

6.7 O27 Woods Run

6.7.1 Existing Sewershed Conditions

The O27 Sewershed is located in the North Western corner of the city. The sewershed is closely aligned to the watershed for the now underground Woods Run which was tributary to the Ohio River until the construction of the combined sewer network. The highest points in the shed are in Ross Township, Perry North, and Perry South and the many branches of Woods Run flow through Riverview Park and along Woods Run Avenue before combining with flows from Brighton Heights and Marshall-Shadeland. Woods Run then flows through a highly industrialized area and its former outfall to the Ohio was just upstream of today's ALCOSAN WWTP. Developed as a Streetcar Suburb, the neighborhoods have seen a slow decline since the discontinuation of Pittsburgh's streetcar network. While no major development is expected, new residents are taking advantage of the area's proximity to Riverview Park.

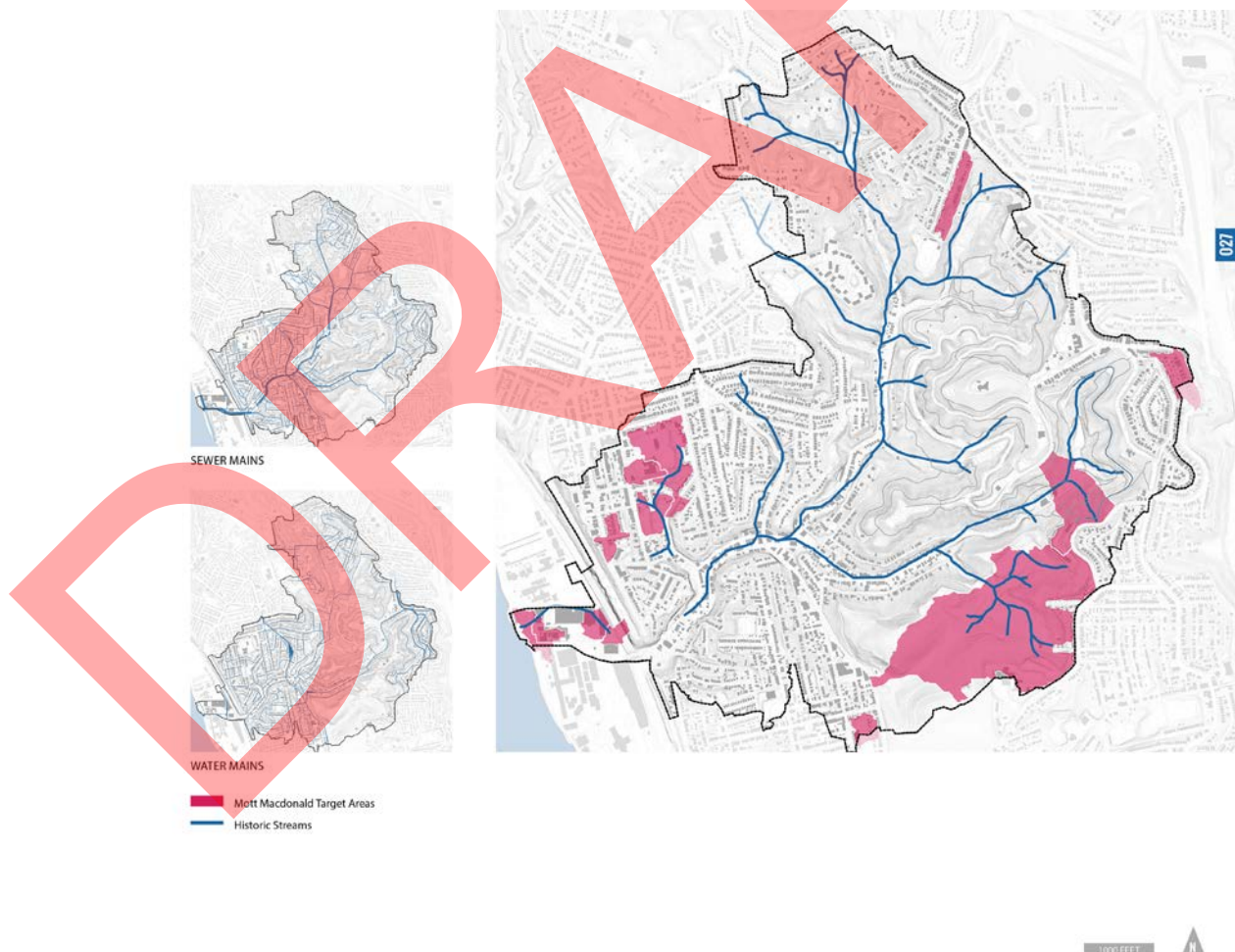


Figure 6-77

Stormwater from rainfall is the major driving force behind the geology of Pittsburgh. Recognizing where and how stormwater historically flowed can give us clues to where those flows want to occur today.

