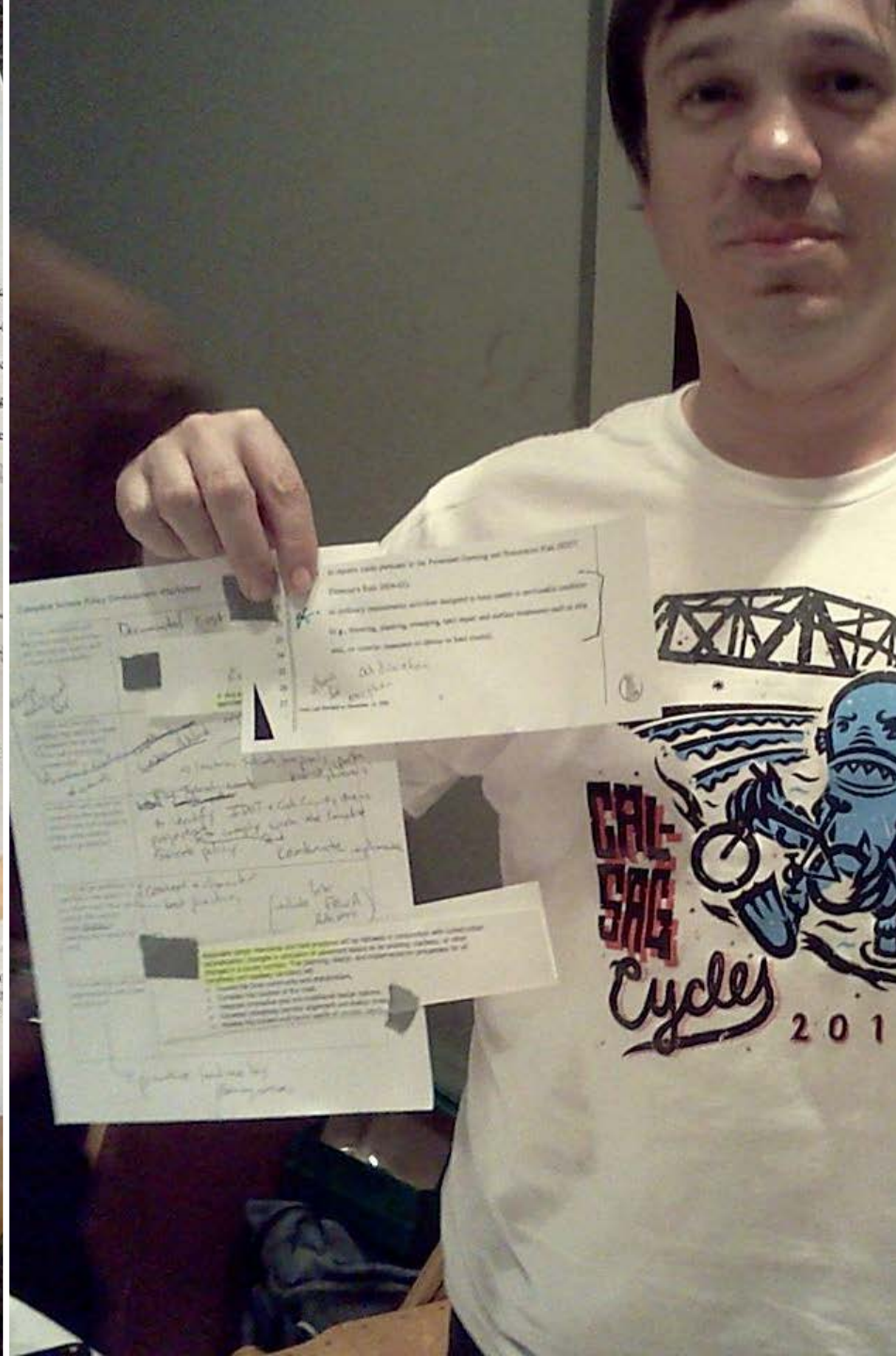
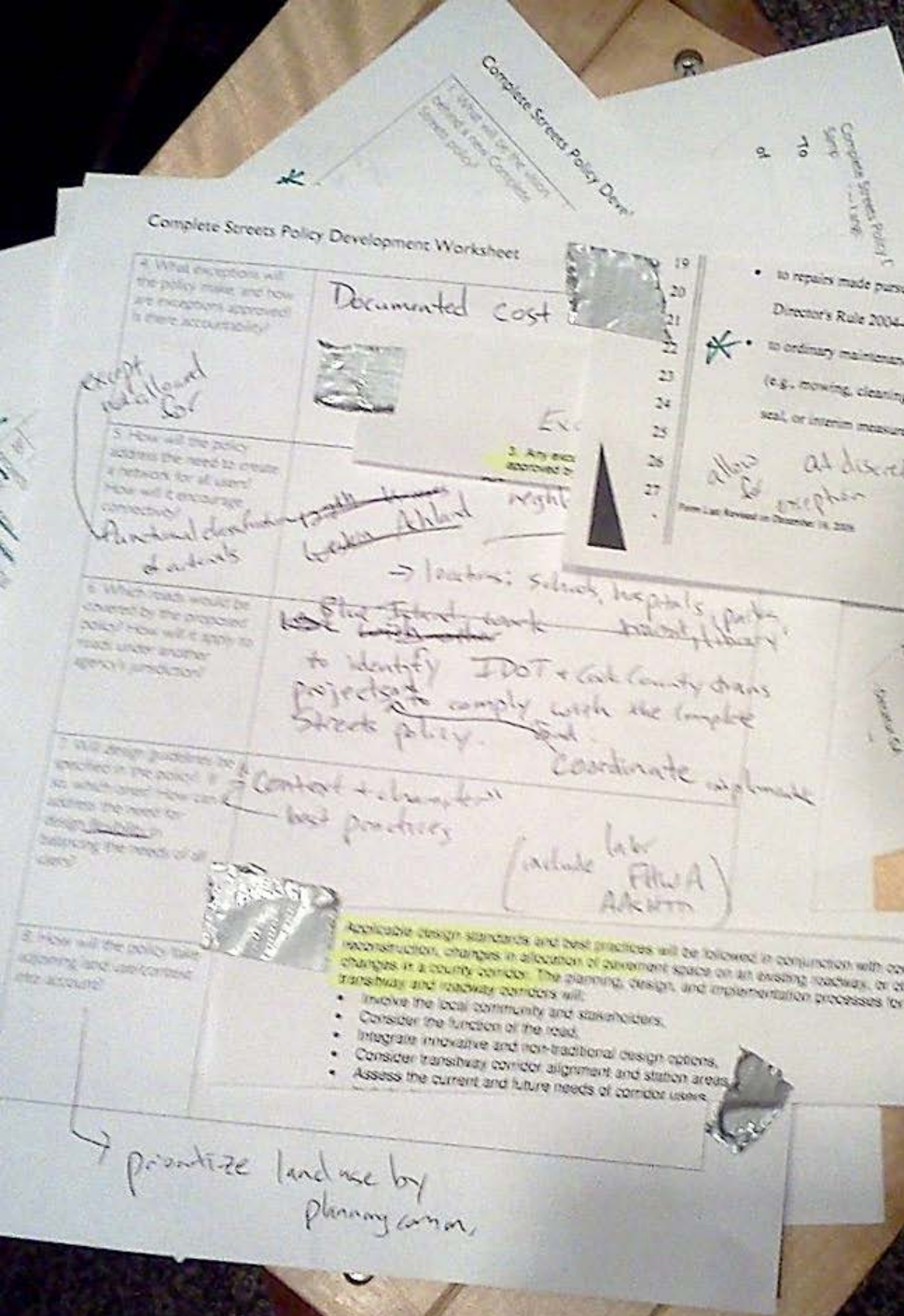
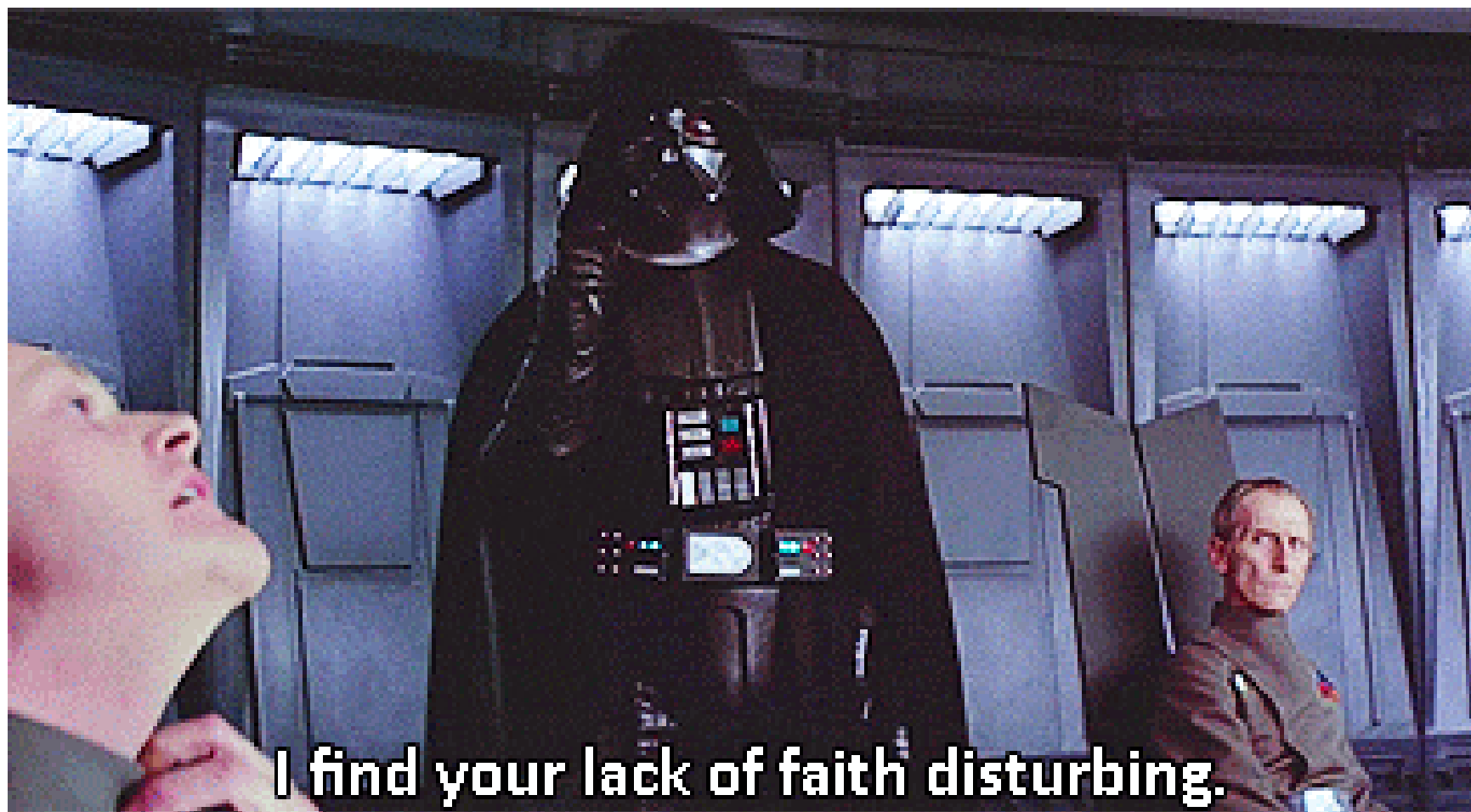


