

DISCUSSION ON BROWNFIELDS: DEMYSTIFYING REMEDIATION AND EXPLORING OPPORTUNITIES

Presented by:



RAMBOLL



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**Redevelopment Authority
of City of Milwaukee**



Sarah Bregant
**Northwest Side Community
Development Corporation**

SPEAKERS

FULL PROGRAM



WIFI

NETWORK:
**Saint Kate
Conference**

PASSWORD:
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SOCIAL MEDIA



#FutureofFreshWater
#GLSLStrong
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An aerial photograph of a city park. In the foreground, a large, dense forest of green trees surrounds a calm lake. Several small boats are visible on the water. To the right, a multi-story apartment building with a light-colored facade and many windows is nestled among the trees. In the background, a city skyline with various skyscrapers and buildings is visible under a blue sky with scattered white clouds.

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Bright ideas.
Sustainable change.

Ramboll in the Americas



Ramboll in brief

- Independent architecture, engineering, and consultancy company
- Founded 1945 in Denmark
- 18,500 experts
- Present in 35 countries
- Particularly strong presence in the Nordics, the UK, North America, Continental Europe, and Asia Pacific
- Creating sustainable solutions across Buildings, Transport, Energy, Environment & Health, Water, Management Consulting, and Architecture & Landscape.
- EUR 2.2 billion revenue
- Owned by Rambøll Fonden – The Ramboll Foundation

Select Multi-Sector Expertise

Water

- Climate resiliency and flood management
- Water and wastewater infrastructure
- Water and wastewater treatment
- Early strategic consultancy
- Water resources management
- Urban planning and design



Environment and Health

- Air & climate
- Biodiversity & ecosystems
- Circular economy & resource management
- Contaminated site & facility solutions
- EHS compliance assurance & performance
- Environmental due diligence
- Health sciences
- Impact assessment
- Technical sustainability services



Transportation

- Bridges, Tunnels & Major Crossings
- Smart Mobility
- Rail Systems
- Aviation
- Roads and Highways
- Ports, Marine and Waterways



Ramboll in the Great Lakes Region

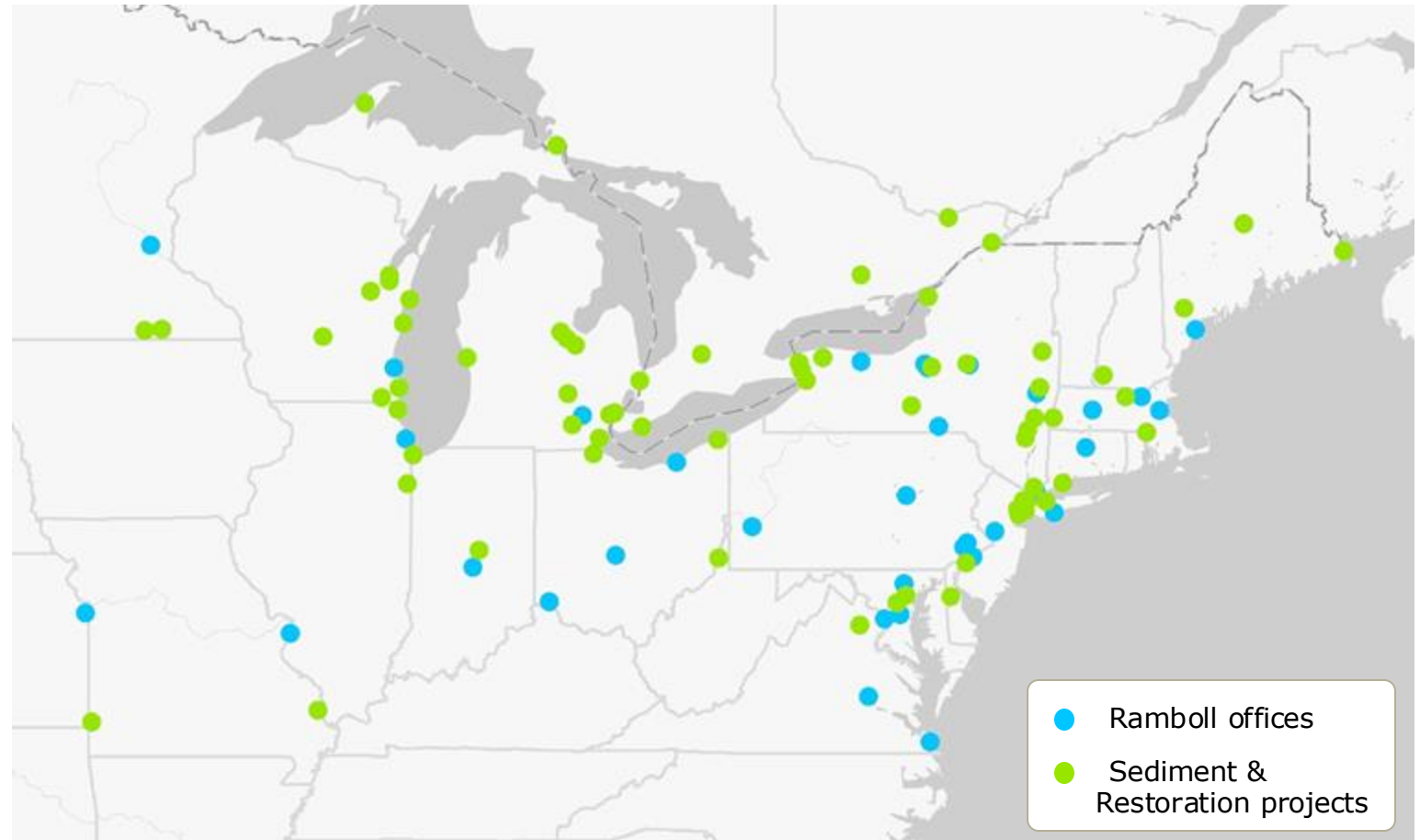
More than 500 employees in the Great Lakes region across various disciplines able to support a myriad of projects

Sediment Experience

- Substantial Great Lakes Experience centered in Ann Arbor, Cleveland, Chicago, Milwaukee, Minneapolis, Rochester and Syracuse
- Sediment remedy design and remedy implementation (EPC)
- Extensive Great Lakes Legacy Act (GLLA) experience with GLNPO
 - **Scott Cieniawski: "Ramboll understands our program and we trust Ramboll's work"**

Ramboll's Experience in the Great Lakes Region

- | | | | |
|-------------------------------|---|------------------------------|-------------------------------|
| 1. Ashtabula River | 6. Lower Rouge River Old Channel (LRROC) | 13. Ottawa River | 20. Sheboygan River |
| 2. Buffalo River | 7. Milwaukee Estuary | 14. Otter Creek | 21. St. Clair River |
| 3. Detroit River | 8. Monguagon Creek - UTC | 15. Peninsula Harbour | 22. St. Lawrence River |
| 4. Grand Calumet River | 10. Munger Landing, Duluth | 16. South Plant MGP | 23. St. Mary's River |
| 5. Kalamazoo River | 11. Muskegon Lake | 17. River Raisin | 24. Thompson Reservoir |
| 6. Lower Fox River | 12. Niagara River | 18. Rochester Embayment | 25. Tittabawassee River |
| | | 19. Saginaw River / Bay | 26. Torch Lake |



Bold text indicates GLNPO GLLA project, or Canadian equivalent

Investigation, Remediation and Redevelopment of Former Coke Plant



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Amy Dzialowski

Geosyntec



Brownfields are...

Real property, the expansion, redevelopment, or reuse of which may be complicated by the presence or *potential* presence of a hazardous substance, pollutant, or contaminant.



