

Green Schoolyards as a Stormwater and Community Resilience Strategy (Part 3): Lessons from Chicago

July 28, 2026



Metropolitan Water
Reclamation District
of Greater Chicago



Nice to meet you!



Holly Sauter,
PE, CFM

Principal Civil Engineer
*Metropolitan Water
Reclamation District of Greater
Chicago (MWRD)*



Moriah Gelder,
PE

Civil Engineer
*Metropolitan Water
Reclamation District of Greater
Chicago (MWRD)*



Alex Heidtke,
PE

Engineering Manager
Greenprint Partners



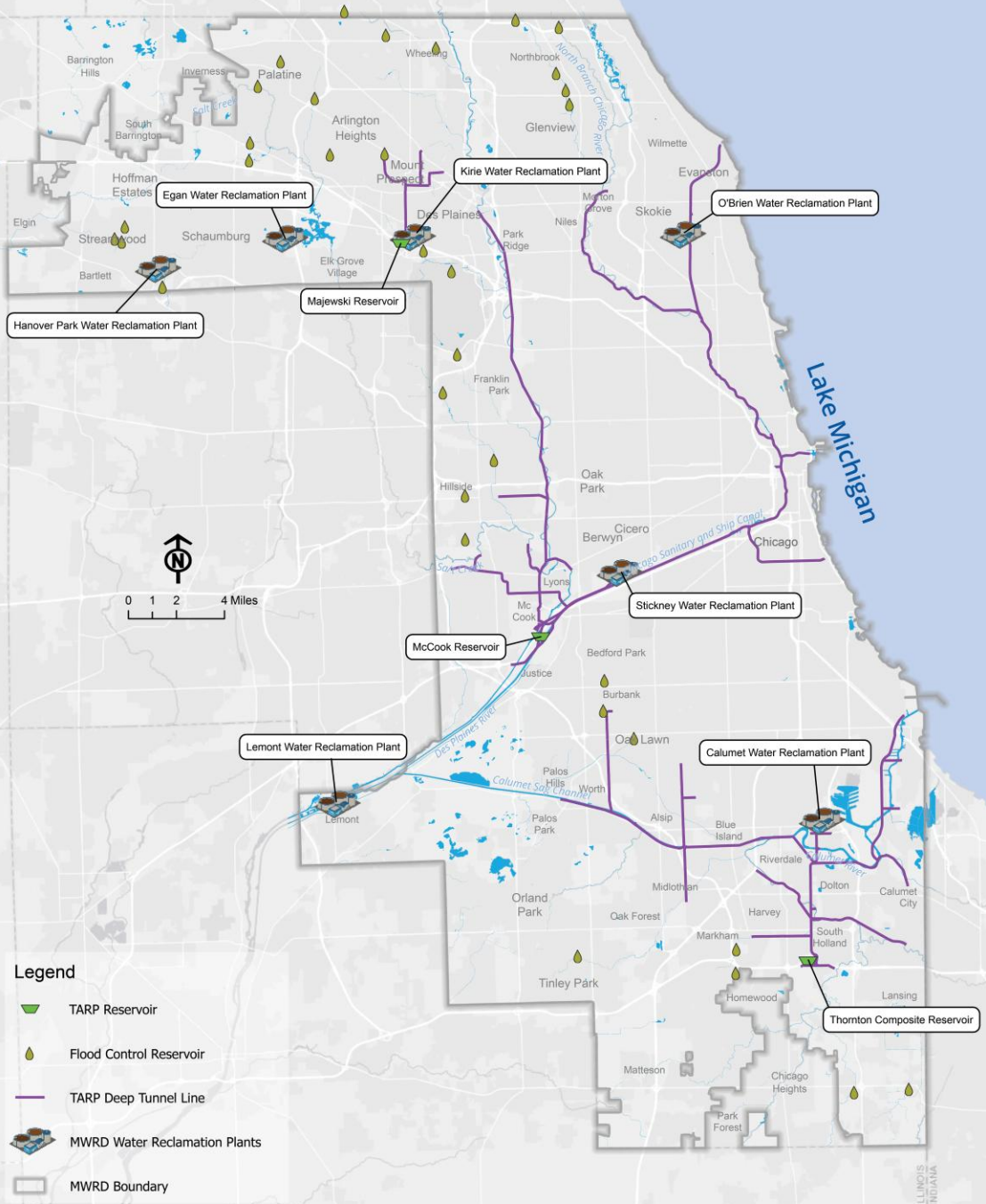
Green Schoolyard Programs

Metropolitan Water Reclamation
District of Greater Chicago (MWRD)