# Approaches to Urban Flooding in the City of Blue Island

Jason Berry, AICP

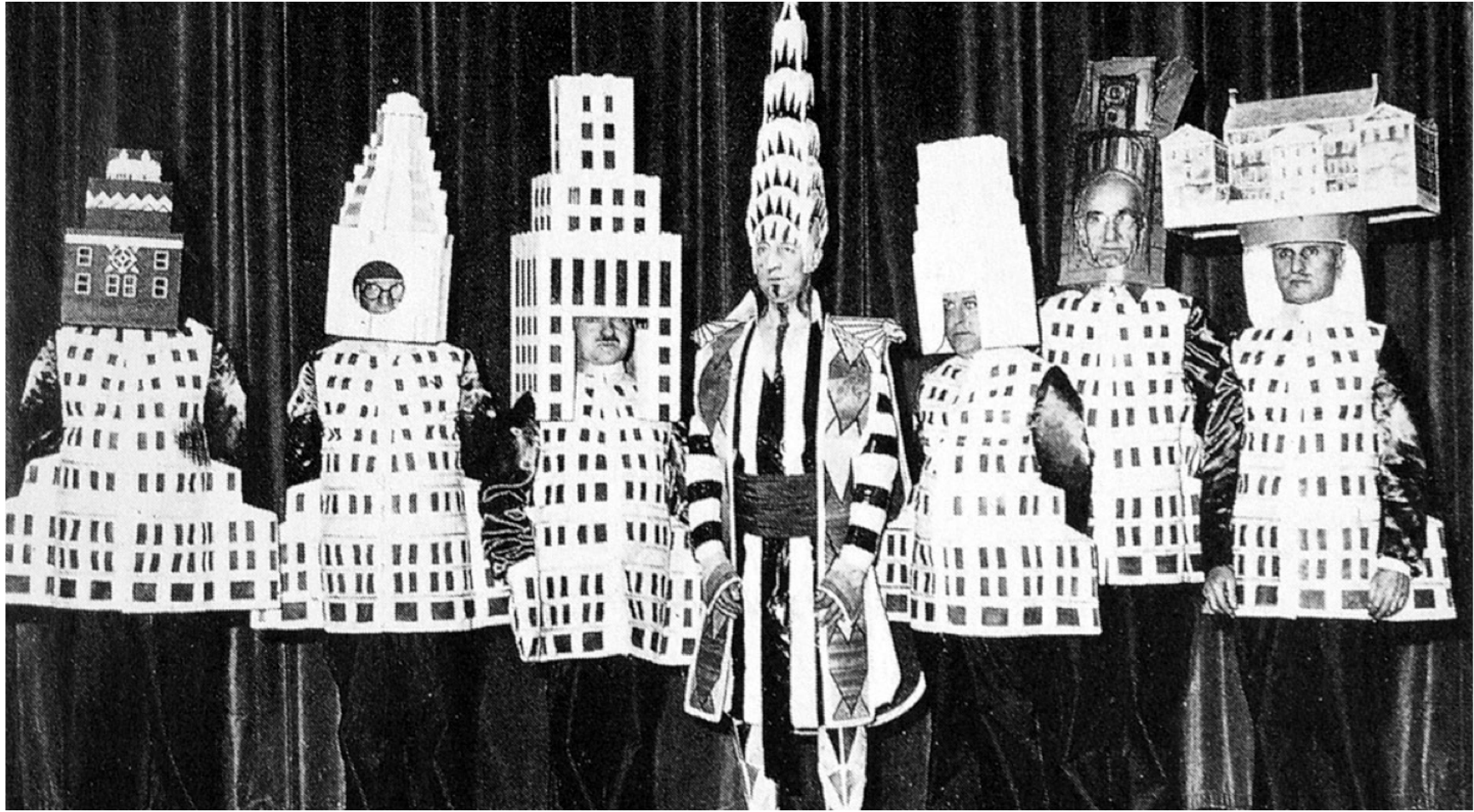
[jberry@cityofblueisland.org](mailto:jberry@cityofblueisland.org)





**I find your lack of faith disturbing.**





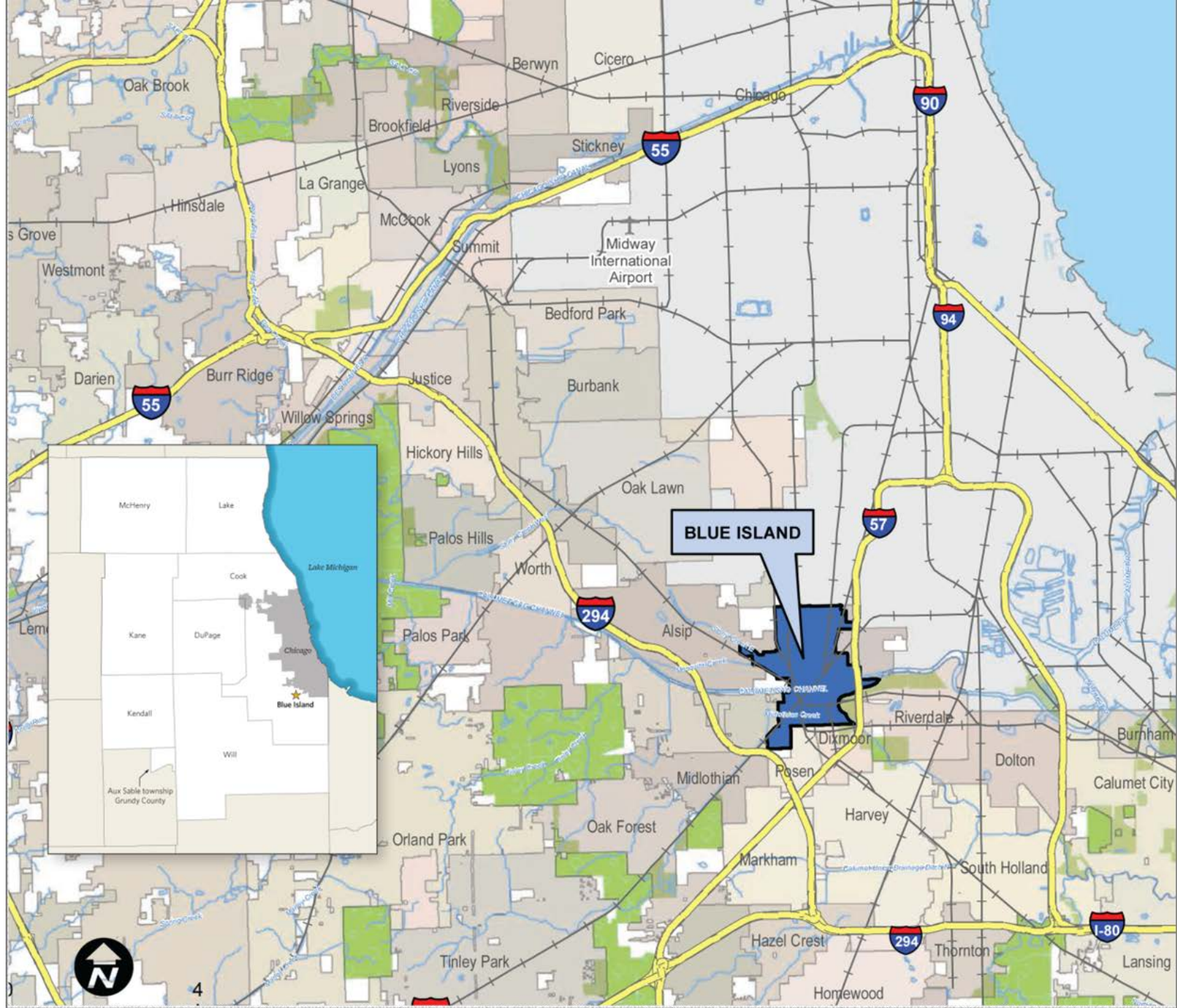
MIRACLES

A man with a mustache, wearing a maroon polo shirt with white horizontal stripes, is holding a white coffee cup. He has a slightly grumpy or thoughtful expression. The background shows an indoor setting with a doorway leading to another room where a person is walking. A wall sconce with three lights is visible on the right.

I like saying no. It lowers their enthusiasm.