Today's sewer mains follow hydrologic flow lines very closely. Woods Run was once one of the largest streams in the City of Pittsburgh and had many tributary branches. Today's stormwater continues to flow in the sewer mains built along these original branches.

6.7.2 Urban Design Framework

The O27 sewershed is distinguished by the amount of green-space in the upper parts of the shed. Dramatically steep wooded slopes have constrained where development has been able to occur. Riverview Park, one of the largest public parks in the city and one of the oldest, has protected an additional 251 acres from development. Adjacent to the Park are several large cemeteries forming an ecologically contiguous green space.

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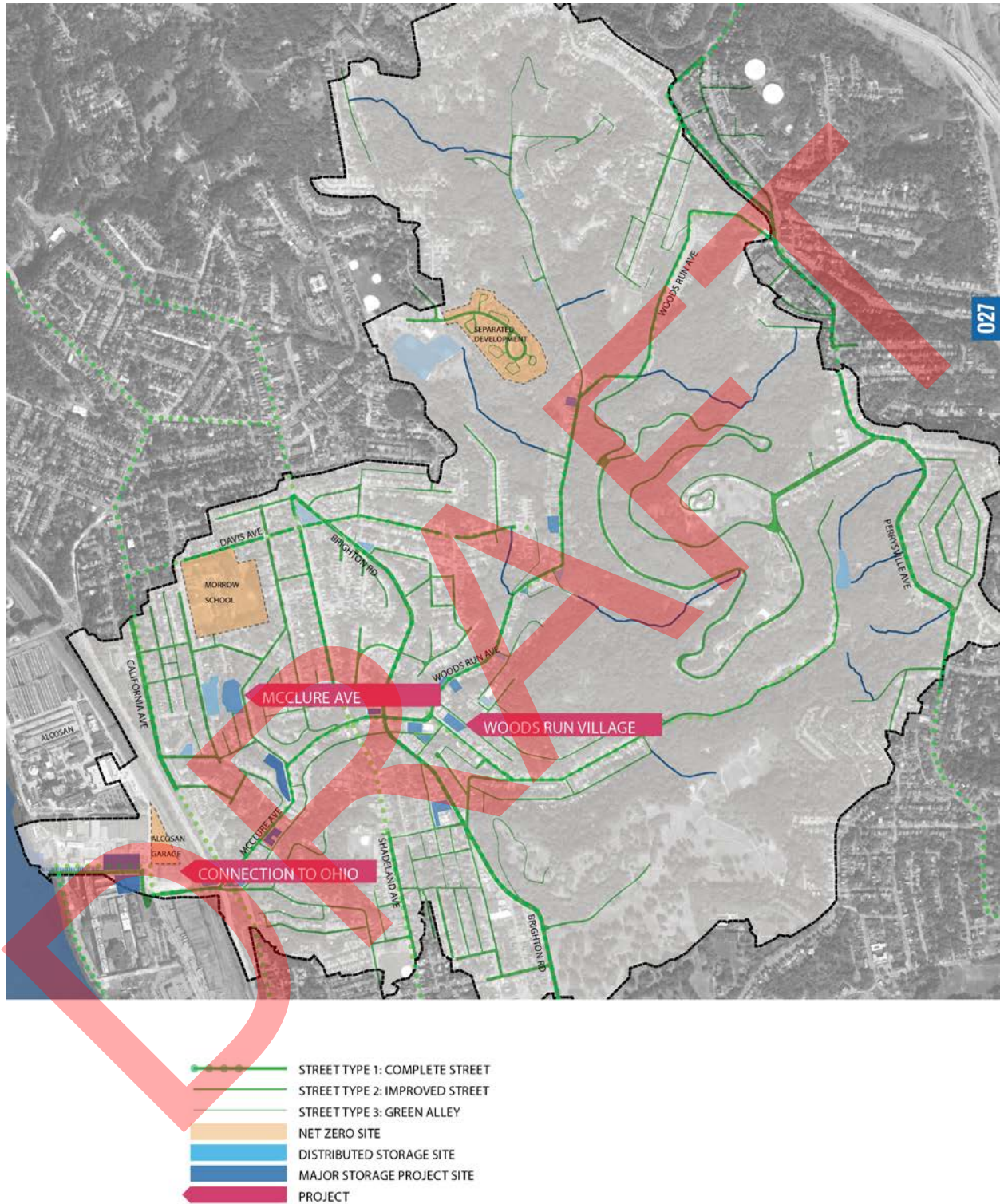


Figure 6-78

The comparatively level hilltops to the west of the Park supported streetcar suburbs at Brighton Heights and Marshall-Shadeland. Major thoroughfares from downtown Pittsburgh to the Southeast reflect these original streetcar lines.