Forging Relationships

**Coordinate
Resiliency Efforts
with Partners**

MWRD Summary of Wastewater Treatment Services



**5.19 MILLION
RESIDENTS
SERVED**



**882.1 SQUARE
MILES
SERVED**



**7 AWARD-WINNING
WATER RECLAMATION
PLANTS**



**TREATMENT CAPACITY
OVER 2.0 BILLION GALLONS
PER DAY**

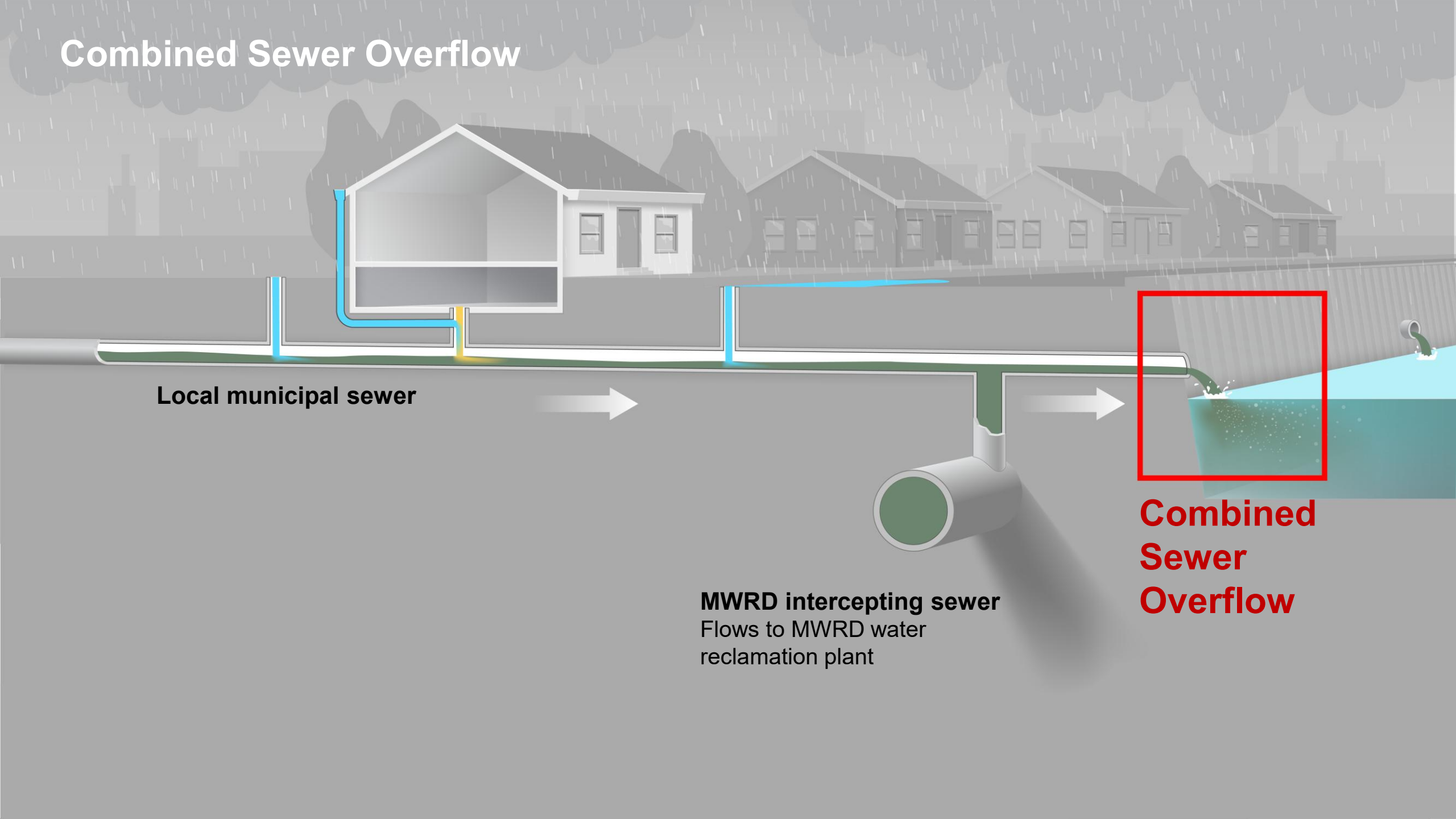


**AVERAGE OF
1.2 BILLION GALLONS
TREATED PER DAY**



**NEARLY
500 BILLION GALLONS
TREATED PER YEAR**

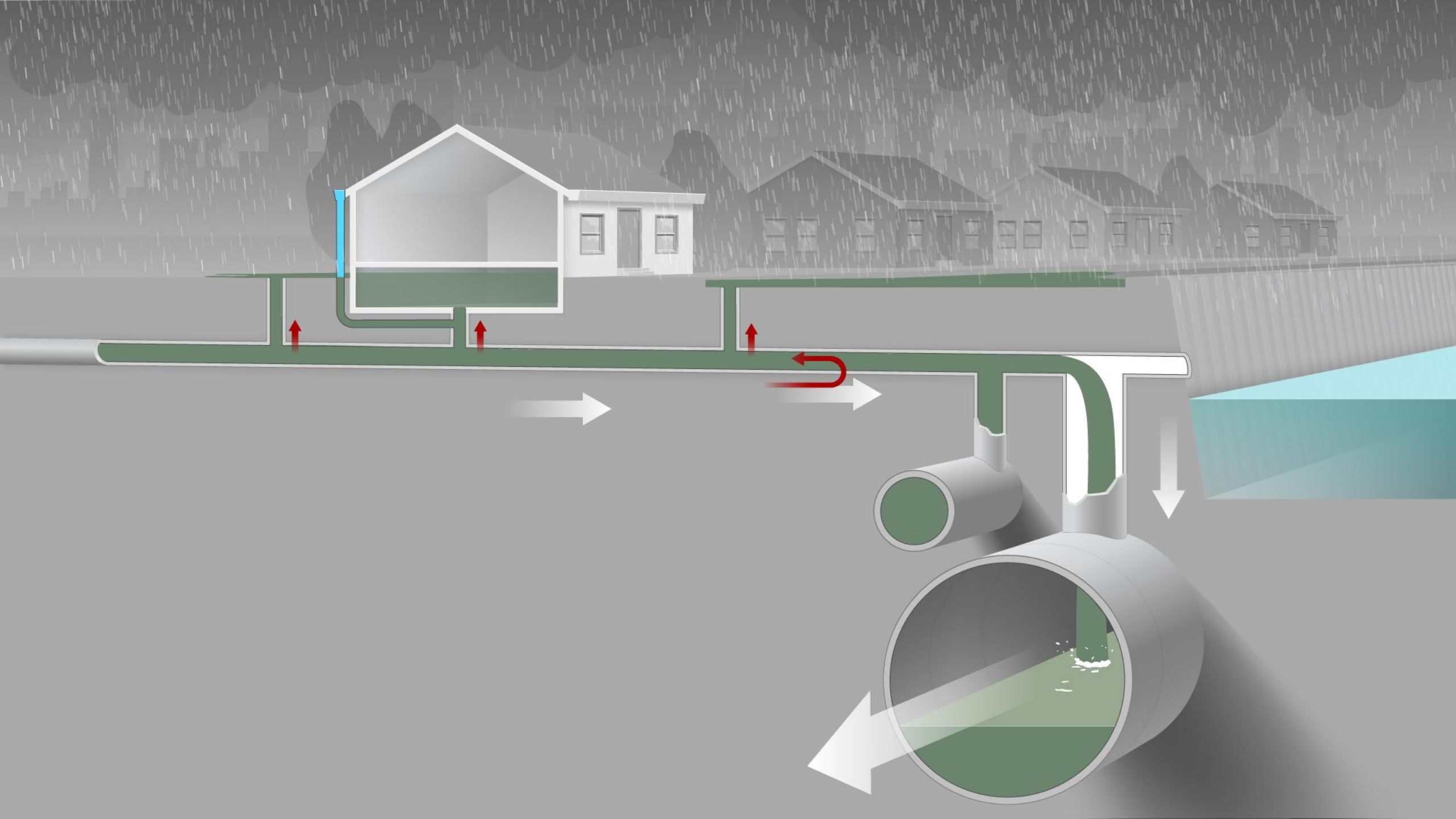
Combined Sewer Overflow



Local municipal sewer

MWRD intercepting sewer
Flows to MWRD water
reclamation plant

**Combined
Sewer
Overflow**





TRANSFORMING CHICAGO'S SCHOOLYARDS INTO VIBRANT OUTDOOR PLACES

FOR:



Inspiring outdoor
space for kids



NEIGHBORHOODS

An investment in neighborhoods



ENVIRONMENT

Flood reduction and water conservation



Space to Grow - Overview

WHAT IT IS

TRANSFORMING UNDERUTILIZED SCHOOLYARDS

Space to Grow is a Chicago-based initiative working with many of the city's low-income communities of color to transform underutilized schoolyards into inspired playgrounds for students and vital outdoor places for the whole neighborhood to get together and reconnect with nature. Our green schoolyards replace expanses of asphalt with landscaping that absorbs rainwater, helping to address neighborhood flooding issues.