**Can you fly this plane and land it?**

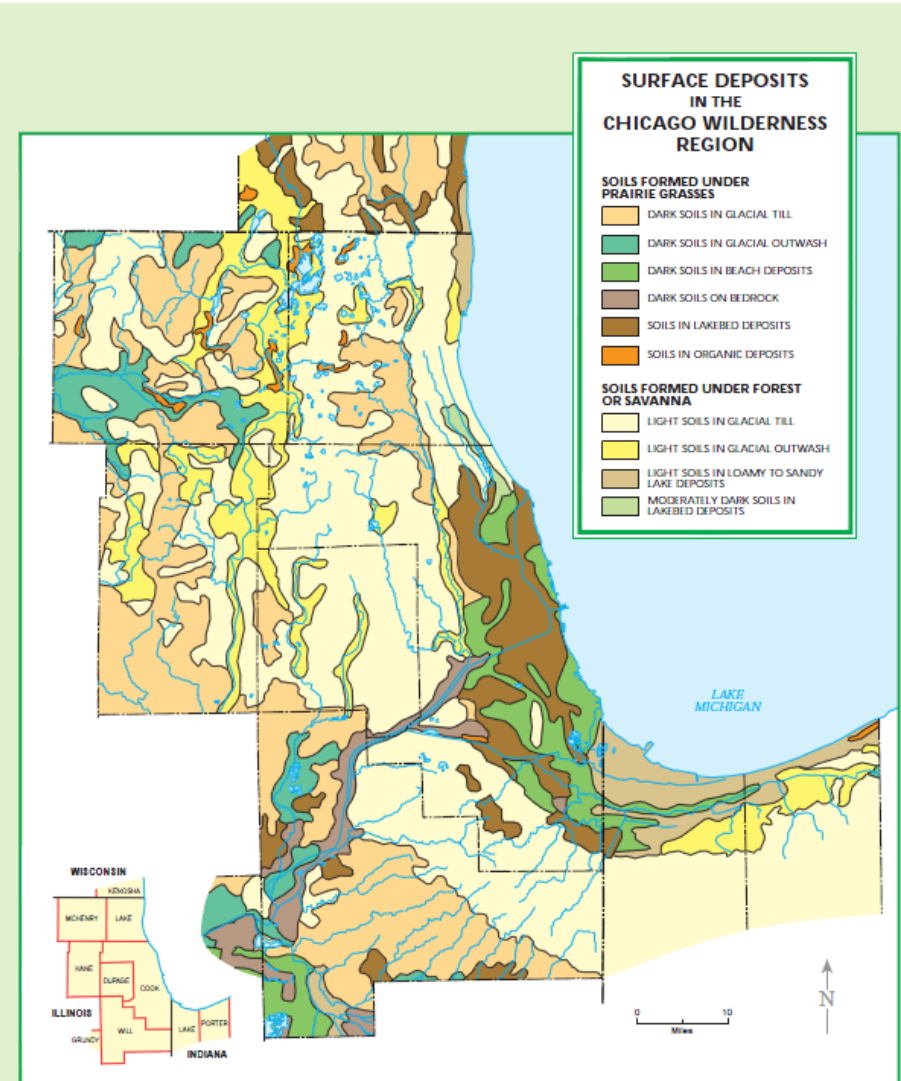
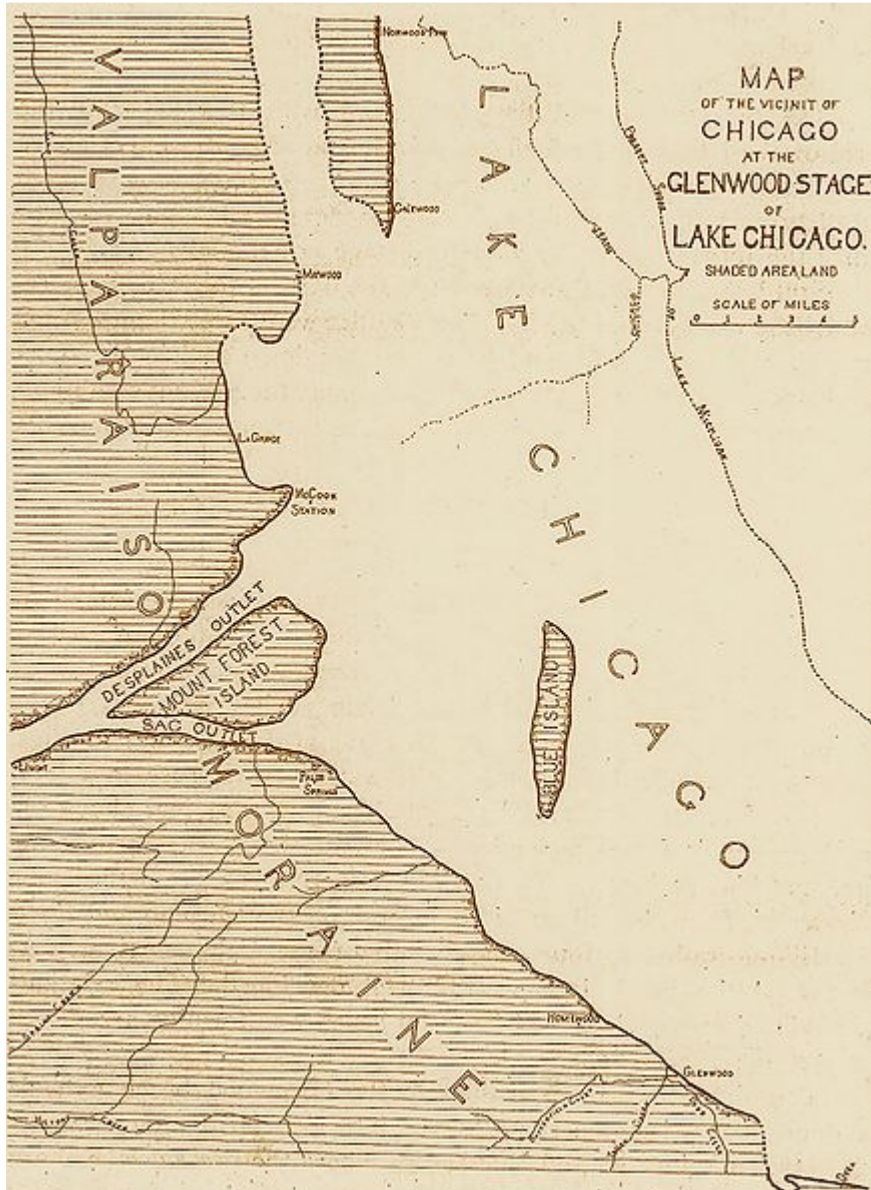


**BLUE ISLAND**





# The Blue Island...



Deposits left by the glaciers or by the lakes that formed as the glaciers melted are the raw materials of soils. Topography, drainage, climate, and vegetation shape these raw materials into soils. The process takes centuries. In a dynamic landscape, vegetation may change more rapidly than soils. We may find prairies growing on forest soils and forests on prairie soils. The scale of the map allows us to show only broad categories. Small patches of soil that do not match the surrounding land will not appear.

# City of Blue Island



**Blue Island Population: 23,706 (All data based on 2010 US Census)**

**Gender** Female: 49%

Male: 51%

**Age** 20–59: 54.9%

Under 20: 32.9%

Over 60: 12.1%

**Education** High school or higher: 74.3%

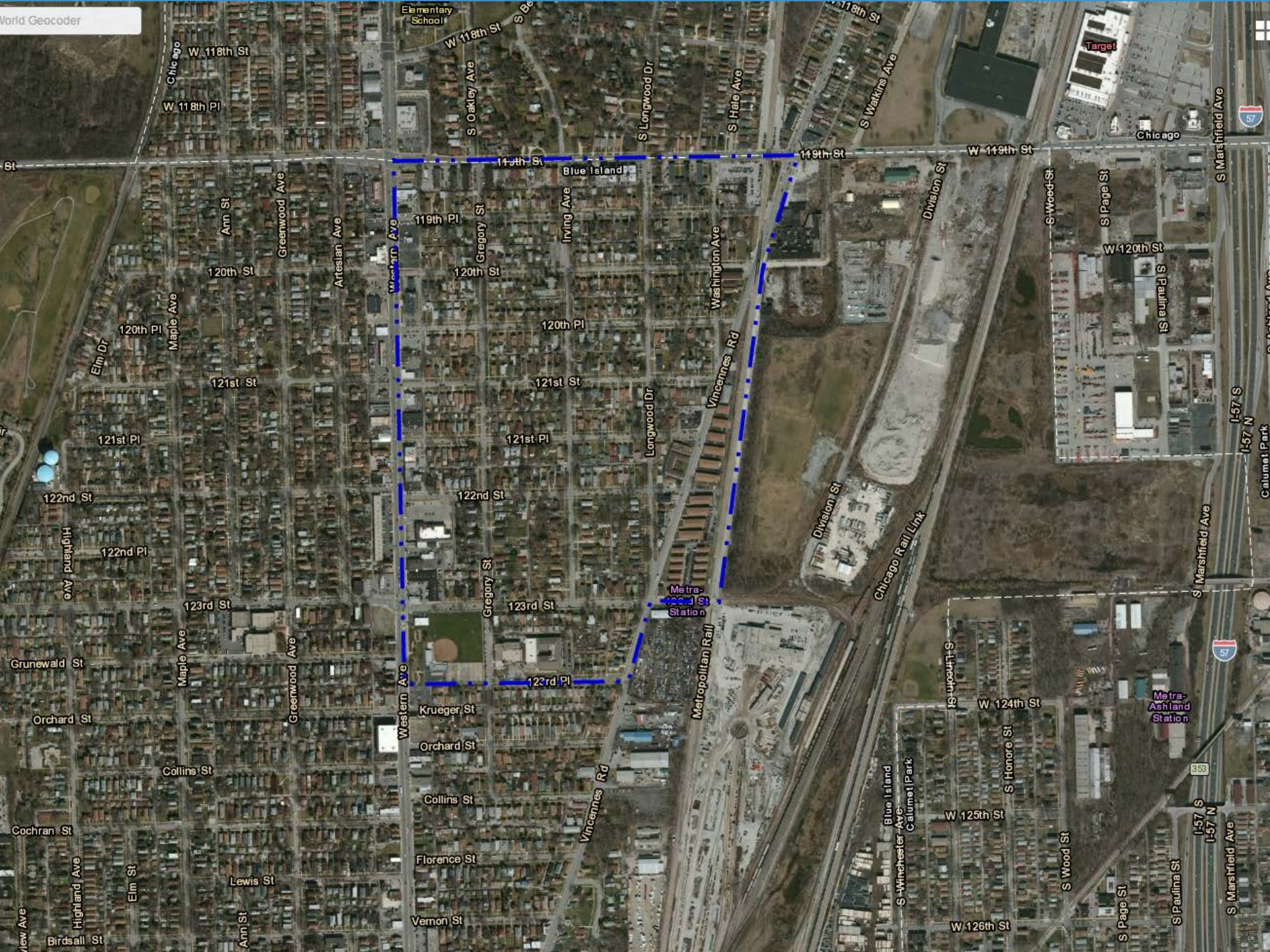
Bachelor's degree or higher: 11.3%

**Ethnicity** Caucasian: 21%

Hispanic: 47%

African American: 30.3%

Other: 0.7%



W 118th St  
W 118th Pl

W 118th St  
S Oakley Ave

W 118th St  
S Watkins Ave

Chicago



Western Ave

119th St  
120th St  
121st St  
122nd St  
123rd St  
122nd Pl  
123rd St  
122nd Pl