Examples of Brownfields Properties

- Former service stations
- Oil and gas sites
- Salvage yards
- Illicit dump sites
- Landfills
- Industrial sites
- Rail yards
- Abandoned/ Occupied buildings
- Commercial Sites (drycleaners, printers, auto salvage, etc.)



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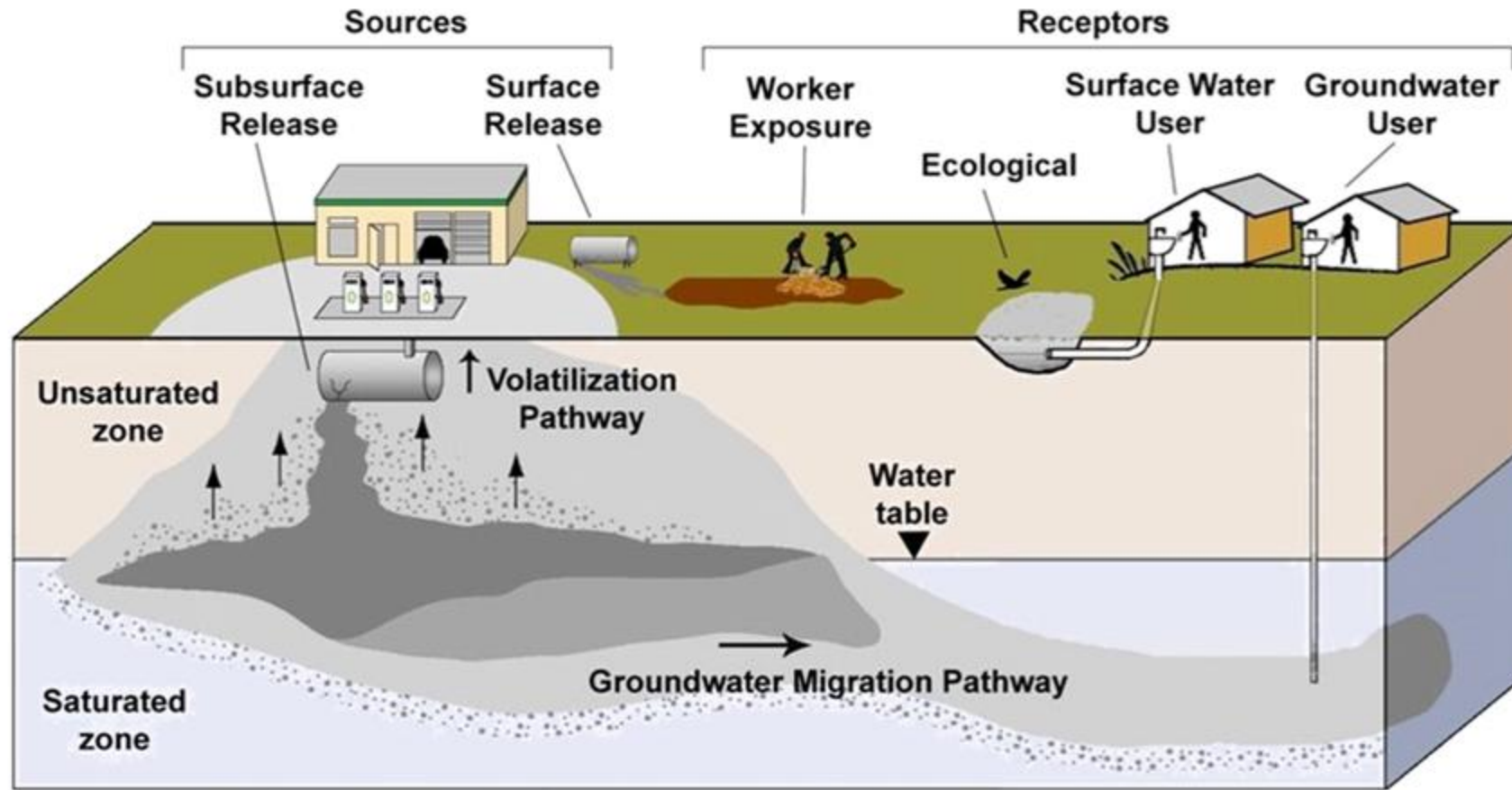


Traditional Brownfields Tasks

- Phase I Environmental Site Assessment
- Phase II Environmental Site Assessment
- Hazardous Building Materials Survey
- Remediation/Mitigation Planning and Cost Estimates
- Community Engagement and Outreach



Environmental Assessment



Brownfields are also...

Redevelopment opportunities that result in viable public and private development projects and provide environmental protection while reducing urban sprawl and greenspace development and solving some of our most complex community challenges.



What Drives Brownfields Redevelopment?

Redevelopment Scenario	Implication
Market value exceeds cleanup costs	Private sector completes cleanup and redevelopment
Value close to covering development & cleanup costs	Targeted public investment can make project feasible
Environmental liability far exceeds property value	Requires significant public investment or market change

Brownfields through a Wider Lens

As brownfields advocates, we have focused on protecting public health and the environment as we cleanup properties and strengthen local economies. Increasingly, we turn our attention to creating healthier, affordable, equitable and more livable communities.

- Revitalize the community
- Reduce urban sprawl
- Promote green and sustainable resources and construction



- Design redevelopment options with a public-safety focus
- Merge redevelopment with innovative cleanup approaches
- Engage community stakeholders with solutions

- Improve infrastructure
- Create new business opportunities
- Generate increased revenue for cities