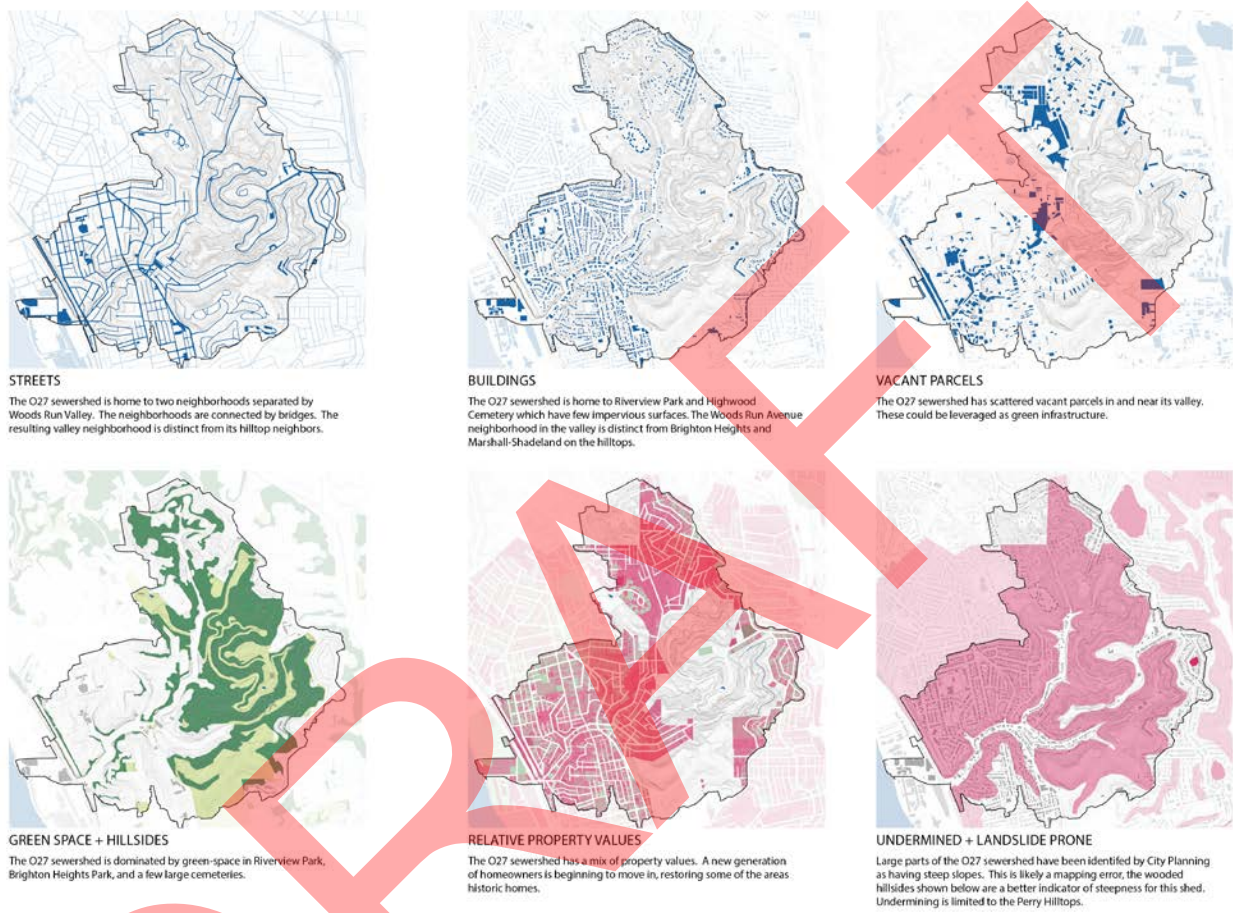