WHY IT MATTERS

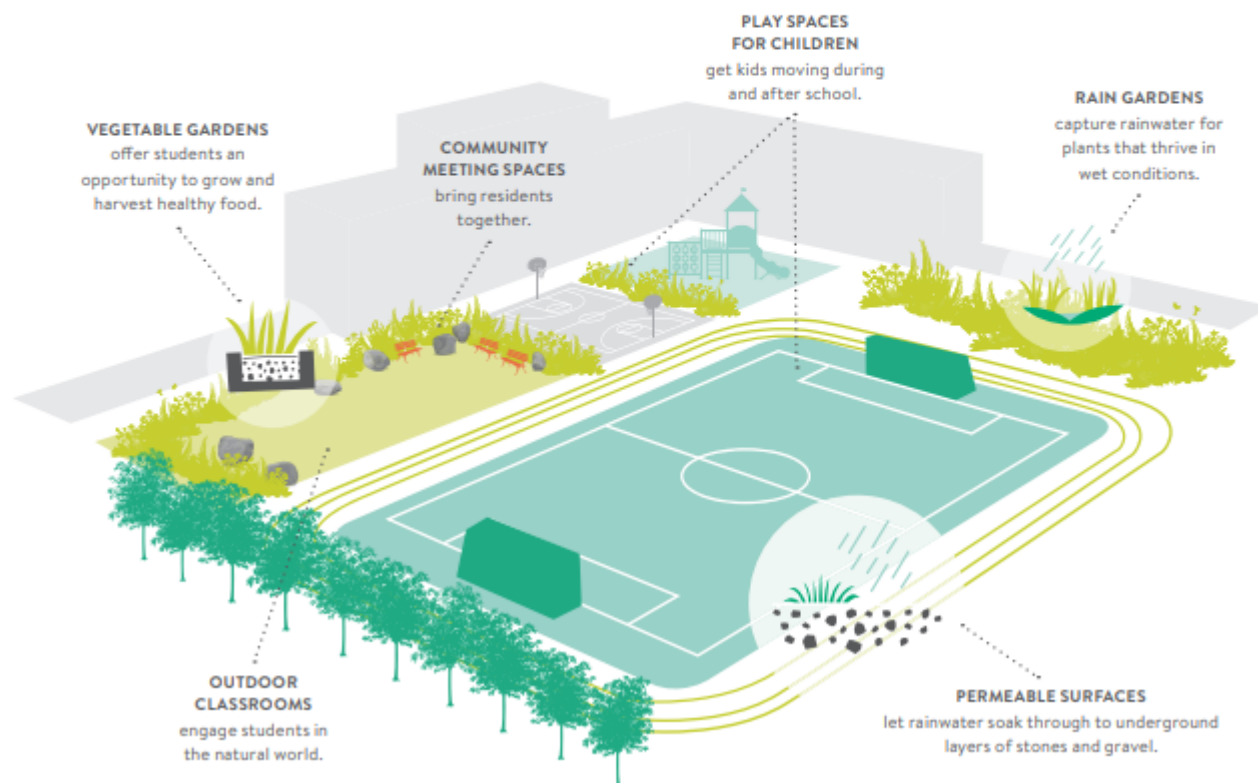
IMPROVING CHILDREN'S HEALTH & WELLNESS

Green schoolyards provide an opportunity for kids to learn and grow outdoors, and for schools to support student health and physical activity.

WHAT WE DO

CREATING NEIGHBORHOOD HUBS

We engage the entire school community, including neighborhood residents, to create a schoolyard that meets many needs and serves as a source of neighborhood pride.





Space to Grow - Partnerships

HOW WE DO IT

FORGING INNOVATIVE ALLIANCES

Our dynamic partnership is building green schoolyards throughout Chicago.

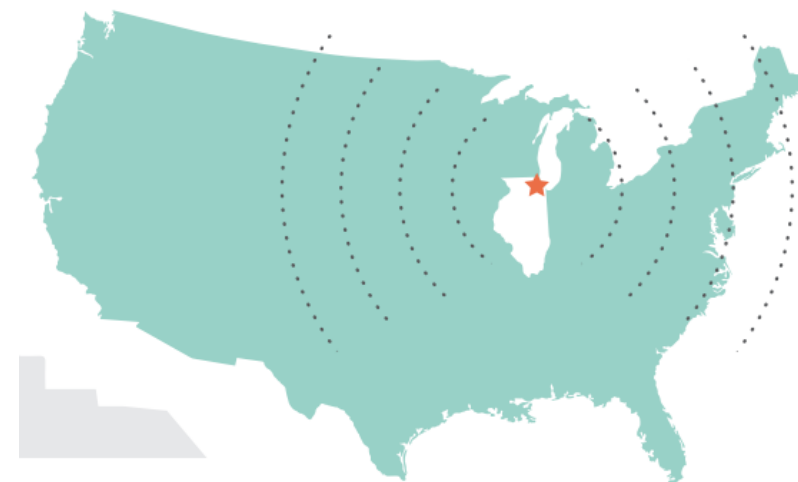
WHAT'S NEXT

EXPANDING IN CHICAGO AND BEYOND

Space to Grow aims to expand its reach in Chicago, and it serves as a model for green schoolyards across the nation, benefiting kids, neighborhoods, and the environment.

PARTNERS

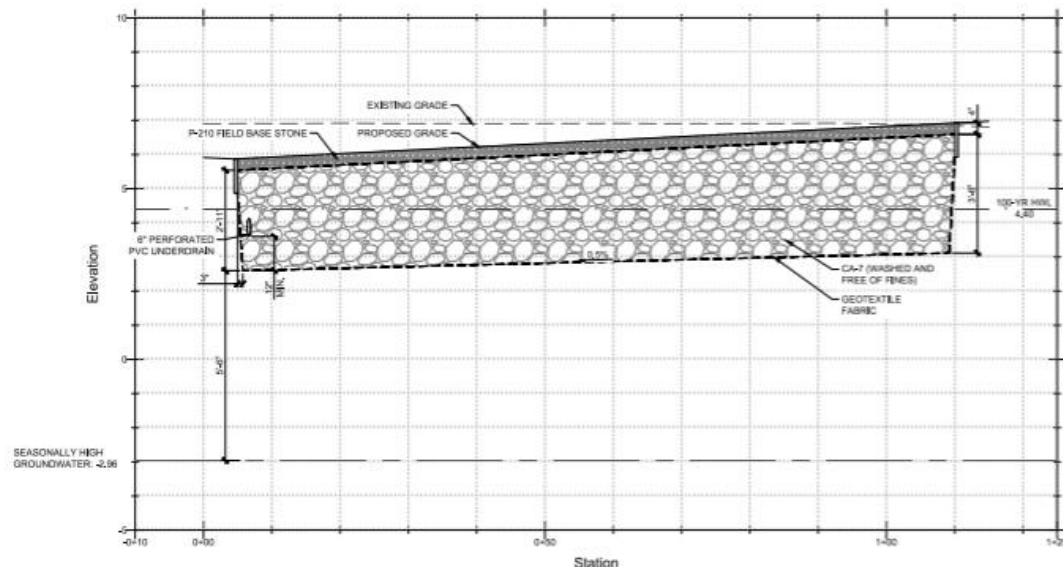
- CHICAGO PUBLIC SCHOOLS
- CITY OF CHICAGO DEPARTMENT OF WATER MANAGEMENT
- METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO
- HEALTHY SCHOOLS CAMPAIGN
- OPENLANDS
- ADDITIONAL PARTNERS AND SUPPORTERS



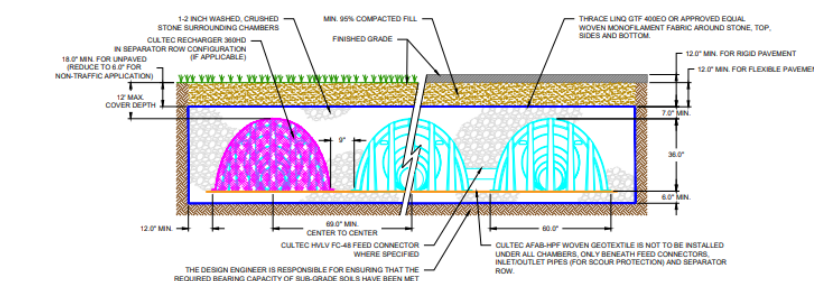


Space to Grow – Technical Aspects

- 41 schoolyards provide nearly **8.8 million gallons** of stormwater storage volume.
 - Infiltration volume counts, soil types vary throughout Chicago
- MWRD reviews the designs to help calculate stormwater storage and lend our green infrastructure expertise.
- MWRD reimburses at set \$/gallon rate up to a max % of total costs at each school.
 - Provides more flexibility than funding method of past IGAs.