Strengthening our Communities through Brownfields Redevelopment



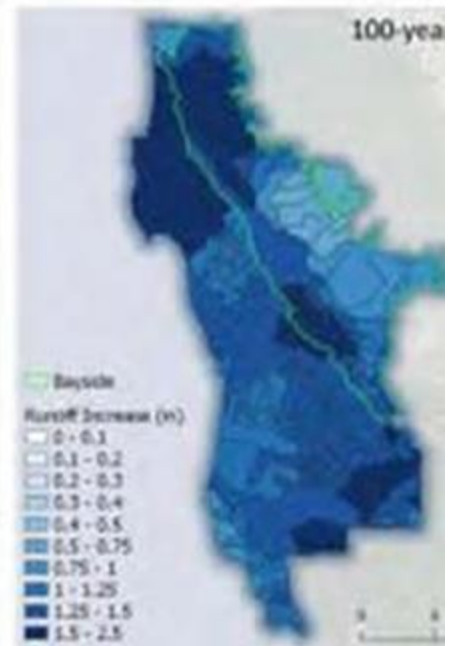
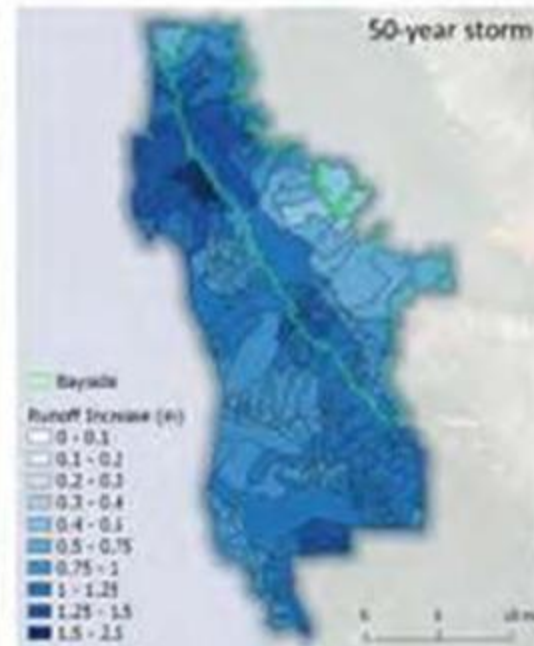
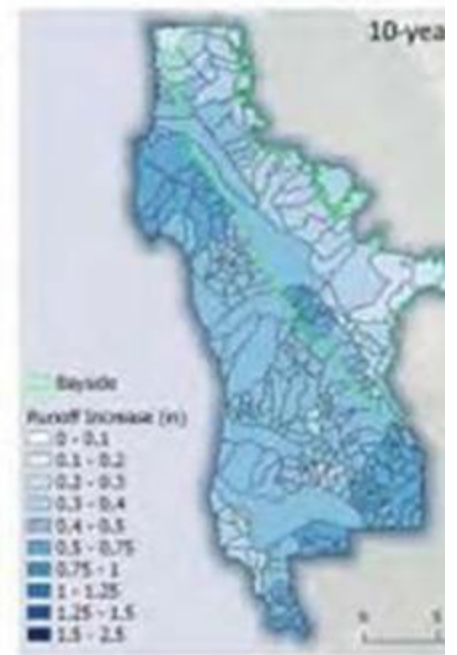
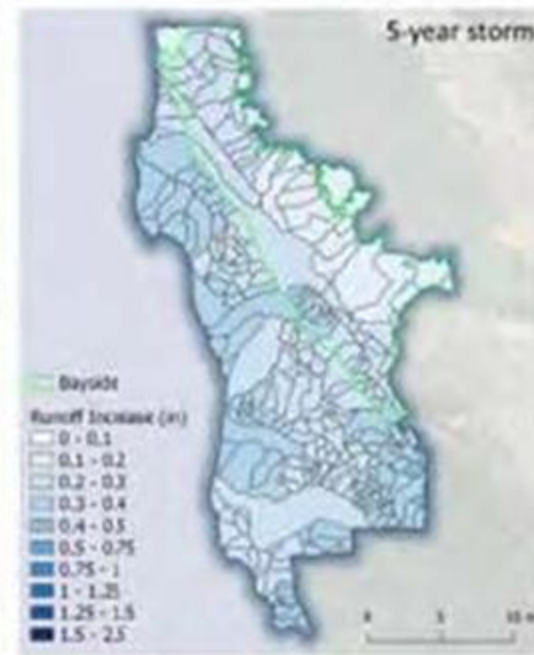
Systemic Change through Brownfields Redevelopment

Future brownfields opportunities in our communities will focus on ways community engagement, assessment, and the brownfields process can improve sustainability, renewable energy, health, environmental justice, preparedness and resilience.



Planning for Resilience and Brownfields

- Brownfields Area-Wide Planning
- Climate-Smart Brownfields Planning
- Equitable Development Activities
- Economic Impact Analysis
- Infrastructure Evaluation
- Market Impact Studies
- Site Reuse Evaluations and Visioning



Case Study: Scissortail Park

- Planned 70-acre Urban Park connecting the urban core of the community to the adjacent river.
- Construction of the project funded by a municipal, penny sales tax for capital improvement projects that create a better quality of life for city residents (\$132M).



Environmental Assessment

- USEPA Brownfields Program funded Phase I ESA's as properties were acquired. \$350,000 site-specific brownfields assessment grant funded additional Phase I ESA's and comprehensive Phase II ESA.
- The assessment identified numerous recognized environmental conditions.
- As an acquisition strategy, the City did not negotiate property values based on potential environmental concerns.

Systemic Strategies

- Community engagement, design, and funding discussions were concurrent with environmental assessment. Communication was key.
- Applied for funding at every opportunity, emphasizing brownfields to greenfield and restored natural functions! Received \$600,000 brownfields cleanup grants.
- Innovative mitigation measures. Cleanup dollars helped to pay for a liner in the water feature.

"It's an aspirational park, in that it's the kind of amenity that people used to imagine only existing in other places," ~ OKC Mayor, David Holt





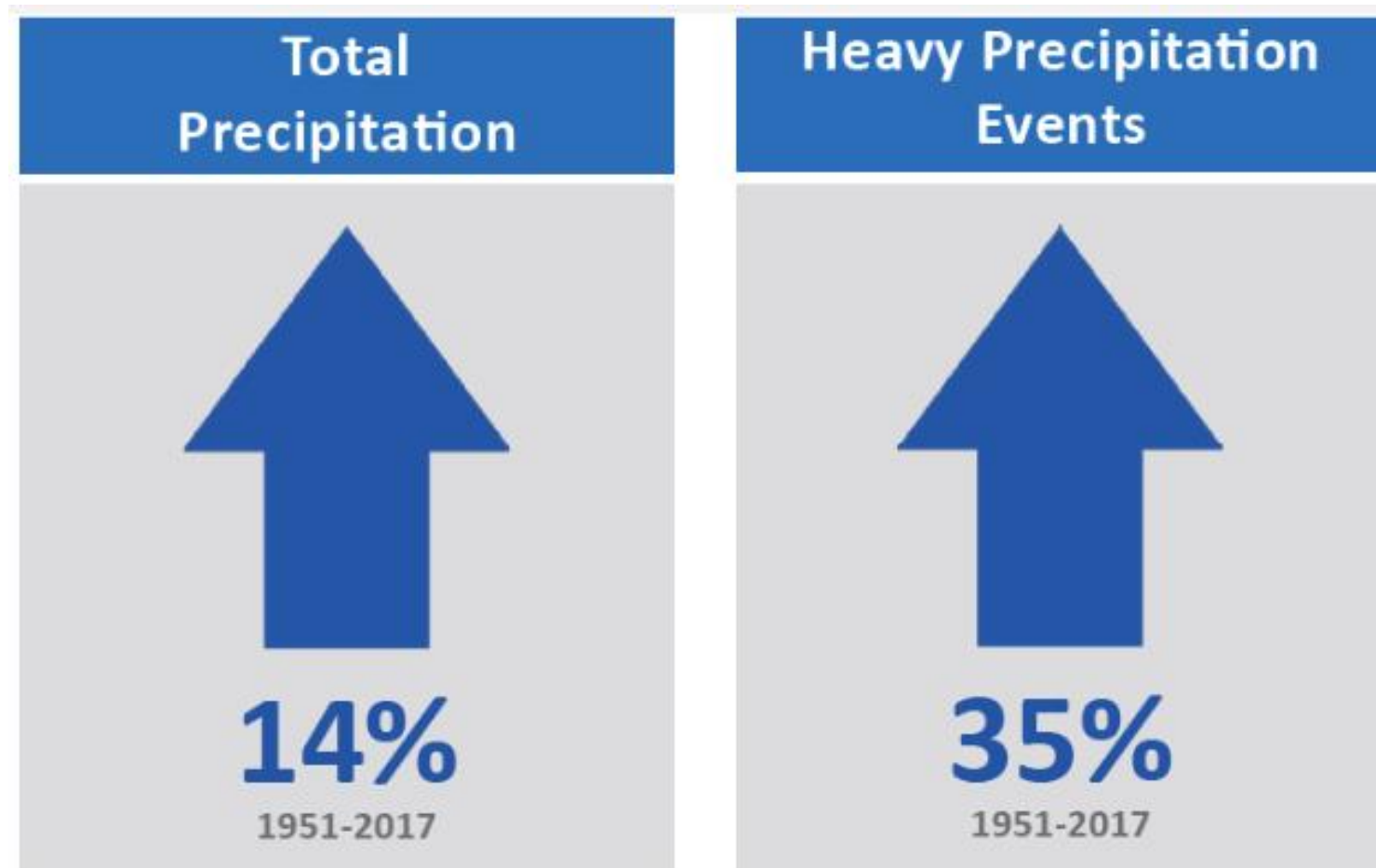
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Evan Kanji

