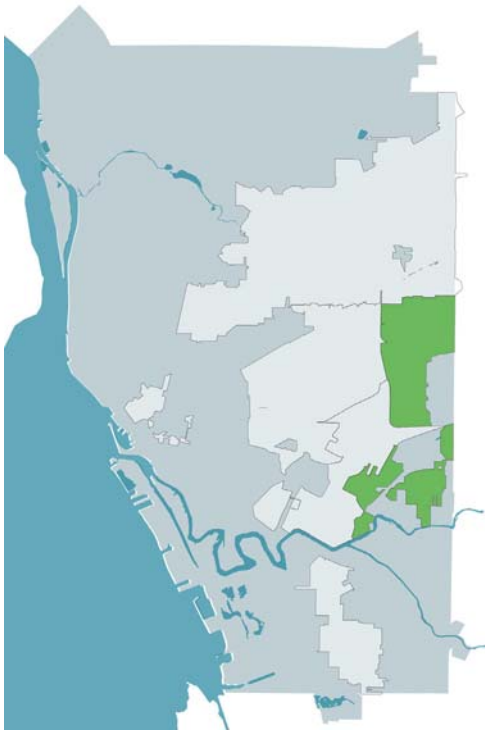

CSO33

When a drop of water lands at the intersection of Bailey Avenue and William Street, it is joined by water from the neighborhoods of Babcock, Emerson, Kaisertown, Lovejoy, Schiller Park, and Seneca. During heavy wet weather, the rainwater combines with sewage and overflows into the Buffalo River at Combined Sewer Overflow 33 (CSO 33).

Community Benefits

- Buffer zones between residential uses and industrial uses and large roadways
- Greater walkability & Pedestrian safety
- Traffic calming
- Support neighborhood revitalization
- Workforce development
- Green jobs
- Tree planting programs
- Expanded canopy cover
- Improved access to green space
- Cleanup and revitalization of vacant land



CSO **Basin 33 at a glance...**

Green Infrastructure Opportunities

The goal for this CSO basin is to reduce the number of impervious acres by 94 Acres. Based on the site analysis, the most feasible sites are located on large commercial properties and parking lots. Sidewalks and roadways also provide many feasible opportunities for green infrastructure retrofits.

Urban Character

Key corridors pass through this CSO basin and intersections on East-West corridors could be highly visible pilot locations for green infrastructure.

Environmental Systems

Urban tree canopy cover in CSO Basin 33 is lower than the City average. Large gaps in the urban canopy should be addressed. Focusing on complete streets and right of way improvements can help to grow the urban forest canopy, create habitat connectivity as well as the opportunity to network green infrastructures systems within the CSO basin.

Equity Considerations

Limited walkability and the presence of larger road corridors makes a focus on complete streets and corridor improvements a priority for improving walkability and access to parks and green space.

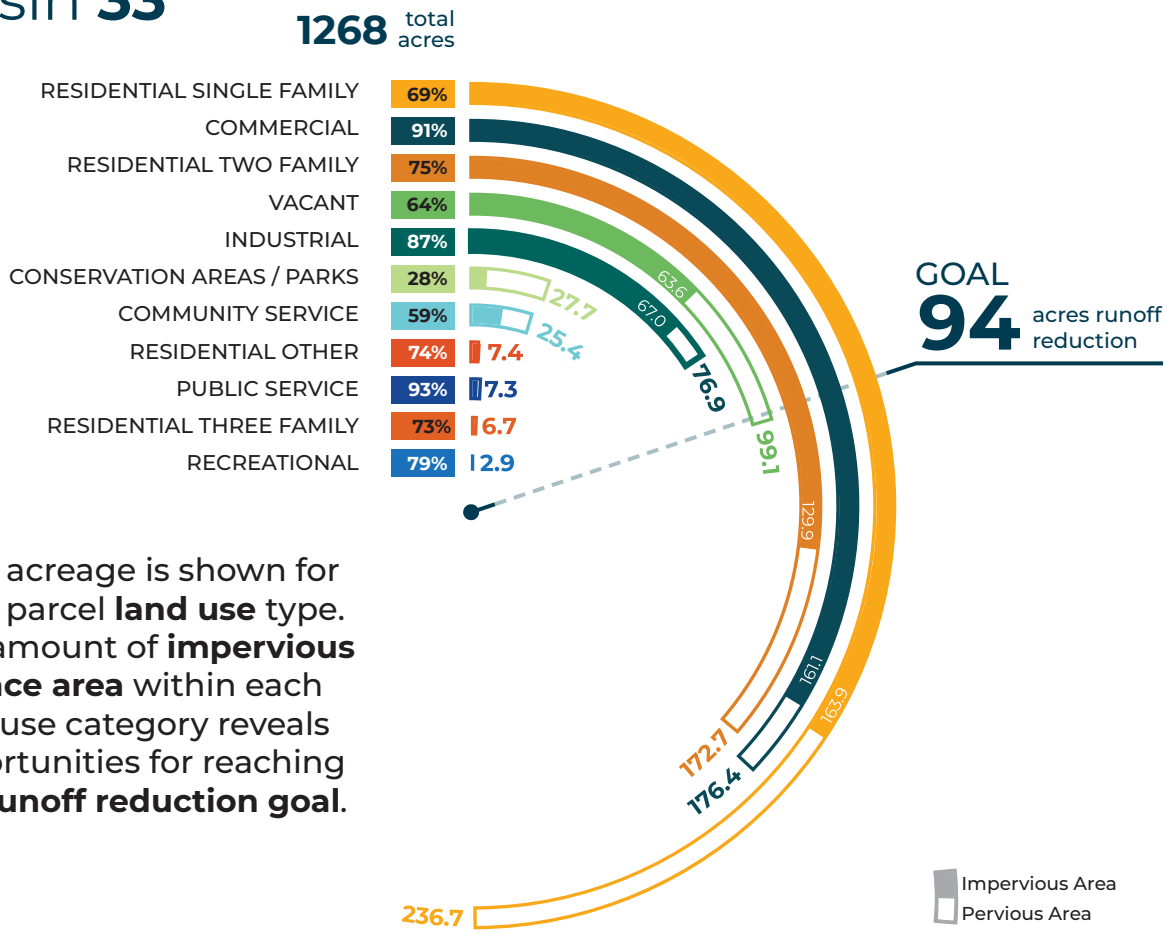
The CSO basin contains regional destinations, such as the Clinton-Bailey Farmer's Market and Niagara Frontier Food Terminal. These could be projects that highlight green infrastructure and foster economic revitalization.

BY THE NUMBERS...

Land Use Opportunity and Impervious Surfaces by Area

Basin **33**

1268 total acres



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**.