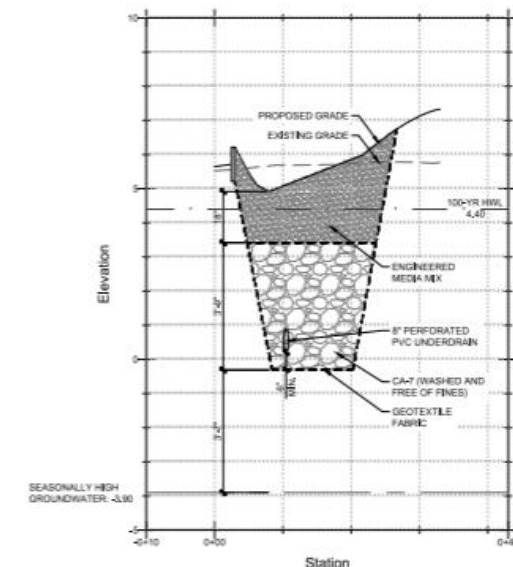


Section A-A (Artificial Turf Field)
Station: (-0+10 - 1+25)
H: 1" = 10' ; V: 1" = 2'

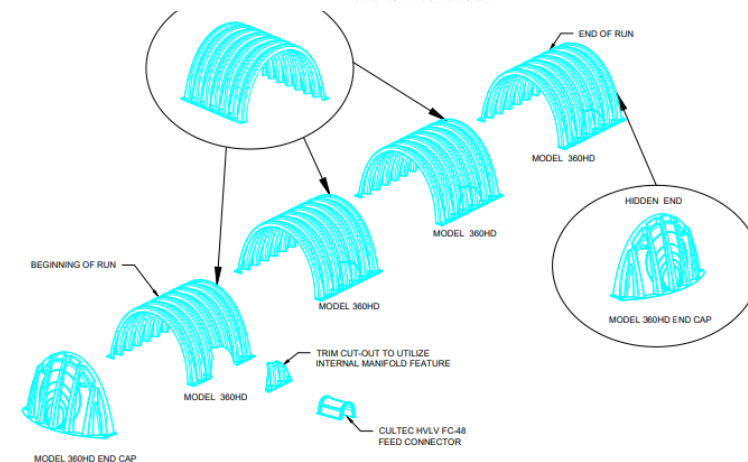


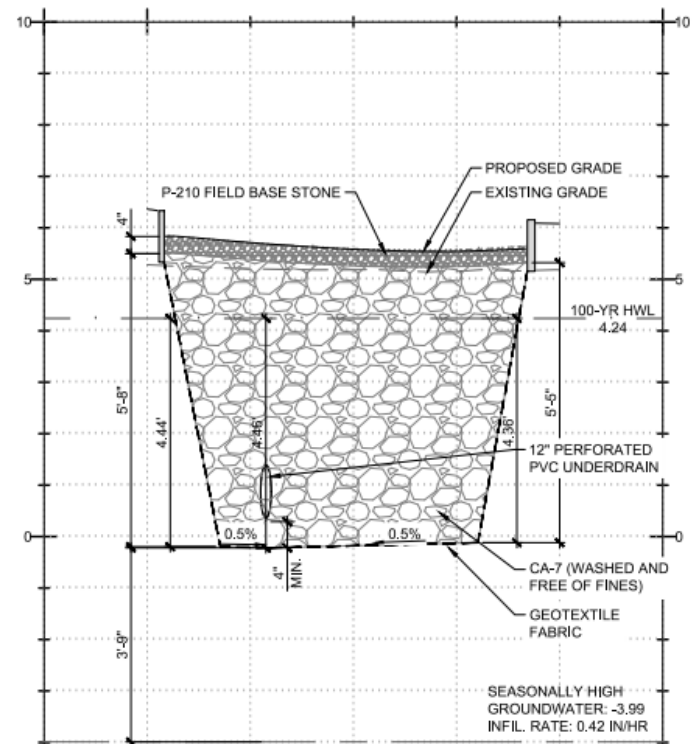
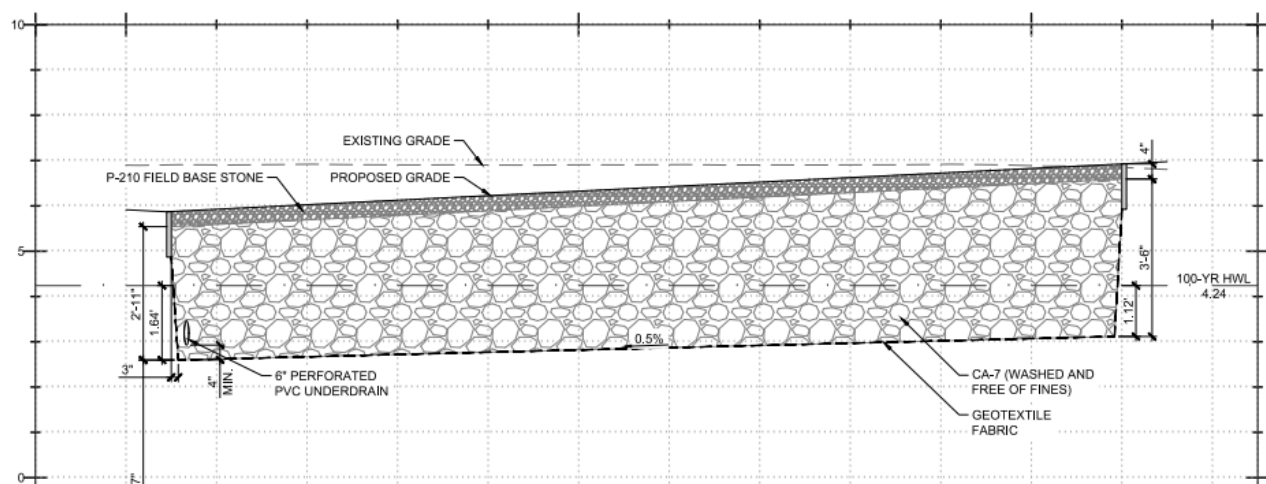
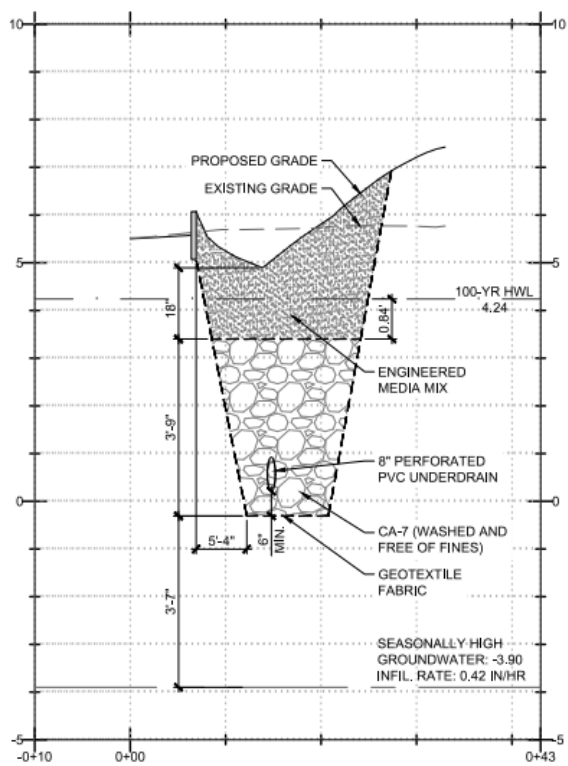
NOTES:

- THE CHAMBERS SHALL BE DESIGNED AND TESTED IN ACCORDANCE WITH ASTM F2787 "STANDARD PRACTICE FOR STRUCTURAL DESIGN OF THERMOPLASTIC CORRUGATED WALL STORMWATER COLLECTION CHAMBERS". THE LOAD CONFIGURATION SHALL INCLUDE:
 - INSTANTANEOUS AASHTO DESIGN TRUCK LIVE LOAD AT MINIMUM COVER
 - MAXIMUM PERMANENT (50-YEAR) COVER LOAD
 - 1-WEEK PARKED AASHTO DESIGN TRUCK LOAD
- THE CHAMBERS SHALL MEET THE REQUIREMENTS OF ASTM F3436-20 "STANDARD SPECIFICATION FOR CELLULAR POLYPROPYLENE (PP) CORRUGATED WALL STORMWATER COLLECTION CHAMBERS". THE CHAMBERS SHALL MEET THE REQUIREMENTS OF THE AASHTO LRBFB BRIDGE DESIGN SPECIFICATIONS SECTION 12.12, WHEN INSTALLED ACCORDING TO CULTEC'S RECOMMENDED INSTALLATION INSTRUCTIONS. THE STRUCTURAL DESIGN OF THE CHAMBERS SHALL INCLUDE THE FOLLOWING:
 - THE CREEP MODULUS SHALL BE 80-YEAR AS SPECIFIED IN ASTM F3436
 - THE MINIMUM SAFETY FACTOR FOR LIVE LOADS SHALL BE 1.75
 - THE MINIMUM SAFETY FACTOR FOR DEAD LOADS SHALL BE 1.95