Geosyntec



Precipitation and Climate Change in the Great Lakes Basin



Source: GLISA

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Disinvestment and Flood Risk

- Case Study: Detroit
 - Experienced two 500 year floods in the span of seven years, along with three other major flooding events



Image Credit: Grist

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The Legacies of Disinvestment on Flood Risk

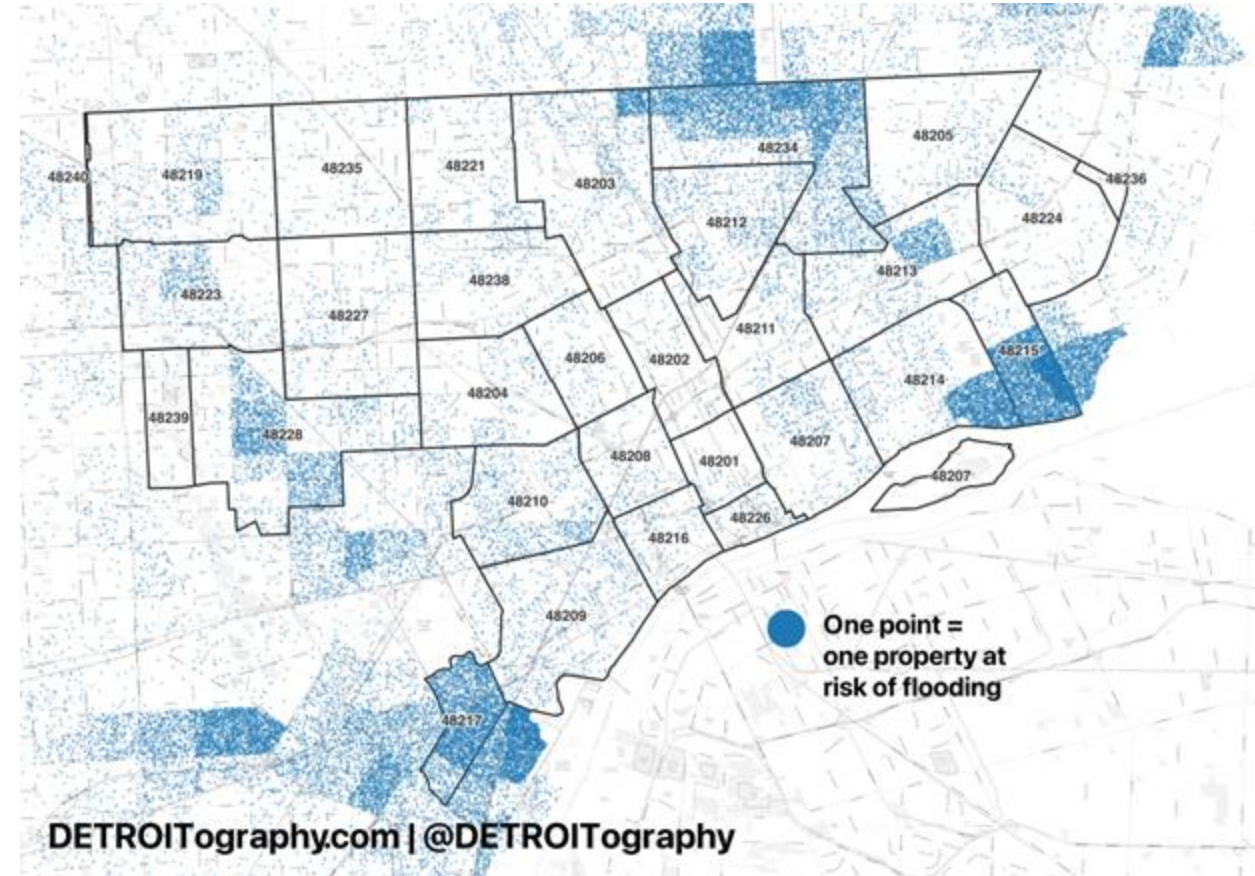
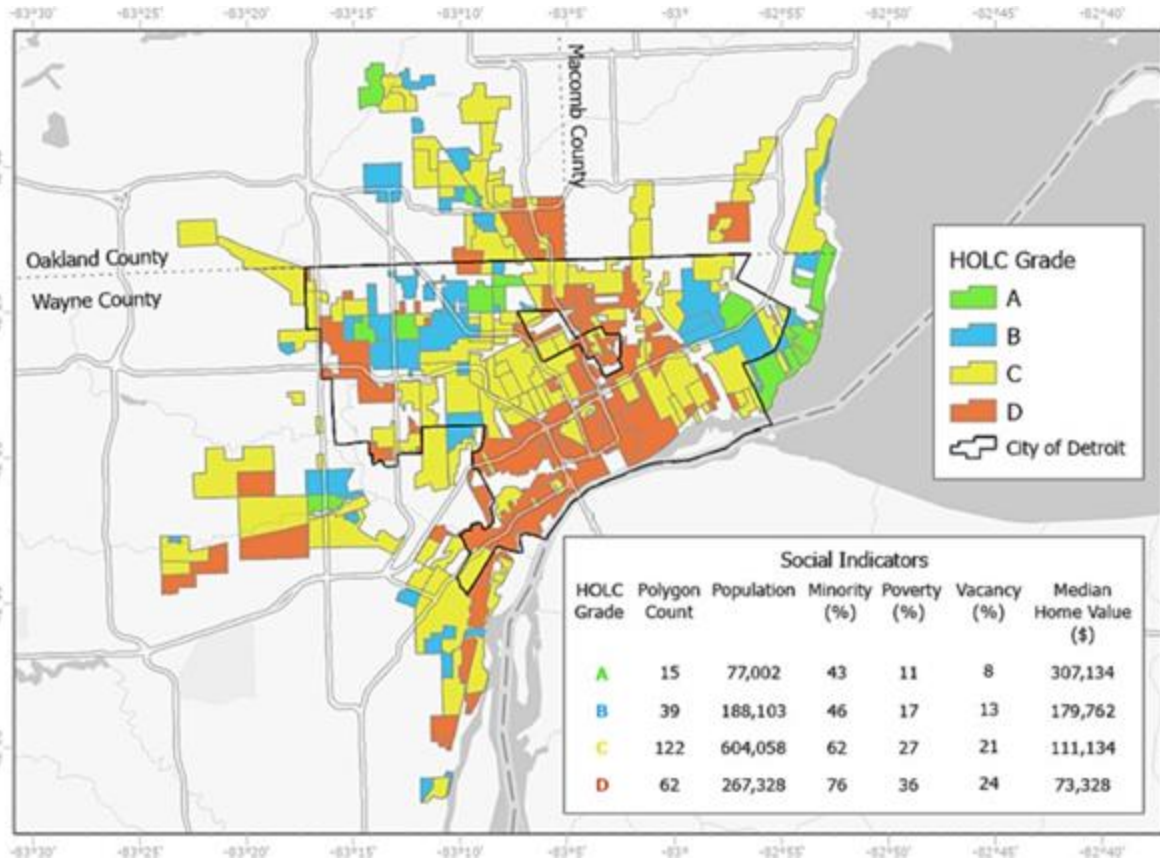


Image Credits: Napieralski et al, Detroitography (with data from First Street Foundation flood model)