Basin Overview

1268 acres
TOTAL BASIN AREA

22,569
RESIDENTS

$29,927
MEDIAN HOUSEHOLD INCOME

162 acres
OF CANOPY AREA

31 acres
OF PARK AREA

310 acres
OF RIGHT OF WAY

121 acres
OF ROAD AREA

251 acres
OF BUILDING AREA

54 acres
OF PARKING LOTS

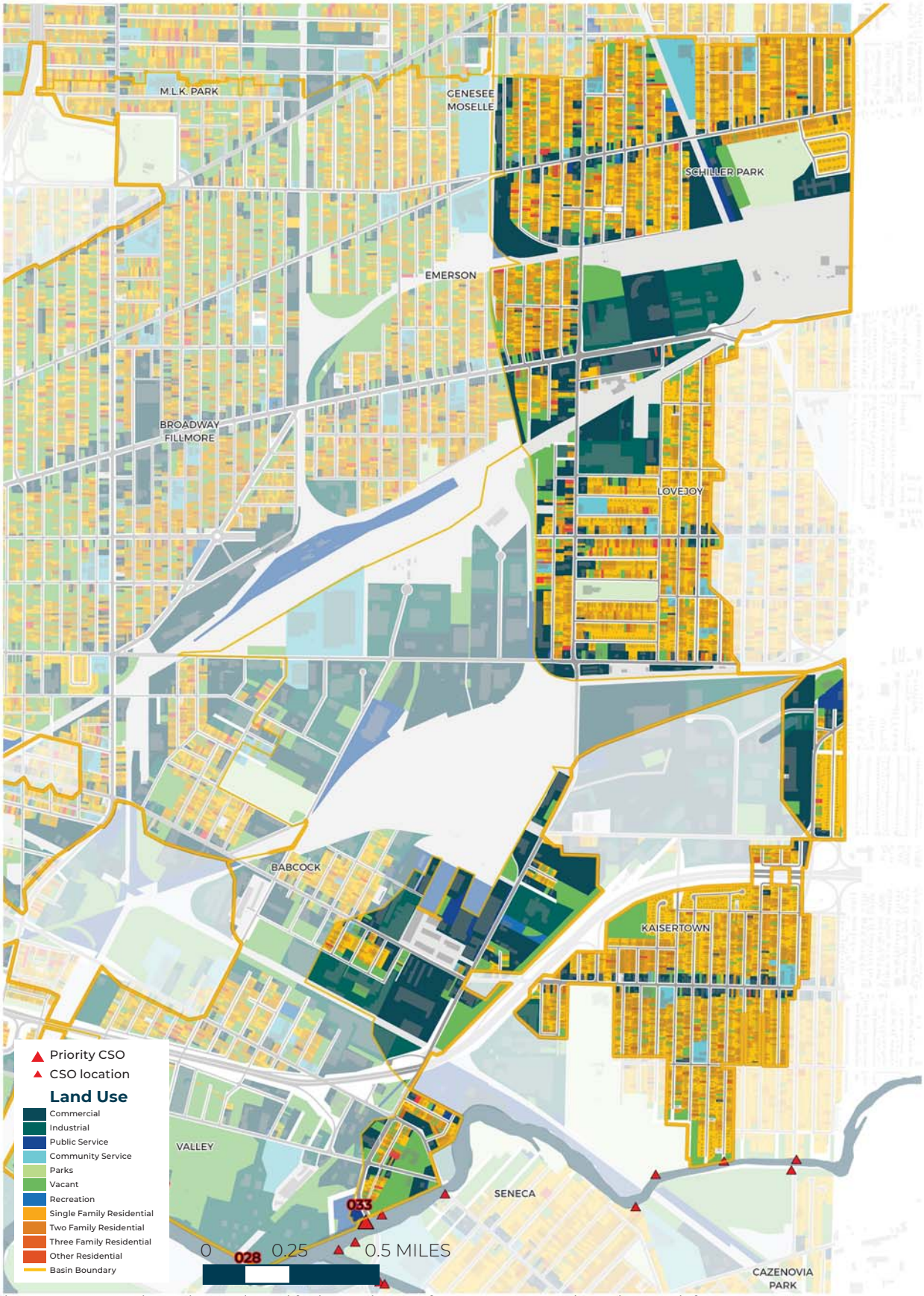


Figure 33.1: CSO Basin 33 Sites evaluated for impervious surface management through green infrastructure.

Opportunity Sites & Networks

Corridors

Bailey Avenue is the major north-south corridor running through the CSO. It's intersection with east-west corridors of Clinton, Broadway, William, and Walden form important neighborhood centers. Green infrastructure along these major corridors provides opportunities for creating networks of green infrastructure that connect adjacent properties. It would also provide greater access to green space in neighborhoods with minimal access.

Sites

Many of the sites surveyed in CSO Basin 33 were large commercial properties with large parking lots along the corridors. Retrofitting these large impervious sites with green infrastructure makes a major contribution to meeting the impervious acre management goal in this basin. Even opportunistic sites, such as Big Lots! are still good green infrastructure candidates because of their large impervious area. The key parks identified in this basin were also evaluated for the potential for green infrastructure retrofit and the possibility to bring stormwater from the street into some of the parks. Key institutions have large impervious areas that could be retrofit with green infrastructure and could be partners in workforce development.

Clusters and Networks

The large clusters of primarily commercial properties adjacent to major corridors provides the opportunity to create clusters or network of green infrastructure around neighborhood centers. Such clusters are based both on physical proximity as well as programmatic synergies, such as between Clinton-Bailey Farmers Market and Niagara Food Terminal.

Key Corridors

- Bailey Avenue
- Clinton Street
- Broadway
- William Street
- Kaisertown Central Business District

Key Parking Lots

1. Big Lots! parking lot
2. Walden Park parking lot
3. School bus and commercial vehicle

Key Institutions

4. Catholic Charities
5. Dominican Nuns
6. Kaisertown Business Community
7. Clinton-Bailey Farmers Market
8. Niagara Food Terminal