Section B-B (Stormwater Rain Garden 1)
Station: (-0+10 - 0+43)
H: 1" = 10' ; V: 1" = 2'



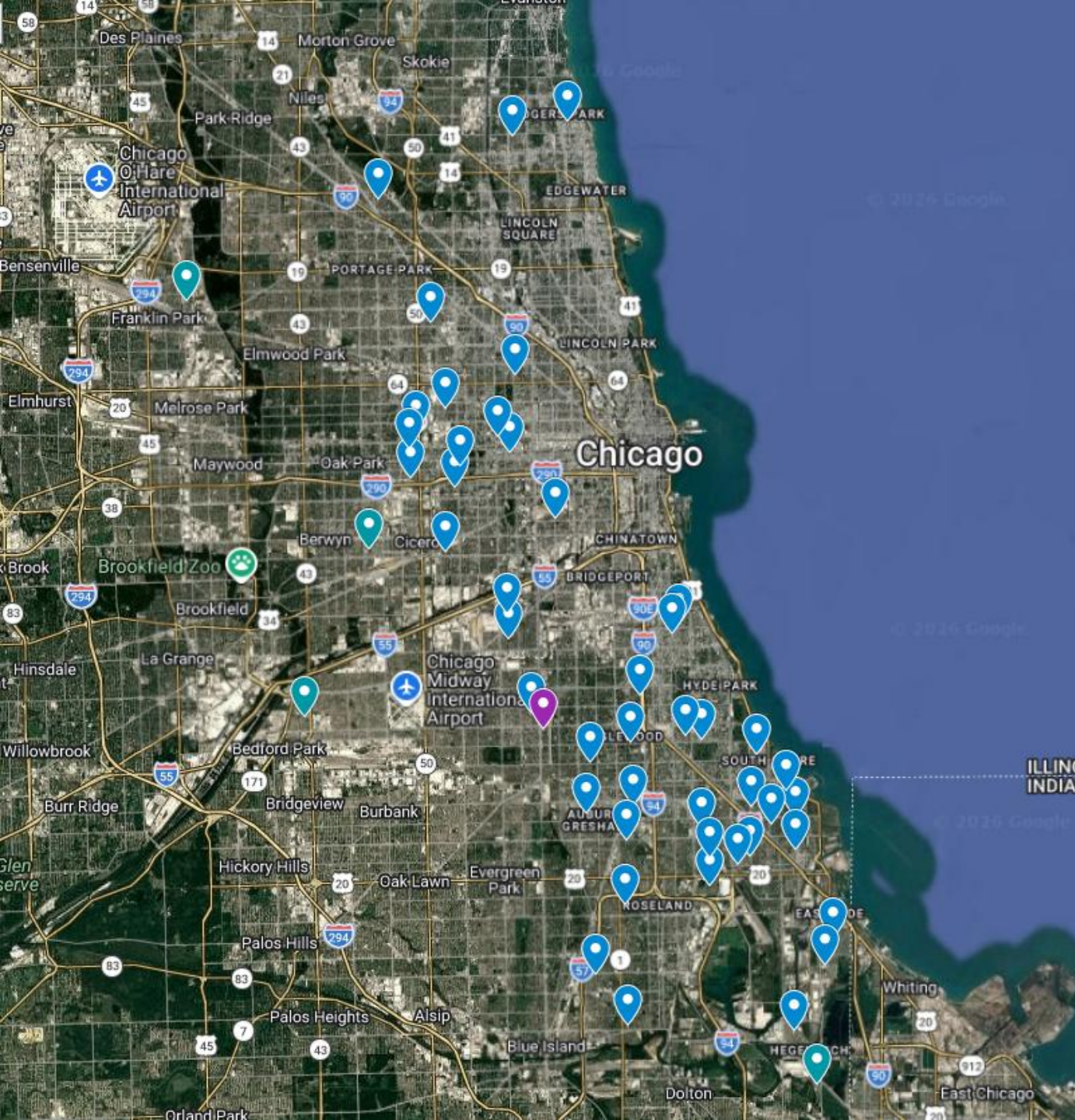




Space to Grow - Partnerships

- 41 schoolyards completed since 2014
- Partnership mechanism with Chicago Public Schools (CPS):
Intergovernmental Agreements
 - First 5 schools completed as a “pilot”, Phase I IGA
 - Next 29 schools completed under a longer-term IGA, Phase II, through 2022
 - A third IGA now underway – Phase III, 2024-2026
- Three funding partners – CPS, MWRD, City of Chicago
 - City has separate IGA with CPS





Space To Grow Projects in 2026

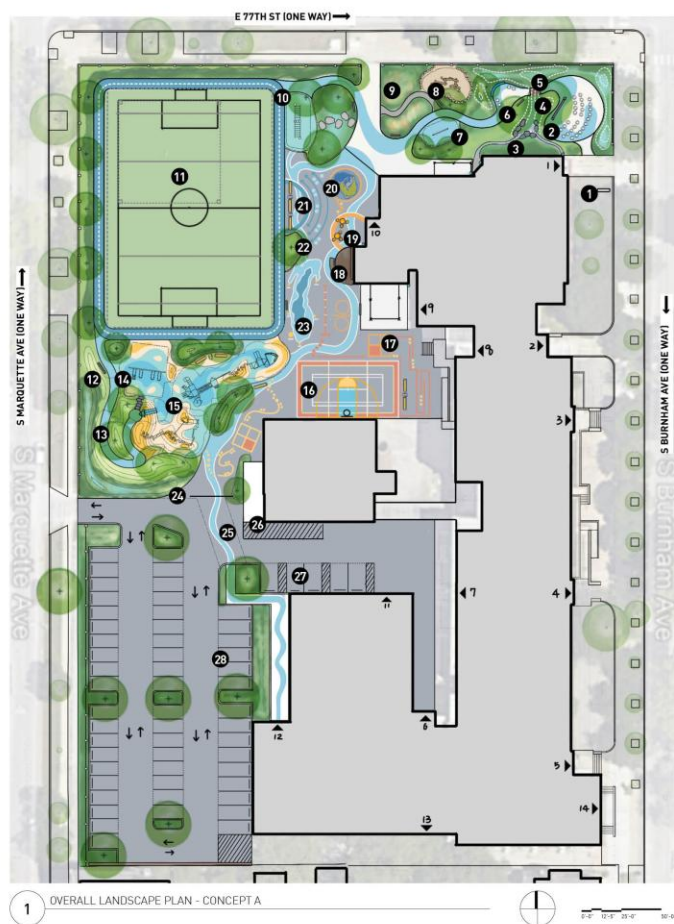
Space to Grow schoolyards provide opportunities for

- Active play + physical education
- Outdoor learning
- Gardening
- Environmental literacy
- Engagement with nature
- Addressing neighborhood flooding issues
- Community gathering