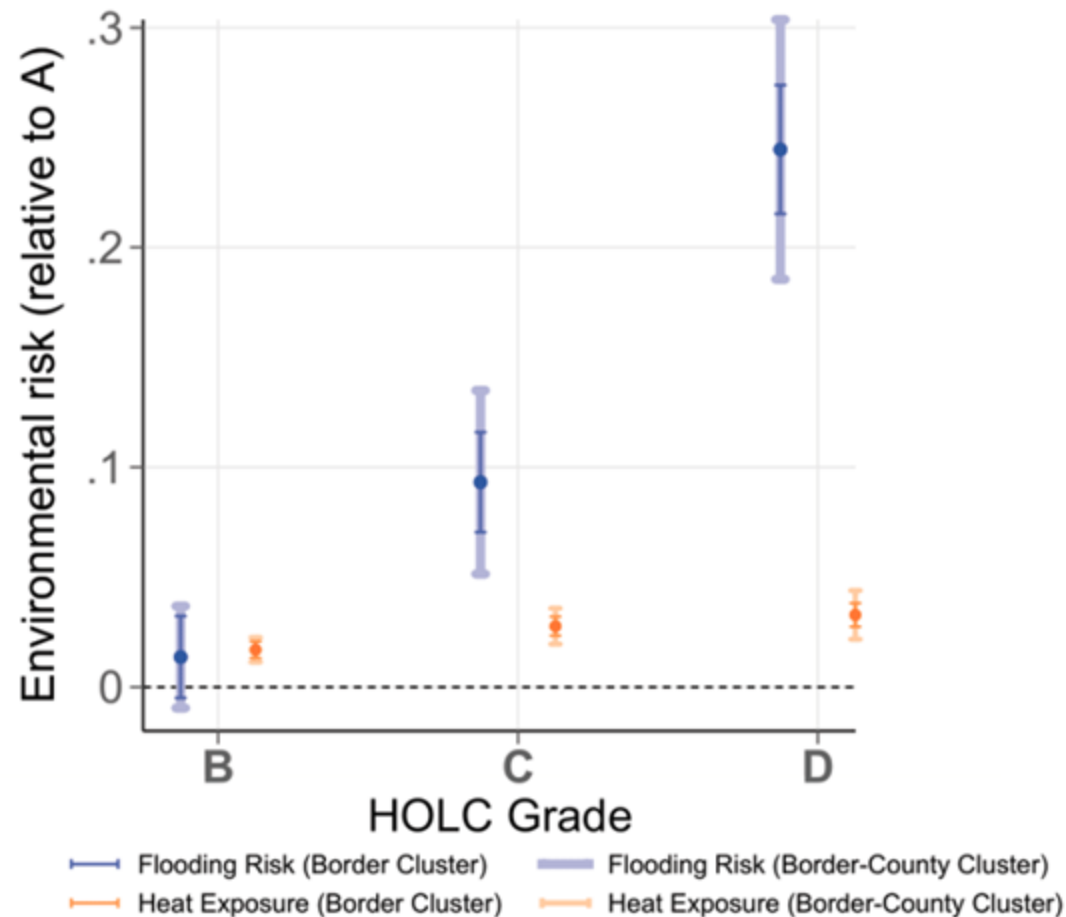
The Legacies of Disinvestment on Flood Risk

Detroit: (From Napieralski et al)

HOLC Grade	Average Land Surface Temp. Difference	Tree Canopy (%) ¹	Impervious Surface (%) ¹	Percent Greenness (NDVI≥0.30) ²	Current Stream Density (km/km ²) ³	Current Wetland Density (m ² /km ²) ⁴	Historic Stream Density (km/km ²) ⁵	Historic Wetland Density (m ² /km ²) ⁵
A	-1.4	25.4	43.8	34.7	0.43	0	0.83	5060
B	-0.5	17.0	53.0	26.3	0.32	1834	0.85	5063
C	+0.08	12.4	58.2	22.4	0.46	1323	0.60	6164
D	+0.52	8.5	61.1	17.5	0.29	1796	0.40	11,849

The Legacies of Disinvestment on Flood Risk

Nationally: (Salazar-Miranda et al)



Flood Infrastructure Disinvestment

“The communities that have wealth can afford insurance, they can afford rain gardens, they can manage coastlines...redlined neighborhoods are struck with the legacy of 70 to 80 years ago and the continued impacts on the quality of life.” - Napieralski

**Federal funding has decreased from
funding 63% of water infrastructure in
1977 to 9% in 2017.**

The Disproportionate Burden of Brownfields

TABLE 1: Proportions of Key Demographics in the Total Near Site Population and the Total U.S. Population				
	Population within 0.5mile of All Sites	Population within 1 mile of All Sites	Population within 3 miles of All Sites	U.S. Population
Minority	55.2%	53.6%	47.8%	39.6%
Below poverty level	22.1%	20.1%	16.3%	13.7%
Linguistically isolated	7.4%	7.2%	6.5%	5.1%
Less than a High School Education	17.8%	16.8%	14.2%	12.5%

(US EPA, 2020)

Black people make up **double the population** in neighborhoods within 0.5 mile of a brownfield compared to their percentage of the US as a whole. The siting of brownfields **often mirrors longer-standing racial segregation patterns**, due to the legacies of **industrial zoning as a segregation tool, redlining, devalued land, and neighborhood-level disinvestment**.

Waterfront Brownfields and Shoreline Naturalization

Case Study: West Don Lands, Toronto

- Former industrial lands at the mouth of the Don River along Lake Ontario.
- Redeveloped into parks, housing, and flood resilient infrastructure along the Don River
- Working on naturalization of the river mouth - at present, floodwaters from the Don would overwhelm much of the area surrounding the rivermouth during a major storm
- Geosyntec role: lead design role for long-term environmental risk management measure (cutoff walls along the river channel and multi-composite riverbed barrier)

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Image Credits: Spacing.ca

From Brownfield to Flood-Resilient Rivermouth



Image Credit: Waterfront Toronto

Waterfront Brownfield Inundation



Source: Environmental Law and Policy Center

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Image Credit: American Planning Association

Who are we redeveloping for?

Residential Mobility, Brownfield Remediation and Environmental Gentrification in Chicago

Richard T. Melstrom and Rose Mohammadi

Published online before print October 20, 2021, 060520-0077R1; DOI: <https://doi.org/10.3368/le.98.1.060520-0077R1>

“When pollution is located in minority and low-income communities where cleanup has the potential to reduce injustice, post-cleanup move-in by higher-income white residents will push poor, predominantly minority residents away, maintaining disparities in pollution exposure.”

Defining Green Gentrification - Framing the Issue

Three dimensions of gentrification:

- Physical displacement of lower-income residents
- Displacement of existing cultures and institutions that support them
- Physical transformation of neighborhood spaces

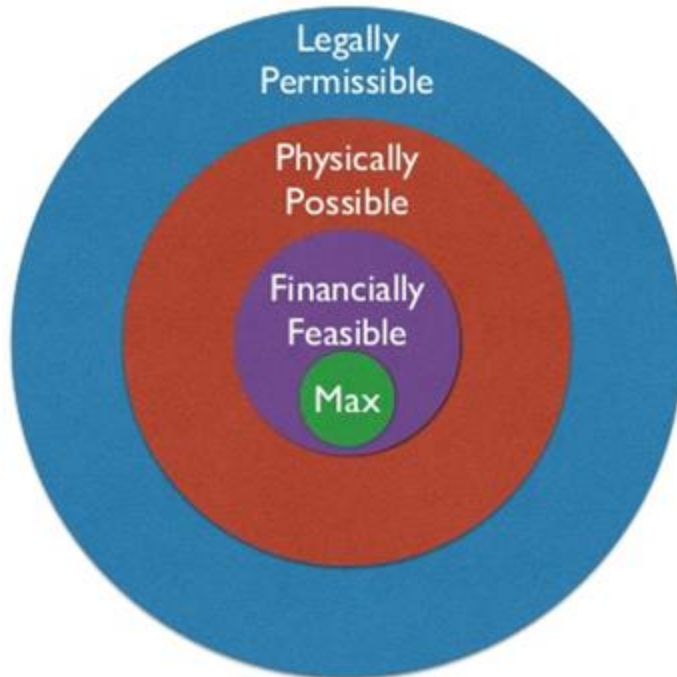
(adapted from The Uproot Project at the University of Texas)

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The Present Paradigm - Economics First

Highest and Best Use



Credit: Bruce Firestone

- EPA Brownfields Grants and State equivalents typically only cover the assessment and remediation part of redevelopment - significantly easier for bigger developers whose main motive is profit to get them.
- Communities are rarely engaged with deeply until grant funding is obtained, at which point projects are mostly planned already.