Key Parks

1. Houghton Park
2. Hennepin Park
3. Walden Park

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

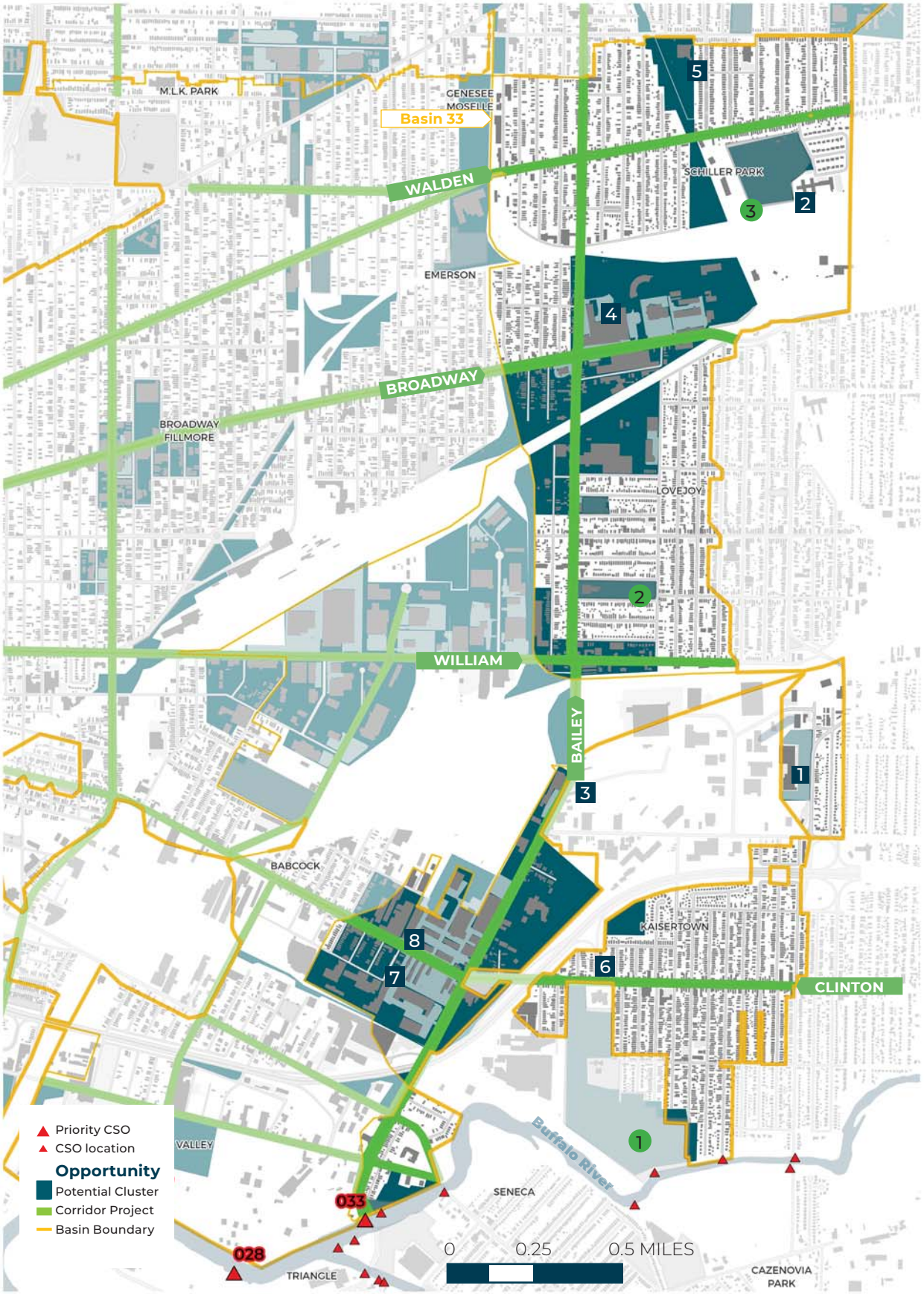


Figure 33.2: CSO Basin 33 Green Infrastructure Opportunity Sites

Green Infrastructure Opportunity
Niagara Food Terminal Green Infrastructure Node

The cluster of the Niagara Food Terminal and Clinton-Bailey Farmers' Market is an excellent candidate for green infrastructure investment because it couples historic public space and community resources with new investment and beautification. The Niagara Food Terminal is an industrial and market district on the eastern edge of CSO Basin 33 and shares many conditions similar to other urban industrial areas with heavy vehicular traffic. In addition, the terminal is a significant cultural center for Buffalo and the East Side.

This cluster has significant impervious surface area that is a major contributer to stormwater runoff to the sewer system. The Terminal is situated at the intersection of two significant corridors: Bailey and Clinton, which can also benefit from green infrastructure and traffic calming to creating a more walkable district. Tree planting and roadside bioswales would expand canopy cover and improve walkability in the neighborhood. Conducting a street tree campaign would help to connect important habitat corridors, and limit dust pollution from high traffic streets. Porous paving could be used in parking lots and market stalls, allowing stormwater to infiltrate and creating visual interest. There are many large, flat roofs in this area, which are significant contributers of stormwater runoff. Roof runoff could be addressed through the addition of green roofs, where this is feasible, or by disconnecting roof downspouts and directing them to bioretention areas or collecting the water for reuse in cisterns. Vacant land adjacent to rail lines could be retrofitted to handle stormwater from this cluster as well. Furthermore, by adding green space to this neighborhood center, access to green space for residents can be increased.

Strategies

- **Porous paving**
- **Green roofs**
- **Downspout disconnection**
- **Bioretention**

Potential Partners

- **Niagara Frontier Food Terminal**
- **Clinton-Bailey Farmers Market**
- **Cornell Cooperative Extension**
- **Babcock Boys and Girls Club**
- **Seneca Babcock Community Center**
- **NY State / Bailey Avenue Projects**

Figure 33.3: Historic image of Buffalo Food Terminal

Figure 33.4: Historic image of The Niagara Frontier Growers Co-operative Market

Placemaking Opportunity with Green Infrastructure

Creating a cluster of green infrastructure around Clinton and Bailey not only reduces stormwater runoff entering the sewers, but is also an opportunity to support the revitalization of these important community assets. The addition of street trees creates more walkable streets, contributes to traffic calming, and helps reduce the urban heat island effect, all of which provide environmental and health benefits as well as contributing to neighborhood revitalization.

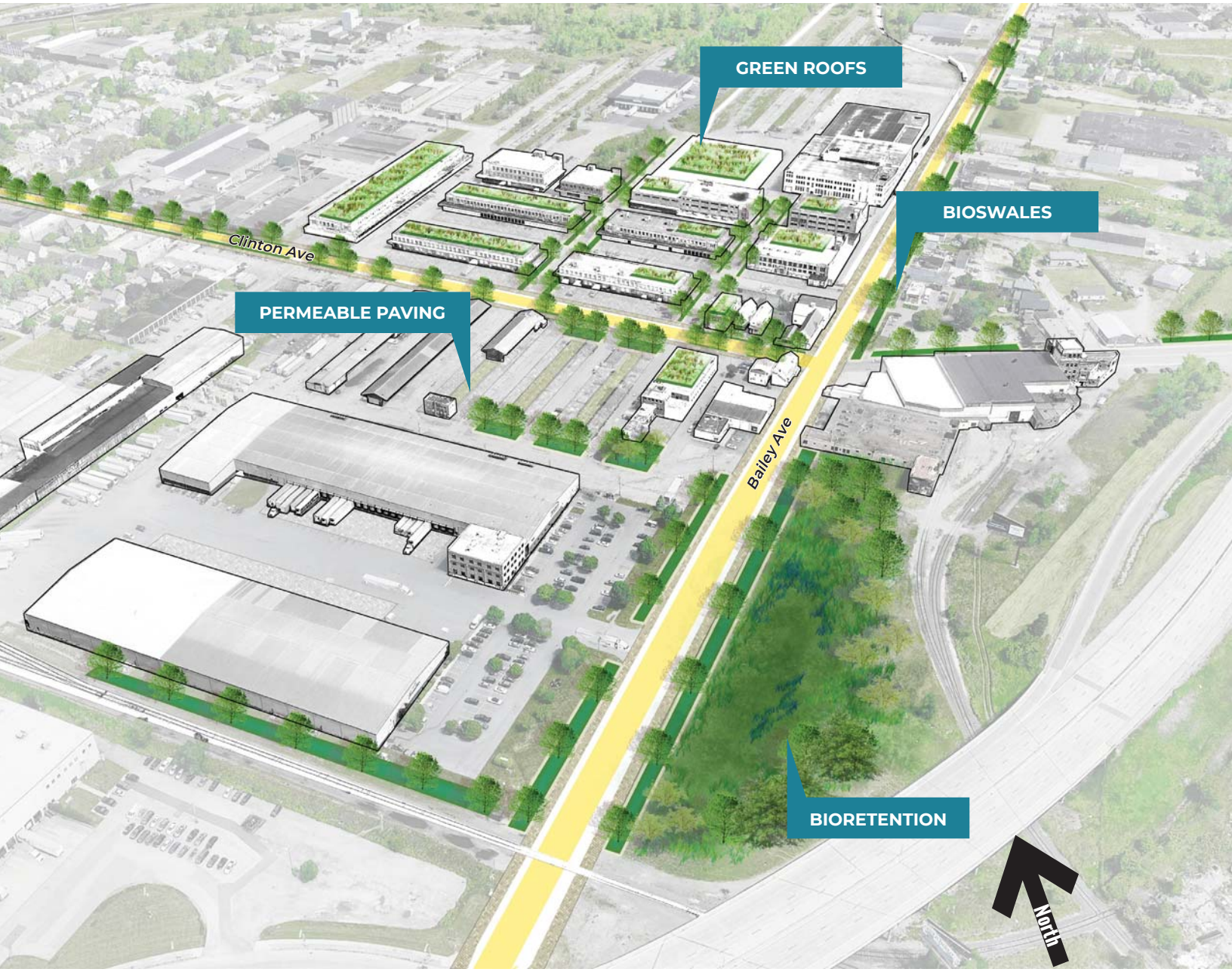


Figure 33.5: Rendering of Possible green infrastructure opportunity node at Niagara Foods

ANALYSIS

Urban Character

The urban character of CSO Basin 33 is diverse and contains residential, commercial, industrial, and open spaces. This diversity will likely lead to a wide range of green infrastructure technologies being deployed in this CSO basin. The CSO basin has a population of 22,569 people. There are two dominant residential typologies present, the first is dense single family detached housing. The second type is single and multifamily detached housing in areas with medium to high parcel vacancy from block to block.