- Virgil Grissom Elementary School
- George Leland Elementary School
- Donald L. Morrill School
- Theophilus Schmid School
- Willia Cather Elementary School
- Drozco Elementary Fine Arts & Sciences
- Corkery Elementary School
- Gunsaulus Scholastic Academy
- Wadsworth STEM Elementary School
- Cook Elementary School
- Nathan S. Davis Elementary School
- Fernwood Elementary School
- Eugene Field Elementary School
- Morton School of Excellence
- James B Farnsworth Elementary School
- Arthur R Ashe Jr School
- Ninos Heroes Elementary
- Nash Elementary School
- Daniel Webster Public School
- Westcott Elementary School
- Barry Elementary School
- Boone Elementary School
- Genevieve Melody Public School
- Jesse Sherwood School
- Harold Washington Elementary School
- Horace Mann School
- Arnold Mireles Academy
- Isabelle C O'Keeffe School
- Wentworth Elementary School
- John Whistler Elementary School
- Robert A Black Magnet Elementary School
- Edward Coles School
- Benjamin E. Mays Elementary Academy
- Brian Piccolo Elementary School
- Ronald Brown Academy
- Spencer Elementary Technology Academy
- Claremont Academy (good CPS example, no...
- Myra Bradwell School
- James Farmer Jr. Elementary School
- Mollison Elementary School
- William H. Ryder Math & Science Specialty E...
- Emmett Louis Till Math and Science Academy
- Amelia Earhart School
- Moos Elementary School
- Jane Addams Elementary School
- George Washington High School



Space to Grow – Partner Funding Model



LEGEND:

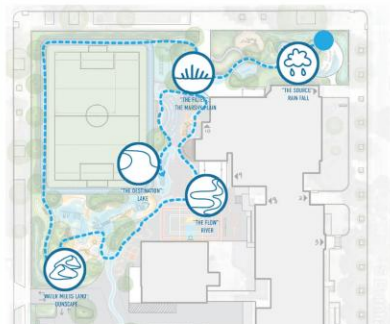
- 1 EXISTING SCHOOL SIGN
- 2 OUTDOOR CLASSROOM W/CHALK BOARD
- 3 DOWNSPOUT AND WATER RUNNEL
- 4 RAIN GARDEN
- 5 BRIDGE
- 6 READING AREA
- 7 FITNESS NOOK
- 8 NATURE PLAY
- 9 NATIVE PLANTING
- 10 RUNNING TRACK
- 11 MULTI-SPORTS FIELD
- 12 SOD MOUND
- 13 ACCESSIBLE SLOPED WALKWAY
- 14 SWING
- 15 2-5, 5-12 PLAY EQUIPMENT
- 16 MULTI-PURPOSE SPORT COURT
- 17 GAME PAINT ON ASPHALT
- 18 WOOD STAGE
- 19 GAME TABLES
- 20 BRADWELL LOGO
- 21 SEATING NOOK
- 22 PLANTER WITH TREE
- 23 LAKE MICHIGAN PAINT
- 24 GATE
- 25 ELEVATED CROSSING
- 26 TRASH ENCLOSURE AND LOADING
- 27 ADA PARKING
- 28 STAFF PARKING

CONCEPT A FLOW + GROWTH



Inspired by the movement and vitality of water, and the growth of connections within the South Shore community and Lake Michigan.

This concept integrates stormwater management elements with storytelling, education, and local identity, creating a space that is both functional and deeply tied to the culture of Bradwell School and South Shore.



"THE SOURCE": RAIN FALL
"WATER MEETS LAND": DUNSCAPE
"THE FLOW": RIVER
"THE FILTER": THE MARSHY PLAIN
"THE DESTINATION": LAKE

- Three large government entities working together
- \$5 per gallon of water stored and infiltrated on the site per water agency
- 45% cap
- Maximum of \$5.3/per partner/year
- CPS responsible for the maintenance, design, and construction management
- Yearly Inspections
- Life Cycle of 20 years



Rain Gardens

**Downspout
Disconnection**

Suburban Green
Schoolyard Program

Permeable Pavements

**Virgil Grissom
Elementary School**

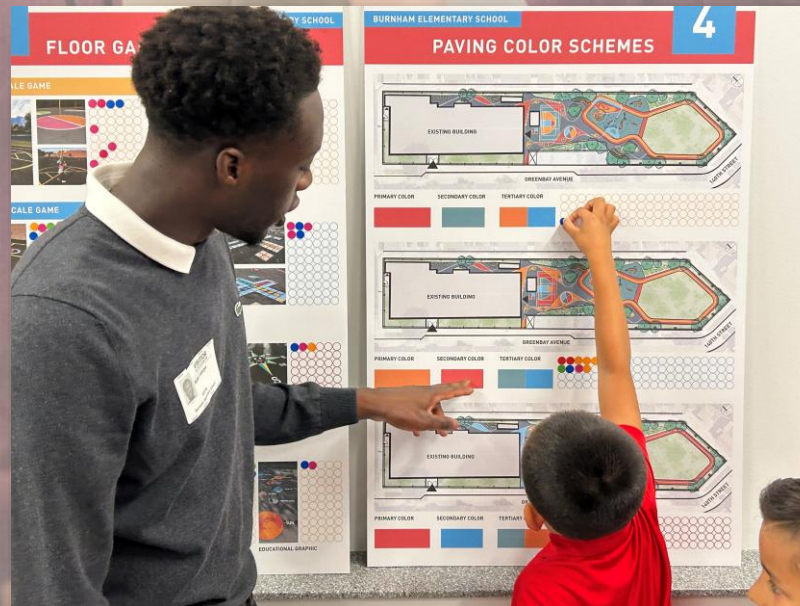


NEW PROGRAM CHALLENGES!

Funding Partners are gone

Grants don't solve funding problems

Courting new partners



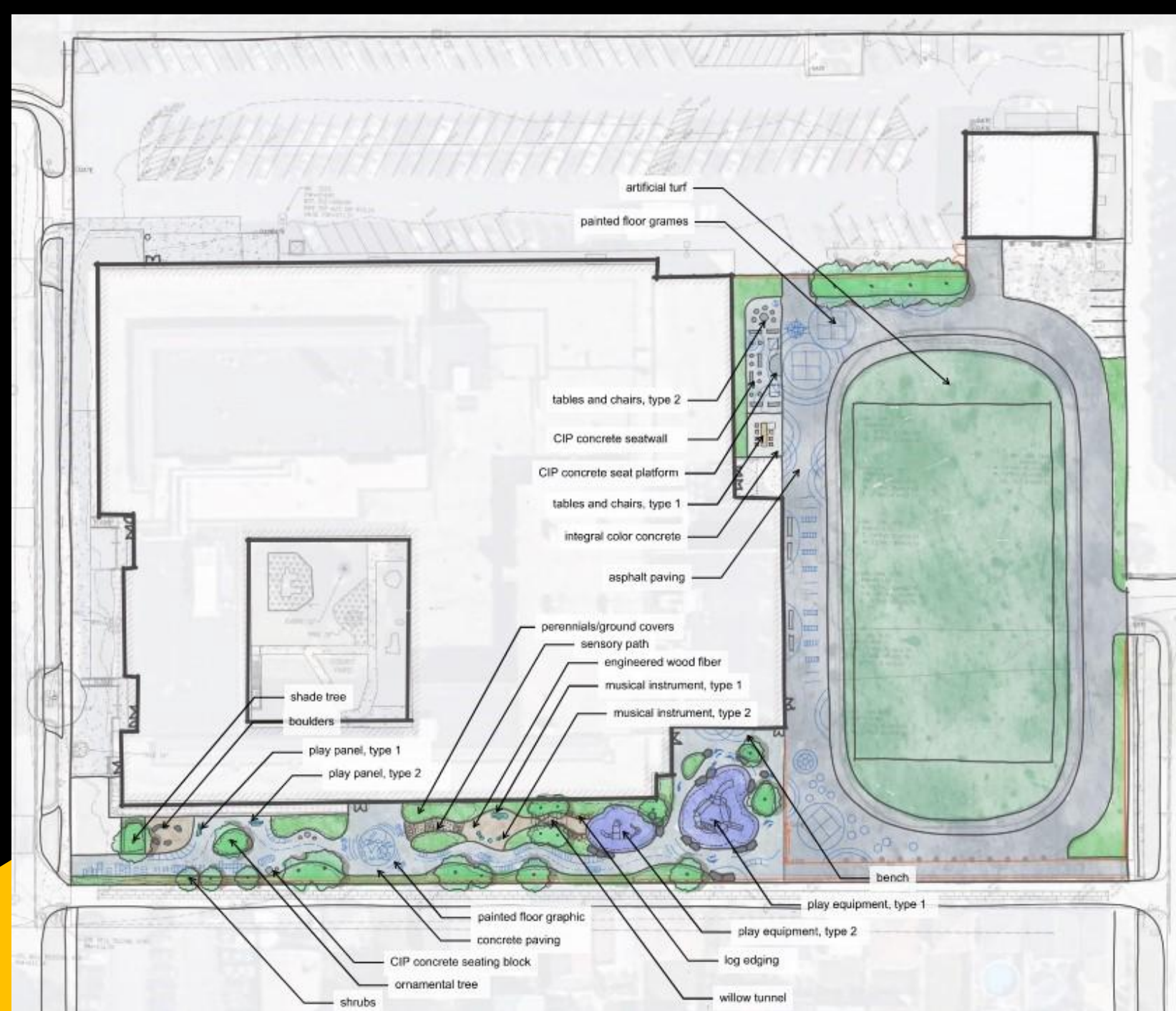
Burnham Elementary School District 154.5