**How can we better
prioritize the needs of
the community and
the ecosystem in
brownfields work?**

Participatory Planning: A Deeper Form of Engagement

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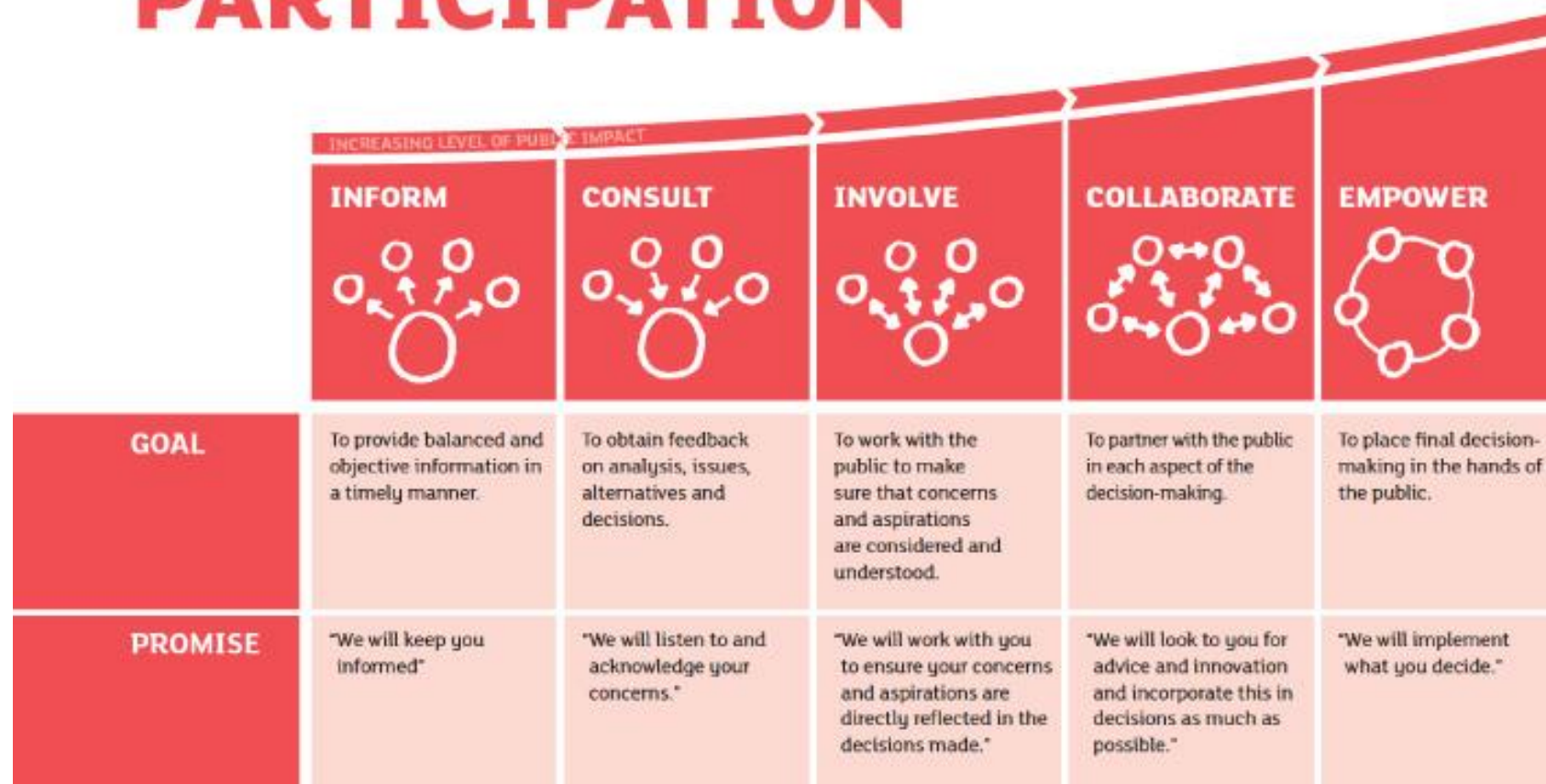
Guiding Principle:

**Engagement
without power-
sharing is just
checking a box.**

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IAP2 SPECTRUM OF PUBLIC PARTICIPATION





Source: Northwest Side Community Development Corporation

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Planning for Real 136 by Katy Wrathall via flickr, CC BY-NC-ND 2.0



Village in Malawi by SuSanA Secretariat / Katherine Anderson via flickr, CC BY-NC-SA 2.0

Participatory Planning Best Practices:

- Show up early and often!
- Meet people where they already are:
 - Show up to existing events, collaborate with existing institutions
 - Plan dedicated events to be easily accessible and meeting residents basic needs
- Plan for diverse languages and cultures:
 - Arrange translation beforehand
 - Be considerate of different cultural needs and norms
- Define your process before, and be transparent about your limitations
 - Transparency about level of power-sharing and involvement
- Make it fun!
 - Favorite examples: community barbecues, participatory bike rides - effective participation doesn't have to be formal

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Tory Kress Redevelopment Authority of the City of Milwaukee





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Sarah Bregant Northwest Side Community Development Corporation



Green Tech Station: A Brownfields Opportunity Fulfilled

The Future of Fresh Water:
Great Lakes and St. Lawrence Cities Initiative
2025 Annual Conference

Milwaukee, WI
May 15, 2025
Tory Kress & Sarah Bregant



Agenda

- **Background**
 - Milwaukee's Brownfield Program
 - 30th Street Industrial Corridor
- **Development of Green Tech Station**
 - Site History & timeline
 - The Project & Partners
- **Green Tech Station Features**
 - Youth Field Trips
 - Research & Training
 - Community Involvement & Events
 - Public Art
- **Process & Logistics**
- **Lessons Learned & Takeaways**



Milwaukee's Brownfield Program

- **Redevelopment Authority of the City of Milwaukee (RACM) was created in 1958 by State Statute. Its mission:**
 - Eliminate blighting and slum conditions that inhibit neighborhood reinvestment;
 - Foster and promote business expansion and job creation; and
 - Facilitate new business and housing development.
- **104 East Nash Street - “the original brownfield”**
 - Prior to 1988, City foreclosed on any and all tax delinquent properties
 - Once foreclosure occurs, City has to manage properties – public safety
 - Protect the City from unknowingly acquiring environmental liability
 - In-rem screenings



Milwaukee's Brownfield Program

GOALS

- Protect public health, safety and the environment
- Eliminate blight
- Utilize existing infrastructure
- Facilitate redevelopment projects – residential, commercial, industrial
- Increase tax revenue
- Create jobs

