

CSO53

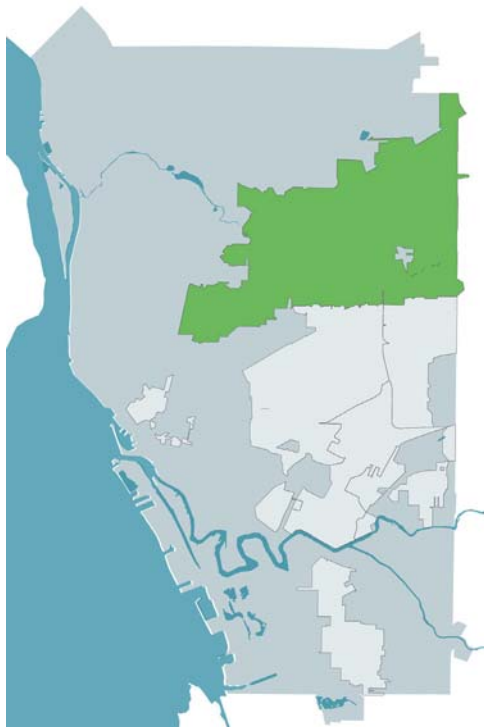


When a drop of water lands at the intersection of Fillmore Avenue and Delavan Avenue, it is joined by water from the neighborhoods of Parkside, Leroy, Kensington, Kenfield, Schiller Park, Genesee Moselle, Grider, MLK Park, Hamlin Park, Cold Spring, Masten Park, Kingsley, and the Fruit Belt. During heavy wet weather, the rainwater combines with sewage and overflows into Scajaquada Creek at Combined Sewer Overflow 53 (CSO 53).

CSO Basin 53 at a glance...

Community Benefits

- Reconnect neighborhoods by creating a deck park over the Scajaquada expressway
- Workforce development
- Green Jobs
- Tree planting programs
- Improving the public realm
- Walkability
- Traffic Calming
- Expanded canopy cover
- Support for neighborhood revitalization efforts
- Reduced urban heat island effect
- Cleanup and revitalization of vacant land



Green Infrastructure Opportunities

CSO Basin 53 is the largest of the priority CSO Basins in terms of both area and population and it also has the largest goal at 299 impervious acres managed. Given the magnitude of the goal, it cannot be met in any one land use. Achieving the goal will require a combination of commercial, parking lots, institutional and city owned property, including the public rights-of-way.

Urban Character

Because of its size, CSO Basin 53 has a diversity of land uses, including commercial corridors, highways, large parking lots and medium density detached housing. There are both high levels of vacant land and high levels of vacancy.

Environmental Systems

Tree canopy overall for CSO Basin 53 is higher than the City average. Much of the tree canopy is located on the interior of blocks, rather than street trees. Given the size and diversity of the basin, the tree canopy is highly variable and targeted investments in increasing canopy cover, particularly street trees, may still be appropriate in this CSO basin.

Equity Considerations

Nearly a quarter of the population of Buffalo lives in the neighborhoods located within and around CSO Basin 53 and it contains the largest share of people of color of any targeted CSO basin. Based on the GI equity index (see Appendix A) this area has a high need for green infrastructure investment. This area includes anchor institutions and major employers that draw many workers and visitors, as well as residential communities. Funding support for green infrastructure, especially to community partners, will enable a range of community stakeholders to participate in the program. Schools, workforce trainers, and employers in this area are good partners for green infrastructure workforce development programs. Green infrastructure could be a unique opportunity to foster increased collaboration and partnerships among the range of educational and workforce institutions located in this area toward green economy solutions for the City's future.

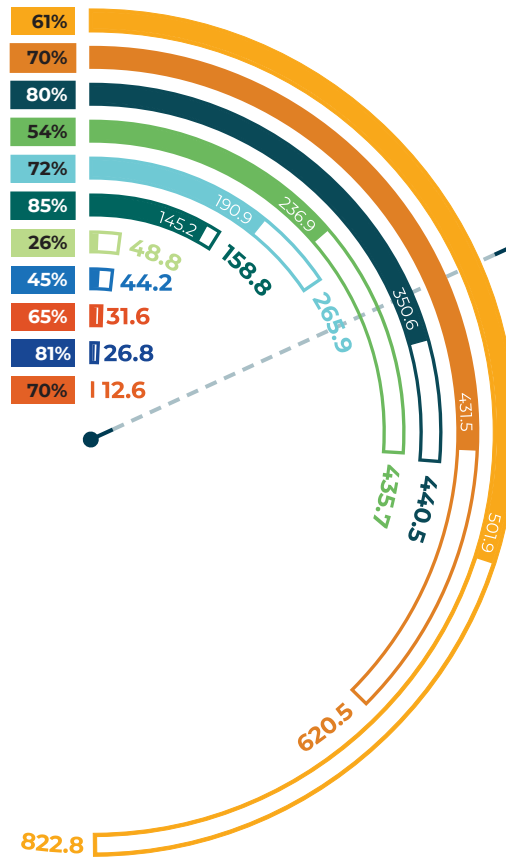
BY THE NUMBERS...

Land Use Opportunity and Impervious Surfaces by Area

Basin 53

3969 total acres

- RESIDENTIAL SINGLE FAMILY 61%
- RESIDENTIAL TWO FAMILY 70%
- COMMERCIAL 80%
- VACANT 54%
- COMMUNITY SERVICE 72%
- INDUSTRIAL 85%
- CONSERVATION AREAS / PARKS 26%
- RECREATIONAL 45%
- RESIDENTIAL OTHER 65%
- PUBLIC SERVICE 81%
- RESIDENTIAL THREE FAMILY 70%

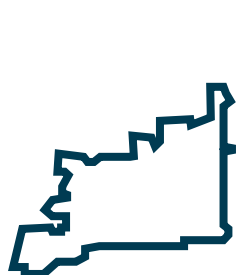


GOAL
299 acres runoff reduction

Total acreage is shown for each parcel **land use** type. The amount of **impervious surface area** within each land use category reveals opportunities for reaching the **runoff reduction goal**.