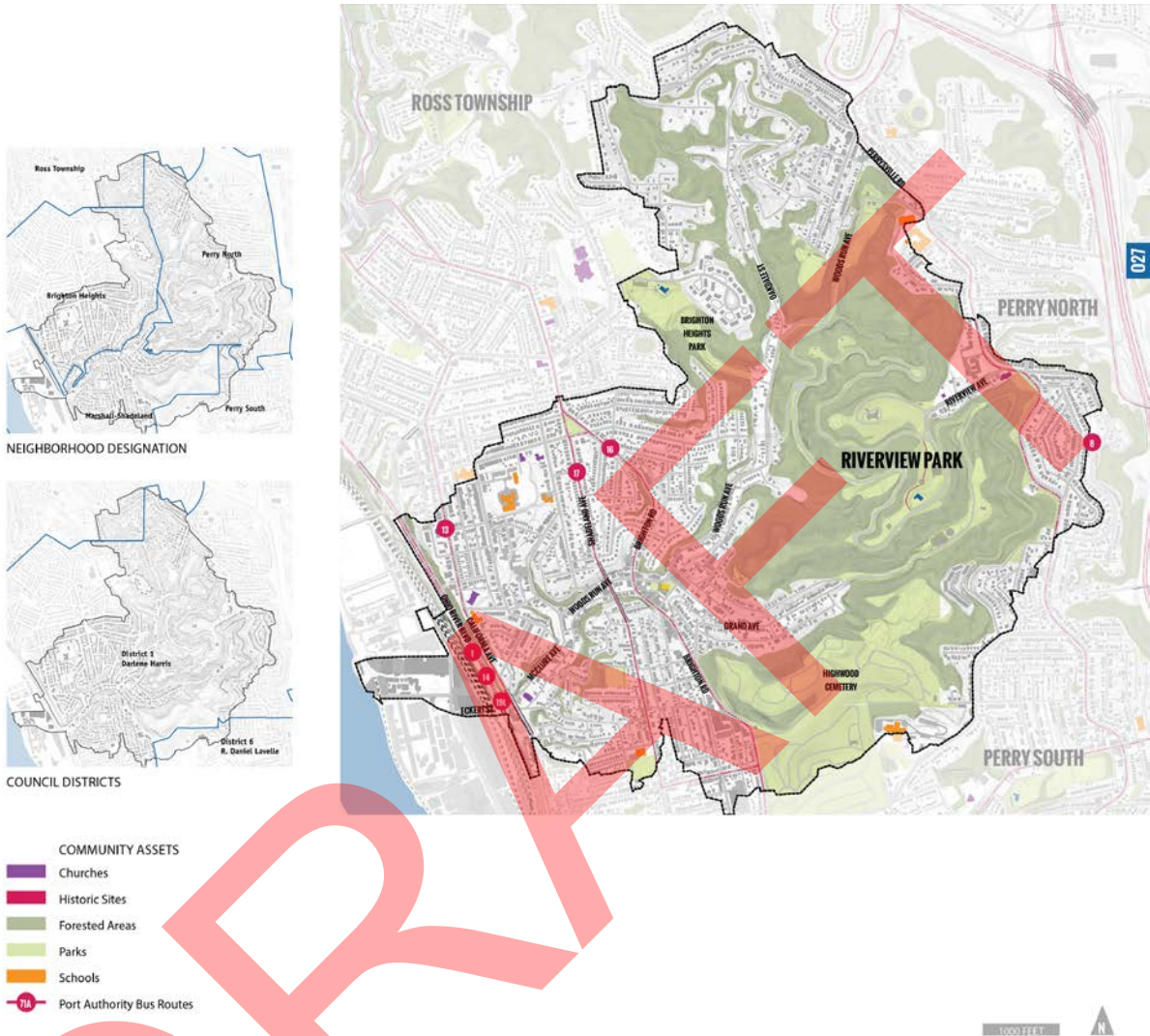