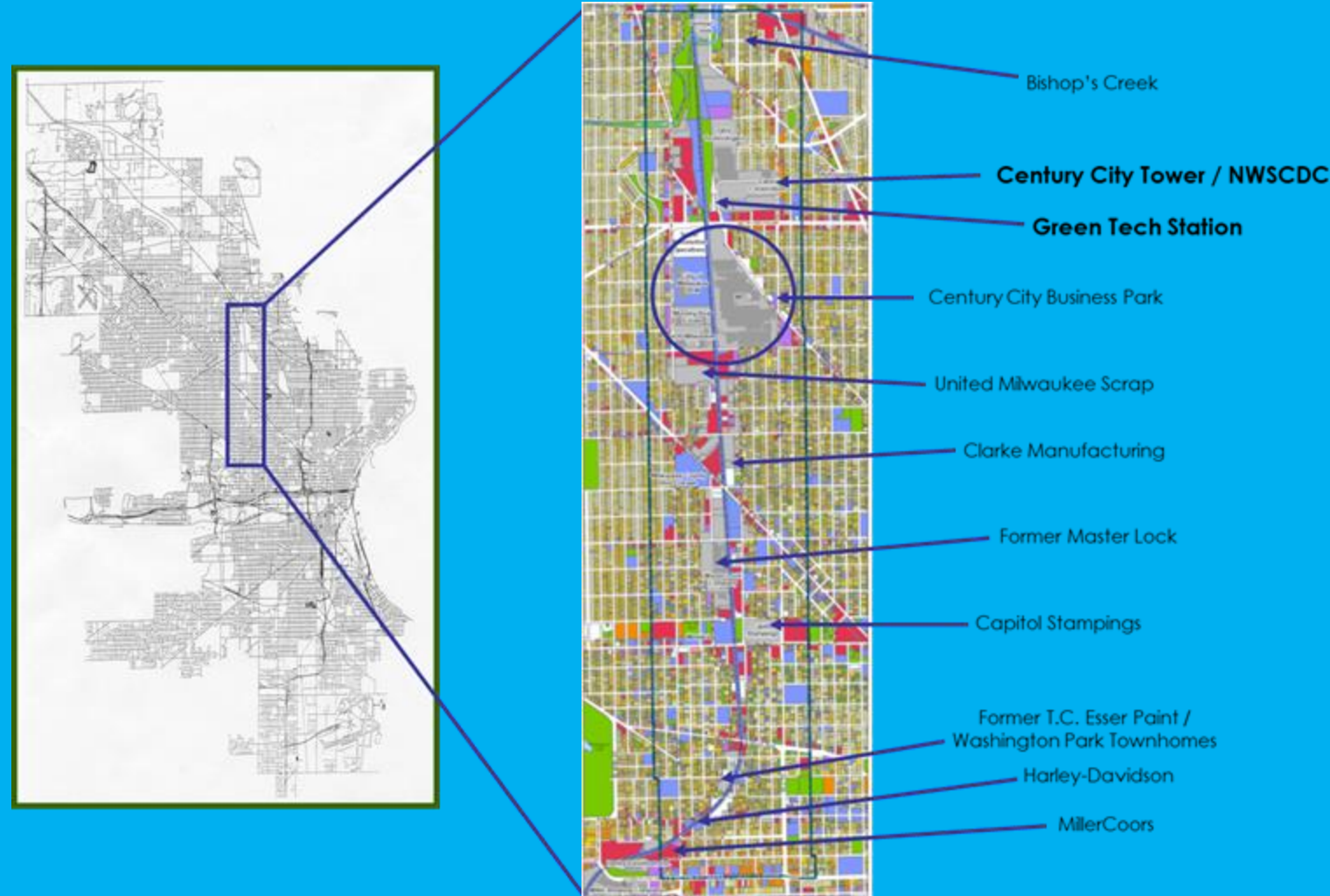
ROLES

- Assist with real estate transactions (acquisitions, sales, foreclosures)
- Manage environmental investigation and cleanup of sites
- Coordinate with developers through redevelopment process
- Community outreach
- Grant management
- Catalytic and special projects

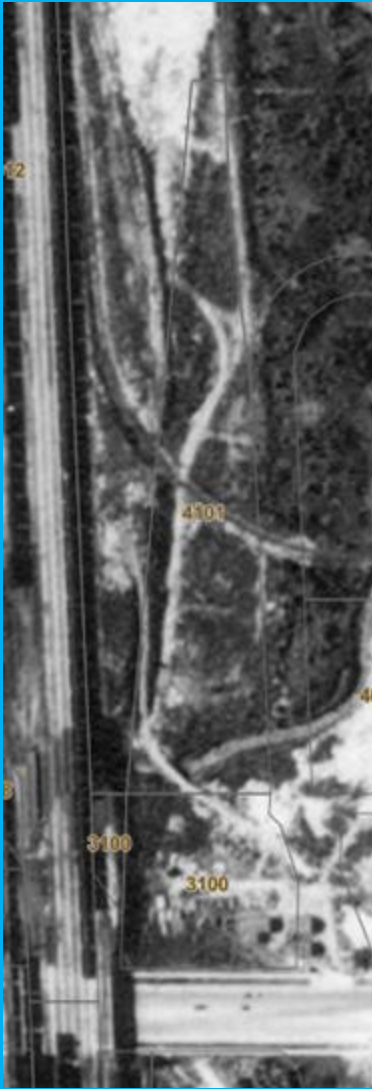
30th Street Industrial Corridor

Long Term Reinvention Strategy

- Business Retention & Attraction
- Neighborhood Stabilization
- Workforce Development
- Brownfield Initiative
- Sustainability
 - Residential/Business BMPs
 - Infrastructure
 - Stormwater
- Urban Agriculture
- Catalytic Projects



