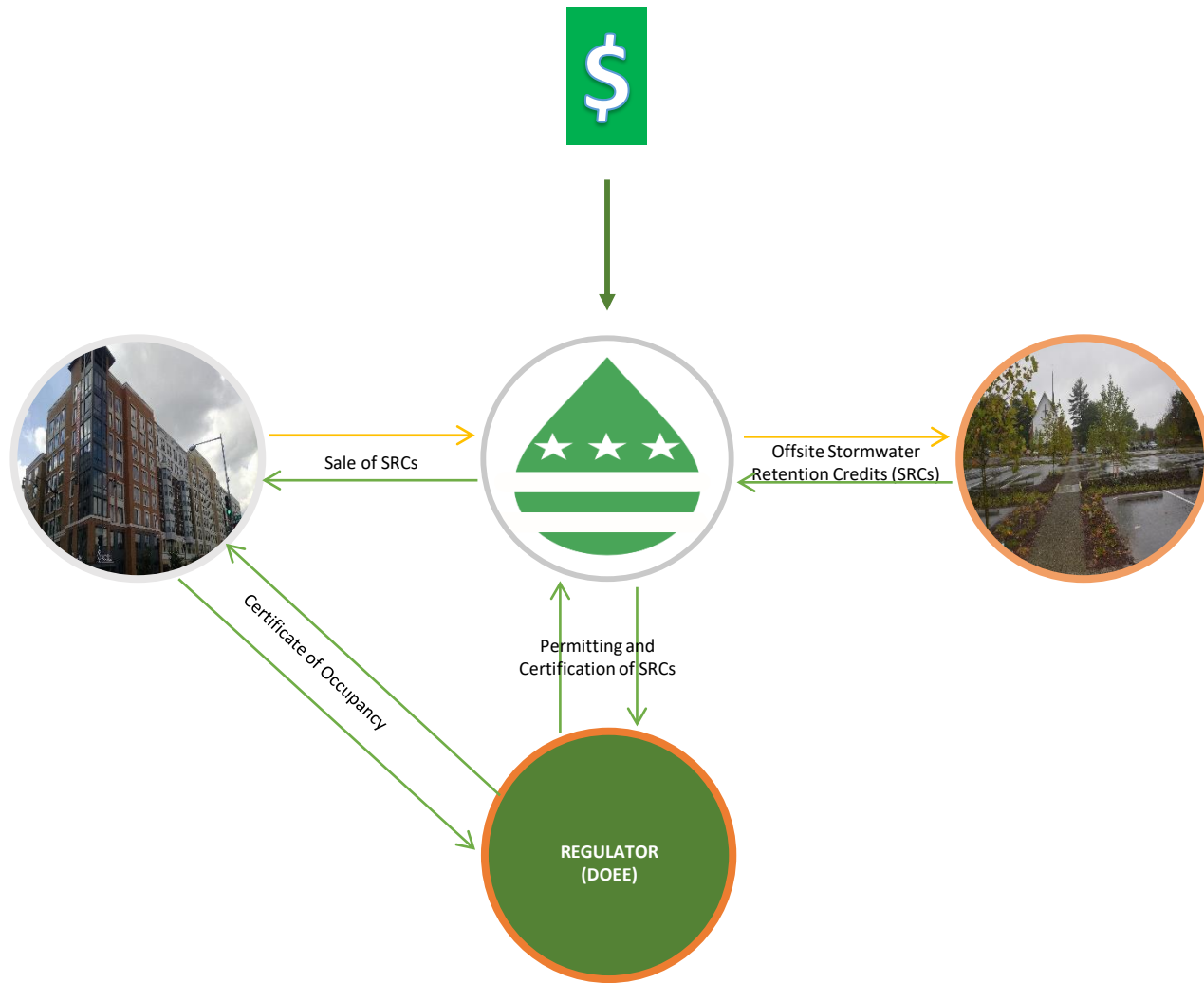
- TNC has created District Stormwater LLC to act as a supplier in the marketplace.
- Impact capital to demonstrate this policy can have triple bottom line outcomes.
- Reduce stormwater runoff to the Chesapeake Bay watershed.
- Prove this market can work and take the policy to other cities nationwide.