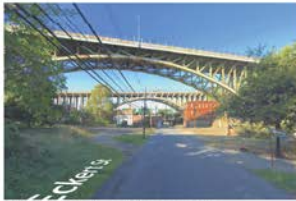
Figure 6-79

Understanding the unique urban fabric of a sewer shed allows PWSA to identify potential synergies between infrastructure and communities. Better streets, better parks, better green-spaces, better hillsides, better homes, and better developments can all have positive ripple effects for people, planet, place, and performance.





CARNEGIE LIBRARY @ WOODS RUN
Source: Saracco Photography



CALIFORNIA AVE + OHIO RIVER BLVD
BRIDGES OVER WOODS RUN VALLEY
Source: Microsoft Here Maps

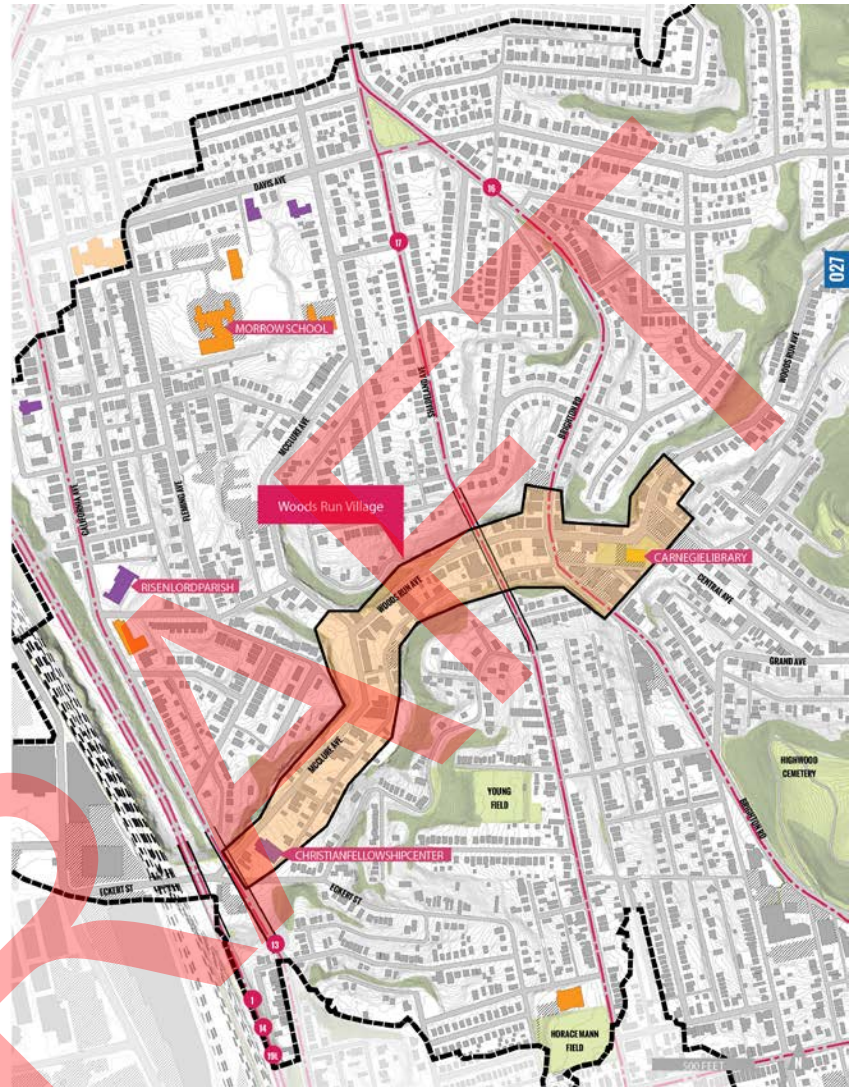


Figure 6-81

Connectivity between valley and hilltop is limited to McClure Avenue and Brighton Road. Three of the major thoroughfares from south to the north bridge over the valley at Shadeland Avenue, California Avenue, and Ohio River Boulevard. As a result, the valley of Woods Run is characteristically distinct from the hilltops of Brighton Heights and Marshall-Shadeland.

Though it does not have its own neighborhood designation, the Woods Run valley is a distinct community. The village center near the intersection of Brighton Road and Woods Run Avenue includes civic assets that could support an engaged and active

community. A few storefronts form a neighborhood commercial center and the newly renovated Carnegie Library serves as the community focal point.

A series of vacant lots and green spaces could be integrated with green infrastructure to provide improved walkability between the library, playground, fire station, commercial storefronts, and the surrounding residential neighborhoods.

Lecky Avenue, parallel to Woods Run Avenue, could be converted to a green alley. Improvements to this alley, which carries the primary sewer main for O27, would enable a bikeable corridor from the Three Rivers Heritage Bike Trail to Riverview Park.