Longwood Dr  
Vincennes Rd  
Metropolitan Rail  
Metra Ashland Station

Chicago Rail Link

I-57 S  
I-57 N



Metra Ashland Station

353

I-57 S  
I-57 N

S Marshfield Ave



Tot Lot

Hart Park

Paul Revere

119TH PL

119TH PL

120TH ST

120TH ST

120TH PL

120TH PL

121ST ST

121ST ST

121ST PL

121ST PL

122ND ST

122ND ST

123RD ST

WESTERN AVE

GREGORY ST

LONGWOOD DR

ALLEY

WASHINGTON ST

VINCENNES AVE

DIVISION ST

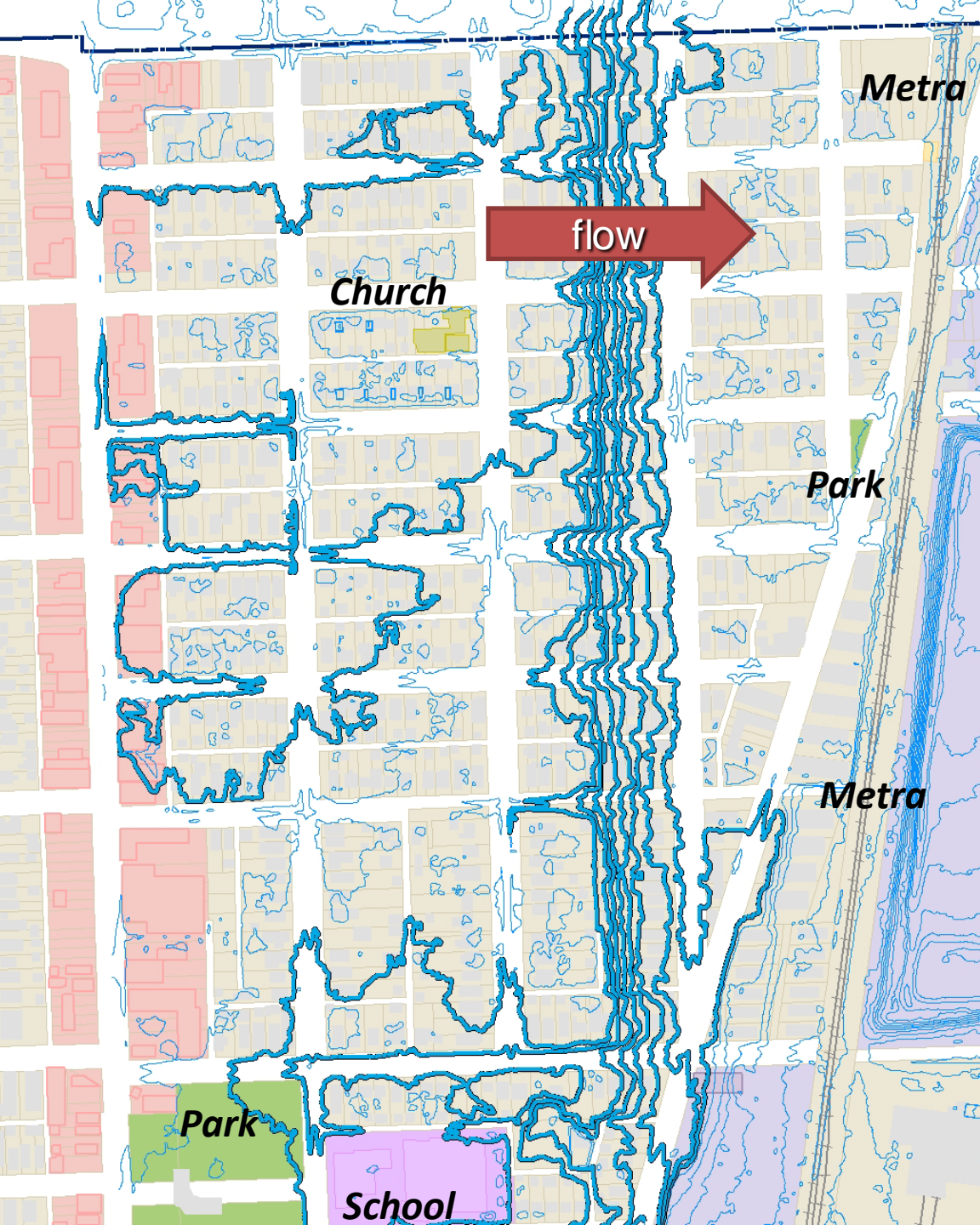
DIVISION ST

ALLEY

GREGORY ST

ALLEY

IRVING AVE



- Limited open space
- 8.8% grade
- Cal-Sag channel watershed
- 2 CSOs plus 2 shared CSOs received by Cal-Sag channel