There are 583 commercial or industrial buildings in CSO Basin 33. Commercial properties are present along the important east-west City corridors of Clinton St, William Ave, and Broadway, as well as in a continuous Industrial District that cuts north-south through Emerson, Lovejoy, Babcock, Kaisertown, and the Valley. These properties are most large flat-roofed buildings with large parking lots or working yards that are paved or heavily compacted. There are significant physical divisions in this CSO basin created by multiple rail lines, train yards, and Interstate I-190.

Investment in green infrastructure in CSO Basin 33 will support a number of broader planning efforts, including the Local Waterfront Revitalization Program, which includes the Buffalo River, the Buffalo River Corridor Brownfield Opportunity Area, and the Buffalo Green Code. Bailey Avenue runs through this CSO, which has several neighborhood centers along it. Neighborhood centers along Clinton Street are also within CSO Basin 33, as well as neighborhood centers at Broadway and Bailey, Walden and Bailey, and Clinton and Bailey, including the Clinton-Bailey Farmers Market and Niagara Food Terminal.

The Kaisertown neighborhood, which is partially located in CSO Basin 33, has one of the highest projected increases in home values according to Zillow. Also the Seneca-Babcock neighborhood, which is also partially located in this CSO basin, is seeing a high level of industrial development per square mile.

Figure 33.6: CSO Basin 33 contains pockets of dense single family detached housing, seen here between Casimir St and Clinton Ave in Kaisertown.

Figure 33.7: Box store commercial lining the western edge of residential blocks along South Ogden St.

Figure 33.8: CSO Basin 33 has a number of large corridors that are flanked by larger commercial or industrial land uses and example is seen here at the intersection of Bailey Ave and Broadway

Figure 33.9: Mixed rates of vacancy between streets are visible here in the contrasting Burgard Pl with both Brinkman Ave and Goembel Ave.

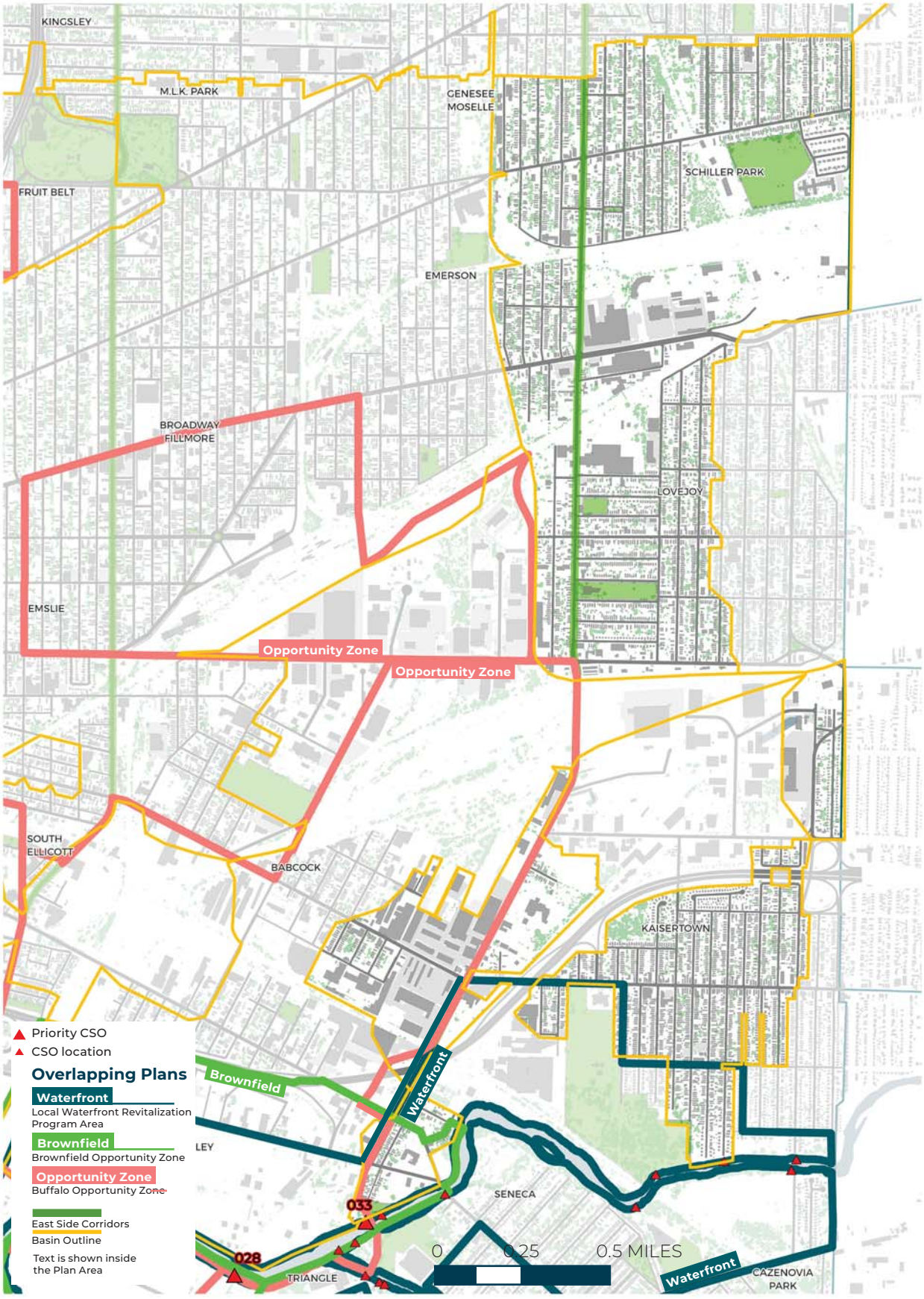


Figure 33.10: CSO Basin 33 Land Use

ANALYSIS

Equity Analysis

The boundaries of CSO Basin 33 intersect with several neighborhoods in Southeast Buffalo, including Babcock, Emerson, Kaisertown, Lovejoy, Schiller Park, and Seneca. The area is also home to several regional destinations like the Clinton-Bailey Farmers Market and the Niagara Frontier Food Terminal. The area is a mixture of residential, commercial, institutional and industrial uses, including neighborhood business districts and community amenities.

Similar to CSO Basin 27, the presence of wide roads, highways, and large lots can make the area seem somewhat geographically isolated, limit walkability, and pose safety issues for pedestrians and transit users. There could be opportunities for green infrastructure to break up large areas such as parking lots, create buffer zones between roads and sidewalks, and enhance walkability and public safety, especially around crosswalks and transit stops.