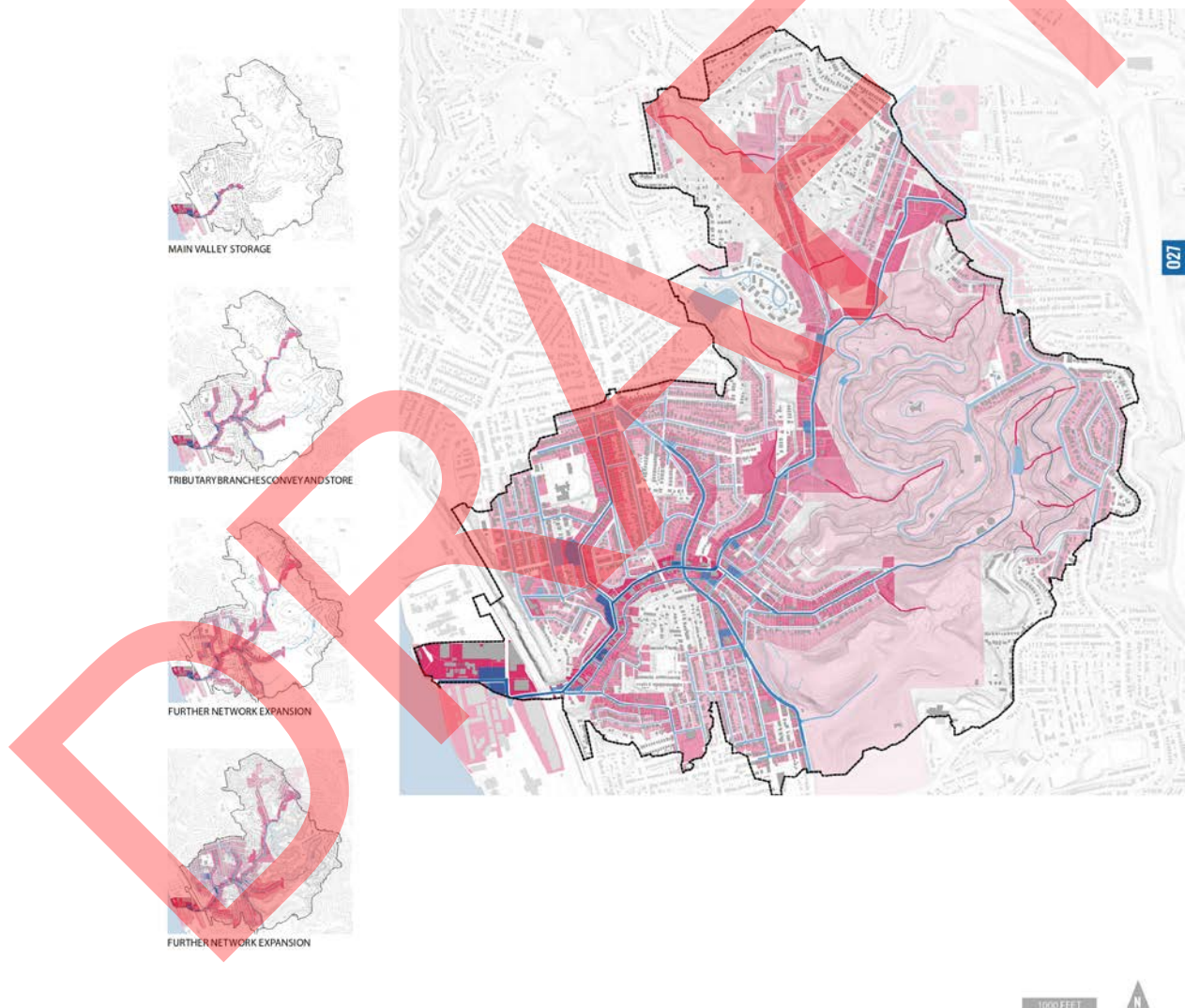


Figure 6-82

Green infrastructure works by restoring, mimicking, and supercharging natural hydrologic processes. Its deployment as a network needs to reconcile historical flows with modern land use. We studied the historical development of the city of Pittsburgh, and the impact of development on the city's topography.

An effective hydrologic network relies on an established hierarchy. The most critical pieces of green infrastructure need to be installed first and need to be scaled to anticipate further expansion of the green infrastructure network.