Impervious Area
Pervious Area

Basin Overview



3969 acres
TOTAL BASIN AREA

64,289
RESIDENTS

\$26,777
MEDIAN HOUSEHOLD INCOME

481 acres
OF CANOPY AREA

93 acres
OF PARK AREA

980 acres
OF RIGHT OF WAY

485 acres
OF ROAD AREA

791 acres
OF BUILDING AREA

172 acres
OF PARKING LOTS

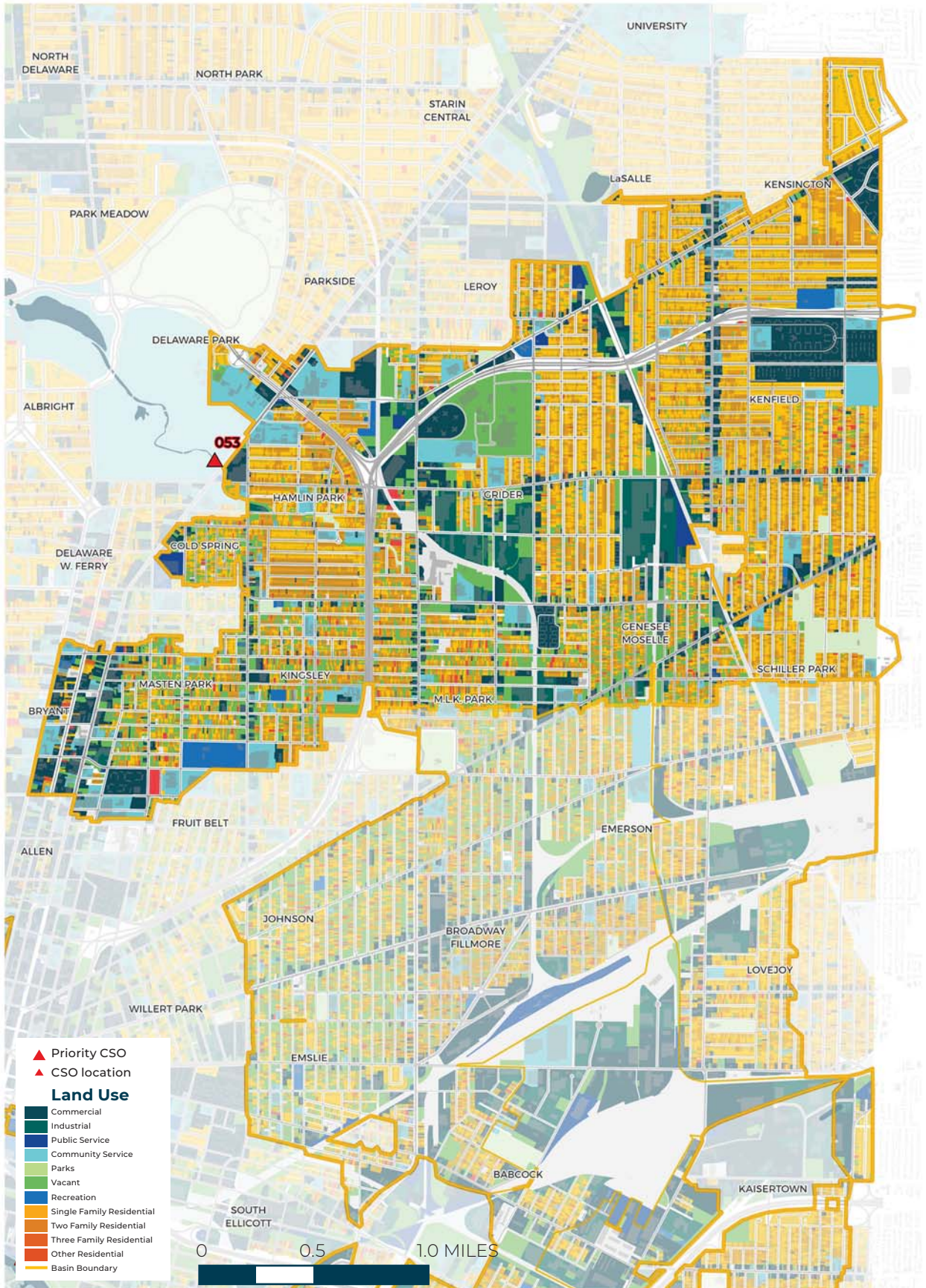


Figure 53.1: CSO Basin 14 Sites evaluated for impervious surface management through green infrastructure.

Opportunity Sites & Networks

Corridors



In CSO Basin 53, corridor green infrastructure will be critical to meeting the stormwater goal. The predominance of large corridors in this basin allows for the organization of green infrastructure into larger networked system, increasing the overall potential effectiveness of green infrastructure in the basin. The Scajaquada Creek corridor also presents the opportunity to incorporate Buffalo's water history into green infrastructure and make underground infrastructure visible. Adding a cap park to the Scajaquada expressway would provide an opportunity for both green infrastructure and neighborhood connectivity.

Sites



The sites inventoried for green infrastructure retrofit in CSO Basin 53 focused on businesses and large institutional campuses as well as community partners institutions. These sites are organized along many key corridors or grouped in industrial or commercial areas.

Clusters and Networks



Combining feasible retrofit sites, important institutional sites, and corridors reveals the existence of key clusters within CSO Basin 53. In addition to physical proximity, the presence of community institutions provides the opportunity for clusters to have a programmatic focus, such as workforce development, community health, or economic development.

Key Corridors

- 1 Kensington Avenue
- 2 Michigan Avenue
- 3 Jefferson Avenue
- 4 Northland Avenue
- 5 Fillmore Avenue
- 6 Genesee Street
- 7 Main Street
- 8 Grider Street
- 9 Ferry Street
- 10 Delavan Avenue
- 11 33 Expressway

Key Businesses

- 1 OSC Manufacturing and Equipment Services
- 2 Buflovak LLC
- 3 Milk-Bone Plant
- 4 Indigo Productions

Key Institutions

- 5 BUDC Redevelopment
- 6 Erie County Medical Center (ECMC)
- 7 Sisters of Charity Hospital
- 8 Medaille College
- 9 Canisius College
- 10 St. Stanislaus Church
- 11 True Bethel Baptist Church
- 12 City Honors School
- 13 Seneca Vocational High School
- 14 Northland Workforce Training Center

CORRIDORS are networked, physically connected systems around a road or right-of-way

OPPORTUNISTIC SITES are stand alone sites with a high opportunity for green infrastructure

CLUSTERS have an anchor institution or are groups of parcels that can implement similar strategies

NETWORKS are larger systems of capture and treatment incorporating many sites

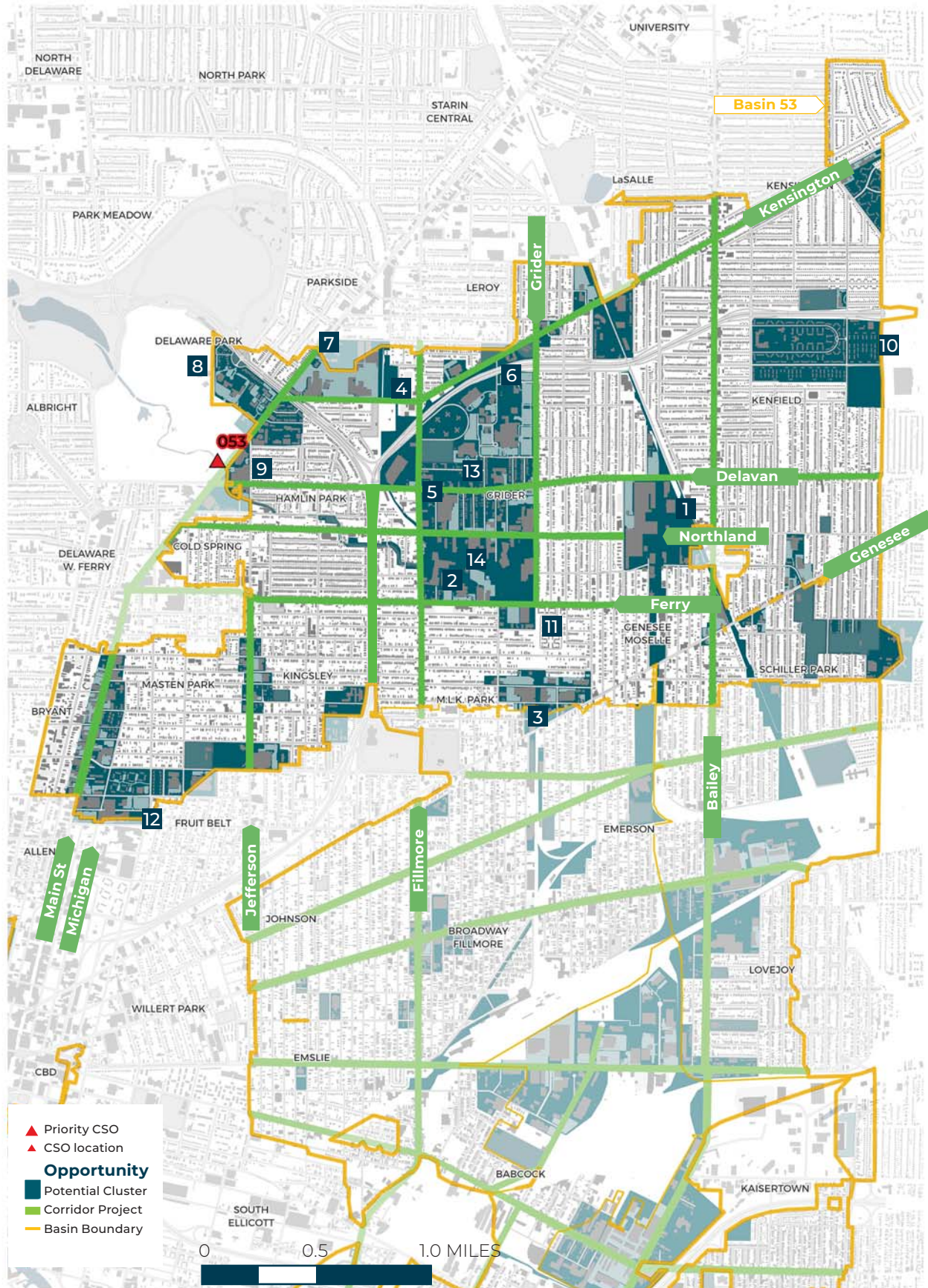


Figure 53.2: CSO Basin 53 Green Infrastructure Opportunity Sites

Green Infrastructure Opportunity

Commercial Building Clusters

Many of CSO Basin 53’s large buildings are clustered together with parking lots for commuters. CSO Basin 53 presents an opportunity to showcase how green infrastructure can be integrated into the parking lots and campus areas.