- Total Stormwater Captured per event: 253,820 gallons
- GI Costs: \$1,744,243.10
- Non-GI Costs: \$380,556.00
- Construction is on-going, completion anticipated Summer 2026



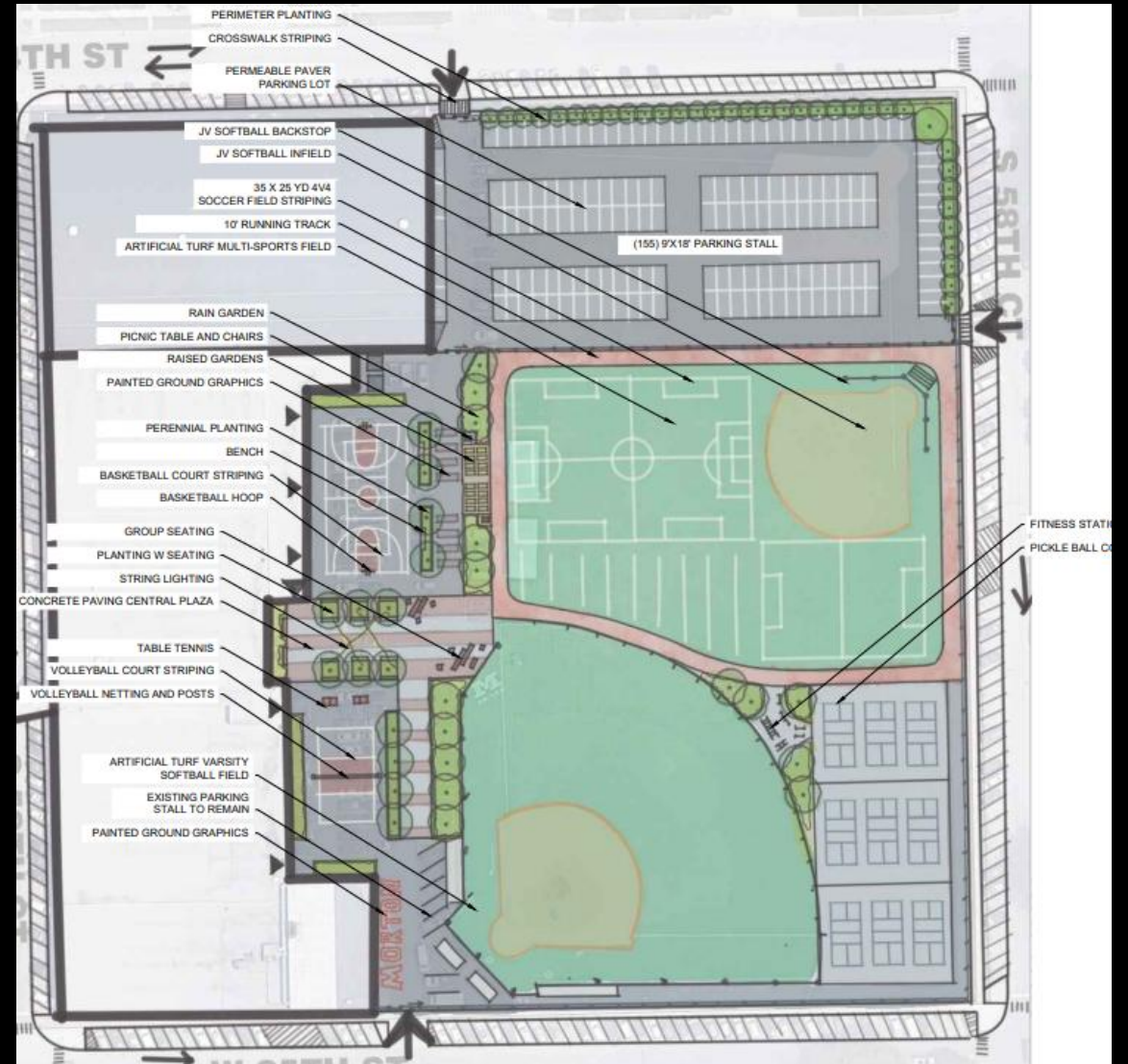
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Morton East High School

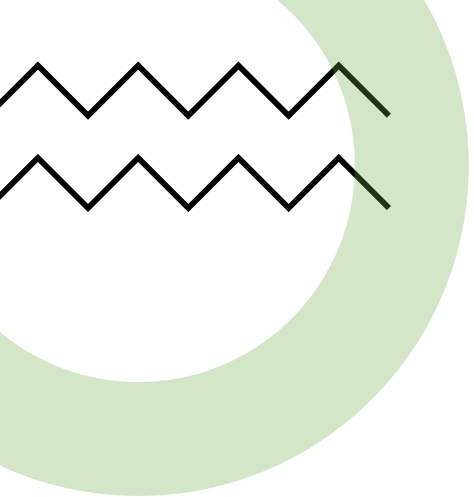
- Estimated Stormwater Captured per event: 1,300,000 gallons
- GI Costs: \$6,400,000
- Non-GI Costs: \$2,690,000
- Design Ongoing, Construction planned for 2027
- Ongoing coordination with Cicero for underground storage in new parking lot





East Leyden High School

- Estimated Stormwater Captured per event: 1,069,000 gallons
- GI Costs and Non-GI 30% Cost Estimates Anticipated Late 2026
- Preliminary Engineering ongoing, Construction planned for 2028



THANK YOU!