BUILDING STORMWATER RETENTION CREDITS IN DC

[BUY CREDITS](#)





Project Type contains:

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SRC Information	Number of SRCs for sale	Buyer's price	High-Impact	DOEE Payment?	Additional information
<p>Seller District Stormwater, LLC kahlil.kettering@tnc.org (301) 905-2531</p>	45,649	\$1.80	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
 <p>Seller WC Smith Municipal Separate Sewer System (MS4) SRCs c/o Brian E. McLaughlin, Director of Land Development bmclaughlin@wcsmith.com (703) 896-6499</p>	29,332	\$2.00	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<p>Purchase Instructions: Contact WC Smith c/o Bri bmclaughlin@wcsmith.com More information about t</p>
<p>Seller B... ..</p>	1,700	\$2.00	<input checked="" type="checkbox"/>	<input type="checkbox"/>	

* Interested buyers should contact sellers directly to negotiate trades. Prices listed on this page are identified by the SRC owner but may be negotiated. For recent trade prices, refer to [Final SRC Sale Prices](#). A template contract and other tools are available at doee.dc.gov/src.

**DOEE offers a payment to eligible sellers as an incentive for them to reduce the price they charge buyers. The reduced price is already shown on this page. Eligible SRCs are identified with a checkbox in the "DOEE payment?" column. [Learn more about how DOEE incentives lower the price you pay to purchase SRCs in large or multi-year transactions.](#)

***To maximize the environmental benefit of your SRC purchase, buy SRCs generated by a voluntary GI project that drains through the MS4 to a small stream in the Anacostia River watershed.

Value Proposition of SRCs for developers:

1. SRCs reduce capital costs (cheaper)
2. SRCs can help generate amenity revenue through design flexibility
3. Large-scale solution to meeting annual requirement
4. Reduction of compliance risk

Parking Spaces

Cost of structure + systems



Value Proposition of SRCs for landowners

1. Reduction of Stormwater Fee in water bill
2. Revenue from sales
3. Reduction of flooding from stormwater management on property
4. Heat island reduction & Aesthetics
5. At no cost



Key Learnings

1. Large “campus” properties are best (cost and impact)
2. Relationships....
Existing environmental community
3. Relationships...
Landowners
4. Relationships...
Connections to buyers
5. Work with permitting agencies throughout design
6. Be aware of overlapping polices (taxes, zoning)
7. Limit utility obstacles



What DOE is doing to stimulate the market

1. SRC aggregator grants to support supply side investigations
2. Price Lock Guarantee to buy/subsidize credits (investor confidence)
3. Allow developers in CSO to buy 100% offsite from “high impact” SRCs
4. Prioritize purchase of “high impacts” SRCs
5. Contracting marketing research firm for developers
6. Maintenance self reporting