Green infrastructure can help buffer the community from large parking lots and improve the appearance of commercial properties. Working with community groups can broaden the participation of stakeholders. Green infrastructure combined with complete streets can link together neighborhoods and enhance pedestrian experience and safety. Incorporating green infrastructure onto vacant land—putting it to more productive use - supports neighborhood revitalization.

The section of Northland Ave that passes between Fillmore and Grider is a good example of a green infrastructure cluster project for CSO 53. It engages community partners focused on workforce development, makes use of vacant parcels, beautifies important city corridors, and intersects with the underground course of Scajaquada Creek.

Partnerships with groups like Buffalo Urban Development Corporation (BUDC) can help showcase networked green infrastructure techniques while also adding attractive landscaping to the institution.

Strategies

- Park improvements
- Detention ponds
- Parking lot planting
- Street trees
- Complete streets
- Curb bump outs
- Urban farming
- Green roofs
- Downspout disconnects

Potential Partners

- Sisters of Charity Hospital
- Medaille College
- Canisius College
- City Honors School
- Seneca Vocational High
- Erie County Medical Center
- BUDC



Figure 53.3: “undated photograph shows the Houdaille Manufacturing Co.” (BuffaloNews.com)



Figure 53.4: BUDC Redevelopment prior to demolition.

Placemaking Opportunity with Green Infrastructure

The development of green infrastructure around the cluster centered on the Northland Workforce Development Center demonstrates the many potential benefits of green infrastructure, incorporating elements of corridor improvements, urban agriculture and greening of parking lots. In addition to more effectively managing stormwater, this breadth of green infrastructure supports neighborhood development and revitalization goals, improves environmental quality and access to green space and improves public health and environmental quality as well as creates memorable neighborhood places.



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- 26
- 27
- 28
- 33
- 53

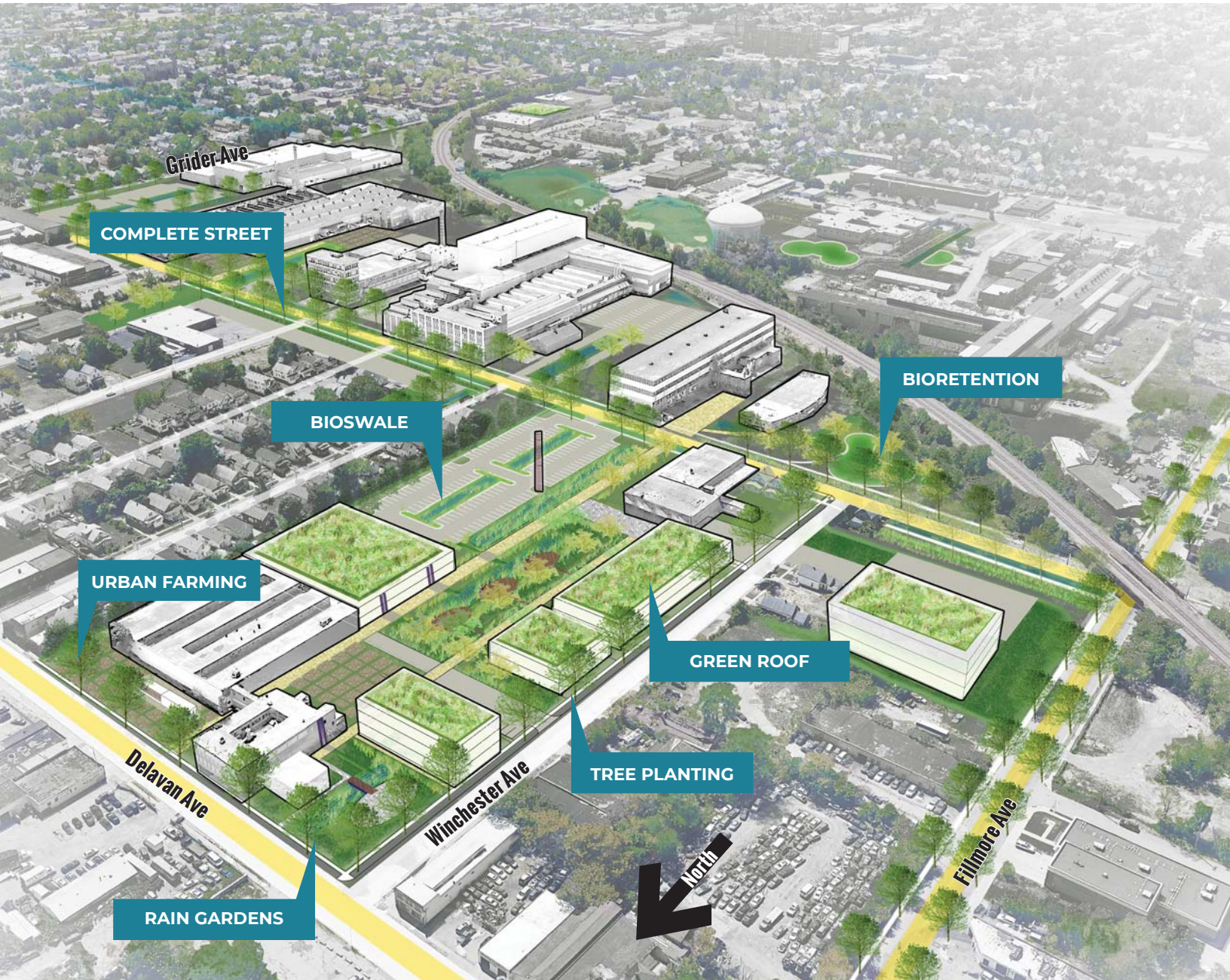


Figure 53.5: Northland Avenue new development cluster

ANALYSIS

Urban Character

Spanning the northeast section of the city, planning neighborhoods intersecting CSO Basin 53 include: Parkside, Leroy, Kensington, Kenfield, Schiller Park, Genesee Moselle, Grider, MLK Park, Hamlin Park, Cold Spring, Masten Park, Kingsley, and the Fruit Belt. CSO Basin 53 includes office buildings, ECMC, other large institutions, dense residential, less dense residential, and a few commercial corridors. There are several main clusters and corridors.

- Masten Park residential with commercial corridors. Characterized by high levels of vacancy and few street trees.
- Fillmore/Grider/East Ferry area with residential and manufacturing, which is divided by the railroad.
- Residential cluster in the north-east corner of the CSO basin and adjacent to the Buffalo Promise neighborhood.
- Residential Cluster in the south-east corner of the CSO basin.
- An institutional cluster around Canisius College, Medaille, and Sister's hospital.
- Erie County Medical Center (ECMC) Campus.
- Potential rails to trails at the edge of the CSO basin, which creates the potential to extend and create a continuity of green space.

Investment in green infrastructure in CSO Basin 53 will support a number of broader planning efforts, including the Local Waterfront Revitalization Program, which includes Scajaquada Creek, and the Buffalo Green Code. The CSO basin includes neighborhood centers along Main, Fillmore, Delavan, and Genesee. The institutional clusters around Canisius College, Medaille College, and Sisters Hospital are important anchors along Buffalo's knowledge corridor as laid out in the Green Code. Northland is also located within CSO Basin 53 and is an industrial redevelopment target in the Green Code.

Several neighborhoods partially located within CSO Basin 53 are experiencing notable residential development, including Hamlin Park, Elmwood-Bryant, and Kensington-Bailey. Elmwood-Bryant is also seeing notable levels of commercial development.



Figure 53.6: Kensington Expressway and a CSX rail line are examples of how infrastructure isolates neighborhoods and reduces walkability



Figure 53.7: ECMC between Grider St and the Kensington Expressway is an example of the large institutions that dominate parts of the CSO basin.



Figure 53.8: Dense single family detached housing comprises large pockets of CSO Basin 53 seen here in the eastern neighborhood of Kenfield.