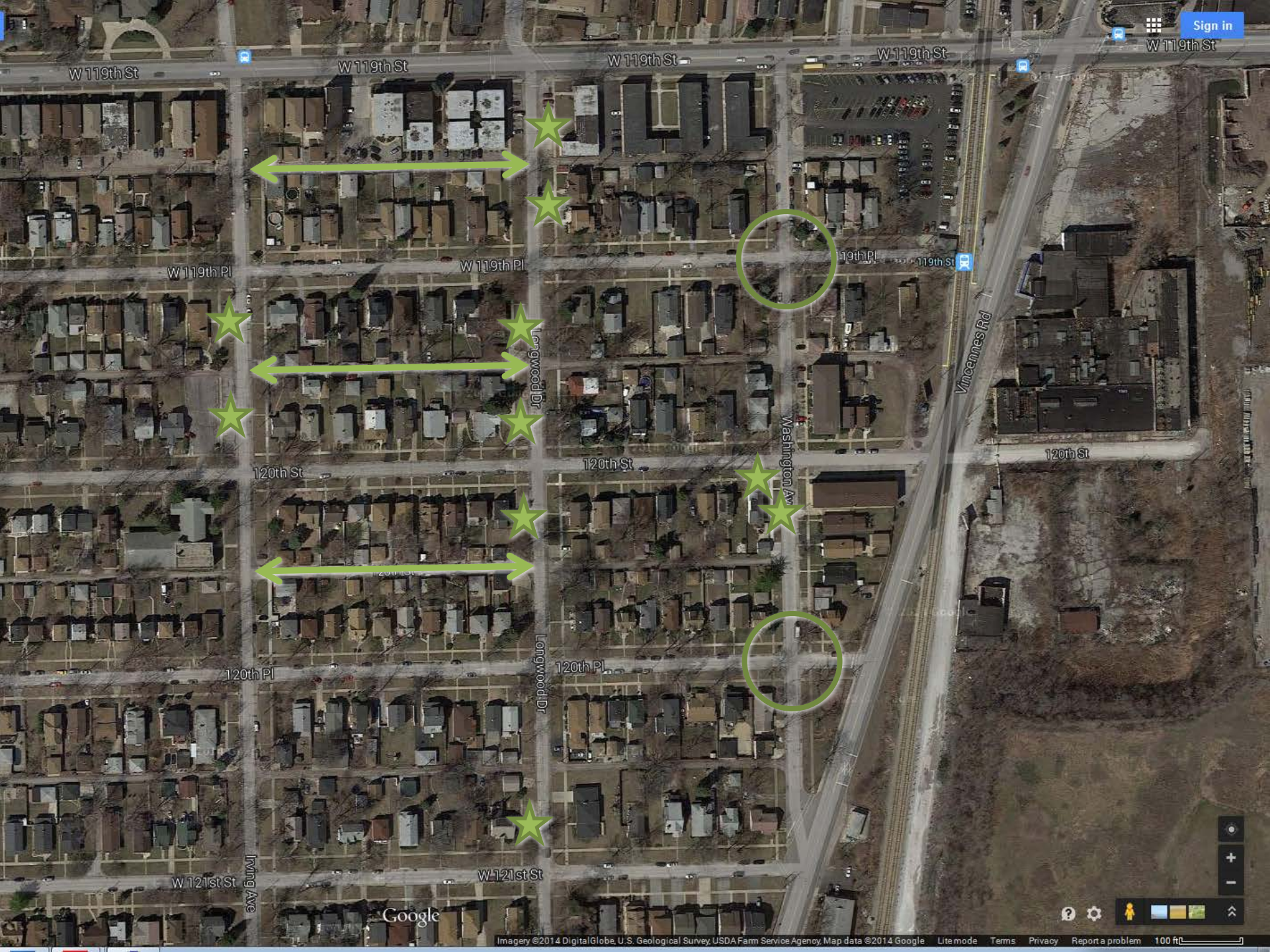


# Existing Conditions









W 119th St

W 119th St

W 119th St

W 119th St

W 119th Pl

W 119th Pl

119th Pl

119th St

Longwood Dr

Washington Av

120th St

120th St

120th St

120th Pl

120th Pl

Longwood Dr

W 121st St

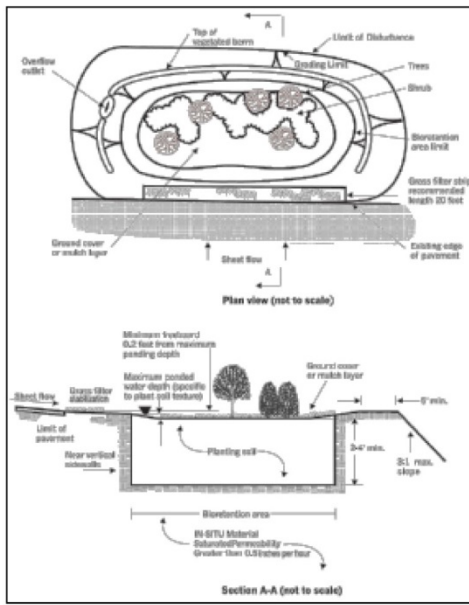
W 121st St

Irving Ave

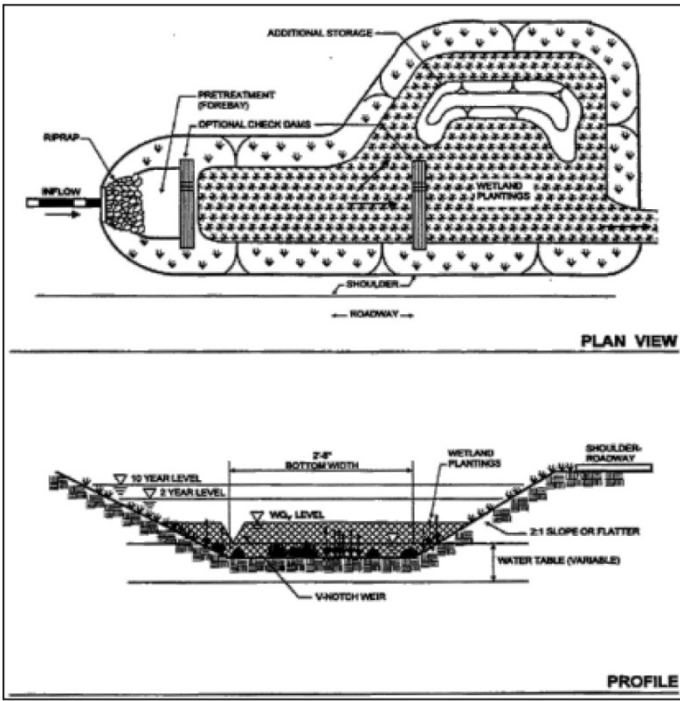
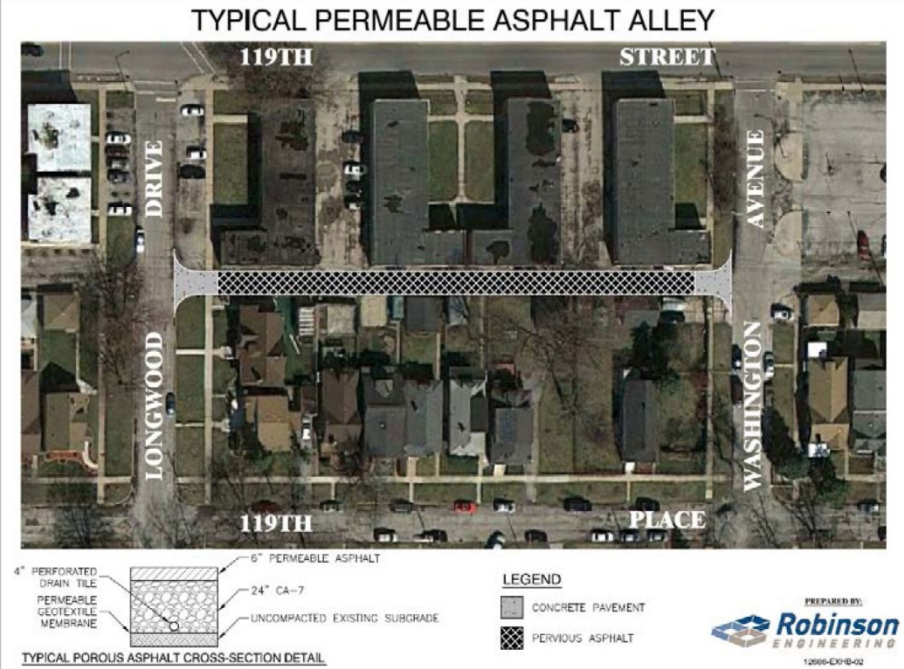
# Blue Island Stormwater Funds

---

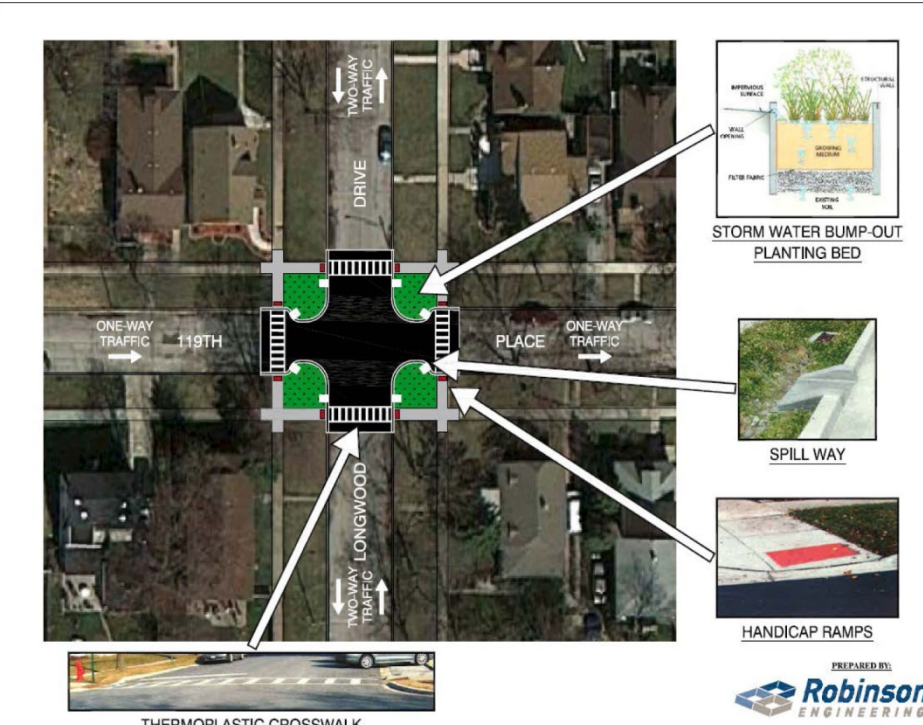
- **IL Jobs Now / Clean Water Initiative**
  - Announced October 11, 2014
  - Funded IL Green Infrastructure Grants (IGIG, applied 2012; 2013) for NE Neighborhood
  - Assistance Amount: \$1,132,588
    - Pervious alleyways, intersection bumpouts and naturalized detention
  - City Council approval November 11, 2014



RETENTION POND DETAIL



BIOSWALE DETAIL



# Blue Island Stormwater Funds

---

- **Chi-Cal Rivers Fund**

- Announced November 18, 2014
- Assistance Amount: \$235,295 (SSMMA)
- 6 acres of wetlands with 1.5MM gallons of stormwater retention
- Remove contaminated soils and plant native vegetation
- Employ students who have graduated from technical environmental training programs



MARSHFIELD SHOPPING PLAZA

PIONEER CHURCH

120TH ST.

BLUE ISLAND C  
PARK PROJECT

NORTHEAST SITE  
MASTER PLAN

COMMUNITY  
CHURCH

HART  
PARK

PAUL REVERE  
SCHOOL

VETERAN'S  
PARK

METRA R

C.R.I. & P

S. VINCENNES RD.

DIVISION ST.

MARSHFIELD AVE.

ASHLAND AVE.

# Blue Island Stormwater Funds

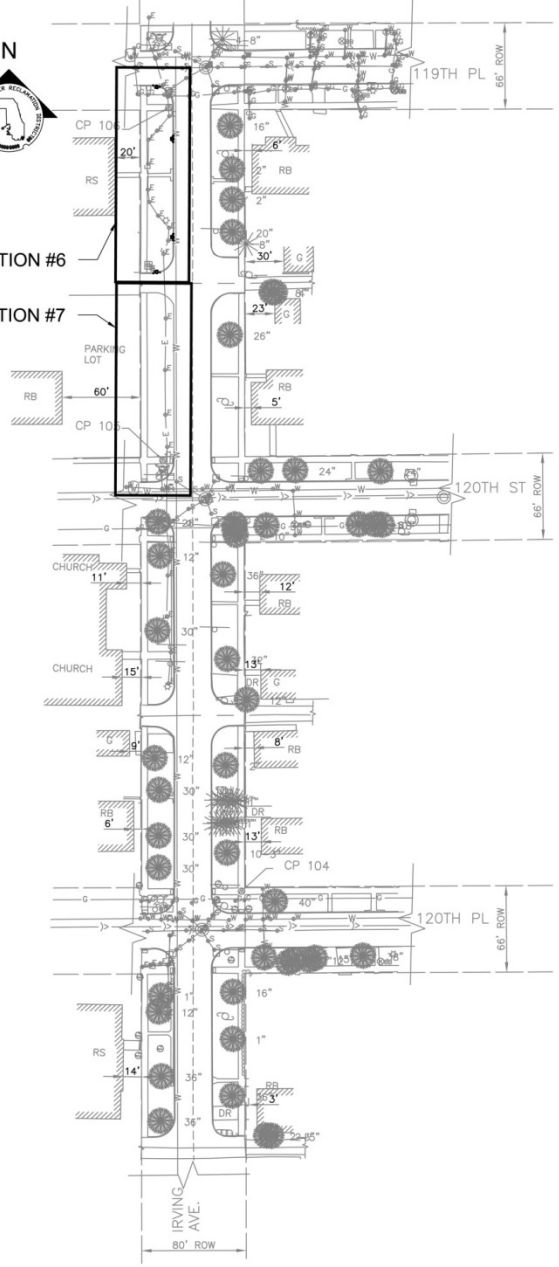
---

- **MWRD “Early Out”**

- Metropolitan Water Reclamation District Green Infrastructure project
- One of four in the MWRD service area
- Design by Environmental Design Inc. (EDI)
- 8 sites selected
  - 5 Bioswales along Longwood, 1 on Irving
  - 1 permeable pavement site on Longwood, 1 on Irving