Site History



1937



1951



1970




1990

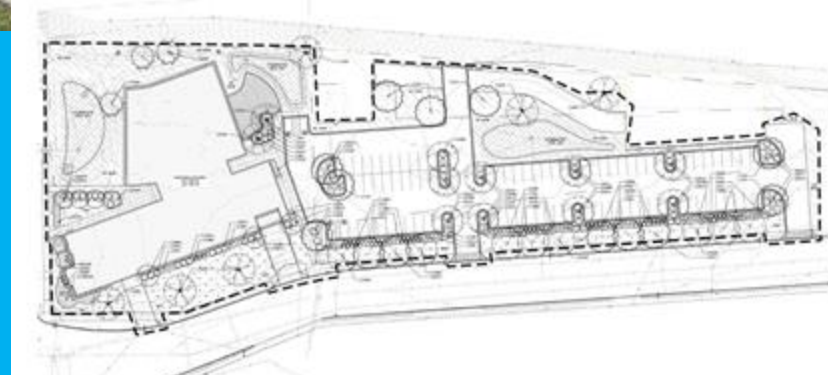


2015

Source: Milwaukee County Land Information
Office

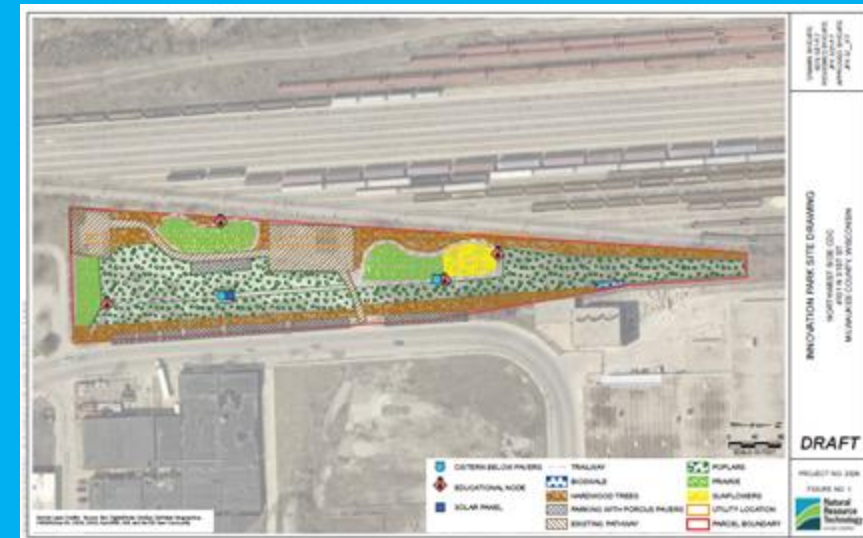
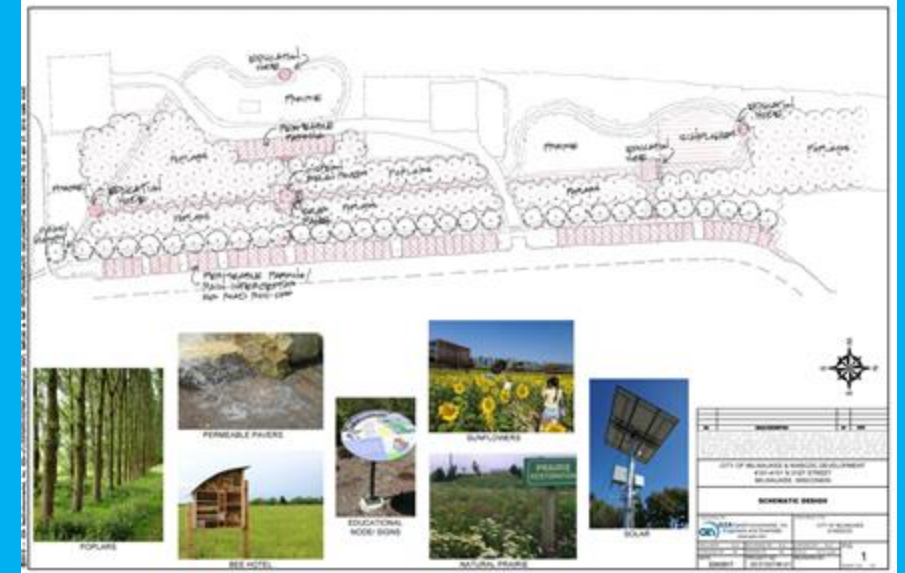
Pre-Development Timeline

- 
- 2007
 - March
 - Receive Special Inspection Warrant
 - Receive WDNR and EPA Eligibility Approval
 - April - Initiated Site Investigation
 - August - Foreclosed on Property
 - 2010
 - EPA Stormwater Management Feasibility Study
 - 2013
 - Gorman NOVA Tech Proposal
 - 2014
 - Re.Invest I-Park Study Completed
 - Ownership Transfers to RACM
 - 2015
 - EPA Brownfield Grant Awarded
 - 2016
 - Project Partners Assembled & Visioning Begins



The Project & The Partners

- Transforming a brownfield into a green infrastructure demonstration & education center
- Partners:
 - NWSCDC
 - City of Milwaukee/RACM
 - Reflo
 - GZA/Ramboll
 - Clean Wisconsin
 - Triangle Neighborhood Association
- Funding from:
 - EPA
 - US Forest Service/ GLRI
 - MMSD
 - Fund for Lake Michigan
 - Kohls
 - Greater Milwaukee Foundation
 - and more...



Redevelopment Timeline

- 2017
 - Additional investigation & cleanup planning
 - Community engagement & grant writing
- 2018
 - Additional partner engagement & fundraising
 - 10-year lease signed
 - Project bid out & construction begins
- 2019
 - Trees, prairie, wetland, & green infrastructure installed
- 2020 - 2021
 - Pavilion /classroom constructed
 - Soft opening, field trips & research begin
- 2022
 - More events & field trips – Citywide Arbor Day celebration
 - Solar array installed
 - African water vessel sculptures installed
- 2023
 - WaterMarker installed
 - Grand opening / ribbon-cutting
- 2024-2025
 - Ongoing maintenance & programming



Green Tech Station Features

Native plants & trees

20,000 gallon underground cistern

Permeable pavement

4 bioswales

Educational signage & walking paths

Solar panels on outdoor classroom



Youth Field Trips



2019-2025: 3,000 visitors
15-20 school field trips per year

Research & Training



Marquette University & USGS conducting research
Side-by-side test cells for green infrastructure experiments & product testing
Hands-on workshops for teens

Community Involvement & Events



Volunteer workdays, cistern build day, grand opening/ribbon cutting, art unveiling, tours, Doors Open MKE, and more!

Incorporating Public Art



Aldo Leopold benches & bottle cap mosaic by ArtWorks for Milwaukee

Incorporating Public Art



African water vessel sculptures &
'G' WaterMarker



Process

- 10-year lease
- Community & funder engagement
- Online forms
- Activation & events
- Maintenance
- Ongoing project team meetings



Green Tech Station Site Reservation Request



Green Tech Station is an outdoor environmental education and research destination located at 4101 N. 31st Street in Milwaukee, WI.

We are currently accepting groups for tours, field trips, meetings, research, volunteer activities, or other events. Please fill out the form below with details on your proposed visit.

Northwest Side Community Development Corporation (NWS CDC) staff will follow up to confirm your request.

Main Contact Name *

Email *

Phone *

School or Entity *

Grade Level (if school group)

Brief Event Description *

Field trip, tour, meeting, research, volunteering, other event, etc.

Date of Activity *

Beginning Time *

Ending Time *

Estimated Number of Attendees *

Lessons Learned / Takeaways



- Strong, committed & capable partnerships
- Expanding breadth brings more visitors, funding, & awareness
- The maintenance struggle is real, but is also an opportunity to support small businesses & workforce development
- Be flexible!

Thank you!

Tory Kress, P.E., AICP
tkress@milwaukee.gov
414-286-8268

Sarah Bregant, AICP
sarah.b@nwscdc.org
414-444-8200 x.8104

Links:

- nwscdc.org/planning-green-tech
- city.milwaukee.gov/DCD/CityRealEstate/BrownfieldRedevelopment



Thank You Milwaukee + Northwest Side CDC!

Upcoming Funding Opportunities:

- Federal Programs- USEPA Brownfields Grants
- State Programs- Petroleum storage tank funds, brownfields funds/credits, redevelopment funds, community development funds, historic tax credits, housing programs, workforce programs, loans, land trusts/banks
- Local Programs- Redevelopment funds, community development funds, tax increment finance districts, housing programs, workforce programs, designated sales tax initiatives

GEOSYNTEC + CITIES INITIATIVE PILOT PROGRAM

**How do we build more resilient,
community driven brownfield
transformations?**

GEOSYNTEC + CITIES INITIATIVE PILOT PROGRAM

- Initial site selection
- Flood + climate resiliency planning
- Initial rounds of participatory planning
- Grant-writing to conduct full-scale Environmental Site Assessments, Participatory Planning, Remediation, and Flood-Resilient Redevelopment for Public and Community uses

SMALL-GROUP VISIONING

Think of a vacant lot or brownfield property in one of your communities, and envision how you might start to transform it.

Some possible things to consider:

- Site-specific challenges and ownership
- Barriers to redevelopment
- What are the needs of the surrounding community and ecosystem?
- Possible partners

CLOSING CEREMONY

SIMONE BALLROOM 2

TODAY

4:45 PM – 5:30 PM



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AWARDS DINNER

SIMONE BALLROOM 2

TODAY

7:30 PM



We can work together to **shift the paradigm** and protect the Future of Fresh Water in the Great Lakes.

THANK YOU



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DOUCE**

MAY 14 - 16, 2025 MILWAUKEE, WI



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