Figure 53.9: Main St along Masten Park is an example of the strong commercial corridors that are driving growth in this basin

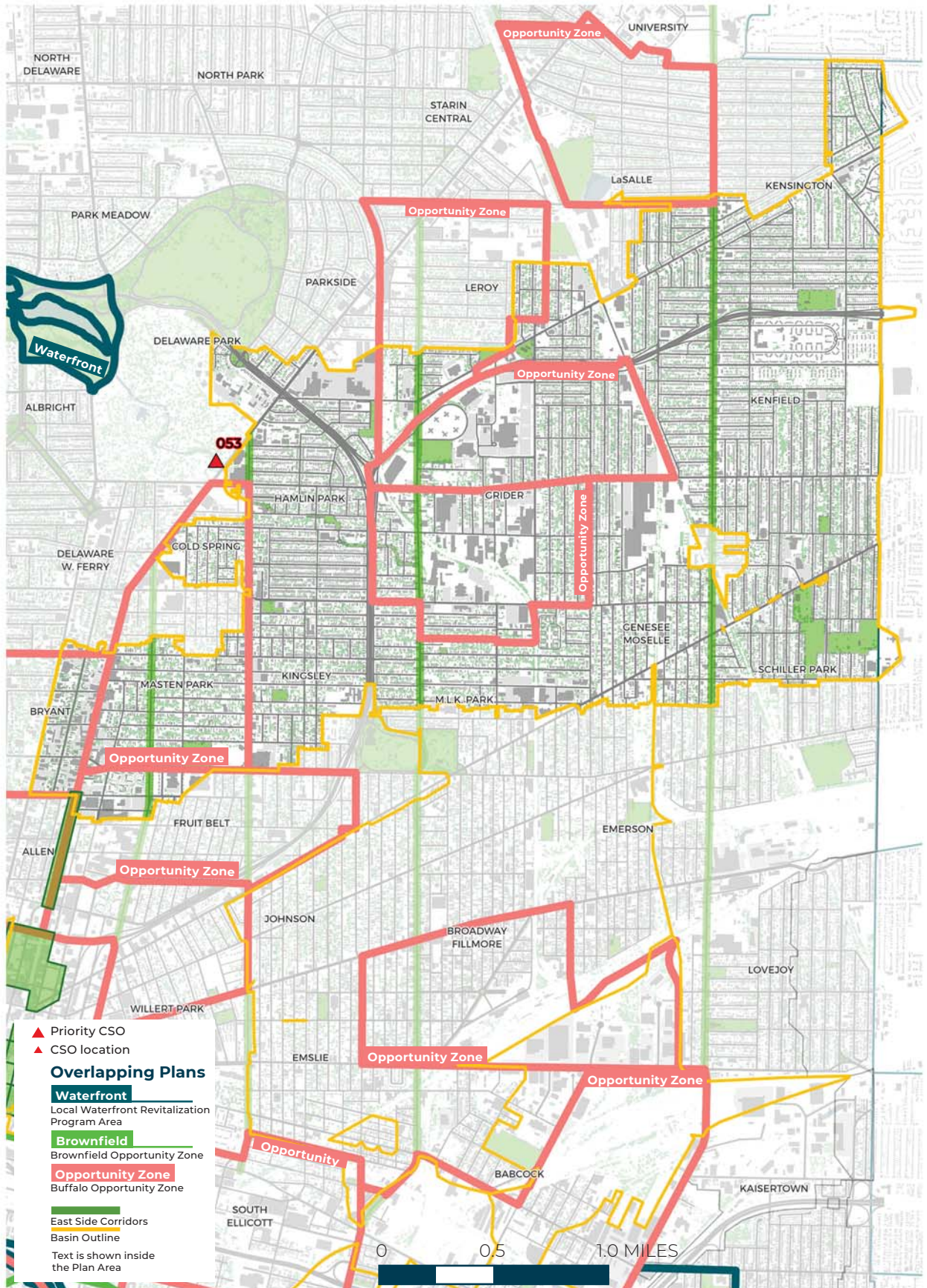


Figure 53.10: CSO Basin 33 Land Use

ANALYSIS

Equity Analysis

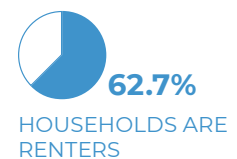
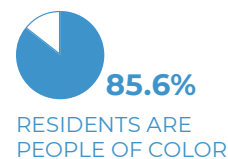
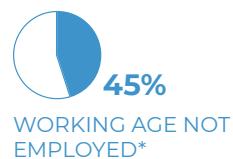
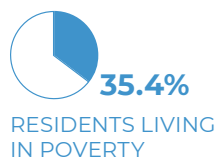
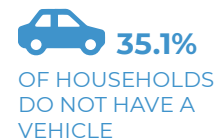
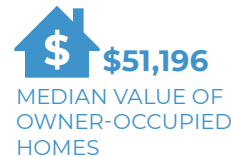
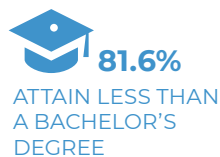
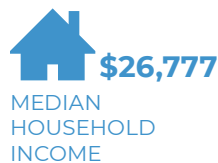
The most extensive basin with a population that makes up nearly a quarter of Buffalo, CSO Basin 53 has an elevated need for green infrastructure investments due to a number of interrelated factors. Covering much of the East Side, CSO Basin 53 has the largest share of people of color (86%) of any targeted investment area. The area also has lower rates of workforce participation and owner-occupancy, and higher poverty levels than the City overall. From an environmental perspective, the basin is marked by a relatively large share of vacant land (16%) and high vacancy rates, but also has the highest tree canopy coverage (16%) of any target basin.

There are a wide range of land uses represented in this basin given the broad cross-section of the City that it touches, including major institutions, employers, and recreational areas in the City of Buffalo. Major institutions and employers located in the area include Buffalo General Hospital, Sister's Hospital, Erie County Medical Center (ECMC) Hospital, Canisius College, and Harmac Medical Products. The area is also home to community amenities, including a large number of public schools, religious institutions, and neighborhood parks. The basin is also adjacent to Forest Lawn Cemetery,

where a buried Scajaquada Creek that flows underneath many of these neighborhoods is uncovered and serves as a water feature in the landscape.

A wide range of typologies and strategies might be appropriate for just this one CSO basin, and the decision-making framework and approach to green infrastructure in this area could be a combination of approaches from other priority areas. In particular, it might be important to develop different strategies for major institutions located in the area and residential areas with commercial corridors, community amenities, and often high rates of vacancy. There are also many reasons to consider prioritizing workforce development in this area—it is the largest priority area and it is home to many major educational and workforce institutions including Canisius College, multiple hospitals, and the Northland Workforce Training Center. Furthermore, people living in these areas have lower rates of educational attainment and higher rates of poverty compared to the City overall, and the majority of workers are employed in service industries. Ensuring that residents and workers in these neighborhoods have opportunities to participate in the installation and maintenance of green infrastructure projects in the priority area could further equity considerations.

Neighborhood Profile Snapshot



The data presented is for census tracts located within or that intersect the CSO basin boundaries, as an approximation of neighborhoods (see Appendix A for more details and methods)
*Includes those that are unemployed or out of the labor force.