LOCATION #6  
LOCATION #7

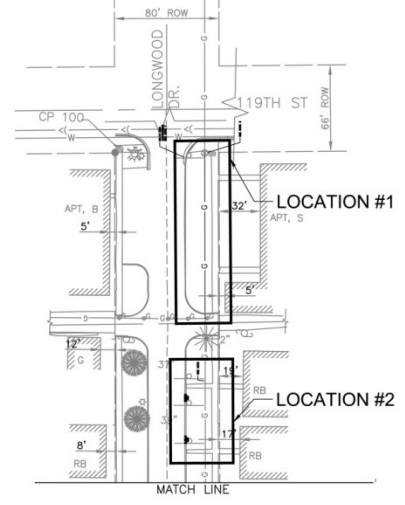
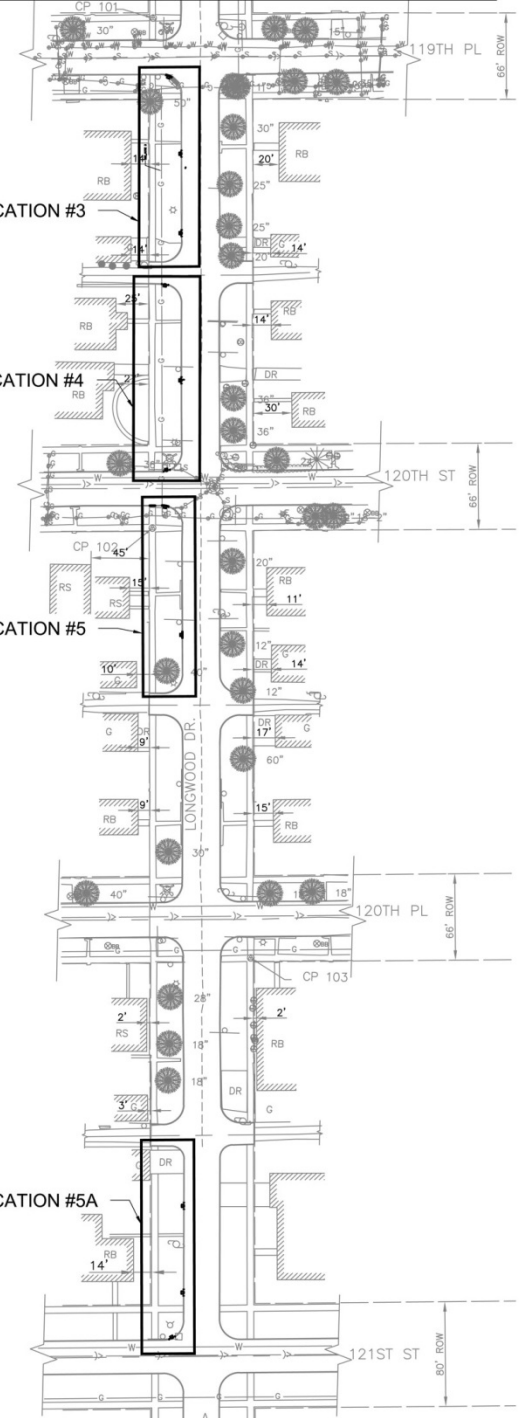


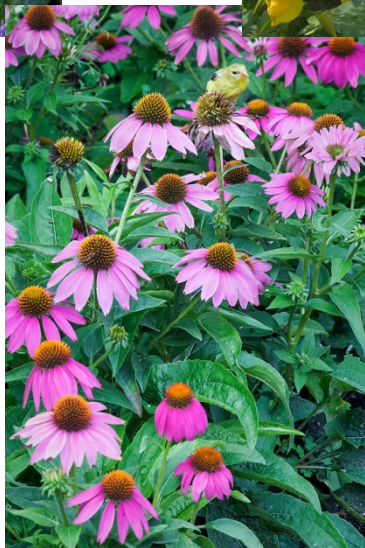
LOCATION #3

LOCATION #4

LOCATION #5

LOCATION #5A







# MWRD “Early Out”

---

- Bid released October 1, 2014
  - Estimated cost of work: \$413,904
- 8 firms attended Oct. 2014 pre-bid; 2 firms submitted
- 5 firms attended April 2015 pre-bid; 3 firms submitted
- ***Low Bid: \$663,838***

# Blue Island Stormwater Funds

---

- **Great Lakes Restoration Initiative (GLRI)**
  - Awarded to South Suburban Mayors and Managers Association (SSMMA)
  - Funding Green Infrastructure in Blue Island, Robbins and Calumet Park in 2015
  - 1,450 SF rain garden with seeding and plugs
  - Weaver Boos Consultants providing design
  - Job creation: new social enterprise / workforce development initiative with OAI
  - City Council to approve IGA

# RAIN GARDEN

## CONSTRUCTION SPECIFICATIONS

1. EXCAVATE RAIN GARDEN 2 FEET BELOW FINISHED GRADE.
2. INSTALL 2 FEET DEPTH OF ENGINEERED SOIL MIX CONSISTING OF 40% SAND, 30% TOPSOIL, 30% COMPOST. CLEAN EXCAVATED SOIL TO BE USED IN ENGINEERED SOIL MIX WHEN POSSIBLE.
3. ENGINEERED SOIL MIX TO BE PLACED ON MONOFILAMENT GEOTEXTILE OVER UNCOMPACTED SOIL.
4. RAIN GARDEN FINISHED GRADE TO HAVE MINIMUM OF 0'-6" AND MAXIMUM OF 1'-0" DEPRESSION.
5. NO EXISTING TREES ARE TO BE REMOVED AS PART OF RAIN GARDEN CONSTRUCTION.
6. PLANT PLUGS TO BE (30) 32-CELL FLATS OF 12 DIFFERENT FORBS & GRASSES.
7. PLUG TO BE PLANTED AT A DENSITY OF 1 PLUG PER SQUARE FOOT.
8. 4" OF MULCH TO BE PLACED OVER PLANT PLUGS AREA.
9. SEEDED AREAS TO BE STORMWATER AND ANNUAL & PERENNIAL SEED MIXES
10. STRAW EROSION CONTROL FABRIC TO BE PLACED OVER SEEDED AREA.



### GREEN INFRASTRUCTURE BMP SUMMARY

#### RAIN GARDEN

AREA: 1,700 SQUARE FEET  
VOLUME: 1,800 CUBIC FEET

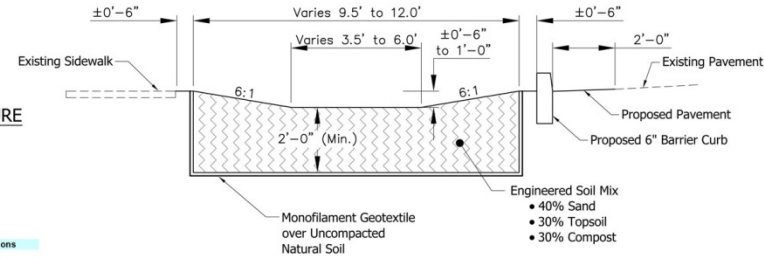
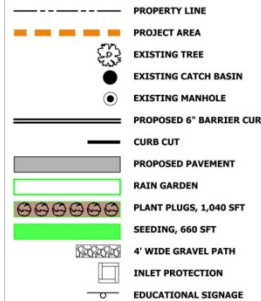
#### Estimated Load and Load Reductions

|         | Load before BMP (lb/yr) | Load after BMP (lb/yr) | Load Reduction (lb/yr) |
|---------|-------------------------|------------------------|------------------------|
| BOD     | 0                       | U                      | U                      |
| COD     | 11                      | 4                      | 7                      |
| TSS     | 14                      | 4                      | 11                     |
| LEAD    | 0                       | 0                      | 0                      |
| COPPER  | 0                       | U                      | U                      |
| ZINC    | 0                       | 0                      | 0                      |
| TDS     | 174                     | U                      | U                      |
| TN      | 0                       | 0                      | 0                      |
| TRN     | 0                       | U                      | U                      |
| DP      | 0                       | U                      | U                      |
| TP      | 0                       | 0                      | 0                      |
| CADMIUM | 0                       | U                      | U                      |

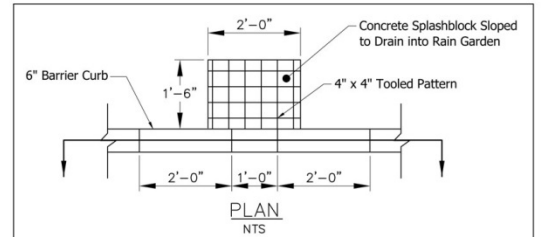
U = Removal efficiency unavailable



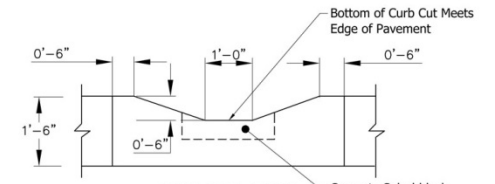
#### LEGEND



### RAIN GARDEN TYPICAL SECTION NTS



#### PLAN NTS



#### SECTION VIEW NTS

#### CURB CUT DETAIL









120th St  
WASHINGTON St

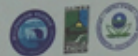
Please Don't  
Mow on Spring

A white rectangular sign with a black border is mounted on a metal post. The sign features the text "RAIN GARDEN" at the top, followed by "Please Don't Mow or Spray" in large blue letters, and "Favor de No Cortar o Rociar con Herbicida" in black letters below. At the bottom right, there are three small circular logos. The sign is set in a garden bed with dark mulch and small green plants. In the background, there is a concrete sidewalk, a paved driveway, and a white house with a brown roof under a clear blue sky.