- Holly Sauter PE, CFM
- SauterH@mwr.org



BEFORE



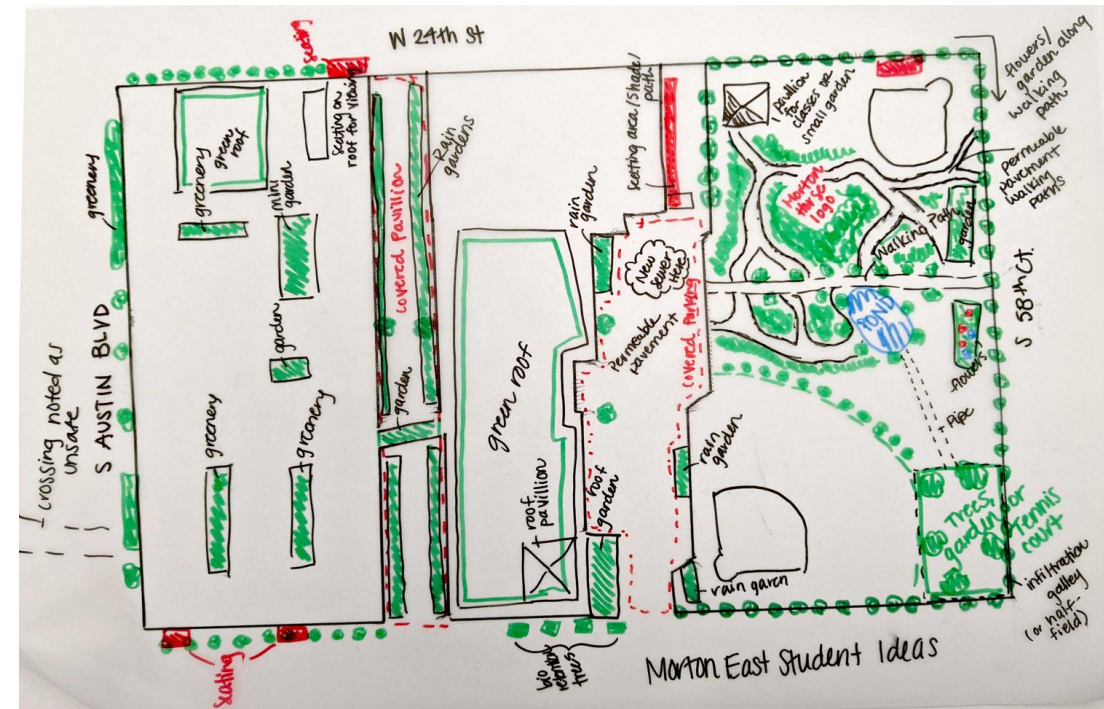
- Large areas of dark asphalt retains and reflects heat during hot days
- Little to no shade available for students

- The field floods every rainfall, preventing students from using the space after storms, and creating maintenance issues for school staff
- Little to no shade available for students





- Green schoolyards provide opportunities for STEM curriculum, both inside and outside the classroom
- During the design process, students can provide feedback about what they want to see at their schools





Infiltration Trench

This long, narrow space is filled with plants and gravel that collect runoff and allow it to soak into the surrounding soil.



Native Plants

This colorful garden creates an attractive space that also uses strong, deep roots that drink up stormwater to reduce flooding.



Stormwater Trees

In addition to providing shade, oxygen and carbon capture, these trees catch stormwater and filter runoff with a special soil and subsurface



Permeable Rubber

This play surface acts like a sponge. Tiny holes allow rainwater to soak into the ground to prevent puddles and slow water's flow into our sewers.



Artificial Turf

This field gives kids a place to play and run and an area for water to flow underground in a layer of gravel that captures stormwater.







Non-Stormwater Funding Sources

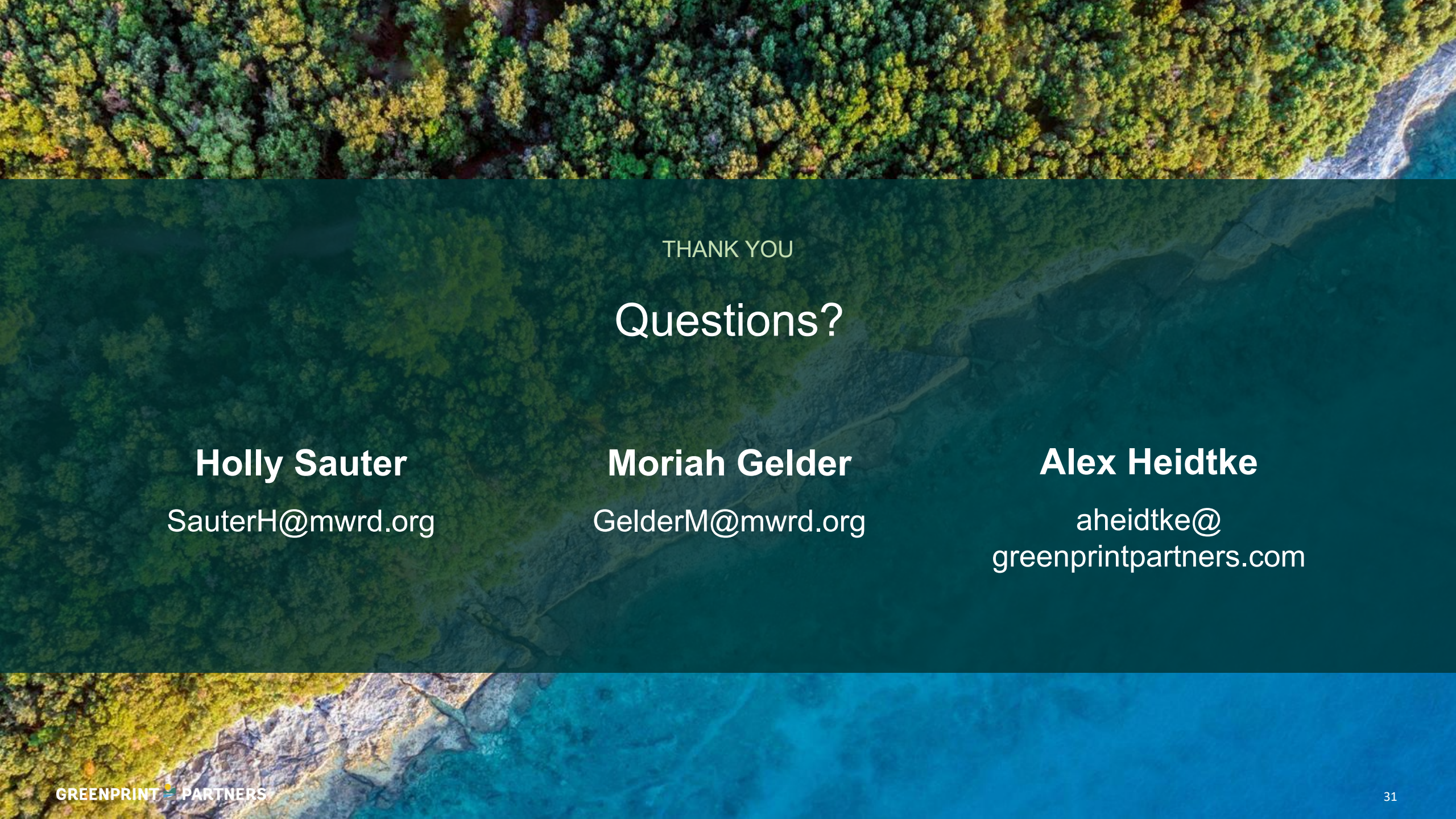
- School district capital budget
- Donations from community partners
- Municipal funds
- Grant opportunities

Non-Stormwater Grant Opportunities

- [American Academy of Dermatology Shade Structure grant](#)
- [GameTime play equipment grant](#)
- [Good Sports Equipment Donation Opportunities](#) - equipment donations
- [KABOOM! Community-Built Playspace Grants Program](#) - playgrounds, adventure courses, and multi-sport courts
- [Whole Foods Market Foundation School Garden Grants](#) - edible educational gardens
- [WK Kellogg Foundation](#) - school playspace and garden projects
- [USDA Patrick Leahy Farm-to-School grant program](#) - implementing farm-to-school programs, including edible school gardens
- [IDNR Illinois Schoolyard Habitat Action Grant](#)
- [Kids Gardening Grants](#)
- [Growing Spaces](#)

Additional Funding

- **GO Bonds**
 - General Obligation Municipal Bond
- **School Maintenance Project Grant**
 - \$50,000 match
 - Illinois State Board of Education



THANK YOU

Questions?

Holly Sauter

SauterH@mwr.d.org

Moriah Gelder

GelderM@mwr.d.org

Alex Heidtke

aheidtke@
greenprintpartners.com