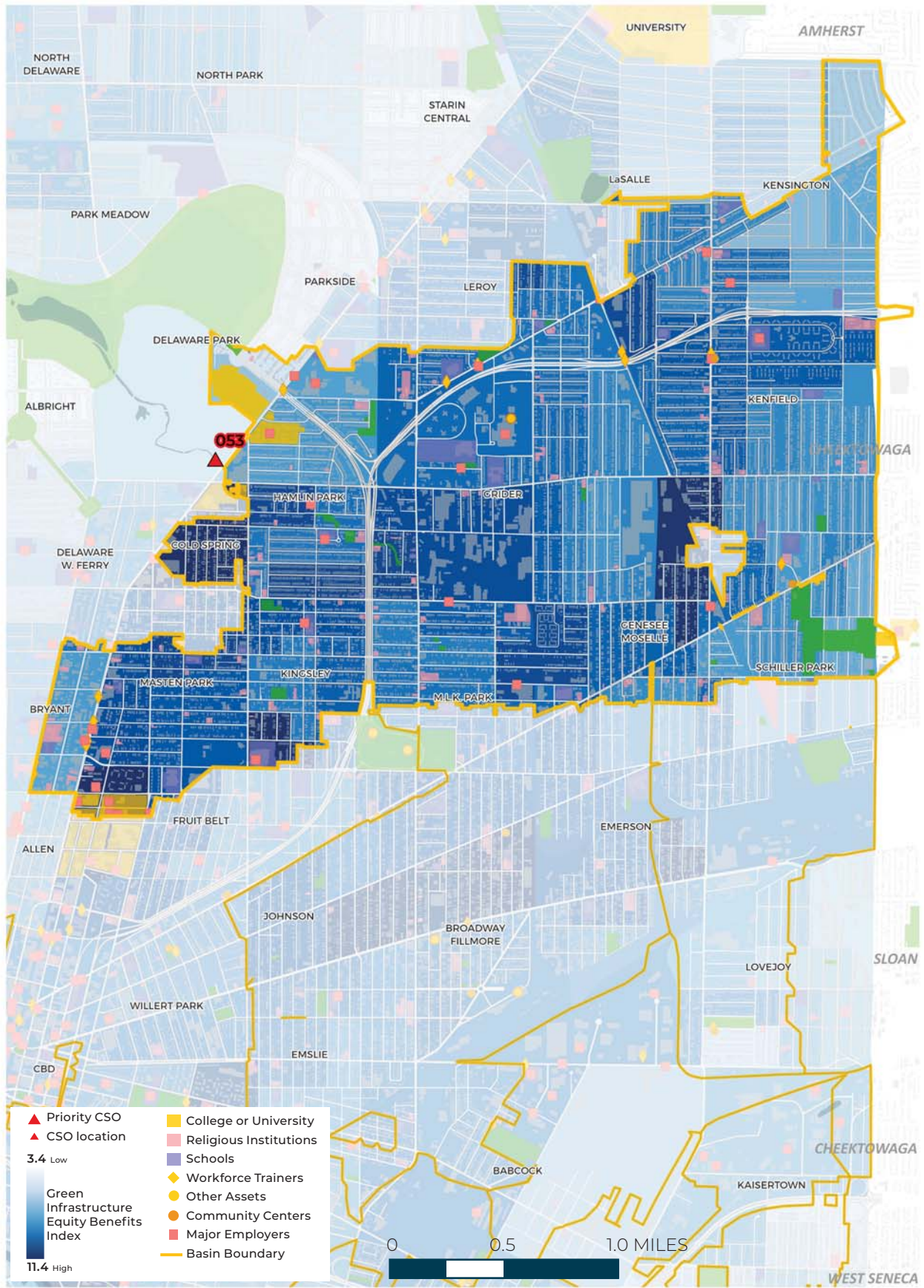


Figure 53.11: CSO Basin 53 and GI Equity Index

ANALYSIS

Environmental Systems

Waterways

CSO Basin 53 discharges to Scajaquada Creek in Delaware Park. Scajaquada Creek is below ground throughout the CSO basin. The CSO basin outfall occurs at the point where Scajaquada Creek emerges from underground. Parallel to the underground portion of Scajaquada is the primary sewer main that collects all stormwater from this basin.

Tree Canopy Cover

CSO Basin 53 has the highest canopy cover of any of the priority CSO Basins. However, the canopy cover varies considerably because of diverse land use and the large size of the basin. In some areas the canopy is higher than the average and in some areas it is absent. Also the canopy is predominantly in the

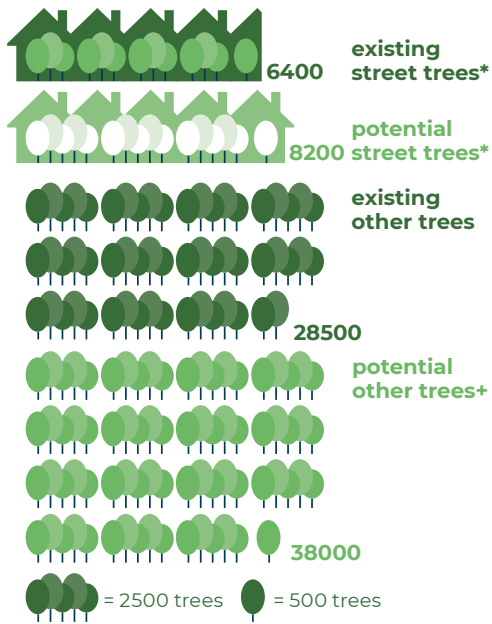
interior of blocks and does not include many street trees. The CSO has available plantable acres almost equal to the amount of existing canopy acres and over 9,000 vacant tree spaces. Thus, despite its relatively high canopy cover rate, investment in canopy expansion is still appropriate in CSO Basin 53.

Habitat Connectivity

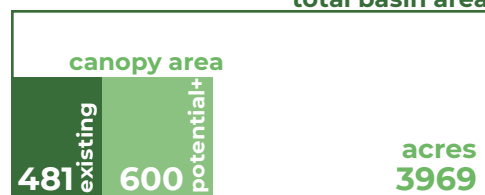
CSO Basin 53 has a number of rail corridors that provided primary habitat corridors between City and the surrounding region. These corridors are interrupted by several significant commercial corridors and expressways that reduce habitat continuity. The basin has no larger habitat patches but is adjacent significant open space, including a contiguous group of cemeteries to the east and the Grover Cleveland Golf Course to the north-east. These open spaces could be expanded or networked with new green infrastructure installations. To expand habitat, large barriers should be bridged and interior block patches integrated into networks connected to periphery patches.

Tree Canopy Summary

NUMBER OF TREES IN BASIN



total basin area



Sources: *City of Buffalo MyTreeKeeper data, +U.S. Forest Service protocol with input from the Tree Technical Advisory Committee. For detailed description of methodology, see Appendix C