City of Calumet City



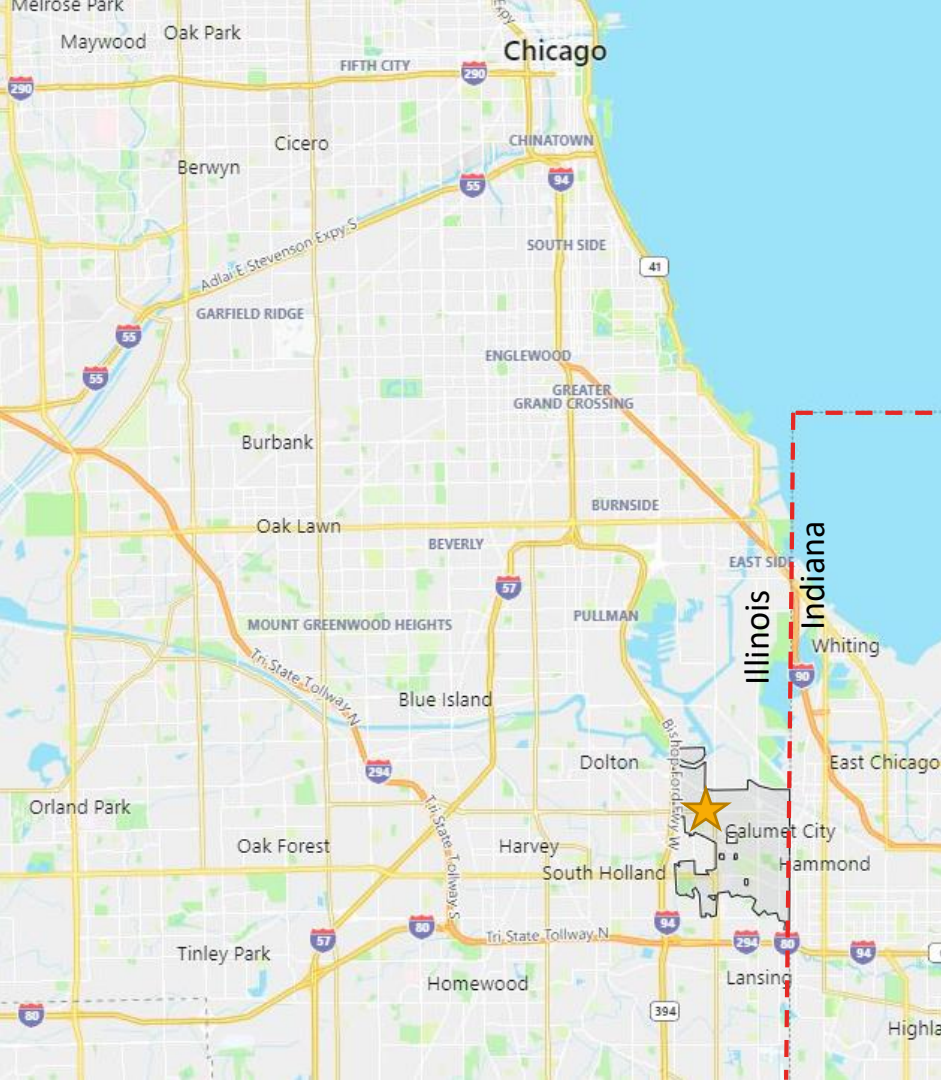
Matthew Buerger, P.E.

Senior Project Manager
Mott MacDonald



Joseph Wiszowaty

Department of Economic Development
City of Calumet City



City of Calumet City

Mayor Michelle Markiewicz Qualkinbush, a 43-year public servant, has served to establish a stable government in Calumet City

Approximately 36,000 residents, incorporated in 1893

One of the oldest and largest communities in the South Suburbs of Chicago

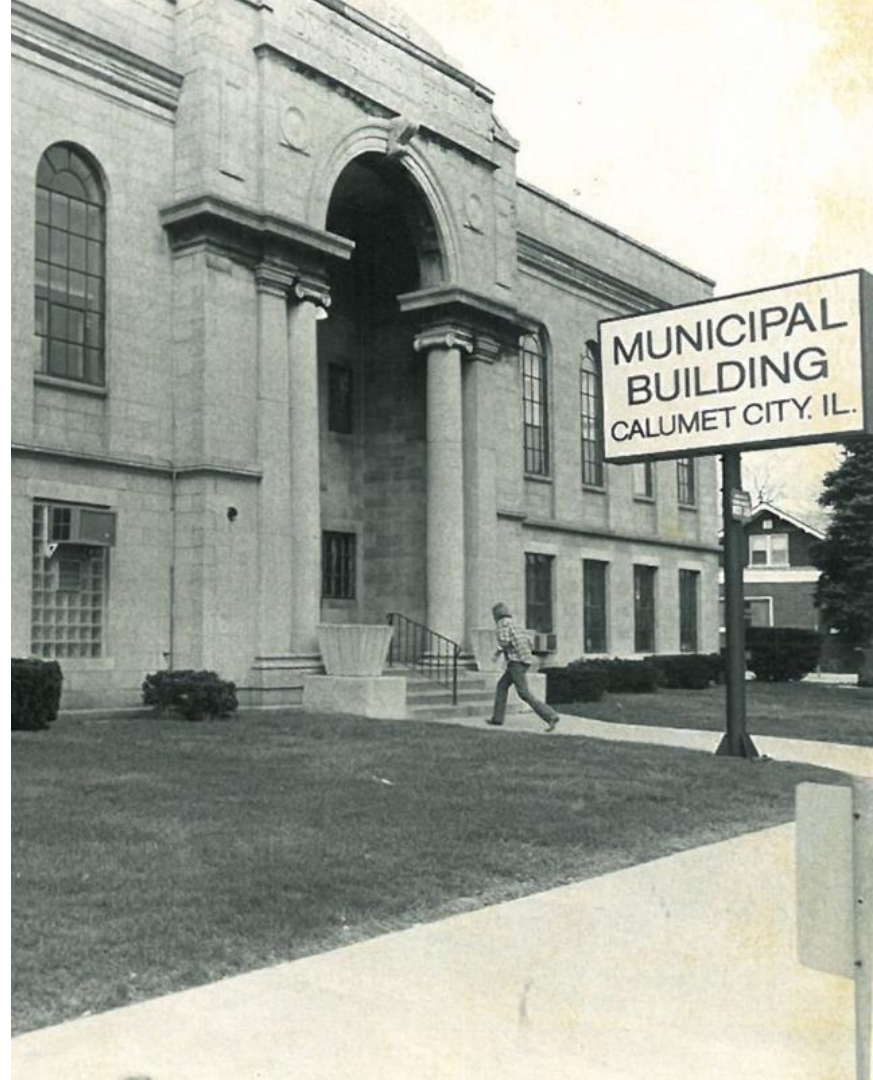
Access to major highways, airports, rail, colleges and universities, shopping malls, and hospitals



