



## **Green + Healthy Schoolyards**

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Milwaukee Public Schools

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Associate Professor, UWM  
Owner, Ce Planning Studio

# PARTNERS

Environmental Engineers

Urban Planners + Designers

Landscape Architects

Educators: Teachers + Staff

MPS Students + Community

Graduate Architecture + Planning  
Students UWM

**Public Schools** : 82% households  
economically disadvantaged

20% in special programs



# Schoolyard Conversion

YEAR 1

YEAR 2

YEAR 3+

MAY REQUIRE MULTIPLE PHASES →



CONCEPTUAL  
PLANNING



FUNDRAISING



DETAILED DESIGN  
& PERMITTING



CONSTRUCTION



MAINTENANCE  
& STEWARDSHIP

36 schoolyards designed

26 completed

10 in process



# YEAR 1 Engagement + Conceptual Design

Student surveys

Student + Staff Charette

Monthly Green Team meetings

Community Open House



# YEAR 1 Engagement + Conceptual Design Stormwater Reduction



Samuel Clemens K4 – 5<sup>th</sup>



Kagel K3 – 7<sup>th</sup>

# YEAR 1 Engagement + Conceptual Design

IDEA FLIP

## March 2023 1st Draft

Perspective #1 - Soccer field, nature play, pathways, trees and raised bed gardens



Things You Like About the Current Draft Concept



Opportunities for Improvement



Questions?

Samuel Clemens K4 – 5th

# YEAR 1 Visualizing the Ideas



# Outdoor Learning + Safe Play



German Immersion K4 – 5th

Gaenslen K4 – 8th

Bioswales      Underground Cisterns  
Classrooms

Nature Play      Outdoor

# YEAR 1 Visualizing the Ideas



Mitchell Integrated Arts K3 – 8th



# Year 2 Technical Design, Permitting, Fundraising



**MILWAUKEE  
PUBLIC SCHOOLS**



National Fish and Wildlife Foundation - Sustain Our Great Lakes (SOGL) - Five Star and Urban Waters Restoration Program - U.S. Environmental Protection Agency - Great Lakes Restoration Initiative (GLRI)  
The Burke Family Foundation - Individual School Green Teams - Medical College of Wisconsin

Without these partners, holistic green and healthy schoolyards would not come to fruition

# Year 3 Construction



857,000 square feet (nearly 20 acres) asphalt removed

**before ASPHALT PLAY**



# TRANSFORMING EDUCATION + PLAY + COMMUNITY



# LONGFELLOW K3 - 8th

BEFORE



# LONGFELLOW K3 - 8th



# LONGFELLOW K3 - 8th



**Year 1**



**Year 3**

# BAYVIEW MONTESSORI 1<sup>st</sup> – 8<sup>th</sup>





# BAYVIEW MONTESSORI 1<sup>st</sup> – 8<sup>th</sup>



# BAYVIEW MONTESSORI 1<sup>st</sup> – 8<sup>th</sup>



# IMPACT

**3,581 trees planted**

**3,158,000 gallons captured per rain event**

**36 million gallons of rainwater captured annually**

**230,000 square feet of native habitat restored**

**\$25.4 million in funds raised for local schools**



# IMPACT

13,000 students and 25,000 community members impacted on a daily basis



# GREENFIELD BILINGUAL

K4 – 8th

More to come in  
2024!