Across many demographic and economic indicators, residents in this area largely reflect the City overall. The median household income, poverty rate, and unemployment rate are mostly on par with the City overall. The majority of households are renters and cost burdened, which may limit the feasibility of green infrastructure on private property. Given this reality, neighborhood businesses and neighborhood commercial corridors might be good priorities for stakeholder engagement and investment in residential areas.

Additionally, CSO Basin 33 neighborhoods are home to a number of active community centers, service agencies, and public schools that could be good partners for community engagement and project implementation. An evaluation of the community capacity for the neighborhood area and these specific organizations to accept, plan for, promote, and maintain green infrastructure practices is critical. As CSO Basin 33's population is largely representative of the City overall, it may provide a good model for piloting new education and outreach efforts to gain insight into challenges and opportunities for Rain Check 2.0.

Neighborhood Profile Snapshot

22,569
RESIDENTS

$29,927
MEDIAN HOUSEHOLD INCOME

87.3%
ATTAIN LESS THAN A BACHELOR'S DEGREE

$57,865
MEDIAN VALUE OF OWNER-OCCUPIED HOMES

31.5%
OF HOUSEHOLDS DO NOT HAVE A VEHICLE

-20.1%
2000–2016
POPULATION CHANGE

32.8%
RESIDENTS LIVING IN POVERTY

41.3%
WORKING AGE NOT EMPLOYED*

37.7%
RESIDENTS ARE PEOPLE OF COLOR

49.8%
HOUSEHOLDS ARE RENTERS

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.

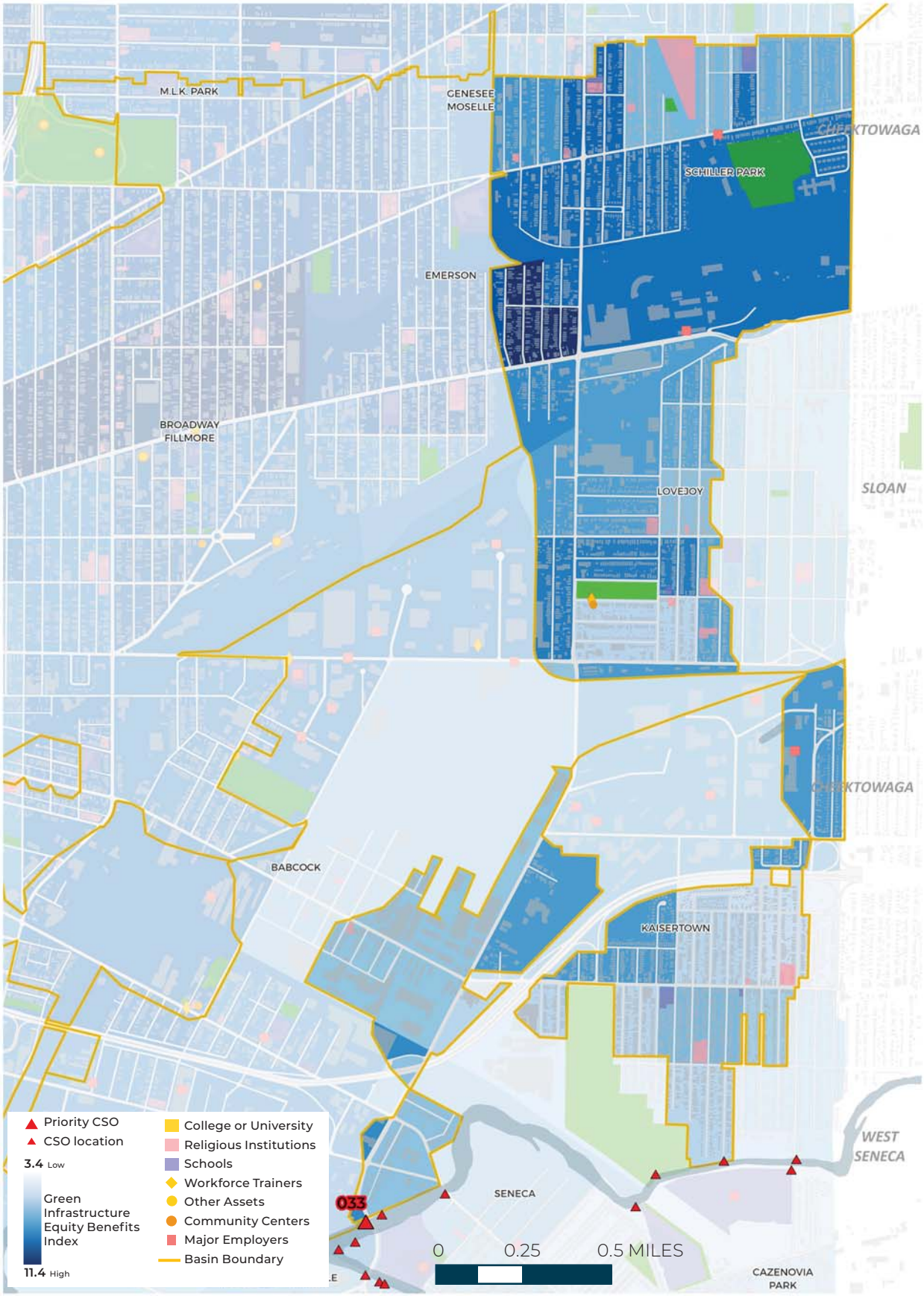


Figure 33.11 CSO Basin 33 and GI Equity Index

ANALYSIS

Environmental Systems

Waterways

CSO Basin 33 sits on the Buffalo River in a stretch that is less industrial and has wider riparian zones compared to the lower stretches where the river meanders toward the Buffalo Harbor. This basin has some of the best access to the river compared to other regions by way of Houghton Park and dead end residential roads.

Tree Canopy Cover

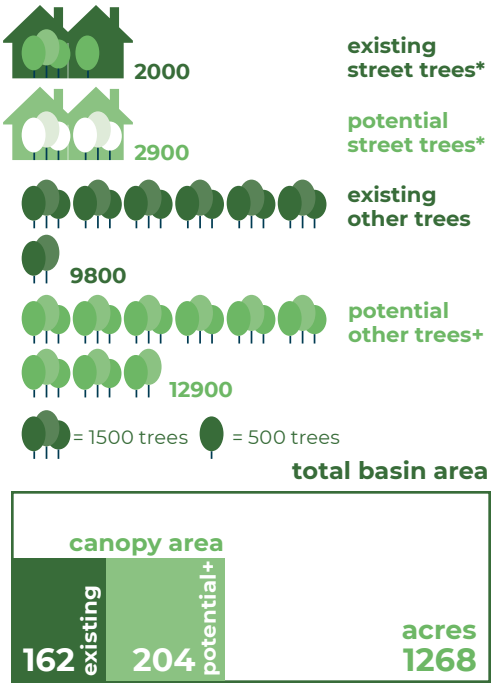
CSO Basin 33 has a deficit of canopy cover compared to the rest of the City. There are a number of densely vegetated pockets throughout or adjacent to the CSO basin along old rail corridors and the interstate, as well as along parks and cemeteries. These moments of concentrated habitat are offset by the large commercial and industrial parcels, commercial corridors, and some residential neighborhoods, which are almost completely devoid of trees. The commercial corridors in particular would benefit from increased tree planting. Expanding canopy corridors from both the Buffalo River and between rail corridors could significantly improve the habitat network in this area without needing to span large distances.