"LOVE THIS PLACE"

History of Calumet City

- Once called West Hammond until 1924 – the City borders the State of Indiana
- Originally developed as a residential-industrial suburb of the Gary-Chicago metropolitan area
- Hard hit in the '70s and '80s due to the decline of the steel mills and manufacturing auto industries; and emerged strong within the realm of economic development
- Community built pre-stormwater regulations



Calumet City's Approach

The City has achieved and continues to work toward expanding and developing commercial corridors and business and industrial districts by:

1

Welcoming

Expanding, diverse, inclusive community participation

2

Leadership

Building a strong leadership base with a team approach

3

Capacity

Strengthening individual skills, accredited college internship program

4

Vision

Encouraging a shared understanding and vision

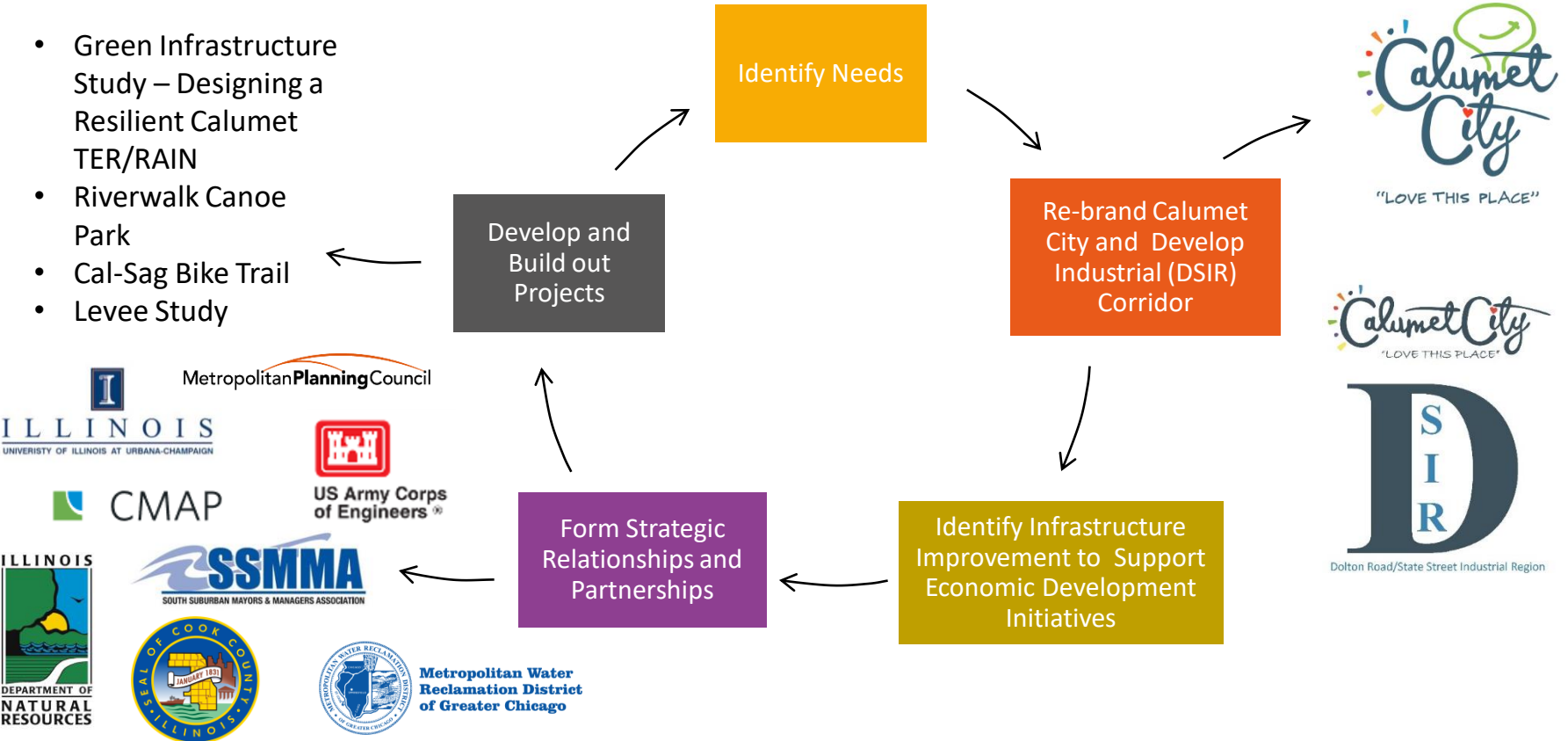
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Strategy