<https://refloh2o.com/schoolyard-redevelopment-projects>



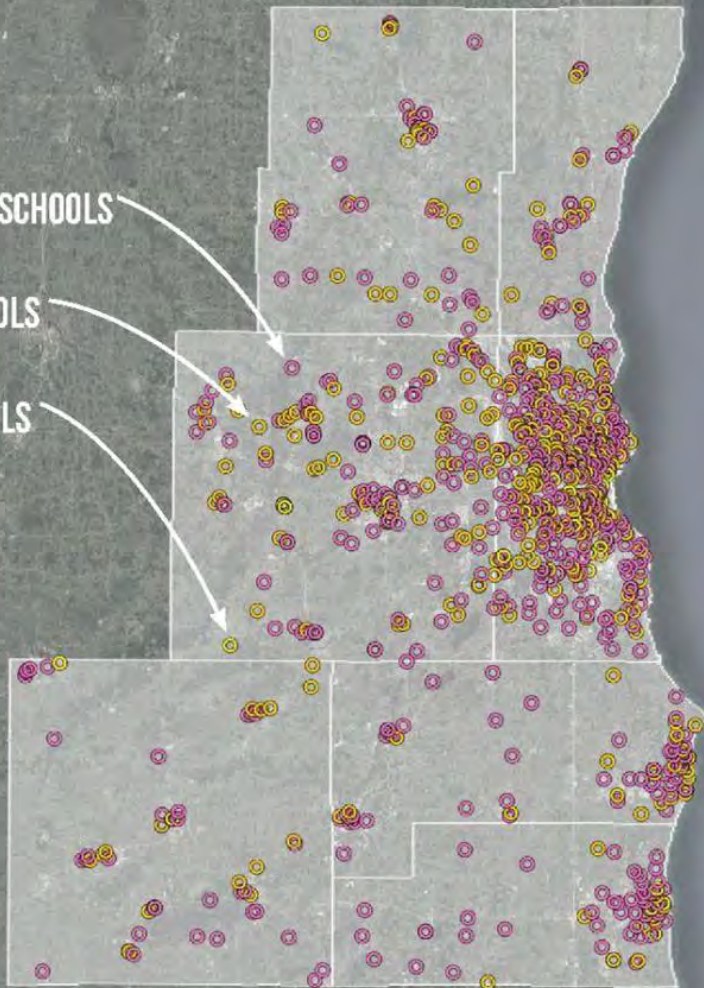
**Carolyn Esswein**  
cesswein@uwm.edu



**535 PUBLIC SCHOOLS**

**307 PRIVATE SCHOOLS**

**74 CHARTER SCHOOLS**



## WHY MILWAUKEE-AREA SCHOOLS?

Southeastern Wisconsin is home to over 900 schools. 100,000's of students, family members, teachers, administrators, maintenance staff, and community members interact with our schools every day. With many of our schools covered in hardscape, investing in green and healthy school projects and ecoliteracy curricular connections present many opportunities for meaningful triple bottom line impacts (social, environmental, and economic).

(map produced by Reflo through Google Earth and in conjunction with the Milwaukee Community Map)

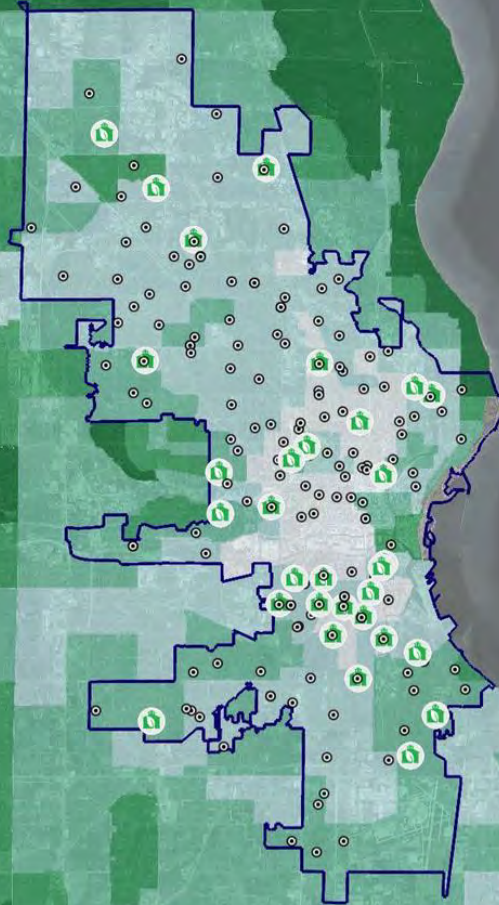
## Milwaukee Public Schools (MPS):

- Largest school district in Wisconsin
- 70,000+ students
- 82% economically disadvantaged
- 20% special needs
- 150 schools + 55 additional facilities
- 500+ acres of impervious surfaces

### BASEMAP LEGEND:

#### MEDIAN HOUSEHOLD INCOME

- \$11,067 - \$24,300
- \$24,300 - \$48,600
- \$48,600 - \$72,900
- \$72,900 - \$97,200
- \$97,200 - \$151,111
- Municipalities



## MEDIAN HOUSEHOLD INCOME IN SE WISCONSIN

Census data can be presented at many scales. Here we used census tracts to display Median Household Income in seven counties. Note that **\$24,300 is the poverty line** for a family of four (2016).