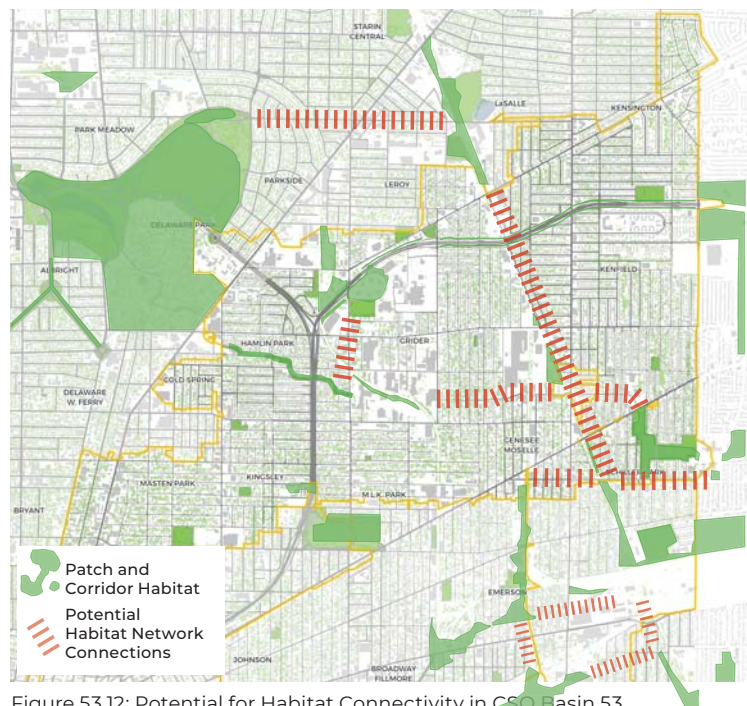


Figure 53.12: Potential for Habitat Connectivity in CSO Basin 53

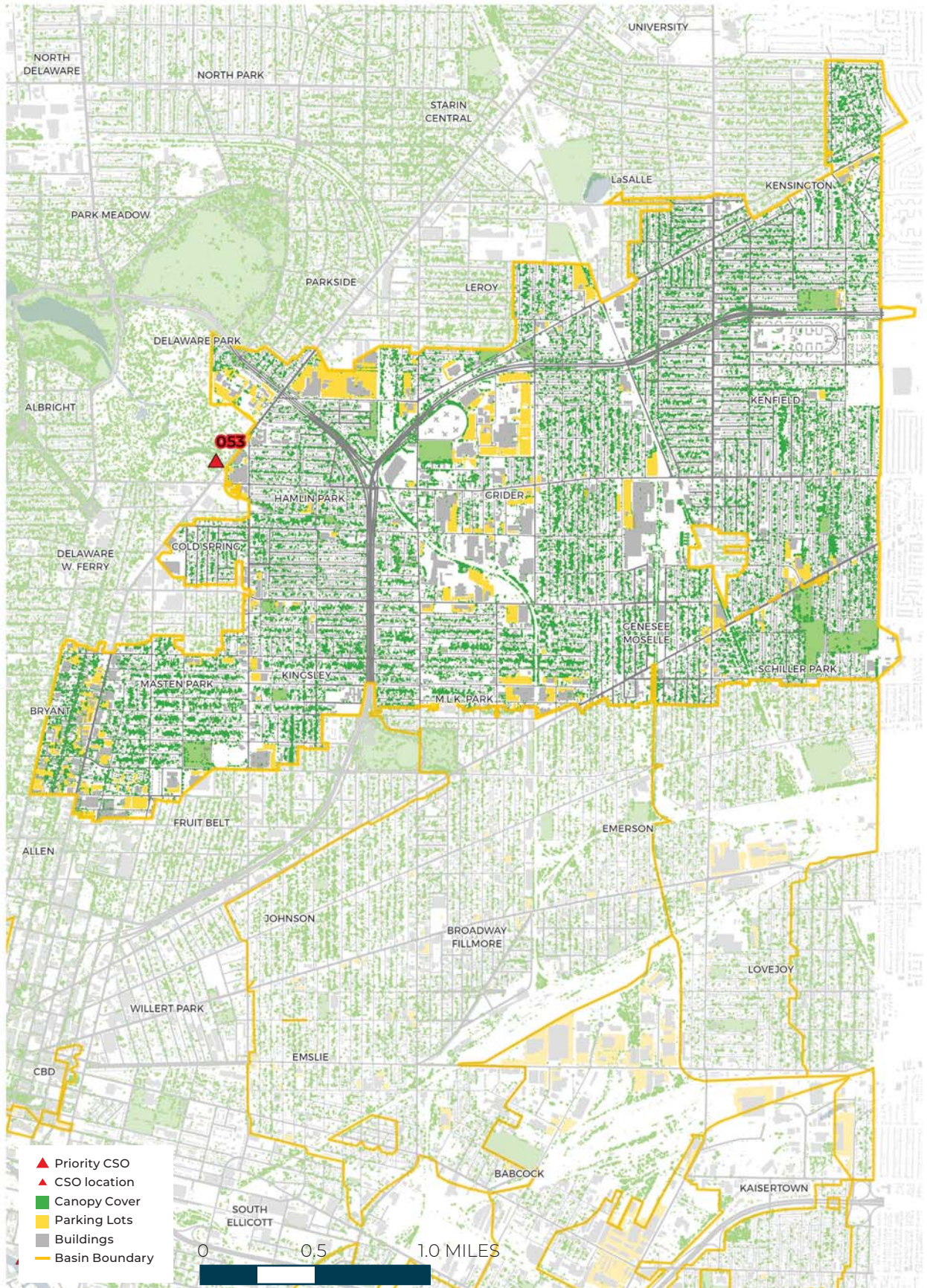


Figure 53.13: CSO Basin 53: Canopy Cover and Impervious Surfaces

ANALYSIS

Site Analysis

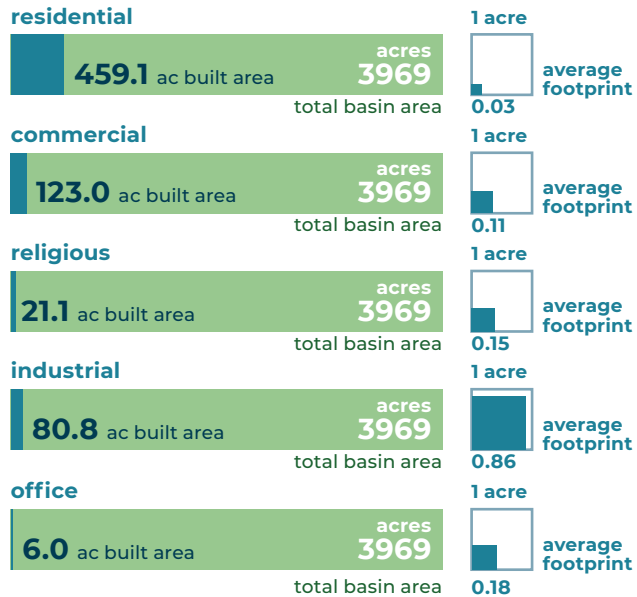
CSO Basin 53 is a very large land area spanning many neighborhoods. This is because the underground course of Scajaquada Creek, which traverses the whole of the basin, operates parallel to a large trunk line that drains this region. The management goal of 299 acres cannot be met by any one land use evaluated through the site analysis process. However, when compared to the large area of CSO Basin 53, the goal is just 10% of the total area.

Most of the land use is residential and roads, but there is a wide range of other uses, such as commercial and institutional. Public land use, including state, county, and City together, are the highest in this zone compared to the other target CSO basins, making up over 10% of the total area surveyed as part of the site analysis process. This opens up the possibility of managing all of the stormwater on public land to meet the goal. Partnerships with institutions such as hospitals may also be hugely beneficial given that the area of institutional property ownership is almost 30% of the goal.

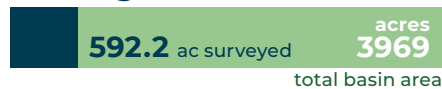
Many of the sites surveyed in this CSO basin focused on sites with large flat roofs or large parking lots because they represent the most efficient means of meeting stormwater goals. These sites also represent significant contributors to urban heat island effect and disrupt neighborhood walkability making them desirable green infrastructure improvement sites. Public rights-of-way comprise 25% of the land area in this basin. Future site analysis for green infrastructure retrofits should include streets as they provide a significant opportunity for stormwater reduction.

Built Area by Land Use

Full Basin Area, GIS sources: Erie County data, Buffalo Sewer Authority data



The site analysis reviewed 15% of the basin and found **113.6 acres of potential drainage area.**



100% of the sites were suitable for green infrastructure. total 116 surveyed sites