Habitat Connectivity

CSO Basin 33 is attached to and a part of several major habitat corridors and patches within the City, including the Buffalo River and the old rail network and rail yards. The latter provide significant open-space continuity within the Buffalo green space system. Future work could be done to help augment the habitat network's integrity.

Tree Canopy Summary

NUMBER OF TREES IN BASIN



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 33.12: Potential for Habitat Connectivity in CSO Basin 33

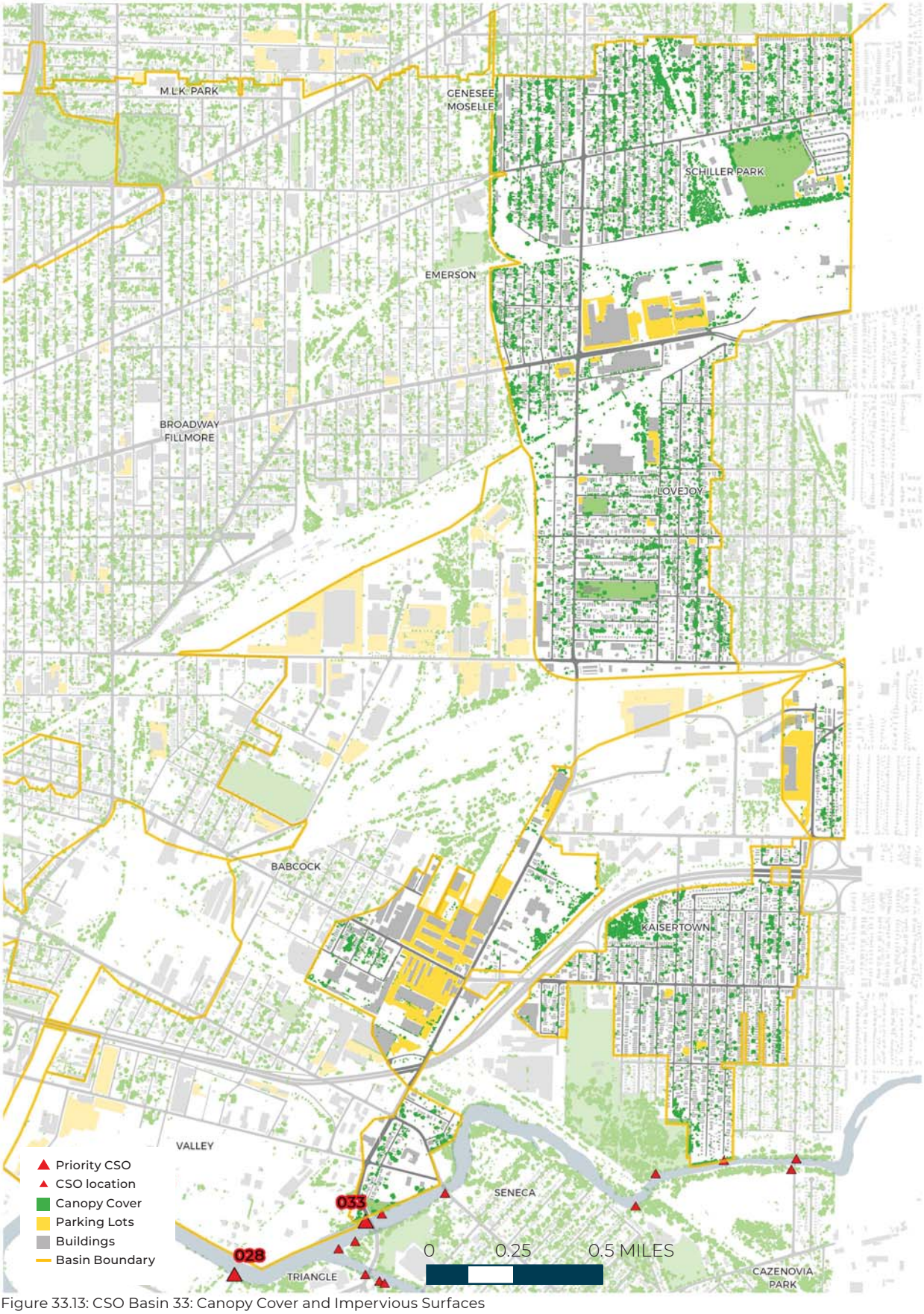


Figure 33.13: CSO Basin 33: Canopy Cover and Impervious Surfaces

ANALYSIS

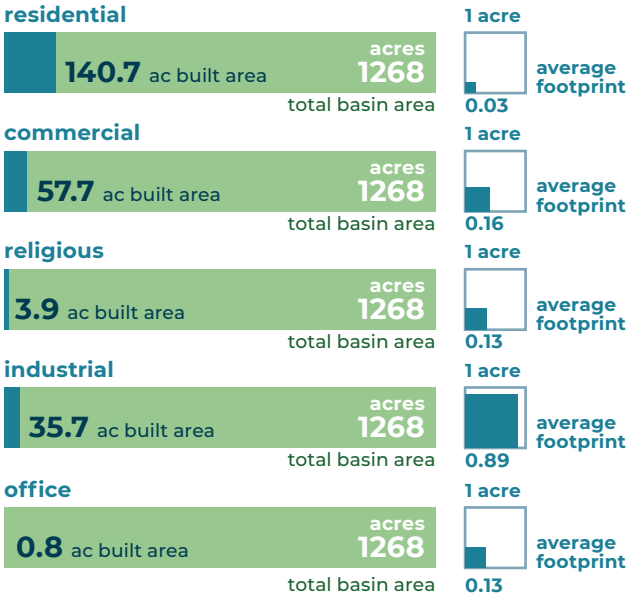
Site Analysis

Site analysis for CSO Basin 33 consisted predominantly of commercial properties. These sites included several businesses along Broadway and Bailey that shared common parking areas, often located in the front of the parcel. Drainage at these locations generally slopes toward the street and landscaping near entrances have deteriorated. These adjacent, commercial locations present opportunities to aggregate drainage capture from multiple properties with a single green infrastructure technology. Commercial properties that relied upon trucking services were often removed from consideration during site analysis in favor of more accessible locations. Frequent truck traffic presents several challenges for implementation of green infrastructure. It limits visibility of the green infrastructure and complicates construction mobilization. Existing drainage patterns are also not always ideal for green infrastructure retrofit.

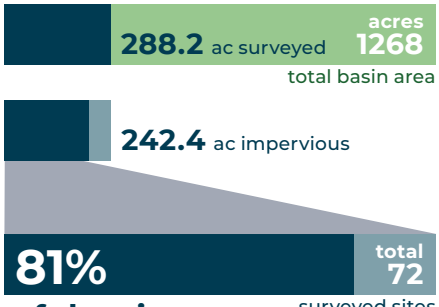
Parks and churches were also evaluated. These locations were often surrounded by residential properties and distinct from the large, commercial sites. The site analysis focused on green infrastructure retrofits that maximized drainage capture from both the parcel and adjacent street flow. Multiple retrofits were proposed on sites where drainage patterns from compacted space varied.

Built Area by Land Use

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



The site analysis reviewed 23% of the basin and found 38.2 acres of potential drainage area.



of the sites were suitable for green infrastructure.