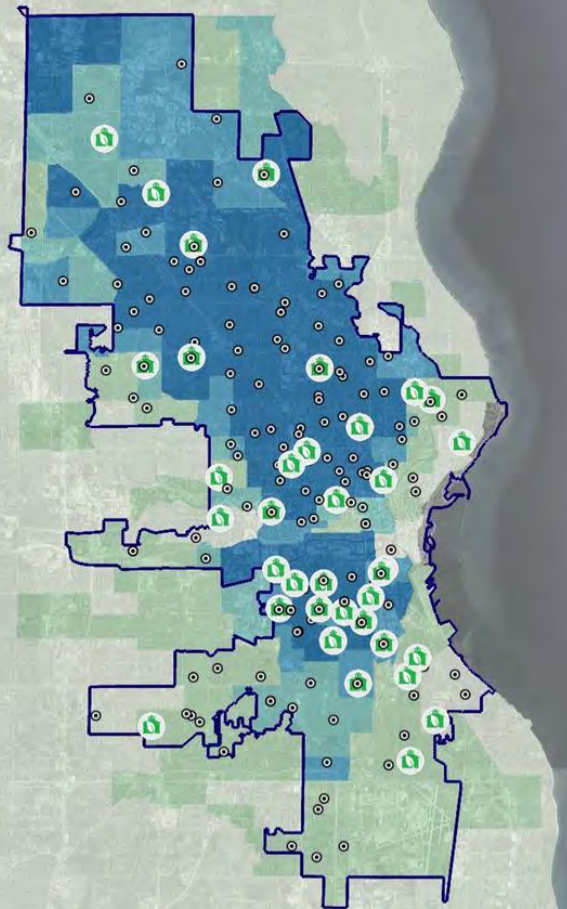
United States  
**Census**  
BUREAU OF ECONOMIC ANALYSIS  
IPUMS

Source:  
U.S. Census 5-Year Estimates 2012-2016  
extracted from NHGIS.org



**BASEMAP LEGEND:  
PERCENT PEOPLE OF COLOR**

- 0% - 20%
- 20% - 40%
- 40% - 60%
- 60% - 80%
- 80% - 100%
- Municipalities



## RACE & ETHNICITY IN SE WISCONSIN

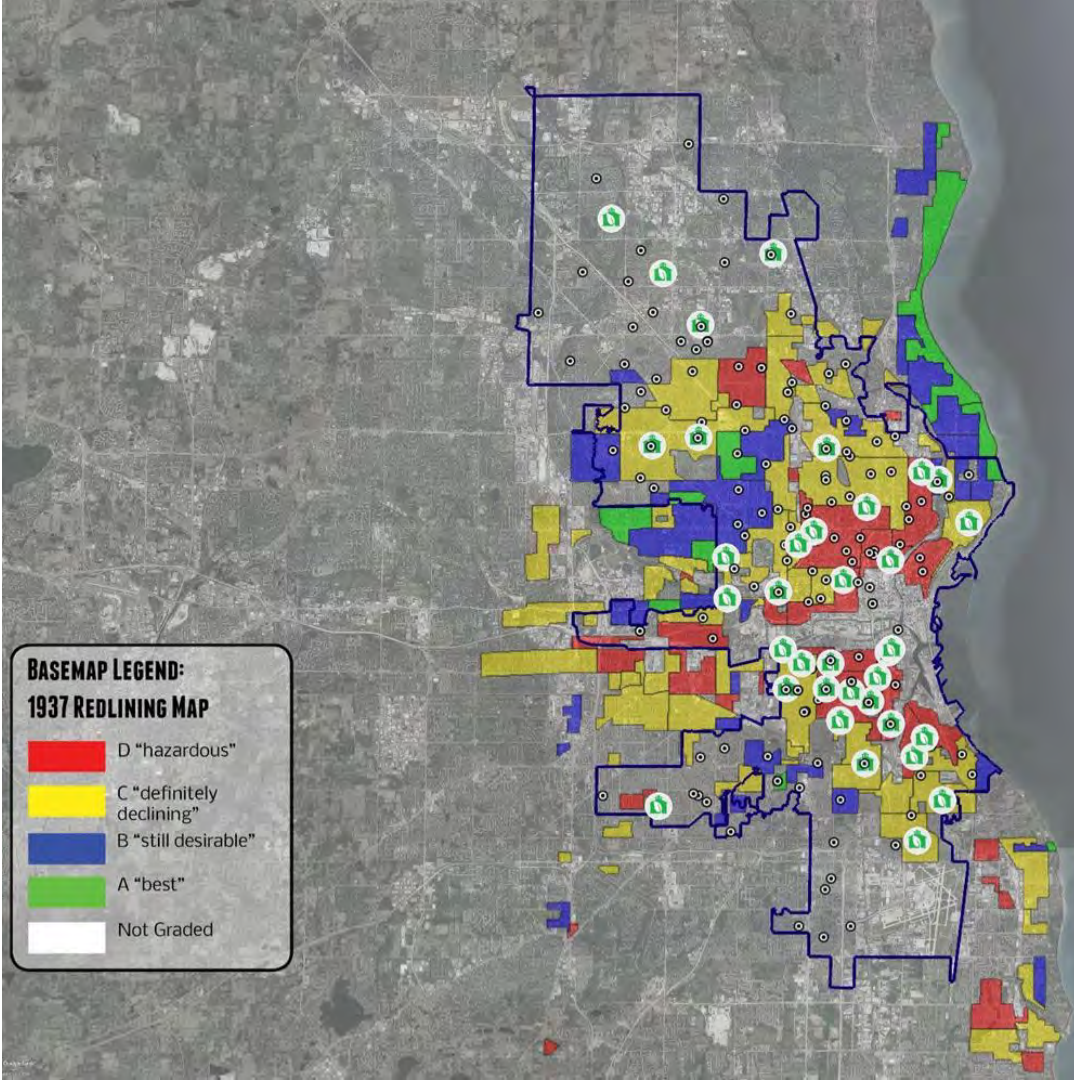
Census data can be presented at many scales. Here, we used census tracts to compare the ratio of people of color to non-Hispanic white people within seven counties in southeast Wisconsin.