Ensuring a strategic community agenda through comprehensive planning and studies

Calumet City Economic Development Department

- Green Infrastructure Study – Designing a Resilient Calumet TER/RAIN
- Riverwalk Canoe Park
- Cal-Sag Bike Trail
- Levee Study





Stormwater Partnerships

“Designing a Resilient TER/RAIN”

Opportunity

Calumet City was built before stormwater detention requirements were established. Urban flooding is a problem. Historical studies identified an ancestral dune.

Solution

Embracing a partnership with the University of Illinois (U of I) and Illinois State Geological Survey (ISGS) to identify ways to recapture drainage and infiltration that has been erased with development.

Outcome

Report identified that green infrastructure is conducive to mitigate stormwater impacts.

Awards

2019 American Society of Landscape Architecture Student Award

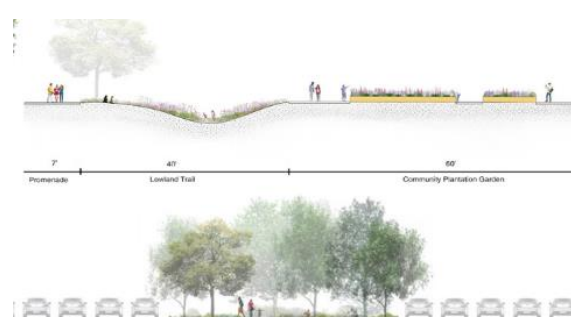
https://www.asla.org/2019studentawards/686004_Before_The_City_There_Was_The_Sand_Designing_Rainwater_In_Calumet_City_For_A_Resilient_Calumet.html

1



Identified Stormwater Needs

2



Examine Existing Facilities, Topography, and Soil Conditions



3



Identify plantings and GI that is conducive with soil conditions to complement gray infrastructure