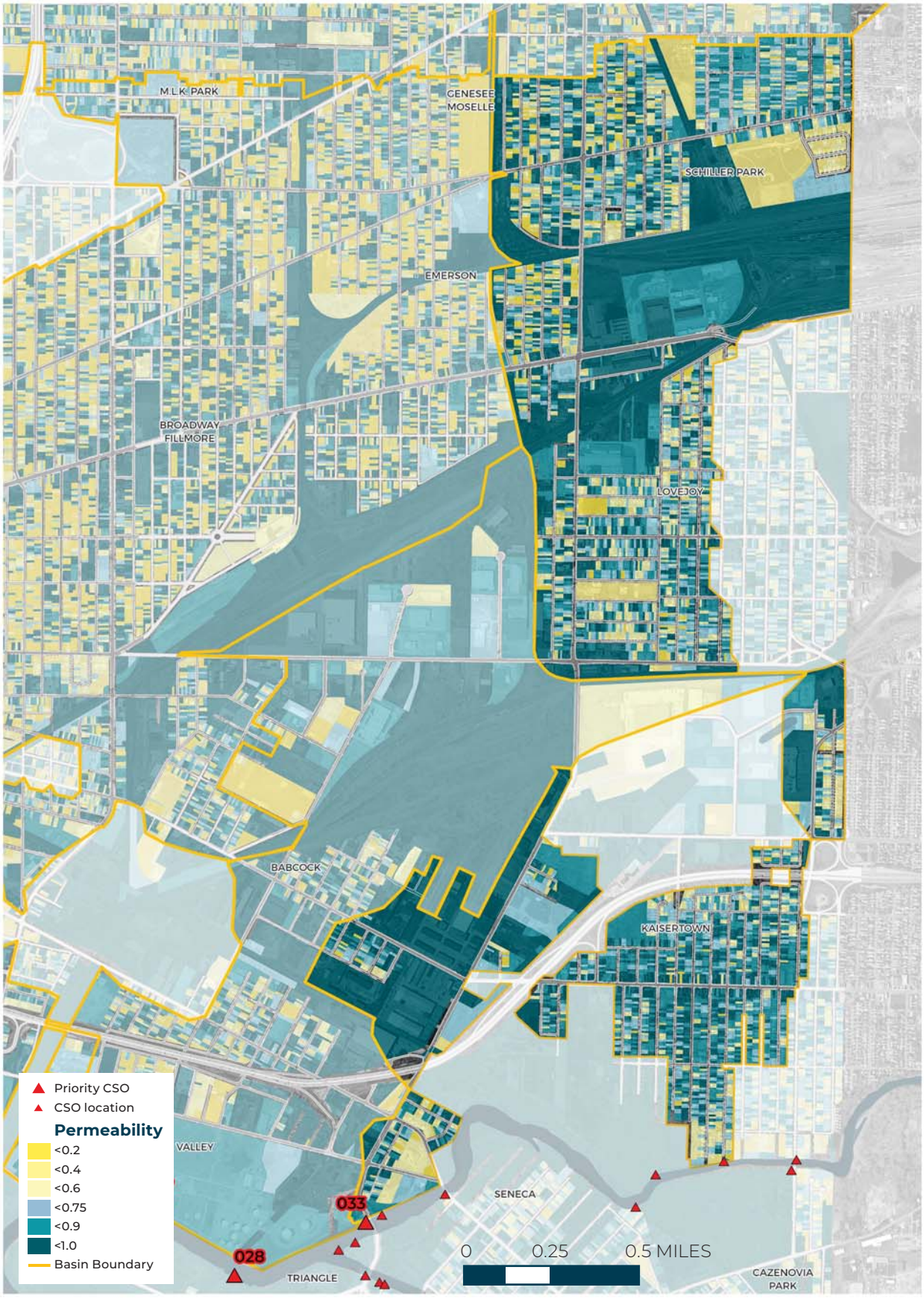


Figure 33.14: CSO Basin 33 Percent Impervious by Parcel

ANALYSIS

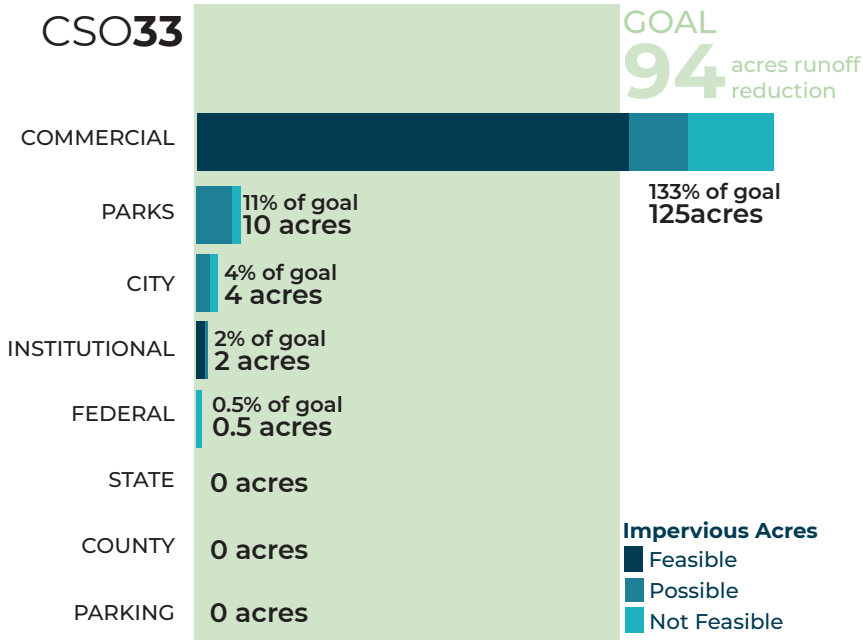
Site Analysis: Surveyed Properties

Figure 33.14: Examples of sites surveyed.

Commercial corridors flanked by commercial properties are strong areas of opportunity in CSO Basin 33.

Surveyed Properties by Land Use and Ownership

GIS sources: Erie County data, Buffalo Sewer Authority data



LARGEST PROPERTY OWNERS BY LAND USE AND OWNERSHIP

COMMERCIAL

Center One LLC
9.8 Imperv. acres

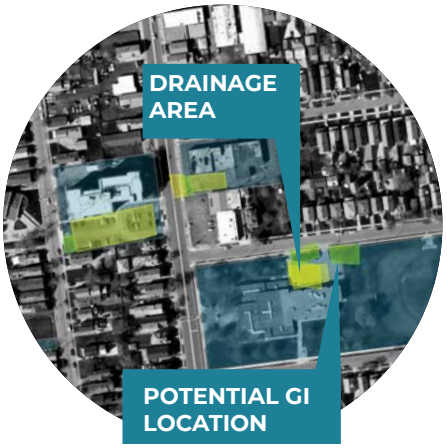
ACME Building
7.7 Imperv. acres

Aim Transportation Solutions
7.5 Imperv. acres

Clinton Bailey Farmers Market
7.4 Imperv. acres

Commercial and institutional properties along key corridors in CSO Basin 33, like Bailey Avenue, were surveyed.

From this, the team was able to determine that many of these properties can retain stormwater on site. This could become part of a perimeter buffer, or could be networked in corridor improvements to take a complete streets approach.