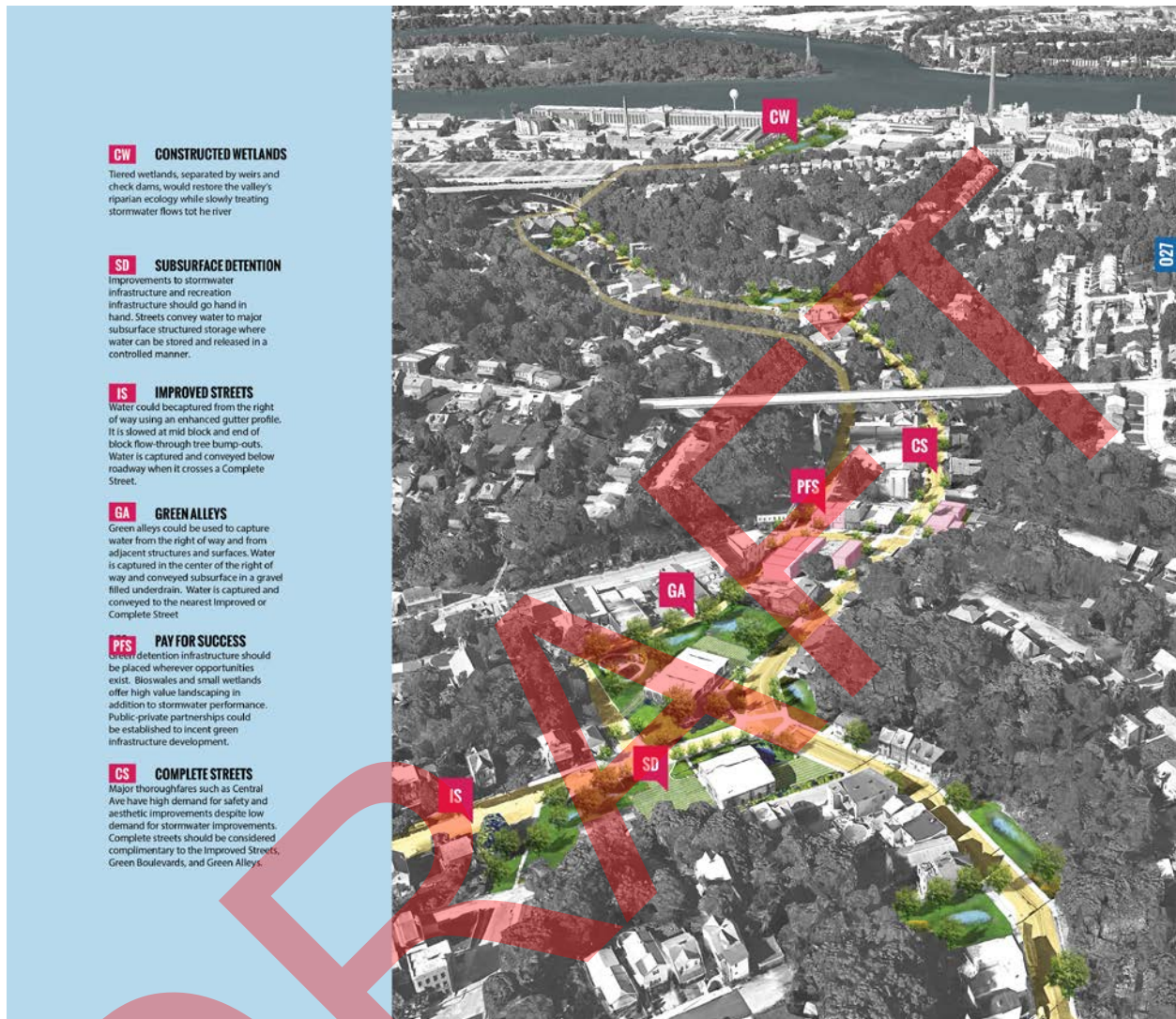
We identified "opportunity sites" throughout each priority sewershed that could both fulfill local stormwater infrastructure needs and support healthy communities and neighborhoods. The result is a hybridization between natural and man-made resource flows.

In O27, the storage infrastructure in the main valley and along tributary branches could allow for street improvements throughout the shed. As street improvements and detention sites come online, the network can be further expanded until every parcel is served by green infrastructure.

6.7.3 Woods Run Concept Plan

6.7.3.1 Woods Run Village

Four tributary branches of Woods Run converge at the core of the Woods Run Valley. Each branch carries with it a major road and the convergence of both rainwater and economic activity demands that investment in green stormwater infrastructure should reinforce the area as a civic center. Key elements such as a library, playground, and fire station are already in place.



CW CONSTRUCTED WETLANDS

Tiered wetlands, separated by weirs and check dams, would restore the valley's riparian ecology while slowly treating stormwater flows to the river.

SD SUBSURFACE DETENTION

Improvements to stormwater infrastructure and recreation infrastructure should go hand in hand. Streets convey water to major subsurface structured storage where water can be stored and released in a controlled manner.

IS IMPROVED STREETS

Water could be captured from the right of way using an enhanced gutter profile. It is slowed at mid block and end of block flow-through tree bump-outs. Water is captured and conveyed below roadway when it crosses a Complete Street.

GA GREEN ALLEYS

Green alleys could be used to capture water from the right of way and from adjacent structures and surfaces. Water is captured in the center of the right of way and conveyed subsurface in a gravel filled underdrain. Water is captured and conveyed to the nearest Improved or Complete Street.

PFS PAY FOR SUCCESS

Green detention infrastructure should be placed wherever opportunities exist. Bioswales and small wetlands offer high value landscaping in addition to stormwater performance. Public-private partnerships could be established to incent green infrastructure development.

CS COMPLETE STREETS

Major thoroughfares such as Central Ave have high demand for safety and aesthetic improvements despite low demand for stormwater improvements. Complete streets should be considered complementary to the Improved Streets, Green Boulevards, and Green Alleys.