United States Census Bureau IPUMS  
Source: U.S. Census 5-Year Estimates 2012-2016 extracted from NHGIS.org







**BASEMAP LEGEND:  
1937 REDLINING MAP**

-  D "hazardous"
-  C "definitely declining"
-  B "still desirable"
-  A "best"
-  Not Graded

## THE IMPACT OF COLOR: REDLINED MILWAUKEE

Federal policy determined if home loans were "safe" to banks by grading city areas by color, including factors like race. People in red zones could not access home loans, trapping citizens in a cycle of poverty.

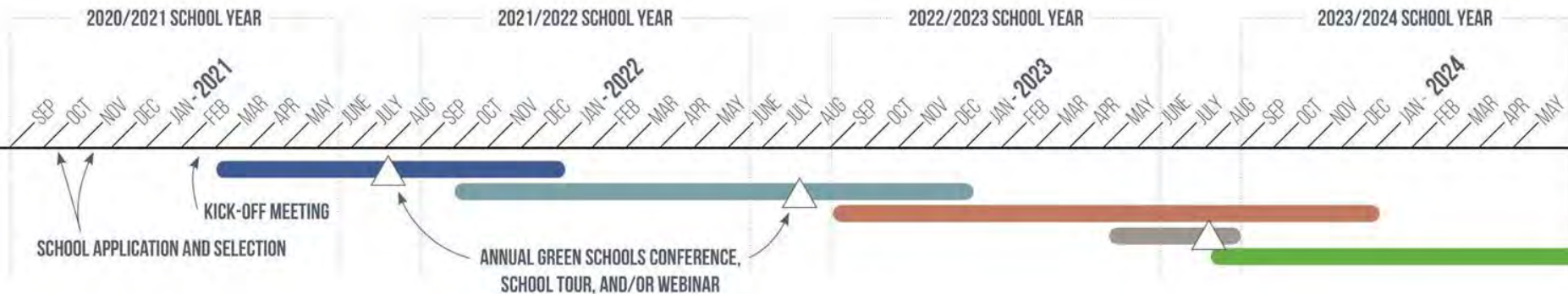


Created by Escuela Verde Youth Activists,  
May 2018; Source: 1937 Home Owners  
Loan Corporation (HOLC) map from  
*Mapping Inequality*, Univ. of Richmond