RAIN GARDEN

**Please Don't  
Mow or Spray**

**Favor de No Cortar  
o Rociar con Herbicida**

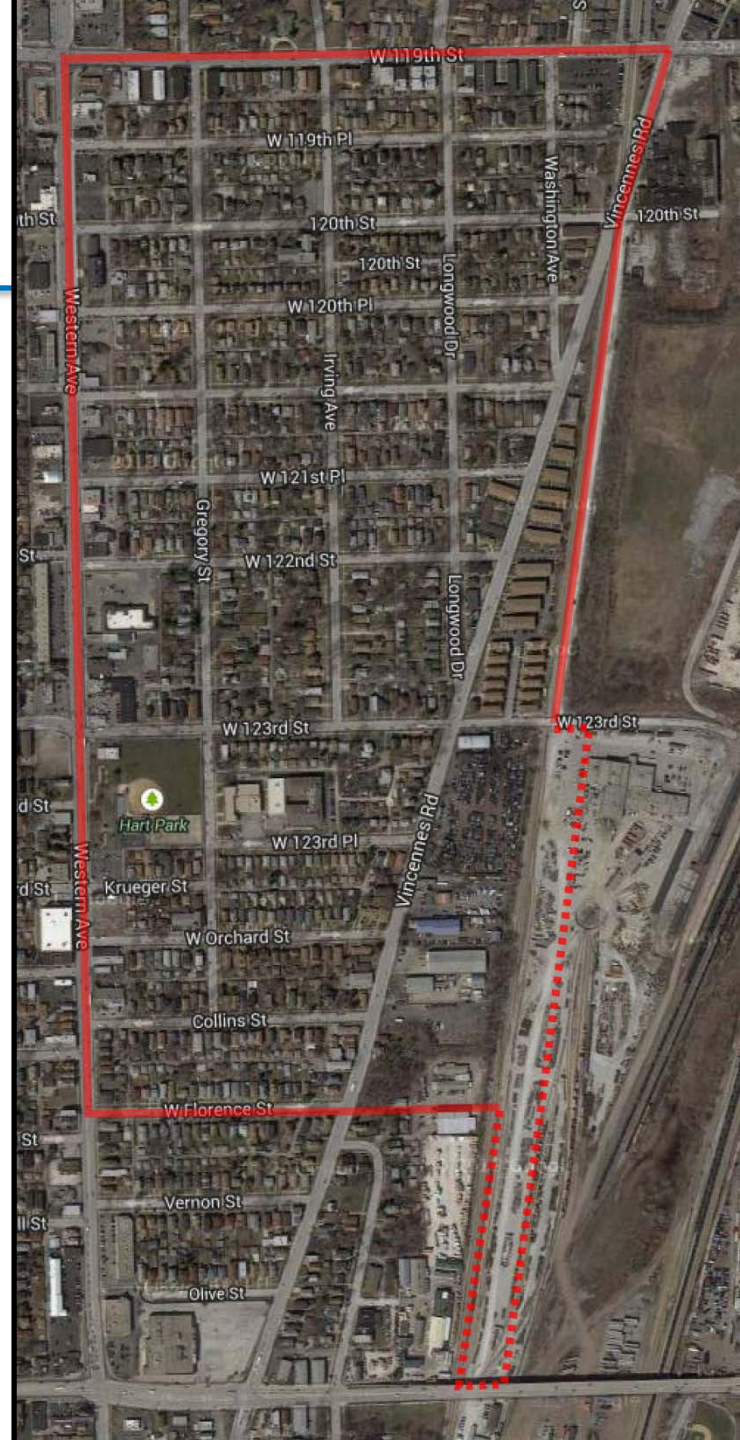


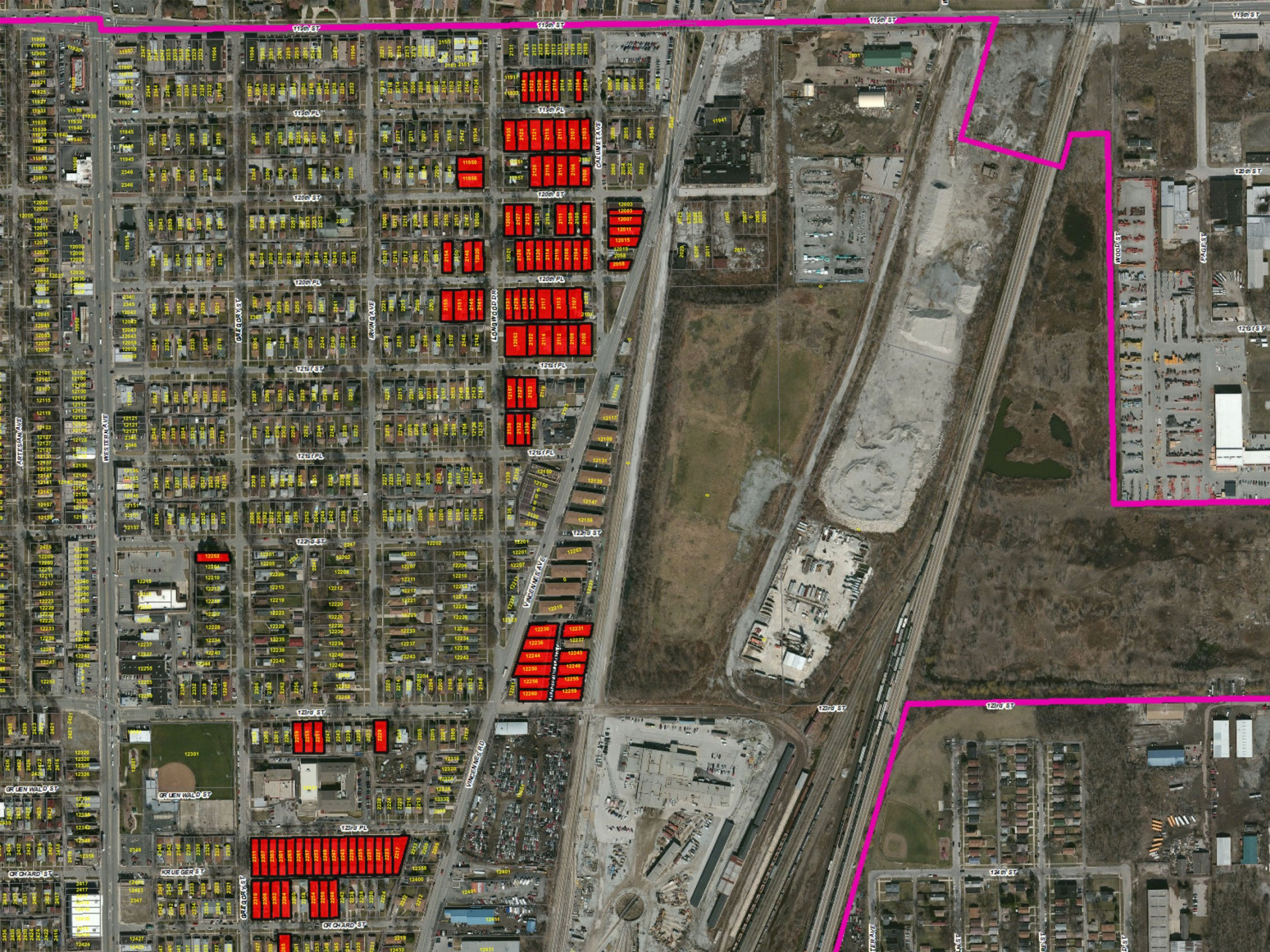




# MWRD Phase II

- Consultant Agreement with EDI October 31, 2014
- Develop and recommend alternative to flooding problem by July, 2015
  - 6 alternatives
  - 1 recommendation brought to 30% design
- Kick off meeting with MWRD November 14, 2014



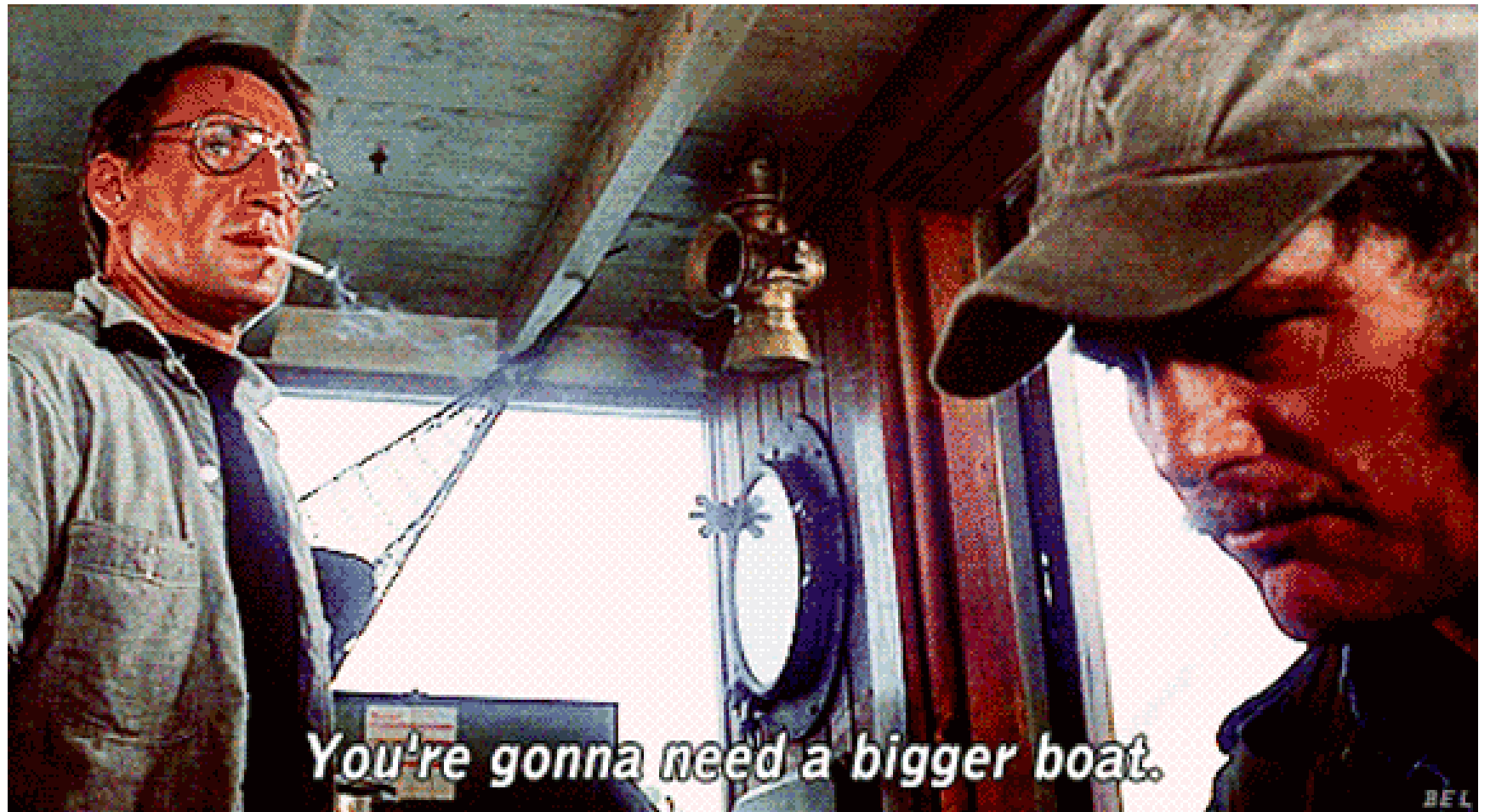


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9800 ST  
9900 ST  
10000 ST

# MINORITY WORKER TRAINING PROGRAM


Hands-on Training in Environmental Remediation  
and Basic Carpentry & Construction.