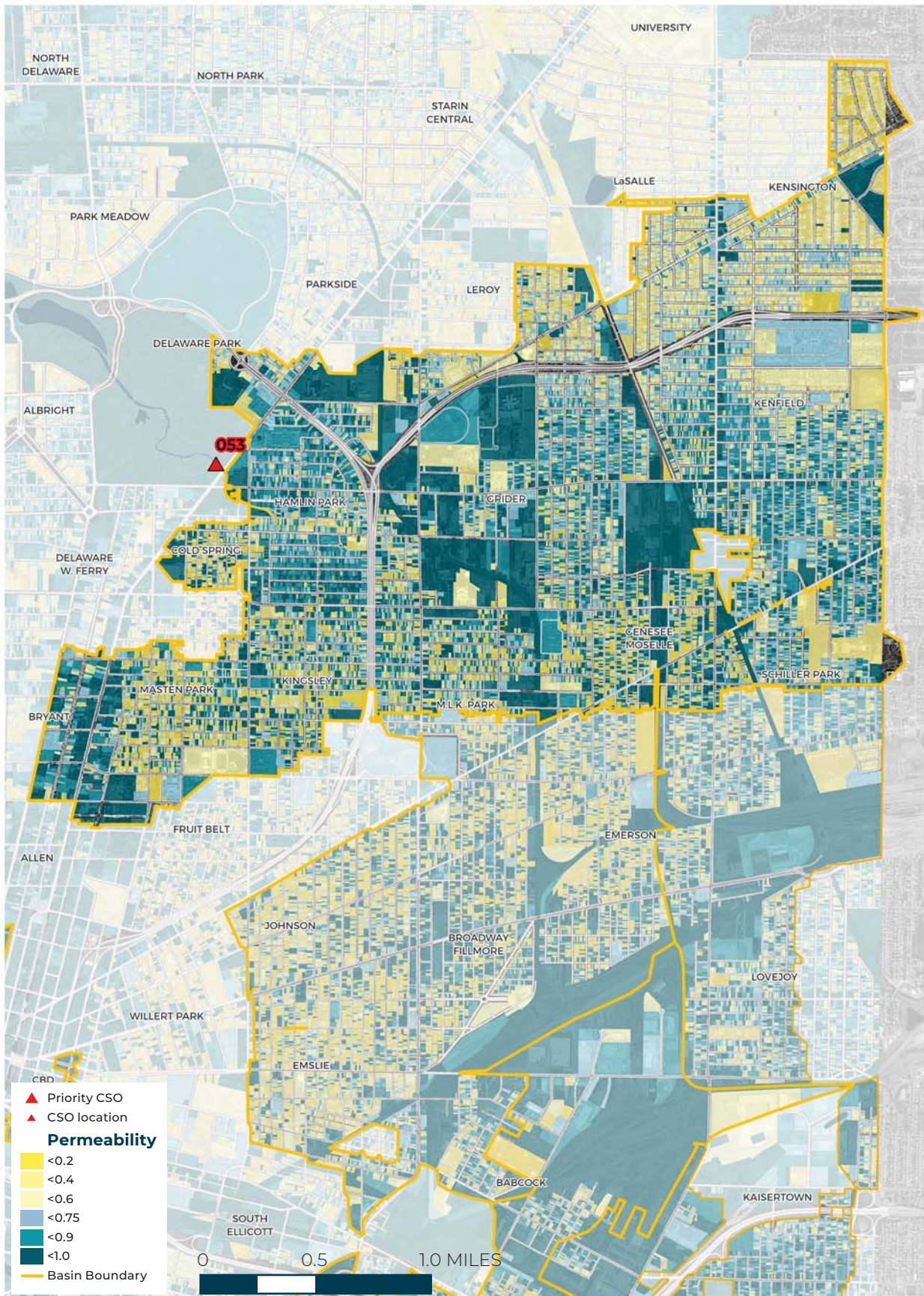


Figure 53.14: CSO Basin 53 Percent Impervious by Parcel

ANALYSIS

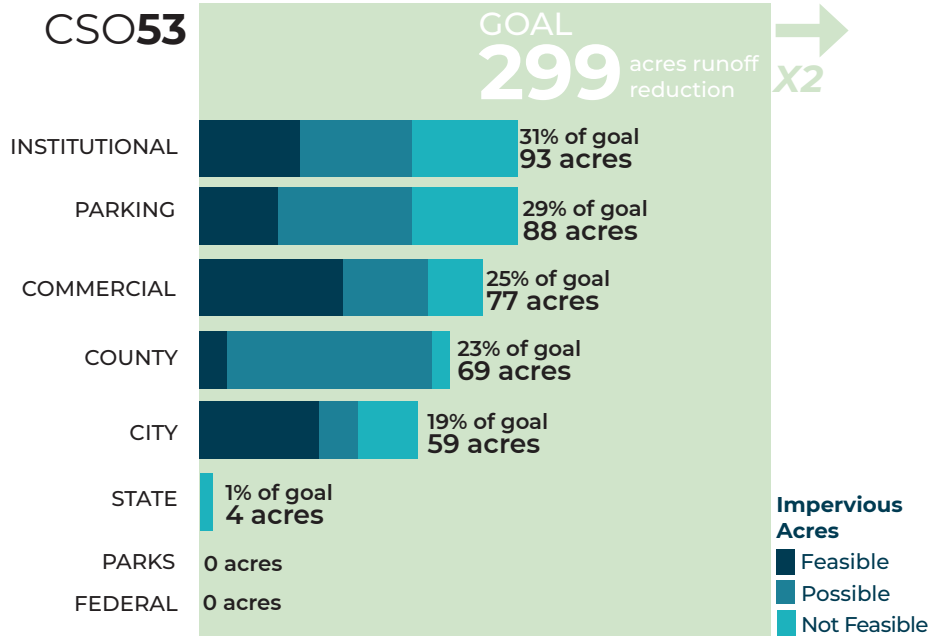
Site Analysis: Surveyed Properties

Surveyed Properties by Land Use and Ownership

GIS sources: Erie County data, Buffalo Sewer Authority data



Figure 53.15: Examples of sites surveyed.

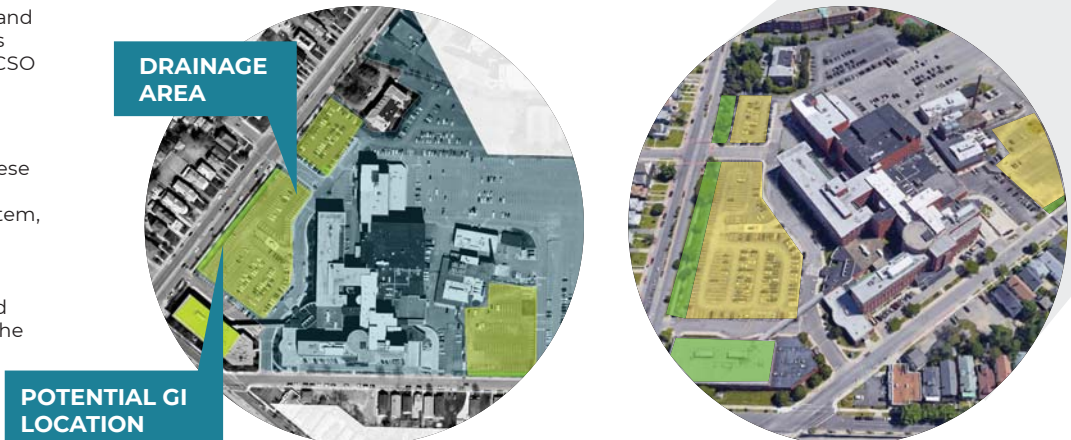


LARGEST PROPERTY OWNERS BY LAND USE AND OWNERSHIP

INSTITUTIONAL	COMMERCIAL	PARKING
Sisters of Charity Hospital 15.8 Imperv. acres	National Grid 19.2 Imperv. acres	OSC 33.0 Imperv. acres
Medaille College 13 Imperv. acres	First Student 7.2 Imperv. acres	Bufllovak LLC 14.7 Imperv. acres
Canisius College 9.7 Imperv. acres	Rosalie and Healthy Chef 5.6 Imperv. acres	BUDC Redevelopment 10.5 Imperv. acres
ECMC 58.4 Imperv. acres		
True Bethel Baptist Church 4.5 Imperv. acres		

Large institutions and campus properties were surveyed in CSO Basin 53.

From this, the team was able to determine that these sites may best be managed as a system, especially if there is an institutional masterplan that guides growth and development for the site.



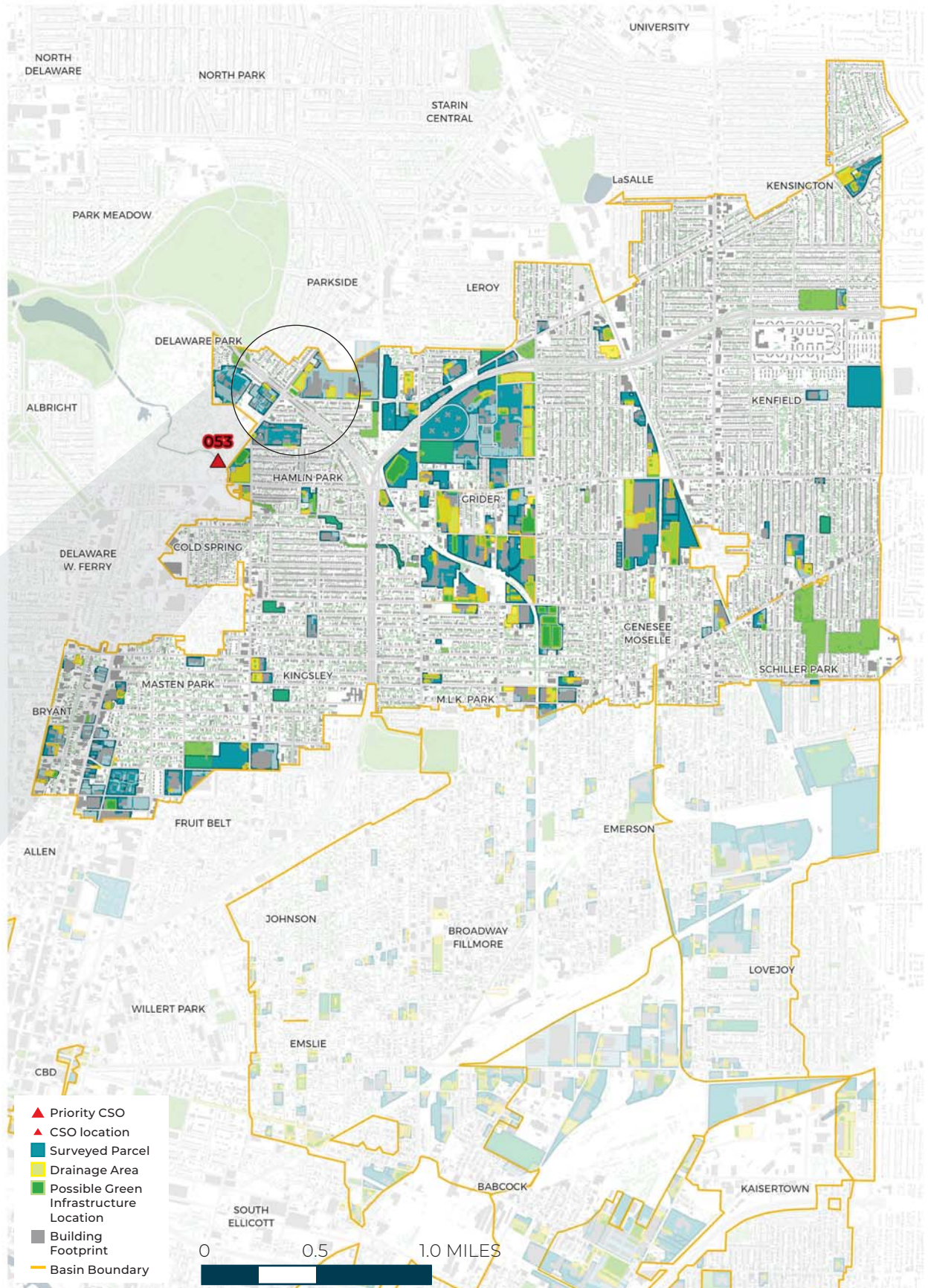


Figure 51.16: CSO Basin 53: Sites analyzed showing parcels, drainage areas and potential green infrastructure.