# GREEN AND HEALTHY SCHOOLS SELECTION PROCESS: NEED AND ENTHUSIASM













# ENVIRONMENTAL INTERNSHIPS: SUMMER PROGRAM





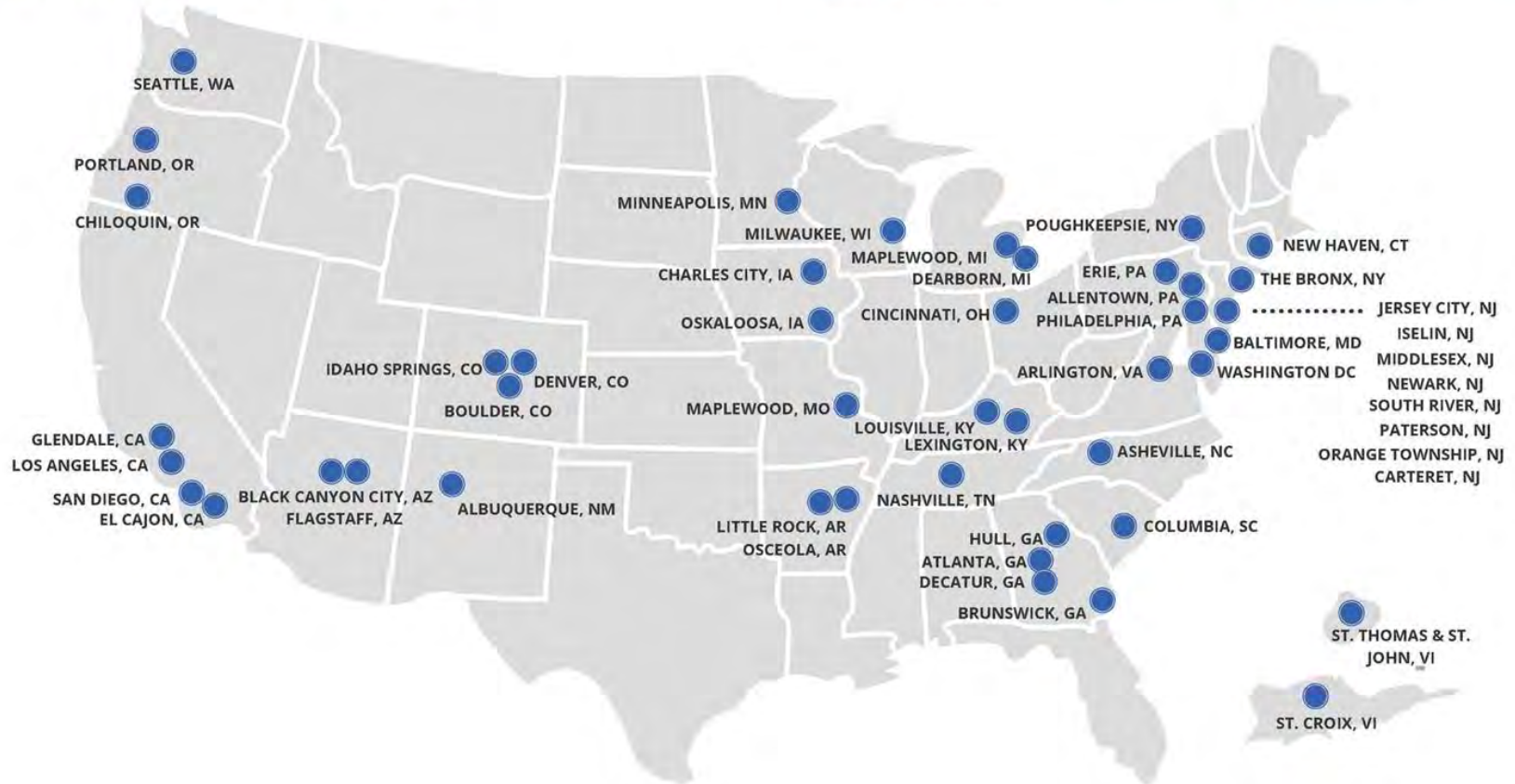
# ENVIRONMENTAL INTERNSHIPS: SCHOOLYEAR PROGRAM



# GREEN AND HEALTHY SCHOOLS RESEARCH ON SOCIAL IMPACT



# Cities Connecting Children to Nature



# ASPHALT COVERED SCHOOLYARDS



# MULTI-USE GATHERING SPACES



# *GREEN AND HEALTHY SCHOOLYARDS – CHALLENGES / OPPORTUNITIES*



# STORMWATER STORAGE UNDER PLAYFIELDS



# MATURE BIOSWALES





# PROTECTING YOUNG BIOSWALES - BORDERS



# POROUS GROUND COVER - CRUSHED GRANITE



# RESILIENT FOOTPATHS - ACTIVATED FOR LEARNING



# LOGS/WOOD - SEATING



## HILLS AS PLAY FEATURES



# CONSTRUCTION SURPRISES - BURIED FOUNDATIONS - ARCHAEOLOGY



## CONSTRUCTION SURPRISES - ANTIQUE TOYS



# TREES - STAKING





# BOLLARDS: VEHICLE AND PEDESTRIAN TRAFFIC