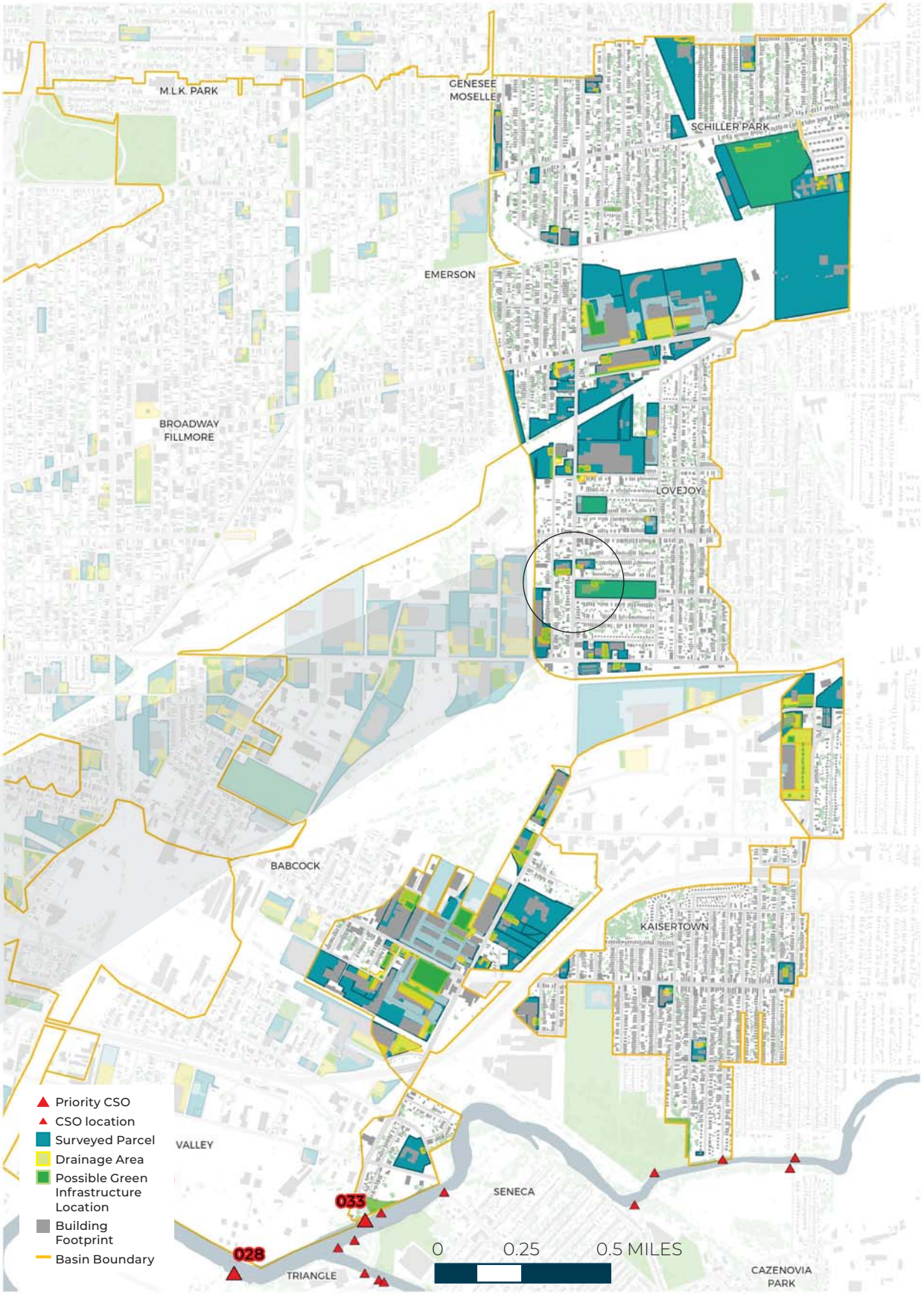


Figure 33.16: CSO Basin 33: Sites analyzed showing parcels, drainage areas and potential green infrastructure.

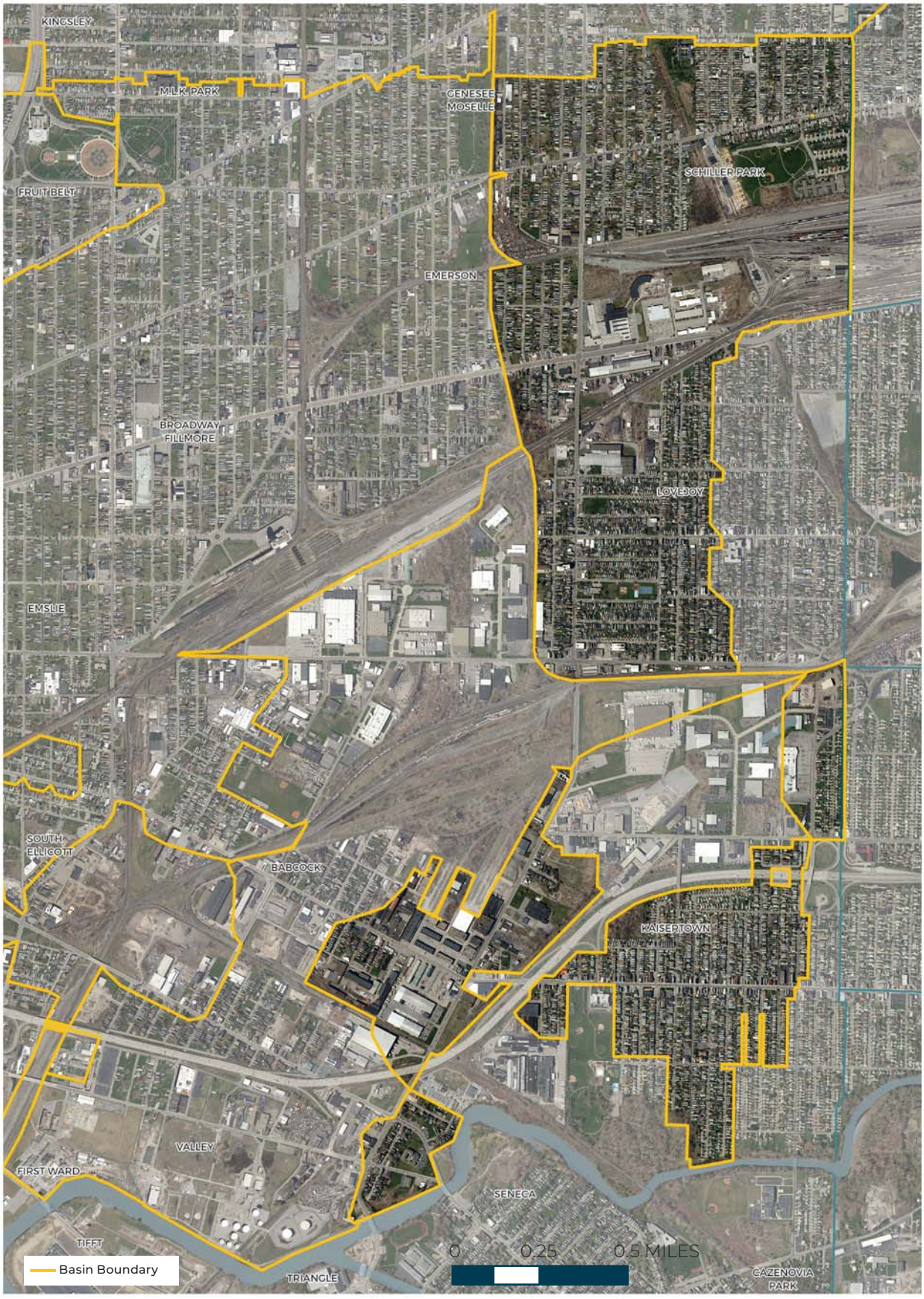


Figure 33.17: CSO Basin 33 Boundary on Aerial.

Figure 33.18: CSO Basin 33 Map of Built Environment and Tree Canopy