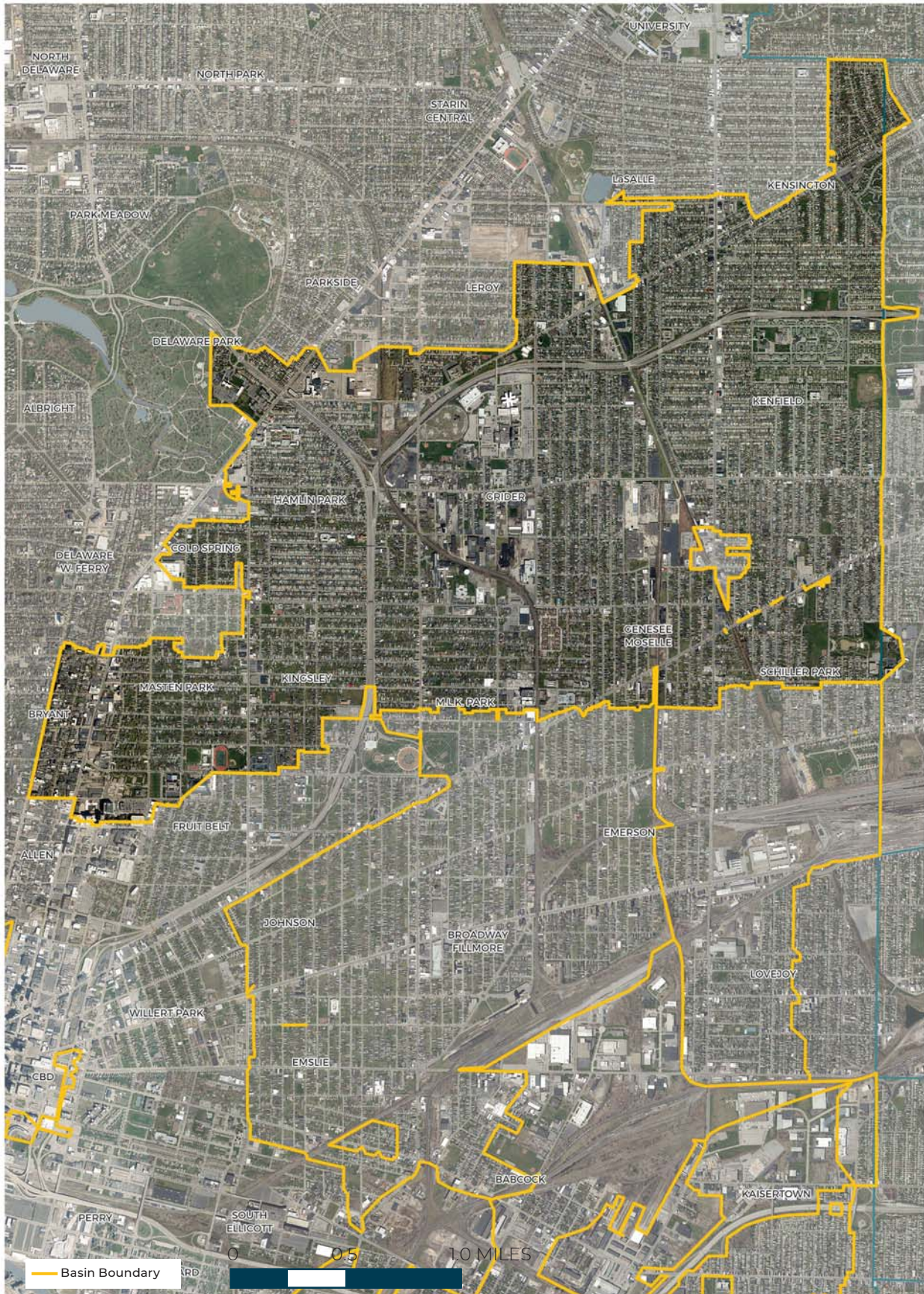


Figure 53.17 CSO Basin 53 Percent Impervious by Parcel

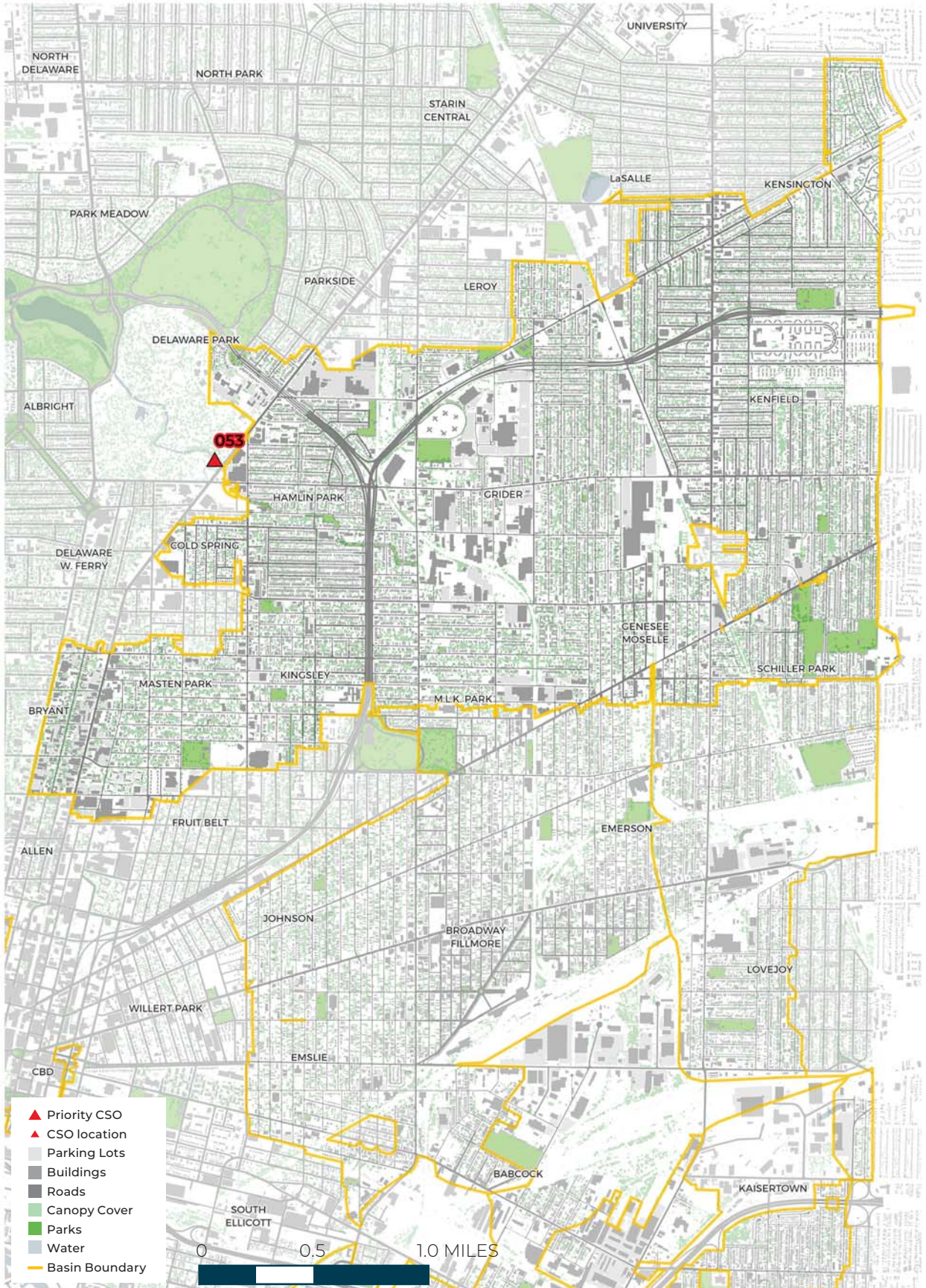


Figure 53.18: CSO Basin 53 Map of Built Environment and Tree Canopy