*You're gonna need a bigger boat.*

BEL



*Metropolitan  
Water Reclamation District  
Of Greater Chicago*

**NO  
TRESPASSING**

VIOLATORS WILL BE CRIMINALLY PROSECUTED  
REPORT ILLEGAL DUMPERS-CALL 1-800-332-DUMP



**CAUTION**  
THIS WATERWAY IS NOT SUITABLE FOR:  
- WADING  
- SWIMMING  
- JET SKIING  
- WATER SKIING/TUBING  
- ANY HUMAN BODY CONTACT  
FOR MORE INFORMATION  
CALL 1-815-295-4300  
OR VISIT [www.ChicagoAreaWaterways.org](http://www.ChicagoAreaWaterways.org)

Protecting Our Great Waterways  
Metropolitan Water Reclamation District of Greater Chicago

# CAUTION

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Protecting Our Water Environment

Metropolitan Water Reclamation District of Greater Chicago



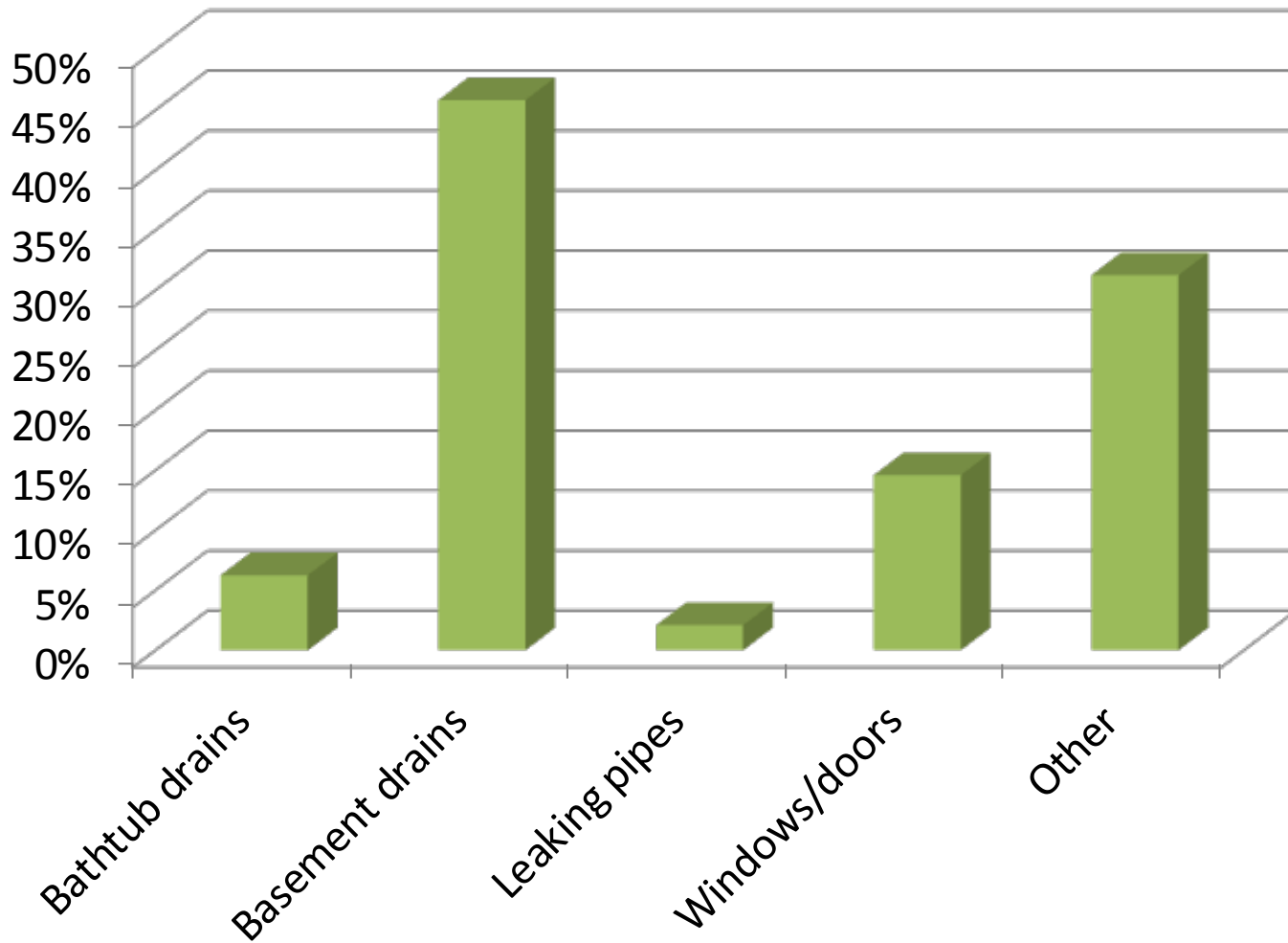








# When it floods, it comes...



# INTERSECTIONS

a blog by CNT

## CNT calls for Illinois elected leaders to help victims of urban flooding

July 7, 2015



Manny  
Gonzales

*New state study finds 92% of flood damage claims are from homeowners and businesses outside floodplains*

SPRINGFIELD – Illinois experienced the wettest June in recorded history as we continue to see an increase in the frequency and intensity of rain events nationwide. This has resulted in more and more flooded homes and businesses, bringing with it the associated costs of property damage,

negative health impacts, loss of work time and a significant loss in property value. A new study – released on July 6 and mandated by the 2014 [Urban Flooding Awareness Act](#), sponsored by Sen. Heather Steans and Rep. Kelly Cassidy – reveals that more than 92 percent of Illinois flood victims live outside any designated floodplains. The study, prompted by research by the Center for Neighborhood Technology (CNT), dispels the myth that flooding is primarily the result of rivers and streams overflowing their banks.

“The implications of this research for Illinois disaster preparedness are enormous,” said [Kathryn Tholin](#), CEO of the non-profit CNT. “We have, for decades, been spending large amounts of taxpayer dollars to solve only one part of the flood damage problem. With this new information, we can adjust our policies and invest our resources in a way that protects a much larger group of flood victims.”

### BLOG TOPICS

- [Transportation + Community Development](#)
- [Cargo-Oriented Development](#)
- [Water](#)
- [Climate](#)
- [Sustainable Prosperity](#)
- [Policy](#)
- [Press Release](#)

[VIEW ALL](#)

### RECENT POSTS

[CNT calls for Illinois elected leaders to help victims of urban flooding](#)

July 7, 2015

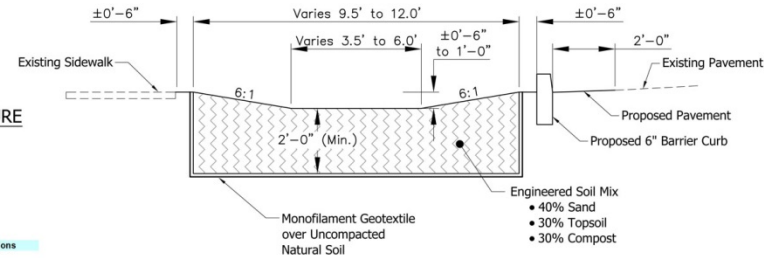
[CNT Applauds SCOTUS Ruling that Supports Diverse Communities with Access to Jobs](#)

June 26, 2015



# RAIN GARDEN CONSTRUCTION SPECIFICATIONS

- EXCAVATE RAIN GARDEN 2 FEET BELOW FINISHED GRADE.
- INSTALL 2 FEET DEPTH OF ENGINEERED SOIL MIX CONSISTING OF 40% SAND, 30% TOPSOIL, 30% COMPOST. CLEAN EXCAVATED SOIL TO BE USED IN ENGINEERED SOIL MIX WHEN POSSIBLE.
- ENGINEERED SOIL MIX TO BE PLACED ON MONOFILAMENT GEOTEXTILE OVER UNCOMPACTED SOIL.
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## GREEN INFRASTRUCTURE BMP SUMMARY

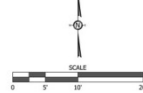
### RAIN GARDEN

AREA: 1,700 SQUARE FEET  
VOLUME: 1,800 CUBIC FEET

Estimated Load and Load Reductions

|         | Load before BMP (lb/yr) | Load after BMP (lb/yr) | Load Reduction (lb/yr) |
|---------|-------------------------|------------------------|------------------------|
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| COPPER  | 0                       | U                      | U                      |
| ZINC    | 0                       | 0                      | 0                      |
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| TRN     | 0                       | U                      | U                      |
| DP      | 0                       | U                      | U                      |
| TP      | 0                       | 0                      | 0                      |
| CADMIUM | 0                       | U                      | U                      |

U = Removal efficiency unavailable

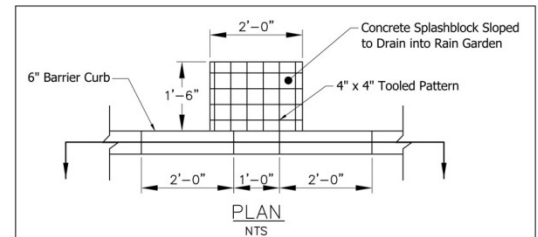


### LEGEND

- PROPERTY LINE
- PROJECT AREA
- 🌳 EXISTING TREE
- EXISTING CATCH BASIN
- EXISTING MANHOLE
- ▬ PROPOSED 6" BARRIER CURB
- ▬ CURB CUT
- ▬ PROPOSED PAVEMENT
- ▬ RAIN GARDEN
- 🌱 PLANT PLUGS, 1,040 SFT
- ▬ SEEDING, 660 SFT
- ▬ 4' WIDE GRAVEL PATH
- ▬ INLET PROTECTION
- EDUCATIONAL SIGNAGE

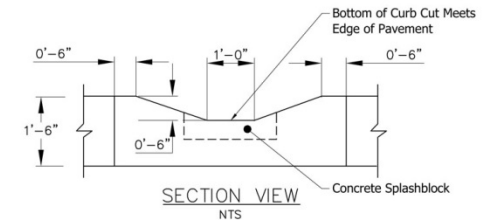
## RAIN GARDEN TYPICAL SECTION

NTS



### PLAN

NTS



### SECTION VIEW

NTS

### CURB CUT DETAIL



*The Heart of the Community*, Ricardo Gonzalez and Blue Island Arts & Culture Committee (2010)



*It's a trap!*