Figure 6-83

Pay for Success development opportunities could exist at the intersection of Brighton Road and Woods Run Avenue, reinforcing the intersection as a community focal point and taking advantage of access to transit.

Pedestrian and Bicycle routes through the area could establish a connection from the riverfront bicycle trail to Riverview Park.

Renovation of an existing playground and Library grounds could reinvigorate an already green village center. Vacation of a portion of Lecky Ave adjacent to the library could activate an inaccessible vacant parcel.

6.7.3.2 McClure Avenue Wilds



Figure 6-84

URA owned parcels at a key low point on McClure Avenue could detain stormwater flows from the surrounding Brighton Heights neighborhood as well as from the nearby Morrow School. The site, which is bisected by a 60" sewer main, could provide both stormwater performance and naturalized passive recreation areas.

6.7.3.3 Woods Run at the Ohio River

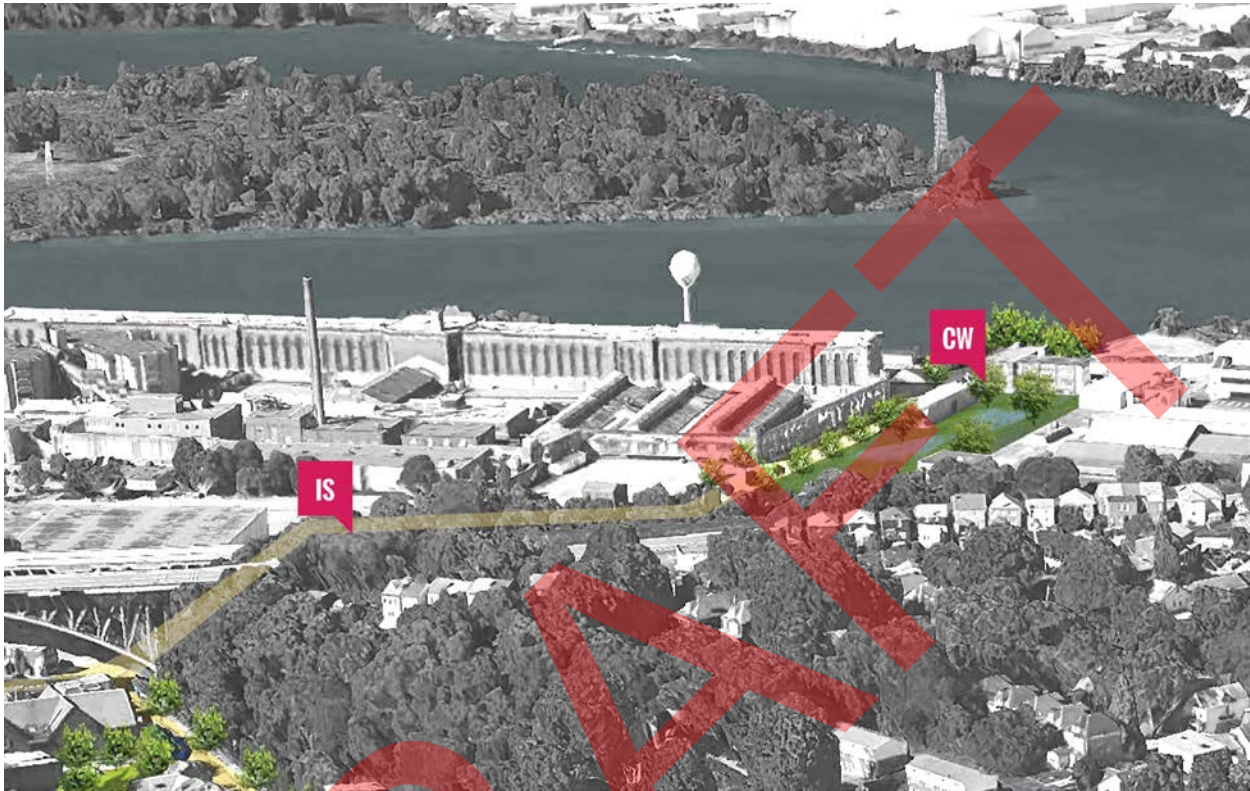


Figure 6-85

Highly industrialized since the steel town days, the Ohio Riverfront at Woods Run is almost entirely paved over or otherwise developed. Home to the Western State Penitentiary and ALCOSAN, this area is the uninspired industrial terminus to the Three Rivers Heritage Trail. Green Infrastructure could be used to soften the area's hard-scape while continuing the Three Rivers Heritage Trail upslope to Riverview Park.