STORMSTORE
COOK COUNTY’S NEW STORMWATER CREDIT TRADING MARKET
JULY 9 2020
10 AM CDT

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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**

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**CNT, The Prevalence and Cost of Urban Funding in Cook County, IL (2014)
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

MWRD begins establishing Watershed Management Ordinance (WMO) 2007
Washington, DC starts Stormwater Retention Credit trading program 2013
TNC + MPC establish StormStore partnership 2014
Supply + Demand Analysis 2017
MWRD approves 5-year pilot study 2019
MWRD approves update to WMO 2020
StormStore partners supporting market establishment TODAY

2012
- Stormwater Credit Trading concept paper submitted for funding

2014
- WMO goes into effect on May 1
- DC confirms first SRC trade!

2019
- MWRD approves updated Rainfall + Release Rates
- TNC completes Mount Olivet Cemetery in DC

2020
- First Supply Credit Listed for Compliance

Pilot through January 1 2025
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
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

- Demand-Side Activities (developers submitting offers/requests):
  1. Determine location and determine requirements for development site.
  2. Determine site conditions, market feasibility, and environmental impacts.
  3. Obtain approvals for a specified portion of a project.
  4. Establish and administer the project.
  5. Incorporate project-specific project agreements.
  6. Maintain compliance through continued credit assessments or ongoing maintenance agreements.

- Supply-Side Activities (credit generators):
  1. Ensure compliance is established.
  2. Ensure the market is viable.
  3. Conduct due diligence.
  4. Develop credit tracking mechanisms.

Market Administration Needs:
- Provide financial and credit market information.
- Implement ongoing projects and maintenance agreements.
- Implement a credit-tracking mechanism.

Additional general administrative activities:
- Monitor market outcomes and adjust market parameters.
- Conduct market research.
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
rwilson@metroplanning.org
(312) 863-6018
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

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

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

Space to Grow Playground Retrofits (Chicago, IL)
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!

Greenprint Priority Areas for Project Development

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

Lower Des Plaines River Watershed Planning Area
- Des Plaines
- Rosemont
- Norridge
- Elmwood Park
- River Grove
- Franklin Park
- Melrose Park
- Maywood
- Bellwood
- Broadview
- Oak Park
- Cicero
- Berwyn
- Lyons
- Summit
- Stickney

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.

- **Washington State**: Developing scientific basis for stormwater retrofit intervention.
- **Chicago and Cook County**: Supporting creation of stormwater credit market including pilot trades.
- **Detroit**: Launching first Watershed Improvement District.
- **Philadelphia**: Delivering projects through Greened Acre Retrofit Program.
- **Maryland**: Generating water quality credits under Maryland Nutrient Credit Trading Program.
- **Washington DC**: Implementing GSI projects to bring credits to market.
- **L.A. County**: Developing recommendations for stormwater incentive programs and launching pilot projects.
- **Gulf Coast States**: Developing stormwater investment blueprints to leverage Deepwater Horizon spill funds.
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.

Kahlil Kettering, The Nature Conservancy, MD/DC Chapter
BUILDING STORMWATER RETENTION CREDITS IN DC
REGULATOR (DOEE)

Sale of SRCs

Certificate of Occupancy

Offsite Stormwater Retention Credits (SRCs)

Permitting and Certification of SRCs
<table>
<thead>
<tr>
<th>SRC Information</th>
<th>Number of SRCs for sale</th>
<th>Buyer's price</th>
<th>High-Impact</th>
<th>DOEE Payment?</th>
<th>Additional information</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Seller</strong></td>
<td><strong>District Stormwater, LLC</strong>&lt;br&gt;<a href="mailto:kahill.kettler@tnm.com">kahill.kettler@tnm.com</a>&lt;br&gt;(301) 905-2931</td>
<td>45,649</td>
<td>$1.80</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td><strong>Seller</strong></td>
<td><strong>WC Smith Municipal Separate Sewer System (MS4)</strong>&lt;br&gt;SRCs c/o Brian E. McLaughlin, Director of Land&lt;br&gt;<a href="mailto:bmlaughlin@wcsmith.com">bmlaughlin@wcsmith.com</a>&lt;br&gt;(703) 896-6499</td>
<td>29,332</td>
<td>$2.00</td>
<td>✔</td>
<td><a href="mailto:bmlaughlin@wcsmith.com">More information about this seller</a></td>
</tr>
<tr>
<td><strong>Seller</strong></td>
<td><strong>RainDrain Systems</strong>&lt;br&gt;<a href="mailto:basil@rainsystems.com">basil@rainsystems.com</a>&lt;br&gt;(800) 786-3469</td>
<td>4,286</td>
<td>$1.95</td>
<td>✔</td>
<td>✔</td>
</tr>
</tbody>
</table>

*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](mailto:Final SRC Sale Prices). A template contract and other tools are available at [TNM SCC portal](mailto:TNM SCC portal).

**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

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 DOEE 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
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.
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

5. **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

Identify Needs

Develop and Build out Projects

Re-brand Calumet City and Develop Industrial (DSIR) Corridor

Form Strategic Relationships and Partnerships

Identify Infrastructure Improvement to Support Economic Development Initiatives
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. Identified Green Infrastructure Benefits

Information provided by University of Illinois and Illinois State Geological Survey
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
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