4



Maximum storm with 100% reliable reduction

- Minimal reduction
- 2.0 inch
- 3.5 inch
- 5.0 inch

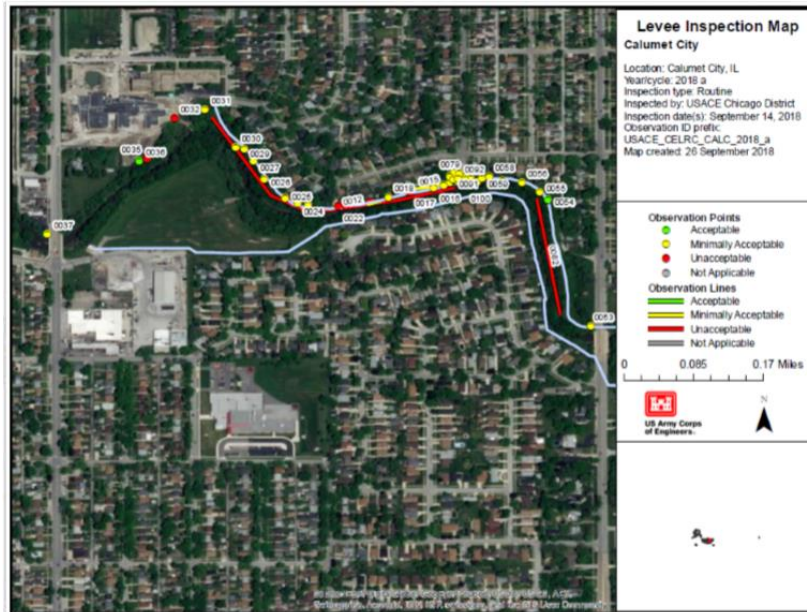
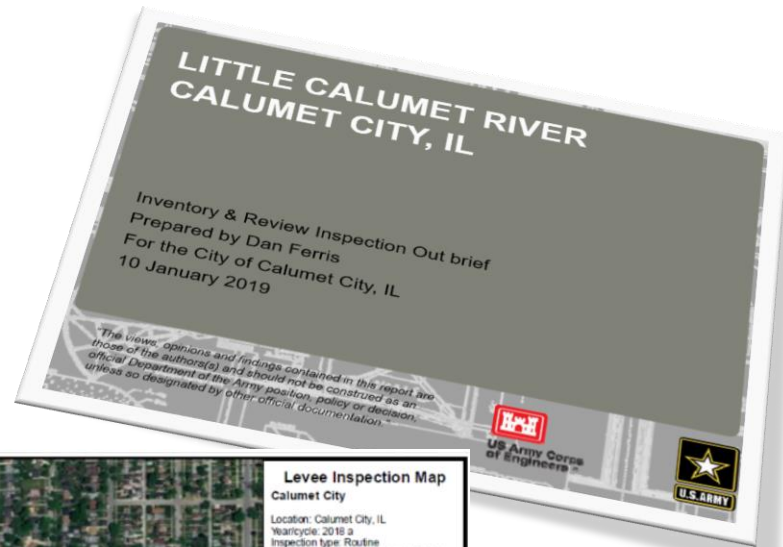
5.0 inches
80% Reduction
24-hour storm

Identified Green Infrastructure Benefits

Levee Inventory & Inspection

Identified a need that impacts residents and businesses

Partnered with United States Army Corps of Engineers to ensure City's participation in Levee Program for areas adjacent to the Little Calumet River





LEGEND:

- 1 CLEARING AND GRUBBING
- 2 WOODLAND RESTORATION AND CONTROLLED BURNING
- 3 EXISTING PARKING
- 4 MULTI-USE ASPHALT PATH
- 5 SIGNAGE (IDENTITY)
- 6 DISC (FRISBY) GOLF
- 7 SITE LIGHTING
- 8 DOG PARK (BIG DOG AREA)
- 9 DOG PARK (SMALL DOG AREA)
- 10 CANOE/KAYAK LAUNCH
- 11 FISHING PIER / WATERFRONT OVERLOOK
- 12 BENCHES/RECEPTACLES
- 13 GREEN INFRASTRUCTURE
- 14 EROSION CONTROL
- 15 PROPOSED UNDER BRIDGE CONNECTION

Calumet City Riverwalk Canoe Park (15 acres)

Use of Wetland Credits to Facilitate Development

Project

Cal Sag Bike Trail – East Leg

Project

Construction of east leg, a 4.4-mile regional bike trail connecting the I&M Trail System to the Burnham Greenway

Stormwater Elements

Wetland impacts that required the use of wetland credits to construct the project

Calumet City Partners Include

SSMMA, Cook County, Village of Burnham, Dolton Park District, IDOT, Village of Dolton





The Nature
Conservancy



Metropolitan Planning Council

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